

Wednesday, February 03, 2010

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

REQUEST NUMBER: 10-1566

These Samples are on:

LANL Request Number: 10-1566

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/3/2010

TURNAROUND/REPORT DUE: 3/5/2010

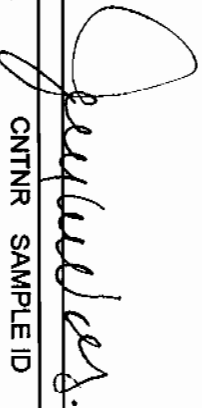
TURNAROUND REQ'D: 30 Days

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 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Wednesday, February 03, 2010

REQUEST NUMBER: 10-1566

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|-----------------|-------------|-------|--------------|---------------|--------------|----------------------|
| EPA:906.0 | | | | | | |
| | | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| HASL-300:AM-241 | | | | | | |
| | | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| HASL-300:ISOPU | | | | | | |
| | | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Wednesday, February 03, 2010

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REQUEST NUMBER: 10-1566

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|---------------|-------------|-------|--------------|---------------|--------------|----------------------|
| HASL-300:ISOU | | | | | | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Final Page of REQUEST NUMBER 10-1566

Wednesday, February 03, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1566

LOS ALAMOS

REQUEST NUMBER: 10-1566

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/5/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

| SAMPLE ID | CTNR | CTNR DESC | ORDER | PRESERV | MATRIX |
|--------------|------|-----------|-------------------------|---------|--------|
| RE15-10-7332 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7332 | 1 | POLY | H3 | Ice | R |
| RE15-10-7333 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7333 | 1 | POLY | H3 | Ice | R |
| RE15-10-7336 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7336 | 1 | POLY | H3 | Ice | R |
| RE15-10-7337 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7337 | 1 | POLY | H3 | Ice | R |
| RE15-10-7334 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7334 | 1 | POLY | H3 | Ice | R |
| RE15-10-7335 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7335 | 1 | POLY | H3 | Ice | R |
| RE15-10-7338 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7338 | 1 | POLY | H3 | Ice | R |
| RE15-10-7339 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7339 | 1 | POLY | H3 | Ice | R |
| RE15-10-7342 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7342 | 1 | POLY | H3 | Ice | R |

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7332

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|--|-----------------------------|--|--------------------------|--|--------------|--|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | | QBT3 | |
| TIME COLLECTED (HH:MM) | | 0850 | | SUB-MEDIA: | | TUFF 1 | |
| PRS ID: 15-008(g) | | OK | | SAMPLE TECH CODE: | | HA | |
| LOCATION ID: 15-610565 | | ↓ | | 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 | | NA | |
| COMPOSITE TYPE: NA | | COMPOSITE TIME INTERVAL: NA | | WATER FLOWING: YES/NO/NA | | NA | |
| BOREHOLE: YES/NO/NA | | BOREHOLE DECLINATION: NA | | BOREHOLE DIRECTION: NA | | NA | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|----------------------|-------------------------------|--------------|---------------|----------------------|
| 1 | normal | 8082+NMED-HEXP | 250 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | H3 | 500 ML POLY | Ice | Y | |
| 1 | | Met+U+CLO4+C N | 1 GAL POLY 1/6/10 | Ice | Y | |
| 1 | ✓ | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | Y | |

SAMPLE DESC:

Brownish gray sand and cobbles

FD: RE15-10-7342

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-2

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha ≤ 5 dpm

Beta/Gamma ≤ 1617 dpm

HE negative

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

COLLECTED BY (PRINT)

Th McFarland

REVIEWED BY (PRINT)

R Saunders

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7333

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | ALLH |
| TIME COLLECTED (HH:MM) | | 0906 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 15-610565 | | | FIELD QC TYPE: | NA | | |
| LOCATION TYPE: | GENERIC | | | FIELD PREP: | NA | | |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | |
| BOTTOM DEPTH: | 0 | 2.5 | | SCREEN/PORT DESC: | | NA | |
| FIELD MATRIX: | R | S | | EXCAVATED: YES/NO | NA | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| BOREHOLE: YES/NO | NA | | | WATER FLOWING: YES/NO | NA | | |
| BOREHOLE DECLINATION: | NA | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|----------------------|--------------------------------|--------------|---------------|----------------------|
| 1 | normal | 8082+NMED-HEXP | 250 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | H3 | 500 ML POLY | Ice | Y | |
| 1 | | Met+U+CLO4+C N | 1 LITER POLY 1 liter LC 1/6/10 | Ice | Y | |
| 1 | | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | Y | |

SAMPLE DESC: brown sand with cobbles and few roots

SAMPLE COMMENTS:

NA

LOCATION DESC: 8g-2

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 11 dpm
Beta/Gamma \leq 1596 dpm

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

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sheri Newwood (Signature) Sheri Newwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7334

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|--------------------------|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | A11h |
| TIME COLLECTED (HH:MM) | | 0910 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 15-610566 | ↓ | | 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 | NO | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | WATER FLOWING: YES/NO/NA |
| BOREHOLE: YES/NO/NA | NO | | | BOREHOLE DECLINATION: | NA | | BOREHOLE DIRECTION: |
| | | | | | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-------------------------|----------------------------------|--------------|---------------|----------------------|
| 1 | normal | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | y | |
| 1 | | H3 | 500 ML POLY | Ice | y | |
| 1 | | Met+U+CLO4+C N | 1 GAT POLY liter JC 1/6/10 | Ice | y | |
| 1 | | NMED Explosives list | 250 ML AMBER GLASS | Ice | y | |
| 1 | ✓ | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | y | |

SAMPLE DESC:

Brown sand and cobbles

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-4 center of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpm
Beta/Gamma \leq 1430 dpm

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

COLLECTED BY (PRINT)

TLMcfarland

REVIEWED BY (PRINT)

R Saunders

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherri Sheppard (Signature) Sherri Sheppard | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7335

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|----|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | ok |
| TIME COLLECTED (HH:MM) | | 0920 | | SUB-MEDIA: | TUFF 1 | | L |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 15-610566 | | | FIELD QC TYPE: | NA | | |
| LOCATION TYPE: | GENERIC | ↓ | | FIELD PREP: | NA | | ↓ |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | ↓ |
| BOTTOM DEPTH: | 0 | 4.0 | | SCREEN/PORT DESC: | NA | | |
| FIELD MATRIX: | R | R | | EXCAVATED: YES/NO/NA | | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| | | | | WATER FLOWING: YES/NO/NA | | | |
| BOREHOLE: YES/NO/NA | | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-------------------------|----------------------------------|--------------|---------------|----------------------|
| 1 | normal | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | H3 | 500 ML POLY | Ice | Y | |
| 1 | | Met+U+CLO4+C N | 1 GAL POLY KC 1/6/10 | Ice | Y | |
| 1 | | NMED Explosives list | 250 ML AMBER GLASS | Ice | Y | |
| 1 | ✓ | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | Y | |

SAMPLE DESC:

Pinkish gray tuff and brown sand, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-4 center of AOC

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 16 dpm
Beta/Gamma \leq 2080 dpm

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

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

R Saunders

| | | | |
|---------------------------|-----------|-------------------------------|-----------|
| RELINQUISHED BY | Date/Time | RECEIVED BY | Date/Time |
| (Printed Name) R Saunders | 2/1/10 | (Printed Name) Sheri Sherwood | 2/1/10 |
| (Signature) R Saunders | 1630 | (Signature) Sheri Sherwood | 1630 |
| RELINQUISHED BY | Date/Time | RECEIVED BY | Date/Time |
| (Printed Name) | | (Printed Name) | |
| (Signature) | | (Signature) | |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7336

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--------------------------|------------|----|--------------------------|----|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | MEDIA: | OBT3 | | ALLH | |
| TIME COLLECTED (HH:MM) | | 0916 | SUB-MEDIA: | TUFF 1 | | NA | |
| PRS ID: | 15-008(g) | OK | SAMPLE TECH CODE: | HA | | OK | |
| LOCATION ID: | 15-610567 | | 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 | 5 | EXCAVATED: YES/NO/NA | | | | |
| COMPOSITE TYPE: | NA | | COMPOSITE TIME INTERVAL: | NA | | WATER FLOWING: YES/NO/NA | |
| BOREHOLE: YES/NO/NA | | | BOREHOLE DECLINATION: | NA | | BOREHOLE DIRECTION: | NA |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-------------------------|----------------------------------|--------------|---------------|----------------------|
| 1 | normal | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | H3 | 500 ML POLY | Ice | Y | |
| 1 | | Met+U+CLO4+C N | 1 GAL POLY 1 liter 20 1/6/10 | Ice | Y | |
| 1 | | NMED Explosives list | 250 ML AMBER GLASS | Ice | Y | |
| 1 | | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | Y | |

SAMPLE DESC: brown sand with cobbles

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-1

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 11 dpm
Beta/Gamma \leq 1727 dpm

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

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7337

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | ALLH |
| TIME COLLECTED (HH:MM) | | 0928 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 15-610567 | | | FIELD QC TYPE: | NA | | |
| LOCATION TYPE: | GENERIC | | | FIELD PREP: | NA | | |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | |
| BOTTOM DEPTH: | 0 | 3.0 | | SCREEN/PORT DESC: | | NA | |
| FIELD MATRIX: | R | S | | EXCAVATED: YES (NO) NA | | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| BOREHOLE: YES (NO) NA | | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-------------------------|----------------------------------|--------------|---------------|----------------------|
| 1 | Normal | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | y | |
| 1 | | H3 | 500 ML POLY | Ice | y | |
| 1 | | Met+U+CLO4+C N | 1 GAL POLY 1 liter RC 1/6/10 | Ice | y | |
| 1 | | NMED Explosives list | 250 ML AMBER GLASS | Ice | y | |
| 1 | | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | y | |

SAMPLE DESC: brown sand with cobbles

FR RE15-10-7344

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-1

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 11 dpm
Beta/Gamma \leq 1631 dpm

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

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherrill Newwood (Signature) Sherrill Newwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7338

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|----------------------------|--------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | Allh |
| TIME COLLECTED (HH:MM) | | 0935 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 15-610568 | | | FIELD QC TYPE: | NA | | |
| LOCATION TYPE: | GENERIC | ↓ | | FIELD PREP: | NA | | ↓ |
| TOP DEPTH: | 0 | 0.0 | | SAMPLE USAGE: | INV | | ↓ |
| BOTTOM DEPTH: | 0 | 0.5 | | SCREEN/PORT DESC: | NA | | |
| FIELD MATRIX: | R | S | | EXCAVATED: YES (NO) NA | | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| | | | | WATER FLOWING: YES (NO) NA | | | |
| BOREHOLE: YES (NO) NA | | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-------------------------|----------------------------------|--------------|---------------|----------------------|
| 1 | normal | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | y | |
| 1 | | H3 | 500 ML POLY | Ice | y | |
| 1 | | Met+U+CLO4+C N | 1 GAL POLY liter pc, 1/6/10 | Ice | y | |
| 1 | | NMED Explosives list | 250 ML AMBER GLASS | Ice | y | |
| 1 | ↓ | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | y | |

SAMPLE DESC:

Brown sand and cobbles, roots

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-3

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 16 dpm
Beta/Gamma \leq 1506 dpm

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

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT)

TLMofarland

| | | | |
|---------------------------|-----------|------------------------------|-----------|
| RELINQUISHED BY | Date/Time | RECEIVED BY | Date/Time |
| (Printed Name) R Saunders | 2/1/10 | (Printed Name) Sheri Shewood | 2/1/10 |
| (Signature) R Saunders | 1630 | (Signature) Sheri Shewood | 1630 |
| RELINQUISHED BY | Date/Time | RECEIVED BY | Date/Time |
| (Printed Name) | | (Printed Name) | |
| (Signature) | | (Signature) | |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7339

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|-----------------|--|--------------------------|--------|--------------|----|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | |
| TIME COLLECTED (HH:MM) | | 02/01/2010 7:40 | | SUB-MEDIA: | TUFF 1 | | OK |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | 15-610568 | | | FIELD QC TYPE: | NA | | |
| LOCATION TYPE: | GENERIC | | | FIELD PREP: | NA | | |
| TOP DEPTH: | 0 | 2.0 | | SAMPLE USAGE: | INV | | |
| BOTTOM DEPTH: | 0 | 3.0 | | SCREEN/PORT DESC: | NA | | |
| FIELD MATRIX: | R | OK | | EXCAVATED: YES/NO/NA | | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| | | | | WATER FLOWING: YES/NO/NA | | | |
| BOREHOLE: YES/NO/NA | | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|-------------------------|----------------------------------|--------------|---------------|----------------------|
| 1 | normal | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | y | |
| 1 | | H3 | 500 ML POLY | Ice | y | |
| 1 | | Met+U+CLO4+C N | 1 GAL POLY liter LC 1/6/00 | Ice | y | |
| 1 | | NMED Explosives list | 250 ML AMBER GLASS | Ice | y | |
| 1 | | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | y | |

SAMPLE DESC: pinkish gray tuff and some brown sand

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-3

FIELD SCREENING/MEASUREMENT RESULTS:

Alpha \leq 22 dpmBeta/Gamma \leq 1893 dpmPID $\frac{\text{Ambient}}{\text{Reading}} \frac{0.0}{0.0}$ ppm

COLLECTED BY (PRINT)

R Saunders

REVIEWED BY (PRINT) TLMcFarland

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherwood (Signature) Sherwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7342

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|--------|--------------|------|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | QBT3 | | Allh |
| TIME COLLECTED (HH:MM) | | 0850 | | SUB-MEDIA: | TUFF 1 | | NA |
| PRS ID: | 15-008(g) | OK | | SAMPLE TECH CODE: | HA | | OK |
| LOCATION ID: | UNK | 15-610565 | | FIELD QC TYPE: | ED | | |
| LOCATION TYPE: | GENERIC | OK | | FIELD PREP: | NA | | |
| TOP DEPTH: | 0 | 0.0 | | SAMPLE USAGE: | QC | | |
| BOTTOM DEPTH: | 0 | 0.5 | | SCREEN/PORT DESC: | | NA | |
| FIELD MATRIX: | R | 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+NMED-HEXP | 250 ML AMBER GLASS | Ice | Y | |
| 1 | | AM241+GS+ISO PU+ISOU | 1 LITER POLY | None | Y | |
| 1 | | H3 | 500 ML POLY | Ice | Y | |
| 1 | | Met+U+CLO4+C N | 1 GAE POLY liter KC 1/6/10 | Ice | Y | |
| 1 | | RADVANA+B+G | 1 EA 8 IN RESEALABLE POLY BAG | None | Y | |

SAMPLE DESC: QC Sample of RE15-10-7332

Brownish gray sand and cobbles

SAMPLE COMMENTS:

NA

LOCATION DESC:

8g-2

FIELD SCREENING/MEASUREMENT RESULTS:

HE negative

Alpha \leq 5 dpmBeta/Gamma \leq 1617 dpmPID $\frac{\text{Ambient Reading}}{0.0} = 0.0$ ppm

COLLECTED BY (PRINT)

T. McFarland

REVIEWED BY (PRINT)

R Saunders

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherri Sherwood (Signature) Sherri Sherwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 2483

EVENT NAME: 4th Qtr. FY09 - AOC 15-008(g) - Threemile Canyon

SAMPLE ID: RE15-10-7344

WORK ORDER:

| AS PLANNED | | AS COLLECTED | | AS PLANNED | | AS COLLECTED | |
|-----------------------------|-----------|--------------|--|--------------------------|-------|--------------|----|
| DATE COLLECTED(MM/DD/YYYY): | | 02/01/2010 | | MEDIA: | NA | | ok |
| TIME COLLECTED (HH:MM) | | 0936 | | SUB-MEDIA: | OTHER | | |
| PRS ID: | 15-008(g) | ok | | SAMPLE TECH CODE: | DC | | |
| LOCATION ID: | UNK | 15-610567 | | FIELD QC TYPE: | ER | | |
| LOCATION TYPE: | GENERIC | ok | | FIELD PREP: | UF | | |
| TOP DEPTH: | 0 | | | SAMPLE USAGE: | QC | | |
| BOTTOM DEPTH: | 0 | | | SCREEN/PORT DESC: | NA | | |
| FIELD MATRIX: | W | | | EXCAVATED: YES/NO/NA | | | |
| COMPOSITE TYPE: | NA | | | COMPOSITE TIME INTERVAL: | NA | | |
| | | | | WATER FLOWING: YES/NO/NA | | | |
| BOREHOLE: YES/NO/NA | | | | BOREHOLE DECLINATION: | NA | | |
| | | | | BOREHOLE DIRECTION: | NA | | |

| # | PRIORITY | ORDER | CNTNR | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|---|----------|--------------|--------------|------------------|---------------|----------------------|
| 1 | normal | METALS+U-GEL | 1 LITER POLY | Nitric Acid | Y | |
| 1 | | SW-846:6850 | 250 ML POLY | Ice | Y | |
| 1 | ✓ | TCN | 500 ML POLY | Sodium Hydroxide | Y | |

SAMPLE DESC: QC Sample of RE15-10-7337

SAMPLE COMMENTS:

Rinsate

LOCATION DESC:

NA

FIELD SCREENING/MEASUREMENT RESULTS:

NA

COLLECTED BY (PRINT)

TLMcFarland

REVIEWED BY (PRINT)

R Saunders

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) R Saunders (Signature) R Saunders | Date/Time 2/1/10 1630 | RECEIVED BY (Printed Name) Sherrif Greenwood (Signature) Sherrif Greenwood | Date/Time 2/1/10 1630 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Rad Screening Data Release Form

The Following samples were received at the Field Support Facility (FSF) without screening data (list sample number):

RE 15-10-7332
7333
7334
7335
7336
7337
7338
7339
7342
8304
8305
8306
8307

RE 15-10-8308
8309
8300
8301
8324
7981
7982
7983
7984
7985

These samples will not be shipped until radiological screening data documentation arrives at the FSF. I understand that it is my responsibility to ensure this information arrives at the FSF in a timely manner. If holding times are missed because screening data does not arrive, I will pick up the samples.

.....
The following samples do not require rad screening data for the reasons stated (list sample numbers):

RE 15-10-7344] rinsate
RE 15-10-8328

RE 15-10-8332 FTB


Reason:

.....
Print Last Name McFarland

Signature


Tracy M.


Date 2/01/10

| DATA VALIDATION COVER SHEET | |
|--|---|
| 5119-1 <div style="text-align: center;">Data Validation Cover Sheet</div> | Records Use only  |


| Section I. | | | |
|---|--|--|--|
| REQUEST NUMBER: <u>10-1566</u> | VALIDATION DATE: <u>03/15/10</u> | LAB CODE: <u>GEL</u> | |
| CONTRACT LABORATORY NAME: <u>GEL Laboratories LLC</u> | | | |
| VALIDATOR: <u>David Schwent</u> | | ORGANIZATION: <u>Analytical Quality Associates, Inc.</u> | |
| ANALYTICAL SUITE (CHECK ALL THAT APPLY): | | | |
| <input type="checkbox"/> TPH-GRO | <input type="checkbox"/> HIGH EXPLOSIVES | <input type="checkbox"/> DIOXIN FURANS | <input type="checkbox"/> LCMSMS PERCHLORATES |
| <input type="checkbox"/> TPH-DRO | <input type="checkbox"/> METALS | <input type="checkbox"/> PCB CONGENERS | <input type="checkbox"/> ORGANOCHLORINE PESTICIDES/POLYCHLORINATED BIPHENYLS |
| <input type="checkbox"/> GENERAL CHEMISTRY | <input checked="" type="checkbox"/> RADIOCHEMISTRY | <input type="checkbox"/> LCMSMS HIGH EXPLOSIVES | |
| <input type="checkbox"/> OTHER (DESCRIBE): _____ | | | |

| Section II. Completeness Check | | | | | | | |
|---|--------------------------|-------------------------------------|-----------------------------|-------------------------------------|--------------------------|-------------------------------------|--------------------------|
| YES | NO | N/A | (CHECK ONE) | YES | NO | N/A | (CHECK ONE) |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1. CHAIN-OF-CUSTODY FORM(S) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6. RAW/BSS DATA |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2. CASE NARRATIVE | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7. QUALITY CONTROL FORMS |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3. SAMPLE RESULT FORMS | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 8. QUANTITATION REPORTS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. SAMPLE CHROMATOGRAMS | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 9. TICS FORMS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. STANDARD CHROMATOGRAMS | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 10. TICS MASS SPECTRA |
| Comments/problems noted (include information about requests for further information submitted to the contract laboratory and agreed-upon date of resolution and contract laboratory point of contact): 1. All reported sample results that were rejected by the laboratory due to interference or low abundance were qualified R,R5a. In the QC samples, several results were also rejected by the laboratory. No sample data were qualified as a result. 2. It should be noted that no MS analysis was performed for the tritium analysis. However, an LCS was performed and was with acceptance limits. No sample data were qualified as a result. 3. It should be noted that the matrix QC analyses for all analyses in this RN were performed on LANL samples from other RNs. No sample data were qualified as a result. | | | | | | | |
| Reviewed By: <u>Charissa Lewis</u> | | | | Level: <u>I</u> | | Date: <u>3/16/10</u> | |


| DATA VALIDATION COVER SHEET | |
|--|--|
| 5119-1 Data Validation Cover Sheet | Records Use only  Los Alamos NATIONAL LABORATORY EST 1947 |
| | |
| VALIDATOR'S SIGNATURE: <u>David Schwartz</u> DATE: <u>03/15/10</u> | |
| Form 5119-1, Revision 0.0 | LOS ALAMOS Environmental Restoration Project |

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

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

| RAD ANALYTICAL DATA VALIDATION CHECKLIST | |
|--|---|
| 5119-2 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 checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 24. Required matrix spike information is missing. Data may not be acceptable for use. Contact the SMO or external laboratory for information. If LCS information is present, do not Reject. Qualify data based on LCS information. MS/MSD is not applicable to Gamma Spectroscopy. | R, R6c | R, R6c |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 25. Duplicate, dilution, or reanalysis. | UJ, R88 | J, R88 |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 26. The LANL project chemist identified quality deficiencies in the reported data that require further qualification. This code can ONLY be used and/or under advisement by the LANL project chemist. | UJ, R, R19 | J, R, R19 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 27. Quantification of data via data validation did not occur based on Quality Control requirements in this procedure. Adhere to the external laboratory qualifiers found within the Form I analytical data summary sheets generated by the external laboratory. | U, U_LAB | J, J_LAB NQ, NQ |

GEL LABORATORIES LLC

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

Certificate of Analysis

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7332
Sample ID: 246328001
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 6.46%

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 | 0.000491 | 0.0182 | +/-0.00115 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.009 | 0.021 | +/-0.0107 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.0154 | 0.0158 | +/-0.0052 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.819 | 0.121 | +/-0.0887 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0595 | 0.0774 | +/-0.0256 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.22 | 0.0829 | +/-0.117 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0376 | 0.167 | +/-0.050 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1054 | 950786 | 4 |
| Bismuth-211 | UI | 1.86 | R,R5a | 0.233 | +/-0.175 | pCi/g | | | | | | |
| Bismuth-214 | | 0.614 | | 0.0684 | +/-0.0526 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.41 | R,R5a | 1.06 | +/-0.364 | pCi/g | | | | | | |
| Cerium-139 | U | -0.00869 | | 0.0359 | +/-0.0102 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0448 | | 0.0541 | +/-0.015 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0103 | | 0.0444 | +/-0.0128 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0227 | | 0.0433 | +/-0.014 | pCi/g | | | | | | |
| Europium-152 | U | 0.00458 | | 0.111 | +/-0.0416 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0401 | | 0.099 | +/-0.0317 | pCi/g | | | | | | |
| Lead-212 | | 0.766 | | 0.0658 | +/-0.0605 | pCi/g | | | | | | |
| Lead-214 | | 0.645 | | 0.0811 | +/-0.0633 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0348 | | 0.0534 | +/-0.0152 | pCi/g | | | | | | |
| Potassium-40 | | 18.4 | | 0.288 | +/-0.981 | pCi/g | | | | | | |
| Radium-223 | U | -0.138 | | 0.777 | +/-0.259 | pCi/g | | | | | | |
| Radium-224 | UI | 2.33 | R,R5a | 0.748 | +/-0.431 | pCi/g | | | | | | |
| Radium-226 | | 0.614 | | 0.0684 | +/-0.0526 | pCi/g | | | | | | |
| Radium-228 | | 0.734 | | 0.133 | +/-0.105 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0903 | | 0.351 | +/-0.0999 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00506 | | 0.045 | +/-0.0136 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.105 | R,R5a | 0.0529 | +/-0.0154 | 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: LANLER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7332
246328001

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 | | 0.273 | 0.0388 | +/-0.0255 | 0.080 | pCi/g | | | | | | |
| Thorium-227 | U | -0.145 | 0.443 | +/-0.134 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.138 | 0.777 | +/-0.259 | | pCi/g | | | | | | |
| Thorium-234 | | 1.52 | 1.33 | +/-0.574 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.00704 | 0.0501 | +/-0.0148 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | -0.0299 | 0.265 | +/-0.0768 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00278 | 0.0326 | +/-0.0101 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | | 235 | 158 | +/-54.7 | 250 | pCi/L | | KXK2 | 02/16/10 | 2215 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 96.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 88.6 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 61.0 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7333
Sample ID: 246328002
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 5.74%

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 | -0.00181 | 0.0193 | +/-0.00209 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.0051 | 0.0208 | +/-0.0057 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00127 | 0.0157 | +/-0.00221 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.918 | 0.0714 | +/-0.0817 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0455 | 0.0455 | +/-0.013 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 2.48 | 0.0487 | +/-0.191 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0267 | 0.144 | +/-0.0458 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1105 | 950786 | 4 |
| Bismuth-211 | UI | 2.01 | R,R5a | 0.231 | +/-0.203 | pCi/g | | | | | | |
| Bismuth-214 | | 0.651 | | 0.0767 | +/-0.0691 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.36 | R,R5a | 0.852 | +/-0.279 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0113 | | 0.0331 | +/-0.00963 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0538 | | 0.0706 | +/-0.0264 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0194 | | 0.0528 | +/-0.015 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0248 | | 0.0406 | +/-0.0143 | pCi/g | | | | | | |
| Europium-152 | U | 0.0291 | | 0.121 | +/-0.0353 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0719 | | 0.0704 | +/-0.0299 | pCi/g | | | | | | |
| Lead-212 | | 0.888 | | 0.0633 | +/-0.0731 | pCi/g | | | | | | |
| Lead-214 | | 0.700 | | 0.0801 | +/-0.0728 | pCi/g | | | | | | |
| Mercury-203 | U | 0.00636 | | 0.0506 | +/-0.0147 | pCi/g | | | | | | |
| Potassium-40 | | 23.6 | | 0.336 | +/-1.25 | pCi/g | | | | | | |
| Radium-223 | U | 0.565 | | 0.809 | +/-0.251 | pCi/g | | | | | | |
| Radium-224 | UI | 2.76 | R,R5a | 0.721 | +/-0.426 | pCi/g | | | | | | |
| Radium-226 | | 0.651 | | 0.0767 | +/-0.0691 | pCi/g | | | | | | |
| Radium-228 | | 0.871 | | 0.150 | +/-0.116 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0347 | | 0.408 | +/-0.120 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00201 | | 0.0555 | +/-0.0178 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0357 | | 0.0471 | +/-0.0138 | pCi/g | | | | | | |
| Thallium-208 | | 0.293 | | 0.0383 | +/-0.0311 | pCi/g | | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7333
Sample ID: 246328002
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 | -0.011 | 0.459 | +/-0.135 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.565 | 0.809 | +/-0.251 | | pCi/g | | | | | | |
| Thorium-234 | | 2.06 | 1.22 | +/-0.632 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0279 | 0.0481 | +/-0.0147 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0746 | 0.262 | +/-0.0732 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.0106 | 0.0305 | +/-0.0107 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| H3 "As Received" | | | | | | | | | | | | |
| Tritium | U | 130 | 157 | +/-49.9 | 250 | pCi/L | | KXX2 | 02/16/10 | 2352 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 92.0 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 83.6 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 97.6 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7336
Sample ID: 246328003
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 7.24%

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 | -0.00548 | 0.0195 | +/-0.00513 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00296 | 0.0242 | +/-0.00755 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00 | 0.0182 | +/-0.00296 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.533 | 0.0832 | +/-0.0566 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0163 | 0.053 | +/-0.010 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.14 | 0.0568 | +/-0.101 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0793 | 0.158 | +/-0.0465 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1106 | 950786 | 4 |
| Bismuth-211 | UI | 1.77 | R,R5a | 0.197 | +/-0.178 | pCi/g | | | | | | |
| Bismuth-214 | | 0.479 | | 0.0789 | +/-0.0525 | 0.200 | pCi/g | | | | | |
| Cadmium-109 | U | 0.177 | | 0.861 | +/-0.235 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0157 | | 0.0313 | +/-0.00914 | 0.050 | pCi/g | | | | | |
| Cesium-134 | U | 0.0428 | | 0.0615 | +/-0.0163 | 0.100 | pCi/g | | | | | |
| Cesium-137 | U | 0.0341 | | 0.0347 | +/-0.0127 | 0.100 | pCi/g | | | | | |
| Cobalt-60 | U | 0.0106 | | 0.0405 | +/-0.0115 | 0.100 | pCi/g | | | | | |
| Europium-152 | U | 0.00611 | | 0.109 | +/-0.0309 | 0.200 | pCi/g | | | | | |
| Lanthanum-140 | U | -0.0463 | | 0.0857 | +/-0.0305 | pCi/g | | | | | | |
| Lead-212 | | 0.650 | | 0.0557 | +/-0.0497 | 0.100 | pCi/g | | | | | |
| Lead-214 | | 0.615 | | 0.0687 | +/-0.0638 | 0.100 | pCi/g | | | | | |
| Mercury-203 | U | 0.0121 | | 0.0422 | +/-0.0133 | 0.100 | pCi/g | | | | | |
| Potassium-40 | | 16.4 | | 0.288 | +/-0.899 | 1.00 | pCi/g | | | | | |
| Radium-223 | U | -0.14 | | 0.660 | +/-0.202 | pCi/g | | | | | | |
| Radium-224 | UI | 2.24 | R,R5a | 0.633 | +/-0.406 | pCi/g | | | | | | |
| Radium-226 | | 0.479 | | 0.0789 | +/-0.0525 | pCi/g | | | | | | |
| Radium-228 | | 0.643 | | 0.111 | +/-0.0816 | 0.500 | pCi/g | | | | | |
| Ruthenium-106 | U | 0.0497 | | 0.308 | +/-0.0882 | 0.800 | pCi/g | | | | | |
| Sodium-22 | U | -0.00405 | | 0.0463 | +/-0.0143 | 0.080 | pCi/g | | | | | |
| Strontium-85 | U | 0.0238 | | 0.0412 | +/-0.0123 | pCi/g | | | | | | |
| Thallium-208 | | 0.238 | | 0.036 | +/-0.0274 | 0.080 | pCi/g | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7336
Sample ID: 246328003

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 | 0.049 | 0.401 | +/-0.115 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.14 | 0.660 | +/-0.202 | | pCi/g | | | | | | |
| Thorium-234 | | 1.70 | 1.25 | +/-0.555 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0135 | 0.0505 | +/-0.0138 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | -0.0532 | 0.212 | +/-0.0612 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00544 | 0.0366 | +/-0.0116 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 85.7 | 158 | +/-48.5 | 250 | pCi/L | | KXK2 | 02/17/10 | 0245 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 83.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 84.2 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 86.0 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7337
Sample ID: 246328004
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 5.64%

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 | 0.00187 | 0.0195 | +/-0.00152 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00129 | 0.0211 | +/-0.00501 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00259 | 0.0159 | +/-0.00183 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.745 | 0.0667 | +/-0.068 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0327 | 0.0426 | +/-0.0141 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.86 | 0.0456 | +/-0.146 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.103 | 0.180 | +/-0.0565 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1108 | 950786 | 4 |
| Bismuth-211 | UI | 2.04 | R,R5a | 0.203 | +/-0.176 | pCi/g | | | | | | |
| Bismuth-214 | | 0.593 | | 0.0851 | +/-0.0632 | 0.200 | pCi/g | | | | | |
| Cadmium-109 | UI | 1.62 | R,R5a | 1.11 | +/-0.366 | pCi/g | | | | | | |
| Cerium-139 | U | 0.000291 | | 0.0342 | +/-0.00988 | 0.050 | pCi/g | | | | | |
| Cesium-134 | U | 0.0397 | | 0.0667 | +/-0.025 | 0.100 | pCi/g | | | | | |
| Cesium-137 | U | 0.0147 | | 0.0483 | +/-0.0135 | 0.100 | pCi/g | | | | | |
| Cobalt-60 | U | 0.0365 | | 0.0529 | +/-0.0136 | 0.100 | pCi/g | | | | | |
| Europium-152 | U | 0.0112 | | 0.0987 | +/-0.0317 | 0.200 | pCi/g | | | | | |
| Lanthanum-140 | U | -0.0669 | | 0.0721 | +/-0.0287 | pCi/g | | | | | | |
| Lead-212 | | 0.776 | | 0.0709 | +/-0.0447 | 0.100 | pCi/g | | | | | |
| Lead-214 | | 0.708 | | 0.0706 | +/-0.0641 | 0.100 | pCi/g | | | | | |
| Mercury-203 | U | 0.0181 | | 0.0513 | +/-0.014 | 0.100 | pCi/g | | | | | |
| Potassium-40 | | 17.4 | | 0.403 | +/-0.872 | 1.00 | pCi/g | | | | | |
| Radium-223 | U | -0.296 | | 0.846 | +/-0.252 | pCi/g | | | | | | |
| Radium-224 | UI | 2.75 | R,R5a | 0.807 | +/-0.444 | pCi/g | | | | | | |
| Radium-226 | | 0.593 | | 0.0851 | +/-0.0632 | pCi/g | | | | | | |
| Radium-228 | | 0.666 | | 0.154 | +/-0.0978 | 0.500 | pCi/g | | | | | |
| Ruthenium-106 | U | -0.0114 | | 0.379 | +/-0.110 | 0.800 | pCi/g | | | | | |
| Sodium-22 | U | 0.00049 | | 0.0536 | +/-0.016 | 0.080 | pCi/g | | | | | |
| Strontium-85 | U | 0.0481 | | 0.0519 | +/-0.0153 | pCi/g | | | | | | |
| Thallium-208 | | 0.273 | | 0.0378 | +/-0.0287 | 0.080 | pCi/g | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7337
Sample ID: 246328004

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|----------|-------------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| GAMMA SPEC "Dry Weight Corrected" | | | | | | | | | | | |
| Thorium-227 | U | -0.0461 | 0.420 | +/-0.119 | | pCi/g | | | | | |
| Thorium-231 | U | -0.296 | 0.846 | +/-0.252 | | pCi/g | | | | | |
| Thorium-234 | U | 1.09 | 1.55 | +/-0.685 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | 0.00659 | 0.0566 | +/-0.0163 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.0829 | 0.265 | +/-0.0749 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.0175 | 0.0425 | +/-0.0145 | 0.100 | pCi/g | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | |
| H3 "As Received" | | | | | | | | | | | |
| Tritium | U | 126 | 158 | +/-50.1 | 250 | pCi/L | | KXK2 | 02/17/10 | 0423 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 86.4 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 86.7 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 103 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Certificate of Analysis

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7334
Sample ID: 246328005
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 22.1%

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 | 0.00441 | 0.0198 | +/-0.00294 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00245 | 0.020 | +/-0.00245 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00245 | 0.0151 | +/-0.0049 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.32 | 0.0865 | +/-0.114 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | | 0.161 | 0.0552 | +/-0.0285 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 4.14 | 0.0591 | +/-0.314 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0214 | 0.148 | +/-0.0451 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1108 | 950786 | 4 |
| Bismuth-211 | UI | 2.18 | R,R5a | 0.223 | +/-0.190 | pCi/g | | | | | | |
| Bismuth-214 | | 0.723 | | 0.0758 | +/-0.0659 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.95 | R,R5a | 0.840 | +/-0.368 | pCi/g | | | | | | |
| Cerium-139 | U | 0.0106 | | 0.0371 | +/-0.0107 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.0653 | R,R5a | 0.063 | +/-0.016 | pCi/g | | | | | | |
| Cesium-137 | | 0.0986 | | 0.0391 | +/-0.0183 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0173 | | 0.0499 | +/-0.0142 | pCi/g | | | | | | |
| Europium-152 | U | -0.0232 | | 0.111 | +/-0.0341 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0218 | | 0.0953 | +/-0.0305 | pCi/g | | | | | | |
| Lead-212 | | 0.911 | | 0.0668 | +/-0.0613 | pCi/g | | | | | | |
| Lead-214 | | 0.759 | | 0.0778 | +/-0.0691 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0114 | | 0.0518 | +/-0.0144 | pCi/g | | | | | | |
| Potassium-40 | | 21.2 | | 0.337 | +/-1.12 | pCi/g | | | | | | |
| Radium-223 | U | -0.412 | | 0.725 | +/-0.225 | pCi/g | | | | | | |
| Radium-224 | UI | 2.60 | R,R5a | 0.760 | +/-0.408 | pCi/g | | | | | | |
| Radium-226 | | 0.723 | | 0.0758 | +/-0.0659 | pCi/g | | | | | | |
| Radium-228 | | 0.871 | | 0.157 | +/-0.117 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.0744 | | 0.381 | +/-0.119 | pCi/g | | | | | | |
| Sodium-22 | U | -0.000205 | | 0.0546 | +/-0.0168 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0518 | R,R5a | 0.0512 | +/-0.015 | pCi/g | | | | | | |
| Thallium-208 | | 0.292 | | 0.0394 | +/-0.0326 | pCi/g | | | | | | |

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03/15/10

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7334
Sample ID: 246328005
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 | -0.0361 | 0.446 | +/-0.127 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.412 | 0.725 | +/-0.225 | | pCi/g | | | | | | |
| Thorium-234 | | 3.08 | 1.30 | +/-0.703 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0214 | 0.0474 | +/-0.0147 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0442 | 0.270 | +/-0.0792 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00768 | 0.0389 | +/-0.0126 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| H3 "As Received" | | | | | | | | | | | | |
| Tritium | U | 18.8 | 159 | +/-46.3 | 250 | pCi/L | | KXK2 | 02/17/10 | 0600 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 91.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 86.3 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 82.5 | (50%-105%) |

Notes:

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

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
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Los Alamos, New Mexico 87545
Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7335
Sample ID: 246328006
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-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 | 0.00223 | 0.0215 | +/-0.00174 | 0.050 | pCi/g | | JXD2 | 02/19/10 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Plutonium-238 | U | 0.00271 | 0.0222 | +/-0.00192 | 0.050 | pCi/g | | JXD2 | 02/20/10 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00407 | 0.0167 | +/-0.00236 | 0.050 | pCi/g | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Uranium-233/234 | | 0.809 | 0.0805 | +/-0.0763 | 0.100 | pCi/g | | JXD2 | 02/20/10 1143 | 950645 | 3 |
| Uranium-235/236 | U | 0.0473 | 0.0513 | +/-0.0151 | 0.100 | pCi/g | | | | | |
| Uranium-238 | | 1.41 | 0.0549 | +/-0.119 | 0.100 | pCi/g | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | |
| Americium-241 | U | 0.0475 | 0.0849 | +/-0.0267 | 0.200 | pCi/g | | MXR1 | 02/18/10 1116 | 950786 | 4 |
| Bismuth-211 | UI | 4.60 | R,R5a | 0.322 | +/-0.341 | pCi/g | | | | | |
| Bismuth-214 | | 1.31 | | 0.122 | +/-0.118 | pCi/g | | | | | |
| Cadmium-109 | UI | 5.10 | R,R5a | 0.807 | +/-0.466 | pCi/g | | | | | |
| Cerium-139 | U | 0.017 | | 0.0429 | +/-0.0123 | pCi/g | | | | | |
| Cesium-134 | UI | 0.111 | R,R5a | 0.100 | +/-0.0445 | pCi/g | | | | | |
| Cesium-137 | U | 0.0279 | | 0.0754 | +/-0.0287 | pCi/g | | | | | |
| Cobalt-60 | U | 0.0361 | | 0.0842 | +/-0.0239 | pCi/g | | | | | |
| Europium-152 | U | -0.0167 | | 0.160 | +/-0.0492 | pCi/g | | | | | |
| Lanthanum-140 | U | -0.0622 | | 0.152 | +/-0.0506 | pCi/g | | | | | |
| Lead-212 | | 2.10 | | 0.0847 | +/-0.133 | pCi/g | | | | | |
| Lead-214 | | 1.60 | | 0.112 | +/-0.126 | pCi/g | | | | | |
| Mercury-203 | U | -0.0253 | | 0.0639 | +/-0.0234 | pCi/g | | | | | |
| Potassium-40 | | 33.5 | | 0.567 | +/-1.78 | pCi/g | | | | | |
| Radium-223 | U | 0.139 | | 0.973 | +/-0.316 | pCi/g | | | | | |
| Radium-224 | UI | 5.31 | R,R5a | 0.965 | +/-0.779 | pCi/g | | | | | |
| Radium-226 | | 1.31 | | 0.122 | +/-0.118 | pCi/g | | | | | |
| Radium-228 | | 2.15 | | 0.232 | +/-0.220 | pCi/g | | | | | |
| Ruthenium-106 | U | -0.124 | | 0.507 | +/-0.155 | pCi/g | | | | | |
| Sodium-22 | U | -0.00122 | | 0.0908 | +/-0.0277 | pCi/g | | | | | |
| Strontium-85 | U | 0.0265 | | 0.069 | +/-0.0229 | pCi/g | | | | | |
| Thallium-208 | | 0.610 | | 0.0678 | +/-0.0575 | pCi/g | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7335
Sample ID: 246328006

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 | -0.294 | 0.591 | +/-0.192 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.139 | 0.973 | +/-0.316 | | pCi/g | | | | | | |
| Thorium-234 | | 2.61 | 0.817 | +/-0.508 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0237 | 0.0807 | +/-0.0233 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.138 | 0.316 | +/-0.091 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.000281 | 0.0608 | +/-0.0185 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | | 274 | 195 | +/-65.4 | 250 | pCi/L | | KXK2 | 02/19/10 | 2203 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.4 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 83.3 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 95.1 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7338
Sample ID: 246328007
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 19.4%

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 | 0.0024 | 0.0224 | +/-0.00591 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.00411 | 0.0224 | +/-0.00362 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00548 | 0.0168 | +/-0.00699 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.11 | 0.077 | +/-0.097 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | | 0.102 | 0.0491 | +/-0.0208 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 2.95 | 0.0526 | +/-0.226 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 2.74E-05 | 0.202 | +/-0.0629 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1116 | 950786 | 4 |
| Bismuth-211 | UI | 1.95 | R,R5a | 0.237 | +/-0.166 | pCi/g | | | | | | |
| Bismuth-214 | | 0.574 | | 0.0848 | +/-0.0583 | 0.200 | pCi/g | | | | | |
| Cadmium-109 | UI | 1.31 | R,R5a | 1.30 | +/-0.524 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0158 | | 0.0383 | +/-0.0114 | 0.050 | pCi/g | | | | | |
| Cesium-134 | U | 0.0527 | | 0.0615 | +/-0.0238 | 0.100 | pCi/g | | | | | |
| Cesium-137 | | 0.130 | | 0.0419 | +/-0.0242 | 0.100 | pCi/g | | | | | |
| Cobalt-60 | U | 0.00239 | | 0.0463 | +/-0.0136 | 0.100 | pCi/g | | | | | |
| Europium-152 | U | -0.0333 | | 0.120 | +/-0.0431 | 0.200 | pCi/g | | | | | |
| Lanthanum-140 | U | -0.0434 | | 0.087 | +/-0.0306 | pCi/g | | | | | | |
| Lead-212 | | 0.646 | | 0.0914 | +/-0.0519 | 0.100 | pCi/g | | | | | |
| Lead-214 | | 0.679 | | 0.0827 | +/-0.0605 | 0.100 | pCi/g | | | | | |
| Mercury-203 | U | 0.00965 | | 0.0553 | +/-0.0152 | 0.100 | pCi/g | | | | | |
| Potassium-40 | | 17.6 | | 0.356 | +/-0.876 | 1.00 | pCi/g | | | | | |
| Radium-223 | U | -0.281 | | 0.749 | +/-0.257 | pCi/g | | | | | | |
| Radium-224 | UI | 1.26 | R,R5a | 1.04 | +/-0.343 | pCi/g | | | | | | |
| Radium-226 | | 0.574 | | 0.0848 | +/-0.0583 | pCi/g | | | | | | |
| Radium-228 | | 0.849 | | 0.175 | +/-0.116 | 0.500 | pCi/g | | | | | |
| Ruthenium-106 | U | -0.0357 | | 0.390 | +/-0.116 | 0.800 | pCi/g | | | | | |
| Sodium-22 | U | 0.00713 | | 0.0592 | +/-0.0172 | 0.080 | pCi/g | | | | | |
| Strontium-85 | UI | 0.0866 | R,R5a | 0.0582 | +/-0.0157 | pCi/g | | | | | | |
| Thallium-208 | | 0.270 | | 0.0458 | +/-0.0282 | 0.080 | pCi/g | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7338
Sample ID: 246328007
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 | 0.166 | 0.516 | +/-0.148 | | pCi/g | | | | | |
| Thorium-231 | U | -0.281 | 0.749 | +/-0.257 | | pCi/g | | | | | |
| Thorium-234 | | 2.30 | 1.63 | +/-0.635 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.00617 | 0.0503 | +/-0.0146 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | 0.0377 | 0.297 | +/-0.085 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | 0.00243 | 0.0343 | +/-0.0102 | 0.100 | pCi/g | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | |
| H3 "As Received" | | | | | | | | | | | |
| Tritium | U | 129 | 158 | +/-50.1 | 250 | pCi/L | | KXK2 | 02/17/10 | 0916 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 83.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 87.3 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 87.8 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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 23, 2010

Client Sample ID: RE15-10-7339
Sample ID: 246328008
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 13.3%

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 | -0.0005 | 0.0207 | +/-0.00631 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00358 | 0.0195 | +/-0.00267 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00119 | 0.0147 | +/-0.00267 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.993 | 0.0804 | +/-0.0895 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | | 0.0748 | 0.0512 | +/-0.0204 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.66 | 0.0549 | +/-0.137 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0357 | 0.325 | +/-0.106 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1147 | 950786 | 4 |
| Bismuth-211 | UI | 4.25 | R,R5a | 0.390 | +/-0.357 | pCi/g | | | | | | |
| Bismuth-214 | | 1.32 | | 0.139 | +/-0.116 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.74 | R,R5a | 1.82 | +/-0.637 | pCi/g | | | | | | |
| Cerium-139 | U | -0.00743 | 0.0598 | +/-0.0174 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0678 | 0.101 | +/-0.0279 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.00454 | 0.078 | +/-0.023 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0139 | 0.0781 | +/-0.0243 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.003 | 0.194 | +/-0.0602 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0906 | 0.160 | +/-0.0567 | | pCi/g | | | | | | |
| Lead-212 | | 1.84 | 0.106 | +/-0.116 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.48 | 0.136 | +/-0.130 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | UI | 0.100 | R,R5a | 0.0824 | +/-0.0289 | 0.100 | pCi/g | | | | | |
| Potassium-40 | | 33.3 | | 0.609 | +/-1.91 | 1.00 | pCi/g | | | | | |
| Radium-223 | U | 0.500 | | 1.45 | +/-0.421 | pCi/g | | | | | | |
| Radium-224 | UI | 4.12 | R,R5a | 1.20 | +/-0.656 | pCi/g | | | | | | |
| Radium-226 | | 1.32 | | 0.139 | +/-0.116 | pCi/g | | | | | | |
| Radium-228 | | 1.93 | | 0.284 | +/-0.207 | 0.500 | pCi/g | | | | | |
| Ruthenium-106 | U | 0.146 | 0.649 | +/-0.186 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0206 | 0.0911 | +/-0.0281 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0657 | 0.0853 | +/-0.0273 | | pCi/g | | | | | | |
| Thallium-208 | | 0.493 | 0.0704 | +/-0.0509 | 0.080 | pCi/g | | | | | | |

DJS
03/15/10

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 23, 2010

Client Sample ID: RE15-10-7339
Sample ID: 246328008

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 | 0.779 | +/-0.235 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.500 | 1.45 | +/-0.421 | | pCi/g | | | | | | |
| Thorium-234 | | 4.22 | 2.62 | +/-1.44 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.00131 | 0.0916 | +/-0.0278 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0774 | 0.436 | +/-0.126 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.0363 | 0.0798 | +/-0.0212 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | | 169 | 158 | +/-51.8 | 250 | pCi/L | | KXK2 | 02/17/10 | 1053 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.1 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 92.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 80.1 | (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
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- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded

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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 23, 2010

Client Sample ID: RE15-10-7342
Sample ID: 246328009
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 5.65%

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 | -0.00443 | 0.0211 | +/-0.00265 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00483 | 0.0197 | +/-0.00452 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00 | 0.0148 | +/-0.00171 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.548 | 0.0737 | +/-0.0551 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | U | 0.0289 | 0.047 | +/-0.0104 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 0.864 | 0.0503 | +/-0.0786 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00162 | 0.125 | +/-0.0376 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1148 | 950786 | 4 |
| Bismuth-211 | UI | 1.89 | R,R5a | 0.214 | +/-0.156 | pCi/g | | | | | | |
| Bismuth-214 | | 0.512 | | 0.0741 | +/-0.0584 | 0.200 | pCi/g | | | | | |
| Cadmium-109 | UI | 1.19 | R,R5a | 0.935 | +/-0.296 | pCi/g | | | | | | |
| Cerium-139 | U | -0.0111 | 0.0352 | +/-0.0106 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0141 | 0.0555 | +/-0.0157 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.00854 | 0.0473 | +/-0.0134 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.000565 | 0.052 | +/-0.0154 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0161 | 0.112 | +/-0.0341 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0545 | 0.122 | +/-0.0327 | | pCi/g | | | | | | |
| Lead-212 | | 0.793 | 0.0665 | +/-0.0517 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.657 | 0.0777 | +/-0.0569 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.00545 | 0.0499 | +/-0.0143 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 15.2 | 0.345 | +/-0.873 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.362 | 0.745 | +/-0.228 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.18 | R,R5a | 0.756 | +/-0.333 | pCi/g | | | | | | |
| Radium-226 | | 0.512 | 0.0741 | +/-0.0584 | | pCi/g | | | | | | |
| Radium-228 | | 0.770 | 0.155 | +/-0.0978 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0796 | 0.363 | +/-0.101 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00199 | 0.052 | +/-0.0156 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0481 | 0.0536 | +/-0.0139 | | pCi/g | | | | | | |
| Thallium-208 | | 0.233 | 0.0407 | +/-0.0293 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7342
Sample ID: 246328009
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 | -0.219 | 0.428 | +/-0.128 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.362 | 0.745 | +/-0.228 | | pCi/g | | | | | | |
| Thorium-234 | U | 1.01 | 1.08 | +/-0.500 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0122 | 0.0526 | +/-0.0149 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.083 | 0.261 | +/-0.0743 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.00233 | 0.0378 | +/-0.0111 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 69.3 | 157 | +/-47.6 | 250 | pCi/L | | KXK2 | 02/17/10 | 1231 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 93.2 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 95.6 | (50%-105%) |

Notes:

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

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- C Analyte has been confirmed by GC/MS analysis
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- F Estimated Value
- H Analytical holding time was exceeded

Wednesday, February 03, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1566

LOS ALAMOS

REQUEST NUMBER: 10-1566

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/5/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

246328%

| SAMPLE ID | CTNR | CTNR DESC | ORDER | PRESERV | MATRIX |
|--------------|------|-----------|-------------------------|---------|--------|
| RE15-10-7332 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7332 | 1 | POLY | H3 | Ice | R |
| RE15-10-7333 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7333 | 1 | POLY | H3 | Ice | R |
| RE15-10-7336 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7336 | 1 | POLY | H3 | Ice | R |
| RE15-10-7337 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7337 | 1 | POLY | H3 | Ice | R |
| RE15-10-7334 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7334 | 1 | POLY | H3 | Ice | R |
| RE15-10-7335 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7335 | 1 | POLY | H3 | Ice | R |
| RE15-10-7338 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7338 | 1 | POLY | H3 | Ice | R |
| RE15-10-7339 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7339 | 1 | POLY | H3 | Ice | R |
| RE15-10-7342 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7342 | 1 | POLY | H3 | Ice | R |

Relinquished By:

Date Time

Received By:

Date Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Page 5 of 923

Wednesday, February 03, 2010

LOS ALAMOS

NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/3/2010

TURNAROUND/REPORT DUE: 3/5/2010

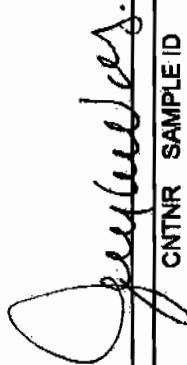
TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature:



Page 1 of 3

REQUEST NUMBER: 10-1566

These Samples are on:

LANL Request Number: 10-1566

Per Agreement Number: 126310011

Project Cost Code: MR3A05529E00

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|-------------|-------|--------------|---------------|--------------|----------------------|
| | EPA-301.1 | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Wednesday, February 03, 2010

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|-----------------|-------|--------------|---------------|--------------|----------------------|
| | EPA-906.0 | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| | HASL-300:AM-241 | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| | HASL-300:ISOPU | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| | HASL-300:ISOPU | 1 | RE15-10-7332 | R | 2/1/2010 | |

REQUEST NUMBER: 10-1566

Wednesday, February 03, 2010

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|---------------|-------|--------------|---------------|--------------|----------------------|
| | HASL-300:ISOU | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Final Page of REQUEST NUMBER 10-1566



February 11, 2010

www.gel.com

Ms. Joylene Valdez
Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm 111
Los Alamos, New Mexico 87545

Re: LANL ER Project
Work Order: 246328
SDG: 10-1566

Dear Ms. Valdez:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on February 05, 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: 10-1566
Enclosures

Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Work Order #: 246328
SDG: 10-1566

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Case Narrative

**Case Narrative for
Los Alamos National Laboratory (72733-001-09)
LANL ER Project
Workorder #: 246328
SDG # : 10-1566**

February 11, 2010

Laboratory Identification:

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

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on February 05, 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 9-14C 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> |
|-----------------------------|-------------------------|
| 246328001 | RE15-10-7332 |
| 246328002 | RE15-10-7333 |
| 246328003 | RE15-10-7336 |
| 246328004 | RE15-10-7337 |
| 246328005 | RE15-10-7334 |
| 246328006 | RE15-10-7335 |
| 246328007 | RE15-10-7338 |
| 246328008 | RE15-10-7339 |
| 246328009 | RE15-10-7342 |

Case Narrative

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

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

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



Valerie Davis
Project Manager

List of current GEL Certifications as of 11 February 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

Wednesday, February 03, 2010

LAB CHAIN OF CUSTODY DOCUMENT NUMBER: 10-1566

LOS ALAMOS

REQUEST NUMBER: 10-1566

NATIONAL LABORATORY

ATTN: Valerie Davis

TURNAROUND/REPORT DUE: 3/5/2010

General Engineering Laboratories, Inc.,
Charleston, SC.

TURNAROUND REQ'D: 30

2040 Savage Rd

Charleston, SC 29407

LAB REQUEST COMMENTS:

246328%

| SAMPLE ID | CTNR | CTNR DESC | ORDER | PRESERV | MATRIX |
|--------------|------|-----------|-------------------------|---------|--------|
| RE15-10-7332 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7332 | 1 | POLY | H3 | Ice | R |
| RE15-10-7333 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7333 | 1 | POLY | H3 | Ice | R |
| RE15-10-7336 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7336 | 1 | POLY | H3 | Ice | R |
| RE15-10-7337 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7337 | 1 | POLY | H3 | Ice | R |
| RE15-10-7334 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7334 | 1 | POLY | H3 | Ice | R |
| RE15-10-7335 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7335 | 1 | POLY | H3 | Ice | R |
| RE15-10-7338 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7338 | 1 | POLY | H3 | Ice | R |
| RE15-10-7339 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7339 | 1 | POLY | H3 | Ice | R |
| RE15-10-7342 | 1 | POLY | AM241+GS+ISOPU+ISO U | None | R |
| RE15-10-7342 | 1 | POLY | H3 | Ice | R |

Relinquished By:

Date

Time

Received By:

Date

Time

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Printed Name

Signature

Received for DISPOSAL By:

Date

Time

Remarks:

Printed Name

Signature

Wednesday, February 03, 2010

LOS ALAMOS
NATIONAL LABORATORY

ATTN: Valerie Davis

General Engineering Laboratories, Inc., Charleston, SC.

2040 Savage Rd

Charleston, SC 29407

Please analyse the enclosed samples
according to the schedule indicated:

SHIP DATE: 2/3/2010

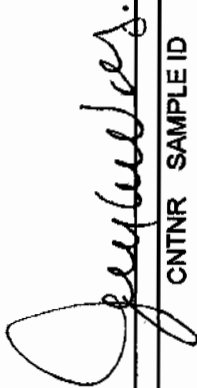
TURNAROUND/REPORT DUE: 3/5/2010

TURNAROUND REQ'D: 30 Days

RAD SCREENING: Yes, Below Background

LAB REQUEST COMMENTS:

LANL ER SMO CONTACT:

Signature: 

Page 1 of 3
REQUEST NUMBER: 10-1566

These Samples are on:
LANL Request Number: 10-1566
Per Agreement Number: 126310011
Project Cost Code: MR3A05529E00

| PRIORITY | METHOD CODE | CNTR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|-------------|------|--------------|---------------|--------------|----------------------|
| | EPA-901.1 | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Wednesday, February 03, 2010

Page 2 of 3
REQUEST NUMBER: 10-1566

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|-----------------|-------|--------------|---------------|--------------|----------------------|
| | EPA-906.0 | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| | HASL-300/AM-241 | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| | HASL-300/ISOPU | 1 | RE15-10-7332 | R | 2/1/2010 | |
| | | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |
| | HASL-300/ISOPU | 1 | RE15-10-7332 | R | 2/1/2010 | |

Wednesday, February 03, 2010

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REQUEST NUMBER: 10-1566

| PRIORITY | METHOD CODE | CNTNR | SAMPLE ID | SAMPLE MATRIX | DATE SAMPLED | SPECIAL INSTRUCTIONS |
|----------|---------------|-------|--------------|---------------|--------------|----------------------|
| | HASL-300:ISOU | 1 | RE15-10-7333 | R | 2/1/2010 | |
| | | 1 | RE15-10-7334 | R | 2/1/2010 | |
| | | 1 | RE15-10-7335 | R | 2/1/2010 | |
| | | 1 | RE15-10-7336 | R | 2/1/2010 | |
| | | 1 | RE15-10-7337 | R | 2/1/2010 | |
| | | 1 | RE15-10-7338 | R | 2/1/2010 | |
| | | 1 | RE15-10-7339 | R | 2/1/2010 | |
| | | 1 | RE15-10-7342 | R | 2/1/2010 | |

Final Page of REQUEST NUMBER 10-1566



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

| | | | |
|-------------------------------------|-----|---------------------------------|---|
| Client: LANL | | SDG/ARCOC/Work Order: 10-1566 | |
| Received By: Patricia Dover-Dent | | Date Received: February 5, 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*: 80 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) 3-6 9-14C |
| 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 9021 3C | 7209 7849 8963 4C | 7209 7849 8724 6C | 7209 7849 8665 12C |
| 7209 7849 9065 3C | 7209 7849 8805 4C | 7209 7849 9043 6C | 7209 7849 8676 13C |
| 7209 7849 9010 3C | 7209 7849 8779 4C | 7209 7849 8827 6C | 7209 7849 9000 14C |
| 7209 7849 8780 4C | 7209 7849 8838 5C | 7209 7849 9124 6C | |
| 7209 7849 8735 4C | 7209 7849 8816 5C | 7209 7849 8941 9C | |
| 7209 7849 8713 4C | 7209 7849 8790 5C | 7209 7849 8952 10C | |
| 7209 7849 8746 4C | 7209 7849 9054 6C | 7209 7849 8687 11C | |
| 7209 7849 8974 4C | 7209 7849 8702 6C | 7209 7849 8698 12C | |

ORIGIN ID: SAFA (505) 665-0000
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGG BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWT: 52.0 LB MAN
CAO: 0014176/CAFE2449
BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 68010AMR1A015AGMKO



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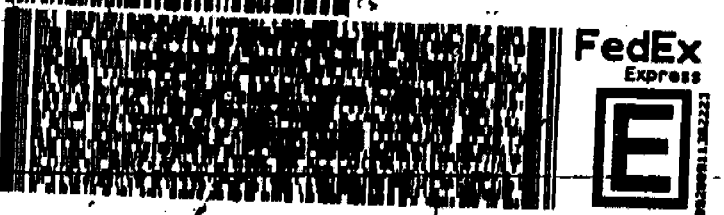


ORIGIN ID: SAFA (505) 665-0000
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGG BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWT: 52.0 LB MAN
CAO: 0014176/CAFE2449
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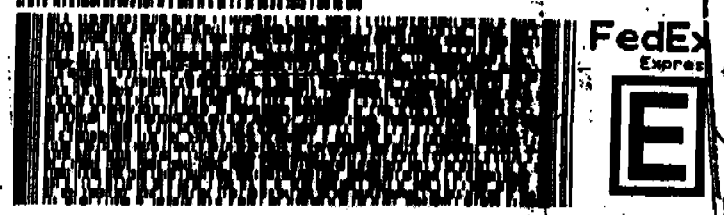


ORIGIN ID: SAFA (505) 665-0000
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGG BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWT: 52.0 LB MAN
CAO: 0014176/CAFE2449
BILL SENDER

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ORIGIN ID: SAFA (505) 665-0000
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGG BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWT: 52.0 LB MAN
CAO: 0014176/CAFE2449
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ALAMOS, NM 87545
UNITED STATES US

ACTMGT: 46.0 LB-HAN
CAD: 0014176/CAFE2449
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ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
7A00 BLDG 1237 DPU 63
LOS ALAMOS, NM 87545
UNITED STA: 28 US

SHIP DATE: 04FEB10
ACTMGT: 00.0 LB-HAN
CAD: 0014176/CAFE2449
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N-10 SAFA (505) 665-9968
JOYLENE VALDEZ
ALAMOS NATL LAB
BLDG 1237 DPU 63
ALAMOS, NM 87545
UNITED STATES US
SHIP DATE: 04FEB10
ACTMGT: 00.0 LB-HAN
CAD: 0014176/CAFE2449
BILL BENDER

ID: SAFA (505) 665-9968
JOYLENE VALDEZ
ALAMOS NATL LAB
BLDG 1237 DPU 63
LOS ALAMOS, NM 87545
UNITED STATES US

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ACTMGT: 00.0 LB-HAN
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REF: 68010AMR3A0520A00

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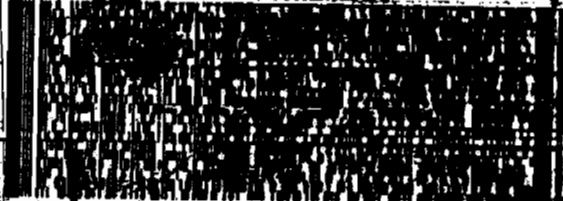
ORIGIN: SAFA (505) 545-8068
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
1A00 BLDG 1237 DMU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWGT: 57.9 LB MAN
CAD: 0014176/CAFE2449
BILL GENDER

VALERIE DAVIS
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2040 SAVAGE RD

CHARLESTON SC 29407
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REF: 6B010AMR1A015AGNKO

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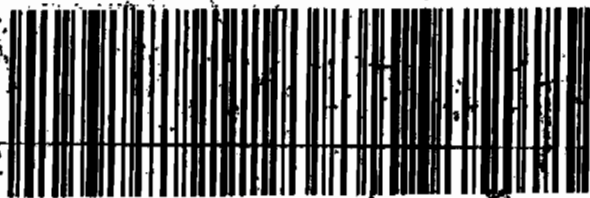
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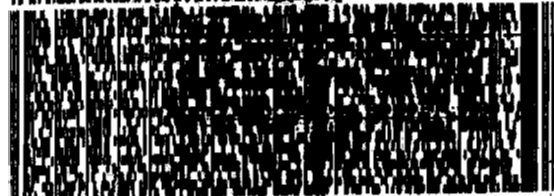


LOS ALAMOS, NM 87545
UNITED STATES US

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGNKO

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1 of 2
TRKH 7209 7849 8779
MASTER NM

FRI - 05FEB A1
PRIORITY OVERNIGHT

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ORIGIN: SAFA (505) 545-8068
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
1A00 BLDG 1237 DMU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWGT: 57.9 LB MAN
CAD: 0014176/CAFE2449
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2040 SAVAGE RD

CHARLESTON SC 29407
(843) 556-8171
REF: 6B010AMR1A015AGNKO

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TRKH 7209 7849 8805
MASTER NM

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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
1A00 BLDG 1237 DMU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWGT: 54.9 LB MAN
CAD: 0014176/CAFE2449
BILL GENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
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ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWT: 56.0 LB MAN
CAD: 0014176/CAFE2440

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(43) 555-8171
REF: 6B010AMR1A015AGMKO

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

SHIP DATE: 04FEB10
ACTWT: 57.0 LB MAN
CAD: 0014176/CAFE2440

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(43) 555-8171
REF: 6B010AMR3A0532VAD0

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PSN 7209 7849 9054
MatrN 7209 7849 9043 0201

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XX CHSA

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

SHIP DATE: 04FEB10
ACTWT: 57.0 LB MAN
CAD: 0014176/CAFE2440

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

SHIP DATE: 04FEB10
ACTWT: 56.0 LB MAN
CAD: 0014176/CAFE2440

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VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(43) 555-8171
REF: 6B010AMR3A0520A00

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MPSH 7209 7849 8702
MatrN 7209 7849 8687 0201

FRI - 05FEB A1
PRIORITY OVERNIGHT

29407
SC-US
CHS

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ORIGIN ID: SAFA (505) 555-9908
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83

SHIP DATE: 05FEB10
ACTWT: 49.8 LB MAN
CAD: 0014176/CAFE2448

LOS ALAMOS, NM 87645
UNITED STATES US

BILL SENDER

VALERIE DAVIS
GENERAL ENGINEERING LAB
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CHARLESTON SC 29407

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REF: 68010AMR1A015AGNKO



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1 of 3
TRKH 7209 7849 8724
8201
NN MASTER NN

FRI - 05FEB A1
PRIORITY OVERNIGHT

29407

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ORIGIN ID: SAFA (505) 555-9908
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83

SHIP DATE: 05FEB10
ACTWT: 50.8 LB MAN
CAD: 0014176/CAFE2448

LOS ALAMOS, NM 87645
UNITED STATES US

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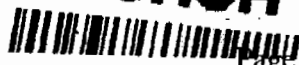


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PSH 7209 7849 8827
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strn 7209 7849 8816 8201

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PRIORITY OVERNIGHT

29407

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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83

SHIP DATE: 05FEB10
ACTWT: 50.8 LB MAN
CAD: 0014176/CAFE2448

LOS ALAMOS, NM 87645
UNITED STATES US

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REF: 68010AMR3A032VA00



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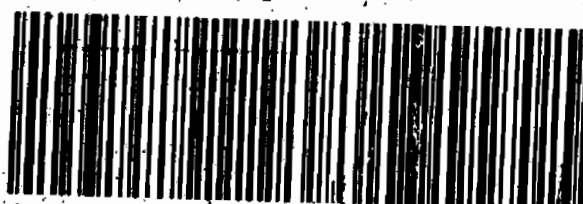


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TRKH 7209 7849 9043
8201
NN MASTER NN

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PRIORITY OVERNIGHT

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29407
SC-US
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ORIGIN ID: SAFA (505) 555-9908
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 83

SHIP DATE: 05FEB10
ACTWT: 57.8 LB MAN
CAD: 0014176/CAFE2448

LOS ALAMOS, NM 87645
UNITED STATES US

BILL SENDER

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GENERAL ENGINEERING LAB
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REF: 68010AMR1A015AGNKO



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TRKH 7209 7849 9124
8201

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PRIORITY OVERNIGHT

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29407
SC-US
CHS

LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

ACTWGT: 50.0 LB MAN
CAD: 0014176/CAFE2449

BILL SENDER

JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWGT: 51.0 LB MAN
CAD: 0014176/CAFE2449

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PRIORITY OVERNIGHT

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Part # 15648-434 NRT V3 08-09

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

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2449

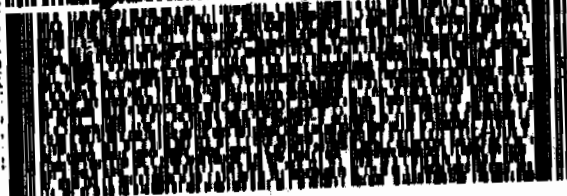
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2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-9171
REF: 68010AMR3A0520A00

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PRIORITY OVERNIGHT

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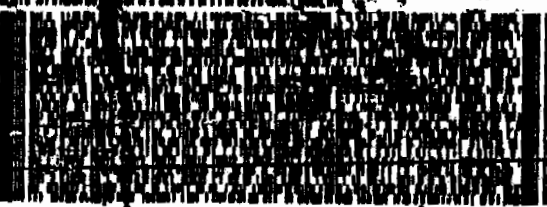
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GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-9171
REF: 68010AMR3A0520A00

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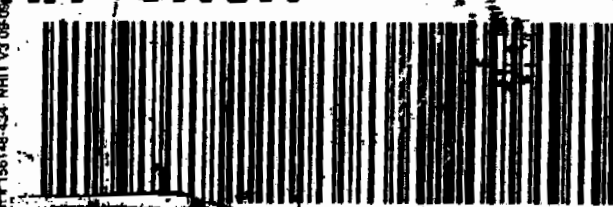


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TRKH
0201 7209 7849 8952
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PRIORITY OVERNIGHT

29407
SC-US
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ORIGIN ID: SAFA (505) 665-9968
JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 04FEB10
ACTWGT: 48.0 LB MAN
CAD: 0014176/CAFE2449

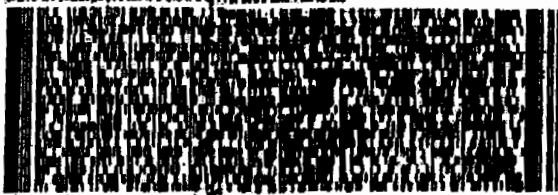
BILL SENDER

VALERIE DAVIS
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2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-9171
REF: 68010AMR3A0520A00

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0201 7209 7849 8698
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FRI - 05FEB A1
PRIORITY OVERNIGHT

29407
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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 03

CAD: 0014176/CAFE2449

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UNITED STATES US

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8177
REF: 68010AMR3A0620A00

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PRIORITY OVERNIGHT

29407
SC-US
CHS

XX CHSA



JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 03

LOS ALAMOS, NM 87545
UNITED STATES US

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8171
REF: 68010AMR1A015AGWKO

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FRI - 05FEB A1
PRIORITY OVERNIGHT

2 of 3
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Matr-N 7209 7849 8986 0201

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29407
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JOYLENE VALDEZ
LOS ALAMOS NATL LAB
TAGS BLDG 1237 DPU 03

CAD: 0014176/CAFE2449

BILL SENDER

LOS ALAMOS, NM 87545
UNITED STATES US

VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8171
REF: 68010AMR3A0620A00

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FRI - 05FEB A1
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SHIP DATE: 04FEB10
ACTWT: 36.8 LB MAN
CAD: 0014176/CAFE2449

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14°

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 10-1566**

Method/Analysis Information

Product: AM241
Analytical Method: DOE EML HASL-300, Am-05-RC Modified
Prep Method: Dry Soil Prep
Analytical Batch Number: 950643
Prep Batch Number: 950428

| Sample ID | Client ID |
|------------------|--|
| 246328001 | RE15-10-7332 |
| 246328002 | RE15-10-7333 |
| 246328003 | RE15-10-7336 |
| 246328004 | RE15-10-7337 |
| 246328005 | RE15-10-7334 |
| 246328006 | RE15-10-7335 |
| 246328007 | RE15-10-7338 |
| 246328008 | RE15-10-7339 |
| 246328009 | RE15-10-7342 |
| 1202037247 | Method Blank (MB) |
| 1202037248 | 246341001(RE15-10-8304) Sample Duplicate (DUP) |
| 1202037249 | 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 1202037247 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 246341001 (RE15-10-8304). The QC was from LANL work order 246341.

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: | 950644 |
| Prep Batch Number: | 950428 |

| Sample ID | Client ID |
|------------------|--|
| 246328001 | RE15-10-7332 |
| 246328002 | RE15-10-7333 |
| 246328003 | RE15-10-7336 |
| 246328004 | RE15-10-7337 |
| 246328005 | RE15-10-7334 |
| 246328006 | RE15-10-7335 |
| 246328007 | RE15-10-7338 |
| 246328008 | RE15-10-7339 |
| 246328009 | RE15-10-7342 |
| 1202037250 | Method Blank (MB) |
| 1202037251 | 246341001(RE15-10-8304) Sample Duplicate (DUP) |
| 1202037252 | 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 1202037250 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 246341001 (RE15-10-8304). The QC was from LANL work order 246341.

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: | 950645 |
| Prep Batch Number: | 950428 |

| Sample ID | Client ID |
|------------------|--|
| 246328001 | RE15-10-7332 |
| 246328002 | RE15-10-7333 |
| 246328003 | RE15-10-7336 |
| 246328004 | RE15-10-7337 |
| 246328005 | RE15-10-7334 |
| 246328006 | RE15-10-7335 |
| 246328007 | RE15-10-7338 |
| 246328008 | RE15-10-7339 |
| 246328009 | RE15-10-7342 |
| 1202037253 | Method Blank (MB) |
| 1202037254 | 246341001(RE15-10-8304) Sample Duplicate (DUP) |
| 1202037255 | 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 1202037253 (MB) was changed to 1.0 per client request.

Designated QC

The following sample was used for QC: 246341001 (RE15-10-8304). The QC was from LANL work order 246341.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The U-233/234, U-235/236 and U-238 blank results are greater than 1.65 times the CSU but less than the MDC.

Technical Information:

Holding Time

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

Sample Re-prep/Re-analysis

Sample 1202037254 (RE15-10-8304) was recounted due to poor resolution.

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-233/234 and U-238 blank results are 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: 950786
Prep Batch Number: 950428

| Sample ID | Client ID |
|------------------|--|
| 246328001 | RE15-10-7332 |
| 246328002 | RE15-10-7333 |
| 246328003 | RE15-10-7336 |
| 246328004 | RE15-10-7337 |
| 246328005 | RE15-10-7334 |
| 246328006 | RE15-10-7335 |
| 246328007 | RE15-10-7338 |
| 246328008 | RE15-10-7339 |
| 246328009 | RE15-10-7342 |
| 1202037546 | Method Blank (MB) |
| 1202037547 | 246341002(RE15-10-8305) Sample Duplicate (DUP) |
| 1202037548 | 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, July 2009, August 2009, October 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: 246341002 (RE15-10-8305). The QC was from LANL work order 246341.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank 1202037546 (MB) result is greater than 1.65 times the CSU but less than the MDC for Cd-109, Cs-137, and U-235.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

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

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

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

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The blank 1202037546 (MB) result is greater than the decision level but less than the MDC for Cd-109, Th-234, and U-235.

Qualifier information

| Qualifier | Reason | Analyte | Sample | Client Sample |
|-----------|------------------------------------|-------------|------------|----------------------------|
| UI | Data rejected due to interference. | Bismuth-211 | 246328001 | RE15-10-7332 |
| | | | 246328002 | RE15-10-7333 |
| | | | 246328003 | RE15-10-7336 |
| | | | 246328004 | RE15-10-7337 |
| | | | 246328005 | RE15-10-7334 |
| | | | 246328006 | RE15-10-7335 |
| | | | 246328007 | RE15-10-7338 |
| | | | 246328008 | RE15-10-7339 |
| | | | 246328009 | RE15-10-7342 |
| | | | 1202037547 | RE15-10-8305(246341002DUP) |

| | | | | |
|----|-------------------------------------|---------------|------------|----------------------------|
| UI | Data rejected due to low abundance. | Cadmium-109 | 246328001 | RE15-10-7332 |
| | | | 246328002 | RE15-10-7333 |
| | | | 246328005 | RE15-10-7334 |
| | | | 246328006 | RE15-10-7335 |
| | | | 246328008 | RE15-10-7339 |
| | | | 246328009 | RE15-10-7342 |
| | | Mercury-203 | 246328008 | RE15-10-7339 |
| | | Radium-224 | 246328001 | RE15-10-7332 |
| | | | 246328002 | RE15-10-7333 |
| | | | 246328003 | RE15-10-7336 |
| | | | 246328004 | RE15-10-7337 |
| | | | 246328005 | RE15-10-7334 |
| | | | 246328006 | RE15-10-7335 |
| | | | 246328007 | RE15-10-7338 |
| | | | 246328008 | RE15-10-7339 |
| | | | 246328009 | RE15-10-7342 |
| | | | 1202037547 | RE15-10-8305(246341002DUP) |
| | | Americium-241 | 1202037547 | RE15-10-8305(246341002DUP) |
| | | Cadmium-109 | 246328004 | RE15-10-7337 |
| | | | 246328007 | RE15-10-7338 |
| | | Cerium-139 | 1202037547 | RE15-10-8305(246341002DUP) |
| | | Cesium-134 | 246328005 | RE15-10-7334 |
| | | | 246328006 | RE15-10-7335 |
| | | Strontium-85 | 246328001 | RE15-10-7332 |
| | | | 246328005 | RE15-10-7334 |
| | | | 246328007 | RE15-10-7338 |
| | | | 1202037546 | MB for batch 950786 |
| | | Thorium-227 | 1202037547 | RE15-10-8305(246341002DUP) |

Method/Analysis Information

Product: H3
Analytical Method: GL-RAD-A-002
Analytical Batch Number: 951367

| Sample ID | Client ID |
|------------------|--|
| 246328001 | RE15-10-7332 |
| 246328002 | RE15-10-7333 |
| 246328003 | RE15-10-7336 |
| 246328004 | RE15-10-7337 |
| 246328005 | RE15-10-7334 |
| 246328006 | RE15-10-7335 |
| 246328007 | RE15-10-7338 |
| 246328008 | RE15-10-7339 |
| 246328009 | RE15-10-7342 |
| 1202038817 | Method Blank (MB) |
| 1202038818 | 246328005(RE15-10-7334) Sample Duplicate (DUP) |
| 1202038819 | Laboratory Control Sample (LCS) |

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

SOP Reference

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

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard 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: 246328005 (RE15-10-7334). The QC was from LANL work order 246328.

QC Information

All of the QC samples met the required acceptance limits.

CSU

The blank result is less than 1.65 times the CSU.

Technical Information:**Holding Time**

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

Sample Re-prep/Re-analysis

Sample 246328006 (RE15-10-7335) was recounted due to the quench number being outside the calibration range. Recount is being reported.

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

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

Additional Comments

Additional comments were not required for this sample set.

Blank Decision Level

The blank result is less than the decision level.

Qualifier information

Manual qualifiers were not required.

Certification Statement

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

Review Validation:

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

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

Reviewer/Date: _____

Rebecca Welch 2/25/10

SAMPLE DATA SUMMARY

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

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

Client SDG: 10-1566 GEL Work Order: 246328

The Qualifiers in this report are defined as follows:

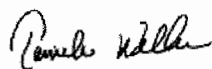
- * Indicates that a quality control analyte recovery is outside of specified acceptance criteria.
- ** Indicates the analyte is a surrogate compound.

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



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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 23, 2010

Client Sample ID: RE15-10-7332
Sample ID: 246328001
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 6.46%

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 | 0.000491 | 0.0182 | +/-0.00115 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.009 | 0.021 | +/-0.0107 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.0154 | 0.0158 | +/-0.0052 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.819 | 0.121 | +/-0.0887 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0595 | 0.0774 | +/-0.0256 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.22 | 0.0829 | +/-0.117 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0376 | 0.167 | +/-0.050 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1054 | 950786 | 4 |
| Bismuth-211 | UI | 1.86 | 0.233 | +/-0.175 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.614 | 0.0684 | +/-0.0526 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.41 | 1.06 | +/-0.364 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.00869 | 0.0359 | +/-0.0102 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0448 | 0.0541 | +/-0.015 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0103 | 0.0444 | +/-0.0128 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0227 | 0.0433 | +/-0.014 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.00458 | 0.111 | +/-0.0416 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0401 | 0.099 | +/-0.0317 | | pCi/g | | | | | | |
| Lead-212 | | 0.766 | 0.0658 | +/-0.0605 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.645 | 0.0811 | +/-0.0633 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0348 | 0.0534 | +/-0.0152 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 18.4 | 0.288 | +/-0.981 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.138 | 0.777 | +/-0.259 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.33 | 0.748 | +/-0.431 | | pCi/g | | | | | | |
| Radium-226 | | 0.614 | 0.0684 | +/-0.0526 | | pCi/g | | | | | | |
| Radium-228 | | 0.734 | 0.133 | +/-0.105 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0903 | 0.351 | +/-0.0999 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00506 | 0.045 | +/-0.0136 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.105 | 0.0529 | +/-0.0154 | | pCi/g | | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7332
Sample ID: 246328001

Project: LANL01004
Client ID: LANL010

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

Rad Gamma Spec Analysis

GAMMA SPEC "Dry Weight Corrected"

| | | | | | | | | | | | |
|--------------|---|----------|--------|-----------|-------|-------|--|--|--|--|--|
| Thallium-208 | | 0.273 | 0.0388 | +/-0.0255 | 0.080 | pCi/g | | | | | |
| Thorium-227 | U | -0.145 | 0.443 | +/-0.134 | | pCi/g | | | | | |
| Thorium-231 | U | -0.138 | 0.777 | +/-0.259 | | pCi/g | | | | | |
| Thorium-234 | | 1.52 | 1.33 | +/-0.574 | 2.00 | pCi/g | | | | | |
| Tin-113 | U | -0.00704 | 0.0501 | +/-0.0148 | 0.100 | pCi/g | | | | | |
| Uranium-235 | U | -0.0299 | 0.265 | +/-0.0768 | 0.500 | pCi/g | | | | | |
| Yttrium-88 | U | -0.00278 | 0.0326 | +/-0.0101 | 0.100 | pCi/g | | | | | |

Rad Liquid Scintillation Analysis

H3 "As Received"

| | | | | | | | | | | | |
|---------|--|-----|-----|---------|-----|-------|--|------|----------|-------------|---|
| Tritium | | 235 | 158 | +/-54.7 | 250 | pCi/L | | KXK2 | 02/16/10 | 2215 951367 | 5 |
|---------|--|-----|-----|---------|-----|-------|--|------|----------|-------------|---|

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 96.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 88.6 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 61.0 | (50%-105%) |

Notes:

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

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7332
Sample ID: 246328001

Project: LANL01004
Client ID: LANL010

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

H Analytical holding time was exceeded

J Value is estimated

M M if above MDC and less than LLD

M Matrix Related Failure

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

ND Analyte concentration is not detected above the detection limit

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

R Sample results are rejected

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

UI Gamma Spectroscopy--Uncertain identification

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 23, 2010

Client Sample ID: RE15-10-7333
Sample ID: 246328002
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 5.74%

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 | -0.00181 | 0.0193 | +/-0.00209 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.0051 | 0.0208 | +/-0.0057 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00127 | 0.0157 | +/-0.00221 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.918 | 0.0714 | +/-0.0817 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0455 | 0.0455 | +/-0.013 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 2.48 | 0.0487 | +/-0.191 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.0267 | 0.144 | +/-0.0458 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1105 | 950786 | 4 |
| Bismuth-211 | UI | 2.01 | 0.231 | +/-0.203 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.651 | 0.0767 | +/-0.0691 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.36 | 0.852 | +/-0.279 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0113 | 0.0331 | +/-0.00963 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0538 | 0.0706 | +/-0.0264 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0194 | 0.0528 | +/-0.015 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0248 | 0.0406 | +/-0.0143 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0291 | 0.121 | +/-0.0353 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0719 | 0.0704 | +/-0.0299 | | pCi/g | | | | | | |
| Lead-212 | | 0.888 | 0.0633 | +/-0.0731 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.700 | 0.0801 | +/-0.0728 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.00636 | 0.0506 | +/-0.0147 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 23.6 | 0.336 | +/-1.25 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.565 | 0.809 | +/-0.251 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.76 | 0.721 | +/-0.426 | | pCi/g | | | | | | |
| Radium-226 | | 0.651 | 0.0767 | +/-0.0691 | | pCi/g | | | | | | |
| Radium-228 | | 0.871 | 0.150 | +/-0.116 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0347 | 0.408 | +/-0.120 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00201 | 0.0555 | +/-0.0178 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0357 | 0.0471 | +/-0.0138 | | pCi/g | | | | | | |
| Thallium-208 | | 0.293 | 0.0383 | +/-0.0311 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7333
Sample ID: 246328002
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 | -0.011 | 0.459 | +/-0.135 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.565 | 0.809 | +/-0.251 | | pCi/g | | | | | | |
| Thorium-234 | | 2.06 | 1.22 | +/-0.632 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0279 | 0.0481 | +/-0.0147 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0746 | 0.262 | +/-0.0732 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.0106 | 0.0305 | +/-0.0107 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 130 | 157 | +/-49.9 | 250 | pCi/L | | KXK2 | 02/16/10 | 2352 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 92.0 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 83.6 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 97.6 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7333
Sample ID: 246328002

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7336
Sample ID: 246328003
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 7.24%

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 | -0.00548 | 0.0195 | +/-0.00513 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00296 | 0.0242 | +/-0.00755 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00 | 0.0182 | +/-0.00296 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.533 | 0.0832 | +/-0.0566 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0163 | 0.053 | +/-0.010 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.14 | 0.0568 | +/-0.101 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0793 | 0.158 | +/-0.0465 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1106 | 950786 | 4 |
| Bismuth-211 | UI | 1.77 | 0.197 | +/-0.178 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.479 | 0.0789 | +/-0.0525 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | U | 0.177 | 0.861 | +/-0.235 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0157 | 0.0313 | +/-0.00914 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0428 | 0.0615 | +/-0.0163 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0341 | 0.0347 | +/-0.0127 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0106 | 0.0405 | +/-0.0115 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.00611 | 0.109 | +/-0.0309 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0463 | 0.0857 | +/-0.0305 | | pCi/g | | | | | | |
| Lead-212 | | 0.650 | 0.0557 | +/-0.0497 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.615 | 0.0687 | +/-0.0638 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0121 | 0.0422 | +/-0.0133 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 16.4 | 0.288 | +/-0.899 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.14 | 0.660 | +/-0.202 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.24 | 0.633 | +/-0.406 | | pCi/g | | | | | | |
| Radium-226 | | 0.479 | 0.0789 | +/-0.0525 | | pCi/g | | | | | | |
| Radium-228 | | 0.643 | 0.111 | +/-0.0816 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0497 | 0.308 | +/-0.0882 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00405 | 0.0463 | +/-0.0143 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0238 | 0.0412 | +/-0.0123 | | pCi/g | | | | | | |
| Thallium-208 | | 0.238 | 0.036 | +/-0.0274 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7336
246328003

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 | 0.049 | 0.401 | +/-0.115 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.14 | 0.660 | +/-0.202 | | pCi/g | | | | | | |
| Thorium-234 | | 1.70 | 1.25 | +/-0.555 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0135 | 0.0505 | +/-0.0138 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | -0.0532 | 0.212 | +/-0.0612 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00544 | 0.0366 | +/-0.0116 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 85.7 | 158 | +/-48.5 | 250 | pCi/L | | KXX2 | 02/17/10 | 0245 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 83.5 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 84.2 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 86.0 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7336
Sample ID: 246328003

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7337
Sample ID: 246328004
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 5.64%

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 | 0.00187 | 0.0195 | +/-0.00152 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00129 | 0.0211 | +/-0.00501 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00259 | 0.0159 | +/-0.00183 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.745 | 0.0667 | +/-0.068 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | U | 0.0327 | 0.0426 | +/-0.0141 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.86 | 0.0456 | +/-0.146 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | -0.103 | 0.180 | +/-0.0565 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1108 | 950786 | 4 |
| Bismuth-211 | UI | 2.04 | 0.203 | +/-0.176 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.593 | 0.0851 | +/-0.0632 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.62 | 1.11 | +/-0.366 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.000291 | 0.0342 | +/-0.00988 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0397 | 0.0667 | +/-0.025 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0147 | 0.0483 | +/-0.0135 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0365 | 0.0529 | +/-0.0136 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.0112 | 0.0987 | +/-0.0317 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0669 | 0.0721 | +/-0.0287 | | pCi/g | | | | | | |
| Lead-212 | | 0.776 | 0.0709 | +/-0.0447 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.708 | 0.0706 | +/-0.0641 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0181 | 0.0513 | +/-0.014 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 17.4 | 0.403 | +/-0.872 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.296 | 0.846 | +/-0.252 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.75 | 0.807 | +/-0.444 | | pCi/g | | | | | | |
| Radium-226 | | 0.593 | 0.0851 | +/-0.0632 | | pCi/g | | | | | | |
| Radium-228 | | 0.666 | 0.154 | +/-0.0978 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.0114 | 0.379 | +/-0.110 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | 0.00049 | 0.0536 | +/-0.016 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0481 | 0.0519 | +/-0.0153 | | pCi/g | | | | | | |
| Thallium-208 | | 0.273 | 0.0378 | +/-0.0287 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7337
246328004

Project: LANL01004
Client ID: LANL010

| Parameter | Qualifier | Result | DL | TPU | RL | Units | DF | Analyst | Date | Time | Batch | Mtd. |
|--|-----------|---------|--------|-----------|-------|-------|----|---------|----------|------|--------|------|
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Thorium-227 | U | -0.0461 | 0.420 | +/-0.119 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.296 | 0.846 | +/-0.252 | | pCi/g | | | | | | |
| Thorium-234 | U | 1.09 | 1.55 | +/-0.685 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.00659 | 0.0566 | +/-0.0163 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0829 | 0.265 | +/-0.0749 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.0175 | 0.0425 | +/-0.0145 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 126 | 158 | +/-50.1 | 250 | pCi/L | | KXK2 | 02/17/10 | 0423 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 86.4 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 86.7 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 103 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7337
Sample ID: 246328004
Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7334
Sample ID: 246328005
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 22.1%

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 | 0.00441 | 0.0198 | +/-0.00294 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00245 | 0.020 | +/-0.00245 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00245 | 0.0151 | +/-0.0049 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.32 | 0.0865 | +/-0.114 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1114 | 950645 | 3 |
| Uranium-235/236 | | 0.161 | 0.0552 | +/-0.0285 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 4.14 | 0.0591 | +/-0.314 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0214 | 0.148 | +/-0.0451 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1108 | 950786 | 4 |
| Bismuth-211 | UI | 2.18 | 0.223 | +/-0.190 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.723 | 0.0758 | +/-0.0659 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.95 | 0.840 | +/-0.368 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.0106 | 0.0371 | +/-0.0107 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.0653 | 0.063 | +/-0.016 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.0986 | 0.0391 | +/-0.0183 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0173 | 0.0499 | +/-0.0142 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0232 | 0.111 | +/-0.0341 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0218 | 0.0953 | +/-0.0305 | | pCi/g | | | | | | |
| Lead-212 | | 0.911 | 0.0668 | +/-0.0613 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.759 | 0.0778 | +/-0.0691 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.0114 | 0.0518 | +/-0.0144 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 21.2 | 0.337 | +/-1.12 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.412 | 0.725 | +/-0.225 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.60 | 0.760 | +/-0.408 | | pCi/g | | | | | | |
| Radium-226 | | 0.723 | 0.0758 | +/-0.0659 | | pCi/g | | | | | | |
| Radium-228 | | 0.871 | 0.157 | +/-0.117 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.0744 | 0.381 | +/-0.119 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.000205 | 0.0546 | +/-0.0168 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0518 | 0.0512 | +/-0.015 | | pCi/g | | | | | | |
| Thallium-208 | | 0.292 | 0.0394 | +/-0.0326 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7334
246328005

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 | -0.0361 | 0.446 | +/-0.127 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.412 | 0.725 | +/-0.225 | | pCi/g | | | | | | |
| Thorium-234 | | 3.08 | 1.30 | +/-0.703 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.0214 | 0.0474 | +/-0.0147 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0442 | 0.270 | +/-0.0792 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | -0.00768 | 0.0389 | +/-0.0126 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 18.8 | 159 | +/-46.3 | 250 | pCi/L | KXK2 | 02/17/10 | 0600 | 951367 | 5 | |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 91.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 86.3 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 82.5 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7334
Sample ID: 246328005
Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7335
Sample ID: 246328006
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-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 | 0.00223 | 0.0215 | +/-0.00174 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00271 | 0.0222 | +/-0.00192 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00407 | 0.0167 | +/-0.00236 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.809 | 0.0805 | +/-0.0763 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | U | 0.0473 | 0.0513 | +/-0.0151 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.41 | 0.0549 | +/-0.119 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0475 | 0.0849 | +/-0.0267 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1116 | 950786 | 4 |
| Bismuth-211 | UI | 4.60 | 0.322 | +/-0.341 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.31 | 0.122 | +/-0.118 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 5.10 | 0.807 | +/-0.466 | | pCi/g | | | | | | |
| Cerium-139 | U | 0.017 | 0.0429 | +/-0.0123 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | UI | 0.111 | 0.100 | +/-0.0445 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.0279 | 0.0754 | +/-0.0287 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.0361 | 0.0842 | +/-0.0239 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0167 | 0.160 | +/-0.0492 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0622 | 0.152 | +/-0.0506 | | pCi/g | | | | | | |
| Lead-212 | | 2.10 | 0.0847 | +/-0.133 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.60 | 0.112 | +/-0.126 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.0253 | 0.0639 | +/-0.0234 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 33.5 | 0.567 | +/-1.78 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.139 | 0.973 | +/-0.316 | | pCi/g | | | | | | |
| Radium-224 | UI | 5.31 | 0.965 | +/-0.779 | | pCi/g | | | | | | |
| Radium-226 | | 1.31 | 0.122 | +/-0.118 | | pCi/g | | | | | | |
| Radium-228 | | 2.15 | 0.232 | +/-0.220 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.124 | 0.507 | +/-0.155 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00122 | 0.0908 | +/-0.0277 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0265 | 0.069 | +/-0.0229 | | pCi/g | | | | | | |
| Thallium-208 | | 0.610 | 0.0678 | +/-0.0575 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7335
246328006

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 | -0.294 | 0.591 | +/-0.192 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.139 | 0.973 | +/-0.316 | | pCi/g | | | | | | |
| Thorium-234 | | 2.61 | 0.817 | +/-0.508 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0237 | 0.0807 | +/-0.0233 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.138 | 0.316 | +/-0.091 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.000281 | 0.0608 | +/-0.0185 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | | 274 | 195 | +/-65.4 | 250 | pCi/L | | KXK2 | 02/19/10 | 2203 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.4 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 83.3 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 95.1 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7335
Sample ID: 246328006

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7338
Sample ID: 246328007
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 19.4%

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 | 0.0024 | 0.0224 | +/-0.00591 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | -0.00411 | 0.0224 | +/-0.00362 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00548 | 0.0168 | +/-0.00699 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 1.11 | 0.077 | +/-0.097 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | | 0.102 | 0.0491 | +/-0.0208 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 2.95 | 0.0526 | +/-0.226 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 2.74E-05 | 0.202 | +/-0.0629 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1116 | 950786 | 4 |
| Bismuth-211 | UI | 1.95 | 0.237 | +/-0.166 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.574 | 0.0848 | +/-0.0583 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.31 | 1.30 | +/-0.524 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0158 | 0.0383 | +/-0.0114 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0527 | 0.0615 | +/-0.0238 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | | 0.130 | 0.0419 | +/-0.0242 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.00239 | 0.0463 | +/-0.0136 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0333 | 0.120 | +/-0.0431 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0434 | 0.087 | +/-0.0306 | | pCi/g | | | | | | |
| Lead-212 | | 0.646 | 0.0914 | +/-0.0519 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.679 | 0.0827 | +/-0.0605 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | 0.00965 | 0.0553 | +/-0.0152 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 17.6 | 0.356 | +/-0.876 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.281 | 0.749 | +/-0.257 | | pCi/g | | | | | | |
| Radium-224 | UI | 1.26 | 1.04 | +/-0.343 | | pCi/g | | | | | | |
| Radium-226 | | 0.574 | 0.0848 | +/-0.0583 | | pCi/g | | | | | | |
| Radium-228 | | 0.849 | 0.175 | +/-0.116 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | -0.0357 | 0.390 | +/-0.116 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | 0.00713 | 0.0592 | +/-0.0172 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | UI | 0.0866 | 0.0582 | +/-0.0157 | | pCi/g | | | | | | |
| Thallium-208 | | 0.270 | 0.0458 | +/-0.0282 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7338
246328007

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 | 0.166 | 0.516 | +/-0.148 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.281 | 0.749 | +/-0.257 | | pCi/g | | | | | | |
| Thorium-234 | | 2.30 | 1.63 | +/-0.635 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.00617 | 0.0503 | +/-0.0146 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0377 | 0.297 | +/-0.085 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.00243 | 0.0343 | +/-0.0102 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 129 | 158 | +/-50.1 | 250 | pCi/L | | KXK2 | 02/17/10 | 0916 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 83.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 87.3 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 87.8 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7338
246328007

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7339
Sample ID: 246328008
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 13.3%

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 | -0.0005 | 0.0207 | +/-0.00631 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00358 | 0.0195 | +/-0.00267 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00119 | 0.0147 | +/-0.00267 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.993 | 0.0804 | +/-0.0895 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | | 0.0748 | 0.0512 | +/-0.0204 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 1.66 | 0.0549 | +/-0.137 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.0357 | 0.325 | +/-0.106 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1147 | 950786 | 4 |
| Bismuth-211 | UI | 4.25 | 0.390 | +/-0.357 | | pCi/g | | | | | | |
| Bismuth-214 | | 1.32 | 0.139 | +/-0.116 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 2.74 | 1.82 | +/-0.637 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.00743 | 0.0598 | +/-0.0174 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0678 | 0.101 | +/-0.0279 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.00454 | 0.078 | +/-0.023 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | -0.0139 | 0.0781 | +/-0.0243 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | 0.003 | 0.194 | +/-0.0602 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | -0.0906 | 0.160 | +/-0.0567 | | pCi/g | | | | | | |
| Lead-212 | | 1.84 | 0.106 | +/-0.116 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 1.48 | 0.136 | +/-0.130 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | UI | 0.100 | 0.0824 | +/-0.0289 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 35.5 | 0.609 | +/-1.91 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | 0.500 | 1.45 | +/-0.421 | | pCi/g | | | | | | |
| Radium-224 | UI | 4.12 | 1.20 | +/-0.656 | | pCi/g | | | | | | |
| Radium-226 | | 1.32 | 0.139 | +/-0.116 | | pCi/g | | | | | | |
| Radium-228 | | 1.93 | 0.284 | +/-0.207 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.146 | 0.649 | +/-0.186 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.0206 | 0.0911 | +/-0.0281 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0657 | 0.0853 | +/-0.0273 | | pCi/g | | | | | | |
| Thallium-208 | | 0.493 | 0.0704 | +/-0.0509 | 0.080 | pCi/g | | | | | | |

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Contact: Ms. Joylene Valdez
Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7339
246328008

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 | 0.779 | +/-0.235 | | pCi/g | | | | | | |
| Thorium-231 | U | 0.500 | 1.45 | +/-0.421 | | pCi/g | | | | | | |
| Thorium-234 | | 4.22 | 2.62 | +/-1.44 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | -0.00131 | 0.0916 | +/-0.0278 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.0774 | 0.436 | +/-0.126 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.0363 | 0.0798 | +/-0.0212 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | | 169 | 158 | +/-51.8 | 250 | pCi/L | | KXK2 | 02/17/10 | 1053 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery % | Acceptable Limits |
|---------------------------|------------------------------|------------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.1 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 92.4 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 80.1 | (50%-105%) |

Notes:

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

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

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Project: LANL ER Project

Report Date: February 23, 2010

Client Sample ID: RE15-10-7339
Sample ID: 246328008

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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 23, 2010

Client Sample ID: RE15-10-7342
Sample ID: 246328009
Matrix: R
Collect Date: 01-FEB-10
Receive Date: 05-FEB-10
Collector: Client
Moisture: 5.65%

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 | -0.00443 | 0.0211 | +/-0.00265 | 0.050 | pCi/g | | JXD2 | 02/19/10 | 1553 | 950643 | 1 |
| <i>ISOPU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Plutonium-238 | U | 0.00483 | 0.0197 | +/-0.00452 | 0.050 | pCi/g | | JXD2 | 02/20/10 | 1431 | 950644 | 2 |
| Plutonium-239/240 | U | 0.00 | 0.0148 | +/-0.00171 | 0.050 | pCi/g | | | | | | |
| <i>ISOU "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Uranium-233/234 | | 0.548 | 0.0737 | +/-0.0551 | 0.100 | pCi/g | | JXD2 | 02/20/10 | 1143 | 950645 | 3 |
| Uranium-235/236 | U | 0.0289 | 0.047 | +/-0.0104 | 0.100 | pCi/g | | | | | | |
| Uranium-238 | | 0.864 | 0.0503 | +/-0.0786 | 0.100 | pCi/g | | | | | | |
| Rad Gamma Spec Analysis | | | | | | | | | | | | |
| <i>GAMMA SPEC "Dry Weight Corrected"</i> | | | | | | | | | | | | |
| Americium-241 | U | 0.00162 | 0.125 | +/-0.0376 | 0.200 | pCi/g | | MXR1 | 02/18/10 | 1148 | 950786 | 4 |
| Bismuth-211 | UI | 1.89 | 0.214 | +/-0.156 | | pCi/g | | | | | | |
| Bismuth-214 | | 0.512 | 0.0741 | +/-0.0584 | 0.200 | pCi/g | | | | | | |
| Cadmium-109 | UI | 1.19 | 0.935 | +/-0.296 | | pCi/g | | | | | | |
| Cerium-139 | U | -0.0111 | 0.0352 | +/-0.0106 | 0.050 | pCi/g | | | | | | |
| Cesium-134 | U | 0.0141 | 0.0555 | +/-0.0157 | 0.100 | pCi/g | | | | | | |
| Cesium-137 | U | 0.00854 | 0.0473 | +/-0.0134 | 0.100 | pCi/g | | | | | | |
| Cobalt-60 | U | 0.000565 | 0.052 | +/-0.0154 | 0.100 | pCi/g | | | | | | |
| Europium-152 | U | -0.0161 | 0.112 | +/-0.0341 | 0.200 | pCi/g | | | | | | |
| Lanthanum-140 | U | 0.0545 | 0.122 | +/-0.0327 | | pCi/g | | | | | | |
| Lead-212 | | 0.793 | 0.0665 | +/-0.0517 | 0.100 | pCi/g | | | | | | |
| Lead-214 | | 0.657 | 0.0777 | +/-0.0569 | 0.100 | pCi/g | | | | | | |
| Mercury-203 | U | -0.00545 | 0.0499 | +/-0.0143 | 0.100 | pCi/g | | | | | | |
| Potassium-40 | | 15.2 | 0.345 | +/-0.873 | 1.00 | pCi/g | | | | | | |
| Radium-223 | U | -0.362 | 0.745 | +/-0.228 | | pCi/g | | | | | | |
| Radium-224 | UI | 2.18 | 0.756 | +/-0.333 | | pCi/g | | | | | | |
| Radium-226 | | 0.512 | 0.0741 | +/-0.0584 | | pCi/g | | | | | | |
| Radium-228 | | 0.770 | 0.155 | +/-0.0978 | 0.500 | pCi/g | | | | | | |
| Ruthenium-106 | U | 0.0796 | 0.363 | +/-0.101 | 0.800 | pCi/g | | | | | | |
| Sodium-22 | U | -0.00199 | 0.052 | +/-0.0156 | 0.080 | pCi/g | | | | | | |
| Strontium-85 | U | 0.0481 | 0.0536 | +/-0.0139 | | pCi/g | | | | | | |
| Thallium-208 | | 0.233 | 0.0407 | +/-0.0293 | 0.080 | pCi/g | | | | | | |

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

Report Date: February 23, 2010

Client Sample ID:
Sample ID:

RE15-10-7342
246328009

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 | -0.219 | 0.428 | +/-0.128 | | pCi/g | | | | | | |
| Thorium-231 | U | -0.362 | 0.745 | +/-0.228 | | pCi/g | | | | | | |
| Thorium-234 | U | 1.01 | 1.08 | +/-0.500 | 2.00 | pCi/g | | | | | | |
| Tin-113 | U | 0.0122 | 0.0526 | +/-0.0149 | 0.100 | pCi/g | | | | | | |
| Uranium-235 | U | 0.083 | 0.261 | +/-0.0743 | 0.500 | pCi/g | | | | | | |
| Yttrium-88 | U | 0.00233 | 0.0378 | +/-0.0111 | 0.100 | pCi/g | | | | | | |
| Rad Liquid Scintillation Analysis | | | | | | | | | | | | |
| <i>H3 "As Received"</i> | | | | | | | | | | | | |
| Tritium | U | 69.3 | 157 | +/-47.6 | 250 | pCi/L | | KXK2 | 02/17/10 | 1231 | 951367 | 5 |

The following Analytical Methods were performed

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

| Surrogate/Tracer recovery | Test | Recovery% | Acceptable Limits |
|---------------------------|------------------------------|-----------|-------------------|
| Americium-243 Tracer | AM241 "Dry Weight Corrected" | 90.3 | (50%-105%) |
| Plutonium-242 Tracer | ISOPU "Dry Weight Corrected" | 93.2 | (50%-105%) |
| Uranium-232 Tracer | ISOU "Dry Weight Corrected" | 95.6 | (50%-105%) |

Notes:

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

The Qualifiers in this report are defined as follows :

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

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

Report Date: February 23, 2010

Client Sample ID: RE15-10-7342
Sample ID: 246328009

Project: LANL01004
Client ID: LANL010

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

J Value is estimated
M M if above MDC and less than LLD
M Matrix Related Failure
N/A RPD or %Recovery limits do not apply.
ND Analyte concentration is not detected above the detection limit
NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
R Sample results are rejected
U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy--Uncertain identification
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

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QC Summary

Client : Los Alamos National Laboratory
PO Box 1663
TA-03, SM271, Drop Pt. 02U, Rm
Los Alamos, New Mexico
Contact: Ms. Joylene Valdez
Workorder: 246328

Report Date: February 23, 2010
Page 1 of 6

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|-------------------|-----------|--------|------------|----|------------|-------|---------------|-----------------|---------------|----------|-------|
| Rad Alpha Spec | | | | | | | | | | | |
| Batch | 950643 | | | | | | | | | | |
| QC1202037248 | 246341001 | DUP | | | | | | | | | |
| Americium-241 | | U | 0.0101 | U | 0.00425 | pCi/g | 0.501 | (0-1) | JXD2 | 02/19/10 | 15:53 |
| | | TPU: | +/-0.00351 | | +/-0.00228 | | | | | | |
| | | Yield: | 92.3 | | 89.9 | | | | | | |
| QC1202037249 | LCS | | | | | | | | | | |
| Americium-241 | | 33.2 | | | 34.1 | pCi/g | | 103 (75%-125%) | | | |
| | | TPU: | | | +/-2.16 | | | | | | |
| | | Yield: | | | 92.6 | | | | | | |
| QC1202037247 | MB | | | | | | | | | | |
| Americium-241 | | | | U | -0.00228 | pCi/g | | | | | |
| | | TPU: | | | +/-0.00153 | | | | | | |
| | | Yield: | | | 87.4 | | | | | | |
| Batch | 950644 | | | | | | | | | | |
| QC1202037251 | 246341001 | DUP | | | | | | | | | |
| Plutonium-238 | | U | 0.00131 | U | 0.00 | pCi/g | 0.173 | (0-1) | JXD2 | 02/20/10 | 13:40 |
| | | TPU: | +/-0.00131 | | +/-0.00246 | | | | | | |
| | | Yield: | 84.6 | | 73.8 | | | | | | |
| Plutonium-239/240 | | U | 0.0131 | | 0.0197 | pCi/g | 0.358 | (0-1) | | | |
| | | TPU: | +/-0.00418 | | +/-0.00501 | | | | | | |
| | | Yield: | 84.6 | | 73.8 | | | | | | |
| QC1202037252 | LCS | | | | | | | | | | |
| Plutonium-238 | | | | | 7.06 | pCi/g | | (75%-125%) | 02/20/1013:39 | | |
| | | TPU: | | | +/-0.543 | | | | | | |
| | | Yield: | | | 82.2 | | | | | | |
| Plutonium-239/240 | | 41.8 | | | 40.5 | pCi/g | | 96.9 (75%-125%) | | | |
| | | TPU: | | | +/-2.38 | | | | | | |
| | | Yield: | | | 82.2 | | | | | | |
| QC1202037250 | MB | | | | | | | | | | |
| Plutonium-238 | | | | U | -0.00153 | pCi/g | 02/20/1013:40 | | | | |
| | | TPU: | | | +/-0.00342 | | | | | | |
| | | Yield: | | | 77.2 | | | | | | |
| Plutonium-239/240 | | | | U | -0.00459 | pCi/g | | | | | |
| | | TPU: | | | +/-0.00306 | | | | | | |
| | | Yield: | | | 77.2 | | | | | | |
| Batch | 950645 | | | | | | | | | | |
| QC1202037254 | 246341001 | DUP | | | | | | | | | |
| Uranium-233/234 | | | 89.1 | | 83.7 | pCi/g | 0.205 | (0-1) | JXD2 | 02/22/10 | 12:41 |
| | | TPU: | +/-7.01 | | +/-6.31 | | | | | | |
| | | Yield: | 45.1 | | 56.7 | | | | | | |
| Uranium-235/236 | | | 5.24 | | 4.90 | pCi/g | 0.193 | (0-1) | | | |
| | | TPU: | +/-0.467 | | +/-0.413 | | | | | | |
| | | Yield: | 45.1 | | 56.7 | | | | | | |
| Uranium-238 | | | 92.3 | | 86.1 | pCi/g | 0.224 | (0-1) | | | |
| | | TPU: | +/-7.26 | | +/-6.49 | | | | | | |

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QC Summary

Workorder: 246328

Page 2 of 6

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time | | | | | | | | | |
|-----------------|-----------|--------|-----------|------------|-----------|-------|--------|------------|-------|----------|-------|--|--|--|--|--|--|--|--|--|
| Rad Alpha Spec | | | | | | | | | | | | | | | | | | | | |
| Batch | 950645 | | | | | | | | | | | | | | | | | | | |
| QC1202037255 | LCS | Yield: | 45.1 | 56.7 | | | | | | | | | | | | | | | | |
| Uranium-233/234 | | | | 6.25 | pCi/g | | | (75%-125%) | | 02/20/10 | 11:06 | | | | | | | | | |
| | | TPU: | | +/-0.600 | | | | | | | | | | | | | | | | |
| | | Yield: | | 84.3 | | | | | | | | | | | | | | | | |
| Uranium-235/236 | | | U | 0.0984 | pCi/g | | | (75%-125%) | | | | | | | | | | | | |
| | | TPU: | | +/-0.0607 | | | | | | | | | | | | | | | | |
| | | Yield: | | 84.3 | | | | | | | | | | | | | | | | |
| Uranium-238 | 5.75 | | | 5.97 | pCi/g | | 104 | (75%-125%) | | | | | | | | | | | | |
| | | TPU: | | +/-0.577 | | | | | | | | | | | | | | | | |
| | | Yield: | | 84.3 | | | | | | | | | | | | | | | | |
| QC1202037253 | MB | | | | | | | | | | | | | | | | | | | |
| Uranium-233/234 | | | U | 0.0307 | pCi/g | | | | | 02/20/10 | 10:58 | | | | | | | | | |
| | | TPU: | | +/-0.00859 | | | | | | | | | | | | | | | | |
| | | Yield: | | 94.6 | | | | | | | | | | | | | | | | |
| Uranium-235/236 | | | U | 0.009 | pCi/g | | | | | | | | | | | | | | | |
| | | TPU: | | +/-0.00454 | | | | | | | | | | | | | | | | |
| | | Yield: | | 94.6 | | | | | | | | | | | | | | | | |
| Uranium-238 | | | U | 0.0309 | pCi/g | | | | | | | | | | | | | | | |
| | | TPU: | | +/-0.00899 | | | | | | | | | | | | | | | | |
| | | Yield: | | 94.6 | | | | | | | | | | | | | | | | |
| Rad Gamma Spec | | | | | | | | | | | | | | | | | | | | |
| Batch | 950786 | | | | | | | | | | | | | | | | | | | |
| QC1202037547 | 246341002 | DUP | | | | | | | | | | | | | | | | | | |
| Americium-241 | | UI | 4.75 | UI | 1.76 | pCi/g | 1.35 | (0-1) | MXR1 | 02/18/10 | 13:52 | | | | | | | | | |
| | | TPU: | +/-0.765 | | +/-0.340 | | | | | | | | | | | | | | | |
| Bismuth-211 | | UI | 3.96 | UI | 4.39 | pCi/g | 0.248 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.426 | | +/-0.435 | | | | | | | | | | | | | | | |
| Bismuth-214 | | | 1.38 | | 1.34 | pCi/g | 0.074 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.133 | | +/-0.165 | | | | | | | | | | | | | | | |
| Cadmium-109 | | U | -30.2 | U | -33.1 | pCi/g | 0.218 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-3.22 | | +/-3.47 | | | | | | | | | | | | | | | |
| Cerium-139 | | UI | 0.287 | UI | 0.188 | pCi/g | 0.444 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.0523 | | +/-0.0591 | | | | | | | | | | | | | | | |
| Cesium-134 | | U | 0.104 | U | 0.148 | pCi/g | 0.230 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.0424 | | +/-0.0542 | | | | | | | | | | | | | | | |
| Cesium-137 | | | 2.54 | | 2.53 | pCi/g | 0.0183 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.152 | | +/-0.149 | | | | | | | | | | | | | | | |
| Cobalt-60 | | U | -0.0249 | U | 0.011 | pCi/g | 0.360 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.0226 | | +/-0.0273 | | | | | | | | | | | | | | | |
| Europium-152 | | U | 0.00343 | U | -0.0371 | pCi/g | 0.0954 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.103 | | +/-0.110 | | | | | | | | | | | | | | | |
| Lanthanum-140 | | U | -0.185 | U | 0.142 | pCi/g | 1.13 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.0648 | | +/-0.0801 | | | | | | | | | | | | | | | |
| Lead-212 | | | 1.71 | | 1.43 | pCi/g | 0.534 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.140 | | +/-0.126 | | | | | | | | | | | | | | | |
| Lead-214 | | | 1.38 | | 1.53 | pCi/g | 0.239 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.153 | | +/-0.157 | | | | | | | | | | | | | | | |
| Mercury-203 | | U | 0.0603 | U | -0.0115 | pCi/g | 0.388 | (0-1) | | | | | | | | | | | | |
| | | TPU: | +/-0.0434 | | +/-0.049 | | | | | | | | | | | | | | | |

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QC Summary

Workorder: 246328

Page 3 of 6

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|-----------------------|--------|-----------|------|-----------|-------|--------|-----------------|-------|-------|---------------|------|
| Rad Gamma Spec | | | | | | | | | | | |
| Batch | 950786 | | | | | | | | | | |
| Potassium-40 | | 26.6 | | 25.9 | pCi/g | 0.108 | | (0-1) | | | |
| | TPU: | +/-1.46 | | +/-1.51 | | | | | | | |
| Radium-223 | U | -0.748 | U | -0.934 | pCi/g | 0.0687 | | (0-1) | | | |
| | TPU: | +/-0.624 | | +/-0.731 | | | | | | | |
| Radium-224 | UI | 5.09 | UI | 3.30 | pCi/g | 0.430 | | (0-1) | | | |
| | TPU: | +/-1.17 | | +/-0.919 | | | | | | | |
| Radium-226 | | 1.38 | | 1.34 | pCi/g | 0.074 | | (0-1) | | | |
| | TPU: | +/-0.133 | | +/-0.165 | | | | | | | |
| Radium-228 | | 1.80 | | 1.76 | pCi/g | 0.0382 | | (0-1) | | | |
| | TPU: | +/-0.209 | | +/-0.262 | | | | | | | |
| Ruthenium-106 | U | 0.00999 | U | 0.309 | pCi/g | 0.250 | | (0-1) | | | |
| | TPU: | +/-0.266 | | +/-0.332 | | | | | | | |
| Sodium-22 | U | -0.022 | U | -0.00153 | pCi/g | 0.186 | | (0-1) | | | |
| | TPU: | +/-0.0258 | | +/-0.0291 | | | | | | | |
| Strontium-85 | UI | 0.183 | U | 0.0786 | pCi/g | 0.634 | | (0-1) | | | |
| | TPU: | +/-0.0377 | | +/-0.0449 | | | | | | | |
| Thallium-208 | | 0.516 | | 0.538 | pCi/g | 0.0805 | | (0-1) | | | |
| | TPU: | +/-0.0555 | | +/-0.080 | | | | | | | |
| Thorium-227 | UI | 3.76 | UI | 1.72 | pCi/g | 0.871 | | (0-1) | | | |
| | TPU: | +/-0.619 | | +/-0.556 | | | | | | | |
| Thorium-231 | U | -0.748 | U | -0.934 | pCi/g | 0.0687 | | (0-1) | | | |
| | TPU: | +/-0.624 | | +/-0.731 | | | | | | | |
| Thorium-234 | | 476 | | 559 | pCi/g | 0.454 | | (0-1) | | | |
| | TPU: | +/-41.7 | | +/-48.9 | | | | | | | |
| Tin-113 | U | -0.0658 | U | -0.0882 | pCi/g | 0.116 | | (0-1) | | | |
| | TPU: | +/-0.0426 | | +/-0.0532 | | | | | | | |
| Uranium-235 | | 28.1 | | 31.7 | pCi/g | 0.338 | | (0-1) | | | |
| | TPU: | +/-2.55 | | +/-2.85 | | | | | | | |
| Yttrium-88 | UI | 0.0852 | U | -0.0753 | pCi/g | 1.42 | | (0-1) | | | |
| | TPU: | +/-0.0235 | | +/-0.0329 | | | | | | | |
| QC1202037548 | LCS | | | | | | | | | | |
| Americium-241 | 15.9 | | | 13.0 | pCi/g | | 81.9 (75%-125%) | | | 02/18/1014:48 | |
| | TPU: | | | +/-0.714 | | | | | | | |
| Bismuth-211 | | | | 2.08 | pCi/g | | | | | | |
| | TPU: | | | +/-0.408 | | | | | | | |
| Bismuth-214 | | | | 0.942 | pCi/g | | | | | | |
| | TPU: | | | +/-0.152 | | | | | | | |
| Cadmium-109 | | | | 31.8 | pCi/g | | | | | | |
| | TPU: | | | +/-1.94 | | | | | | | |
| Cerium-139 | | | U | -0.004 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0218 | | | | | | | |
| Cesium-134 | | | U | 0.101 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0545 | | | | | | | |
| Cesium-137 | 5.56 | | | 5.88 | pCi/g | | 106 (75%-125%) | | | | |
| | TPU: | | | +/-0.295 | | | | | | | |
| Cobalt-60 | 6.39 | | | 6.14 | pCi/g | | 96.1 (75%-125%) | | | | |
| | TPU: | | | +/-0.325 | | | | | | | |
| Europium-152 | | | U | -0.0915 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0955 | | | | | | | |
| Lanthanum-140 | | | U | -0.0615 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0444 | | | | | | | |

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QC Summary

Workorder: 246328

Page 4 of 6

| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|----------------|--------|--------|------|------------|-------|-----|------|-------|-------|---------------|------|
| Rad Gamma Spec | | | | | | | | | | | |
| Batch | 950786 | | | | | | | | | | |
| Lead-212 | | | | 1.13 | pCi/g | | | | | | |
| | TPU: | | | +/-0.094 | | | | | | | |
| Lead-214 | | | | 0.724 | pCi/g | | | | | | |
| | TPU: | | | +/-0.143 | | | | | | | |
| Mercury-203 | | | U | -0.0256 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0319 | | | | | | | |
| Potassium-40 | | | U | 0.690 | pCi/g | | | | | | |
| | TPU: | | | +/-0.334 | | | | | | | |
| Radium-223 | | | U | -0.369 | pCi/g | | | | | | |
| | TPU: | | | +/-0.627 | | | | | | | |
| Radium-224 | | | | 2.92 | pCi/g | | | | | | |
| | TPU: | | | +/-0.894 | | | | | | | |
| Radium-226 | | | | 0.942 | pCi/g | | | | | | |
| | TPU: | | | +/-0.152 | | | | | | | |
| Radium-228 | | | | 1.11 | pCi/g | | | | | | |
| | TPU: | | | +/-0.459 | | | | | | | |
| Ruthenium-106 | | | U | 0.115 | pCi/g | | | | | | |
| | TPU: | | | +/-0.328 | | | | | | | |
| Sodium-22 | | | U | -0.0268 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0315 | | | | | | | |
| Strontium-85 | | | U | 0.0305 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0411 | | | | | | | |
| Thallium-208 | | | | 0.488 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0713 | | | | | | | |
| Thorium-227 | | | U | -0.0931 | pCi/g | | | | | | |
| | TPU: | | | +/-0.371 | | | | | | | |
| Thorium-231 | | | U | -0.369 | pCi/g | | | | | | |
| | TPU: | | | +/-0.627 | | | | | | | |
| Thorium-234 | | | U | 0.0907 | pCi/g | | | | | | |
| | TPU: | | | +/-0.469 | | | | | | | |
| Tin-113 | | | U | -0.0862 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0471 | | | | | | | |
| Uranium-235 | | | U | 0.309 | pCi/g | | | | | | |
| | TPU: | | | +/-0.154 | | | | | | | |
| Yttrium-88 | | | U | 0.0447 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0272 | | | | | | | |
| QC1202037546 | MB | | | | | | | | | | |
| Americium-241 | | | U | 0.0413 | pCi/g | | | | | 02/18/1013:52 | |
| | TPU: | | | +/-0.0373 | | | | | | | |
| Bismuth-211 | | | U | 0.0336 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0596 | | | | | | | |
| Bismuth-214 | | | U | -0.0506 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0219 | | | | | | | |
| Cadmium-109 | | | U | 0.304 | pCi/g | | | | | | |
| | TPU: | | | +/-0.174 | | | | | | | |
| Cerium-139 | | | U | 0.000183 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00688 | | | | | | | |
| Cesium-134 | | | U | 0.00524 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0107 | | | | | | | |
| Cesium-137 | | | U | 0.0148 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00817 | | | | | | | |

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QC Summary

Workorder: 246328

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| Parmname | NOM | Sample | Qual | QC | Units | RER | REC% | Range | Anlst | Date | Time |
|--------------------------|-----------|--------|---------|------------|---------|-------|-------|----------------|-------|---------------|------|
| Rad Gamma Spec | | | | | | | | | | | |
| Batch | 950786 | | | | | | | | | | |
| Cobalt-60 | | | U | -0.00208 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00903 | | | | | | | |
| Europium-152 | | | U | 0.00631 | pCi/g | | | | | | |
| | TPU: | | | +/-0.025 | | | | | | | |
| Lanthanum-140 | | | U | 0.0112 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0141 | | | | | | | |
| Lead-212 | | | U | 0.0209 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0189 | | | | | | | |
| Lead-214 | | | U | 0.0202 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0207 | | | | | | | |
| Mercury-203 | | | U | -0.00146 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00907 | | | | | | | |
| Potassium-40 | | | U | 0.0193 | pCi/g | | | | | | |
| | TPU: | | | +/-0.135 | | | | | | | |
| Radium-223 | | | U | 0.126 | pCi/g | | | | | | |
| | TPU: | | | +/-0.176 | | | | | | | |
| Radium-224 | | | U | 0.0635 | pCi/g | | | | | | |
| | TPU: | | | +/-0.171 | | | | | | | |
| Radium-226 | | | U | -0.0506 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0219 | | | | | | | |
| Radium-228 | | | U | 0.00106 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0338 | | | | | | | |
| Ruthenium-106 | | | U | -0.0335 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0801 | | | | | | | |
| Sodium-22 | | | U | -0.0124 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00836 | | | | | | | |
| Strontium-85 | | | UI | 0.0434 | pCi/g | | | | | | |
| | TPU: | | | +/-0.012 | | | | | | | |
| Thallium-208 | | | U | -0.00756 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0114 | | | | | | | |
| Thorium-227 | | | U | -0.121 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0951 | | | | | | | |
| Thorium-231 | | | U | 0.126 | pCi/g | | | | | | |
| | TPU: | | | +/-0.176 | | | | | | | |
| Thorium-234 | | | U | 0.683 | pCi/g | | | | | | |
| | TPU: | | | +/-0.595 | | | | | | | |
| Tin-113 | | | U | 0.0141 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0112 | | | | | | | |
| Uranium-235 | | | U | 0.101 | pCi/g | | | | | | |
| | TPU: | | | +/-0.0522 | | | | | | | |
| Yttrium-88 | | | U | 0.00966 | pCi/g | | | | | | |
| | TPU: | | | +/-0.00992 | | | | | | | |
| Rad Liquid Scintillation | | | | | | | | | | | |
| Batch | 951367 | | | | | | | | | | |
| QC1202038818 | 246328005 | DUP | | | | | | | | | |
| Tritium | | U | 18.8 | U | 69.3 | pCi/L | 0.269 | (0-1) | KXK2 | 02/17/1015:46 | |
| | | TPU: | +/-46.3 | | +/-47.6 | | | | | | |
| QC1202038819 | LCS | | | | | | | | | | |
| Tritium | 5560 | | | | 6030 | pCi/L | | 108 (75%-125%) | | 02/17/1017:23 | |
| | | TPU: | | | +/-539 | | | | | | |

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QC Summary

Workorder: 246328

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| Parname | NOM | Sample Qual | QC | Units | RER | REC% | Range | Anlst | Date Time |
|--------------------------|--------|-------------|---------|-------|-----|------|-------|-------|---------------|
| Rad Liquid Scintillation | | | | | | | | | |
| Batch | 951367 | | | | | | | | |
| QC1202038817 | MB | | | | | | | | |
| Tritium | | U | 26.7 | pCi/L | | | | | 02/17/1014:08 |
| | TPU: | | +/-46.2 | | | | | | |

Notes:

The Qualifiers in this report are defined as follows:

- ** Analyte is a surrogate compound
- < Result is less than value reported
- > Result is greater than value reported
- A The TIC is a suspected aldol-condensation product
- B For General Chemistry and Organic analysis the target analyte was detected in the associated blank.
- BD Results are either below the MDC or tracer recovery is low
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of the sample
- F Estimated Value
- H Analytical holding time was exceeded
- J Value is estimated
- M M if above MDC and less than LLD
- M Matrix Related Failure
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
- UI Gamma Spectroscopy--Uncertain identification
- 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# 450643 Product: Am Date: 2/22/10

| Criteria: | Yes | No | Comments |
|---|-----|----|----------|
| Sample Solids are less than or equal to 100 mg for GAB. | | | N/A |
| Samples have been blank corrected (if required) | ✓ | | |
| If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay. | ✓ | | |
| Instrument source check is within limits. | ✓ | | |
| Instrument bkg check is within limits. | ✓ | | |
| Method RDL/ LLD has been met. | ✓ | | |
| If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%. | ✓ | | |
| Or meets the client's required RER acceptance criteria. | | | |
| Tracer yield is 15-125% . Carrier yield 25-125%. | ✓ | | |
| Or meets the client's contract acceptance criteria. | | | |
| Method blank is less than the RDL/ LLD. | ✓ | | |
| (If rad samples, < 5% of lowest activity) | ✓ | | |
| Sample was run within hold time. | ✓ | | |
| Sample was correctly preserved if required. | | | N/A |
| Smears Taken for Radioactive batches. | | | N/A |
| Method Spike and LCS are within 75-125% or meets the client's contract acceptance criteria. | ✓ | | |
| No blank spaces on data forms. | ✓ | | |
| All line outs initialed and dated. | ✓ | | |
| No transcription errors are apparent. | | | |
| Aux data is correct. | | | N/A |
| Client Special requirements page has been checked. | ✓ | | |
| Raw Data and/ or spectrum are included and properly statused. | ✓ | | |
| QC data entered into QC database and batch is in REVW | ✓ | | |
| Hit notification complete (if necessary) | | | N/A |
| Batch entered into Case Narrative. | ✓ | | |
| Batch Data Exception Reports (DER) completed, if applicable. | | | N/A |
| Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed. | | | N/A |
| Aliquot Correction completed if required. | | | N/A |
| Review sample historical results if available (If 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: Sopl M1- 2/22/10Secondary Review Performed By: legblew 2/22/10

2/16 2/26

LANL

Am/Cm Que Sheet

08-FEB-10

Comments:

Internal Due Date: 16-FEB-10

Analyst: JXD2 First Client Due Date: 26-FEB-10

Batch #: 950643

Tracer(s): Am241/Cm244 Tracer Code: 445-96-2-53 Expiration Date: 05/11/10
 LCS Isotope(s): Am241/Cm244 LCS Code(s): --- Expiration Date: ---
 Spike Isotope(s): Am241/Cm244 Spike Code(s): --- Expiration Date: ---
 Prep Date: 02/16/10 Initials: JXD Pipet ID: 2826057 Balance ID: 50410272
 Witness: JEH 2-16-10

| Sample ID | Client Description | Type | Hazard Code | Min CRDL | Matrix | Client | Collection Date | Pos. | Label # | Aliquot (g/l/n) | Am/Cm Det # |
|--------------|----------------------------|--------|-------------|----------|------------|-----------|-----------------|------|---------|-----------------|-------------|
| 246312001-1 | RE16-10-1313 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 29-JAN-10 | 1 | 1 | 1.279 | | 80 |
| 246328001-1 | RE15-10-7332 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 2 | 2 | 1.269 | | 81 |
| 246328002-1 | RE15-10-7333 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 3 | 3 | 1.254 | | 82 |
| 246328003-1 | RE15-10-7336 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 4 | 4 | 1.267 | | 83 |
| 246328004-1 | RE15-10-7337 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 5 | 5 | 1.265 | | 84 |
| 246328005-1 | RE15-10-7334 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 6 | 6 | 1.258 | | 85 |
| 246328006-1 | RE15-10-7335 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 7 | 7 | 1.254 | | 86 |
| 246328007-1 | RE15-10-7338 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 8 | 8 | 1.257 | | 87 |
| 246328008-1 | RE15-10-7339 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 9 | 9 | 1.269 | | 88 |
| 246328009-1 | RE15-10-7342 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 10 | 10 | 1.279 | | 89 |
| 246341001-1 | RE15-10-8304 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 11 | 11 | 1.266 | | 90 |
| 246341002-1 | RE15-10-8305 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 12 | 12 | 1.252 | 231 | 91 |
| 246341003-1 | RE15-10-8306 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 13 | 13 | 1.273 | | 92 |
| 246341004-1 | RE15-10-8307 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 14 | 14 | 1.272 | | 93 |
| 246341005-1 | RE15-10-8309 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 15 | 15 | 1.268 | | 94 |
| 246341006-1 | RE15-10-8308 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 16 | 16 | 1.279 | | 95 |
| 246341007-1 | RE15-10-8301 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 17 | 17 | 1.257 | | 97 |
| 246341008-1 | RE15-10-8300 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 18 | 18 | 1.290 | | 99 |
| 246341009-1 | RE15-10-8324 | SAMPLE | .05 pCi/g | SOIL | LANL010 | 01-FEB-10 | 19 | 19 | 1.276 | | 100 |
| 1202037247-1 | MB for batch 950643 | MB | .05 pCi/g | SOIL | QC ACCOUNT | | 20 | 20 | | | 101 |
| 1202037248-1 | RE15-10-8304(246341001DUP) | DUP | .05 pCi/g | SOIL | QC ACCOUNT | 01-FEB-10 | 21 | 21 | 1.265 | | 102 |
| 1202037249-1 | LCS for batch 950643 | LCS | .05 pCi/g | SOIL | QC ACCOUNT | | 22 | 22 | 0.100 | | 103 |

* GRM 0244-B Exp 4/30/20 0.100g

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

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: 306 AL-2/22/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

Blank Correction Report

Batch ID 950643

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Allquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|---------------|---------|-----------|---------|--------|--------------------------------|-------|------------------------------|
| 1202037248 | DUP | Americium-241 | 1.27 g | 0.00425 | 0.00228 | 0.0193 | -.00179528 | pCi/g | NO |
| 1202037249 | LCS | Americium-241 | 0.100 g | 34.1 | 2.16 | 0.237 | -.0228 | pCi/g | NO |
| 1202037247 | MB | Americium-241 | 1.00 g | -0.00228 | 0.00153 | 0.0244 | -.00228 | pCi/g | NO |
| 246312001 | RE16-10-1313 | Americium-241 | 1.28 g | 0.00534 | 0.00254 | 0.0189 | -.00178125 | pCi/g | NO |
| 246328001 | RE15-10-7332 | Americium-241 | 1.27 g | 0.000491 | 0.00115 | 0.0182 | -.00179528 | pCi/g | NO |
| 246328002 | RE15-10-7333 | Americium-241 | 1.26 g | -0.00181 | 0.00209 | 0.0193 | -.00180952 | pCi/g | NO |
| 246328003 | RE15-10-7336 | Americium-241 | 1.27 g | -0.00548 | 0.00513 | 0.0195 | -.00179528 | pCi/g | NO |
| 246328004 | RE15-10-7337 | Americium-241 | 1.27 g | 0.00187 | 0.00152 | 0.0195 | -.00179528 | pCi/g | NO |
| 246328005 | RE15-10-7334 | Americium-241 | 1.26 g | 0.00441 | 0.00294 | 0.0198 | -.00180952 | pCi/g | NO |
| 246328006 | RE15-10-7335 | Americium-241 | 1.25 g | 0.00223 | 0.00174 | 0.0215 | -.001824 | pCi/g | NO |
| 246328007 | RE15-10-7338 | Americium-241 | 1.26 g | 0.0024 | 0.00591 | 0.0224 | -.00180952 | pCi/g | NO |
| 246328008 | RE15-10-7339 | Americium-241 | 1.27 g | -0.0005 | 0.00631 | 0.0207 | -.00179528 | pCi/g | NO |
| 246328009 | RE15-10-7342 | Americium-241 | 1.28 g | -0.00443 | 0.00265 | 0.0211 | -.00178125 | pCi/g | NO |
| 246341001 | RE15-10-8304 | Americium-241 | 1.27 g | 0.0101 | 0.00351 | 0.0189 | -.00179528 | pCi/g | NO |
| 246341002 | RE15-10-8305 | Americium-241 | 1.25 g | 0.0377 | 0.00689 | 0.018 | -.001824 | pCi/g | NO |
| 246341003 | RE15-10-8306 | Americium-241 | 1.27 g | 0.00392 | 0.00238 | 0.0228 | -.00179528 | pCi/g | NO |
| 246341004 | RE15-10-8307 | Americium-241 | 1.27 g | 0.00602 | 0.00282 | 0.0207 | -.00179528 | pCi/g | NO |
| 246341005 | RE15-10-8309 | Americium-241 | 1.27 g | -0.000502 | 0.0013 | 0.0207 | -.00179528 | pCi/g | NO |
| 246341006 | RE15-10-8308 | Americium-241 | 1.28 g | 0.000696 | 0.00663 | 0.0198 | -.00178125 | pCi/g | NO |
| 246341007 | RE15-10-8301 | Americium-241 | 1.26 g | 0.00312 | 0.00361 | 0.0196 | -.00180952 | pCi/g | NO |
| 246341008 | RE15-10-8300 | Americium-241 | 1.29 g | 0.000643 | 0.00192 | 0.0192 | -.00176744 | pCi/g | NO |
| 246341009 | RE15-10-8324 | Americium-241 | 1.28 g | 0.00842 | 0.00352 | 0.0181 | -.00178125 | pCi/g | NO |

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | | |
|---|--|--|--|
| BATCH NUMBER : 950643 SAMPLE ID : S0246328001_AM SAMPLE QTY : 1.269 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 96.306 | | CHAMBER : 081 DETECTOR S/N : 79996 AVERAGE %EFFICIENCY : 32.2195 COUNT DATE : 19-FEB-2010 15:53:22 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B081.CNF:1026 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W081.CNF:274 CAL DATE : 9-FEB-2010 |
|---|--|--|--|

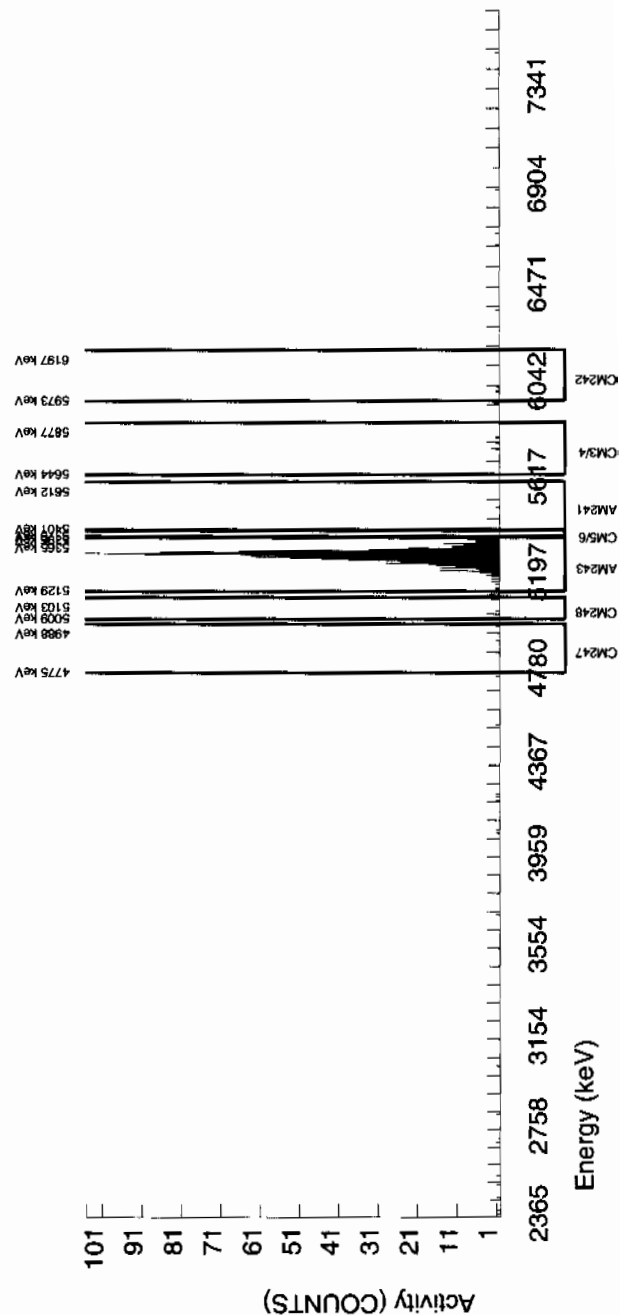
| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.8088E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G |
|---|---|---|

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 | 5503.975 | 9.147 | 2.000 | 0.429 | 0.000 | 2.8409 | 99.94000 | 4.91E-04 | 1.15E-03 | 7.56E-03 | 1.82E-02 | 1.14E-03 |
| AM243 | 5270.000 | 5289.613 | 31.550 | 903.000 | 903.000 | 0.000 | 0.0000 | 99.78000 | 1.04E+00 | 7.05E-02 | 0.00E+00 | 3.11E-03 | 3.45E-02 |
| CM-242 | 6102.000 | 6024.404 | 23.783 | 3.000 | 3.000 | 0.000 | 4.3413 | 100.0000 | 3.72E-03 | 2.16E-03 | 1.16E-02 | 2.62E-02 | 2.15E-03 |
| CM-3/4 | 5795.020 | 5786.849 | 7.165 | 7.000 | 7.000 | 0.000 | 5.1799 | 100.0000 | 8.02E-03 | 3.07E-03 | 1.38E-02 | 3.07E-02 | 3.03E-03 |
| CM-5/6 | 5386.000 | 5375.040 | 7.318 | 5.000 | 5.000 | 0.000 | 14.2480 | 86.09000 | 6.64E-03 | 3.00E-03 | 4.40E-02 | 9.17E-02 | 2.97E-03 |
| CM-247 | 4946.000 | 4907.255 | 0.000 | 4.000 | 3.000 | 1.000 | 13.7917 | 79.30000 | 4.33E-03 | 3.24E-03 | 4.63E-02 | 9.65E-02 | 3.23E-03 |
| CM-248 | 5078.600 | 5081.754 | 4.879 | 3.000 | 2.000 | 1.000 | 19.5080 | 91.00000 | 2.51E-03 | 2.52E-03 | 5.71E-02 | 1.18E-01 | 2.51E-03 |

NOTES:

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

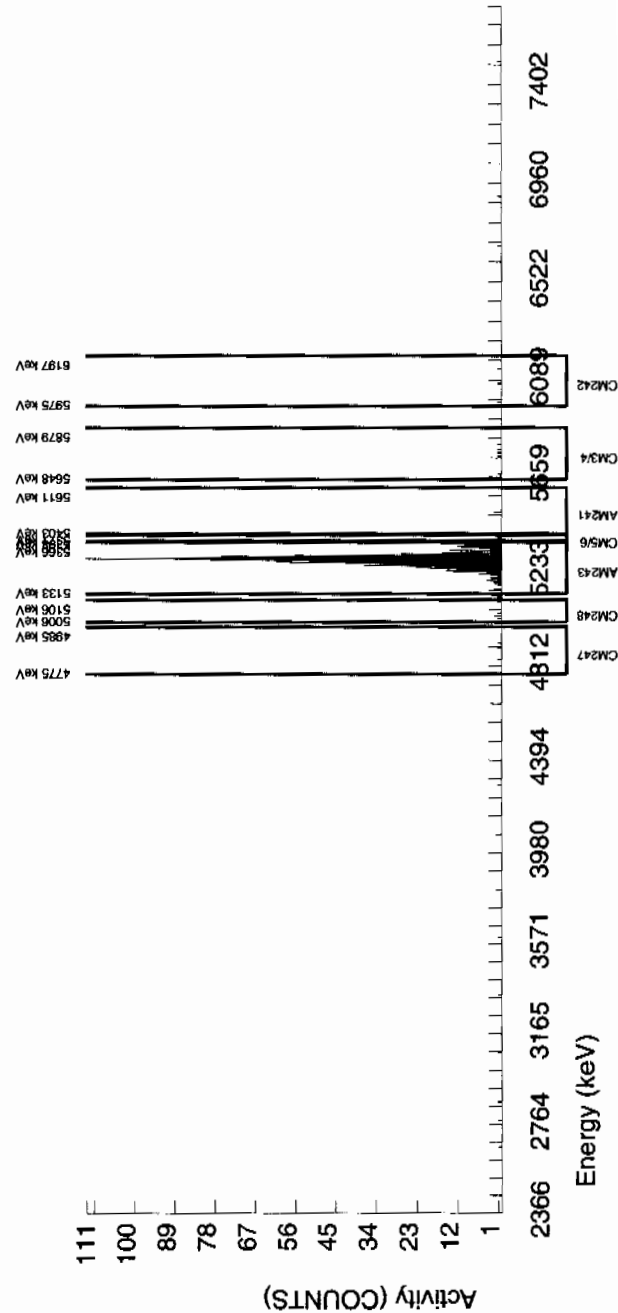
| | | |
|---|---|--|
| <p>BATCH NUMBER : 950643 SAMPLE ID : S0246328002_AM SAMPLE QTY : 1.259 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 92.035</p> | <p>CHAMBER : 082 DETECTOR S/N : 79997 AVERAGE %EFFICIENCY : 32.1841 COUNT DATE : 19-FEB-2010 15:53:22 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B082.CNF;1016 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W082.CNF;257 CAL DATE : 9-FEB-2010</p> |
|---|---|--|

| | | |
|--|---|---|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6843E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+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 |
| AM-241 | 5479.150 | 5504.117 | 4.942 | 2.000 | -1.500 | 2.000 | 2.8409 | 99.94000 | -1.81E-03 | 2.09E-03 |
| AM243 | 5270.000 | 5290.307 | 30.620 | 866.000 | 862.000 | 4.000 | 2.0000 | 99.78000 | 1.04E+00 | 7.21E-02 |
| CM-242 | 6102.000 | 6066.976 | 138.385 | 6.000 | 5.000 | 1.000 | 4.3413 | 100.00000 | 6.55E-03 | 3.49E-03 |
| CM-3/4 | 5795.020 | 5762.349 | 128.500 | 6.000 | 6.000 | 0.000 | 5.1799 | 100.00000 | 7.26E-03 | 3.00E-03 |
| CM-5/6 | 5386.000 | 5378.208 | 0.000 | 12.000 | 12.000 | 0.000 | 14.2480 | 86.09000 | 1.68E-02 | 4.96E-03 |
| CM-247 | 4946.000 | 4885.105 | 74.135 | 3.000 | 2.000 | 1.000 | 13.7917 | 79.30000 | 3.05E-03 | 3.05E-03 |
| CM-248 | 5078.600 | 5045.642 | 4.942 | 6.000 | 5.000 | 1.000 | 19.5080 | 91.00000 | 6.64E-03 | 3.53E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328003_AM SAMPLE QTY : 1.267 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 83.525</p> | <p>CHAMBER : 083 DETECTOR S/N : 64278 AVERAGE %EFFICIENCY : 34.7636 COUNT DATE : 19-FEB-2010 15:53:23 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B083.CNF;1023 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W083.CNF;292 CAL DATE : 9-FEB-2010</p> |
|---|---|--|

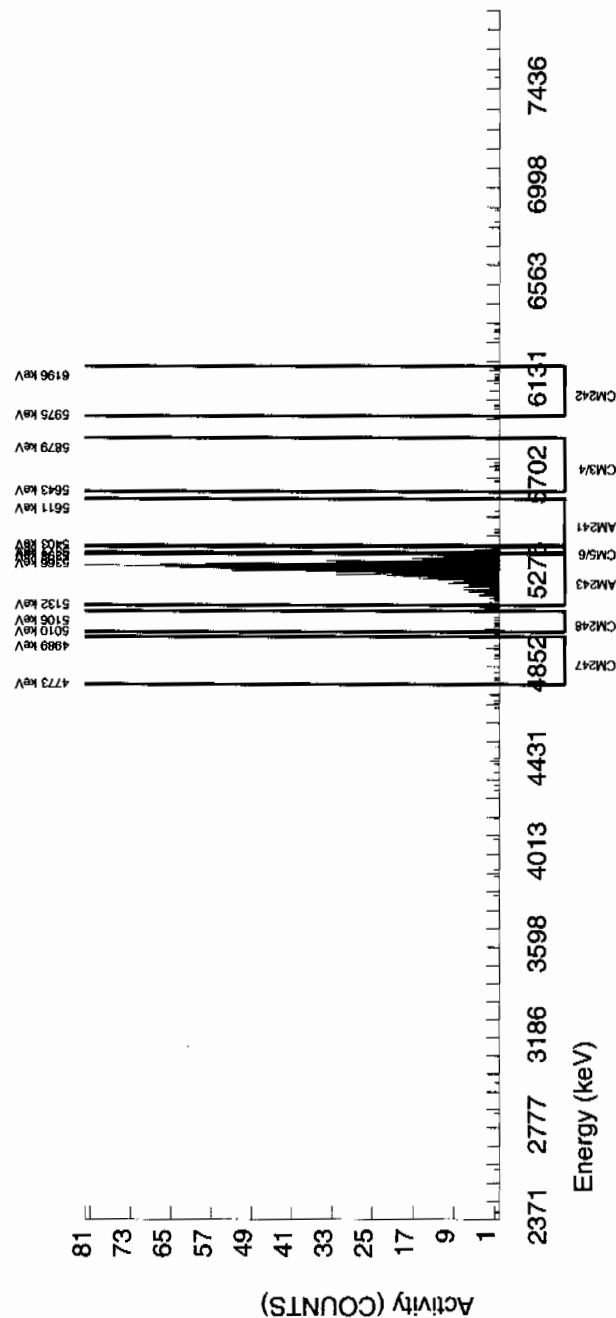
| | | |
|--|---|---|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4361E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> |
|--|---|---|

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 | 5474.294 | 5.063 | 8.000 | -4.470 | 11.000 | 2.8409 | 99.94000 | -5.48E-03 | 5.13E-03 | 8.10E-03 | 1.95E-02 | 5.13E-03 |
| AM243 | 5270.000 | 5298.389 | 37.734 | 846.000 | 845.000 | 1.000 | 1.0000 | 99.78000 | 1.04E+00 | 7.18E-02 | 2.85E-03 | 9.03E-03 | 3.57E-02 |
| CM-242 | 6102.000 | 6116.206 | 93.657 | 12.000 | 11.000 | 1.000 | 4.3413 | 100.0000 | 1.46E-02 | 4.87E-03 | 1.24E-02 | 2.81E-02 | 4.79E-03 |
| CM-3/4 | 5795.020 | 5739.790 | 10.125 | 10.000 | 2.000 | 8.000 | 5.1799 | 100.0000 | 2.45E-03 | 5.21E-03 | 1.48E-02 | 3.28E-02 | 5.21E-03 |
| CM-5/6 | 5386.000 | 5379.389 | 0.000 | 20.000 | 19.000 | 1.000 | 14.2480 | 86.09000 | 2.70E-02 | 6.72E-03 | 4.71E-02 | 9.81E-02 | 6.52E-03 |
| CM-247 | 4946.000 | 4892.415 | 0.000 | 9.000 | 5.000 | 4.000 | 13.7917 | 79.30000 | 7.72E-03 | 5.59E-03 | 4.95E-02 | 1.03E-01 | 5.57E-03 |
| CM-248 | 5078.600 | 5053.206 | 8.596 | 12.000 | 10.000 | 2.000 | 19.5080 | 91.00000 | 1.35E-02 | 5.10E-03 | 6.11E-02 | 1.26E-01 | 5.03E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328004_AM SAMPLE QTY : 1.265 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 86.383 | CHAMBER : 084 DETECTOR S/N : 78265 AVERAGE %EFFICIENCY : 33.6931 COUNT DATE : 19-FEB-2010 15:53:23 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B084.CNF;1021 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W084.CNF;295 CAL DATE : 9-FEB-2010 |
|---|--|--|

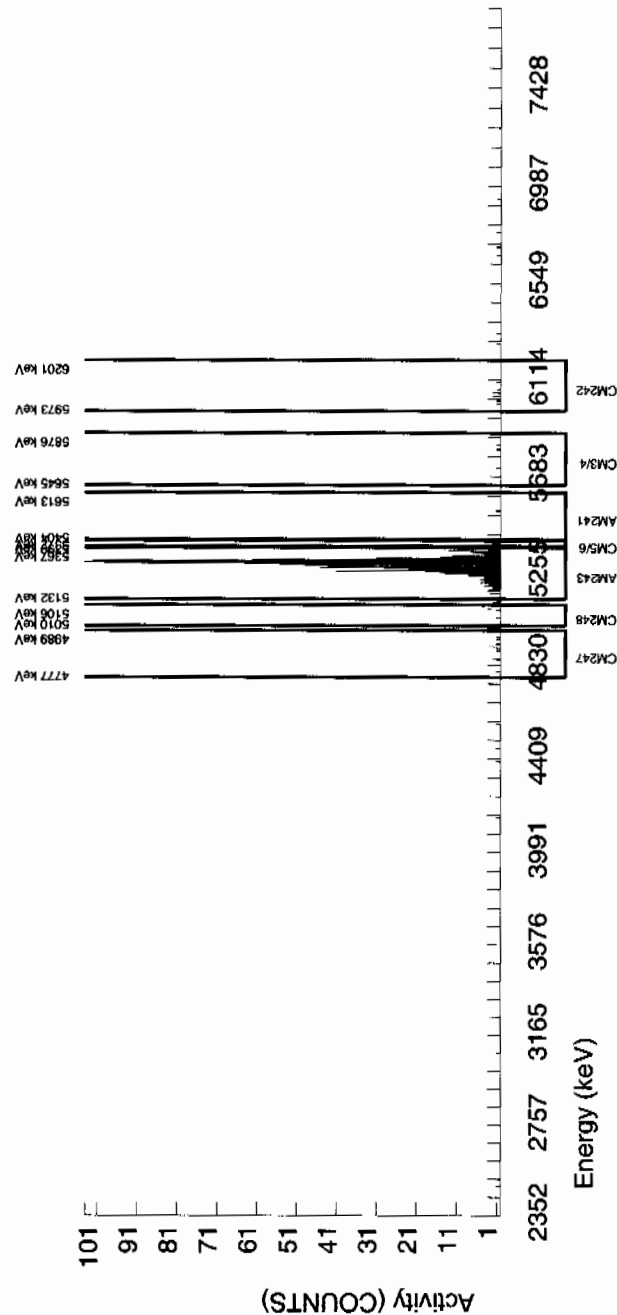
| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5194E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G |
|---|---|---|

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 | 5514.657 | 65.461 | 3.000 | 1.526 | 0.000 | 2.8409 | 99.94000 | 1.87E-03 | 1.52E-03 | 8.09E-03 | 1.95E-02 | 1.51E-03 |
| AM243 | 5270.000 | 5294.793 | 24.573 | 848.000 | 847.000 | 1.000 | 1.0000 | 99.78000 | 1.04E+00 | 7.19E-02 | 2.85E-03 | 9.03E-03 | 3.57E-02 |
| CM-242 | 6102.000 | 6050.319 | 20.142 | 9.000 | 9.000 | 0.000 | 4.3413 | 100.0000 | 1.19E-02 | 4.04E-03 | 1.24E-02 | 2.80E-02 | 3.98E-03 |
| CM-3/4 | 5795.020 | 5802.768 | 140.994 | 6.000 | 6.000 | 0.000 | 5.1799 | 100.0000 | 7.36E-03 | 3.04E-03 | 1.47E-02 | 3.28E-02 | 3.00E-03 |
| CM-5/6 | 5386.000 | 5381.212 | 0.000 | 21.000 | 21.000 | 0.000 | 14.2480 | 86.09000 | 2.98E-02 | 6.75E-03 | 4.71E-02 | 9.81E-02 | 6.51E-03 |
| CM-247 | 4946.000 | 4905.559 | 7.396 | 11.000 | 9.000 | 2.000 | 13.7917 | 79.30000 | 1.39E-02 | 5.62E-03 | 4.95E-02 | 1.03E-01 | 5.56E-03 |
| CM-248 | 5078.600 | 5087.086 | 0.000 | 4.000 | 2.000 | 2.000 | 19.5080 | 91.00000 | 2.69E-03 | 3.30E-03 | 6.10E-02 | 1.26E-01 | 3.29E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328005_AM SAMPLE QTY : 1.258 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 91.332 | | CHAMBER : 085 DETECTOR S/N : 78776 AVERAGE %EFFICIENCY : 31.5289 COUNT DATE : 19-FEB-2010 15:53:23 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B085.CNF:1024 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W085.CNF:302 CAL DATE : 9-FEB-2010 |
|---|--|---|--|

| | | |
|--|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6637E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+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 | 5493.481 | 130.573 | 6.000 | 3.542 | 1.000 | 2.8409 | 99.94000 | 4.41E-03 | 2.94E-03 | 8.22E-03 | 1.98E-02 | 2.93E-03 |
| AM243 | 5270.000 | 5288.340 | 30.945 | 838.000 | 838.000 | 0.000 | 0.0000 | 99.78000 | 1.04E+00 | 7.25E-02 | 0.00E+00 | 3.38E-03 | 3.61E-02 |
| CM-242 | 6102.000 | 6051.523 | 5.022 | 3.000 | 3.000 | 0.000 | 4.3413 | 100.0000 | 4.04E-03 | 2.35E-03 | 1.26E-02 | 2.85E-02 | 2.34E-03 |
| CM-3/4 | 5795.020 | 5773.835 | 7.376 | 8.000 | 7.000 | 1.000 | 5.1799 | 100.0000 | 8.72E-03 | 3.77E-03 | 1.50E-02 | 3.33E-02 | 3.74E-03 |
| CM-5/6 | 5386.000 | 5372.796 | 0.000 | 11.000 | 11.000 | 0.000 | 14.2480 | 86.09000 | 1.59E-02 | 4.88E-03 | 4.79E-02 | 9.97E-02 | 4.79E-03 |
| CM-247 | 4946.000 | 4907.096 | 140.617 | 5.000 | 2.000 | 3.000 | 13.7917 | 79.30000 | 3.14E-03 | 4.44E-03 | 5.03E-02 | 1.05E-01 | 4.44E-03 |
| CM-248 | 5078.600 | 5062.192 | 0.000 | 5.000 | 5.000 | 0.000 | 19.5080 | 91.00000 | 6.83E-03 | 3.08E-03 | 6.20E-02 | 1.28E-01 | 3.06E-03 |

NOTES:

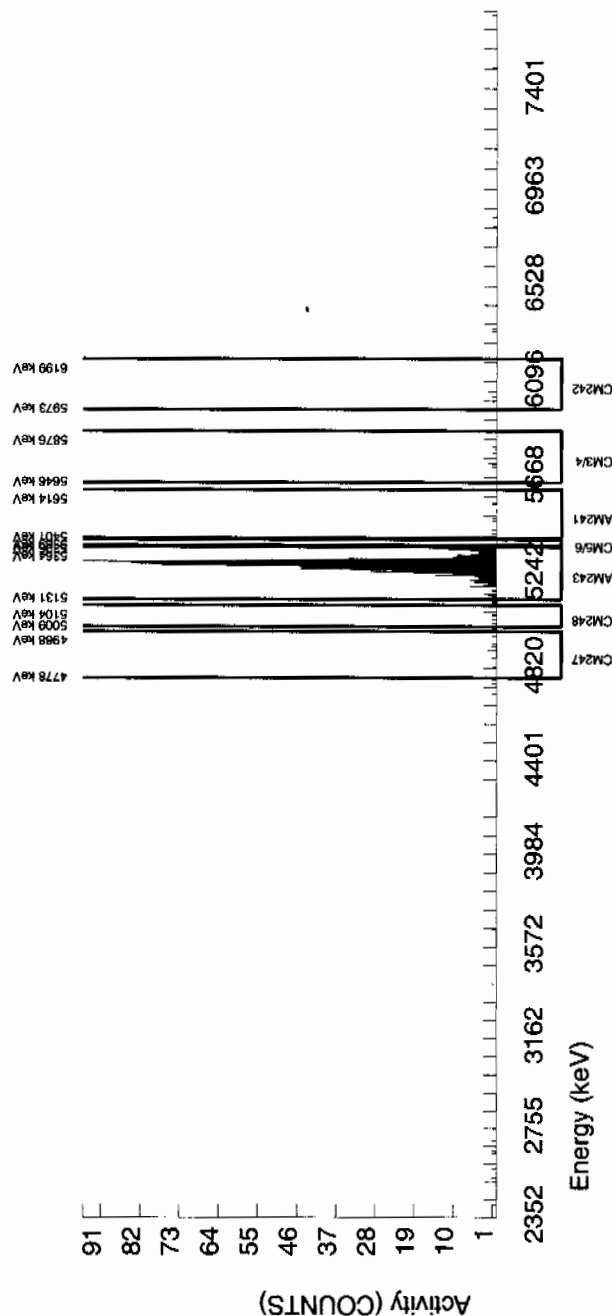
* Sg calculated via blank population.

(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328006_AM SAMPLE QTY : 1.254 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 90.354</p> | <p>CHAMBER : 086 DETECTOR S/N : 78198 AVERAGE %EFFICIENCY : 29.4361 COUNT DATE : 19-FEB-2010 15:53:23 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B086.CNF;1023 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W086.CNF;283 CAL DATE : 9-FEB-2010</p> |
|--|---|---|

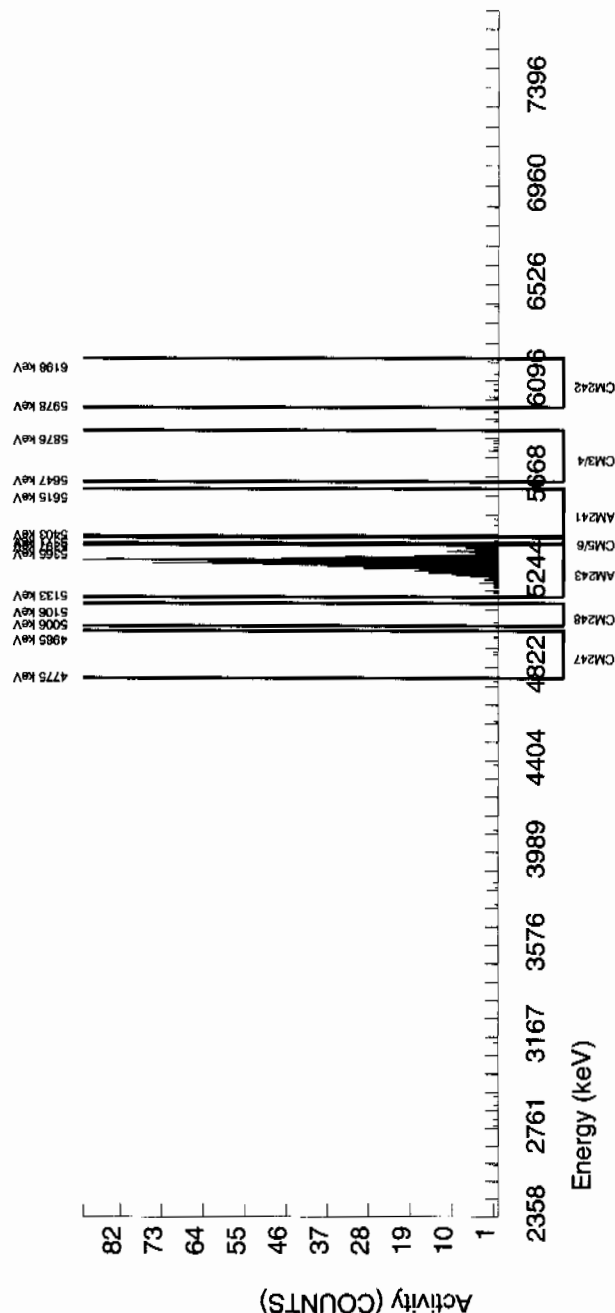
| | | |
|--|--|--|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6352E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> |
|--|--|--|

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 | 5480.297 | 50.206 | 3.000 | 1.653 | 0.000 | 2.8409 | 99.94000 | 2.23E-03 | 1.74E-03 | 8.93E-03 | 2.15E-02 | 1.74E-03 |
| AM243 | 5270.000 | 5289.994 | 32.314 | 776.000 | 774.000 | 2.000 | 1.4142 | 99.78000 | 1.05E+00 | 7.43E-02 | 4.45E-03 | 1.26E-02 | 3.78E-02 |
| CM-242 | 6102.000 | 6056.076 | 7.374 | 8.000 | 6.000 | 2.000 | 4.3413 | 100.0000 | 8.79E-03 | 4.66E-03 | 1.36E-02 | 3.09E-02 | 4.63E-03 |
| CM-3/4 | 5795.020 | 5787.389 | 10.041 | 8.000 | 8.000 | 0.000 | 5.1799 | 100.0000 | 1.08E-02 | 3.88E-03 | 1.63E-02 | 3.62E-02 | 3.83E-03 |
| CM-5/6 | 5386.000 | 5376.592 | 0.000 | 18.000 | 18.000 | 0.000 | 14.2480 | 86.09000 | 2.82E-02 | 6.88E-03 | 5.20E-02 | 1.08E-01 | 6.66E-03 |
| CM-247 | 4946.000 | 4884.424 | 0.000 | 6.000 | 5.000 | 1.000 | 13.7917 | 79.30000 | 8.52E-03 | 4.54E-03 | 5.46E-02 | 1.14E-01 | 4.51E-03 |
| CM-248 | 5078.600 | 5027.339 | 5.021 | 1.000 | 1.000 | 0.000 | 19.5080 | 91.00000 | 1.48E-03 | 1.49E-03 | 6.74E-02 | 1.39E-01 | 1.48E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328007_AM SAMPLE QTY : 1.257 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 83.276 | CHAMBER : 087 DETECTOR S/N : 78199 AVERAGE %EFFICIENCY : 30.6587 COUNT DATE : 19-FEB-2010 15:53:23 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B087.CNF:1030 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W087.CNF:276 CAL DATE : 9-FEB-2010 |
|---|--|--|

| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.4288E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+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 | 5501.138 | 7.268 | 11.000 | 1.707 | 8.000 | 2.8409 | 99.94000 | 2.40E-03 | 5.91E-03 | 9.28E-03 | 2.24E-02 | 5.91E-03 |
| AM243 | 5270.000 | 5287.412 | 30.536 | 746.000 | 743.000 | 3.000 | 1.7321 | 99.78000 | 1.05E+00 | 7.49E-02 | 5.67E-03 | 1.51E-02 | 3.85E-02 |
| CM-242 | 6102.000 | 6023.635 | 24.741 | 3.000 | 3.000 | 0.000 | 4.3413 | 100.0000 | 4.57E-03 | 2.65E-03 | 1.42E-02 | 3.22E-02 | 2.64E-03 |
| CM-3/4 | 5795.020 | 5763.526 | 0.000 | 4.000 | 3.000 | 1.000 | 5.1799 | 100.0000 | 4.22E-03 | 3.16E-03 | 1.69E-02 | 3.76E-02 | 3.14E-03 |
| CM-5/6 | 5386.000 | 5377.084 | 0.000 | 14.000 | 14.000 | 0.000 | 14.2480 | 86.09000 | 2.28E-02 | 6.26E-03 | 5.40E-02 | 1.12E-01 | 6.10E-03 |
| CM-247 | 4946.000 | 4896.957 | 158.341 | 4.000 | 3.000 | 1.000 | 13.7917 | 79.30000 | 5.31E-03 | 3.97E-03 | 5.68E-02 | 1.18E-01 | 3.96E-03 |
| CM-248 | 5078.600 | 5059.936 | 56.749 | 9.000 | 6.000 | 3.000 | 19.5080 | 91.00000 | 9.25E-03 | 5.37E-03 | 7.00E-02 | 1.44E-01 | 5.34E-03 |

NOTES:

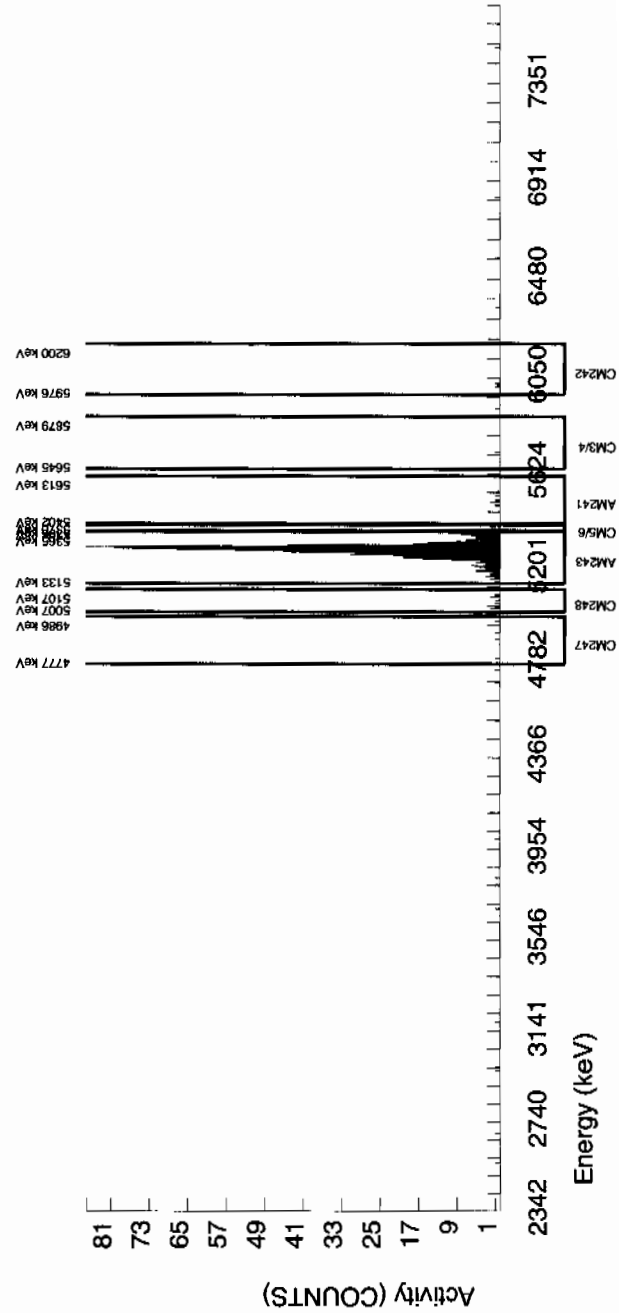
* Sg calculated via blank population.

(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328008_AM SAMPLE QTY : 1.269 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 90.130 | CHAMBER : 088 DETECTOR S/N : 33452 AVERAGE %EFFICIENCY : 30.3479 COUNT DATE : 19-FEB-2010 15:53:23 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B088.CNF:1018 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W088.CNF:286 CAL DATE : 9-FEB-2010 |
|---|---|--|

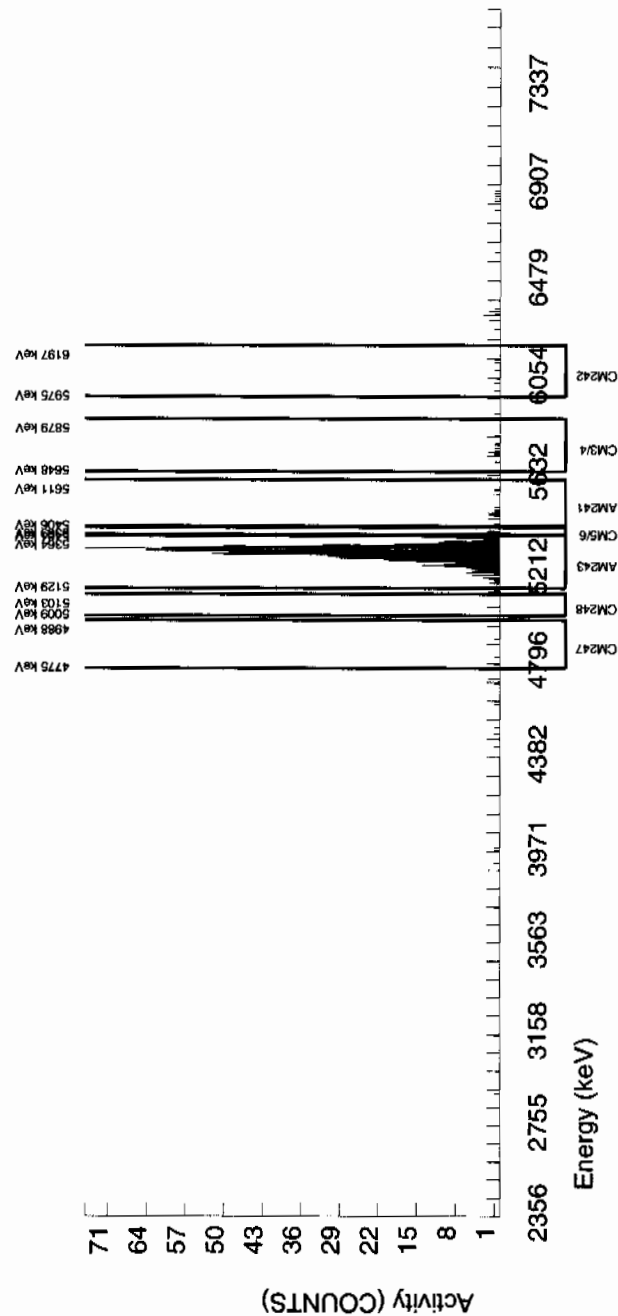
| | | |
|--|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6287E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G |
|--|---|---|

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 | 5478.252 | 22.404 | 13.000 | -0.385 | 12.000 | 2.8409 | 99.94000 | -5.00E-04 | 6.31E-03 | 8.58E-03 | 2.07E-02 | 6.31E-03 |
| AM243 | 5270.000 | 5291.974 | 41.572 | 798.000 | 796.000 | 2.000 | 1.4142 | 99.78000 | 1.04E+00 | 7.29E-02 | 4.28E-03 | 1.21E-02 | 3.68E-02 |
| CM-242 | 6102.000 | 6087.951 | 134.426 | 7.000 | 2.000 | 5.000 | 4.3413 | 100.0000 | 2.81E-03 | 4.88E-03 | 1.31E-02 | 2.97E-02 | 4.87E-03 |
| CM-3/4 | 5795.020 | 5741.573 | 22.249 | 14.000 | 6.000 | 8.000 | 5.1799 | 100.0000 | 7.80E-03 | 6.12E-03 | 1.56E-02 | 3.48E-02 | 6.10E-03 |
| CM-5/6 | 5386.000 | 5378.225 | 0.000 | 16.000 | 10.000 | 6.000 | 14.2480 | 86.09000 | 1.51E-02 | 7.13E-03 | 5.00E-02 | 1.04E-01 | 7.07E-03 |
| CM-247 | 4946.000 | 4844.397 | 114.511 | 3.000 | 3.000 | 0.000 | 13.7917 | 79.30000 | 4.91E-03 | 2.85E-03 | 5.25E-02 | 1.09E-01 | 2.83E-03 |
| CM-248 | 5078.600 | 5014.272 | 4.979 | 1.000 | -1.000 | 2.000 | 19.5080 | 91.00000 | -1.43E-03 | 2.47E-03 | 6.47E-02 | 1.33E-01 | 2.47E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246328009_AM SAMPLE QTY : 1.279 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 90.285 | | CHAMBER : 089 DETECTOR S/N : 78262 AVERAGE %EFFICIENCY : 29.4965 COUNT DATE : 19-FEB-2010 15:53:24 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B089.CNF:717 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W089.CNF:195 CAL DATE : 9-FEB-2010 |
|---|--|---|---|

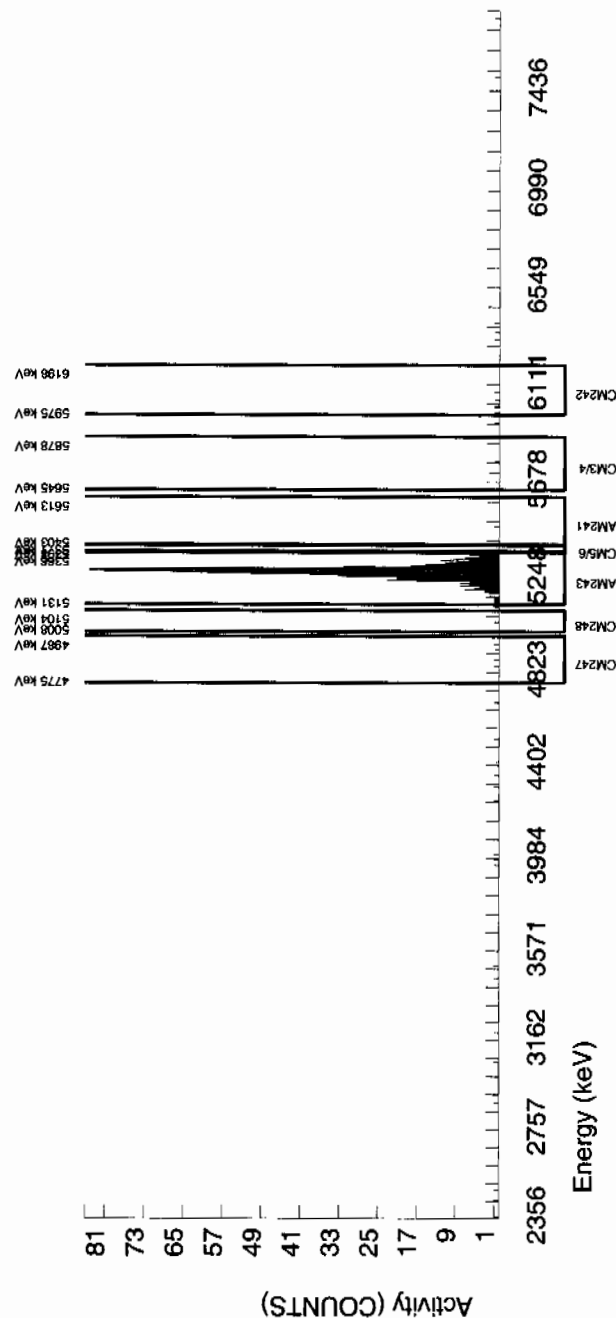
| | | |
|--|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6332E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G |
|--|---|---|

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 | 5489.283 | 4.988 | 1.000 | -3.349 | 3.000 | 2.8409 | 99.94000 | -4.43E-03 | 2.65E-03 | 8.75E-03 | 2.11E-02 | 2.65E-03 |
| AM243 | 5270.000 | 5282.460 | 31.859 | 777.000 | 775.000 | 2.000 | 1.4142 | 99.78000 | 1.03E+00 | 7.29E-02 | 4.36E-03 | 1.23E-02 | 3.70E-02 |
| CM-242 | 6102.000 | 6038.563 | 89.787 | 6.000 | 6.000 | 0.000 | 4.3413 | 100.0000 | 8.60E-03 | 3.55E-03 | 1.34E-02 | 3.03E-02 | 3.51E-03 |
| CM-3/4 | 5795.020 | 5749.153 | 4.988 | 4.000 | 3.000 | 1.000 | 5.1799 | 100.0000 | 3.98E-03 | 2.97E-03 | 1.59E-02 | 3.55E-02 | 2.96E-03 |
| CM-5/6 | 5386.000 | 5376.638 | 4.988 | 2.000 | 2.000 | 0.000 | 14.2480 | 86.09000 | 3.07E-03 | 2.18E-03 | 5.09E-02 | 1.06E-01 | 2.17E-03 |
| CM-247 | 4946.000 | 4874.063 | 164.610 | 6.000 | 3.000 | 3.000 | 13.7917 | 79.30000 | 5.00E-03 | 5.01E-03 | 5.35E-02 | 1.12E-01 | 5.00E-03 |
| CM-248 | 5078.600 | 5053.669 | 9.353 | 2.000 | -1.000 | 3.000 | 19.5080 | 91.00000 | -1.45E-03 | 3.25E-03 | 6.60E-02 | 1.36E-01 | 3.25E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S0246341001_AM SAMPLE QTY : 1.266 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 92.288 | CHAMBER : 090 DETECTOR S/N : 78263 AVERAGE %EFFICIENCY : 32.5428 COUNT DATE : 19-FEB-2010 15:53:24 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B090.CNF:725 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W090.CNF:201 CAL DATE : 9-FEB-2010 |
|---|--|---|

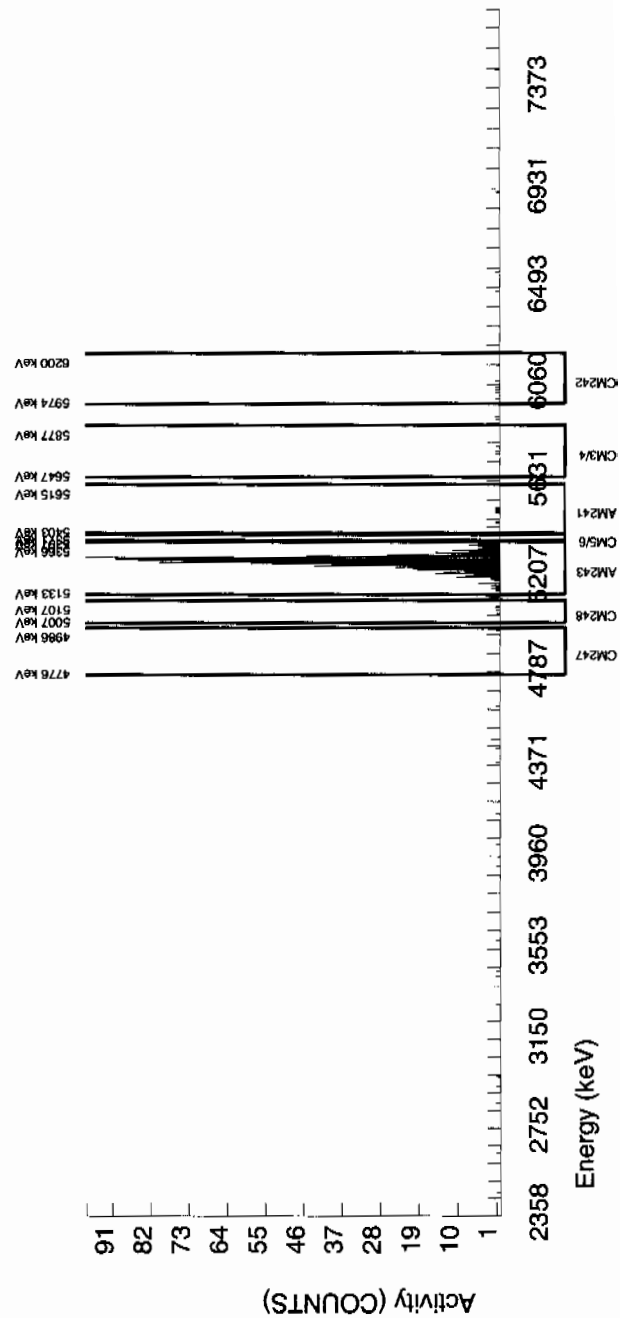
| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6916E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G |
|---|---|---|

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 | 5474.801 | 4.894 | 10.000 | 8.479 | 0.000 | 2.8409 | 99.94000 | 1.01E-02 | 3.51E-03 | 7.83E-03 | 1.89E-02 | 3.45E-03 |
| AM243 | 5270.000 | 5283.189 | 30.727 | 875.000 | 874.000 | 1.000 | 1.0000 | 99.78000 | 1.04E+00 | 7.28E-02 | 2.76E-03 | 8.74E-03 | 3.51E-02 |
| CM-242 | 6102.000 | 6043.055 | 78.303 | 6.000 | 5.000 | 1.000 | 4.3413 | 100.0000 | 6.42E-03 | 3.42E-03 | 1.20E-02 | 2.71E-02 | 3.40E-03 |
| CM-3/4 | 5795.020 | 5768.395 | 34.258 | 3.000 | 2.000 | 1.000 | 5.1799 | 100.0000 | 2.37E-03 | 2.38E-03 | 1.43E-02 | 3.18E-02 | 2.37E-03 |
| CM-5/6 | 5386.000 | 5384.054 | 0.000 | 0.000 | 0.000 | 0.000 | 14.2480 | 86.09000 | 0.00E+00 | 1.38E-03 | 4.56E-02 | 9.50E-02 | 1.38E-03 |
| CM-247 | 4946.000 | 4921.088 | 0.000 | 3.000 | 0.000 | 3.000 | 13.7917 | 79.30000 | 3.56E-10 | 3.66E-03 | 4.79E-02 | 9.99E-02 | 3.66E-03 |
| CM-248 | 5078.600 | 5067.225 | 0.000 | 6.000 | 6.000 | 0.000 | 19.5080 | 91.00000 | 7.81E-03 | 3.22E-03 | 5.91E-02 | 1.22E-01 | 3.19E-03 |

NOTES:

- * Sg calculated via blank population.
 (Sg updated 10-FEB-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 : 950643 SAMPLE ID : S1202037247_AM SAMPLE QTY : 1.000 G SAMPLE DATE : 16-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 87.353 | | CHAMBER : 101 DETECTOR S/N : 64253 AVERAGE %EFFICIENCY : 33.7124 COUNT DATE : 19-FEB-2010 15:53:26 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B101.CNF:682 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W101.CNF:180 CAL DATE : 9-FEB-2010 |
|---|--|--|---|

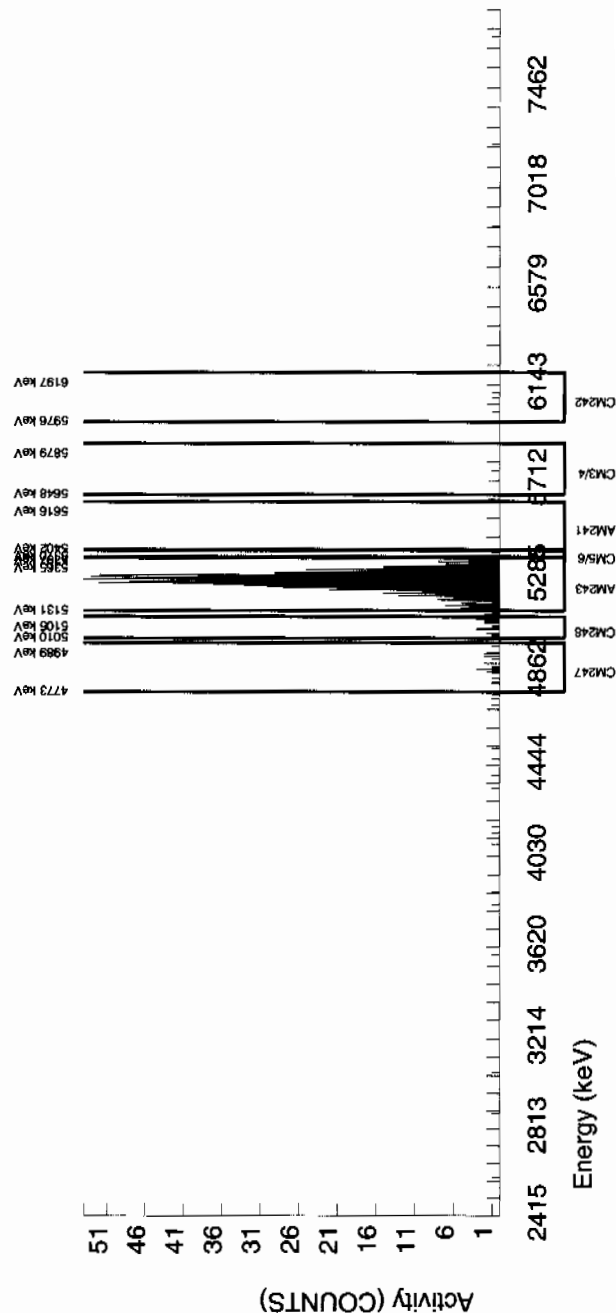
| | | |
|---|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.5477E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G |
|---|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5508.673 | 0.000 | 0.000 | -1.491 | 0.000 | 2.8409 | 99.94000 | -2.28E-03 | 1.53E-03 | 1.01E-02 | 2.44E-02 | 1.53E-03 |
| AM243 | 5270.000 | 5265.958 | 65.570 | 857.000 | 857.000 | 0.000 | 0.0000 | 99.78000 | 1.31E+00 | 9.07E-02 | 0.00E+00 | 4.15E-03 | 4.49E-02 |
| CM-242 | 6102.000 | 6072.854 | 79.003 | 4.000 | 4.000 | 0.000 | 4.3413 | 100.0000 | 6.22E-03 | 3.13E-03 | 1.54E-02 | 3.50E-02 | 3.11E-03 |
| CM-3/4 | 5795.020 | 5760.306 | 4.938 | 1.000 | 0.000 | 1.000 | 5.1799 | 100.0000 | 0.00E+00 | 2.17E-03 | 1.84E-02 | 4.10E-02 | 2.16E-03 |
| CM-5/6 | 5386.000 | 5379.681 | 6.121 | 5.000 | 5.000 | 0.000 | 14.2480 | 86.09000 | 8.88E-03 | 4.01E-03 | 5.89E-02 | 1.23E-01 | 3.97E-03 |
| CM-247 | 4946.000 | 4896.948 | 70.362 | 19.000 | 17.000 | 2.000 | 13.7917 | 79.30000 | 3.28E-02 | 9.06E-03 | 6.19E-02 | 1.29E-01 | 8.84E-03 |
| CM-248 | 5078.600 | 5066.877 | 48.760 | 21.000 | 21.000 | 0.000 | 19.5080 | 91.00000 | 3.53E-02 | 7.99E-03 | 7.63E-02 | 1.57E-01 | 7.70E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S1202037248_AM SAMPLE QTY : 1.265 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 89.867</p> | <p>CHAMBER : 102 DETECTOR S/N : 72525 AVERAGE %EFFICIENCY : 32.7311 COUNT DATE : 19-FEB-2010 15:53:26 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_AM BKG FILE : B102.CNF:680 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W102.CNF:194 CAL DATE : 9-FEB-2010</p> |
|--|---|--|

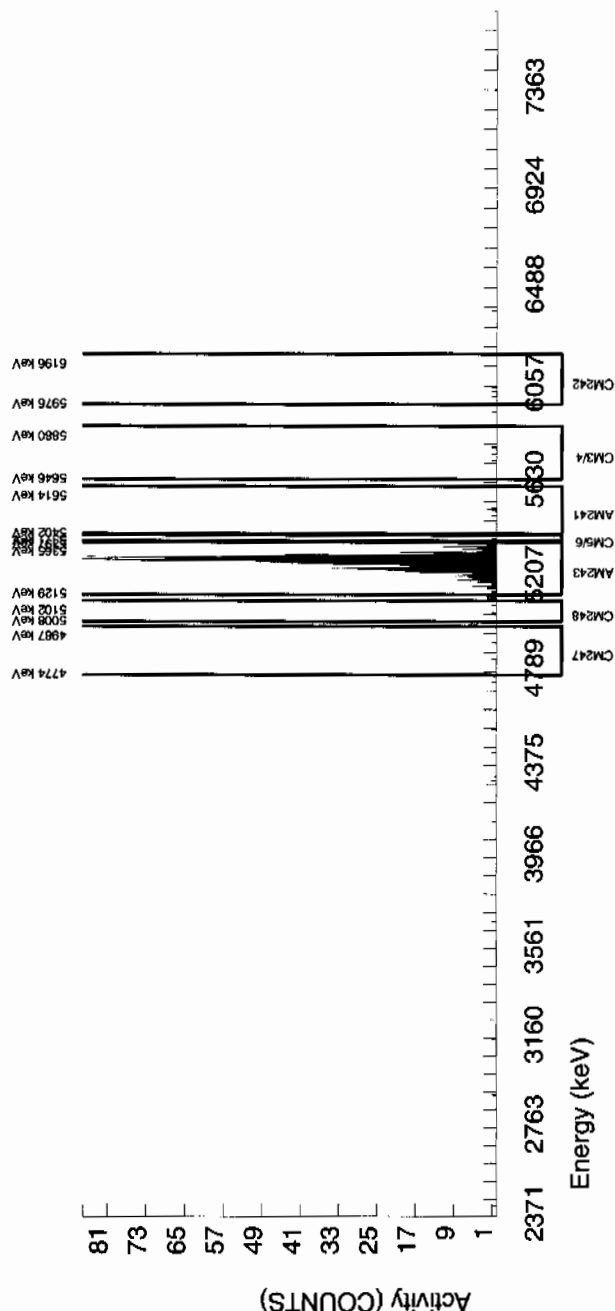
| | | |
|--|--|--|
| <p>TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.6210E+00 dpm</p> | <p>MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> | <p>LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3155E+01 pCi/G</p> |
|--|--|--|

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 | 5511.207 | 7.160 | 5.000 | 3.510 | 0.000 | 2.8409 | 99.94000 | 4.25E-03 | 2.28E-03 | 8.01E-03 | 1.93E-02 | 2.27E-03 |
| AM243 | 5270.000 | 5280.869 | 34.148 | 858.000 | 856.000 | 2.000 | 1.4142 | 99.78000 | 1.04E+00 | 7.18E-02 | 3.99E-03 | 1.13E-02 | 3.56E-02 |
| CM-242 | 6102.000 | 6036.723 | 43.872 | 4.000 | 3.000 | 1.000 | 4.3413 | 100.0000 | 3.94E-03 | 2.94E-03 | 1.22E-02 | 2.77E-02 | 2.93E-03 |
| CM-3/4 | 5795.020 | 5770.877 | 58.495 | 4.000 | 4.000 | 0.000 | 5.1799 | 100.0000 | 4.85E-03 | 2.44E-03 | 1.46E-02 | 3.25E-02 | 2.43E-03 |
| CM-5/6 | 5386.000 | 5375.157 | 0.000 | 7.000 | 7.000 | 0.000 | 14.2480 | 86.09000 | 9.84E-03 | 3.77E-03 | 4.66E-02 | 9.70E-02 | 3.72E-03 |
| CM-247 | 4946.000 | 4833.440 | 0.000 | 4.000 | 4.000 | 0.000 | 13.7917 | 79.30000 | 6.11E-03 | 3.08E-03 | 4.90E-02 | 1.02E-01 | 3.05E-03 |
| CM-248 | 5078.600 | 5083.245 | 0.000 | 6.000 | 6.000 | 0.000 | 19.5080 | 91.00000 | 7.98E-03 | 3.29E-03 | 6.04E-02 | 1.24E-01 | 3.26E-03 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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 : 950643 SAMPLE ID : S1202037249_AM SAMPLE QTY : 0.100 G SAMPLE DATE : 16-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 92.595 | CHAMBER : 103 DETECTOR S/N : 79461 AVERAGE %EFFICIENCY : 32.6574 COUNT DATE : 19-FEB-2010 15:53:26 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_AM BKG FILE : B103.CNF:684 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W103.CNF:198 CAL DATE : 9-FEB-2010 |
|---|---|---|

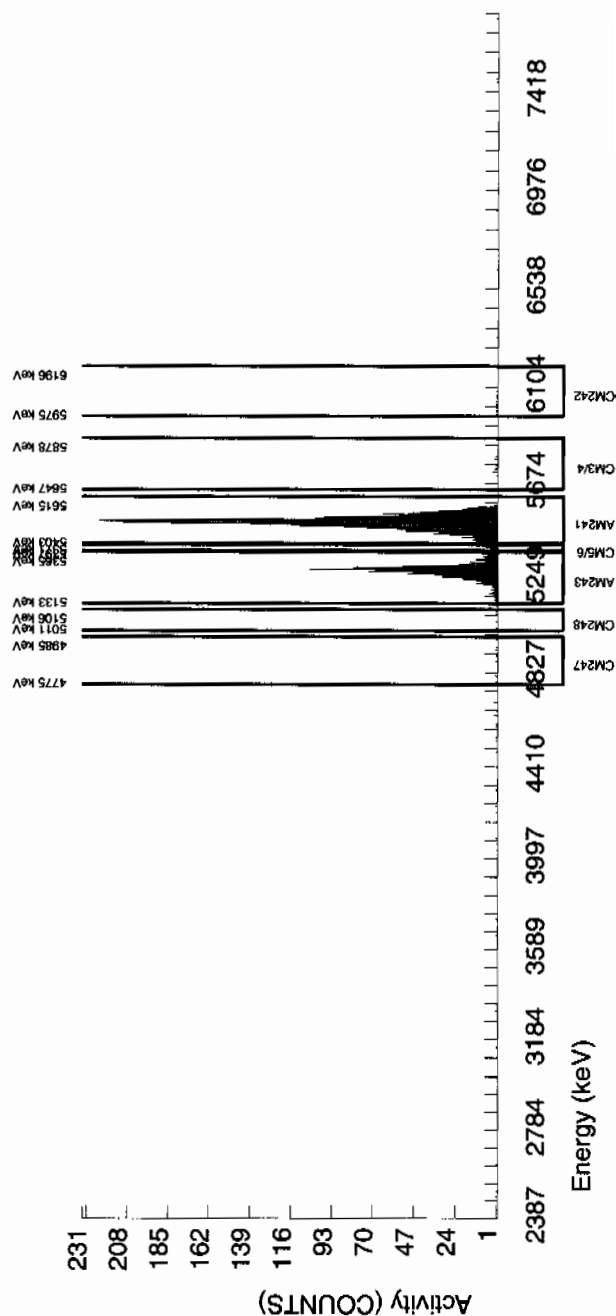
| | | |
|--|---|---|
| TRACER ID : 445-96-2-SS NUCLIDE : AM243 NOMINAL : 2.9166E+00 dpm RESULTS : 2.7006E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : AM-241 NOMINAL : 3.3153E+01 pCi/G |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|---------|----------|----------------|-------------|-----------|-----------|-----------|
| AM-241 | 5479.150 | 5502.414 | 32.487 | 2289.000 | 2287.469 | 0.000 | 2.8409 | 99.94000 | 3.41E+01 | 2.16E+00 | 9.85E-02 | 2.37E-01 | 7.13E-01 |
| AM243 | 5270.000 | 5283.376 | 28.493 | 881.000 | 880.000 | 1.000 | 1.0000 | 99.78000 | 1.31E+01 | 9.03E-01 | 3.47E-02 | 1.10E-01 | 4.43E-01 |
| CM-242 | 6102.000 | 6040.914 | 98.529 | 12.000 | 12.000 | 0.000 | 4.3413 | 100.0000 | 1.82E-01 | 5.36E-02 | 1.50E-01 | 3.41E-01 | 5.25E-02 |
| CM-3/4 | 5795.020 | 5754.447 | 57.886 | 11.000 | 11.000 | 0.000 | 5.1799 | 100.0000 | 1.64E-01 | 5.04E-02 | 1.80E-01 | 3.99E-01 | 4.94E-02 |
| CM-5/6 | 5386.000 | 5385.801 | 0.000 | 34.000 | 34.000 | 0.000 | 14.2480 | 86.09000 | 5.88E-01 | 1.07E-01 | 5.74E-01 | 1.19E+00 | 1.01E-01 |
| CM-247 | 4946.000 | 4885.758 | 4.926 | 9.000 | 8.000 | 1.000 | 13.7917 | 79.30000 | 1.50E-01 | 6.01E-02 | 6.03E-01 | 1.26E+00 | 5.94E-02 |
| CM-248 | 5078.600 | 5078.003 | 0.000 | 6.000 | 4.000 | 2.000 | 19.5080 | 91.00000 | 6.55E-02 | 4.65E-02 | 7.43E-01 | 1.53E+00 | 4.63E-02 |

NOTES:

- * Sg calculated via blank population.
(Sg updated 10-FEB-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# 980644 Product: Pu Date: 2/21/10

| 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 statused. | ✓ | | |
| QC data entered into QC database and batch is in REVW | ✓ | | |
| Hit notification complete (if necessary) | | | N/A |
| Batch entered into Case Narrative. | ✓ | | |
| Batch Data Exception Reports (DER) completed, if applicable. | | | N/A |
| Batch Data Exception Reports (DER) second reviewed and disposition verified to be completed. | | | N/A |
| Aliquot Correction completed if required. | | | N/A |
| Review sample historical results if available (If REMF, results above MDC have been verified by historical results, recount or re-analysis.) | ✓ | | |

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: [Signature] 2/21/10

Secondary Review Performed By: JopLML 2/22/10

LANL

Plutonium Que Sheet

08-FEB-10

Batch #: 950644 Analyst: JXD2 First Client Due Date: 26-FEB-10 Internal Due Date: 16-FEB-10

Tracer Isotope(s): Pu-239/Pu-238 Tracer Code: 1575-A Expiration Date: 01/03/11 Vol: 0.1
 LCS Isotope(s): Pu-239/Pu-238 LCS Code: Expiration Date: Vol:
 Spike Isotope(s): Pu-239/Pu-238 Spike Code: Expiration Date: Vol:
 Prep Date: 02/04/10 Initials: JXD0 Pipet ID: 2771058 Balance ID: 50710272

Witness: JXD0 2-16-10

| Sample ID | Client Description | Type | Hazard Code | Min CRDL | Matrix | Client | Collection Date | Pos. | Label # | Wet/Ally | Aliquot | Pu Det # |
|--------------|----------------------------|--------|-------------|----------|--------|------------|-----------------|------|---------|----------|---------|----------|
| 246312001-1 | RE16-10-1313 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 29-JAN-10 | 1 | 1 | 1.274 | 13 | |
| 246328001-1 | RE15-10-7332 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 2 | 2 | 1.269 | 14 | |
| 246328002-1 | RE15-10-7333 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 3 | 3 | 1.259 | 16 | |
| 246328003-1 | RE15-10-7336 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 4 | 4 | 1.267 | 17 | |
| 246328004-1 | RE15-10-7337 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 5 | 5 | 1.265 | 18 | |
| 246328005-1 | RE15-10-7334 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 6 | 6 | 1.258 | 31 | |
| 246328006-1 | RE15-10-7335 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 7 | 7 | 1.254 | 33 | |
| 246328007-1 | RE15-10-7338 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 8 | 8 | 1.257 | 35 | |
| 246328008-1 | RE15-10-7339 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 9 | 9 | 1.269 | 36 | |
| 246328009-1 | RE15-10-7342 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 10 | 10 | 1.279 | 77 | |
| 246341001-1 | RE15-10-8304 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 11 | 11 | 1.266 | 79 | |
| 246341002-1 | RE15-10-8305 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 12 | 12 | 1.252 | 80 | |
| 246341003-1 | RE15-10-8306 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 13 | 13 | 1.273 | 81 | |
| 246341004-1 | RE15-10-8307 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 14 | 14 | 1.272 | 82 | |
| 246341005-1 | RE15-10-8309 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 15 | 15 | 1.268 | 107 | |
| 246341006-1 | RE15-10-8308 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 16 | 16 | 1.279 | 108 | |
| 246341007-1 | RE15-10-8301 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 17 | 17 | 1.257 | 109 | |
| 246341008-1 | RE15-10-8300 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 18 | 18 | 1.290 | 111 | |
| 246341009-1 | RE15-10-8324 | SAMPLE | .05 pCi/g | | SOIL | LANL010 | 01-FEB-10 | 19 | 19 | 1.276 | 112 | |
| 1202037250-1 | MB for batch 950644 | MB | .05 pCi/g | | SOIL | QC ACCOUNT | | 20 | 20 | 1 | 253 | |
| 1202037251-1 | RE15-10-8304(246341001DUP) | DUP | .05 pCi/g | | SOIL | QC ACCOUNT | | 21 | 21 | 1.265 | 254 | |
| 1202037252-1 | LCS for batch 950644 | LCS | .05 pCi/g | | SOIL | QC ACCOUNT | | 22 | 22 | 0.100 | 305 | 252 |

* SLM 0244-B exp 04/30/20 0.100g

Choose SOP Used: GL-RAD-A-015 GL-RAD-A-036, GL-RAD-A-045, GL-RAD-A-043
 Solid Sample Dissolution by: LEACH or DIGESTION Circle One
 Data Reviewed By: JXD0 2/21/10

GEL Laboratories LLC., Radiochemistry Division

Blank Correction Report

Batch ID 950644

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Aliquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|-------------------|---------|----------|---------|--------|--------------------------------|-------|------------------------------|
| 1202037251 | DUP | Plutonium-238 | 1.27 g | 0.00 | 0.00246 | 0.0201 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.0197 | 0.00501 | 0.0151 | -.00361417 | pCi/g | NO |
| 1202037252 | LCS | Plutonium-238 | 0.100 g | 7.06 | 0.543 | 0.337 | -.0153 | pCi/g | NO |
| | | Plutonium-239/240 | 0.100 g | 40.5 | 2.38 | 0.254 | -.0459 | pCi/g | NO |
| 1202037250 | MB | Plutonium-238 | 1.00 g | -0.00153 | 0.00342 | 0.025 | -.00153 | pCi/g | NO |
| | | Plutonium-239/240 | 1.00 g | -0.00459 | 0.00306 | 0.0188 | -.00459 | pCi/g | NO |
| 246312001 | RE16-10-1313 | Plutonium-238 | 1.28 g | 0.00 | 0.00488 | 0.0178 | -.00119531 | pCi/g | NO |
| | | Plutonium-239/240 | 1.28 g | 0.00 | 0.00218 | 0.0134 | -.00358594 | pCi/g | NO |
| 246328001 | RE15-10-7332 | Plutonium-238 | 1.27 g | 0.009 | 0.0107 | 0.021 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.0154 | 0.0052 | 0.0158 | -.00361417 | pCi/g | NO |
| 246328002 | RE15-10-7333 | Plutonium-238 | 1.26 g | -0.0051 | 0.0057 | 0.0208 | -.00121429 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | 0.00127 | 0.00221 | 0.0157 | -.00364286 | pCi/g | NO |
| 246328003 | RE15-10-7336 | Plutonium-238 | 1.27 g | 0.00296 | 0.00755 | 0.0242 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00 | 0.00296 | 0.0182 | -.00361417 | pCi/g | NO |
| 246328004 | RE15-10-7337 | Plutonium-238 | 1.27 g | 0.00129 | 0.00501 | 0.0211 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00259 | 0.00183 | 0.0159 | -.00361417 | pCi/g | NO |
| 246328005 | RE15-10-7334 | Plutonium-238 | 1.26 g | 0.00245 | 0.00245 | 0.020 | -.00121429 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | 0.00245 | 0.0049 | 0.0151 | -.00364286 | pCi/g | NO |
| 246328006 | RE15-10-7335 | Plutonium-238 | 1.25 g | 0.00271 | 0.00192 | 0.0222 | -.001224 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.00407 | 0.00236 | 0.0167 | -.003672 | pCi/g | NO |
| 246328007 | RE15-10-7338 | Plutonium-238 | 1.26 g | -0.00411 | 0.00362 | 0.0224 | -.00121429 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | 0.00548 | 0.00699 | 0.0168 | -.00364286 | pCi/g | NO |
| 246328008 | RE15-10-7339 | Plutonium-238 | 1.27 g | 0.00358 | 0.00267 | 0.0195 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00119 | 0.00267 | 0.0147 | -.00361417 | pCi/g | NO |
| 246328009 | RE15-10-7342 | Plutonium-238 | 1.28 g | 0.00483 | 0.00452 | 0.0197 | -.00119531 | pCi/g | NO |
| | | Plutonium-239/240 | 1.28 g | 0.00 | 0.00171 | 0.0148 | -.00358594 | pCi/g | NO |
| 246341001 | RE15-10-8304 | Plutonium-238 | 1.27 g | 0.00131 | 0.00131 | 0.0214 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.0131 | 0.00418 | 0.0161 | -.00361417 | pCi/g | NO |
| 246341002 | RE15-10-8305 | Plutonium-238 | 1.25 g | 0.00671 | 0.00302 | 0.0219 | -.001224 | pCi/g | NO |
| | | Plutonium-239/240 | 1.25 g | 0.134 | 0.0151 | 0.0165 | -.003672 | pCi/g | NO |
| 246341003 | RE15-10-8306 | Plutonium-238 | 1.27 g | 0.00349 | 0.00202 | 0.019 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.0268 | 0.00597 | 0.0143 | -.00361417 | pCi/g | NO |
| 246341004 | RE15-10-8307 | Plutonium-238 | 1.27 g | 0.00242 | 0.00296 | 0.0198 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00725 | 0.00454 | 0.0149 | -.00361417 | pCi/g | NO |
| 246341005 | RE15-10-8309 | Plutonium-238 | 1.27 g | -0.00135 | 0.00303 | 0.0221 | -.00120472 | pCi/g | NO |
| | | Plutonium-239/240 | 1.27 g | 0.00135 | 0.00303 | 0.0166 | -.00361417 | pCi/g | NO |
| 246341006 | RE15-10-8308 | Plutonium-238 | 1.26 g | -0.00117 | 0.00203 | 0.0191 | -.00119531 | pCi/g | NO |
| | | Plutonium-239/240 | 1.26 g | 0.0152 | 0.00488 | 0.0144 | -.00358594 | pCi/g | NO |
| 246341007 | RE15-10-8301 | Plutonium-238 | 1.26 g | 0.00227 | 0.00161 | 0.0185 | -.00121429 | pCi/g | NO |

20m
2/22/10

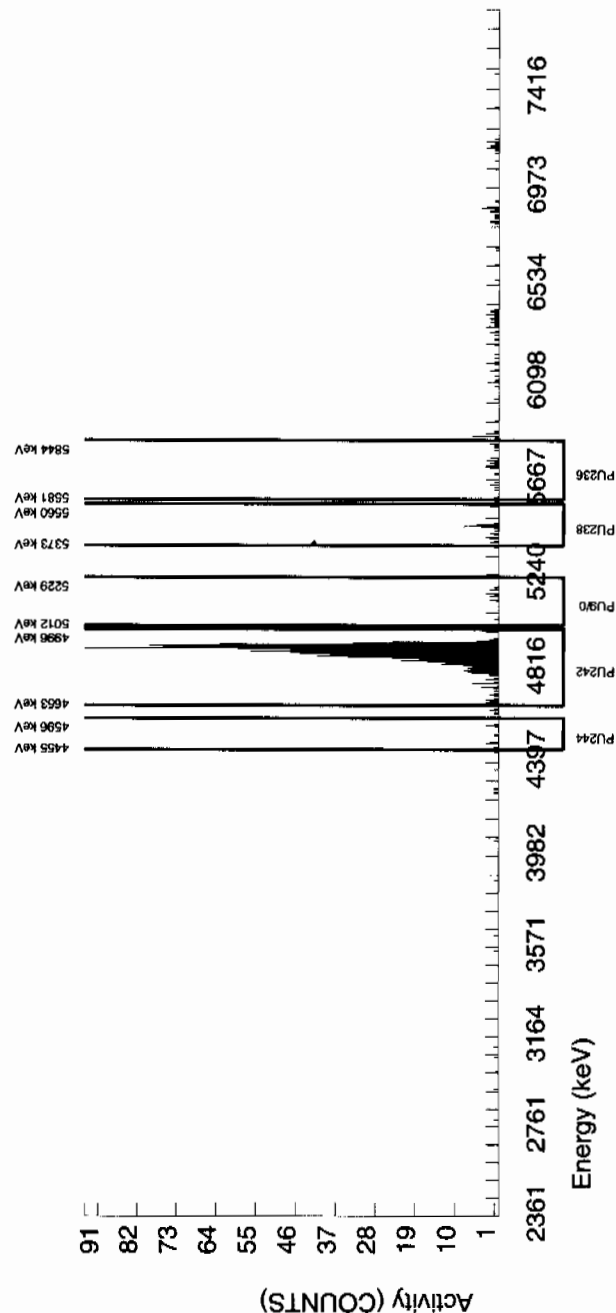
Blank Correction Report

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Aliquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|-------------------|---------|---------|---------|--------|--------------------------------------|-------|------------------------------------|
| 246341007 | RE15-10-8301 | Plutonium-239/240 | 1.26 g | 0.00113 | 0.00253 | 0.0139 | -.00364286 | pCi/g | NO |
| 246341008 | RE15-10-8300 | Plutonium-238 | 1.29 g | 0.00 | 0.00176 | 0.0204 | -.00118605 | pCi/g | NO |
| | | Plutonium-239/240 | 1.29 g | 0.00997 | 0.00398 | 0.0153 | -.00355814 | pCi/g | NO |
| 246341009 | RE15-10-8324 | Plutonium-238 | 1.28 g | 0.00234 | 0.00286 | 0.0191 | -.00119531 | pCi/g | NO |
| | | Plutonium-239/240 | 1.28 g | 0.0257 | 0.0061 | 0.0144 | -.00358594 | pCi/g | NO |

GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|--|----------|----------|--------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 950644 SAMPLE ID : S0246328001_PU SAMPLE QTY : 1.269 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 88.550 | | | | CHAMBER : 014 DETECTOR S/N : 67616 AVERAGE %EFFICIENCY : 31.2326 COUNT DATE : 20-FEB-2010 14:31:46 ELAPSED LIVE TIME(SEC) : 59999.99 | | | | LIB FILE : ENV_ALPHA_PU BKG FILE : B014.CNF.1096 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W014.CNF.325 CAL DATE : 3-FEB-2010 | | | | | |
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.9937E+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 | 5735.790 | 170.905 | 33.000 | -8.000 | 41.000 | 2.6925 | 100.0000 | -1.04E-02 | 1.12E-02 | 8.04E-03 | 1.96E-02 | 1.12E-02 |
| PU-238 | 5499.000 | 5454.347 | 16.025 | 38.000 | 7.000 | 31.000 | 2.9312 | 99.90000 | 9.00E-03 | 1.07E-02 | 8.76E-03 | 2.10E-02 | 1.07E-02 |
| PU-9/0 | 5155.000 | 5133.084 | 49.421 | 14.000 | 12.000 | 2.000 | 2.0604 | 99.90000 | 1.54E-02 | 5.20E-03 | 6.16E-03 | 1.58E-02 | 5.14E-03 |
| PU242 | 4890.000 | 4892.766 | 37.142 | 938.000 | 935.000 | 3.000 | 1.7321 | 100.0000 | 1.20E+00 | 7.33E-02 | 5.17E-03 | 1.38E-02 | 3.94E-02 |
| PU-244 | 4589.000 | 4514.424 | 14.888 | 11.000 | 11.000 | 0.000 | 3.7241 | 99.90000 | 1.41E-02 | 4.32E-03 | 1.11E-02 | 2.57E-02 | 4.26E-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

| | | |
|--|---|---|
| <p>BATCH NUMBER : 950644 SAMPLE ID : S0246328002_PU SAMPLE QTY : 1.259 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 83.627</p> | <p>CHAMBER : 016 DETECTOR S/N : 78774 AVERAGE %EFFICIENCY : 33.6016 COUNT DATE : 20-FEB-2010 14:31:46 ELAPSED LIVE TIME(SEC) : 59999.99</p> | <p>LIB FILE : ENV_ALPHA_PU BKG FILE : B016.CNF;1091 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W016.CNF;311 CAL DATE : 3-FEB-2010</p> |
|--|---|---|

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|---|--|--|
| <p>TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.8272E+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

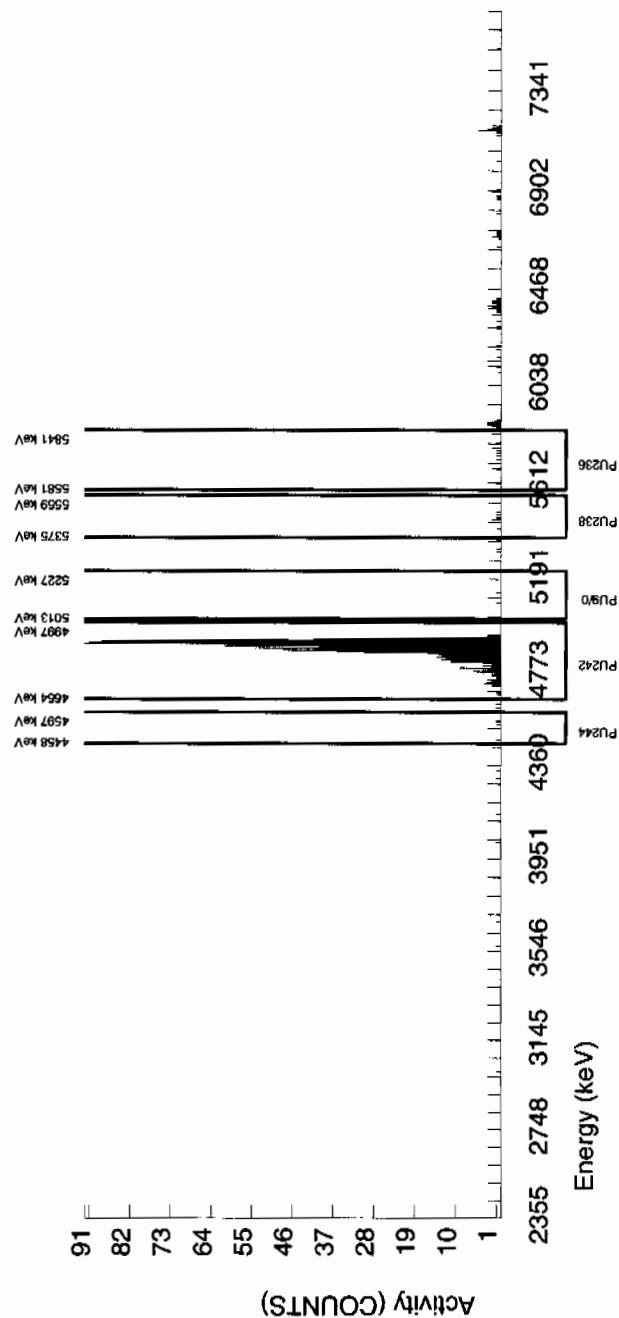
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5745.021 | 143.843 | 14.000 | -25.000 | 39.000 | 2.6925 | 100.0000 | -3.23E-02 | 9.39E-03 | 7.98E-03 | 1.94E-02 | 9.39E-03 |
| PU-238 | 5499.000 | 5461.036 | 7.169 | 8.000 | -4.000 | 12.000 | 2.9312 | 99.900000 | -5.10E-03 | 5.70E-03 | 8.69E-03 | 2.08E-02 | 5.70E-03 |
| PU-9/0 | 5155.000 | 5114.729 | 48.812 | 2.000 | 1.000 | 1.000 | 2.0604 | 99.900000 | 1.27E-03 | 2.21E-03 | 6.11E-03 | 1.57E-02 | 2.21E-03 |
| PU242 | 4890.000 | 4888.544 | 48.032 | 951.000 | 950.000 | 1.000 | 1.0000 | 100.0000 | 1.21E+00 | 7.34E-02 | 2.96E-03 | 9.37E-03 | 3.93E-02 |
| PU-244 | 4589.000 | 4523.799 | 102.505 | 6.000 | 5.000 | 1.000 | 3.7241 | 99.900000 | 6.37E-03 | 3.39E-03 | 1.10E-02 | 2.55E-02 | 3.37E-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 : 950644 SAMPLE ID : S0246328003_PU SAMPLE QTY : 1.267 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 84.173 | CHAMBER : 017 DETECTOR S/N : 78791 AVERAGE %EFFICIENCY : 28.5696 COUNT DATE : 20-FEB-2010 14:31:46 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_PU BKG FILE : B017.CNF;1938 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W017.CNF;1262 CAL DATE : 3-FEB-2010 |
| | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | |

| | | |
|---|--|---|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.8457E+00 dpm | | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|---|--|---|

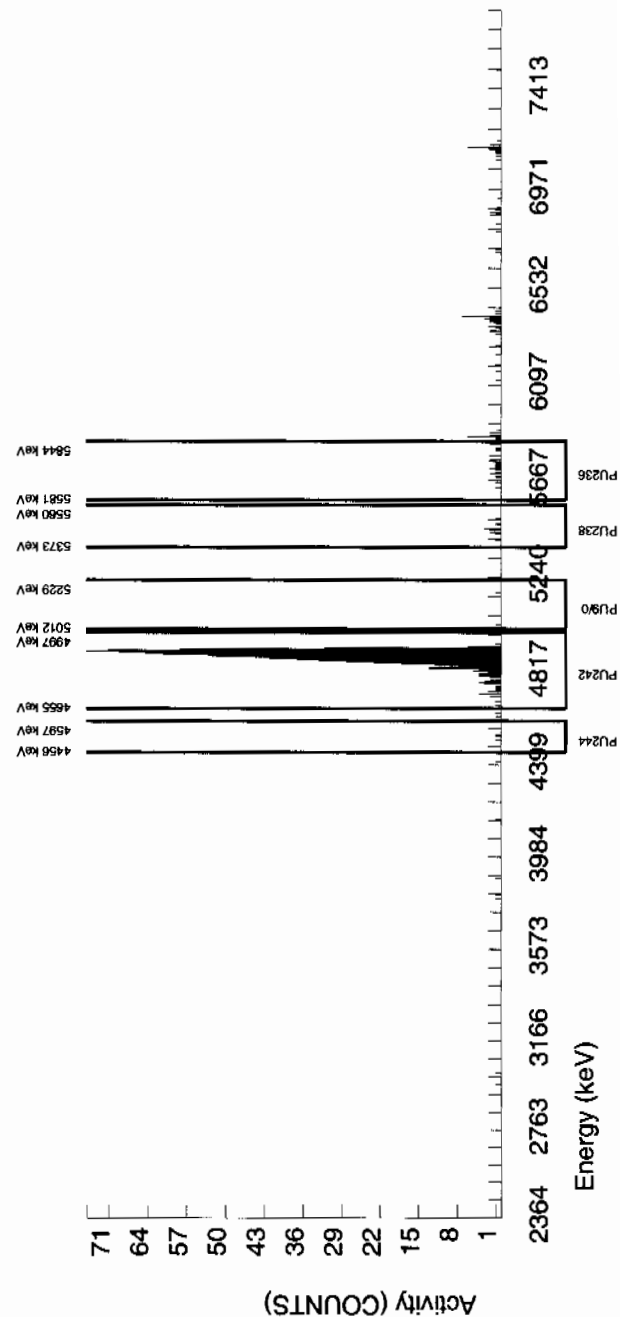
NUCLIDE ACTIVITY SUMMARY

| 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 | 5752.814 | 126.336 | 26.000 | 2.000 | 24.000 | 2.6925 | 100.0000 | 3.00E-03 | 1.06E-02 | 9.26E-03 | 2.25E-02 | 1.06E-02 |
| PU-238 | 5499.000 | 5446.083 | 19.428 | 14.000 | 2.000 | 12.000 | 2.9312 | 99.900000 | 2.96E-03 | 7.55E-03 | 1.01E-02 | 2.42E-02 | 7.55E-03 |
| PU-9/0 | 5155.000 | 5104.909 | 138.892 | 2.000 | 0.000 | 2.000 | 2.0604 | 99.900000 | 0.00E+00 | 2.96E-03 | 7.09E-03 | 1.82E-02 | 2.96E-03 |
| PU242 | 4890.000 | 4891.654 | 48.029 | 815.000 | 4.000 | 2.000 | 1.4142 | 100.0000 | 1.20E+00 | 7.65E-02 | 4.86E-03 | 1.37E-02 | 4.23E-02 |
| PU-244 | 4589.000 | 4540.794 | 54.565 | 4.000 | 0.000 | 0.000 | 3.7241 | 99.900000 | 5.92E-03 | 2.98E-03 | 1.28E-02 | 2.97E-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 : 950644 SAMPLE ID : S0246328004_PU SAMPLE QTY : 1.265 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 86.673 | | CHAMBER : 018 DETECTOR S/N : 78782 AVERAGE %EFFICIENCY : 31.8067 COUNT DATE : 20-FEB-2010 14:31:46 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_PU BKG FILE : B018.CNF;1090 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W018.CNF;306 CAL DATE : 3-FEB-2010 |
|---|--|---|--|

| | | |
|---|---|---|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.9302E+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 |
|---|---|---|

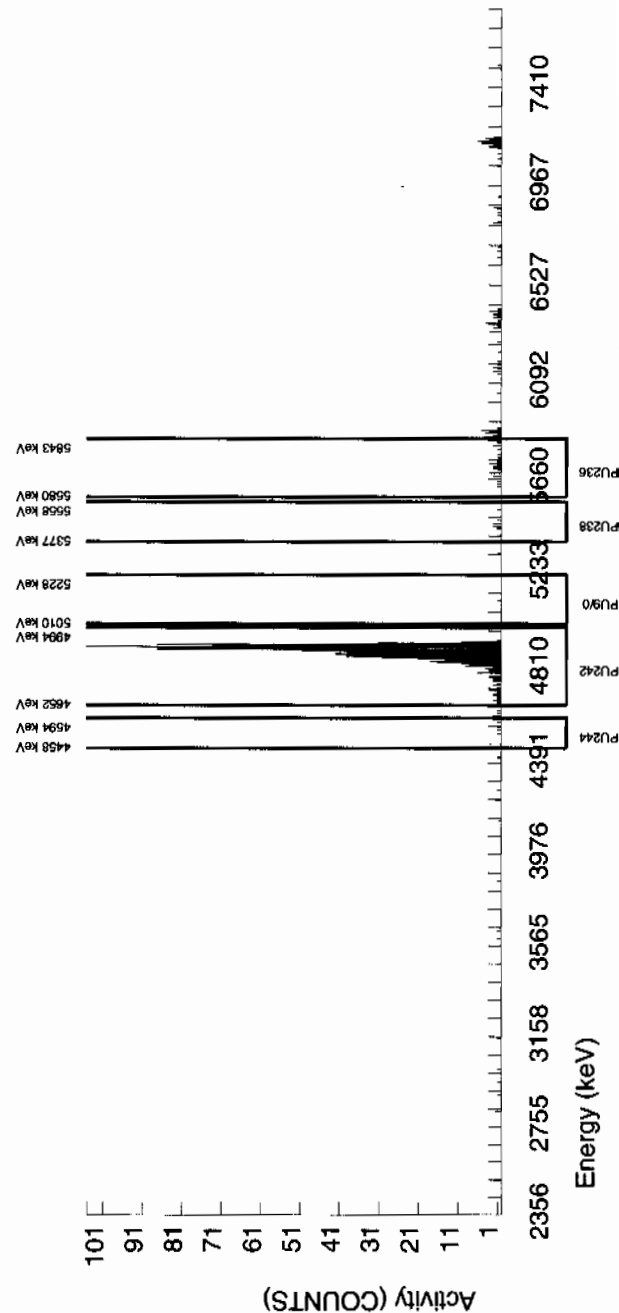
NUCLIDE ACTIVITY SUMMARY

| 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 | 5736.781 | 151.146 | 32.000 | 14.000 | 18.000 | 2.6925 | 100.0000 | 1.83E-02 | 9.30E-03 | 8.09E-03 | 1.97E-02 | 9.26E-03 |
| PU-238 | 5499.000 | 5464.784 | 17.197 | 8.000 | 1.000 | 7.000 | 2.9312 | 99.900000 | 1.29E-03 | 5.01E-03 | 8.82E-03 | 2.11E-02 | 5.01E-03 |
| PU-9/0 | 5155.000 | 5068.474 | 94.195 | 2.000 | 2.000 | 0.000 | 2.0604 | 99.900000 | 2.59E-03 | 1.83E-03 | 6.20E-03 | 1.59E-02 | 1.83E-03 |
| PU242 | 4890.000 | 4889.401 | 27.683 | 933.000 | 932.000 | 1.000 | 1.0000 | 100.0000 | 1.20E+00 | 7.35E-02 | 3.00E-03 | 9.51E-03 | 3.95E-02 |
| PU-244 | 4589.000 | 4564.760 | 4.958 | 6.000 | 6.000 | 0.000 | 3.7241 | 99.900000 | 7.76E-03 | 3.19E-03 | 1.12E-02 | 2.59E-02 | 3.17E-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

| | | |
|--|---|---|
| <p>BATCH NUMBER : 950644 SAMPLE ID : S0246328005_PU SAMPLE QTY : 1.258 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 86.317</p> | <p>CHAMBER : 031 DETECTOR S/N : 79988 AVERAGE %EFFICIENCY : 33.8909 COUNT DATE : 20-FEB-2010 14:31:49 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_PU BKG FILE : B031.CNF;1109 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W031.CNF;345 CAL DATE : 3-FEB-2010</p> |
|--|---|---|

| | | |
|---|--|--|
| <p>TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.9182E+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

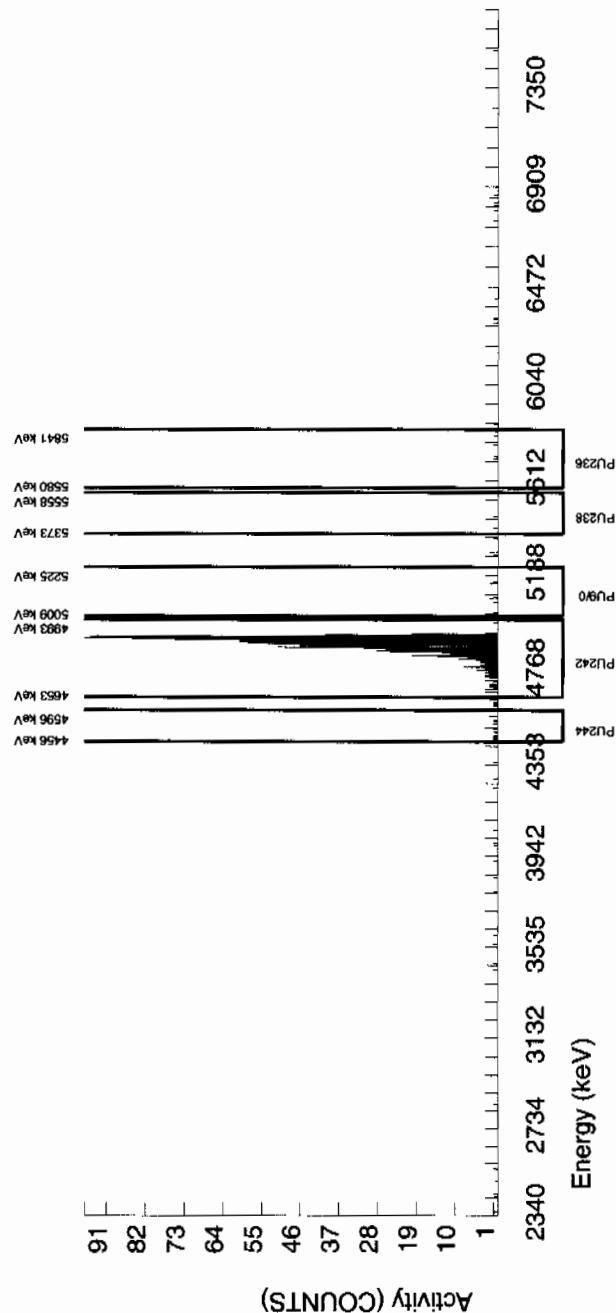
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5772.744 | 117.510 | 5.000 | -1.000 | 6.000 | 2.6925 | 100.0000 | -1.24E-03 | 4.11E-03 | 7.67E-03 | 1.87E-02 | 4.11E-03 |
| PU-238 | 5499.000 | 5414.976 | 73.444 | 3.000 | 2.000 | 1.000 | 2.9312 | 99.900000 | 2.45E-03 | 2.45E-03 | 8.35E-03 | 2.00E-02 | 2.45E-03 |
| PU-9/0 | 5155.000 | 5113.888 | 65.946 | 9.000 | 2.000 | 7.000 | 2.0604 | 99.900000 | 2.45E-03 | 4.90E-03 | 5.87E-03 | 1.51E-02 | 4.90E-03 |
| PU242 | 4890.000 | 4887.432 | 48.841 | 992.000 | 989.000 | 3.000 | 1.7321 | 100.0000 | 1.21E+00 | 7.28E-02 | 4.93E-03 | 1.32E-02 | 3.86E-02 |
| PU-244 | 4589.000 | 4517.876 | 4.896 | 14.000 | 14.000 | 0.000 | 3.7241 | 99.900000 | 1.72E-02 | 4.67E-03 | 1.06E-02 | 2.46E-02 | 4.58E-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

| | | |
|--|---|---|
| <p>BATCH NUMBER : 950644 SAMPLE ID : S0246328006_PU SAMPLE QTY : 1.254 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 83.330</p> | <p>CHAMBER : 033 DETECTOR S/N : 78785 AVERAGE %EFFICIENCY : 31.8048 COUNT DATE : 20-FEB-2010 14:31:49 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_PU BKG FILE : B033.CNF:1108 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W033.CNF:330 CAL DATE : 3-FEB-2010</p> |
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|---|--|--|
| <p>TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.8172E+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

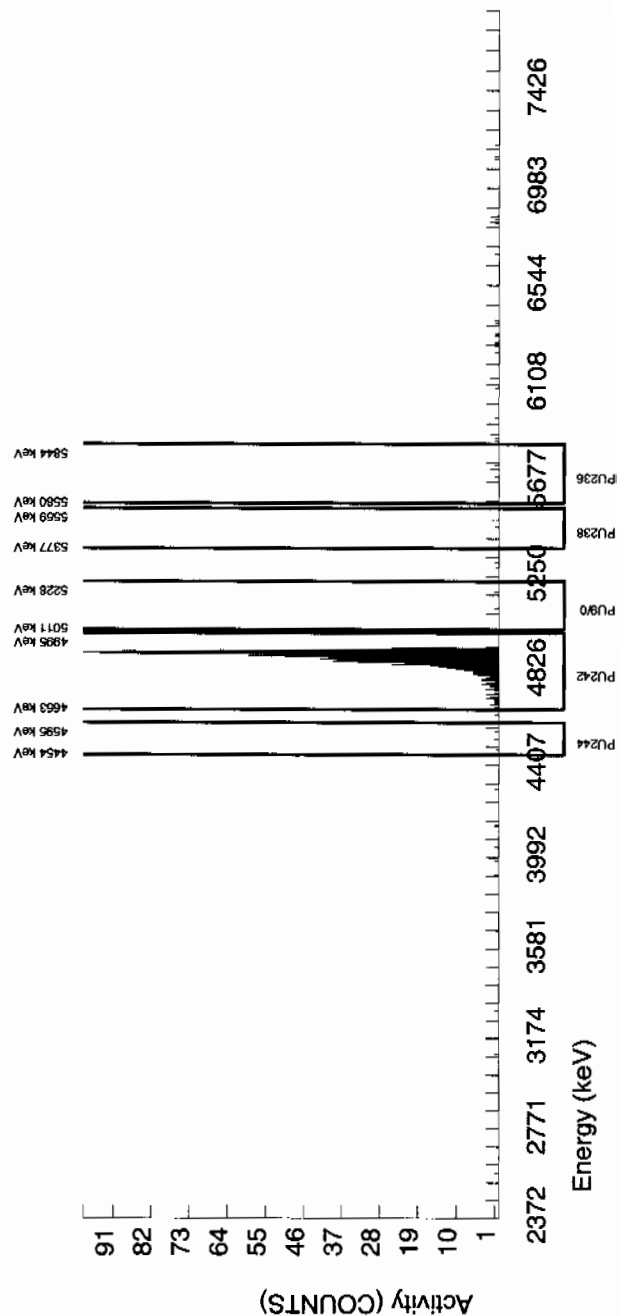
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5733.317 | 4.962 | 4.000 | -1.000 | 5.000 | 2.6925 | 100.0000 | -1.37E-03 | 4.12E-03 | 8.49E-03 | 2.07E-02 | 4.12E-03 |
| PU-238 | 5499.000 | 5433.451 | 89.315 | 2.000 | 2.000 | 0.000 | 2.9312 | 99.900000 | 2.71E-03 | 1.92E-03 | 9.25E-03 | 2.22E-02 | 1.92E-03 |
| PU-9/0 | 5155.000 | 5157.657 | 74.429 | 3.000 | 3.000 | 0.000 | 2.0604 | 99.900000 | 4.07E-03 | 2.36E-03 | 6.50E-03 | 1.67E-02 | 2.35E-03 |
| PU242 | 4890.000 | 4886.301 | 30.492 | 898.000 | 896.000 | 2.000 | 1.4142 | 100.0000 | 1.21E+00 | 7.51E-02 | 4.46E-03 | 1.26E-02 | 4.07E-02 |
| PU-244 | 4589.000 | 4507.797 | 94.276 | 4.000 | 3.000 | 1.000 | 3.7241 | 99.900000 | 4.07E-03 | 3.04E-03 | 1.18E-02 | 2.72E-02 | 3.03E-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

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|---|--|--|
| BATCH NUMBER : 950644 SAMPLE ID : S0246328007_PU SAMPLE QTY : 1.257 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 87.287 | CHAMBER : 035 DETECTOR S/N : 78202 AVERAGE %EFFICIENCY : 30.0240 COUNT DATE : 20-FEB-2010 14:31:49 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B035.CNF;1106 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W035.CNF;319 CAL DATE : 3-FEB-2010 |
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|--|---|---|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.9510E+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 |
|--|---|---|

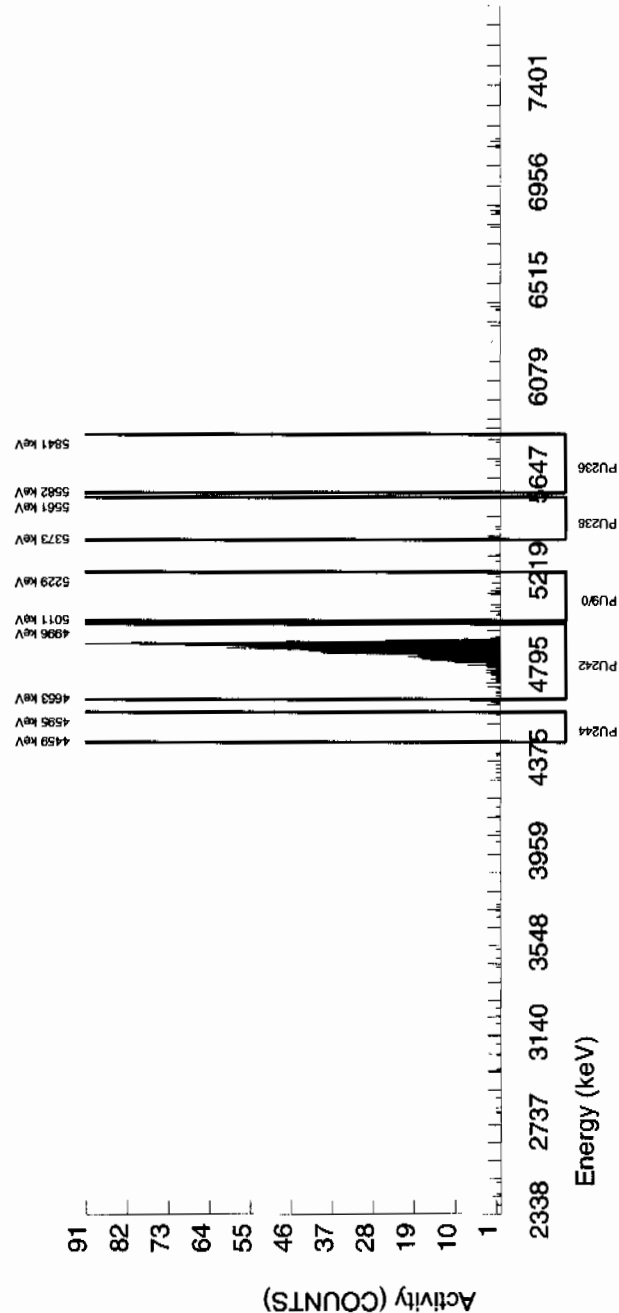
NUCLIDE ACTIVITY SUMMARY

| 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 | 5749.001 | 104.187 | 3.000 | 2.000 | 1.000 | 2.6925 | 100.0000 | 2.77E-03 | 2.78E-03 | 8.57E-03 | 2.08E-02 | 2.77E-03 |
| PU-238 | 5499.000 | 5432.152 | 14.884 | 2.000 | -3.000 | 5.000 | 2.9312 | 99.900000 | -4.11E-03 | 3.62E-03 | 9.33E-03 | 2.24E-02 | 3.62E-03 |
| PU-9/0 | 5155.000 | 5124.292 | 124.032 | 15.000 | 4.000 | 11.000 | 2.0604 | 99.900000 | 5.48E-03 | 6.99E-03 | 6.56E-03 | 1.68E-02 | 6.98E-03 |
| PU242 | 4890.000 | 4884.369 | 38.442 | 893.000 | 886.000 | 7.000 | 2.6458 | 100.0000 | 1.21E+00 | 7.55E-02 | 8.42E-03 | 2.05E-02 | 4.10E-02 |
| PU-244 | 4589.000 | 4589.516 | 4.961 | 1.000 | 1.000 | 0.000 | 3.7241 | 99.900000 | 1.37E-03 | 1.37E-03 | 1.19E-02 | 2.74E-02 | 1.37E-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

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|---|--|--|
| BATCH NUMBER : 950644 SAMPLE ID : S0246328008_PU SAMPLE QTY : 1.269 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 92.379 | CHAMBER : 036 DETECTOR S/N : 78203 AVERAGE %EFFICIENCY : 32.2436 COUNT DATE : 20-FEB-2010 14:31:49 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B036.CNF;1104 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W036.CNF;331 CAL DATE : 3-FEB-2010 |
|---|--|--|

| | | |
|--|---|---|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 3.1231E+00 dpm | MS/MSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G | LCS/LCSD ID : 0244-B NUCLIDE : PU-9/0 NOMINAL : 4.1778E+01 pCi/G |
|--|---|---|

NUCLIDE ACTIVITY SUMMARY

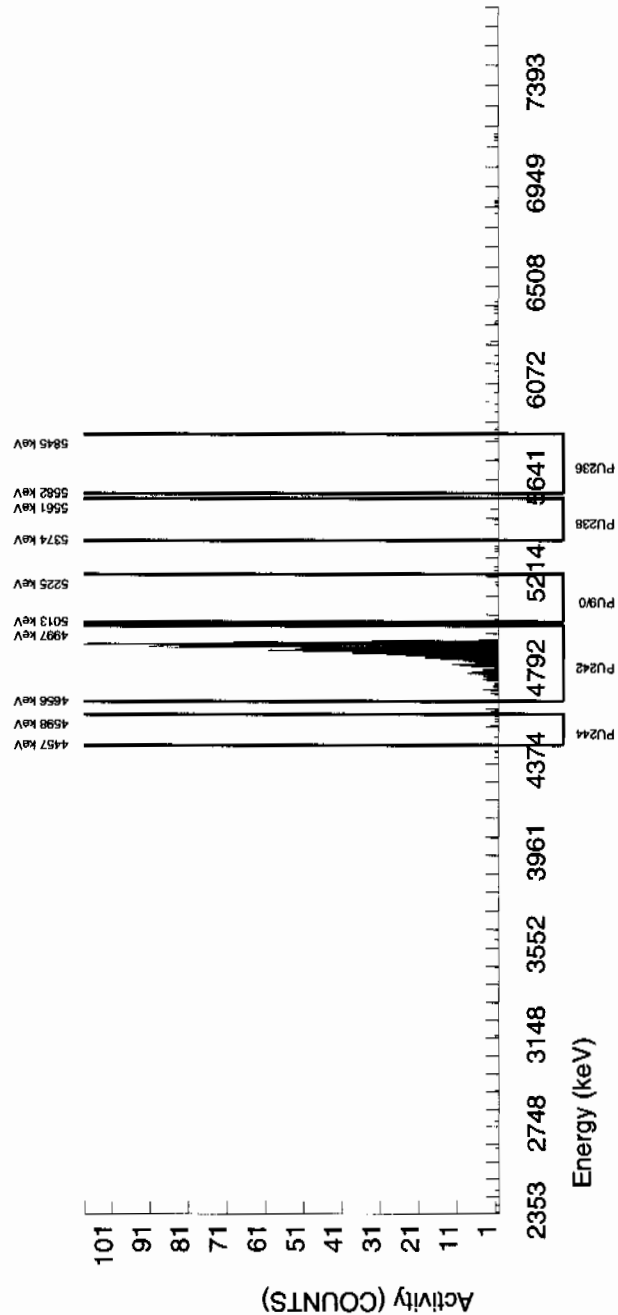
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5783.399 | 88.410 | 2.000 | -1.000 | 3.000 | 2.6925 | 100.0000 | -1.21E-03 | 2.70E-03 | 7.46E-03 | 1.82E-02 | 2.70E-03 |
| PU-238 | 5499.000 | 5488.456 | 4.912 | 4.000 | 3.000 | 1.000 | 2.9312 | 99.900000 | 3.58E-03 | 2.67E-03 | 8.13E-03 | 1.95E-02 | 2.67E-03 |
| PU-9/0 | 5155.000 | 5134.689 | 157.173 | 3.000 | 1.000 | 2.000 | 2.0604 | 99.900000 | 1.19E-03 | 2.67E-03 | 5.72E-03 | 1.47E-02 | 2.67E-03 |
| PU242 | 4890.000 | 4889.717 | 38.758 | 1013.000 | 1007.000 | 6.000 | 2.4495 | 100.0000 | 1.20E+00 | 7.19E-02 | 6.79E-03 | 1.68E-02 | 3.80E-02 |
| PU-244 | 4589.000 | 4545.169 | 4.912 | 7.000 | 7.000 | 0.000 | 3.7241 | 99.900000 | 8.35E-03 | 3.18E-03 | 1.03E-02 | 2.39E-02 | 3.16E-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

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|---|--|--|--|
| BATCH NUMBER : 950644 SAMPLE ID : S0246328009_PU SAMPLE QTY : 1.279 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 93.210 | | CHAMBER : 077 DETECTOR S/N : 67576 AVERAGE %EFFICIENCY : 31.3532 COUNT DATE : 20-FEB-2010 14:31:54 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_PU BKG FILE : B077.CNF;1016 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W077.CNF;263 CAL DATE : 9-FEB-2010 |
|---|--|--|--|

| | | |
|--|---|---|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+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

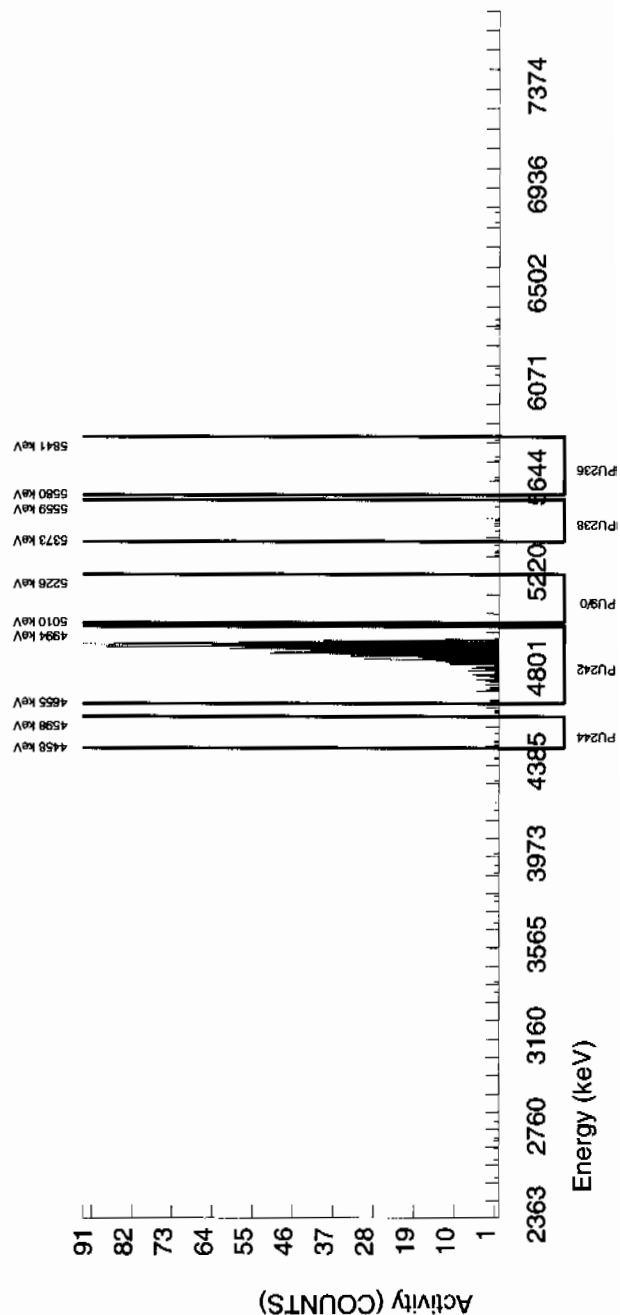
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5729.655 | 167.884 | 6.000 | 1.000 | 5.000 | 2.6925 | 100.0000 | 1.22E-03 | 4.05E-03 | 7.55E-03 | 1.84E-02 | 4.05E-03 |
| PU-238 | 5499.000 | 5470.949 | 0.000 | 9.000 | 4.000 | 5.000 | 2.9312 | 99.900000 | 4.83E-03 | 4.52E-03 | 8.23E-03 | 1.97E-02 | 4.52E-03 |
| PU-9/0 | 5155.000 | 5052.106 | 4.938 | 1.000 | 0.000 | 1.000 | 2.0604 | 99.900000 | 0.00E+00 | 1.71E-03 | 5.78E-03 | 1.48E-02 | 1.71E-03 |
| PU242 | 4890.000 | 4891.188 | 53.051 | 990.000 | 988.000 | 2.000 | 1.4142 | 100.0000 | 1.19E+00 | 7.15E-02 | 3.96E-03 | 1.12E-02 | 3.80E-02 |
| PU-244 | 4589.000 | 4517.902 | 0.000 | 11.000 | 11.000 | 0.000 | 3.7241 | 99.900000 | 1.33E-02 | 4.06E-03 | 1.05E-02 | 2.42E-02 | 4.00E-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

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|---|--|--|
| BATCH NUMBER : 950644 SAMPLE ID : S0246341001_PU SAMPLE QTY : 1.266 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 84.568 | CHAMBER : 079 DETECTOR S/N : 79466 AVERAGE %EFFICIENCY : 32.2486 COUNT DATE : 20-FEB-2010 14:31:54 ELAPSED LIVE TIME(SEC) : 59999.99 | LIB FILE : ENV_ALPHA_PU BKG FILE : B079.CNF:1018 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W079.CNF:268 CAL DATE : 9-FEB-2010 |
|---|--|--|

| | | |
|--|---|---|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.8590E+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

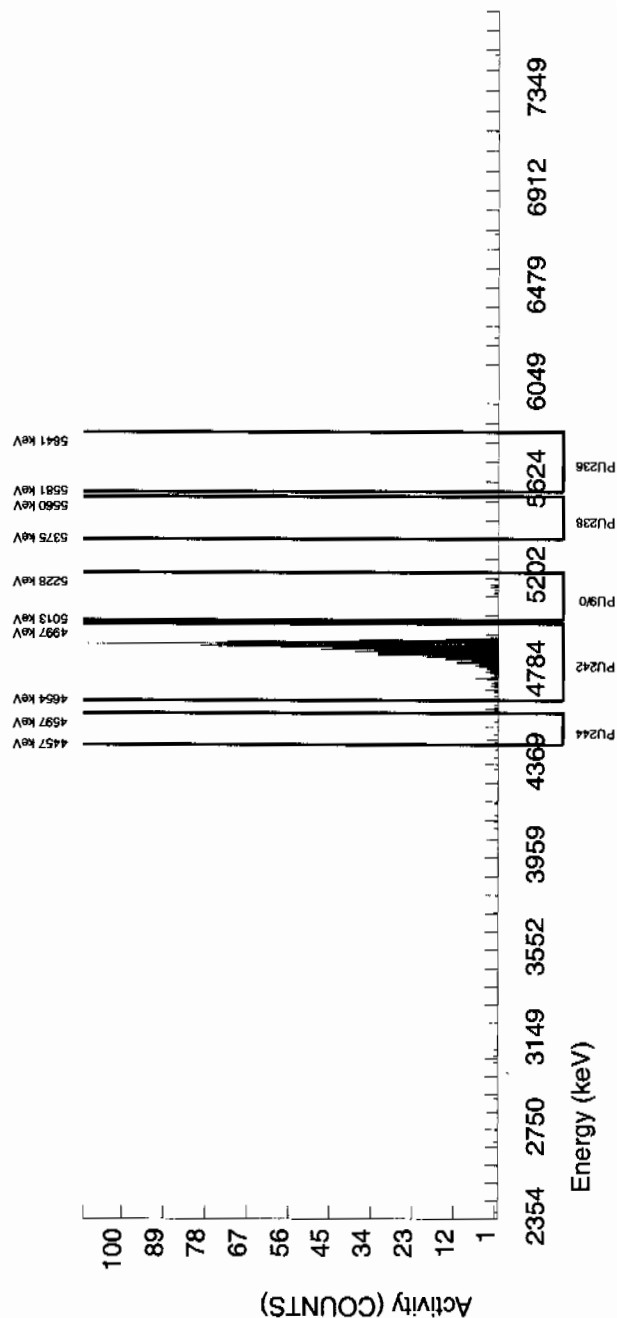
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5711.009 | 0.000 | 0.000 | 0.000 | 0.000 | 2.6925 | 100.0000 | 0.00E+00 | 1.32E-03 | 8.17E-03 | 1.99E-02 | 1.32E-03 |
| PU-238 | 5499.000 | 5406.821 | 4.918 | 1.000 | 1.000 | 0.000 | 2.9312 | 99.900000 | 1.31E-03 | 1.31E-03 | 8.91E-03 | 2.14E-02 | 1.31E-03 |
| PU-9/0 | 5155.000 | 5161.734 | 14.651 | 10.000 | 10.000 | 0.000 | 2.0604 | 99.900000 | 1.31E-02 | 4.18E-03 | 6.26E-03 | 1.61E-02 | 4.13E-03 |
| PU242 | 4890.000 | 4888.022 | 28.030 | 924.000 | 922.000 | 2.000 | 1.4142 | 100.0000 | 1.20E+00 | 7.37E-02 | 4.29E-03 | 1.21E-02 | 3.97E-02 |
| PU-244 | 4589.000 | 4504.898 | 4.918 | 7.000 | 7.000 | 0.000 | 3.7241 | 99.900000 | 9.14E-03 | 3.49E-03 | 1.13E-02 | 2.62E-02 | 3.46E-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

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|---|--|--|--|
| BATCH NUMBER : 950644 SAMPLE ID : S1202037250_PU SAMPLE QTY : 1.000 G SAMPLE DATE : 16-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 77.185 | | CHAMBER : 253 DETECTOR S/N : 79446 AVERAGE %EFFICIENCY : 38.1689 COUNT DATE : 20-FEB-2010 13:40:15 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_PU BKG FILE : B253.CNF;82 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W253.CNF;28 CAL DATE : 29-JAN-2010 |
|---|--|--|--|

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|---|--|--|
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.6095E+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

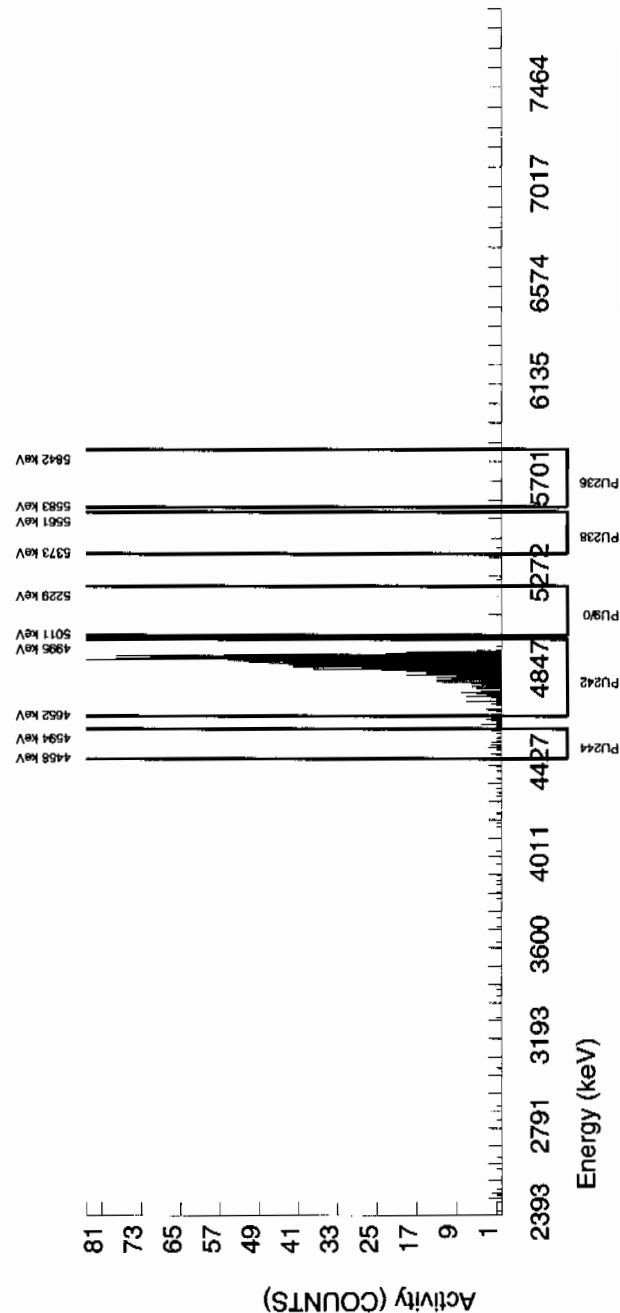
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|-----------|----------------|-------------|-----------|-----------|-----------|
| PU-236 | 5749.000 | 5711.991 | 0.000 | 0.000 | -1.000 | 1.000 | 2.6925 | 100.0000 | -1.53E-03 | 2.17E-03 | 9.58E-03 | 2.33E-02 | 2.17E-03 |
| PU-238 | 5499.000 | 5469.849 | 123.538 | 2.000 | -1.000 | 3.000 | 2.9312 | 99.900000 | -1.53E-03 | 3.42E-03 | 1.04E-02 | 2.50E-02 | 3.42E-03 |
| PU-9/0 | 5155.000 | 5119.959 | 0.000 | 0.000 | -3.000 | 3.000 | 2.0604 | 99.900000 | -4.59E-03 | 3.06E-03 | 7.34E-03 | 1.88E-02 | 3.06E-03 |
| PU242 | 4890.000 | 4883.382 | 41.761 | 998.000 | 996.000 | 2.000 | 1.4142 | 100.0000 | 1.52E+00 | 9.12E-02 | 5.03E-03 | 1.42E-02 | 4.84E-02 |
| PU-244 | 4589.000 | 4532.644 | 0.000 | 20.000 | 20.000 | 0.000 | 3.7241 | 99.900000 | 3.06E-02 | 7.02E-03 | 1.33E-02 | 3.07E-02 | 6.84E-03 |

NOTES:

* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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



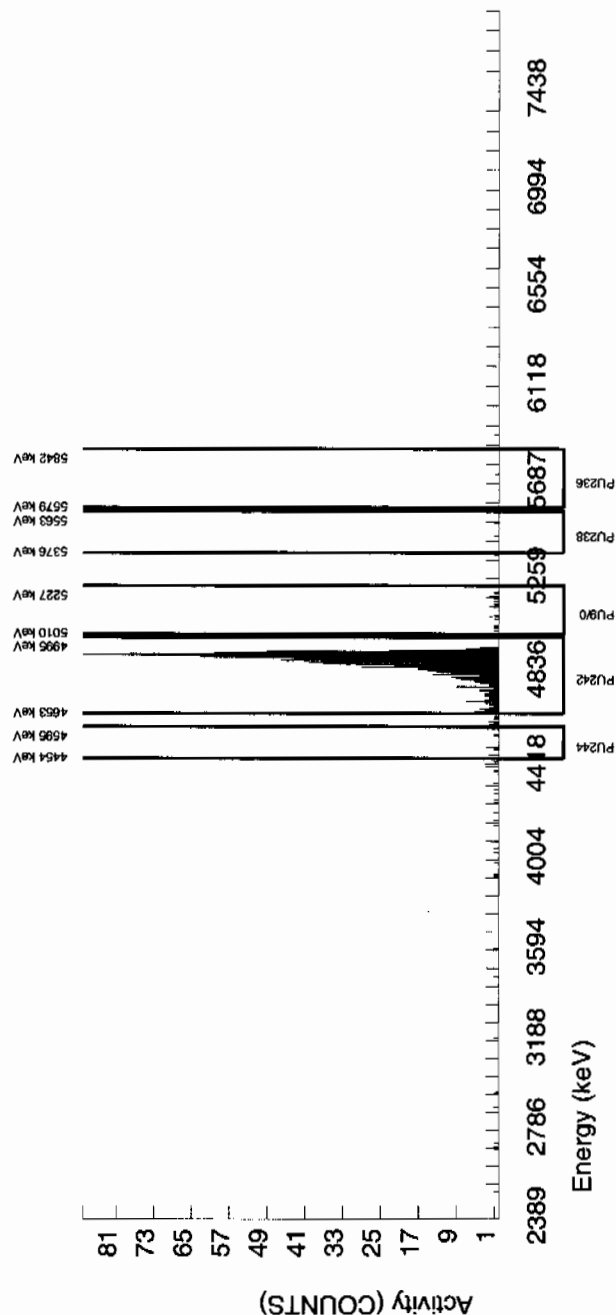
GEL Laboratories LLC
ALPHA SPECTROSCOPY REPORT

| | | | | | | | | | | | | | |
|---|----------------|-------------|-----------|--|----------|----------|--------|--|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 950644 SAMPLE ID : S1202037251_PU SAMPLE QTY : 1.265 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 73.846 | | | | CHAMBER : 254 DETECTOR S/N : 79447 AVERAGE %EFFICIENCY : 39.2943 COUNT DATE : 20-FEB-2010 13:40:17 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_PU BKG FILE : B254.CNF;80 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W254.CNF;28 CAL DATE : 29-JAN-2010 | | | | | |
| TRACER ID : 1375-A NUCLIDE : PU242 NOMINAL : 3.3808E+00 dpm RESULTS : 2.4965E+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 | 5734.831 | 4.937 | 1.000 | -1.000 | 2.000 | 2.6925 | 100.0000 | -1.24E-03 | 2.15E-03 | 7.69E-03 | 1.87E-02 | 2.15E-03 |
| PU-238 | 5499.000 | 5485.743 | 59.245 | 2.000 | 0.000 | 2.000 | 2.9312 | 99.900000 | 0.00E+00 | 2.46E-03 | 8.38E-03 | 2.01E-02 | 2.46E-03 |
| PU-9/0 | 5155.000 | 5127.402 | 49.267 | 16.000 | 16.000 | 0.000 | 2.0604 | 99.900000 | 1.97E-02 | 5.01E-03 | 5.89E-03 | 1.51E-02 | 4.91E-03 |
| PU242 | 4890.000 | 4883.540 | 41.277 | 981.000 | 981.000 | 0.000 | 0.0000 | 100.0000 | 1.20E+00 | 7.23E-02 | 0.00E+00 | 3.33E-03 | 3.84E-02 |
| PU-244 | 4589.000 | 4521.480 | 4.937 | 8.000 | 8.000 | 0.000 | 3.7241 | 99.900000 | 9.83E-03 | 3.51E-03 | 1.06E-02 | 2.46E-02 | 3.47E-03 |

NOTES:

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

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

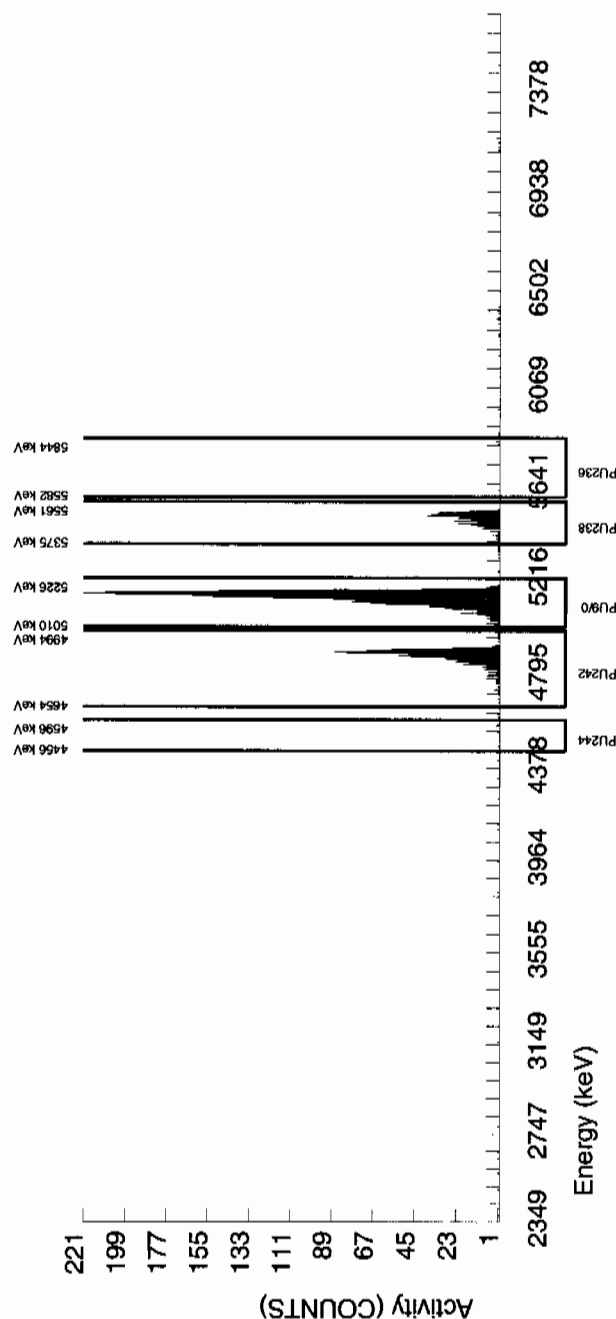


| | | | | | | | | | | | | | |
|------------------------------------|----------------|-------------|-----------|-----------------------------------|----------|----------|--------|-------------------------------|----------------|-------------|-----------|-----------|-----------|
| BATCH NUMBER : 950644 | | | | CHAMBER : 202 | | | | LIB FILE : ENV_ALPHA_PU | | | | | |
| SAMPLE ID : S1202037252_PU | | | | DETECTOR S/N : 78903 | | | | BKG FILE : B202.CNF;100 | | | | | |
| SAMPLE QTY : 0.100 G | | | | AVERAGE %EFFICIENCY : 26.5796 | | | | BKG DATE : 14-FEB-2010 | | | | | |
| SAMPLE DATE : 16-FEB-2010 00:00:00 | | | | COUNT DATE : 20-FEB-2010 13:39:52 | | | | BKG LIVE TIME(SEC) : 60000.00 | | | | | |
| ANALYST : JXD2 | | | | ELAPSED LIVE TIME(SEC) : 60000.00 | | | | EFF FILE : W202.CNF;49 | | | | | |
| % YIELD : 82.240 | | | | | | | | CAL DATE : 22-JAN-2010 | | | | | |
| TRACER | | | | MS/MSD | | | | LCS/LCSD | | | | | |
| ID : 1375-A | | | | ID : 0244-B | | | | ID : 0244-B | | | | | |
| NUCLIDE : PU242 | | | | NUCLIDE : PU-9/0 | | | | NUCLIDE : PU-9/0 | | | | | |
| NOMINAL : 3.3808E+00 dpm | | | | NOMINAL : 4.1778E+01 pCi/G | | | | NOMINAL : 4.1778E+01 pCi/G | | | | | |
| RESULTS : 2.7803E+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 | 5776.848 | 4.951 | 4.000 | -3.000 | 7.000 | 2.6925 | 100.0000 | -6.20E-02 | 6.86E-02 | 1.29E-01 | 3.14E-01 | 6.86E-02 |
| PU-238 | 5499.000 | 5491.391 | 49.954 | 345.000 | 342.000 | 3.000 | 2.9312 | 99.900000 | 7.06E+00 | 5.43E-01 | 1.41E-01 | 3.37E-01 | 3.85E-01 |
| PU-9/0 | 5155.000 | 5145.786 | 34.290 | 1962.000 | 1961.000 | 1.000 | 2.0604 | 99.900000 | 4.05E+01 | 2.38E+00 | 9.89E-02 | 2.54E-01 | 9.14E-01 |
| PU242 | 4890.000 | 4883.783 | 32.618 | 739.000 | 739.000 | 0.000 | 0.0000 | 100.0000 | 1.52E+01 | 9.99E-01 | 0.00E+00 | 5.58E-02 | 5.60E-01 |
| PU-244 | 4589.000 | 4537.422 | 7.272 | 7.000 | 7.000 | 0.000 | 3.7241 | 99.900000 | 1.44E-01 | 5.51E-02 | 1.79E-01 | 4.13E-01 | 5.46E-02 |

NOTES:

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

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



Radiochemistry Batch Checklist, Rev10

Batch# 950645 Product: U Date: 2/23/10

| Criteria: | Yes | No | Comments |
|---|-----|----|----------------|
| Sample Solids are less than or equal to 100 mg for GAB. | | | N/A |
| Samples have been blank corrected (if required) | ✓ | | |
| If activity less 10* MDA/ MDC, error is 150% or less of sample activity. If greater 10* MDA/ MDC, error is 40% or less. If below the MDA/ MDC, error is okay. | ✓ | | |
| Instrument source check is within limits. | ✓ | | |
| Instrument bkg check is within limits. | ✓ | | |
| Method RDU/ LLD has been met. | ✓ | | |
| If duplicate activities are less 5* MDA/ MDC, then RPD is 100% or less. If greater 5* MDA/ MDC, then RPD 20% or less. If below the MDA/ MDC, the RPD is 0%. | ✓ | | |
| Or meets the client's required RER acceptance criteria. | ✓ | | |
| Tracer yield is 15-125% . Carrier yield 25-125%. | ✓ | | case narrative |
| Or meets the client's contract acceptance criteria. | ✓ | | |
| Method blank is less than the RDL/ LLD. | ✓ | | case narrative |
| (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 | ✓ | | |
| 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 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: E. A. 2/23/10

Secondary Review Performed By: first 2/23/10

LANL

Uranium Que Sheet

08-FEB-10

Batch #: 950645 Analyst: JXD2 First Client Due Date: 26-FEB-10 Internal Due Date: 16-FEB-10
 Tracer Isotope: U-232 U-236 Tracer Code: 1483-H Expiration Date: 12/01/10 Vol: 0.1
 LCS Isotope: U-238 LCS Code: Expiration Date: Vol: ---
 Spike Isotope: U-238 Spike Code: Expiration Date: Vol: ---
 Prep Date: 02/01/10 Initials: JHO Pipet ID: 257477 Balance ID: 50+10272

Witness: JEH 2-16-10

| Sample ID | Client Description | Type | Hazard Code | Min CRDL | Matrix | Client | Collection Date | Pos. | Label # | Wet/Dry Aliquot (g/l) | U Det # |
|--------------|----------------------------|--------|-------------|----------|--------|------------|-----------------|------|---------|-----------------------|---------|
| 246312081-1 | RE16-10-1313 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 29-JAN-10 | 1 | 1 | 0.513 | 1 |
| 246328001-1 | RE15-10-7332 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 2 | 2 | 0.519 | 2 |
| 246328002-1 | RE15-10-7333 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 3 | 3 | 0.525 | 3 |
| 246328003-1 | RE15-10-7336 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 4 | 4 | 0.521 | 4 |
| 246328004-1 | RE15-10-7337 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 5 | 5 | 0.520 | 5 |
| 246328005-1 | RE15-10-7334 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 6 | 6 | 0.511 | 6 |
| 246328006-1 | RE15-10-7335 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 7 | 7 | 0.503 | 7 |
| 246328007-1 | RE15-10-7338 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 8 | 8 | 0.529 | 8 |
| 246328008-1 | RE15-10-7339 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 9 | 9 | 0.517 | 9 |
| 246328009-1 | RE15-10-7342 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 10 | 10 | 0.506 | 10 |
| 246341001-1 | RE15-10-8304 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 11 | 11 | 0.523 | 11 |
| 246341002-1 | RE15-10-8305 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 12 | 12 | 0.502 | 12 |
| 246341003-1 | RE15-10-8306 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 13 | 13 | 0.524 | 13 |
| 246341004-1 | RE15-10-8307 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 14 | 14 | 0.506 | 14 |
| 246341005-1 | RE15-10-8309 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 15 | 15 | 0.509 | 15 |
| 246341006-1 | RE15-10-8308 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 16 | 16 | 0.518 | 16 |
| 246341007-1 | RE15-10-8301 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 17 | 17 | 0.509 | 17 |
| 246341008-1 | RE15-10-8300 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 18 | 18 | 0.522 | 18 |
| 246341009-1 | RE15-10-8324 | SAMPLE | | .1 pCi/g | SOIL | LANL010 | 01-FEB-10 | 19 | 19 | 0.513 | 19 |
| 1202037253-1 | MB for batch 950645 | MB | | .1 pCi/g | SOIL | QC ACCOUNT | | 20 | 20 | 1.0 | 129 |
| 1202037254-1 | RE15-10-8304(246341001DUP) | DUP | | .1 pCi/g | SOIL | QC ACCOUNT | | 21 | 21 | 0.533 | 123 |
| 1202037255-1 | LCS for batch 950645 | LCS | | .1 pCi/g | SOIL | QC ACCOUNT | | 22 | 22 | 0.104 | 185 |

* SRM 0244-A Exp 10/31/20 0.104g

Choose SOP used: GL-RAD-A-011

Solid Sample Dissolution by: LEACH or DIGESTION

Circle One

Data Reviewed By: E-23/10

GEL Laboratories LLC, Radiochemistry Division

Blank Correction Report

Batch ID 950645

| GEL Sample ID | Client sample ID | Parameter | Aliquot | Result | TPU | MDA | Aliquot Corrected Blank Result | Units | Activity <5X Corrected Blank |
|---------------|------------------|-----------------|---------|--------|---------|--------|--------------------------------------|-------|------------------------------------|
| 1202037254 | DUP | Uranium-233/234 | 0.533 g | 83.7 | 6.31 | 0.146 | .057598499 | pCi/g | NO |
| | | Uranium-235/236 | 0.533 g | 4.90 | 0.413 | 0.0933 | .016885553 | pCi/g | NO |
| | | Uranium-238 | 0.533 g | 86.1 | 6.49 | 0.100 | .057973734 | pCi/g | NO |
| 1202037255 | LCS | Uranium-233/234 | 0.104 g | 6.25 | 0.600 | 0.502 | .295192308 | pCi/g | NO |
| | | Uranium-235/236 | 0.104 g | 0.0984 | 0.0607 | 0.320 | .086538482 | pCi/g | YES |
| | | Uranium-238 | 0.104 g | 5.97 | 0.577 | 0.343 | .297115385 | pCi/g | NO |
| 1202037253 | MB | Uranium-233/234 | 1.00 g | 0.0307 | 0.00859 | 0.0459 | .0307 | pCi/g | YES |
| | | Uranium-235/236 | 1.00 g | 0.009 | 0.00454 | 0.0293 | .009 | pCi/g | YES |
| | | Uranium-238 | 1.00 g | 0.0309 | 0.00899 | 0.0313 | .0309 | pCi/g | YES |
| 246312001 | RE16-10-1313 | Uranium-233/234 | 0.513 g | 0.746 | 0.0691 | 0.0709 | .059844055 | pCi/g | NO |
| | | Uranium-235/236 | 0.513 g | 0.0486 | 0.0143 | 0.0452 | .017543860 | pCi/g | YES |
| | | Uranium-238 | 0.513 g | 0.904 | 0.0804 | 0.0484 | .060233918 | pCi/g | NO |
| 246328001 | RE15-10-7332 | Uranium-233/234 | 0.519 g | 0.819 | 0.0887 | 0.121 | .059152216 | pCi/g | NO |
| | | Uranium-235/236 | 0.519 g | 0.0595 | 0.0256 | 0.0774 | .017341040 | pCi/g | YES |
| | | Uranium-238 | 0.519 g | 1.22 | 0.117 | 0.0829 | .059537572 | pCi/g | NO |
| 246328002 | RE15-10-7333 | Uranium-233/234 | 0.525 g | 0.918 | 0.0817 | 0.0714 | .058476190 | pCi/g | NO |
| | | Uranium-235/236 | 0.525 g | 0.0455 | 0.013 | 0.0455 | .017142857 | pCi/g | YES |
| | | Uranium-238 | 0.525 g | 2.48 | 0.191 | 0.0487 | .058857143 | pCi/g | NO |
| 246328003 | RE15-10-7336 | Uranium-233/234 | 0.521 g | 0.533 | 0.0566 | 0.0832 | .058925144 | pCi/g | NO |
| | | Uranium-235/236 | 0.521 g | 0.0163 | 0.010 | 0.053 | .017274472 | pCi/g | YES |
| | | Uranium-238 | 0.521 g | 1.14 | 0.101 | 0.0568 | .059309021 | pCi/g | NO |
| 246328004 | RE15-10-7337 | Uranium-233/234 | 0.520 g | 0.745 | 0.068 | 0.0667 | .059038462 | pCi/g | NO |
| | | Uranium-235/236 | 0.520 g | 0.0327 | 0.0141 | 0.0426 | .017307692 | pCi/g | YES |
| | | Uranium-238 | 0.520 g | 1.86 | 0.146 | 0.0456 | .059423077 | pCi/g | NO |
| 246328005 | RE15-10-7334 | Uranium-233/234 | 0.511 g | 1.32 | 0.114 | 0.0865 | .060078278 | pCi/g | NO |
| | | Uranium-235/236 | 0.511 g | 0.161 | 0.0285 | 0.0552 | .017612524 | pCi/g | NO |
| | | Uranium-238 | 0.511 g | 4.14 | 0.314 | 0.0591 | .060469667 | pCi/g | NO |
| 246328006 | RE15-10-7335 | Uranium-233/234 | 0.503 g | 0.809 | 0.0763 | 0.0805 | .061033797 | pCi/g | NO |
| | | Uranium-235/236 | 0.503 g | 0.0473 | 0.0151 | 0.0513 | .017892644 | pCi/g | YES |
| | | Uranium-238 | 0.503 g | 1.41 | 0.119 | 0.0549 | .061431412 | pCi/g | NO |
| 246328007 | RE15-10-7338 | Uranium-233/234 | 0.529 g | 1.11 | 0.097 | 0.077 | .058034026 | pCi/g | NO |
| | | Uranium-235/236 | 0.529 g | 0.102 | 0.0208 | 0.0491 | .017013233 | pCi/g | NO |
| | | Uranium-238 | 0.529 g | 2.95 | 0.226 | 0.0526 | .058412098 | pCi/g | NO |
| 246328008 | RE15-10-7339 | Uranium-233/234 | 0.517 g | 0.993 | 0.0895 | 0.0804 | .059381044 | pCi/g | NO |
| | | Uranium-235/236 | 0.517 g | 0.0748 | 0.0204 | 0.0512 | .017408124 | pCi/g | YES |
| | | Uranium-238 | 0.517 g | 1.66 | 0.137 | 0.0549 | .059767892 | pCi/g | NO |
| 246328009 | RE15-10-7342 | Uranium-233/234 | 0.506 g | 0.548 | 0.0551 | 0.0737 | .060671937 | pCi/g | NO |
| | | Uranium-235/236 | 0.506 g | 0.0289 | 0.0104 | 0.047 | .017786561 | pCi/g | YES |
| | | Uranium-238 | 0.506 g | 0.864 | 0.0786 | 0.0503 | .061067194 | pCi/g | NO |
| 246341001 | RE15-10-8304 | Uranium-233/234 | 0.523 g | 89.1 | 7.01 | 0.196 | .058699809 | pCi/g | NO |
| | | Uranium-235/236 | 0.523 g | 5.24 | 0.467 | 0.125 | .017208413 | 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 |
|---------------|------------------|-----------------|---------|--------|--------|--------|--------------------------------------|-------|------------------------------------|
| 246341001 | RE15-10-8304 | Uranium-238 | 0.523 g | 92.3 | 7.26 | 0.134 | .059082218 | pCi/g | NO |
| 246341003 | RE15-10-8306 | Uranium-233/234 | 0.524 g | 8.26 | 0.614 | 0.0974 | .058587786 | pCi/g | NO |
| | | Uranium-235/236 | 0.524 g | 0.525 | 0.0624 | 0.0621 | .017175573 | pCi/g | NO |
| | | Uranium-238 | 0.524 g | 10.1 | 0.744 | 0.0665 | .058969466 | pCi/g | NO |
| 246341004 | RE15-10-8307 | Uranium-233/234 | 0.506 g | 2.63 | 0.210 | 0.0929 | .060671937 | pCi/g | NO |
| | | Uranium-235/236 | 0.506 g | 0.0774 | 0.0206 | 0.0592 | .017786561 | pCi/g | YES |
| | | Uranium-238 | 0.506 g | 2.82 | 0.224 | 0.0634 | .061067194 | pCi/g | NO |
| 246341005 | RE15-10-8309 | Uranium-233/234 | 0.509 g | 1.65 | 0.142 | 0.0996 | .060314342 | pCi/g | NO |
| | | Uranium-235/236 | 0.509 g | 0.0585 | 0.0187 | 0.0635 | .017681729 | pCi/g | YES |
| | | Uranium-238 | 0.509 g | 1.53 | 0.134 | 0.068 | .060707269 | pCi/g | NO |
| 246341006 | RE15-10-8308 | Uranium-233/234 | 0.518 g | 2.74 | 0.216 | 0.0881 | .059266409 | pCi/g | NO |
| | | Uranium-235/236 | 0.518 g | 0.207 | 0.0333 | 0.0562 | .017374517 | pCi/g | NO |
| | | Uranium-238 | 0.518 g | 5.14 | 0.387 | 0.0601 | .059652510 | pCi/g | NO |
| 246341007 | RE15-10-8301 | Uranium-233/234 | 0.509 g | 1.66 | 0.142 | 0.0942 | .060314342 | pCi/g | NO |
| | | Uranium-235/236 | 0.509 g | 0.0784 | 0.0209 | 0.060 | .017681729 | pCi/g | YES |
| | | Uranium-238 | 0.509 g | 1.65 | 0.141 | 0.0643 | .060707269 | pCi/g | NO |
| 246341008 | RE15-10-8300 | Uranium-233/234 | 0.522 g | 1.11 | 0.106 | 0.106 | .058812261 | pCi/g | NO |
| | | Uranium-235/236 | 0.522 g | 0.0937 | 0.0231 | 0.0677 | .017241379 | pCi/g | NO |
| | | Uranium-238 | 0.522 g | 1.41 | 0.129 | 0.0725 | .059195402 | pCi/g | NO |
| 246341009 | RE15-10-8324 | Uranium-233/234 | 0.513 g | 7.64 | 0.567 | 0.0951 | .059844055 | pCi/g | NO |
| | | Uranium-235/236 | 0.513 g | 0.349 | 0.0478 | 0.0607 | .017543860 | pCi/g | NO |
| | | Uranium-238 | 0.513 g | 10.0 | 0.737 | 0.0649 | .060233918 | pCi/g | NO |

2/24/10

GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|---|---|
| <p>BATCH NUMBER : 950645 SAMPLE ID : S0246328001_UU SAMPLE QTY : 0.519 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 60.958</p> | <p>CHAMBER : 002 DETECTOR S/N : 79452 AVERAGE %EFFICIENCY : 29.5805 COUNT DATE : 20-FEB-2010 11:14:08 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B002.CNF:1115 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W002.CNF:328 CAL DATE : 3-FEB-2010</p> |
|--|---|---|

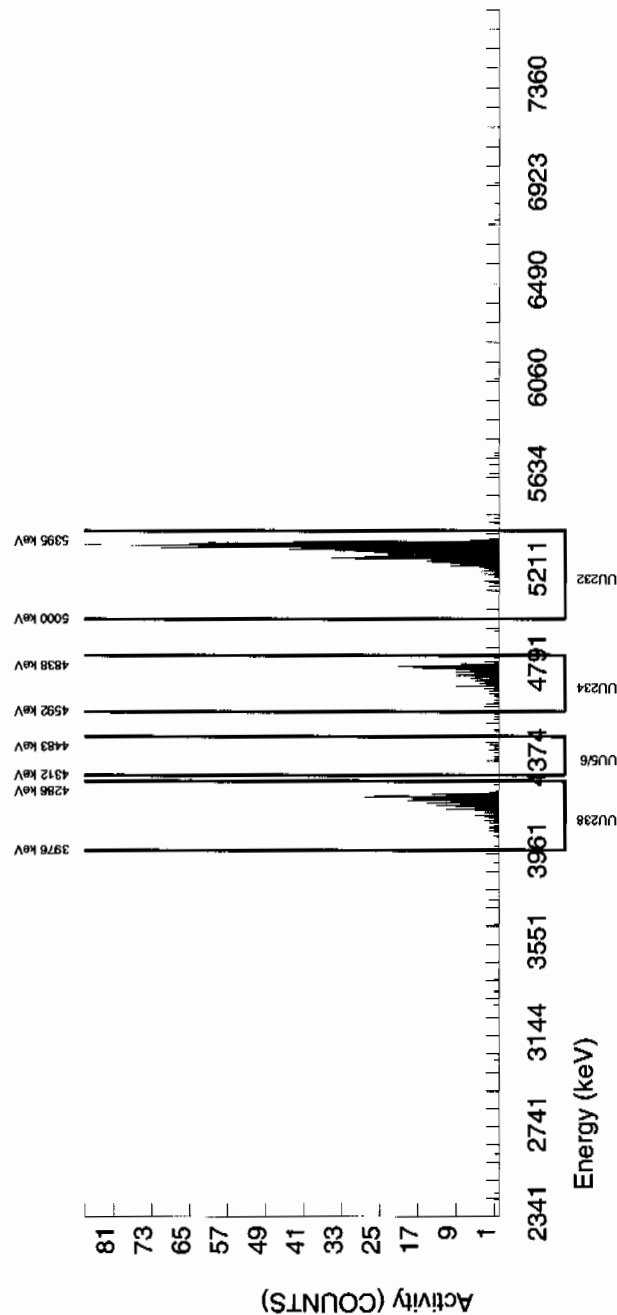
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 2.7466E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

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 | 5311.258 | 34.955 | 814.000 | 812.000 | 2.000 | 1.4142 | 100.0000 | 3.91E+00 | 3.16E-01 | 1.58E-02 | 4.47E-02 | 1.38E-01 |
| U-3/4 | 4763.020 | 4760.630 | 17.462 | 179.000 | 170.178 | 8.000 | 4.8416 | 100.0000 | 8.19E-01 | 8.87E-02 | 5.42E-02 | 1.21E-01 | 6.57E-02 |
| U-235 | 4391.000 | 4411.213 | 29.767 | 14.000 | 10.000 | 4.000 | 2.2152 | 80.90000 | 5.95E-02 | 2.56E-02 | 3.07E-02 | 7.74E-02 | 2.52E-02 |
| U-238 | 4184.730 | 4192.042 | 34.217 | 253.000 | 253.000 | 0.000 | 3.1208 | 100.0000 | 1.22E+00 | 1.17E-01 | 3.49E-02 | 8.29E-02 | 7.66E-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 : 950645 SAMPLE ID : S0246328002_UU SAMPLE QTY : 0.525 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 97.555 | CHAMBER : 003 DETECTOR S/N : 79453 AVERAGE %EFFICIENCY : 31.0941 COUNT DATE : 20-FEB-2010 11:14:08 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_UU BKG FILE : B003.CNF;1110 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W003.CNF;341 CAL DATE : 3-FEB-2010 |
|---|--|--|

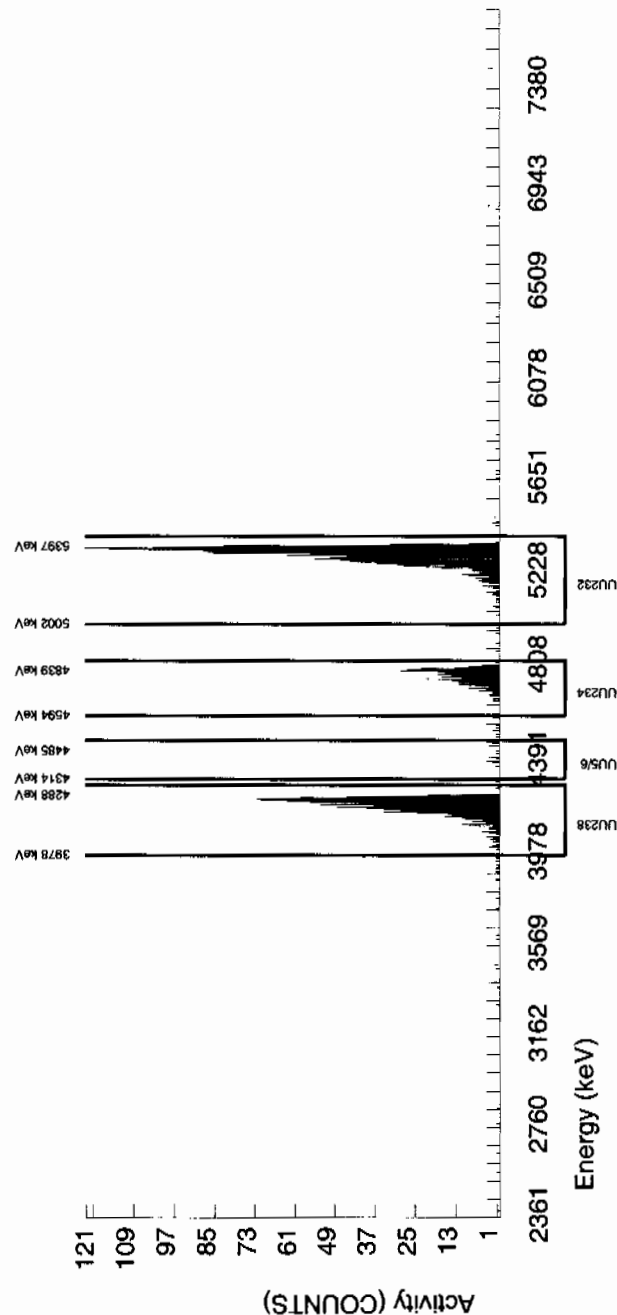
| | | |
|---|--|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 4.3955E+00 dpm | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G |
|---|--|--|

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 | 5315.328 | 42.042 | 1368.000 | 1366.000 | 2.000 | 1.4142 | 100.0000 | 3.87E+00 | 2.87E-01 | 9.31E-03 | 2.63E-02 | 1.05E-01 |
| U-3/4 | 4763.020 | 4769.057 | 53.150 | 328.000 | 324.617 | 2.000 | 4.8416 | 100.0000 | 9.18E-01 | 8.17E-02 | 3.19E-02 | 7.14E-02 | 5.13E-02 |
| U-235 | 4391.000 | 4428.372 | 73.268 | 13.000 | 13.000 | 0.000 | 2.2152 | 80.90000 | 4.55E-02 | 1.30E-02 | 1.80E-02 | 4.55E-02 | 1.26E-02 |
| U-238 | 4184.730 | 4197.581 | 53.744 | 878.000 | 877.000 | 1.000 | 3.1208 | 100.0000 | 2.48E+00 | 1.91E-01 | 2.05E-02 | 4.87E-02 | 8.39E-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

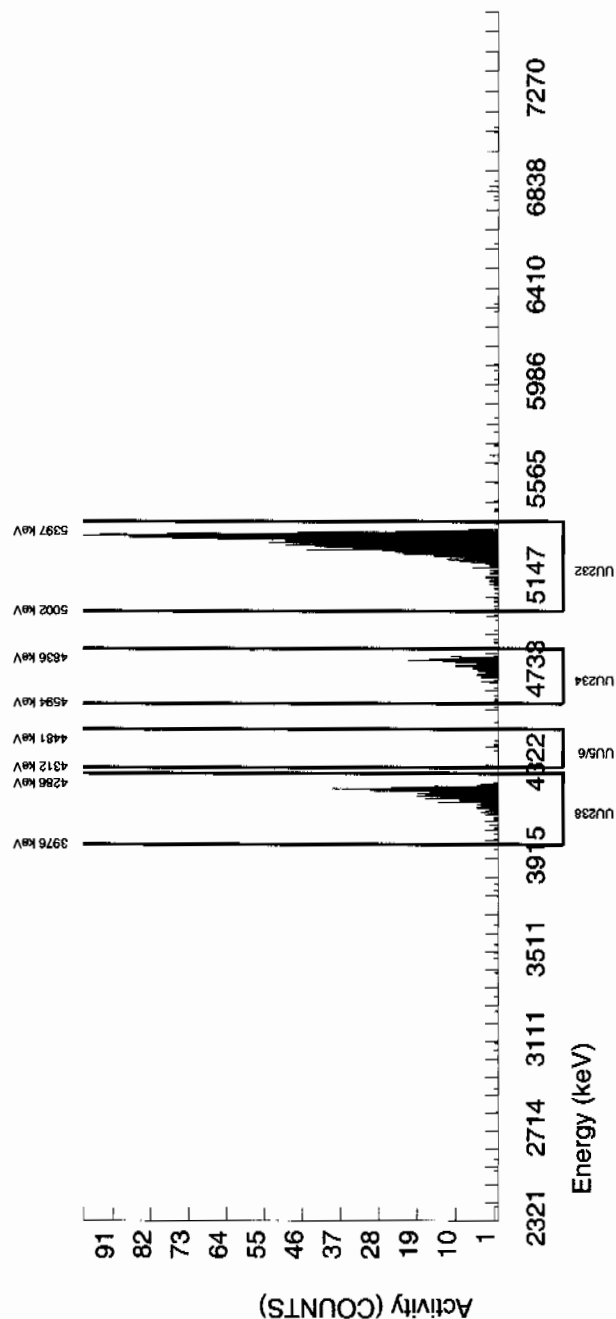
| | | | |
|---|--|---|--|
| BATCH NUMBER : 950645 SAMPLE ID : S0246328003_UU SAMPLE QTY : 0.521 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 86.046 | | CHAMBER : 004 DETECTOR S/N : 68548 AVERAGE %EFFICIENCY : 30.4786 COUNT DATE : 20-FEB-2010 11:14:08 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_UU BKG FILE : B004.CNF:1119 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W004.CNF:330 CAL DATE : 3-FEB-2010 |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 3.8770E+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 | 5307.897 | 54.048 | 1186.000 | 1181.000 | 5.000 | 2.2361 | 100.0000 | 3.90E+00 | 2.96E-01 | 1.71E-02 | 4.32E-02 | 1.14E-01 |
| U-3/4 | 4763.020 | 4764.935 | 23.810 | 165.000 | 161.805 | 2.000 | 4.8416 | 100.0000 | 5.33E-01 | 5.66E-02 | 3.71E-02 | 8.32E-02 | 4.25E-02 |
| U-235 | 4391.000 | 4396.680 | 112.573 | 5.000 | 4.000 | 1.000 | 2.2152 | 80.90000 | 1.63E-02 | 1.00E-02 | 2.10E-02 | 5.30E-02 | 9.98E-03 |
| U-238 | 4184.730 | 4193.317 | 21.027 | 348.000 | 347.000 | 1.000 | 3.1208 | 100.0000 | 1.14E+00 | 1.01E-01 | 2.39E-02 | 5.68E-02 | 6.16E-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 : 950645 SAMPLE ID : S0246328004_UU SAMPLE QTY : 0.520 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 102.604</p> | <p>CHAMBER : 005 DETECTOR S/N : 79454 AVERAGE %EFFICIENCY : 31.9230 COUNT DATE : 20-FEB-2010 11:14:08 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B005.CNF;1105 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W005.CNF;337 CAL DATE : 3-FEB-2010</p> |
|---|---|---|

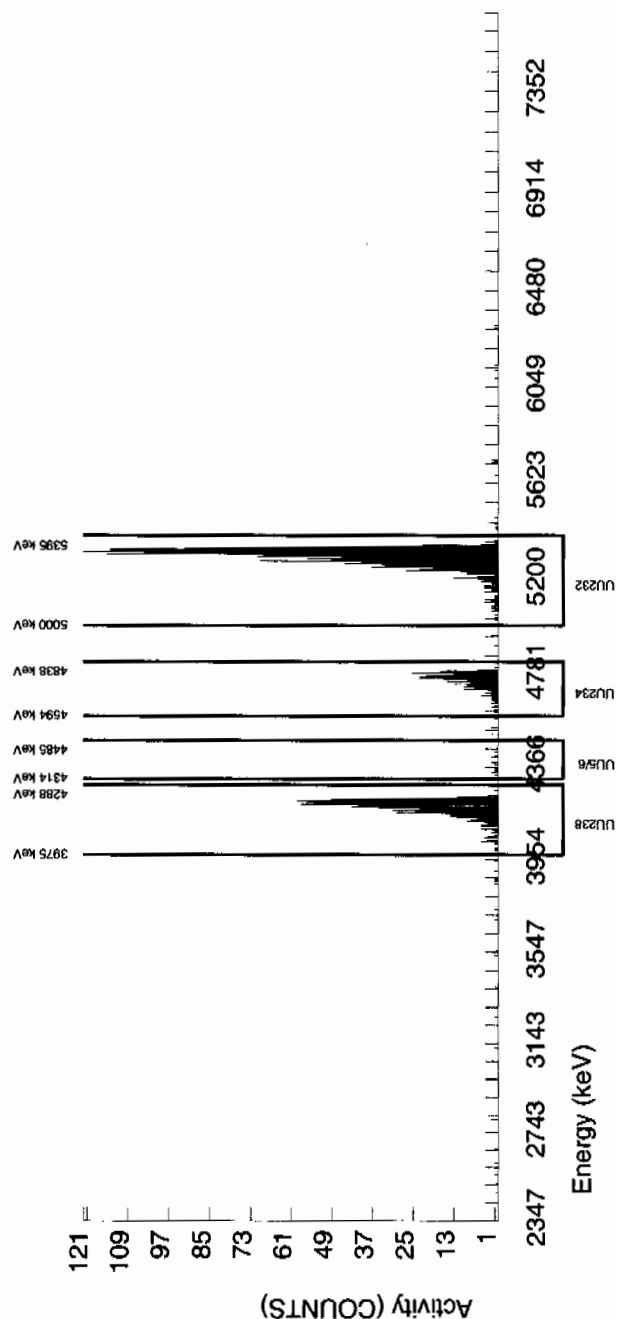
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 4.6230E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

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 | 5304.822 | 60.644 | 1481.000 | 1475.000 | 6.000 | 2.4495 | 100.0000 | 3.90E+00 | 2.87E-01 | 1.51E-02 | 3.73E-02 | 1.02E-01 |
| U-3/4 | 4763.020 | 4756.873 | 56.081 | 285.000 | 281.507 | 2.000 | 4.8416 | 100.0000 | 7.44E-01 | 6.80E-02 | 2.98E-02 | 6.67E-02 | 4.47E-02 |
| U-235 | 4391.000 | 4379.728 | 76.199 | 14.000 | 10.000 | 4.000 | 2.2152 | 80.90000 | 3.27E-02 | 1.41E-02 | 1.68E-02 | 4.26E-02 | 1.39E-02 |
| U-238 | 4184.730 | 4188.707 | 60.229 | 703.000 | 702.000 | 1.000 | 3.1208 | 100.0000 | 1.86E+00 | 1.46E-01 | 1.92E-02 | 4.56E-02 | 7.02E-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 : 950645 SAMPLE ID : S0246328005_UU SAMPLE QTY : 0.511 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 82.514 | | | | CHAMBER : 006 DETECTOR S/N : 79455 AVERAGE %EFFICIENCY : 31.1643 COUNT DATE : 20-FEB-2010 11:14:08 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_UU BKG FILE : B006.CNF;1118 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W006.CNF;361 CAL DATE : 3-FEB-2010 | | | | | |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 3.7178E+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 | 5296.862 | 35.517 | 1158.000 | 1158.000 | 0.000 | 0.0000 | 100.0000 | 3.97E+00 | 3.02E-01 | 0.00E+00 | 9.29E-03 | 1.17E-01 |
| U-3/4 | 4763.020 | 4752.461 | 66.431 | 385.000 | 383.828 | 0.000 | 4.8416 | 100.0000 | 1.32E+00 | 1.14E-01 | 3.86E-02 | 8.65E-02 | 6.72E-02 |
| U-235 | 4391.000 | 4400.478 | 72.660 | 38.000 | 38.000 | 0.000 | 2.2152 | 80.90000 | 1.61E-01 | 2.85E-02 | 2.18E-02 | 5.52E-02 | 2.61E-02 |
| U-238 | 4184.730 | 4183.386 | 59.126 | 1209.000 | 1209.000 | 0.000 | 3.1208 | 100.0000 | 4.14E+00 | 3.14E-01 | 2.49E-02 | 5.91E-02 | 1.19E-01 |

NOTES:

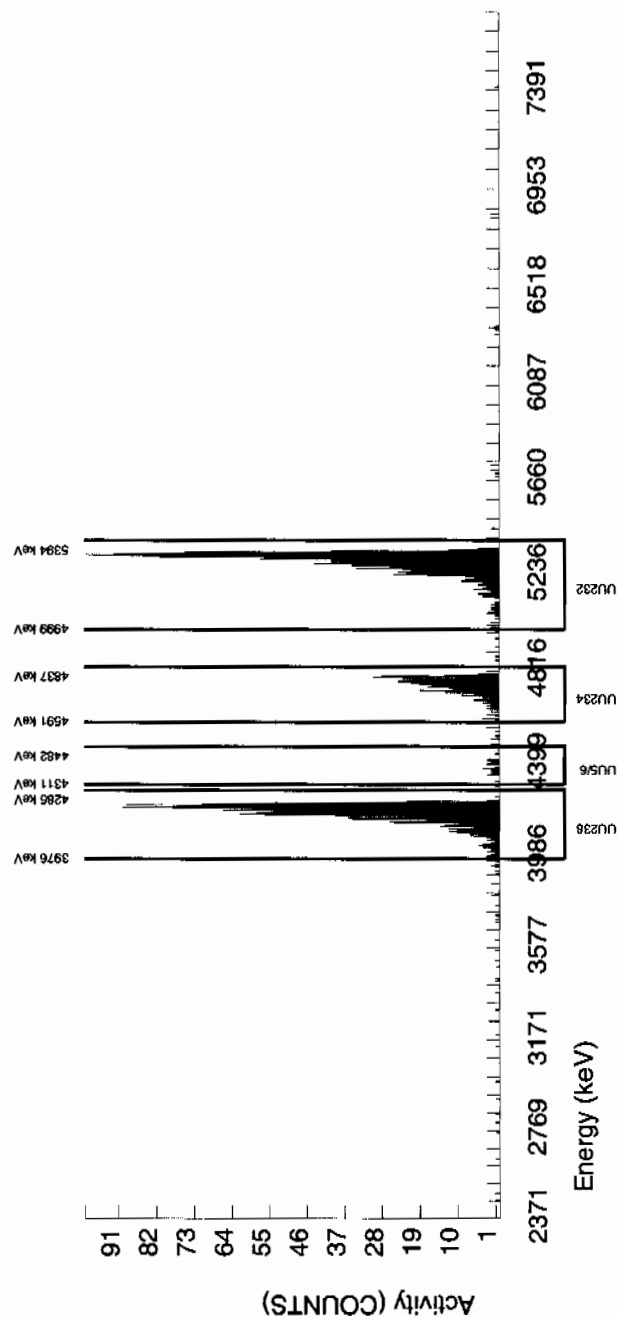
* Sg calculated via blank population.

(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



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

| | | |
|--|---|---|
| <p>BATCH NUMBER : 950645 SAMPLE ID : S0246328006_UU SAMPLE QTY : 0.503 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 95.092</p> | <p>CHAMBER : 007 DETECTOR S/N : 67607 AVERAGE %EFFICIENCY : 29.5407 COUNT DATE : 20-FEB-2010 11:43:32 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B007.CNF;1113 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W007.CNF;312 CAL DATE : 3-FEB-2010</p> |
|--|---|---|

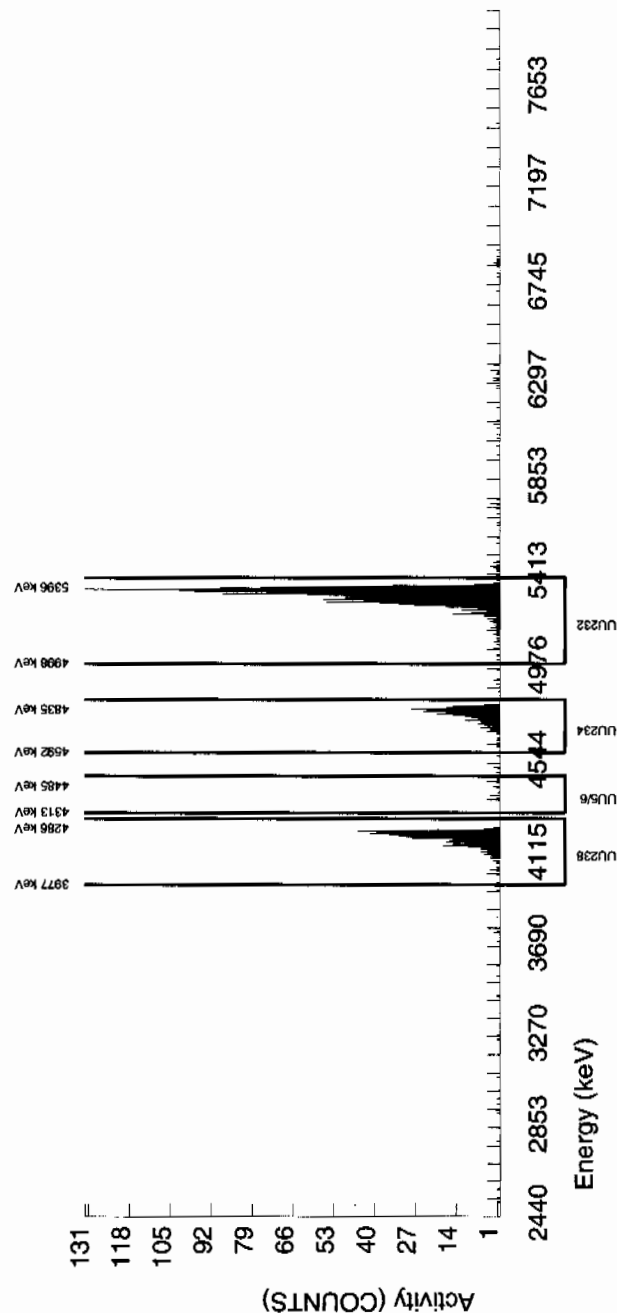
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 4.2846E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

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 | 5314.595 | 36.188 | 1281.000 | 1265.000 | 16.000 | 4.0000 | 100.0000 | 4.03E+00 | 3.04E-01 | 2.97E-02 | 6.80E-02 | 1.15E-01 |
| U-3/4 | 4763.020 | 4771.288 | 37.800 | 258.000 | 253.720 | 3.000 | 4.8416 | 100.0000 | 8.09E-01 | 7.63E-02 | 3.59E-02 | 8.05E-02 | 5.14E-02 |
| U-235 | 4391.000 | 4421.755 | 44.951 | 13.000 | 12.000 | 1.000 | 2.2152 | 80.90000 | 4.73E-02 | 1.51E-02 | 2.03E-02 | 5.13E-02 | 1.47E-02 |
| U-238 | 4184.730 | 4196.860 | 37.637 | 445.000 | 443.000 | 2.000 | 3.1208 | 100.0000 | 1.41E+00 | 1.19E-01 | 2.31E-02 | 5.49E-02 | 6.74E-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

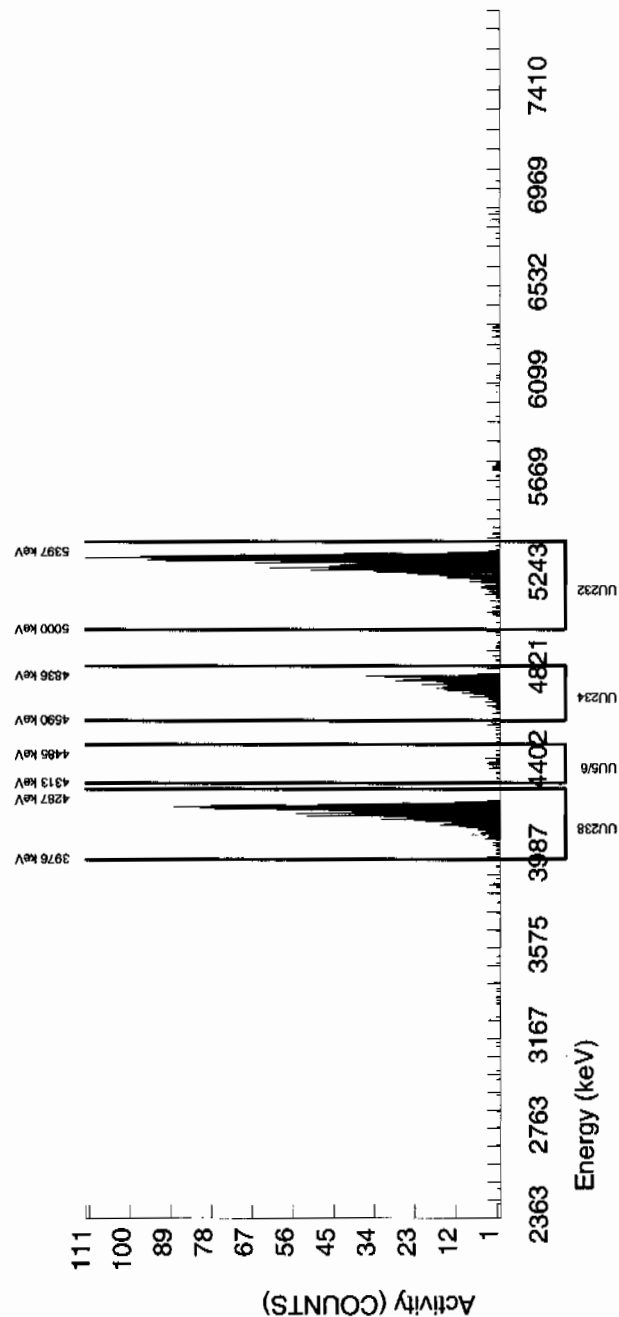
| | | | | | | | | | | | | | |
|---|-------------------|----------------|--------------|--|-------------|-------------|-----------|--|-------------------|----------------|--------------|--------------|--------------|
| BATCH NUMBER : 950645 SAMPLE ID : S0246328007_UU SAMPLE QTY : 0.529 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 87.846 | | | | CHAMBER : 008 DETECTOR S/N : 78788 AVERAGE %EFFICIENCY : 31.7753 COUNT DATE : 20-FEB-2010 11:43:32 ELAPSED LIVE TIME(SEC) : 60000.00 | | | | LIB FILE : ENV_ALPHA_UU BKG FILE : B008.CNF:1115 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W008.CNF:343 CAL DATE : 3-FEB-2010 | | | | | |
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 3.9581E+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 | 5301.654 | 59.171 | 1262.000 | 1257.000 | 5.000 | 2.2361 | 100.0000 | 3.84E+00 | 2.89E-01 | 1.59E-02 | 4.00E-02 | 1.09E-01 |
| U-3/4 | 4763.020 | 4754.797 | 39.849 | 367.000 | 363.728 | 2.000 | 4.8416 | 100.0000 | 1.11E+00 | 9.70E-02 | 3.44E-02 | 7.70E-02 | 5.85E-02 |
| U-235 | 4391.000 | 4406.704 | 48.979 | 27.000 | 27.000 | 0.000 | 2.2152 | 80.90000 | 1.02E-01 | 2.08E-02 | 1.94E-02 | 4.91E-02 | 1.96E-02 |
| U-238 | 4184.730 | 4184.791 | 52.851 | 967.000 | 967.000 | 0.000 | 3.1208 | 100.0000 | 2.95E+00 | 2.26E-01 | 2.21E-02 | 5.26E-02 | 9.49E-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 : 950645 SAMPLE ID : S0246328008_UU SAMPLE QTY : 0.517 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 80.119 | | CHAMBER : 009 DETECTOR S/N : 72528 AVERAGE %EFFICIENCY : 34.1471 COUNT DATE : 20-FEB-2010 11:43:32 ELAPSED LIVE TIME(SEC) : 60000.00 | LIB FILE : ENV_ALPHA_UU BKG FILE : B009.CNF;1106 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W009.CNF;307 CAL DATE : 3-FEB-2010 |
|---|--|--|--|

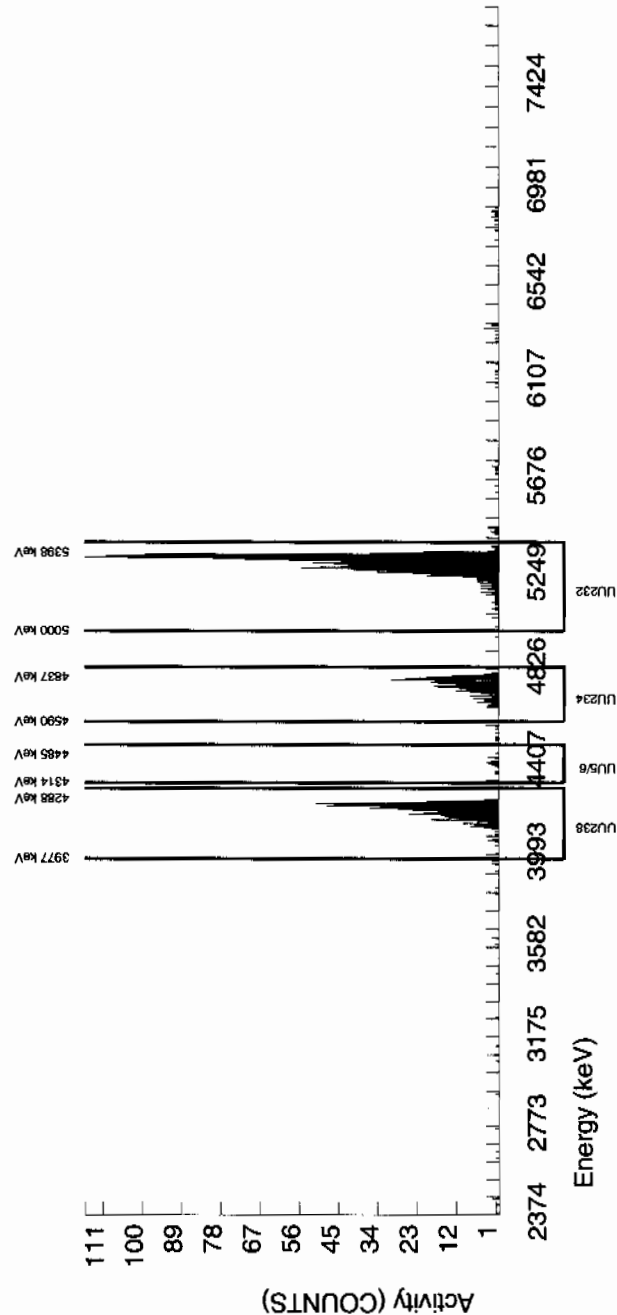
| | | |
|---|--|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 3.6099E+00 dpm | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G |
|---|--|--|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5310.036 | 30.349 | 1235.000 | 1232.000 | 3.000 | 1.7321 | 100.0000 | 3.93E+00 | 2.96E-01 | 1.28E-02 | 3.43E-02 | 1.12E-01 |
| U-3/4 | 4763.020 | 4759.906 | 49.397 | 315.000 | 311.753 | 2.000 | 4.8416 | 100.0000 | 9.93E-01 | 8.95E-02 | 3.59E-02 | 8.04E-02 | 5.66E-02 |
| U-235 | 4391.000 | 4388.277 | 0.000 | 22.000 | 19.000 | 3.000 | 2.2152 | 80.90000 | 7.48E-02 | 2.04E-02 | 2.03E-02 | 5.12E-02 | 1.97E-02 |
| U-238 | 4184.730 | 4191.963 | 34.350 | 520.000 | 520.000 | 0.000 | 3.1208 | 100.0000 | 1.66E+00 | 1.37E-01 | 2.31E-02 | 5.49E-02 | 7.26E-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 : 950645 SAMPLE ID : S0246328009_UU SAMPLE QTY : 0.506 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 95.589 | | CHAMBER : 010 DETECTOR S/N : 72529 AVERAGE %EFFICIENCY : 31.8962 COUNT DATE : 20-FEB-2010 11:43:32 ELAPSED LIVE TIME(SEC) : 60000.00 | | LIB FILE : ENV_ALPHA_UU BKG FILE : B010.CNF;1124 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 59999.99 EFF FILE : W010.CNF;335 CAL DATE : 3-FEB-2010 | |
|---|--|--|--|--|--|

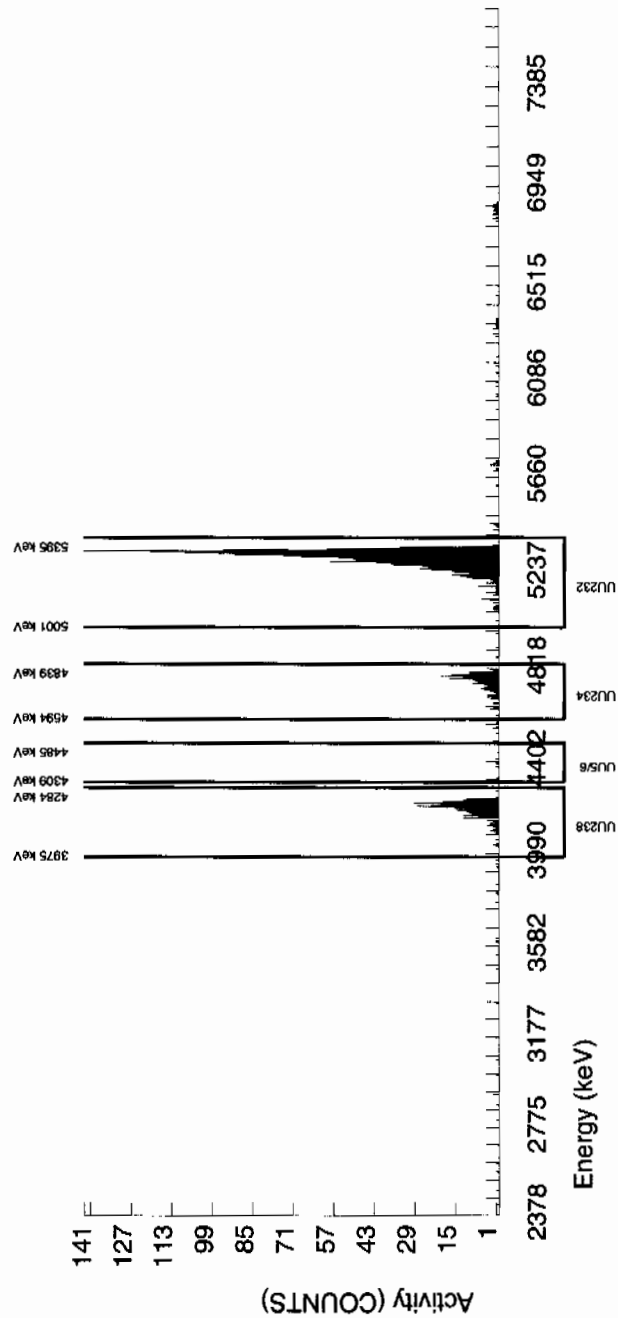
| | | | | | |
|--|--|---|--|---|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 4.3069E+00 dpm | | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | |
|--|--|---|--|---|--|

NUCLIDE ACTIVITY SUMMARY

| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G | TPU 1-SIGMA | DLC pCi/G | MDC pCi/G | UNC pCi/G |
|---------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|-------------|-----------|-----------|-----------|
| U232 | 5302.100 | 5308.529 | 29.521 | 1376.000 | 1373.000 | 3.000 | 1.7321 | 100.0000 | 4.01E+00 | 2.98E-01 | 1.18E-02 | 3.14E-02 | 1.08E-01 |
| U-3/4 | 4763.020 | 4760.272 | 26.200 | 189.000 | 187.610 | 0.000 | 4.8416 | 100.0000 | 5.48E-01 | 5.51E-02 | 3.29E-02 | 7.37E-02 | 4.00E-02 |
| U-235 | 4391.000 | 4376.524 | 0.000 | 8.000 | 8.000 | 0.000 | 2.2152 | 80.90000 | 2.89E-02 | 1.04E-02 | 1.86E-02 | 4.70E-02 | 1.02E-02 |
| U-238 | 4184.730 | 4190.711 | 33.379 | 300.000 | 296.000 | 4.000 | 3.1208 | 100.0000 | 8.64E-01 | 7.86E-02 | 2.12E-02 | 5.03E-02 | 5.09E-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 : 950645 SAMPLE ID : S0246341001_UU SAMPLE QTY : 0.523 G SAMPLE DATE : 1-FEB-2010 00:00:00. ANALYST : JXD2 % YIELD : 45.055</p> | <p>CHAMBER : 121 DETECTOR S/N : 75545 AVERAGE %EFFICIENCY : 24.6447 COUNT DATE : 22-FEB-2010 12:41:39 ELAPSED LIVE TIME(SEC) : 60000.00</p> | <p>LIB FILE : ENV_ALPHA_UU BKG FILE : B121.CNF:449 BKG DATE : 21-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W121.CNF:119 CAL DATE : 18-FEB-2010</p> |
|--|---|---|

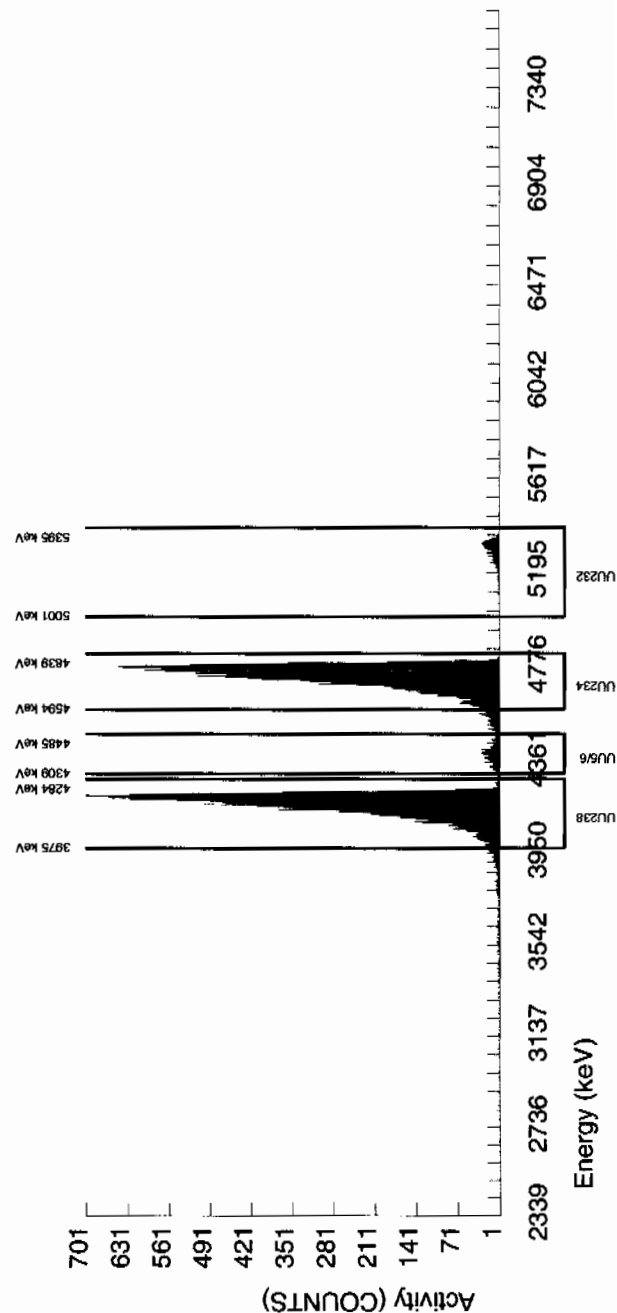
| | | |
|--|---|---|
| <p>TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5057E+00 dpm RESULTS : 2.0301E+00 dpm</p> | <p>MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> | <p>LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G</p> |
|--|---|---|

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 | 5287.215 | 97.706 | 505.000 | 500.000 | 5.000 | 2.2361 | 100.0000 | 3.88E+00 | 3.50E-01 | 4.03E-02 | 1.02E-01 | 1.75E-01 |
| U-3/4 | 4763.020 | 4743.671 | 78.263 | 11494.000 | 11492.494 | 1.000 | 4.8416 | 100.0000 | 8.91E+01 | 7.01E-00 | 8.74E-02 | 1.96E-01 | 8.32E-01 |
| U-235 | 4391.000 | 4394.835 | 83.284 | 547.000 | 547.000 | 0.000 | 2.2152 | 80.90000 | 5.24E+00 | 4.67E-01 | 4.94E-02 | 1.25E-01 | 2.24E-01 |
| U-238 | 4184.730 | 4171.088 | 80.552 | 11897.000 | 11897.000 | 0.000 | 3.1208 | 100.0000 | 9.23E+01 | 7.26E+00 | 5.63E-02 | 1.34E-01 | 8.46E-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



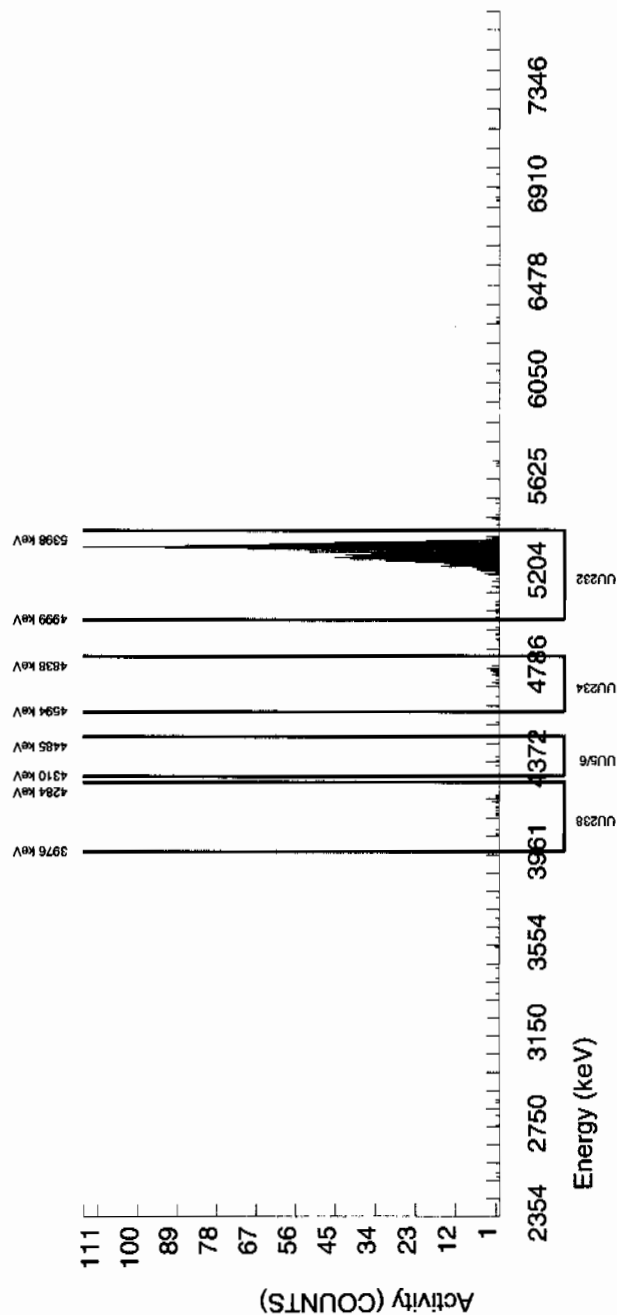
NOTES:

* 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:



NOTES:

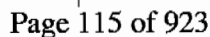
* Sg calculated via blank population.

(Sg updated 10-FEB-2010)

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

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

U-3/4



GEL Laboratories LLC ALPHA SPECTROSCOPY REPORT

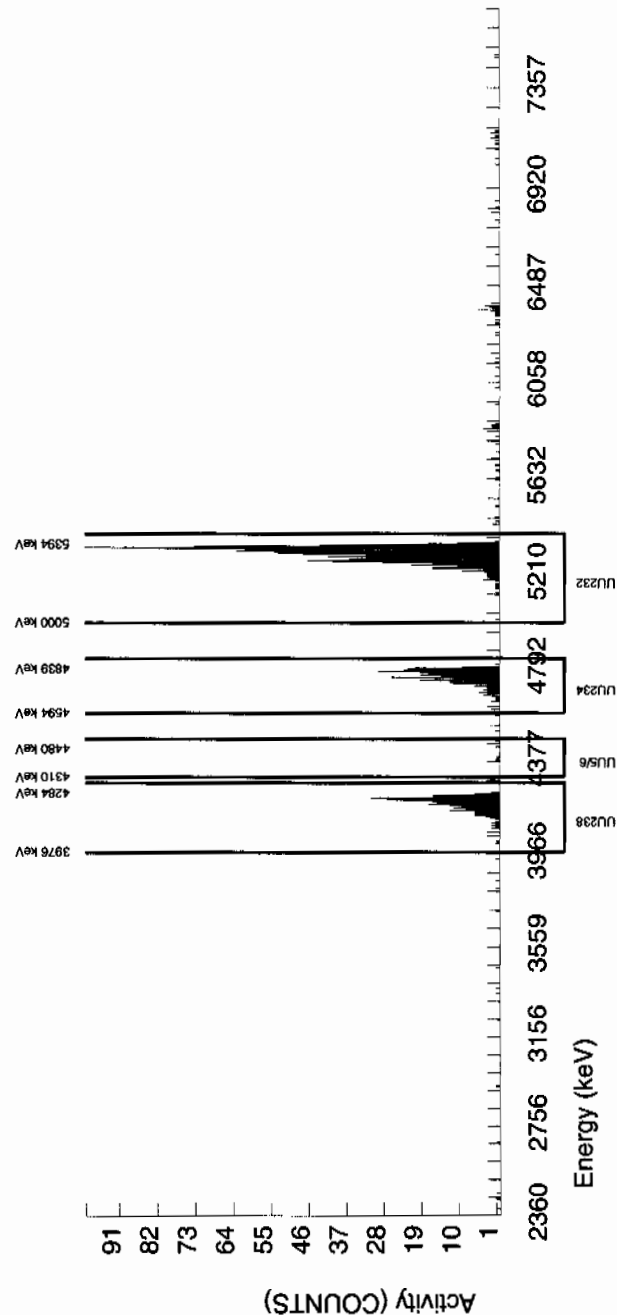
| | | | | | |
|---|--|--|--|---|--|
| BATCH NUMBER : 950645 SAMPLE ID : S1202037255_UU SAMPLE QTY : 0.104 G SAMPLE DATE : 16-FEB-2010 00:00:00 ANALYST : JXD2 % YIELD : 84.267 | | CHAMBER : 185 DETECTOR S/N : 68615 AVERAGE %EFFICIENCY : 25.8251 COUNT DATE : 20-FEB-2010 11:06:37 ELAPSED LIVE TIME(SEC) : 60000.00 | | LIB FILE : ENV_ALPHA_UU BKG FILE : B185.CNF;154 BKG DATE : 14-FEB-2010 BKG LIVE TIME(SEC) : 60000.00 EFF FILE : W185.CNF;53 CAL DATE : 22-JAN-2010 | |
|---|--|--|--|---|--|

| | | | | | |
|--|--|---|--|---|--|
| TRACER ID : 1283-H NUCLIDE : U232 NOMINAL : 4.5038E+00 dpm RESULTS : 3.7953E+00 dpm | | MS/MSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | | LCS/LCSD ID : 0244-A NUCLIDE : U-238 NOMINAL : 5.7500E+00 pCi/G | |
|--|--|---|--|---|--|

| NUCLIDE ACTIVITY SUMMARY | | | | | | | | | |
|--------------------------|----------------|-------------|-----------|------------|----------|----------|--------|----------|----------------|
| NUCLIDE | LIBRARY ENERGY | PEAK ENERGY | PEAK FWHM | GROSS AREA | NET AREA | BKG AREA | BKG Sg | %ABUN | ACTIVITY pCi/G |
| U232 | 5302.100 | 5310.129 | 36.168 | 981.000 | 980.000 | 1.000 | 1.0000 | 100.0000 | 1.95E+01 |
| U-3/4 | 4763.020 | 4761.928 | 58.643 | 316.000 | 314.008 | 1.000 | 4.8416 | 100.0000 | 6.25E+00 |
| U-235 | 4391.000 | 4421.467 | 88.041 | 5.000 | 4.000 | 1.000 | 2.2152 | 80.90000 | 9.84E-02 |
| U-238 | 4184.730 | 4194.101 | 40.771 | 300.000 | 300.000 | 0.000 | 3.1208 | 100.0000 | 5.97E+00 |

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# 950786 Product: Y-5 Date: 2/22/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By: KObt 2/22/10

Secondary Review Performed By: SEulau 2/23/10

LANL
2/26

Gamma Spec Que Sheet

1.6. - 2/18/10

02/12/2010

Batch #: 950786 Analyst: MXR1 First Client Due Date: 02/26/2010 Internal Due Date: 02/16/2010

Gamma Spike Isotope: Mixed Gamma

Gamma LCS Isotope: Mixed Gamma

Spike Code: n/a

Expiration Date: n/a

Vol: n/a

Nominal Concentration: n/a

6.40 6.390

Initials: yls

Prep Date: 2/11/10

Library: SOLID

Witness: n/a

Net/Dry

| Hazard | | | | Wet/Dry | | Sealing Date/Time | | | |
|--------------|-----------------------------------|--------|------|------------|--------|--------------------|------------------|----------|-----------------|
| Sample ID | Client Description / Container ID | Type | Code | Client | Matrix | Collect Date | Geometry (1/g/F) | Detector | (If Applicable) |
| 246312001-1 | RE16-10-1313 | SAMPLE | | LANL010 | SOIL | 29-JAN-10 12:00:00 | RF | can | 140.78 |
| 246328001-1 | RE15-10-7332 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 157.11 |
| 246328002-1 | RE15-10-7333 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 151.13 |
| 246328003-1 | RE15-10-7336 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 171.26 |
| 246328004-1 | RE15-10-7337 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 160.41 |
| 246328005-1 | RE15-10-7334 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 156.00 |
| 246328006-1 | RE15-10-7335 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 122.42 |
| 246328007-1 | RE15-10-7338 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 163.13 |
| 246328008-1 | RE15-10-7339 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 125.38 |
| 246328009-1 | RE15-10-7342 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 166.62 |
| 246341001-1 | RE15-10-8304 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 109.74 |
| 246341002-1 | RE15-10-8305 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 98.67 |
| 246341003-1 | RE15-10-8306 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 128.30 |
| 246341004-1 | RE15-10-8307 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 119.41 |
| 246341005-1 | RE15-10-8309 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 140.62 |
| 246341006-1 | RE15-10-8308 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 140.98 |
| 246341007-1 | RE15-10-8301 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 127.62 |
| 246341008-1 | RE15-10-8300 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 130.57 |
| 246341009-1 | RE15-10-8324 | SAMPLE | | LANL010 | SOIL | 01-FEB-10 12:00:00 | RF | | 130.73 |
| 1202037546-1 | MB | MB | | QC ACCOUNT | SOIL | 2/11/10 | RF | | 171.26 |
| 1202037547-1 | DUP RE15-10-8305(246341002) | DUP | | QC ACCOUNT | SOIL | 01-FEB-10 12:00:00 | RF | | 95.15 |
| 1202037548-1 | LCS | LCS | | QC ACCOUNT | SOIL | 2/11/10 | RF | | 155.44 |

GEL Laboratories LLC, Radiochemistry Division

Data Reviewed By: Klatka 2/12/10
 ✓ no history
 ✓ deficiencies

Page 1 of 1

Failed RDL Report

| Batch Id | Samp Id | Sample Type | Run Date | YIELD | Parmname | Result | MDA | RDL |
|----------|------------|-------------|-----------|-------|---------------|----------|---------|-------|
| 950786 | 246312001 | SAMPLE | 18-FEB-10 | | Americium-241 | -0.1267 | 0.4363 | 0.200 |
| | | | | | Cerium-139 | 0.02697 | 0.05612 | 0.050 |
| | | | | | Thorium-234 | 0.5324 | 3.414 | 2.00 |
| 950786 | 246328001 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246328002 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246328003 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246328004 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246328005 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246328006 | SAMPLE | 18-FEB-10 | | Sodium-22 | -0.00122 | 0.09075 | 0.080 |
| 950786 | 246328007 | SAMPLE | 18-FEB-10 | | Americium-241 | 2.74E-05 | 0.2018 | 0.200 |
| 950786 | 246328008 | SAMPLE | 18-FEB-10 | | Americium-241 | 0.0357 | 0.325 | 0.200 |
| | | | | | Cerium-139 | -0.00743 | 0.05977 | 0.050 |
| | | | | | Cesium-134 | 0.06784 | 0.1014 | 0.100 |
| | | | | | Sodium-22 | -0.02056 | 0.09109 | 0.080 |
| 950786 | 246328009 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246341001 | SAMPLE | 18-FEB-10 | | Americium-241 | 0.7881 | 1.094 | 0.200 |
| | | | | | Europium-152 | -0.1048 | 0.2561 | 0.200 |
| | | | | | Mercury-203 | 0.07269 | 0.1275 | 0.100 |
| | | | | | Sodium-22 | -0.02731 | 0.09164 | 0.080 |
| | | | | | Tin-113 | 0.02289 | 0.1294 | 0.100 |
| 950786 | 246341002 | SAMPLE | 18-FEB-10 | | Cesium-134 | 0.1035 | 0.141 | 0.100 |
| | | | | | Europium-152 | 0.00343 | 0.296 | 0.200 |
| | | | | | Mercury-203 | 0.06025 | 0.1399 | 0.100 |
| | | | | | Ruthenium-106 | 0.00999 | 0.872 | 0.800 |
| | | | | | Sodium-22 | -0.02197 | 0.082 | 0.080 |
| | | | | | Tin-113 | -0.06584 | 0.1356 | 0.100 |
| 950786 | 246341003 | SAMPLE | 18-FEB-10 | | Americium-241 | 0.04275 | 0.4515 | 0.200 |
| | | | | | Cerium-139 | -0.02409 | 0.05282 | 0.050 |
| 950786 | 246341004 | SAMPLE | 18-FEB-10 | | | | | |
| 950786 | 246341005 | SAMPLE | 18-FEB-10 | | Americium-241 | -0.06609 | 0.2212 | 0.200 |
| 950786 | 246341006 | SAMPLE | 18-FEB-10 | | Americium-241 | -0.00083 | 0.2682 | 0.200 |
| 950786 | 246341007 | SAMPLE | 18-FEB-10 | | Americium-241 | 0.09593 | 0.2072 | 0.200 |
| | | | | | Sodium-22 | 0.03805 | 0.08554 | 0.080 |
| 950786 | 246341008 | SAMPLE | 18-FEB-10 | | Cesium-134 | 0.05379 | 0.1075 | 0.100 |
| | | | | | Sodium-22 | -0.06261 | 0.09861 | 0.080 |
| 950786 | 246341009 | SAMPLE | 18-FEB-10 | | Americium-241 | 0.1985 | 0.2728 | 0.200 |
| | | | | | Cerium-139 | 0.00171 | 0.05669 | 0.050 |
| 950786 | 1202037546 | MB | 18-FEB-10 | | | | | |
| 950786 | 1202037547 | DUP | 18-FEB-10 | | Cesium-134 | 0.148 | 0.1862 | 0.100 |
| | | | | | Europium-152 | -0.03714 | 0.3409 | 0.200 |
| | | | | | Mercury-203 | -0.01147 | 0.1604 | 0.100 |
| | | | | | Ruthenium-106 | 0.3087 | 1.12 | 0.800 |

Failed RDL Report

| Batch Id | Samp Id | Sample Type | Run Date | YIELD | Parmname | Result | MDA | RDL |
|----------|------------|-------------|-----------|-------|---------------|----------|---------|-------|
| 950786 | 1202037547 | DUP | 18-FEB-10 | | Sodium-22 | -0.00153 | 0.09498 | 0.080 |
| | | | | | Tin-113 | -0.08817 | 0.1651 | 0.100 |
| 950786 | 1202037548 | LCS | 18-FEB-10 | | Cerium-139 | -0.004 | 0.07556 | 0.050 |
| | | | | | Cesium-134 | 0.1008 | 0.1995 | 0.100 |
| | | | | | Europium-152 | -0.09154 | 0.3255 | 0.200 |
| | | | | | Mercury-203 | -0.02564 | 0.1115 | 0.100 |
| | | | | | Potassium-40 | 0.6903 | 1.302 | 1.00 |
| | | | | | Ruthenium-106 | 0.1153 | 1.108 | 0.800 |
| | | | | | Sodium-22 | -0.02684 | 0.09346 | 0.080 |
| | | | | | Tin-113 | -0.08615 | 0.1536 | 0.100 |
| | | | | | Uranium-235 | 0.3087 | 0.561 | 0.500 |
| | | | | | Yttrium-88 | 0.04469 | 0.1083 | 0.100 |

GEL QUALS

Batch ID: 950786

Report run on: February 22, 2010 4:16 PM

| Samp Id | Parname | Cofa | Edd | Qual | Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|--------------|------|-----|------|-------------------------------------|------|--------|-----|--------|-----|
| 246312001-1 18-FEB-2010 10:53 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 2.172 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.556 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .1043 | | | |
| 246328001-1 18-FEB-2010 10:54 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 1.855 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 1.413 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.326 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .1051 | | | |
| 246328002-1 18-FEB-2010 11:05 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 2.011 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 1.356 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.761 | | | |
| 246328003-1 18-FEB-2010 11:06 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 1.768 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.244 | | | |
| 246328004-1 18-FEB-2010 11:08 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 2.036 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to low abundance. | | 1.619 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.746 | | | |
| 246328005-1 18-FEB-2010 11:08 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 2.181 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 1.954 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .06534 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.597 | | | |

GEL QUALS

Batch ID: 950786

Report run on: February 22, 2010 4:16 PM

| Samp Id | Parname | Cofa | Edd | Qual Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|--------------|------|-----|-------------------------------------|------|--------|-----|--------|-----|
| 246328005-1 18-FEB-2010 11:08 | Strontium-85 | UI | UI | Data rejected due to low abundance. | | .0518 | | | |
| 246328006-1 18-FEB-2010 11:16 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.604 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 5.101 | | | |
| | Cesium-134 | UI | UI | Data rejected due to low abundance. | | .1112 | | .1 | .1 |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 5.314 | | | |
| 246328007-1 18-FEB-2010 11:16 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 1.951 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to low abundance. | | 1.31 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 1.263 | | | |
| | Strontium-85 | UI | UI | Data rejected due to low abundance. | | .08662 | | | |
| 246328008-1 18-FEB-2010 11:47 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.247 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 2.737 | | | |
| | Mercury-203 | UI | UI | Data rejected due to interference. | | .1003 | | .1 | .1 |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 4.124 | | | |
| 246328009-1 18-FEB-2010 11:48 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 1.888 | | | |
| | Cadmium-109 | UI | UI | Data rejected due to interference. | | 1.187 | | | |
| | Radium-224 | UI | UI | Data rejected due to interference. | | 2.178 | | | |
| 246341001-1 18-FEB-2010 12:56 | Bismuth-211 | UI | UI | Data rejected due to interference. | | 4.172 | | | |
| | Cerium-139 | UI | UI | Data rejected due to low abundance. | | .1435 | | .05 | .05 |
| | Cesium-134 | UI | UI | Data rejected due to low abundance. | | .143 | | .1 | .1 |

GEL QUALS

Batch ID: 950786

Report run on: February 22, 2010 4:16 PM

| Samp Id | Parname | Cofa | Edd | Qual Comments | Auto | Result | MDA | Uncert | SQL |
|----------------------------------|---------------|------|-----|--|------|--------|-----|--------|-----|
| 246341001-1 18-FEB-2010 12:56 | Lead-212 | UI | UI | UI Data rejected due to low abundance. | | 1.914 | | .1 | .1 |
| | Radium-224 | UI | UI | UI Data rejected due to interference. | | 6.655 | | | |
| | Strontium-85 | UI | UI | UI Data rejected due to low abundance. | | .1462 | | | |
| | Thorium-227 | UI | UI | UI Data rejected due to low abundance. | | 3.424 | | | |
| 246341002-1 18-FEB-2010 12:57 | Americium-241 | UI | UI | UI Data rejected due to interference. | | 4.754 | | .2 | .2 |
| | Bismuth-211 | UI | UI | UI Data rejected due to interference. | | 3.963 | | | |
| | Cerium-139 | UI | UI | UI Data rejected due to low abundance. | | .2872 | | .05 | .05 |
| | Radium-224 | UI | UI | UI Data rejected due to interference. | | 5.092 | | | |
| | Strontium-85 | UI | UI | UI Data rejected due to low abundance. | | .1833 | | | |
| | Thorium-227 | UI | UI | UI Data rejected due to low abundance. | | 3.761 | | | |
| | Yttrium-88 | UI | UI | UI Data rejected due to low abundance. | | .08519 | | .1 | .1 |
| 246341003-1 18-FEB-2010 13:09 | Bismuth-211 | UI | UI | UI Data rejected due to interference. | | 3.779 | | | |
| | Cadmium-109 | UI | UI | UI Data rejected due to interference. | | 2.898 | | | |
| | Radium-224 | UI | UI | UI Data rejected due to interference. | | 5.06 | | | |
| 246341004-1 18-FEB-2010 13:10 | Bismuth-211 | UI | UI | UI Data rejected due to interference. | | 4.25 | | | |
| | Cadmium-109 | UI | UI | UI Data rejected due to interference. | | 3.469 | | | |
| | Radium-224 | UI | UI | UI Data rejected due to interference. | | 5.323 | | | |
| 246341005-1 18-FEB-2010 13:10 | Bismuth-211 | UI | UI | UI Data rejected due to low abundance. | | 3.902 | | | |
| | Cadmium-109 | UI | UI | UI Data rejected due to interference. | | 3.197 | | | |
| | Cesium-134 | UI | UI | UI Data rejected due to low abundance. | | .08292 | | .1 | .1 |

GEL QUALS

Batch ID: 950786

Report run on: February 22, 2010 4:16 PM

| Samp Id | Parname | Cofa | Edd | Qual | Comments | Auto | Result | MDA | Uncert | SQL |
|--------------------------------------|---------------|------|-----|------|-------------------------------------|------|--------|-----|--------|-----|
| 246341005-1 18-FEB-2010 13:10 | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.077 | | | |
| 246341006-1 18-FEB-2010 13:12 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.637 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 4.037 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1289 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.312 | | | |
| 246341007-1 18-FEB-2010 13:12 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 4.627 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 4.359 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1241 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.879 | | | |
| 246341008-1 18-FEB-2010 13:24 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 4.167 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 3.634 | | | |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 2.676 | | | |
| 246341009-1 18-FEB-2010 13:49 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 3.838 | | | |
| | Cadmium-109 | UI | UI | UI | Data rejected due to interference. | | 4.009 | | | |
| | Cesium-134 | UI | UI | UI | Data rejected due to low abundance. | | .1089 | | .1 | .1 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 4.482 | | | |
| | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .07767 | | | |
| 1202037546-1 MB 18-FEB-2010 13:52 | Strontium-85 | UI | UI | UI | Data rejected due to low abundance. | | .04335 | | | |
| 1202037547-1 DUP | Americium-241 | UI | UI | UI | Data rejected due to low abundance. | | 1.763 | | .2 | .2 |

GEL QUALS

Batch ID: 950786

Report run on: February 22, 2010 4:16 PM

| Samp Id | Parmname | Cofa | Edd | Qual | Comments | Auto | Result | MDA | Uncert | SQL |
|---------------------------------------|-------------|------|-----|------|-------------------------------------|------|--------|-----|--------|-----|
| 1202037547-1 DUP 18-FEB-2010 13:52 | Bismuth-211 | UI | UI | UI | Data rejected due to interference. | | 4.391 | | | |
| | Cerium-139 | UI | UI | UI | Data rejected due to low abundance. | | .1882 | | .05 | .05 |
| | Radium-224 | UI | UI | UI | Data rejected due to interference. | | 3.298 | | | |
| | Thorium-227 | UI | UI | UI | Data rejected due to low abundance. | | 1.715 | | | |

| | | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|-------|-------|---|-------|------------|-------|-------------------------------------|--|
| Bismuth-214 | ✓ | 0.614 | 0.05263 | pCi/g | 0.06836 | 0.200 | 609.4 | 4 | 1.811 | IDENTIFIED | 6.298 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 1.413 | 0.3642 | pCi/g | 1.057 | Y | 87.19 | 3 | 1.252 | IDENTIFIED | 25.35 | <input checked="" type="checkbox"/> | UI |
| Cerium-143 | — | 978.1 | 187 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Gross Gamma | — | 4.862 | 1.014 | pCi/g | 1.352 | N | | 0 | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 6.40E+06 | 1.99E+07 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Krypton-85 | — | 20.1 | 2.95 | pCi/g | 10.13 | N | 0 | 9 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 0.7663 | 0.0605 | pCi/g | 0.06577 | 0.100 | 238.7 | 4 | 1.198 | IDENTIFIED | 4.321 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 0.6452 | 0.06331 | pCi/g | 0.08112 | 0.100 | 351.9 | 4 | 1.289 | IDENTIFIED | 7.461 | <input type="checkbox"/> | |
| Neptunium-237 | HE | 0.4066 | 0.1129 | pCi/g | 0.2796 | N | 87.19 | 3 | 1.252 | IDENTIFIED | 25.35 | <input type="checkbox"/> | |
| Niobium-97 | HE | 16500 | 1.99E+05 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Polonium-212 | NR | 0.7663 | 0.0605 | pCi/g | 0.06577 | N | 238.7 | 4 | 1.198 | IDENTIFIED | 4.321 | <input type="checkbox"/> | |
| Polonium-214 | NR | 0.6452 | 0.06331 | pCi/g | 0.08112 | N | 351.9 | 4 | 1.289 | IDENTIFIED | 7.461 | <input type="checkbox"/> | |
| Polonium-216 | NR | 0.7663 | 0.0605 | pCi/g | 0.06577 | N | 238.7 | 4 | 1.198 | IDENTIFIED | 4.321 | <input type="checkbox"/> | |
| Polonium-218 | NR | 0.6452 | 0.06331 | pCi/g | 0.08112 | N | 351.9 | 4 | 1.289 | IDENTIFIED | 7.461 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 18.43 | 0.9811 | pCi/g | 0.2883 | 1.00 | 1461 | 1 | 2.688 | IDENTIFIED | 2.711 | <input type="checkbox"/> | |
| Radium-224 | INT | 2.326 | 0.4305 | pCi/g | 0.7475 | Y | 241.7 | 1 | 1.886 | IDENTIFIED | 17.41 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 0.614 | 0.05263 | pCi/g | 0.06836 | Y | 609.4 | 4 | 1.811 | IDENTIFIED | 6.298 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 0.7343 | 0.1047 | pCi/g | 0.133 | 0.500 | 911.2 | 3 | 1.722 | IDENTIFIED | 12.62 | <input type="checkbox"/> | |
| Sodium-24 | HE | 1.20E+06 | 1.84E+06 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Strontium-85 | LA | 0.1051 | 0.01542 | pCi/g | 0.05293 | Y | 0 | 9 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Thallium-200 | HE | 13.81 | 500.8 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.2733 | 0.02549 | pCi/g | 0.03882 | 0.080 | 583.2 | 1 | 1.775 | IDENTIFIED | 7.587 | <input type="checkbox"/> | |
| Thorium-228 | NR | 0.7794 | 0.06153 | pCi/g | 0.06689 | N | 238.7 | 4 | 1.198 | IDENTIFIED | 4.321 | <input type="checkbox"/> | |
| Thorium-230 | NR | 0.614 | 0.05263 | pCi/g | 0.06836 | N | 609.4 | 4 | 1.811 | IDENTIFIED | 6.298 | <input type="checkbox"/> | |
| Thorium-232 | NR | 0.7343 | 0.1047 | pCi/g | 0.133 | N | 911.2 | 3 | 1.722 | IDENTIFIED | 12.62 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 1.517 | 0.5743 | pCi/g | 1.328 | 2.00 | 63.13 | 2 | 1.049 | IDENTIFIED | 36.85 | <input type="checkbox"/> | |
| Tin-126 | HE | 0.1385 | 0.0357 | pCi/g | 0.1001 | N | 87.19 | 3 | 1.252 | IDENTIFIED | 25.35 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.1563 | 0.01602 | pCi/g | 0.04898 | N | 0 | 9 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | NR | 4.498 | 1.71E-06 | ug/g | 1.9776 | N | | 0 | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 0.614 | 0.05263 | pCi/g | 0.06836 | N | 609.4 | 4 | 1.811 | IDENTIFIED | 6.298 | <input type="checkbox"/> | |
| Uranium-238 | HE | 1.517 | 0.5743 | pCi/g | 1.328 | N | 63.13 | 2 | 1.049 | IDENTIFIED | 36.85 | <input type="checkbox"/> | |
| Zirconium-97 | — | 2.16E+07 | 4.50E+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 |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|--------|------------------|
| 246328002 | 01-FEB-10 12:00 | 18-FEB-10 11:05 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | ✓ | 0.8714 | 0.1158 | pCi/g | 0.1498 | N | 911.4 | 3 | 1.566 | IDENTIFIED 11.82 |
| Americium-243 | — | 0.2232 | 0.02359 | pCi/g | 0.05297 | N | 74.79 | 1 | 1.047 | IDENTIFIED 9.763 |
| Annihilation Rad. | — | 0.09637 | 0.02456 | pCi/g | 0.03341 | N | 510.8 | 1 | 1.655 | IDENTIFIED 24.91 |
| Bismuth-211 | INT | 2.011 | 0.2026 | pCi/g | 0.2305 | Y | 352 | 4 | 1.016 | IDENTIFIED 7.632 |
| Bismuth-212 | — | 0.8656 | 0.1654 | pCi/g | 0.4947 | N | 0 | 8 | 0 | FAIL_ABUND 0 |
| Bismuth-214 | ✓ | 0.6506 | 0.0691 | pCi/g | 0.07673 | 0.200 | 609.4 | 4 | 1.307 | IDENTIFIED 8.991 |
| Cadmium-109 | INT | 1.356 | 0.2787 | pCi/g | 0.8523 | Y | 87.09 | 3 | 0.8524 | IDENTIFIED 20 |
| Cerium-143 | — | 522 | 151.4 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF 0 |
| Gross Gamma | — | 6.338 | 1.091 | pCi/g | 2.281 | N | | 0 | | |
| Iodine-123 | HE | 2.24E+07 | 1.90E+07 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF 0 |
| Iodine-133 | HE | 774.7 | 9044 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF 0 |

| | | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|-------|-------|---|--------|------------|-------|-------------------------------------|----|
| Lead-212 | ✓ | 0.8878 | 0.07307 | pCi/g | 0.06332 | 0.100 | 238.6 | 4 | 0.9983 | IDENTIFIED | 4.325 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 0.6997 | 0.0728 | pCi/g | 0.08011 | 0.100 | 352 | 4 | 1.016 | IDENTIFIED | 7.632 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 2.643 | 0.6742 | pCi/g | 1.765 | N | 0 | 8 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Neptunium-237 | HE | 0.3904 | 0.08975 | pCi/g | 0.2702 | N | 87.09 | 3 | 0.8524 | IDENTIFIED | 20 | <input type="checkbox"/> | |
| Polonium-212 | NR | 0.8878 | 0.07307 | pCi/g | 0.06332 | N | 238.6 | 4 | 0.9983 | IDENTIFIED | 4.325 | <input type="checkbox"/> | |
| Polonium-214 | NR | 0.6997 | 0.0728 | pCi/g | 0.08011 | N | 352 | 4 | 1.016 | IDENTIFIED | 7.632 | <input type="checkbox"/> | |
| Polonium-216 | NR | 0.8878 | 0.07307 | pCi/g | 0.06332 | N | 238.6 | 4 | 0.9983 | IDENTIFIED | 4.325 | <input type="checkbox"/> | |
| Polonium-218 | NR | 0.6997 | 0.0728 | pCi/g | 0.08011 | N | 352 | 4 | 1.016 | IDENTIFIED | 7.632 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 23.57 | 1.25 | pCi/g | 0.336 | 1.00 | 1461 | 1 | 1.911 | IDENTIFIED | 3.067 | <input type="checkbox"/> | |
| Radium-224 | INT | 2.761 | 0.4262 | pCi/g | 0.7207 | Y | 241.7 | 1 | 1.574 | IDENTIFIED | 13.9 | <input checked="" type="checkbox"/> | UL |
| Radium-226 | ✓ | 0.6506 | 0.0691 | pCi/g | 0.07673 | Y | 609.4 | 4 | 1.307 | IDENTIFIED | 8.991 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 0.8714 | 0.1158 | pCi/g | 0.1498 | 0.500 | 911.4 | 3 | 1.566 | IDENTIFIED | 11.82 | <input type="checkbox"/> | |
| Thallium-200 | HE | 350.4 | 546.6 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.2926 | 0.03111 | pCi/g | 0.03834 | 0.080 | 583.3 | 1 | 1.22 | IDENTIFIED | 9.159 | <input type="checkbox"/> | |
| Thorium-228 | NR | 0.903 | 0.07432 | pCi/g | 0.0644 | N | 238.6 | 4 | 0.9983 | IDENTIFIED | 4.325 | <input type="checkbox"/> | |
| Thorium-230 | NR | 0.6506 | 0.06909 | pCi/g | 0.07672 | N | 609.4 | 4 | 1.307 | IDENTIFIED | 8.991 | <input type="checkbox"/> | |
| Thorium-232 | NR | 0.8714 | 0.1158 | pCi/g | 0.1498 | N | 911.4 | 3 | 1.566 | IDENTIFIED | 11.82 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 2.061 | 0.6317 | pCi/g | 1.223 | 2.00 | 63.36 | 2 | 0.9598 | IDENTIFIED | 29.4 | <input type="checkbox"/> | |
| Tin-126 | HE | 0.1329 | 0.02731 | pCi/g | 0.08381 | N | 87.09 | 3 | 0.8524 | IDENTIFIED | 20 | <input type="checkbox"/> | |
| Titanium-44 | - | 0.2266 | 0.01821 | pCi/g | 0.04401 | N | 0 | 8 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | - | 6.1648 | 1.88E-06 | ug/g | 1.8216 | N | 0 | | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 0.6506 | 0.06909 | pCi/g | 0.07672 | N | 609.4 | 4 | 1.307 | IDENTIFIED | 8.991 | <input type="checkbox"/> | |
| Uranium-238 | HE | 2.061 | 0.6317 | pCi/g | 1.223 | N | 63.36 | 2 | 0.9598 | IDENTIFIED | 29.4 | <input type="checkbox"/> | |
| Zirconium-97 | HE | 2.61E+06 | 4.18E+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 | | |
|---------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|--------|------------------|-------------------------------------|----|
| 246328003 | 01-FEB-10 12:00 | 18-FEB-10 11:06 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | | |
| Actinium-228 | ✓ | 0.6431 | 0.08155 | pCi/g | 0.1106 | N | 911.1 | 3 | 1.512 | IDENTIFIED 11.2 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.1707 | 0.02149 | pCi/g | 0.05405 | N | 74.91 | 1 | 1.02 | IDENTIFIED 11.88 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 1.768 | 0.1776 | pCi/g | 0.1971 | Y | 351.8 | 4 | 1.15 | IDENTIFIED 8.436 | <input checked="" type="checkbox"/> | UL |
| Bismuth-212 | HE | 0.5061 | 0.1284 | pCi/g | 0.2503 | N | 727 | 1 | 2.013 | IDENTIFIED 24.83 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 0.4793 | 0.0525 | pCi/g | 0.07888 | 0.200 | 609.3 | 4 | 1.465 | IDENTIFIED 9.596 | <input type="checkbox"/> | |
| Cerium-143 | - | 550.9 | 138.9 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Gross Gamma | - | 4.204 | 0.7818 | pCi/g | 1.586 | N | 0 | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 2.56E+06 | 1.78E+07 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Iodine-133 | HE | 370.2 | 7327 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 0.6498 | 0.0497 | pCi/g | 0.05566 | 0.100 | 238.5 | 4 | 0.9711 | IDENTIFIED 4.844 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 0.6151 | 0.06384 | pCi/g | 0.06871 | 0.100 | 351.8 | 4 | 1.15 | IDENTIFIED 8.436 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 1.668 | 0.5409 | pCi/g | 1.445 | N | 0 | 9 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Niobium-97 | HE | 5133 | 1.92E+05 | pCi/g | 0 | N | 0 | 9 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Polonium-212 | NR | 0.6498 | 0.0497 | pCi/g | 0.05566 | N | 238.5 | 4 | 0.9711 | IDENTIFIED 4.844 | <input type="checkbox"/> | |
| Polonium-214 | NR | 0.6151 | 0.06384 | pCi/g | 0.06871 | N | 351.8 | 4 | 1.15 | IDENTIFIED 8.436 | <input type="checkbox"/> | |
| Polonium-216 | NR | 0.6498 | 0.0497 | pCi/g | 0.05566 | N | 238.5 | 4 | 0.9711 | IDENTIFIED 4.844 | <input type="checkbox"/> | |
| Polonium-218 | NR | 0.6151 | 0.06384 | pCi/g | 0.06871 | N | 351.8 | 4 | 1.15 | IDENTIFIED 8.436 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 16.35 | 0.8987 | pCi/g | 0.288 | 1.00 | 1461 | 1 | 1.807 | IDENTIFIED 3.301 | <input type="checkbox"/> | |
| Radium-224 | INT | 2.244 | 0.4057 | pCi/g | 0.6333 | Y | 241.6 | 1 | 1.736 | IDENTIFIED 17.22 | <input checked="" type="checkbox"/> | UL |

| | | | | | | | | | | | | |
|----------------|----|----------|----------|---------------|-------|-------|---|--------|------------|-------|--------------------------|--|
| Radium-226 | ✓ | 0.4793 | 0.0525 | pCi/g 0.07888 | Y | 609.3 | 4 | 1.465 | IDENTIFIED | 9.596 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 0.6431 | 0.08155 | pCi/g 0.1106 | 0.500 | 911.1 | 3 | 1.512 | IDENTIFIED | 11.2 | <input type="checkbox"/> | |
| Technetium-99m | — | 1.36E+18 | 0 | pCi/g 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-200 | HE | 415.1 | 446.7 | pCi/g 0 | N | 0 | 9 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.2382 | 0.02735 | pCi/g 0.03598 | 0.080 | 583.2 | 1 | 1.349 | IDENTIFIED | 10.36 | <input type="checkbox"/> | |
| Thorium-228 | NR | 0.6609 | 0.05055 | pCi/g 0.05661 | N | 238.5 | 4 | 0.9711 | IDENTIFIED | 4.844 | <input type="checkbox"/> | |
| Thorium-230 | NR | 0.4793 | 0.0525 | pCi/g 0.07888 | N | 609.3 | 4 | 1.465 | IDENTIFIED | 9.596 | <input type="checkbox"/> | |
| Thorium-232 | NR | 0.6431 | 0.08155 | pCi/g 0.1106 | N | 911.1 | 3 | 1.512 | IDENTIFIED | 11.2 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 1.699 | 0.5547 | pCi/g 1.25 | 2.00 | 63.07 | 2 | 0.8168 | IDENTIFIED | 31.46 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.1603 | 0.01576 | pCi/g 0.0417 | N | 0 | 9 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | — | 5.0307 | 1.65E-06 | ug/g 1.8612 | N | 0 | | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 0.4793 | 0.0525 | pCi/g 0.07888 | N | 609.3 | 4 | 1.465 | IDENTIFIED | 9.596 | <input type="checkbox"/> | |
| Uranium-238 | HE | 1.699 | 0.5547 | pCi/g 1.25 | N | 63.07 | 2 | 0.8168 | IDENTIFIED | 31.46 | <input type="checkbox"/> | |
| Zirconium-97 | HE | 7.54E+06 | 3.85E+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 | | |
|-------------------|-----------------|-----------------|-----------|---------------|--------|------------|--------|---------------------|------------|--------------|-------------------------------------|--|
| 246328004 | 01-FEB-10 12:00 | 18-FEB-10 11:08 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004IGEL | N | RGSP | | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | | |
| Actinium-228 | ✓ | 0.6661 | 0.09776 | pCi/g 0.154 | N | 910.7 | 3 | 1.878 | IDENTIFIED | 13.61 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.1548 | 0.02536 | pCi/g 0.06783 | N | 74.57 | 1 | 1.048 | IDENTIFIED | 16.02 | <input type="checkbox"/> | |
| Annihilation Rad. | — | 0.09122 | 0.02801 | pCi/g 0.03279 | N | 510.8 | 1 | 2.018 | IDENTIFIED | 30.55 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 2.036 | 0.1763 | pCi/g 0.2025 | Y | 351.7 | 4 | 1.357 | IDENTIFIED | 8.069 | <input checked="" type="checkbox"/> | UI |
| Bismuth-212 | HE | 0.6229 | 0.1932 | pCi/g 0.4739 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 0.5927 | 0.06319 | pCi/g 0.08505 | 0.200 | 608.8 | 4 | 1.43 | IDENTIFIED | 9.833 | <input type="checkbox"/> | |
| Cadmium-109 | LA | 1.619 | 0.3661 | pCi/g 1.107 | Y | 0 | 11 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Cerium-143 | — | 1244 | 197.8 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Gross Gamma | — | 4.495 | 0.8579 | pCi/g 1.519 | N | 0 | | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 6.00E+06 | 2.02E+07 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-133 | HE | 3550 | 9454 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-135 | — | 1.19E+17 | 0 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 0.7764 | 0.04469 | pCi/g 0.07088 | 0.100 | 238.4 | 4 | 1.061 | IDENTIFIED | 4.531 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 0.7083 | 0.06406 | pCi/g 0.0706 | 0.100 | 351.7 | 4 | 1.357 | IDENTIFIED | 8.069 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 2.164 | 0.6717 | pCi/g 1.746 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Polonium-212 | NR | 0.7764 | 0.04469 | pCi/g 0.07088 | N | 238.4 | 4 | 1.061 | IDENTIFIED | 4.531 | <input type="checkbox"/> | |
| Polonium-214 | NR | 0.7083 | 0.06406 | pCi/g 0.0706 | N | 351.7 | 4 | 1.357 | IDENTIFIED | 8.069 | <input type="checkbox"/> | |
| Polonium-216 | NR | 0.7764 | 0.04469 | pCi/g 0.07088 | N | 238.4 | 4 | 1.061 | IDENTIFIED | 4.531 | <input type="checkbox"/> | |
| Polonium-218 | NR | 0.7083 | 0.06406 | pCi/g 0.0706 | N | 351.7 | 4 | 1.357 | IDENTIFIED | 8.069 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 17.4 | 0.8715 | pCi/g 0.4028 | 1.00 | 1460 | 1 | 1.936 | IDENTIFIED | 3.519 | <input type="checkbox"/> | |
| Radium-224 | INT | 2.746 | 0.4437 | pCi/g 0.8066 | Y | 241.2 | 1 | 1.713 | IDENTIFIED | 15.92 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 0.5927 | 0.06319 | pCi/g 0.08505 | Y | 608.8 | 4 | 1.43 | IDENTIFIED | 9.833 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 0.6661 | 0.09776 | pCi/g 0.154 | 0.500 | 910.7 | 3 | 1.878 | IDENTIFIED | 13.61 | <input type="checkbox"/> | |
| Sodium-24 | HE | 6.08E+05 | 1.80E+06 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-200 | HE | 256.6 | 504.4 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.2727 | 0.02868 | pCi/g 0.03778 | 0.080 | 583.1 | 1 | 1.329 | IDENTIFIED | 9.892 | <input type="checkbox"/> | |
| Thorium-228 | NR | 0.7896 | 0.04545 | pCi/g 0.07209 | N | 238.4 | 4 | 1.061 | IDENTIFIED | 4.531 | <input type="checkbox"/> | |
| Thorium-230 | NR | 0.5927 | 0.06318 | pCi/g 0.08504 | N | 608.8 | 4 | 1.43 | IDENTIFIED | 9.833 | <input type="checkbox"/> | |
| Thorium-232 | NR | 0.6661 | 0.09776 | pCi/g 0.154 | N | 910.7 | 3 | 1.878 | IDENTIFIED | 13.61 | <input type="checkbox"/> | |

| | | | | | | | | | | | | | |
|---------------|----|----------|----------|-------|---------|---|-------|----|------|------------|-------|--------------------------|--|
| Titanium-44 | — | 0.1656 | 0.01613 | pCi/g | 0.05096 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | NR | 3.2789 | 2.04E-06 | ug/g | 2.3069 | N | | | 0 | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 0.5927 | 0.06318 | pCi/g | 0.08504 | N | 608.8 | 4 | 1.43 | IDENTIFIED | 9.833 | <input type="checkbox"/> | |
| Zirconium-97 | — | 1.57E+07 | 4.69E+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 |
|-----------|-----------------|-----------------|-----------|-------------|--------|----------|--------|---------------|-------|-------|
| 246328005 | 01-FEB-10 12:00 | 18-FEB-10 11:08 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004IGEL | N | RGSP |

| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb | Act | Rpt | Err(%) | Qual | Qual Comment |
|-------------------|--------|----------|----------|-------|---------|------------|-------|------|--------|------------|--------|-------------------------------------|--|
| Actinium-228 | ✓ | 0.8709 | 0.1165 | pCi/g | 0.1574 | N | 911.2 | 3 | 1.309 | IDENTIFIED | 11.9 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.1678 | 0.02235 | pCi/g | 0.06 | N | 74.89 | 1 | 0.9578 | IDENTIFIED | 12.69 | <input type="checkbox"/> | |
| Annihilation Rad. | — | 0.08866 | 0.02658 | pCi/g | 0.03238 | N | 510.7 | 1 | 1.606 | IDENTIFIED | 29.62 | <input type="checkbox"/> | |
| Barium-137m | NR | 0.09329 | 0.01728 | pCi/g | 0.03694 | N | 661.5 | 2 | 1.016 | IDENTIFIED | 17.83 | <input type="checkbox"/> | |
| Bismuth-210 | HE | 2.707 | 1.016 | pCi/g | 2.575 | N | 46.72 | 3 | 1.235 | IDENTIFIED | 37.25 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 2.181 | 0.1904 | pCi/g | 0.2231 | Y | 351.9 | 4 | 1.18 | IDENTIFIED | 7.305 | <input checked="" type="checkbox"/> | UI |
| Bismuth-212 | HE | 0.7591 | 0.1596 | pCi/g | 0.481 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 0.7231 | 0.06592 | pCi/g | 0.07579 | 0.200 | 609.3 | 4 | 1.391 | IDENTIFIED | 7.221 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 1.954 | 0.3682 | pCi/g | 0.84 | Y | 87.41 | 3 | 1.267 | IDENTIFIED | 18.24 | <input checked="" type="checkbox"/> | UI |
| Cerium-143 | — | 648.3 | 160.3 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cesium-134 | LA | 0.06534 | 0.01604 | pCi/g | 0.06304 | 0.100 | 0 | 11 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Cesium-137 | ✓ | 0.09861 | 0.01827 | pCi/g | 0.03905 | 0.100 | 661.5 | 2 | 1.016 | IDENTIFIED | 17.83 | <input type="checkbox"/> | |
| Gross Gamma | — | 5.839 | 0.8061 | pCi/g | 1.778 | N | | | 0 | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 3.77E+07 | 2.11E+07 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-133 | HE | 2000 | 9351 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-135 | — | 8.52E+16 | 0 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Krypton-85 | HE | 9.909 | 2.868 | pCi/g | 9.8 | N | 0 | 11 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Lead-210 | HE | 2.707 | 1.016 | pCi/g | 2.575 | N | 46.72 | 3 | 1.235 | IDENTIFIED | 37.25 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 0.9113 | 0.06128 | pCi/g | 0.06679 | 0.100 | 238.6 | 4 | 1.216 | IDENTIFIED | 4.117 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 0.7586 | 0.06914 | pCi/g | 0.07776 | 0.100 | 351.9 | 4 | 1.18 | IDENTIFIED | 7.305 | <input type="checkbox"/> | |
| Neptunium-237 | NR | 0.5626 | 0.1208 | pCi/g | 0.2774 | N | 87.41 | 3 | 1.267 | IDENTIFIED | 18.24 | <input type="checkbox"/> | |
| Polonium-210 | HE | 2.707 | 1.015 | pCi/g | 2.575 | N | 46.72 | 3 | 1.235 | IDENTIFIED | 37.25 | <input type="checkbox"/> | |
| Polonium-212 | NR | 0.9113 | 0.06128 | pCi/g | 0.06679 | N | 238.6 | 4 | 1.216 | IDENTIFIED | 4.117 | <input type="checkbox"/> | |
| Polonium-214 | NR | 0.7586 | 0.06914 | pCi/g | 0.07776 | N | 351.9 | 4 | 1.18 | IDENTIFIED | 7.305 | <input type="checkbox"/> | |
| Polonium-216 | NR | 0.9113 | 0.06128 | pCi/g | 0.06679 | N | 238.6 | 4 | 1.216 | IDENTIFIED | 4.117 | <input type="checkbox"/> | |
| Polonium-218 | NR | 0.7586 | 0.06914 | pCi/g | 0.07776 | N | 351.9 | 4 | 1.18 | IDENTIFIED | 7.305 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 21.19 | 1.123 | pCi/g | 0.337 | 1.00 | 1461 | 1 | 1.758 | IDENTIFIED | 3.014 | <input type="checkbox"/> | |
| Radium-224 | INT | 2.597 | 0.4079 | pCi/g | 0.7597 | Y | 241.6 | 1 | 1.613 | IDENTIFIED | 14.95 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 0.7231 | 0.06592 | pCi/g | 0.07579 | Y | 609.3 | 4 | 1.391 | IDENTIFIED | 7.221 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 0.8709 | 0.1165 | pCi/g | 0.1574 | 0.500 | 911.2 | 3 | 1.309 | IDENTIFIED | 11.9 | <input type="checkbox"/> | |
| Sodium-24 | HE | 3.50E+05 | 1.58E+06 | pCi/g | 0 | N | 0 | 11 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Strontium-85 | LA | 0.0518 | 0.01499 | pCi/g | 0.05123 | Y | 0 | 11 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Thallium-208 | ✓ | 0.2916 | 0.03256 | pCi/g | 0.03935 | 0.080 | 583.1 | 1 | 1.425 | IDENTIFIED | 9.91 | <input type="checkbox"/> | |
| Thorium-228 | NR | 0.9268 | 0.06232 | pCi/g | 0.06793 | N | 238.6 | 4 | 1.216 | IDENTIFIED | 4.117 | <input type="checkbox"/> | |
| Thorium-230 | NR | 0.7231 | 0.06592 | pCi/g | 0.07579 | N | 609.3 | 4 | 1.391 | IDENTIFIED | 7.221 | <input type="checkbox"/> | |
| Thorium-232 | NR | 0.8709 | 0.1165 | pCi/g | 0.1574 | N | 911.2 | 3 | 1.309 | IDENTIFIED | 11.9 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 3.084 | 0.7025 | pCi/g | 1.303 | 2.00 | 63.21 | 2 | 0.9937 | IDENTIFIED | 21.06 | <input type="checkbox"/> | |
| Tin-126 | NR | 0.1916 | 0.03609 | pCi/g | 0.08258 | N | 87.41 | 3 | 1.267 | IDENTIFIED | 18.24 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.2043 | 0.01755 | pCi/g | 0.0547 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |

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

*** = 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 |
|----------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|-------|--|
| 246328007 | 01-FEB-10 12:00 | 18-FEB-10 11:16 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004KJEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 ✓ | 0.8491 | 0.1159 | pCi/g | 0.175 | N | 911.2 | 3 | 1.794 IDENTIFIED | 12.42 | <input type="checkbox"/> |
| Americium-243 INT | 0.2155 | 0.03376 | pCi/g | 0.06961 | N | 74.86 | 1 | 1.617 IDENTIFIED | 15.16 | <input type="checkbox"/> |
| Annihilation Rad. HE | 0.05903 | 0.02536 | pCi/g | 0.0342 | N | 510.8 | 1 | 2.78 IDENTIFIED | 42.86 | <input type="checkbox"/> |
| Barium-137m NR | 0.1228 | 0.02286 | pCi/g | 0.03959 | N | 662.4 | 2 | 1.015 IDENTIFIED | 18.38 | <input type="checkbox"/> |
| Bismuth-211 INT | 1.951 | 0.1662 | pCi/g | 0.2372 | Y | 351.7 | 4 | 1.432 IDENTIFIED | 7.9 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bismuth-212 ✓ | 0.7138 | 0.1896 | pCi/g | 0.3303 | N | 727.1 | 1 | 1.46 IDENTIFIED | 26.23 | <input type="checkbox"/> |
| Bismuth-214 ✓ | 0.5743 | 0.05829 | pCi/g | 0.08475 | 0.200 | 609.2 | 4 | 1.425 IDENTIFIED | 9.358 | <input type="checkbox"/> |
| Cadmium-109 LA | 1.31 | 0.5244 | pCi/g | 1.297 | Y | 0 | 10 | 0 NOT_IDENTI | 0 | <input checked="" type="checkbox"/> UI Date rejected due to low abundance. |
| Cerium-143 - | 1115 | 203 | pCi/g | 0 | N | 0 | 10 | 0 SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cesium-137 ✓ | 0.1298 | 0.02416 | pCi/g | 0.04185 | 0.100 | 662.4 | 2 | 1.015 IDENTIFIED | 18.38 | <input type="checkbox"/> |
| Gross Gamma - | 5.153 | 0.9036 | pCi/g | 2.417 | N | 0 | | | | <input type="checkbox"/> |
| Iodine-135 - | 2.64E+17 | 0 | pCi/g | 0 | N | 0 | 10 | 0 SHORT_HLIF | 0 | <input type="checkbox"/> |
| Krypton-85 HE | 16.57 | 3.002 | pCi/g | 11.13 | N | 0 | 10 | 0 NOT_IDENTI | 0 | <input type="checkbox"/> |
| Lead-212 ✓ | 0.6464 | 0.05187 | pCi/g | 0.09137 | 0.100 | 238.4 | 4 | 1.297 IDENTIFIED | 7.167 | <input type="checkbox"/> |
| Lead-214 ✓ | 0.6786 | 0.06047 | pCi/g | 0.08268 | 0.100 | 351.7 | 4 | 1.432 IDENTIFIED | 7.9 | <input type="checkbox"/> |
| Neptunium-237 NR | 0.8269 | 0.1743 | pCi/g | 0.3291 | N | 86.21 | 2 | 3.651 IDENTIFIED | 17.85 | <input type="checkbox"/> |
| Niobium-95m - | 0.3229 | 0.05891 | pCi/g | 0.2017 | N | 0 | 10 | 0 NOT_IDENTI | 0 | <input type="checkbox"/> |
| Polonium-212 NR | 0.6464 | 0.05187 | pCi/g | 0.09137 | N | 238.4 | 4 | 1.297 IDENTIFIED | 7.167 | <input type="checkbox"/> |
| Polonium-214 NR | 0.6786 | 0.06047 | pCi/g | 0.08268 | N | 351.7 | 4 | 1.432 IDENTIFIED | 7.9 | <input type="checkbox"/> |
| Polonium-216 NR | 0.6464 | 0.05187 | pCi/g | 0.09137 | N | 238.4 | 4 | 1.297 IDENTIFIED | 7.167 | <input type="checkbox"/> |
| Polonium-218 NR | 0.6786 | 0.06047 | pCi/g | 0.08268 | N | 351.7 | 4 | 1.432 IDENTIFIED | 7.9 | <input type="checkbox"/> |
| Potassium-40 ✓ | 17.58 | 0.8764 | pCi/g | 0.3556 | 1.00 | 1461 | 1 | 1.999 IDENTIFIED | 3.315 | <input type="checkbox"/> |
| Radium-224 INT | 1.263 | 0.3434 | pCi/g | 1.039 | Y | 241.8 | 1 | 1.834 IDENTIFIED | 27.03 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Radium-226 ✓ | 0.5743 | 0.05829 | pCi/g | 0.08475 | Y | 609.2 | 4 | 1.425 IDENTIFIED | 9.358 | <input type="checkbox"/> |
| Radium-228 ✓ | 0.8491 | 0.1159 | pCi/g | 0.175 | 0.500 | 911.2 | 3 | 1.794 IDENTIFIED | 12.42 | <input type="checkbox"/> |
| Sodium-24 HE | 3.45E+06 | 1.92E+06 | pCi/g | 0 | N | 0 | 10 | 0 SHORT_HLIF | 0 | <input type="checkbox"/> |
| Strontium-85 LA | 0.08662 | 0.0157 | pCi/g | 0.0582 | Y | 0 | 10 | 0 NOT_IDENTI | 0 | <input checked="" type="checkbox"/> UI Date rejected due to low abundance. |
| Thallium-200 HE | 362.3 | 519.5 | pCi/g | 0 | N | 0 | 10 | 0 SHORT_HLIF | 0 | <input type="checkbox"/> |
| Thallium-208 ✓ | 0.2702 | 0.0282 | pCi/g | 0.04575 | 0.080 | 583.1 | 1 | 1.701 IDENTIFIED | 9.866 | <input type="checkbox"/> |
| Thorium-228 NR | 0.6574 | 0.05275 | pCi/g | 0.09293 | N | 238.4 | 4 | 1.297 IDENTIFIED | 7.167 | <input type="checkbox"/> |
| Thorium-230 NR | 0.5743 | 0.05829 | pCi/g | 0.08475 | N | 609.2 | 4 | 1.425 IDENTIFIED | 9.358 | <input type="checkbox"/> |
| Thorium-232 NR | 0.8491 | 0.1159 | pCi/g | 0.175 | N | 911.2 | 3 | 1.794 IDENTIFIED | 12.42 | <input type="checkbox"/> |
| Thorium-234 ✓ | 2.302 | 0.635 | pCi/g | 1.628 | 2.00 | 63.39 | 2 | 1.243 IDENTIFIED | 26.16 | <input type="checkbox"/> |
| Tin-126 NR | 0.2816 | 0.05176 | pCi/g | 0.121 | N | 86.21 | 2 | 3.651 IDENTIFIED | 17.85 | <input type="checkbox"/> |
| Titanium-44 - | 0.1975 | 0.02009 | pCi/g | 0.06146 | N | 0 | 10 | 0 FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium - | 6.8673 | 1.89E-06 | ug/g | 2.4247 | N | 0 | | | | <input type="checkbox"/> |
| Uranium-234 NR | 0.5743 | 0.05829 | pCi/g | 0.08475 | N | 609.2 | 4 | 1.425 IDENTIFIED | 9.358 | <input type="checkbox"/> |
| Uranium-238 HE | 2.302 | 0.635 | pCi/g | 1.628 | N | 63.39 | 2 | 1.243 IDENTIFIED | 26.16 | <input type="checkbox"/> |
| Zirconium-97 - | 2.31E+07 | 4.39E+06 | 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 |
|----------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|-------|--------------------------|
| 246328008 | 01-FEB-10 12:00 | 18-FEB-10 11:47 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004KJEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 ✓ | 1.931 | 0.2073 | pCi/g | 0.2842 | N | 911.6 | 3 | 1.466 IDENTIFIED | 9.038 | <input type="checkbox"/> |

| | | | | | | | | | | | | |
|----------------------|-----|----------|----------|---------------|-------|-------|---|--------|------------|-------|-------------------------------------|----|
| Americium-243 | INT | 0.4082 | 0.05093 | pCi/g 0.1102 | N | 74.82 | 1 | 1.305 | IDENTIFIED | 11.76 | <input type="checkbox"/> | |
| Annihilation Rad. HE | | 0.1253 | 0.03785 | pCi/g 0.05147 | N | 511.4 | 1 | 2.487 | IDENTIFIED | 29.91 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 4.247 | 0.3567 | pCi/g 0.39 | Y | 352.2 | 4 | 1.281 | IDENTIFIED | 7.065 | <input checked="" type="checkbox"/> | UI |
| Bismuth-212 | — | 1.834 | 0.3871 | pCi/g 0.883 | N | 0 | 6 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 1.323 | 0.116 | pCi/g 0.1393 | 0.200 | 609.5 | 4 | 1.645 | IDENTIFIED | 7.247 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 2.737 | 0.6371 | pCi/g 1.824 | Y | 87.35 | 3 | 1.201 | IDENTIFIED | 22.8 | <input checked="" type="checkbox"/> | UI |
| Cerium-143 | — | 1025 | 256.2 | pCi/g 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Gross Gamma | — | 10.19 | 1.426 | pCi/g 2.664 | N | 0 | | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 3.16E+07 | 3.55E+07 | pCi/g 0 | N | 0 | 6 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.836 | 0.1158 | pCi/g 0.1057 | 0.100 | 239 | 4 | 1.253 | IDENTIFIED | 3.759 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.477 | 0.1299 | pCi/g 0.136 | 0.100 | 352.2 | 4 | 1.281 | IDENTIFIED | 7.065 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 3.816 | 1.14 | pCi/g 2.821 | N | 0 | 6 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Mercury-203 | INT | 0.1003 | 0.02888 | pCi/g 0.08242 | 0.100 | 277.8 | 1 | 0.8451 | IDENTIFIED | 28.4 | <input checked="" type="checkbox"/> | UI |
| Neptunium-237 | HE | 0.7878 | 0.2006 | pCi/g 0.5005 | N | 87.35 | 3 | 1.201 | IDENTIFIED | 22.8 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.836 | 0.1158 | pCi/g 0.1057 | N | 239 | 4 | 1.253 | IDENTIFIED | 3.759 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.477 | 0.1299 | pCi/g 0.136 | N | 352.2 | 4 | 1.281 | IDENTIFIED | 7.065 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.836 | 0.1158 | pCi/g 0.1057 | N | 239 | 4 | 1.253 | IDENTIFIED | 3.759 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.477 | 0.1299 | pCi/g 0.136 | N | 352.2 | 4 | 1.281 | IDENTIFIED | 7.065 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 35.5 | 1.91 | pCi/g 0.6094 | 1.00 | 1461 | 1 | 1.982 | IDENTIFIED | 3.032 | <input type="checkbox"/> | |
| Radium-224 | INT | 4.124 | 0.6559 | pCi/g 1.203 | Y | 242 | 1 | 1.553 | IDENTIFIED | 15.24 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 1.323 | 0.116 | pCi/g 0.1393 | Y | 609.5 | 4 | 1.645 | IDENTIFIED | 7.247 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.931 | 0.2073 | pCi/g 0.2842 | 0.500 | 911.6 | 3 | 1.466 | IDENTIFIED | 9.038 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.4928 | 0.05088 | pCi/g 0.07036 | 0.080 | 583.5 | 1 | 1.471 | IDENTIFIED | 9.273 | <input type="checkbox"/> | |
| Thorium-228 | NR | 1.868 | 0.1178 | pCi/g 0.1075 | N | 239 | 4 | 1.253 | IDENTIFIED | 3.759 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.323 | 0.116 | pCi/g 0.1393 | N | 609.5 | 4 | 1.645 | IDENTIFIED | 7.247 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.931 | 0.2073 | pCi/g 0.2842 | N | 911.6 | 3 | 1.466 | IDENTIFIED | 9.038 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 4.222 | 1.438 | pCi/g 2.62 | 2.00 | 63.38 | 2 | 1.496 | IDENTIFIED | 32.9 | <input type="checkbox"/> | |
| Tin-126 | HE | 0.2683 | 0.06245 | pCi/g 0.1854 | N | 87.35 | 3 | 1.201 | IDENTIFIED | 22.8 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.4475 | 0.03641 | pCi/g 0.09571 | N | 0 | 6 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | — | 12.597 | 4.28E-06 | ug/g 3.9002 | N | 0 | | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.323 | 0.116 | pCi/g 0.1393 | N | 609.5 | 4 | 1.645 | IDENTIFIED | 7.247 | <input type="checkbox"/> | |
| Uranium-238 | HE | 4.222 | 1.438 | pCi/g 2.62 | N | 63.38 | 2 | 1.496 | IDENTIFIED | 32.9 | <input type="checkbox"/> | |
| Zirconium-97 | HE | 4.87E+06 | 7.03E+06 | 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 |
|----------------------|-----------------|-----------------|-----------|---------------|--------|----------|----------|-------------------------|-------------------------------------|--------------|
| 246328009 | 01-FEB-10 12:00 | 18-FEB-10 11:48 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy | *** FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | ✓ | 0.7704 | 0.09778 | pCi/g 0.1546 | N | 911.6 | 3 | 1.787 IDENTIFIED 11.28 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.09477 | 0.01737 | pCi/g 0.05364 | N | 74.88 | 1 | 0.85 IDENTIFIED 17.88 | <input type="checkbox"/> | |
| Annihilation Rad. HE | | 0.05454 | 0.02594 | pCi/g 0.03504 | N | 511.5 | 1 | 1.737 IDENTIFIED 47.35 | <input type="checkbox"/> | |
| Bismuth-210 | HE | 3.45 | 1.167 | pCi/g 2.098 | N | 46.55 | 3 | 0.9142 IDENTIFIED 33.51 | <input type="checkbox"/> | |
| * Bismuth-211 | INT | 1.888 | 0.1559 | pCi/g 0.2142 | Y | 352.1 | 4 | 1.406 IDENTIFIED 6.93 | <input checked="" type="checkbox"/> | UI |
| Bismuth-212 | HE | 0.6382 | 0.1456 | pCi/g 0.4659 | N | 0 | 7 | 0 FAIL_ABUND 0 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 0.5119 | 0.05843 | pCi/g 0.07413 | 0.200 | 609.6 | 4 | 1.308 IDENTIFIED 10.18 | <input type="checkbox"/> | |
| * Cadmium-109 | INT | 1.187 | 0.2955 | pCi/g 0.935 | Y | 87.11 | 3 | 1.08 IDENTIFIED 24.44 | <input checked="" type="checkbox"/> | UI |
| Cerium-143 | — | 527.6 | 141.5 | pCi/g 0 | N | 0 | 7 | 0 SHORT_HLIF 0 | <input type="checkbox"/> | |
| Gross Gamma | — | 4.413 | 0.8168 | pCi/g 1.737 | N | 0 | | | <input type="checkbox"/> | |

| | | | | | | | | | | | | |
|-------------------|-----|----------|----------|--------------|-------|-------|----|-------|------------|-------|-------------------------------------|--|
| Lead-214 | ✓ | 1.451 | 0.1494 | pCi/g 0.1964 | 0.100 | 352 | 4 | 1.578 | IDENTIFIED | 8.628 | <input type="checkbox"/> | |
| Niobium-95 | INT | 0.6816 | 0.07617 | pCi/g 0.1082 | N | 766.6 | 1 | 1.838 | IDENTIFIED | 10.28 | <input type="checkbox"/> | |
| Niobium-95m | HE | 0.4346 | 0.1274 | pCi/g 0.3974 | N | 0 | 23 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Niobium-97 | HE | 2.61E+05 | 6.12E+05 | pCi/g 0 | N | 0 | 23 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.914 | 0.1413 | pCi/g 0.3364 | N | 0 | 23 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.451 | 0.1494 | pCi/g 0.1964 | N | 352 | 4 | 1.578 | IDENTIFIED | 8.628 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.914 | 0.1413 | pCi/g 0.3364 | N | 0 | 23 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.451 | 0.1494 | pCi/g 0.1964 | N | 352 | 4 | 1.578 | IDENTIFIED | 8.628 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 33.63 | 2.001 | pCi/g 0.8972 | 1.00 | 1461 | 1 | 2.075 | IDENTIFIED | 3.358 | <input type="checkbox"/> | |
| Protactinium-234m | ✓ | 152.1 | 11.58 | pCi/g 10.84 | N | 1001 | 1 | 2.015 | IDENTIFIED | 5.574 | <input type="checkbox"/> | |
| Radium-224 | INT | 6.655 | 1.178 | pCi/g 1.797 | Y | 241.5 | 1 | 2.04 | IDENTIFIED | 16.83 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 1.191 | 0.1257 | pCi/g 0.1733 | Y | 609.4 | 4 | 1.562 | IDENTIFIED | 9.317 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.827 | 0.229 | pCi/g 0.285 | 0.500 | 911 | 3 | 1.964 | IDENTIFIED | 11.07 | <input type="checkbox"/> | |
| Rhenium-183 | — | 1.521 | 0.2119 | pCi/g 0.5156 | N | 0 | 23 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Strontium-85 | LA | 0.1462 | 0.03773 | pCi/g 0.12 | Y | 0 | 23 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Technetium-99m | — | 1.29E+19 | 0 | pCi/g 0 | N | 0 | 23 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Tellurium-125m | NR | 98.5 | 19.58 | pCi/g 36.79 | N | 109.3 | 1 | 1.877 | IDENTIFIED | 18.99 | <input type="checkbox"/> | |
| Thallium-200 | HE | 1176 | 1322 | pCi/g 0 | N | 0 | 23 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.5792 | 0.06773 | pCi/g 0.0917 | 0.080 | 583 | 1 | 1.729 | IDENTIFIED | 10.76 | <input type="checkbox"/> | |
| Thorium-227 | LA | 3.424 | 0.7532 | pCi/g 1.283 | Y | 0 | 23 | 0 | FAIL_ABUND | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Thorium-228 | NR | 1.946 | 0.1437 | pCi/g 0.3422 | N | 0 | 23 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.191 | 0.1257 | pCi/g 0.1733 | N | 609.4 | 4 | 1.562 | IDENTIFIED | 9.317 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.827 | 0.229 | pCi/g 0.285 | N | 911 | 3 | 1.964 | IDENTIFIED | 11.07 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 113.5 | 11.96 | pCi/g 7.491 | 2.00 | 63.36 | 2 | 1.276 | IDENTIFIED | 4.018 | <input type="checkbox"/> | |
| Total Uranium | — | 340.62 | 3.56E-05 | ug/g 11.151 | N | 0 | | | | | <input type="checkbox"/> | |
| Tungsten-181 | NR | 17.75 | 1.323 | pCi/g 3.08 | N | 0 | 23 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Uranium-231 | NR | 24.77 | 3.678 | pCi/g 8.301 | N | 0 | 23 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.191 | 0.1257 | pCi/g 0.1733 | N | 609.4 | 4 | 1.562 | IDENTIFIED | 9.317 | <input type="checkbox"/> | |
| Uranium-235 | ✓ | 6.361 | 0.7282 | pCi/g 0.7501 | 0.500 | 144 | 2 | 1.348 | IDENTIFIED | 6.864 | <input type="checkbox"/> | |
| Uranium-238 | NR | 113.5 | 11.96 | pCi/g 7.491 | N | 63.36 | 2 | 1.276 | IDENTIFIED | 4.018 | <input type="checkbox"/> | |
| Zirconium-97 | — | 3.89E+07 | 1.15E+07 | pCi/g 0 | N | 0 | 23 | 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 |
|-------------------|-----------------|-----------------|-----------|---------------|--------|------------|--------|--------------|-------------|-------|--|
| 246341002 | 01-FEB-10 12:00 | 18-FEB-10 12:57 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act | Rpt Err (%) | Qual | Qual Comment |
| Actinium-227 | — | 3.761 | 0.5929 | pCi/g 1.519 | N | 0 | 22 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |
| Actinium-228 | ✓ | 1.8 | 0.2088 | pCi/g 0.2809 | N | 911.2 | 3 | 2.095 | IDENTIFIED | 9.522 | <input type="checkbox"/> |
| Americium-241 | NVP | 4.754 | 0.7646 | pCi/g 0.8937 | 0.200 | 59.52 | 1 | 2.48 | IDENTIFIED | 15.6 | <input checked="" type="checkbox"/> UI |
| Americium-243 | HE | 0.5023 | 0.137 | pCi/g 0.3491 | N | 74.67 | 1 | 1.153 | IDENTIFIED | 26.97 | <input type="checkbox"/> |
| Annihilation Rad. | HE | 0.1897 | 0.06572 | pCi/g 0.07986 | N | 510.9 | 1 | 2.279 | IDENTIFIED | 34.27 | <input type="checkbox"/> |
| Arsenic-73 | NR | 20.07 | 3.339 | pCi/g 5.218 | N | 53.59 | 1 | 2.414 | IDENTIFIED | 16.21 | <input type="checkbox"/> |
| Barium-137m | NR | 2.401 | 0.1434 | pCi/g 0.1023 | N | 661.6 | 2 | 1.713 | IDENTIFIED | 2.808 | <input type="checkbox"/> |
| Bismuth-211 | INT | 3.963 | 0.4263 | pCi/g 0.6145 | Y | 351.8 | 4 | 1.296 | IDENTIFIED | 9.046 | <input checked="" type="checkbox"/> UI |
| Bismuth-212 | HE | 1.162 | 0.343 | pCi/g 0.7946 | N | 727.6 | 1 | 2.169 | IDENTIFIED | 28.91 | <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.381 | 0.1326 | pCi/g 0.1838 | 0.200 | 609.2 | 4 | 1.474 | IDENTIFIED | 7.641 | <input type="checkbox"/> |
| Cerium-139 | LA | 0.2872 | 0.05225 | pCi/g 0.1549 | 0.050 | 0 | 22 | 0 | NOT_IDENTI | 0 | <input checked="" type="checkbox"/> UI Data rejected due to low abundance. |
| Cerium-141 | — | 5.525 | 0.2854 | pCi/g 0.5042 | N | 0 | 22 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> |

| | | | | | | | | | | | |
|-------------------|-----|----------|----------|---------------|-------|-------|----|--------|-------------------|-------------------------------------|--|
| Cerium-143 | — | 1848 | 461.2 | pCi/g 0 | N | 0 | 22 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Cesium-137 | ✓ | 2.538 | 0.1518 | pCi/g 0.1081 | 0.100 | 661.6 | 2 | 1.713 | IDENTIFIED 2.808 | <input type="checkbox"/> | |
| Cobalt-57 | INT | 0.3169 | 0.05652 | pCi/g 0.1377 | N | 121 | 1 | 1.087 | IDENTIFIED 17.35 | <input type="checkbox"/> | |
| Curium-243 | HE | 0.8246 | 0.2487 | pCi/g 0.5739 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Europium-155 | — | 1.378 | 0.2374 | pCi/g 0.6642 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Gadolinium-153 | — | 6.832 | 0.375 | pCi/g 0.6552 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Gold-195 | — | 19.93 | 1.094 | pCi/g 1.883 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Gross Gamma | — | 104.3 | 6.147 | pCi/g 15.86 | N | | 0 | | | <input type="checkbox"/> | |
| Krypton-85 | HE | 35.03 | 7.202 | pCi/g 21.6 | N | 0 | 22 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.714 | 0.1401 | pCi/g 0.1862 | 0.100 | 238.6 | 4 | 1.279 | IDENTIFIED 4.813 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.379 | 0.1526 | pCi/g 0.2141 | 0.100 | 351.8 | 4 | 1.296 | IDENTIFIED 9.046 | <input type="checkbox"/> | |
| Molybdenum-99 | — | 162.4 | 26.8 | pCi/g 74.63 | N | 0 | 22 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> | |
| Niobium-95 | INT | 2.714 | 0.175 | pCi/g 0.1192 | N | 766.4 | 1 | 2.03 | IDENTIFIED 3.422 | <input type="checkbox"/> | |
| Niobium-97 | — | 7.47E+06 | 8.50E+05 | pCi/g 0 | N | 0 | 22 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.714 | 0.1401 | pCi/g 0.1862 | N | 238.6 | 4 | 1.279 | IDENTIFIED 4.813 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.379 | 0.1526 | pCi/g 0.2141 | N | 351.8 | 4 | 1.296 | IDENTIFIED 9.046 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.714 | 0.1401 | pCi/g 0.1862 | N | 238.6 | 4 | 1.279 | IDENTIFIED 4.813 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.379 | 0.1526 | pCi/g 0.2141 | N | 351.8 | 4 | 1.296 | IDENTIFIED 9.046 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 26.58 | 1.458 | pCi/g 0.7091 | 1.00 | 1461 | 1 | 2.562 | IDENTIFIED 3.015 | <input type="checkbox"/> | |
| Protactinium-234 | — | 1.804 | 0.3762 | pCi/g 0.9574 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Protactinium-234m | ✓ | 695.2 | 41.78 | pCi/g 10.43 | N | 1001 | 1 | 2.033 | IDENTIFIED 1.811 | <input type="checkbox"/> | |
| Radium-224 | INT | 5.092 | 1.168 | pCi/g 2.117 | Y | 241.6 | 1 | 1.886 | IDENTIFIED 22.06 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 1.381 | 0.1326 | pCi/g 0.1838 | Y | 609.2 | 4 | 1.474 | IDENTIFIED 7.641 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.8 | 0.2088 | pCi/g 0.2809 | 0.500 | 911.2 | 3 | 2.095 | IDENTIFIED 9.522 | <input type="checkbox"/> | |
| Rhenium-183 | INT | 7.341 | 0.4551 | pCi/g 0.5339 | N | 163.3 | 1 | 1.162 | IDENTIFIED 3.866 | <input type="checkbox"/> | |
| Rubidium-84 | NR | 0.6646 | 0.124 | pCi/g 0.1784 | N | 880.7 | 1 | 4.115 | IDENTIFIED 17.79 | <input type="checkbox"/> | |
| Silver-110m | — | 0.3057 | 0.04277 | pCi/g 0.1305 | N | 0 | 22 | 0 | NOT_IDENTI 0 | <input type="checkbox"/> | |
| Strontium-85 | LA | 0.1833 | 0.03768 | pCi/g 0.113 | Y | 0 | 22 | 0 | NOT_IDENTI 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Tellurium-125m | INT | 307.6 | 32.22 | pCi/g 52.38 | N | 109 | 1 | 1.747 | IDENTIFIED 9.166 | <input type="checkbox"/> | |
| Terbium-160 | — | 1.298 | 0.242 | pCi/g 0.4451 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Thallium-200 | HE | 2036 | 1432 | pCi/g 0 | N | 0 | 22 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.5163 | 0.05547 | pCi/g 0.1042 | 0.080 | 583.2 | 1 | 1.67 | IDENTIFIED 9.275 | <input type="checkbox"/> | |
| Thorium-227 | LA | 3.761 | 0.6194 | pCi/g 1.519 | Y | 0 | 22 | 0 | FAIL_ABUND 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Thorium-228 | NR | 1.743 | 0.1425 | pCi/g 0.1894 | N | 238.6 | 4 | 1.279 | IDENTIFIED 4.813 | <input type="checkbox"/> | |
| Thorium-229 | — | 4.527 | 0.7824 | pCi/g 2.145 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.381 | 0.1326 | pCi/g 0.1838 | N | 609.2 | 4 | 1.474 | IDENTIFIED 7.641 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.8 | 0.2088 | pCi/g 0.2809 | N | 911.2 | 3 | 2.095 | IDENTIFIED 9.522 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 476.4 | 41.68 | pCi/g 7.141 | 2.00 | 63.26 | 2 | 0.9828 | IDENTIFIED 0.8902 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.4093 | 0.07002 | pCi/g 0.229 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Total Uranium | — | 1430.2 | 0.00012 | ug/g 10.631 | N | | 0 | | | <input type="checkbox"/> | |
| Tungsten-181 | NR | 16.6 | 1 | pCi/g 2.6 | N | 57.17 | 1 | 2.091 | IDENTIFIED 20.64 | <input type="checkbox"/> | |
| Uranium-231 | NR | 96.18 | 10.06 | pCi/g 8.368 | N | 94.54 | 1 | 1.695 | IDENTIFIED 9.446 | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.381 | 0.1326 | pCi/g 0.1838 | N | 609.2 | 4 | 1.474 | IDENTIFIED 7.641 | <input type="checkbox"/> | |
| Uranium-235 | ✓ | 28.07 | 2.549 | pCi/g 1.029 | 0.500 | 143.8 | 1 | 1.147 | IDENTIFIED 2.164 | <input type="checkbox"/> | |
| Uranium-238 | NR | 476.4 | 41.68 | pCi/g 7.141 | N | 63.26 | 2 | 0.9828 | IDENTIFIED 0.8902 | <input type="checkbox"/> | |
| Xenon-127 | — | 0.659 | 0.08349 | pCi/g 0.2339 | N | 0 | 22 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Yttrium-88 | LA | 0.08519 | 0.0235 | pCi/g 0.08382 | 0.100 | 0 | 22 | 0 | NOT_IDENTI 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |

| Zirconium-97 — 5.98E+07 1.24E+07 pCi/g 0 N 0 22 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 |
| 246341003 | 01-FEB-10 12:00 | 18-FEB-10 13:09 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 ✓ | 1.59 | 0.1939 | pCi/g | 0.2345 | N | 911 3 | 1.692 | IDENTIFIED 10.52 | <input type="checkbox"/> | |
| Americium-243 <i>ENT</i> | 0.4317 | 0.05407 | pCi/g | 0.1177 | N | 74.63 1 | 1.205 | IDENTIFIED 11.27 | <input type="checkbox"/> | |
| Annihilation Rad. HE | 0.0715 | 0.03425 | pCi/g | 0.04836 | N | 510.5 1 | 1.862 | IDENTIFIED 47.8 | <input type="checkbox"/> | |
| Barium-137m <i>NR</i> | 0.4688 | 0.03811 | pCi/g | 0.05639 | N | 661.2 2 | 1.475 | IDENTIFIED 7.745 | <input type="checkbox"/> | |
| Bismuth-211 <i>ENT</i> | 3.779 | 0.2564 | pCi/g | 0.3255 | Y | 351.6 4 | 1.251 | IDENTIFIED 5.721 | <input checked="" type="checkbox"/> | |
| Bismuth-212 ✓ | 1.435 | 0.2319 | pCi/g | 0.4586 | N | 726.8 1 | 0.9452 | IDENTIFIED 15.66 | <input type="checkbox"/> | |
| Bismuth-214 ✓ | 1.063 | 0.08515 | pCi/g | 0.1081 | 0.200 | 608.9 4 | 1.393 | IDENTIFIED 7.049 | <input type="checkbox"/> | |
| Cadmium-109 <i>ENT</i> | 2.898 | 0.7037 | pCi/g | 1.854 | Y | 86.85 3 | 1.325 | IDENTIFIED 23.62 | <input checked="" type="checkbox"/> | |
| Cerium-143 — | 2445 | 355.3 | pCi/g | 0 | N | 0 11 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cesium-135 HE | 0.3663 | 0.08815 | pCi/g | 0.2975 | N | 0 11 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Cesium-137 ✓ | 0.4955 | 0.0403 | pCi/g | 0.0596 | 0.100 | 661.2 2 | 1.475 | IDENTIFIED 7.745 | <input type="checkbox"/> | |
| Gross Gamma — | 10.43 | 1.425 | pCi/g | 3.522 | N | 0 | | | <input type="checkbox"/> | |
| Iodine-123 HE | 1.42E+07 | 3.40E+07 | pCi/g | 0 | N | 0 11 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 ✓ | 1.711 | 0.08621 | pCi/g | 0.09533 | 0.100 | 238.4 4 | 1.125 | IDENTIFIED 3.319 | <input type="checkbox"/> | |
| Lead-214 ✓ | 1.315 | 0.09555 | pCi/g | 0.1134 | 0.100 | 351.6 4 | 1.251 | IDENTIFIED 5.721 | <input type="checkbox"/> | |
| Lutetium-177 HE | 3.637 | 0.9027 | pCi/g | 2.452 | N | 0 11 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Neptunium-237 HE | 0.834 | 0.2201 | pCi/g | 0.5438 | N | 86.85 3 | 1.325 | IDENTIFIED 23.62 | <input type="checkbox"/> | |
| Niobium-95m HE | 0.2574 | 0.0735 | pCi/g | 0.2431 | N | 0 11 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Niobium-97 — | 1.02E+06 | 3.46E+05 | pCi/g | 0 | N | 0 11 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Polonium-212 <i>NR</i> | 1.711 | 0.08621 | pCi/g | 0.09533 | N | 238.4 4 | 1.125 | IDENTIFIED 3.319 | <input type="checkbox"/> | |
| Polonium-214 <i>NR</i> | 1.315 | 0.09555 | pCi/g | 0.1134 | N | 351.6 4 | 1.251 | IDENTIFIED 5.721 | <input type="checkbox"/> | |
| Polonium-216 <i>NR</i> | 1.711 | 0.08621 | pCi/g | 0.09533 | N | 238.4 4 | 1.125 | IDENTIFIED 3.319 | <input type="checkbox"/> | |
| Polonium-218 <i>NR</i> | 1.315 | 0.09555 | pCi/g | 0.1134 | N | 351.6 4 | 1.251 | IDENTIFIED 5.721 | <input type="checkbox"/> | |
| Potassium-40 ✓ | 25.94 | 1.404 | pCi/g | 0.5974 | 1.00 | 1460 1 | 1.967 | IDENTIFIED 3.277 | <input type="checkbox"/> | |
| Protactinium-234m HE | 16.92 | 3.453 | pCi/g | 10.85 | N | 0 11 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Radium-224 <i>ENT</i> | 5.06 | 0.555 | pCi/g | 1.085 | Y | 241.4 1 | 1.841 | IDENTIFIED 10.53 | <input checked="" type="checkbox"/> | |
| Radium-226 ✓ | 1.063 | 0.08515 | pCi/g | 0.1081 | Y | 608.9 4 | 1.393 | IDENTIFIED 7.049 | <input type="checkbox"/> | |
| Radium-228 ✓ | 1.59 | 0.1939 | pCi/g | 0.2345 | 0.500 | 911 3 | 1.692 | IDENTIFIED 10.52 | <input type="checkbox"/> | |
| Sodium-24 HE | 2.68E+06 | 3.15E+06 | pCi/g | 0 | N | 0 11 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-200 HE | 632.5 | 805.8 | pCi/g | 0 | N | 0 11 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 ✓ | 0.483 | 0.04246 | pCi/g | 0.0541 | 0.080 | 582.8 1 | 1.279 | IDENTIFIED 8.123 | <input type="checkbox"/> | |
| Thorium-228 <i>NR</i> | 1.74 | 0.08769 | pCi/g | 0.09697 | N | 238.4 4 | 1.125 | IDENTIFIED 3.319 | <input type="checkbox"/> | |
| Thorium-230 <i>NR</i> | 1.063 | 0.08515 | pCi/g | 0.1081 | N | 608.9 4 | 1.393 | IDENTIFIED 7.049 | <input type="checkbox"/> | |
| Thorium-232 <i>NR</i> | 1.59 | 0.1939 | pCi/g | 0.2345 | N | 911 3 | 1.692 | IDENTIFIED 10.52 | <input type="checkbox"/> | |
| Thorium-234 ✓ | 11.33 | 1.924 | pCi/g | 3.31 | 2.00 | 62.98 2 | 0.8451 | IDENTIFIED 13.82 | <input type="checkbox"/> | |
| Tin-126 HE | 0.284 | 0.06897 | pCi/g | 0.1924 | N | 86.85 3 | 1.325 | IDENTIFIED 23.62 | <input type="checkbox"/> | |
| Titanium-44 — | 0.1725 | 0.02721 | pCi/g | 0.08891 | N | 0 11 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Total Uranium — | 33.865 | 5.72E-06 | ug/g | 4.9276 | N | 0 | | | <input type="checkbox"/> | |
| Uranium-234 <i>NR</i> | 1.063 | 0.08515 | pCi/g | 0.1081 | N | 608.9 4 | 1.393 | IDENTIFIED 7.049 | <input type="checkbox"/> | |
| Uranium-238 <i>NR</i> | 11.33 | 1.924 | pCi/g | 3.31 | N | 62.98 2 | 0.8451 | IDENTIFIED 13.82 | <input type="checkbox"/> | |
| Zirconium-97 — | 2.09E+07 | 6.64E+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 | |
|-------------------|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|------------|--------------|---|
| 246341004 | 01-FEB-10 12:00 | 18-FEB-10 13:10 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | ✓ 1.87 | 0.1761 | pCi/g | 0.1933 | N | 911.5 | 3 | 1.401 | IDENTIFIED | 7.185 | <input type="checkbox"/> |
| Americium-243 | INT 0.3325 | 0.03286 | pCi/g | 0.07592 | N | 74.86 | 1 | 0.81 | IDENTIFIED | 9.013 | <input type="checkbox"/> |
| Annihilation Rad. | — 0.1144 | 0.03107 | pCi/g | 0.04514 | N | 511 | 1 | 2.018 | IDENTIFIED | 26.62 | <input type="checkbox"/> |
| Barium-137m | NR 0.1669 | 0.03026 | pCi/g | 0.0586 | N | 661.7 | 2 | 1.165 | IDENTIFIED | 17.5 | <input type="checkbox"/> |
| Bismuth-211 | INT 4.25 | 0.3715 | pCi/g | 0.2858 | Y | 351.9 | 4 | 1.118 | IDENTIFIED | 5.757 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bismuth-212 | HE 1.232 | 0.2875 | pCi/g | 0.7097 | N | 0 | 10 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Bismuth-214 | ✓ 1.278 | 0.1045 | pCi/g | 0.1143 | 0.200 | 609.4 | 4 | 1.511 | IDENTIFIED | 5.908 | <input type="checkbox"/> |
| Cadmium-109 | INT 3.469 | 0.4645 | pCi/g | 1.008 | Y | 87.12 | 3 | 1.082 | IDENTIFIED | 12.54 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Cerium-143 | — 910.9 | 232.6 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Cesium-137 | ✓ 0.1765 | 0.03199 | pCi/g | 0.06194 | 0.100 | 661.7 | 2 | 1.165 | IDENTIFIED | 17.5 | <input type="checkbox"/> |
| Gold-195 | HE 0.3731 | 0.1043 | pCi/g | 0.3577 | N | 0 | 10 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Gross Gamma | — 10.76 | 1.561 | pCi/g | 3.946 | N | 0 | | | | | <input type="checkbox"/> |
| Iodine-123 | HE 4.62E+07 | 2.95E+07 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Iodine-135 | — 3.76E+17 | 0 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Lead-212 | ✓ 1.828 | 0.1409 | pCi/g | 0.08693 | 0.100 | 238.6 | 4 | 0.9498 | IDENTIFIED | 3.224 | <input type="checkbox"/> |
| Lead-214 | ✓ 1.478 | 0.1348 | pCi/g | 0.09964 | 0.100 | 351.9 | 4 | 1.118 | IDENTIFIED | 5.757 | <input type="checkbox"/> |
| Lutetium-177 | — 5.284 | 0.8162 | pCi/g | 2.456 | N | 0 | 10 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Neptunium-237 | INT 0.9983 | 0.1688 | pCi/g | 0.3003 | N | 87.12 | 3 | 1.082 | IDENTIFIED | 12.54 | <input type="checkbox"/> |
| Niobium-97 | HE 3.69E+05 | 3.40E+05 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Polonium-212 | NR 1.828 | 0.1409 | pCi/g | 0.08693 | N | 238.6 | 4 | 0.9498 | IDENTIFIED | 3.224 | <input type="checkbox"/> |
| Polonium-214 | NR 1.478 | 0.1348 | pCi/g | 0.09964 | N | 351.9 | 4 | 1.118 | IDENTIFIED | 5.757 | <input type="checkbox"/> |
| Polonium-216 | NR 1.828 | 0.1409 | pCi/g | 0.08693 | N | 238.6 | 4 | 0.9498 | IDENTIFIED | 3.224 | <input type="checkbox"/> |
| Polonium-218 | NR 1.478 | 0.1348 | pCi/g | 0.09964 | N | 351.9 | 4 | 1.118 | IDENTIFIED | 5.757 | <input type="checkbox"/> |
| Potassium-40 | ✓ 28.62 | 1.51 | pCi/g | 0.6398 | 1.00 | 1461 | 1 | 1.976 | IDENTIFIED | 3.021 | <input type="checkbox"/> |
| Radium-224 | INT 5.323 | 0.7744 | pCi/g | 0.9895 | Y | 241.6 | 1 | 1.66 | IDENTIFIED | 12.91 | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Radium-226 | ✓ 1.278 | 0.1045 | pCi/g | 0.1143 | Y | 609.4 | 4 | 1.511 | IDENTIFIED | 5.908 | <input type="checkbox"/> |
| Radium-228 | ✓ 1.87 | 0.1761 | pCi/g | 0.1933 | 0.500 | 911.5 | 3 | 1.401 | IDENTIFIED | 7.185 | <input type="checkbox"/> |
| Sodium-24 | HE 1.06E+06 | 2.84E+06 | pCi/g | 0 | N | 0 | 10 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> |
| Thallium-208 | ✓ 0.6004 | 0.05178 | pCi/g | 0.05957 | 0.080 | 583.3 | 1 | 1.29 | IDENTIFIED | 6.725 | <input type="checkbox"/> |
| Thorium-228 | NR 1.86 | 0.1434 | pCi/g | 0.08841 | N | 238.6 | 4 | 0.9498 | IDENTIFIED | 3.224 | <input type="checkbox"/> |
| Thorium-230 | NR 1.278 | 0.1045 | pCi/g | 0.1143 | N | 609.4 | 4 | 1.511 | IDENTIFIED | 5.908 | <input type="checkbox"/> |
| Thorium-232 | NR 1.87 | 0.1761 | pCi/g | 0.1933 | N | 911.5 | 3 | 1.401 | IDENTIFIED | 7.185 | <input type="checkbox"/> |
| Thorium-234 | ✓ 4.2 | 0.9103 | pCi/g | 1.734 | 2.00 | 63.32 | 2 | 1.008 | IDENTIFIED | 19.85 | <input type="checkbox"/> |
| Tin-126 | NR 0.34 | 0.04553 | pCi/g | 0.09913 | N | 87.12 | 3 | 1.082 | IDENTIFIED | 12.54 | <input type="checkbox"/> |
| Titanium-44 | — 0.4048 | 0.02758 | pCi/g | 0.06316 | N | 0 | 10 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Total Uranium | — 12.62 | 2.71E-06 | ug/g | 2.5818 | N | 0 | | | | | <input type="checkbox"/> |
| Uranium-234 | NR 1.278 | 0.1045 | pCi/g | 0.1143 | N | 609.4 | 4 | 1.511 | IDENTIFIED | 5.908 | <input type="checkbox"/> |
| Uranium-238 | NR 4.2 | 0.9103 | pCi/g | 1.734 | N | 63.32 | 2 | 1.008 | IDENTIFIED | 19.85 | <input type="checkbox"/> |
| Zirconium-97 | HE 4.72E+06 | 6.02E+06 | 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 |
|--|-----------------|-----------------|-----------|-------------|--------|------------|--------|---------------------|------------|--------------|
| 246341005 | 01-FEB-10 12:00 | 18-FEB-10 13:10 | 17 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 ✓ | 1.719 | 0.1684 | pCi/g | 0.1966 | N | 911.2 | 3 | 1.605 | IDENTIFIED | 7.791 |
| <div><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="text"/></div> | | | | | | | | | | |

| | | | | | | | | | | | | |
|-------------------|-----|----------|----------|---------------|-------|-------|---|--------|------------|-------|-------------------------------------|--|
| Americium-243 | INT | 0.3829 | 0.03274 | pCi/g 0.07645 | N | 74.83 | 1 | 0.8167 | IDENTIFIED | 7.477 | <input type="checkbox"/> | |
| Annihilation Rad. | — | 0.1365 | 0.03159 | pCi/g 0.04121 | N | 510.6 | 1 | 1.637 | IDENTIFIED | 22.65 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 3.902 | 0.2923 | pCi/g 0.2972 | Y | 351.8 | 4 | 1.165 | IDENTIFIED | 5.131 | <input checked="" type="checkbox"/> | |
| Bismuth-212 | ✓ | 0.9882 | 0.255 | pCi/g 0.3918 | N | 727.5 | 1 | 1.14 | IDENTIFIED | 25.27 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 1.218 | 0.09931 | pCi/g 0.0922 | 0.200 | 609.2 | 4 | 1.389 | IDENTIFIED | 6.211 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 3.197 | 0.5063 | pCi/g 1.066 | Y | 87.31 | 3 | 1.161 | IDENTIFIED | 15.1 | <input checked="" type="checkbox"/> | |
| Cerium-143 | — | 1164 | 235.7 | pCi/g 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Cesium-134 | LA | 0.08292 | 0.02937 | pCi/g 0.08229 | 0.100 | 0 | 7 | 0 | FAIL_ABUND | 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Gross Gamma | — | 9.797 | 1.341 | pCi/g 3.667 | N | 0 | | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 1.31E+07 | 3.06E+07 | pCi/g 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.687 | 0.1126 | pCi/g 0.08542 | 0.100 | 238.6 | 4 | 0.9672 | IDENTIFIED | 3.087 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.357 | 0.1077 | pCi/g 0.1036 | 0.100 | 351.8 | 4 | 1.165 | IDENTIFIED | 5.131 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 2.971 | 0.8169 | pCi/g 2.329 | N | 0 | 7 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Neptunium-237 | NR | 0.9202 | 0.1739 | pCi/g 0.3654 | N | 87.31 | 3 | 1.161 | IDENTIFIED | 15.1 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.687 | 0.1126 | pCi/g 0.08542 | N | 238.6 | 4 | 0.9672 | IDENTIFIED | 3.087 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.357 | 0.1077 | pCi/g 0.1036 | N | 351.8 | 4 | 1.165 | IDENTIFIED | 5.131 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.687 | 0.1126 | pCi/g 0.08542 | N | 238.6 | 4 | 0.9672 | IDENTIFIED | 3.087 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.357 | 0.1077 | pCi/g 0.1036 | N | 351.8 | 4 | 1.165 | IDENTIFIED | 5.131 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 29.4 | 1.529 | pCi/g 0.4153 | 1.00 | 1461 | 1 | 1.865 | IDENTIFIED | 2.78 | <input type="checkbox"/> | |
| Radium-224 | INT | 4.077 | 0.5361 | pCi/g 0.9721 | Y | 241.5 | 1 | 1.518 | IDENTIFIED | 11.94 | <input checked="" type="checkbox"/> | |
| Radium-226 | ✓ | 1.218 | 0.09931 | pCi/g 0.0922 | Y | 609.2 | 4 | 1.389 | IDENTIFIED | 6.211 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.719 | 0.1684 | pCi/g 0.1966 | 0.500 | 911.2 | 3 | 1.605 | IDENTIFIED | 7.791 | <input type="checkbox"/> | |
| Rhenium-188 | HE | 0.3071 | 0.1271 | pCi/g 0.2402 | N | 154 | 1 | 1.007 | IDENTIFIED | 41.14 | <input type="checkbox"/> | |
| Sodium-24 | HE | 9.77E+05 | 2.75E+06 | pCi/g 0 | N | 0 | 7 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.5562 | 0.04534 | pCi/g 0.05347 | 0.080 | 583.1 | 1 | 1.262 | IDENTIFIED | 6.472 | <input type="checkbox"/> | |
| Thorium-228 | NR | 1.716 | 0.1145 | pCi/g 0.08688 | N | 238.6 | 4 | 0.9672 | IDENTIFIED | 3.087 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.218 | 0.09931 | pCi/g 0.0922 | N | 609.2 | 4 | 1.389 | IDENTIFIED | 6.211 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.719 | 0.1684 | pCi/g 0.1966 | N | 911.2 | 3 | 1.605 | IDENTIFIED | 7.791 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 2.185 | 0.8016 | pCi/g 1.882 | 2.00 | 63.25 | 2 | 0.7795 | IDENTIFIED | 35.64 | <input type="checkbox"/> | |
| Tin-126 | NR | 0.3134 | 0.04962 | pCi/g 0.105 | N | 87.31 | 3 | 1.161 | IDENTIFIED | 15.1 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.3666 | 0.02537 | pCi/g 0.06567 | N | 0 | 7 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | — | 6.6177 | 2.39E-06 | ug/g 2.8017 | N | 0 | | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.218 | 0.09931 | pCi/g 0.0922 | N | 609.2 | 4 | 1.389 | IDENTIFIED | 6.211 | <input type="checkbox"/> | |
| Uranium-238 | HE | 2.185 | 0.8016 | pCi/g 1.882 | N | 63.25 | 2 | 0.7795 | IDENTIFIED | 35.64 | <input type="checkbox"/> | |
| Zirconium-97 | — | 1.50E+07 | 5.60E+06 | 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 | |
|-------------------|-----------------|-----------------|-----------|---------------|--------|----------|----------|---------------|------------|-------|-------------------------------------|
| 246341006 | 01-FEB-10 12:00 | 18-FEB-10 13:12 | 17.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP | |
| Name | Result | Uncert. | Units | MDA | RDL | Energy | *** FWHM | Comb Act | Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | ✓ | 1.484 | 0.1659 | pCi/g 0.2005 | N | 910.8 | 3 | 1.89 | IDENTIFIED | 9.74 | <input type="checkbox"/> |
| Americium-243 | INT | 0.353 | 0.03957 | pCi/g 0.09873 | N | 74.67 | 1 | 1.017 | IDENTIFIED | 10.68 | <input type="checkbox"/> |
| Annihilation Rad. | HE | 0.09935 | 0.03135 | pCi/g 0.04365 | N | 510.4 | 1 | 1.758 | IDENTIFIED | 31.41 | <input type="checkbox"/> |
| Barium-137m | NR | 0.2122 | 0.03013 | pCi/g 0.06375 | N | 661.4 | 2 | 1.412 | IDENTIFIED | 13.83 | <input type="checkbox"/> |
| Bismuth-211 | INT | 3.637 | 0.2572 | pCi/g 0.3019 | Y | 351.6 | 4 | 1.331 | IDENTIFIED | 6.334 | <input checked="" type="checkbox"/> |
| Bismuth-212 | — | 1.069 | 0.1932 | pCi/g 0.6524 | N | 0 | 11 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> |
| Bismuth-214 | ✓ | 1.237 | 0.09166 | pCi/g 0.1074 | 0.200 | 608.9 | 4 | 1.298 | IDENTIFIED | 6.159 | <input type="checkbox"/> |
| Cadmium-109 | INT | 4.037 | 0.5542 | pCi/g 1.23 | Y | 86.99 | 3 | 1.188 | IDENTIFIED | 13.2 | <input checked="" type="checkbox"/> |

| | | | | | | | | | | | |
|-------------------|-----|----------|----------|---------------|-------|-------|----|--------|------------------|-------------------------------------|--|
| Cerium-143 | — | 2186 | 325.5 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Cesium-134 | LA | 0.1289 | 0.03187 | pCi/g 0.08959 | 0.100 | 0 | 11 | 0 | FAIL_ABUND 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Cesium-137 | ✓ | 0.2243 | 0.03186 | pCi/g 0.06739 | 0.100 | 661.4 | 2 | 1.412 | IDENTIFIED 13.83 | <input type="checkbox"/> | |
| Gross Gamma | — | 10.31 | 1.414 | pCi/g 3.676 | N | 0 | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 2.15E+07 | 3.18E+07 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Iodine-135 | — | 1.32E+17 | 0 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.595 | 0.07624 | pCi/g 0.08152 | 0.100 | 238.4 | 4 | 1.068 | IDENTIFIED 3.2 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.265 | 0.09535 | pCi/g 0.1052 | 0.100 | 351.6 | 4 | 1.331 | IDENTIFIED 6.334 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 3.655 | 0.9393 | pCi/g 2.367 | N | 0 | 11 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Neptunium-237 | | 1.162 | 0.1995 | pCi/g 0.385 | N | 86.99 | 3 | 1.188 | IDENTIFIED 13.2 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.595 | 0.07624 | pCi/g 0.08152 | N | 238.4 | 4 | 1.068 | IDENTIFIED 3.2 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.265 | 0.09535 | pCi/g 0.1052 | N | 351.6 | 4 | 1.331 | IDENTIFIED 6.334 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.595 | 0.07624 | pCi/g 0.08152 | N | 238.4 | 4 | 1.068 | IDENTIFIED 3.2 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.265 | 0.09535 | pCi/g 0.1052 | N | 351.6 | 4 | 1.331 | IDENTIFIED 6.334 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 28.88 | 1.328 | pCi/g 0.5656 | 1.00 | 1460 | 1 | 2.196 | IDENTIFIED 2.906 | <input type="checkbox"/> | |
| Protactinium-234m | HE | 13.67 | 3.66 | pCi/g 10.16 | N | 0 | 11 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Radium-224 | INT | 4.312 | 0.5272 | pCi/g 0.9277 | Y | 241.4 | 1 | 1.922 | IDENTIFIED 11.91 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 1.237 | 0.09166 | pCi/g 0.1074 | Y | 608.9 | 4 | 1.298 | IDENTIFIED 6.159 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.484 | 0.1659 | pCi/g 0.2005 | 0.500 | 910.8 | 3 | 1.89 | IDENTIFIED 9.74 | <input type="checkbox"/> | |
| Technetium-99m | — | 3.82E+18 | 0 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Thallium-200 | HE | 953.2 | 758.7 | pCi/g 0 | N | 0 | 11 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.4846 | 0.04544 | pCi/g 0.05749 | 0.080 | 582.7 | 1 | 1.383 | IDENTIFIED 8.669 | <input type="checkbox"/> | |
| Thorium-228 | NR | 1.623 | 0.07755 | pCi/g 0.08291 | N | 238.4 | 4 | 1.068 | IDENTIFIED 3.2 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.237 | 0.09166 | pCi/g 0.1074 | N | 608.9 | 4 | 1.298 | IDENTIFIED 6.159 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.484 | 0.1659 | pCi/g 0.2005 | N | 910.8 | 3 | 1.89 | IDENTIFIED 9.74 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 7.044 | 1.295 | pCi/g 2.235 | 2.00 | 63.18 | 2 | 0.9201 | IDENTIFIED 16.29 | <input type="checkbox"/> | |
| Tin-126 | INT | 0.3956 | 0.05431 | pCi/g 0.1211 | N | 86.99 | 3 | 1.188 | IDENTIFIED 13.2 | <input type="checkbox"/> | |
| Titanium-44 | — | 0.3954 | 0.02902 | pCi/g 0.07748 | N | 0 | 11 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Total Uranium | — | 21.153 | 3.85E-06 | ug/g 3.3272 | N | 0 | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.237 | 0.09166 | pCi/g 0.1074 | N | 608.9 | 4 | 1.298 | IDENTIFIED 6.159 | <input type="checkbox"/> | |
| Uranium-235 | ✓ | 0.4252 | 0.1241 | pCi/g 0.3464 | 0.500 | 143.2 | 1 | 1.231 | IDENTIFIED 28.03 | <input type="checkbox"/> | |
| Uranium-238 | NR | 7.044 | 1.295 | pCi/g 2.235 | N | 63.18 | 2 | 0.9201 | IDENTIFIED 16.29 | <input type="checkbox"/> | |
| Zirconium-97 | ✓ | 2.23E+07 | 6.82E+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 |
|-------------------|-----------------|-----------------|-----------|---------------|--------|------------|--------|---------------------|------------------|-------------------------------------|--|
| 246341007 | 01-FEB-10 12:00 | 18-FEB-10 13:12 | 17.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment | |
| Actinium-228 | ✓ | 2.079 | 0.1871 | pCi/g 0.2004 | N | 911.2 | 3 | 1.31 | IDENTIFIED 6.594 | <input type="checkbox"/> | |
| Americium-243 | INT | 0.5021 | 0.0429 | pCi/g 0.08063 | N | 74.96 | 1 | 1.367 | IDENTIFIED 7.529 | <input type="checkbox"/> | |
| Annihilation Rad. | — | 0.1858 | 0.03444 | pCi/g 0.04323 | N | 510.5 | 1 | 1.482 | IDENTIFIED 17.94 | <input type="checkbox"/> | |
| Bismuth-211 | INT | 4.627 | 0.3205 | pCi/g 0.3271 | Y | 351.9 | 4 | 1.309 | IDENTIFIED 5.011 | <input checked="" type="checkbox"/> | UI |
| Bismuth-212 | HE | 1.018 | 0.26 | pCi/g 0.6912 | N | 0 | 8 | 0 | FAIL_ABUND 0 | <input type="checkbox"/> | |
| Bismuth-214 | ✓ | 1.5 | 0.116 | pCi/g 0.1051 | 0.200 | 609.4 | 4 | 1.332 | IDENTIFIED 5.372 | <input type="checkbox"/> | |
| Cadmium-109 | INT | 4.359 | 0.5447 | pCi/g 1.123 | Y | 87.3 | 3 | 1.275 | IDENTIFIED 11.58 | <input checked="" type="checkbox"/> | UI |
| Cerium-143 | — | 1718 | 298.8 | pCi/g 0 | N | 0 | 8 | 0 | SHORT_HLIF 0 | <input type="checkbox"/> | |
| Cesium-134 | LA | 0.1241 | 0.02801 | pCi/g 0.09724 | 0.100 | 0 | 8 | 0 | FAIL_ABUND 0 | <input checked="" type="checkbox"/> | UI Data rejected due to low abundance. |
| Gross Gamma | — | 11.66 | 1.52 | pCi/g 3.735 | N | 0 | | | | <input type="checkbox"/> | |

| | | | | | | | | | | | | | |
|---------------|-----|----------|----------|-------|---------|-------|-------|---|-------|------------|-------|-------------------------------------|----|
| Iodine-123 | HE | 2.72E+07 | 3.30E+07 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.981 | 0.12 | pCi/g | 0.09193 | 0.100 | 238.6 | 4 | 1.084 | IDENTIFIED | 2.905 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.609 | 0.1191 | pCi/g | 0.114 | 0.100 | 351.9 | 4 | 1.309 | IDENTIFIED | 5.011 | <input type="checkbox"/> | |
| Neptunium-237 | NR | 1.254 | 0.2033 | pCi/g | 0.3265 | N | 87.3 | 3 | 1.275 | IDENTIFIED | 11.58 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.981 | 0.12 | pCi/g | 0.09193 | N | 238.6 | 4 | 1.084 | IDENTIFIED | 2.905 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.609 | 0.1191 | pCi/g | 0.114 | N | 351.9 | 4 | 1.309 | IDENTIFIED | 5.011 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.981 | 0.12 | pCi/g | 0.09193 | N | 238.6 | 4 | 1.084 | IDENTIFIED | 2.905 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.609 | 0.1191 | pCi/g | 0.114 | N | 351.9 | 4 | 1.309 | IDENTIFIED | 5.011 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 36.91 | 1.865 | pCi/g | 0.475 | 1.00 | 1461 | 1 | 1.822 | IDENTIFIED | 2.555 | <input type="checkbox"/> | |
| Radium-224 | INT | 4.879 | 0.6347 | pCi/g | 1.046 | Y | 241.5 | 1 | 1.615 | IDENTIFIED | 12.08 | <input checked="" type="checkbox"/> | UI |
| Radium-226 | ✓ | 1.5 | 0.116 | pCi/g | 0.1051 | Y | 609.4 | 4 | 1.332 | IDENTIFIED | 5.372 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 2.079 | 0.1871 | pCi/g | 0.2004 | 0.500 | 911.2 | 3 | 1.31 | IDENTIFIED | 6.594 | <input type="checkbox"/> | |
| Sodium-24 | HE | 1.45E+06 | 3.05E+06 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-200 | HE | 303.1 | 757.5 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.6637 | 0.05232 | pCi/g | 0.05291 | 0.080 | 583.4 | 1 | 1.27 | IDENTIFIED | 5.975 | <input type="checkbox"/> | |
| Thorium-228 | NR | 2.015 | 0.1221 | pCi/g | 0.0935 | N | 238.6 | 4 | 1.084 | IDENTIFIED | 2.905 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.5 | 0.116 | pCi/g | 0.1051 | N | 609.4 | 4 | 1.332 | IDENTIFIED | 5.372 | <input type="checkbox"/> | |
| Thorium-232 | NR | 2.079 | 0.1871 | pCi/g | 0.2004 | N | 911.2 | 3 | 1.31 | IDENTIFIED | 6.594 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 3.283 | 0.7878 | pCi/g | 1.763 | 2.00 | 63.45 | 2 | 1.301 | IDENTIFIED | 22.37 | <input type="checkbox"/> | |
| Tin-126 | NR | 0.4272 | 0.05338 | pCi/g | 0.1104 | N | 87.3 | 3 | 1.275 | IDENTIFIED | 11.58 | <input type="checkbox"/> | |
| Titanium-44 | ✓ | 0.4324 | 0.02838 | pCi/g | 0.08059 | N | 0 | 8 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | NR | 9.7367 | 2.34E-06 | ug/g | 2.625 | N | 0 | | | | | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.5 | 0.116 | pCi/g | 0.1051 | N | 609.4 | 4 | 1.332 | IDENTIFIED | 5.372 | <input type="checkbox"/> | |
| Uranium-238 | HE | 3.283 | 0.7878 | pCi/g | 1.763 | N | 63.45 | 2 | 1.301 | IDENTIFIED | 22.37 | <input type="checkbox"/> | |
| Zirconium-97 | ✓ | 2.04E+07 | 6.45E+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 |
|-------------------|-----------------|-----------------|-----------|-------------|---------|------------|--------|---------------------|--------|------------------|
| 246341008 | 01-FEB-10 12:00 | 18-FEB-10 13:24 | 17.1 | SAMPLE | LOAD | 1 | LANL | LANL01004GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy *** | FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | ✓ | 2.015 | 0.2499 | pCi/g | 0.286 | N | 910.7 | 3 | 1.576 | IDENTIFIED 11.03 |
| Americium-243 | INT | 0.3711 | 0.02668 | pCi/g | 0.04861 | N | 74.84 | 1 | 0.7965 | IDENTIFIED 5.803 |
| Annihilation Rad. | HE | 0.09848 | 0.03542 | pCi/g | 0.05479 | N | 510.5 | 1 | 1.526 | IDENTIFIED 35.65 |
| Bismuth-210 | NR | 2.404 | 0.3953 | pCi/g | 0.6778 | N | 46.49 | 3 | 0.589 | IDENTIFIED 15.74 |
| Bismuth-211 | INT | 4.167 | 0.2978 | pCi/g | 0.3286 | Y | 351.6 | 4 | 1.033 | IDENTIFIED 5.545 |
| Bismuth-212 | HE | 0.9328 | 0.3193 | pCi/g | 0.8092 | N | 0 | 8 | 0 | FAIL_ABUND 0 |
| Bismuth-214 | ✓ | 1.464 | 0.1255 | pCi/g | 0.1227 | 0.200 | 608.9 | 4 | 1.24 | IDENTIFIED 6.207 |
| Cadmium-109 | INT | 3.634 | 0.3836 | pCi/g | 0.7593 | Y | 87.21 | 3 | 0.9759 | IDENTIFIED 9.466 |
| Cerium-143 | ✓ | 1172 | 244.6 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF 0 |
| Gross Gamma | ✓ | 10.53 | 1.335 | pCi/g | 3.909 | N | 0 | | | |
| Iodine-133 | HE | 25530 | 15600 | pCi/g | 0 | N | 0 | 8 | 0 | SHORT_HLIF 0 |
| Lead-210 | ✓ | 2.404 | 0.3953 | pCi/g | 0.6778 | N | 46.49 | 3 | 0.589 | IDENTIFIED 15.74 |
| Lead-212 | ✓ | 1.73 | 0.107 | pCi/g | 0.1173 | 0.100 | 238.5 | 4 | 0.9575 | IDENTIFIED 3.676 |
| Lead-214 | ✓ | 1.45 | 0.1103 | pCi/g | 0.1139 | 0.100 | 351.6 | 4 | 1.033 | IDENTIFIED 5.545 |
| Lutetium-177 | HE | 3.677 | 0.7682 | pCi/g | 2.36 | N | 0 | 8 | 0 | FAIL_ABUND 0 |
| Neptunium-237 | NR | 1.046 | 0.1544 | pCi/g | 0.2239 | N | 87.21 | 3 | 0.9759 | IDENTIFIED 9.466 |
| Polonium-210 | NR | 2.404 | 0.3925 | pCi/g | 0.6778 | N | 46.49 | 3 | 0.589 | IDENTIFIED 15.74 |
| Polonium-212 | NR | 1.73 | 0.107 | pCi/g | 0.1173 | N | 238.5 | 4 | 0.9575 | IDENTIFIED 3.676 |

| | | | | | | | | | | | | |
|-------------------|-----|----------|----------|--------------|-------|-------|----|-------|------------|-------|-------------------------------------|-------------------------------------|
| Cobalt-57 | HE | 0.241 | 0.07319 | pCi/g 0.1537 | N | 120.7 | 1 | 1.285 | IDENTIFIED | 30.07 | <input type="checkbox"/> | |
| Curium-243 | HE | 1.057 | 0.2392 | pCi/g 0.6409 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Europium-155 | — | 2.459 | 0.2792 | pCi/g 0.7455 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Gadolinium-153 | — | 7.673 | 0.4175 | pCi/g 0.7355 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Gold-195 | — | 22.38 | 1.218 | pCi/g 2.144 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Gross Gamma | — | 107.2 | 5.866 | pCi/g 25.88 | N | 0 | | | | | <input type="checkbox"/> | |
| Iodine-123 | HE | 2.02E+08 | 1.34E+08 | pCi/g 0 | N | 0 | 22 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Iodine-133 | HE | 10630 | 33960 | pCi/g 0 | N | 0 | 22 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Lead-212 | ✓ | 1.43 | 0.1258 | pCi/g 0.237 | 0.100 | 238.7 | 4 | 1.124 | IDENTIFIED | 7.387 | <input type="checkbox"/> | |
| Lead-214 | ✓ | 1.527 | 0.1566 | pCi/g 0.2526 | 0.100 | 352 | 4 | 1.284 | IDENTIFIED | 8.84 | <input type="checkbox"/> | |
| Lutetium-177 | HE | 7.206 | 1.778 | pCi/g 5.487 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Niobium-95 | NR | 2.901 | 0.1741 | pCi/g 0.1473 | N | 766.6 | 1 | 1.433 | IDENTIFIED | 3.904 | <input type="checkbox"/> | |
| Polonium-212 | NR | 1.43 | 0.1258 | pCi/g 0.237 | N | 238.7 | 4 | 1.124 | IDENTIFIED | 7.387 | <input type="checkbox"/> | |
| Polonium-214 | NR | 1.527 | 0.1566 | pCi/g 0.2526 | N | 352 | 4 | 1.284 | IDENTIFIED | 8.84 | <input type="checkbox"/> | |
| Polonium-216 | NR | 1.43 | 0.1258 | pCi/g 0.237 | N | 238.7 | 4 | 1.124 | IDENTIFIED | 7.387 | <input type="checkbox"/> | |
| Polonium-218 | NR | 1.527 | 0.1566 | pCi/g 0.2526 | N | 352 | 4 | 1.284 | IDENTIFIED | 8.84 | <input type="checkbox"/> | |
| Potassium-40 | ✓ | 25.94 | 1.506 | pCi/g 0.7623 | 1.00 | 1461 | 1 | 1.833 | IDENTIFIED | 3.907 | <input type="checkbox"/> | |
| Protactinium-234 | HE | 1.594 | 0.4706 | pCi/g 1.154 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Protactinium-234m | ✓ | 747.2 | 42.1 | pCi/g 13.17 | N | 1001 | 1 | 1.757 | IDENTIFIED | 2.336 | <input type="checkbox"/> | |
| Radium-224 | INT | 3.298 | 0.9189 | pCi/g 2.658 | Y | 241.5 | 1 | 1.479 | IDENTIFIED | 27.54 | <input checked="" type="checkbox"/> | |
| Radium-226 | ✓ | 1.337 | 0.1645 | pCi/g 0.2337 | Y | 609.7 | 4 | 1.433 | IDENTIFIED | 11.17 | <input type="checkbox"/> | |
| Radium-228 | ✓ | 1.764 | 0.2621 | pCi/g 0.3422 | 0.500 | 911.5 | 3 | 1.939 | IDENTIFIED | 13.67 | <input type="checkbox"/> | |
| Rhenium-183 | — | 8.057 | 0.4483 | pCi/g 0.9265 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Rubidium-84 | HE | 0.3793 | 0.0842 | pCi/g 0.2999 | N | 0 | 22 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Technetium-99m | — | 3.92E+19 | 0 | pCi/g 0 | N | 0 | 22 | 0 | SHORT_HLIF | 0 | <input type="checkbox"/> | |
| Tellurium-125m | — | 414.7 | 40.75 | pCi/g 59.74 | N | 109.2 | 1 | 1.849 | IDENTIFIED | 8.346 | <input type="checkbox"/> | |
| Thallium-208 | ✓ | 0.5381 | 0.07995 | pCi/g 0.1227 | 0.080 | 583.6 | 1 | 1.323 | IDENTIFIED | 14.07 | <input type="checkbox"/> | |
| Thorium-227 | LA | 1.715 | 0.5556 | pCi/g 1.641 | Y | 0 | 22 | 0 | FAIL_ABUND | 0 | <input checked="" type="checkbox"/> | Data rejected due to low abundance. |
| Thorium-228 | NR | 1.454 | 0.128 | pCi/g 0.241 | N | 238.7 | 4 | 1.124 | IDENTIFIED | 7.387 | <input type="checkbox"/> | |
| Thorium-229 | HE | 2.45 | 0.7932 | pCi/g 2.422 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Thorium-230 | NR | 1.337 | 0.1645 | pCi/g 0.2337 | N | 609.7 | 4 | 1.433 | IDENTIFIED | 11.17 | <input type="checkbox"/> | |
| Thorium-232 | NR | 1.764 | 0.2621 | pCi/g 0.3422 | N | 911.5 | 3 | 1.939 | IDENTIFIED | 13.67 | <input type="checkbox"/> | |
| Thorium-234 | ✓ | 558.7 | 48.93 | pCi/g 7.729 | 2.00 | 63.26 | 2 | 1.042 | IDENTIFIED | 1.006 | <input type="checkbox"/> | |
| Titanium-44 | HE | 0.3234 | 0.09599 | pCi/g 0.2468 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Total Uranium | — | 1676.8 | 0.00015 | ug/g 11.507 | N | 0 | | | | | <input type="checkbox"/> | |
| Tungsten-181 | — | 26.91 | 1.286 | pCi/g 2.795 | N | 0 | 22 | 0 | NOT_IDENTI | 0 | <input type="checkbox"/> | |
| Uranium-231 | NR | 83.91 | 9.5 | pCi/g 8.96 | N | 94.7 | 1 | 1.264 | IDENTIFIED | 10.38 | <input type="checkbox"/> | |
| Uranium-234 | NR | 1.337 | 0.1645 | pCi/g 0.2337 | N | 609.7 | 4 | 1.433 | IDENTIFIED | 11.17 | <input type="checkbox"/> | |
| Uranium-235 | ✓ | 31.72 | 2.851 | pCi/g 1.161 | 0.500 | 143.9 | 1 | 1.084 | IDENTIFIED | 2.416 | <input type="checkbox"/> | |
| Uranium-238 | NR | 558.7 | 48.93 | pCi/g 7.729 | N | 63.26 | 2 | 1.042 | IDENTIFIED | 1.006 | <input type="checkbox"/> | |
| Xenon-127 | NR | 0.6044 | 0.08756 | pCi/g 0.2515 | N | 0 | 22 | 0 | FAIL_ABUND | 0 | <input type="checkbox"/> | |
| Zirconium-97 | HE | 1.16E+07 | 1.53E+07 | pCi/g 0 | N | 0 | 22 | 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 |
|--------------|--------------|-----------------|-----------|--------------|--------|----------|----------|---------------------|------------|--------------|
| 1202037548 | | 18-FEB-10 14:48 | 0 | LCS | LOAD | 1 | | GEL | N | RGSP |
| Name | Result | Uncert. | Units | MDA | RDL | Energy | *** FWHM | Comb Act Rpt Err(%) | Qual | Qual Comment |
| Actinium-228 | HE | 1.113 | 0.4591 | pCi/g 0.9232 | N | 0 | 9 | 0 | FAIL_ABUND | 0 |

Result Greater Than DL

| Batch Id | Sample Id | Sample Type | Run Date | Paramname | Result | Uncertainty | Units | DL | RDL |
|----------|------------|-------------|-----------|-------------------|----------|-------------|-------|---------|-------|
| 950786 | 246341008 | SAMPLE | 18-FEB-10 | Lead-214 | 1.45 | 0.1103 | pCi/g | 0.05698 | 0.100 |
| | | | | Potassium-40 | 35.43 | 1.957 | pCi/g | 0.3905 | 1.00 |
| | | | | Radium-224 | 2.676 | 0.5402 | pCi/g | 0.5206 | Y |
| | | | | Radium-226 | 1.464 | 0.1255 | pCi/g | 0.0614 | Y |
| | | | | Radium-228 | 2.015 | 0.2499 | pCi/g | 0.1431 | 0.500 |
| | | | | Technetium-99m | 1.79E+18 | 0 | pCi/g | 0 | N |
| | | | | Thallium-200 | 764 | 832 | pCi/g | 0 | N |
| | | | | Thallium-208 | 0.6078 | 0.05705 | pCi/g | 0.03624 | 0.080 |
| | | | | Thorium-234 | 1.82 | 0.3798 | pCi/g | 0.3971 | 2.00 |
| | | | | Zirconium-97 | 1.47E+07 | 7.49E+06 | pCi/g | 0 | N |
| 950786 | 246341008 | SAMPLE | 18-FEB-10 | Americium-241 | 0.1985 | 0.08734 | pCi/g | 0.1385 | 0.200 |
| | | | | Bismuth-211 | 3.838 | 0.238 | pCi/g | 0.1643 | Y |
| | | | | Bismuth-214 | 1.038 | 0.09338 | pCi/g | 0.05739 | 0.200 |
| | | | | Cadmium-109 | 4.009 | 0.5083 | pCi/g | 0.7214 | Y |
| | | | | Cerium-143 | 3194 | 430.9 | pCi/g | 0 | N |
| | | | | Cesium-134 | 0.1089 | 0.02991 | pCi/g | 0.04504 | 0.100 |
| | | | | Cesium-137 | 0.6049 | 0.04492 | pCi/g | 0.03209 | 0.100 |
| | | | | Europium-152 | 0.08593 | 0.05847 | pCi/g | 0.08099 | 0.200 |
| | | | | Gross Gamma | 10.75 | 1.411 | pCi/g | 2.165 | N |
| | | | | Krypton-85 | 14.84 | 3.818 | pCi/g | 6.419 | N |
| | | | | Lead-212 | 1.731 | 0.08372 | pCi/g | 0.0462 | 0.100 |
| | | | | Lead-214 | 1.335 | 0.08981 | pCi/g | 0.06011 | 0.100 |
| | | | | Mercury-203 | 0.04035 | 0.02193 | pCi/g | 0.03899 | 0.100 |
| | | | | Niobium-97 | 1.12E+08 | 4.05E+05 | pCi/g | 0 | N |
| | | | | Potassium-40 | 27.06 | 1.3 | pCi/g | 0.2617 | 1.00 |
| | | | | Protactinium-234m | 10.47 | 4.857 | pCi/g | 5.02 | N |
| | | | | Radium-224 | 4.482 | 0.613 | pCi/g | 0.5254 | Y |
| | | | | Radium-226 | 1.038 | 0.09338 | pCi/g | 0.05739 | Y |
| | | | | Radium-228 | 1.524 | 0.1775 | pCi/g | 0.1155 | 0.500 |
| | | | | Strontium-85 | 0.07767 | 0.01998 | pCi/g | 0.0336 | Y |
| | | | | Thallium-208 | 0.4974 | 0.04796 | pCi/g | 0.03087 | 0.080 |
| | | | | Thorium-234 | 9.912 | 1.433 | pCi/g | 1.077 | 2.00 |
| | | | | Uranium-235 | 0.5193 | 0.1695 | pCi/g | 0.1877 | 0.500 |
| | | | | Uranium-238 | 9.912 | 1.433 | pCi/g | 1.077 | N |
| | | | | Zirconium-97 | 1.91E+07 | 8.04E+06 | pCi/g | 0 | N |
| 950786 | 1202037546 | MB | 18-FEB-10 | Cadmium-109 | 0.3036 | 0.1739 | pCi/g | 0.2987 | Y |
| | | | | Iodine-123 | 31.71 | 95.1 | pCi/g | 0 | N |

246341008

Result Greater Than DL

| Batch Id | Sample Id | Sample Type | Run Date | Parname | Result | Uncertainty | Units | DL | RDL |
|----------|------------|-------------|-----------|-------------------|----------|-------------|-------|---------|---------|
| 950786 | 1202037546 | MB | 18-FEB-10 | Iodine-135 | 1.29E+07 | 6.72E+06 | pCi/g | 0 | N |
| | | | | Krypton-85 | 9.152 | 2.526 | pCi/g | 4.557 | N |
| | | | | Strontium-85 | 0.04335 | 0.01196 | pCi/g | 0.02158 | Y ✓ |
| | | | | Thorium-234 | 0.6827 | 0.5951 | pCi/g | 0.4723 | (2.00) |
| | | | | Uranium-235 | 0.1008 | 0.05219 | pCi/g | 0.09558 | (0.500) |
| | | | | Zirconium-97 | 361.2 | 320.7 | pCi/g | 0 | N |
| 950786 | 1202037547 | DUP | 18-FEB-10 | Americium-241 | 1.763 | 0.3397 | pCi/g | 0.5029 | 0.200 |
| | | | | Antimony-122 | 6.272 | 4.14 | pCi/g | 6.284 | N |
| | | | | Arsenic-73 | 7.686 | 2.548 | pCi/g | 2.323 | N |
| | | | | Bismuth-211 | 4.391 | 0.4352 | pCi/g | 0.3667 | Y |
| | | | | Bismuth-214 | 1.337 | 0.1645 | pCi/g | 0.1169 | 0.200 |
| | | | | Cerium-139 | 0.1882 | 0.05912 | pCi/g | 0.08501 | 0.050 |
| | | | | Cerium-141 | 5.94 | 0.2957 | pCi/g | 0.2924 | N |
| | | | | Cerium-143 | 2216 | 523.3 | pCi/g | 0 | N |
| | | | | Cesium-134 | 0.148 | 0.05416 | pCi/g | 0.09313 | 0.100 |
| | | | | Cesium-137 | 2.527 | 0.1489 | pCi/g | 0.06766 | 0.100 |
| | | | | Gadolinium-153 | 7.673 | 0.4175 | pCi/g | 0.368 | N |
| | | | | Gold-195 | 22.38 | 1.218 | pCi/g | 1.073 | N |
| | | | | Gross Gamma | 107.2 | 5.866 | pCi/g | 12.85 | N |
| | | | | Iodine-123 | 2.02E+06 | 1.34E+06 | pCi/g | 0 | N |
| | | | | Iodine-133 | 10630 | 33980 | pCi/g | 0 | N |
| | | | | Krypton-85 | 15.02 | 8.569 | pCi/g | 13.07 | N |
| | | | | Lanthanum-140 | 0.1415 | 0.08011 | pCi/g | 0.1298 | Y |
| | | | | Lead-212 | 1.43 | 0.1258 | pCi/g | 0.1186 | 0.100 |
| | | | | Lead-214 | 1.527 | 0.1586 | pCi/g | 0.1264 | 0.100 |
| | | | | Lutetium-177 | 7.206 | 1.778 | pCi/g | 2.745 | N |
| | | | | Potassium-40 | 25.94 | 1.506 | pCi/g | 0.3814 | 1.00 |
| | | | | Protactinium-234m | 747.2 | 42.1 | pCi/g | 6.588 | Y |
| | | | | Radium-224 | 3.298 | 0.9189 | pCi/g | 1.33 | Y |
| | | | | Radium-226 | 1.337 | 0.1645 | pCi/g | 0.1169 | Y |
| | | | | Radium-228 | 1.764 | 0.2621 | pCi/g | 0.1712 | 0.500 |
| | | | | Rhenium-183 | 8.057 | 0.4483 | pCi/g | 0.4635 | N |
| | | | | Strontium-85 | 0.07863 | 0.04485 | pCi/g | 0.0684 | Y |
| | | | | Technetium-99m | 3.92E+19 | 0 | pCi/g | 0 | N |
| | | | | Tellurium-125m | 414.7 | 40.75 | pCi/g | 29.89 | N |
| | | | | Thallium-208 | 0.5381 | 0.07995 | pCi/g | 0.06136 | 0.080 |
| | | | | Thorium-227 | 1.715 | 0.5556 | pCi/g | 0.8209 | Y |

no 2 hr/10

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 12:55:10.74

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328001.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 10:54:05
Sample ID          : G246328001      Sample quantity   : 1.57110E+02 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.79 0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 950786          Detector SN#     :
Matrix Spike ID    :                 LCS ID            : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|-------|----------|
| 1 | 0 | 63.13* | 104 | 405 | 1.05 | 126.52 | 123 | 8 | 1.44E-02 | 36.9 | |
| 2 | 4 | 74.85* | 314 | 480 | 1.40 | 149.93 | 144 | 15 | 4.37E-02 | 13.8 | 9.70E-01 |
| 3 | 4 | 77.10* | 412 | 366 | 0.98 | 154.42 | 144 | 15 | 5.73E-02 | 9.4 | |
| 4 | 0 | 87.19 | 160 | 496 | 1.25 | 174.58 | 171 | 8 | 2.23E-02 | 25.3 | |
| 5 | 0 | 93.59* | 19 | 665 | 1.41 | 187.37 | 181 | 9 | 2.59E-03 | 268.5 | |
| 6 | 0 | 185.87* | 178 | 391 | 1.40 | 371.76 | 367 | 10 | 2.47E-02 | 23.6 | |
| 7 | 0 | 209.45 | 82 | 294 | 0.90 | 418.88 | 415 | 8 | 1.15E-02 | 37.7 | |
| 8 | 3 | 238.69* | 960 | 226 | 1.20 | 477.31 | 469 | 20 | 1.33E-01 | 4.3 | 1.17E+00 |
| 9 | 3 | 241.68 | 256 | 332 | 1.89 | 483.27 | 469 | 20 | 3.56E-02 | 17.4 | |
| 10 | 4 | 270.22 | 178 | 208 | 2.15 | 540.30 | 535 | 32 | 2.47E-02 | 17.5 | 2.79E+00 |
| 11 | 4 | 277.05 | 93 | 243 | 2.17 | 553.95 | 535 | 32 | 1.29E-02 | 37.2 | |
| 12 | 0 | 295.20* | 331 | 222 | 1.62 | 590.22 | 585 | 11 | 4.59E-02 | 10.6 | |
| 13 | 0 | 300.41 | 125 | 197 | 1.44 | 600.62 | 596 | 11 | 1.74E-02 | 23.5 | |
| 14 | 0 | 328.69 | 106 | 191 | 3.33 | 657.16 | 652 | 11 | 1.48E-02 | 27.2 | |
| 15 | 0 | 338.26* | 215 | 303 | 1.39 | 676.27 | 668 | 15 | 2.98E-02 | 19.2 | |
| 16 | 0 | 351.94* | 543 | 244 | 1.29 | 703.60 | 697 | 13 | 7.54E-02 | 7.5 | |
| 17 | 0 | 510.89* | 127 | 193 | 2.49 | 1021.29 | 1011 | 21 | 1.76E-02 | 33.6 | |
| 18 | 0 | 583.24* | 379 | 82 | 1.78 | 1165.88 | 1159 | 14 | 5.26E-02 | 7.6 | |
| 19 | 2 | 609.41* | 453 | 73 | 1.81 | 1218.19 | 1208 | 22 | 6.30E-02 | 6.3 | 1.05E+00 |
| 20 | 2 | 613.43 | 45 | 36 | 1.87 | 1226.24 | 1208 | 22 | 6.21E-03 | 28.6 | |
| 21 | 0 | 728.38 | 33 | 161 | 1.82 | 1456.02 | 1446 | 14 | 4.58E-03 | 83.4 | |
| 22 | 0 | 911.20* | 237 | 116 | 1.72 | 1821.52 | 1816 | 16 | 3.30E-02 | 12.6 | |
| 23 | 3 | 965.23 | 88 | 111 | 3.10 | 1929.54 | 1921 | 26 | 1.23E-02 | 30.8 | 1.72E+00 |
| 24 | 3 | 968.87* | 151 | 98 | 2.43 | 1936.83 | 1921 | 26 | 2.10E-02 | 17.0 | |
| 25 | 0 | 1120.20* | 109 | 56 | 2.20 | 2239.42 | 2231 | 15 | 1.52E-02 | 18.8 | |
| 26 | 0 | 1460.65* | 1571 | 32 | 2.69 | 2920.33 | 2909 | 20 | 2.18E-01 | 2.7 | |
| 27 | 0 | 1729.58 | 47 | 10 | 1.21 | 3458.33 | 3447 | 21 | 6.49E-03 | 22.6 | |
| 28 | 0 | 1764.46* | 67 | 36 | 3.67 | 3528.11 | 3520 | 22 | 9.26E-03 | 27.6 | |

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328001.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 10:54:05
Sample ID        : G246328001             Sample quantity  : 157.11 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA22                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.79    0.0%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance : 1.50 keV               Half life ratio   : 8.00
Errors propagated: Yes                    Systematic Error  : 0.00 %
Efficiency type   : Empirical              Efficiencies at   : Peak Energy
Abundance limit  : 75.00                  WTM error limit   : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 1.843E+01 | 1.962E+00 | 2.857E-01 | 2.617E-02 | 64.517 |
| CD-109 | + | 88.03 | * | 1.413E+00 | 7.284E-01 | 9.713E-01 | 9.217E-02 | 1.454 |
| SN-126 | + | 64.28 | | 6.003E-01 | 4.509E-01 | 4.891E-01 | 7.103E-02 | 1.227 |
| | + | 86.94 | | 5.756E-01 | 3.772E-01 | 3.846E-01 | 1.597E-01 | 1.497 |
| | + | 87.57 | * | 1.385E-01 | 7.139E-02 | 9.198E-02 | 8.685E-03 | 1.505 |
| TL-208 | + | 277.35 | | 5.265E-01 | 4.016E-01 | 3.996E-01 | 6.589E-02 | 1.318 |
| | + | 510.84 | | 3.267E-01 | 2.234E-01 | 1.314E-01 | 1.713E-02 | 2.486 |
| | + | 583.14 | * | 2.733E-01 | 5.098E-02 | 3.749E-02 | 4.065E-03 | 7.291 |
| | | 860.37 | | 4.368E-01 | 2.134E-01 | 3.767E-01 | 4.389E-02 | 1.160 |
| BI-211 | | 72.87 | | 2.906E+00 | 2.024E+00 | 3.150E+00 | 2.521E-01 | 0.922 |
| | + | 351.07 | * | 1.855E+00 | 3.509E-01 | 2.217E-01 | 2.587E-02 | 8.366 |
| PB-212 | + | 74.81 | | 1.138E+00 | 3.439E-01 | 3.274E-01 | 4.062E-02 | 3.475 |
| | + | 77.11 | | 8.471E-01 | 1.736E-01 | 1.864E-01 | 1.559E-02 | 4.544 |
| | + | 87.30 | | 6.404E-01 | 3.364E-01 | 4.264E-01 | 5.856E-02 | 1.502 |
| | + | 238.63 | * | 7.663E-01 | 1.210E-01 | 6.200E-02 | 8.192E-03 | 12.360 |
| | + | 300.09 | | 1.486E+00 | 7.306E-01 | 7.247E-01 | 1.057E-01 | 2.051 |
| PO-212 | + | 74.81 | | 1.138E+00 | 3.439E-01 | 3.274E-01 | 4.062E-02 | 3.475 |
| | + | 77.11 | | 8.471E-01 | 1.736E-01 | 1.864E-01 | 1.559E-02 | 4.544 |
| | + | 87.30 | | 6.404E-01 | 3.364E-01 | 4.264E-01 | 5.856E-02 | 1.502 |
| | | 115.19 | | -2.735E+00 | 2.462E+00 | 3.711E+00 | 3.074E-01 | -0.737 |
| | + | 238.63 | * | 7.663E-01 | 1.210E-01 | 6.200E-02 | 8.192E-03 | 12.360 |
| | + | 300.09 | | 1.486E+00 | 7.306E-01 | 7.247E-01 | 1.057E-01 | 2.051 |
| BI-214 | + | 609.31 | * | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.685E-03 | 9.290 |
| | + | 1120.29 | | 7.380E-01 | 2.891E-01 | 3.076E-01 | 3.398E-02 | 2.399 |
| | + | 1764.49 | | 5.873E-01 | 3.279E-01 | 1.222E-01 | 1.018E-02 | 4.806 |
| PB-214 | + | 74.81 | | 1.960E+00 | 5.819E-01 | 5.641E-01 | 6.218E-02 | 3.475 |
| | + | 77.11 | | 1.452E+00 | 3.176E-01 | 3.196E-01 | 3.615E-02 | 4.544 |
| | + | 87.30 | | 1.097E+00 | 5.719E-01 | 7.305E-01 | 8.887E-02 | 1.502 |
| | + | 241.98 | | 1.227E+00 | 4.593E-01 | 3.728E-01 | 5.127E-02 | 3.290 |
| | + | 295.21 | | 6.890E-01 | 1.786E-01 | 1.419E-01 | 2.113E-02 | 4.854 |
| | + | 351.92 | * | 6.452E-01 | 1.266E-01 | 7.726E-02 | 9.848E-03 | 8.351 |
| PO-214 | + | 74.81 | | 1.960E+00 | 5.819E-01 | 5.641E-01 | 6.218E-02 | 3.475 |
| | + | 77.11 | | 1.452E+00 | 3.176E-01 | 3.196E-01 | 3.615E-02 | 4.544 |
| | + | 87.30 | | 1.097E+00 | 5.719E-01 | 7.305E-01 | 8.887E-02 | 1.502 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | + | 241.98 | | 1.227E+00 | 4.593E-01 | 3.728E-01 | 5.127E-02 | 3.290 |
| | + | 295.21 | | 6.890E-01 | 1.786E-01 | 1.419E-01 | 2.113E-02 | 4.854 |
| | + | 351.92 | * | 6.452E-01 | 1.266E-01 | 7.726E-02 | 9.848E-03 | 8.351 |
| | + | 74.81 | | 1.138E+00 | 3.439E-01 | 3.274E-01 | 4.062E-02 | 3.475 |
| | + | 77.11 | | 8.471E-01 | 1.736E-01 | 1.864E-01 | 1.559E-02 | 4.544 |
| | + | 87.30 | | 6.404E-01 | 3.364E-01 | 4.264E-01 | 5.856E-02 | 1.502 |
| PO-218 | + | 238.63 | * | 7.663E-01 | 1.210E-01 | 6.200E-02 | 8.192E-03 | 12.360 |
| | + | 300.09 | | 1.486E+00 | 7.306E-01 | 7.247E-01 | 1.057E-01 | 2.051 |
| | + | 74.81 | | 1.960E+00 | 5.819E-01 | 5.641E-01 | 6.218E-02 | 3.475 |
| | + | 77.11 | | 1.452E+00 | 3.176E-01 | 3.196E-01 | 3.615E-02 | 4.544 |
| | + | 87.30 | | 1.097E+00 | 5.719E-01 | 7.305E-01 | 8.887E-02 | 1.502 |
| | + | 241.98 | | 1.227E+00 | 4.593E-01 | 3.728E-01 | 5.127E-02 | 3.290 |
| RA-224 | + | 295.21 | | 6.890E-01 | 1.786E-01 | 1.419E-01 | 2.113E-02 | 4.854 |
| | + | 351.92 | * | 6.452E-01 | 1.266E-01 | 7.726E-02 | 9.848E-03 | 8.351 |
| | + | 240.98 | * | 2.326E+00 | 8.611E-01 | 7.049E-01 | 8.824E-02 | 3.300 |
| RA-226 | + | 609.31 | * | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.685E-03 | 9.290 |
| | + | 1120.29 | | 7.380E-01 | 2.891E-01 | 3.076E-01 | 3.398E-02 | 2.399 |
| | + | 1764.49 | | 5.873E-01 | 3.279E-01 | 1.222E-01 | 1.018E-02 | 4.806 |
| AC-228 | + | 338.32 | | 8.141E-01 | 4.640E-01 | 2.330E-01 | 9.803E-02 | 3.494 |
| | + | 911.07 | * | 7.343E-01 | 2.093E-01 | 1.301E-01 | 1.724E-02 | 5.644 |
| | + | 969.11 | | 8.221E-01 | 3.429E-01 | 2.257E-01 | 5.452E-02 | 3.642 |
| RA-228 | + | 338.32 | | 8.141E-01 | 4.640E-01 | 2.330E-01 | 9.803E-02 | 3.494 |
| | + | 911.07 | * | 7.343E-01 | 2.093E-01 | 1.301E-01 | 1.724E-02 | 5.644 |
| | + | 969.11 | | 8.221E-01 | 3.429E-01 | 2.257E-01 | 5.452E-02 | 3.642 |
| TH-228 | + | 74.81 | | 1.157E+00 | 3.328E-01 | 3.329E-01 | 2.743E-02 | 3.475 |
| | + | 77.11 | | 8.615E-01 | 1.766E-01 | 1.896E-01 | 1.585E-02 | 4.544 |
| | + | 87.30 | | 6.513E-01 | 3.358E-01 | 4.337E-01 | 4.082E-02 | 1.502 |
| | + | 238.63 | * | 7.794E-01 | 1.231E-01 | 6.306E-02 | 8.332E-03 | 12.360 |
| TH-230 | + | 300.09 | | 1.512E+00 | 1.153E+00 | 7.370E-01 | 4.433E-01 | 2.051 |
| | + | 609.31 | * | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.684E-03 | 9.290 |
| | + | 1120.29 | | 7.380E-01 | 2.891E-01 | 3.076E-01 | 3.398E-02 | 2.399 |
| | + | 1764.49 | | 5.872E-01 | 3.279E-01 | 1.222E-01 | 1.018E-02 | 4.806 |
| TH-232 | + | 338.32 | | 8.141E-01 | 3.277E-01 | 2.330E-01 | 2.771E-02 | 3.494 |
| | + | 911.07 | * | 7.343E-01 | 2.093E-01 | 1.301E-01 | 1.724E-02 | 5.644 |
| | + | 969.11 | | 8.221E-01 | 3.429E-01 | 2.257E-01 | 5.452E-02 | 3.642 |
| TH-234 | + | 63.29 | * | 1.517E+00 | 1.149E+00 | 1.210E+00 | 2.107E-01 | 1.253 |
| | + | 92.38 | | 1.041E-01 | 5.596E-01 | 5.400E-01 | 9.894E-02 | 0.193 |
| U-234 | + | 609.31 | * | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.684E-03 | 9.290 |
| | + | 1120.29 | | 7.380E-01 | 2.891E-01 | 3.076E-01 | 3.398E-02 | 2.399 |
| | + | 1764.49 | | 5.872E-01 | 3.279E-01 | 1.222E-01 | 1.018E-02 | 4.806 |
| NP-237 | + | 86.50 | * | 4.066E-01 | 2.258E-01 | 2.568E-01 | 5.814E-02 | 1.583 |
| | + | 95.87 | | -4.036E-01 | 6.722E-01 | 9.227E-01 | 2.282E-01 | -0.437 |
| U-238 | + | 63.29 | * | 1.517E+00 | 1.149E+00 | 1.210E+00 | 2.107E-01 | 1.253 |
| | + | 92.38 | | 1.041E-01 | 5.593E-01 | 5.400E-01 | 4.920E-02 | 0.193 |
| AM-243 | + | 74.67 | * | 1.844E-01 | 5.301E-02 | 5.322E-02 | 4.338E-03 | 3.465 |
| | + | 86.72 | | 1.525E+01 | 7.862E+00 | 9.609E+00 | 8.979E-01 | 1.587 |
| | + | 117.66 | | -1.218E+00 | 2.638E+00 | 4.104E+00 | 3.390E-01 | -0.297 |
| ANH-511 | + | 142.18 | | -1.849E+00 | 1.273E+01 | 2.046E+01 | 1.807E+00 | -0.090 |
| | + | 511.00 | * | 7.057E-02 | 4.790E-02 | 2.840E-02 | 2.845E-03 | 2.485 |

---- 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 | * | | 2.273E-01 | 2.240E-01 | 3.818E-01 | 3.984E-02 | 0.595 |
| NA-22 | 1274.54 | * | | -5.062E-03 | 2.728E-02 | 4.445E-02 | 3.830E-03 | -0.114 |
| NA-24 | 1368.53 | * | | 1.201E+00 | 2.728E-02 | Half-Life | too short | |
| AL-26 | 1129.67 | | | 8.348E-02 | 1.148E+00 | 1.796E+00 | 1.564E-01 | 0.046 |
| | 1808.65 | * | | 7.334E-05 | 1.991E-02 | 3.277E-02 | 2.680E-03 | 0.002 |
| TI-44 | 67.85 | | | 2.500E-02 | 2.866E-02 | 4.662E-02 | 3.559E-03 | 0.536 |
| | 78.38 | * | | 1.563E-01 | 3.205E-02 | 4.488E-02 | 3.805E-03 | 3.483 |
| SC-46 | 889.25 | * | | 4.066E-03 | 2.443E-02 | 4.103E-02 | 4.593E-03 | 0.099 |
| | 1120.51 | + | | 1.283E-01 | 4.953E-02 | 7.507E-02 | 6.637E-03 | 1.709 |
| V-48 | 944.10 | | | -2.551E-01 | 5.986E-01 | 9.526E-01 | 1.033E-01 | -0.268 |
| | 983.50 | * | | -2.565E-02 | 4.645E-02 | 7.260E-02 | 7.614E-03 | -0.353 |
| | 1312.09 | | | -2.105E-03 | 5.265E-02 | 8.657E-02 | 7.627E-03 | -0.024 |
| CR-51 | 320.08 | * | | 1.918E-01 | 2.631E-01 | 4.528E-01 | 5.864E-02 | 0.424 |
| MN-52 | 744.21 | | | 8.034E-02 | 1.961E-01 | 3.272E-01 | 3.555E-02 | 0.246 |
| | 848.13 | | | 2.676E-01 | 5.535E+00 | 9.253E+00 | 1.030E+00 | 0.029 |
| | 935.52 | | | 2.093E-01 | 2.111E-01 | 3.703E-01 | 4.042E-02 | 0.565 |
| | 1246.25 | | | -1.187E+01 | 6.181E+00 | 8.660E+00 | 7.321E-01 | -1.371 |
| | 1333.61 | | | -1.549E+00 | 4.498E+00 | 7.191E+00 | 6.413E-01 | -0.215 |
| | 1434.06 | * | | 5.604E-02 | 1.670E-01 | 2.841E-01 | 2.539E-02 | 0.197 |
| MN-54 | 834.83 | * | | 1.648E-02 | 2.376E-02 | 4.130E-02 | 4.588E-03 | 0.399 |
| CO-56 | 846.75 | * | | -4.670E-03 | 2.648E-02 | 4.360E-02 | 4.853E-03 | -0.107 |
| | 977.42 | | | 1.782E+00 | 2.046E+00 | 3.158E+00 | 3.331E-01 | 0.564 |
| | 1037.82 | | | -5.137E-02 | 1.959E-01 | 3.130E-01 | 3.227E-02 | -0.164 |
| | 1175.09 | | | -1.014E+00 | 1.453E+00 | 2.299E+00 | 1.851E-01 | -0.441 |
| | 1238.25 | | | 9.755E-02 | 6.108E-02 | 1.098E-01 | 9.518E-03 | 0.888 |
| | 1360.21 | | | 6.730E-02 | 6.374E-01 | 1.059E+00 | 9.460E-02 | 0.064 |
| | 1771.40 | | | 4.809E-03 | 1.745E-01 | 2.447E-01 | 2.033E-02 | 0.020 |
| CO-57 | 122.06 | * | | 1.234E-02 | 1.778E-02 | 2.899E-02 | 2.391E-03 | 0.426 |
| | 136.48 | | | -3.313E-02 | 1.386E-01 | 2.323E-01 | 2.155E-02 | -0.143 |
| CO-58 | 810.76 | * | | -9.214E-03 | 2.375E-02 | 3.857E-02 | 4.271E-03 | -0.239 |
| FE-59 | 142.65 | | | -8.549E-01 | 2.037E+00 | 3.243E+00 | 2.870E-01 | -0.264 |
| | 192.34 | | | -7.980E-04 | 6.568E-01 | 1.083E+00 | 1.608E-01 | -0.001 |
| | 1099.22 | * | | -3.145E-02 | 6.239E-02 | 9.718E-02 | 9.523E-03 | -0.324 |
| | 1291.56 | | | -4.277E-02 | 8.067E-02 | 1.271E-01 | 1.253E-02 | -0.337 |
| CO-60 | 1173.22 | | | 4.801E-04 | 2.825E-02 | 4.719E-02 | 3.795E-03 | 0.010 |
| | 1332.49 | * | | -2.273E-02 | 2.800E-02 | 4.278E-02 | 3.815E-03 | -0.531 |
| ZN-65 | 1115.52 | * | | 2.776E-02 | 6.976E-02 | 1.002E-01 | 8.943E-03 | 0.277 |
| GE-68 | 1077.35 | * | | -3.531E-01 | 8.523E-01 | 1.342E+00 | 1.265E-01 | -0.263 |
| AS-73 | 53.44 | * | | 1.916E-01 | 4.843E-01 | 8.230E-01 | 6.219E-02 | 0.233 |
| AS-74 | 595.88 | * | | -2.677E-04 | 6.476E-02 | 1.073E-01 | 1.113E-02 | -0.002 |
| | 634.78 | | | -1.709E-01 | 2.438E-01 | 3.816E-01 | 4.000E-02 | -0.448 |
| SE-75 | 66.05 | | | -1.514E+00 | 3.239E+00 | 4.636E+00 | 4.423E-01 | -0.327 |
| | 96.73 | | | -2.302E-01 | 5.565E-01 | 7.794E-01 | 1.073E-01 | -0.295 |
| | 121.11 | | | 5.115E-02 | 9.664E-02 | 1.566E-01 | 1.712E-02 | 0.327 |
| | 136.00 | | | -1.234E-02 | 2.617E-02 | 4.346E-02 | 3.771E-03 | -0.284 |
| | 198.60 | | | -3.879E-01 | 1.352E+00 | 2.138E+00 | 2.499E-01 | -0.181 |
| | 264.65 | * | | 8.862E-03 | 3.537E-02 | 5.042E-02 | 6.787E-03 | 0.176 |
| | 279.53 | | | 8.034E-02 | 7.918E-02 | 1.314E-01 | 1.865E-02 | 0.611 |
| | 303.91 | | | 4.500E-01 | 1.484E+00 | 2.215E+00 | 3.375E-01 | 0.203 |

---- 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 | | -1.112E-01 | 1.697E-01 | 2.675E-01 | 3.131E-02 | -0.416 |
| | | 87.88 | | 5.201E+02 | 2.682E+02 | 3.511E+02 | 3.328E+01 | 1.482 |
| | | 200.40 | | 2.404E+01 | 1.950E+02 | 3.221E+02 | 3.542E+01 | 0.075 |
| | + | 239.00 | | 2.103E+02 | 3.184E+01 | 3.754E+01 | 4.672E+00 | 5.601 |
| | | 249.79 | | -2.506E+01 | 8.021E+01 | 1.275E+02 | 1.640E+01 | -0.196 |
| | | 281.68 | | 6.635E+01 | 1.188E+02 | 1.716E+02 | 2.391E+01 | 0.387 |
| | | 297.23 | | 3.465E+02 | 1.062E+02 | 1.316E+02 | 1.769E+01 | 2.633 |
| | | 303.76 | | 7.215E+01 | 2.141E+02 | 3.203E+02 | 4.236E+01 | 0.225 |
| | | 439.47 | | -1.303E+02 | 1.644E+02 | 2.542E+02 | 2.447E+01 | -0.513 |
| | | 484.57 | | -2.889E+01 | 2.503E+02 | 4.008E+02 | 3.963E+01 | -0.072 |
| | | 520.65 | * | 2.222E+00 | 1.200E+01 | 1.895E+01 | 1.907E+00 | 0.117 |
| | | 574.64 | | -3.898E+01 | 2.328E+02 | 3.651E+02 | 3.757E+01 | -0.107 |
| | | 578.91 | | 1.087E+02 | 1.064E+02 | 1.648E+02 | 1.698E+01 | 0.659 |
| | | 585.48 | | 1.559E+03 | 3.063E+02 | 5.043E+02 | 5.209E+01 | 3.091 |
| | | 755.35 | | -4.788E+00 | 1.826E+02 | 2.955E+02 | 3.221E+01 | -0.016 |
| | | 817.79 | | 2.604E+01 | 1.453E+02 | 2.458E+02 | 2.722E+01 | 0.106 |
| SR-82 | | 698.33 | | -4.775E+00 | 2.288E+01 | 3.685E+01 | 3.942E+00 | -0.130 |
| | | 776.49 | * | -1.423E-01 | 2.747E-01 | 4.271E-01 | 4.684E-02 | -0.333 |
| | | 1395.20 | | -8.302E+00 | 7.947E+00 | 1.158E+01 | 1.035E+00 | -0.717 |
| RB-83 | | 520.41 | * | 1.327E-03 | 4.667E-02 | 7.286E-02 | 7.333E-03 | 0.018 |
| | | 529.64 | | -3.895E-02 | 6.912E-02 | 1.118E-01 | 1.130E-02 | -0.348 |
| | | 552.65 | | -1.263E-01 | 1.209E-01 | 1.867E-01 | 1.905E-02 | -0.676 |
| RB-84 | | 881.50 | * | -5.560E-03 | 4.700E-02 | 7.735E-02 | 8.651E-03 | -0.072 |
| KR-85 | | 513.99 | * | 2.010E+01 | 5.900E+00 | 9.744E+00 | 9.777E-01 | 2.063 |
| SR-85 | | 513.99 | * | 1.051E-01 | 3.084E-02 | 5.093E-02 | 5.111E-03 | 2.063 |
| RB-86 | | 1076.63 | * | 6.008E-02 | 5.678E-01 | 9.318E-01 | 8.793E-02 | 0.064 |
| Y-88 | | 898.02 | | -5.439E-04 | 2.618E-02 | 4.332E-02 | 4.867E-03 | -0.013 |
| | | 1836.01 | * | -2.778E-03 | 2.023E-02 | 3.248E-02 | 2.626E-03 | -0.086 |
| ZR-88 | | 392.90 | * | -3.868E-03 | 2.043E-02 | 3.325E-02 | 3.096E-03 | -0.116 |
| Y-91 | | 1204.90 | * | -1.443E+00 | 1.123E+01 | 1.850E+01 | 1.521E+00 | -0.078 |
| NB-94 | | 702.63 | * | 3.564E-04 | 2.150E-02 | 3.513E-02 | 3.765E-03 | 0.010 |
| | | 871.10 | | 5.674E-04 | 2.264E-02 | 3.769E-02 | 4.211E-03 | 0.015 |
| NB-95 | | 765.79 | * | 2.944E-02 | 3.031E-02 | 5.172E-02 | 5.655E-03 | 0.569 |
| NB-95M | | 235.69 | * | 9.073E-02 | 9.929E-02 | 1.472E-01 | 1.945E-02 | 0.616 |
| ZR-95 | | 724.18 | | 9.873E-02 | 7.244E-02 | 1.124E-01 | 1.281E-02 | 0.879 |
| | | 756.15 | * | -1.691E-03 | 4.569E-02 | 7.386E-02 | 8.574E-03 | -0.023 |
| NB-97 | | 657.90 | * | 1.650E-02 | 4.569E-02 | Half-Life | too short | |
| | | 1024.50 | | -1.397E+01 | 4.569E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -4.132E+00 | 4.569E-02 | Half-Life | too short | |
| | | 355.39 | | 7.905E+00 | 4.569E-02 | Half-Life | too short | |
| | | 507.63 | * | 2.159E+01 | 4.569E-02 | Half-Life | too short | |
| | | 602.52 | | -2.679E+01 | 4.569E-02 | Half-Life | too short | |
| | | 1021.30 | | -1.539E+01 | 4.569E-02 | Half-Life | too short | |
| | | 1147.95 | | -2.347E+00 | 4.569E-02 | Half-Life | too short | |
| | | 1362.66 | | -2.304E+01 | 4.569E-02 | Half-Life | too short | |
| | | 1750.46 | | 2.775E+01 | 4.569E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | -2.205E+01 | 2.929E+01 | 4.706E+01 | 1.305E+01 | -0.469 |
| | | 181.06 | | -1.646E+00 | 2.013E+01 | 2.917E+01 | 5.584E+00 | -0.056 |
| | | 366.43 | | 1.106E+01 | 9.098E+01 | 1.514E+02 | 1.606E+01 | 0.073 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| | 739.58 | * | | 4.438E+00 | 1.245E+01 | 2.068E+01 | 3.423E+00 | 0.215 |
| | 778.00 | | | -9.643E+00 | 3.652E+01 | 5.789E+01 | 6.352E+00 | -0.167 |
| TC-99M | 140.51 | * | | -3.234E+12 | 3.652E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | 1.630E-02 | 2.272E-02 | 3.692E-02 | 3.086E-03 | 0.441 |
| | 198.01 | * | | 8.863E-03 | 2.417E-02 | 3.917E-02 | 4.273E-03 | 0.226 |
| | 325.23 | | | -9.173E-02 | 1.767E-01 | 2.475E-01 | 3.077E-02 | -0.371 |
| RH-102 | 418.52 | | | -2.824E-01 | 1.912E-01 | 2.821E-01 | 2.677E-02 | -1.001 |
| | 475.06 | * | | -1.505E-02 | 2.047E-02 | 3.153E-02 | 3.101E-03 | -0.477 |
| | 631.29 | | | 1.002E-02 | 3.374E-02 | 5.673E-02 | 5.941E-03 | 0.177 |
| | 697.49 | | | 3.251E-02 | 4.885E-02 | 8.307E-02 | 8.886E-03 | 0.391 |
| | 766.84 | | | 9.373E-02 | 7.618E-02 | 1.313E-01 | 1.436E-02 | 0.714 |
| | 1046.59 | | | -5.793E-02 | 7.787E-02 | 1.157E-01 | 1.134E-02 | -0.501 |
| | 1112.84 | | | -9.334E-03 | 1.669E-01 | 2.285E-01 | 2.045E-02 | -0.041 |
| RU-103 | 497.08 | * | | -7.380E-03 | 2.777E-02 | 4.390E-02 | 6.588E-03 | -0.168 |
| | 610.33 | | | 6.848E+00 | 1.486E+00 | 1.689E+00 | 2.986E-01 | 4.054 |
| RH-106 | 511.85 | | | 3.537E-01 | 2.401E-01 | 2.823E-01 | 2.830E-02 | 1.253 |
| | 621.84 | * | | 9.031E-02 | 2.001E-01 | 3.394E-01 | 4.956E-02 | 0.266 |
| | 1050.47 | | | 1.290E+00 | 1.493E+00 | 2.590E+00 | 2.528E-01 | 0.498 |
| RU-106 | 511.85 | | | 3.537E-01 | 2.401E-01 | 2.823E-01 | 2.830E-02 | 1.253 |
| | 621.84 | * | | 9.031E-02 | 1.999E-01 | 3.394E-01 | 3.545E-02 | 0.266 |
| | 1050.47 | | | 1.290E+00 | 1.493E+00 | 2.590E+00 | 2.528E-01 | 0.498 |
| AG-108M | 433.93 | * | | 1.445E-02 | 2.220E-02 | 3.743E-02 | 3.705E-03 | 0.386 |
| | 614.37 | | | 3.438E-02 | 2.001E-02 | 3.905E-02 | 4.180E-03 | 0.880 |
| | 722.95 | | | 6.519E-03 | 2.878E-02 | 4.107E-02 | 4.544E-03 | 0.159 |
| AG-110M | 657.75 | * | | -1.232E-03 | 2.334E-02 | 3.822E-02 | 4.107E-03 | -0.032 |
| | 677.61 | | | 5.743E-02 | 1.951E-01 | 3.259E-01 | 3.524E-02 | 0.176 |
| | 706.67 | | | 6.458E-02 | 1.371E-01 | 2.303E-01 | 2.516E-02 | 0.280 |
| | 763.93 | | | -9.773E-02 | 1.162E-01 | 1.769E-01 | 1.968E-02 | -0.552 |
| | 884.67 | | | 6.261E-03 | 3.180E-02 | 5.352E-02 | 6.103E-03 | 0.117 |
| | 937.48 | | | 4.459E-02 | 7.051E-02 | 1.215E-01 | 1.355E-02 | 0.367 |
| | 1384.27 | | | -9.922E-02 | 1.183E-01 | 1.786E-01 | 1.638E-02 | -0.556 |
| IN-111 | 171.28 | | | 9.600E-01 | 1.082E+00 | 1.853E+00 | 1.850E-01 | 0.518 |
| | 245.39 | * | | -4.460E-01 | 1.344E+00 | 1.858E+00 | 2.358E-01 | -0.240 |
| IN-113M | 391.69 | * | | -7.038E-03 | 2.949E-02 | 4.787E-02 | 4.571E-03 | -0.147 |
| SN-113 | 391.69 | * | | -7.038E-03 | 2.949E-02 | 4.787E-02 | 4.571E-03 | -0.147 |
| IN-114M | 190.27 | * | | 1.077E-01 | 1.401E-01 | 2.111E-01 | 2.244E-02 | 0.510 |
| CD-115 | 260.90 | | | -5.316E+01 | 1.631E+02 | 2.581E+02 | 3.430E+01 | -0.206 |
| | 492.35 | | | 1.955E+01 | 4.298E+01 | 7.116E+01 | 7.063E+00 | 0.275 |
| | 527.90 | * | | -5.020E+00 | 1.229E+01 | 2.009E+01 | 2.029E+00 | -0.250 |
| SN-117M | 156.02 | | | 3.842E-01 | 1.653E+00 | 2.792E+00 | 2.617E-01 | 0.138 |
| | 158.56 | * | | 3.381E-03 | 4.049E-02 | 6.795E-02 | 6.444E-03 | 0.050 |
| SB-122 | 563.90 | * | | 1.161E+00 | 2.108E+00 | 3.619E+00 | 3.709E-01 | 0.321 |
| | 692.80 | | | 1.486E+01 | 4.432E+01 | 7.402E+01 | 7.903E+00 | 0.201 |
| I-123 | 159.00 | * | | 6.397E+00 | 4.432E+01 | Half-Life | too short | |
| | 528.96 | | | -2.147E+03 | 4.432E+01 | Half-Life | too short | |
| TE-123M | 159.00 | * | | 3.114E-03 | 1.936E-02 | 3.258E-02 | 3.112E-03 | 0.096 |
| I-124 | 602.71 | * | | -6.126E-01 | 7.054E-01 | 9.247E-01 | 9.605E-02 | -0.663 |
| | 722.78 | | | 8.819E-01 | 4.075E+00 | 5.809E+00 | 6.269E-01 | 0.152 |
| | 1325.50 | | | 2.554E+01 | 3.146E+01 | 5.531E+01 | 4.912E+00 | 0.462 |

---- 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 | | | 3.240E+00 | 2.779E+01 | 4.616E+01 | 4.126E+00 | 0.070 |
| | 1509.49 | | | 8.507E+00 | 1.368E+01 | 2.373E+01 | 2.109E+00 | 0.358 |
| | 1691.02 | | | -3.049E-01 | 3.024E+00 | 4.934E+00 | 4.220E-01 | -0.062 |
| | 602.71 | | | -2.682E-02 | 3.088E-02 | 4.048E-02 | 4.205E-03 | -0.663 |
| | 645.85 | | | 7.888E-05 | 3.240E-01 | 5.332E-01 | 5.832E-02 | 0.000 |
| | 709.31 | | | 1.292E+00 | 1.913E+00 | 3.245E+00 | 3.486E-01 | 0.398 |
| | 713.82 | | | -5.209E-01 | 1.134E+00 | 1.712E+00 | 2.337E-01 | -0.304 |
| | 722.78 | | | 5.596E-02 | 2.585E-01 | 3.686E-01 | 4.033E-02 | 0.152 |
| | 968.20 | | + | 8.644E+00 | 3.080E+00 | 4.360E+00 | 4.636E-01 | 1.982 |
| | 1045.16 | | | -7.258E-01 | 1.609E+00 | 2.527E+00 | 2.482E-01 | -0.287 |
| | 1325.50 | | | 1.731E+00 | 2.132E+00 | 3.749E+00 | 3.329E-01 | 0.462 |
| | 1368.21 | | | 6.272E-01 | 1.132E+00 | 1.957E+00 | 2.678E-01 | 0.320 |
| SB-125 | 1436.60 | | | 1.404E+00 | 2.253E+00 | 3.944E+00 | 3.524E-01 | 0.356 |
| | 1691.02 | | * | -4.564E-03 | 4.527E-02 | 7.385E-02 | 6.569E-03 | -0.062 |
| | 427.89 | | * | -2.740E-02 | 6.221E-02 | 9.886E-02 | 9.592E-03 | -0.277 |
| | 463.38 | | | 3.074E-01 | 1.877E-01 | 3.275E-01 | 3.396E-02 | 0.939 |
| | 600.56 | | | 4.264E-02 | 1.343E-01 | 1.964E-01 | 2.144E-02 | 0.217 |
| | 635.90 | | | -2.960E-02 | 1.721E-01 | 2.802E-01 | 3.100E-02 | -0.106 |
| TE-125M | 109.28 | | * | 1.814E+00 | 6.716E+00 | 1.085E+01 | 1.099E+00 | 0.167 |
| I-126 | 388.63 | | | 3.339E-03 | 1.466E-01 | 2.415E-01 | 2.287E-02 | 0.014 |
| SB-126 | 666.33 | | * | 2.842E-02 | 1.345E-01 | 2.235E-01 | 2.362E-02 | 0.127 |
| | 753.82 | | | 7.460E-01 | 1.036E+00 | 1.761E+00 | 1.919E-01 | 0.424 |
| | 223.80 | | | -2.933E+00 | 3.159E+00 | 4.911E+00 | 5.826E-01 | -0.597 |
| | 278.60 | | | 2.132E+00 | 1.953E+00 | 3.248E+00 | 4.540E-01 | 0.656 |
| | 296.50 | | + | 7.601E+00 | 1.912E+00 | 2.408E+00 | 3.244E-01 | 3.157 |
| | 414.70 | | | -6.380E-03 | 5.572E-02 | 9.061E-02 | 8.576E-03 | -0.070 |
| | 415.30 | | | 1.195E+00 | 4.544E+00 | 7.543E+00 | 7.143E-01 | 0.158 |
| | 555.20 | | | -9.904E-01 | 2.518E+00 | 4.085E+00 | 4.173E-01 | -0.242 |
| | 573.80 | | | -7.995E-01 | 7.412E-01 | 1.110E+00 | 1.142E-01 | -0.720 |
| | 593.00 | | | -5.551E-01 | 6.639E-01 | 1.038E+00 | 1.075E-01 | -0.535 |
| SB-127 | 656.30 | | | -5.012E-01 | 2.473E+00 | 4.010E+00 | 4.224E-01 | -0.125 |
| | 666.33 | | | 1.193E-02 | 5.646E-02 | 9.381E-02 | 9.912E-03 | 0.127 |
| | 675.00 | | | 9.844E-01 | 1.413E+00 | 2.416E+00 | 2.562E-01 | 0.407 |
| | 695.00 | | | 5.999E-03 | 5.479E-02 | 9.018E-02 | 9.637E-03 | 0.067 |
| | 697.00 | | | 1.592E-01 | 1.868E-01 | 3.211E-01 | 3.434E-02 | 0.496 |
| | 720.50 | | * | -1.858E-02 | 1.175E-01 | 1.611E-01 | 1.737E-02 | -0.115 |
| | 856.80 | | | -3.136E-01 | 3.703E-01 | 5.805E-01 | 6.472E-02 | -0.540 |
| | 989.30 | | | 3.100E-01 | 8.672E-01 | 1.463E+00 | 1.526E-01 | 0.212 |
| | 1034.80 | | | -5.368E+00 | 6.388E+00 | 9.683E+00 | 9.629E-01 | -0.554 |
| | 1213.00 | | | -2.305E+00 | 3.227E+00 | 5.083E+00 | 4.203E-01 | -0.453 |
| | 61.10 | | | -7.445E+00 | 5.124E+01 | 7.565E+01 | 8.102E+00 | -0.098 |
| | 252.40 | | | -1.353E+00 | 4.255E+00 | 6.696E+00 | 2.898E+00 | -0.202 |
| | 290.80 | | | 7.262E+00 | 2.183E+01 | 3.272E+01 | 5.169E+00 | 0.222 |
| | 411.60 | | | 5.053E+00 | 1.165E+01 | 1.946E+01 | 3.228E+00 | 0.260 |
| | 444.90 | | | 5.066E-01 | 8.812E+00 | 1.438E+01 | 1.977E+00 | 0.035 |
| | 473.00 | | | 5.533E-01 | 1.602E+00 | 2.640E+00 | 3.740E-01 | 0.210 |
| | 543.00 | | | -1.313E+01 | 1.451E+01 | 2.263E+01 | 3.572E+00 | -0.580 |
| | 603.60 | | | -1.121E+01 | 1.266E+01 | 1.650E+01 | 2.352E+00 | -0.679 |
| | 685.20 | | * | 7.691E-01 | 1.193E+00 | 2.031E+00 | 2.737E-01 | 0.379 |

---- 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 | | | -3.258E+00 | 1.346E+01 | 2.161E+01 | 3.764E+00 | -0.151 |
| | 722.20 | | | 7.677E+00 | 2.831E+01 | 4.059E+01 | 5.439E+00 | 0.189 |
| | 783.80 | | | 1.309E+00 | 3.156E+00 | 5.244E+00 | 7.663E-01 | 0.250 |
| | 57.60 | | | 3.028E+00 | 3.630E+00 | 6.235E+00 | 4.478E-01 | 0.486 |
| | 145.22 | | | 2.804E-01 | 4.903E-01 | 8.404E-01 | 7.516E-02 | 0.334 |
| | 172.10 | | | 8.228E-02 | 8.433E-02 | 1.448E-01 | 1.449E-02 | 0.568 |
| I-131 | 202.84 | * | | -7.992E-03 | 3.394E-02 | 5.520E-02 | 6.119E-03 | -0.145 |
| | 374.96 | | | 4.115E-02 | 1.351E-01 | 2.265E-01 | 2.306E-02 | 0.182 |
| | 80.18 | | | 1.480E+00 | 3.536E+00 | 5.261E+00 | 4.587E-01 | 0.281 |
| | 284.30 | | | -1.062E-01 | 1.380E+00 | 1.910E+00 | 2.701E-01 | -0.056 |
| | 364.48 | * | | 5.276E-02 | 9.029E-02 | 1.536E-01 | 1.704E-02 | 0.344 |
| | 636.97 | | | 2.199E-01 | 1.147E+00 | 1.914E+00 | 2.086E-01 | 0.115 |
| TE-132 | 722.89 | | | 1.266E+00 | 5.678E+00 | 8.100E+00 | 8.786E-01 | 0.156 |
| | 49.72 | | | -4.431E+00 | 1.615E+01 | 2.680E+01 | 2.922E+00 | -0.165 |
| | 111.76 | | | 1.550E+00 | 3.200E+01 | 5.035E+01 | 5.610E+00 | 0.031 |
| | 116.30 | | | -8.916E+00 | 2.775E+01 | 4.350E+01 | 4.827E+00 | -0.205 |
| BA-133 | 228.16 | * | | 1.440E-01 | 7.307E-01 | 1.198E+00 | 2.171E-01 | 0.120 |
| | 53.15 | | | 7.601E-01 | 2.037E+00 | 3.460E+00 | 2.625E-01 | 0.220 |
| | 79.62 | | | 4.886E-01 | 8.537E-01 | 1.276E+00 | 1.941E-01 | 0.383 |
| | 81.00 | | | -4.143E-02 | 6.684E-02 | 9.391E-02 | 1.497E-02 | -0.441 |
| | 276.40 | + | | 5.205E-01 | 3.989E-01 | 4.417E-01 | 7.992E-02 | 1.178 |
| | 302.84 | | | 7.747E-02 | 1.042E-01 | 1.588E-01 | 2.647E-02 | 0.488 |
| I-133 | 356.01 | * | | 5.695E-03 | 3.271E-02 | 4.765E-02 | 7.121E-03 | 0.120 |
| | 383.85 | | | 2.405E-02 | 1.938E-01 | 3.215E-01 | 4.302E-02 | 0.075 |
| | 510.53 | + | | 3.121E+00 | 1.938E-01 | Half-Life | too short | |
| | 529.87 | * | | -6.904E-03 | 1.938E-01 | Half-Life | too short | |
| | 706.58 | | | 5.788E-01 | 1.938E-01 | Half-Life | too short | |
| | 856.28 | | | -2.981E+00 | 1.938E-01 | Half-Life | too short | |
| | 875.33 | | | 2.879E-01 | 1.938E-01 | Half-Life | too short | |
| | 1236.41 | | | 3.433E+00 | 1.938E-01 | Half-Life | too short | |
| | 1298.22 | | | -1.333E-01 | 1.938E-01 | Half-Life | too short | |
| | 475.35 | | | -1.057E+00 | 1.344E+00 | 2.063E+00 | 2.029E-01 | -0.512 |
| CS-134 | 563.23 | | | 8.133E-02 | 2.256E-01 | 3.837E-01 | 3.958E-02 | 0.212 |
| | 569.32 | | | -3.547E-02 | 1.288E-01 | 2.064E-01 | 2.140E-02 | -0.172 |
| | 604.70 | | | -1.303E-02 | 2.548E-02 | 3.462E-02 | 3.604E-03 | -0.376 |
| | 795.84 | * | | 4.477E-02 | 2.996E-02 | 5.272E-02 | 5.836E-03 | 0.849 |
| | 801.93 | | | -5.650E-02 | 2.474E-01 | 3.914E-01 | 4.334E-02 | -0.144 |
| | 1038.57 | | | 6.137E-03 | 2.359E+00 | 3.854E+00 | 3.816E-01 | 0.002 |
| CS-135 | 1167.94 | | | -2.602E-01 | 1.604E+00 | 2.646E+00 | 2.150E-01 | -0.098 |
| | 1365.15 | | | -1.366E-01 | 7.917E-01 | 1.278E+00 | 1.191E-01 | -0.107 |
| | 268.24 | * | | 1.680E-01 | 1.303E-01 | 1.940E-01 | 2.807E-02 | 0.866 |
| | 288.45 | | | 9.352E+10 | 1.303E-01 | Half-Life | too short | |
| | 417.63 | | | -1.450E+12 | 1.303E-01 | Half-Life | too short | |
| | 546.56 | | | 1.014E+12 | 1.303E-01 | Half-Life | too short | |
| I-135 | 836.80 | | | 5.168E+11 | 1.303E-01 | Half-Life | too short | |
| | 1038.76 | | | 5.035E+10 | 1.303E-01 | Half-Life | too short | |
| | 1124.00 | | | 5.826E+12 | 1.303E-01 | Half-Life | too short | |
| | 1131.51 | | | -2.153E+11 | 1.303E-01 | Half-Life | too short | |
| | 1260.41 | * | | -1.538E+11 | 1.303E-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 | | 6.874E+13 | 1.303E-01 | Half-Life | too short | |
| | | 1678.03 | | -1.330E+11 | 1.303E-01 | Half-Life | too short | |
| | | 1706.46 | | 5.049E+11 | 1.303E-01 | Half-Life | too short | |
| | | 1791.20 | | 4.159E+11 | 1.303E-01 | Half-Life | too short | |
| | | 66.91 | | 5.719E-02 | 5.749E-01 | 8.469E-01 | 1.260E-01 | 0.068 |
| | + | 86.29 | | 1.991E+00 | 1.044E+00 | 1.362E+00 | 1.813E-01 | 1.462 |
| | | 153.22 | | 1.013E-01 | 4.822E-01 | 8.148E-01 | 8.321E-02 | 0.124 |
| | | 163.89 | | 3.727E-01 | 7.911E-01 | 1.342E+00 | 1.429E-01 | 0.278 |
| | | 176.55 | | -1.136E-01 | 2.718E-01 | 4.433E-01 | 4.692E-02 | -0.256 |
| | | 273.65 | | 2.428E-01 | 3.373E-01 | 5.565E-01 | 7.873E-02 | 0.436 |
| | | 340.57 | | 2.911E-01 | 1.153E-01 | 1.835E-01 | 2.199E-02 | 1.586 |
| | | 818.51 | | 6.163E-03 | 5.252E-02 | 8.850E-02 | 9.807E-03 | 0.070 |
| | | 1048.07 | * | -5.306E-02 | 8.202E-02 | 1.232E-01 | 1.246E-02 | -0.431 |
| | | 1235.34 | | 5.089E-01 | 4.410E-01 | 7.748E-01 | 9.054E-02 | 0.657 |
| BA-137M | | 661.65 | * | 9.747E-03 | 2.423E-02 | 4.072E-02 | 4.294E-03 | 0.239 |
| CS-137 | | 661.65 | * | 1.030E-02 | 2.561E-02 | 4.304E-02 | 4.545E-03 | 0.239 |
| CE-139 | | 165.85 | * | -8.694E-03 | 2.047E-02 | 3.356E-02 | 3.291E-03 | -0.259 |
| BA-140 | | 162.64 | | 9.275E-02 | 5.616E-01 | 9.436E-01 | 9.542E-02 | 0.098 |
| | | 304.84 | | 2.355E-01 | 1.004E+00 | 1.489E+00 | 4.429E-01 | 0.158 |
| | | 423.70 | | 3.532E-01 | 1.389E+00 | 2.294E+00 | 7.496E-01 | 0.154 |
| LA-140 | | 537.32 | * | -6.302E-02 | 1.811E-01 | 2.946E-01 | 9.890E-02 | -0.214 |
| | + | 328.77 | | 5.535E-01 | 3.090E-01 | 3.995E-01 | 5.047E-02 | 1.385 |
| | | 432.53 | | 1.658E-01 | 1.547E+00 | 2.537E+00 | 2.527E-01 | 0.065 |
| | | 487.03 | | -6.219E-02 | 9.965E-02 | 1.538E-01 | 1.594E-02 | -0.404 |
| | | 751.79 | | -5.415E-01 | 1.241E+00 | 1.947E+00 | 2.265E-01 | -0.278 |
| | | 815.85 | | -6.234E-02 | 2.213E-01 | 3.625E-01 | 4.298E-02 | -0.172 |
| | | 867.82 | | -1.331E+00 | 1.058E+00 | 1.584E+00 | 1.825E-01 | -0.840 |
| | | 919.63 | | 1.082E+00 | 2.300E+00 | 3.409E+00 | 4.326E-01 | 0.317 |
| | | 925.24 | | -4.050E-01 | 8.370E-01 | 1.332E+00 | 1.522E-01 | -0.304 |
| | | 1596.49 | * | -4.009E-02 | 6.346E-02 | 9.833E-02 | 8.619E-03 | -0.408 |
| CE-141 | | 145.44 | * | 1.374E-02 | 4.442E-02 | 7.554E-02 | 6.876E-03 | 0.182 |
| CE-143 | | 57.37 | | 2.629E-04 | 4.442E-02 | Half-Life | too short | |
| | | 231.56 | | 1.922E-03 | 4.442E-02 | Half-Life | too short | |
| | | 293.26 | * | 9.781E-04 | 4.442E-02 | Half-Life | too short | |
| | + | 350.59 | | 3.712E-02 | 4.442E-02 | Half-Life | too short | |
| | | 490.36 | | 1.786E-03 | 4.442E-02 | Half-Life | too short | |
| | | 664.57 | | 1.297E-03 | 4.442E-02 | Half-Life | too short | |
| | | 721.93 | | 5.612E-04 | 4.442E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | 5.970E-01 | 1.396E+00 | 2.078E+00 | 1.796E-01 | 0.287 |
| | | 133.54 | * | -6.258E-02 | 1.337E-01 | 2.220E-01 | 3.445E-02 | -0.282 |
| PM-144 | | 476.78 | | 2.980E-02 | 4.587E-02 | 7.684E-02 | 8.112E-03 | 0.388 |
| | | 618.01 | | -1.945E-03 | 2.328E-02 | 3.280E-02 | 3.487E-03 | -0.059 |
| | | 696.49 | * | 1.687E-02 | 2.161E-02 | 3.702E-02 | 3.959E-03 | 0.456 |
| | | 778.57 | | -1.595E-01 | 1.532E+00 | 2.457E+00 | 2.696E-01 | -0.065 |
| PR-144 | | 696.49 | * | 1.145E+00 | 1.466E+00 | 2.511E+00 | 2.685E-01 | 0.456 |
| | | 1489.15 | | -6.861E+00 | 7.773E+00 | 1.123E+01 | 1.000E+00 | -0.611 |
| PM-146 | | 453.90 | * | 1.173E-02 | 2.756E-02 | 4.588E-02 | 5.332E-03 | 0.256 |
| | | 633.02 | | -8.240E-01 | 9.350E-01 | 1.360E+00 | 5.148E-01 | -0.606 |
| | | 735.90 | | 1.668E-02 | 1.028E-01 | 1.650E-01 | 4.844E-02 | 0.101 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| ND-147 | | 747.13 | | -1.991E-02 | 5.971E-02 | 9.443E-02 | 1.466E-02 | -0.211 |
| | | 91.11 | | -2.389E-01 | 3.180E-01 | 3.710E-01 | 3.666E-02 | -0.644 |
| | | 319.41 | | 1.722E+00 | 2.499E+00 | 4.298E+00 | 5.440E-01 | 0.401 |
| | | 439.89 | | -2.460E+00 | 4.348E+00 | 6.828E+00 | 6.576E-01 | -0.360 |
| | | 531.02 | * | 7.512E-02 | 4.075E-01 | 6.894E-01 | 1.093E-01 | 0.109 |
| PM-149 | | 285.90 | * | -4.183E+01 | 1.317E+02 | 1.787E+02 | 3.382E+01 | -0.234 |
| EU-152 | | 121.78 | | 3.703E-02 | 5.154E-02 | 8.407E-02 | 8.069E-03 | 0.440 |
| | | 244.69 | | 1.646E-02 | 2.662E-01 | 3.777E-01 | 4.783E-02 | 0.044 |
| | | 344.27 | * | 4.580E-03 | 8.313E-02 | 1.056E-01 | 1.269E-02 | 0.043 |
| | | 443.98 | | 5.355E-02 | 6.160E-01 | 1.007E+00 | 9.723E-02 | 0.053 |
| | | 778.89 | | 5.985E-02 | 1.727E-01 | 2.860E-01 | 3.138E-02 | 0.209 |
| | | 867.32 | | -8.312E-01 | 5.874E-01 | 8.694E-01 | 9.707E-02 | -0.956 |
| | + | 964.01 | | 5.533E-01 | 3.464E-01 | 3.728E-01 | 3.979E-02 | 1.484 |
| | | 1085.78 | | 2.107E-02 | 2.709E-01 | 4.433E-01 | 4.130E-02 | 0.048 |
| | | 1112.02 | | 1.032E-01 | 2.255E-01 | 3.279E-01 | 2.938E-02 | 0.315 |
| | | 1407.95 | | -6.986E-02 | 1.300E-01 | 2.019E-01 | 1.805E-02 | -0.346 |
| GD-153 | | 69.67 | | -5.023E-02 | 1.106E+00 | 1.627E+00 | 1.263E-01 | -0.031 |
| | | 83.37 | | -3.097E-01 | 1.049E+01 | 1.508E+01 | 1.354E+00 | -0.021 |
| | | 97.43 | * | -6.060E-02 | 5.528E-02 | 7.993E-02 | 7.029E-03 | -0.758 |
| EU-154 | | 103.18 | | -4.355E-02 | 7.156E-02 | 1.117E-01 | 9.548E-03 | -0.390 |
| | | 123.07 | | -2.010E-03 | 3.616E-02 | 5.715E-02 | 6.340E-03 | -0.035 |
| | | 247.94 | | 1.849E-01 | 2.651E-01 | 4.257E-01 | 6.326E-02 | 0.434 |
| | | 591.81 | | -1.766E-01 | 4.089E-01 | 6.257E-01 | 8.135E-02 | -0.282 |
| | | 723.30 | | 8.124E-02 | 1.229E-01 | 1.823E-01 | 2.103E-02 | 0.446 |
| | | 756.87 | | 5.725E-02 | 5.033E-01 | 8.222E-01 | 1.128E-01 | 0.070 |
| | | 873.19 | | 6.839E-02 | 1.961E-01 | 3.333E-01 | 4.719E-02 | 0.205 |
| | | 996.32 | | -1.860E-01 | 2.543E-01 | 3.908E-01 | 7.296E-02 | -0.476 |
| EU-155 | | 1004.76 | | -3.173E-02 | 1.388E-01 | 2.235E-01 | 2.886E-02 | -0.142 |
| | | 1274.45 | * | -1.297E-02 | 7.621E-02 | 1.244E-01 | 1.405E-02 | -0.104 |
| | | 48.70 | | -1.104E+00 | 1.403E+00 | 2.276E+00 | 1.853E-01 | -0.485 |
| | | 60.01 | | 1.341E+00 | 3.186E+00 | 4.847E+00 | 3.442E-01 | 0.277 |
| | + | 86.54 | | 1.669E-01 | 8.607E-02 | 1.153E-01 | 1.084E-02 | 1.448 |
| | | 105.31 | * | 6.811E-02 | 7.374E-02 | 1.223E-01 | 1.050E-02 | 0.557 |
| | + | 86.79 | | 4.534E-01 | 2.338E-01 | 3.124E-01 | 2.922E-02 | 1.451 |
| TB-160 | | 197.04 | | 4.891E-02 | 4.175E-01 | 6.708E-01 | 7.294E-02 | 0.073 |
| | | 215.65 | | -2.643E-01 | 5.204E-01 | 8.308E-01 | 9.603E-02 | -0.318 |
| | | 298.57 | | 1.826E-01 | 1.167E-01 | 1.354E-01 | 1.815E-02 | 1.348 |
| | | 879.36 | * | -5.400E-02 | 9.434E-02 | 1.499E-01 | 1.676E-02 | -0.360 |
| | | 962.29 | | 9.606E-01 | 3.942E-01 | 6.636E-01 | 7.092E-02 | 1.448 |
| HO-166M | + | 966.15 | | 3.866E-01 | 2.420E-01 | 3.365E-01 | 3.585E-02 | 1.149 |
| | | 1177.93 | | -6.592E-02 | 2.372E-01 | 3.878E-01 | 3.129E-02 | -0.170 |
| | | 1271.85 | | -2.590E-02 | 4.534E-01 | 7.470E-01 | 6.420E-02 | -0.035 |
| | | 80.57 | | 7.432E-02 | 1.779E-01 | 2.645E-01 | 2.298E-02 | 0.281 |
| | + | 184.41 | | 7.750E-02 | 3.742E-02 | 4.718E-02 | 4.919E-03 | 1.643 |
| | | 280.46 | | 3.488E-02 | 6.010E-02 | 9.850E-02 | 1.376E-02 | 0.354 |
| | | 410.95 | | 1.413E-01 | 1.712E-01 | 2.912E-01 | 2.748E-02 | 0.485 |
| | | 711.68 | * | 2.207E-02 | 4.173E-02 | 6.769E-02 | 7.277E-03 | 0.326 |
| | | 752.31 | | 4.581E-02 | 1.747E-01 | 2.885E-01 | 3.143E-02 | 0.159 |
| | | 810.29 | | -2.202E-02 | 3.527E-02 | 5.615E-02 | 6.208E-03 | -0.392 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| TM-171 | | 51.35 | | -4.282E-01 | 1.747E+01 | 2.926E+01 | 2.283E+00 | -0.015 |
| | | 52.39 | | 3.728E+00 | 8.996E+00 | 1.532E+01 | 1.176E+00 | 0.243 |
| | | 59.40 | | 5.872E+00 | 1.722E+01 | 2.612E+01 | 1.846E+00 | 0.225 |
| | | 66.72 | * | 2.194E-01 | 1.895E+01 | 2.781E+01 | 2.101E+00 | 0.008 |
| LU-176 | + | 88.36 | | 3.284E-01 | 1.693E-01 | 2.220E-01 | 2.099E-02 | 1.480 |
| | | 201.83 | | -1.341E-02 | 2.053E-02 | 3.280E-02 | 3.623E-03 | -0.409 |
| | | 306.84 | * | -3.707E-03 | 1.774E-02 | 2.677E-02 | 3.512E-03 | -0.138 |
| | | 401.10 | | -5.573E+00 | 4.442E+00 | 6.724E+00 | 6.301E-01 | -0.829 |
| LU-177 | | 112.95 | | -2.205E-01 | 1.391E+00 | 2.166E+00 | 1.800E-01 | -0.102 |
| | + | 208.36 | * | 1.443E+00 | 1.101E+00 | 1.593E+00 | 1.798E-01 | 0.906 |
| LU-177M | | 52.97 | | 5.314E-01 | 9.124E-01 | 1.563E+00 | 1.189E-01 | 0.340 |
| | | 54.07 | | 2.018E-01 | 4.861E-01 | 8.263E-01 | 6.189E-02 | 0.244 |
| | | 61.30 | | 8.347E-02 | 9.658E-01 | 1.443E+00 | 1.038E-01 | 0.058 |
| | | 121.62 | | 1.994E-01 | 2.665E-01 | 4.355E-01 | 3.587E-02 | 0.458 |
| | | 147.16 | | -2.044E-01 | 4.524E-01 | 7.482E-01 | 6.747E-02 | -0.273 |
| | | 171.86 | | 3.386E-01 | 3.316E-01 | 5.699E-01 | 5.699E-02 | 0.594 |
| | | 218.09 | | 1.721E-01 | 5.936E-01 | 9.807E-01 | 1.142E-01 | 0.176 |
| | + | 268.79 | | 2.147E+00 | 8.054E-01 | 1.017E+00 | 1.383E-01 | 2.111 |
| | | 319.02 | | 9.034E-02 | 1.758E-01 | 3.005E-01 | 3.808E-02 | 0.301 |
| | | 367.43 | | 5.449E-02 | 6.145E-01 | 1.021E+00 | 1.078E-01 | 0.053 |
| | | 413.65 | * | -7.499E-02 | 1.232E-01 | 1.947E-01 | 1.842E-02 | -0.385 |
| HF-181 | | 56.28 | | -4.585E-01 | 5.661E-01 | 9.110E-01 | 6.637E-02 | -0.503 |
| | | 57.53 | | 1.288E-01 | 3.069E-01 | 5.194E-01 | 3.733E-02 | 0.248 |
| | | 65.20 | | -5.247E-01 | 6.427E-01 | 9.028E-01 | 6.730E-02 | -0.581 |
| | | 133.02 | | -2.459E-02 | 4.471E-02 | 7.416E-02 | 6.321E-03 | -0.332 |
| | | 136.25 | | -1.312E-01 | 3.118E-01 | 5.189E-01 | 4.476E-02 | -0.253 |
| | | 345.85 | | 6.862E-02 | 1.546E-01 | 2.180E-01 | 2.521E-02 | 0.315 |
| | | 482.03 | * | -8.386E-03 | 2.935E-02 | 4.652E-02 | 4.592E-03 | -0.180 |
| W-181 | | 56.28 | | -1.759E-01 | 2.173E-01 | 3.497E-01 | 2.548E-02 | -0.503 |
| | | 57.53 | | 4.910E-02 | 1.179E-01 | 1.995E-01 | 1.434E-02 | 0.246 |
| | | 65.20 | * | -2.000E-01 | 2.449E-01 | 3.441E-01 | 2.565E-02 | -0.581 |
| TA-182 | | 67.75 | | 3.771E-02 | 7.058E-02 | 1.121E-01 | 8.549E-03 | 0.336 |
| | | 100.10 | | 1.099E-01 | 1.181E-01 | 1.966E-01 | 1.704E-02 | 0.559 |
| | | 152.43 | | 4.010E-02 | 2.233E-01 | 3.772E-01 | 3.480E-02 | 0.106 |
| | | 222.10 | | -1.191E-02 | 2.453E-01 | 3.993E-01 | 4.712E-02 | -0.030 |
| | | 1001.68 | | 4.143E-01 | 1.447E+00 | 2.302E+00 | 2.372E-01 | 0.180 |
| | + | 1121.28 | | 3.528E-01 | 1.362E-01 | 2.051E-01 | 1.811E-02 | 1.720 |
| | | 1189.05 | | -9.624E-02 | 2.127E-01 | 3.436E-01 | 2.794E-02 | -0.280 |
| | | 1221.42 | * | 8.144E-02 | 1.295E-01 | 2.238E-01 | 1.861E-02 | 0.364 |
| | | 1230.97 | | -3.448E-01 | 3.401E-01 | 5.272E-01 | 4.412E-02 | -0.654 |
| RE-183 | | 57.98 | | 1.184E-01 | 1.174E-01 | 2.027E-01 | 1.451E-02 | 0.584 |
| | | 59.32 | | 2.309E-02 | 7.197E-02 | 1.091E-01 | 7.713E-03 | 0.212 |
| | | 67.20 | | 2.420E-02 | 1.367E-01 | 2.021E-01 | 1.533E-02 | 0.120 |
| | | 162.32 | * | 1.528E-02 | 7.545E-02 | 1.269E-01 | 1.225E-02 | 0.120 |
| | + | 208.81 | | 1.093E+00 | 8.341E-01 | 1.205E+00 | 1.362E-01 | 0.907 |
| | | 291.72 | | -8.262E-02 | 7.162E-01 | 1.044E+00 | 1.423E-01 | -0.079 |
| RE-184 | | 57.98 | | 4.316E-01 | 4.280E-01 | 7.390E-01 | 5.288E-02 | 0.584 |
| | | 59.32 | | 8.412E-02 | 2.622E-01 | 3.973E-01 | 2.810E-02 | 0.212 |
| | | 67.20 | | 8.820E-02 | 4.982E-01 | 7.365E-01 | 5.589E-02 | 0.120 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 161.27 | | -4.395E-02 | 2.426E-01 | 4.026E-01 | 3.866E-02 | -0.109 |
| | | 216.55 | | -2.079E-01 | 1.868E-01 | 2.881E-01 | 3.340E-02 | -0.721 |
| | | 252.85 | * | -1.141E-01 | 1.670E-01 | 2.596E-01 | 3.368E-02 | -0.439 |
| | | 318.01 | | -7.237E-02 | 3.011E-01 | 4.982E-01 | 6.332E-02 | -0.145 |
| | | 792.07 | | 2.299E-01 | 6.496E-01 | 1.074E+00 | 1.182E-01 | 0.214 |
| | | 903.28 | | -2.574E-02 | 6.981E-01 | 1.053E+00 | 1.176E-01 | -0.024 |
| | | 920.93 | | 5.796E-02 | 3.427E-01 | 5.100E-01 | 5.628E-02 | 0.114 |
| | | 59.72 | | 7.701E-02 | 1.923E-01 | 2.923E-01 | 2.070E-02 | 0.263 |
| | | 61.14 | | -1.344E-02 | 1.062E-01 | 1.569E-01 | 1.127E-02 | -0.086 |
| | | 69.30 | | -3.229E-02 | 2.013E-01 | 2.945E-01 | 2.278E-02 | -0.110 |
| | | 592.07 | | -6.439E-01 | 1.639E+00 | 2.585E+00 | 2.676E-01 | -0.249 |
| | | 646.12 | * | -1.414E-03 | 2.739E-02 | 4.492E-02 | 4.721E-03 | -0.031 |
| | | 717.42 | | -1.860E-01 | 5.765E-01 | 8.945E-01 | 9.636E-02 | -0.208 |
| | | 874.81 | | 2.437E-01 | 3.928E-01 | 6.788E-01 | 7.586E-02 | 0.359 |
| | | 880.27 | | -3.011E-01 | 5.187E-01 | 8.231E-01 | 9.205E-02 | -0.366 |
| RE-188 | | 155.03 | * | 7.824E-02 | 1.171E-01 | 2.005E-01 | 1.872E-02 | 0.390 |
| | | 477.96 | | 2.002E+00 | 2.108E+00 | 3.585E+00 | 3.531E-01 | 0.558 |
| W-188 | + | 633.10 | | -1.629E+00 | 1.810E+00 | 2.786E+00 | 2.919E-01 | -0.585 |
| | | 63.58 | | 6.208E+01 | 4.598E+01 | 5.870E+01 | 4.313E+00 | 1.058 |
| | | 227.08 | | 3.452E+00 | 9.320E+00 | 1.539E+01 | 1.845E+00 | 0.224 |
| | | 290.67 | * | 1.871E+00 | 5.532E+00 | 8.295E+00 | 1.133E+00 | 0.226 |
| IR-192 | + | 295.96 | | 5.345E-01 | 1.346E-01 | 1.713E-01 | 2.317E-02 | 3.120 |
| | | 308.46 | | 8.409E-03 | 6.373E-02 | 1.076E-01 | 1.408E-02 | 0.078 |
| | | 316.51 | * | -1.389E-02 | 2.300E-02 | 3.727E-02 | 4.763E-03 | -0.373 |
| | | 468.07 | | -7.189E-02 | 4.931E-02 | 7.024E-02 | 7.266E-03 | -1.024 |
| | | 604.41 | | -2.789E-01 | 3.567E-01 | 4.702E-01 | 6.702E-02 | -0.593 |
| | + | 612.46 | | 6.188E-01 | 3.610E-01 | 1.152E+00 | 1.325E-01 | 0.537 |
| AU-195 | | 65.12 | | -1.021E-01 | 1.139E-01 | 1.594E-01 | 1.187E-02 | -0.641 |
| | | 66.83 | | 3.969E-03 | 6.307E-02 | 9.276E-02 | 7.016E-03 | 0.043 |
| | + | 75.70 | | 6.010E-01 | 1.728E-01 | 2.628E-01 | 2.165E-02 | 2.287 |
| | | 98.88 | * | 1.274E-01 | 1.483E-01 | 2.466E-01 | 2.150E-02 | 0.517 |
| TL-200 | | 129.76 | | 2.202E+00 | 1.945E+00 | 3.407E+00 | 2.871E-01 | 0.646 |
| | | 367.94 | * | 1.381E-05 | 1.945E+00 | Half-Life | too short | |
| | | 579.30 | | 1.483E-02 | 1.945E+00 | Half-Life | too short | |
| | | 828.27 | | -7.062E-03 | 1.945E+00 | Half-Life | too short | |
| | | 1205.75 | | -3.291E-04 | 1.945E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | 2.258E-01 | 4.540E+00 | 7.151E+00 | 5.511E-01 | 0.032 |
| | | 70.82 | | -8.310E-01 | 2.689E+00 | 3.897E+00 | 3.058E-01 | -0.213 |
| | | 80.30 | | 2.089E+00 | 4.997E+00 | 7.433E+00 | 6.439E-01 | 0.281 |
| | | 135.34 | | -1.292E+01 | 2.538E+01 | 4.211E+01 | 3.620E+00 | -0.307 |
| | | 167.43 | * | -2.802E+00 | 7.195E+00 | 1.180E+01 | 1.163E+00 | -0.237 |
| TL-202 | | 68.90 | | 1.483E-02 | 2.982E-01 | 4.697E-01 | 3.620E-02 | 0.032 |
| | | 70.82 | | -5.444E-02 | 1.762E-01 | 2.553E-01 | 2.003E-02 | -0.213 |
| | | 80.30 | | 1.369E-01 | 3.274E-01 | 4.871E-01 | 4.219E-02 | 0.281 |
| | | 439.56 | * | -1.747E-02 | 5.027E-02 | 8.008E-02 | 7.709E-03 | -0.218 |
| HG-203 | | 70.83 | | -2.217E-01 | 7.073E-01 | 1.024E+00 | 1.345E-01 | -0.216 |
| | | 72.87 | | 5.940E-01 | 4.179E-01 | 6.439E-01 | 8.248E-02 | 0.922 |
| | | 82.60 | | -3.580E-01 | 7.955E-01 | 1.118E+00 | 1.556E-01 | -0.320 |
| | | 279.20 | * | 3.476E-02 | 3.037E-02 | 5.054E-02 | 7.153E-03 | 0.688 |

---- 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 | | 1.522E-01 | 1.175E-01 | 1.821E-01 | 1.456E-02 | 0.836 |
| | + | 74.97 | | 3.311E-01 | 9.517E-02 | 1.315E-01 | 1.075E-02 | 2.518 |
| | | 84.90 | | 1.423E-01 | 1.318E-01 | 1.983E-01 | 1.812E-02 | 0.718 |
| | | 569.67 | | -4.417E-03 | 1.976E-02 | 3.176E-02 | 3.263E-03 | -0.139 |
| | | 1063.62 | * | -2.326E-03 | 3.366E-02 | 5.455E-02 | 5.237E-03 | -0.043 |
| | | 1770.23 | | 4.797E-01 | 3.510E-01 | 6.098E-01 | 5.069E-02 | 0.787 |
| TL-207 | | 81.07 | | -9.757E-02 | 1.468E-01 | 2.064E-01 | 1.804E-02 | -0.473 |
| | | 83.78 | | 1.954E-02 | 8.830E-02 | 1.284E-01 | 1.158E-02 | 0.152 |
| | + | 94.90 | | 5.030E-02 | 2.702E-01 | 2.382E-01 | 2.129E-02 | 0.211 |
| | | 122.32 | | 7.513E-01 | 1.220E+00 | 1.983E+00 | 1.764E-01 | 0.379 |
| | | 144.24 | | -1.299E-01 | 4.993E-01 | 7.991E-01 | 7.910E-02 | -0.163 |
| | | 154.21 | | 6.824E-02 | 2.645E-01 | 4.474E-01 | 4.519E-02 | 0.153 |
| | + | 269.46 | | 4.987E-01 | 1.873E-01 | 2.375E-01 | 3.262E-02 | 2.100 |
| | | 323.87 | * | -1.384E-01 | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| | + | 338.28 | | 3.400E+00 | 1.401E+00 | 1.484E+00 | 2.195E-01 | 2.291 |
| | | 445.03 | | 5.073E-02 | 1.473E+00 | 2.400E+00 | 3.084E-01 | 0.021 |
| PO-209 | | 260.50 | | -4.920E-01 | 6.834E+00 | 1.096E+01 | 1.455E+00 | -0.045 |
| | | 262.80 | | -9.108E+00 | 1.894E+01 | 2.968E+01 | 3.966E+00 | -0.307 |
| | | 896.60 | * | -6.438E-01 | 4.610E+00 | 7.558E+00 | 8.466E-01 | -0.085 |
| BI-210 | | 46.50 | * | 1.418E-01 | 2.108E+00 | 3.450E+00 | 3.205E-01 | 0.041 |
| PB-210 | | 46.50 | * | 1.418E-01 | 2.108E+00 | 3.450E+00 | 3.205E-01 | 0.041 |
| PO-210 | | 46.50 | * | 1.418E-01 | 2.108E+00 | 3.450E+00 | 2.901E-01 | 0.041 |
| PB-211 | | 404.84 | * | -1.838E-01 | 6.376E-01 | 1.012E+00 | 6.355E-01 | -0.182 |
| | | 427.08 | | -7.695E-01 | 1.439E+00 | 2.141E+00 | 1.333E+00 | -0.359 |
| | | 831.96 | | 1.576E-01 | 7.624E-01 | 1.280E+00 | 8.068E-01 | 0.123 |
| BI-212 | + | 727.18 | * | 2.002E-01 | 3.347E-01 | 3.791E-01 | 4.528E-02 | 0.528 |
| | | 785.46 | | -8.588E-02 | 1.097E+00 | 1.760E+00 | 1.935E-01 | -0.049 |
| | | 1620.62 | | 1.011E+00 | 8.024E-01 | 1.509E+00 | 1.316E-01 | 0.670 |
| PO-215 | | 81.07 | | -9.757E-02 | 1.468E-01 | 2.064E-01 | 1.804E-02 | -0.473 |
| | | 83.78 | | 1.954E-02 | 8.830E-02 | 1.284E-01 | 1.158E-02 | 0.152 |
| | + | 94.90 | | 5.030E-02 | 2.702E-01 | 2.382E-01 | 2.129E-02 | 0.211 |
| | | 122.32 | | 7.513E-01 | 1.220E+00 | 1.983E+00 | 1.764E-01 | 0.379 |
| | | 144.24 | | -1.299E-01 | 4.993E-01 | 7.991E-01 | 7.910E-02 | -0.163 |
| | | 154.21 | | 6.824E-02 | 2.645E-01 | 4.474E-01 | 4.519E-02 | 0.153 |
| | + | 269.46 | | 4.987E-01 | 1.873E-01 | 2.375E-01 | 3.262E-02 | 2.100 |
| | | 323.87 | * | -1.384E-01 | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| | + | 338.28 | | 3.400E+00 | 1.401E+00 | 1.484E+00 | 2.195E-01 | 2.291 |
| | | 445.03 | | 5.073E-02 | 1.473E+00 | 2.400E+00 | 3.084E-01 | 0.021 |
| RN-219 | + | 271.23 | | 6.398E-01 | 2.427E-01 | 3.127E-01 | 4.632E-02 | 2.046 |
| | | 401.81 | * | -3.388E-01 | 2.764E-01 | 4.138E-01 | 6.403E-02 | -0.819 |
| RN-220 | | 549.76 | * | 5.733E+00 | 1.582E+01 | 2.700E+01 | 2.752E+00 | 0.212 |
| RA-223 | | 81.07 | | -9.757E-02 | 1.468E-01 | 2.064E-01 | 1.804E-02 | -0.473 |
| | | 83.78 | | 1.954E-02 | 8.830E-02 | 1.284E-01 | 1.158E-02 | 0.152 |
| | + | 94.90 | | 5.030E-02 | 2.702E-01 | 2.382E-01 | 2.129E-02 | 0.211 |
| | | 122.32 | | 7.513E-01 | 1.220E+00 | 1.983E+00 | 1.764E-01 | 0.379 |
| | | 144.24 | | -1.299E-01 | 4.993E-01 | 7.991E-01 | 7.910E-02 | -0.163 |
| | | 154.21 | | 6.824E-02 | 2.645E-01 | 4.474E-01 | 4.519E-02 | 0.153 |
| | + | 269.46 | | 4.987E-01 | 1.873E-01 | 2.375E-01 | 3.262E-02 | 2.100 |
| | | 323.87 | * | -1.384E-01 | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |

---- 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 | | 3.400E+00 | 1.401E+00 | 1.484E+00 | 2.195E-01 | 2.291 |
| | | 445.03 | | 5.073E-02 | 1.473E+00 | 2.400E+00 | 3.084E-01 | 0.021 |
| | | 79.80 | | 5.206E-01 | 1.081E+00 | 1.606E+00 | 3.453E-01 | 0.324 |
| | | 236.00 | | 5.147E-01 | 2.046E-01 | 3.060E-01 | 4.616E-02 | 1.682 |
| | * | 256.20 | | -1.453E-01 | 2.679E-01 | 4.184E-01 | 7.635E-02 | -0.347 |
| | | 286.10 | | -8.826E-02 | 1.222E+00 | 1.691E+00 | 2.881E-01 | -0.052 |
| TH-227 | + | 299.80 | | 2.755E+00 | 1.408E+00 | 1.708E+00 | 3.458E-01 | 1.613 |
| | | 304.40 | | 2.811E-01 | 1.322E+00 | 1.961E+00 | 4.113E-01 | 0.143 |
| | | 334.20 | | 1.023E+00 | 2.340E+00 | 2.410E+00 | 5.102E-01 | 0.425 |
| | | 79.80 | | 5.206E-01 | 1.081E+00 | 1.606E+00 | 3.497E-01 | 0.324 |
| | + | 94.00 | | 4.024E-01 | 2.163E+00 | 2.370E+00 | 5.197E-01 | 0.170 |
| | | 236.00 | | 5.147E-01 | 2.028E-01 | 3.060E-01 | 4.331E-02 | 1.682 |
| TH-229 | * | 256.20 | | -1.453E-01 | 2.683E-01 | 4.184E-01 | 8.612E-02 | -0.347 |
| | | 286.10 | | -8.826E-02 | 1.225E+00 | 1.691E+00 | 1.707E+00 | -0.052 |
| | + | 299.80 | | 2.755E+00 | 1.408E+00 | 1.708E+00 | 3.458E-01 | 1.613 |
| | | 304.40 | | 2.811E-01 | 1.322E+00 | 1.961E+00 | 4.113E-01 | 0.143 |
| | | 334.20 | | 1.023E+00 | 2.340E+00 | 2.410E+00 | 5.102E-01 | 0.425 |
| | | 85.43 | | 2.504E-01 | 1.305E-01 | 2.031E-01 | 1.868E-02 | 1.233 |
| PA-231 | + | 88.47 | | 1.890E-01 | 9.748E-02 | 1.274E-01 | 1.203E-02 | 1.484 |
| | | 100.00 | | 9.524E-02 | 1.219E-01 | 2.019E-01 | 1.750E-02 | 0.472 |
| | * | 193.63 | | -6.147E-01 | 3.563E-01 | 5.358E-01 | 5.761E-02 | -1.147 |
| | | 210.97 | | 7.966E-01 | 5.961E-01 | 9.076E-01 | 1.033E-01 | 0.878 |
| | * | 283.67 | | 5.270E-01 | 1.172E+00 | 1.680E+00 | 3.138E-01 | 0.314 |
| | + | 301.29 | | 1.102E+00 | 5.462E-01 | 6.743E-01 | 1.072E-01 | 1.634 |
| TH-231 | | 81.07 | | -9.757E-02 | 1.468E-01 | 2.064E-01 | 1.804E-02 | -0.473 |
| | | 83.78 | | 1.954E-02 | 8.830E-02 | 1.284E-01 | 1.158E-02 | 0.152 |
| | + | 94.90 | | 5.030E-02 | 2.702E-01 | 2.382E-01 | 2.129E-02 | 0.211 |
| | | 122.32 | | 7.513E-01 | 1.220E+00 | 1.983E+00 | 1.764E-01 | 0.379 |
| | | 144.24 | | -1.299E-01 | 4.993E-01 | 7.991E-01 | 7.910E-02 | -0.163 |
| | | 154.21 | | 6.824E-02 | 2.645E-01 | 4.474E-01 | 4.519E-02 | 0.153 |
| U-231 | + | 269.46 | | 4.987E-01 | 1.873E-01 | 2.375E-01 | 3.262E-02 | 2.100 |
| | * | 323.87 | | -1.384E-01 | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| | + | 338.28 | | 3.400E+00 | 1.401E+00 | 1.484E+00 | 2.195E-01 | 2.291 |
| | | 445.03 | | 5.073E-02 | 1.473E+00 | 2.400E+00 | 3.084E-01 | 0.021 |
| | | 84.21 | | 4.493E+00 | 5.062E+00 | 7.569E+00 | 6.861E-01 | 0.594 |
| | + | 92.29 | | 5.381E-01 | 2.891E+00 | 3.506E+00 | 3.197E-01 | 0.153 |
| PA-233 | * | 95.87 | | -6.193E-01 | 1.022E+00 | 1.416E+00 | 1.257E-01 | -0.437 |
| | | 108.00 | | -1.131E+00 | 1.984E+00 | 3.097E+00 | 2.603E-01 | -0.365 |
| | + | 75.28 | | 9.661E+00 | 3.036E+00 | 3.979E+00 | 6.014E-01 | 2.428 |
| | + | 86.59 | | 2.711E+00 | 1.558E+00 | 1.874E+00 | 5.071E-01 | 1.446 |
| | + | 300.12 | | 7.680E-01 | 3.861E-01 | 4.769E-01 | 8.599E-02 | 1.611 |
| | * | 311.98 | | 2.790E-02 | 4.124E-02 | 7.108E-02 | 9.311E-03 | 0.393 |
| PA-234 | | 340.50 | | 1.372E+00 | 5.971E-01 | 8.196E-01 | 2.062E-01 | 1.674 |
| | | 398.62 | | 2.471E-01 | 1.348E+00 | 2.234E+00 | 6.003E-01 | 0.111 |
| | | 415.76 | | 4.584E-01 | 1.058E+00 | 1.767E+00 | 3.870E-01 | 0.259 |
| | + | 63.00 | | 1.768E+00 | 1.329E+00 | 1.725E+00 | 2.555E-01 | 1.025 |
| | + | 94.67 | | 3.588E-02 | 1.928E-01 | 1.794E-01 | 2.267E-02 | 0.200 |
| | | 98.44 | | 8.181E-03 | 6.022E-02 | 9.724E-02 | 5.426E-02 | 0.084 |
| | | 99.86 | | 2.261E-01 | 3.078E-01 | 5.092E-01 | 4.418E-02 | 0.444 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 111.00 | | 1.438E-01 | 1.290E-01 | 2.136E-01 | 2.540E-02 | 0.674 |
| | | 131.20 | | -3.433E-02 | 7.134E-02 | 1.188E-01 | 1.006E-02 | -0.289 |
| | | 152.70 | | 2.292E-02 | 2.154E-01 | 3.627E-01 | 6.300E-02 | 0.063 |
| | + | 186.00 | | 2.790E+00 | 1.586E+00 | 1.776E+00 | 5.644E-01 | 1.571 |
| | | 226.40 | | 1.404E-02 | 2.867E-01 | 4.677E-01 | 7.293E-02 | 0.030 |
| | | 227.20 | | 1.662E-01 | 3.084E-01 | 5.121E-01 | 6.142E-02 | 0.325 |
| | | 248.90 | | 2.173E-01 | 5.830E-01 | 9.541E-01 | 2.322E-01 | 0.228 |
| | + | 293.70 | | 3.307E+00 | 9.686E-01 | 1.030E+00 | 2.083E-01 | 3.211 |
| | | 369.80 | | -7.814E-02 | 5.673E-01 | 9.306E-01 | 2.100E-01 | -0.084 |
| | | 568.70 | | -1.328E-01 | 6.519E-01 | 1.050E+00 | 1.078E-01 | -0.127 |
| | | 569.50 | | -2.997E-02 | 1.759E-01 | 2.837E-01 | 2.914E-02 | -0.106 |
| | | 574.00 | | -8.820E-01 | 9.566E-01 | 1.453E+00 | 1.494E-01 | -0.607 |
| | | 699.00 | | -1.976E-01 | 4.533E-01 | 7.155E-01 | 1.439E-01 | -0.276 |
| | | 706.10 | | 2.050E-01 | 7.053E-01 | 1.162E+00 | 5.235E-01 | 0.176 |
| | | 733.00 | | -2.610E-01 | 3.087E-01 | 3.846E-01 | 8.902E-02 | -0.679 |
| | | 742.81 | | 3.075E-02 | 9.129E-01 | 1.485E+00 | 1.003E+00 | 0.021 |
| | | 796.30 | | 7.955E-01 | 6.188E-01 | 1.021E+00 | 2.851E-01 | 0.779 |
| | | 805.60 | | -3.413E-01 | 6.848E-01 | 9.965E-01 | 3.131E-01 | -0.343 |
| | | 819.60 | | 5.691E-01 | 8.047E-01 | 1.359E+00 | 5.254E-01 | 0.419 |
| | | 826.30 | | -1.528E-01 | 5.237E-01 | 8.490E-01 | 3.844E-01 | -0.180 |
| | | 831.60 | | 6.702E-02 | 3.926E-01 | 6.621E-01 | 2.029E-01 | 0.101 |
| | | 876.40 | | 2.644E-01 | 6.106E-01 | 9.382E-01 | 9.668E-01 | 0.282 |
| | | 880.51 | | -9.235E-02 | 1.851E-01 | 2.957E-01 | 3.307E-02 | -0.312 |
| | | 883.24 | | -4.328E-03 | 1.851E-01 | 3.067E-01 | 2.073E-01 | -0.014 |
| | | 899.00 | | 2.957E-01 | 5.466E-01 | 9.147E-01 | 4.052E-01 | 0.323 |
| | | 925.00 | | -2.594E-01 | 7.789E-01 | 1.255E+00 | 1.380E-01 | -0.207 |
| | | 926.50 | | 1.513E-03 | 1.169E-01 | 1.934E-01 | 5.063E-02 | 0.008 |
| | | 946.00 | * | -1.229E-01 | 1.903E-01 | 2.952E-01 | 5.867E-02 | -0.416 |
| | | 949.00 | | 3.068E-01 | 2.752E-01 | 4.886E-01 | 5.279E-02 | 0.628 |
| | | 980.50 | | 2.922E-01 | 4.517E-01 | 7.666E-01 | 8.062E-02 | 0.381 |
| PA-234M | | 1394.10 | | -1.296E-01 | 8.019E-01 | 1.287E+00 | 8.381E-01 | -0.101 |
| | | 766.42 | | 1.096E+01 | 9.644E+00 | 1.377E+01 | 7.047E+00 | 0.796 |
| | | 1001.03 | * | 1.432E+00 | 3.238E+00 | 5.203E+00 | 5.963E-01 | 0.275 |
| U-235 | | 89.95 | | -1.501E+00 | 1.193E+00 | 1.130E+00 | 3.509E-01 | -1.328 |
| | + | 93.35 | | 1.252E-01 | 6.733E-01 | 8.069E-01 | 2.272E-01 | 0.155 |
| | | 105.00 | | 5.739E-01 | 7.345E-01 | 1.183E+00 | 3.526E-01 | 0.485 |
| | | 143.76 | * | -2.987E-02 | 1.536E-01 | 2.463E-01 | 4.345E-02 | -0.121 |
| | | 163.35 | | 8.486E-02 | 3.203E-01 | 5.393E-01 | 1.056E-01 | 0.157 |
| | + | 185.71 | | 1.033E-01 | 4.990E-02 | 6.593E-02 | 6.904E-03 | 1.567 |
| | | 205.31 | | -2.585E-01 | 4.223E-01 | 5.824E-01 | 1.186E-01 | -0.444 |
| NP-236 | + | 94.67 | | 2.722E-02 | 1.462E-01 | 1.363E-01 | 1.220E-02 | 0.200 |
| | | 98.44 | | 6.164E-03 | 4.540E-02 | 7.350E-02 | 6.426E-03 | 0.084 |
| | | 111.00 | | 1.088E-01 | 9.717E-02 | 1.615E-01 | 1.348E-02 | 0.674 |
| | | 160.31 | * | -1.270E-02 | 5.412E-02 | 8.966E-02 | 8.571E-03 | -0.142 |
| NP-239 | | 99.55 | | 1.150E-01 | 1.012E-01 | 1.697E-01 | 1.475E-02 | 0.677 |
| | | 117.00 | * | -5.212E-02 | 1.297E-01 | 2.025E-01 | 1.673E-02 | -0.257 |
| | + | 209.75 | | 8.468E-01 | 6.461E-01 | 9.250E-01 | 1.049E-01 | 0.915 |
| | | 228.18 | | 3.004E-02 | 1.615E-01 | 2.648E-01 | 3.186E-02 | 0.113 |
| | + | 277.60 | | 2.539E-01 | 1.924E-01 | 2.142E-01 | 2.986E-02 | 1.185 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|------------------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AM-241 CM-243 | | 334.30 | | -9.014E-02 | 1.423E+00 | 1.371E+00 | 1.653E-01 | -0.066 |
| | | 59.54 | * | 3.758E-02 | 9.995E-02 | 1.518E-01 | 1.187E-02 | 0.248 |
| | | 99.55 | | 1.183E-01 | 1.041E-01 | 1.747E-01 | 1.518E-02 | 0.677 |
| | | 103.76 | * | -1.624E-02 | 6.619E-02 | 1.051E-01 | 8.958E-03 | -0.155 |
| | | 117.00 | | -5.362E-02 | 1.335E-01 | 2.083E-01 | 1.722E-02 | -0.257 |
| + | | 209.75 | | 8.348E-01 | 6.370E-01 | 9.120E-01 | 1.034E-01 | 0.915 |
| | | 228.18 | | 3.036E-02 | 1.632E-01 | 2.676E-01 | 3.220E-02 | 0.113 |
| | | 277.60 | | 2.560E-01 | 1.940E-01 | 2.160E-01 | 3.011E-02 | 1.185 |
| | | 798.80 | | -7.877E-02 | 9.281E-02 | 1.395E-01 | 1.538E-02 | -0.565 |
| | | 1036.00 | | -1.286E-01 | 1.924E-01 | 2.964E-01 | 2.943E-02 | -0.434 |
| AM-246 | | 1062.04 | | 1.412E-02 | 1.452E-01 | 2.385E-01 | 2.295E-02 | 0.059 |
| | | 1078.86 | * | -5.495E-02 | 9.706E-02 | 1.508E-01 | 1.418E-02 | -0.364 |
| | | 278.00 | | 1.053E+00 | 7.978E-01 | 8.728E-01 | 1.218E-01 | 1.206 |
| | | 287.40 | | 1.355E-01 | 8.937E-01 | 1.387E+00 | 1.908E-01 | 0.098 |
| | | 402.60 | * | -1.638E-02 | 2.398E-02 | 3.775E-02 | 3.541E-03 | -0.434 |
| CF-249 | | 252.85 | | -4.248E-01 | 6.218E-01 | 9.667E-01 | 1.254E-01 | -0.439 |
| | | 333.44 | | -4.641E-02 | 1.851E-01 | 1.733E-01 | 2.097E-02 | -0.268 |
| | | 387.95 | * | 1.391E-02 | 2.555E-02 | 4.326E-02 | 4.111E-03 | 0.322 |
| CF-251 | | 176.60 | * | -3.383E-02 | 8.514E-02 | 1.390E-01 | 1.412E-02 | -0.243 |
| | | 227.00 | | 9.360E-02 | 2.742E-01 | 4.524E-01 | 5.422E-02 | 0.207 |
| | | 285.00 | | -8.641E-01 | 1.406E+00 | 1.861E+00 | 2.574E-01 | -0.464 |

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]G246328001      *
* Acquisition date   : 18-FEB-2010 10:54:05 Detector SN#      :              *
* Detector ID        : GAM22                                           Sensitivity   : 5.000          *
* Geometry           : CAN                                           Energy tolerance: 1.500        *
* Elapsed live time   : 0 02:00:00.00 Abundance limit : 75.000         *
* Elapsed real time   : 0 02:00:01.79 Half life ratio  : 8.000          *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328001 Analyst initials: MXR1              *
* Batch Number       : 950786 Sample Quantity : 1.5711E+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 | 1.843E+01 | 1.923E+00 | 2.883E-01 | 0.000E+00 |
| CD-109 | 1.413E+00 | 7.138E-01 | 1.057E+00 | 0.000E+00 |
| SN-126 | 1.385E-01 | 6.997E-02 | 1.001E-01 | 0.000E+00 |
| TL-208 | 2.733E-01 | 4.996E-02 | 3.882E-02 | 0.000E+00 |
| BI-211 | 1.855E+00 | 3.439E-01 | 2.328E-01 | 0.000E+00 |
| PB-212 | 7.663E-01 | 1.186E-01 | 6.577E-02 | 0.000E+00 |
| PO-212 | 7.663E-01 | 1.186E-01 | 6.577E-02 | 0.000E+00 |
| BI-214 | 6.140E-01 | 1.032E-01 | 6.836E-02 | 0.000E+00 |
| PB-214 | 6.452E-01 | 1.241E-01 | 8.112E-02 | 0.000E+00 |
| PO-214 | 6.452E-01 | 1.241E-01 | 8.112E-02 | 0.000E+00 |
| PO-216 | 7.663E-01 | 1.186E-01 | 6.577E-02 | 0.000E+00 |
| PO-218 | 6.452E-01 | 1.241E-01 | 8.112E-02 | 0.000E+00 |
| RA-224 | 2.326E+00 | 8.439E-01 | 7.475E-01 | 0.000E+00 |
| RA-226 | 6.140E-01 | 1.032E-01 | 6.836E-02 | 0.000E+00 |
| AC-228 | 7.343E-01 | 2.051E-01 | 1.330E-01 | 0.000E+00 |
| RA-228 | 7.343E-01 | 2.051E-01 | 1.330E-01 | 0.000E+00 |
| TH-228 | 7.794E-01 | 1.206E-01 | 6.689E-02 | 0.000E+00 |
| TH-230 | 6.140E-01 | 1.032E-01 | 6.836E-02 | 0.000E+00 |
| TH-232 | 7.343E-01 | 2.051E-01 | 1.330E-01 | 0.000E+00 |
| TH-234 | 1.517E+00 | 1.126E+00 | 1.328E+00 | 0.000E+00 |
| U-234 | 6.140E-01 | 1.032E-01 | 6.836E-02 | 0.000E+00 |
| NP-237 | 4.066E-01 | 2.213E-01 | 2.796E-01 | 0.000E+00 |
| U-238 | 1.517E+00 | 1.126E+00 | 1.328E+00 | 0.000E+00 |
| AM-243 | 1.844E-01 | 5.195E-02 | 5.816E-02 | 0.000E+00 |
| ANH-511 | 7.057E-02 | 4.695E-02 | 2.951E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 2.273E-01 | 2.196E-01 | 3.975E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -5.062E-03 | 2.673E-02 | 4.503E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 0.000E+00 | 3.610E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 7.334E-05 | 1.952E-02 | 3.286E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.140E-02 | 4.898E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 4.066E-03 | 2.394E-02 | 4.199E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -2.565E-02 | 4.552E-02 | 7.410E-02 | 0.000E+00 | NOT IDENT. |
| CR-51 | 1.918E-01 | 2.578E-01 | 4.767E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 5.604E-02 | 1.636E-01 | 2.868E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.648E-02 | 2.328E-02 | 4.234E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -4.670E-03 | 2.595E-02 | 4.469E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | 1.234E-02 | 1.742E-02 | 3.129E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -9.214E-03 | 2.328E-02 | 3.958E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -3.145E-02 | 6.114E-02 | 9.886E-02 | 0.000E+00 | NOT IDENT. |
| CO-60 | -2.273E-02 | 2.744E-02 | 4.328E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 2.776E-02 | 6.836E-02 | 1.019E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -3.531E-01 | 8.352E-01 | 1.366E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 1.916E-01 | 4.746E-01 | 9.067E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | -2.677E-04 | 6.347E-02 | 1.111E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 8.862E-03 | 3.466E-02 | 5.334E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 2.222E+00 | 1.176E+01 | 1.968E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -1.423E-01 | 2.692E-01 | 4.388E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.327E-03 | 4.574E-02 | 7.569E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | -5.560E-03 | 4.606E-02 | 7.918E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 5.782E+00 | 1.013E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 3.022E-02 | 5.293E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 6.008E-02 | 5.565E-01 | 9.485E-01 | 0.000E+00 | NOT IDENT. |
| Y-88 | -2.778E-03 | 1.982E-02 | 3.256E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -3.868E-03 | 2.003E-02 | 3.481E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -1.443E+00 | 1.100E+01 | 1.877E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 3.564E-04 | 2.107E-02 | 3.619E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 2.944E-02 | 2.970E-02 | 5.315E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 9.073E-02 | 9.731E-02 | 1.562E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.691E-03 | 4.478E-02 | 7.594E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 3.895E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 8.812E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 4.438E+00 | 1.220E+01 | 2.128E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 4.244E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 8.863E-03 | 2.368E-02 | 4.175E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -1.505E-02 | 2.006E-02 | 3.284E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -7.380E-03 | 2.722E-02 | 4.566E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 9.031E-02 | 1.961E-01 | 3.508E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 9.031E-02 | 1.959E-01 | 3.508E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 1.445E-02 | 2.175E-02 | 3.908E-02 | 0.000E+00 | FAIL ABUN |
| AG-110M | -1.232E-03 | 2.288E-02 | 3.944E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -4.460E-01 | 1.317E+00 | 1.970E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -7.038E-03 | 2.890E-02 | 5.011E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -7.038E-03 | 2.890E-02 | 5.011E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.077E-01 | 1.373E-01 | 2.253E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -5.020E+00 | 1.205E+01 | 2.086E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 3.381E-03 | 3.968E-02 | 7.285E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 1.161E+00 | 2.065E+00 | 3.751E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.898E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 3.114E-03 | 1.898E-02 | 3.493E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -6.126E-01 | 6.913E-01 | 9.567E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | -4.564E-03 | 4.436E-02 | 7.420E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | -2.740E-02 | 6.096E-02 | 1.032E-01 | 0.000E+00 | NOT IDENT. |
| TE-125M | 1.814E+00 | 6.582E+00 | 1.174E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 2.842E-02 | 1.318E-01 | 2.307E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -1.858E-02 | 1.151E-01 | 1.658E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 7.691E-01 | 1.169E+00 | 2.094E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -7.992E-03 | 3.326E-02 | 5.881E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 5.276E-02 | 8.849E-02 | 1.611E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 1.440E-01 | 7.160E-01 | 1.272E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 5.695E-03 | 3.205E-02 | 5.002E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 1.655E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 4.477E-02 | 2.936E-02 | 5.413E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 1.680E-01 | 1.277E-01 | 2.052E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 3.810E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -5.306E-02 | 8.038E-02 | 1.255E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 9.747E-03 | 2.375E-02 | 4.202E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 1.030E-02 | 2.510E-02 | 4.442E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -8.694E-03 | 2.006E-02 | 3.594E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -6.302E-02 | 1.775E-01 | 3.058E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -4.009E-02 | 6.219E-02 | 9.896E-02 | 0.000E+00 | FAIL ABUN |
| CE-141 | 1.374E-02 | 4.353E-02 | 8.117E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 3.664E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -6.258E-02 | 1.310E-01 | 2.390E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 1.687E-02 | 2.118E-02 | 3.815E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 1.145E+00 | 1.437E+00 | 2.588E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.173E-02 | 2.701E-02 | 4.784E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 7.512E-02 | 3.993E-01 | 7.158E-01 | 0.000E+00 | NOT IDENT. |
| PM-149 | -4.183E+01 | 1.291E+02 | 1.887E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | 4.580E-03 | 8.147E-02 | 1.109E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -6.060E-02 | 5.418E-02 | 8.677E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | -1.297E-02 | 7.469E-02 | 1.260E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 6.811E-02 | 7.227E-02 | 1.325E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -5.400E-02 | 9.245E-02 | 1.535E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 2.207E-02 | 4.089E-02 | 6.972E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | 2.194E-01 | 1.857E+01 | 3.047E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -3.707E-03 | 1.738E-02 | 2.821E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 1.443E+00 | 1.079E+00 | 1.696E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -7.499E-02 | 1.207E-01 | 2.036E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -8.386E-03 | 2.877E-02 | 4.842E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -2.000E-01 | 2.400E-01 | 3.772E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 8.144E-02 | 1.269E-01 | 2.269E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 1.528E-02 | 7.394E-02 | 1.360E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -1.141E-01 | 1.636E-01 | 2.749E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -1.414E-03 | 2.685E-02 | 4.639E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 7.824E-02 | 1.147E-01 | 2.151E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 1.871E+00 | 5.421E+00 | 8.754E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | -1.389E-02 | 2.254E-02 | 3.924E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 1.274E-01 | 1.454E-01 | 2.675E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.815E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -2.802E+00 | 7.051E+00 | 1.264E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | -1.747E-02 | 4.927E-02 | 8.358E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | 3.476E-02 | 2.976E-02 | 5.339E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | -2.326E-03 | 3.299E-02 | 5.555E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -1.384E-01 | 5.072E-01 | 7.765E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -6.438E-01 | 4.518E+00 | 7.734E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | 1.418E-01 | 2.065E+00 | 3.814E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 1.418E-01 | 2.065E+00 | 3.814E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 1.418E-01 | 2.065E+00 | 3.814E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -1.838E-01 | 6.249E-01 | 1.059E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 2.002E-01 | 3.280E-01 | 3.902E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -1.384E-01 | 5.072E-01 | 7.765E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | -3.388E-01 | 2.708E-01 | 4.329E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 5.733E+00 | 1.550E+01 | 2.800E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -1.384E-01 | 5.072E-01 | 7.765E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -1.453E-01 | 2.626E-01 | 4.430E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -1.453E-01 | 2.629E-01 | 4.430E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -6.147E-01 | 3.492E-01 | 5.715E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 5.270E-01 | 1.149E+00 | 1.775E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -1.384E-01 | 5.072E-01 | 7.765E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -6.193E-01 | 1.001E+00 | 1.538E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 2.790E-02 | 4.041E-02 | 7.487E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | -1.229E-01 | 1.865E-01 | 3.016E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 1.432E+00 | 3.173E+00 | 5.308E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | -2.987E-02 | 1.505E-01 | 2.647E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -1.270E-02 | 5.304E-02 | 9.610E-02 | 0.000E+00 | FAIL ABUN |
| NP-239 | -5.212E-02 | 1.271E-01 | 2.188E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 3.758E-02 | 9.795E-02 | 1.668E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -1.624E-02 | 6.487E-02 | 1.139E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -5.495E-02 | 9.512E-02 | 1.535E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -1.638E-02 | 2.350E-02 | 3.949E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 1.391E-02 | 2.504E-02 | 4.530E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -3.383E-02 | 8.344E-02 | 1.486E-01 | 0.000E+00 | NOT IDENT. |

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 12:55:12.09

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328001.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 10:54:05
Sample ID          : G246328001          Sample quantity  : 1.57110E+02 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time   : 0 02:00:00.00      Elapsed real time: 0 02:00:01.79  0.0%
Energy tolerance    : 1.50000 keV        Analyst Initials : MXR1
Abundance limit     : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786              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 | 1571 | 10.67* | 1.909E+00 | 1.843E+01 | 1.843E+01 | 10.65 |
| CD-109 | 88.03 | 160 | 3.72* | 7.478E+00 | 1.377E+00 | 1.413E+00 | 51.56 |
| SN-126 | 64.28 | 104 | 9.60 | 4.306E+00 | 6.003E-01 | 6.003E-01 | 75.12 |
| | 86.94 | 160 | 8.90 | 7.478E+00 | 5.756E-01 | 5.756E-01 | 65.53 |
| | 87.57 | 160 | 37.00* | 7.478E+00 | 1.385E-01 | 1.385E-01 | 51.56 |
| TL-208 | 277.35 | 93 | 6.80 | 6.186E+00 | 5.265E-01 | 5.265E-01 | 76.27 |
| | 510.84 | 127 | 21.60 | 4.298E+00 | 3.267E-01 | 3.267E-01 | 68.40 |
| | 583.14 | 379 | 84.20* | 3.930E+00 | 2.733E-01 | 2.733E-01 | 18.65 |
| | 860.37 | ----- | 12.46 | 2.924E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 5.897E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 543 | 12.94* | 5.401E+00 | 1.855E+00 | 1.855E+00 | 18.92 |
| PB-212 | 74.81 | 314 | 10.70 | 6.171E+00 | 1.138E+00 | 1.138E+00 | 30.23 |
| | 77.11 | 412 | 18.00 | 6.460E+00 | 8.471E-01 | 8.471E-01 | 20.50 |
| | 87.30 | 160 | 8.00 | 7.478E+00 | 6.404E-01 | 6.404E-01 | 52.52 |
| | 238.63 | 960 | 44.60* | 6.709E+00 | 7.663E-01 | 7.663E-01 | 15.79 |
| | 300.09 | 125 | 3.41 | 5.912E+00 | 1.486E+00 | 1.486E+00 | 49.15 |
| PO-212 | 74.81 | 314 | 10.70 | 6.171E+00 | 1.138E+00 | 1.138E+00 | 30.23 |
| | 77.11 | 412 | 18.00 | 6.460E+00 | 8.471E-01 | 8.471E-01 | 20.50 |
| | 87.30 | 160 | 8.00 | 7.478E+00 | 6.404E-01 | 6.404E-01 | 52.52 |
| | 115.19 | ----- | 0.60 | 8.535E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 960 | 44.60* | 6.709E+00 | 7.663E-01 | 7.663E-01 | 15.79 |
| | 300.09 | 125 | 3.41 | 5.912E+00 | 1.486E+00 | 1.486E+00 | 49.15 |
| BI-214 | 609.31 | 453 | 46.30* | 3.811E+00 | 6.140E-01 | 6.140E-01 | 17.14 |
| | 1120.29 | 109 | 15.10 | 2.346E+00 | 7.380E-01 | 7.380E-01 | 39.18 |
| | 1764.49 | 67 | 15.80 | 1.716E+00 | 5.872E-01 | 5.873E-01 | 55.84 |
| PB-214 | 74.81 | 314 | 6.21 | 6.171E+00 | 1.960E+00 | 1.960E+00 | 29.68 |
| | 77.11 | 412 | 10.50 | 6.460E+00 | 1.452E+00 | 1.452E+00 | 21.87 |
| | 87.30 | 160 | 4.67 | 7.478E+00 | 1.097E+00 | 1.097E+00 | 52.14 |
| | 241.98 | 256 | 7.49 | 6.665E+00 | 1.227E+00 | 1.227E+00 | 37.44 |
| | 295.21 | 331 | 19.20 | 5.971E+00 | 6.890E-01 | 6.890E-01 | 25.92 |
| | 351.92 | 543 | 37.20* | 5.401E+00 | 6.452E-01 | 6.452E-01 | 19.62 |
| PO-214 | 74.81 | 314 | 6.21 | 6.171E+00 | 1.960E+00 | 1.960E+00 | 29.68 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-216 | 77.11 | 412 | 10.50 | 6.460E+00 | 1.452E+00 | 1.452E+00 | 21.87 |
| | 87.30 | 160 | 4.67 | 7.478E+00 | 1.097E+00 | 1.097E+00 | 52.14 |
| | 241.98 | 256 | 7.49 | 6.665E+00 | 1.227E+00 | 1.227E+00 | 37.44 |
| | 295.21 | 331 | 19.20 | 5.971E+00 | 6.890E-01 | 6.890E-01 | 25.92 |
| | 351.92 | 543 | 37.20* | 5.401E+00 | 6.452E-01 | 6.452E-01 | 19.62 |
| | 74.81 | 314 | 10.70 | 6.171E+00 | 1.138E+00 | 1.138E+00 | 30.23 |
| | 77.11 | 412 | 18.00 | 6.460E+00 | 8.471E-01 | 8.471E-01 | 20.50 |
| | 87.30 | 160 | 8.00 | 7.478E+00 | 6.404E-01 | 6.404E-01 | 52.52 |
| | 238.63 | 960 | 44.60* | 6.709E+00 | 7.663E-01 | 7.663E-01 | 15.79 |
| | 300.09 | 125 | 3.41 | 5.912E+00 | 1.486E+00 | 1.486E+00 | 49.15 |
| PO-218 | 74.81 | 314 | 6.21 | 6.171E+00 | 1.960E+00 | 1.960E+00 | 29.68 |
| | 77.11 | 412 | 10.50 | 6.460E+00 | 1.452E+00 | 1.452E+00 | 21.87 |
| | 87.30 | 160 | 4.67 | 7.478E+00 | 1.097E+00 | 1.097E+00 | 52.14 |
| | 241.98 | 256 | 7.49 | 6.665E+00 | 1.227E+00 | 1.227E+00 | 37.44 |
| | 295.21 | 331 | 19.20 | 5.971E+00 | 6.890E-01 | 6.890E-01 | 25.92 |
| RA-224 | 351.92 | 543 | 37.20* | 5.401E+00 | 6.452E-01 | 6.452E-01 | 19.62 |
| | 240.98 | 256 | 3.95* | 6.665E+00 | 2.326E+00 | 2.326E+00 | 37.02 |
| RA-226 | 609.31 | 453 | 46.30* | 3.811E+00 | 6.140E-01 | 6.140E-01 | 17.14 |
| | 1120.29 | 109 | 15.10 | 2.346E+00 | 7.380E-01 | 7.380E-01 | 39.18 |
| AC-228 | 1764.49 | 67 | 15.80 | 1.716E+00 | 5.872E-01 | 5.873E-01 | 55.84 |
| | 338.32 | 215 | 11.40 | 5.526E+00 | 8.141E-01 | 8.141E-01 | 57.00 |
| | 911.07 | 237 | 27.70* | 2.788E+00 | 7.343E-01 | 7.343E-01 | 28.51 |
| | 969.11 | 151 | 16.60 | 2.649E+00 | 8.221E-01 | 8.221E-01 | 41.71 |
| RA-228 | 338.32 | 215 | 11.40 | 5.526E+00 | 8.141E-01 | 8.141E-01 | 57.00 |
| | 911.07 | 237 | 27.70* | 2.788E+00 | 7.343E-01 | 7.343E-01 | 28.51 |
| TH-228 | 969.11 | 151 | 16.60 | 2.649E+00 | 8.221E-01 | 8.221E-01 | 41.71 |
| | 74.81 | 314 | 10.70 | 6.171E+00 | 1.138E+00 | 1.157E+00 | 28.77 |
| | 77.11 | 412 | 18.00 | 6.460E+00 | 8.471E-01 | 8.615E-01 | 20.50 |
| | 87.30 | 160 | 8.00 | 7.478E+00 | 6.404E-01 | 6.513E-01 | 51.56 |
| TH-230 | 238.63 | 960 | 44.60* | 6.709E+00 | 7.663E-01 | 7.794E-01 | 15.79 |
| | 300.09 | 125 | 3.41 | 5.912E+00 | 1.486E+00 | 1.512E+00 | 76.30 |
| | 609.31 | 453 | 46.30* | 3.811E+00 | 6.140E-01 | 6.140E-01 | 17.14 |
| | 1120.29 | 109 | 15.10 | 2.346E+00 | 7.380E-01 | 7.380E-01 | 39.18 |
| TH-232 | 1764.49 | 67 | 15.80 | 1.716E+00 | 5.872E-01 | 5.872E-01 | 55.84 |
| | 338.32 | 215 | 11.40 | 5.526E+00 | 8.141E-01 | 8.141E-01 | 40.25 |
| TH-234 | 911.07 | 237 | 27.70* | 2.788E+00 | 7.343E-01 | 7.343E-01 | 28.51 |
| | 969.11 | 151 | 16.60 | 2.649E+00 | 8.221E-01 | 8.221E-01 | 41.71 |
| | 63.29 | 104 | 3.80* | 4.306E+00 | 1.517E+00 | 1.517E+00 | 75.73 |
| U-234 | 92.38 | 19 | 5.41 | 7.911E+00 | 1.041E-01 | 1.041E-01 | 537.36 |
| | 609.31 | 453 | 46.30* | 3.811E+00 | 6.140E-01 | 6.140E-01 | 17.14 |
| | 1120.29 | 109 | 15.10 | 2.346E+00 | 7.380E-01 | 7.380E-01 | 39.18 |
| NP-237 | 1764.49 | 67 | 15.80 | 1.716E+00 | 5.872E-01 | 5.872E-01 | 55.84 |
| | 86.50 | 160 | 12.60* | 7.478E+00 | 4.066E-01 | 4.066E-01 | 55.54 |
| U-238 | 95.87 | ----- | 2.60 | 8.032E+00 | ----- | Line Not Found | ----- |
| | 63.29 | 104 | 3.80* | 4.306E+00 | 1.517E+00 | 1.517E+00 | 75.73 |
| AM-243 | 92.38 | 19 | 5.41 | 7.911E+00 | 1.041E-01 | 1.041E-01 | 537.13 |
| | 74.67 | 314 | 66.00* | 6.171E+00 | 1.844E-01 | 1.844E-01 | 28.74 |
| | 86.72 | 160 | 0.34 | 7.478E+00 | 1.525E+01 | 1.525E+01 | 51.56 |
| | 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 | 127 | 100.00* | 4.298E+00 | 7.057E-02 | 7.057E-02 | 67.89 |

Flag: "*" = Keyline

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 | 1.843E+01 | 1.843E+01 | 0.196E+01 | 10.65 | |
| CD-109 | 464.00D | 1.03 | 1.377E+00 | 1.413E+00 | 0.728E+00 | 51.56 | |
| SN-126 | 1.00E+05Y | 1.00 | 1.385E-01 | 1.385E-01 | 0.714E-01 | 51.56 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.733E-01 | 2.733E-01 | 0.510E-01 | 18.65 | |
| BI-211 | 7.04E+08Y | 1.00 | 1.855E+00 | 1.855E+00 | 0.351E+00 | 18.92 | |
| PB-212 | 1.41E+10Y | 1.00 | 7.663E-01 | 7.663E-01 | 1.210E-01 | 15.79 | |
| PO-212 | 1.41E+10Y | 1.00 | 7.663E-01 | 7.663E-01 | 1.210E-01 | 15.79 | |
| BI-214 | 1600.00Y | 1.00 | 6.140E-01 | 6.140E-01 | 1.053E-01 | 17.14 | |
| PB-214 | 1600.00Y | 1.00 | 6.452E-01 | 6.452E-01 | 1.266E-01 | 19.62 | |
| PO-214 | 1600.00Y | 1.00 | 6.452E-01 | 6.452E-01 | 1.266E-01 | 19.62 | |
| PO-216 | 1.41E+10Y | 1.00 | 7.663E-01 | 7.663E-01 | 1.210E-01 | 15.79 | |
| PO-218 | 1600.00Y | 1.00 | 6.452E-01 | 6.452E-01 | 1.266E-01 | 19.62 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.326E+00 | 2.326E+00 | 0.861E+00 | 37.02 | |
| RA-226 | 1600.00Y | 1.00 | 6.140E-01 | 6.140E-01 | 1.053E-01 | 17.14 | |
| AC-228 | 1.41E+10Y | 1.00 | 7.343E-01 | 7.343E-01 | 2.093E-01 | 28.51 | |
| RA-228 | 1.41E+10Y | 1.00 | 7.343E-01 | 7.343E-01 | 2.093E-01 | 28.51 | |
| TH-228 | 1.91Y | 1.02 | 7.663E-01 | 7.794E-01 | 1.231E-01 | 15.79 | |
| TH-230 | 4.47E+09Y | 1.00 | 6.140E-01 | 6.140E-01 | 1.053E-01 | 17.14 | |
| TH-232 | 1.41E+10Y | 1.00 | 7.343E-01 | 7.343E-01 | 2.093E-01 | 28.51 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.517E+00 | 1.517E+00 | 1.149E+00 | 75.73 | |
| U-234 | 4.47E+09Y | 1.00 | 6.140E-01 | 6.140E-01 | 1.053E-01 | 17.14 | |
| NP-237 | 2.14E+06Y | 1.00 | 4.066E-01 | 4.066E-01 | 2.258E-01 | 55.54 | |
| U-238 | 4.47E+09Y | 1.00 | 1.517E+00 | 1.517E+00 | 1.149E+00 | 75.73 | |
| AM-243 | 7380.00Y | 1.00 | 1.844E-01 | 1.844E-01 | 0.530E-01 | 28.74 | |
| ANH-511 | 1.00E+09Y | 1.00 | 7.057E-02 | 7.057E-02 | 4.790E-02 | 67.89 | |
| Total Activity : | | | 3.776E+01 | 3.780E+01 | | | |

Grand Total Activity : 3.776E+01 3.780E+01

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

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

Unidentified Energy Lines
Sample ID : G246328001

Page : 5
Acquisition date : 18-FEB-2010 10:54:05

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 185.87 | 178 | 391 | 1.40 | 371.76 | 367 | 10 | 2.47E-02 | 47.1 | 7.61E+00 | T |
| 0 | 209.45 | 82 | 294 | 0.90 | 418.88 | 415 | 8 | 1.15E-02 | 75.5 | 7.18E+00 | T |
| 4 | 270.22 | 178 | 208 | 2.15 | 540.30 | 535 | 32 | 2.47E-02 | 34.9 | 6.27E+00 | T |
| 0 | 328.69 | 106 | 191 | 3.33 | 657.16 | 652 | 11 | 1.48E-02 | 54.4 | 5.62E+00 | T |
| 2 | 613.43 | 45 | 36 | 1.87 | 1226.24 | 1208 | 22 | 6.21E-03 | 57.2 | 3.79E+00 | T |
| 0 | 728.38 | 33 | 161 | 1.82 | 1456.02 | 1446 | 14 | 4.58E-03 | **** | 3.34E+00 | T |
| 3 | 965.23 | 88 | 111 | 3.10 | 1929.54 | 1921 | 26 | 1.23E-02 | 61.7 | 2.66E+00 | T |
| 0 | 1729.58 | 47 | 10 | 1.21 | 3458.33 | 3447 | 21 | 6.49E-03 | 45.3 | 1.73E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328001.CNF;1
* Acquisition date   : 18-FEB-2010 10:54:05  Detector SN#      :
* Detector ID        : GAM22                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.79          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G246328001             Analyst initials: MXR1
* Batch Number       : 950786                 Sample Quantity : 1.57110E+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 | 1.843E+01 | 1.962E+00 | 2.857E-01 | 2.617E-02 | 64.517 |
| CD-109 | 1.413E+00 | 7.284E-01 | 9.713E-01 | 9.217E-02 | 1.454 |
| SN-126 | 1.385E-01 | 7.139E-02 | 9.198E-02 | 8.685E-03 | 1.505 |
| TL-208 | 2.733E-01 | 5.098E-02 | 3.749E-02 | 4.065E-03 | 7.291 |
| BI-211 | 1.855E+00 | 3.509E-01 | 2.217E-01 | 2.587E-02 | 8.366 |
| PB-212 | 7.663E-01 | 1.210E-01 | 6.200E-02 | 8.192E-03 | 12.360 |
| PO-212 | 7.663E-01 | 1.210E-01 | 6.200E-02 | 8.192E-03 | 12.360 |
| BI-214 | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.685E-03 | 9.290 |
| PB-214 | 6.452E-01 | 1.266E-01 | 7.726E-02 | 9.848E-03 | 8.351 |
| PO-214 | 6.452E-01 | 1.266E-01 | 7.726E-02 | 9.848E-03 | 8.351 |
| PO-216 | 7.663E-01 | 1.210E-01 | 6.200E-02 | 8.192E-03 | 12.360 |
| PO-218 | 6.452E-01 | 1.266E-01 | 7.726E-02 | 9.848E-03 | 8.351 |
| RA-224 | 2.326E+00 | 8.611E-01 | 7.049E-01 | 8.824E-02 | 3.300 |
| AC-226 | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.685E-03 | 9.290 |
| AC-228 | 7.343E-01 | 2.093E-01 | 1.301E-01 | 1.724E-02 | 5.644 |
| RA-228 | 7.343E-01 | 2.093E-01 | 1.301E-01 | 1.724E-02 | 5.644 |
| TH-228 | 7.794E-01 | 1.231E-01 | 6.306E-02 | 8.332E-03 | 12.360 |
| TH-230 | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.684E-03 | 9.290 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-232 | 7.343E-01 | 2.093E-01 | 1.301E-01 | 1.724E-02 | 5.644 |
| TH-234 | 1.517E+00 | 1.149E+00 | 1.210E+00 | 2.107E-01 | 1.253 |
| U-234 | 6.140E-01 | 1.053E-01 | 6.609E-02 | 7.684E-03 | 9.290 |
| NP-237 | 4.066E-01 | 2.258E-01 | 2.568E-01 | 5.814E-02 | 1.583 |
| U-238 | 1.517E+00 | 1.149E+00 | 1.210E+00 | 2.107E-01 | 1.253 |
| AM-243 | 1.844E-01 | 5.301E-02 | 5.322E-02 | 4.338E-03 | 3.465 |
| ANH-511 | 7.057E-02 | 4.790E-02 | 2.840E-02 | 2.845E-03 | 2.485 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 2.273E-01 | | 2.240E-01 | 3.818E-01 | 3.984E-02 | 0.595 |
| NA-22 | -5.062E-03 | | 2.728E-02 | 4.445E-02 | 3.830E-03 | -0.114 |
| NA-24 | 1.201E+00 | | 1.842E+00 | Half-Life too short | | |
| AL-26 | 7.334E-05 | | 1.991E-02 | 3.277E-02 | 2.680E-03 | 0.002 |
| TI-44 | 1.563E-01 | + | 3.205E-02 | 4.488E-02 | 3.805E-03 | 3.483 |
| SC-46 | 4.066E-03 | | 2.443E-02 | 4.103E-02 | 4.593E-03 | 0.099 |
| V-48 | -2.565E-02 | | 4.645E-02 | 7.260E-02 | 7.614E-03 | -0.353 |
| CR-51 | 1.918E-01 | | 2.631E-01 | 4.528E-01 | 5.864E-02 | 0.424 |
| MN-52 | 5.604E-02 | | 1.670E-01 | 2.841E-01 | 2.539E-02 | 0.197 |
| MN-54 | 1.648E-02 | | 2.376E-02 | 4.130E-02 | 4.588E-03 | 0.399 |
| CO-56 | -4.670E-03 | | 2.648E-02 | 4.360E-02 | 4.853E-03 | -0.107 |
| CO-57 | 1.234E-02 | | 1.778E-02 | 2.899E-02 | 2.391E-03 | 0.426 |
| CO-58 | -9.214E-03 | | 2.375E-02 | 3.857E-02 | 4.271E-03 | -0.239 |
| FE-59 | -3.145E-02 | | 6.239E-02 | 9.718E-02 | 9.523E-03 | -0.324 |
| CO-60 | -2.273E-02 | | 2.800E-02 | 4.278E-02 | 3.815E-03 | -0.531 |
| ZN-65 | 2.776E-02 | | 6.976E-02 | 1.002E-01 | 8.943E-03 | 0.277 |
| GE-68 | -3.531E-01 | | 8.523E-01 | 1.342E+00 | 1.265E-01 | -0.263 |
| AS-73 | 1.916E-01 | | 4.843E-01 | 8.230E-01 | 6.219E-02 | 0.233 |
| AS-74 | -2.677E-04 | | 6.476E-02 | 1.073E-01 | 1.113E-02 | -0.002 |
| SE-75 | 8.862E-03 | | 3.537E-02 | 5.042E-02 | 6.787E-03 | 0.176 |
| BR-77 | 2.222E+00 | | 1.200E+01 | 1.895E+01 | 1.907E+00 | 0.117 |
| SR-82 | -1.423E-01 | | 2.747E-01 | 4.271E-01 | 4.684E-02 | -0.333 |
| RB-83 | 1.327E-03 | | 4.667E-02 | 7.286E-02 | 7.333E-03 | 0.018 |
| RB-84 | -5.560E-03 | | 4.700E-02 | 7.735E-02 | 8.651E-03 | -0.072 |
| KR-85 | 2.010E+01 | | 5.900E+00 | 9.744E+00 | 9.777E-01 | 2.063 |
| SR-85 | 1.051E-01 | | 3.084E-02 | 5.093E-02 | 5.111E-03 | 2.063 |
| RB-86 | 6.008E-02 | | 5.678E-01 | 9.318E-01 | 8.793E-02 | 0.064 |
| Y-88 | -2.778E-03 | | 2.023E-02 | 3.248E-02 | 2.626E-03 | -0.086 |
| ZR-88 | -3.868E-03 | | 2.043E-02 | 3.325E-02 | 3.096E-03 | -0.116 |
| Y-91 | -1.443E+00 | | 1.123E+01 | 1.850E+01 | 1.521E+00 | -0.078 |
| NB-94 | 3.564E-04 | | 2.150E-02 | 3.513E-02 | 3.765E-03 | 0.010 |
| NB-95 | 2.944E-02 | | 3.031E-02 | 5.172E-02 | 5.655E-03 | 0.569 |
| NB-95M | 9.073E-02 | | 9.929E-02 | 1.472E-01 | 1.945E-02 | 0.616 |
| ZR-95 | -1.691E-03 | | 4.569E-02 | 7.386E-02 | 8.574E-03 | -0.023 |
| NB-97 | 1.650E-02 | | 1.987E-01 | Half-Life too short | | |
| ZR-97 | 2.159E+01 | | 4.496E+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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| MO-99 | 4.438E+00 | | 1.245E+01 | 2.068E+01 | 3.423E+00 | 0.215 |
| TC-99M | -3.234E+12 | | 2.165E+12 | Half-Life too short | | |
| RH-101 | 8.863E-03 | | 2.417E-02 | 3.917E-02 | 4.273E-03 | 0.226 |
| RH-102 | -1.505E-02 | | 2.047E-02 | 3.153E-02 | 3.101E-03 | -0.477 |
| RU-103 | -7.380E-03 | | 2.777E-02 | 4.390E-02 | 6.588E-03 | -0.168 |
| RH-106 | 9.031E-02 | | 2.001E-01 | 3.394E-01 | 4.956E-02 | 0.266 |
| RU-106 | 9.031E-02 | | 1.999E-01 | 3.394E-01 | 3.545E-02 | 0.266 |
| AG-108M | 1.445E-02 | | 2.220E-02 | 3.743E-02 | 3.705E-03 | 0.386 |
| AG-110M | -1.232E-03 | | 2.334E-02 | 3.822E-02 | 4.107E-03 | -0.032 |
| IN-111 | -4.460E-01 | | 1.344E+00 | 1.858E+00 | 2.358E-01 | -0.240 |
| IN-113M | -7.038E-03 | | 2.949E-02 | 4.787E-02 | 4.571E-03 | -0.147 |
| SN-113 | -7.038E-03 | | 2.949E-02 | 4.787E-02 | 4.571E-03 | -0.147 |
| IN-114M | 1.077E-01 | | 1.401E-01 | 2.111E-01 | 2.244E-02 | 0.510 |
| CD-115 | -5.020E+00 | | 1.229E+01 | 2.009E+01 | 2.029E+00 | -0.250 |
| SN-117M | 3.381E-03 | | 4.049E-02 | 6.795E-02 | 6.444E-03 | 0.050 |
| SB-122 | 1.161E+00 | | 2.108E+00 | 3.619E+00 | 3.709E-01 | 0.321 |
| I-123 | 6.397E+00 | | 1.989E+01 | Half-Life too short | | |
| TE-123M | 3.114E-03 | | 1.936E-02 | 3.258E-02 | 3.112E-03 | 0.096 |
| I-124 | -6.126E-01 | | 7.054E-01 | 9.247E-01 | 9.605E-02 | -0.663 |
| SB-124 | -4.564E-03 | | 4.527E-02 | 7.385E-02 | 6.569E-03 | -0.062 |
| SB-125 | -2.740E-02 | | 6.221E-02 | 9.886E-02 | 9.592E-03 | -0.277 |
| TE-125M | 1.814E+00 | | 6.716E+00 | 1.085E+01 | 1.099E+00 | 0.167 |
| I-126 | 2.842E-02 | | 1.345E-01 | 2.235E-01 | 2.362E-02 | 0.127 |
| SB-126 | -1.858E-02 | | 1.175E-01 | 1.611E-01 | 1.737E-02 | -0.115 |
| SB-127 | 7.691E-01 | | 1.193E+00 | 2.031E+00 | 2.737E-01 | 0.379 |
| XE-127 | -7.992E-03 | | 3.394E-02 | 5.520E-02 | 6.119E-03 | -0.145 |
| I-131 | 5.276E-02 | | 9.029E-02 | 1.536E-01 | 1.704E-02 | 0.344 |
| TE-132 | 1.440E-01 | | 7.307E-01 | 1.198E+00 | 2.171E-01 | 0.120 |
| BA-133 | 5.695E-03 | | 3.271E-02 | 4.765E-02 | 7.121E-03 | 0.120 |
| I-133 | -6.904E-03 | | 8.446E-03 | Half-Life too short | | |
| CS-134 | 4.477E-02 | | 2.996E-02 | 5.272E-02 | 5.836E-03 | 0.849 |
| CS-135 | 1.680E-01 | | 1.303E-01 | 1.940E-01 | 2.807E-02 | 0.866 |
| I-135 | -1.538E+11 | | 1.944E+11 | Half-Life too short | | |
| CS-136 | -5.306E-02 | | 8.202E-02 | 1.232E-01 | 1.246E-02 | -0.431 |
| BA-137M | 9.747E-03 | | 2.423E-02 | 4.072E-02 | 4.294E-03 | 0.239 |
| CS-137 | 1.030E-02 | | 2.561E-02 | 4.304E-02 | 4.545E-03 | 0.239 |
| CE-139 | -8.694E-03 | | 2.047E-02 | 3.356E-02 | 3.291E-03 | -0.259 |
| BA-140 | -6.302E-02 | | 1.811E-01 | 2.946E-01 | 9.890E-02 | -0.214 |
| LA-140 | -4.009E-02 | | 6.346E-02 | 9.833E-02 | 8.619E-03 | -0.408 |
| CE-141 | 1.374E-02 | | 4.442E-02 | 7.554E-02 | 6.876E-03 | 0.182 |
| CE-143 | 9.781E-04 | | 1.870E-04 | Half-Life too short | | |
| CE-144 | -6.258E-02 | | 1.337E-01 | 2.220E-01 | 3.445E-02 | -0.282 |
| PM-144 | 1.687E-02 | | 2.161E-02 | 3.702E-02 | 3.959E-03 | 0.456 |
| PR-144 | 1.145E+00 | | 1.466E+00 | 2.511E+00 | 2.685E-01 | 0.456 |
| PM-146 | 1.173E-02 | | 2.756E-02 | 4.588E-02 | 5.332E-03 | 0.256 |
| ND-147 | 7.512E-02 | | 4.075E-01 | 6.894E-01 | 1.093E-01 | 0.109 |
| PM-149 | -4.183E+01 | | 1.317E+02 | 1.787E+02 | 3.382E+01 | -0.234 |
| EU-152 | 4.580E-03 | | 8.313E-02 | 1.056E-01 | 1.269E-02 | 0.043 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| GD-153 | -6.060E-02 | | 5.528E-02 | 7.993E-02 | 7.029E-03 | -0.758 |
| EU-154 | -1.297E-02 | | 7.621E-02 | 1.244E-01 | 1.405E-02 | -0.104 |
| EU-155 | 6.811E-02 | | 7.374E-02 | 1.223E-01 | 1.050E-02 | 0.557 |
| TB-160 | -5.400E-02 | | 9.434E-02 | 1.499E-01 | 1.676E-02 | -0.360 |
| HO-166M | 2.207E-02 | | 4.173E-02 | 6.769E-02 | 7.277E-03 | 0.326 |
| TM-171 | 2.194E-01 | | 1.895E+01 | 2.781E+01 | 2.101E+00 | 0.008 |
| LU-176 | -3.707E-03 | | 1.774E-02 | 2.677E-02 | 3.512E-03 | -0.138 |
| LU-177 | 1.443E+00 | + | 1.101E+00 | 1.593E+00 | 1.798E-01 | 0.906 |
| LU-177M | -7.499E-02 | | 1.232E-01 | 1.947E-01 | 1.842E-02 | -0.385 |
| HF-181 | -8.386E-03 | | 2.935E-02 | 4.652E-02 | 4.592E-03 | -0.180 |
| W-181 | -2.000E-01 | | 2.449E-01 | 3.441E-01 | 2.565E-02 | -0.581 |
| TA-182 | 8.144E-02 | | 1.295E-01 | 2.238E-01 | 1.861E-02 | 0.364 |
| RE-183 | 1.528E-02 | | 7.545E-02 | 1.269E-01 | 1.225E-02 | 0.120 |
| RE-184 | -1.141E-01 | | 1.670E-01 | 2.596E-01 | 3.368E-02 | -0.439 |
| OS-185 | -1.414E-03 | | 2.739E-02 | 4.492E-02 | 4.721E-03 | -0.031 |
| RE-188 | 7.824E-02 | | 1.171E-01 | 2.005E-01 | 1.872E-02 | 0.390 |
| W-188 | 1.871E+00 | | 5.532E+00 | 8.295E+00 | 1.133E+00 | 0.226 |
| IR-192 | -1.389E-02 | | 2.300E-02 | 3.727E-02 | 4.763E-03 | -0.373 |
| AU-195 | 1.274E-01 | | 1.483E-01 | 2.466E-01 | 2.150E-02 | 0.517 |
| TL-200 | 1.381E-05 | | 5.008E-04 | Half-Life too short | | |
| TL-201 | -2.802E+00 | | 7.195E+00 | 1.180E+01 | 1.163E+00 | -0.237 |
| TL-202 | -1.747E-02 | | 5.027E-02 | 8.008E-02 | 7.709E-03 | -0.218 |
| HG-203 | 3.476E-02 | | 3.037E-02 | 5.054E-02 | 7.153E-03 | 0.688 |
| BI-207 | -2.326E-03 | | 3.366E-02 | 5.455E-02 | 5.237E-03 | -0.043 |
| TL-207 | -1.384E-01 | | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| PO-209 | -6.438E-01 | | 4.610E+00 | 7.558E+00 | 8.466E-01 | -0.085 |
| BI-210 | 1.418E-01 | | 2.108E+00 | 3.450E+00 | 3.205E-01 | 0.041 |
| PB-210 | 1.418E-01 | | 2.108E+00 | 3.450E+00 | 3.205E-01 | 0.041 |
| PO-210 | 1.418E-01 | | 2.108E+00 | 3.450E+00 | 2.901E-01 | 0.041 |
| PB-211 | -1.838E-01 | | 6.376E-01 | 1.012E+00 | 6.355E-01 | -0.182 |
| BI-212 | 2.002E-01 | + | 3.347E-01 | 3.791E-01 | 4.528E-02 | 0.528 |
| PO-215 | -1.384E-01 | | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| RN-219 | -3.388E-01 | | 2.764E-01 | 4.138E-01 | 6.403E-02 | -0.819 |
| RN-220 | 5.733E+00 | | 1.582E+01 | 2.700E+01 | 2.752E+00 | 0.212 |
| RA-223 | -1.384E-01 | | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| AC-227 | -1.453E-01 | | 2.679E-01 | 4.184E-01 | 7.635E-02 | -0.347 |
| TH-227 | -1.453E-01 | | 2.683E-01 | 4.184E-01 | 8.612E-02 | -0.347 |
| TH-229 | -6.147E-01 | | 3.563E-01 | 5.358E-01 | 5.761E-02 | -1.147 |
| PA-231 | 5.270E-01 | | 1.172E+00 | 1.680E+00 | 3.138E-01 | 0.314 |
| TH-231 | -1.384E-01 | | 5.175E-01 | 7.380E-01 | 1.467E-01 | -0.188 |
| U-231 | -6.193E-01 | | 1.022E+00 | 1.416E+00 | 1.257E-01 | -0.437 |
| PA-233 | 2.790E-02 | | 4.124E-02 | 7.108E-02 | 9.311E-03 | 0.393 |
| PA-234 | -1.229E-01 | | 1.903E-01 | 2.952E-01 | 5.867E-02 | -0.416 |
| PA-234M | 1.432E+00 | | 3.238E+00 | 5.203E+00 | 5.963E-01 | 0.275 |
| U-235 | -2.987E-02 | | 1.536E-01 | 2.463E-01 | 4.345E-02 | -0.121 |
| NP-236 | -1.270E-02 | | 5.412E-02 | 8.966E-02 | 8.571E-03 | -0.142 |
| NP-239 | -5.212E-02 | | 1.297E-01 | 2.025E-01 | 1.673E-02 | -0.257 |
| AM-241 | 3.758E-02 | | 9.995E-02 | 1.518E-01 | 1.187E-02 | 0.248 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -1.624E-02 | | 6.619E-02 | 1.051E-01 | 8.958E-03 | -0.155 |
| AM-246 | -5.495E-02 | | 9.706E-02 | 1.508E-01 | 1.418E-02 | -0.364 |
| CM-247 | -1.638E-02 | | 2.398E-02 | 3.775E-02 | 3.541E-03 | -0.434 |
| CF-249 | 1.391E-02 | | 2.555E-02 | 4.326E-02 | 4.111E-03 | 0.322 |
| CF-251 | -3.383E-02 | | 8.514E-02 | 1.390E-01 | 1.412E-02 | -0.243 |

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]G246328001          *
* Acquisition date   : 18-FEB-2010 10:54:05 Detector SN#      :              *
* Detector ID        : GAM22                      Sensitivity   : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00           Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.79           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G246328001           Analyst initials: MXR1            *
* Batch Number       : 950786              Sample Quantity : 1.5711E+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 | 1.843E+01 | 1.923E+00 | 1.442E-01 | 9.811E-01 |
| CD-109 | 1.413E+00 | 7.138E-01 | 5.288E-01 | 3.642E-01 |
| SN-126 | 1.385E-01 | 6.997E-02 | 5.009E-02 | 3.570E-02 |
| TL-208 | 2.733E-01 | 4.996E-02 | 1.942E-02 | 2.549E-02 |
| BI-211 | 1.855E+00 | 3.439E-01 | 1.165E-01 | 1.754E-01 |
| PB-212 | 7.663E-01 | 1.186E-01 | 3.291E-02 | 6.050E-02 |
| PO-212 | 7.663E-01 | 1.186E-01 | 3.291E-02 | 6.050E-02 |
| BI-214 | 6.140E-01 | 1.032E-01 | 3.420E-02 | 5.263E-02 |
| PB-214 | 6.452E-01 | 1.241E-01 | 4.058E-02 | 6.331E-02 |
| PO-214 | 6.452E-01 | 1.241E-01 | 4.058E-02 | 6.331E-02 |
| PO-216 | 7.663E-01 | 1.186E-01 | 3.291E-02 | 6.050E-02 |
| PO-218 | 6.452E-01 | 1.241E-01 | 4.058E-02 | 6.331E-02 |
| RA-224 | 2.326E+00 | 8.439E-01 | 3.740E-01 | 4.305E-01 |
| RA-226 | 6.140E-01 | 1.032E-01 | 3.420E-02 | 5.263E-02 |
| AC-228 | 7.343E-01 | 2.051E-01 | 6.656E-02 | 1.047E-01 |
| TH-228 | 7.343E-01 | 2.051E-01 | 6.656E-02 | 1.047E-01 |
| TH-228 | 7.794E-01 | 1.206E-01 | 3.347E-02 | 6.153E-02 |
| TH-230 | 6.140E-01 | 1.032E-01 | 3.420E-02 | 5.263E-02 |
| TH-232 | 7.343E-01 | 2.051E-01 | 6.656E-02 | 1.047E-01 |
| TH-234 | 1.517E+00 | 1.126E+00 | 6.644E-01 | 5.743E-01 |
| U-234 | 6.140E-01 | 1.032E-01 | 3.420E-02 | 5.263E-02 |
| NP-237 | 4.066E-01 | 2.213E-01 | 1.399E-01 | 1.129E-01 |
| U-238 | 1.517E+00 | 1.126E+00 | 6.644E-01 | 5.743E-01 |
| AM-243 | 1.844E-01 | 5.195E-02 | 2.910E-02 | 2.651E-02 |
| ANH-511 | 7.057E-02 | 4.695E-02 | 1.477E-02 | 2.395E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 2.273E-01 | 2.196E-01 | 1.989E-01 | 1.120E-01 NOT IDENT. |
| NA-22 | -5.062E-03 | 2.673E-02 | 2.253E-02 | 1.364E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 1.201E+06 | 3.610E+06 | 0.000E+00 | 1.842E+06 | SHORT HLIF |
| AL-26 | 7.334E-05 | 1.952E-02 | 1.644E-02 | 9.957E-03 | NOT IDENT. |
| TI-44 | 1.563E-01 | 3.140E-02 | 2.450E-02 | 1.602E-02 | FAIL ABUN |
| SC-46 | 4.066E-03 | 2.394E-02 | 2.101E-02 | 1.222E-02 | FAIL ABUN |
| V-48 | -2.565E-02 | 4.552E-02 | 3.707E-02 | 2.322E-02 | NOT IDENT. |
| CR-51 | 1.918E-01 | 2.578E-01 | 2.385E-01 | 1.315E-01 | NOT IDENT. |
| MN-52 | 5.604E-02 | 1.636E-01 | 1.435E-01 | 8.348E-02 | NOT IDENT. |
| MN-54 | 1.648E-02 | 2.328E-02 | 2.118E-02 | 1.188E-02 | NOT IDENT. |
| CO-56 | -4.670E-03 | 2.595E-02 | 2.236E-02 | 1.324E-02 | NOT IDENT. |
| CO-57 | 1.234E-02 | 1.742E-02 | 1.565E-02 | 8.890E-03 | NOT IDENT. |
| CO-58 | -9.214E-03 | 2.328E-02 | 1.980E-02 | 1.188E-02 | NOT IDENT. |
| FE-59 | -3.145E-02 | 6.114E-02 | 4.946E-02 | 3.120E-02 | NOT IDENT. |
| CO-60 | -2.273E-02 | 2.744E-02 | 2.165E-02 | 1.400E-02 | NOT IDENT. |
| ZN-65 | 2.776E-02 | 6.836E-02 | 5.100E-02 | 3.488E-02 | NOT IDENT. |
| GE-68 | -3.531E-01 | 8.352E-01 | 6.833E-01 | 4.261E-01 | NOT IDENT. |
| AS-73 | 1.916E-01 | 4.746E-01 | 4.536E-01 | 2.421E-01 | NOT IDENT. |
| AS-74 | -2.677E-04 | 6.347E-02 | 5.558E-02 | 3.238E-02 | NOT IDENT. |
| SE-75 | 8.862E-03 | 3.466E-02 | 2.669E-02 | 1.769E-02 | NOT IDENT. |
| BR-77 | 2.222E+00 | 1.176E+01 | 9.847E+00 | 6.001E+00 | FAIL ABUN |
| SR-82 | -1.423E-01 | 2.692E-01 | 2.195E-01 | 1.374E-01 | NOT IDENT. |
| RB-83 | 1.327E-03 | 4.574E-02 | 3.787E-02 | 2.333E-02 | NOT IDENT. |
| RB-84 | -5.560E-03 | 4.606E-02 | 3.961E-02 | 2.350E-02 | NOT IDENT. |
| KR-85 | 2.010E+01 | 5.782E+00 | 5.066E+00 | 2.950E+00 | NOT IDENT. |
| SR-85 | 1.051E-01 | 3.022E-02 | 2.648E-02 | 1.542E-02 | NOT IDENT. |
| RB-86 | 6.008E-02 | 5.565E-01 | 4.746E-01 | 2.839E-01 | NOT IDENT. |
| Y-88 | -2.778E-03 | 1.982E-02 | 1.629E-02 | 1.011E-02 | NOT IDENT. |
| ZR-88 | -3.868E-03 | 2.003E-02 | 1.741E-02 | 1.022E-02 | NOT IDENT. |
| Y-91 | -1.443E+00 | 1.100E+01 | 9.391E+00 | 5.613E+00 | NOT IDENT. |
| NB-94 | 3.564E-04 | 2.107E-02 | 1.811E-02 | 1.075E-02 | NOT IDENT. |
| NB-95 | 2.944E-02 | 2.970E-02 | 2.659E-02 | 1.516E-02 | NOT IDENT. |
| NB-95M | 9.073E-02 | 9.731E-02 | 7.814E-02 | 4.965E-02 | NOT IDENT. |
| ZR-95 | -1.691E-03 | 4.478E-02 | 3.799E-02 | 2.285E-02 | NOT IDENT. |
| NB-97 | 1.650E+04 | 3.895E+05 | 0.000E+00 | 1.987E+05 | SHORT HLIF |
| ZR-97 | 2.159E+07 | 8.812E+06 | 0.000E+00 | 4.496E+06 | SHORT HLIF |
| MO-99 | 4.438E+00 | 1.220E+01 | 1.064E+01 | 6.225E+00 | NOT IDENT. |
| TC-99M | -3.234E+18 | 4.244E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 8.863E-03 | 2.368E-02 | 2.089E-02 | 1.208E-02 | NOT IDENT. |
| RH-102 | -1.505E-02 | 2.006E-02 | 1.643E-02 | 1.023E-02 | NOT IDENT. |
| RU-103 | -7.380E-03 | 2.722E-02 | 2.284E-02 | 1.389E-02 | FAIL ABUN |
| RH-106 | 9.031E-02 | 1.961E-01 | 1.755E-01 | 1.000E-01 | FAIL ABUN |
| RU-106 | 9.031E-02 | 1.959E-01 | 1.755E-01 | 9.994E-02 | FAIL ABUN |
| AG-108M | 1.445E-02 | 2.175E-02 | 1.955E-02 | 1.110E-02 | FAIL ABUN |
| AG-110M | -1.232E-03 | 2.288E-02 | 1.973E-02 | 1.167E-02 | NOT IDENT. |
| IN-111 | -4.460E-01 | 1.317E+00 | 9.856E-01 | 6.722E-01 | NOT IDENT. |
| IN-113M | -7.038E-03 | 2.890E-02 | 2.507E-02 | 1.475E-02 | NOT IDENT. |
| SN-113 | -7.038E-03 | 2.890E-02 | 2.507E-02 | 1.475E-02 | NOT IDENT. |
| IN-114M | 1.077E-01 | 1.373E-01 | 1.127E-01 | 7.006E-02 | NOT IDENT. |
| CD-115 | -5.020E+00 | 1.205E+01 | 1.044E+01 | 6.147E+00 | NOT IDENT. |
| SN-117M | 3.381E-03 | 3.968E-02 | 3.644E-02 | 2.024E-02 | NOT IDENT. |
| SB-122 | 1.161E+00 | 2.065E+00 | 1.877E+00 | 1.054E+00 | NOT IDENT. |
| I-123 | 6.397E+06 | 3.898E+07 | 0.000E+00 | 1.989E+07 | SHORT HLIF |
| TE-123M | 3.114E-03 | 1.898E-02 | 1.748E-02 | 9.682E-03 | NOT IDENT. |
| I-124 | -6.126E-01 | 6.913E-01 | 4.787E-01 | 3.527E-01 | NOT IDENT. |
| SB-124 | -4.564E-03 | 4.436E-02 | 3.712E-02 | 2.263E-02 | FAIL ABUN |
| SB-125 | -2.740E-02 | 6.096E-02 | 5.166E-02 | 3.110E-02 | NOT IDENT. |
| TE-125M | 1.814E+00 | 6.582E+00 | 5.874E+00 | 3.358E+00 | NOT IDENT. |
| I-126 | 2.842E-02 | 1.318E-01 | 1.154E-01 | 6.727E-02 | NOT IDENT. |
| SB-126 | -1.858E-02 | 1.151E-01 | 8.297E-02 | 5.873E-02 | FAIL ABUN |
| SB-127 | 7.691E-01 | 1.169E+00 | 1.048E+00 | 5.967E-01 | NOT IDENT. |
| XE-127 | -7.992E-03 | 3.326E-02 | 2.942E-02 | 1.697E-02 | NOT IDENT. |
| I-131 | 5.276E-02 | 8.849E-02 | 8.061E-02 | 4.515E-02 | NOT IDENT. |
| TE-132 | 1.440E-01 | 7.160E-01 | 6.365E-01 | 3.653E-01 | NOT IDENT. |
| BA-133 | 5.695E-03 | 3.205E-02 | 2.502E-02 | 1.635E-02 | FAIL ABUN |
| I-133 | -6.904E+03 | 1.655E+04 | 0.000E+00 | 8.446E+03 | SHORT HLIF |
| CS-134 | 4.477E-02 | 2.936E-02 | 2.708E-02 | 1.498E-02 | NOT IDENT. |
| CS-135 | 1.680E-01 | 1.277E-01 | 1.027E-01 | 6.517E-02 | NOT IDENT. |
| I-135 | -1.538E+17 | 3.810E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -5.306E-02 | 8.038E-02 | 6.280E-02 | 4.101E-02 | FAIL ABUN |
| BA-137M | 9.747E-03 | 2.375E-02 | 2.102E-02 | 1.212E-02 | NOT IDENT. |
| CS-137 | 1.030E-02 | 2.510E-02 | 2.222E-02 | 1.281E-02 | NOT IDENT. |
| CE-139 | -8.694E-03 | 2.006E-02 | 1.798E-02 | 1.023E-02 | NOT IDENT. |
| BA-140 | -6.302E-02 | 1.775E-01 | 1.530E-01 | 9.057E-02 | NOT IDENT. |
| LA-140 | -4.009E-02 | 6.219E-02 | 4.951E-02 | 3.173E-02 | FAIL ABUN |
| CE-141 | 1.374E-02 | 4.353E-02 | 4.061E-02 | 2.221E-02 | NOT IDENT. |
| CE-143 | 9.781E+02 | 3.664E+02 | 0.000E+00 | 1.870E+02 | SHORT HLIF |
| CE-144 | -6.258E-02 | 1.310E-01 | 1.196E-01 | 6.686E-02 | NOT IDENT. |
| PM-144 | 1.687E-02 | 2.118E-02 | 1.909E-02 | 1.081E-02 | NOT IDENT. |
| PR-144 | 1.145E+00 | 1.437E+00 | 1.295E+00 | 7.329E-01 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.173E-02 | 2.701E-02 | 2.393E-02 | 1.378E-02 | NOT IDENT. |
| ND-147 | 7.512E-02 | 3.993E-01 | 3.581E-01 | 2.037E-01 | NOT IDENT. |
| PM-149 | -4.183E+01 | 1.291E+02 | 9.440E+01 | 6.586E+01 | NOT IDENT. |
| EU-152 | 4.580E-03 | 8.147E-02 | 5.549E-02 | 4.157E-02 | FAIL ABUN |
| GD-153 | -6.060E-02 | 5.418E-02 | 4.341E-02 | 2.764E-02 | NOT IDENT. |
| EU-154 | -1.297E-02 | 7.469E-02 | 6.302E-02 | 3.811E-02 | NOT IDENT. |
| EU-155 | 6.811E-02 | 7.227E-02 | 6.627E-02 | 3.687E-02 | FAIL ABUN |
| TB-160 | -5.400E-02 | 9.245E-02 | 7.678E-02 | 4.717E-02 | FAIL ABUN |
| HO-166M | 2.207E-02 | 4.089E-02 | 3.488E-02 | 2.086E-02 | FAIL ABUN |
| TM-171 | 2.194E-01 | 1.857E+01 | 1.524E+01 | 9.476E+00 | NOT IDENT. |
| LU-176 | -3.707E-03 | 1.738E-02 | 1.411E-02 | 8.869E-03 | FAIL ABUN |
| LU-177 | 1.443E+00 | 1.079E+00 | 8.483E-01 | 5.507E-01 | FAIL ABUN |
| LU-177M | -7.499E-02 | 1.207E-01 | 1.018E-01 | 6.159E-02 | FAIL ABUN |
| HF-181 | -8.386E-03 | 2.877E-02 | 2.423E-02 | 1.468E-02 | NOT IDENT. |
| W-181 | -2.000E-01 | 2.400E-01 | 1.887E-01 | 1.225E-01 | NOT IDENT. |
| TA-182 | 8.144E-02 | 1.269E-01 | 1.135E-01 | 6.476E-02 | FAIL ABUN |
| RE-183 | 1.528E-02 | 7.394E-02 | 6.805E-02 | 3.773E-02 | FAIL ABUN |
| RE-184 | -1.141E-01 | 1.636E-01 | 1.376E-01 | 8.348E-02 | NOT IDENT. |
| OS-185 | -1.414E-03 | 2.685E-02 | 2.321E-02 | 1.370E-02 | NOT IDENT. |
| RE-188 | 7.824E-02 | 1.147E-01 | 1.076E-01 | 5.853E-02 | NOT IDENT. |
| W-188 | 1.871E+00 | 5.421E+00 | 4.380E+00 | 2.766E+00 | FAIL ABUN |
| IR-192 | -1.389E-02 | 2.254E-02 | 1.963E-02 | 1.150E-02 | FAIL ABUN |
| AU-195 | 1.274E-01 | 1.454E-01 | 1.338E-01 | 7.416E-02 | FAIL ABUN |
| TL-200 | 1.381E+01 | 9.815E+02 | 0.000E+00 | 5.008E+02 | SHORT HLIF |
| TL-201 | -2.802E+00 | 7.051E+00 | 6.323E+00 | 3.598E+00 | NOT IDENT. |
| TL-202 | -1.747E-02 | 4.927E-02 | 4.181E-02 | 2.514E-02 | NOT IDENT. |
| HG-203 | 3.476E-02 | 2.976E-02 | 2.671E-02 | 1.518E-02 | NOT IDENT. |
| BI-207 | -2.326E-03 | 3.299E-02 | 2.779E-02 | 1.683E-02 | FAIL ABUN |
| TL-207 | -1.384E-01 | 5.072E-01 | 3.885E-01 | 2.588E-01 | FAIL ABUN |
| PO-209 | -6.438E-01 | 4.518E+00 | 3.869E+00 | 2.305E+00 | NOT IDENT. |
| BI-210 | 1.418E-01 | 2.065E+00 | 1.908E+00 | 1.054E+00 | NOT IDENT. |
| PB-210 | 1.418E-01 | 2.065E+00 | 1.908E+00 | 1.054E+00 | NOT IDENT. |
| PO-210 | 1.418E-01 | 2.065E+00 | 1.908E+00 | 1.054E+00 | NOT IDENT. |
| PB-211 | -1.838E-01 | 6.249E-01 | 5.297E-01 | 3.188E-01 | NOT IDENT. |
| BI-212 | 2.002E-01 | 3.280E-01 | 1.952E-01 | 1.674E-01 | FAIL ABUN |
| PO-215 | -1.384E-01 | 5.072E-01 | 3.885E-01 | 2.588E-01 | FAIL ABUN |
| RN-219 | -3.388E-01 | 2.708E-01 | 2.166E-01 | 1.382E-01 | FAIL ABUN |
| RN-220 | 5.733E+00 | 1.550E+01 | 1.401E+01 | 7.911E+00 | NOT IDENT. |
| RA-223 | -1.384E-01 | 5.072E-01 | 3.885E-01 | 2.588E-01 | FAIL ABUN |
| AC-227 | -1.453E-01 | 2.626E-01 | 2.216E-01 | 1.340E-01 | FAIL ABUN |
| TH-227 | -1.453E-01 | 2.629E-01 | 2.216E-01 | 1.341E-01 | FAIL ABUN |
| TH-229 | -6.147E-01 | 3.492E-01 | 2.859E-01 | 1.782E-01 | FAIL ABUN |
| PA-231 | 5.270E-01 | 1.149E+00 | 8.878E-01 | 5.862E-01 | FAIL ABUN |
| TH-231 | -1.384E-01 | 5.072E-01 | 3.885E-01 | 2.588E-01 | FAIL ABUN |
| U-231 | -6.193E-01 | 1.001E+00 | 7.693E-01 | 5.108E-01 | FAIL ABUN |
| PA-233 | 2.790E-02 | 4.041E-02 | 3.746E-02 | 2.062E-02 | FAIL ABUN |
| PA-234 | -1.229E-01 | 1.865E-01 | 1.509E-01 | 9.516E-02 | FAIL ABUN |
| PA-234M | 1.432E+00 | 3.173E+00 | 2.656E+00 | 1.619E+00 | NOT IDENT. |
| U-235 | -2.987E-02 | 1.505E-01 | 1.324E-01 | 7.679E-02 | FAIL ABUN |
| NP-236 | -1.270E-02 | 5.304E-02 | 4.808E-02 | 2.706E-02 | FAIL ABUN |
| NP-239 | -5.212E-02 | 1.271E-01 | 1.094E-01 | 6.485E-02 | FAIL ABUN |
| AM-241 | 3.758E-02 | 9.795E-02 | 8.345E-02 | 4.997E-02 | NOT IDENT. |
| CM-243 | -1.624E-02 | 6.487E-02 | 5.697E-02 | 3.310E-02 | FAIL ABUN |
| AM-246 | -5.495E-02 | 9.512E-02 | 7.678E-02 | 4.853E-02 | NOT IDENT. |
| CM-247 | -1.638E-02 | 2.350E-02 | 1.976E-02 | 1.199E-02 | FAIL ABUN |
| CF-249 | 1.391E-02 | 2.504E-02 | 2.266E-02 | 1.278E-02 | NOT IDENT. |
| CF-251 | -3.383E-02 | 8.344E-02 | 7.435E-02 | 4.257E-02 | NOT IDENT. |

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

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| | |
|-------|----------|
| 46.50 | 243.8567 |
| 46.50 | 243.8567 |
| 46.50 | 243.8567 |
| 48.70 | 272.8423 |
| 49.72 | 251.1973 |
| 51.35 | 251.1913 |
| 52.39 | 243.0644 |
| 52.97 | 230.6571 |
| 53.15 | 244.7988 |
| 53.44 | 250.6962 |
| 54.07 | 243.8976 |
| 56.28 | 298.0453 |
| 56.28 | 298.0485 |
| 57.37 | 0.0000 |
| 57.53 | 279.6737 |
| 57.53 | 279.6759 |
| 57.60 | 263.6325 |
| 57.98 | 263.0900 |
| 57.98 | 263.0900 |
| 59.32 | 297.9320 |
| 59.32 | 297.9320 |
| 59.40 | 298.0264 |
| 59.54 | 298.1923 |
| 59.72 | 298.4057 |
| 60.01 | 298.7485 |
| 61.10 | 325.9932 |
| 61.14 | 326.0436 |
| 61.30 | 326.2466 |
| 63.00 | 321.6077 |
| 63.29 | 321.9631 |
| 63.29 | 321.9631 |
| 63.58 | 322.3169 |
| 64.28 | 363.5645 |
| 65.12 | 369.1017 |
| 65.20 | 361.8861 |
| 65.20 | 361.8861 |
| 66.05 | 358.6151 |
| 66.72 | 352.1290 |
| 66.83 | 352.2712 |
| 66.91 | 352.3751 |
| 67.20 | 354.2230 |
| 67.20 | 354.2230 |
| 67.75 | 340.7309 |
| 67.85 | 340.8548 |
| 68.90 | 376.5923 |
| 68.90 | 376.5923 |
| 69.30 | 386.6457 |
| 69.67 | 379.7102 |
| 70.82 | 381.2451 |
| 70.82 | 381.2451 |
| 70.83 | 381.2588 |
| 72.80 | 359.7782 |
| 72.87 | 359.8658 |
| 72.87 | 359.8658 |
| 74.67 | 377.7208 |
| 74.81 | 377.8977 |
| 74.81 | 377.8977 |
| 74.81 | 377.8977 |
| 74.81 | 377.8977 |
| 74.81 | 377.8977 |
| 74.81 | 377.8977 |
| 74.81 | 377.8977 |
| 74.97 | 378.1013 |
| 75.28 | 378.4931 |
| 75.70 | 379.0220 |
| 77.11 | 380.7892 |
| 77.11 | 380.7892 |

| | |
|--------|----------|
| 77.11 | 380.7892 |
| 77.11 | 380.7892 |
| 77.11 | 380.7892 |
| 77.11 | 380.7892 |
| 77.11 | 380.7892 |
| 78.38 | 395.6589 |
| 79.62 | 354.1300 |
| 79.80 | 354.3336 |
| 79.80 | 354.3336 |
| 80.11 | 356.2266 |
| 80.18 | 356.3059 |
| 80.30 | 356.4417 |
| 80.30 | 356.4417 |
| 80.57 | 356.7466 |
| 81.00 | 408.2662 |
| 81.07 | 408.3569 |
| 81.07 | 408.3569 |
| 81.07 | 408.3569 |
| 81.07 | 408.3569 |
| 82.60 | 396.3305 |
| 83.37 | 397.2741 |
| 83.78 | 388.4204 |
| 83.78 | 388.4204 |
| 83.78 | 388.4204 |
| 83.78 | 388.4204 |
| 84.21 | 359.2574 |
| 84.90 | 360.0155 |
| 85.43 | 362.1641 |
| 86.29 | 466.8496 |
| 86.50 | 467.1442 |
| 86.54 | 467.2008 |
| 86.59 | 467.2711 |
| 86.72 | 467.4546 |
| 86.79 | 527.6858 |
| 86.94 | 527.9262 |
| 87.30 | 528.4940 |
| 87.30 | 528.4940 |
| 87.30 | 528.4940 |
| 87.30 | 528.4940 |
| 87.30 | 528.4940 |
| 87.30 | 528.4940 |
| 87.57 | 528.9185 |
| 87.88 | 571.7342 |
| 88.03 | 571.9883 |
| 88.36 | 496.6284 |
| 88.47 | 496.7914 |
| 89.95 | 575.2252 |
| 91.11 | 532.5240 |
| 92.29 | 424.9069 |
| 92.38 | 425.0164 |
| 92.38 | 425.0164 |
| 93.35 | 308.0889 |
| 94.00 | 299.0103 |
| 94.67 | 322.1191 |
| 94.67 | 322.1237 |
| 94.90 | 322.3312 |
| 94.90 | 322.3312 |
| 94.90 | 322.3312 |
| 94.90 | 322.3312 |
| 95.87 | 336.1322 |
| 95.87 | 336.1322 |
| 96.73 | 330.4557 |
| 97.43 | 363.5505 |
| 98.44 | 321.1544 |
| 98.44 | 321.1559 |
| 98.88 | 298.7279 |
| 99.55 | 280.7703 |
| 99.55 | 280.7703 |
| 99.86 | 301.6979 |
| 100.00 | 301.8120 |
| 100.10 | 294.2674 |
| 103.18 | 345.0282 |
| 103.76 | 341.1517 |
| 105.00 | 308.0284 |
| 105.31 | 310.4852 |
| 108.00 | 379.3843 |
| 109.28 | 349.3581 |

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| 111.00 | 310.5063 |
| 111.00 | 310.5063 |
| 111.76 | 351.5216 |
| 112.95 | 332.2771 |
| 115.19 | 353.3423 |
| 116.30 | 321.3560 |
| 117.00 | 319.6180 |
| 117.00 | 319.6180 |
| 117.66 | 330.3727 |
| 121.11 | 305.4925 |
| 121.62 | 298.9548 |
| 121.78 | 299.0645 |
| 122.06 | 298.1066 |
| 122.32 | 298.2845 |
| 122.32 | 298.2845 |
| 122.32 | 298.2845 |
| 122.32 | 298.2845 |
| 123.07 | 318.4119 |
| 127.23 | 326.0764 |
| 129.76 | 334.6424 |
| 131.20 | 370.0603 |
| 133.02 | 348.5225 |
| 133.54 | 332.0875 |
| 135.34 | 340.4782 |
| 136.00 | 339.1741 |
| 136.25 | 339.3543 |
| 136.48 | 334.1732 |
| 140.51 | 390.0146 |
| 140.51 | 0.0000 |
| 142.18 | 349.8755 |
| 142.65 | 367.3595 |
| 143.76 | 359.1422 |
| 144.24 | 363.1125 |
| 144.24 | 363.1125 |
| 144.24 | 363.1125 |
| 144.24 | 363.1125 |
| 145.22 | 344.7780 |
| 145.44 | 348.5625 |
| 147.16 | 374.3533 |
| 152.43 | 317.5020 |
| 152.70 | 327.7964 |
| 153.22 | 326.2816 |
| 154.21 | 325.9794 |
| 154.21 | 325.9794 |
| 154.21 | 325.9794 |
| 154.21 | 325.9794 |
| 155.03 | 315.3922 |
| 156.02 | 319.6946 |
| 158.56 | 321.2318 |
| 159.00 | 0.0000 |
| 159.00 | 320.5631 |
| 160.31 | 336.2943 |
| 161.27 | 333.1497 |
| 162.32 | 320.6667 |
| 162.64 | 323.6718 |
| 163.35 | 322.2141 |
| 163.89 | 309.3662 |
| 165.85 | 337.8374 |
| 167.43 | 330.2842 |
| 171.28 | 296.3436 |
| 171.86 | 287.1065 |
| 172.10 | 287.2282 |
| 176.55 | 316.3844 |
| 176.60 | 316.4120 |
| 181.06 | 303.8981 |
| 184.41 | 304.0472 |
| 185.71 | 320.3275 |
| 186.00 | 320.4827 |
| 190.27 | 278.6454 |
| 192.34 | 304.0593 |
| 193.63 | 361.0763 |
| 197.04 | 307.3356 |
| 198.01 | 301.8257 |
| 198.60 | 331.0172 |
| 200.40 | 321.9509 |
| 201.83 | 357.7381 |
| 202.84 | 331.1959 |
| 205.31 | 356.2249 |

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| 208.36 | 348.1572 |
| 208.81 | 333.2019 |
| 209.75 | 336.7138 |
| 209.75 | 336.7138 |
| 210.97 | 286.1182 |
| 215.65 | 302.8336 |
| 216.55 | 323.7197 |
| 218.09 | 285.4298 |
| 222.10 | 297.4087 |
| 223.80 | 317.7977 |
| 226.40 | 301.3038 |
| 227.00 | 295.3191 |
| 227.08 | 295.3516 |
| 227.20 | 289.1606 |
| 228.16 | 297.8810 |
| 228.18 | 297.8898 |
| 228.18 | 297.8898 |
| 231.56 | 0.0000 |
| 235.69 | 292.9899 |
| 236.00 | 289.7461 |
| 236.00 | 289.7461 |
| 238.63 | 278.9431 |
| 238.63 | 278.9431 |
| 238.63 | 278.9431 |
| 238.63 | 278.9431 |
| 239.00 | 279.0820 |
| 240.98 | 279.8232 |
| 241.98 | 280.1979 |
| 241.98 | 280.1979 |
| 241.98 | 280.1979 |
| 244.69 | 279.5007 |
| 245.39 | 279.7589 |
| 247.94 | 240.8409 |
| 248.90 | 249.5570 |
| 249.79 | 262.7126 |
| 252.40 | 252.8412 |
| 252.85 | 270.2111 |
| 252.85 | 270.2111 |
| 254.15 | 0.0000 |
| 256.20 | 259.4778 |
| 256.20 | 259.4778 |
| 260.50 | 252.1924 |
| 260.90 | 253.4074 |
| 262.80 | 256.1886 |
| 264.65 | 230.7712 |
| 268.24 | 238.8135 |
| 268.79 | 214.3757 |
| 269.46 | 249.7238 |
| 269.46 | 249.7238 |
| 269.46 | 249.7238 |
| 269.46 | 249.7238 |
| 271.23 | 226.9093 |
| 273.65 | 227.5725 |
| 276.40 | 228.3238 |
| 277.35 | 228.5815 |
| 277.60 | 228.6476 |
| 277.60 | 228.6476 |
| 278.00 | 228.7576 |
| 278.60 | 228.9210 |
| 279.20 | 229.0845 |
| 279.53 | 229.1725 |
| 280.46 | 229.4240 |
| 281.68 | 205.2172 |
| 283.67 | 196.7512 |
| 284.30 | 218.3758 |
| 285.00 | 234.6774 |
| 285.90 | 233.1304 |
| 286.10 | 222.4220 |
| 286.10 | 222.4220 |
| 287.40 | 221.9851 |
| 288.45 | 0.0000 |
| 290.67 | 213.3756 |
| 290.80 | 213.4073 |
| 291.72 | 234.6951 |
| 293.26 | 0.0000 |
| 293.70 | 232.2063 |
| 295.21 | 214.4792 |
| 295.21 | 214.4792 |

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| 295.21 | 214.4792 |
| 295.96 | 172.3336 |
| 296.50 | 172.4380 |
| 297.23 | 172.5795 |
| 298.57 | 172.8392 |
| 299.80 | 173.0758 |
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| 300.09 | 173.1338 |
| 300.09 | 173.1338 |
| 300.09 | 173.1338 |
| 300.09 | 173.1338 |
| 300.12 | 173.1384 |
| 301.29 | 193.1329 |
| 302.84 | 188.8961 |
| 303.76 | 182.9883 |
| 303.91 | 183.0176 |
| 304.40 | 186.1696 |
| 304.40 | 186.1696 |
| 304.84 | 187.7857 |
| 306.84 | 207.2152 |
| 308.46 | 198.6478 |
| 311.98 | 178.1716 |
| 316.51 | 208.7238 |
| 318.01 | 209.0588 |
| 319.02 | 198.1196 |
| 319.41 | 191.6891 |
| 320.08 | 193.6848 |
| 323.87 | 225.9341 |
| 323.87 | 225.9341 |
| 323.87 | 225.9341 |
| 323.87 | 225.9341 |
| 325.23 | 241.8564 |
| 328.77 | 195.4494 |
| 333.44 | 198.2772 |
| 334.20 | 165.3592 |
| 334.20 | 165.3592 |
| 334.30 | 198.4515 |
| 338.28 | 174.5821 |
| 338.28 | 174.5821 |
| 338.28 | 174.5821 |
| 338.28 | 174.5821 |
| 338.32 | 174.5911 |
| 338.32 | 174.5911 |
| 338.32 | 174.5911 |
| 340.50 | 191.7729 |
| 340.57 | 191.7852 |
| 344.27 | 186.1307 |
| 345.85 | 173.9953 |
| 350.59 | 0.0000 |
| 351.07 | 195.0703 |
| 351.92 | 195.2314 |
| 351.92 | 195.2314 |
| 351.92 | 195.2314 |
| 355.39 | 0.0000 |
| 356.01 | 181.8456 |
| 364.48 | 166.4516 |
| 366.43 | 180.4111 |
| 367.43 | 178.6283 |
| 367.94 | 0.0000 |
| 369.80 | 179.0237 |
| 374.96 | 167.1072 |
| 383.85 | 161.5336 |
| 387.95 | 152.1838 |
| 388.63 | 167.2063 |
| 391.69 | 172.6537 |
| 391.69 | 172.6537 |
| 392.90 | 170.8414 |
| 398.62 | 157.6478 |
| 400.65 | 179.0517 |
| 401.10 | 193.2117 |
| 401.81 | 192.3243 |
| 402.60 | 176.3351 |
| 404.84 | 183.7440 |
| 410.95 | 176.5934 |
| 411.60 | 175.6757 |
| 413.65 | 195.3094 |
| 414.70 | 170.0314 |
| 415.30 | 155.8557 |

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| 415.76 | 143.6885 |
| 417.63 | 0.0000 |
| 418.52 | 185.9013 |
| 423.70 | 152.8560 |
| 427.08 | 165.6303 |
| 427.89 | 169.8582 |
| 432.53 | 159.1396 |
| 433.93 | 147.9418 |
| 439.47 | 169.3931 |
| 439.56 | 153.8156 |
| 439.89 | 162.1737 |
| 443.98 | 139.7611 |
| 444.90 | 141.9517 |
| 445.03 | 141.9666 |
| 445.03 | 141.9666 |
| 445.03 | 141.9666 |
| 445.03 | 141.9666 |
| 453.90 | 128.2489 |
| 463.38 | 130.2581 |
| 468.07 | 191.3093 |
| 473.00 | 146.1545 |
| 475.06 | 170.9570 |
| 475.35 | 173.1336 |
| 476.78 | 136.9438 |
| 477.59 | 130.6034 |
| 477.96 | 128.4990 |
| 482.03 | 147.1496 |
| 484.57 | 131.2870 |
| 487.03 | 144.4622 |
| 490.36 | 0.0000 |
| 492.35 | 130.9598 |
| 497.08 | 139.0141 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 120.6509 |
| 511.00 | 120.6643 |
| 511.85 | 120.7361 |
| 511.85 | 120.7361 |
| 513.99 | 108.0946 |
| 513.99 | 108.0946 |
| 520.41 | 123.9184 |
| 520.65 | 123.9403 |
| 527.90 | 137.8232 |
| 528.96 | 0.0000 |
| 529.64 | 142.6173 |
| 529.87 | 0.0000 |
| 531.02 | 129.7774 |
| 537.32 | 131.2667 |
| 543.00 | 136.4443 |
| 546.56 | 0.0000 |
| 549.76 | 108.8987 |
| 552.65 | 126.9800 |
| 555.20 | 106.4663 |
| 563.23 | 120.2872 |
| 563.90 | 121.2891 |
| 568.70 | 123.5677 |
| 569.32 | 124.5662 |
| 569.50 | 119.8271 |
| 569.67 | 119.8400 |
| 573.80 | 140.4442 |
| 574.00 | 137.3408 |
| 574.64 | 124.8045 |
| 578.91 | 111.5317 |
| 579.30 | 0.0000 |
| 583.14 | 124.7129 |
| 585.48 | 103.7615 |
| 591.81 | 125.0095 |
| 592.07 | 123.1336 |
| 593.00 | 137.0714 |
| 595.88 | 133.4489 |
| 600.56 | 131.3425 |
| 602.52 | 0.0000 |
| 602.71 | 161.4817 |
| 602.71 | 161.4817 |
| 603.60 | 164.9010 |
| 604.41 | 159.9844 |
| 604.70 | 151.6772 |
| 609.31 | 110.1791 |

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|--------|----------|
| 609.31 | 110.1791 |
| 609.31 | 110.1791 |
| 609.31 | 110.1791 |
| 610.33 | 110.2481 |
| 612.46 | 103.8314 |
| 614.37 | 115.6867 |
| 618.01 | 115.9417 |
| 621.84 | 105.1213 |
| 621.84 | 105.1213 |
| 631.29 | 101.7594 |
| 633.02 | 126.5885 |
| 633.10 | 124.6157 |
| 634.78 | 122.7588 |
| 635.90 | 113.9237 |
| 636.97 | 108.0486 |
| 645.85 | 109.6039 |
| 646.12 | 110.6183 |
| 656.30 | 128.3073 |
| 657.75 | 126.4076 |
| 657.90 | 0.0000 |
| 661.65 | 126.6870 |
| 661.65 | 126.6870 |
| 664.57 | 0.0000 |
| 666.33 | 128.0309 |
| 666.33 | 128.0309 |
| 675.00 | 100.2891 |
| 677.61 | 102.4631 |
| 685.20 | 95.7633 |
| 692.80 | 108.4369 |
| 695.00 | 113.6874 |
| 696.49 | 99.4293 |
| 696.49 | 99.4293 |
| 697.00 | 99.4570 |
| 697.49 | 105.6362 |
| 698.33 | 121.0753 |
| 698.50 | 121.0873 |
| 699.00 | 122.1450 |
| 702.63 | 117.2424 |
| 706.10 | 121.5819 |
| 706.58 | 0.0000 |
| 706.67 | 112.3442 |
| 709.31 | 113.5337 |
| 711.68 | 104.3761 |
| 713.82 | 114.8414 |
| 717.42 | 105.1658 |
| 720.50 | 108.5733 |
| 721.93 | 0.0000 |
| 722.20 | 92.6359 |
| 722.78 | 96.2289 |
| 722.78 | 96.2289 |
| 722.89 | 96.2346 |
| 722.95 | 96.2365 |
| 723.30 | 94.4728 |
| 724.18 | 101.6485 |
| 727.18 | 117.8825 |
| 733.00 | 134.3628 |
| 735.90 | 110.7526 |
| 739.58 | 106.9576 |
| 742.81 | 110.2872 |
| 744.21 | 99.8532 |
| 747.13 | 109.4759 |
| 751.79 | 112.9016 |
| 752.31 | 97.1005 |
| 753.82 | 90.8361 |
| 755.35 | 103.5907 |
| 756.15 | 99.4026 |
| 756.87 | 103.6704 |
| 763.93 | 146.5043 |
| 765.79 | 121.1366 |
| 766.42 | 114.7961 |
| 766.84 | 120.1361 |
| 776.49 | 121.7802 |
| 778.00 | 113.3173 |
| 778.57 | 108.0029 |
| 778.89 | 97.3244 |
| 783.80 | 93.2712 |
| 785.46 | 98.7121 |
| 792.07 | 102.2576 |

| | |
|---------|----------|
| 795.84 | 80.8762 |
| 796.30 | 84.1302 |
| 798.80 | 118.7885 |
| 801.93 | 94.0925 |
| 805.60 | 87.2923 |
| 810.29 | 94.0024 |
| 810.76 | 90.2998 |
| 815.85 | 94.2489 |
| 817.79 | 92.4672 |
| 818.51 | 94.3669 |
| 819.60 | 81.3273 |
| 826.30 | 97.5254 |
| 828.27 | 0.0000 |
| 831.60 | 95.8847 |
| 831.96 | 94.9605 |
| 834.83 | 95.0873 |
| 836.80 | 0.0000 |
| 846.75 | 105.0749 |
| 848.13 | 97.5630 |
| 856.28 | 0.0000 |
| 856.80 | 135.0342 |
| 860.37 | 80.0068 |
| 867.32 | 130.8959 |
| 867.82 | 122.3237 |
| 871.10 | 95.7049 |
| 873.19 | 89.0882 |
| 874.81 | 86.2756 |
| 875.33 | 0.0000 |
| 876.40 | 86.3368 |
| 879.36 | 103.7398 |
| 880.27 | 101.8594 |
| 880.51 | 100.9094 |
| 881.50 | 92.3002 |
| 883.24 | 90.4462 |
| 884.67 | 85.6895 |
| 889.25 | 79.1086 |
| 896.60 | 85.1687 |
| 898.02 | 85.2208 |
| 899.00 | 80.4120 |
| 903.28 | 91.0438 |
| 911.07 | 81.8042 |
| 911.07 | 81.8042 |
| 911.07 | 81.8042 |
| 919.63 | 80.3925 |
| 920.93 | 91.2760 |
| 925.00 | 96.0039 |
| 925.24 | 99.9331 |
| 926.50 | 93.1246 |
| 935.52 | 81.6698 |
| 937.48 | 77.7973 |
| 944.10 | 84.9232 |
| 946.00 | 90.9203 |
| 949.00 | 65.3060 |
| 962.29 | 66.1602 |
| 964.01 | 87.1124 |
| 966.15 | 79.7154 |
| 968.20 | 79.7810 |
| 969.11 | 79.8117 |
| 969.11 | 79.8117 |
| 969.11 | 79.8117 |
| 977.42 | 59.5581 |
| 980.50 | 65.8378 |
| 983.50 | 80.2734 |
| 989.30 | 72.4131 |
| 996.32 | 107.9143 |
| 1001.03 | 81.8433 |
| 1001.68 | 84.8965 |
| 1004.76 | 91.0704 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 93.1582 |
| 1036.00 | 89.1028 |
| 1037.82 | 78.9148 |
| 1038.57 | 72.7879 |
| 1038.76 | 0.0000 |
| 1045.16 | 86.3291 |
| 1046.59 | 89.4608 |
| 1048.07 | 91.5702 |

| | |
|---------|----------|
| 1050.47 | 71.0552 |
| 1050.47 | 71.0552 |
| 1062.04 | 78.6030 |
| 1063.62 | 82.7902 |
| 1076.63 | 87.3486 |
| 1077.35 | 96.7334 |
| 1078.86 | 98.8700 |
| 1085.78 | 89.7283 |
| 1099.22 | 95.4116 |
| 1112.02 | 71.8872 |
| 1112.84 | 84.8153 |
| 1115.52 | 92.2791 |
| 1120.29 | 96.1321 |
| 1120.29 | 96.1321 |
| 1120.29 | 96.1321 |
| 1120.29 | 96.1321 |
| 1120.51 | 96.1416 |
| 1121.28 | 94.3176 |
| 1124.00 | 0.0000 |
| 1129.67 | 86.5601 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 95.8647 |
| 1173.22 | 90.3867 |
| 1175.09 | 102.6931 |
| 1177.93 | 99.9637 |
| 1189.05 | 116.4311 |
| 1204.90 | 84.6950 |
| 1205.75 | 0.0000 |
| 1213.00 | 105.9154 |
| 1221.42 | 97.5985 |
| 1230.97 | 146.8553 |
| 1235.34 | 110.5394 |
| 1236.41 | 0.0000 |
| 1238.25 | 101.0234 |
| 1246.25 | 128.2917 |
| 1260.41 | 0.0000 |
| 1271.85 | 72.9401 |
| 1274.45 | 73.9729 |
| 1274.54 | 73.9752 |
| 1291.56 | 75.3504 |
| 1298.22 | 0.0000 |
| 1312.09 | 57.1203 |
| 1325.50 | 54.3890 |
| 1325.50 | 54.3890 |
| 1332.49 | 80.2708 |
| 1333.61 | 74.3500 |
| 1360.21 | 47.9663 |
| 1362.66 | 0.0000 |
| 1365.15 | 51.0389 |
| 1368.21 | 42.0705 |
| 1368.53 | 0.0000 |
| 1376.25 | 52.2111 |
| 1384.27 | 73.4701 |
| 1394.10 | 53.4949 |
| 1395.20 | 64.6172 |
| 1407.95 | 65.8708 |
| 1434.06 | 30.6299 |
| 1436.60 | 30.6528 |
| 1457.56 | 0.0000 |
| 1460.81 | 27.4333 |
| 1489.15 | 45.6207 |
| 1509.49 | 36.4911 |
| 1596.49 | 48.3645 |
| 1620.62 | 23.8553 |
| 1678.03 | 0.0000 |
| 1691.02 | 23.3066 |
| 1691.02 | 23.3066 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 8.8953 |
| 1764.49 | 8.8953 |
| 1764.49 | 8.8953 |
| 1764.49 | 8.8953 |
| 1770.23 | 17.8145 |
| 1771.40 | 24.9471 |
| 1791.20 | 0.0000 |
| 1808.65 | 24.9641 |

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328001

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 4.4980E+00 | ug/g |
| Total Uranium Counting Unc. | 3.3493E+00 | ug/g |
| Total Uranium Tpu | 1.7088E-06 | ug/g |
| Total Uranium Mda | 1.9776E+00 | ug/g |

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 950786                SAMPLE ID   : G246328001                *
*  ANALYST       : MXR1                  DETECTOR    : GAM22                  *
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 18-FEB-2010 10:54:05.19  SAMPLE ALQT: 157.110 GRAM          *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 4.862E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.014E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 1.352E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 6.531E-01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:07:28.44

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328002.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:05:59
Sample ID          : G246328002      Sample quantity   : 1.51130E+02 GRAM
Detector name      : GAM11           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:01.49  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 950786          Detector SN#     :
Matrix Spike ID    :                 LCS ID            : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|-------|----------|
| 1 | 0 | 63.36* | 135 | 453 | 0.96 | 125.60 | 122 | 8 | 1.88E-02 | 29.4 | |
| 2 | 3 | 74.79 | 343 | 304 | 1.05 | 148.48 | 142 | 15 | 4.77E-02 | 9.8 | 3.30E+00 |
| 3 | 3 | 77.06* | 535 | 305 | 0.94 | 153.02 | 142 | 15 | 7.44E-02 | 6.9 | |
| 4 | 3 | 87.09 | 134 | 285 | 0.85 | 173.09 | 170 | 21 | 1.87E-02 | 20.0 | 3.35E+00 |
| 5 | 3 | 89.89 | 113 | 370 | 1.09 | 178.70 | 170 | 21 | 1.57E-02 | 29.2 | |
| 6 | 3 | 92.63* | 427 | 318 | 1.10 | 184.19 | 170 | 21 | 5.93E-02 | 9.3 | |
| 7 | 0 | 185.83* | 171 | 263 | 1.10 | 370.73 | 366 | 10 | 2.38E-02 | 20.3 | |
| 8 | 0 | 208.84 | 115 | 220 | 0.84 | 416.77 | 413 | 9 | 1.60E-02 | 24.8 | |
| 9 | 7 | 238.61* | 831 | 182 | 1.00 | 476.36 | 472 | 22 | 1.15E-01 | 4.3 | 3.98E+00 |
| 10 | 7 | 241.65 | 227 | 178 | 1.57 | 482.45 | 472 | 22 | 3.15E-02 | 13.9 | |
| 11 | 0 | 270.28 | 68 | 199 | 1.56 | 539.74 | 536 | 10 | 9.38E-03 | 40.9 | |
| 12 | 0 | 295.14 | 284 | 212 | 1.14 | 589.51 | 583 | 13 | 3.95E-02 | 12.1 | |
| 13 | 0 | 300.67* | 27 | 224 | 0.90 | 600.58 | 595 | 12 | 3.81E-03 | 112.5 | |
| 14 | 0 | 328.00 | 29 | 176 | 1.41 | 655.26 | 650 | 10 | 4.08E-03 | 86.2 | |
| 15 | 0 | 338.35* | 198 | 129 | 1.23 | 675.97 | 669 | 11 | 2.76E-02 | 13.4 | |
| 16 | 0 | 352.02* | 411 | 155 | 1.02 | 703.34 | 699 | 10 | 5.71E-02 | 7.6 | |
| 17 | 0 | 409.54 | 87 | 114 | 2.61 | 818.45 | 813 | 13 | 1.21E-02 | 27.5 | |
| 18 | 0 | 462.99 | 70 | 63 | 1.31 | 925.43 | 922 | 10 | 9.74E-03 | 24.0 | |
| 19 | 0 | 510.78* | 115 | 102 | 1.66 | 1021.06 | 1014 | 15 | 1.59E-02 | 24.9 | |
| 20 | 0 | 583.34* | 264 | 76 | 1.22 | 1166.26 | 1161 | 12 | 3.67E-02 | 9.2 | |
| 21 | 0 | 609.42* | 312 | 102 | 1.31 | 1218.46 | 1212 | 14 | 4.33E-02 | 9.0 | |
| 22 | 0 | 727.44 | 91 | 45 | 1.61 | 1454.62 | 1449 | 12 | 1.27E-02 | 18.3 | |
| 23 | 0 | 770.68* | 109 | 72 | 8.97 | 1541.15 | 1530 | 25 | 1.52E-02 | 23.6 | |
| 24 | 0 | 795.73 | 34 | 64 | 1.04 | 1591.26 | 1586 | 11 | 4.69E-03 | 48.9 | |
| 25 | 0 | 861.15 | 32 | 47 | 0.64 | 1722.16 | 1717 | 11 | 4.45E-03 | 45.0 | |
| 26 | 0 | 911.40* | 178 | 59 | 1.57 | 1822.72 | 1816 | 13 | 2.47E-02 | 11.8 | |
| 27 | 0 | 969.49* | 115 | 41 | 1.23 | 1938.94 | 1933 | 13 | 1.60E-02 | 15.5 | |
| 28 | 0 | 1002.14* | 32 | 40 | 1.64 | 2004.27 | 1999 | 13 | 4.49E-03 | 45.0 | |
| 29 | 0 | 1120.70 | 74 | 68 | 1.67 | 2241.49 | 2234 | 16 | 1.03E-02 | 27.3 | |
| 30 | 0 | 1461.19* | 1241 | 34 | 1.91 | 2922.66 | 2912 | 19 | 1.72E-01 | 3.1 | |
| 31 | 0 | 1587.95 | 17 | 7 | 1.36 | 3176.23 | 3169 | 14 | 2.40E-03 | 40.4 | |
| 32 | 0 | 1729.90 | 22 | 7 | 1.94 | 3460.19 | 3453 | 13 | 2.99E-03 | 32.6 | |
| 33 | 0 | 1764.95* | 73 | 0 | 2.73 | 3530.29 | 3522 | 14 | 1.01E-02 | 12.0 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 13:07:32

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 11:05:59
Sample ID        : G246328002             Sample quantity  : 151.13 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA11                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.49   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 | * | 2.357E+01 | 2.499E+00 | 3.336E-01 | 2.885E-02 | 70.657 |
| CD-109 | + | 88.03 | * | 1.356E+00 | 5.573E-01 | 7.897E-01 | 7.489E-02 | 1.717 |
| SN-126 | + | 64.28 | | 8.156E-01 | 4.939E-01 | 4.395E-01 | 6.376E-02 | 1.856 |
| | + | 86.94 | | 5.527E-01 | 3.187E-01 | 3.243E-01 | 1.346E-01 | 1.704 |
| | + | 87.57 | * | 1.329E-01 | 5.463E-02 | 7.765E-02 | 7.325E-03 | 1.712 |
| TL-208 | | 277.35 | | 2.075E-01 | 2.667E-01 | 4.476E-01 | 7.936E-02 | 0.464 |
| | + | 510.84 | | 4.461E-01 | 2.304E-01 | 1.494E-01 | 2.026E-02 | 2.986 |
| | + | 583.14 | * | 2.926E-01 | 6.221E-02 | 3.718E-02 | 4.015E-03 | 7.869 |
| | + | 860.37 | | 3.316E-01 | 3.003E-01 | 3.078E-01 | 3.206E-02 | 1.077 |
| BI-211 | | 72.87 | | 2.491E+00 | 1.780E+00 | 2.964E+00 | 2.354E-01 | 0.840 |
| | + | 351.07 | * | 2.011E+00 | 4.052E-01 | 2.207E-01 | 2.912E-02 | 9.113 |
| PB-212 | + | 74.81 | | 1.377E+00 | 3.182E-01 | 3.009E-01 | 3.722E-02 | 4.575 |
| | + | 77.11 | | 1.228E+00 | 1.973E-01 | 1.725E-01 | 1.433E-02 | 7.120 |
| | + | 87.30 | | 6.149E-01 | 2.600E-01 | 3.598E-01 | 4.939E-02 | 1.709 |
| | + | 238.63 | * | 8.878E-01 | 1.461E-01 | 6.006E-02 | 8.412E-03 | 14.782 |
| | + | 300.09 | | 4.535E-01 | 1.023E+00 | 7.927E-01 | 1.270E-01 | 0.572 |
| PO-212 | + | 74.81 | | 1.377E+00 | 3.182E-01 | 3.009E-01 | 3.722E-02 | 4.575 |
| | + | 77.11 | | 1.228E+00 | 1.973E-01 | 1.725E-01 | 1.433E-02 | 7.120 |
| | + | 87.30 | | 6.149E-01 | 2.600E-01 | 3.598E-01 | 4.939E-02 | 1.709 |
| | + | 115.19 | | -8.802E-01 | 2.239E+00 | 3.748E+00 | 3.175E-01 | -0.235 |
| | + | 238.63 | * | 8.878E-01 | 1.461E-01 | 6.006E-02 | 8.412E-03 | 14.782 |
| | + | 300.09 | | 4.535E-01 | 1.023E+00 | 7.927E-01 | 1.270E-01 | 0.572 |
| BI-214 | + | 609.31 | * | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| | + | 1120.29 | | 8.002E-01 | 4.458E-01 | 3.597E-01 | 3.885E-02 | 2.224 |
| | + | 1764.49 | | 1.069E+00 | 2.723E-01 | 1.512E-01 | 1.246E-02 | 7.074 |
| PB-214 | + | 74.81 | | 2.372E+00 | 5.313E-01 | 5.185E-01 | 5.693E-02 | 4.575 |
| | + | 77.11 | | 2.105E+00 | 3.744E-01 | 2.957E-01 | 3.333E-02 | 7.120 |
| | + | 87.30 | | 1.053E+00 | 4.404E-01 | 6.165E-01 | 7.494E-02 | 1.709 |
| | + | 241.98 | | 1.456E+00 | 4.569E-01 | 3.619E-01 | 5.272E-02 | 4.024 |
| | + | 295.21 | | 8.236E-01 | 2.402E-01 | 1.398E-01 | 2.280E-02 | 5.890 |
| | + | 351.92 | * | 6.997E-01 | 1.456E-01 | 7.671E-02 | 1.085E-02 | 9.121 |
| PO-214 | + | 74.81 | | 2.372E+00 | 5.313E-01 | 5.185E-01 | 5.693E-02 | 4.575 |
| | + | 77.11 | | 2.105E+00 | 3.744E-01 | 2.957E-01 | 3.333E-02 | 7.120 |
| | + | 87.30 | | 1.053E+00 | 4.404E-01 | 6.165E-01 | 7.494E-02 | 1.709 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | + | 241.98 | | 1.456E+00 | 4.569E-01 | 3.619E-01 | 5.272E-02 | 4.024 |
| | + | 295.21 | | 8.236E-01 | 2.402E-01 | 1.398E-01 | 2.280E-02 | 5.890 |
| | + | 351.92 | * | 6.997E-01 | 1.456E-01 | 7.671E-02 | 1.085E-02 | 9.121 |
| | + | 74.81 | | 1.377E+00 | 3.182E-01 | 3.009E-01 | 3.722E-02 | 4.575 |
| | + | 77.11 | | 1.228E+00 | 1.973E-01 | 1.725E-01 | 1.433E-02 | 7.120 |
| | + | 87.30 | | 6.149E-01 | 2.600E-01 | 3.598E-01 | 4.939E-02 | 1.709 |
| PO-218 | + | 238.63 | * | 8.878E-01 | 1.461E-01 | 6.006E-02 | 8.412E-03 | 14.782 |
| | + | 300.09 | | 4.535E-01 | 1.023E+00 | 7.927E-01 | 1.270E-01 | 0.572 |
| | + | 74.81 | | 2.372E+00 | 5.313E-01 | 5.185E-01 | 5.693E-02 | 4.575 |
| | + | 77.11 | | 2.105E+00 | 3.744E-01 | 2.957E-01 | 3.333E-02 | 7.120 |
| | + | 87.30 | | 1.053E+00 | 4.404E-01 | 6.165E-01 | 7.494E-02 | 1.709 |
| | + | 241.98 | | 1.456E+00 | 4.569E-01 | 3.619E-01 | 5.272E-02 | 4.024 |
| RA-224 | + | 295.21 | | 8.236E-01 | 2.402E-01 | 1.398E-01 | 2.280E-02 | 5.890 |
| | + | 351.92 | * | 6.997E-01 | 1.456E-01 | 7.671E-02 | 1.085E-02 | 9.121 |
| | + | 240.98 | * | 2.761E+00 | 8.525E-01 | 6.838E-01 | 9.157E-02 | 4.038 |
| | + | 609.31 | * | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| | + | 1120.29 | | 8.002E-01 | 4.458E-01 | 3.597E-01 | 3.885E-02 | 2.224 |
| | + | 1764.49 | | 1.069E+00 | 2.723E-01 | 1.512E-01 | 1.246E-02 | 7.074 |
| AC-228 | + | 338.32 | | 1.071E+00 | 5.384E-01 | 2.504E-01 | 1.065E-01 | 4.277 |
| | + | 911.07 | * | 8.714E-01 | 2.317E-01 | 1.469E-01 | 1.788E-02 | 5.931 |
| | + | 969.11 | | 9.920E-01 | 3.867E-01 | 3.214E-01 | 7.618E-02 | 3.086 |
| | + | 338.32 | | 1.071E+00 | 5.384E-01 | 2.504E-01 | 1.065E-01 | 4.277 |
| | + | 911.07 | * | 8.714E-01 | 2.317E-01 | 1.469E-01 | 1.788E-02 | 5.931 |
| | + | 969.11 | | 9.920E-01 | 3.867E-01 | 3.214E-01 | 7.618E-02 | 3.086 |
| TH-228 | + | 74.81 | | 1.400E+00 | 2.964E-01 | 3.060E-01 | 2.504E-02 | 4.575 |
| | + | 77.11 | | 1.249E+00 | 2.007E-01 | 1.754E-01 | 1.458E-02 | 7.120 |
| | + | 87.30 | | 6.253E-01 | 2.570E-01 | 3.660E-01 | 3.440E-02 | 1.709 |
| | + | 238.63 | * | 9.030E-01 | 1.486E-01 | 6.109E-02 | 8.555E-03 | 14.782 |
| | + | 300.09 | | 4.612E-01 | 1.074E+00 | 8.062E-01 | 4.879E-01 | 0.572 |
| | + | 609.31 | * | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| TH-230 | + | 1120.29 | | 8.002E-01 | 4.458E-01 | 3.597E-01 | 3.885E-02 | 2.224 |
| | + | 1764.49 | | 1.069E+00 | 2.723E-01 | 1.512E-01 | 1.246E-02 | 7.074 |
| | + | 338.32 | | 1.071E+00 | 3.212E-01 | 2.504E-01 | 3.376E-02 | 4.277 |
| | + | 911.07 | * | 8.714E-01 | 2.317E-01 | 1.469E-01 | 1.788E-02 | 5.931 |
| | + | 969.11 | | 9.920E-01 | 3.867E-01 | 3.214E-01 | 7.618E-02 | 3.086 |
| | + | 63.29 | * | 2.061E+00 | 1.263E+00 | 1.125E+00 | 1.957E-01 | 1.832 |
| U-234 | + | 92.38 | | 2.781E+00 | 7.265E-01 | 5.163E-01 | 9.472E-02 | 5.387 |
| | + | 609.31 | * | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| | + | 1120.29 | | 8.002E-01 | 4.458E-01 | 3.597E-01 | 3.885E-02 | 2.224 |
| | + | 1764.49 | | 1.069E+00 | 2.723E-01 | 1.512E-01 | 1.246E-02 | 7.074 |
| | + | 86.50 | * | 3.904E-01 | 1.795E-01 | 2.503E-01 | 5.665E-02 | 1.560 |
| | + | 95.87 | | 4.670E-01 | 6.627E-01 | 9.745E-01 | 2.412E-01 | 0.479 |
| U-238 | + | 63.29 | * | 2.061E+00 | 1.263E+00 | 1.125E+00 | 1.957E-01 | 1.832 |
| | + | 92.38 | | 2.781E+00 | 5.764E-01 | 5.163E-01 | 4.728E-02 | 5.387 |
| | + | 74.67 | * | 2.232E-01 | 4.718E-02 | 4.890E-02 | 3.957E-03 | 4.564 |
| | + | 86.72 | | 1.464E+01 | 6.015E+00 | 8.605E+00 | 8.028E-01 | 1.701 |
| | + | 117.66 | | 1.375E+00 | 2.264E+00 | 3.954E+00 | 3.345E-01 | 0.348 |
| | + | 142.18 | | -5.154E+00 | 1.167E+01 | 1.926E+01 | 1.717E+00 | -0.268 |
| ANH-511 | + | 511.00 | * | 9.637E-02 | 4.911E-02 | 3.229E-02 | 3.452E-03 | 2.985 |

---- 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 | * | | 6.383E-02 | 2.260E-01 | 3.854E-01 | 4.362E-02 | 0.166 |
| NA-22 | 1274.54 | * | | -2.010E-03 | 3.551E-02 | 5.489E-02 | 4.508E-03 | -0.037 |
| NA-24 | 1368.53 | * | | -2.617E+00 | 3.551E-02 | Half-Life too short | | |
| AL-26 | 1129.67 | | | -2.706E-01 | 1.317E+00 | 2.058E+00 | 1.739E-01 | -0.131 |
| | 1808.65 | * | | -7.081E-03 | 2.146E-02 | 3.271E-02 | 2.670E-03 | -0.216 |
| TI-44 | 67.85 | | | -1.861E-02 | 2.669E-02 | 4.072E-02 | 3.085E-03 | -0.457 |
| | + 78.38 | * | | 2.266E-01 | 3.642E-02 | 4.067E-02 | 3.428E-03 | 5.572 |
| SC-46 | 889.25 | * | | 9.949E-03 | 2.948E-02 | 5.100E-02 | 5.023E-03 | 0.195 |
| | + 1120.51 | | | 1.391E-01 | 7.693E-02 | 9.217E-02 | 7.860E-03 | 1.509 |
| V-48 | 944.10 | | | -3.009E-01 | 6.642E-01 | 1.053E+00 | 1.019E-01 | -0.286 |
| | 983.50 | * | | -1.811E-02 | 5.081E-02 | 8.100E-02 | 7.683E-03 | -0.224 |
| | 1312.09 | | | 2.479E-02 | 6.310E-02 | 1.075E-01 | 8.864E-03 | 0.231 |
| CR-51 | 320.08 | * | | -3.657E-01 | 2.759E-01 | 3.861E-01 | 5.603E-02 | -0.947 |
| MN-52 | 744.21 | | | -1.146E-01 | 2.152E-01 | 3.263E-01 | 3.170E-02 | -0.351 |
| | 848.13 | | | 1.835E+00 | 5.337E+00 | 9.310E+00 | 9.173E-01 | 0.197 |
| | 935.52 | | | 2.857E-01 | 2.248E-01 | 4.183E-01 | 4.061E-02 | 0.683 |
| | 1246.25 | | | -1.571E+00 | 6.690E+00 | 1.062E+01 | 8.669E-01 | -0.148 |
| | 1333.61 | | | -1.656E+00 | 4.481E+00 | 6.854E+00 | 5.665E-01 | -0.242 |
| | 1434.06 | * | | 1.896E-01 | 2.116E-01 | 3.876E-01 | 3.248E-02 | 0.489 |
| MN-54 | 834.83 | * | | 9.115E-03 | 2.734E-02 | 4.739E-02 | 4.667E-03 | 0.192 |
| CO-56 | 846.75 | * | | -1.921E-02 | 2.564E-02 | 3.955E-02 | 3.896E-03 | -0.486 |
| | 977.42 | | | -1.781E-01 | 2.258E+00 | 3.629E+00 | 3.454E-01 | -0.049 |
| | 1037.82 | | | -8.927E-02 | 2.391E-01 | 3.803E-01 | 3.650E-02 | -0.235 |
| | 1175.09 | | | -2.541E-01 | 1.869E+00 | 3.018E+00 | 2.426E-01 | -0.084 |
| | 1238.25 | | | 9.281E-02 | 7.285E-02 | 1.307E-01 | 1.100E-02 | 0.710 |
| | 1360.21 | | | -1.895E-01 | 7.449E-01 | 1.157E+00 | 9.607E-02 | -0.164 |
| | 1771.40 | | | -5.522E-01 | 2.410E-01 | 2.230E-01 | 1.835E-02 | -2.476 |
| CO-57 | 122.06 | * | | 2.042E-02 | 1.563E-02 | 2.795E-02 | 2.364E-03 | 0.731 |
| | 136.48 | | | -7.933E-03 | 1.369E-01 | 2.306E-01 | 2.166E-02 | -0.034 |
| CO-58 | 810.76 | * | | -3.656E-03 | 2.825E-02 | 4.448E-02 | 4.380E-03 | -0.082 |
| FE-59 | 142.65 | | | 1.162E+00 | 1.903E+00 | 3.215E+00 | 2.871E-01 | 0.361 |
| | 192.34 | | | -2.764E-01 | 6.279E-01 | 1.012E+00 | 1.519E-01 | -0.273 |
| | 1099.22 | * | | 1.516E-02 | 6.937E-02 | 1.169E-01 | 1.099E-02 | 0.130 |
| | 1291.56 | | | -1.225E-02 | 9.583E-02 | 1.532E-01 | 1.446E-02 | -0.080 |
| CO-60 | 1173.22 | | | -3.217E-02 | 3.635E-02 | 5.407E-02 | 4.344E-03 | -0.595 |
| | 1332.49 | * | | -2.484E-02 | 2.863E-02 | 4.018E-02 | 3.320E-03 | -0.618 |
| ZN-65 | 1115.52 | * | | 2.574E-02 | 7.915E-02 | 1.178E-01 | 1.011E-02 | 0.218 |
| GE-68 | 1077.35 | * | | 9.517E-01 | 9.826E-01 | 1.766E+00 | 1.568E-01 | 0.539 |
| AS-73 | 53.44 | * | | -2.984E-02 | 4.433E-01 | 7.065E-01 | 5.305E-02 | -0.042 |
| AS-74 | 595.88 | * | | 9.749E-03 | 7.301E-02 | 1.211E-01 | 1.232E-02 | 0.080 |
| | 634.78 | | | -7.689E-02 | 2.626E-01 | 4.159E-01 | 4.069E-02 | -0.185 |
| SE-75 | 66.05 | | | -4.953E-01 | 2.984E+00 | 4.296E+00 | 4.082E-01 | -0.115 |
| | 96.73 | | | -1.630E-01 | 5.676E-01 | 7.929E-01 | 1.096E-01 | -0.206 |
| | 121.11 | | | -3.181E-02 | 8.294E-02 | 1.382E-01 | 1.533E-02 | -0.230 |
| | 136.00 | | | -1.322E-03 | 2.586E-02 | 4.358E-02 | 3.836E-03 | -0.030 |
| | 198.60 | | | -1.101E-01 | 1.301E+00 | 2.056E+00 | 2.459E-01 | -0.054 |
| | 264.65 | * | | -1.449E-02 | 2.870E-02 | 4.473E-02 | 6.574E-03 | -0.324 |
| | 279.53 | | | -5.934E-02 | 8.058E-02 | 1.231E-01 | 1.927E-02 | -0.482 |
| | 303.91 | | | 9.329E-01 | 1.538E+00 | 2.318E+00 | 3.853E-01 | 0.402 |

---- 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 | | -5.103E-02 | 1.726E-01 | 2.854E-01 | 3.651E-02 | -0.179 |
| | | 87.88 | | 5.006E+02 | 2.057E+02 | 3.421E+02 | 3.240E+01 | 1.463 |
| | | 200.40 | | -5.355E+01 | 1.891E+02 | 3.074E+02 | 3.477E+01 | -0.174 |
| | + | 239.00 | | 2.442E+02 | 3.868E+01 | 4.390E+01 | 5.833E+00 | 5.563 |
| | | 249.79 | | 6.788E+00 | 7.406E+01 | 1.156E+02 | 1.603E+01 | 0.059 |
| | | 281.68 | | 5.112E+01 | 1.073E+02 | 1.782E+02 | 2.748E+01 | 0.287 |
| | | 297.23 | | 6.163E+01 | 9.576E+01 | 1.159E+02 | 1.739E+01 | 0.532 |
| | | 303.76 | | 1.332E+02 | 2.216E+02 | 3.344E+02 | 4.949E+01 | 0.398 |
| | | 439.47 | | -1.052E+02 | 1.668E+02 | 2.659E+02 | 2.868E+01 | -0.396 |
| | | 484.57 | | -4.519E+01 | 2.679E+02 | 4.404E+02 | 4.742E+01 | -0.103 |
| | | 520.65 | * | 8.762E+00 | 1.214E+01 | 2.130E+01 | 2.269E+00 | 0.411 |
| | | 574.64 | | -8.738E+01 | 2.493E+02 | 3.972E+02 | 4.107E+01 | -0.220 |
| | | 578.91 | | -2.522E+01 | 1.116E+02 | 1.563E+02 | 1.611E+01 | -0.161 |
| | | 585.48 | | 7.894E+02 | 2.614E+02 | 4.664E+02 | 4.784E+01 | 1.692 |
| | | 755.35 | | 1.744E+02 | 1.994E+02 | 3.485E+02 | 3.395E+01 | 0.500 |
| | | 817.79 | | -7.182E+01 | 1.635E+02 | 2.473E+02 | 2.432E+01 | -0.290 |
| SR-82 | | 698.33 | | 2.430E+01 | 2.623E+01 | 4.586E+01 | 4.398E+00 | 0.530 |
| | | 776.49 | * | 2.021E-01 | 2.833E-01 | 4.423E-01 | 4.326E-02 | 0.457 |
| | | 1395.20 | | -3.198E+00 | 7.737E+00 | 1.155E+01 | 9.637E-01 | -0.277 |
| RB-83 | | 520.41 | * | 3.887E-02 | 4.728E-02 | 8.353E-02 | 8.902E-03 | 0.465 |
| | | 529.64 | | -1.385E-03 | 7.287E-02 | 1.205E-01 | 1.279E-02 | -0.011 |
| | | 552.65 | | 3.619E-02 | 1.319E-01 | 2.231E-01 | 2.341E-02 | 0.162 |
| RB-84 | | 881.50 | * | 1.545E-02 | 5.581E-02 | 9.601E-02 | 9.460E-03 | 0.161 |
| KR-85 | | 513.99 | * | 6.826E+00 | 5.283E+00 | 8.704E+00 | 9.297E-01 | 0.784 |
| SR-85 | | 513.99 | * | 3.568E-02 | 2.762E-02 | 4.550E-02 | 4.860E-03 | 0.784 |
| RB-86 | | 1076.63 | * | 1.822E-02 | 6.647E-01 | 1.100E+00 | 9.778E-02 | 0.017 |
| Y-88 | | 898.02 | | -1.745E-03 | 2.934E-02 | 4.890E-02 | 4.832E-03 | -0.036 |
| | | 1836.01 | * | -1.056E-02 | 2.132E-02 | 3.041E-02 | 2.469E-03 | -0.347 |
| ZR-88 | | 392.90 | * | 4.440E-03 | 1.968E-02 | 3.385E-02 | 3.610E-03 | 0.131 |
| Y-91 | | 1204.90 | * | -4.637E+00 | 1.529E+01 | 2.425E+01 | 1.963E+00 | -0.191 |
| NB-94 | | 702.63 | * | -1.355E-02 | 2.542E-02 | 3.905E-02 | 3.750E-03 | -0.347 |
| | | 871.10 | | -2.392E-03 | 2.336E-02 | 3.884E-02 | 3.828E-03 | -0.062 |
| NB-95 | | 765.79 | * | 2.784E-02 | 3.338E-02 | 5.210E-02 | 5.086E-03 | 0.534 |
| NB-95M | | 235.69 | * | -8.105E-02 | 1.013E-01 | 1.385E-01 | 1.934E-02 | -0.585 |
| ZR-95 | | 724.18 | | 2.009E-02 | 7.989E-02 | 1.163E-01 | 1.202E-02 | 0.173 |
| | | 756.15 | * | 2.438E-02 | 5.044E-02 | 8.519E-02 | 8.964E-03 | 0.286 |
| NB-97 | | 657.90 | * | -6.985E-01 | 5.044E-02 | Half-Life | too short | |
| | | 1024.50 | | -1.883E+01 | 5.044E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | -2.359E+01 | 5.044E-02 | Half-Life | too short | |
| | | 355.39 | | 2.388E+00 | 5.044E-02 | Half-Life | too short | |
| | | 507.63 | * | 2.607E+00 | 5.044E-02 | Half-Life | too short | |
| | | 602.52 | | 9.979E+00 | 5.044E-02 | Half-Life | too short | |
| | | 1021.30 | | 6.485E+00 | 5.044E-02 | Half-Life | too short | |
| | | 1147.95 | | -4.631E-03 | 5.044E-02 | Half-Life | too short | |
| | | 1362.66 | | 8.401E+00 | 5.044E-02 | Half-Life | too short | |
| | | 1750.46 | | -2.621E+00 | 5.044E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | -9.520E+00 | 2.739E+01 | 4.442E+01 | 1.234E+01 | -0.214 |
| | | 181.06 | | -7.989E+00 | 2.006E+01 | 2.898E+01 | 5.560E+00 | -0.276 |
| | | 366.43 | | 9.838E-01 | 9.788E+01 | 1.550E+02 | 1.878E+01 | 0.006 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | 739.58 | * | | 6.559E+00 | 1.291E+01 | 2.185E+01 | 3.457E+00 | 0.300 |
| | 778.00 | | | 1.497E+00 | 4.216E+01 | 5.934E+01 | 5.806E+00 | 0.025 |
| TC-99M | 140.51 | * | | -1.426E+12 | 4.216E+01 | Half-Life too short | | |
| RH-101 | 127.23 | | | -8.890E-03 | 1.966E-02 | 3.261E-02 | 2.786E-03 | -0.273 |
| | 198.01 | * | | 1.764E-03 | 2.344E-02 | 3.736E-02 | 4.181E-03 | 0.047 |
| | 325.23 | | | -4.122E-02 | 1.738E-01 | 2.409E-01 | 3.380E-02 | -0.171 |
| RH-102 | 418.52 | | | -1.035E-02 | 1.835E-01 | 3.078E-01 | 3.309E-02 | -0.034 |
| | 475.06 | * | | -9.945E-03 | 2.013E-02 | 3.223E-02 | 3.474E-03 | -0.309 |
| | 631.29 | | | 1.291E-02 | 3.895E-02 | 6.554E-02 | 6.437E-03 | 0.197 |
| | 697.49 | | | 1.406E-02 | 5.709E-02 | 9.453E-02 | 9.063E-03 | 0.149 |
| | 766.84 | | | 9.272E-02 | 9.388E-02 | 1.469E-01 | 1.435E-02 | 0.631 |
| | 1046.59 | | | -7.286E-02 | 8.449E-02 | 1.261E-01 | 1.148E-02 | -0.578 |
| | 1112.84 | | | 1.254E-01 | 1.867E-01 | 3.020E-01 | 2.595E-02 | 0.415 |
| RU-103 | 497.08 | * | | 1.328E-02 | 2.637E-02 | 4.571E-02 | 7.103E-03 | 0.291 |
| | 610.33 | | | 7.258E+00 | 1.819E+00 | 2.065E+00 | 3.604E-01 | 3.515 |
| RH-106 | 511.85 | + | | 4.830E-01 | 2.462E-01 | 3.286E-01 | 3.513E-02 | 1.470 |
| | 621.84 | * | | 3.471E-02 | 2.392E-01 | 3.961E-01 | 5.637E-02 | 0.088 |
| | 1050.47 | | | 1.745E+00 | 1.632E+00 | 2.988E+00 | 2.712E-01 | 0.584 |
| RU-106 | 511.85 | + | | 4.830E-01 | 2.462E-01 | 3.286E-01 | 3.513E-02 | 1.470 |
| | 621.84 | * | | 3.471E-02 | 2.392E-01 | 3.961E-01 | 3.930E-02 | 0.088 |
| | 1050.47 | | | 1.745E+00 | 1.632E+00 | 2.988E+00 | 2.712E-01 | 0.584 |
| AG-108M | 433.93 | * | | -2.158E-03 | 2.328E-02 | 3.886E-02 | 4.296E-03 | -0.056 |
| | 614.37 | | | -1.191E-02 | 3.134E-02 | 4.275E-02 | 4.399E-03 | -0.279 |
| | 722.95 | | | 3.642E-04 | 3.465E-02 | 4.895E-02 | 4.878E-03 | 0.007 |
| AG-110M | 657.75 | * | | -3.652E-02 | 2.805E-02 | 3.990E-02 | 3.888E-03 | -0.915 |
| | 677.61 | | | 7.670E-02 | 2.093E-01 | 3.523E-01 | 3.431E-02 | 0.218 |
| | 706.67 | | | 3.125E-02 | 1.496E-01 | 2.469E-01 | 2.427E-02 | 0.127 |
| | 763.93 | | | 3.730E-02 | 1.235E-01 | 1.811E-01 | 1.806E-02 | 0.206 |
| | 884.67 | | | -3.003E-02 | 3.665E-02 | 5.626E-02 | 5.680E-03 | -0.534 |
| | 937.48 | | | 1.723E-02 | 7.714E-02 | 1.318E-01 | 1.315E-02 | 0.131 |
| | 1384.27 | | | 8.096E-02 | 1.160E-01 | 2.062E-01 | 1.770E-02 | 0.393 |
| IN-111 | 171.28 | | | -7.504E-01 | 1.040E+00 | 1.665E+00 | 1.657E-01 | -0.451 |
| | 245.39 | * | | -2.328E-01 | 1.140E+00 | 1.833E+00 | 2.498E-01 | -0.127 |
| IN-113M | 391.69 | * | | -2.785E-02 | 2.948E-02 | 4.619E-02 | 5.024E-03 | -0.603 |
| SN-113 | 391.69 | * | | -2.785E-02 | 2.948E-02 | 4.619E-02 | 5.024E-03 | -0.603 |
| IN-114M | 190.27 | * | | 4.911E-02 | 1.303E-01 | 1.985E-01 | 2.148E-02 | 0.247 |
| CD-115 | 260.90 | | | -4.881E+01 | 1.608E+02 | 2.556E+02 | 3.698E+01 | -0.191 |
| | 492.35 | | | 1.385E+00 | 4.326E+01 | 7.223E+01 | 7.764E+00 | 0.019 |
| | 527.90 | * | | 1.729E+00 | 1.338E+01 | 2.240E+01 | 2.380E+00 | 0.077 |
| SN-117M | 156.02 | | | -1.128E+00 | 1.690E+00 | 2.740E+00 | 2.565E-01 | -0.412 |
| | 158.56 | * | | 3.876E-02 | 3.883E-02 | 6.783E-02 | 6.410E-03 | 0.572 |
| SB-122 | 563.90 | * | | 1.417E+00 | 2.385E+00 | 4.115E+00 | 4.286E-01 | 0.344 |
| | 692.80 | | | -3.495E+01 | 4.867E+01 | 7.284E+01 | 6.973E+00 | -0.480 |
| I-123 | 159.00 | * | | 2.242E+01 | 4.867E+01 | Half-Life too short | | |
| | 528.96 | | | 1.972E+03 | 4.867E+01 | Half-Life too short | | |
| TE-123M | 159.00 | * | | 1.080E-02 | 1.831E-02 | 3.148E-02 | 2.995E-03 | 0.343 |
| I-124 | 602.71 | * | | 1.812E-01 | 7.263E-01 | 1.129E+00 | 1.141E-01 | 0.161 |
| | 722.78 | | | -7.913E-02 | 4.905E+00 | 6.905E+00 | 6.672E-01 | -0.011 |
| | 1325.50 | | | 1.436E+01 | 3.245E+01 | 5.585E+01 | 4.612E+00 | 0.257 |

---- 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 | | 1.985E+01 | 2.770E+01 | 4.938E+01 | 4.109E+00 | 0.402 |
| | | 1509.49 | | 1.707E+01 | 1.606E+01 | 3.051E+01 | 2.568E+00 | 0.560 |
| | | 1691.02 | | 5.014E-01 | 3.378E+00 | 5.777E+00 | 4.817E-01 | 0.087 |
| | | 602.71 | | 7.923E-03 | 3.175E-02 | 4.936E-02 | 4.989E-03 | 0.161 |
| | | 645.85 | | 8.584E-02 | 3.599E-01 | 6.001E-01 | 6.073E-02 | 0.143 |
| | | 709.31 | | -2.096E+00 | 2.108E+00 | 3.054E+00 | 2.939E-01 | -0.686 |
| | | 713.82 | | 8.012E-01 | 1.293E+00 | 2.201E+00 | 2.815E-01 | 0.364 |
| | | 722.78 | | -5.014E-03 | 3.109E-01 | 4.376E-01 | 4.301E-02 | -0.011 |
| | + | 968.20 | | 1.043E+01 | 3.379E+00 | 5.158E+00 | 4.932E-01 | 2.023 |
| | | 1045.16 | | -9.617E-01 | 1.878E+00 | 2.936E+00 | 2.676E-01 | -0.328 |
| | | 1325.50 | | 9.719E-01 | 2.196E+00 | 3.780E+00 | 3.121E-01 | 0.257 |
| | | 1368.21 | | -3.993E-01 | 1.181E+00 | 1.794E+00 | 2.383E-01 | -0.223 |
| | | 1436.60 | | 2.963E-01 | 2.996E+00 | 4.891E+00 | 4.099E-01 | 0.061 |
| | | 1691.02 | * | 7.495E-03 | 5.049E-02 | 8.635E-02 | 7.504E-03 | 0.087 |
| SB-125 | | 427.89 | * | -5.597E-03 | 6.213E-02 | 1.038E-01 | 1.132E-02 | -0.054 |
| | + | 463.38 | | 5.345E-01 | 2.634E-01 | 3.808E-01 | 4.317E-02 | 1.404 |
| | | 600.56 | | -7.736E-04 | 1.392E-01 | 2.282E-01 | 2.436E-02 | -0.003 |
| | | 635.90 | | -9.555E-02 | 1.864E-01 | 2.880E-01 | 2.992E-02 | -0.332 |
| TE-125M | | 109.28 | * | -4.091E-01 | 5.791E+00 | 9.861E+00 | 1.012E+00 | -0.041 |
| | | 388.63 | | 9.379E-02 | 1.468E-01 | 2.591E-01 | 2.810E-02 | 0.362 |
| I-126 | | 666.33 | * | 1.016E-01 | 1.452E-01 | 2.505E-01 | 2.375E-02 | 0.406 |
| | | 753.82 | | -1.696E-01 | 1.145E+00 | 1.812E+00 | 1.765E-01 | -0.094 |
| SB-126 | | 223.80 | | -2.508E+00 | 3.033E+00 | 4.707E+00 | 5.879E-01 | -0.533 |
| | | 278.60 | | 1.314E+00 | 1.980E+00 | 3.311E+00 | 5.115E-01 | 0.397 |
| | + | 296.50 | | 9.091E+00 | 2.590E+00 | 2.636E+00 | 3.961E-01 | 3.449 |
| | | 414.70 | | -2.620E-02 | 5.949E-02 | 8.411E-02 | 9.034E-03 | -0.312 |
| | | 415.30 | | -2.920E+00 | 5.010E+00 | 6.958E+00 | 7.475E-01 | -0.420 |
| | | 555.20 | | -1.948E+00 | 3.027E+00 | 4.686E+00 | 4.909E-01 | -0.416 |
| | | 573.80 | | -2.919E-01 | 8.267E-01 | 1.318E+00 | 1.364E-01 | -0.221 |
| | | 593.00 | | -2.013E-01 | 7.298E-01 | 1.167E+00 | 1.190E-01 | -0.172 |
| | | 656.30 | | 4.517E-01 | 2.707E+00 | 4.475E+00 | 4.265E-01 | 0.101 |
| | | 666.33 | | 4.264E-02 | 6.095E-02 | 1.051E-01 | 9.965E-03 | 0.406 |
| | | 675.00 | | -9.291E-01 | 1.481E+00 | 2.238E+00 | 2.129E-01 | -0.415 |
| | | 695.00 | | -7.990E-03 | 5.993E-02 | 9.581E-02 | 9.178E-03 | -0.083 |
| | | 697.00 | | -4.095E-02 | 2.204E-01 | 3.508E-01 | 3.363E-02 | -0.117 |
| | | 720.50 | * | -5.116E-02 | 1.272E-01 | 1.884E-01 | 1.819E-02 | -0.272 |
| SB-127 | | 856.80 | | 7.615E-02 | 3.461E-01 | 5.255E-01 | 5.179E-02 | 0.145 |
| | | 989.30 | | 1.081E-01 | 9.808E-01 | 1.650E+00 | 1.560E-01 | 0.066 |
| | | 1034.80 | | 2.955E+00 | 6.760E+00 | 1.173E+01 | 1.077E+00 | 0.252 |
| | | 1213.00 | | -2.505E+00 | 4.261E+00 | 6.571E+00 | 5.329E-01 | -0.381 |
| | | 61.10 | | -6.179E-01 | 4.739E+01 | 6.935E+01 | 7.434E+00 | -0.009 |
| | | 252.40 | | 2.810E+00 | 4.066E+00 | 6.609E+00 | 2.882E+00 | 0.425 |
| | | 290.80 | | -1.049E+01 | 2.336E+01 | 3.203E+01 | 5.490E+00 | -0.328 |
| | | 411.60 | | 1.071E+01 | 1.245E+01 | 1.991E+01 | 3.456E+00 | 0.538 |
| | | 444.90 | | 2.794E+00 | 9.414E+00 | 1.613E+01 | 2.349E+00 | 0.173 |
| | | 473.00 | | 9.946E-02 | 1.610E+00 | 2.665E+00 | 3.956E-01 | 0.037 |
| | | 543.00 | | -1.157E+01 | 1.643E+01 | 2.530E+01 | 4.056E+00 | -0.458 |
| | | 603.60 | | -7.663E-01 | 1.356E+01 | 1.935E+01 | 2.716E+00 | -0.040 |
| | | 685.20 | * | -2.320E-01 | 1.247E+00 | 1.981E+00 | 2.502E-01 | -0.117 |

---- 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 | | 1.456E+01 | 1.563E+01 | 2.712E+01 | 4.545E+00 | 0.537 |
| | | 722.20 | | 2.609E+00 | 3.484E+01 | 4.964E+01 | 6.211E+00 | 0.053 |
| | | 783.80 | | 2.755E+00 | 3.719E+00 | 6.297E+00 | 8.651E-01 | 0.438 |
| | | 57.60 | | 9.370E-01 | 3.325E+00 | 5.376E+00 | 3.870E-01 | 0.174 |
| | | 145.22 | | -4.194E-02 | 4.984E-01 | 8.177E-01 | 7.366E-02 | -0.051 |
| | | 172.10 | | 1.586E-02 | 8.200E-02 | 1.379E-01 | 1.377E-02 | 0.115 |
| I-131 | | 202.84 | * | -4.118E-03 | 3.202E-02 | 5.246E-02 | 5.995E-03 | -0.078 |
| | | 374.96 | | 2.812E-02 | 1.454E-01 | 2.333E-01 | 2.718E-02 | 0.121 |
| | | 80.18 | | 1.054E+00 | 3.322E+00 | 4.883E+00 | 4.237E-01 | 0.216 |
| | | 284.30 | | -4.568E-01 | 1.244E+00 | 1.953E+00 | 3.050E-01 | -0.234 |
| | | 364.48 | * | -8.422E-02 | 9.993E-02 | 1.462E-01 | 1.836E-02 | -0.576 |
| | | 636.97 | | -5.577E-01 | 1.266E+00 | 1.973E+00 | 2.012E-01 | -0.283 |
| TE-132 | | 722.89 | | 7.643E-03 | 6.838E+00 | 9.647E+00 | 9.381E-01 | 0.001 |
| | | 49.72 | | 8.270E+00 | 1.448E+01 | 2.389E+01 | 2.593E+00 | 0.346 |
| | | 111.76 | | -8.948E-01 | 2.824E+01 | 4.812E+01 | 5.426E+00 | -0.019 |
| | | 116.30 | | -1.236E+01 | 2.542E+01 | 4.229E+01 | 4.756E+00 | -0.292 |
| | | 228.16 | * | -1.638E-01 | 7.175E-01 | 1.142E+00 | 2.123E-01 | -0.143 |
| | | 53.15 | | 4.769E-02 | 1.865E+00 | 2.988E+00 | 2.252E-01 | 0.016 |
| BA-133 | | 79.62 | | -4.724E-01 | 8.182E-01 | 1.133E+00 | 1.721E-01 | -0.417 |
| | | 81.00 | | -2.066E-03 | 5.731E-02 | 8.962E-02 | 1.426E-02 | -0.023 |
| | | 276.40 | | 2.638E-01 | 2.627E-01 | 4.430E-01 | 8.514E-02 | 0.596 |
| | | 302.84 | | 1.020E-02 | 1.054E-01 | 1.506E-01 | 2.703E-02 | 0.068 |
| | | 356.01 | * | 2.687E-02 | 3.180E-02 | 4.861E-02 | 7.840E-03 | 0.553 |
| | | 383.85 | | 1.303E-01 | 1.985E-01 | 3.501E-01 | 5.056E-02 | 0.372 |
| I-133 | + | 510.53 | | 4.290E+00 | 1.985E-01 | Half-Life | too short | |
| | | 529.87 | * | 7.747E-04 | 1.985E-01 | Half-Life | too short | |
| | | 706.58 | | 2.582E-01 | 1.985E-01 | Half-Life | too short | |
| | | 856.28 | | 2.028E-01 | 1.985E-01 | Half-Life | too short | |
| | | 875.33 | | 8.492E-02 | 1.985E-01 | Half-Life | too short | |
| | | 1236.41 | | 1.771E+00 | 1.985E-01 | Half-Life | too short | |
| CS-134 | | 1298.22 | | 7.183E-01 | 1.985E-01 | Half-Life | too short | |
| | | 475.35 | | -5.239E-01 | 1.310E+00 | 2.114E+00 | 2.279E-01 | -0.248 |
| | | 563.23 | | 2.187E-01 | 2.521E-01 | 4.440E-01 | 4.658E-02 | 0.493 |
| | | 569.32 | | 6.415E-02 | 1.479E-01 | 2.460E-01 | 2.578E-02 | 0.261 |
| | | 604.70 | | -1.025E-02 | 2.783E-02 | 3.820E-02 | 3.861E-03 | -0.268 |
| | + | 795.84 | * | 5.378E-02 | 5.282E-02 | 6.902E-02 | 6.808E-03 | 0.779 |
| CS-135 | | 801.93 | | -2.955E-01 | 3.533E-01 | 4.650E-01 | 4.585E-02 | -0.635 |
| | | 1038.57 | | -7.497E-01 | 2.846E+00 | 4.580E+00 | 4.194E-01 | -0.164 |
| | | 1167.94 | | 1.238E+00 | 1.828E+00 | 3.199E+00 | 2.586E-01 | 0.387 |
| | | 1365.15 | | 2.922E-02 | 8.149E-01 | 1.325E+00 | 1.154E-01 | 0.022 |
| | | 268.24 | * | 3.962E-02 | 1.156E-01 | 1.718E-01 | 2.695E-02 | 0.231 |
| | I-135 | 288.45 | | 7.782E+11 | 1.156E-01 | Half-Life | too short | |
| I-135 | | 417.63 | | 7.195E+10 | 1.156E-01 | Half-Life | too short | |
| | | 546.56 | | -1.948E+10 | 1.156E-01 | Half-Life | too short | |
| | | 836.80 | | -3.089E+11 | 1.156E-01 | Half-Life | too short | |
| | | 1038.76 | | -3.888E+11 | 1.156E-01 | Half-Life | too short | |
| | | 1124.00 | | 1.722E+12 | 1.156E-01 | Half-Life | too short | |
| | | 1131.51 | | 2.923E+11 | 1.156E-01 | Half-Life | too short | |
| | | 1260.41 | * | -3.231E+10 | 1.156E-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 | | 1.617E+13 | 1.156E-01 | Half-Life | too short | |
| | | 1678.03 | | -4.305E+11 | 1.156E-01 | Half-Life | too short | |
| | | 1706.46 | | -7.868E+11 | 1.156E-01 | Half-Life | too short | |
| | | 1791.20 | | 1.024E+12 | 1.156E-01 | Half-Life | too short | |
| | | 66.91 | | -7.117E-03 | 5.276E-01 | 7.662E-01 | 1.138E-01 | -0.009 |
| | + | 86.29 | | 1.912E+00 | 8.065E-01 | 1.319E+00 | 1.755E-01 | 1.449 |
| | | 153.22 | | 5.238E-01 | 4.946E-01 | 8.632E-01 | 8.821E-02 | 0.607 |
| | | 163.89 | | 4.716E-01 | 7.335E-01 | 1.263E+00 | 1.336E-01 | 0.374 |
| | | 176.55 | | -3.470E-03 | 2.626E-01 | 4.366E-01 | 4.633E-02 | -0.008 |
| | | 273.65 | | -1.392E-01 | 3.642E-01 | 5.059E-01 | 7.843E-02 | -0.275 |
| | | 340.57 | | 6.035E-02 | 1.058E-01 | 1.576E-01 | 2.136E-02 | 0.383 |
| | | 818.51 | | 3.757E-02 | 5.632E-02 | 9.675E-02 | 9.524E-03 | 0.388 |
| | | 1048.07 | * | -3.268E-02 | 8.900E-02 | 1.415E-01 | 1.336E-02 | -0.231 |
| | | 1235.34 | | -4.501E-01 | 5.428E-01 | 8.172E-01 | 9.407E-02 | -0.551 |
| BA-137M | | 661.65 | * | 1.834E-02 | 2.842E-02 | 4.861E-02 | 4.599E-03 | 0.377 |
| CS-137 | | 661.65 | * | 1.939E-02 | 3.004E-02 | 5.138E-02 | 4.870E-03 | 0.377 |
| CE-139 | | 165.85 | * | -1.125E-02 | 1.926E-02 | 3.116E-02 | 3.028E-03 | -0.361 |
| BA-140 | | 162.64 | | 3.211E-01 | 5.186E-01 | 8.921E-01 | 8.967E-02 | 0.360 |
| LA-140 | | 304.84 | | -7.463E-02 | 1.050E+00 | 1.490E+00 | 4.541E-01 | -0.050 |
| | | 423.70 | | -5.108E-01 | 1.444E+00 | 2.351E+00 | 7.770E-01 | -0.217 |
| | | 537.32 | * | -2.821E-03 | 2.010E-01 | 3.321E-01 | 1.119E-01 | -0.008 |
| | + | 328.77 | | 2.166E-01 | 3.748E-01 | 4.309E-01 | 6.116E-02 | 0.503 |
| | | 432.53 | | 1.294E+00 | 1.580E+00 | 2.801E+00 | 3.113E-01 | 0.462 |
| | | 487.03 | | 3.086E-02 | 1.078E-01 | 1.836E-01 | 2.055E-02 | 0.168 |
| | | 751.79 | | -2.736E-02 | 1.353E+00 | 2.172E+00 | 2.293E-01 | -0.013 |
| | | 815.85 | | -1.636E-01 | 2.462E-01 | 3.597E-01 | 3.853E-02 | -0.455 |
| | | 867.82 | | 6.124E-01 | 1.063E+00 | 1.804E+00 | 1.850E-01 | 0.340 |
| | | 919.63 | | 8.176E-01 | 2.302E+00 | 3.978E+00 | 4.614E-01 | 0.206 |
| | | 925.24 | | -4.910E-01 | 9.198E-01 | 1.452E+00 | 1.486E-01 | -0.338 |
| | | 1596.49 | * | -7.192E-02 | 5.979E-02 | 7.010E-02 | 5.895E-03 | -1.026 |
| CE-141 | | 145.44 | * | -1.785E-02 | 4.489E-02 | 7.251E-02 | 6.646E-03 | -0.246 |
| CE-143 | | 57.37 | | -5.720E-04 | 4.489E-02 | Half-Life | too short | |
| | | 231.56 | | 7.324E-04 | 4.489E-02 | Half-Life | too short | |
| | | 293.26 | * | 5.220E-04 | 4.489E-02 | Half-Life | too short | |
| | + | 350.59 | | 4.043E-02 | 4.489E-02 | Half-Life | too short | |
| | | 490.36 | | -1.208E-03 | 4.489E-02 | Half-Life | too short | |
| | | 664.57 | | -1.968E-03 | 4.489E-02 | Half-Life | too short | |
| | | 721.93 | | -6.529E-04 | 4.489E-02 | Half-Life | too short | |
| | | 80.11 | | 4.338E-01 | 1.311E+00 | 1.928E+00 | 1.659E-01 | 0.225 |
| CE-144 | | 133.54 | * | -5.688E-02 | 1.325E-01 | 2.191E-01 | 3.419E-02 | -0.260 |
| PM-144 | | 476.78 | | 3.928E-03 | 4.618E-02 | 7.761E-02 | 8.875E-03 | 0.051 |
| | | 618.01 | | -6.714E-03 | 2.404E-02 | 3.834E-02 | 3.898E-03 | -0.175 |
| | | 696.49 | * | -2.265E-03 | 2.542E-02 | 4.084E-02 | 3.916E-03 | -0.055 |
| | | 778.57 | | -1.773E+00 | 1.978E+00 | 2.371E+00 | 2.321E-01 | -0.748 |
| | | 696.49 | * | -1.537E-01 | 1.724E+00 | 2.770E+00 | 2.655E-01 | -0.055 |
| PR-144 | | 1489.15 | | -1.783E+00 | 9.238E+00 | 1.506E+01 | 1.267E+00 | -0.118 |
| PM-146 | | 453.90 | * | 1.371E-02 | 2.987E-02 | 5.169E-02 | 6.481E-03 | 0.265 |
| | | 633.02 | | 4.202E-01 | 9.656E-01 | 1.621E+00 | 6.107E-01 | 0.259 |
| | | 735.90 | | -4.890E-02 | 1.021E-01 | 1.541E-01 | 4.460E-02 | -0.317 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| ND-147 | + | 747.13 | | -2.278E-02 | 6.644E-02 | 1.019E-01 | 1.502E-02 | -0.224 |
| | | 91.11 | | 4.219E-01 | 2.498E-01 | 3.647E-01 | 3.615E-02 | 1.157 |
| | | 319.41 | | -6.566E-01 | 2.502E+00 | 3.916E+00 | 5.582E-01 | -0.168 |
| | | 439.89 | | -5.150E+00 | 4.447E+00 | 6.721E+00 | 7.251E-01 | -0.766 |
| PM-149 | * | 531.02 | | -4.328E-01 | 4.515E-01 | 6.755E-01 | 1.093E-01 | -0.641 |
| | | 285.90 | | -3.040E+01 | 1.164E+02 | 1.841E+02 | 3.692E+01 | -0.165 |
| EU-152 | | 121.78 | | 5.048E-02 | 4.468E-02 | 7.935E-02 | 7.762E-03 | 0.636 |
| | | 244.69 | | -7.410E-02 | 2.206E-01 | 3.516E-01 | 4.779E-02 | -0.211 |
| | | 344.27 | * | 2.905E-02 | 7.064E-02 | 1.156E-01 | 1.567E-02 | 0.251 |
| | | 443.98 | | 8.613E-01 | 6.510E-01 | 1.187E+00 | 1.281E-01 | 0.726 |
| | | 778.89 | | -2.330E-01 | 2.255E-01 | 2.620E-01 | 2.563E-02 | -0.890 |
| | | 867.32 | | 2.531E-01 | 6.010E-01 | 9.711E-01 | 9.570E-02 | 0.261 |
| | | 964.01 | | 9.809E-02 | 2.378E-01 | 3.607E-01 | 3.456E-02 | 0.272 |
| | | 1085.78 | | 1.784E-01 | 2.967E-01 | 5.189E-01 | 4.574E-02 | 0.344 |
| | | 1112.02 | | 1.093E-01 | 2.456E-01 | 4.120E-01 | 3.544E-02 | 0.265 |
| | | 1407.95 | | 1.590E-01 | 1.331E-01 | 2.501E-01 | 2.090E-02 | 0.636 |
| GD-153 | | 69.67 | | 7.738E-01 | 1.023E+00 | 1.550E+00 | 1.194E-01 | 0.499 |
| | | 83.37 | | 3.904E+00 | 1.033E+01 | 1.505E+01 | 1.346E+00 | 0.259 |
| | | 97.43 | * | 1.406E-02 | 5.812E-02 | 8.408E-02 | 7.470E-03 | 0.167 |
| EU-154 | | 103.18 | | -5.043E-02 | 6.318E-02 | 1.042E-01 | 9.039E-03 | -0.484 |
| | | 123.07 | | 1.864E-02 | 3.170E-02 | 5.514E-02 | 6.202E-03 | 0.338 |
| | | 247.94 | | -9.515E-02 | 2.542E-01 | 3.561E-01 | 5.594E-02 | -0.267 |
| | | 591.81 | | 6.325E-02 | 4.042E-01 | 6.736E-01 | 8.679E-02 | 0.094 |
| | | 723.30 | | -9.280E-03 | 1.482E-01 | 2.073E-01 | 2.173E-02 | -0.045 |
| | | 756.87 | | 8.727E-02 | 5.449E-01 | 8.911E-01 | 1.141E-01 | 0.098 |
| | | 873.19 | | -1.081E-01 | 2.149E-01 | 3.422E-01 | 4.498E-02 | -0.316 |
| | | 996.32 | | 1.351E-01 | 2.752E-01 | 4.267E-01 | 7.751E-02 | 0.317 |
| | | 1004.76 | | 4.428E-02 | 1.629E-01 | 2.449E-01 | 2.989E-02 | 0.181 |
| | | 1274.45 | * | -5.608E-03 | 9.909E-02 | 1.532E-01 | 1.684E-02 | -0.037 |
| EU-155 | | 48.70 | | -1.480E+00 | 1.262E+00 | 1.892E+00 | 1.530E-01 | -0.782 |
| | | 60.01 | | 9.456E-01 | 2.894E+00 | 4.328E+00 | 3.088E-01 | 0.218 |
| | | 86.54 | + | 1.602E-01 | 6.587E-02 | 1.131E-01 | 1.062E-02 | 1.417 |
| TB-160 | + | 105.31 | * | 8.536E-02 | 6.538E-02 | 1.172E-01 | 1.023E-02 | 0.728 |
| | | 86.79 | | 4.353E-01 | 1.789E-01 | 3.057E-01 | 2.855E-02 | 1.424 |
| | | 197.04 | | -4.976E-02 | 4.073E-01 | 6.427E-01 | 7.163E-02 | -0.077 |
| | | 215.65 | | 1.364E-01 | 5.018E-01 | 8.368E-01 | 1.010E-01 | 0.163 |
| | | 298.57 | | 3.021E-02 | 1.195E-01 | 1.387E-01 | 2.076E-02 | 0.218 |
| | | 879.36 | * | 1.156E-01 | 1.093E-01 | 1.995E-01 | 1.966E-02 | 0.579 |
| | | 962.29 | | -5.564E-01 | 4.099E-01 | 5.367E-01 | 5.148E-02 | -1.037 |
| | | 966.15 | | 2.873E-01 | 1.634E-01 | 2.842E-01 | 2.721E-02 | 1.011 |
| | | 1177.93 | | 8.141E-02 | 2.882E-01 | 4.847E-01 | 3.898E-02 | 0.168 |
| | | 1271.85 | | -3.243E-01 | 5.696E-01 | 8.645E-01 | 7.088E-02 | -0.375 |
| HO-166M | + | 80.57 | | -3.944E-02 | 1.720E-01 | 2.444E-01 | 2.113E-02 | -0.161 |
| | | 184.41 | | 9.606E-02 | 4.022E-02 | 4.444E-02 | 4.686E-03 | 2.161 |
| | | 280.46 | | -7.027E-02 | 6.481E-02 | 9.594E-02 | 1.482E-02 | -0.732 |
| | | 410.95 | + | 5.506E-01 | 3.085E-01 | 3.201E-01 | 3.435E-02 | 1.720 |
| | | 711.68 | * | 1.694E-02 | 4.545E-02 | 7.601E-02 | 7.321E-03 | 0.223 |
| | | 752.31 | | -6.639E-02 | 2.044E-01 | 3.178E-01 | 3.093E-02 | -0.209 |
| | | 810.29 | | -1.612E-02 | 4.326E-02 | 6.620E-02 | 6.506E-03 | -0.243 |

---- 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 | | 6.546E-01 | 1.576E+01 | 2.531E+01 | 1.957E+00 | 0.026 |
| | | 52.39 | | -3.781E+00 | 8.299E+00 | 1.295E+01 | 9.865E-01 | -0.292 |
| | | 59.40 | | -6.844E+00 | 1.586E+01 | 2.262E+01 | 1.609E+00 | -0.303 |
| LU-176 | | 66.72 | * | 2.803E-01 | 1.745E+01 | 2.538E+01 | 1.905E+00 | 0.011 |
| | + | 88.36 | | 3.153E-01 | 1.296E-01 | 2.058E-01 | 1.946E-02 | 1.532 |
| | | 201.83 | | 2.451E-03 | 1.901E-02 | 3.159E-02 | 3.594E-03 | 0.078 |
| | | 306.84 | * | 8.812E-03 | 1.625E-02 | 2.706E-02 | 3.978E-03 | 0.326 |
| | | 401.10 | | -9.107E-01 | 4.492E+00 | 7.484E+00 | 8.006E-01 | -0.122 |
| LU-177 | | 112.95 | | 1.420E+00 | 1.266E+00 | 2.247E+00 | 1.909E-01 | 0.632 |
| | + | 208.36 | * | 2.643E+00 | 1.348E+00 | 1.669E+00 | 1.953E-01 | 1.584 |
| LU-177M | | 52.97 | | -7.370E-02 | 8.450E-01 | 1.346E+00 | 1.017E-01 | -0.055 |
| | | 54.07 | | 3.665E-01 | 4.382E-01 | 7.306E-01 | 5.443E-02 | 0.502 |
| | | 61.30 | | 2.662E-02 | 8.872E-01 | 1.302E+00 | 9.371E-02 | 0.020 |
| | | 121.62 | | 2.313E-01 | 2.287E-01 | 4.052E-01 | 3.424E-02 | 0.571 |
| | | 147.16 | | 2.888E-01 | 4.216E-01 | 7.297E-01 | 6.617E-02 | 0.396 |
| | | 171.86 | | 1.750E-02 | 3.191E-01 | 5.333E-01 | 5.320E-02 | 0.033 |
| | | 218.09 | | 3.234E-01 | 5.672E-01 | 9.590E-01 | 1.170E-01 | 0.337 |
| | + | 268.79 | | 1.114E+00 | 9.255E-01 | 9.278E-01 | 1.383E-01 | 1.201 |
| | | 319.02 | | 1.978E-02 | 1.764E-01 | 2.846E-01 | 4.061E-02 | 0.069 |
| | | 367.43 | | 2.333E-01 | 6.605E-01 | 1.074E+00 | 1.296E-01 | 0.217 |
| | | 413.65 | * | 4.182E-02 | 1.202E-01 | 1.856E-01 | 1.993E-02 | 0.225 |
| HF-181 | | 56.28 | | 8.710E-02 | 5.015E-01 | 8.077E-01 | 5.879E-02 | 0.108 |
| | | 57.53 | | 8.381E-02 | 2.785E-01 | 4.509E-01 | 3.247E-02 | 0.186 |
| | | 65.20 | | -1.005E-01 | 5.977E-01 | 8.611E-01 | 6.383E-02 | -0.117 |
| | | 133.02 | | -2.323E-02 | 4.367E-02 | 7.199E-02 | 6.241E-03 | -0.323 |
| | | 136.25 | | 1.807E-03 | 3.066E-01 | 5.179E-01 | 4.533E-02 | 0.003 |
| | | 345.85 | | 4.262E-02 | 1.396E-01 | 2.270E-01 | 2.984E-02 | 0.188 |
| | | 482.03 | * | -3.019E-02 | 2.965E-02 | 4.485E-02 | 4.830E-03 | -0.673 |
| W-181 | | 56.28 | | 3.321E-02 | 1.925E-01 | 3.100E-01 | 2.256E-02 | 0.107 |
| | | 57.53 | | 3.226E-02 | 1.070E-01 | 1.732E-01 | 1.247E-02 | 0.186 |
| | | 65.20 | * | -3.831E-02 | 2.278E-01 | 3.282E-01 | 2.433E-02 | -0.117 |
| TA-182 | | 67.75 | | -4.570E-02 | 6.437E-02 | 9.813E-02 | 7.429E-03 | -0.466 |
| | | 100.10 | | 7.369E-03 | 1.084E-01 | 1.865E-01 | 1.636E-02 | 0.040 |
| | | 152.43 | | 9.395E-02 | 2.303E-01 | 3.931E-01 | 3.632E-02 | 0.239 |
| | | 222.10 | | 6.517E-02 | 2.337E-01 | 3.892E-01 | 4.827E-02 | 0.167 |
| | + | 1001.68 | | 2.525E+00 | 2.285E+00 | 2.805E+00 | 2.633E-01 | 0.900 |
| | + | 1121.28 | | 3.826E-01 | 2.116E-01 | 2.551E-01 | 2.174E-02 | 1.500 |
| | | 1189.05 | | 3.950E-02 | 2.485E-01 | 4.127E-01 | 3.329E-02 | 0.096 |
| RE-183 | | 1221.42 | * | -4.441E-02 | 1.546E-01 | 2.453E-01 | 1.993E-02 | -0.181 |
| | | 1230.97 | | 1.952E-01 | 3.660E-01 | 6.263E-01 | 5.097E-02 | 0.312 |
| | | 57.98 | | 4.916E-02 | 1.074E-01 | 1.752E-01 | 1.257E-02 | 0.281 |
| | | 59.32 | | -2.861E-02 | 6.628E-02 | 9.455E-02 | 6.729E-03 | -0.303 |
| | | 67.20 | | -8.402E-02 | 1.292E-01 | 1.803E-01 | 1.359E-02 | -0.466 |
| | | 162.32 | * | 2.108E-02 | 6.944E-02 | 1.178E-01 | 1.130E-02 | 0.179 |
| | + | 208.81 | | 2.000E+00 | 1.020E+00 | 1.268E+00 | 1.486E-01 | 1.578 |
| RE-184 | | 291.72 | | -1.163E-01 | 7.311E-01 | 1.033E+00 | 1.566E-01 | -0.113 |
| | | 57.98 | | 1.792E-01 | 3.917E-01 | 6.386E-01 | 4.584E-02 | 0.281 |
| | | 59.32 | | -1.042E-01 | 2.414E-01 | 3.444E-01 | 2.451E-02 | -0.303 |
| | | 67.20 | | -3.062E-01 | 4.707E-01 | 6.571E-01 | 4.951E-02 | -0.466 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 161.27 | | -1.777E-01 | 2.258E-01 | 3.615E-01 | 3.452E-02 | -0.491 |
| | | 216.55 | | 3.388E-02 | 1.776E-01 | 2.948E-01 | 3.572E-02 | 0.115 |
| | | 252.85 | * | -4.884E-03 | 1.535E-01 | 2.491E-01 | 3.495E-02 | -0.020 |
| | | 318.01 | | 1.158E-01 | 3.050E-01 | 5.014E-01 | 7.175E-02 | 0.231 |
| | | 792.07 | | 6.381E-02 | 8.336E-01 | 1.177E+00 | 1.154E-01 | 0.054 |
| | | 903.28 | | -1.942E-01 | 7.435E-01 | 1.180E+00 | 1.160E-01 | -0.165 |
| | | 920.93 | | 1.418E-01 | 3.335E-01 | 5.803E-01 | 5.668E-02 | 0.244 |
| | | 59.72 | | -5.476E-02 | 1.784E-01 | 2.565E-01 | 1.826E-02 | -0.213 |
| | | 61.14 | | -1.752E-03 | 9.800E-02 | 1.434E-01 | 1.031E-02 | -0.012 |
| | | 69.30 | | 6.697E-02 | 1.871E-01 | 2.776E-01 | 2.131E-02 | 0.241 |
| | | 592.07 | | 5.605E-02 | 1.684E+00 | 2.773E+00 | 2.829E-01 | 0.020 |
| | | 646.12 | * | 1.369E-02 | 3.046E-02 | 5.173E-02 | 4.993E-03 | 0.265 |
| | | 717.42 | | -2.148E-01 | 7.076E-01 | 1.110E+00 | 1.071E-01 | -0.193 |
| | | 874.81 | | -8.083E-02 | 4.370E-01 | 7.211E-01 | 7.106E-02 | -0.112 |
| | | 880.27 | | 4.753E-01 | 6.047E-01 | 1.083E+00 | 1.067E-01 | 0.439 |
| RE-188 | | 155.03 | * | -7.669E-03 | 1.196E-01 | 2.000E-01 | 1.866E-02 | -0.038 |
| | | 477.96 | | 6.410E-01 | 2.157E+00 | 3.682E+00 | 3.968E-01 | 0.174 |
| | | 633.10 | | 7.895E-01 | 1.954E+00 | 3.313E+00 | 3.247E-01 | 0.238 |
| W-188 | + | 63.58 | | 8.436E+01 | 4.998E+01 | 6.051E+01 | 4.430E+00 | 1.394 |
| | | 227.08 | | 1.991E+00 | 8.896E+00 | 1.454E+01 | 1.840E+00 | 0.137 |
| IR-192 | + | 290.67 | * | -1.896E+00 | 5.826E+00 | 8.095E+00 | 1.230E+00 | -0.234 |
| | | 295.96 | | 6.390E-01 | 1.821E-01 | 1.997E-01 | 3.010E-02 | 3.200 |
| | | 308.46 | | -2.258E-02 | 6.662E-02 | 1.039E-01 | 1.525E-02 | -0.217 |
| AU-195 | | 316.51 | * | 1.271E-02 | 2.447E-02 | 4.056E-02 | 5.831E-03 | 0.313 |
| | | 468.07 | | 3.509E-02 | 4.920E-02 | 7.798E-02 | 8.804E-03 | 0.450 |
| | | 604.41 | | -9.315E-02 | 3.856E-01 | 5.379E-01 | 7.550E-02 | -0.173 |
| | | 612.46 | | 2.257E-01 | 5.254E-01 | 7.945E-01 | 8.847E-02 | 0.284 |
| | | 65.12 | | -5.079E-03 | 1.044E-01 | 1.515E-01 | 1.122E-02 | -0.034 |
| | | 66.83 | | -6.777E-05 | 5.795E-02 | 8.422E-02 | 6.326E-03 | -0.001 |
| | + | 75.70 | | 7.273E-01 | 1.538E-01 | 2.495E-01 | 2.042E-02 | 2.915 |
| | | 98.88 | * | 4.114E-02 | 1.386E-01 | 2.406E-01 | 2.123E-02 | 0.171 |
| | | 129.76 | | 2.109E+00 | 1.802E+00 | 3.190E+00 | 2.742E-01 | 0.661 |
| | | 367.94 | * | 3.504E-04 | 1.802E+00 | Half-Life | too short | |
| TL-200 | | 579.30 | | -4.215E-03 | 1.802E+00 | Half-Life | too short | |
| | | 828.27 | | 9.040E-03 | 1.802E+00 | Half-Life | too short | |
| | | 1205.75 | | -5.880E-04 | 1.802E+00 | Half-Life | too short | |
| | | 68.90 | | 1.304E+00 | 4.126E+00 | 6.616E+00 | 5.060E-01 | 0.197 |
| TL-201 | | 70.82 | | 6.941E-01 | 2.501E+00 | 3.691E+00 | 2.874E-01 | 0.188 |
| | | 80.30 | | 1.382E+00 | 4.697E+00 | 6.894E+00 | 5.943E-01 | 0.200 |
| | | 135.34 | | 7.729E+00 | 2.470E+01 | 4.229E+01 | 3.691E+00 | 0.183 |
| | | 167.43 | * | 5.248E+00 | 6.822E+00 | 1.179E+01 | 1.153E+00 | 0.445 |
| TL-202 | | 68.90 | | 8.555E-02 | 2.707E-01 | 4.340E-01 | 3.319E-02 | 0.197 |
| | | 70.82 | | 4.540E-02 | 1.636E-01 | 2.415E-01 | 1.880E-02 | 0.188 |
| | | 80.30 | | 9.041E-02 | 3.074E-01 | 4.511E-01 | 3.888E-02 | 0.200 |
| | | 439.56 | * | -3.609E-02 | 5.211E-02 | 8.255E-02 | 8.904E-03 | -0.437 |
| HG-203 | | 70.83 | | 1.809E-01 | 6.565E-01 | 9.686E-01 | 1.268E-01 | 0.187 |
| | | 72.87 | | 5.093E-01 | 3.674E-01 | 6.059E-01 | 7.738E-02 | 0.840 |
| | | 82.60 | | -8.921E-02 | 7.004E-01 | 1.089E+00 | 1.514E-01 | -0.082 |
| | | 279.20 | * | 6.357E-03 | 2.945E-02 | 4.820E-02 | 7.528E-03 | 0.132 |

---- 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 | | 1.363E-01 | 1.035E-01 | 1.719E-01 | 1.364E-02 | 0.793 |
| | + | 74.97 | | 4.006E-01 | 8.470E-02 | 1.296E-01 | 1.052E-02 | 3.092 |
| | | 84.90 | | 7.023E-02 | 1.299E-01 | 1.907E-01 | 1.739E-02 | 0.368 |
| | | 569.67 | | 1.175E-02 | 2.257E-02 | 3.778E-02 | 3.920E-03 | 0.311 |
| | | 1063.62 | * | 3.744E-02 | 3.540E-02 | 6.498E-02 | 5.837E-03 | 0.576 |
| TL-207 | | 1770.23 | | 7.209E-02 | 2.273E-01 | 3.705E-01 | 3.049E-02 | 0.195 |
| | | 81.07 | | -1.652E-04 | 1.266E-01 | 1.984E-01 | 1.725E-02 | -0.001 |
| | | 83.78 | | 4.668E-02 | 8.759E-02 | 1.286E-01 | 1.156E-02 | 0.363 |
| | | 94.90 | | 9.767E-02 | 1.630E-01 | 2.409E-01 | 2.170E-02 | 0.405 |
| | | 122.32 | | 1.471E+00 | 1.059E+00 | 1.899E+00 | 1.727E-01 | 0.775 |
| | | 144.24 | | -2.474E-02 | 4.768E-01 | 7.842E-01 | 7.813E-02 | -0.032 |
| | | 154.21 | | 2.392E-01 | 2.727E-01 | 4.731E-01 | 4.778E-02 | 0.506 |
| | + | 269.46 | | 2.588E-01 | 2.150E-01 | 2.395E-01 | 3.603E-02 | 1.080 |
| | | 323.87 | * | 5.647E-01 | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| | + | 338.28 | | 4.472E+00 | 1.398E+00 | 1.754E+00 | 2.824E-01 | 2.549 |
| | | 445.03 | | 4.333E-01 | 1.570E+00 | 2.686E+00 | 3.686E-01 | 0.161 |
| | PO-209 | 260.50 | | 6.227E-01 | 6.714E+00 | 1.096E+01 | 1.583E+00 | 0.057 |
| | | 262.80 | | -1.278E+01 | 1.792E+01 | 2.748E+01 | 4.004E+00 | -0.465 |
| | | 896.60 | * | -1.723E+00 | 5.282E+00 | 8.559E+00 | 8.427E-01 | -0.201 |
| | BI-210 | 46.50 | * | -2.025E-01 | 1.709E+00 | 2.742E+00 | 2.552E-01 | -0.074 |
| | PB-210 | 46.50 | * | -2.025E-01 | 1.709E+00 | 2.742E+00 | 2.552E-01 | -0.074 |
| | PO-210 | 46.50 | * | -2.025E-01 | 1.709E+00 | 2.742E+00 | 2.311E-01 | -0.074 |
| | PB-211 | 404.84 | * | 9.224E-02 | 6.804E-01 | 1.025E+00 | 6.455E-01 | 0.090 |
| | | 427.08 | | 9.290E-02 | 1.345E+00 | 2.274E+00 | 1.421E+00 | 0.041 |
| | | 831.96 | | -3.985E-01 | 9.778E-01 | 1.441E+00 | 9.055E-01 | -0.277 |
| | BI-212 | 727.18 | * | 8.656E-01 | 3.308E-01 | 4.824E-01 | 5.272E-02 | 1.795 |
| | | 785.46 | | -5.691E-01 | 1.386E+00 | 2.104E+00 | 2.061E-01 | -0.271 |
| | PO-215 | 1620.62 | | 5.089E-01 | 8.537E-01 | 1.563E+00 | 1.312E-01 | 0.326 |
| | | 81.07 | | -1.652E-04 | 1.266E-01 | 1.984E-01 | 1.725E-02 | -0.001 |
| | | 83.78 | | 4.668E-02 | 8.759E-02 | 1.286E-01 | 1.156E-02 | 0.363 |
| | | 94.90 | | 9.767E-02 | 1.630E-01 | 2.409E-01 | 2.170E-02 | 0.405 |
| | | 122.32 | | 1.471E+00 | 1.059E+00 | 1.899E+00 | 1.727E-01 | 0.775 |
| | | 144.24 | | -2.474E-02 | 4.768E-01 | 7.842E-01 | 7.813E-02 | -0.032 |
| | | 154.21 | | 2.392E-01 | 2.727E-01 | 4.731E-01 | 4.778E-02 | 0.506 |
| | | 269.46 | | 2.588E-01 | 2.150E-01 | 2.395E-01 | 3.603E-02 | 1.080 |
| | | 323.87 | * | 5.647E-01 | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| | | 338.28 | | 4.472E+00 | 1.398E+00 | 1.754E+00 | 2.824E-01 | 2.549 |
| | | 445.03 | | 4.333E-01 | 1.570E+00 | 2.686E+00 | 3.686E-01 | 0.161 |
| | RN-219 | 271.23 | | 3.320E-01 | 2.764E-01 | 3.215E-01 | 5.165E-02 | 1.033 |
| | | 401.81 | * | -3.545E-02 | 2.827E-01 | 4.736E-01 | 7.724E-02 | -0.075 |
| | RN-220 | 549.76 | * | -9.695E+00 | 1.808E+01 | 2.837E+01 | 2.981E+00 | -0.342 |
| | RA-223 | 81.07 | | -1.652E-04 | 1.266E-01 | 1.984E-01 | 1.725E-02 | -0.001 |
| | | 83.78 | | 4.668E-02 | 8.759E-02 | 1.286E-01 | 1.156E-02 | 0.363 |
| | | 94.90 | | 9.767E-02 | 1.630E-01 | 2.409E-01 | 2.170E-02 | 0.405 |
| | | 122.32 | | 1.471E+00 | 1.059E+00 | 1.899E+00 | 1.727E-01 | 0.775 |
| | | 144.24 | | -2.474E-02 | 4.768E-01 | 7.842E-01 | 7.813E-02 | -0.032 |
| | | 154.21 | | 2.392E-01 | 2.727E-01 | 4.731E-01 | 4.778E-02 | 0.506 |
| | | 269.46 | | 2.588E-01 | 2.150E-01 | 2.395E-01 | 3.603E-02 | 1.080 |
| | | 323.87 | * | 5.647E-01 | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |

---- 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 | | 4.472E+00 | 1.398E+00 | 1.754E+00 | 2.824E-01 | 2.549 |
| | | 445.03 | | 4.333E-01 | 1.570E+00 | 2.686E+00 | 3.686E-01 | 0.161 |
| | | 79.80 | | -4.492E-01 | 1.044E+00 | 1.459E+00 | 3.135E-01 | -0.308 |
| | | 236.00 | | -1.647E-01 | 1.855E-01 | 2.510E-01 | 3.952E-02 | -0.656 |
| | | 256.20 | * | -1.097E-02 | 2.694E-01 | 4.365E-01 | 8.319E-02 | -0.025 |
| | | 286.10 | | -1.096E-01 | 1.080E+00 | 1.729E+00 | 3.162E-01 | -0.063 |
| TH-227 | + | 299.80 | | 8.404E-01 | 1.899E+00 | 1.803E+00 | 3.842E-01 | 0.466 |
| | | 304.40 | | 3.815E-01 | 1.400E+00 | 2.051E+00 | 4.511E-01 | 0.186 |
| | | 334.20 | | -1.540E-01 | 1.843E+00 | 2.590E+00 | 5.728E-01 | -0.059 |
| | | 79.80 | | -4.492E-01 | 1.044E+00 | 1.459E+00 | 3.175E-01 | -0.308 |
| | + | 94.00 | | 1.075E+01 | 3.096E+00 | 2.586E+00 | 5.677E-01 | 4.157 |
| | | 236.00 | | -1.647E-01 | 1.853E-01 | 2.510E-01 | 3.729E-02 | -0.656 |
| TH-229 | | 256.20 | * | -1.097E-02 | 2.694E-01 | 4.365E-01 | 9.300E-02 | -0.025 |
| | | 286.10 | | -1.096E-01 | 1.086E+00 | 1.729E+00 | 3.174E-01 | -0.063 |
| | + | 299.80 | | 8.404E-01 | 1.899E+00 | 1.803E+00 | 3.842E-01 | 0.466 |
| | | 304.40 | | 3.815E-01 | 1.400E+00 | 2.051E+00 | 4.511E-01 | 0.186 |
| | | 334.20 | | -1.540E-01 | 1.843E+00 | 2.590E+00 | 5.728E-01 | -0.059 |
| | | 85.43 | | -1.137E-02 | 1.307E-01 | 1.854E-01 | 1.702E-02 | -0.061 |
| PA-231 | + | 88.47 | | 1.815E-01 | 7.458E-02 | 1.171E-01 | 1.106E-02 | 1.550 |
| | | 100.00 | | 3.488E-02 | 1.110E-01 | 1.927E-01 | 1.692E-02 | 0.181 |
| | | 193.63 | * | 1.761E-02 | 3.300E-01 | 5.476E-01 | 6.013E-02 | 0.032 |
| | | 210.97 | | 4.358E-01 | 5.522E-01 | 8.549E-01 | 1.012E-01 | 0.510 |
| | | 283.67 | * | -8.415E-02 | 1.087E+00 | 1.744E+00 | 3.456E-01 | -0.048 |
| | + | 301.29 | | 3.362E-01 | 7.585E-01 | 6.836E-01 | 1.178E-01 | 0.492 |
| TH-231 | | 81.07 | | -1.652E-04 | 1.266E-01 | 1.984E-01 | 1.725E-02 | -0.001 |
| | | 83.78 | | 4.668E-02 | 8.759E-02 | 1.286E-01 | 1.156E-02 | 0.363 |
| | | 94.90 | | 9.767E-02 | 1.630E-01 | 2.409E-01 | 2.170E-02 | 0.405 |
| | | 122.32 | | 1.471E+00 | 1.059E+00 | 1.899E+00 | 1.727E-01 | 0.775 |
| | | 144.24 | | -2.474E-02 | 4.768E-01 | 7.842E-01 | 7.813E-02 | -0.032 |
| | | 154.21 | | 2.392E-01 | 2.727E-01 | 4.731E-01 | 4.778E-02 | 0.506 |
| U-231 | + | 269.46 | | 2.588E-01 | 2.150E-01 | 2.395E-01 | 3.603E-02 | 1.080 |
| | | 323.87 | * | 5.647E-01 | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| | + | 338.28 | | 4.472E+00 | 1.398E+00 | 1.754E+00 | 2.824E-01 | 2.549 |
| | | 445.03 | | 4.333E-01 | 1.570E+00 | 2.686E+00 | 3.686E-01 | 0.161 |
| | | 84.21 | | 4.147E+00 | 5.048E+00 | 7.515E+00 | 6.793E-01 | 0.552 |
| | + | 92.29 | | 1.439E+01 | 2.983E+00 | 4.364E+00 | 3.998E-01 | 3.298 |
| PA-233 | | 95.87 | * | 7.175E-01 | 1.005E+00 | 1.497E+00 | 1.341E-01 | 0.479 |
| | | 108.00 | | -1.547E+00 | 1.689E+00 | 2.761E+00 | 2.365E-01 | -0.560 |
| | + | 75.28 | | 1.169E+01 | 2.883E+00 | 3.843E+00 | 5.798E-01 | 3.042 |
| | + | 86.59 | | 2.603E+00 | 1.257E+00 | 1.840E+00 | 4.979E-01 | 1.414 |
| | + | 300.12 | | 2.343E-01 | 5.290E-01 | 5.011E-01 | 9.630E-02 | 0.468 |
| | | 311.98 | * | 1.008E-02 | 4.441E-02 | 7.230E-02 | 1.061E-02 | 0.139 |
| PA-234 | | 340.50 | | 3.443E-01 | 4.774E-01 | 7.103E-01 | 1.843E-01 | 0.485 |
| | | 398.62 | | 1.120E+00 | 1.420E+00 | 2.473E+00 | 6.770E-01 | 0.453 |
| | | 415.76 | | -1.608E-01 | 1.129E+00 | 1.651E+00 | 3.712E-01 | -0.097 |
| | + | 63.00 | | 2.402E+00 | 1.456E+00 | 1.742E+00 | 2.579E-01 | 1.379 |
| | | 94.67 | | 1.238E-01 | 1.193E-01 | 1.794E-01 | 2.276E-02 | 0.690 |
| | | 98.44 | | 1.097E-02 | 5.915E-02 | 9.753E-02 | 5.444E-02 | 0.113 |
| | | 99.86 | | 1.176E-01 | 2.824E-01 | 4.924E-01 | 4.325E-02 | 0.239 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 111.00 | | -1.495E-02 | 1.154E-01 | 1.959E-01 | 2.354E-02 | -0.076 |
| | | 131.20 | | -2.867E-02 | 6.736E-02 | 1.117E-01 | 9.639E-03 | -0.257 |
| | | 152.70 | | 1.480E-01 | 2.217E-01 | 3.804E-01 | 6.608E-02 | 0.389 |
| | + | 186.00 | | 3.458E+00 | 1.781E+00 | 1.842E+00 | 5.863E-01 | 1.877 |
| | | 226.40 | | 1.097E-01 | 2.785E-01 | 4.588E-01 | 7.390E-02 | 0.239 |
| | | 227.20 | | 1.004E-01 | 2.915E-01 | 4.792E-01 | 6.069E-02 | 0.210 |
| | | 248.90 | | -4.446E-01 | 5.944E-01 | 7.880E-01 | 1.961E-01 | -0.564 |
| | + | 293.70 | | 3.953E+00 | 1.273E+00 | 1.069E+00 | 2.275E-01 | 3.699 |
| | | 369.80 | | -2.923E-02 | 6.509E-01 | 1.009E+00 | 2.351E-01 | -0.029 |
| | | 568.70 | | -6.326E-02 | 7.355E-01 | 1.172E+00 | 1.217E-01 | -0.054 |
| | | 569.50 | | 1.354E-01 | 2.031E-01 | 3.434E-01 | 3.564E-02 | 0.394 |
| | | 574.00 | | -1.549E-01 | 1.050E+00 | 1.705E+00 | 1.764E-01 | -0.091 |
| | | 699.00 | | 5.191E-01 | 5.206E-01 | 9.038E-01 | 1.766E-01 | 0.574 |
| | | 706.10 | | 2.906E-01 | 7.530E-01 | 1.245E+00 | 5.578E-01 | 0.233 |
| | | 733.00 | | -1.051E-02 | 2.761E-01 | 3.865E-01 | 8.749E-02 | -0.027 |
| | | 742.81 | | -2.628E-01 | 9.767E-01 | 1.502E+00 | 1.012E+00 | -0.175 |
| | + | 796.30 | | 1.043E+00 | 1.059E+00 | 1.337E+00 | 3.670E-01 | 0.781 |
| | | 805.60 | | 6.180E-01 | 7.720E-01 | 1.297E+00 | 4.023E-01 | 0.476 |
| | | 819.60 | | 1.134E+00 | 9.454E-01 | 1.546E+00 | 5.926E-01 | 0.734 |
| | | 826.30 | | 4.129E-01 | 6.535E-01 | 1.069E+00 | 4.811E-01 | 0.386 |
| | | 831.60 | | -2.386E-01 | 4.916E-01 | 7.353E-01 | 2.222E-01 | -0.324 |
| | | 876.40 | | 1.449E-01 | 6.427E-01 | 1.073E+00 | 1.104E+00 | 0.135 |
| | | 880.51 | | 1.386E-01 | 2.124E-01 | 3.769E-01 | 3.713E-02 | 0.368 |
| | | 883.24 | | -4.125E-04 | 2.102E-01 | 3.529E-01 | 2.378E-01 | -0.001 |
| | | 899.00 | | 1.825E-01 | 5.833E-01 | 9.992E-01 | 4.394E-01 | 0.183 |
| | | 925.00 | | -4.944E-01 | 8.613E-01 | 1.354E+00 | 1.320E-01 | -0.365 |
| | | 926.50 | | -2.689E-02 | 1.198E-01 | 1.951E-01 | 5.012E-02 | -0.138 |
| | | 946.00 | * | 3.513E-02 | 2.082E-01 | 3.535E-01 | 6.810E-02 | 0.099 |
| | | 949.00 | | 1.507E-01 | 3.080E-01 | 5.392E-01 | 5.204E-02 | 0.279 |
| | | 980.50 | | 1.169E-01 | 5.173E-01 | 8.812E-01 | 8.373E-02 | 0.133 |
| PA-234M | | 1394.10 | | 2.076E-02 | 7.813E-01 | 1.266E+00 | 8.233E-01 | 0.016 |
| | | 766.42 | | 8.839E+00 | 1.037E+01 | 1.469E+01 | 7.486E+00 | 0.602 |
| U-235 | + | 1001.03 | * | 5.670E+00 | 5.137E+00 | 6.308E+00 | 6.710E-01 | 0.899 |
| | + | 89.95 | | 1.496E+00 | 9.888E-01 | 1.173E+00 | 3.645E-01 | 1.275 |
| | + | 93.35 | | 3.344E+00 | 1.129E+00 | 9.893E-01 | 2.787E-01 | 3.380 |
| | | 105.00 | | 4.522E-01 | 6.634E-01 | 1.144E+00 | 3.413E-01 | 0.395 |
| | | 143.76 | * | 7.460E-02 | 1.464E-01 | 2.456E-01 | 4.343E-02 | 0.304 |
| | | 163.35 | | 1.889E-01 | 2.924E-01 | 5.009E-01 | 9.794E-02 | 0.377 |
| | + | 185.71 | | 1.281E-01 | 5.363E-02 | 6.835E-02 | 7.248E-03 | 1.874 |
| | | 205.31 | | 1.884E-01 | 3.526E-01 | 5.382E-01 | 1.107E-01 | 0.350 |
| NP-236 | | 94.67 | | 9.479E-02 | 9.015E-02 | 1.362E-01 | 1.229E-02 | 0.696 |
| | | 98.44 | | 8.275E-03 | 4.448E-02 | 7.373E-02 | 6.518E-03 | 0.112 |
| | | 111.00 | | -1.131E-02 | 8.730E-02 | 1.482E-01 | 1.262E-02 | -0.076 |
| | | 160.31 | * | -4.869E-02 | 5.089E-02 | 8.069E-02 | 7.676E-03 | -0.603 |
| NP-239 | | 99.55 | | 6.083E-02 | 9.532E-02 | 1.675E-01 | 1.473E-02 | 0.363 |
| | | 117.00 | * | 9.462E-03 | 1.150E-01 | 1.965E-01 | 1.662E-02 | 0.048 |
| | + | 209.75 | | 1.549E+00 | 7.903E-01 | 9.953E-01 | 1.172E-01 | 1.557 |
| | | 228.18 | | -4.669E-02 | 1.588E-01 | 2.519E-01 | 3.204E-02 | -0.185 |
| | | 277.60 | | 1.082E-01 | 1.271E-01 | 2.145E-01 | 3.302E-02 | 0.505 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| | | 334.30 | -1.052E-01 | 1.043E+00 | 1.464E+00 | 1.999E-01 | -0.072 |
| AM-241 | | 59.54 * | -2.665E-02 | 9.160E-02 | 1.319E-01 | 1.036E-02 | -0.202 |
| CM-243 | | 99.55 | 6.261E-02 | 9.810E-02 | 1.724E-01 | 1.516E-02 | 0.363 |
| | | 103.76 * | -6.996E-02 | 5.815E-02 | 9.376E-02 | 8.119E-03 | -0.746 |
| | | 117.00 | 9.736E-03 | 1.183E-01 | 2.022E-01 | 1.711E-02 | 0.048 |
| | + | 209.75 | 1.528E+00 | 7.792E-01 | 9.813E-01 | 1.155E-01 | 1.557 |
| | | 228.18 | -4.719E-02 | 1.605E-01 | 2.546E-01 | 3.238E-02 | -0.185 |
| | | 277.60 | 1.091E-01 | 1.282E-01 | 2.163E-01 | 3.329E-02 | 0.505 |
| AM-246 | | 798.80 | 3.073E-02 | 1.191E-01 | 1.724E-01 | 1.692E-02 | 0.178 |
| | | 1036.00 | -5.871E-02 | 2.124E-01 | 3.409E-01 | 3.128E-02 | -0.172 |
| | | 1062.04 | 5.530E-02 | 1.557E-01 | 2.675E-01 | 2.406E-02 | 0.207 |
| | | 1078.86 * | 6.944E-02 | 1.098E-01 | 1.923E-01 | 1.705E-02 | 0.361 |
| CM-247 | | 278.00 | 4.132E-01 | 5.352E-01 | 8.996E-01 | 1.387E-01 | 0.459 |
| | | 287.40 | 3.614E-01 | 8.745E-01 | 1.445E+00 | 2.208E-01 | 0.250 |
| | | 402.60 * | -4.271E-03 | 2.502E-02 | 4.178E-02 | 4.472E-03 | -0.102 |
| CF-249 | | 252.85 | -1.819E-02 | 5.716E-01 | 9.275E-01 | 1.301E-01 | -0.020 |
| | | 333.44 | -9.738E-03 | 1.396E-01 | 1.965E-01 | 2.691E-02 | -0.050 |
| | | 387.95 * | 1.430E-02 | 2.659E-02 | 4.661E-02 | 5.075E-03 | 0.307 |
| CF-251 | | 176.60 * | -8.576E-04 | 8.218E-02 | 1.367E-01 | 1.392E-02 | -0.006 |
| | | 227.00 | 6.942E-02 | 2.627E-01 | 4.302E-01 | 5.445E-02 | 0.161 |
| | | 285.00 | -2.955E-01 | 1.236E+00 | 1.960E+00 | 3.006E-01 | -0.151 |

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]G246328002      *
* Acquisition date   : 18-FEB-2010 11:05:59 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 02:00:01.49           Half life ratio : 8.000        *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G246328002              Analyst initials: MXR1          *
* Batch Number       : 950786                  Sample Quantity : 1.5113E+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 | 2.357E+01 | 2.449E+00 | 3.360E-01 | 0.000E+00 |
| CD-109 | 1.356E+00 | 5.462E-01 | 8.523E-01 | 0.000E+00 |
| SN-126 | 1.329E-01 | 5.353E-02 | 8.381E-02 | 0.000E+00 |
| TL-208 | 2.926E-01 | 6.097E-02 | 3.834E-02 | 0.000E+00 |
| BI-211 | 2.011E+00 | 3.971E-01 | 2.305E-01 | 0.000E+00 |
| PB-212 | 8.878E-01 | 1.432E-01 | 6.332E-02 | 0.000E+00 |
| PO-212 | 8.878E-01 | 1.432E-01 | 6.332E-02 | 0.000E+00 |
| BI-214 | 6.506E-01 | 1.354E-01 | 7.673E-02 | 0.000E+00 |
| PB-214 | 6.997E-01 | 1.427E-01 | 8.011E-02 | 0.000E+00 |
| PO-214 | 6.997E-01 | 1.427E-01 | 8.011E-02 | 0.000E+00 |
| PO-216 | 8.878E-01 | 1.432E-01 | 6.332E-02 | 0.000E+00 |
| PO-218 | 6.997E-01 | 1.427E-01 | 8.011E-02 | 0.000E+00 |
| RA-224 | 2.761E+00 | 8.354E-01 | 7.207E-01 | 0.000E+00 |
| RA-226 | 6.506E-01 | 1.354E-01 | 7.673E-02 | 0.000E+00 |
| AC-228 | 8.714E-01 | 2.270E-01 | 1.498E-01 | 0.000E+00 |
| RA-228 | 8.714E-01 | 2.270E-01 | 1.498E-01 | 0.000E+00 |
| TH-228 | 9.030E-01 | 1.457E-01 | 6.440E-02 | 0.000E+00 |
| TH-230 | 6.506E-01 | 1.354E-01 | 7.672E-02 | 0.000E+00 |
| TH-232 | 8.714E-01 | 2.270E-01 | 1.498E-01 | 0.000E+00 |
| TH-234 | 2.061E+00 | 1.238E+00 | 1.223E+00 | 0.000E+00 |
| U-234 | 6.506E-01 | 1.354E-01 | 7.672E-02 | 0.000E+00 |
| NP-237 | 3.904E-01 | 1.759E-01 | 2.702E-01 | 0.000E+00 |
| U-238 | 2.061E+00 | 1.238E+00 | 1.223E+00 | 0.000E+00 |
| AM-243 | 2.232E-01 | 4.624E-02 | 5.297E-02 | 0.000E+00 |
| ANH-511 | 9.637E-02 | 4.813E-02 | 3.341E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 6.383E-02 | 2.215E-01 | 3.994E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -2.010E-03 | 3.480E-02 | 5.549E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 0.000E+00 | 4.003E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -7.081E-03 | 2.103E-02 | 3.276E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.569E-02 | 4.401E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 9.949E-03 | 2.889E-02 | 5.203E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -1.811E-02 | 4.979E-02 | 8.243E-02 | 0.000E+00 | NOT IDENT. |
| CR-51 | -3.657E-01 | 2.703E-01 | 4.041E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 1.896E-01 | 2.073E-01 | 3.906E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 9.115E-03 | 2.680E-02 | 4.843E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -1.921E-02 | 2.513E-02 | 4.040E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | 2.042E-02 | 1.532E-02 | 2.994E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -3.656E-03 | 2.768E-02 | 4.549E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | 1.516E-02 | 6.798E-02 | 1.186E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -2.484E-02 | 2.805E-02 | 4.057E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 2.574E-02 | 7.756E-02 | 1.195E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 9.517E-01 | 9.629E-01 | 1.793E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -2.984E-02 | 4.345E-01 | 7.711E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | 9.749E-03 | 7.155E-02 | 1.249E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.449E-02 | 2.813E-02 | 4.703E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 8.762E+00 | 1.190E+01 | 2.202E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | 2.021E-01 | 2.777E-01 | 4.529E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 3.887E-02 | 4.633E-02 | 8.639E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | 1.545E-02 | 5.469E-02 | 9.798E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 6.826E+00 | 5.177E+00 | 9.004E+00 | 0.000E+00 | NOT IDENT. |
| SR-85 | 3.568E-02 | 2.706E-02 | 4.707E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 1.822E-02 | 6.514E-01 | 1.117E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -1.056E-02 | 2.089E-02 | 3.045E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 4.440E-03 | 1.928E-02 | 3.525E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -4.637E+00 | 1.498E+01 | 2.455E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -1.355E-02 | 2.491E-02 | 4.008E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 2.784E-02 | 3.272E-02 | 5.337E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | -8.105E-02 | 9.932E-02 | 1.461E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 2.438E-02 | 4.943E-02 | 8.728E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 4.738E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 8.198E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 6.559E+00 | 1.265E+01 | 2.239E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 4.026E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.764E-03 | 2.297E-02 | 3.956E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -9.945E-03 | 1.973E-02 | 3.340E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 1.328E-02 | 2.584E-02 | 4.733E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 3.471E-02 | 2.344E-01 | 4.078E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 3.471E-02 | 2.344E-01 | 4.078E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -2.158E-03 | 2.281E-02 | 4.037E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -3.652E-02 | 2.749E-02 | 4.102E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -2.328E-01 | 1.117E+00 | 1.931E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -2.785E-02 | 2.889E-02 | 4.811E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -2.785E-02 | 2.889E-02 | 4.811E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 4.911E-02 | 1.277E-01 | 2.104E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 1.729E+00 | 1.311E+01 | 2.316E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 3.876E-02 | 3.806E-02 | 7.220E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 1.417E+00 | 2.337E+00 | 4.247E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.724E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.080E-02 | 1.794E-02 | 3.351E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | 1.812E-01 | 7.118E-01 | 1.163E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | 7.495E-03 | 4.948E-02 | 8.664E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | -5.597E-03 | 6.088E-02 | 1.079E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -4.091E-01 | 5.675E+00 | 1.059E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 1.016E-01 | 1.423E-01 | 2.575E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -5.116E-02 | 1.247E-01 | 1.932E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -2.320E-01 | 1.222E+00 | 2.035E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -4.118E-03 | 3.138E-02 | 5.552E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -8.422E-02 | 9.793E-02 | 1.525E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.638E-01 | 7.032E-01 | 1.205E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 2.687E-02 | 3.117E-02 | 5.075E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 1.773E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 5.378E-02 | 5.176E-02 | 7.062E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 3.962E-02 | 1.133E-01 | 1.806E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 4.097E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -3.268E-02 | 8.722E-02 | 1.438E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 1.834E-02 | 2.785E-02 | 4.997E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 1.939E-02 | 2.944E-02 | 5.282E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -1.125E-02 | 1.888E-02 | 3.314E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -2.821E-03 | 1.970E-01 | 3.432E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -7.192E-02 | 5.859E-02 | 7.044E-02 | 0.000E+00 | FAIL ABUN |
| CE-141 | -1.785E-02 | 4.399E-02 | 7.734E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.968E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -5.688E-02 | 1.298E-01 | 2.342E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -2.265E-03 | 2.491E-02 | 4.193E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -1.537E-01 | 1.690E+00 | 2.844E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.371E-02 | 2.927E-02 | 5.364E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -4.328E-01 | 4.425E-01 | 6.982E-01 | 0.000E+00 | FAIL ABUN |
| PM-149 | -3.040E+01 | 1.141E+02 | 1.933E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | 2.905E-02 | 6.923E-02 | 1.208E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | 1.406E-02 | 5.696E-02 | 9.053E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | -5.608E-03 | 9.711E-02 | 1.548E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 8.536E-02 | 6.408E-02 | 1.260E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 1.156E-01 | 1.071E-01 | 2.036E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 1.694E-02 | 4.454E-02 | 7.800E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | 2.803E-01 | 1.710E+01 | 2.757E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 8.812E-03 | 1.593E-02 | 2.836E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 1.321E+00 | 1.765E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | 4.182E-02 | 1.178E-01 | 1.930E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -3.019E-02 | 2.906E-02 | 4.647E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -3.831E-02 | 2.232E-01 | 3.566E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -4.441E-02 | 1.515E-01 | 2.482E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 2.108E-02 | 6.805E-02 | 1.254E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -4.884E-03 | 1.504E-01 | 2.622E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.369E-02 | 2.985E-02 | 5.321E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | -7.669E-03 | 1.173E-01 | 2.130E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -1.896E+00 | 5.709E+00 | 8.493E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | 1.271E-02 | 2.398E-02 | 4.247E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 4.114E-02 | 1.358E-01 | 2.590E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.071E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 5.248E+00 | 6.686E+00 | 1.253E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | -3.609E-02 | 5.107E-02 | 8.573E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | 6.357E-03 | 2.886E-02 | 5.062E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 3.744E-02 | 3.469E-02 | 6.599E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | 5.647E-01 | 4.915E-01 | 8.087E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.723E+00 | 5.176E+00 | 8.731E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | -2.025E-01 | 1.674E+00 | 3.002E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | -2.025E-01 | 1.674E+00 | 3.002E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | -2.025E-01 | 1.674E+00 | 3.002E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 9.224E-02 | 6.668E-01 | 1.067E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 3.242E-01 | 4.947E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 5.647E-01 | 4.915E-01 | 8.087E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | -3.545E-02 | 2.770E-01 | 4.930E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | -9.695E+00 | 1.772E+01 | 2.930E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 5.647E-01 | 4.915E-01 | 8.087E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -1.097E-02 | 2.640E-01 | 4.594E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -1.097E-02 | 2.640E-01 | 4.594E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 1.761E-02 | 3.234E-01 | 5.802E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -8.415E-02 | 1.065E+00 | 1.831E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 5.647E-01 | 4.915E-01 | 8.087E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | 7.175E-01 | 9.847E-01 | 1.613E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 1.008E-02 | 4.352E-02 | 7.572E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | 3.513E-02 | 2.040E-01 | 3.601E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 5.670E+00 | 5.034E+00 | 6.416E+00 | 0.000E+00 | FAIL ABUN |
| U-235 | 7.460E-02 | 1.435E-01 | 2.621E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -4.869E-02 | 4.988E-02 | 8.587E-02 | 0.000E+00 | NOT IDENT. |
| NP-239 | 9.462E-03 | 1.127E-01 | 2.106E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -2.665E-02 | 8.977E-02 | 1.436E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -6.996E-02 | 5.699E-02 | 1.008E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 6.944E-02 | 1.076E-01 | 1.952E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -4.271E-03 | 2.452E-02 | 4.349E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.430E-02 | 2.606E-02 | 4.856E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -8.576E-04 | 8.054E-02 | 1.451E-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]G246328002.CNF;1
Sample date       : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:05:59
Sample ID        : G246328002      Sample quantity   : 1.51130E+02 GRAM
Detector name    : GAM11           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.49  0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000         Sensitivity      : 5.00000
Batch ID         : 950786           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 | 1241 | 10.67* | 1.225E+00 | 2.357E+01 | 2.357E+01 | 10.60 |
| CD-109 | 88.03 | 134 | 3.72* | 6.783E+00 | 1.322E+00 | 1.356E+00 | 41.09 |
| SN-126 | 64.28 | 135 | 9.60 | 4.293E+00 | 8.156E-01 | 8.156E-01 | 60.55 |
| | 86.94 | 134 | 8.90 | 6.783E+00 | 5.527E-01 | 5.527E-01 | 57.66 |
| | 87.57 | 134 | 37.00* | 6.783E+00 | 1.329E-01 | 1.329E-01 | 41.09 |
| TL-208 | 277.35 | --- | 6.80 | 4.676E+00 | --- | Line Not Found | --- |
| | 510.84 | 115 | 21.60 | 2.954E+00 | 4.461E-01 | 4.461E-01 | 51.64 |
| | 583.14 | 264 | 84.20* | 2.661E+00 | 2.926E-01 | 2.926E-01 | 21.26 |
| | 860.37 | 32 | 12.46 | 1.926E+00 | 3.316E-01 | 3.316E-01 | 90.56 |
| BI-211 | 72.87 | --- | 1.27 | 5.576E+00 | --- | Line Not Found | --- |
| | 351.07 | 411 | 12.94* | 3.921E+00 | 2.011E+00 | 2.011E+00 | 20.15 |
| PB-212 | 74.81 | 343 | 10.70 | 5.787E+00 | 1.377E+00 | 1.377E+00 | 23.11 |
| | 77.11 | 535 | 18.00 | 6.017E+00 | 1.228E+00 | 1.228E+00 | 16.07 |
| | 87.30 | 134 | 8.00 | 6.783E+00 | 6.149E-01 | 6.149E-01 | 42.29 |
| | 238.63 | 831 | 44.60* | 5.210E+00 | 8.878E-01 | 8.878E-01 | 16.46 |
| | 300.09 | 27 | 3.41 | 4.407E+00 | 4.535E-01 | 4.535E-01 | 225.55 |
| PO-212 | 74.81 | 343 | 10.70 | 5.787E+00 | 1.377E+00 | 1.377E+00 | 23.11 |
| | 77.11 | 535 | 18.00 | 6.017E+00 | 1.228E+00 | 1.228E+00 | 16.07 |
| | 87.30 | 134 | 8.00 | 6.783E+00 | 6.149E-01 | 6.149E-01 | 42.29 |
| | 115.19 | --- | 0.60 | 7.407E+00 | --- | Line Not Found | --- |
| | 238.63 | 831 | 44.60* | 5.210E+00 | 8.878E-01 | 8.878E-01 | 16.46 |
| | 300.09 | 27 | 3.41 | 4.407E+00 | 4.535E-01 | 4.535E-01 | 225.55 |
| BI-214 | 609.31 | 312 | 46.30* | 2.569E+00 | 6.506E-01 | 6.506E-01 | 21.24 |
| | 1120.29 | 74 | 15.10 | 1.531E+00 | 8.002E-01 | 8.002E-01 | 55.71 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.069E+00 | 1.069E+00 | 25.46 |
| PB-214 | 74.81 | 343 | 6.21 | 5.787E+00 | 2.372E+00 | 2.372E+00 | 22.40 |
| | 77.11 | 535 | 10.50 | 6.017E+00 | 2.105E+00 | 2.105E+00 | 17.78 |
| | 87.30 | 134 | 4.67 | 6.783E+00 | 1.053E+00 | 1.053E+00 | 41.81 |
| | 241.98 | 227 | 7.49 | 5.164E+00 | 1.456E+00 | 1.456E+00 | 31.38 |
| | 295.21 | 284 | 19.20 | 4.468E+00 | 8.236E-01 | 8.236E-01 | 29.17 |
| | 351.92 | 411 | 37.20* | 3.921E+00 | 6.997E-01 | 6.997E-01 | 20.81 |
| PO-214 | 74.81 | 343 | 6.21 | 5.787E+00 | 2.372E+00 | 2.372E+00 | 22.40 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| | 77.11 | 535 | 10.50 | 6.017E+00 | 2.105E+00 | 2.105E+00 | 17.78 |
| | 87.30 | 134 | 4.67 | 6.783E+00 | 1.053E+00 | 1.053E+00 | 41.81 |
| | 241.98 | 227 | 7.49 | 5.164E+00 | 1.456E+00 | 1.456E+00 | 31.38 |
| | 295.21 | 284 | 19.20 | 4.468E+00 | 8.236E-01 | 8.236E-01 | 29.17 |
| | 351.92 | 411 | 37.20* | 3.921E+00 | 6.997E-01 | 6.997E-01 | 20.81 |
| PO-216 | 74.81 | 343 | 10.70 | 5.787E+00 | 1.377E+00 | 1.377E+00 | 23.11 |
| | 77.11 | 535 | 18.00 | 6.017E+00 | 1.228E+00 | 1.228E+00 | 16.07 |
| | 87.30 | 134 | 8.00 | 6.783E+00 | 6.149E-01 | 6.149E-01 | 42.29 |
| | 238.63 | 831 | 44.60* | 5.210E+00 | 8.878E-01 | 8.878E-01 | 16.46 |
| | 300.09 | 27 | 3.41 | 4.407E+00 | 4.535E-01 | 4.535E-01 | 225.55 |
| PO-218 | 74.81 | 343 | 6.21 | 5.787E+00 | 2.372E+00 | 2.372E+00 | 22.40 |
| | 77.11 | 535 | 10.50 | 6.017E+00 | 2.105E+00 | 2.105E+00 | 17.78 |
| | 87.30 | 134 | 4.67 | 6.783E+00 | 1.053E+00 | 1.053E+00 | 41.81 |
| | 241.98 | 227 | 7.49 | 5.164E+00 | 1.456E+00 | 1.456E+00 | 31.38 |
| | 295.21 | 284 | 19.20 | 4.468E+00 | 8.236E-01 | 8.236E-01 | 29.17 |
| | 351.92 | 411 | 37.20* | 3.921E+00 | 6.997E-01 | 6.997E-01 | 20.81 |
| RA-224 | 240.98 | 227 | 3.95* | 5.164E+00 | 2.761E+00 | 2.761E+00 | 30.88 |
| RA-226 | 609.31 | 312 | 46.30* | 2.569E+00 | 6.506E-01 | 6.506E-01 | 21.24 |
| | 1120.29 | 74 | 15.10 | 1.531E+00 | 8.002E-01 | 8.002E-01 | 55.71 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.069E+00 | 1.069E+00 | 25.46 |
| AC-228 | 338.32 | 198 | 11.40 | 4.038E+00 | 1.071E+00 | 1.071E+00 | 50.28 |
| | 911.07 | 178 | 27.70* | 1.833E+00 | 8.714E-01 | 8.714E-01 | 26.58 |
| | 969.11 | 115 | 16.60 | 1.737E+00 | 9.920E-01 | 9.920E-01 | 38.98 |
| RA-228 | 338.32 | 198 | 11.40 | 4.038E+00 | 1.071E+00 | 1.071E+00 | 50.28 |
| | 911.07 | 178 | 27.70* | 1.833E+00 | 8.714E-01 | 8.714E-01 | 26.58 |
| | 969.11 | 115 | 16.60 | 1.737E+00 | 9.920E-01 | 9.920E-01 | 38.98 |
| TH-228 | 74.81 | 343 | 10.70 | 5.787E+00 | 1.377E+00 | 1.400E+00 | 21.17 |
| | 77.11 | 535 | 18.00 | 6.017E+00 | 1.228E+00 | 1.249E+00 | 16.07 |
| | 87.30 | 134 | 8.00 | 6.783E+00 | 6.149E-01 | 6.253E-01 | 41.09 |
| | 238.63 | 831 | 44.60* | 5.210E+00 | 8.878E-01 | 9.030E-01 | 16.46 |
| | 300.09 | 27 | 3.41 | 4.407E+00 | 4.535E-01 | 4.612E-01 | 232.98 |
| TH-230 | 609.31 | 312 | 46.30* | 2.569E+00 | 6.506E-01 | 6.506E-01 | 21.24 |
| | 1120.29 | 74 | 15.10 | 1.531E+00 | 8.002E-01 | 8.002E-01 | 55.71 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.069E+00 | 1.069E+00 | 25.46 |
| TH-232 | 338.32 | 198 | 11.40 | 4.038E+00 | 1.071E+00 | 1.071E+00 | 30.00 |
| | 911.07 | 178 | 27.70* | 1.833E+00 | 8.714E-01 | 8.714E-01 | 26.58 |
| | 969.11 | 115 | 16.60 | 1.737E+00 | 9.920E-01 | 9.920E-01 | 38.98 |
| TH-234 | 63.29 | 135 | 3.80* | 4.293E+00 | 2.061E+00 | 2.061E+00 | 61.32 |
| | 92.38 | 427 | 5.41 | 7.053E+00 | 2.781E+00 | 2.781E+00 | 26.12 |
| U-234 | 609.31 | 312 | 46.30* | 2.569E+00 | 6.506E-01 | 6.506E-01 | 21.24 |
| | 1120.29 | 74 | 15.10 | 1.531E+00 | 8.002E-01 | 8.002E-01 | 55.71 |
| | 1764.49 | 73 | 15.80 | 1.071E+00 | 1.069E+00 | 1.069E+00 | 25.46 |
| NP-237 | 86.50 | 134 | 12.60* | 6.783E+00 | 3.904E-01 | 3.904E-01 | 45.98 |
| | 95.87 | ----- | 2.60 | 7.169E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 135 | 3.80* | 4.293E+00 | 2.061E+00 | 2.061E+00 | 61.32 |
| | 92.38 | 427 | 5.41 | 7.053E+00 | 2.781E+00 | 2.781E+00 | 20.73 |
| AM-243 | 74.67 | 343 | 66.00* | 5.787E+00 | 2.232E-01 | 2.232E-01 | 21.14 |
| | 86.72 | 134 | 0.34 | 6.783E+00 | 1.464E+01 | 1.464E+01 | 41.09 |
| | 117.66 | ----- | 0.55 | 7.397E+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 | 7.065E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 115 | 100.00* | 2.954E+00 | 9.637E-02 | 9.637E-02 | 50.96 |

Flag: "*" = Keyline

Total number of lines in spectrum 33
Number of unidentified lines 3
Number of lines tentatively identified by NID 30 90.91%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.357E+01 | 2.357E+01 | 0.250E+01 | 10.60 | |
| CD-109 | 464.00D | 1.03 | 1.322E+00 | 1.356E+00 | 0.557E+00 | 41.09 | |
| SN-126 | 1.00E+05Y | 1.00 | 1.329E-01 | 1.329E-01 | 0.546E-01 | 41.09 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.926E-01 | 2.926E-01 | 0.622E-01 | 21.26 | |
| BI-211 | 7.04E+08Y | 1.00 | 2.011E+00 | 2.011E+00 | 0.405E+00 | 20.15 | |
| PB-212 | 1.41E+10Y | 1.00 | 8.878E-01 | 8.878E-01 | 1.461E-01 | 16.46 | |
| PO-212 | 1.41E+10Y | 1.00 | 8.878E-01 | 8.878E-01 | 1.461E-01 | 16.46 | |
| BI-214 | 1600.00Y | 1.00 | 6.506E-01 | 6.506E-01 | 1.382E-01 | 21.24 | |
| PB-214 | 1600.00Y | 1.00 | 6.997E-01 | 6.997E-01 | 1.456E-01 | 20.81 | |
| PO-214 | 1600.00Y | 1.00 | 6.997E-01 | 6.997E-01 | 1.456E-01 | 20.81 | |
| PO-216 | 1.41E+10Y | 1.00 | 8.878E-01 | 8.878E-01 | 1.461E-01 | 16.46 | |
| PO-218 | 1600.00Y | 1.00 | 6.997E-01 | 6.997E-01 | 1.456E-01 | 20.81 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.761E+00 | 2.761E+00 | 0.852E+00 | 30.88 | |
| RA-226 | 1600.00Y | 1.00 | 6.506E-01 | 6.506E-01 | 1.382E-01 | 21.24 | |
| AC-228 | 1.41E+10Y | 1.00 | 8.714E-01 | 8.714E-01 | 2.317E-01 | 26.58 | |
| RA-228 | 1.41E+10Y | 1.00 | 8.714E-01 | 8.714E-01 | 2.317E-01 | 26.58 | |
| TH-228 | 1.91Y | 1.02 | 8.878E-01 | 9.030E-01 | 1.486E-01 | 16.46 | |
| TH-230 | 4.47E+09Y | 1.00 | 6.506E-01 | 6.506E-01 | 1.382E-01 | 21.24 | |
| TH-232 | 1.41E+10Y | 1.00 | 8.714E-01 | 8.714E-01 | 2.317E-01 | 26.58 | |
| TH-234 | 4.47E+09Y | 1.00 | 2.061E+00 | 2.061E+00 | 1.263E+00 | 61.32 | |
| U-234 | 4.47E+09Y | 1.00 | 6.506E-01 | 6.506E-01 | 1.382E-01 | 21.24 | |
| NP-237 | 2.14E+06Y | 1.00 | 3.904E-01 | 3.904E-01 | 1.795E-01 | 45.98 | |
| U-238 | 4.47E+09Y | 1.00 | 2.061E+00 | 2.061E+00 | 1.263E+00 | 61.32 | |
| AM-243 | 7380.00Y | 1.00 | 2.232E-01 | 2.232E-01 | 0.472E-01 | 21.14 | |
| ANH-511 | 1.00E+09Y | 1.00 | 9.637E-02 | 9.637E-02 | 4.911E-02 | 50.96 | |
| Total Activity : | | | 4.579E+01 | 4.584E+01 | | | |

Grand Total Activity : 4.579E+01 4.584E+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 |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 3 | 89.89 | 113 | 370 | 1.09 | 178.70 | 170 | 21 | 1.57E-02 | 58.4 | 6.93E+00 | T |
| 0 | 185.83 | 171 | 263 | 1.10 | 370.73 | 366 | 10 | 2.38E-02 | 40.5 | 6.16E+00 | T |
| 0 | 208.84 | 115 | 220 | 0.84 | 416.77 | 413 | 9 | 1.60E-02 | 49.6 | 5.71E+00 | T |
| 0 | 270.28 | 68 | 199 | 1.56 | 539.74 | 536 | 10 | 9.38E-03 | 81.7 | 4.76E+00 | T |
| 0 | 328.00 | 29 | 176 | 1.41 | 655.26 | 650 | 10 | 4.08E-03 | **** | 4.13E+00 | T |
| 0 | 409.54 | 87 | 114 | 2.61 | 818.45 | 813 | 13 | 1.21E-02 | 55.0 | 3.50E+00 | T |
| 0 | 462.99 | 70 | 63 | 1.31 | 925.43 | 922 | 10 | 9.74E-03 | 48.0 | 3.19E+00 | T |
| 0 | 727.44 | 91 | 45 | 1.61 | 1454.62 | 1449 | 12 | 1.27E-02 | 36.6 | 2.22E+00 | T |
| 0 | 770.68 | 109 | 72 | 8.97 | 1541.15 | 1530 | 25 | 1.52E-02 | 47.2 | 2.12E+00 | |
| 0 | 795.73 | 34 | 64 | 1.04 | 1591.26 | 1586 | 11 | 4.69E-03 | 97.7 | 2.06E+00 | T |
| 0 | 1002.14 | 32 | 40 | 1.64 | 2004.27 | 1999 | 13 | 4.49E-03 | 90.0 | 1.69E+00 | T |
| 0 | 1587.95 | 17 | 7 | 1.36 | 3176.23 | 3169 | 14 | 2.40E-03 | 80.7 | 1.15E+00 | |
| 0 | 1729.90 | 22 | 7 | 1.94 | 3460.19 | 3453 | 13 | 2.99E-03 | 65.2 | 1.08E+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]G246328002.CNF;1 *
* Acquisition date   : 18-FEB-2010 11:05:59  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 02:00:01.49          Half life ratio : 8.00000    *
*****
*                                     SAMPLE DATA                            *
*                                     *                                       *
* Sample date        : 1-FEB-2010 12:00:00.  Nuclide Library : SOLID        *
* Sample ID          : G246328002            Analyst initials: MXR1         *
* Batch Number       : 950786                Sample Quantity : 1.51130E+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 | 2.357E+01 | 2.499E+00 | 3.336E-01 | 2.885E-02 | 70.657 |
| CD-109 | 1.356E+00 | 5.573E-01 | 7.897E-01 | 7.489E-02 | 1.717 |
| SN-126 | 1.329E-01 | 5.463E-02 | 7.765E-02 | 7.325E-03 | 1.712 |
| TL-208 | 2.926E-01 | 6.221E-02 | 3.718E-02 | 4.015E-03 | 7.869 |
| BI-211 | 2.011E+00 | 4.052E-01 | 2.207E-01 | 2.912E-02 | 9.113 |
| PB-212 | 8.878E-01 | 1.461E-01 | 6.006E-02 | 8.412E-03 | 14.782 |
| PO-212 | 8.878E-01 | 1.461E-01 | 6.006E-02 | 8.412E-03 | 14.782 |
| BI-214 | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| PB-214 | 6.997E-01 | 1.456E-01 | 7.671E-02 | 1.085E-02 | 9.121 |
| PO-214 | 6.997E-01 | 1.456E-01 | 7.671E-02 | 1.085E-02 | 9.121 |
| PO-216 | 8.878E-01 | 1.461E-01 | 6.006E-02 | 8.412E-03 | 14.782 |
| PO-218 | 6.997E-01 | 1.456E-01 | 7.671E-02 | 1.085E-02 | 9.121 |
| RA-224 | 2.761E+00 | 8.525E-01 | 6.838E-01 | 9.157E-02 | 4.038 |
| RA-226 | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| AC-228 | 8.714E-01 | 2.317E-01 | 1.469E-01 | 1.788E-02 | 5.931 |
| RA-228 | 8.714E-01 | 2.317E-01 | 1.469E-01 | 1.788E-02 | 5.931 |
| TH-228 | 9.030E-01 | 1.486E-01 | 6.109E-02 | 8.555E-03 | 14.782 |
| TH-230 | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-232 | 8.714E-01 | 2.317E-01 | 1.469E-01 | 1.788E-02 | 5.931 |
| TH-234 | 2.061E+00 | 1.263E+00 | 1.125E+00 | 1.957E-01 | 1.832 |
| U-234 | 6.506E-01 | 1.382E-01 | 7.448E-02 | 8.419E-03 | 8.736 |
| NP-237 | 3.904E-01 | 1.795E-01 | 2.503E-01 | 5.665E-02 | 1.560 |
| U-238 | 2.061E+00 | 1.263E+00 | 1.125E+00 | 1.957E-01 | 1.832 |
| AM-243 | 2.232E-01 | 4.718E-02 | 4.890E-02 | 3.957E-03 | 4.564 |
| ANH-511 | 9.637E-02 | 4.911E-02 | 3.229E-02 | 3.452E-03 | 2.985 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 6.383E-02 | | 2.260E-01 | 3.854E-01 | 4.362E-02 | 0.166 |
| NA-22 | -2.010E-03 | | 3.551E-02 | 5.489E-02 | 4.508E-03 | -0.037 |
| NA-24 | -2.617E+00 | | 2.042E+00 | Half-Life too short | | |
| AL-26 | -7.081E-03 | | 2.146E-02 | 3.271E-02 | 2.670E-03 | -0.216 |
| TI-44 | 2.266E-01 | + | 3.642E-02 | 4.067E-02 | 3.428E-03 | 5.572 |
| SC-46 | 9.949E-03 | | 2.948E-02 | 5.100E-02 | 5.023E-03 | 0.195 |
| V-48 | -1.811E-02 | | 5.081E-02 | 8.100E-02 | 7.683E-03 | -0.224 |
| CR-51 | -3.657E-01 | | 2.759E-01 | 3.861E-01 | 5.603E-02 | -0.947 |
| MN-52 | 1.896E-01 | | 2.116E-01 | 3.876E-01 | 3.248E-02 | 0.489 |
| MN-54 | 9.115E-03 | | 2.734E-02 | 4.739E-02 | 4.667E-03 | 0.192 |
| CO-56 | -1.921E-02 | | 2.564E-02 | 3.955E-02 | 3.896E-03 | -0.486 |
| CO-57 | 2.042E-02 | | 1.563E-02 | 2.795E-02 | 2.364E-03 | 0.731 |
| CO-58 | -3.656E-03 | | 2.825E-02 | 4.448E-02 | 4.380E-03 | -0.082 |
| FE-59 | 1.516E-02 | | 6.937E-02 | 1.169E-01 | 1.099E-02 | 0.130 |
| CO-60 | -2.484E-02 | | 2.863E-02 | 4.018E-02 | 3.320E-03 | -0.618 |
| ZN-65 | 2.574E-02 | | 7.915E-02 | 1.178E-01 | 1.011E-02 | 0.218 |
| GE-68 | 9.517E-01 | | 9.826E-01 | 1.766E+00 | 1.568E-01 | 0.539 |
| AS-73 | -2.984E-02 | | 4.433E-01 | 7.065E-01 | 5.305E-02 | -0.042 |
| AS-74 | 9.749E-03 | | 7.301E-02 | 1.211E-01 | 1.232E-02 | 0.080 |
| SE-75 | -1.449E-02 | | 2.870E-02 | 4.473E-02 | 6.574E-03 | -0.324 |
| BR-77 | 8.762E+00 | | 1.214E+01 | 2.130E+01 | 2.269E+00 | 0.411 |
| SR-82 | 2.021E-01 | | 2.833E-01 | 4.423E-01 | 4.326E-02 | 0.457 |
| RB-83 | 3.887E-02 | | 4.728E-02 | 8.353E-02 | 8.902E-03 | 0.465 |
| RB-84 | 1.545E-02 | | 5.581E-02 | 9.601E-02 | 9.460E-03 | 0.161 |
| KR-85 | 6.826E+00 | | 5.283E+00 | 8.704E+00 | 9.297E-01 | 0.784 |
| SR-85 | 3.568E-02 | | 2.762E-02 | 4.550E-02 | 4.860E-03 | 0.784 |
| RB-86 | 1.822E-02 | | 6.647E-01 | 1.100E+00 | 9.778E-02 | 0.017 |
| Y-88 | -1.056E-02 | | 2.132E-02 | 3.041E-02 | 2.469E-03 | -0.347 |
| ZR-88 | 4.440E-03 | | 1.968E-02 | 3.385E-02 | 3.610E-03 | 0.131 |
| Y-91 | -4.637E+00 | | 1.529E+01 | 2.425E+01 | 1.963E+00 | -0.191 |
| NB-94 | -1.355E-02 | | 2.542E-02 | 3.905E-02 | 3.750E-03 | -0.347 |
| NB-95 | 2.784E-02 | | 3.338E-02 | 5.210E-02 | 5.086E-03 | 0.534 |
| NB-95M | -8.105E-02 | | 1.013E-01 | 1.385E-01 | 1.934E-02 | -0.585 |
| ZR-95 | 2.438E-02 | | 5.044E-02 | 8.519E-02 | 8.964E-03 | 0.286 |
| NB-97 | -6.985E-01 | | 2.417E-01 | Half-Life too short | | |
| ZR-97 | 2.607E+00 | | 4.182E+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 |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| MO-99 | 6.559E+00 | | 1.291E+01 | 2.185E+01 | 3.457E+00 | 0.300 |
| TC-99M | -1.426E+12 | | 2.054E+12 | Half-Life | too short | |
| RH-101 | 1.764E-03 | | 2.344E-02 | 3.736E-02 | 4.181E-03 | 0.047 |
| RH-102 | -9.945E-03 | | 2.013E-02 | 3.223E-02 | 3.474E-03 | -0.309 |
| RU-103 | 1.328E-02 | | 2.637E-02 | 4.571E-02 | 7.103E-03 | 0.291 |
| RH-106 | 3.471E-02 | | 2.392E-01 | 3.961E-01 | 5.637E-02 | 0.088 |
| RU-106 | 3.471E-02 | | 2.392E-01 | 3.961E-01 | 3.930E-02 | 0.088 |
| AG-108M | -2.158E-03 | | 2.328E-02 | 3.886E-02 | 4.296E-03 | -0.056 |
| AG-110M | -3.652E-02 | | 2.805E-02 | 3.990E-02 | 3.888E-03 | -0.915 |
| IN-111 | -2.328E-01 | | 1.140E+00 | 1.833E+00 | 2.498E-01 | -0.127 |
| IN-113M | -2.785E-02 | | 2.948E-02 | 4.619E-02 | 5.024E-03 | -0.603 |
| SN-113 | -2.785E-02 | | 2.948E-02 | 4.619E-02 | 5.024E-03 | -0.603 |
| IN-114M | 4.911E-02 | | 1.303E-01 | 1.985E-01 | 2.148E-02 | 0.247 |
| CD-115 | 1.729E+00 | | 1.338E+01 | 2.240E+01 | 2.380E+00 | 0.077 |
| SN-117M | 3.876E-02 | | 3.883E-02 | 6.783E-02 | 6.410E-03 | 0.572 |
| SB-122 | 1.417E+00 | | 2.385E+00 | 4.115E+00 | 4.286E-01 | 0.344 |
| I-123 | 2.242E+01 | | 1.900E+01 | Half-Life | too short | |
| TE-123M | 1.080E-02 | | 1.831E-02 | 3.148E-02 | 2.995E-03 | 0.343 |
| I-124 | 1.812E-01 | | 7.263E-01 | 1.129E+00 | 1.141E-01 | 0.161 |
| SB-124 | 7.495E-03 | | 5.049E-02 | 8.635E-02 | 7.504E-03 | 0.087 |
| SB-125 | -5.597E-03 | | 6.213E-02 | 1.038E-01 | 1.132E-02 | -0.054 |
| TE-125M | -4.091E-01 | | 5.791E+00 | 9.861E+00 | 1.012E+00 | -0.041 |
| I-126 | 1.016E-01 | | 1.452E-01 | 2.505E-01 | 2.375E-02 | 0.406 |
| SB-126 | -5.116E-02 | | 1.272E-01 | 1.884E-01 | 1.819E-02 | -0.272 |
| SB-127 | -2.320E-01 | | 1.247E+00 | 1.981E+00 | 2.502E-01 | -0.117 |
| XE-127 | -4.118E-03 | | 3.202E-02 | 5.246E-02 | 5.995E-03 | -0.078 |
| I-131 | -8.422E-02 | | 9.993E-02 | 1.462E-01 | 1.836E-02 | -0.576 |
| TE-132 | -1.638E-01 | | 7.175E-01 | 1.142E+00 | 2.123E-01 | -0.143 |
| BA-133 | 2.687E-02 | | 3.180E-02 | 4.861E-02 | 7.840E-03 | 0.553 |
| I-133 | 7.747E-04 | | 9.044E-03 | Half-Life | too short | |
| CS-134 | 5.378E-02 | + | 5.282E-02 | 6.902E-02 | 6.808E-03 | 0.779 |
| CS-135 | 3.962E-02 | | 1.156E-01 | 1.718E-01 | 2.695E-02 | 0.231 |
| I-135 | -3.231E+10 | | 2.091E+11 | Half-Life | too short | |
| CS-136 | -3.268E-02 | | 8.900E-02 | 1.415E-01 | 1.336E-02 | -0.231 |
| BA-137M | 1.834E-02 | | 2.842E-02 | 4.861E-02 | 4.599E-03 | 0.377 |
| CS-137 | 1.939E-02 | | 3.004E-02 | 5.138E-02 | 4.870E-03 | 0.377 |
| CE-139 | -1.125E-02 | | 1.926E-02 | 3.116E-02 | 3.028E-03 | -0.361 |
| BA-140 | -2.821E-03 | | 2.010E-01 | 3.321E-01 | 1.119E-01 | -0.008 |
| LA-140 | -7.192E-02 | | 5.979E-02 | 7.010E-02 | 5.895E-03 | -1.026 |
| CE-141 | -1.785E-02 | | 4.489E-02 | 7.251E-02 | 6.646E-03 | -0.246 |
| CE-143 | 5.220E-04 | | 1.514E-04 | Half-Life | too short | |
| CE-144 | -5.688E-02 | | 1.325E-01 | 2.191E-01 | 3.419E-02 | -0.260 |
| PM-144 | -2.265E-03 | | 2.542E-02 | 4.084E-02 | 3.916E-03 | -0.055 |
| PR-144 | -1.537E-01 | | 1.724E+00 | 2.770E+00 | 2.655E-01 | -0.055 |
| PM-146 | 1.371E-02 | | 2.987E-02 | 5.169E-02 | 6.481E-03 | 0.265 |
| ND-147 | -4.328E-01 | | 4.515E-01 | 6.755E-01 | 1.093E-01 | -0.641 |
| PM-149 | -3.040E+01 | | 1.164E+02 | 1.841E+02 | 3.692E+01 | -0.165 |
| EU-152 | 2.905E-02 | | 7.064E-02 | 1.156E-01 | 1.567E-02 | 0.251 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| GD-153 | 1.406E-02 | | 5.812E-02 | 8.408E-02 | 7.470E-03 | 0.167 |
| EU-154 | -5.608E-03 | | 9.909E-02 | 1.532E-01 | 1.684E-02 | -0.037 |
| EU-155 | 8.536E-02 | | 6.538E-02 | 1.172E-01 | 1.023E-02 | 0.728 |
| TB-160 | 1.156E-01 | | 1.093E-01 | 1.995E-01 | 1.966E-02 | 0.579 |
| HO-166M | 1.694E-02 | | 4.545E-02 | 7.601E-02 | 7.321E-03 | 0.223 |
| TM-171 | 2.803E-01 | | 1.745E+01 | 2.538E+01 | 1.905E+00 | 0.011 |
| LU-176 | 8.812E-03 | | 1.625E-02 | 2.706E-02 | 3.978E-03 | 0.326 |
| LU-177 | 2.643E+00 | + | 1.348E+00 | 1.669E+00 | 1.953E-01 | 1.584 |
| LU-177M | 4.182E-02 | | 1.202E-01 | 1.856E-01 | 1.993E-02 | 0.225 |
| HF-181 | -3.019E-02 | | 2.965E-02 | 4.485E-02 | 4.830E-03 | -0.673 |
| W-181 | -3.831E-02 | | 2.278E-01 | 3.282E-01 | 2.433E-02 | -0.117 |
| TA-182 | -4.441E-02 | | 1.546E-01 | 2.453E-01 | 1.993E-02 | -0.181 |
| RE-183 | 2.108E-02 | | 6.944E-02 | 1.178E-01 | 1.130E-02 | 0.179 |
| RE-184 | -4.884E-03 | | 1.535E-01 | 2.491E-01 | 3.495E-02 | -0.020 |
| OS-185 | 1.369E-02 | | 3.046E-02 | 5.173E-02 | 4.993E-03 | 0.265 |
| RE-188 | -7.669E-03 | | 1.196E-01 | 2.000E-01 | 1.866E-02 | -0.038 |
| W-188 | -1.896E+00 | | 5.826E+00 | 8.095E+00 | 1.230E+00 | -0.234 |
| IR-192 | 1.271E-02 | | 2.447E-02 | 4.056E-02 | 5.831E-03 | 0.313 |
| AU-195 | 4.114E-02 | | 1.386E-01 | 2.406E-01 | 2.123E-02 | 0.171 |
| TL-200 | 3.504E-04 | | 5.466E-04 | Half-Life too short | | |
| TL-201 | 5.248E+00 | | 6.822E+00 | 1.179E+01 | 1.153E+00 | 0.445 |
| TL-202 | -3.609E-02 | | 5.211E-02 | 8.255E-02 | 8.904E-03 | -0.437 |
| HG-203 | 6.357E-03 | | 2.945E-02 | 4.820E-02 | 7.528E-03 | 0.132 |
| BI-207 | 3.744E-02 | | 3.540E-02 | 6.498E-02 | 5.837E-03 | 0.576 |
| TL-207 | 5.647E-01 | | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| PO-209 | -1.723E+00 | | 5.282E+00 | 8.559E+00 | 8.427E-01 | -0.201 |
| BI-210 | -2.025E-01 | | 1.709E+00 | 2.742E+00 | 2.552E-01 | -0.074 |
| PB-210 | -2.025E-01 | | 1.709E+00 | 2.742E+00 | 2.552E-01 | -0.074 |
| PO-210 | -2.025E-01 | | 1.709E+00 | 2.742E+00 | 2.311E-01 | -0.074 |
| PB-211 | 9.224E-02 | | 6.804E-01 | 1.025E+00 | 6.455E-01 | 0.090 |
| BI-212 | 8.656E-01 | + | 3.308E-01 | 4.824E-01 | 5.272E-02 | 1.795 |
| PO-215 | 5.647E-01 | | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| RN-219 | -3.545E-02 | | 2.827E-01 | 4.736E-01 | 7.724E-02 | -0.075 |
| RN-220 | -9.695E+00 | | 1.808E+01 | 2.837E+01 | 2.981E+00 | -0.342 |
| RA-223 | 5.647E-01 | | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| AC-227 | -1.097E-02 | | 2.694E-01 | 4.365E-01 | 8.319E-02 | -0.025 |
| TH-227 | -1.097E-02 | | 2.694E-01 | 4.365E-01 | 9.300E-02 | -0.025 |
| TH-229 | 1.761E-02 | | 3.300E-01 | 5.476E-01 | 6.013E-02 | 0.032 |
| PA-231 | -8.415E-02 | | 1.087E+00 | 1.744E+00 | 3.456E-01 | -0.048 |
| TH-231 | 5.647E-01 | | 5.016E-01 | 7.728E-01 | 1.616E-01 | 0.731 |
| U-231 | 7.175E-01 | | 1.005E+00 | 1.497E+00 | 1.341E-01 | 0.479 |
| PA-233 | 1.008E-02 | | 4.441E-02 | 7.230E-02 | 1.061E-02 | 0.139 |
| PA-234 | 3.513E-02 | | 2.082E-01 | 3.535E-01 | 6.810E-02 | 0.099 |
| PA-234M | 5.670E+00 | + | 5.137E+00 | 6.308E+00 | 6.710E-01 | 0.899 |
| U-235 | 7.460E-02 | | 1.464E-01 | 2.456E-01 | 4.343E-02 | 0.304 |
| NP-236 | -4.869E-02 | | 5.089E-02 | 8.069E-02 | 7.676E-03 | -0.603 |
| NP-239 | 9.462E-03 | | 1.150E-01 | 1.965E-01 | 1.662E-02 | 0.048 |
| AM-241 | -2.665E-02 | | 9.160E-02 | 1.319E-01 | 1.036E-02 | -0.202 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -6.996E-02 | | 5.815E-02 | 9.376E-02 | 8.119E-03 | -0.746 |
| AM-246 | 6.944E-02 | | 1.098E-01 | 1.923E-01 | 1.705E-02 | 0.361 |
| CM-247 | -4.271E-03 | | 2.502E-02 | 4.178E-02 | 4.472E-03 | -0.102 |
| CF-249 | 1.430E-02 | | 2.659E-02 | 4.661E-02 | 5.075E-03 | 0.307 |
| CF-251 | -8.576E-04 | | 8.218E-02 | 1.367E-01 | 1.392E-02 | -0.006 |

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G246328002
* Acquisition date   : 18-FEB-2010 11:05:59 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 02:00:01.49 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G246328002 Analyst initials: MXR1
* Batch Number       : 950786 Sample Quantity : 1.5113E+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 | 2.357E+01 | 2.449E+00 | 1.681E-01 | 1.250E+00 |
| CD-109 | 1.356E+00 | 5.462E-01 | 4.264E-01 | 2.787E-01 |
| SN-126 | 1.329E-01 | 5.353E-02 | 4.193E-02 | 2.731E-02 |
| TL-208 | 2.926E-01 | 6.097E-02 | 1.918E-02 | 3.111E-02 |
| BI-211 | 2.011E+00 | 3.971E-01 | 1.153E-01 | 2.026E-01 |
| PB-212 | 8.878E-01 | 1.432E-01 | 3.168E-02 | 7.307E-02 |
| PO-212 | 8.878E-01 | 1.432E-01 | 3.168E-02 | 7.307E-02 |
| BI-214 | 6.506E-01 | 1.354E-01 | 3.839E-02 | 6.910E-02 |
| PB-214 | 6.997E-01 | 1.427E-01 | 4.008E-02 | 7.280E-02 |
| PO-214 | 6.997E-01 | 1.427E-01 | 4.008E-02 | 7.280E-02 |
| PO-216 | 8.878E-01 | 1.432E-01 | 3.168E-02 | 7.307E-02 |
| PO-218 | 6.997E-01 | 1.427E-01 | 4.008E-02 | 7.280E-02 |
| RA-224 | 2.761E+00 | 8.354E-01 | 3.605E-01 | 4.262E-01 |
| RA-226 | 6.506E-01 | 1.354E-01 | 3.839E-02 | 6.910E-02 |
| AC-228 | 8.714E-01 | 2.270E-01 | 7.495E-02 | 1.158E-01 |
| RA-228 | 8.714E-01 | 2.270E-01 | 7.495E-02 | 1.158E-01 |
| TH-228 | 9.030E-01 | 1.457E-01 | 3.222E-02 | 7.432E-02 |
| TH-230 | 6.506E-01 | 1.354E-01 | 3.839E-02 | 6.909E-02 |
| TH-232 | 8.714E-01 | 2.270E-01 | 7.495E-02 | 1.158E-01 |
| TH-234 | 2.061E+00 | 1.238E+00 | 6.120E-01 | 6.317E-01 |
| U-234 | 6.506E-01 | 1.354E-01 | 3.839E-02 | 6.909E-02 |
| NP-237 | 3.904E-01 | 1.759E-01 | 1.352E-01 | 8.975E-02 |
| U-238 | 2.061E+00 | 1.238E+00 | 6.120E-01 | 6.317E-01 |
| AM-243 | 2.232E-01 | 4.624E-02 | 2.650E-02 | 2.359E-02 |
| ANH-511 | 9.637E-02 | 4.813E-02 | 1.671E-02 | 2.456E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 6.383E-02 | 2.215E-01 | 1.998E-01 | 1.130E-01 NOT IDENT. |
| NA-22 | -2.010E-03 | 3.480E-02 | 2.776E-02 | 1.775E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | -2.617E+06 | 4.003E+06 | 0.000E+00 | 2.042E+06 | SHORT HLIF |
| AL-26 | -7.081E-03 | 2.103E-02 | 1.639E-02 | 1.073E-02 | NOT IDENT. |
| TI-44 | 2.266E-01 | 3.569E-02 | 2.202E-02 | 1.821E-02 | FAIL ABUN |
| SC-46 | 9.949E-03 | 2.889E-02 | 2.603E-02 | 1.474E-02 | FAIL ABUN |
| V-48 | -1.811E-02 | 4.979E-02 | 4.124E-02 | 2.541E-02 | NOT IDENT. |
| CR-51 | -3.657E-01 | 2.703E-01 | 2.022E-01 | 1.379E-01 | NOT IDENT. |
| MN-52 | 1.896E-01 | 2.073E-01 | 1.954E-01 | 1.058E-01 | NOT IDENT. |
| MN-54 | 9.115E-03 | 2.680E-02 | 2.423E-02 | 1.367E-02 | NOT IDENT. |
| CO-56 | -1.921E-02 | 2.513E-02 | 2.021E-02 | 1.282E-02 | NOT IDENT. |
| CO-57 | 2.042E-02 | 1.532E-02 | 1.498E-02 | 7.816E-03 | NOT IDENT. |
| CO-58 | -3.656E-03 | 2.768E-02 | 2.276E-02 | 1.412E-02 | NOT IDENT. |
| FE-59 | 1.516E-02 | 6.798E-02 | 5.934E-02 | 3.468E-02 | NOT IDENT. |
| CO-60 | -2.484E-02 | 2.805E-02 | 2.030E-02 | 1.431E-02 | NOT IDENT. |
| ZN-65 | 2.574E-02 | 7.756E-02 | 5.979E-02 | 3.957E-02 | NOT IDENT. |
| GE-68 | 9.517E-01 | 9.629E-01 | 8.969E-01 | 4.913E-01 | NOT IDENT. |
| AS-73 | -2.984E-02 | 4.345E-01 | 3.858E-01 | 2.217E-01 | NOT IDENT. |
| AS-74 | 9.749E-03 | 7.155E-02 | 6.247E-02 | 3.650E-02 | NOT IDENT. |
| SE-75 | -1.449E-02 | 2.813E-02 | 2.353E-02 | 1.435E-02 | NOT IDENT. |
| BR-77 | 8.762E+00 | 1.190E+01 | 1.102E+01 | 6.070E+00 | FAIL ABUN |
| SR-82 | 2.021E-01 | 2.777E-01 | 2.266E-01 | 1.417E-01 | NOT IDENT. |
| RB-83 | 3.887E-02 | 4.633E-02 | 4.322E-02 | 2.364E-02 | NOT IDENT. |
| RB-84 | 1.545E-02 | 5.469E-02 | 4.902E-02 | 2.790E-02 | NOT IDENT. |
| KR-85 | 6.826E+00 | 5.177E+00 | 4.505E+00 | 2.641E+00 | NOT IDENT. |
| SR-85 | 3.568E-02 | 2.706E-02 | 2.355E-02 | 1.381E-02 | NOT IDENT. |
| RB-86 | 1.822E-02 | 6.514E-01 | 5.589E-01 | 3.323E-01 | NOT IDENT. |
| Y-88 | -1.056E-02 | 2.089E-02 | 1.523E-02 | 1.066E-02 | NOT IDENT. |
| ZR-88 | 4.440E-03 | 1.928E-02 | 1.764E-02 | 9.839E-03 | NOT IDENT. |
| Y-91 | -4.637E+00 | 1.498E+01 | 1.228E+01 | 7.644E+00 | NOT IDENT. |
| NB-94 | -1.355E-02 | 2.491E-02 | 2.005E-02 | 1.271E-02 | NOT IDENT. |
| NB-95 | 2.784E-02 | 3.272E-02 | 2.670E-02 | 1.669E-02 | NOT IDENT. |
| NB-95M | -8.105E-02 | 9.932E-02 | 7.309E-02 | 5.067E-02 | NOT IDENT. |
| ZR-95 | 2.438E-02 | 4.943E-02 | 4.366E-02 | 2.522E-02 | NOT IDENT. |
| NB-97 | -6.985E+05 | 4.738E+05 | 0.000E+00 | 2.417E+05 | SHORT HLIF |
| ZR-97 | 2.607E+06 | 8.198E+06 | 0.000E+00 | 4.182E+06 | SHORT HLIF |
| MO-99 | 6.559E+00 | 1.265E+01 | 1.120E+01 | 6.453E+00 | NOT IDENT. |
| TC-99M | -1.426E+18 | 4.026E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.764E-03 | 2.297E-02 | 1.979E-02 | 1.172E-02 | NOT IDENT. |
| RH-102 | -9.945E-03 | 1.973E-02 | 1.671E-02 | 1.006E-02 | NOT IDENT. |
| RU-103 | 1.328E-02 | 2.584E-02 | 2.368E-02 | 1.319E-02 | FAIL ABUN |
| RH-106 | 3.471E-02 | 2.344E-01 | 2.040E-01 | 1.196E-01 | FAIL ABUN |
| RU-106 | 3.471E-02 | 2.344E-01 | 2.040E-01 | 1.196E-01 | FAIL ABUN |
| AG-108M | -2.158E-03 | 2.281E-02 | 2.020E-02 | 1.164E-02 | NOT IDENT. |
| AG-110M | -3.652E-02 | 2.749E-02 | 2.052E-02 | 1.403E-02 | NOT IDENT. |
| IN-111 | -2.328E-01 | 1.117E+00 | 9.662E-01 | 5.698E-01 | NOT IDENT. |
| IN-113M | -2.785E-02 | 2.889E-02 | 2.407E-02 | 1.474E-02 | NOT IDENT. |
| SN-113 | -2.785E-02 | 2.889E-02 | 2.407E-02 | 1.474E-02 | NOT IDENT. |
| IN-114M | 4.911E-02 | 1.277E-01 | 1.053E-01 | 6.517E-02 | NOT IDENT. |
| CD-115 | 1.729E+00 | 1.311E+01 | 1.159E+01 | 6.688E+00 | NOT IDENT. |
| SN-117M | 3.876E-02 | 3.806E-02 | 3.612E-02 | 1.942E-02 | NOT IDENT. |
| SB-122 | 1.417E+00 | 2.337E+00 | 2.125E+00 | 1.192E+00 | NOT IDENT. |
| I-123 | 2.242E+07 | 3.724E+07 | 0.000E+00 | 1.900E+07 | SHORT HLIF |
| TE-123M | 1.080E-02 | 1.794E-02 | 1.677E-02 | 9.154E-03 | NOT IDENT. |
| I-124 | 1.812E-01 | 7.118E-01 | 5.821E-01 | 3.632E-01 | NOT IDENT. |
| SB-124 | 7.495E-03 | 4.948E-02 | 4.335E-02 | 2.525E-02 | FAIL ABUN |
| SB-125 | -5.597E-03 | 6.088E-02 | 5.398E-02 | 3.106E-02 | FAIL ABUN |
| TE-125M | -4.091E-01 | 5.675E+00 | 5.298E+00 | 2.895E+00 | NOT IDENT. |
| I-126 | 1.016E-01 | 1.423E-01 | 1.288E-01 | 7.262E-02 | NOT IDENT. |
| SB-126 | -5.116E-02 | 1.247E-01 | 9.667E-02 | 6.362E-02 | FAIL ABUN |
| SB-127 | -2.320E-01 | 1.222E+00 | 1.018E+00 | 6.235E-01 | NOT IDENT. |
| XE-127 | -4.118E-03 | 3.138E-02 | 2.777E-02 | 1.601E-02 | NOT IDENT. |
| I-131 | -8.422E-02 | 9.793E-02 | 7.630E-02 | 4.996E-02 | NOT IDENT. |
| TE-132 | -1.638E-01 | 7.032E-01 | 6.030E-01 | 3.588E-01 | NOT IDENT. |
| BA-133 | 2.687E-02 | 3.117E-02 | 2.539E-02 | 1.590E-02 | NOT IDENT. |
| I-133 | 7.747E+02 | 1.773E+04 | 0.000E+00 | 9.044E+03 | SHORT HLIF |
| CS-134 | 5.378E-02 | 5.176E-02 | 3.533E-02 | 2.641E-02 | FAIL ABUN |
| CS-135 | 3.962E-02 | 1.133E-01 | 9.035E-02 | 5.781E-02 | NOT IDENT. |
| I-135 | -3.231E+16 | 4.097E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -3.268E-02 | 8.722E-02 | 7.192E-02 | 4.450E-02 | FAIL ABUN |
| BA-137M | 1.834E-02 | 2.785E-02 | 2.500E-02 | 1.421E-02 | NOT IDENT. |
| CS-137 | 1.939E-02 | 2.944E-02 | 2.643E-02 | 1.502E-02 | NOT IDENT. |
| CE-139 | -1.125E-02 | 1.888E-02 | 1.658E-02 | 9.630E-03 | NOT IDENT. |
| BA-140 | -2.821E-03 | 1.970E-01 | 1.717E-01 | 1.005E-01 | NOT IDENT. |
| LA-140 | -7.192E-02 | 5.859E-02 | 3.524E-02 | 2.989E-02 | FAIL ABUN |
| CE-141 | -1.785E-02 | 4.399E-02 | 3.869E-02 | 2.244E-02 | NOT IDENT. |
| CE-143 | 5.220E+02 | 2.968E+02 | 0.000E+00 | 1.514E+02 | SHORT HLIF |
| CE-144 | -5.688E-02 | 1.298E-01 | 1.172E-01 | 6.625E-02 | NOT IDENT. |
| PM-144 | -2.265E-03 | 2.491E-02 | 2.098E-02 | 1.271E-02 | NOT IDENT. |
| PR-144 | -1.537E-01 | 1.690E+00 | 1.423E+00 | 8.622E-01 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 1.371E-02 | 2.927E-02 | 2.684E-02 | 1.493E-02 | NOT IDENT. |
| ND-147 | -4.328E-01 | 4.425E-01 | 3.493E-01 | 2.258E-01 | FAIL ABUN |
| PM-149 | -3.040E+01 | 1.141E+02 | 9.669E+01 | 5.821E+01 | NOT IDENT. |
| EU-152 | 2.905E-02 | 6.923E-02 | 6.044E-02 | 3.532E-02 | NOT IDENT. |
| GD-153 | 1.406E-02 | 5.696E-02 | 4.529E-02 | 2.906E-02 | NOT IDENT. |
| EU-154 | -5.608E-03 | 9.711E-02 | 7.747E-02 | 4.954E-02 | NOT IDENT. |
| EU-155 | 8.536E-02 | 6.408E-02 | 6.303E-02 | 3.269E-02 | FAIL ABUN |
| TB-160 | 1.156E-01 | 1.071E-01 | 1.019E-01 | 5.465E-02 | FAIL ABUN |
| HO-166M | 1.694E-02 | 4.454E-02 | 3.902E-02 | 2.272E-02 | FAIL ABUN |
| TM-171 | 2.803E-01 | 1.710E+01 | 1.379E+01 | 8.723E+00 | NOT IDENT. |
| LU-176 | 8.812E-03 | 1.593E-02 | 1.419E-02 | 8.126E-03 | FAIL ABUN |
| LU-177 | 2.643E+00 | 1.321E+00 | 8.832E-01 | 6.742E-01 | FAIL ABUN |
| LU-177M | 4.182E-02 | 1.178E-01 | 9.657E-02 | 6.008E-02 | FAIL ABUN |
| HF-181 | -3.019E-02 | 2.906E-02 | 2.325E-02 | 1.483E-02 | NOT IDENT. |
| W-181 | -3.831E-02 | 2.232E-01 | 1.784E-01 | 1.139E-01 | NOT IDENT. |
| TA-182 | -4.441E-02 | 1.515E-01 | 1.242E-01 | 7.729E-02 | FAIL ABUN |
| RE-183 | 2.108E-02 | 6.805E-02 | 6.272E-02 | 3.472E-02 | FAIL ABUN |
| RE-184 | -4.884E-03 | 1.504E-01 | 1.312E-01 | 7.675E-02 | NOT IDENT. |
| OS-185 | 1.369E-02 | 2.985E-02 | 2.662E-02 | 1.523E-02 | NOT IDENT. |
| RE-188 | -7.669E-03 | 1.173E-01 | 1.066E-01 | 5.982E-02 | NOT IDENT. |
| W-188 | -1.896E+00 | 5.709E+00 | 4.249E+00 | 2.913E+00 | FAIL ABUN |
| IR-192 | 1.271E-02 | 2.398E-02 | 2.125E-02 | 1.224E-02 | FAIL ABUN |
| AU-195 | 4.114E-02 | 1.358E-01 | 1.296E-01 | 6.929E-02 | FAIL ABUN |
| TL-200 | 3.504E+02 | 1.071E+03 | 0.000E+00 | 5.466E+02 | SHORT HLIF |
| TL-201 | 5.248E+00 | 6.686E+00 | 6.270E+00 | 3.411E+00 | NOT IDENT. |
| TL-202 | -3.609E-02 | 5.107E-02 | 4.289E-02 | 2.605E-02 | NOT IDENT. |
| HG-203 | 6.357E-03 | 2.886E-02 | 2.532E-02 | 1.473E-02 | NOT IDENT. |
| BI-207 | 3.744E-02 | 3.469E-02 | 3.301E-02 | 1.770E-02 | FAIL ABUN |
| TL-207 | 5.647E-01 | 4.915E-01 | 4.046E-01 | 2.508E-01 | FAIL ABUN |
| PO-209 | -1.723E+00 | 5.176E+00 | 4.368E+00 | 2.641E+00 | NOT IDENT. |
| BI-210 | -2.025E-01 | 1.674E+00 | 1.502E+00 | 8.543E-01 | NOT IDENT. |
| PB-210 | -2.025E-01 | 1.674E+00 | 1.502E+00 | 8.543E-01 | NOT IDENT. |
| PO-210 | -2.025E-01 | 1.674E+00 | 1.502E+00 | 8.543E-01 | NOT IDENT. |
| PB-211 | 9.224E-02 | 6.668E-01 | 5.336E-01 | 3.402E-01 | NOT IDENT. |
| BI-212 | 8.656E-01 | 3.242E-01 | 2.475E-01 | 1.654E-01 | FAIL ABUN |
| PO-215 | 5.647E-01 | 4.915E-01 | 4.046E-01 | 2.508E-01 | FAIL ABUN |
| RN-219 | -3.545E-02 | 2.770E-01 | 2.466E-01 | 1.414E-01 | FAIL ABUN |
| RN-220 | -9.695E+00 | 1.772E+01 | 1.466E+01 | 9.041E+00 | NOT IDENT. |
| RA-223 | 5.647E-01 | 4.915E-01 | 4.046E-01 | 2.508E-01 | FAIL ABUN |
| AC-227 | -1.097E-02 | 2.640E-01 | 2.298E-01 | 1.347E-01 | FAIL ABUN |
| TH-227 | -1.097E-02 | 2.640E-01 | 2.298E-01 | 1.347E-01 | FAIL ABUN |
| TH-229 | 1.761E-02 | 3.234E-01 | 2.903E-01 | 1.650E-01 | FAIL ABUN |
| PA-231 | -8.415E-02 | 1.065E+00 | 9.162E-01 | 5.436E-01 | FAIL ABUN |
| TH-231 | 5.647E-01 | 4.915E-01 | 4.046E-01 | 2.508E-01 | FAIL ABUN |
| U-231 | 7.175E-01 | 9.847E-01 | 8.069E-01 | 5.024E-01 | FAIL ABUN |
| PA-233 | 1.008E-02 | 4.352E-02 | 3.788E-02 | 2.220E-02 | FAIL ABUN |
| PA-234 | 3.513E-02 | 2.040E-01 | 1.802E-01 | 1.041E-01 | FAIL ABUN |
| PA-234M | 5.670E+00 | 5.034E+00 | 3.210E+00 | 2.569E+00 | FAIL ABUN |
| U-235 | 7.460E-02 | 1.435E-01 | 1.311E-01 | 7.321E-02 | FAIL ABUN |
| NP-236 | -4.869E-02 | 4.988E-02 | 4.296E-02 | 2.545E-02 | NOT IDENT. |
| NP-239 | 9.462E-03 | 1.127E-01 | 1.054E-01 | 5.750E-02 | FAIL ABUN |
| AM-241 | -2.665E-02 | 8.977E-02 | 7.183E-02 | 4.580E-02 | NOT IDENT. |
| CM-243 | -6.996E-02 | 5.699E-02 | 5.043E-02 | 2.908E-02 | FAIL ABUN |
| AM-246 | 6.944E-02 | 1.076E-01 | 9.766E-02 | 5.492E-02 | NOT IDENT. |
| CM-247 | -4.271E-03 | 2.452E-02 | 2.176E-02 | 1.251E-02 | NOT IDENT. |
| CF-249 | 1.430E-02 | 2.606E-02 | 2.429E-02 | 1.330E-02 | NOT IDENT. |
| CF-251 | -8.576E-04 | 8.054E-02 | 7.260E-02 | 4.109E-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 | 185.9595 |
| 46.50 | 185.9595 |
| 46.50 | 185.9595 |
| 48.70 | 243.2876 |
| 49.72 | 192.4517 |
| 51.35 | 203.4617 |
| 52.39 | 219.6963 |
| 52.97 | 204.5504 |
| 53.15 | 204.6704 |
| 53.44 | 210.4296 |
| 54.07 | 178.5040 |
| 56.28 | 196.6100 |
| 56.28 | 196.6120 |
| 57.37 | 0.0000 |
| 57.53 | 207.5271 |
| 57.53 | 207.5285 |
| 57.60 | 207.5721 |
| 57.98 | 205.5561 |
| 57.98 | 205.5561 |
| 59.32 | 246.4649 |
| 59.32 | 246.4649 |
| 59.40 | 246.5246 |
| 59.54 | 242.0890 |
| 59.72 | 248.2756 |
| 60.01 | 225.7641 |
| 61.10 | 247.7798 |
| 61.14 | 247.8088 |
| 61.30 | 247.9257 |
| 63.00 | 251.0726 |
| 63.29 | 251.2831 |
| 63.29 | 251.2831 |
| 63.58 | 251.4936 |
| 64.28 | 262.3556 |
| 65.12 | 258.3694 |
| 65.20 | 264.5810 |
| 65.20 | 264.5810 |
| 66.05 | 260.5898 |
| 66.72 | 257.9867 |
| 66.83 | 258.0682 |
| 66.91 | 258.1243 |
| 67.20 | 289.2713 |
| 67.20 | 289.2713 |
| 67.75 | 290.4854 |
| 67.85 | 290.5655 |
| 68.90 | 261.0969 |
| 68.90 | 261.0969 |
| 69.30 | 266.0481 |
| 69.67 | 250.7436 |
| 70.82 | 257.7672 |
| 70.82 | 257.7672 |
| 70.83 | 257.7739 |
| 72.80 | 259.1234 |
| 72.87 | 259.1704 |
| 72.87 | 259.1704 |
| 74.67 | 260.3856 |
| 74.81 | 260.4796 |
| 74.81 | 260.4796 |
| 74.81 | 260.4796 |
| 74.81 | 260.4796 |
| 74.81 | 260.4796 |
| 74.81 | 260.4796 |
| 74.97 | 260.5870 |
| 75.28 | 260.7951 |
| 75.70 | 261.0754 |
| 77.11 | 262.0103 |
| 77.11 | 262.0103 |

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| 77.11 | 262.0103 |
| 77.11 | 262.0103 |
| 77.11 | 262.0103 |
| 77.11 | 262.0103 |
| 77.11 | 262.0103 |
| 78.38 | 251.6952 |
| 79.62 | 273.2427 |
| 79.80 | 273.3645 |
| 79.80 | 273.3645 |
| 80.11 | 243.1762 |
| 80.18 | 243.2179 |
| 80.30 | 243.2891 |
| 80.30 | 243.2891 |
| 80.57 | 269.0762 |
| 81.00 | 265.7524 |
| 81.07 | 265.7979 |
| 81.07 | 265.7979 |
| 81.07 | 265.7979 |
| 81.07 | 265.7979 |
| 82.60 | 290.9258 |
| 83.37 | 283.8015 |
| 83.78 | 282.4666 |
| 83.78 | 282.4666 |
| 83.78 | 282.4666 |
| 83.78 | 282.4666 |
| 84.21 | 269.8291 |
| 84.90 | 275.1259 |
| 85.43 | 304.6356 |
| 86.29 | 339.3465 |
| 86.50 | 339.5123 |
| 86.54 | 286.3381 |
| 86.59 | 286.3722 |
| 86.72 | 286.4583 |
| 86.79 | 286.5031 |
| 86.94 | 286.6035 |
| 87.30 | 286.8437 |
| 87.30 | 286.8437 |
| 87.30 | 286.8437 |
| 87.30 | 286.8437 |
| 87.30 | 286.8437 |
| 87.30 | 286.8437 |
| 87.57 | 287.0212 |
| 87.88 | 287.2274 |
| 88.03 | 287.3260 |
| 88.36 | 287.5447 |
| 88.47 | 287.6165 |
| 89.95 | 288.5882 |
| 91.11 | 289.3430 |
| 92.29 | 290.1068 |
| 92.38 | 290.1642 |
| 92.38 | 290.1642 |
| 93.35 | 290.7881 |
| 94.00 | 291.2041 |
| 94.67 | 246.5403 |
| 94.67 | 246.5433 |
| 94.90 | 246.6661 |
| 94.90 | 246.6661 |
| 94.90 | 246.6661 |
| 94.90 | 246.6661 |
| 95.87 | 212.3490 |
| 95.87 | 212.3490 |
| 96.73 | 247.6482 |
| 97.43 | 233.0371 |
| 98.44 | 233.2048 |
| 98.44 | 233.2062 |
| 98.88 | 226.2441 |
| 99.55 | 214.0234 |
| 99.55 | 214.0234 |
| 99.86 | 214.1641 |
| 100.00 | 214.2266 |
| 100.10 | 220.9695 |
| 103.18 | 227.4390 |
| 103.76 | 235.3012 |
| 105.00 | 206.3032 |
| 105.31 | 184.4365 |
| 108.00 | 232.2183 |
| 109.28 | 215.7516 |

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| 111.00 | 225.0378 |
| 111.00 | 225.0378 |
| 111.76 | 236.5109 |
| 112.95 | 206.9942 |
| 115.19 | 225.1332 |
| 116.30 | 218.6920 |
| 117.00 | 192.1487 |
| 117.00 | 192.1487 |
| 117.66 | 174.1881 |
| 121.11 | 192.7466 |
| 121.62 | 163.2455 |
| 121.78 | 163.2930 |
| 122.06 | 163.3768 |
| 122.32 | 155.5870 |
| 122.32 | 155.5870 |
| 122.32 | 155.5870 |
| 122.32 | 155.5870 |
| 123.07 | 178.5560 |
| 127.23 | 210.7527 |
| 129.76 | 186.0043 |
| 131.20 | 221.9874 |
| 133.02 | 223.5750 |
| 133.54 | 218.4249 |
| 135.34 | 198.5250 |
| 136.00 | 213.0703 |
| 136.25 | 210.4730 |
| 136.48 | 213.2422 |
| 140.51 | 211.9695 |
| 140.51 | 0.0000 |
| 142.18 | 235.1595 |
| 142.65 | 200.0407 |
| 143.76 | 209.4683 |
| 144.24 | 225.9653 |
| 144.24 | 225.9653 |
| 144.24 | 225.9653 |
| 144.24 | 225.9653 |
| 145.22 | 219.9599 |
| 145.44 | 220.9455 |
| 147.16 | 189.6426 |
| 152.43 | 211.4417 |
| 152.70 | 207.8518 |
| 153.22 | 198.8152 |
| 154.21 | 206.4909 |
| 154.21 | 206.4909 |
| 154.21 | 206.4909 |
| 154.21 | 206.4909 |
| 155.03 | 225.2118 |
| 156.02 | 231.0995 |
| 158.56 | 167.9604 |
| 159.00 | 0.0000 |
| 159.00 | 172.7137 |
| 160.31 | 202.8249 |
| 161.27 | 194.7299 |
| 162.32 | 168.9050 |
| 162.64 | 164.3161 |
| 163.35 | 158.8804 |
| 163.89 | 161.8127 |
| 165.85 | 193.2319 |
| 167.43 | 164.5289 |
| 171.28 | 197.5831 |
| 171.86 | 181.6602 |
| 172.10 | 181.7227 |
| 176.55 | 177.1450 |
| 176.60 | 177.1583 |
| 181.06 | 196.9354 |
| 184.41 | 179.0579 |
| 185.71 | 170.6927 |
| 186.00 | 170.7575 |
| 190.27 | 155.7178 |
| 192.34 | 175.1111 |
| 193.63 | 168.5828 |
| 197.04 | 175.1980 |
| 198.01 | 169.5349 |
| 198.60 | 175.5458 |
| 200.40 | 186.7607 |
| 201.83 | 172.3261 |
| 202.84 | 174.5171 |
| 205.31 | 139.4509 |

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| 208.36 | 160.8234 |
| 208.81 | 160.9124 |
| 209.75 | 173.0300 |
| 209.75 | 173.0300 |
| 210.97 | 155.3621 |
| 215.65 | 153.2350 |
| 216.55 | 155.4052 |
| 218.09 | 144.6416 |
| 222.10 | 150.3717 |
| 223.80 | 171.9057 |
| 226.40 | 147.0665 |
| 227.00 | 146.1533 |
| 227.08 | 146.1665 |
| 227.20 | 140.0959 |
| 228.16 | 161.5927 |
| 228.18 | 163.6286 |
| 228.18 | 163.6286 |
| 231.56 | 0.0000 |
| 235.69 | 207.5613 |
| 236.00 | 212.2474 |
| 236.00 | 212.2474 |
| 238.63 | 146.0258 |
| 238.63 | 146.0258 |
| 238.63 | 146.0258 |
| 238.63 | 146.0258 |
| 239.00 | 146.0850 |
| 240.98 | 146.4043 |
| 241.98 | 146.5661 |
| 241.98 | 146.5661 |
| 241.98 | 146.5661 |
| 244.69 | 146.9994 |
| 245.39 | 147.1106 |
| 247.94 | 118.4288 |
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| 249.79 | 108.6703 |
| 252.40 | 104.3803 |
| 252.85 | 121.1390 |
| 252.85 | 121.1390 |
| 254.15 | 0.0000 |
| 256.20 | 140.4312 |
| 256.20 | 140.4312 |
| 260.50 | 131.5867 |
| 260.90 | 135.8526 |
| 262.80 | 130.8443 |
| 264.65 | 118.4053 |
| 268.24 | 117.7772 |
| 268.79 | 117.8427 |
| 269.46 | 109.9561 |
| 269.46 | 109.9561 |
| 269.46 | 109.9561 |
| 269.46 | 109.9561 |
| 271.23 | 119.1982 |
| 273.65 | 128.0200 |
| 276.40 | 118.7437 |
| 277.35 | 125.2789 |
| 277.60 | 121.0258 |
| 277.60 | 121.0258 |
| 278.00 | 126.4313 |
| 278.60 | 130.7941 |
| 279.20 | 128.7256 |
| 279.53 | 153.4474 |
| 280.46 | 166.4755 |
| 281.68 | 116.1343 |
| 283.67 | 126.0549 |
| 284.30 | 129.3652 |
| 285.00 | 126.2168 |
| 285.90 | 128.4857 |
| 286.10 | 123.1104 |
| 286.10 | 123.1104 |
| 287.40 | 116.7781 |
| 288.45 | 0.0000 |
| 290.67 | 125.2777 |
| 290.80 | 130.1758 |
| 291.72 | 122.1451 |
| 293.26 | 0.0000 |
| 293.70 | 107.6891 |
| 295.21 | 107.8422 |
| 295.21 | 107.8422 |

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| 295.21 | 107.8422 |
| 295.96 | 107.9187 |
| 296.50 | 107.9731 |
| 297.23 | 137.5151 |
| 298.57 | 137.6869 |
| 299.80 | 106.6644 |
| 299.80 | 106.6644 |
| 300.09 | 106.6942 |
| 300.09 | 106.6942 |
| 300.09 | 106.6942 |
| 300.09 | 106.6942 |
| 300.12 | 106.6962 |
| 301.29 | 106.8112 |
| 302.84 | 95.4448 |
| 303.76 | 90.5852 |
| 303.91 | 90.5969 |
| 304.40 | 100.5268 |
| 304.40 | 100.5268 |
| 304.84 | 103.8650 |
| 306.84 | 88.0876 |
| 308.46 | 106.9640 |
| 311.98 | 100.6680 |
| 316.51 | 95.5235 |
| 318.01 | 91.2006 |
| 319.02 | 95.7352 |
| 319.41 | 99.1092 |
| 320.08 | 121.4519 |
| 323.87 | 80.4932 |
| 323.87 | 80.4932 |
| 323.87 | 80.4932 |
| 323.87 | 80.4932 |
| 325.23 | 110.8090 |
| 328.77 | 122.9380 |
| 333.44 | 118.3600 |
| 334.20 | 113.3610 |
| 334.20 | 113.3610 |
| 334.30 | 113.3712 |
| 338.28 | 99.6051 |
| 338.28 | 99.6051 |
| 338.28 | 99.6051 |
| 338.28 | 99.6051 |
| 338.32 | 99.6087 |
| 338.32 | 99.6087 |
| 338.32 | 99.6087 |
| 340.50 | 98.6573 |
| 340.57 | 98.6644 |
| 344.27 | 98.9706 |
| 345.85 | 94.5435 |
| 350.59 | 0.0000 |
| 351.07 | 94.3802 |
| 351.92 | 93.8733 |
| 351.92 | 93.8733 |
| 351.92 | 93.8733 |
| 355.39 | 0.0000 |
| 356.01 | 70.6402 |
| 364.48 | 106.3937 |
| 366.43 | 92.6595 |
| 367.43 | 86.9370 |
| 367.94 | 0.0000 |
| 369.80 | 96.3909 |
| 374.96 | 85.1206 |
| 383.85 | 76.6082 |
| 387.95 | 80.3804 |
| 388.63 | 75.1195 |
| 391.69 | 95.6667 |
| 391.69 | 95.6667 |
| 392.90 | 74.4741 |
| 398.62 | 73.9029 |
| 400.65 | 90.0641 |
| 401.10 | 90.0949 |
| 401.81 | 92.8202 |
| 402.60 | 91.0881 |
| 404.84 | 78.7147 |
| 410.95 | 81.7606 |
| 411.60 | 69.0352 |
| 413.65 | 63.3757 |
| 414.70 | 77.8386 |
| 415.30 | 80.7557 |

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| 415.76 | 67.8000 |
| 417.63 | 0.0000 |
| 418.52 | 74.0773 |
| 423.70 | 87.0439 |
| 427.08 | 73.6176 |
| 427.89 | 80.0253 |
| 432.53 | 70.2489 |
| 433.93 | 86.7548 |
| 439.47 | 85.2547 |
| 439.56 | 85.2590 |
| 439.89 | 90.7807 |
| 443.98 | 57.9310 |
| 444.90 | 74.5297 |
| 445.03 | 74.5359 |
| 445.03 | 74.5359 |
| 445.03 | 74.5359 |
| 445.03 | 74.5359 |
| 453.90 | 70.3547 |
| 463.38 | 69.8662 |
| 468.07 | 58.3077 |
| 473.00 | 64.6812 |
| 475.06 | 78.8474 |
| 475.35 | 76.9839 |
| 476.78 | 70.4773 |
| 477.59 | 68.6335 |
| 477.96 | 68.6503 |
| 482.03 | 80.1427 |
| 484.57 | 71.7730 |
| 487.03 | 70.9385 |
| 490.36 | 0.0000 |
| 492.35 | 65.4824 |
| 497.08 | 51.3987 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 68.1534 |
| 511.00 | 68.1599 |
| 511.85 | 68.1957 |
| 511.85 | 68.1957 |
| 513.99 | 56.9349 |
| 513.99 | 56.9349 |
| 520.41 | 53.1000 |
| 520.65 | 55.0396 |
| 527.90 | 64.0060 |
| 528.96 | 0.0000 |
| 529.64 | 63.0997 |
| 529.87 | 0.0000 |
| 531.02 | 78.6962 |
| 537.32 | 66.3108 |
| 543.00 | 74.3579 |
| 546.56 | 0.0000 |
| 549.76 | 68.7546 |
| 552.65 | 53.1266 |
| 555.20 | 67.9829 |
| 563.23 | 55.4241 |
| 563.90 | 62.3752 |
| 568.70 | 66.5154 |
| 569.32 | 62.5655 |
| 569.50 | 58.5985 |
| 569.67 | 58.6039 |
| 573.80 | 71.6814 |
| 574.00 | 66.7097 |
| 574.64 | 67.7302 |
| 578.91 | 62.2991 |
| 579.30 | 0.0000 |
| 583.14 | 52.0365 |
| 585.48 | 46.4906 |
| 591.81 | 51.2755 |
| 592.07 | 53.2944 |
| 593.00 | 65.3928 |
| 595.88 | 68.5167 |
| 600.56 | 81.8207 |
| 602.52 | 0.0000 |
| 602.71 | 72.8130 |
| 602.71 | 72.8130 |
| 603.60 | 76.0835 |
| 604.41 | 77.7375 |
| 604.70 | 77.7492 |
| 609.31 | 58.8602 |

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| 609.31 | 58.8602 |
| 609.31 | 58.8602 |
| 609.31 | 58.8602 |
| 610.33 | 58.8903 |
| 612.46 | 53.6717 |
| 614.37 | 70.0052 |
| 618.01 | 71.3608 |
| 621.84 | 64.3535 |
| 621.84 | 64.3535 |
| 631.29 | 54.4023 |
| 633.02 | 49.3140 |
| 633.10 | 49.3154 |
| 634.78 | 56.5559 |
| 635.90 | 58.6456 |
| 636.97 | 59.7063 |
| 645.85 | 52.7369 |
| 646.12 | 50.6748 |
| 656.30 | 59.2492 |
| 657.75 | 88.4163 |
| 657.90 | 0.0000 |
| 661.65 | 66.7012 |
| 661.65 | 66.7012 |
| 664.57 | 0.0000 |
| 666.33 | 54.3185 |
| 666.33 | 54.3185 |
| 675.00 | 55.5976 |
| 677.61 | 46.2142 |
| 685.20 | 48.4918 |
| 692.80 | 62.4210 |
| 695.00 | 57.1904 |
| 696.49 | 63.5889 |
| 696.49 | 63.5889 |
| 697.00 | 65.7255 |
| 697.49 | 61.4993 |
| 698.33 | 51.9773 |
| 698.50 | 51.9803 |
| 699.00 | 48.8090 |
| 702.63 | 72.2770 |
| 706.10 | 53.2303 |
| 706.58 | 0.0000 |
| 706.67 | 55.3738 |
| 709.31 | 71.4349 |
| 711.68 | 56.5713 |
| 713.82 | 56.6263 |
| 717.42 | 67.4239 |
| 720.50 | 64.9154 |
| 721.93 | 0.0000 |
| 722.20 | 60.0640 |
| 722.78 | 60.0793 |
| 722.78 | 60.0793 |
| 722.89 | 60.0828 |
| 722.95 | 60.0845 |
| 723.30 | 63.5269 |
| 724.18 | 60.1169 |
| 727.18 | 50.5241 |
| 733.00 | 43.1128 |
| 735.90 | 50.7249 |
| 739.58 | 43.2410 |
| 742.81 | 51.9653 |
| 744.21 | 56.3307 |
| 747.13 | 45.5568 |
| 751.79 | 51.0850 |
| 752.31 | 58.7082 |
| 753.82 | 51.1309 |
| 755.35 | 40.2791 |
| 756.15 | 43.5608 |
| 756.87 | 47.9316 |
| 763.93 | 43.7097 |
| 765.79 | 43.7451 |
| 766.42 | 50.7585 |
| 766.84 | 56.0187 |
| 776.49 | 31.6424 |
| 778.00 | 43.9771 |
| 778.57 | 61.5833 |
| 778.89 | 61.5918 |
| 783.80 | 42.9847 |
| 785.46 | 62.8673 |
| 792.07 | 53.0903 |

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|---------|---------|
| 795.84 | 50.9597 |
| 796.30 | 54.9584 |
| 798.80 | 51.4665 |
| 801.93 | 71.0820 |
| 805.60 | 43.3823 |
| 810.29 | 51.2685 |
| 810.76 | 45.7046 |
| 815.85 | 46.9180 |
| 817.79 | 48.0732 |
| 818.51 | 34.6678 |
| 819.60 | 27.9709 |
| 826.30 | 43.7548 |
| 828.27 | 0.0000 |
| 831.60 | 60.7137 |
| 831.96 | 60.7236 |
| 834.83 | 54.0396 |
| 836.80 | 0.0000 |
| 846.75 | 46.1540 |
| 848.13 | 34.4087 |
| 856.28 | 0.0000 |
| 856.80 | 31.8016 |
| 860.37 | 40.9460 |
| 867.32 | 36.4961 |
| 867.82 | 34.2215 |
| 871.10 | 42.9460 |
| 873.19 | 51.2121 |
| 874.81 | 50.3285 |
| 875.33 | 0.0000 |
| 876.40 | 47.6138 |
| 879.36 | 41.2515 |
| 880.27 | 44.0168 |
| 880.51 | 44.0209 |
| 881.50 | 49.5426 |
| 883.24 | 47.7395 |
| 884.67 | 56.0333 |
| 889.25 | 45.0893 |
| 896.60 | 47.9857 |
| 898.02 | 44.3180 |
| 899.00 | 39.7162 |
| 903.28 | 50.3691 |
| 911.07 | 41.7546 |
| 911.07 | 41.7546 |
| 911.07 | 41.7546 |
| 919.63 | 44.6813 |
| 920.93 | 41.9084 |
| 925.00 | 51.2993 |
| 925.24 | 51.3047 |
| 926.50 | 41.9963 |
| 935.52 | 31.8360 |
| 937.48 | 40.2926 |
| 944.10 | 44.1474 |
| 946.00 | 39.4786 |
| 949.00 | 36.6987 |
| 962.29 | 68.5511 |
| 964.01 | 45.7290 |
| 966.15 | 36.2950 |
| 968.20 | 77.3820 |
| 969.11 | 64.4539 |
| 969.11 | 64.4539 |
| 969.11 | 64.4539 |
| 977.42 | 45.4204 |
| 980.50 | 39.0191 |
| 983.50 | 39.0611 |
| 989.30 | 39.1402 |
| 996.32 | 31.9002 |
| 1001.03 | 39.9404 |
| 1001.68 | 34.5164 |
| 1004.76 | 35.1932 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 33.9404 |
| 1036.00 | 42.6852 |
| 1037.82 | 49.5059 |
| 1038.57 | 45.6345 |
| 1038.76 | 0.0000 |
| 1045.16 | 49.6304 |
| 1046.59 | 51.6000 |
| 1048.07 | 48.7036 |

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|---------|---------|
| 1050.47 | 30.2205 |
| 1050.47 | 30.2205 |
| 1062.04 | 34.2515 |
| 1063.62 | 27.4148 |
| 1076.63 | 49.1650 |
| 1077.35 | 39.3418 |
| 1078.86 | 41.3294 |
| 1085.78 | 38.4630 |
| 1099.22 | 42.5927 |
| 1112.02 | 44.2036 |
| 1112.84 | 42.6374 |
| 1115.52 | 49.7852 |
| 1120.29 | 51.8553 |
| 1120.29 | 51.8553 |
| 1120.29 | 51.8553 |
| 1120.29 | 51.8553 |
| 1120.51 | 51.8578 |
| 1121.28 | 51.8705 |
| 1124.00 | 0.0000 |
| 1129.67 | 50.0073 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 39.4704 |
| 1173.22 | 61.8340 |
| 1175.09 | 55.7842 |
| 1177.93 | 50.7568 |
| 1189.05 | 55.0020 |
| 1204.90 | 61.4033 |
| 1205.75 | 0.0000 |
| 1213.00 | 69.7564 |
| 1221.42 | 60.6738 |
| 1230.97 | 51.5625 |
| 1235.34 | 84.6706 |
| 1236.41 | 0.0000 |
| 1238.25 | 53.7393 |
| 1246.25 | 47.6486 |
| 1260.41 | 0.0000 |
| 1271.85 | 47.9990 |
| 1274.45 | 38.6368 |
| 1274.54 | 38.6368 |
| 1291.56 | 37.7736 |
| 1298.22 | 0.0000 |
| 1312.09 | 27.4371 |
| 1325.50 | 22.2428 |
| 1325.50 | 22.2428 |
| 1332.49 | 33.9578 |
| 1333.61 | 28.6611 |
| 1360.21 | 26.7285 |
| 1362.66 | 0.0000 |
| 1365.15 | 19.2700 |
| 1368.21 | 21.4287 |
| 1368.53 | 0.0000 |
| 1376.25 | 18.2534 |
| 1384.27 | 18.2916 |
| 1394.10 | 18.3389 |
| 1395.20 | 21.5820 |
| 1407.95 | 15.1573 |
| 1434.06 | 14.1699 |
| 1436.60 | 22.9042 |
| 1457.56 | 0.0000 |
| 1460.81 | 14.2664 |
| 1489.15 | 23.0245 |
| 1509.49 | 15.7355 |
| 1596.49 | 19.5878 |
| 1620.62 | 11.4038 |
| 1678.03 | 0.0000 |
| 1691.02 | 9.6549 |
| 1691.02 | 9.6549 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 4.9052 |
| 1764.49 | 4.9052 |
| 1764.49 | 4.9052 |
| 1764.49 | 4.9052 |
| 1770.23 | 3.3677 |
| 1771.40 | 39.3001 |
| 1791.20 | 0.0000 |
| 1808.65 | 11.8828 |

1836.01

9.9585

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328002

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 6.1648E+00 | ug/g |
| Total Uranium Counting Unc. | 3.6842E+00 | ug/g |
| Total Uranium Tpu | 1.8797E-06 | ug/g |
| Total Uranium Mda | 1.8216E+00 | ug/g |

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*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 950786                SAMPLE ID   : G246328002                *
*  ANALYST       : MXR1                  DETECTOR    : GAM11                  *
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 18-FEB-2010 11:05:59.42  SAMPLE ALQT: 151.130 GRAM          *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 6.338E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.091E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.281E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.098E+00

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:08:34.36

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
Configuration   : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328003.CNF;1
Sample date     : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:06:25
Sample ID       : G246328003           Sample quantity  : 1.71260E+02 GRAM
Detector name   : GAM16                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00       Elapsed real time: 0 02:00:01.52  0.0%
Energy tolerance: 1.50000 keV          Analyst Initials  : MXR1
Abundance limit : 75.00000             Sensitivity      : 5.00000
Batch ID        : 950786               Detector SN#     :
Matrix Spike ID :                      LCS ID           : 1032-A
*****

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| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|-------|----------|
| 1 | 0 | 63.07* | 103 | 290 | 0.82 | 126.34 | 123 | 8 | 1.43E-02 | 31.5 | |
| 2 | 2 | 74.91 | 263 | 288 | 1.02 | 150.01 | 145 | 13 | 3.65E-02 | 11.9 | 1.33E+00 |
| 3 | 2 | 77.07* | 382 | 260 | 0.94 | 154.33 | 145 | 13 | 5.31E-02 | 8.9 | |
| 4 | 0 | 92.78* | 201 | 378 | 1.18 | 185.75 | 182 | 9 | 2.79E-02 | 19.8 | |
| 5 | 0 | 185.95* | 101 | 247 | 1.10 | 372.10 | 367 | 9 | 1.41E-02 | 31.4 | |
| 6 | 0 | 209.26 | 82 | 191 | 1.20 | 418.71 | 415 | 9 | 1.15E-02 | 32.0 | |
| 7 | 5 | 238.54* | 691 | 154 | 0.97 | 477.27 | 473 | 17 | 9.60E-02 | 4.8 | 2.55E+00 |
| 8 | 5 | 241.56* | 210 | 198 | 1.74 | 483.32 | 473 | 17 | 2.91E-02 | 17.2 | |
| 9 | 0 | 270.23 | 93 | 140 | 2.26 | 540.66 | 536 | 10 | 1.28E-02 | 26.2 | |
| 10 | 0 | 277.24 | 33 | 158 | 0.84 | 554.67 | 550 | 9 | 4.54E-03 | 71.4 | |
| 11 | 0 | 295.13* | 243 | 170 | 1.07 | 590.44 | 585 | 11 | 3.37E-02 | 12.4 | |
| 12 | 0 | 299.90 | 57 | 116 | 1.37 | 599.98 | 596 | 8 | 7.92E-03 | 35.3 | |
| 13 | 0 | 338.14* | 129 | 134 | 1.13 | 676.46 | 673 | 9 | 1.79E-02 | 18.6 | |
| 14 | 0 | 351.82* | 411 | 168 | 1.15 | 703.82 | 697 | 14 | 5.71E-02 | 8.4 | |
| 15 | 0 | 462.96 | 57 | 69 | 1.40 | 926.10 | 922 | 8 | 7.96E-03 | 28.9 | |
| 16 | 0 | 510.99* | 36 | 134 | 1.66 | 1022.14 | 1016 | 14 | 4.95E-03 | 83.0 | |
| 17 | 0 | 583.25* | 244 | 76 | 1.35 | 1166.64 | 1161 | 14 | 3.39E-02 | 10.4 | |
| 18 | 0 | 609.35* | 261 | 96 | 1.46 | 1218.83 | 1214 | 10 | 3.62E-02 | 9.6 | |
| 19 | 0 | 661.62 | 32 | 35 | 1.05 | 1323.36 | 1319 | 8 | 4.41E-03 | 37.1 | |
| 20 | 0 | 727.04 | 61 | 44 | 2.01 | 1454.16 | 1449 | 11 | 8.41E-03 | 24.8 | |
| 21 | 0 | 911.09* | 148 | 32 | 1.51 | 1822.19 | 1817 | 10 | 2.06E-02 | 11.2 | |
| 22 | 0 | 968.90* | 117 | 26 | 1.29 | 1937.78 | 1933 | 11 | 1.62E-02 | 12.8 | |
| 23 | 0 | 1121.69* | 15 | 56 | 3.35 | 2243.26 | 2240 | 10 | 2.03E-03 | 119.4 | |
| 24 | 0 | 1378.43* | 17 | 14 | 1.30 | 2756.54 | 2752 | 12 | 2.34E-03 | 58.2 | |
| 25 | 0 | 1460.69* | 962 | 4 | 1.81 | 2920.98 | 2913 | 16 | 1.34E-01 | 3.3 | |
| 26 | 0 | 1588.32 | 14 | 9 | 1.80 | 3176.12 | 3171 | 11 | 1.91E-03 | 49.2 | |
| 27 | 0 | 1620.27 | 10 | 7 | 0.98 | 3239.99 | 3236 | 7 | 1.32E-03 | 55.9 | |
| 28 | 0 | 1764.39* | 54 | 0 | 1.50 | 3528.06 | 3523 | 10 | 7.46E-03 | 15.6 | |

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328003.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 11:06:25
Sample ID        : G246328003             Sample quantity  : 171.26 GRAM
Sample type       : SOLID                  Sample geometry   :
Detector name     : GAMMA16               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.52    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 | * | 1.635E+01 | 1.797E+00 | 2.842E-01 | 2.498E-02 | 57.533 |
| BA-137M | + | 661.65 | * | 3.221E-02 | 2.408E-02 | 3.156E-02 | 2.801E-03 | 1.021 |
| CS-137 | + | 661.65 | * | 3.405E-02 | 2.545E-02 | 3.336E-02 | 2.966E-03 | 1.021 |
| TL-208 | + | 277.35 | | 2.244E-01 | 3.223E-01 | 3.270E-01 | 4.861E-02 | 0.686 |
| | + | 510.84 | | 1.220E-01 | 2.030E-01 | 1.424E-01 | 1.801E-02 | 0.857 |
| | + | 583.14 | * | 2.382E-01 | 5.470E-02 | 3.441E-02 | 3.411E-03 | 6.923 |
| | | 860.37 | | 1.455E-01 | 1.917E-01 | 3.411E-01 | 3.415E-02 | 0.427 |
| BI-211 | | 72.87 | | 1.442E-01 | 1.762E+00 | 2.734E+00 | 2.223E-01 | 0.053 |
| | + | 351.07 | * | 1.768E+00 | 3.553E-01 | 1.854E-01 | 2.027E-02 | 9.536 |
| BI-212 | + | 727.18 | * | 5.061E-01 | 2.569E-01 | 2.411E-01 | 2.519E-02 | 2.099 |
| | | 785.46 | | 7.014E-01 | 1.074E+00 | 1.912E+00 | 1.777E-01 | 0.367 |
| | + | 1620.62 | | 6.778E-01 | 7.606E-01 | 1.124E+00 | 9.553E-02 | 0.603 |
| PB-212 | + | 74.81 | | 1.053E+00 | 2.828E-01 | 2.982E-01 | 3.725E-02 | 3.531 |
| | + | 77.11 | | 8.687E-01 | 1.708E-01 | 1.692E-01 | 1.437E-02 | 5.135 |
| | | 87.30 | | 2.826E-03 | 2.096E-01 | 3.567E-01 | 4.934E-02 | 0.008 |
| | + | 238.63 | * | 6.498E-01 | 9.940E-02 | 5.172E-02 | 6.123E-03 | 12.565 |
| | + | 300.09 | | 8.262E-01 | 5.933E-01 | 7.159E-01 | 9.380E-02 | 1.154 |
| PO-212 | + | 74.81 | | 1.053E+00 | 2.828E-01 | 2.982E-01 | 3.725E-02 | 3.531 |
| | + | 77.11 | | 8.687E-01 | 1.708E-01 | 1.692E-01 | 1.437E-02 | 5.135 |
| | | 87.30 | | 2.826E-03 | 2.096E-01 | 3.567E-01 | 4.934E-02 | 0.008 |
| | | 115.19 | | 2.164E-01 | 1.934E+00 | 3.266E+00 | 2.725E-01 | 0.066 |
| | + | 238.63 | * | 6.498E-01 | 9.940E-02 | 5.172E-02 | 6.123E-03 | 12.565 |
| | + | 300.09 | | 8.262E-01 | 5.933E-01 | 7.159E-01 | 9.380E-02 | 1.154 |
| BI-214 | + | 609.31 | * | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| | + | 1120.29 | | 1.401E-01 | 3.348E-01 | 3.608E-01 | 3.874E-02 | 0.388 |
| | + | 1764.49 | | 7.054E-01 | 2.274E-01 | 8.581E-02 | 7.102E-03 | 8.220 |
| PB-214 | + | 74.81 | | 1.814E+00 | 4.761E-01 | 5.138E-01 | 5.712E-02 | 3.531 |
| | + | 77.11 | | 1.489E+00 | 3.140E-01 | 2.900E-01 | 3.309E-02 | 5.135 |
| | | 87.30 | | 4.842E-03 | 3.591E-01 | 6.110E-01 | 7.502E-02 | 0.008 |
| | + | 241.98 | | 1.184E+00 | 4.331E-01 | 3.115E-01 | 3.859E-02 | 3.800 |
| | + | 295.21 | | 6.171E-01 | 1.736E-01 | 1.273E-01 | 1.699E-02 | 4.849 |
| | + | 351.92 | * | 6.151E-01 | 1.277E-01 | 6.464E-02 | 7.817E-03 | 9.516 |
| PO-214 | + | 74.81 | | 1.814E+00 | 4.761E-01 | 5.138E-01 | 5.712E-02 | 3.531 |
| | + | 77.11 | | 1.489E+00 | 3.140E-01 | 2.900E-01 | 3.309E-02 | 5.135 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 87.30 | | 4.842E-03 | 3.591E-01 | 6.110E-01 | 7.502E-02 | 0.008 |
| | + | 241.98 | | 1.184E+00 | 4.331E-01 | 3.115E-01 | 3.859E-02 | 3.800 |
| | + | 295.21 | | 6.171E-01 | 1.736E-01 | 1.273E-01 | 1.699E-02 | 4.849 |
| | + | 351.92 | * | 6.151E-01 | 1.277E-01 | 6.464E-02 | 7.817E-03 | 9.516 |
| PO-216 | + | 74.81 | | 1.053E+00 | 2.828E-01 | 2.982E-01 | 3.725E-02 | 3.531 |
| | + | 77.11 | | 8.687E-01 | 1.708E-01 | 1.692E-01 | 1.437E-02 | 5.135 |
| | | 87.30 | | 2.826E-03 | 2.096E-01 | 3.567E-01 | 4.934E-02 | 0.008 |
| | + | 238.63 | * | 6.498E-01 | 9.940E-02 | 5.172E-02 | 6.123E-03 | 12.565 |
| | + | 300.09 | | 8.262E-01 | 5.933E-01 | 7.159E-01 | 9.380E-02 | 1.154 |
| PO-218 | + | 74.81 | | 1.814E+00 | 4.761E-01 | 5.138E-01 | 5.712E-02 | 3.531 |
| | + | 77.11 | | 1.489E+00 | 3.140E-01 | 2.900E-01 | 3.309E-02 | 5.135 |
| | | 87.30 | | 4.842E-03 | 3.591E-01 | 6.110E-01 | 7.502E-02 | 0.008 |
| | + | 241.98 | | 1.184E+00 | 4.331E-01 | 3.115E-01 | 3.859E-02 | 3.800 |
| | + | 295.21 | | 6.171E-01 | 1.736E-01 | 1.273E-01 | 1.699E-02 | 4.849 |
| | + | 351.92 | * | 6.151E-01 | 1.277E-01 | 6.464E-02 | 7.817E-03 | 9.516 |
| RA-224 | + | 240.98 | * | 2.244E+00 | 8.115E-01 | 5.886E-01 | 6.487E-02 | 3.813 |
| RA-226 | + | 609.31 | * | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| | + | 1120.29 | | 1.401E-01 | 3.348E-01 | 3.608E-01 | 3.874E-02 | 0.388 |
| | + | 1764.49 | | 7.054E-01 | 2.274E-01 | 8.581E-02 | 7.102E-03 | 8.220 |
| AC-228 | + | 338.32 | | 6.102E-01 | 3.419E-01 | 2.340E-01 | 9.783E-02 | 2.607 |
| | + | 911.07 | * | 6.431E-01 | 1.631E-01 | 1.073E-01 | 1.275E-02 | 5.992 |
| | + | 969.11 | | 8.909E-01 | 3.099E-01 | 2.588E-01 | 6.104E-02 | 3.442 |
| RA-228 | + | 338.32 | | 6.102E-01 | 3.419E-01 | 2.340E-01 | 9.783E-02 | 2.607 |
| | + | 911.07 | * | 6.431E-01 | 1.631E-01 | 1.073E-01 | 1.275E-02 | 5.992 |
| | + | 969.11 | | 8.909E-01 | 3.099E-01 | 2.588E-01 | 6.104E-02 | 3.442 |
| TH-228 | + | 74.81 | | 1.071E+00 | 2.699E-01 | 3.032E-01 | 2.537E-02 | 3.531 |
| | + | 77.11 | | 8.835E-01 | 1.737E-01 | 1.720E-01 | 1.461E-02 | 5.135 |
| | | 87.30 | | 2.874E-03 | 2.132E-01 | 3.628E-01 | 3.467E-02 | 0.008 |
| | + | 238.63 | * | 6.609E-01 | 1.011E-01 | 5.260E-02 | 6.228E-03 | 12.565 |
| | + | 300.09 | | 8.402E-01 | 7.776E-01 | 7.281E-01 | 4.355E-01 | 1.154 |
| TH-230 | + | 609.31 | * | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| | + | 1120.29 | | 1.401E-01 | 3.348E-01 | 3.608E-01 | 3.874E-02 | 0.388 |
| | + | 1764.49 | | 7.054E-01 | 2.274E-01 | 8.581E-02 | 7.102E-03 | 8.220 |
| TH-232 | + | 338.32 | | 6.102E-01 | 2.371E-01 | 2.340E-01 | 2.555E-02 | 2.607 |
| | + | 911.07 | * | 6.431E-01 | 1.631E-01 | 1.073E-01 | 1.275E-02 | 5.992 |
| | + | 969.11 | | 8.909E-01 | 3.099E-01 | 2.588E-01 | 6.104E-02 | 3.442 |
| TH-234 | + | 63.29 | * | 1.699E+00 | 1.109E+00 | 1.116E+00 | 1.947E-01 | 1.523 |
| | + | 92.38 | | 1.233E+00 | 5.383E-01 | 4.819E-01 | 8.857E-02 | 2.558 |
| U-234 | + | 609.31 | * | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| | + | 1120.29 | | 1.401E-01 | 3.348E-01 | 3.608E-01 | 3.874E-02 | 0.388 |
| | + | 1764.49 | | 7.054E-01 | 2.274E-01 | 8.581E-02 | 7.102E-03 | 8.220 |
| U-238 | + | 63.29 | * | 1.699E+00 | 1.109E+00 | 1.116E+00 | 1.947E-01 | 1.523 |
| | + | 92.38 | | 1.233E+00 | 5.013E-01 | 4.819E-01 | 4.446E-02 | 2.558 |
| AM-243 | + | 74.67 | * | 1.707E-01 | 4.298E-02 | 4.849E-02 | 4.014E-03 | 3.521 |
| | | 86.72 | | 3.764E+00 | 4.916E+00 | 8.575E+00 | 8.136E-01 | 0.439 |
| | | 117.66 | | -9.059E-01 | 2.159E+00 | 3.548E+00 | 2.952E-01 | -0.255 |
| | | 142.18 | | -1.978E+01 | 1.042E+01 | 1.503E+01 | 1.281E+00 | -1.316 |
| ANH-511 | + | 511.00 | * | 2.634E-02 | 4.379E-02 | 3.077E-02 | 2.926E-03 | 0.856 |

---- 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 | * | 2.009E-01 | 2.039E-01 | 3.619E-01 | 3.661E-02 | 0.555 |

---- 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 | * | | -4.046E-03 | 2.855E-02 | 4.549E-02 | 3.785E-03 | -0.089 |
| NA-24 | 1368.53 | * | | -1.595E+00 | 2.855E-02 | Half-Life too short | | |
| AL-26 | 1129.67 | | | -7.068E-02 | 1.189E+00 | 1.883E+00 | 1.579E-01 | -0.038 |
| | 1808.65 | * | | 1.950E-03 | 1.731E-02 | 2.927E-02 | 2.393E-03 | 0.067 |
| TI-44 | 67.85 | | | -2.750E-02 | 2.683E-02 | 3.881E-02 | 3.006E-03 | -0.709 |
| | 78.38 | * | | 1.603E-01 | 3.152E-02 | 3.747E-02 | 3.226E-03 | 4.279 |
| SC-46 | 889.25 | * | | 2.634E-02 | 2.368E-02 | 4.383E-02 | 4.143E-03 | 0.601 |
| | 1120.51 | + | | 2.435E-02 | 5.817E-02 | 7.592E-02 | 6.414E-03 | 0.321 |
| V-48 | 944.10 | | | -2.374E-02 | 6.305E-01 | 1.044E+00 | 9.756E-02 | -0.023 |
| | 983.50 | * | | -5.040E-03 | 4.396E-02 | 7.185E-02 | 6.614E-03 | -0.070 |
| | 1312.09 | | | 3.109E-02 | 5.499E-02 | 9.553E-02 | 8.019E-03 | 0.325 |
| CR-51 | 320.08 | * | | 1.156E-01 | 2.448E-01 | 4.006E-01 | 4.684E-02 | 0.288 |
| MN-52 | 744.21 | | | -7.558E-03 | 1.702E-01 | 2.712E-01 | 2.490E-02 | -0.028 |
| | 848.13 | | | 4.854E+00 | 5.222E+00 | 9.496E+00 | 8.937E-01 | 0.511 |
| | 935.52 | | | 7.377E-02 | 2.102E-01 | 3.614E-01 | 3.385E-02 | 0.204 |
| | 1246.25 | | | -1.781E+00 | 5.487E+00 | 8.561E+00 | 7.057E-01 | -0.208 |
| | 1333.61 | | | 2.339E-01 | 3.770E+00 | 6.147E+00 | 5.186E-01 | 0.038 |
| | 1434.06 | * | | 1.856E-01 | 1.709E-01 | 3.247E-01 | 2.771E-02 | 0.571 |
| MN-54 | 834.83 | * | | 7.839E-03 | 2.333E-02 | 4.032E-02 | 3.787E-03 | 0.194 |
| CO-56 | 846.75 | * | | 3.106E-03 | 2.496E-02 | 4.235E-02 | 3.986E-03 | 0.073 |
| | 977.42 | | | 5.300E-01 | 1.770E+00 | 3.033E+00 | 2.799E-01 | 0.175 |
| | 1037.82 | | | -7.156E-02 | 1.946E-01 | 3.073E-01 | 2.889E-02 | -0.233 |
| | 1175.09 | | | -7.804E-03 | 1.487E+00 | 2.426E+00 | 1.952E-01 | -0.003 |
| | 1238.25 | | | 5.499E-02 | 6.393E-02 | 1.114E-01 | 9.450E-03 | 0.494 |
| | 1360.21 | | | 1.632E-01 | 5.824E-01 | 9.828E-01 | 8.324E-02 | 0.166 |
| | 1771.40 | | | -1.912E-01 | 1.567E-01 | 1.847E-01 | 1.526E-02 | -1.035 |
| CO-57 | 122.06 | * | | -5.038E-03 | 1.505E-02 | 2.481E-02 | 2.061E-03 | -0.203 |
| | 136.48 | | | -2.422E-02 | 1.249E-01 | 2.061E-01 | 1.873E-02 | -0.118 |
| CO-58 | 810.76 | * | | -2.555E-02 | 2.329E-02 | 3.435E-02 | 3.218E-03 | -0.744 |
| FE-59 | 142.65 | | | -1.831E+00 | 1.633E+00 | 2.487E+00 | 2.123E-01 | -0.736 |
| | 192.34 | | | -2.875E-01 | 5.826E-01 | 9.248E-01 | 1.309E-01 | -0.311 |
| | 1099.22 | * | | -3.195E-02 | 6.184E-02 | 9.569E-02 | 8.895E-03 | -0.334 |
| | 1291.56 | | | 1.694E-02 | 7.386E-02 | 1.234E-01 | 1.179E-02 | 0.137 |
| CO-60 | 1173.22 | | | 1.606E-02 | 2.906E-02 | 5.014E-02 | 4.032E-03 | 0.320 |
| | 1332.49 | * | | 1.059E-02 | 2.304E-02 | 3.979E-02 | 3.357E-03 | 0.266 |
| ZN-65 | 1115.52 | * | | -6.306E-02 | 6.586E-02 | 8.964E-02 | 7.612E-03 | -0.704 |
| GE-68 | 1077.35 | * | | 2.789E-01 | 7.191E-01 | 1.237E+00 | 1.081E-01 | 0.225 |
| AS-73 | 53.44 | * | | -7.742E-02 | 4.801E-01 | 7.449E-01 | 5.683E-02 | -0.104 |
| AS-74 | 595.88 | * | | 1.309E-02 | 6.103E-02 | 1.014E-01 | 9.413E-03 | 0.129 |
| | 634.78 | | | 1.635E-01 | 2.239E-01 | 3.892E-01 | 3.528E-02 | 0.420 |
| SE-75 | 66.05 | | | -5.726E-01 | 2.969E+00 | 4.170E+00 | 4.012E-01 | -0.137 |
| | 96.73 | | | -4.464E-01 | 4.869E-01 | 6.956E-01 | 9.616E-02 | -0.642 |
| | 121.11 | | | 5.822E-03 | 8.111E-02 | 1.364E-01 | 1.497E-02 | 0.043 |
| | 136.00 | | | 8.375E-03 | 2.349E-02 | 3.977E-02 | 3.375E-03 | 0.211 |
| | 198.60 | | | -9.663E-01 | 1.080E+00 | 1.638E+00 | 1.756E-01 | -0.590 |
| | 264.65 | * | | -1.239E-02 | 2.716E-02 | 3.979E-02 | 4.644E-03 | -0.311 |
| | 279.53 | | | -2.287E-02 | 7.271E-02 | 1.001E-01 | 1.225E-02 | -0.228 |
| | 303.91 | | | -7.960E-01 | 1.431E+00 | 1.898E+00 | 2.638E-01 | -0.419 |
| | 400.65 | | | -1.241E-01 | 1.483E-01 | 2.316E-01 | 2.696E-02 | -0.536 |

---- 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 | | | 6.567E+01 | 1.731E+02 | 2.858E+02 | 2.751E+01 | 0.230 |
| | 200.40 | | | 4.628E+01 | 1.616E+02 | 2.678E+02 | 2.661E+01 | 0.173 |
| | 239.00 | | + | 1.788E+02 | 2.614E+01 | 3.624E+01 | 3.975E+00 | 4.933 |
| | 249.79 | | | -3.256E+00 | 6.555E+01 | 1.051E+02 | 1.183E+01 | -0.031 |
| | 281.68 | | | -3.891E+01 | 9.993E+01 | 1.362E+02 | 1.631E+01 | -0.286 |
| | 297.23 | | | 7.664E+01 | 7.583E+01 | 9.513E+01 | 1.119E+01 | 0.806 |
| | 303.76 | | | -1.631E+01 | 1.969E+02 | 2.754E+02 | 3.210E+01 | -0.059 |
| | 439.47 | | | 2.609E+01 | 1.499E+02 | 2.530E+02 | 2.387E+01 | 0.103 |
| | 484.57 | | | 7.448E+01 | 2.375E+02 | 4.031E+02 | 3.835E+01 | 0.185 |
| | 520.65 | | * | 4.787E+00 | 1.016E+01 | 1.744E+01 | 1.657E+00 | 0.275 |
| | 574.64 | | | -2.062E+02 | 2.206E+02 | 3.273E+02 | 3.067E+01 | -0.630 |
| | 578.91 | | | 2.187E+01 | 9.582E+01 | 1.412E+02 | 1.321E+01 | 0.155 |
| | 585.48 | | | 5.197E+02 | 2.215E+02 | 3.844E+02 | 3.586E+01 | 1.352 |
| | 755.35 | | | 1.822E+02 | 1.891E+02 | 3.299E+02 | 3.040E+01 | 0.552 |
| | 817.79 | | | -7.659E+01 | 1.358E+02 | 2.147E+02 | 2.010E+01 | -0.357 |
| SR-82 | 698.33 | | | -6.512E+00 | 2.337E+01 | 3.662E+01 | 3.304E+00 | -0.178 |
| | 776.49 | | * | -8.050E-02 | 2.515E-01 | 3.869E-01 | 3.587E-02 | -0.208 |
| | 1395.20 | | | 3.884E-01 | 5.816E+00 | 9.482E+00 | 8.064E-01 | 0.041 |
| RB-83 | 520.41 | | * | 1.875E-02 | 3.979E-02 | 6.829E-02 | 6.489E-03 | 0.275 |
| | 529.64 | | | -2.222E-02 | 5.987E-02 | 9.483E-02 | 8.998E-03 | -0.234 |
| | 552.65 | | | 1.031E-01 | 1.211E-01 | 2.129E-01 | 2.010E-02 | 0.484 |
| RB-84 | 881.50 | | * | 3.859E-02 | 3.919E-02 | 7.246E-02 | 6.845E-03 | 0.533 |
| KR-85 | 513.99 | | * | 4.559E+00 | 4.705E+00 | 7.503E+00 | 7.134E-01 | 0.608 |
| SR-85 | 513.99 | | * | 2.383E-02 | 2.459E-02 | 3.922E-02 | 3.730E-03 | 0.608 |
| RB-86 | 1076.63 | | * | 4.964E-01 | 4.817E-01 | 8.849E-01 | 7.732E-02 | 0.561 |
| Y-88 | 898.02 | | | 1.140E-02 | 2.611E-02 | 4.546E-02 | 4.317E-03 | 0.251 |
| | 1836.01 | | * | -5.444E-03 | 2.327E-02 | 3.636E-02 | 2.952E-03 | -0.150 |
| ZR-88 | 392.90 | | * | -2.812E-03 | 1.895E-02 | 3.149E-02 | 2.912E-03 | -0.089 |
| Y-91 | 1204.90 | | * | -5.262E+00 | 1.266E+01 | 1.972E+01 | 1.604E+00 | -0.267 |
| NB-94 | 702.63 | | * | 1.276E-02 | 2.082E-02 | 3.546E-02 | 3.205E-03 | 0.360 |
| | 871.10 | | | -3.011E-03 | 2.089E-02 | 3.443E-02 | 3.249E-03 | -0.087 |
| NB-95 | 765.79 | | * | -1.646E-02 | 2.578E-02 | 3.819E-02 | 3.530E-03 | -0.431 |
| NB-95M | 235.69 | | * | 6.676E-03 | 8.467E-02 | 1.226E-01 | 1.458E-02 | 0.054 |
| ZR-95 | 724.18 | | | -6.382E-02 | 6.946E-02 | 8.435E-02 | 8.287E-03 | -0.757 |
| | 756.15 | | * | 3.048E-02 | 4.810E-02 | 8.165E-02 | 8.196E-03 | 0.373 |
| NB-97 | 657.90 | | * | 5.133E-03 | 4.810E-02 | Half-Life | too short | |
| | 1024.50 | | | 3.874E+00 | 4.810E-02 | Half-Life | too short | |
| ZR-97 | 254.15 | | | -8.347E+00 | 4.810E-02 | Half-Life | too short | |
| | 355.39 | | | -2.823E+00 | 4.810E-02 | Half-Life | too short | |
| | 507.63 | | * | 7.535E+00 | 4.810E-02 | Half-Life | too short | |
| | 602.52 | | | -8.266E+00 | 4.810E-02 | Half-Life | too short | |
| | 1021.30 | | | -2.913E+01 | 4.810E-02 | Half-Life | too short | |
| | 1147.95 | | | -6.523E+00 | 4.810E-02 | Half-Life | too short | |
| | 1362.66 | | | -1.727E+00 | 4.810E-02 | Half-Life | too short | |
| | 1750.46 | | | -1.921E+01 | 4.810E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | 9.084E+00 | 2.303E+01 | 3.882E+01 | 1.074E+01 | 0.234 |
| | 181.06 | | | -3.962E+00 | 1.818E+01 | 2.625E+01 | 4.906E+00 | -0.151 |
| | 366.43 | | | -7.001E+00 | 8.168E+01 | 1.370E+02 | 1.385E+01 | -0.051 |
| | 739.58 | | * | 6.608E+00 | 1.086E+01 | 1.851E+01 | 2.870E+00 | 0.357 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| | 778.00 | | | -8.818E-01 | 3.364E+01 | 5.354E+01 | 4.966E+00 | -0.016 |
| TC-99M | 140.51 | * | | 1.361E+12 | 3.364E+01 | Half-Life too short | | |
| RH-101 | 127.23 | | | -2.010E-02 | 1.823E-02 | 2.872E-02 | 2.392E-03 | -0.700 |
| | 198.01 | * | | -7.732E-05 | 1.906E-02 | 3.060E-02 | 3.021E-03 | -0.003 |
| | 325.23 | | | -1.675E-01 | 1.445E-01 | 2.063E-01 | 2.316E-02 | -0.812 |
| RH-102 | 418.52 | | | 1.990E-01 | 1.711E-01 | 3.083E-01 | 2.888E-02 | 0.646 |
| | 475.06 | * | | -2.412E-02 | 1.719E-02 | 2.464E-02 | 2.342E-03 | -0.979 |
| | 631.29 | | | -3.766E-02 | 3.261E-02 | 4.625E-02 | 4.203E-03 | -0.814 |
| | 697.49 | | | -4.176E-03 | 4.942E-02 | 7.822E-02 | 7.056E-03 | -0.053 |
| | 766.84 | | | 4.491E-02 | 6.502E-02 | 1.110E-01 | 1.026E-02 | 0.405 |
| | 1046.59 | | | 6.548E-03 | 6.881E-02 | 1.147E-01 | 1.022E-02 | 0.057 |
| | 1112.84 | | | -5.590E-02 | 1.467E-01 | 2.308E-01 | 1.962E-02 | -0.242 |
| RU-103 | 497.08 | * | | 1.381E-03 | 2.400E-02 | 3.986E-02 | 5.870E-03 | 0.035 |
| | 610.33 | | | 5.346E+00 | 1.371E+00 | 1.782E+00 | 3.029E-01 | 3.000 |
| RH-106 | 511.85 | + | | 1.320E-01 | 2.195E-01 | 2.705E-01 | 2.572E-02 | 0.488 |
| | 621.84 | * | | 4.970E-02 | 1.764E-01 | 2.950E-01 | 4.042E-02 | 0.168 |
| | 1050.47 | | | -1.230E-01 | 1.297E+00 | 2.113E+00 | 1.879E-01 | -0.058 |
| RU-106 | 511.85 | + | | 1.320E-01 | 2.195E-01 | 2.705E-01 | 2.572E-02 | 0.488 |
| | 621.84 | * | | 4.970E-02 | 1.763E-01 | 2.950E-01 | 2.698E-02 | 0.168 |
| | 1050.47 | | | -1.230E-01 | 1.297E+00 | 2.113E+00 | 1.879E-01 | -0.058 |
| AG-108M | 433.93 | * | | -4.262E-03 | 1.888E-02 | 3.091E-02 | 3.009E-03 | -0.138 |
| | 614.37 | | | -1.895E-03 | 2.559E-02 | 3.604E-02 | 3.426E-03 | -0.053 |
| | 722.95 | | | -1.687E-02 | 2.826E-02 | 3.613E-02 | 3.408E-03 | -0.467 |
| CD-109 | 88.03 | * | | 1.768E-01 | 4.699E-01 | 7.757E-01 | 7.475E-02 | 0.228 |
| AG-110M | 657.75 | * | | 2.668E-03 | 2.187E-02 | 3.150E-02 | 2.883E-03 | 0.085 |
| | 677.61 | | | -5.058E-02 | 2.031E-01 | 3.198E-01 | 2.934E-02 | -0.158 |
| | 706.67 | | | -1.014E-01 | 1.365E-01 | 2.027E-01 | 1.881E-02 | -0.500 |
| | 763.93 | | | -4.559E-02 | 9.423E-02 | 1.418E-01 | 1.343E-02 | -0.321 |
| | 884.67 | | | -2.373E-02 | 2.893E-02 | 4.364E-02 | 4.235E-03 | -0.544 |
| | 937.48 | | | -6.140E-02 | 7.753E-02 | 1.187E-01 | 1.146E-02 | -0.517 |
| | 1384.27 | | | 4.676E-02 | 1.029E-01 | 1.589E-01 | 1.389E-02 | 0.294 |
| IN-111 | 171.28 | | | -4.742E-01 | 9.164E-01 | 1.465E+00 | 1.347E-01 | -0.324 |
| | 245.39 | * | | 4.774E-01 | 9.830E-01 | 1.474E+00 | 1.641E-01 | 0.324 |
| IN-113M | 391.69 | * | | 1.352E-02 | 2.751E-02 | 4.769E-02 | 4.526E-03 | 0.283 |
| SN-113 | 391.69 | * | | 1.352E-02 | 2.751E-02 | 4.769E-02 | 4.526E-03 | 0.283 |
| IN-114M | 190.27 | * | | 1.167E-01 | 1.179E-01 | 1.936E-01 | 1.872E-02 | 0.603 |
| CD-115 | 260.90 | | | 4.591E+01 | 1.359E+02 | 2.229E+02 | 2.573E+01 | 0.206 |
| | 492.35 | | | 3.556E+01 | 3.477E+01 | 6.254E+01 | 5.951E+00 | 0.569 |
| | 527.90 | * | | -4.702E+00 | 1.099E+01 | 1.733E+01 | 1.645E+00 | -0.271 |
| SN-117M | 156.02 | | | -8.353E-01 | 1.393E+00 | 2.230E+00 | 1.967E-01 | -0.375 |
| | 158.56 | * | | 6.887E-03 | 3.530E-02 | 5.890E-02 | 5.231E-03 | 0.117 |
| SB-122 | 563.90 | * | | 3.206E-01 | 1.990E+00 | 3.305E+00 | 3.109E-01 | 0.097 |
| | 692.80 | | | 1.520E+01 | 4.292E+01 | 7.157E+01 | 6.443E+00 | 0.212 |
| I-123 | 159.00 | * | | 2.564E+00 | 4.292E+01 | Half-Life too short | | |
| | 528.96 | | | 5.452E+02 | 4.292E+01 | Half-Life too short | | |
| TE-123M | 159.00 | * | | 1.235E-03 | 1.712E-02 | 2.840E-02 | 2.540E-03 | 0.043 |
| I-124 | 602.71 | * | | -2.190E-01 | 5.858E-01 | 8.867E-01 | 8.201E-02 | -0.247 |
| | 722.78 | | | -2.508E+00 | 3.999E+00 | 5.083E+00 | 4.632E-01 | -0.493 |
| | 1325.50 | | | 1.823E+01 | 3.114E+01 | 5.417E+01 | 4.562E+00 | 0.337 |

---- 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 | | 2.500E+01 | 3.404E+01 | 5.334E+01 | 4.527E+00 | 0.469 |
| | | 1509.49 | | 1.052E+01 | 1.099E+01 | 2.129E+01 | 1.820E+00 | 0.494 |
| | | 1691.02 | | -3.450E-01 | 3.004E+00 | 4.849E+00 | 4.077E-01 | -0.071 |
| | | 602.71 | | -9.575E-03 | 2.561E-02 | 3.876E-02 | 3.586E-03 | -0.247 |
| | | 645.85 | | 1.931E-01 | 3.128E-01 | 5.368E-01 | 5.092E-02 | 0.360 |
| | | 709.31 | | 1.265E+00 | 1.851E+00 | 3.164E+00 | 2.868E-01 | 0.400 |
| | | 713.82 | | -6.714E-01 | 1.086E+00 | 1.629E+00 | 2.016E-01 | -0.412 |
| | | 722.78 | | -1.589E-01 | 2.534E-01 | 3.221E-01 | 2.992E-02 | -0.493 |
| | + | 968.20 | | 9.368E+00 | 2.549E+00 | 4.381E+00 | 4.058E-01 | 2.138 |
| | | 1045.16 | | 6.710E-01 | 1.533E+00 | 2.649E+00 | 2.363E-01 | 0.253 |
| | | 1325.50 | | 1.234E+00 | 2.107E+00 | 3.666E+00 | 3.088E-01 | 0.337 |
| | | 1368.21 | | -4.989E-01 | 1.103E+00 | 1.636E+00 | 2.190E-01 | -0.305 |
| SB-125 | | 1436.60 | | -7.454E-01 | 2.196E+00 | 3.481E+00 | 2.971E-01 | -0.214 |
| | | 1691.02 | * | -5.157E-03 | 4.490E-02 | 7.247E-02 | 6.347E-03 | -0.071 |
| | | 427.89 | * | 1.079E-02 | 5.426E-02 | 9.195E-02 | 8.785E-03 | 0.117 |
| | + | 463.38 | | 3.838E-01 | 2.250E-01 | 3.300E-01 | 3.335E-02 | 1.163 |
| | | 600.56 | | -3.163E-02 | 1.102E-01 | 1.748E-01 | 1.722E-02 | -0.181 |
| TE-125M | | 635.90 | | 1.293E-01 | 1.588E-01 | 2.779E-01 | 2.702E-02 | 0.465 |
| I-126 | | 109.28 | * | 3.934E+00 | 5.291E+00 | 9.183E+00 | 9.351E-01 | 0.428 |
| | | 388.63 | | 1.442E-02 | 1.367E-01 | 2.314E-01 | 2.165E-02 | 0.062 |
| | | 666.33 | * | 5.912E-02 | 1.345E-01 | 2.015E-01 | 1.792E-02 | 0.293 |
| SB-126 | | 753.82 | | 7.059E-01 | 1.078E+00 | 1.834E+00 | 1.689E-01 | 0.385 |
| | | 223.80 | | -4.967E-01 | 2.675E+00 | 4.286E+00 | 4.527E-01 | -0.116 |
| | + | 278.60 | | 1.645E+00 | 2.358E+00 | 2.839E+00 | 3.405E-01 | 0.579 |
| | + | 296.50 | | 6.811E+00 | 1.868E+00 | 2.224E+00 | 2.619E-01 | 3.062 |
| | | 414.70 | | -6.598E-02 | 4.560E-02 | 6.609E-02 | 6.181E-03 | -0.998 |
| | | 415.30 | | -1.890E+00 | 3.831E+00 | 6.146E+00 | 5.749E-01 | -0.308 |
| | | 555.20 | | -2.643E+00 | 2.799E+00 | 4.172E+00 | 3.936E-01 | -0.633 |
| | | 573.80 | | -5.810E-01 | 7.225E-01 | 1.090E+00 | 1.022E-01 | -0.533 |
| | | 593.00 | | -4.049E-01 | 6.364E-01 | 9.725E-01 | 9.039E-02 | -0.416 |
| | | 656.30 | | -1.892E-02 | 2.338E+00 | 3.302E+00 | 2.944E-01 | -0.006 |
| | | 666.33 | | 2.481E-02 | 5.644E-02 | 8.455E-02 | 7.520E-03 | 0.293 |
| | | 675.00 | | -1.772E-01 | 1.350E+00 | 2.150E+00 | 1.920E-01 | -0.082 |
| | | 695.00 | | -2.189E-03 | 5.537E-02 | 8.805E-02 | 7.934E-03 | -0.025 |
| | | 697.00 | | -9.345E-02 | 1.935E-01 | 2.938E-01 | 2.650E-02 | -0.318 |
| | | 720.50 | * | 3.590E-02 | 9.713E-02 | 1.570E-01 | 1.429E-02 | 0.229 |
| | | 856.80 | | -9.996E-02 | 3.362E-01 | 5.474E-01 | 5.158E-02 | -0.183 |
| | | 989.30 | | -6.963E-01 | 8.252E-01 | 1.222E+00 | 1.122E-01 | -0.570 |
| | | 1034.80 | | 1.092E-01 | 6.170E+00 | 1.020E+01 | 9.155E-01 | 0.011 |
| SN-126 | | 1213.00 | | 3.258E-01 | 3.201E+00 | 5.270E+00 | 4.297E-01 | 0.062 |
| | + | 64.28 | | 6.726E-01 | 4.343E-01 | 4.731E-01 | 6.892E-02 | 1.422 |
| | | 86.94 | | -2.094E-03 | 1.902E-01 | 3.235E-01 | 1.344E-01 | -0.006 |
| SB-127 | | 87.57 | * | 6.495E-03 | 4.482E-02 | 7.661E-02 | 7.345E-03 | 0.085 |
| | | 61.10 | | 3.999E+01 | 4.698E+01 | 7.103E+01 | 7.638E+00 | 0.563 |
| | | 252.40 | | 1.766E+00 | 3.766E+00 | 6.116E+00 | 2.619E+00 | 0.289 |
| | | 290.80 | | 3.859E+00 | 1.962E+01 | 2.831E+01 | 4.042E+00 | 0.136 |
| | | 411.60 | | -1.777E+00 | 9.308E+00 | 1.534E+01 | 2.535E+00 | -0.116 |
| | | 444.90 | | -1.947E+00 | 7.833E+00 | 1.277E+01 | 1.737E+00 | -0.152 |
| | | 473.00 | | -6.024E-01 | 1.342E+00 | 2.133E+00 | 2.974E-01 | -0.282 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|----------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| XE-127 | | 543.00 | | 6.365E+00 | 1.362E+01 | 2.325E+01 | 3.568E+00 | 0.274 |
| | | 603.60 | | -7.091E+00 | 1.083E+01 | 1.504E+01 | 2.021E+00 | -0.472 |
| | | 685.20 | * | 5.372E-01 | 1.182E+00 | 1.990E+00 | 2.427E-01 | 0.270 |
| | | 698.50 | | -3.581E+00 | 1.370E+01 | 2.148E+01 | 3.532E+00 | -0.167 |
| | | 722.20 | | -1.147E+01 | 2.823E+01 | 3.731E+01 | 4.511E+00 | -0.308 |
| | | 783.80 | | 3.892E+00 | 3.095E+00 | 5.522E+00 | 7.391E-01 | 0.705 |
| | | 57.60 | | 1.280E-01 | 3.611E+00 | 5.654E+00 | 4.087E-01 | 0.023 |
| | | 145.22 | | 4.158E-01 | 4.028E-01 | 6.995E-01 | 6.006E-02 | 0.594 |
| | | 172.10 | | -1.212E-02 | 7.214E-02 | 1.176E-01 | 1.084E-02 | -0.103 |
| | | 202.84 | * | 3.107E-02 | 2.815E-02 | 4.838E-02 | 4.838E-03 | 0.642 |
| I-131 | | 374.96 | | -7.617E-02 | 1.115E-01 | 1.775E-01 | 1.745E-02 | -0.429 |
| | | 80.18 | | 7.558E-01 | 2.975E+00 | 4.640E+00 | 4.108E-01 | 0.163 |
| | | 284.30 | | 1.996E-01 | 1.000E+00 | 1.619E+00 | 1.990E-01 | 0.123 |
| | | 364.48 | * | 1.224E-02 | 7.897E-02 | 1.346E-01 | 1.425E-02 | 0.091 |
| TE-132 | | 636.97 | | 9.412E-02 | 1.095E+00 | 1.791E+00 | 1.706E-01 | 0.053 |
| | | 722.89 | | -3.387E+00 | 5.575E+00 | 7.114E+00 | 6.528E-01 | -0.476 |
| | | 49.72 | | -1.295E+00 | 1.642E+01 | 2.569E+01 | 2.816E+00 | -0.050 |
| | | 111.76 | | 1.174E+01 | 2.426E+01 | 4.166E+01 | 4.661E+00 | 0.282 |
| BA-133 | | 116.30 | | -1.105E+00 | 2.201E+01 | 3.687E+01 | 4.108E+00 | -0.030 |
| | | 228.16 | * | 1.566E-01 | 5.936E-01 | 9.752E-01 | 1.683E-01 | 0.161 |
| | | 53.15 | | 6.375E-01 | 1.994E+00 | 3.189E+00 | 2.443E-01 | 0.200 |
| | | 79.62 | | -5.796E-02 | 7.094E-01 | 1.087E+00 | 1.661E-01 | -0.053 |
| + 276.40 | | 81.00 | | -2.083E-02 | 5.264E-02 | 8.419E-02 | 1.348E-02 | -0.247 |
| | | 302.84 | | 2.218E-01 | 3.191E-01 | 3.838E-01 | 6.387E-02 | 0.578 |
| | | 356.01 | * | -5.910E-03 | 9.330E-02 | 1.308E-01 | 2.020E-02 | -0.045 |
| | | 383.85 | | -5.251E-03 | 2.724E-02 | 3.886E-02 | 5.615E-03 | -0.135 |
| I-133 | | 510.53 | | -1.065E-01 | 1.551E-01 | 2.449E-01 | 3.243E-02 | -0.435 |
| | | 529.87 | * | 1.173E+00 | 1.551E-01 | Half-Life | too short | |
| | | 706.58 | | 3.702E-04 | 1.551E-01 | Half-Life | too short | |
| | | 856.28 | | -8.817E-01 | 1.551E-01 | Half-Life | too short | |
| CS-134 | | 875.33 | | -9.975E-01 | 1.551E-01 | Half-Life | too short | |
| | | 1236.41 | | -8.418E-02 | 1.551E-01 | Half-Life | too short | |
| | | 1298.22 | | 2.201E+00 | 1.551E-01 | Half-Life | too short | |
| | | 475.35 | | -2.386E-01 | 1.551E-01 | Half-Life | too short | |
| | | 563.23 | | -1.074E+00 | 1.123E+00 | 1.697E+00 | 1.613E-01 | -0.633 |
| | | 569.32 | | -6.623E-02 | 2.214E-01 | 3.525E-01 | 3.343E-02 | -0.188 |
| | | 604.70 | | 5.628E-02 | 1.342E-01 | 2.207E-01 | 2.096E-02 | 0.255 |
| | | 795.84 | * | -8.957E-03 | 2.505E-02 | 3.416E-02 | 3.163E-03 | -0.262 |
| | | 801.93 | | 4.283E-02 | 3.267E-02 | 5.941E-02 | 5.570E-03 | 0.721 |
| | | 1038.57 | | -1.597E-01 | 2.691E-01 | 4.348E-01 | 4.077E-02 | -0.367 |
| | | 1167.94 | | -1.597E+00 | 2.403E+00 | 3.649E+00 | 3.267E-01 | -0.438 |
| | | 1365.15 | | 1.026E+00 | 1.636E+00 | 2.842E+00 | 2.297E-01 | 0.361 |
| CS-135 | | 268.24 | * | -9.934E-02 | 7.146E-01 | 1.123E+00 | 9.970E-02 | -0.088 |
| | | 288.45 | | 1.291E-01 | 9.590E-02 | 1.520E-01 | 1.938E-02 | 0.850 |
| | | 417.63 | | 7.428E+11 | 9.590E-02 | Half-Life | too short | |
| | | 546.56 | | 5.541E+11 | 9.590E-02 | Half-Life | too short | |
| I-135 | | 836.80 | | -1.396E+11 | 9.590E-02 | Half-Life | too short | |
| | | 1038.76 | | 1.169E+12 | 9.590E-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 |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 1124.00 | | | -1.194E+12 | 9.590E-02 | Half-Life | too short | |
| | 1131.51 | | | 9.037E+09 | 9.590E-02 | Half-Life | too short | |
| | 1260.41 | * | | -1.913E+10 | 9.590E-02 | Half-Life | too short | |
| | 1457.56 | | | 2.442E+13 | 9.590E-02 | Half-Life | too short | |
| | 1678.03 | | | -5.608E+10 | 9.590E-02 | Half-Life | too short | |
| | 1706.46 | | | 2.453E+11 | 9.590E-02 | Half-Life | too short | |
| | 1791.20 | | | 2.042E+11 | 9.590E-02 | Half-Life | too short | |
| CS-136 | 66.91 | | | -3.811E-02 | 5.244E-01 | 7.424E-01 | 1.108E-01 | -0.051 |
| | 86.29 | | | 5.876E-01 | 6.338E-01 | 1.107E+00 | 1.486E-01 | 0.531 |
| | 153.22 | | | 3.398E-01 | 4.049E-01 | 6.964E-01 | 6.796E-02 | 0.488 |
| | 163.89 | | | -2.323E-01 | 7.577E-01 | 1.198E+00 | 1.200E-01 | -0.194 |
| | 176.55 | | | -2.870E-02 | 2.356E-01 | 3.846E-01 | 3.764E-02 | -0.075 |
| | 273.65 | | | 8.070E-02 | 3.578E-01 | 4.141E-01 | 5.089E-02 | 0.195 |
| | 340.57 | | | 4.418E-02 | 9.438E-02 | 1.464E-01 | 1.619E-02 | 0.302 |
| | 818.51 | | | -1.537E-03 | 4.896E-02 | 8.205E-02 | 7.691E-03 | -0.019 |
| | 1048.07 | * | | -2.885E-02 | 7.102E-02 | 1.113E-01 | 1.031E-02 | -0.259 |
| | 1235.34 | | | 4.112E-02 | 4.546E-01 | 7.451E-01 | 8.612E-02 | 0.055 |
| CE-139 | 165.85 | | * | -1.566E-02 | 1.828E-02 | 2.874E-02 | 2.607E-03 | -0.545 |
| BA-140 | 162.64 | | | 2.673E-01 | 5.256E-01 | 8.637E-01 | 8.176E-02 | 0.309 |
| | 304.84 | | | -6.498E-01 | 9.092E-01 | 1.255E+00 | 3.652E-01 | -0.518 |
| | 423.70 | | | -9.018E-01 | 1.362E+00 | 2.092E+00 | 6.825E-01 | -0.431 |
| | 537.32 | * | | -6.683E-02 | 1.791E-01 | 2.822E-01 | 9.417E-02 | -0.237 |
| LA-140 | 328.77 | | | 2.395E-01 | 2.096E-01 | 3.547E-01 | 4.088E-02 | 0.675 |
| | 432.53 | | | -3.255E-01 | 1.247E+00 | 2.034E+00 | 1.994E-01 | -0.160 |
| | 487.03 | | | -3.171E-02 | 8.656E-02 | 1.384E-01 | 1.384E-02 | -0.229 |
| | 751.79 | | | 1.012E-02 | 1.192E+00 | 1.909E+00 | 1.923E-01 | 0.005 |
| | 815.85 | | | 3.350E-02 | 2.033E-01 | 3.476E-01 | 3.574E-02 | 0.096 |
| | 867.82 | | | 4.239E-01 | 9.500E-01 | 1.658E+00 | 1.634E-01 | 0.256 |
| | 919.63 | | | 1.393E+00 | 1.826E+00 | 3.276E+00 | 3.701E-01 | 0.425 |
| | 925.24 | | | -5.804E-01 | 7.696E-01 | 1.171E+00 | 1.158E-01 | -0.496 |
| | 1596.49 | * | | -4.634E-02 | 6.092E-02 | 8.480E-02 | 7.223E-03 | -0.546 |
| CE-141 | 145.44 | * | | 3.376E-02 | 3.648E-02 | 6.309E-02 | 5.519E-03 | 0.535 |
| CE-143 | 57.37 | | | 7.239E-04 | 3.648E-02 | Half-Life | too short | |
| | 231.56 | | | 2.485E-04 | 3.648E-02 | Half-Life | too short | |
| | 293.26 | * | | 5.509E-04 | 3.648E-02 | Half-Life | too short | |
| | 350.59 | | + | 3.554E-02 | 3.648E-02 | Half-Life | too short | |
| | 490.36 | | | -1.310E-03 | 3.648E-02 | Half-Life | too short | |
| | 664.57 | | | -9.534E-04 | 3.648E-02 | Half-Life | too short | |
| | 721.93 | | | 1.118E-04 | 3.648E-02 | Half-Life | too short | |
| CE-144 | 80.11 | | | 2.875E-01 | 1.173E+00 | 1.829E+00 | 1.605E-01 | 0.157 |
| | 133.54 | * | | 3.376E-02 | 1.174E-01 | 1.982E-01 | 3.061E-02 | 0.170 |
| PM-144 | 476.78 | | | 1.738E-02 | 4.078E-02 | 6.983E-02 | 7.154E-03 | 0.249 |
| | 618.01 | | | -3.854E-03 | 1.751E-02 | 2.777E-02 | 2.608E-03 | -0.139 |
| | 696.49 | * | | -4.351E-03 | 2.228E-02 | 3.486E-02 | 3.145E-03 | -0.125 |
| | 778.57 | | | -2.849E-01 | 1.403E+00 | 2.187E+00 | 2.029E-01 | -0.130 |
| PR-144 | 696.49 | * | | -2.951E-01 | 1.511E+00 | 2.365E+00 | 2.132E-01 | -0.125 |
| | 1489.15 | | | -1.270E-01 | 5.908E+00 | 9.848E+00 | 8.421E-01 | -0.013 |
| PM-146 | 453.90 | * | | -1.487E-03 | 2.371E-02 | 3.920E-02 | 4.477E-03 | -0.038 |
| | 633.02 | | | -3.717E-01 | 8.275E-01 | 1.260E+00 | 4.721E-01 | -0.295 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| ND-147 | | 735.90 | | 8.648E-03 | 8.978E-02 | 1.455E-01 | 4.184E-02 | 0.059 |
| | | 747.13 | | 1.225E-02 | 5.007E-02 | 8.255E-02 | 1.188E-02 | 0.148 |
| | | 91.11 | | -4.002E-02 | 1.925E-01 | 3.089E-01 | 3.088E-02 | -0.130 |
| | | 319.41 | | 8.845E-01 | 2.352E+00 | 3.825E+00 | 4.343E-01 | 0.231 |
| | | 439.89 | | 1.547E+00 | 3.907E+00 | 6.703E+00 | 6.328E-01 | 0.231 |
| PM-149 | | 531.02 | * | -1.832E-02 | 3.616E-01 | 5.917E-01 | 9.152E-02 | -0.031 |
| | | 285.90 | * | -3.128E+01 | 9.530E+01 | 1.480E+02 | 2.604E+01 | -0.211 |
| EU-152 | | 121.78 | | 8.847E-03 | 4.328E-02 | 7.317E-02 | 7.064E-03 | 0.121 |
| | | 244.69 | | 1.125E-01 | 1.929E-01 | 2.914E-01 | 3.240E-02 | 0.386 |
| | | 344.27 | * | 6.109E-03 | 6.180E-02 | 1.020E-01 | 1.140E-02 | 0.060 |
| | | 443.98 | | -1.371E-01 | 5.569E-01 | 9.087E-01 | 8.586E-02 | -0.151 |
| | | 778.89 | | -2.754E-02 | 1.620E-01 | 2.534E-01 | 2.351E-02 | -0.109 |
| | | 867.32 | | 4.044E-01 | 4.945E-01 | 8.931E-01 | 8.426E-02 | 0.453 |
| | | 964.01 | | 1.797E-01 | 2.004E-01 | 3.223E-01 | 2.990E-02 | 0.558 |
| | | 1085.78 | | 2.901E-01 | 2.635E-01 | 4.797E-01 | 4.164E-02 | 0.605 |
| | | 1112.02 | | -8.151E-02 | 2.051E-01 | 3.217E-01 | 2.737E-02 | -0.253 |
| | | 1407.95 | | 1.339E-01 | 1.184E-01 | 2.208E-01 | 1.880E-02 | 0.606 |
| | | 69.67 | | 2.208E-01 | 8.922E-01 | 1.482E+00 | 1.168E-01 | 0.149 |
| | | 83.37 | | 5.273E-01 | 7.844E+00 | 1.325E+01 | 1.208E+00 | 0.040 |
| | | 97.43 | * | 1.957E-02 | 4.797E-02 | 7.478E-02 | 6.644E-03 | 0.262 |
| | | 103.18 | | -2.791E-02 | 5.404E-02 | 8.880E-02 | 7.652E-03 | -0.314 |
| EU-154 | | 123.07 | | -7.862E-03 | 3.104E-02 | 5.134E-02 | 5.713E-03 | -0.153 |
| | | 247.94 | | -3.701E-02 | 1.997E-01 | 3.172E-01 | 4.289E-02 | -0.117 |
| | | 591.81 | | -9.151E-02 | 3.694E-01 | 5.877E-01 | 7.159E-02 | -0.156 |
| | | 723.30 | | -7.801E-02 | 1.176E-01 | 1.484E-01 | 1.481E-02 | -0.526 |
| | | 756.87 | | 1.485E-01 | 4.961E-01 | 8.179E-01 | 1.015E-01 | 0.182 |
| EU-155 | | 873.19 | | -1.707E-02 | 1.693E-01 | 2.800E-01 | 3.593E-02 | -0.061 |
| | | 996.32 | | -1.900E-01 | 2.359E-01 | 3.516E-01 | 6.340E-02 | -0.540 |
| | | 1004.76 | | -4.927E-02 | 1.300E-01 | 2.057E-01 | 2.470E-02 | -0.240 |
| | | 1274.45 | * | -2.396E-02 | 8.054E-02 | 1.258E-01 | 1.393E-02 | -0.191 |
| | | 48.70 | | -1.394E+00 | 1.490E+00 | 2.206E+00 | 1.812E-01 | -0.632 |
| | | 60.01 | | 1.708E+00 | 2.952E+00 | 4.404E+00 | 3.145E-01 | 0.388 |
| | | 86.54 | | 3.715E-02 | 5.370E-02 | 9.348E-02 | 8.925E-03 | 0.397 |
| | | 105.31 | * | 5.262E-03 | 5.696E-02 | 9.650E-02 | 8.349E-03 | 0.055 |
| | | 86.79 | | 1.161E-01 | 1.463E-01 | 2.554E-01 | 2.425E-02 | 0.455 |
| | | 197.04 | | -1.267E-01 | 3.341E-01 | 5.249E-01 | 5.169E-02 | -0.241 |
| TB-160 | | 215.65 | | 2.509E-02 | 4.357E-01 | 7.101E-01 | 7.344E-02 | 0.035 |
| | | 298.57 | | 1.224E-01 | 8.759E-02 | 1.193E-01 | 1.401E-02 | 1.026 |
| | | 879.36 | * | -8.570E-03 | 8.272E-02 | 1.368E-01 | 1.292E-02 | -0.063 |
| | | 962.29 | | 4.204E-02 | 3.715E-01 | 5.897E-01 | 5.474E-02 | 0.071 |
| | | 966.15 | | 2.754E-01 | 1.587E-01 | 2.711E-01 | 2.513E-02 | 1.016 |
| | | 1177.93 | | -3.039E-02 | 2.389E-01 | 3.847E-01 | 3.098E-02 | -0.079 |
| | | 1271.85 | | -1.395E-01 | 4.781E-01 | 7.475E-01 | 6.208E-02 | -0.187 |
| | | 80.57 | | 1.544E-02 | 1.513E-01 | 2.340E-01 | 2.065E-02 | 0.066 |
| | | 184.41 | | -4.465E-03 | 2.411E-02 | 3.654E-02 | 3.479E-03 | -0.122 |
| | | 280.46 | | -1.841E-02 | 5.463E-02 | 7.492E-02 | 8.987E-03 | -0.246 |
| HO-166M | | 410.95 | | 8.737E-02 | 1.345E-01 | 2.358E-01 | 2.201E-02 | 0.371 |
| | | 711.68 | * | 7.961E-03 | 3.938E-02 | 6.456E-02 | 5.857E-03 | 0.123 |
| | | 752.31 | | 4.114E-02 | 1.783E-01 | 2.921E-01 | 2.689E-02 | 0.141 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TM-171 | | 810.29 | | -3.566E-02 | 3.427E-02 | 5.093E-02 | 4.761E-03 | -0.700 |
| | | 51.35 | | -6.028E+00 | 1.721E+01 | 2.640E+01 | 2.080E+00 | -0.228 |
| | | 52.39 | | 3.513E+00 | 8.768E+00 | 1.410E+01 | 1.093E+00 | 0.249 |
| | | 59.40 | | 1.617E+01 | 1.596E+01 | 2.448E+01 | 1.738E+00 | 0.661 |
| LU-176 | | 66.72 | * | 4.294E+00 | 1.694E+01 | 2.452E+01 | 1.878E+00 | 0.175 |
| | | 88.36 | | 1.035E-01 | 1.114E-01 | 1.779E-01 | 1.708E-02 | 0.582 |
| | | 201.83 | | 4.806E-03 | 1.688E-02 | 2.794E-02 | 2.787E-03 | 0.172 |
| | | 306.84 | * | -1.971E-03 | 1.490E-02 | 2.341E-02 | 2.715E-03 | -0.084 |
| LU-177 | | 401.10 | | -2.459E+00 | 3.841E+00 | 6.116E+00 | 5.682E-01 | -0.402 |
| | | 112.95 | | 3.937E-01 | 1.063E+00 | 1.817E+00 | 1.522E-01 | 0.217 |
| | + | 208.36 | * | 1.668E+00 | 1.082E+00 | 1.337E+00 | 1.356E-01 | 1.248 |
| | | 52.97 | | 3.258E-01 | 9.124E-01 | 1.462E+00 | 1.123E-01 | 0.223 |
| LU-177M | | 54.07 | | -1.301E-01 | 4.953E-01 | 7.633E-01 | 5.770E-02 | -0.170 |
| | | 61.30 | | 7.694E-01 | 8.757E-01 | 1.329E+00 | 9.639E-02 | 0.579 |
| | | 121.62 | | 9.597E-02 | 2.228E-01 | 3.804E-01 | 3.158E-02 | 0.252 |
| | | 147.16 | | -1.897E-01 | 3.800E-01 | 6.147E-01 | 5.301E-02 | -0.309 |
| | | 171.86 | | -5.837E-02 | 2.823E-01 | 4.594E-01 | 4.230E-02 | -0.127 |
| | | 218.09 | | 7.382E-02 | 4.931E-01 | 8.074E-01 | 8.404E-02 | 0.091 |
| | + | 268.79 | | 1.342E+00 | 7.218E-01 | 8.387E-01 | 9.851E-02 | 1.600 |
| | | 319.02 | | 4.335E-02 | 1.658E-01 | 2.676E-01 | 3.040E-02 | 0.162 |
| HF-181 | | 367.43 | | 1.113E-01 | 5.560E-01 | 9.499E-01 | 9.577E-02 | 0.117 |
| | | 413.65 | * | -6.572E-02 | 9.473E-02 | 1.490E-01 | 1.393E-02 | -0.441 |
| | | 56.28 | | 1.031E-01 | 5.588E-01 | 8.835E-01 | 6.485E-02 | 0.117 |
| | | 57.53 | | 2.171E-02 | 3.030E-01 | 4.755E-01 | 3.440E-02 | 0.046 |
| | | 65.20 | | 1.167E-01 | 5.636E-01 | 8.162E-01 | 6.164E-02 | 0.143 |
| | | 133.02 | | -1.192E-02 | 3.872E-02 | 6.360E-02 | 5.334E-03 | -0.187 |
| | | 136.25 | | -1.327E-02 | 2.825E-01 | 4.696E-01 | 3.959E-02 | -0.028 |
| | | 345.85 | | 2.663E-02 | 1.351E-01 | 2.055E-01 | 2.202E-02 | 0.130 |
| W-181 | | 482.03 | * | -2.468E-03 | 2.752E-02 | 4.525E-02 | 4.304E-03 | -0.055 |
| | | 56.28 | | 3.969E-02 | 2.145E-01 | 3.391E-01 | 2.489E-02 | 0.117 |
| | | 57.53 | | 8.465E-03 | 1.164E-01 | 1.827E-01 | 1.322E-02 | 0.046 |
| | | 65.20 | * | 4.448E-02 | 2.148E-01 | 3.111E-01 | 2.349E-02 | 0.143 |
| TA-182 | | 67.75 | | -6.198E-02 | 6.495E-02 | 9.440E-02 | 7.303E-03 | -0.657 |
| | | 100.10 | | 4.478E-02 | 9.722E-02 | 1.677E-01 | 1.466E-02 | 0.267 |
| | | 152.43 | | -3.021E-02 | 1.890E-01 | 3.105E-01 | 2.713E-02 | -0.097 |
| | | 222.10 | | 6.753E-02 | 2.086E-01 | 3.443E-01 | 3.621E-02 | 0.196 |
| | | 1001.68 | | 6.643E-01 | 1.306E+00 | 2.229E+00 | 2.035E-01 | 0.298 |
| | + | 1121.28 | | 6.698E-02 | 1.600E-01 | 2.081E-01 | 1.757E-02 | 0.322 |
| | | 1189.05 | | -1.468E-01 | 1.999E-01 | 2.987E-01 | 2.416E-02 | -0.491 |
| | | 1221.42 | * | 3.798E-02 | 1.286E-01 | 2.156E-01 | 1.763E-02 | 0.176 |
| RE-183 | | 1230.97 | | -3.822E-01 | 3.557E-01 | 5.191E-01 | 4.258E-02 | -0.736 |
| | | 57.98 | | -9.689E-02 | 1.199E-01 | 1.782E-01 | 1.283E-02 | -0.544 |
| | | 59.32 | | 3.632E-02 | 6.839E-02 | 1.017E-01 | 7.226E-03 | 0.357 |
| | | 67.20 | | -4.483E-02 | 1.266E-01 | 1.757E-01 | 1.353E-02 | -0.255 |
| | | 162.32 | * | 2.418E-02 | 7.110E-02 | 1.160E-01 | 1.041E-02 | 0.208 |
| | + | 208.81 | | 1.262E+00 | 8.186E-01 | 1.028E+00 | 1.044E-01 | 1.228 |
| | | 291.72 | | -4.488E-02 | 6.351E-01 | 8.931E-01 | 1.058E-01 | -0.050 |
| | | 57.98 | | -3.532E-01 | 4.372E-01 | 6.495E-01 | 4.676E-02 | -0.544 |
| RE-184 | | 59.32 | | 1.323E-01 | 2.491E-01 | 3.704E-01 | 2.632E-02 | 0.357 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 67.20 | | -1.634E-01 | 4.613E-01 | 6.404E-01 | 4.929E-02 | -0.255 |
| | | 161.27 | | -1.673E-01 | 2.224E-01 | 3.531E-01 | 3.160E-02 | -0.474 |
| | | 216.55 | | -5.072E-02 | 1.528E-01 | 2.429E-01 | 2.518E-02 | -0.209 |
| | | 252.85 | * | 4.622E-02 | 1.421E-01 | 2.332E-01 | 2.643E-02 | 0.198 |
| | | 318.01 | | 4.749E-02 | 2.794E-01 | 4.482E-01 | 5.102E-02 | 0.106 |
| | | 792.07 | | -4.281E-01 | 6.432E-01 | 1.019E+00 | 9.486E-02 | -0.420 |
| | | 903.28 | | 5.467E-01 | 6.415E-01 | 1.153E+00 | 1.090E-01 | 0.474 |
| | | 920.93 | | 1.494E-01 | 2.668E-01 | 4.708E-01 | 4.428E-02 | 0.317 |
| | | 59.72 | | 1.350E-01 | 1.777E-01 | 2.682E-01 | 1.909E-02 | 0.503 |
| | | 61.14 | | 8.320E-02 | 9.695E-02 | 1.470E-01 | 1.064E-02 | 0.566 |
| | | 69.30 | | -9.449E-03 | 1.564E-01 | 2.678E-01 | 2.102E-02 | -0.035 |
| | | 592.07 | | -3.789E-01 | 1.528E+00 | 2.431E+00 | 2.261E-01 | -0.156 |
| | | 646.12 | * | 1.130E-02 | 2.722E-02 | 4.583E-02 | 4.120E-03 | 0.246 |
| | | 717.42 | | -2.208E-01 | 5.891E-01 | 9.095E-01 | 8.270E-02 | -0.243 |
| | | 874.81 | | 1.228E-01 | 3.343E-01 | 5.815E-01 | 5.490E-02 | 0.211 |
| RE-188 | | 880.27 | | 8.734E-03 | 4.548E-01 | 7.620E-01 | 7.198E-02 | 0.011 |
| | | 155.03 | * | 1.366E-02 | 9.859E-02 | 1.643E-01 | 1.445E-02 | 0.083 |
| | | 477.96 | | 2.654E+00 | 1.961E+00 | 3.555E+00 | 3.380E-01 | 0.747 |
| | | 633.10 | | -5.740E-03 | 1.611E+00 | 2.613E+00 | 2.372E-01 | -0.002 |
| W-188 | + | 63.58 | | 6.957E+01 | 4.407E+01 | 5.345E+01 | 3.973E+00 | 1.301 |
| | | 227.08 | | 4.651E+00 | 7.605E+00 | 1.274E+01 | 1.357E+00 | 0.365 |
| IR-192 | | 290.67 | * | 9.014E-01 | 4.958E+00 | 7.146E+00 | 8.476E-01 | 0.126 |
| | + | 295.96 | | 4.787E-01 | 1.314E-01 | 1.688E-01 | 1.996E-02 | 2.836 |
| | | 308.46 | | 2.231E-03 | 5.950E-02 | 9.469E-02 | 1.099E-02 | 0.024 |
| | | 316.51 | * | -8.352E-03 | 2.124E-02 | 3.254E-02 | 3.719E-03 | -0.257 |
| | | 468.07 | | 4.574E-03 | 4.157E-02 | 6.467E-02 | 6.508E-03 | 0.071 |
| AU-195 | | 604.41 | | -8.710E-03 | 3.250E-01 | 4.617E-01 | 6.204E-02 | -0.019 |
| | | 612.46 | | 1.045E-02 | 4.760E-01 | 6.796E-01 | 7.073E-02 | 0.015 |
| | | 65.12 | | 1.747E-02 | 9.905E-02 | 1.432E-01 | 1.080E-02 | 0.122 |
| | | 66.83 | | 1.478E-02 | 5.630E-02 | 8.150E-02 | 6.251E-03 | 0.181 |
| | + | 75.70 | | 5.563E-01 | 1.401E-01 | 2.415E-01 | 2.020E-02 | 2.304 |
| TL-200 | | 98.88 | * | 1.151E-01 | 1.257E-01 | 2.204E-01 | 1.940E-02 | 0.523 |
| | | 129.76 | | 8.087E-01 | 1.588E+00 | 2.714E+00 | 2.266E-01 | 0.298 |
| | | 367.94 | * | 4.151E-04 | 1.588E+00 | Half-Life | too short | |
| | | 579.30 | | 3.682E-03 | 1.588E+00 | Half-Life | too short | |
| | | 828.27 | | 1.300E-03 | 1.588E+00 | Half-Life | too short | |
| TL-201 | | 1205.75 | | -2.530E-04 | 1.588E+00 | Half-Life | too short | |
| | | 68.90 | | -1.541E-01 | 3.756E+00 | 6.439E+00 | 5.036E-01 | -0.024 |
| | | 70.82 | | 2.392E+00 | 2.295E+00 | 3.734E+00 | 2.975E-01 | 0.641 |
| | | 80.30 | | 1.134E+00 | 4.212E+00 | 6.573E+00 | 5.782E-01 | 0.173 |
| TL-202 | | 135.34 | | 3.758E+00 | 2.252E+01 | 3.783E+01 | 3.184E+00 | 0.099 |
| | | 167.43 | * | 2.104E+00 | 6.176E+00 | 1.035E+01 | 9.423E-01 | 0.203 |
| | | 68.90 | | -1.011E-02 | 2.464E-01 | 4.223E-01 | 3.303E-02 | -0.024 |
| | | 70.82 | | 1.565E-01 | 1.501E-01 | 2.442E-01 | 1.946E-02 | 0.641 |
| HG-203 | | 80.30 | | 7.422E-02 | 2.756E-01 | 4.301E-01 | 3.784E-02 | 0.173 |
| | | 439.56 | * | 1.073E-02 | 4.666E-02 | 7.911E-02 | 7.465E-03 | 0.136 |
| | | 70.83 | | 6.295E-01 | 6.059E-01 | 9.801E-01 | 1.294E-01 | 0.642 |
| | | 72.87 | | 2.947E-02 | 3.602E-01 | 5.590E-01 | 7.204E-02 | 0.053 |
| | | 82.60 | | -2.342E-01 | 6.004E-01 | 9.946E-01 | 1.393E-01 | -0.235 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| BI-207 | | 279.20 | * | 1.205E-02 | 2.663E-02 | 3.943E-02 | 4.806E-03 | 0.306 |
| | | 72.80 | | 7.843E-03 | 1.029E-01 | 1.596E-01 | 1.297E-02 | 0.049 |
| | + | 74.97 | | 3.065E-01 | 7.715E-02 | 1.229E-01 | 1.021E-02 | 2.494 |
| | | 84.90 | | -1.331E-01 | 1.046E-01 | 1.664E-01 | 1.545E-02 | -0.800 |
| | | 569.67 | | 6.878E-03 | 2.046E-02 | 3.342E-02 | 3.138E-03 | 0.206 |
| TL-207 | | 1063.62 | * | -1.222E-02 | 3.572E-02 | 5.606E-02 | 4.942E-03 | -0.218 |
| | | 1770.23 | | -1.411E+00 | 4.691E-01 | 3.165E-01 | 2.615E-02 | -4.459 |
| | | 81.07 | | -4.846E-02 | 1.158E-01 | 1.853E-01 | 1.645E-02 | -0.262 |
| | | 83.78 | | 1.160E-02 | 6.694E-02 | 1.136E-01 | 1.040E-02 | 0.102 |
| | | 94.90 | | 7.237E-02 | 1.298E-01 | 2.042E-01 | 1.846E-02 | 0.354 |
| | | 122.32 | | -3.884E-01 | 1.047E+00 | 1.724E+00 | 1.543E-01 | -0.225 |
| | | 144.24 | | 4.229E-02 | 3.961E-01 | 6.454E-01 | 6.192E-02 | 0.066 |
| | | 154.21 | | 9.867E-02 | 2.179E-01 | 3.687E-01 | 3.548E-02 | 0.268 |
| | + | 269.46 | | 3.117E-01 | 1.677E-01 | 2.046E-01 | 2.433E-02 | 1.524 |
| | | 323.87 | * | -1.398E-01 | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| | + | 338.28 | | 2.548E+00 | 1.015E+00 | 1.442E+00 | 2.021E-01 | 1.767 |
| | | 445.03 | | -2.811E-01 | 1.312E+00 | 2.146E+00 | 2.724E-01 | -0.131 |
| PO-209 | | 260.50 | | 7.053E-02 | 5.693E+00 | 9.144E+00 | 1.055E+00 | 0.008 |
| | | 262.80 | | 1.965E+01 | 1.521E+01 | 2.632E+01 | 3.051E+00 | 0.747 |
| | | 896.60 | * | 1.325E+00 | 4.299E+00 | 7.414E+00 | 7.012E-01 | 0.179 |
| BI-210 | | 46.50 | * | 8.757E-01 | 2.220E+00 | 3.550E+00 | 3.311E-01 | 0.247 |
| PB-210 | | 46.50 | * | 8.757E-01 | 2.220E+00 | 3.550E+00 | 3.311E-01 | 0.247 |
| PO-210 | | 46.50 | * | 8.757E-01 | 2.220E+00 | 3.550E+00 | 2.999E-01 | 0.247 |
| PB-211 | | 404.84 | * | 2.463E-01 | 5.570E-01 | 9.266E-01 | 5.816E-01 | 0.266 |
| | | 427.08 | | 4.174E-01 | 1.249E+00 | 2.093E+00 | 1.303E+00 | 0.199 |
| | | 831.96 | | -7.004E-01 | 8.321E-01 | 1.063E+00 | 6.674E-01 | -0.659 |
| PO-215 | | 81.07 | | -4.846E-02 | 1.158E-01 | 1.853E-01 | 1.645E-02 | -0.262 |
| | | 83.78 | | 1.160E-02 | 6.694E-02 | 1.136E-01 | 1.040E-02 | 0.102 |
| | | 94.90 | | 7.237E-02 | 1.298E-01 | 2.042E-01 | 1.846E-02 | 0.354 |
| | | 122.32 | | -3.884E-01 | 1.047E+00 | 1.724E+00 | 1.543E-01 | -0.225 |
| | | 144.24 | | 4.229E-02 | 3.961E-01 | 6.454E-01 | 6.192E-02 | 0.066 |
| | | 154.21 | | 9.867E-02 | 2.179E-01 | 3.687E-01 | 3.548E-02 | 0.268 |
| | + | 269.46 | | 3.117E-01 | 1.677E-01 | 2.046E-01 | 2.433E-02 | 1.524 |
| | | 323.87 | * | -1.398E-01 | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| | + | 338.28 | | 2.548E+00 | 1.015E+00 | 1.442E+00 | 2.021E-01 | 1.767 |
| | | 445.03 | | -2.811E-01 | 1.312E+00 | 2.146E+00 | 2.724E-01 | -0.131 |
| RN-219 | + | 271.23 | | 3.999E-01 | 2.163E-01 | 2.541E-01 | 3.327E-02 | 1.574 |
| | | 401.81 | * | -4.034E-02 | 2.291E-01 | 3.787E-01 | 5.841E-02 | -0.107 |
| RN-220 | | 549.76 | * | 3.044E+00 | 1.493E+01 | 2.496E+01 | 2.358E+00 | 0.122 |
| RA-223 | | 81.07 | | -4.846E-02 | 1.158E-01 | 1.853E-01 | 1.645E-02 | -0.262 |
| | | 83.78 | | 1.160E-02 | 6.694E-02 | 1.136E-01 | 1.040E-02 | 0.102 |
| | | 94.90 | | 7.237E-02 | 1.298E-01 | 2.042E-01 | 1.846E-02 | 0.354 |
| | | 122.32 | | -3.884E-01 | 1.047E+00 | 1.724E+00 | 1.543E-01 | -0.225 |
| | | 144.24 | | 4.229E-02 | 3.961E-01 | 6.454E-01 | 6.192E-02 | 0.066 |
| | | 154.21 | | 9.867E-02 | 2.179E-01 | 3.687E-01 | 3.548E-02 | 0.268 |
| | + | 269.46 | | 3.117E-01 | 1.677E-01 | 2.046E-01 | 2.433E-02 | 1.524 |
| | | 323.87 | * | -1.398E-01 | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| | + | 338.28 | | 2.548E+00 | 1.015E+00 | 1.442E+00 | 2.021E-01 | 1.767 |
| | | 445.03 | | -2.811E-01 | 1.312E+00 | 2.146E+00 | 2.724E-01 | -0.131 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| AC-227 | | 79.80 | | 3.833E-02 | 9.040E-01 | 1.394E+00 | 3.005E-01 | 0.027 |
| | | 236.00 | | 1.641E-02 | 1.513E-01 | 2.196E-01 | 3.060E-02 | 0.075 |
| | | 256.20 | * | 4.902E-02 | 2.295E-01 | 3.736E-01 | 6.381E-02 | 0.131 |
| | | 286.10 | | -4.066E-01 | 9.032E-01 | 1.388E+00 | 2.160E-01 | -0.293 |
| | + | 299.80 | | 1.531E+00 | 1.120E+00 | 1.560E+00 | 2.996E-01 | 0.981 |
| | | 304.40 | | -5.690E-01 | 1.172E+00 | 1.684E+00 | 3.373E-01 | -0.338 |
| | | 334.20 | | -1.035E-01 | 1.466E+00 | 2.184E+00 | 4.496E-01 | -0.047 |
| TH-227 | | 79.80 | | 3.833E-02 | 9.040E-01 | 1.394E+00 | 3.044E-01 | 0.027 |
| | + | 94.00 | | 4.763E+00 | 2.159E+00 | 2.091E+00 | 4.594E-01 | 2.278 |
| | | 236.00 | | 1.641E-02 | 1.513E-01 | 2.196E-01 | 2.838E-02 | 0.075 |
| | | 256.20 | * | 4.902E-02 | 2.295E-01 | 3.736E-01 | 7.306E-02 | 0.131 |
| | | 286.10 | | -4.066E-01 | 9.896E-01 | 1.388E+00 | 1.398E+00 | -0.293 |
| | + | 299.80 | | 1.531E+00 | 1.120E+00 | 1.560E+00 | 2.996E-01 | 0.981 |
| | | 304.40 | | -5.690E-01 | 1.172E+00 | 1.684E+00 | 3.373E-01 | -0.338 |
| TH-229 | | 334.20 | | -1.035E-01 | 1.466E+00 | 2.184E+00 | 4.496E-01 | -0.047 |
| | | 85.43 | | -2.759E-02 | 9.868E-02 | 1.643E-01 | 1.535E-02 | -0.168 |
| | | 88.47 | | 2.869E-03 | 6.668E-02 | 1.023E-01 | 9.810E-03 | 0.028 |
| | | 100.00 | | 5.342E-02 | 1.002E-01 | 1.733E-01 | 1.516E-02 | 0.308 |
| | | 193.63 | * | -1.927E-01 | 3.040E-01 | 4.703E-01 | 4.589E-02 | -0.410 |
| | | 210.97 | | 4.620E-01 | 4.590E-01 | 7.150E-01 | 7.306E-02 | 0.646 |
| | | 283.67 | * | 3.654E-01 | 8.621E-01 | 1.417E+00 | 2.450E-01 | 0.258 |
| PA-231 | + | 301.29 | | 6.124E-01 | 4.416E-01 | 6.103E-01 | 8.895E-02 | 1.003 |
| TH-231 | | 81.07 | | -4.846E-02 | 1.158E-01 | 1.853E-01 | 1.645E-02 | -0.262 |
| | | 83.78 | | 1.160E-02 | 6.694E-02 | 1.136E-01 | 1.040E-02 | 0.102 |
| | | 94.90 | | 7.237E-02 | 1.298E-01 | 2.042E-01 | 1.846E-02 | 0.354 |
| | | 122.32 | | -3.884E-01 | 1.047E+00 | 1.724E+00 | 1.543E-01 | -0.225 |
| | | 144.24 | | 4.229E-02 | 3.961E-01 | 6.454E-01 | 6.192E-02 | 0.066 |
| | | 154.21 | | 9.867E-02 | 2.179E-01 | 3.687E-01 | 3.548E-01 | 0.268 |
| | + | 269.46 | | 3.117E-01 | 1.677E-01 | 2.046E-01 | 2.433E-02 | 1.524 |
| U-231 | | 323.87 | * | -1.398E-01 | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| | + | 338.28 | | 2.548E+00 | 1.015E+00 | 1.442E+00 | 2.021E-01 | 1.767 |
| | | 445.03 | | -2.811E-01 | 1.312E+00 | 2.146E+00 | 2.724E-01 | -0.131 |
| | | 84.21 | | -1.102E+00 | 3.939E+00 | 6.565E+00 | 6.043E-01 | -0.168 |
| | + | 92.29 | | 6.379E+00 | 2.595E+00 | 3.351E+00 | 3.094E-01 | 1.904 |
| | | 95.87 | * | -4.199E-01 | 8.702E-01 | 1.287E+00 | 1.156E-01 | -0.326 |
| | | 108.00 | | 9.251E-01 | 1.497E+00 | 2.591E+00 | 2.195E-01 | 0.357 |
| PA-233 | + | 75.28 | | 8.942E+00 | 2.521E+00 | 3.649E+00 | 5.541E-01 | 2.451 |
| | | 86.59 | | 6.217E-01 | 8.869E-01 | 1.520E+00 | 4.120E-01 | 0.409 |
| | + | 300.12 | | 4.269E-01 | 3.099E-01 | 4.386E-01 | 7.393E-02 | 0.973 |
| | | 311.98 | * | 2.172E-03 | 3.792E-02 | 6.040E-02 | 7.060E-03 | 0.036 |
| | | 340.50 | | 2.332E-01 | 4.209E-01 | 6.521E-01 | 1.613E-01 | 0.358 |
| | | 398.62 | | 1.066E+00 | 1.218E+00 | 2.115E+00 | 5.679E-01 | 0.504 |
| | | 415.76 | | -3.631E-01 | 9.132E-01 | 1.473E+00 | 3.218E-01 | -0.247 |
| PA-234 | + | 63.00 | | 1.981E+00 | 1.280E+00 | 1.590E+00 | 2.362E-01 | 1.245 |
| | | 94.67 | | 7.429E-02 | 9.661E-02 | 1.530E-01 | 1.945E-02 | 0.485 |
| | | 98.44 | | 4.896E-02 | 5.780E-02 | 8.974E-02 | 5.009E-02 | 0.546 |
| | | 99.86 | | 2.242E-01 | 2.526E-01 | 4.428E-01 | 3.878E-02 | 0.506 |
| | | 111.00 | | 4.590E-03 | 1.025E-01 | 1.728E-01 | 2.063E-02 | 0.027 |
| | | 131.20 | | -1.138E-02 | 5.928E-02 | 9.802E-02 | 8.199E-03 | -0.116 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| | | 152.70 | 1.034E-02 | 1.802E-01 | 2.993E-01 | 5.120E-02 | 0.035 |
| | + | 186.00 | 1.809E+00 | 1.271E+00 | 1.522E+00 | 4.794E-01 | 1.188 |
| | | 226.40 | 6.413E-02 | 2.341E-01 | 3.850E-01 | 5.619E-02 | 0.167 |
| | | 227.20 | 1.560E-01 | 2.523E-01 | 4.227E-01 | 4.503E-02 | 0.369 |
| | | 248.90 | -6.060E-01 | 5.000E-01 | 7.023E-01 | 1.653E-01 | -0.863 |
| | + | 293.70 | 2.962E+00 | 9.258E-01 | 9.536E-01 | 1.821E-01 | 3.106 |
| | | 369.80 | 7.110E-02 | 4.974E-01 | 8.463E-01 | 1.893E-01 | 0.084 |
| | | 568.70 | -2.963E-01 | 6.765E-01 | 1.033E+00 | 9.705E-02 | -0.287 |
| | | 569.50 | 6.194E-02 | 1.841E-01 | 3.007E-01 | 2.823E-02 | 0.206 |
| | | 574.00 | -7.526E-01 | 9.359E-01 | 1.412E+00 | 1.324E-01 | -0.533 |
| | | 699.00 | -1.247E-01 | 4.589E-01 | 7.183E-01 | 1.384E-01 | -0.174 |
| | | 706.10 | -8.507E-01 | 7.913E-01 | 9.789E-01 | 4.374E-01 | -0.869 |
| | | 733.00 | -1.427E-02 | 2.416E-01 | 3.502E-01 | 7.846E-02 | -0.041 |
| | | 742.81 | -1.396E-01 | 7.991E-01 | 1.245E+00 | 8.379E-01 | -0.112 |
| | | 796.30 | 1.058E+00 | 6.681E-01 | 1.152E+00 | 3.144E-01 | 0.918 |
| | | 805.60 | 1.939E-01 | 6.464E-01 | 1.112E+00 | 3.432E-01 | 0.174 |
| | | 819.60 | -1.892E-01 | 7.245E-01 | 1.179E+00 | 4.503E-01 | -0.160 |
| | | 826.30 | 1.909E-01 | 4.852E-01 | 8.348E-01 | 3.748E-01 | 0.229 |
| | | 831.60 | -3.959E-01 | 3.847E-01 | 5.444E-01 | 1.637E-01 | -0.727 |
| | | 876.40 | -2.552E-01 | 5.476E-01 | 7.555E-01 | 7.772E-01 | -0.338 |
| | | 880.51 | 7.735E-02 | 1.569E-01 | 2.763E-01 | 2.610E-02 | 0.280 |
| | | 883.24 | -5.272E-02 | 1.714E-01 | 2.706E-01 | 1.822E-01 | -0.195 |
| | | 899.00 | 5.777E-02 | 5.302E-01 | 8.936E-01 | 3.922E-01 | 0.065 |
| | | 925.00 | -6.807E-01 | 7.426E-01 | 1.108E+00 | 1.041E-01 | -0.614 |
| | | 926.50 | -2.249E-02 | 1.091E-01 | 1.774E-01 | 4.533E-02 | -0.127 |
| | | 946.00 | * -1.027E-01 | 2.083E-01 | 3.282E-01 | 6.269E-02 | -0.313 |
| | | 949.00 | 3.291E-01 | 2.985E-01 | 5.447E-01 | 5.080E-02 | 0.604 |
| | | 980.50 | 3.301E-01 | 4.302E-01 | 7.720E-01 | 7.115E-02 | 0.428 |
| | | 1394.10 | 6.577E-02 | 5.530E-01 | 9.101E-01 | 5.922E-01 | 0.072 |
| PA-234M | | 766.42 | 2.014E+00 | 6.851E+00 | 1.116E+01 | 5.676E+00 | 0.180 |
| | | 1001.03 | * 1.078E+00 | 2.819E+00 | 4.754E+00 | 4.950E-01 | 0.227 |
| U-235 | | 89.95 | -5.380E-01 | 7.085E-01 | 1.013E+00 | 3.150E-01 | -0.531 |
| | + | 93.35 | 1.482E+00 | 7.207E-01 | 7.627E-01 | 2.150E-01 | 1.943 |
| | | 105.00 | 2.962E-01 | 5.525E-01 | 9.442E-01 | 2.816E-01 | 0.314 |
| | | 143.76 | * -5.322E-02 | 1.224E-01 | 1.936E-01 | 3.384E-02 | -0.275 |
| | | 163.35 | 3.146E-03 | 3.020E-01 | 4.853E-01 | 9.344E-02 | 0.006 |
| | + | 185.71 | 6.700E-02 | 4.257E-02 | 5.676E-02 | 5.423E-03 | 1.180 |
| | | 205.31 | 1.057E-01 | 3.319E-01 | 4.874E-01 | 9.638E-02 | 0.217 |
| NP-236 | | 94.67 | 5.720E-02 | 7.315E-02 | 1.162E-01 | 1.052E-02 | 0.492 |
| | | 98.44 | 3.702E-02 | 3.864E-02 | 6.784E-02 | 5.989E-03 | 0.546 |
| | | 111.00 | 3.472E-03 | 7.753E-02 | 1.307E-01 | 1.099E-02 | 0.027 |
| | | 160.31 | * 8.877E-03 | 4.838E-02 | 8.062E-02 | 7.195E-03 | 0.110 |
| NP-237 | | 86.50 | * 8.830E-02 | 1.320E-01 | 2.276E-01 | 5.166E-02 | 0.388 |
| | | 95.87 | -2.732E-01 | 5.698E-01 | 8.377E-01 | 2.074E-01 | -0.326 |
| NP-239 | | 99.55 | 7.738E-02 | 8.555E-02 | 1.500E-01 | 1.316E-02 | 0.516 |
| | | 117.00 | * -2.535E-02 | 1.046E-01 | 1.735E-01 | 1.445E-02 | -0.146 |
| | + | 209.75 | 9.775E-01 | 6.341E-01 | 8.135E-01 | 8.286E-02 | 1.202 |
| | | 228.18 | 3.337E-02 | 1.309E-01 | 2.152E-01 | 2.298E-02 | 0.155 |
| | + | 277.60 | 1.082E-01 | 1.552E-01 | 1.935E-01 | 2.316E-02 | 0.559 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 334.30 | | -6.392E-02 | 8.304E-01 | 1.236E+00 | 1.362E-01 | -0.052 |
| AM-241 | | 59.54 | * | 7.925E-02 | 9.298E-02 | 1.411E-01 | 1.107E-02 | 0.562 |
| CM-243 | | 99.55 | | 7.963E-02 | 8.804E-02 | 1.544E-01 | 1.354E-02 | 0.516 |
| | | 103.76 | * | -3.381E-03 | 4.983E-02 | 8.382E-02 | 7.206E-03 | -0.040 |
| | | 117.00 | | -2.608E-02 | 1.077E-01 | 1.785E-01 | 1.486E-02 | -0.146 |
| | + | 209.75 | | 9.637E-01 | 6.252E-01 | 8.020E-01 | 8.169E-02 | 1.202 |
| | | 228.18 | | 3.373E-02 | 1.323E-01 | 2.174E-01 | 2.322E-02 | 0.155 |
| | + | 277.60 | | 1.091E-01 | 1.564E-01 | 1.951E-01 | 2.335E-02 | 0.559 |
| AM-246 | | 798.80 | | -1.512E-01 | 9.892E-02 | 1.432E-01 | 1.335E-02 | -1.056 |
| | | 1036.00 | | 1.732E-02 | 1.849E-01 | 3.084E-01 | 2.765E-02 | 0.056 |
| | | 1062.04 | | -7.294E-02 | 1.606E-01 | 2.493E-01 | 2.200E-02 | -0.293 |
| | | 1078.86 | * | 3.403E-02 | 8.333E-02 | 1.436E-01 | 1.253E-02 | 0.237 |
| CM-247 | + | 278.00 | | 4.488E-01 | 6.434E-01 | 8.077E-01 | 9.676E-02 | 0.556 |
| | | 287.40 | | -1.992E-01 | 7.212E-01 | 1.125E+00 | 1.340E-01 | -0.177 |
| | | 402.60 | * | -8.817E-03 | 2.099E-02 | 3.405E-02 | 3.166E-03 | -0.259 |
| CF-249 | | 252.85 | | 1.721E-01 | 5.293E-01 | 8.686E-01 | 9.844E-02 | 0.198 |
| | | 333.44 | | -3.146E-02 | 1.100E-01 | 1.607E-01 | 1.773E-02 | -0.196 |
| | | 387.95 | * | 9.864E-03 | 2.343E-02 | 4.051E-02 | 3.800E-03 | 0.244 |
| CF-251 | | 176.60 | * | -7.412E-03 | 7.381E-02 | 1.206E-01 | 1.125E-02 | -0.061 |
| | | 227.00 | | 1.838E-01 | 2.214E-01 | 3.750E-01 | 3.993E-02 | 0.490 |
| | | 285.00 | | -4.444E-01 | 1.018E+00 | 1.567E+00 | 1.871E-01 | -0.284 |

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]G246328003
* Acquisition date   : 18-FEB-2010 11:06:25 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 02:00:01.52 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G246328003 Analyst initials: MXR1
* Batch Number       : 950786 Sample Quantity : 1.7126E+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 | 1.635E+01 | 1.761E+00 | 2.880E-01 | 0.000E+00 |
| BA-137M | 3.221E-02 | 2.359E-02 | 3.286E-02 | 0.000E+00 |
| CS-137 | 3.405E-02 | 2.494E-02 | 3.474E-02 | 0.000E+00 |
| TL-208 | 2.382E-01 | 5.360E-02 | 3.598E-02 | 0.000E+00 |
| BI-211 | 1.768E+00 | 3.482E-01 | 1.971E-01 | 0.000E+00 |
| BI-212 | 5.061E-01 | 2.517E-01 | 2.503E-01 | 0.000E+00 |
| PB-212 | 6.498E-01 | 9.741E-02 | 5.566E-02 | 0.000E+00 |
| PO-212 | 6.498E-01 | 9.741E-02 | 5.566E-02 | 0.000E+00 |
| BI-214 | 4.793E-01 | 1.029E-01 | 7.888E-02 | 0.000E+00 |
| PB-214 | 6.151E-01 | 1.251E-01 | 6.871E-02 | 0.000E+00 |
| PO-214 | 6.151E-01 | 1.251E-01 | 6.871E-02 | 0.000E+00 |
| PO-216 | 6.498E-01 | 9.741E-02 | 5.566E-02 | 0.000E+00 |
| PO-218 | 6.151E-01 | 1.251E-01 | 6.871E-02 | 0.000E+00 |
| RA-224 | 2.244E+00 | 7.952E-01 | 6.333E-01 | 0.000E+00 |
| RA-226 | 4.793E-01 | 1.029E-01 | 7.888E-02 | 0.000E+00 |
| AC-228 | 6.431E-01 | 1.598E-01 | 1.106E-01 | 0.000E+00 |
| RA-228 | 6.431E-01 | 1.598E-01 | 1.106E-01 | 0.000E+00 |
| TH-228 | 6.609E-01 | 9.907E-02 | 5.661E-02 | 0.000E+00 |
| TH-230 | 4.793E-01 | 1.029E-01 | 7.888E-02 | 0.000E+00 |
| TH-232 | 6.431E-01 | 1.598E-01 | 1.106E-01 | 0.000E+00 |
| TH-234 | 1.699E+00 | 1.087E+00 | 1.250E+00 | 0.000E+00 |
| U-234 | 4.793E-01 | 1.029E-01 | 7.888E-02 | 0.000E+00 |
| U-238 | 1.699E+00 | 1.087E+00 | 1.250E+00 | 0.000E+00 |
| AM-243 | 1.707E-01 | 4.212E-02 | 5.405E-02 | 0.000E+00 |
| ANH-511 | 2.634E-02 | 4.291E-02 | 3.231E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 2.009E-01 | 1.998E-01 | 3.809E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -4.046E-03 | 2.798E-02 | 4.632E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | 0.000E+00 | 3.455E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 1.950E-03 | 1.697E-02 | 2.943E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.088E-02 | 4.170E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 2.634E-02 | 2.321E-02 | 4.519E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -5.040E-03 | 4.308E-02 | 7.382E-02 | 0.000E+00 | NOT IDENT. |
| CR-51 | 1.156E-01 | 2.399E-01 | 4.272E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 1.856E-01 | 1.674E-01 | 3.293E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 7.839E-03 | 2.286E-02 | 4.166E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 3.106E-03 | 2.446E-02 | 4.374E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -5.038E-03 | 1.475E-02 | 2.725E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -2.555E-02 | 2.282E-02 | 3.553E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -3.195E-02 | 6.060E-02 | 9.794E-02 | 0.000E+00 | NOT IDENT. |
| CO-60 | 1.059E-02 | 2.258E-02 | 4.046E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -6.306E-02 | 6.455E-02 | 9.170E-02 | 0.000E+00 | NOT IDENT. |
| GE-68 | 2.789E-01 | 7.047E-01 | 1.267E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -7.742E-02 | 4.705E-01 | 8.384E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | 1.309E-02 | 5.980E-02 | 1.060E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.239E-02 | 2.661E-02 | 4.269E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 4.787E+00 | 9.957E+00 | 1.830E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -8.050E-02 | 2.465E-01 | 4.007E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 1.875E-02 | 3.900E-02 | 7.168E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | 3.859E-02 | 3.841E-02 | 7.472E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 4.559E+00 | 4.611E+00 | 7.879E+00 | 0.000E+00 | NOT IDENT. |
| SR-85 | 2.383E-02 | 2.410E-02 | 4.119E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 4.964E-01 | 4.720E-01 | 9.063E-01 | 0.000E+00 | NOT IDENT. |
| Y-88 | -5.444E-03 | 2.281E-02 | 3.655E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -2.812E-03 | 1.857E-02 | 3.336E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -5.262E+00 | 1.241E+01 | 2.012E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 1.276E-02 | 2.041E-02 | 3.685E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | -1.646E-02 | 2.526E-02 | 3.957E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 6.676E-03 | 8.297E-02 | 1.320E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 3.048E-02 | 4.713E-02 | 8.464E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 3.762E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 7.541E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 6.608E+00 | 1.064E+01 | 1.921E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.390E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -7.732E-05 | 1.868E-02 | 3.312E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -2.412E-02 | 1.685E-02 | 2.594E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 1.381E-03 | 2.352E-02 | 4.191E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 4.970E-02 | 1.728E-01 | 3.078E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 4.970E-02 | 1.728E-01 | 3.078E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -4.262E-03 | 1.850E-02 | 3.264E-02 | 0.000E+00 | NOT IDENT. |
| CD-109 | 1.768E-01 | 4.605E-01 | 8.605E-01 | 0.000E+00 | NOT IDENT. |
| AG-110M | 2.668E-03 | 2.143E-02 | 3.281E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 4.774E-01 | 9.633E-01 | 1.585E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 1.352E-02 | 2.696E-02 | 5.052E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 1.352E-02 | 2.696E-02 | 5.052E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.167E-01 | 1.155E-01 | 2.098E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -4.702E+00 | 1.077E+01 | 1.818E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 6.887E-03 | 3.459E-02 | 6.419E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 3.206E-01 | 1.950E+00 | 3.460E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.484E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.235E-03 | 1.678E-02 | 3.095E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -2.190E-01 | 5.741E-01 | 9.263E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | -5.157E-03 | 4.401E-02 | 7.306E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | 1.079E-02 | 5.317E-02 | 9.713E-02 | 0.000E+00 | FAIL ABUN |
| TE-125M | 3.934E+00 | 5.186E+00 | 1.012E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 5.912E-02 | 1.318E-01 | 2.098E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 3.590E-02 | 9.519E-02 | 1.630E-01 | 0.000E+00 | FAIL ABUN |
| SN-126 | 6.495E-03 | 4.392E-02 | 8.500E-02 | 0.000E+00 | FAIL ABUN |
| SB-127 | 5.372E-01 | 1.158E+00 | 2.070E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 3.107E-02 | 2.759E-02 | 5.233E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 1.224E-02 | 7.739E-02 | 1.430E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 1.566E-01 | 5.817E-01 | 1.051E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -5.251E-03 | 2.669E-02 | 4.129E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 1.436E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 4.283E-02 | 3.201E-02 | 6.148E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 1.291E-01 | 9.398E-02 | 1.630E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 3.436E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.885E-02 | 6.960E-02 | 1.141E-01 | 0.000E+00 | NOT IDENT. |
| CE-139 | -1.566E-02 | 1.791E-02 | 3.129E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -6.683E-02 | 1.755E-01 | 2.959E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -4.634E-02 | 5.970E-02 | 8.567E-02 | 0.000E+00 | NOT IDENT. |
| CE-141 | 3.376E-02 | 3.575E-02 | 6.895E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.723E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 3.376E-02 | 1.150E-01 | 2.172E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -4.351E-03 | 2.183E-02 | 3.624E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -2.951E-01 | 1.481E+00 | 2.458E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | -1.487E-03 | 2.323E-02 | 4.133E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -1.832E-02 | 3.544E-01 | 6.207E-01 | 0.000E+00 | NOT IDENT. |
| PM-149 | -3.128E+01 | 9.340E+01 | 1.583E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | 6.109E-03 | 6.057E-02 | 1.085E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | 1.957E-02 | 4.701E-02 | 8.271E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | -2.396E-02 | 7.893E-02 | 1.281E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 5.262E-03 | 5.582E-02 | 1.065E-01 | 0.000E+00 | NOT IDENT. |
| TB-160 | -8.570E-03 | 8.107E-02 | 1.410E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 7.961E-03 | 3.859E-02 | 6.706E-02 | 0.000E+00 | NOT IDENT. |
| TM-171 | 4.294E+00 | 1.660E+01 | 2.742E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -1.971E-03 | 1.460E-02 | 2.499E-02 | 0.000E+00 | NOT IDENT. |
| LU-177 | 0.000E+00 | 1.060E+00 | 1.445E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -6.572E-02 | 9.284E-02 | 1.576E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -2.468E-03 | 2.697E-02 | 4.762E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 4.448E-02 | 2.105E-01 | 3.481E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 3.798E-02 | 1.261E-01 | 2.199E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 2.418E-02 | 6.968E-02 | 1.264E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 4.622E-02 | 1.393E-01 | 2.506E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.130E-02 | 2.667E-02 | 4.776E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.366E-02 | 9.662E-02 | 1.792E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 9.014E-01 | 4.859E+00 | 7.643E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | -8.352E-03 | 2.081E-02 | 3.471E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 1.151E-01 | 1.232E-01 | 2.436E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 8.755E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 2.104E+00 | 6.052E+00 | 1.126E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 1.073E-02 | 4.573E-02 | 8.349E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | 1.205E-02 | 2.609E-02 | 4.223E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | -1.222E-02 | 3.500E-02 | 5.744E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -1.398E-01 | 3.955E-01 | 6.603E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | 1.325E+00 | 4.213E+00 | 7.641E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | 8.757E-01 | 2.176E+00 | 4.011E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 8.757E-01 | 2.176E+00 | 4.011E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 8.757E-01 | 2.176E+00 | 4.011E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 2.463E-01 | 5.459E-01 | 9.807E-01 | 0.000E+00 | NOT IDENT. |
| PO-215 | -1.398E-01 | 3.955E-01 | 6.603E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | -4.034E-02 | 2.245E-01 | 4.009E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 3.044E+00 | 1.463E+01 | 2.615E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -1.398E-01 | 3.955E-01 | 6.603E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | 4.902E-02 | 2.249E-01 | 4.012E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | 4.902E-02 | 2.249E-01 | 4.012E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -1.927E-01 | 2.980E-01 | 5.094E-01 | 0.000E+00 | NOT IDENT. |
| PA-231 | 3.654E-01 | 8.449E-01 | 1.516E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -1.398E-01 | 3.955E-01 | 6.603E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -4.199E-01 | 8.528E-01 | 1.424E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 2.172E-03 | 3.717E-02 | 6.446E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | -1.027E-01 | 2.042E-01 | 3.376E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 1.078E+00 | 2.763E+00 | 4.881E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | -5.322E-02 | 1.200E-01 | 2.117E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 8.877E-03 | 4.742E-02 | 8.784E-02 | 0.000E+00 | NOT IDENT. |
| NP-237 | 8.830E-02 | 1.294E-01 | 2.526E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -2.535E-02 | 1.025E-01 | 1.909E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 7.925E-02 | 9.112E-02 | 1.583E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -3.381E-03 | 4.883E-02 | 9.254E-02 | 0.000E+00 | FAIL ABUN |
| AM-246 | 3.403E-02 | 8.166E-02 | 1.470E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -8.817E-03 | 2.057E-02 | 3.604E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 9.864E-03 | 2.297E-02 | 4.293E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -7.412E-03 | 7.234E-02 | 1.310E-01 | 0.000E+00 | NOT IDENT. |

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:08:35.44

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328003.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:06:25
Sample ID          : G246328003          Sample quantity  : 1.71260E+02 GRAM
Detector name      : GAM16              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.52  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             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 | 962 | 10.67* | 1.208E+00 | 1.635E+01 | 1.635E+01 | 10.99 |
| BA-137M | 661.65 | 32 | 89.98* | 2.405E+00 | 3.218E-02 | 3.221E-02 | 74.73 |
| CS-137 | 661.65 | 32 | 85.12* | 2.405E+00 | 3.402E-02 | 3.405E-02 | 74.74 |
| TL-208 | 277.35 | 33 | 6.80 | 4.696E+00 | 2.244E-01 | 2.244E-01 | 143.64 |
| | 510.84 | 36 | 21.60 | 2.964E+00 | 1.220E-01 | 1.220E-01 | 166.43 |
| | 583.14 | 244 | 84.20* | 2.667E+00 | 2.382E-01 | 2.382E-01 | 22.96 |
| | 860.37 | ----- | 12.46 | 1.920E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 4.872E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 411 | 12.94* | 3.940E+00 | 1.768E+00 | 1.768E+00 | 20.09 |
| BI-212 | 727.18 | 61 | 11.80* | 2.222E+00 | 5.061E-01 | 5.061E-01 | 50.76 |
| | 785.46 | ----- | 1.97 | 2.079E+00 | ----- | Line Not Found | ----- |
| | 1620.62 | 10 | 2.75 | 1.117E+00 | 6.778E-01 | 6.778E-01 | 112.22 |
| PB-212 | 74.81 | 263 | 10.70 | 5.117E+00 | 1.053E+00 | 1.053E+00 | 26.86 |
| | 77.11 | 382 | 18.00 | 5.358E+00 | 8.687E-01 | 8.687E-01 | 19.66 |
| | 87.30 | ----- | 8.00 | 6.262E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 691 | 44.60* | 5.226E+00 | 6.498E-01 | 6.498E-01 | 15.30 |
| | 300.09 | 57 | 3.41 | 4.435E+00 | 8.262E-01 | 8.262E-01 | 71.82 |
| PO-212 | 74.81 | 263 | 10.70 | 5.117E+00 | 1.053E+00 | 1.053E+00 | 26.86 |
| | 77.11 | 382 | 18.00 | 5.358E+00 | 8.687E-01 | 8.687E-01 | 19.66 |
| | 87.30 | ----- | 8.00 | 6.262E+00 | ----- | Line Not Found | ----- |
| | 115.19 | ----- | 0.60 | 7.166E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 691 | 44.60* | 5.226E+00 | 6.498E-01 | 6.498E-01 | 15.30 |
| | 300.09 | 57 | 3.41 | 4.435E+00 | 8.262E-01 | 8.262E-01 | 71.82 |
| BI-214 | 609.31 | 261 | 46.30* | 2.574E+00 | 4.793E-01 | 4.793E-01 | 21.91 |
| | 1120.29 | 15 | 15.10 | 1.514E+00 | 1.401E-01 | 1.401E-01 | 238.98 |
| | 1764.49 | 54 | 15.80 | 1.056E+00 | 7.054E-01 | 7.054E-01 | 32.24 |
| PB-214 | 74.81 | 263 | 6.21 | 5.117E+00 | 1.814E+00 | 1.814E+00 | 26.24 |
| | 77.11 | 382 | 10.50 | 5.358E+00 | 1.489E+00 | 1.489E+00 | 21.08 |
| | 87.30 | ----- | 4.67 | 6.262E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 210 | 7.49 | 5.180E+00 | 1.184E+00 | 1.184E+00 | 36.59 |
| | 295.21 | 243 | 19.20 | 4.487E+00 | 6.171E-01 | 6.171E-01 | 28.12 |
| | 351.92 | 411 | 37.20* | 3.940E+00 | 6.150E-01 | 6.151E-01 | 20.76 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 74.81 | 263 | 6.21 | 5.117E+00 | 1.814E+00 | 1.814E+00 | 26.24 |
| | 77.11 | 382 | 10.50 | 5.358E+00 | 1.489E+00 | 1.489E+00 | 21.08 |
| | 87.30 | ----- | 4.67 | 6.262E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 210 | 7.49 | 5.180E+00 | 1.184E+00 | 1.184E+00 | 36.59 |
| | 295.21 | 243 | 19.20 | 4.487E+00 | 6.171E-01 | 6.171E-01 | 28.12 |
| PO-216 | 351.92 | 411 | 37.20* | 3.940E+00 | 6.150E-01 | 6.151E-01 | 20.76 |
| | 74.81 | 263 | 10.70 | 5.117E+00 | 1.053E+00 | 1.053E+00 | 26.86 |
| | 77.11 | 382 | 18.00 | 5.358E+00 | 8.687E-01 | 8.687E-01 | 19.66 |
| | 87.30 | ----- | 8.00 | 6.262E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 691 | 44.60* | 5.226E+00 | 6.498E-01 | 6.498E-01 | 15.30 |
| PO-218 | 300.09 | 57 | 3.41 | 4.435E+00 | 8.262E-01 | 8.262E-01 | 71.82 |
| | 74.81 | 263 | 6.21 | 5.117E+00 | 1.814E+00 | 1.814E+00 | 26.24 |
| | 77.11 | 382 | 10.50 | 5.358E+00 | 1.489E+00 | 1.489E+00 | 21.08 |
| | 87.30 | ----- | 4.67 | 6.262E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 210 | 7.49 | 5.180E+00 | 1.184E+00 | 1.184E+00 | 36.59 |
| RA-224 | 295.21 | 243 | 19.20 | 4.487E+00 | 6.171E-01 | 6.171E-01 | 28.12 |
| | 351.92 | 411 | 37.20* | 3.940E+00 | 6.150E-01 | 6.151E-01 | 20.76 |
| | 240.98 | 210 | 3.95* | 5.180E+00 | 2.244E+00 | 2.244E+00 | 36.16 |
| | 609.31 | 261 | 46.30* | 2.574E+00 | 4.793E-01 | 4.793E-01 | 21.91 |
| | 1120.29 | 15 | 15.10 | 1.514E+00 | 1.401E-01 | 1.401E-01 | 238.98 |
| AC-228 | 1764.49 | 54 | 15.80 | 1.056E+00 | 7.054E-01 | 7.054E-01 | 32.24 |
| | 338.32 | 129 | 11.40 | 4.059E+00 | 6.102E-01 | 6.102E-01 | 56.02 |
| | 911.07 | 148 | 27.70* | 1.824E+00 | 6.431E-01 | 6.431E-01 | 25.36 |
| | 969.11 | 117 | 16.60 | 1.727E+00 | 8.909E-01 | 8.909E-01 | 34.79 |
| | 338.32 | 129 | 11.40 | 4.059E+00 | 6.102E-01 | 6.102E-01 | 56.02 |
| RA-228 | 911.07 | 148 | 27.70* | 1.824E+00 | 6.431E-01 | 6.431E-01 | 25.36 |
| | 969.11 | 117 | 16.60 | 1.727E+00 | 8.909E-01 | 8.909E-01 | 34.79 |
| | 74.81 | 263 | 10.70 | 5.117E+00 | 1.053E+00 | 1.071E+00 | 25.20 |
| | 77.11 | 382 | 18.00 | 5.358E+00 | 8.687E-01 | 8.835E-01 | 19.66 |
| | 87.30 | ----- | 8.00 | 6.262E+00 | ----- | Line Not Found | ----- |
| TH-228 | 238.63 | 691 | 44.60* | 5.226E+00 | 6.498E-01 | 6.609E-01 | 15.30 |
| | 300.09 | 57 | 3.41 | 4.435E+00 | 8.262E-01 | 8.402E-01 | 92.54 |
| | 609.31 | 261 | 46.30* | 2.574E+00 | 4.793E-01 | 4.793E-01 | 21.91 |
| | 1120.29 | 15 | 15.10 | 1.514E+00 | 1.401E-01 | 1.401E-01 | 238.98 |
| | 1764.49 | 54 | 15.80 | 1.056E+00 | 7.054E-01 | 7.054E-01 | 32.24 |
| TH-232 | 338.32 | 129 | 11.40 | 4.059E+00 | 6.102E-01 | 6.102E-01 | 38.86 |
| | 911.07 | 148 | 27.70* | 1.824E+00 | 6.431E-01 | 6.431E-01 | 25.36 |
| | 969.11 | 117 | 16.60 | 1.727E+00 | 8.909E-01 | 8.909E-01 | 34.79 |
| | 63.29 | 103 | 3.80* | 3.497E+00 | 1.699E+00 | 1.699E+00 | 65.29 |
| | 92.38 | 201 | 5.41 | 6.595E+00 | 1.233E+00 | 1.233E+00 | 43.67 |
| U-234 | 609.31 | 261 | 46.30* | 2.574E+00 | 4.793E-01 | 4.793E-01 | 21.91 |
| | 1120.29 | 15 | 15.10 | 1.514E+00 | 1.401E-01 | 1.401E-01 | 238.98 |
| | 1764.49 | 54 | 15.80 | 1.056E+00 | 7.054E-01 | 7.054E-01 | 32.24 |
| | 63.29 | 103 | 3.80* | 3.497E+00 | 1.699E+00 | 1.699E+00 | 65.29 |
| | 92.38 | 201 | 5.41 | 6.595E+00 | 1.233E+00 | 1.233E+00 | 40.68 |
| AM-243 | 74.67 | 263 | 66.00* | 5.117E+00 | 1.707E-01 | 1.707E-01 | 25.18 |
| | 86.72 | ----- | 0.34 | 6.221E+00 | ----- | Line Not Found | ----- |
| | 117.66 | ----- | 0.55 | 7.175E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.968E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|------|---------|-----------|-------------------------|------------------------|-------------------|
| ANH-511 | 511.00 | 36 | 100.00* | 2.964E+00 | 2.634E-02 | 2.634E-02 | 166.22 |

Flag: "*" = Keyline

Total number of lines in spectrum 28
Number of unidentified lines 2
Number of lines tentatively identified by NID 26 92.86%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 1.635E+01 | 1.635E+01 | 0.180E+01 | 10.99 | |
| BA-137M | 30.17Y | 1.00 | 3.218E-02 | 3.221E-02 | 2.408E-02 | 74.73 | |
| CS-137 | 30.17Y | 1.00 | 3.402E-02 | 3.405E-02 | 2.545E-02 | 74.74 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.382E-01 | 2.382E-01 | 0.547E-01 | 22.96 | |
| BI-211 | 7.04E+08Y | 1.00 | 1.768E+00 | 1.768E+00 | 0.355E+00 | 20.09 | |
| BI-212 | 1.41E+10Y | 1.00 | 5.061E-01 | 5.061E-01 | 2.569E-01 | 50.76 | |
| PB-212 | 1.41E+10Y | 1.00 | 6.498E-01 | 6.498E-01 | 0.994E-01 | 15.30 | |
| PO-212 | 1.41E+10Y | 1.00 | 6.498E-01 | 6.498E-01 | 0.994E-01 | 15.30 | |
| BI-214 | 1600.00Y | 1.00 | 4.793E-01 | 4.793E-01 | 1.050E-01 | 21.91 | |
| PB-214 | 1600.00Y | 1.00 | 6.150E-01 | 6.151E-01 | 1.277E-01 | 20.76 | |
| PO-214 | 1600.00Y | 1.00 | 6.150E-01 | 6.151E-01 | 1.277E-01 | 20.76 | |
| PO-216 | 1.41E+10Y | 1.00 | 6.498E-01 | 6.498E-01 | 0.994E-01 | 15.30 | |
| PO-218 | 1600.00Y | 1.00 | 6.150E-01 | 6.151E-01 | 1.277E-01 | 20.76 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.244E+00 | 2.244E+00 | 0.811E+00 | 36.16 | |
| RA-226 | 1600.00Y | 1.00 | 4.793E-01 | 4.793E-01 | 1.050E-01 | 21.91 | |
| AC-228 | 1.41E+10Y | 1.00 | 6.431E-01 | 6.431E-01 | 1.631E-01 | 25.36 | |
| RA-228 | 1.41E+10Y | 1.00 | 6.431E-01 | 6.431E-01 | 1.631E-01 | 25.36 | |
| TH-228 | 1.91Y | 1.02 | 6.498E-01 | 6.609E-01 | 1.011E-01 | 15.30 | |
| TH-230 | 4.47E+09Y | 1.00 | 4.793E-01 | 4.793E-01 | 1.050E-01 | 21.91 | |
| TH-232 | 1.41E+10Y | 1.00 | 6.431E-01 | 6.431E-01 | 1.631E-01 | 25.36 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.699E+00 | 1.699E+00 | 1.109E+00 | 65.29 | |
| U-234 | 4.47E+09Y | 1.00 | 4.793E-01 | 4.793E-01 | 1.050E-01 | 21.91 | |
| U-238 | 4.47E+09Y | 1.00 | 1.699E+00 | 1.699E+00 | 1.109E+00 | 65.29 | |
| AM-243 | 7380.00Y | 1.00 | 1.707E-01 | 1.707E-01 | 0.430E-01 | 25.18 | |
| ANH-511 | 1.00E+09Y | 1.00 | 2.634E-02 | 2.634E-02 | 4.379E-02 | 166.22 | |
| Total Activity : | | | 3.306E+01 | 3.307E+01 | | | |

Grand Total Activity : 3.306E+01 3.307E+01

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

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

Unidentified Energy Lines
Sample ID : G246328003

Page : 5
Acquisition date : 18-FEB-2010 11:06:25

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 185.95 | 101 | 247 | 1.10 | 372.10 | 367 | 9 | 1.41E-02 | 62.8 | 6.14E+00 | T |
| 0 | 209.26 | 82 | 191 | 1.20 | 418.71 | 415 | 9 | 1.15E-02 | 64.1 | 5.71E+00 | T |
| 0 | 270.23 | 93 | 140 | 2.26 | 540.66 | 536 | 10 | 1.28E-02 | 52.5 | 4.78E+00 | T |
| 0 | 462.96 | 57 | 69 | 1.40 | 926.10 | 922 | 8 | 7.96E-03 | 57.7 | 3.20E+00 | T |
| 0 | 1378.43 | 17 | 14 | 1.30 | 2756.54 | 2752 | 12 | 2.34E-03 | **** | 1.27E+00 | |
| 0 | 1588.32 | 14 | 9 | 1.80 | 3176.12 | 3171 | 11 | 1.91E-03 | 98.4 | 1.13E+00 | |

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328003.CNF;1
* Acquisition date   : 18-FEB-2010 11:06:25   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 02:00:01.52           Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G246328003             Analyst initials: MXR1
* Batch Number       : 950786                 Sample Quantity  : 1.71260E+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      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 1.635E+01 | 1.797E+00 | 2.842E-01 | 2.498E-02 | 57.533 |
| BA-137M | 3.221E-02 | 2.408E-02 | 3.156E-02 | 2.801E-03 | 1.021 |
| CS-137 | 3.405E-02 | 2.545E-02 | 3.336E-02 | 2.966E-03 | 1.021 |
| TL-208 | 2.382E-01 | 5.470E-02 | 3.441E-02 | 3.411E-03 | 6.923 |
| BI-211 | 1.768E+00 | 3.553E-01 | 1.854E-01 | 2.027E-02 | 9.536 |
| BI-212 | 5.061E-01 | 2.569E-01 | 2.411E-01 | 2.519E-02 | 2.099 |
| PB-212 | 6.498E-01 | 9.940E-02 | 5.172E-02 | 6.123E-03 | 12.565 |
| PO-212 | 6.498E-01 | 9.940E-02 | 5.172E-02 | 6.123E-03 | 12.565 |
| BI-214 | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| PB-214 | 6.151E-01 | 1.277E-01 | 6.464E-02 | 7.817E-03 | 9.516 |
| PO-214 | 6.151E-01 | 1.277E-01 | 6.464E-02 | 7.817E-03 | 9.516 |
| PO-216 | 6.498E-01 | 9.940E-02 | 5.172E-02 | 6.123E-03 | 12.565 |
| PO-218 | 6.151E-01 | 1.277E-01 | 6.464E-02 | 7.817E-03 | 9.516 |
| RA-224 | 2.244E+00 | 8.115E-01 | 5.886E-01 | 6.487E-02 | 3.813 |
| RA-226 | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| AC-228 | 6.431E-01 | 1.631E-01 | 1.073E-01 | 1.275E-02 | 5.992 |
| RA-228 | 6.431E-01 | 1.631E-01 | 1.073E-01 | 1.275E-02 | 5.992 |
| TH-228 | 6.609E-01 | 1.011E-01 | 5.260E-02 | 6.228E-03 | 12.565 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-230 | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| TH-232 | 6.431E-01 | 1.631E-01 | 1.073E-01 | 1.275E-02 | 5.992 |
| TH-234 | 1.699E+00 | 1.109E+00 | 1.116E+00 | 1.947E-01 | 1.523 |
| U-234 | 4.793E-01 | 1.050E-01 | 7.554E-02 | 7.987E-03 | 6.344 |
| U-238 | 1.699E+00 | 1.109E+00 | 1.116E+00 | 1.947E-01 | 1.523 |
| AM-243 | 1.707E-01 | 4.298E-02 | 4.849E-02 | 4.014E-03 | 3.521 |
| ANH-511 | 2.634E-02 | 4.379E-02 | 3.077E-02 | 2.926E-03 | 0.856 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 2.009E-01 | | 2.039E-01 | 3.619E-01 | 3.661E-02 | 0.555 |
| NA-22 | -4.046E-03 | | 2.855E-02 | 4.549E-02 | 3.785E-03 | -0.089 |
| NA-24 | -1.595E+00 | | 1.763E+00 | Half-Life too short | | |
| AL-26 | 1.950E-03 | | 1.731E-02 | 2.927E-02 | 2.393E-03 | 0.067 |
| TI-44 | 1.603E-01 | + | 3.152E-02 | 3.747E-02 | 3.226E-03 | 4.279 |
| SC-46 | 2.634E-02 | | 2.368E-02 | 4.383E-02 | 4.143E-03 | 0.601 |
| V-48 | -5.040E-03 | | 4.396E-02 | 7.185E-02 | 6.614E-03 | -0.070 |
| CR-51 | 1.156E-01 | | 2.448E-01 | 4.006E-01 | 4.684E-02 | 0.288 |
| MN-52 | 1.856E-01 | | 1.709E-01 | 3.247E-01 | 2.771E-02 | 0.571 |
| MN-54 | 7.839E-03 | | 2.333E-02 | 4.032E-02 | 3.787E-03 | 0.194 |
| CO-56 | 3.106E-03 | | 2.496E-02 | 4.235E-02 | 3.986E-03 | 0.073 |
| CO-57 | -5.038E-03 | | 1.505E-02 | 2.481E-02 | 2.061E-03 | -0.203 |
| CO-58 | -2.555E-02 | | 2.329E-02 | 3.435E-02 | 3.218E-03 | -0.744 |
| FE-59 | -3.195E-02 | | 6.184E-02 | 9.569E-02 | 8.895E-03 | -0.334 |
| CO-60 | 1.059E-02 | | 2.304E-02 | 3.979E-02 | 3.357E-03 | 0.266 |
| ZN-65 | -6.306E-02 | | 6.586E-02 | 8.964E-02 | 7.612E-03 | -0.704 |
| GE-68 | 2.789E-01 | | 7.191E-01 | 1.237E+00 | 1.081E-01 | 0.225 |
| AS-73 | -7.742E-02 | | 4.801E-01 | 7.449E-01 | 5.683E-02 | -0.104 |
| AS-74 | 1.309E-02 | | 6.103E-02 | 1.014E-01 | 9.413E-03 | 0.129 |
| SE-75 | -1.239E-02 | | 2.716E-02 | 3.979E-02 | 4.644E-03 | -0.311 |
| BR-77 | 4.787E+00 | | 1.016E+01 | 1.744E+01 | 1.657E+00 | 0.275 |
| SR-82 | -8.050E-02 | | 2.515E-01 | 3.869E-01 | 3.587E-02 | -0.208 |
| RB-83 | 1.875E-02 | | 3.979E-02 | 6.829E-02 | 6.489E-03 | 0.275 |
| RB-84 | 3.859E-02 | | 3.919E-02 | 7.246E-02 | 6.845E-03 | 0.533 |
| KR-85 | 4.559E+00 | | 4.705E+00 | 7.503E+00 | 7.134E-01 | 0.608 |
| SR-85 | 2.383E-02 | | 2.459E-02 | 3.922E-02 | 3.730E-03 | 0.608 |
| RB-86 | 4.964E-01 | | 4.817E-01 | 8.849E-01 | 7.732E-02 | 0.561 |
| Y-88 | -5.444E-03 | | 2.327E-02 | 3.636E-02 | 2.952E-03 | -0.150 |
| ZR-88 | -2.812E-03 | | 1.895E-02 | 3.149E-02 | 2.912E-03 | -0.089 |
| Y-91 | -5.262E+00 | | 1.266E+01 | 1.972E+01 | 1.604E+00 | -0.267 |
| NB-94 | 1.276E-02 | | 2.082E-02 | 3.546E-02 | 3.205E-03 | 0.360 |
| NB-95 | -1.646E-02 | | 2.578E-02 | 3.819E-02 | 3.530E-03 | -0.431 |
| NB-95M | 6.676E-03 | | 8.467E-02 | 1.226E-01 | 1.458E-02 | 0.054 |
| ZR-95 | 3.048E-02 | | 4.810E-02 | 8.165E-02 | 8.196E-03 | 0.373 |
| NB-97 | 5.133E-03 | | 1.920E-01 | Half-Life too short | | |
| ZR-97 | 7.535E+00 | | 3.847E+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 |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| MO-99 | 6.608E+00 | | 1.086E+01 | 1.851E+01 | 2.870E+00 | 0.357 |
| TC-99M | 1.361E+12 | | 1.729E+12 | Half-Life too short | | |
| RH-101 | -7.732E-05 | | 1.906E-02 | 3.060E-02 | 3.021E-03 | -0.003 |
| RH-102 | -2.412E-02 | | 1.719E-02 | 2.464E-02 | 2.342E-03 | -0.979 |
| RU-103 | 1.381E-03 | | 2.400E-02 | 3.986E-02 | 5.870E-03 | 0.035 |
| RH-106 | 4.970E-02 | | 1.764E-01 | 2.950E-01 | 4.042E-02 | 0.168 |
| RU-106 | 4.970E-02 | | 1.763E-01 | 2.950E-01 | 2.698E-02 | 0.168 |
| AG-108M | -4.262E-03 | | 1.888E-02 | 3.091E-02 | 3.009E-03 | -0.138 |
| CD-109 | 1.768E-01 | | 4.699E-01 | 7.757E-01 | 7.475E-02 | 0.228 |
| AG-110M | 2.668E-03 | | 2.187E-02 | 3.150E-02 | 2.883E-03 | 0.085 |
| IN-111 | 4.774E-01 | | 9.830E-01 | 1.474E+00 | 1.641E-01 | 0.324 |
| IN-113M | 1.352E-02 | | 2.751E-02 | 4.769E-02 | 4.526E-03 | 0.283 |
| SN-113 | 1.352E-02 | | 2.751E-02 | 4.769E-02 | 4.526E-03 | 0.283 |
| IN-114M | 1.167E-01 | | 1.179E-01 | 1.936E-01 | 1.872E-02 | 0.603 |
| CD-115 | -4.702E+00 | | 1.099E+01 | 1.733E+01 | 1.645E+00 | -0.271 |
| SN-117M | 6.887E-03 | | 3.530E-02 | 5.890E-02 | 5.231E-03 | 0.117 |
| SB-122 | 3.206E-01 | | 1.990E+00 | 3.305E+00 | 3.109E-01 | 0.097 |
| I-123 | 2.564E+00 | | 1.778E+01 | Half-Life too short | | |
| TE-123M | 1.235E-03 | | 1.712E-02 | 2.840E-02 | 2.540E-03 | 0.043 |
| I-124 | -2.190E-01 | | 5.858E-01 | 8.867E-01 | 8.201E-02 | -0.247 |
| SB-124 | -5.157E-03 | | 4.490E-02 | 7.247E-02 | 6.347E-03 | -0.071 |
| SB-125 | 1.079E-02 | | 5.426E-02 | 9.195E-02 | 8.785E-03 | 0.117 |
| TE-125M | 3.934E+00 | | 5.291E+00 | 9.183E+00 | 9.351E-01 | 0.428 |
| I-126 | 5.912E-02 | | 1.345E-01 | 2.015E-01 | 1.792E-02 | 0.293 |
| SB-126 | 3.590E-02 | | 9.713E-02 | 1.570E-01 | 1.429E-02 | 0.229 |
| SN-126 | 6.495E-03 | | 4.482E-02 | 7.661E-02 | 7.345E-03 | 0.085 |
| SB-127 | 5.372E-01 | | 1.182E+00 | 1.990E+00 | 2.427E-01 | 0.270 |
| XE-127 | 3.107E-02 | | 2.815E-02 | 4.838E-02 | 4.838E-03 | 0.642 |
| I-131 | 1.224E-02 | | 7.897E-02 | 1.346E-01 | 1.425E-02 | 0.091 |
| TE-132 | 1.566E-01 | | 5.936E-01 | 9.752E-01 | 1.683E-01 | 0.161 |
| BA-133 | -5.251E-03 | | 2.724E-02 | 3.886E-02 | 5.615E-03 | -0.135 |
| I-133 | 3.702E-04 | | 7.327E-03 | Half-Life too short | | |
| CS-134 | 4.283E-02 | | 3.267E-02 | 5.941E-02 | 5.570E-03 | 0.721 |
| CS-135 | 1.291E-01 | | 9.590E-02 | 1.520E-01 | 1.938E-02 | 0.850 |
| I-135 | -1.913E+10 | | 1.753E+11 | Half-Life too short | | |
| CS-136 | -2.885E-02 | | 7.102E-02 | 1.113E-01 | 1.031E-02 | -0.259 |
| CE-139 | -1.566E-02 | | 1.828E-02 | 2.874E-02 | 2.607E-03 | -0.545 |
| BA-140 | -6.683E-02 | | 1.791E-01 | 2.822E-01 | 9.417E-02 | -0.237 |
| LA-140 | -4.634E-02 | | 6.092E-02 | 8.480E-02 | 7.223E-03 | -0.546 |
| CE-141 | 3.376E-02 | | 3.648E-02 | 6.309E-02 | 5.519E-03 | 0.535 |
| CE-143 | 5.509E-04 | | 1.389E-04 | Half-Life too short | | |
| CE-144 | 3.376E-02 | | 1.174E-01 | 1.982E-01 | 3.061E-02 | 0.170 |
| PM-144 | -4.351E-03 | | 2.228E-02 | 3.486E-02 | 3.145E-03 | -0.125 |
| PR-144 | -2.951E-01 | | 1.511E+00 | 2.365E+00 | 2.132E-01 | -0.125 |
| PM-146 | -1.487E-03 | | 2.371E-02 | 3.920E-02 | 4.477E-03 | -0.038 |
| ND-147 | -1.832E-02 | | 3.616E-01 | 5.917E-01 | 9.152E-02 | -0.031 |
| PM-149 | -3.128E+01 | | 9.530E+01 | 1.480E+02 | 2.604E+01 | -0.211 |
| EU-152 | 6.109E-03 | | 6.180E-02 | 1.020E-01 | 1.140E-02 | 0.060 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| GD-153 | 1.957E-02 | | 4.797E-02 | 7.478E-02 | 6.644E-03 | 0.262 |
| EU-154 | -2.396E-02 | | 8.054E-02 | 1.258E-01 | 1.393E-02 | -0.191 |
| EU-155 | 5.262E-03 | | 5.696E-02 | 9.650E-02 | 8.349E-03 | 0.055 |
| TB-160 | -8.570E-03 | | 8.272E-02 | 1.368E-01 | 1.292E-02 | -0.063 |
| HO-166M | 7.961E-03 | | 3.938E-02 | 6.456E-02 | 5.857E-03 | 0.123 |
| TM-171 | 4.294E+00 | | 1.694E+01 | 2.452E+01 | 1.878E+00 | 0.175 |
| LU-176 | -1.971E-03 | | 1.490E-02 | 2.341E-02 | 2.715E-03 | -0.084 |
| LU-177 | 1.668E+00 | + | 1.082E+00 | 1.337E+00 | 1.356E-01 | 1.248 |
| LU-177M | -6.572E-02 | | 9.473E-02 | 1.490E-01 | 1.393E-02 | -0.441 |
| HF-181 | -2.468E-03 | | 2.752E-02 | 4.525E-02 | 4.304E-03 | -0.055 |
| W-181 | 4.448E-02 | | 2.148E-01 | 3.111E-01 | 2.349E-02 | 0.143 |
| TA-182 | 3.798E-02 | | 1.286E-01 | 2.156E-01 | 1.763E-02 | 0.176 |
| RE-183 | 2.418E-02 | | 7.110E-02 | 1.160E-01 | 1.041E-02 | 0.208 |
| RE-184 | 4.622E-02 | | 1.421E-01 | 2.332E-01 | 2.643E-02 | 0.198 |
| OS-185 | 1.130E-02 | | 2.722E-02 | 4.583E-02 | 4.120E-03 | 0.246 |
| RE-188 | 1.366E-02 | | 9.859E-02 | 1.643E-01 | 1.445E-02 | 0.083 |
| W-188 | 9.014E-01 | | 4.958E+00 | 7.146E+00 | 8.476E-01 | 0.126 |
| IR-192 | -8.352E-03 | | 2.124E-02 | 3.254E-02 | 3.719E-03 | -0.257 |
| AU-195 | 1.151E-01 | | 1.257E-01 | 2.204E-01 | 1.940E-02 | 0.523 |
| TL-200 | 4.151E-04 | | 4.467E-04 | Half-Life too short | | |
| TL-201 | 2.104E+00 | | 6.176E+00 | 1.035E+01 | 9.423E-01 | 0.203 |
| TL-202 | 1.073E-02 | | 4.666E-02 | 7.911E-02 | 7.465E-03 | 0.136 |
| HG-203 | 1.205E-02 | | 2.663E-02 | 3.943E-02 | 4.806E-03 | 0.306 |
| BI-207 | -1.222E-02 | | 3.572E-02 | 5.606E-02 | 4.942E-03 | -0.218 |
| TL-207 | -1.398E-01 | | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| PO-209 | 1.325E+00 | | 4.299E+00 | 7.414E+00 | 7.012E-01 | 0.179 |
| BI-210 | 8.757E-01 | | 2.220E+00 | 3.550E+00 | 3.311E-01 | 0.247 |
| PB-210 | 8.757E-01 | | 2.220E+00 | 3.550E+00 | 3.311E-01 | 0.247 |
| PO-210 | 8.757E-01 | | 2.220E+00 | 3.550E+00 | 2.999E-01 | 0.247 |
| PB-211 | 2.463E-01 | | 5.570E-01 | 9.266E-01 | 5.816E-01 | 0.266 |
| PO-215 | -1.398E-01 | | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| RN-219 | -4.034E-02 | | 2.291E-01 | 3.787E-01 | 5.841E-02 | -0.107 |
| RN-220 | 3.044E+00 | | 1.493E+01 | 2.496E+01 | 2.358E+00 | 0.122 |
| RA-223 | -1.398E-01 | | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| AC-227 | 4.902E-02 | | 2.295E-01 | 3.736E-01 | 6.381E-02 | 0.131 |
| TH-227 | 4.902E-02 | | 2.295E-01 | 3.736E-01 | 7.306E-02 | 0.131 |
| TH-229 | -1.927E-01 | | 3.040E-01 | 4.703E-01 | 4.589E-02 | -0.410 |
| PA-231 | 3.654E-01 | | 8.621E-01 | 1.417E+00 | 2.450E-01 | 0.258 |
| TH-231 | -1.398E-01 | | 4.036E-01 | 6.195E-01 | 1.185E-01 | -0.226 |
| U-231 | -4.199E-01 | | 8.702E-01 | 1.287E+00 | 1.156E-01 | -0.326 |
| PA-233 | 2.172E-03 | | 3.792E-02 | 6.040E-02 | 7.060E-03 | 0.036 |
| PA-234 | -1.027E-01 | | 2.083E-01 | 3.282E-01 | 6.269E-02 | -0.313 |
| PA-234M | 1.078E+00 | | 2.819E+00 | 4.754E+00 | 4.950E-01 | 0.227 |
| U-235 | -5.322E-02 | | 1.224E-01 | 1.936E-01 | 3.384E-02 | -0.275 |
| NP-236 | 8.877E-03 | | 4.838E-02 | 8.062E-02 | 7.195E-03 | 0.110 |
| NP-237 | 8.830E-02 | | 1.320E-01 | 2.276E-01 | 5.166E-02 | 0.388 |
| NP-239 | -2.535E-02 | | 1.046E-01 | 1.735E-01 | 1.445E-02 | -0.146 |
| AM-241 | 7.925E-02 | | 9.298E-02 | 1.411E-01 | 1.107E-02 | 0.562 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -3.381E-03 | | 4.983E-02 | 8.382E-02 | 7.206E-03 | -0.040 |
| AM-246 | 3.403E-02 | | 8.333E-02 | 1.436E-01 | 1.253E-02 | 0.237 |
| CM-247 | -8.817E-03 | | 2.099E-02 | 3.405E-02 | 3.166E-03 | -0.259 |
| CF-249 | 9.864E-03 | | 2.343E-02 | 4.051E-02 | 3.800E-03 | 0.244 |
| CF-251 | -7.412E-03 | | 7.381E-02 | 1.206E-01 | 1.125E-02 | -0.061 |

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]G246328003             *
* Acquisition date   : 18-FEB-2010 11:06:25 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 02:00:01.52   Half life ratio : 8.000                *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID              *
* Sample ID          : G246328003      Analyst initials: MXR1                *
* Batch Number       : 950786          Sample Quantity : 1.7126E+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 | 1.635E+01 | 1.761E+00 | 1.441E-01 | 8.987E-01 |
| BA-137M | 3.221E-02 | 2.359E-02 | 1.644E-02 | 1.204E-02 |
| CS-137 | 3.405E-02 | 2.494E-02 | 1.738E-02 | 1.273E-02 |
| TL-208 | 2.382E-01 | 5.360E-02 | 1.800E-02 | 2.735E-02 |
| BI-211 | 1.768E+00 | 3.482E-01 | 9.862E-02 | 1.776E-01 |
| BI-212 | 5.061E-01 | 2.517E-01 | 1.252E-01 | 1.284E-01 |
| PB-212 | 6.498E-01 | 9.741E-02 | 2.785E-02 | 4.970E-02 |
| PO-212 | 6.498E-01 | 9.741E-02 | 2.785E-02 | 4.970E-02 |
| BI-214 | 4.793E-01 | 1.029E-01 | 3.947E-02 | 5.250E-02 |
| PB-214 | 6.151E-01 | 1.251E-01 | 3.438E-02 | 6.384E-02 |
| PO-214 | 6.151E-01 | 1.251E-01 | 3.438E-02 | 6.384E-02 |
| PO-216 | 6.498E-01 | 9.741E-02 | 2.785E-02 | 4.970E-02 |
| PO-218 | 6.151E-01 | 1.251E-01 | 3.438E-02 | 6.384E-02 |
| RA-224 | 2.244E+00 | 7.952E-01 | 3.169E-01 | 4.057E-01 |
| RA-226 | 4.793E-01 | 1.029E-01 | 3.947E-02 | 5.250E-02 |
| AC-228 | 6.431E-01 | 1.598E-01 | 5.531E-02 | 8.155E-02 |
| RA-228 | 6.431E-01 | 1.598E-01 | 5.531E-02 | 8.155E-02 |
| TH-228 | 6.609E-01 | 9.907E-02 | 2.832E-02 | 5.055E-02 |
| TH-230 | 4.793E-01 | 1.029E-01 | 3.946E-02 | 5.250E-02 |
| TH-232 | 6.431E-01 | 1.598E-01 | 5.531E-02 | 8.155E-02 |
| TH-234 | 1.699E+00 | 1.087E+00 | 6.254E-01 | 5.547E-01 |
| U-234 | 4.793E-01 | 1.029E-01 | 3.946E-02 | 5.250E-02 |
| U-238 | 1.699E+00 | 1.087E+00 | 6.254E-01 | 5.547E-01 |
| AM-243 | 1.707E-01 | 4.212E-02 | 2.704E-02 | 2.149E-02 |
| ANH-511 | 2.634E-02 | 4.291E-02 | 1.617E-02 | 2.189E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 2.009E-01 | 1.998E-01 | 1.906E-01 | 1.019E-01 NOT IDENT. |
| NA-22 | -4.046E-03 | 2.798E-02 | 2.317E-02 | 1.428E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-24 | -1.595E+06 | 3.455E+06 | 0.000E+00 | 1.763E+06 | SHORT HLIF |
| AL-26 | 1.950E-03 | 1.697E-02 | 1.473E-02 | 8.657E-03 | NOT IDENT. |
| TI-44 | 1.603E-01 | 3.088E-02 | 2.086E-02 | 1.576E-02 | FAIL ABUN |
| SC-46 | 2.634E-02 | 2.321E-02 | 2.261E-02 | 1.184E-02 | FAIL ABUN |
| V-48 | -5.040E-03 | 4.308E-02 | 3.693E-02 | 2.198E-02 | NOT IDENT. |
| CR-51 | 1.156E-01 | 2.399E-01 | 2.137E-01 | 1.224E-01 | NOT IDENT. |
| MN-52 | 1.856E-01 | 1.674E-01 | 1.647E-01 | 8.543E-02 | NOT IDENT. |
| MN-54 | 7.839E-03 | 2.286E-02 | 2.084E-02 | 1.166E-02 | NOT IDENT. |
| CO-56 | 3.106E-03 | 2.446E-02 | 2.188E-02 | 1.248E-02 | NOT IDENT. |
| CO-57 | -5.038E-03 | 1.475E-02 | 1.363E-02 | 7.524E-03 | NOT IDENT. |
| CO-58 | -2.555E-02 | 2.282E-02 | 1.778E-02 | 1.164E-02 | NOT IDENT. |
| FE-59 | -3.195E-02 | 6.060E-02 | 4.900E-02 | 3.092E-02 | NOT IDENT. |
| CO-60 | 1.059E-02 | 2.258E-02 | 2.024E-02 | 1.152E-02 | NOT IDENT. |
| ZN-65 | -6.306E-02 | 6.455E-02 | 4.588E-02 | 3.293E-02 | NOT IDENT. |
| GE-68 | 2.789E-01 | 7.047E-01 | 6.340E-01 | 3.596E-01 | NOT IDENT. |
| AS-73 | -7.742E-02 | 4.705E-01 | 4.194E-01 | 2.401E-01 | NOT IDENT. |
| AS-74 | 1.309E-02 | 5.980E-02 | 5.302E-02 | 3.051E-02 | NOT IDENT. |
| SE-75 | -1.239E-02 | 2.661E-02 | 2.136E-02 | 1.358E-02 | NOT IDENT. |
| BR-77 | 4.787E+00 | 9.957E+00 | 9.156E+00 | 5.080E+00 | FAIL ABUN |
| SR-82 | -8.050E-02 | 2.465E-01 | 2.005E-01 | 1.258E-01 | NOT IDENT. |
| RB-83 | 1.875E-02 | 3.900E-02 | 3.586E-02 | 1.990E-02 | NOT IDENT. |
| RB-84 | 3.859E-02 | 3.841E-02 | 3.738E-02 | 1.960E-02 | NOT IDENT. |
| KR-85 | 4.559E+00 | 4.611E+00 | 3.942E+00 | 2.352E+00 | NOT IDENT. |
| SR-85 | 2.383E-02 | 2.410E-02 | 2.061E-02 | 1.230E-02 | NOT IDENT. |
| RB-86 | 4.964E-01 | 4.720E-01 | 4.534E-01 | 2.408E-01 | NOT IDENT. |
| Y-88 | -5.444E-03 | 2.281E-02 | 1.829E-02 | 1.164E-02 | NOT IDENT. |
| ZR-88 | -2.812E-03 | 1.857E-02 | 1.669E-02 | 9.475E-03 | NOT IDENT. |
| Y-91 | -5.262E+00 | 1.241E+01 | 1.007E+01 | 6.332E+00 | NOT IDENT. |
| NB-94 | 1.276E-02 | 2.041E-02 | 1.844E-02 | 1.041E-02 | NOT IDENT. |
| NB-95 | -1.646E-02 | 2.526E-02 | 1.980E-02 | 1.289E-02 | NOT IDENT. |
| NB-95M | 6.676E-03 | 8.297E-02 | 6.605E-02 | 4.233E-02 | NOT IDENT. |
| ZR-95 | 3.048E-02 | 4.713E-02 | 4.235E-02 | 2.405E-02 | NOT IDENT. |
| NB-97 | 5.133E+03 | 3.762E+05 | 0.000E+00 | 1.920E+05 | SHORT HLIF |
| ZR-97 | 7.535E+06 | 7.541E+06 | 0.000E+00 | 3.847E+06 | SHORT HLIF |
| MO-99 | 6.608E+00 | 1.064E+01 | 9.609E+00 | 5.429E+00 | NOT IDENT. |
| TC-99M | 1.361E+18 | 3.390E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -7.732E-05 | 1.868E-02 | 1.657E-02 | 9.530E-03 | NOT IDENT. |
| RH-102 | -2.412E-02 | 1.685E-02 | 1.298E-02 | 8.597E-03 | NOT IDENT. |
| RU-103 | 1.381E-03 | 2.352E-02 | 2.097E-02 | 1.200E-02 | FAIL ABUN |
| RH-106 | 4.970E-02 | 1.728E-01 | 1.540E-01 | 8.818E-02 | FAIL ABUN |
| RU-106 | 4.970E-02 | 1.728E-01 | 1.540E-01 | 8.815E-02 | FAIL ABUN |
| AG-108M | -4.262E-03 | 1.850E-02 | 1.633E-02 | 9.441E-03 | NOT IDENT. |
| CD-109 | 1.768E-01 | 4.605E-01 | 4.305E-01 | 2.349E-01 | NOT IDENT. |
| AG-110M | 2.668E-03 | 2.143E-02 | 1.641E-02 | 1.093E-02 | NOT IDENT. |
| IN-111 | 4.774E-01 | 9.633E-01 | 7.928E-01 | 4.915E-01 | NOT IDENT. |
| IN-113M | 1.352E-02 | 2.696E-02 | 2.528E-02 | 1.376E-02 | NOT IDENT. |
| SN-113 | 1.352E-02 | 2.696E-02 | 2.528E-02 | 1.376E-02 | NOT IDENT. |
| IN-114M | 1.167E-01 | 1.155E-01 | 1.050E-01 | 5.893E-02 | NOT IDENT. |
| CD-115 | -4.702E+00 | 1.077E+01 | 9.094E+00 | 5.496E+00 | NOT IDENT. |
| SN-117M | 6.887E-03 | 3.459E-02 | 3.212E-02 | 1.765E-02 | NOT IDENT. |
| SB-122 | 3.206E-01 | 1.950E+00 | 1.731E+00 | 9.950E-01 | NOT IDENT. |
| I-123 | 2.564E+06 | 3.484E+07 | 0.000E+00 | 1.778E+07 | SHORT HLIF |
| TE-123M | 1.235E-03 | 1.678E-02 | 1.548E-02 | 8.562E-03 | NOT IDENT. |
| I-124 | -2.190E-01 | 5.741E-01 | 4.634E-01 | 2.929E-01 | NOT IDENT. |
| SB-124 | -5.157E-03 | 4.401E-02 | 3.655E-02 | 2.245E-02 | FAIL ABUN |
| SB-125 | 1.079E-02 | 5.317E-02 | 4.859E-02 | 2.713E-02 | FAIL ABUN |
| TE-125M | 3.934E+00 | 5.186E+00 | 5.064E+00 | 2.646E+00 | NOT IDENT. |
| I-126 | 5.912E-02 | 1.318E-01 | 1.049E-01 | 6.725E-02 | NOT IDENT. |
| SB-126 | 3.590E-02 | 9.519E-02 | 8.157E-02 | 4.856E-02 | FAIL ABUN |
| SN-126 | 6.495E-03 | 4.392E-02 | 4.252E-02 | 2.241E-02 | FAIL ABUN |
| SB-127 | 5.372E-01 | 1.158E+00 | 1.035E+00 | 5.909E-01 | NOT IDENT. |
| XE-127 | 3.107E-02 | 2.759E-02 | 2.618E-02 | 1.407E-02 | NOT IDENT. |
| I-131 | 1.224E-02 | 7.739E-02 | 7.153E-02 | 3.948E-02 | NOT IDENT. |
| TE-132 | 1.566E-01 | 5.817E-01 | 5.258E-01 | 2.968E-01 | NOT IDENT. |
| BA-133 | -5.251E-03 | 2.669E-02 | 2.066E-02 | 1.362E-02 | FAIL ABUN |
| I-133 | 3.702E+02 | 1.436E+04 | 0.000E+00 | 7.327E+03 | SHORT HLIF |
| CS-134 | 4.283E-02 | 3.201E-02 | 3.076E-02 | 1.633E-02 | NOT IDENT. |
| CS-135 | 1.291E-01 | 9.398E-02 | 8.154E-02 | 4.795E-02 | NOT IDENT. |
| I-135 | -1.913E+16 | 3.436E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.885E-02 | 6.960E-02 | 5.710E-02 | 3.551E-02 | NOT IDENT. |
| CE-139 | -1.566E-02 | 1.791E-02 | 1.565E-02 | 9.139E-03 | NOT IDENT. |
| BA-140 | -6.683E-02 | 1.755E-01 | 1.480E-01 | 8.954E-02 | NOT IDENT. |
| LA-140 | -4.634E-02 | 5.970E-02 | 4.286E-02 | 3.046E-02 | NOT IDENT. |
| CE-141 | 3.376E-02 | 3.575E-02 | 3.450E-02 | 1.824E-02 | NOT IDENT. |
| CE-143 | 5.509E+02 | 2.723E+02 | 0.000E+00 | 1.389E+02 | SHORT HLIF |
| CE-144 | 3.376E-02 | 1.150E-01 | 1.086E-01 | 5.868E-02 | NOT IDENT. |
| PM-144 | -4.351E-03 | 2.183E-02 | 1.813E-02 | 1.114E-02 | NOT IDENT. |
| PR-144 | -2.951E-01 | 1.481E+00 | 1.230E+00 | 7.555E-01 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | -1.487E-03 | 2.323E-02 | 2.068E-02 | 1.185E-02 | NOT IDENT. |
| ND-147 | -1.832E-02 | 3.544E-01 | 3.105E-01 | 1.808E-01 | NOT IDENT. |
| PM-149 | -3.128E+01 | 9.340E+01 | 7.922E+01 | 4.765E+01 | NOT IDENT. |
| EU-152 | 6.109E-03 | 6.057E-02 | 5.428E-02 | 3.090E-02 | NOT IDENT. |
| GD-153 | 1.957E-02 | 4.701E-02 | 4.138E-02 | 2.399E-02 | NOT IDENT. |
| EU-154 | -2.396E-02 | 7.893E-02 | 6.407E-02 | 4.027E-02 | NOT IDENT. |
| EU-155 | 5.262E-03 | 5.582E-02 | 5.328E-02 | 2.848E-02 | NOT IDENT. |
| TB-160 | -8.570E-03 | 8.107E-02 | 7.057E-02 | 4.136E-02 | FAIL ABUN |
| HO-166M | 7.961E-03 | 3.859E-02 | 3.355E-02 | 1.969E-02 | NOT IDENT. |
| TM-171 | 4.294E+00 | 1.660E+01 | 1.372E+01 | 8.471E+00 | NOT IDENT. |
| LU-176 | -1.971E-03 | 1.460E-02 | 1.250E-02 | 7.450E-03 | NOT IDENT. |
| LU-177 | 1.668E+00 | 1.060E+00 | 7.227E-01 | 5.409E-01 | FAIL ABUN |
| LU-177M | -6.572E-02 | 9.284E-02 | 7.883E-02 | 4.736E-02 | FAIL ABUN |
| HF-181 | -2.468E-03 | 2.697E-02 | 2.382E-02 | 1.376E-02 | NOT IDENT. |
| W-181 | 4.448E-02 | 2.105E-01 | 1.742E-01 | 1.074E-01 | NOT IDENT. |
| TA-182 | 3.798E-02 | 1.261E-01 | 1.100E-01 | 6.432E-02 | FAIL ABUN |
| RE-183 | 2.418E-02 | 6.968E-02 | 6.322E-02 | 3.555E-02 | FAIL ABUN |
| RE-184 | 4.622E-02 | 1.393E-01 | 1.254E-01 | 7.106E-02 | NOT IDENT. |
| OS-185 | 1.130E-02 | 2.667E-02 | 2.390E-02 | 1.361E-02 | NOT IDENT. |
| RE-188 | 1.366E-02 | 9.662E-02 | 8.964E-02 | 4.930E-02 | NOT IDENT. |
| W-188 | 9.014E-01 | 4.859E+00 | 3.824E+00 | 2.479E+00 | FAIL ABUN |
| IR-192 | -8.352E-03 | 2.081E-02 | 1.736E-02 | 1.062E-02 | FAIL ABUN |
| AU-195 | 1.151E-01 | 1.232E-01 | 1.219E-01 | 6.284E-02 | FAIL ABUN |
| TL-200 | 4.151E+02 | 8.755E+02 | 0.000E+00 | 4.467E+02 | SHORT HLIF |
| TL-201 | 2.104E+00 | 6.052E+00 | 5.635E+00 | 3.088E+00 | NOT IDENT. |
| TL-202 | 1.073E-02 | 4.573E-02 | 4.177E-02 | 2.333E-02 | NOT IDENT. |
| HG-203 | 1.205E-02 | 2.609E-02 | 2.113E-02 | 1.331E-02 | NOT IDENT. |
| BI-207 | -1.222E-02 | 3.500E-02 | 2.874E-02 | 1.786E-02 | FAIL ABUN |
| TL-207 | -1.398E-01 | 3.955E-01 | 3.303E-01 | 2.018E-01 | FAIL ABUN |
| PO-209 | 1.325E+00 | 4.213E+00 | 3.823E+00 | 2.149E+00 | NOT IDENT. |
| BI-210 | 8.757E-01 | 2.176E+00 | 2.007E+00 | 1.110E+00 | NOT IDENT. |
| PB-210 | 8.757E-01 | 2.176E+00 | 2.007E+00 | 1.110E+00 | NOT IDENT. |
| PO-210 | 8.757E-01 | 2.176E+00 | 2.007E+00 | 1.110E+00 | NOT IDENT. |
| PB-211 | 2.463E-01 | 5.459E-01 | 4.906E-01 | 2.785E-01 | NOT IDENT. |
| PO-215 | -1.398E-01 | 3.955E-01 | 3.303E-01 | 2.018E-01 | FAIL ABUN |
| RN-219 | -4.034E-02 | 2.245E-01 | 2.006E-01 | 1.145E-01 | FAIL ABUN |
| RN-220 | 3.044E+00 | 1.463E+01 | 1.308E+01 | 7.464E+00 | NOT IDENT. |
| RA-223 | -1.398E-01 | 3.955E-01 | 3.303E-01 | 2.018E-01 | FAIL ABUN |
| AC-227 | 4.902E-02 | 2.249E-01 | 2.007E-01 | 1.147E-01 | FAIL ABUN |
| TH-227 | 4.902E-02 | 2.249E-01 | 2.007E-01 | 1.148E-01 | FAIL ABUN |
| TH-229 | -1.927E-01 | 2.980E-01 | 2.549E-01 | 1.520E-01 | NOT IDENT. |
| PA-231 | 3.654E-01 | 8.449E-01 | 7.586E-01 | 4.311E-01 | FAIL ABUN |
| TH-231 | -1.398E-01 | 3.955E-01 | 3.303E-01 | 2.018E-01 | FAIL ABUN |
| U-231 | -4.199E-01 | 8.528E-01 | 7.126E-01 | 4.351E-01 | FAIL ABUN |
| PA-233 | 2.172E-03 | 3.717E-02 | 3.225E-02 | 1.896E-02 | FAIL ABUN |
| PA-234 | -1.027E-01 | 2.042E-01 | 1.689E-01 | 1.042E-01 | FAIL ABUN |
| PA-234M | 1.078E+00 | 2.763E+00 | 2.442E+00 | 1.410E+00 | NOT IDENT. |
| U-235 | -5.322E-02 | 1.200E-01 | 1.059E-01 | 6.122E-02 | FAIL ABUN |
| NP-236 | 8.877E-03 | 4.742E-02 | 4.395E-02 | 2.419E-02 | NOT IDENT. |
| NP-237 | 8.830E-02 | 1.294E-01 | 1.264E-01 | 6.602E-02 | NOT IDENT. |
| NP-239 | -2.535E-02 | 1.025E-01 | 9.549E-02 | 5.232E-02 | FAIL ABUN |
| AM-241 | 7.925E-02 | 9.112E-02 | 7.920E-02 | 4.649E-02 | NOT IDENT. |
| CM-243 | -3.381E-03 | 4.883E-02 | 4.630E-02 | 2.491E-02 | FAIL ABUN |
| AM-246 | 3.403E-02 | 8.166E-02 | 7.356E-02 | 4.166E-02 | NOT IDENT. |
| CM-247 | -8.817E-03 | 2.057E-02 | 1.803E-02 | 1.050E-02 | FAIL ABUN |
| CF-249 | 9.864E-03 | 2.297E-02 | 2.148E-02 | 1.172E-02 | NOT IDENT. |
| CF-251 | -7.412E-03 | 7.234E-02 | 6.556E-02 | 3.691E-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 | 171.6195 |
| 46.50 | 171.6195 |
| 46.50 | 171.6195 |
| 48.70 | 203.5722 |
| 49.72 | 166.2148 |
| 51.35 | 165.8356 |
| 52.39 | 151.9835 |
| 52.97 | 155.8372 |
| 53.15 | 155.9188 |
| 53.44 | 172.8550 |
| 54.07 | 180.3841 |
| 56.28 | 180.3041 |
| 56.28 | 180.3052 |
| 57.37 | 0.0000 |
| 57.53 | 190.6457 |
| 57.53 | 190.6466 |
| 57.60 | 190.6826 |
| 57.98 | 220.0607 |
| 57.98 | 220.0607 |
| 59.32 | 188.7307 |
| 59.32 | 188.7307 |
| 59.40 | 170.8707 |
| 59.54 | 175.8192 |
| 59.72 | 175.9040 |
| 60.01 | 180.9311 |
| 61.10 | 179.8220 |
| 61.14 | 179.8407 |
| 61.30 | 179.9165 |
| 63.00 | 215.6301 |
| 63.29 | 215.7923 |
| 63.29 | 215.7923 |
| 63.58 | 215.9539 |
| 64.28 | 240.6544 |
| 65.12 | 203.1779 |
| 65.20 | 203.2183 |
| 65.20 | 203.2183 |
| 66.05 | 216.9008 |
| 66.72 | 200.6795 |
| 66.83 | 200.7349 |
| 66.91 | 217.3685 |
| 67.20 | 232.4689 |
| 67.20 | 232.4689 |
| 67.75 | 249.4125 |
| 67.85 | 249.4751 |
| 68.90 | 247.6178 |
| 68.90 | 247.6178 |
| 69.30 | 252.8668 |
| 69.67 | 240.5654 |
| 70.82 | 218.6164 |
| 70.82 | 218.6164 |
| 70.83 | 218.6217 |
| 72.80 | 271.4041 |
| 72.87 | 271.4483 |
| 72.87 | 271.4483 |
| 74.67 | 255.2641 |
| 74.81 | 255.3455 |
| 74.81 | 255.3455 |
| 74.81 | 255.3455 |
| 74.81 | 255.3455 |
| 74.81 | 255.3455 |
| 74.81 | 255.3455 |
| 74.81 | 255.3455 |
| 74.97 | 255.4407 |
| 75.28 | 255.6235 |
| 75.70 | 255.8693 |
| 77.11 | 256.6926 |
| 77.11 | 256.6926 |

| | |
|--------|----------|
| 77.11 | 256.6926 |
| 77.11 | 256.6926 |
| 77.11 | 256.6926 |
| 77.11 | 256.6926 |
| 77.11 | 256.6926 |
| 78.38 | 246.7733 |
| 79.62 | 235.9171 |
| 79.80 | 236.0111 |
| 79.80 | 236.0111 |
| 80.11 | 232.3219 |
| 80.18 | 232.3578 |
| 80.30 | 232.4186 |
| 80.30 | 232.4186 |
| 80.57 | 241.5506 |
| 81.00 | 262.3555 |
| 81.07 | 262.3960 |
| 81.07 | 262.3960 |
| 81.07 | 262.3960 |
| 81.07 | 262.3960 |
| 82.60 | 255.5274 |
| 83.37 | 247.3326 |
| 83.78 | 251.0017 |
| 83.78 | 251.0017 |
| 83.78 | 251.0017 |
| 83.78 | 251.0017 |
| 84.21 | 269.3628 |
| 84.90 | 308.6653 |
| 85.43 | 264.8676 |
| 86.29 | 256.6769 |
| 86.50 | 273.2730 |
| 86.54 | 273.2954 |
| 86.59 | 273.3243 |
| 86.72 | 273.3980 |
| 86.79 | 273.4364 |
| 86.94 | 310.8628 |
| 87.30 | 306.7510 |
| 87.30 | 306.7510 |
| 87.30 | 306.7510 |
| 87.30 | 306.7510 |
| 87.30 | 306.7510 |
| 87.30 | 306.7510 |
| 87.57 | 298.2286 |
| 87.88 | 282.9340 |
| 88.03 | 285.1104 |
| 88.36 | 250.8179 |
| 88.47 | 295.3008 |
| 89.95 | 340.7581 |
| 91.11 | 266.6807 |
| 92.29 | 282.6786 |
| 92.38 | 282.7294 |
| 92.38 | 282.7294 |
| 93.35 | 283.2764 |
| 94.00 | 204.8045 |
| 94.67 | 213.0113 |
| 94.67 | 213.0137 |
| 94.90 | 201.1966 |
| 94.90 | 201.1966 |
| 94.90 | 201.1966 |
| 94.90 | 201.1966 |
| 95.87 | 229.4291 |
| 95.87 | 229.4291 |
| 96.73 | 247.0852 |
| 97.43 | 203.5218 |
| 98.44 | 195.4754 |
| 98.44 | 195.4765 |
| 98.88 | 192.9731 |
| 99.55 | 186.0965 |
| 99.55 | 186.0965 |
| 99.86 | 180.8609 |
| 100.00 | 190.7113 |
| 100.10 | 190.7494 |
| 103.18 | 184.6800 |
| 103.76 | 177.6993 |
| 105.00 | 167.3109 |
| 105.31 | 184.5071 |
| 108.00 | 179.9824 |
| 109.28 | 189.4615 |

| | |
|--------|----------|
| 111.00 | 201.8605 |
| 111.00 | 201.8605 |
| 111.76 | 191.2044 |
| 112.95 | 184.3036 |
| 115.19 | 186.8516 |
| 116.30 | 184.4545 |
| 117.00 | 192.9443 |
| 117.00 | 192.9443 |
| 117.66 | 207.8771 |
| 121.11 | 208.1577 |
| 121.62 | 198.1488 |
| 121.78 | 204.6842 |
| 122.06 | 217.7522 |
| 122.32 | 223.4075 |
| 122.32 | 223.4075 |
| 122.32 | 223.4075 |
| 122.32 | 223.4075 |
| 123.07 | 222.7551 |
| 127.23 | 228.0016 |
| 129.76 | 187.6404 |
| 131.20 | 202.1727 |
| 133.02 | 207.4630 |
| 133.54 | 192.5283 |
| 135.34 | 202.5276 |
| 136.00 | 203.6818 |
| 136.25 | 217.0263 |
| 136.48 | 217.1032 |
| 140.51 | 179.3214 |
| 140.51 | 0.0000 |
| 142.18 | 220.8839 |
| 142.65 | 203.8152 |
| 143.76 | 186.8968 |
| 144.24 | 175.5183 |
| 144.24 | 175.5183 |
| 144.24 | 175.5183 |
| 144.24 | 175.5183 |
| 145.22 | 171.9295 |
| 145.44 | 171.9841 |
| 147.16 | 212.8685 |
| 152.43 | 185.3635 |
| 152.70 | 181.5500 |
| 153.22 | 167.1096 |
| 154.21 | 169.2864 |
| 154.21 | 169.2864 |
| 154.21 | 169.2864 |
| 154.21 | 169.2864 |
| 155.03 | 184.0916 |
| 156.02 | 193.1237 |
| 158.56 | 188.9085 |
| 159.00 | 0.0000 |
| 159.00 | 197.8348 |
| 160.31 | 203.0960 |
| 161.27 | 230.8691 |
| 162.32 | 190.8602 |
| 162.64 | 185.0357 |
| 163.35 | 200.9764 |
| 163.89 | 209.0088 |
| 165.85 | 219.4413 |
| 167.43 | 176.3160 |
| 171.28 | 187.1604 |
| 171.86 | 181.3242 |
| 172.10 | 181.3798 |
| 176.55 | 179.4097 |
| 176.60 | 179.4225 |
| 181.06 | 198.0711 |
| 184.41 | 197.3764 |
| 185.71 | 206.8140 |
| 186.00 | 206.8887 |
| 190.27 | 167.5925 |
| 192.34 | 189.0612 |
| 193.63 | 173.9982 |
| 197.04 | 163.3946 |
| 198.01 | 152.2637 |
| 198.60 | 177.0758 |
| 200.40 | 160.9401 |
| 201.83 | 167.4069 |
| 202.84 | 144.8407 |
| 205.31 | 147.8432 |

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|--------|----------|
| 208.36 | 156.1615 |
| 208.81 | 139.5752 |
| 209.75 | 139.7224 |
| 209.75 | 139.7224 |
| 210.97 | 129.9940 |
| 215.65 | 149.0347 |
| 216.55 | 153.3844 |
| 218.09 | 145.2240 |
| 222.10 | 150.0820 |
| 223.80 | 158.8257 |
| 226.40 | 141.2151 |
| 227.00 | 128.5551 |
| 227.08 | 136.0039 |
| 227.20 | 136.0208 |
| 228.16 | 139.3501 |
| 228.18 | 139.3528 |
| 228.18 | 139.3528 |
| 231.56 | 0.0000 |
| 235.69 | 170.4627 |
| 236.00 | 165.6918 |
| 236.00 | 165.6918 |
| 238.63 | 139.7926 |
| 238.63 | 139.7926 |
| 238.63 | 139.7926 |
| 238.63 | 139.7926 |
| 239.00 | 139.8441 |
| 240.98 | 140.1258 |
| 241.98 | 140.2673 |
| 241.98 | 140.2673 |
| 241.98 | 140.2673 |
| 244.69 | 100.6176 |
| 245.39 | 100.6885 |
| 247.94 | 113.9679 |
| 248.90 | 143.4095 |
| 249.79 | 120.7005 |
| 252.40 | 124.2805 |
| 252.85 | 125.4256 |
| 252.85 | 125.4256 |
| 254.15 | 0.0000 |
| 256.20 | 124.7391 |
| 256.20 | 124.7391 |
| 260.50 | 120.8608 |
| 260.90 | 113.2116 |
| 262.80 | 89.1920 |
| 264.65 | 120.4528 |
| 268.24 | 86.3281 |
| 268.79 | 89.6946 |
| 269.46 | 100.8309 |
| 269.46 | 100.8309 |
| 269.46 | 100.8309 |
| 269.46 | 100.8309 |
| 271.23 | 99.8859 |
| 273.65 | 90.0983 |
| 276.40 | 104.8225 |
| 277.35 | 104.9124 |
| 277.60 | 102.1463 |
| 277.60 | 102.1463 |
| 278.00 | 98.8333 |
| 278.60 | 102.2394 |
| 279.20 | 102.2934 |
| 279.53 | 120.7771 |
| 280.46 | 112.4839 |
| 281.68 | 112.6065 |
| 283.67 | 93.1656 |
| 284.30 | 98.8335 |
| 285.00 | 111.2562 |
| 285.90 | 110.2221 |
| 286.10 | 113.6147 |
| 286.10 | 113.6147 |
| 287.40 | 110.3676 |
| 288.45 | 0.0000 |
| 290.67 | 108.4277 |
| 290.80 | 108.4395 |
| 291.72 | 115.3103 |
| 293.26 | 0.0000 |
| 293.70 | 107.0162 |
| 295.21 | 115.6610 |
| 295.21 | 115.6610 |

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| 295.21 | 115.6610 |
| 295.96 | 98.7175 |
| 296.50 | 98.7635 |
| 297.23 | 98.8255 |
| 298.57 | 98.9388 |
| 299.80 | 109.2891 |
| 299.80 | 109.2891 |
| 300.09 | 112.7325 |
| 300.09 | 112.7325 |
| 300.09 | 112.7325 |
| 300.09 | 112.7325 |
| 300.12 | 112.7366 |
| 301.29 | 102.5903 |
| 302.84 | 102.7258 |
| 303.76 | 99.3795 |
| 303.91 | 114.8148 |
| 304.40 | 111.0902 |
| 304.40 | 111.0902 |
| 304.84 | 116.6198 |
| 306.84 | 104.2190 |
| 308.46 | 103.2147 |
| 311.98 | 95.4672 |
| 316.51 | 103.9069 |
| 318.01 | 100.5672 |
| 319.02 | 105.2780 |
| 319.41 | 101.8395 |
| 320.08 | 99.5792 |
| 323.87 | 108.0175 |
| 323.87 | 108.0175 |
| 323.87 | 108.0175 |
| 323.87 | 108.0175 |
| 325.23 | 134.8802 |
| 328.77 | 101.4469 |
| 333.44 | 109.5504 |
| 334.20 | 103.9939 |
| 334.20 | 103.9939 |
| 334.30 | 104.0029 |
| 338.28 | 112.7871 |
| 338.28 | 112.7871 |
| 338.28 | 112.7871 |
| 338.28 | 112.7871 |
| 338.32 | 112.7910 |
| 338.32 | 112.7910 |
| 338.32 | 112.7910 |
| 340.50 | 115.8070 |
| 340.57 | 115.8130 |
| 344.27 | 109.2656 |
| 345.85 | 103.5242 |
| 350.59 | 0.0000 |
| 351.07 | 86.3181 |
| 351.92 | 86.3743 |
| 351.92 | 86.3743 |
| 351.92 | 86.3743 |
| 355.39 | 0.0000 |
| 356.01 | 82.8900 |
| 364.48 | 86.2910 |
| 366.43 | 96.3173 |
| 367.43 | 92.7842 |
| 367.94 | 0.0000 |
| 369.80 | 85.7270 |
| 374.96 | 84.2373 |
| 383.85 | 74.7479 |
| 387.95 | 81.3651 |
| 388.63 | 91.4642 |
| 391.69 | 86.1614 |
| 391.69 | 86.1614 |
| 392.90 | 93.5737 |
| 398.62 | 67.2356 |
| 400.65 | 91.3094 |
| 401.10 | 89.4929 |
| 401.81 | 78.4592 |
| 402.60 | 84.9669 |
| 404.84 | 75.8465 |
| 410.95 | 66.8738 |
| 411.60 | 76.1943 |
| 413.65 | 76.2994 |
| 414.70 | 86.5957 |
| 415.30 | 77.3148 |

| | |
|--------|---------|
| 415.76 | 75.4753 |
| 417.63 | 0.0000 |
| 418.52 | 65.3452 |
| 423.70 | 94.6074 |
| 427.08 | 74.1638 |
| 427.89 | 74.2035 |
| 432.53 | 67.8329 |
| 433.93 | 74.4940 |
| 439.47 | 77.5995 |
| 439.56 | 75.7104 |
| 439.89 | 70.9934 |
| 443.98 | 74.0260 |
| 444.90 | 72.1696 |
| 445.03 | 72.1766 |
| 445.03 | 72.1766 |
| 445.03 | 72.1766 |
| 453.90 | 62.0741 |
| 463.38 | 50.7198 |
| 468.07 | 65.5077 |
| 473.00 | 69.5687 |
| 475.06 | 83.1996 |
| 475.35 | 78.3761 |
| 476.78 | 65.8532 |
| 477.59 | 62.0098 |
| 477.96 | 58.1470 |
| 482.03 | 76.7458 |
| 484.57 | 66.1593 |
| 487.03 | 65.2814 |
| 490.36 | 0.0000 |
| 492.35 | 43.0057 |
| 497.08 | 59.7863 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 80.0174 |
| 511.00 | 80.0248 |
| 511.85 | 80.0625 |
| 511.85 | 80.0625 |
| 513.99 | 61.7525 |
| 513.99 | 61.7525 |
| 520.41 | 51.6461 |
| 520.65 | 51.6541 |
| 527.90 | 60.8380 |
| 528.96 | 0.0000 |
| 529.64 | 57.9026 |
| 529.87 | 0.0000 |
| 531.02 | 56.9478 |
| 537.32 | 70.1773 |
| 543.00 | 53.2976 |
| 546.56 | 0.0000 |
| 549.76 | 52.4840 |
| 552.65 | 50.5432 |
| 555.20 | 76.9301 |
| 563.23 | 68.1082 |
| 563.90 | 59.9957 |
| 568.70 | 72.3802 |
| 569.32 | 62.2063 |
| 569.50 | 62.2119 |
| 569.67 | 60.1776 |
| 573.80 | 74.6174 |
| 574.00 | 74.6241 |
| 574.64 | 73.6260 |
| 578.91 | 54.1116 |
| 579.30 | 0.0000 |
| 583.14 | 57.5159 |
| 585.48 | 52.6484 |
| 591.81 | 58.8021 |
| 592.07 | 58.8091 |
| 593.00 | 67.0947 |
| 595.88 | 59.9559 |
| 600.56 | 68.3868 |
| 602.52 | 0.0000 |
| 602.71 | 72.3120 |
| 602.71 | 72.3120 |
| 603.60 | 74.7158 |
| 604.41 | 68.1024 |
| 604.70 | 79.7414 |
| 609.31 | 78.0487 |

| | |
|--------|---------|
| 609.31 | 78.0487 |
| 609.31 | 78.0487 |
| 609.31 | 78.0487 |
| 610.33 | 56.6396 |
| 612.46 | 60.0346 |
| 614.37 | 56.7524 |
| 618.01 | 48.0748 |
| 621.84 | 42.9294 |
| 621.84 | 42.9294 |
| 631.29 | 56.7999 |
| 633.02 | 54.7422 |
| 633.10 | 46.3217 |
| 634.78 | 42.1448 |
| 635.90 | 41.1126 |
| 636.97 | 51.6812 |
| 645.85 | 46.6023 |
| 646.12 | 51.9055 |
| 656.30 | 44.2762 |
| 657.75 | 42.6025 |
| 657.90 | 0.0000 |
| 661.65 | 44.8134 |
| 661.65 | 44.8134 |
| 664.57 | 0.0000 |
| 666.33 | 47.9035 |
| 666.33 | 47.9035 |
| 675.00 | 53.6758 |
| 677.61 | 62.3383 |
| 685.20 | 48.5321 |
| 692.80 | 50.8612 |
| 695.00 | 55.2443 |
| 696.49 | 57.4479 |
| 696.49 | 57.4479 |
| 697.00 | 61.7975 |
| 697.49 | 56.3894 |
| 698.33 | 66.1733 |
| 698.50 | 65.0940 |
| 699.00 | 64.0235 |
| 702.63 | 49.9966 |
| 706.10 | 77.2857 |
| 706.58 | 0.0000 |
| 706.67 | 68.5948 |
| 709.31 | 52.3228 |
| 711.68 | 55.6505 |
| 713.82 | 63.3472 |
| 717.42 | 60.1646 |
| 720.50 | 43.8147 |
| 721.93 | 0.0000 |
| 722.20 | 50.8619 |
| 722.78 | 52.6289 |
| 722.78 | 52.6289 |
| 722.89 | 52.6318 |
| 722.95 | 52.6333 |
| 723.30 | 52.6406 |
| 724.18 | 64.9487 |
| 727.18 | 38.4479 |
| 733.00 | 39.6453 |
| 735.90 | 45.2066 |
| 739.58 | 37.5465 |
| 742.81 | 44.2334 |
| 744.21 | 40.9396 |
| 747.13 | 35.4502 |
| 751.79 | 49.9493 |
| 752.31 | 51.0706 |
| 753.82 | 48.8810 |
| 755.35 | 45.5770 |
| 756.15 | 48.9280 |
| 756.87 | 48.9427 |
| 763.93 | 49.0851 |
| 765.79 | 56.9377 |
| 766.42 | 49.1361 |
| 766.84 | 45.7934 |
| 776.49 | 51.5801 |
| 778.00 | 47.1244 |
| 778.57 | 47.1346 |
| 778.89 | 47.1411 |
| 783.80 | 34.8636 |
| 785.46 | 45.9162 |
| 792.07 | 66.7987 |

| | |
|---------|---------|
| 795.84 | 46.1067 |
| 796.30 | 43.4027 |
| 798.80 | 85.9847 |
| 801.93 | 57.9984 |
| 805.60 | 50.8225 |
| 810.29 | 51.8260 |
| 810.76 | 52.7452 |
| 815.85 | 38.2707 |
| 817.79 | 48.3302 |
| 818.51 | 43.7824 |
| 819.60 | 43.8012 |
| 826.30 | 37.5106 |
| 828.27 | 0.0000 |
| 831.60 | 55.0063 |
| 831.96 | 54.0968 |
| 834.83 | 49.5664 |
| 836.80 | 0.0000 |
| 846.75 | 46.1035 |
| 848.13 | 35.9798 |
| 856.28 | 0.0000 |
| 856.80 | 55.5337 |
| 860.37 | 48.1939 |
| 867.32 | 33.4512 |
| 867.82 | 39.9629 |
| 871.10 | 43.7332 |
| 873.19 | 37.2480 |
| 874.81 | 32.6117 |
| 875.33 | 0.0000 |
| 876.40 | 41.9535 |
| 879.36 | 39.1997 |
| 880.27 | 37.3457 |
| 880.51 | 30.8126 |
| 881.50 | 24.2855 |
| 883.24 | 41.1243 |
| 884.67 | 44.8863 |
| 889.25 | 29.0375 |
| 896.60 | 34.7498 |
| 898.02 | 39.4663 |
| 899.00 | 44.1807 |
| 903.28 | 38.5997 |
| 911.07 | 28.3220 |
| 911.07 | 28.3220 |
| 911.07 | 28.3220 |
| 919.63 | 31.2493 |
| 920.93 | 32.2112 |
| 925.00 | 51.2314 |
| 925.24 | 47.4402 |
| 926.50 | 43.6652 |
| 935.52 | 45.7066 |
| 937.48 | 61.9373 |
| 944.10 | 45.8438 |
| 946.00 | 56.3856 |
| 949.00 | 37.3109 |
| 962.29 | 52.8569 |
| 964.01 | 41.6692 |
| 966.15 | 44.9076 |
| 968.20 | 70.6174 |
| 969.11 | 52.9805 |
| 969.11 | 52.9805 |
| 969.11 | 52.9805 |
| 977.42 | 33.8088 |
| 980.50 | 29.0090 |
| 983.50 | 34.8460 |
| 989.30 | 42.6723 |
| 996.32 | 50.5477 |
| 1001.03 | 33.1019 |
| 1001.68 | 35.0569 |
| 1004.76 | 42.8903 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 39.3730 |
| 1036.00 | 37.4192 |
| 1037.82 | 41.3807 |
| 1038.57 | 44.3474 |
| 1038.76 | 0.0000 |
| 1045.16 | 33.5783 |
| 1046.59 | 35.5693 |
| 1048.07 | 39.5391 |

| | |
|---------|---------|
| 1050.47 | 32.6455 |
| 1050.47 | 32.6455 |
| 1062.04 | 51.6293 |
| 1063.62 | 47.6813 |
| 1076.63 | 23.9367 |
| 1077.35 | 29.9282 |
| 1078.86 | 30.9395 |
| 1085.78 | 33.0064 |
| 1099.22 | 49.2105 |
| 1112.02 | 48.3938 |
| 1112.84 | 49.4163 |
| 1115.52 | 63.0798 |
| 1120.29 | 65.6982 |
| 1120.29 | 65.6982 |
| 1120.29 | 65.6982 |
| 1120.29 | 65.6982 |
| 1120.51 | 64.0168 |
| 1121.28 | 65.7173 |
| 1124.00 | 0.0000 |
| 1129.67 | 49.5525 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 39.9750 |
| 1173.22 | 40.0359 |
| 1175.09 | 46.2217 |
| 1177.93 | 47.2870 |
| 1189.05 | 52.5938 |
| 1204.90 | 53.8662 |
| 1205.75 | 0.0000 |
| 1213.00 | 43.6078 |
| 1221.42 | 46.8325 |
| 1230.97 | 76.1724 |
| 1235.34 | 64.7730 |
| 1236.41 | 0.0000 |
| 1238.25 | 56.4601 |
| 1246.25 | 40.8681 |
| 1260.41 | 0.0000 |
| 1271.85 | 40.0967 |
| 1274.45 | 40.1264 |
| 1274.54 | 38.0145 |
| 1291.56 | 25.4590 |
| 1298.22 | 0.0000 |
| 1312.09 | 24.5307 |
| 1325.50 | 24.6172 |
| 1325.50 | 24.6172 |
| 1332.49 | 19.2999 |
| 1333.61 | 22.5237 |
| 1360.21 | 17.2781 |
| 1362.66 | 0.0000 |
| 1365.15 | 19.4625 |
| 1368.21 | 23.8058 |
| 1368.53 | 0.0000 |
| 1376.25 | 27.1069 |
| 1384.27 | 14.4863 |
| 1394.10 | 10.8916 |
| 1395.20 | 13.0734 |
| 1407.95 | 15.3009 |
| 1434.06 | 9.8996 |
| 1436.60 | 19.2611 |
| 1457.56 | 0.0000 |
| 1460.81 | 12.9159 |
| 1489.15 | 11.1455 |
| 1509.49 | 8.3990 |
| 1596.49 | 21.8073 |
| 1620.62 | 11.4839 |
| 1678.03 | 0.0000 |
| 1691.02 | 10.6876 |
| 1691.02 | 10.6876 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 1.9731 |
| 1764.49 | 1.9731 |
| 1764.49 | 1.9731 |
| 1764.49 | 1.9731 |
| 1770.23 | 51.3589 |
| 1771.40 | 18.7704 |
| 1791.20 | 0.0000 |
| 1808.65 | 7.9629 |

1836.01

13.0101

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328003

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 5.0307E+00 | ug/g |
| Total Uranium Counting Unc. | 3.2350E+00 | ug/g |
| Total Uranium Tpu | 1.6505E-06 | ug/g |
| Total Uranium Mda | 1.8612E+00 | ug/g |

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*  BATCH ID      : 950786                SAMPLE ID   : G246328003                *
*  ANALYST       : MXR1                  DETECTOR    : GAM16                  *
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*  ANALYSIS DATE: 18-FEB-2010 11:06:25.94  SAMPLE ALQT: 171.260 GRAM          *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 4.204E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 7.818E-01
GROSS GAMMA MDA (pCi/GRAM ) : 1.586E+00
GROSS GAMMA DLC (pCi/GRAM ) : 7.600E-01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:09:38.95

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328004.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:08:24
Sample ID          : G246328004          Sample quantity  : 1.60610E+02 GRAM
Detector name      : GAM12              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             Detector SN#      :
Matrix Spike ID    :                    LCS ID            : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 63.02* | 56 | 364 | 0.86 | 125.53 | 122 | 8 | 7.80E-03 | 62.3 | |
| 2 | 2 | 74.57* | 200 | 312 | 1.05 | 148.63 | 144 | 14 | 2.78E-02 | 16.0 | 1.39E+00 |
| 3 | 2 | 76.93 | 332 | 260 | 0.89 | 153.36 | 144 | 14 | 4.62E-02 | 9.1 | |
| 4 | 0 | 86.41 | 69 | 356 | 0.99 | 172.32 | 171 | 7 | 9.61E-03 | 46.5 | |
| 5 | 3 | 89.86 | 128 | 204 | 1.09 | 179.22 | 177 | 17 | 1.78E-02 | 18.7 | 9.88E-01 |
| 6 | 3 | 92.54* | 257 | 275 | 1.25 | 184.59 | 177 | 17 | 3.57E-02 | 13.4 | |
| 7 | 0 | 128.61 | 62 | 298 | 1.49 | 256.78 | 252 | 9 | 8.58E-03 | 52.0 | |
| 8 | 0 | 185.79* | 65 | 299 | 1.17 | 371.19 | 366 | 10 | 8.97E-03 | 54.8 | |
| 9 | 0 | 208.99 | 96 | 226 | 1.06 | 417.60 | 413 | 10 | 1.34E-02 | 30.9 | |
| 10 | 4 | 238.42* | 743 | 143 | 1.06 | 476.49 | 473 | 17 | 1.03E-01 | 4.5 | 9.80E-01 |
| 11 | 4 | 241.23 | 231 | 192 | 1.71 | 482.11 | 473 | 17 | 3.21E-02 | 15.9 | |
| 12 | 0 | 294.83* | 250 | 120 | 1.32 | 589.37 | 585 | 9 | 3.47E-02 | 10.3 | |
| 13 | 0 | 338.18* | 152 | 150 | 1.50 | 676.09 | 671 | 12 | 2.11E-02 | 17.5 | |
| 14 | 0 | 351.72* | 424 | 154 | 1.36 | 703.18 | 697 | 14 | 5.89E-02 | 8.1 | |
| 15 | 0 | 462.45 | 45 | 68 | 1.08 | 924.73 | 920 | 11 | 6.26E-03 | 38.0 | |
| 16 | 0 | 510.78* | 109 | 125 | 2.02 | 1021.42 | 1012 | 20 | 1.51E-02 | 30.6 | |
| 17 | 0 | 583.08* | 246 | 70 | 1.33 | 1166.06 | 1160 | 14 | 3.42E-02 | 9.9 | |
| 18 | 0 | 608.84* | 284 | 93 | 1.43 | 1217.60 | 1210 | 16 | 3.94E-02 | 9.8 | |
| 19 | 0 | 727.43 | 65 | 70 | 1.68 | 1454.84 | 1448 | 15 | 9.07E-03 | 30.7 | |
| 20 | 0 | 794.47* | 25 | 51 | 1.46 | 1588.94 | 1581 | 12 | 3.44E-03 | 62.8 | |
| 21 | 0 | 910.67* | 135 | 56 | 1.88 | 1821.36 | 1815 | 11 | 1.87E-02 | 13.6 | |
| 22 | 0 | 968.93* | 46 | 66 | 1.56 | 1937.91 | 1931 | 12 | 6.35E-03 | 39.1 | |
| 23 | 0 | 1120.67* | 17 | 56 | 1.76 | 2241.40 | 2239 | 8 | 2.41E-03 | 88.0 | |
| 24 | 0 | 1460.00* | 904 | 16 | 1.94 | 2920.02 | 2912 | 16 | 1.25E-01 | 3.5 | |
| 25 | 0 | 1763.49* | 45 | 18 | 2.03 | 3526.86 | 3519 | 17 | 6.25E-03 | 27.1 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 13:09:43

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328004.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 11:08:24
Sample ID        : G246328004             Sample quantity  : 160.61 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA12                Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.21    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 | * | 1.740E+01 | 1.743E+00 | 3.987E-01 | 2.843E-02 | 43.628 |
| SN-126 | + | 64.28 | | 4.312E-01 | 5.404E-01 | 5.458E-01 | 7.665E-02 | 0.790 |
| | + | 86.94 | | 3.248E-01 | 3.301E-01 | 4.052E-01 | 1.668E-01 | 0.801 |
| | + | 87.57 | * | 7.812E-02 | 7.284E-02 | 9.682E-02 | 7.379E-03 | 0.807 |
| TL-208 | | 277.35 | | 2.684E-01 | 2.574E-01 | 4.524E-01 | 4.738E-02 | 0.593 |
| | + | 510.84 | | 4.223E-01 | 2.617E-01 | 1.456E-01 | 1.503E-02 | 2.900 |
| | + | 583.14 | * | 2.727E-01 | 5.736E-02 | 3.640E-02 | 2.604E-03 | 7.491 |
| | | 860.37 | | 3.472E-01 | 2.218E-01 | 4.093E-01 | 3.577E-02 | 0.848 |
| BI-211 | | 72.87 | | 2.233E+00 | 2.294E+00 | 3.620E+00 | 2.429E-01 | 0.617 |
| | + | 351.07 | * | 2.036E+00 | 3.526E-01 | 1.923E-01 | 1.209E-02 | 10.589 |
| PB-212 | + | 74.81 | | 9.551E-01 | 3.253E-01 | 3.798E-01 | 4.390E-02 | 2.514 |
| | + | 77.11 | | 8.974E-01 | 1.748E-01 | 2.156E-01 | 1.492E-02 | 4.163 |
| | + | 87.30 | | 3.613E-01 | 3.388E-01 | 4.491E-01 | 5.640E-02 | 0.805 |
| | + | 238.63 | * | 7.764E-01 | 8.938E-02 | 6.658E-02 | 4.728E-03 | 11.661 |
| | | 300.09 | | 5.600E-01 | 5.702E-01 | 9.379E-01 | 7.657E-02 | 0.597 |
| PO-212 | + | 74.81 | | 9.551E-01 | 3.253E-01 | 3.798E-01 | 4.390E-02 | 2.514 |
| | + | 77.11 | | 8.974E-01 | 1.748E-01 | 2.156E-01 | 1.492E-02 | 4.163 |
| | + | 87.30 | | 3.613E-01 | 3.388E-01 | 4.491E-01 | 5.640E-02 | 0.805 |
| | | 115.19 | | -1.373E+00 | 2.476E+00 | 3.956E+00 | 2.509E-01 | -0.347 |
| | + | 238.63 | * | 7.764E-01 | 8.938E-02 | 6.658E-02 | 4.728E-03 | 11.661 |
| | | 300.09 | | 5.600E-01 | 5.702E-01 | 9.379E-01 | 7.657E-02 | 0.597 |
| BI-214 | + | 609.31 | * | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| | + | 1120.29 | | 1.886E-01 | 3.323E-01 | 3.167E-01 | 2.877E-02 | 0.595 |
| | + | 1764.49 | | 6.717E-01 | 3.658E-01 | 1.564E-01 | 9.269E-03 | 4.294 |
| PB-214 | + | 74.81 | | 1.646E+00 | 5.526E-01 | 6.545E-01 | 6.582E-02 | 2.514 |
| | + | 77.11 | | 1.538E+00 | 3.217E-01 | 3.695E-01 | 3.804E-02 | 4.163 |
| | + | 87.30 | | 6.189E-01 | 5.791E-01 | 7.693E-01 | 8.328E-02 | 0.805 |
| | + | 241.98 | | 1.448E+00 | 4.750E-01 | 4.010E-01 | 3.156E-02 | 3.611 |
| | + | 295.21 | | 7.060E-01 | 1.578E-01 | 1.536E-01 | 1.296E-02 | 4.597 |
| | + | 351.92 | * | 7.083E-01 | 1.281E-01 | 6.704E-02 | 5.476E-03 | 10.566 |
| PO-214 | + | 74.81 | | 1.646E+00 | 5.526E-01 | 6.545E-01 | 6.582E-02 | 2.514 |
| | + | 77.11 | | 1.538E+00 | 3.217E-01 | 3.695E-01 | 3.804E-02 | 4.163 |
| | + | 87.30 | | 6.189E-01 | 5.791E-01 | 7.693E-01 | 8.328E-02 | 0.805 |
| | + | 241.98 | | 1.448E+00 | 4.750E-01 | 4.010E-01 | 3.156E-02 | 3.611 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | + | 295.21 | | 7.060E-01 | 1.578E-01 | 1.536E-01 | 1.296E-02 | 4.597 |
| | + | 351.92 | * | 7.083E-01 | 1.281E-01 | 6.704E-02 | 5.476E-03 | 10.566 |
| | + | 74.81 | | 9.551E-01 | 3.253E-01 | 3.798E-01 | 4.390E-02 | 2.514 |
| | + | 77.11 | | 8.974E-01 | 1.748E-01 | 2.156E-01 | 1.492E-02 | 4.163 |
| | + | 87.30 | | 3.613E-01 | 3.388E-01 | 4.491E-01 | 5.640E-02 | 0.805 |
| PO-218 | + | 238.63 | * | 7.764E-01 | 8.938E-02 | 6.658E-02 | 4.728E-03 | 11.661 |
| | | 300.09 | | 5.600E-01 | 5.702E-01 | 9.379E-01 | 7.657E-02 | 0.597 |
| | + | 74.81 | | 1.646E+00 | 5.526E-01 | 6.545E-01 | 6.582E-02 | 2.514 |
| | + | 77.11 | | 1.538E+00 | 3.217E-01 | 3.695E-01 | 3.804E-02 | 4.163 |
| | + | 87.30 | | 6.189E-01 | 5.791E-01 | 7.693E-01 | 8.328E-02 | 0.805 |
| RA-224 | + | 241.98 | | 1.448E+00 | 4.750E-01 | 4.010E-01 | 3.156E-02 | 3.611 |
| | + | 295.21 | | 7.060E-01 | 1.578E-01 | 1.536E-01 | 1.296E-02 | 4.597 |
| | + | 351.92 | * | 7.083E-01 | 1.281E-01 | 6.704E-02 | 5.476E-03 | 10.566 |
| | + | 240.98 | * | 2.746E+00 | 8.874E-01 | 7.578E-01 | 4.180E-02 | 3.623 |
| | + | 609.31 | * | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| RA-226 | + | 1120.29 | | 1.886E-01 | 3.323E-01 | 3.167E-01 | 2.877E-02 | 0.595 |
| | + | 1764.49 | | 6.717E-01 | 3.658E-01 | 1.564E-01 | 9.269E-03 | 4.294 |
| | + | 338.32 | | 8.043E-01 | 4.317E-01 | 2.508E-01 | 1.022E-01 | 3.206 |
| | + | 911.07 | * | 6.661E-01 | 1.955E-01 | 1.503E-01 | 1.650E-02 | 4.432 |
| | + | 969.11 | | 3.980E-01 | 3.247E-01 | 2.381E-01 | 5.490E-02 | 1.671 |
| RA-228 | + | 338.32 | | 8.043E-01 | 4.317E-01 | 2.508E-01 | 1.022E-01 | 3.206 |
| | + | 911.07 | * | 6.661E-01 | 1.955E-01 | 1.503E-01 | 1.650E-02 | 4.432 |
| | + | 969.11 | | 3.980E-01 | 3.247E-01 | 2.381E-01 | 5.490E-02 | 1.671 |
| | + | 74.81 | | 9.714E-01 | 3.183E-01 | 3.863E-01 | 2.663E-02 | 2.514 |
| | + | 77.11 | | 9.127E-01 | 1.778E-01 | 2.192E-01 | 1.518E-02 | 4.163 |
| TH-228 | + | 87.30 | | 3.675E-01 | 3.426E-01 | 4.567E-01 | 3.471E-02 | 0.805 |
| | + | 238.63 | * | 7.896E-01 | 9.090E-02 | 6.772E-02 | 4.808E-03 | 11.661 |
| | | 300.09 | | 5.695E-01 | 6.684E-01 | 9.539E-01 | 5.621E-01 | 0.597 |
| | + | 609.31 | * | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| | + | 1120.29 | | 1.886E-01 | 3.323E-01 | 3.167E-01 | 2.877E-02 | 0.595 |
| TH-230 | + | 1764.49 | | 6.717E-01 | 3.658E-01 | 1.564E-01 | 9.269E-03 | 4.294 |
| | + | 338.32 | | 8.043E-01 | 2.848E-01 | 2.508E-01 | 1.421E-02 | 3.206 |
| | + | 911.07 | * | 6.661E-01 | 1.955E-01 | 1.503E-01 | 1.650E-02 | 4.432 |
| | + | 969.11 | | 3.980E-01 | 3.247E-01 | 2.381E-01 | 5.490E-02 | 1.671 |
| | + | 63.29 | * | 1.089E+00 | 1.369E+00 | 1.405E+00 | 2.392E-01 | 0.775 |
| TH-234 | + | 92.38 | | 1.862E+00 | 5.958E-01 | 5.082E-01 | 8.886E-02 | 3.664 |
| | + | 609.31 | * | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| | + | 1120.29 | | 1.886E-01 | 3.323E-01 | 3.167E-01 | 2.877E-02 | 0.595 |
| | + | 1764.49 | | 6.717E-01 | 3.658E-01 | 1.564E-01 | 9.269E-03 | 4.294 |
| | + | 86.50 | * | 2.294E-01 | 2.191E-01 | 2.841E-01 | 6.241E-02 | 0.808 |
| NP-237 | | 95.87 | | -2.126E-01 | 6.855E-01 | 9.959E-01 | 2.403E-01 | -0.213 |
| | + | 63.29 | * | 1.089E+00 | 1.369E+00 | 1.405E+00 | 2.392E-01 | 0.775 |
| | + | 92.38 | | 1.862E+00 | 5.170E-01 | 5.082E-01 | 3.700E-02 | 3.664 |
| | + | 74.67 | * | 1.548E-01 | 5.072E-02 | 6.177E-02 | 4.197E-03 | 2.507 |
| | + | 86.72 | | 8.602E+00 | 8.021E+00 | 1.063E+01 | 8.029E-01 | 0.809 |
| AM-243 | | 117.66 | | -8.027E-01 | 2.549E+00 | 4.114E+00 | 2.592E-01 | -0.195 |
| | | 142.18 | | -3.049E+00 | 1.247E+01 | 1.976E+01 | 1.118E+00 | -0.154 |
| | + | 511.00 | * | 9.122E-02 | 5.601E-02 | 3.146E-02 | 1.918E-03 | 2.899 |

---- 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 | * | 1.481E-01 | 2.228E-01 | 3.797E-01 | 2.613E-02 | 0.390 |

----- 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 | * | | 4.903E-04 | 3.208E-02 | 5.283E-02 | 3.402E-03 | 0.009 |
| NA-24 | 1368.53 | * | | 6.082E-01 | 3.208E-02 | Half-Life | too short | |
| AL-26 | 1129.67 | | | -5.079E-02 | 1.212E+00 | 2.004E+00 | 1.221E-01 | -0.025 |
| | 1808.65 | * | | -1.762E-02 | 2.025E-02 | 2.584E-02 | 1.482E-03 | -0.682 |
| TI-44 | 67.85 | | | -2.062E-02 | 3.172E-02 | 4.949E-02 | 3.222E-03 | -0.417 |
| | 78.38 | * | | 1.656E-01 | 3.226E-02 | 4.646E-02 | 3.250E-03 | 3.565 |
| SC-46 | 889.25 | * | | -1.205E-02 | 3.075E-02 | 4.767E-02 | 3.951E-03 | -0.253 |
| | 1120.51 | + | | 3.277E-02 | 5.772E-02 | 9.442E-02 | 5.867E-03 | 0.347 |
| V-48 | 944.10 | | | -2.769E-01 | 7.121E-01 | 1.094E+00 | 8.788E-02 | -0.253 |
| | 983.50 | * | | -1.392E-02 | 5.502E-02 | 8.555E-02 | 6.591E-03 | -0.163 |
| | 1312.09 | | | 1.558E-03 | 6.005E-02 | 9.880E-02 | 6.705E-03 | 0.016 |
| CR-51 | 320.08 | * | | 6.811E-02 | 2.683E-01 | 4.520E-01 | 2.874E-02 | 0.151 |
| MN-52 | 744.21 | | | -1.155E-01 | 2.025E-01 | 3.124E-01 | 2.232E-02 | -0.370 |
| | 848.13 | | | 5.341E-02 | 6.523E+00 | 1.062E+01 | 8.460E-01 | 0.005 |
| | 935.52 | | | 3.735E-01 | 2.462E-01 | 4.544E-01 | 3.679E-02 | 0.822 |
| | 1246.25 | | | -3.418E-01 | 6.538E+00 | 1.071E+01 | 6.598E-01 | -0.032 |
| | 1333.61 | | | 6.462E-01 | 4.549E+00 | 7.282E+00 | 5.085E-01 | 0.089 |
| | 1434.06 | * | | -3.816E-02 | 2.333E-01 | 3.700E-01 | 2.542E-02 | -0.103 |
| MN-54 | 834.83 | * | | -1.093E-02 | 3.068E-02 | 4.833E-02 | 3.800E-03 | -0.226 |
| CO-56 | 846.75 | * | | -6.307E-03 | 3.110E-02 | 4.956E-02 | 3.942E-03 | -0.127 |
| | 977.42 | | | -5.237E-01 | 2.313E+00 | 3.620E+00 | 2.808E-01 | -0.145 |
| | 1037.82 | | | -1.235E-01 | 2.254E-01 | 3.543E-01 | 2.737E-02 | -0.348 |
| | 1175.09 | | | -1.666E-01 | 1.657E+00 | 2.714E+00 | 1.496E-01 | -0.061 |
| | 1238.25 | | | 1.083E-01 | 6.995E-02 | 1.295E-01 | 8.336E-03 | 0.836 |
| | 1360.21 | | | -2.656E-01 | 6.690E-01 | 1.021E+00 | 7.106E-02 | -0.260 |
| | 1771.40 | | | -2.679E-01 | 1.773E-01 | 1.877E-01 | 1.107E-02 | -1.427 |
| CO-57 | 122.06 | * | | -1.121E-02 | 1.792E-02 | 2.796E-02 | 1.749E-03 | -0.401 |
| | 136.48 | | | 1.723E-01 | 1.421E-01 | 2.445E-01 | 1.644E-02 | 0.705 |
| CO-58 | 810.76 | * | | 7.513E-03 | 2.891E-02 | 4.846E-02 | 3.729E-03 | 0.155 |
| FE-59 | 142.65 | | | -1.085E+00 | 2.014E+00 | 3.143E+00 | 1.776E-01 | -0.345 |
| | 192.34 | | | -4.659E-01 | 6.812E-01 | 1.039E+00 | 1.201E-01 | -0.448 |
| | 1099.22 | * | | -2.105E-02 | 6.872E-02 | 1.107E-01 | 8.178E-03 | -0.190 |
| | 1291.56 | | | -1.127E-01 | 9.972E-02 | 1.405E-01 | 1.132E-02 | -0.802 |
| CO-60 | 1173.22 | | | 8.564E-03 | 3.355E-02 | 5.694E-02 | 3.130E-03 | 0.150 |
| | 1332.49 | * | | 3.646E-02 | 2.718E-02 | 5.221E-02 | 3.646E-03 | 0.698 |
| ZN-65 | 1115.52 | * | | -4.896E-02 | 8.161E-02 | 1.068E-01 | 6.720E-03 | -0.458 |
| GE-68 | 1077.35 | * | | 1.385E+00 | 9.767E-01 | 1.833E+00 | 1.236E-01 | 0.756 |
| AS-73 | 53.44 | * | | 1.571E-01 | 5.617E-01 | 9.674E-01 | 6.246E-02 | 0.162 |
| AS-74 | 595.88 | * | | 5.286E-02 | 7.133E-02 | 1.262E-01 | 8.030E-03 | 0.419 |
| | 634.78 | | | -6.849E-02 | 2.640E-01 | 4.292E-01 | 2.766E-02 | -0.160 |
| SE-75 | 66.05 | | | -1.510E+00 | 3.558E+00 | 5.254E+00 | 4.587E-01 | -0.287 |
| | 96.73 | | | -6.989E-01 | 6.118E-01 | 8.358E-01 | 1.058E-01 | -0.836 |
| | 121.11 | | | -5.865E-02 | 9.588E-02 | 1.495E-01 | 1.424E-02 | -0.392 |
| | 136.00 | | | 2.992E-02 | 2.641E-02 | 4.536E-02 | 2.678E-03 | 0.660 |
| | 198.60 | | | -3.966E-01 | 1.247E+00 | 1.946E+00 | 1.307E-01 | -0.204 |
| | 264.65 | * | | -4.044E-03 | 2.912E-02 | 4.848E-02 | 2.748E-03 | -0.083 |
| | 279.53 | | | 1.770E-02 | 7.442E-02 | 1.262E-01 | 7.731E-03 | 0.140 |
| | 303.91 | | | -6.878E-01 | 1.407E+00 | 2.265E+00 | 2.145E-01 | -0.304 |
| | 400.65 | | | -4.666E-02 | 1.731E-01 | 2.762E-01 | 2.468E-02 | -0.169 |

---- 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 | | 2.943E+02 | 2.744E+02 | 3.762E+02 | 2.876E+01 | 0.782 |
| | | 200.40 | | 3.954E+01 | 1.946E+02 | 3.129E+02 | 1.660E+01 | 0.126 |
| | + | 239.00 | | 2.137E+02 | 2.266E+01 | 4.192E+01 | 2.309E+00 | 5.097 |
| | | 249.79 | | -2.387E+01 | 7.498E+01 | 1.241E+02 | 6.889E+00 | -0.192 |
| | | 281.68 | | -4.562E+01 | 1.002E+02 | 1.628E+02 | 9.201E+00 | -0.280 |
| | | 297.23 | | 3.968E+00 | 7.652E+01 | 1.126E+02 | 6.391E+00 | 0.035 |
| | | 303.76 | | -2.188E+02 | 2.118E+02 | 3.290E+02 | 1.869E+01 | -0.665 |
| | | 439.47 | | 4.959E+01 | 1.769E+02 | 2.931E+02 | 1.688E+01 | 0.169 |
| | | 484.57 | | 4.225E+01 | 2.752E+02 | 4.485E+02 | 2.683E+01 | 0.094 |
| | | 520.65 | * | -3.493E+00 | 1.300E+01 | 2.025E+01 | 1.242E+00 | -0.172 |
| | | 574.64 | | -6.881E+01 | 2.374E+02 | 3.884E+02 | 2.451E+01 | -0.177 |
| | | 578.91 | | -5.997E+01 | 1.052E+02 | 1.416E+02 | 8.952E+00 | -0.424 |
| | | 585.48 | | 7.199E+02 | 2.506E+02 | 4.576E+02 | 2.901E+01 | 1.573 |
| | | 755.35 | | 9.323E+01 | 2.063E+02 | 3.532E+02 | 2.554E+01 | 0.264 |
| | | 817.79 | | 8.131E+01 | 1.650E+02 | 2.828E+02 | 2.185E+01 | 0.288 |
| | | 698.33 | | -1.409E-01 | 2.437E+01 | 4.027E+01 | 2.729E+00 | -0.003 |
| | | 776.49 | * | -1.967E-01 | 2.891E-01 | 4.400E-01 | 3.256E-02 | -0.447 |
| SR-82 | | 1395.20 | | -6.620E+00 | 9.201E+00 | 1.339E+01 | 9.268E-01 | -0.495 |
| | | 520.41 | * | -5.657E-03 | 5.029E-02 | 7.956E-02 | 4.878E-03 | -0.071 |
| | | 529.64 | | 1.587E-02 | 7.660E-02 | 1.247E-01 | 7.688E-03 | 0.127 |
| RB-83 | | 552.65 | | 8.447E-03 | 1.260E-01 | 2.133E-01 | 1.332E-02 | 0.040 |
| | | 881.50 | * | -9.585E-03 | 5.139E-02 | 8.150E-02 | 6.705E-03 | -0.118 |
| RB-84 | | 513.99 | * | 9.196E+00 | 5.855E+00 | 9.532E+00 | 5.821E-01 | 0.965 |
| KR-85 | | 513.99 | * | 4.807E-02 | 3.061E-02 | 4.983E-02 | 3.043E-03 | 0.965 |
| SR-85 | | 1076.63 | * | 5.917E-01 | 6.678E-01 | 1.203E+00 | 8.122E-02 | 0.492 |
| RB-86 | | 898.02 | | -2.817E-02 | 3.224E-02 | 4.692E-02 | 3.941E-03 | -0.600 |
| Y-88 | | 1836.01 | * | -1.749E-02 | 2.907E-02 | 4.237E-02 | 2.385E-03 | -0.413 |
| ZR-88 | | 392.90 | * | -5.080E-03 | 2.441E-02 | 3.769E-02 | 2.067E-03 | -0.135 |
| Y-91 | | 1204.90 | * | 3.423E+00 | 1.455E+01 | 2.457E+01 | 1.420E+00 | 0.139 |
| NB-94 | | 702.63 | * | -1.420E-02 | 2.385E-02 | 3.721E-02 | 2.534E-03 | -0.382 |
| | | 871.10 | | -2.177E-02 | 2.494E-02 | 3.623E-02 | 2.952E-03 | -0.601 |
| NB-95 | | 765.79 | * | 3.495E-02 | 3.087E-02 | 5.554E-02 | 4.062E-03 | 0.629 |
| NB-95M | | 235.69 | * | 7.356E-02 | 9.638E-02 | 1.507E-01 | 1.099E-02 | 0.488 |
| ZR-95 | | 724.18 | | 4.773E-02 | 8.016E-02 | 1.227E-01 | 9.676E-03 | 0.389 |
| | | 756.15 | * | 1.996E-02 | 5.174E-02 | 8.809E-02 | 7.276E-03 | 0.227 |
| NB-97 | | 657.90 | * | -2.709E-01 | 5.174E-02 | Half-Life | too short | |
| | | 1024.50 | | -2.034E+01 | 5.174E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | 2.254E+00 | 5.174E-02 | Half-Life | too short | |
| | | 355.39 | | -5.142E+00 | 5.174E-02 | Half-Life | too short | |
| | | 507.63 | * | 1.569E+01 | 5.174E-02 | Half-Life | too short | |
| | | 602.52 | | -2.612E+01 | 5.174E-02 | Half-Life | too short | |
| | | 1021.30 | | -3.313E+00 | 5.174E-02 | Half-Life | too short | |
| | | 1147.95 | | -7.286E+00 | 5.174E-02 | Half-Life | too short | |
| | | 1362.66 | | 1.044E+01 | 5.174E-02 | Half-Life | too short | |
| | | 1750.46 | | -5.150E+00 | 5.174E-02 | Half-Life | too short | |
| MO-99 | | 140.51 | | -3.605E+01 | 3.199E+01 | 4.559E+01 | 1.228E+01 | -0.791 |
| | | 181.06 | | -1.259E+00 | 2.185E+01 | 3.098E+01 | 5.249E+00 | -0.041 |
| | | 366.43 | | -9.033E+00 | 9.336E+01 | 1.522E+02 | 8.511E+00 | -0.059 |
| | | 739.58 | * | 9.377E+00 | 1.264E+01 | 2.220E+01 | 3.192E+00 | 0.422 |

---- 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 | | -4.212E+01 | 4.025E+01 | 5.867E+01 | 4.349E+00 | -0.718 |
| RH-101 | + | 140.51 | * | -5.421E+12 | 4.025E+01 | Half-Life too short | | |
| | | 127.23 | | 3.231E-02 | 3.368E-02 | 3.809E-02 | 2.311E-03 | 0.848 |
| | | 198.01 | * | -1.597E-03 | 2.240E-02 | 3.548E-02 | 1.877E-03 | -0.045 |
| RH-102 | | 325.23 | | -4.133E-02 | 1.643E-01 | 2.679E-01 | 1.522E-02 | -0.154 |
| | | 418.52 | | 5.547E-02 | 1.944E-01 | 3.234E-01 | 1.824E-02 | 0.172 |
| | | 475.06 | * | -2.043E-02 | 2.103E-02 | 3.083E-02 | 1.831E-03 | -0.663 |
| | | 631.29 | | 1.541E-02 | 3.650E-02 | 6.315E-02 | 4.066E-03 | 0.244 |
| | | 697.49 | | 2.540E-02 | 5.254E-02 | 9.063E-02 | 6.135E-03 | 0.280 |
| | | 766.84 | | 1.292E-01 | 7.732E-02 | 1.441E-01 | 1.055E-02 | 0.897 |
| | | 1046.59 | | -7.373E-02 | 7.852E-02 | 1.167E-01 | 8.268E-03 | -0.632 |
| | | 1112.84 | | -7.769E-02 | 1.614E-01 | 2.547E-01 | 1.608E-02 | -0.305 |
| RU-103 | | 497.08 | * | 2.963E-03 | 2.992E-02 | 4.843E-02 | 6.178E-03 | 0.061 |
| | + | 610.33 | | 6.612E+00 | 1.662E+00 | 1.940E+00 | 3.037E-01 | 3.408 |
| RH-106 | + | 511.85 | | 4.572E-01 | 2.808E-01 | 3.213E-01 | 1.959E-02 | 1.423 |
| | | 621.84 | * | -1.144E-02 | 2.200E-01 | 3.653E-01 | 4.405E-02 | -0.031 |
| | | 1050.47 | | -5.734E-01 | 1.549E+00 | 2.478E+00 | 1.746E-01 | -0.231 |
| RU-106 | + | 511.85 | | 4.572E-01 | 2.808E-01 | 3.213E-01 | 1.959E-02 | 1.423 |
| | | 621.84 | * | -1.144E-02 | 2.200E-01 | 3.653E-01 | 2.346E-02 | -0.031 |
| | | 1050.47 | | -5.734E-01 | 1.549E+00 | 2.478E+00 | 1.746E-01 | -0.231 |
| AG-108M | | 433.93 | * | 1.070E-03 | 2.435E-02 | 3.963E-02 | 2.470E-03 | 0.027 |
| | | 614.37 | | 2.211E-02 | 3.187E-02 | 4.983E-02 | 3.416E-03 | 0.444 |
| | | 722.95 | | -9.216E-03 | 3.396E-02 | 4.673E-02 | 3.452E-03 | -0.197 |
| CD-109 | | 88.03 | * | 1.619E+00 | 7.321E-01 | 1.012E+00 | 7.744E-02 | 1.600 |
| AG-110M | | 657.75 | * | -1.807E-02 | 2.492E-02 | 3.859E-02 | 2.630E-03 | -0.468 |
| | | 677.61 | | -1.783E-01 | 2.190E-01 | 3.341E-01 | 2.313E-02 | -0.534 |
| | | 706.67 | | 1.210E-01 | 1.456E-01 | 2.580E-01 | 1.842E-02 | 0.469 |
| | | 763.93 | | -3.208E-02 | 1.239E-01 | 1.984E-01 | 1.505E-02 | -0.162 |
| | | 884.67 | | 2.628E-02 | 3.384E-02 | 5.965E-02 | 5.095E-03 | 0.441 |
| | | 937.48 | | -1.507E-02 | 8.499E-02 | 1.344E-01 | 1.130E-02 | -0.112 |
| | | 1384.27 | | 1.163E-02 | 1.034E-01 | 1.718E-01 | 1.244E-02 | 0.068 |
| IN-111 | | 171.28 | | 1.024E+00 | 1.051E+00 | 1.777E+00 | 9.138E-02 | 0.576 |
| | | 245.39 | * | -6.113E-02 | 1.205E+00 | 1.787E+00 | 9.891E-02 | -0.034 |
| IN-113M | | 391.69 | * | 6.593E-03 | 3.250E-02 | 5.389E-02 | 3.173E-03 | 0.122 |
| SN-113 | | 391.69 | * | 6.593E-03 | 3.250E-02 | 5.389E-02 | 3.173E-03 | 0.122 |
| IN-114M | | 190.27 | * | 6.945E-02 | 1.427E-01 | 2.096E-01 | 1.100E-02 | 0.331 |
| CD-115 | | 260.90 | | 3.369E+00 | 1.475E+02 | 2.481E+02 | 1.388E+01 | 0.014 |
| | | 492.35 | | 5.135E+00 | 4.679E+01 | 7.587E+01 | 4.565E+00 | 0.068 |
| | | 527.90 | * | -2.225E+00 | 1.417E+01 | 2.229E+01 | 1.373E+00 | -0.100 |
| SN-117M | | 156.02 | | -1.314E+00 | 1.693E+00 | 2.618E+00 | 1.398E-01 | -0.502 |
| | | 158.56 | * | 2.371E-02 | 4.053E-02 | 6.739E-02 | 3.560E-03 | 0.352 |
| SB-122 | | 563.90 | * | 2.167E+00 | 2.279E+00 | 4.108E+00 | 2.580E-01 | 0.528 |
| | | 692.80 | | -1.602E+00 | 4.841E+01 | 7.982E+01 | 5.374E+00 | -0.020 |
| I-123 | | 159.00 | * | 6.001E+00 | 4.841E+01 | Half-Life too short | | |
| | | 528.96 | | -1.334E+03 | 4.841E+01 | Half-Life too short | | |
| TE-123M | | 159.00 | * | 2.885E-03 | 1.940E-02 | 3.155E-02 | 1.690E-03 | 0.091 |
| I-124 | | 602.71 | * | -4.608E-01 | 6.777E-01 | 8.968E-01 | 5.723E-02 | -0.514 |
| | | 722.78 | | -1.295E+00 | 4.819E+00 | 6.634E+00 | 4.625E-01 | -0.195 |
| | | 1325.50 | | -4.464E+00 | 3.383E+01 | 5.440E+01 | 3.762E+00 | -0.082 |

---- 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 | | 2.977E+01 | 2.820E+01 | 5.262E+01 | 3.655E+00 | 0.566 |
| | | 1509.49 | | 1.456E+01 | 1.592E+01 | 2.930E+01 | 1.972E+00 | 0.497 |
| | | 1691.02 | | 2.073E-01 | 3.487E+00 | 5.875E+00 | 3.647E-01 | 0.035 |
| | | 602.71 | | -2.014E-02 | 2.962E-02 | 3.920E-02 | 2.502E-03 | -0.514 |
| | | 645.85 | | -3.150E-01 | 3.642E-01 | 5.558E-01 | 3.967E-02 | -0.567 |
| | | 709.31 | | -1.673E-01 | 2.076E+00 | 3.403E+00 | 2.336E-01 | -0.049 |
| | | 713.82 | | -1.867E-01 | 1.199E+00 | 1.949E+00 | 2.119E-01 | -0.096 |
| | | 722.78 | | -8.205E-02 | 3.053E-01 | 4.203E-01 | 3.027E-02 | -0.195 |
| | + | 968.20 | | 4.185E+00 | 3.292E+00 | 4.515E+00 | 3.538E-01 | 0.927 |
| | | 1045.16 | | 3.529E-01 | 1.673E+00 | 2.862E+00 | 2.033E-01 | 0.123 |
| | | 1325.50 | | -3.020E-01 | 2.289E+00 | 3.681E+00 | 2.546E-01 | -0.082 |
| | | 1368.21 | | -3.615E-02 | 1.182E+00 | 1.920E+00 | 2.396E-01 | -0.019 |
| SB-125 | | 1436.60 | | -3.922E-01 | 2.768E+00 | 4.395E+00 | 3.017E-01 | -0.089 |
| | | 1691.02 | * | 3.097E-03 | 5.210E-02 | 8.780E-02 | 5.859E-03 | 0.035 |
| | | 427.89 | * | 2.587E-03 | 6.748E-02 | 1.099E-01 | 6.532E-03 | 0.024 |
| | + | 463.38 | | 3.402E-01 | 2.599E-01 | 3.450E-01 | 2.357E-02 | 0.986 |
| | | 600.56 | | -1.009E-01 | 1.219E-01 | 1.749E-01 | 1.261E-02 | -0.577 |
| TE-125M | | 635.90 | | -8.749E-03 | 1.866E-01 | 3.094E-01 | 2.274E-02 | -0.028 |
| | | 109.28 | * | -4.314E+00 | 6.647E+00 | 1.035E+01 | 8.933E-01 | -0.417 |
| I-126 | | 388.63 | | 5.102E-03 | 1.629E-01 | 2.670E-01 | 1.467E-02 | 0.019 |
| | | 666.33 | * | -5.479E-02 | 1.372E-01 | 2.192E-01 | 1.429E-02 | -0.250 |
| SB-126 | | 753.82 | | 5.783E-01 | 1.203E+00 | 2.063E+00 | 1.489E-01 | 0.280 |
| | | 223.80 | | 1.093E+00 | 3.036E+00 | 5.237E+00 | 2.845E-01 | 0.209 |
| | | 278.60 | | 2.239E+00 | 1.836E+00 | 3.272E+00 | 1.847E-01 | 0.684 |
| | | 296.50 | | 3.333E+00 | 1.480E+00 | 2.448E+00 | 1.389E-01 | 1.362 |
| | | 414.70 | | -1.830E-02 | 5.766E-02 | 9.143E-02 | 5.137E-03 | -0.200 |
| | | 415.30 | | -8.317E-01 | 4.774E+00 | 7.658E+00 | 4.306E-01 | -0.109 |
| | | 555.20 | | -1.222E+00 | 2.913E+00 | 4.720E+00 | 2.951E-01 | -0.259 |
| | | 573.80 | | -1.783E-01 | 7.740E-01 | 1.273E+00 | 8.032E-02 | -0.140 |
| | | 593.00 | | -1.395E-01 | 7.497E-01 | 1.236E+00 | 7.859E-02 | -0.113 |
| | | 656.30 | | -1.153E+00 | 2.671E+00 | 4.264E+00 | 2.761E-01 | -0.270 |
| | | 666.33 | | -2.299E-02 | 5.758E-02 | 9.198E-02 | 5.997E-03 | -0.250 |
| | | 675.00 | | 1.334E-01 | 1.537E+00 | 2.568E+00 | 1.692E-01 | 0.052 |
| SB-127 | | 695.00 | | 1.141E-02 | 5.956E-02 | 1.002E-01 | 6.764E-03 | 0.114 |
| | | 697.00 | | 1.440E-01 | 2.065E-01 | 3.621E-01 | 2.450E-02 | 0.398 |
| | | 720.50 | * | 6.789E-02 | 1.247E-01 | 1.914E-01 | 1.331E-02 | 0.355 |
| | | 856.80 | | -2.134E-01 | 4.284E-01 | 6.625E-01 | 5.323E-02 | -0.322 |
| | | 989.30 | | -5.150E-02 | 1.001E+00 | 1.596E+00 | 1.222E-01 | -0.032 |
| | | 1034.80 | | -2.618E+00 | 6.913E+00 | 1.109E+01 | 7.994E-01 | -0.236 |
| | | 1213.00 | | -3.479E+00 | 4.168E+00 | 6.229E+00 | 3.647E-01 | -0.558 |
| | | 61.10 | | 2.832E+01 | 5.399E+01 | 8.465E+01 | 8.595E+00 | 0.335 |
| | | 252.40 | | -8.547E-01 | 3.885E+00 | 6.429E+00 | 2.679E+00 | -0.133 |
| | | 290.80 | | -1.239E+01 | 2.067E+01 | 2.857E+01 | 2.790E+00 | -0.433 |
| | | 411.60 | | -7.713E+00 | 1.205E+01 | 1.856E+01 | 2.736E+00 | -0.416 |
| | | 444.90 | | -1.129E+00 | 9.381E+00 | 1.503E+01 | 1.708E+00 | -0.075 |
| SB-127 | | 473.00 | | 1.201E-02 | 1.639E+00 | 2.643E+00 | 3.120E-01 | 0.005 |
| | | 543.00 | | -1.549E+01 | 1.429E+01 | 2.132E+01 | 2.895E+00 | -0.727 |
| | | 603.60 | | -1.648E+00 | 1.158E+01 | 1.652E+01 | 1.926E+00 | -0.100 |
| | | 685.20 | * | 2.739E-01 | 1.387E+00 | 2.336E+00 | 2.481E-01 | 0.117 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| XE-127 | | 698.50 | 1.314E+00 | 1.452E+01 | 2.419E+01 | 3.707E+00 | 0.054 |
| | | 722.20 | 2.886E+00 | 3.351E+01 | 4.842E+01 | 5.119E+00 | 0.060 |
| | | 783.80 | 3.213E+00 | 3.656E+00 | 6.445E+00 | 7.854E-01 | 0.498 |
| | | 57.60 | 2.586E+00 | 4.164E+00 | 7.246E+00 | 4.579E-01 | 0.357 |
| | | 145.22 | 7.465E-02 | 5.018E-01 | 8.196E-01 | 4.579E-02 | 0.091 |
| | | 172.10 | -2.016E-02 | 8.295E-02 | 1.313E-01 | 6.758E-03 | -0.154 |
| I-131 | | 202.84 | * 3.316E-03 | 3.482E-02 | 5.559E-02 | 2.956E-03 | 0.060 |
| | | 374.96 | -6.409E-02 | 1.372E-01 | 2.166E-01 | 1.204E-02 | -0.296 |
| | | 80.18 | -4.316E-01 | 3.900E+00 | 5.820E+00 | 4.182E-01 | -0.074 |
| | | 284.30 | -4.569E-01 | 1.109E+00 | 1.802E+00 | 1.143E-01 | -0.253 |
| | | 364.48 | * -8.590E-02 | 9.550E-02 | 1.462E-01 | 9.229E-03 | -0.588 |
| | | 636.97 | -9.284E-02 | 1.245E+00 | 2.058E+00 | 1.461E-01 | -0.045 |
| TE-132 | | 722.89 | -1.820E+00 | 6.707E+00 | 9.228E+00 | 6.513E-01 | -0.197 |
| | | 49.72 | 4.350E+00 | 1.856E+01 | 3.199E+01 | 3.160E+00 | 0.136 |
| | | 111.76 | 2.548E+01 | 3.122E+01 | 5.252E+01 | 5.145E+00 | 0.485 |
| | | 116.30 | 1.110E+00 | 2.710E+01 | 4.458E+01 | 4.340E+00 | 0.025 |
| | | 228.16 | * -2.227E-01 | 7.129E-01 | 1.188E+00 | 1.737E-01 | -0.187 |
| | | 53.15 | 5.165E-01 | 2.387E+00 | 4.101E+00 | 2.652E-01 | 0.126 |
| BA-133 | | 79.62 | 2.043E-01 | 9.197E-01 | 1.398E+00 | 2.013E-01 | 0.146 |
| | | 81.00 | -9.441E-02 | 7.401E-02 | 1.012E-01 | 1.531E-02 | -0.933 |
| | | 276.40 | 1.967E-01 | 2.533E-01 | 4.398E-01 | 5.671E-02 | 0.447 |
| | | 302.84 | -9.734E-02 | 9.963E-02 | 1.547E-01 | 1.794E-02 | -0.629 |
| | | 356.01 | * -3.161E-02 | 3.448E-02 | 4.484E-02 | 5.144E-03 | -0.705 |
| | | 383.85 | -5.737E-02 | 2.203E-01 | 3.537E-01 | 3.793E-02 | -0.162 |
| I-133 | + | 510.53 | 4.066E+00 | 2.203E-01 | Half-Life | too short | |
| | | 529.87 | * 3.550E-03 | 2.203E-01 | Half-Life | too short | |
| | | 706.58 | 1.053E+00 | 2.203E-01 | Half-Life | too short | |
| | | 856.28 | -8.733E-01 | 2.203E-01 | Half-Life | too short | |
| | | 875.33 | 3.089E-01 | 2.203E-01 | Half-Life | too short | |
| | | 1236.41 | 2.928E+00 | 2.203E-01 | Half-Life | too short | |
| CS-134 | | 1298.22 | 7.855E-01 | 2.203E-01 | Half-Life | too short | |
| | | 475.35 | -7.577E-01 | 1.340E+00 | 2.046E+00 | 1.215E-01 | -0.370 |
| | | 563.23 | 1.757E-01 | 2.505E-01 | 4.437E-01 | 2.835E-02 | 0.396 |
| | | 569.32 | -7.879E-03 | 1.433E-01 | 2.339E-01 | 1.510E-02 | -0.034 |
| | | 604.70 | 1.984E-02 | 2.332E-02 | 3.753E-02 | 2.407E-03 | 0.529 |
| | + | 795.84 | * 3.971E-02 | 4.997E-02 | 6.485E-02 | 4.944E-03 | 0.612 |
| CS-135 | | 801.93 | 4.755E-02 | 3.154E-01 | 5.236E-01 | 4.009E-02 | 0.091 |
| | | 1038.57 | 3.047E-01 | 2.717E+00 | 4.599E+00 | 3.298E-01 | 0.066 |
| | | 1167.94 | -6.725E-01 | 1.849E+00 | 2.947E+00 | 1.642E-01 | -0.228 |
| | | 1365.15 | 4.895E-01 | 8.094E-01 | 1.447E+00 | 1.076E-01 | 0.338 |
| | | 268.24 | * 5.341E-02 | 1.068E-01 | 1.838E-01 | 1.382E-02 | 0.291 |
| | | 288.45 | 6.498E+11 | 1.068E-01 | Half-Life | too short | |
| I-135 | | 417.63 | 7.789E+11 | 1.068E-01 | Half-Life | too short | |
| | | 546.56 | 6.699E+11 | 1.068E-01 | Half-Life | too short | |
| | | 836.80 | 1.072E+12 | 1.068E-01 | Half-Life | too short | |
| | | 1038.76 | 8.946E+10 | 1.068E-01 | Half-Life | too short | |
| | | 1124.00 | 7.832E+11 | 1.068E-01 | Half-Life | too short | |
| | | 1131.51 | -5.079E+11 | 1.068E-01 | Half-Life | too short | |
| | | 1260.41 | * 1.186E+11 | 1.068E-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 | | 6.655E+13 | 1.068E-01 | Half-Life | too short | |
| | | 1678.03 | | -1.934E+10 | 1.068E-01 | Half-Life | too short | |
| | | 1706.46 | | 1.541E+12 | 1.068E-01 | Half-Life | too short | |
| | | 1791.20 | | -3.612E+11 | 1.068E-01 | Half-Life | too short | |
| | | 66.91 | | -4.723E-01 | 6.354E-01 | 9.162E-01 | 1.315E-01 | -0.516 |
| | + | 86.29 | | 1.124E+00 | 1.053E+00 | 1.438E+00 | 1.747E-01 | 0.781 |
| | | 153.22 | | 2.172E-02 | 4.853E-01 | 7.863E-01 | 5.434E-02 | 0.028 |
| | | 163.89 | | 1.480E-01 | 7.921E-01 | 1.288E+00 | 8.703E-02 | 0.115 |
| | | 176.55 | | -9.960E-02 | 2.757E-01 | 4.326E-01 | 2.581E-02 | -0.230 |
| | | 273.65 | | -4.041E-01 | 3.465E-01 | 5.414E-01 | 3.503E-02 | -0.746 |
| | | 340.57 | | 1.637E-01 | 9.449E-02 | 1.586E-01 | 9.578E-03 | 1.032 |
| | | 818.51 | | 6.913E-02 | 5.615E-02 | 1.031E-01 | 7.986E-03 | 0.670 |
| | | 1048.07 | * | -7.965E-02 | 8.303E-02 | 1.233E-01 | 9.264E-03 | -0.646 |
| | | 1235.34 | | 3.888E-01 | 5.230E-01 | 9.121E-01 | 9.250E-02 | 0.426 |
| BA-137M | | 661.65 | * | 1.390E-02 | 2.546E-02 | 4.421E-02 | 2.866E-03 | 0.314 |
| CS-137 | | 661.65 | * | 1.470E-02 | 2.692E-02 | 4.674E-02 | 3.040E-03 | 0.314 |
| CE-139 | | 165.85 | * | 2.914E-04 | 1.977E-02 | 3.182E-02 | 1.631E-03 | 0.009 |
| BA-140 | | 162.64 | | 4.841E-01 | 5.446E-01 | 9.184E-01 | 5.501E-02 | 0.527 |
| | | 304.84 | | -9.519E-01 | 9.603E-01 | 1.433E+00 | 3.906E-01 | -0.664 |
| | | 423.70 | | -2.987E-01 | 1.413E+00 | 2.249E+00 | 7.142E-01 | -0.133 |
| LA-140 | | 537.32 | * | 1.445E-01 | 1.971E-01 | 3.423E-01 | 1.116E-01 | 0.422 |
| | | 328.77 | | 1.470E-01 | 2.336E-01 | 4.007E-01 | 2.560E-02 | 0.367 |
| | | 432.53 | | -4.427E-01 | 1.733E+00 | 2.756E+00 | 1.746E-01 | -0.161 |
| | | 487.03 | | -1.054E-01 | 1.099E-01 | 1.606E-01 | 1.082E-02 | -0.656 |
| | | 751.79 | | -1.963E-01 | 1.433E+00 | 2.325E+00 | 1.926E-01 | -0.084 |
| | | 815.85 | | -1.595E-01 | 2.618E-01 | 3.984E-01 | 3.509E-02 | -0.400 |
| | | 867.82 | | 5.266E-01 | 1.035E+00 | 1.778E+00 | 1.530E-01 | 0.296 |
| | | 919.63 | | 1.178E-01 | 2.168E+00 | 3.524E+00 | 3.637E-01 | 0.033 |
| | | 925.24 | | -2.014E-01 | 9.076E-01 | 1.427E+00 | 1.247E-01 | -0.141 |
| | | 1596.49 | * | -6.686E-02 | 5.737E-02 | 7.161E-02 | 4.663E-03 | -0.934 |
| CE-141 | | 145.44 | * | -5.780E-03 | 4.536E-02 | 7.308E-02 | 4.254E-03 | -0.079 |
| CE-143 | | 57.37 | | 1.414E-03 | 4.536E-02 | Half-Life | too short | |
| | | 231.56 | | -5.063E-04 | 4.536E-02 | Half-Life | too short | |
| | | 293.26 | * | 1.244E-03 | 4.536E-02 | Half-Life | too short | |
| | + | 350.59 | | 4.096E-02 | 4.536E-02 | Half-Life | too short | |
| | | 490.36 | | 8.543E-04 | 4.536E-02 | Half-Life | too short | |
| | | 664.57 | | -1.580E-03 | 4.536E-02 | Half-Life | too short | |
| | | 721.93 | | 1.822E-04 | 4.536E-02 | Half-Life | too short | |
| CE-144 | | 80.11 | | -1.659E-01 | 1.538E+00 | 2.296E+00 | 1.630E-01 | -0.072 |
| | | 133.54 | * | -1.634E-01 | 1.362E-01 | 2.041E-01 | 2.906E-02 | -0.801 |
| PM-144 | | 476.78 | | 1.094E-02 | 4.772E-02 | 7.837E-02 | 5.538E-03 | 0.140 |
| | | 618.01 | | 9.755E-03 | 2.374E-02 | 4.091E-02 | 2.754E-03 | 0.238 |
| | | 696.49 | * | 2.562E-02 | 2.426E-02 | 4.370E-02 | 2.957E-03 | 0.586 |
| | | 778.57 | | -1.928E+00 | 1.711E+00 | 2.469E+00 | 1.832E-01 | -0.781 |
| PR-144 | | 696.49 | * | 1.738E+00 | 1.646E+00 | 2.964E+00 | 2.004E-01 | 0.586 |
| | | 1489.15 | | -4.074E+00 | 7.845E+00 | 1.134E+01 | 7.680E-01 | -0.359 |
| PM-146 | | 453.90 | * | 3.440E-02 | 3.233E-02 | 5.635E-02 | 4.872E-03 | 0.610 |
| | | 633.02 | | 4.066E-01 | 9.483E-01 | 1.621E+00 | 5.987E-01 | 0.251 |
| | | 735.90 | | 2.642E-02 | 1.092E-01 | 1.790E-01 | 5.042E-02 | 0.148 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| ND-147 | + | 747.13 | | -1.261E-06 | 6.288E-02 | 1.034E-01 | 1.364E-02 | 0.000 |
| | | 91.11 | | 5.394E-01 | 2.064E-01 | 4.279E-01 | 3.509E-02 | 1.261 |
| | | 319.41 | | 3.739E-01 | 2.515E+00 | 4.211E+00 | 2.395E-01 | 0.089 |
| | | 439.89 | | 2.202E+00 | 4.704E+00 | 7.903E+00 | 4.556E-01 | 0.279 |
| | | 531.02 | * | -2.105E-01 | 4.438E-01 | 6.734E-01 | 9.215E-02 | -0.313 |
| PM-149 | | 285.90 | * | -6.267E+01 | 1.039E+02 | 1.661E+02 | 2.346E+01 | -0.377 |
| EU-152 | | 121.78 | | -5.788E-03 | 5.042E-02 | 8.081E-02 | 6.427E-03 | -0.072 |
| | | 244.69 | | -7.866E-02 | 2.397E-01 | 3.477E-01 | 1.923E-02 | -0.226 |
| | | 344.27 | * | 1.121E-02 | 6.339E-02 | 9.362E-02 | 6.000E-03 | 0.120 |
| | | 443.98 | | -2.028E-01 | 6.575E-01 | 1.036E+00 | 5.990E-02 | -0.196 |
| | | 778.89 | | -9.911E-02 | 1.877E-01 | 2.904E-01 | 2.154E-02 | -0.341 |
| | | 867.32 | | 2.435E-01 | 5.691E-01 | 9.684E-01 | 7.860E-02 | 0.251 |
| | | 964.01 | | 2.808E-01 | 2.470E-01 | 3.942E-01 | 3.103E-02 | 0.712 |
| | | 1085.78 | | -7.140E-02 | 2.870E-01 | 4.655E-01 | 3.093E-02 | -0.153 |
| | | 1112.02 | | -5.376E-02 | 2.244E-01 | 3.638E-01 | 2.300E-02 | -0.148 |
| | | 1407.95 | | 1.331E-01 | 1.394E-01 | 2.559E-01 | 1.768E-02 | 0.520 |
| GD-153 | | 69.67 | | 4.367E-01 | 1.196E+00 | 1.844E+00 | 1.212E-01 | 0.237 |
| | | 83.37 | | 8.367E+00 | 1.125E+01 | 1.714E+01 | 1.253E+00 | 0.488 |
| | | 97.43 | * | -7.832E-02 | 6.367E-02 | 8.677E-02 | 6.033E-03 | -0.903 |
| | | 103.18 | | -3.213E-02 | 6.934E-02 | 1.119E-01 | 7.477E-03 | -0.287 |
| EU-154 | | 123.07 | | -3.553E-03 | 3.749E-02 | 5.817E-02 | 5.621E-03 | -0.061 |
| | | 247.94 | | 1.369E-01 | 2.558E-01 | 4.146E-01 | 3.892E-02 | 0.330 |
| | | 591.81 | | 3.372E-01 | 4.300E-01 | 7.642E-01 | 7.729E-02 | 0.441 |
| | | 723.30 | | -6.480E-02 | 1.460E-01 | 1.961E-01 | 1.583E-02 | -0.330 |
| | | 756.87 | | 1.420E-01 | 5.559E-01 | 9.350E-01 | 1.031E-01 | 0.152 |
| | | 873.19 | | -3.222E-02 | 2.080E-01 | 3.313E-01 | 3.951E-02 | -0.097 |
| | | 996.32 | | -3.490E-02 | 2.884E-01 | 4.787E-01 | 8.276E-02 | -0.073 |
| | | 1004.76 | | -1.260E-01 | 1.679E-01 | 2.605E-01 | 2.824E-02 | -0.484 |
| | | 1274.45 | * | -4.998E-04 | 8.931E-02 | 1.467E-01 | 1.429E-02 | -0.003 |
| | | 48.70 | | -7.210E-01 | 1.576E+00 | 2.635E+00 | 1.722E-01 | -0.274 |
| EU-155 | | 60.01 | | -1.730E+00 | 3.556E+00 | 5.265E+00 | 3.308E-01 | -0.329 |
| | | 86.54 | + | 9.415E-02 | 8.780E-02 | 1.214E-01 | 9.275E-03 | 0.776 |
| | | 105.31 | * | 2.017E-02 | 7.095E-02 | 1.187E-01 | 8.000E-03 | 0.170 |
| TB-160 | + | 86.79 | | 2.558E-01 | 2.385E-01 | 3.296E-01 | 2.492E-02 | 0.776 |
| | | 197.04 | | -1.745E-01 | 3.899E-01 | 6.039E-01 | 3.191E-02 | -0.289 |
| | | 215.65 | | -7.461E-01 | 5.317E-01 | 7.637E-01 | 4.116E-02 | -0.977 |
| | | 298.57 | | 6.652E-02 | 8.853E-02 | 1.373E-01 | 7.797E-03 | 0.484 |
| | | 879.36 | * | -4.654E-02 | 1.061E-01 | 1.635E-01 | 1.343E-02 | -0.285 |
| | | 962.29 | | 4.077E-01 | 4.526E-01 | 7.059E-01 | 5.567E-02 | 0.578 |
| | | 966.15 | | 4.066E-01 | 2.089E-01 | 3.487E-01 | 2.739E-02 | 1.166 |
| | | 1177.93 | | -5.333E-02 | 2.831E-01 | 4.600E-01 | 2.548E-02 | -0.116 |
| | | 1271.85 | | -5.391E-01 | 5.114E-01 | 7.239E-01 | 4.634E-02 | -0.745 |
| | | 80.57 | | 3.968E-02 | 1.903E-01 | 2.889E-01 | 2.059E-02 | 0.137 |
| HO-166M | + | 184.41 | | 3.576E-02 | 3.925E-02 | 4.595E-02 | 2.395E-03 | 0.778 |
| | | 280.46 | | -4.842E-02 | 5.786E-02 | 9.188E-02 | 5.190E-03 | -0.527 |
| | | 410.95 | | -5.135E-02 | 1.741E-01 | 2.772E-01 | 1.551E-02 | -0.185 |
| | | 711.68 | * | 2.010E-02 | 4.387E-02 | 7.535E-02 | 5.186E-03 | 0.267 |
| | | 752.31 | | 4.759E-02 | 2.021E-01 | 3.394E-01 | 2.446E-02 | 0.140 |
| | | 810.29 | | 1.680E-02 | 4.193E-02 | 7.131E-02 | 5.467E-03 | 0.236 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| TM-171 | | 51.35 | | -2.959E+00 | 1.993E+01 | 3.374E+01 | 2.199E+00 | -0.088 |
| | | 52.39 | | -5.404E-01 | 1.038E+01 | 1.764E+01 | 1.145E+00 | -0.031 |
| | | 59.40 | | -1.851E+01 | 1.947E+01 | 2.799E+01 | 1.756E+00 | -0.661 |
| | | 66.72 | * | -6.177E+00 | 2.054E+01 | 3.053E+01 | 1.976E+00 | -0.202 |
| LU-176 | + | 88.36 | | 3.309E-01 | 1.261E-01 | 2.341E-01 | 1.784E-02 | 1.414 |
| | | 201.83 | | -5.111E-03 | 2.053E-02 | 3.215E-02 | 1.708E-03 | -0.159 |
| | | 306.84 | * | 8.622E-03 | 1.607E-02 | 2.764E-02 | 1.571E-03 | 0.312 |
| | | 401.10 | | 4.140E-01 | 4.488E+00 | 7.375E+00 | 4.083E-01 | 0.056 |
| LU-177 | | 112.95 | | 5.223E-01 | 1.396E+00 | 2.308E+00 | 1.475E-01 | 0.226 |
| | + | 208.36 | * | 2.164E+00 | 1.343E+00 | 1.634E+00 | 8.742E-02 | 1.324 |
| LU-177M | | 52.97 | | 1.470E-01 | 1.084E+00 | 1.857E+00 | 1.201E-01 | 0.079 |
| | | 54.07 | | -3.775E-02 | 5.692E-01 | 9.655E-01 | 6.213E-02 | -0.039 |
| | | 61.30 | | 7.287E-01 | 1.016E+00 | 1.610E+00 | 1.017E-01 | 0.453 |
| | | 121.62 | | -3.622E-02 | 2.603E-01 | 4.166E-01 | 2.601E-02 | -0.087 |
| | | 147.16 | | -1.712E-02 | 4.466E-01 | 7.221E-01 | 4.002E-02 | -0.024 |
| | | 171.86 | | -4.687E-02 | 3.270E-01 | 5.205E-01 | 2.679E-02 | -0.090 |
| | | 218.09 | | 4.675E-02 | 5.984E-01 | 9.502E-01 | 5.133E-02 | 0.049 |
| | | 268.79 | | 5.747E-01 | 5.437E-01 | 9.613E-01 | 5.402E-02 | 0.598 |
| | | 319.02 | | -3.902E-02 | 1.753E-01 | 2.864E-01 | 1.628E-02 | -0.136 |
| | | 367.43 | | 1.319E-01 | 6.241E-01 | 1.041E+00 | 5.813E-02 | 0.127 |
| | | 413.65 | * | -1.327E-02 | 1.197E-01 | 1.931E-01 | 1.084E-02 | -0.069 |
| HF-181 | | 56.28 | | 3.828E-01 | 6.497E-01 | 1.130E+00 | 7.189E-02 | 0.339 |
| | | 57.53 | | 2.340E-01 | 3.496E-01 | 6.095E-01 | 3.853E-02 | 0.384 |
| | | 65.20 | | -3.301E-01 | 7.070E-01 | 1.042E+00 | 6.697E-02 | -0.317 |
| | | 133.02 | | -3.852E-02 | 4.933E-02 | 6.763E-02 | 3.989E-03 | -0.570 |
| | | 136.25 | | 3.643E-01 | 3.171E-01 | 5.447E-01 | 3.165E-02 | 0.669 |
| | | 345.85 | | -8.513E-02 | 1.367E-01 | 1.837E-01 | 1.038E-02 | -0.463 |
| | | 482.03 | * | -2.510E-04 | 3.069E-02 | 4.933E-02 | 2.945E-03 | -0.005 |
| W-181 | | 56.28 | | 1.478E-01 | 2.494E-01 | 4.340E-01 | 2.760E-02 | 0.341 |
| | | 57.53 | | 9.007E-02 | 1.343E-01 | 2.342E-01 | 1.480E-02 | 0.385 |
| | | 65.20 | * | -1.258E-01 | 2.694E-01 | 3.972E-01 | 2.552E-02 | -0.317 |
| TA-182 | | 67.75 | | -7.030E-02 | 7.804E-02 | 1.195E-01 | 7.773E-03 | -0.588 |
| | | 100.10 | | 9.755E-02 | 1.231E-01 | 2.108E-01 | 1.437E-02 | 0.463 |
| | | 152.43 | | 1.771E-01 | 2.196E-01 | 3.701E-01 | 2.006E-02 | 0.479 |
| | | 222.10 | | -2.021E-01 | 2.395E-01 | 3.893E-01 | 2.112E-02 | -0.519 |
| | | 1001.68 | | -9.205E-01 | 1.615E+00 | 2.642E+00 | 1.991E-01 | -0.348 |
| | + | 1121.28 | | 9.015E-02 | 1.587E-01 | 2.510E-01 | 1.557E-02 | 0.359 |
| | | 1189.05 | | 1.697E-01 | 2.436E-01 | 4.282E-01 | 2.415E-02 | 0.396 |
| | | 1221.42 | * | -2.475E-02 | 1.637E-01 | 2.665E-01 | 1.581E-02 | -0.093 |
| | | 1230.97 | | -2.409E-01 | 3.821E-01 | 5.933E-01 | 3.572E-02 | -0.406 |
| RE-183 | | 57.98 | | -2.004E-03 | 1.348E-01 | 2.285E-01 | 1.441E-02 | -0.009 |
| | | 59.32 | | -5.709E-02 | 8.014E-02 | 1.170E-01 | 7.341E-03 | -0.488 |
| | | 67.20 | | -8.752E-02 | 1.475E-01 | 2.155E-01 | 1.398E-02 | -0.406 |
| | | 162.32 | * | -4.541E-04 | 7.467E-02 | 1.202E-01 | 6.251E-03 | -0.004 |
| | + | 208.81 | | 1.637E+00 | 1.016E+00 | 1.253E+00 | 6.708E-02 | 1.306 |
| | | 291.72 | | -3.730E-01 | 6.690E-01 | 9.307E-01 | 5.276E-02 | -0.401 |
| RE-184 | | 57.98 | | -7.305E-03 | 4.913E-01 | 8.329E-01 | 5.254E-02 | -0.009 |
| | | 59.32 | | -2.080E-01 | 2.919E-01 | 4.262E-01 | 2.674E-02 | -0.488 |
| | | 67.20 | | -3.190E-01 | 5.377E-01 | 7.855E-01 | 5.096E-02 | -0.406 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| OS-185 | | 161.27 | | -1.377E-01 | 2.452E-01 | 3.829E-01 | 2.000E-02 | -0.360 |
| | | 216.55 | | -6.585E-02 | 1.829E-01 | 2.826E-01 | 1.524E-02 | -0.233 |
| | | 252.85 | * | -3.946E-02 | 1.498E-01 | 2.483E-01 | 1.382E-02 | -0.159 |
| | | 318.01 | | -3.093E-01 | 2.903E-01 | 4.434E-01 | 2.521E-02 | -0.697 |
| | | 792.07 | | 9.430E-01 | 7.975E-01 | 1.306E+00 | 9.826E-02 | 0.722 |
| | | 903.28 | | 3.982E-02 | 8.622E-01 | 1.270E+00 | 1.057E-01 | 0.031 |
| | | 920.93 | | 8.819E-03 | 3.249E-01 | 5.264E-01 | 4.318E-02 | 0.017 |
| | | 59.72 | | -1.818E-01 | 2.172E-01 | 3.146E-01 | 1.974E-02 | -0.578 |
| | | 61.14 | | 5.835E-02 | 1.115E-01 | 1.750E-01 | 1.105E-02 | 0.333 |
| | | 69.30 | | -2.820E-02 | 2.027E-01 | 3.241E-01 | 2.126E-02 | -0.087 |
| | | 592.07 | | 1.342E+00 | 1.810E+00 | 3.209E+00 | 2.040E-01 | 0.418 |
| | | 646.12 | * | -3.411E-02 | 3.133E-02 | 4.673E-02 | 3.020E-03 | -0.730 |
| | | 717.42 | | -1.261E-01 | 6.299E-01 | 1.019E+00 | 7.058E-02 | -0.124 |
| | | 874.81 | | 1.434E-01 | 4.207E-01 | 7.084E-01 | 5.792E-02 | 0.202 |
| | | 880.27 | | -3.082E-01 | 5.774E-01 | 8.779E-01 | 7.215E-02 | -0.351 |
| RE-188 | | 155.03 | * | -2.806E-02 | 1.159E-01 | 1.847E-01 | 9.903E-03 | -0.152 |
| | | 477.96 | | 1.158E+00 | 2.153E+00 | 3.630E+00 | 2.161E-01 | 0.319 |
| | | 633.10 | | 8.214E-01 | 1.926E+00 | 3.331E+00 | 2.146E-01 | 0.247 |
| W-188 | + | 63.58 | | 4.460E+01 | 5.562E+01 | 6.755E+01 | 4.309E+00 | 0.660 |
| | | 227.08 | | -3.045E+00 | 8.863E+00 | 1.476E+01 | 8.047E-01 | -0.206 |
| | | 290.67 | * | -1.940E+00 | 5.144E+00 | 7.282E+00 | 4.127E-01 | -0.266 |
| IR-192 | + | 295.96 | | 5.477E-01 | 1.177E-01 | 1.901E-01 | 1.097E-02 | 2.880 |
| | | 308.46 | | 1.528E-03 | 6.553E-02 | 1.091E-01 | 6.273E-03 | 0.014 |
| | | 316.51 | * | -1.733E-02 | 2.285E-02 | 3.585E-02 | 2.049E-03 | -0.483 |
| | | 468.07 | | -1.300E-02 | 5.440E-02 | 7.435E-02 | 5.040E-03 | -0.175 |
| AU-195 | | 604.41 | | 2.011E-01 | 3.240E-01 | 5.071E-01 | 5.913E-02 | 0.397 |
| | | 612.46 | | 6.666E-01 | 5.810E-01 | 9.452E-01 | 7.603E-02 | 0.705 |
| | | 65.12 | | -4.399E-02 | 1.243E-01 | 1.845E-01 | 1.185E-02 | -0.238 |
| | | 66.83 | | -2.419E-02 | 6.808E-02 | 1.009E-01 | 6.532E-03 | -0.240 |
| | + | 75.70 | | 5.046E-01 | 1.653E-01 | 2.910E-01 | 1.992E-02 | 1.734 |
| | | 98.88 | * | 1.422E-01 | 1.729E-01 | 2.676E-01 | 1.840E-02 | 0.532 |
| | + | 129.76 | | 2.865E+00 | 2.986E+00 | 3.392E+00 | 2.032E-01 | 0.845 |
| TL-200 | | 367.94 | * | 2.566E-04 | 2.986E+00 | Half-Life | too short | |
| | | 579.30 | | -1.330E-03 | 2.986E+00 | Half-Life | too short | |
| | | 828.27 | | 1.720E-03 | 2.986E+00 | Half-Life | too short | |
| | | 1205.75 | | 2.319E-03 | 2.986E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | -2.577E+00 | 4.737E+00 | 7.797E+00 | 5.105E-01 | -0.331 |
| | | 70.82 | | 1.473E+00 | 2.971E+00 | 4.606E+00 | 3.049E-01 | 0.320 |
| | | 80.30 | | -6.373E-01 | 5.516E+00 | 8.229E+00 | 5.851E-01 | -0.077 |
| | | 135.34 | | -3.101E+00 | 2.596E+01 | 4.200E+01 | 2.451E+00 | -0.074 |
| TL-202 | | 167.43 | * | -6.505E+00 | 7.391E+00 | 1.129E+01 | 5.789E-01 | -0.576 |
| | | 68.90 | | -1.690E-01 | 3.106E-01 | 5.113E-01 | 3.347E-02 | -0.331 |
| | | 70.82 | | 9.635E-02 | 1.943E-01 | 3.012E-01 | 1.994E-02 | 0.320 |
| | | 80.30 | | -4.169E-02 | 3.609E-01 | 5.383E-01 | 3.828E-02 | -0.077 |
| HG-203 | | 439.56 | * | 1.632E-02 | 5.555E-02 | 9.211E-02 | 5.305E-03 | 0.177 |
| | | 70.83 | | 3.874E-01 | 7.804E-01 | 1.208E+00 | 1.503E-01 | 0.321 |
| | | 72.87 | | 4.564E-01 | 4.711E-01 | 7.401E-01 | 8.912E-02 | 0.617 |
| | | 82.60 | | 3.986E-02 | 7.708E-01 | 1.232E+00 | 1.594E-01 | 0.032 |
| | | 279.20 | * | 1.805E-02 | 2.794E-02 | 4.843E-02 | 2.912E-03 | 0.373 |

---- 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 | | 1.128E-01 | 1.332E-01 | 2.092E-01 | 1.403E-02 | 0.539 |
| | + | 74.97 | | 2.780E-01 | 9.105E-02 | 1.445E-01 | 9.839E-03 | 1.924 |
| | | 84.90 | | 1.881E-01 | 1.389E-01 | 2.174E-01 | 1.613E-02 | 0.865 |
| | | 569.67 | | 5.375E-03 | 2.175E-02 | 3.634E-02 | 2.288E-03 | 0.148 |
| | | 1063.62 | * | 4.443E-03 | 3.846E-02 | 6.497E-02 | 4.482E-03 | 0.068 |
| TL-207 | | 1770.23 | | -9.056E-02 | 3.442E-01 | 4.419E-01 | 2.608E-02 | -0.205 |
| | | 81.07 | | -2.100E-01 | 1.608E-01 | 2.229E-01 | 1.596E-02 | -0.942 |
| | | 83.78 | | 9.721E-02 | 9.536E-02 | 1.471E-01 | 1.080E-02 | 0.661 |
| | | 94.90 | | 5.436E-02 | 1.645E-01 | 2.494E-01 | 1.772E-02 | 0.218 |
| | | 122.32 | | -7.416E-01 | 1.235E+00 | 1.929E+00 | 1.366E-01 | -0.384 |
| | | 144.24 | | 4.615E-01 | 4.787E-01 | 8.012E-01 | 5.673E-02 | 0.576 |
| | | 154.21 | | 6.752E-02 | 2.614E-01 | 4.281E-01 | 2.855E-02 | 0.158 |
| | | 269.46 | | 1.141E-01 | 1.261E-01 | 2.214E-01 | 1.305E-02 | 0.515 |
| | | 323.87 | * | -2.955E-01 | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| | + | 338.28 | | 3.358E+00 | 1.225E+00 | 1.636E+00 | 1.711E-01 | 2.053 |
| | | 445.03 | | 3.997E-02 | 1.552E+00 | 2.517E+00 | 2.584E-01 | 0.016 |
| | | 260.50 | | 4.476E-01 | 6.128E+00 | 1.034E+01 | 5.784E-01 | 0.043 |
| PO-209 | | 262.80 | | 2.940E+00 | 1.721E+01 | 2.919E+01 | 1.635E+00 | 0.101 |
| | | 896.60 | * | -2.631E+00 | 5.701E+00 | 8.755E+00 | 7.306E-01 | -0.301 |
| BI-210 | | 46.50 | * | 1.532E+00 | 2.288E+00 | 3.946E+00 | 2.973E-01 | 0.388 |
| PB-210 | | 46.50 | * | 1.532E+00 | 2.288E+00 | 3.946E+00 | 2.973E-01 | 0.388 |
| PO-210 | | 46.50 | * | 1.532E+00 | 2.287E+00 | 3.946E+00 | 2.531E-01 | 0.388 |
| PB-211 | | 404.84 | * | -2.352E-01 | 6.789E-01 | 1.052E+00 | 6.554E-01 | -0.224 |
| | | 427.08 | | 2.018E-01 | 1.446E+00 | 2.365E+00 | 1.462E+00 | 0.085 |
| BI-212 | | 831.96 | | -7.035E-02 | 9.340E-01 | 1.509E+00 | 9.440E-01 | -0.047 |
| | + | 727.18 | * | 6.229E-01 | 3.863E-01 | 4.595E-01 | 3.978E-02 | 1.356 |
| | | 785.46 | | 2.771E-01 | 1.311E+00 | 2.134E+00 | 1.594E-01 | 0.130 |
| | | 1620.62 | | -3.241E-01 | 9.188E-01 | 1.443E+00 | 9.293E-02 | -0.225 |
| | | 81.07 | | -2.100E-01 | 1.608E-01 | 2.229E-01 | 1.596E-02 | -0.942 |
| PO-215 | | 83.78 | | 9.721E-02 | 9.536E-02 | 1.471E-01 | 1.080E-02 | 0.661 |
| | | 94.90 | | 5.436E-02 | 1.645E-01 | 2.494E-01 | 1.772E-02 | 0.218 |
| | | 122.32 | | -7.416E-01 | 1.235E+00 | 1.929E+00 | 1.366E-01 | -0.384 |
| | | 144.24 | | 4.615E-01 | 4.787E-01 | 8.012E-01 | 5.673E-02 | 0.576 |
| | | 154.21 | | 6.752E-02 | 2.614E-01 | 4.281E-01 | 2.855E-02 | 0.158 |
| | | 269.46 | | 1.141E-01 | 1.261E-01 | 2.214E-01 | 1.305E-02 | 0.515 |
| | | 323.87 | * | -2.955E-01 | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| | + | 338.28 | | 3.358E+00 | 1.225E+00 | 1.636E+00 | 1.711E-01 | 2.053 |
| | | 445.03 | | 3.997E-02 | 1.552E+00 | 2.517E+00 | 2.584E-01 | 0.016 |
| | | 271.23 | | 1.704E-01 | 1.645E-01 | 2.899E-01 | 2.313E-02 | 0.588 |
| | | 401.81 | * | 4.980E-02 | 2.786E-01 | 4.607E-01 | 6.218E-02 | 0.108 |
| | | 549.76 | * | -1.371E+01 | 1.664E+01 | 2.587E+01 | 1.613E+00 | -0.530 |
| RN-220 | | 81.07 | | -2.100E-01 | 1.608E-01 | 2.229E-01 | 1.596E-02 | -0.942 |
| RA-223 | | 83.78 | | 9.721E-02 | 9.536E-02 | 1.471E-01 | 1.080E-02 | 0.661 |
| | | 94.90 | | 5.436E-02 | 1.645E-01 | 2.494E-01 | 1.772E-02 | 0.218 |
| | | 122.32 | | -7.416E-01 | 1.235E+00 | 1.929E+00 | 1.366E-01 | -0.384 |
| | | 144.24 | | 4.615E-01 | 4.787E-01 | 8.012E-01 | 5.673E-02 | 0.576 |
| | | 154.21 | | 6.752E-02 | 2.614E-01 | 4.281E-01 | 2.855E-02 | 0.158 |
| | | 269.46 | | 1.141E-01 | 1.261E-01 | 2.214E-01 | 1.305E-02 | 0.515 |
| | | 323.87 | * | -2.955E-01 | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |

---- 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 | | 3.358E+00 | 1.225E+00 | 1.636E+00 | 1.711E-01 | 2.053 |
| | | 445.03 | | 3.997E-02 | 1.552E+00 | 2.517E+00 | 2.584E-01 | 0.016 |
| | | 79.80 | | 2.587E-01 | 1.166E+00 | 1.771E+00 | 3.708E-01 | 0.146 |
| | | 236.00 | | 3.547E-01 | 1.901E-01 | 3.094E-01 | 3.182E-02 | 1.147 |
| | | 256.20 | * | -4.607E-02 | 2.381E-01 | 3.956E-01 | 5.487E-02 | -0.116 |
| | | 286.10 | | -2.886E-01 | 9.565E-01 | 1.565E+00 | 1.798E-01 | -0.184 |
| | | 299.80 | | 8.551E-01 | 1.066E+00 | 1.724E+00 | 2.800E-01 | 0.496 |
| | | 304.40 | | -7.337E-01 | 1.235E+00 | 1.965E+00 | 3.391E-01 | -0.373 |
| TH-227 | | 334.20 | | 2.623E-01 | 1.758E+00 | 2.585E+00 | 4.729E-01 | 0.101 |
| | | 79.80 | | 2.587E-01 | 1.166E+00 | 1.771E+00 | 3.758E-01 | 0.146 |
| | + | 94.00 | | 7.197E+00 | 2.462E+00 | 2.557E+00 | 5.433E-01 | 2.814 |
| | | 236.00 | | 3.547E-01 | 1.892E-01 | 3.094E-01 | 2.742E-02 | 1.147 |
| | | 256.20 | * | -4.607E-02 | 2.381E-01 | 3.956E-01 | 6.657E-02 | -0.116 |
| | | 286.10 | | -2.886E-01 | 9.987E-01 | 1.565E+00 | 1.567E+00 | -0.184 |
| | | 299.80 | | 8.551E-01 | 1.066E+00 | 1.724E+00 | 2.800E-01 | 0.496 |
| | | 304.40 | | -7.337E-01 | 1.235E+00 | 1.965E+00 | 3.391E-01 | -0.373 |
| TH-229 | | 334.20 | | 2.623E-01 | 1.758E+00 | 2.585E+00 | 4.729E-01 | 0.101 |
| | + | 85.43 | | 1.752E-01 | 1.633E-01 | 2.185E-01 | 1.630E-02 | 0.802 |
| | + | 88.47 | | 1.905E-01 | 7.258E-02 | 1.348E-01 | 1.026E-02 | 1.413 |
| | | 100.00 | | 7.139E-02 | 1.293E-01 | 2.168E-01 | 1.479E-02 | 0.329 |
| PA-231 | | 193.63 | * | 8.294E-02 | 3.446E-01 | 5.565E-01 | 2.930E-02 | 0.149 |
| | | 210.97 | | 4.983E-01 | 5.792E-01 | 8.673E-01 | 4.652E-02 | 0.575 |
| | | 283.67 | * | -2.279E-01 | 9.773E-01 | 1.608E+00 | 2.206E-01 | -0.142 |
| | | 301.29 | | 5.103E-01 | 3.874E-01 | 6.875E-01 | 7.140E-02 | 0.742 |
| TH-231 | | 81.07 | | -2.100E-01 | 1.608E-01 | 2.229E-01 | 1.596E-02 | -0.942 |
| | | 83.78 | | 9.721E-02 | 9.536E-02 | 1.471E-01 | 1.080E-02 | 0.661 |
| | | 94.90 | | 5.436E-02 | 1.645E-01 | 2.494E-01 | 1.772E-02 | 0.218 |
| | | 122.32 | | -7.416E-01 | 1.235E+00 | 1.929E+00 | 1.366E-01 | -0.384 |
| | | 144.24 | | 4.615E-01 | 4.787E-01 | 8.012E-01 | 5.673E-02 | 0.576 |
| | | 154.21 | | 6.752E-02 | 2.614E-01 | 4.281E-01 | 2.855E-02 | 0.158 |
| | | 269.46 | | 1.141E-01 | 1.261E-01 | 2.214E-01 | 1.305E-02 | 0.515 |
| | | 323.87 | * | -2.955E-01 | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| U-231 | + | 338.28 | | 3.358E+00 | 1.225E+00 | 1.636E+00 | 1.711E-01 | 2.053 |
| | | 445.03 | | 3.997E-02 | 1.552E+00 | 2.517E+00 | 2.584E-01 | 0.016 |
| | | 84.21 | | 8.667E+00 | 5.391E+00 | 8.527E+00 | 6.286E-01 | 1.016 |
| | + | 92.29 | | 9.640E+00 | 2.676E+00 | 4.212E+00 | 3.069E-01 | 2.289 |
| PA-233 | | 95.87 | * | -3.267E-01 | 1.051E+00 | 1.531E+00 | 1.078E-01 | -0.213 |
| | | 108.00 | | -7.589E-01 | 1.931E+00 | 3.052E+00 | 1.989E-01 | -0.249 |
| | + | 75.28 | | 8.111E+00 | 2.849E+00 | 4.382E+00 | 6.318E-01 | 1.851 |
| | + | 86.59 | | 1.529E+00 | 1.478E+00 | 1.975E+00 | 5.232E-01 | 0.774 |
| | | 300.12 | | 2.923E-01 | 2.965E-01 | 4.852E-01 | 6.494E-02 | 0.603 |
| | | 311.98 | * | 2.299E-02 | 4.308E-02 | 7.396E-02 | 4.475E-03 | 0.311 |
| | | 340.50 | | 7.749E-01 | 4.533E-01 | 7.093E-01 | 1.627E-01 | 1.093 |
| | | 398.62 | | -9.218E-01 | 1.481E+00 | 2.268E+00 | 5.850E-01 | -0.406 |
| PA-234 | | 415.76 | | -3.024E-01 | 1.155E+00 | 1.838E+00 | 3.774E-01 | -0.165 |
| | + | 63.00 | | 1.270E+00 | 1.592E+00 | 1.978E+00 | 2.842E-01 | 0.642 |
| | | 94.67 | | 8.613E-02 | 1.199E-01 | 1.851E-01 | 2.112E-02 | 0.465 |
| | | 98.44 | | 3.198E-02 | 7.378E-02 | 1.086E-01 | 6.034E-02 | 0.294 |
| | | 99.86 | | 2.095E-01 | 3.404E-01 | 5.497E-01 | 3.753E-02 | 0.381 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| | | 111.00 | | 1.094E-01 | 1.270E-01 | 2.165E-01 | 2.304E-02 | 0.505 |
| | | 131.20 | | 2.553E-02 | 7.423E-02 | 1.107E-01 | 6.589E-03 | 0.231 |
| | | 152.70 | | 9.124E-02 | 2.133E-01 | 3.519E-01 | 5.514E-02 | 0.259 |
| | + | 186.00 | | 1.287E+00 | 1.465E+00 | 1.728E+00 | 5.262E-01 | 0.745 |
| | | 226.40 | | 7.090E-02 | 2.731E-01 | 4.684E-01 | 5.334E-02 | 0.151 |
| | | 227.20 | | -1.978E-01 | 2.983E-01 | 4.888E-01 | 2.664E-02 | -0.405 |
| | | 248.90 | | 7.572E-02 | 5.402E-01 | 9.169E-01 | 1.964E-01 | 0.083 |
| | + | 293.70 | | 3.389E+00 | 8.872E-01 | 1.138E+00 | 1.825E-01 | 2.978 |
| | | 369.80 | | 4.726E-01 | 5.659E-01 | 9.730E-01 | 2.020E-01 | 0.486 |
| | | 568.70 | | -6.285E-02 | 7.317E-01 | 1.192E+00 | 7.503E-02 | -0.053 |
| | | 569.50 | | -1.689E-02 | 1.974E-01 | 3.214E-01 | 2.024E-02 | -0.053 |
| | | 574.00 | | -1.203E-01 | 1.013E+00 | 1.682E+00 | 1.061E-01 | -0.072 |
| | | 699.00 | | -1.499E-02 | 5.098E-01 | 8.404E-01 | 1.540E-01 | -0.018 |
| | | 706.10 | | 4.588E-01 | 7.675E-01 | 1.289E+00 | 5.710E-01 | 0.356 |
| | | 733.00 | | -2.263E-01 | 3.141E-01 | 3.957E-01 | 8.563E-02 | -0.572 |
| | | 742.81 | | -5.737E-01 | 9.920E-01 | 1.402E+00 | 9.402E-01 | -0.409 |
| | | 796.30 | | 3.916E-01 | 7.931E-01 | 1.199E+00 | 3.206E-01 | 0.327 |
| | | 805.60 | | -9.046E-02 | 7.789E-01 | 1.258E+00 | 3.821E-01 | -0.072 |
| | | 819.60 | | 3.741E-01 | 8.772E-01 | 1.478E+00 | 5.592E-01 | 0.253 |
| | | 826.30 | | 5.248E-02 | 6.023E-01 | 9.902E-01 | 4.415E-01 | 0.053 |
| | | 831.60 | | -2.186E-01 | 4.880E-01 | 7.528E-01 | 2.230E-01 | -0.290 |
| | | 876.40 | | 7.055E-01 | 9.228E-01 | 1.054E+00 | 1.083E+00 | 0.670 |
| | | 880.51 | | -1.094E-01 | 2.060E-01 | 3.133E-01 | 2.576E-02 | -0.349 |
| | | 883.24 | | 6.226E-02 | 2.051E-01 | 3.371E-01 | 2.264E-01 | 0.185 |
| | | 899.00 | | -2.812E-01 | 6.593E-01 | 9.991E-01 | 4.363E-01 | -0.281 |
| | | 925.00 | | -2.612E-01 | 8.567E-01 | 1.333E+00 | 1.089E-01 | -0.196 |
| | | 926.50 | | -6.346E-02 | 1.307E-01 | 1.974E-01 | 4.959E-02 | -0.322 |
| | | 946.00 | * | 1.593E-01 | 2.203E-01 | 3.806E-01 | 7.039E-02 | 0.419 |
| | | 949.00 | | 1.740E-02 | 3.405E-01 | 5.516E-01 | 4.409E-02 | 0.032 |
| | | 980.50 | | 3.332E-01 | 5.604E-01 | 9.584E-01 | 7.409E-02 | 0.348 |
| PA-234M | | 1394.10 | | 1.362E-01 | 8.531E-01 | 1.418E+00 | 9.198E-01 | 0.096 |
| | | 766.42 | | 9.409E+00 | 9.555E+00 | 1.491E+01 | 7.537E+00 | 0.631 |
| | | 1001.03 | * | -2.313E-01 | 3.646E+00 | 6.248E+00 | 5.655E-01 | -0.037 |
| U-235 | + | 89.95 | | 1.912E+00 | 9.228E-01 | 1.312E+00 | 4.009E-01 | 1.457 |
| | + | 93.35 | | 2.239E+00 | 8.619E-01 | 9.393E-01 | 2.595E-01 | 2.384 |
| | | 105.00 | | 2.537E-02 | 7.001E-01 | 1.158E+00 | 3.395E-01 | 0.022 |
| | | 143.76 | * | 8.285E-02 | 1.498E-01 | 2.456E-01 | 3.989E-02 | 0.337 |
| | | 163.35 | | 1.427E-01 | 3.182E-01 | 5.231E-01 | 9.306E-02 | 0.273 |
| | + | 185.71 | | 4.768E-02 | 5.233E-02 | 6.450E-02 | 3.367E-03 | 0.739 |
| | | 205.31 | | 7.319E-02 | 4.040E-01 | 5.770E-01 | 1.029E-01 | 0.127 |
| NP-236 | | 94.67 | | 6.611E-02 | 9.076E-02 | 1.405E-01 | 1.000E-02 | 0.471 |
| | | 98.44 | | 2.415E-02 | 5.416E-02 | 8.211E-02 | 5.665E-03 | 0.294 |
| | | 111.00 | | 8.276E-02 | 9.578E-02 | 1.638E-01 | 1.054E-02 | 0.505 |
| | | 160.31 | * | -4.842E-02 | 5.485E-02 | 8.407E-02 | 4.408E-03 | -0.576 |
| NP-239 | | 99.55 | | 7.150E-02 | 1.137E-01 | 1.837E-01 | 1.257E-02 | 0.389 |
| | | 117.00 | * | -1.046E-02 | 1.286E-01 | 2.102E-01 | 1.327E-02 | -0.050 |
| | + | 209.75 | | 1.268E+00 | 7.873E-01 | 9.692E-01 | 5.192E-02 | 1.308 |
| | | 228.18 | | -4.868E-02 | 1.573E-01 | 2.625E-01 | 1.432E-02 | -0.185 |
| | | 277.60 | | 1.745E-01 | 1.222E-01 | 2.197E-01 | 1.239E-02 | 0.795 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 334.30 | | 1.369E-01 | 9.950E-01 | 1.462E+00 | 8.293E-02 | 0.094 |
| AM-241 | | 59.54 | * | -1.032E-01 | 1.130E-01 | 1.628E-01 | 1.157E-02 | -0.634 |
| CM-243 | | 99.55 | | 7.358E-02 | 1.170E-01 | 1.891E-01 | 1.294E-02 | 0.389 |
| | | 103.76 | * | 2.004E-03 | 6.325E-02 | 1.046E-01 | 6.969E-03 | 0.019 |
| | | 117.00 | | -1.076E-02 | 1.323E-01 | 2.163E-01 | 1.365E-02 | -0.050 |
| | + | 209.75 | | 1.250E+00 | 7.762E-01 | 9.555E-01 | 5.119E-02 | 1.308 |
| | | 228.18 | | -4.920E-02 | 1.590E-01 | 2.653E-01 | 1.447E-02 | -0.185 |
| | | 277.60 | | 1.760E-01 | 1.232E-01 | 2.215E-01 | 1.250E-02 | 0.795 |
| AM-246 | | 798.80 | | -1.251E-01 | 1.331E-01 | 1.638E-01 | 1.241E-02 | -0.764 |
| | | 1036.00 | | -5.115E-02 | 2.114E-01 | 3.445E-01 | 2.480E-02 | -0.148 |
| | | 1062.04 | | 1.757E-02 | 1.623E-01 | 2.741E-01 | 1.895E-02 | 0.064 |
| | | 1078.86 | * | 7.807E-02 | 1.112E-01 | 1.975E-01 | 1.328E-02 | 0.395 |
| CM-247 | | 278.00 | | 7.523E-01 | 5.076E-01 | 9.145E-01 | 5.161E-02 | 0.823 |
| | | 287.40 | | 4.661E-01 | 7.665E-01 | 1.329E+00 | 7.524E-02 | 0.351 |
| | | 402.60 | * | -4.008E-03 | 2.495E-02 | 4.017E-02 | 2.228E-03 | -0.100 |
| CF-249 | | 252.85 | | -1.469E-01 | 5.579E-01 | 9.248E-01 | 5.147E-02 | -0.159 |
| | | 333.44 | | 5.488E-02 | 1.295E-01 | 1.952E-01 | 1.107E-02 | 0.281 |
| | | 387.95 | * | 1.629E-02 | 2.783E-02 | 4.744E-02 | 2.608E-03 | 0.343 |
| CF-251 | | 176.60 | * | -3.270E-02 | 8.618E-02 | 1.351E-01 | 6.984E-03 | -0.242 |
| | | 227.00 | | -8.855E-02 | 2.611E-01 | 4.352E-01 | 2.371E-02 | -0.203 |
| | | 285.00 | | -3.830E-01 | 1.113E+00 | 1.818E+00 | 1.029E-01 | -0.211 |

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]G246328004        *
* Acquisition date   : 18-FEB-2010 11:08:24 Detector SN# :                   *
* Detector ID        : GAM12 Sensitivity : 5.000                            *
* Geometry           : CAN Energy tolerance: 1.500                         *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000              *
* Elapsed real time  : 0 02:00:01.21 Half life ratio : 8.000                *
*****
*                                     SAMPLE DATA                            *
*
* Sample date       : 1-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID         : G246328004 Analyst initials: MXR1                    *
* Batch Number      : 950786 Sample Quantity : 1.6061E+02 GRAM             *
* Recovery          : 1.00000 Carrier Weight : 0.00000                     *
*****
*                                     QC DATA                                *
*
* Standard Weight   : 0.00000                                                *
* CALIB. DATE/TIME  : 10-FEB-2009 09:20:24 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 | 1.740E+01 | 1.708E+00 | 4.028E-01 | 0.000E+00 |
| SN-126 | 7.812E-02 | 7.138E-02 | 1.059E-01 | 0.000E+00 |
| TL-208 | 2.727E-01 | 5.621E-02 | 3.778E-02 | 0.000E+00 |
| BI-211 | 2.036E+00 | 3.456E-01 | 2.025E-01 | 0.000E+00 |
| PB-212 | 7.764E-01 | 8.759E-02 | 7.088E-02 | 0.000E+00 |
| PO-212 | 7.764E-01 | 8.759E-02 | 7.088E-02 | 0.000E+00 |
| BI-214 | 5.927E-01 | 1.238E-01 | 8.505E-02 | 0.000E+00 |
| PB-214 | 7.083E-01 | 1.256E-01 | 7.060E-02 | 0.000E+00 |
| PO-214 | 7.083E-01 | 1.256E-01 | 7.060E-02 | 0.000E+00 |
| PO-216 | 7.764E-01 | 8.759E-02 | 7.088E-02 | 0.000E+00 |
| PO-218 | 7.083E-01 | 1.256E-01 | 7.060E-02 | 0.000E+00 |
| RA-224 | 2.746E+00 | 8.696E-01 | 8.066E-01 | 0.000E+00 |
| RA-226 | 5.927E-01 | 1.238E-01 | 8.505E-02 | 0.000E+00 |
| AC-228 | 6.661E-01 | 1.916E-01 | 1.540E-01 | 0.000E+00 |
| RA-228 | 6.661E-01 | 1.916E-01 | 1.540E-01 | 0.000E+00 |
| TH-228 | 7.896E-01 | 8.909E-02 | 7.209E-02 | 0.000E+00 |
| TH-230 | 5.927E-01 | 1.238E-01 | 8.504E-02 | 0.000E+00 |
| TH-232 | 6.661E-01 | 1.916E-01 | 1.540E-01 | 0.000E+00 |
| TH-234 | 1.089E+00 | 1.342E+00 | 1.549E+00 | 0.000E+00 |
| U-234 | 5.927E-01 | 1.238E-01 | 8.504E-02 | 0.000E+00 |
| NP-237 | 2.294E-01 | 2.147E-01 | 3.108E-01 | 0.000E+00 |
| U-238 | 1.089E+00 | 1.342E+00 | 1.549E+00 | 0.000E+00 |
| AM-243 | 1.548E-01 | 4.970E-02 | 6.783E-02 | 0.000E+00 |
| ANH-511 | 9.122E-02 | 5.489E-02 | 3.279E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 1.481E-01 | 2.183E-01 | 3.964E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | 4.903E-04 | 3.144E-02 | 5.359E-02 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 3.522E+06 | 0.000E+00 | 0.000E+00 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| AL-26 | -1.762E-02 | 1.984E-02 | 2.593E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.161E-02 | 5.096E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -1.205E-02 | 3.013E-02 | 4.887E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -1.392E-02 | 5.392E-02 | 8.745E-02 | 0.000E+00 | NOT IDENT. |
| CR-51 | 6.811E-02 | 2.630E-01 | 4.774E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -3.816E-02 | 2.286E-01 | 3.739E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -1.093E-02 | 3.006E-02 | 4.965E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -6.307E-03 | 3.048E-02 | 5.089E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -1.121E-02 | 1.756E-02 | 3.031E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | 7.513E-03 | 2.833E-02 | 4.983E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -2.105E-02 | 6.735E-02 | 1.128E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | 3.646E-02 | 2.664E-02 | 5.288E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -4.896E-02 | 7.998E-02 | 1.088E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 1.385E+00 | 9.572E-01 | 1.869E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 1.571E-01 | 5.505E-01 | 1.072E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 5.286E-02 | 6.990E-02 | 1.309E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -4.044E-03 | 2.853E-02 | 5.146E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | -3.493E+00 | 1.274E+01 | 2.109E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -1.967E-01 | 2.833E-01 | 4.530E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -5.657E-03 | 4.929E-02 | 8.286E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | -9.585E-03 | 5.037E-02 | 8.358E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 9.196E+00 | 5.738E+00 | 9.931E+00 | 0.000E+00 | NOT IDENT. |
| SR-85 | 4.807E-02 | 3.000E-02 | 5.192E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 5.917E-01 | 6.545E-01 | 1.227E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -1.749E-02 | 2.849E-02 | 4.250E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -5.080E-03 | 2.392E-02 | 3.957E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 3.423E+00 | 1.426E+01 | 2.496E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -1.420E-02 | 2.338E-02 | 3.842E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 3.495E-02 | 3.025E-02 | 5.720E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 7.356E-02 | 9.446E-02 | 1.605E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 1.996E-02 | 5.070E-02 | 9.076E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 4.207E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 9.190E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 9.377E+00 | 1.238E+01 | 2.289E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 4.798E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -1.597E-03 | 2.195E-02 | 3.796E-02 | 0.000E+00 | FAIL ABUN |
| RH-102 | -2.043E-02 | 2.061E-02 | 3.219E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 2.963E-03 | 2.932E-02 | 5.051E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -1.144E-02 | 2.156E-01 | 3.786E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -1.144E-02 | 2.156E-01 | 3.786E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 1.070E-03 | 2.387E-02 | 4.149E-02 | 0.000E+00 | NOT IDENT. |
| CD-109 | 0.000E+00 | 7.175E-01 | 1.107E+00 | 0.000E+00 | NOT IDENT. |
| AG-110M | -1.807E-02 | 2.442E-02 | 3.992E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -6.113E-02 | 1.181E+00 | 1.901E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 6.593E-03 | 3.185E-02 | 5.659E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 6.593E-03 | 3.185E-02 | 5.659E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 6.945E-02 | 1.398E-01 | 2.246E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -2.225E+00 | 1.388E+01 | 2.321E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 2.371E-02 | 3.972E-02 | 7.255E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 2.167E+00 | 2.233E+00 | 4.269E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 3.955E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 2.885E-03 | 1.902E-02 | 3.396E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -4.608E-01 | 6.642E-01 | 9.301E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | 3.097E-03 | 5.106E-02 | 8.829E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | 2.587E-03 | 6.613E-02 | 1.151E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -4.314E+00 | 6.514E+00 | 1.126E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -5.479E-02 | 1.345E-01 | 2.267E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 6.789E-02 | 1.222E-01 | 1.974E-01 | 0.000E+00 | NOT IDENT. |
| SB-127 | 2.739E-01 | 1.359E+00 | 2.414E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 3.316E-02 | 3.412E-02 | 5.945E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -8.590E-03 | 9.359E-02 | 1.538E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -2.227E-01 | 6.987E-01 | 1.267E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -3.161E-02 | 3.380E-02 | 4.721E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 1.853E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 3.971E-02 | 4.897E-02 | 6.671E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 5.341E-02 | 1.047E-01 | 1.951E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 4.319E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -7.965E-02 | 8.137E-02 | 1.258E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 1.390E-02 | 2.495E-02 | 4.573E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 1.470E-02 | 2.638E-02 | 4.834E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | 2.914E-04 | 1.937E-02 | 3.422E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 1.445E-01 | 1.932E-01 | 3.562E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -6.686E-02 | 5.623E-02 | 7.213E-02 | 0.000E+00 | NOT IDENT. |
| CE-141 | -5.780E-03 | 4.445E-02 | 7.885E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 3.877E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | -1.634E-01 | 1.334E-01 | 2.207E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 2.562E-02 | 2.378E-02 | 4.513E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 1.738E+00 | 1.613E+00 | 3.061E+00 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 3.440E-02 | 3.168E-02 | 5.893E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -2.105E-01 | 4.350E-01 | 7.009E-01 | 0.000E+00 | FAIL ABUN |
| PM-149 | -6.267E+01 | 1.018E+02 | 1.760E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | 1.121E-02 | 6.212E-02 | 9.866E-02 | 0.000E+00 | NOT IDENT. |
| GD-153 | -7.832E-02 | 6.240E-02 | 9.463E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | -4.998E-04 | 8.752E-02 | 1.488E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 2.017E-02 | 6.953E-02 | 1.292E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -4.654E-02 | 1.040E-01 | 1.677E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 2.010E-02 | 4.299E-02 | 7.777E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | -6.177E+00 | 2.013E+01 | 3.363E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 8.622E-03 | 1.575E-02 | 2.922E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 1.317E+00 | 1.746E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -1.327E-02 | 1.173E-01 | 2.024E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -2.510E-04 | 3.007E-02 | 5.149E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | -1.258E-01 | 2.641E-01 | 4.377E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -2.475E-02 | 1.604E-01 | 2.706E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -4.541E-04 | 7.318E-02 | 1.294E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -3.946E-02 | 1.468E-01 | 2.640E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -3.411E-02 | 3.070E-02 | 4.836E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | -2.806E-02 | 1.136E-01 | 1.990E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -1.940E+00 | 5.042E+00 | 7.710E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | -1.733E-02 | 2.239E-02 | 3.787E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 1.422E-01 | 1.694E-01 | 2.918E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.887E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -6.505E+00 | 7.243E+00 | 1.214E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 1.632E-02 | 5.444E-02 | 9.640E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | 1.805E-02 | 2.738E-02 | 5.133E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 4.443E-03 | 3.769E-02 | 6.627E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -2.955E-01 | 4.937E-01 | 8.462E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -2.631E+00 | 5.587E+00 | 8.974E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | 1.532E+00 | 2.242E+00 | 4.387E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 1.532E+00 | 2.242E+00 | 4.387E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 1.532E+00 | 2.241E+00 | 4.387E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -2.352E-01 | 6.653E-01 | 1.103E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 3.786E-01 | 4.739E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -2.955E-01 | 4.937E-01 | 8.462E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | 4.980E-02 | 2.730E-01 | 4.834E-01 | 0.000E+00 | NOT IDENT. |
| RN-220 | -1.371E+01 | 1.631E+01 | 2.690E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -2.955E-01 | 4.937E-01 | 8.462E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -4.607E-02 | 2.333E-01 | 4.204E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | -4.607E-02 | 2.333E-01 | 4.204E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 8.294E-02 | 3.377E-01 | 5.959E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -2.279E-01 | 9.578E-01 | 1.704E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -2.955E-01 | 4.937E-01 | 8.462E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -3.267E-01 | 1.030E+00 | 1.670E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 2.299E-02 | 4.222E-02 | 7.816E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | 1.593E-01 | 2.159E-01 | 3.895E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -2.313E-01 | 3.573E+00 | 6.384E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 8.285E-02 | 1.468E-01 | 2.651E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -4.842E-02 | 5.375E-02 | 9.048E-02 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.046E-02 | 1.260E-01 | 2.282E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | -1.032E-01 | 1.108E-01 | 1.799E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 2.004E-03 | 6.199E-02 | 1.139E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 7.807E-02 | 1.090E-01 | 2.013E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -4.008E-03 | 2.445E-02 | 4.215E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.629E-02 | 2.728E-02 | 4.983E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -3.270E-02 | 8.445E-02 | 1.450E-01 | 0.000E+00 | NOT IDENT. |

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:09:40.76

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328004.CNF;1
Sample date       : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:08:24
Sample ID        : G246328004      Sample quantity   : 1.60610E+02 GRAM
Detector name    : GAM12           Detector geometry: CAN
Elapsed live time: 0 02:00:00.00   Elapsed real time: 0 02:00:01.21  0.0%
Energy tolerance : 1.50000 keV     Analyst Initials : MXR1
Abundance limit  : 75.00000        Sensitivity      : 5.00000
Batch ID        : 950786           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 | 904 | 10.67* | 1.138E+00 | 1.740E+01 | 1.740E+01 | 10.02 |
| SN-126 | 64.28 | 56 | 9.60 | 3.170E+00 | 4.312E-01 | 4.312E-01 | 125.34 |
| | 86.94 | 69 | 8.90 | 5.597E+00 | 3.248E-01 | 3.248E-01 | 101.64 |
| | 87.57 | 69 | 37.00* | 5.597E+00 | 7.812E-02 | 7.812E-02 | 93.24 |
| TL-208 | 277.35 | ----- | 6.80 | 4.505E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 109 | 21.60 | 2.794E+00 | 4.223E-01 | 4.223E-01 | 61.97 |
| | 583.14 | 246 | 84.20* | 2.505E+00 | 2.727E-01 | 2.727E-01 | 21.04 |
| | 860.37 | ----- | 12.46 | 1.795E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 4.387E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 424 | 12.94* | 3.763E+00 | 2.036E+00 | 2.036E+00 | 17.32 |
| PB-212 | 74.81 | 200 | 10.70 | 4.570E+00 | 9.551E-01 | 9.551E-01 | 34.06 |
| | 77.11 | 332 | 18.00 | 4.810E+00 | 8.974E-01 | 8.974E-01 | 19.48 |
| | 87.30 | 69 | 8.00 | 5.597E+00 | 3.613E-01 | 3.613E-01 | 93.78 |
| | 238.63 | 743 | 44.60* | 5.017E+00 | 7.764E-01 | 7.764E-01 | 11.51 |
| | 300.09 | ----- | 3.41 | 4.248E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 200 | 10.70 | 4.570E+00 | 9.551E-01 | 9.551E-01 | 34.06 |
| | 77.11 | 332 | 18.00 | 4.810E+00 | 8.974E-01 | 8.974E-01 | 19.48 |
| | 87.30 | 69 | 8.00 | 5.597E+00 | 3.613E-01 | 3.613E-01 | 93.78 |
| | 115.19 | ----- | 0.60 | 6.604E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 743 | 44.60* | 5.017E+00 | 7.764E-01 | 7.764E-01 | 11.51 |
| | 300.09 | ----- | 3.41 | 4.248E+00 | ----- | Line Not Found | ----- |
| BI-214 | 609.31 | 284 | 46.30* | 2.416E+00 | 5.927E-01 | 5.927E-01 | 21.32 |
| | 1120.29 | 17 | 15.10 | 1.422E+00 | 1.886E-01 | 1.886E-01 | 176.22 |
| | 1764.49 | 45 | 15.80 | 9.905E-01 | 6.717E-01 | 6.717E-01 | 54.46 |
| PB-214 | 74.81 | 200 | 6.21 | 4.570E+00 | 1.646E+00 | 1.646E+00 | 33.58 |
| | 77.11 | 332 | 10.50 | 4.810E+00 | 1.538E+00 | 1.538E+00 | 20.91 |
| | 87.30 | 69 | 4.67 | 5.597E+00 | 6.189E-01 | 6.189E-01 | 93.56 |
| | 241.98 | 231 | 7.49 | 4.977E+00 | 1.448E+00 | 1.448E+00 | 32.80 |
| | 295.21 | 250 | 19.20 | 4.305E+00 | 7.060E-01 | 7.060E-01 | 22.35 |
| | 351.92 | 424 | 37.20* | 3.763E+00 | 7.083E-01 | 7.083E-01 | 18.09 |
| PO-214 | 74.81 | 200 | 6.21 | 4.570E+00 | 1.646E+00 | 1.646E+00 | 33.58 |
| | 77.11 | 332 | 10.50 | 4.810E+00 | 1.538E+00 | 1.538E+00 | 20.91 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| | 87.30 | 69 | 4.67 | 5.597E+00 | 6.189E-01 | 6.189E-01 | 93.56 |
| | 241.98 | 231 | 7.49 | 4.977E+00 | 1.448E+00 | 1.448E+00 | 32.80 |
| | 295.21 | 250 | 19.20 | 4.305E+00 | 7.060E-01 | 7.060E-01 | 22.35 |
| | 351.92 | 424 | 37.20* | 3.763E+00 | 7.083E-01 | 7.083E-01 | 18.09 |
| PO-216 | 74.81 | 200 | 10.70 | 4.570E+00 | 9.551E-01 | 9.551E-01 | 34.06 |
| | 77.11 | 332 | 18.00 | 4.810E+00 | 8.974E-01 | 8.974E-01 | 19.48 |
| | 87.30 | 69 | 8.00 | 5.597E+00 | 3.613E-01 | 3.613E-01 | 93.78 |
| | 238.63 | 743 | 44.60* | 5.017E+00 | 7.764E-01 | 7.764E-01 | 11.51 |
| | 300.09 | ----- | 3.41 | 4.248E+00 | ----- | Line Not Found | ----- |
| PO-218 | 74.81 | 200 | 6.21 | 4.570E+00 | 1.646E+00 | 1.646E+00 | 33.58 |
| | 77.11 | 332 | 10.50 | 4.810E+00 | 1.538E+00 | 1.538E+00 | 20.91 |
| | 87.30 | 69 | 4.67 | 5.597E+00 | 6.189E-01 | 6.189E-01 | 93.56 |
| | 241.98 | 231 | 7.49 | 4.977E+00 | 1.448E+00 | 1.448E+00 | 32.80 |
| | 295.21 | 250 | 19.20 | 4.305E+00 | 7.060E-01 | 7.060E-01 | 22.35 |
| | 351.92 | 424 | 37.20* | 3.763E+00 | 7.083E-01 | 7.083E-01 | 18.09 |
| RA-224 | 240.98 | 231 | 3.95* | 4.977E+00 | 2.746E+00 | 2.746E+00 | 32.32 |
| RA-226 | 609.31 | 284 | 46.30* | 2.416E+00 | 5.927E-01 | 5.927E-01 | 21.32 |
| | 1120.29 | 17 | 15.10 | 1.422E+00 | 1.886E-01 | 1.886E-01 | 176.22 |
| | 1764.49 | 45 | 15.80 | 9.905E-01 | 6.717E-01 | 6.717E-01 | 54.46 |
| AC-228 | 338.32 | 152 | 11.40 | 3.879E+00 | 8.043E-01 | 8.043E-01 | 53.68 |
| | 911.07 | 135 | 27.70* | 1.707E+00 | 6.661E-01 | 6.661E-01 | 29.35 |
| | 969.11 | 46 | 16.60 | 1.616E+00 | 3.980E-01 | 3.980E-01 | 81.59 |
| RA-228 | 338.32 | 152 | 11.40 | 3.879E+00 | 8.043E-01 | 8.043E-01 | 53.68 |
| | 911.07 | 135 | 27.70* | 1.707E+00 | 6.661E-01 | 6.661E-01 | 29.35 |
| | 969.11 | 46 | 16.60 | 1.616E+00 | 3.980E-01 | 3.980E-01 | 81.59 |
| TH-228 | 74.81 | 200 | 10.70 | 4.570E+00 | 9.551E-01 | 9.714E-01 | 32.77 |
| | 77.11 | 332 | 18.00 | 4.810E+00 | 8.974E-01 | 9.127E-01 | 19.48 |
| | 87.30 | 69 | 8.00 | 5.597E+00 | 3.613E-01 | 3.675E-01 | 93.24 |
| | 238.63 | 743 | 44.60* | 5.017E+00 | 7.764E-01 | 7.896E-01 | 11.51 |
| | 300.09 | ----- | 3.41 | 4.248E+00 | ----- | Line Not Found | ----- |
| TH-230 | 609.31 | 284 | 46.30* | 2.416E+00 | 5.927E-01 | 5.927E-01 | 21.32 |
| | 1120.29 | 17 | 15.10 | 1.422E+00 | 1.886E-01 | 1.886E-01 | 176.22 |
| | 1764.49 | 45 | 15.80 | 9.905E-01 | 6.717E-01 | 6.717E-01 | 54.46 |
| TH-232 | 338.32 | 152 | 11.40 | 3.879E+00 | 8.043E-01 | 8.043E-01 | 35.41 |
| | 911.07 | 135 | 27.70* | 1.707E+00 | 6.661E-01 | 6.661E-01 | 29.35 |
| | 969.11 | 46 | 16.60 | 1.616E+00 | 3.980E-01 | 3.980E-01 | 81.59 |
| TH-234 | 63.29 | 56 | 3.80* | 3.170E+00 | 1.089E+00 | 1.089E+00 | 125.71 |
| | 92.38 | 257 | 5.41 | 5.965E+00 | 1.862E+00 | 1.862E+00 | 31.99 |
| U-234 | 609.31 | 284 | 46.30* | 2.416E+00 | 5.927E-01 | 5.927E-01 | 21.32 |
| | 1120.29 | 17 | 15.10 | 1.422E+00 | 1.886E-01 | 1.886E-01 | 176.22 |
| | 1764.49 | 45 | 15.80 | 9.905E-01 | 6.717E-01 | 6.717E-01 | 54.46 |
| NP-237 | 86.50 | 69 | 12.60* | 5.597E+00 | 2.294E-01 | 2.294E-01 | 95.50 |
| | 95.87 | ----- | 2.60 | 6.124E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 56 | 3.80* | 3.170E+00 | 1.089E+00 | 1.089E+00 | 125.71 |
| | 92.38 | 257 | 5.41 | 5.965E+00 | 1.862E+00 | 1.862E+00 | 27.76 |
| AM-243 | 74.67 | 200 | 66.00* | 4.570E+00 | 1.548E-01 | 1.548E-01 | 32.75 |
| | 86.72 | 69 | 0.34 | 5.597E+00 | 8.602E+00 | 8.602E+00 | 93.24 |
| | 117.66 | ----- | 0.55 | 6.624E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.534E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|------|---------|-----------|-------------------------|------------------------|-------------------|
| ANH-511 | 511.00 | 109 | 100.00* | 2.794E+00 | 9.122E-02 | 9.122E-02 | 61.41 |

Flag: "*" = Keyline

Total number of lines in spectrum 25
Number of unidentified lines 0
Number of lines tentatively identified by NID 25 100.00%

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 | 1.740E+01 | 1.740E+01 | 0.174E+01 | 10.02 | |
| SN-126 | 1.00E+05Y | 1.00 | 7.812E-02 | 7.812E-02 | 7.284E-02 | 93.24 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.727E-01 | 2.727E-01 | 0.574E-01 | 21.04 | |
| BI-211 | 7.04E+08Y | 1.00 | 2.036E+00 | 2.036E+00 | 0.353E+00 | 17.32 | |
| PB-212 | 1.41E+10Y | 1.00 | 7.764E-01 | 7.764E-01 | 0.894E-01 | 11.51 | |
| PO-212 | 1.41E+10Y | 1.00 | 7.764E-01 | 7.764E-01 | 0.894E-01 | 11.51 | |
| BI-214 | 1600.00Y | 1.00 | 5.927E-01 | 5.927E-01 | 1.264E-01 | 21.32 | |
| PB-214 | 1600.00Y | 1.00 | 7.083E-01 | 7.083E-01 | 1.281E-01 | 18.09 | |
| PO-214 | 1600.00Y | 1.00 | 7.083E-01 | 7.083E-01 | 1.281E-01 | 18.09 | |
| PO-216 | 1.41E+10Y | 1.00 | 7.764E-01 | 7.764E-01 | 0.894E-01 | 11.51 | |
| PO-218 | 1600.00Y | 1.00 | 7.083E-01 | 7.083E-01 | 1.281E-01 | 18.09 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.746E+00 | 2.746E+00 | 0.887E+00 | 32.32 | |
| RA-226 | 1600.00Y | 1.00 | 5.927E-01 | 5.927E-01 | 1.264E-01 | 21.32 | |
| AC-228 | 1.41E+10Y | 1.00 | 6.661E-01 | 6.661E-01 | 1.955E-01 | 29.35 | |
| RA-228 | 1.41E+10Y | 1.00 | 6.661E-01 | 6.661E-01 | 1.955E-01 | 29.35 | |
| TH-228 | 1.91Y | 1.02 | 7.764E-01 | 7.896E-01 | 0.909E-01 | 11.51 | |
| TH-230 | 4.47E+09Y | 1.00 | 5.927E-01 | 5.927E-01 | 1.264E-01 | 21.32 | |
| TH-232 | 1.41E+10Y | 1.00 | 6.661E-01 | 6.661E-01 | 1.955E-01 | 29.35 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.089E+00 | 1.089E+00 | 1.369E+00 | 125.71 | |
| U-234 | 4.47E+09Y | 1.00 | 5.927E-01 | 5.927E-01 | 1.264E-01 | 21.32 | |
| NP-237 | 2.14E+06Y | 1.00 | 2.294E-01 | 2.294E-01 | 2.191E-01 | 95.50 | |
| U-238 | 4.47E+09Y | 1.00 | 1.089E+00 | 1.089E+00 | 1.369E+00 | 125.71 | |
| AM-243 | 7380.00Y | 1.00 | 1.548E-01 | 1.548E-01 | 0.507E-01 | 32.75 | |
| ANH-511 | 1.00E+09Y | 1.00 | 9.122E-02 | 9.122E-02 | 5.601E-02 | 61.41 | |

Total Activity : 3.478E+01 3.480E+01

Grand Total Activity : 3.478E+01 3.480E+01

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

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

Unidentified Energy Lines
Sample ID : G246328004

Page : 5
Acquisition date : 18-FEB-2010 11:08:24

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 3 | 89.86 | 128 | 204 | 1.09 | 179.22 | 177 | 17 | 1.78E-02 | 37.4 | 5.82E+00 | T |
| 0 | 128.61 | 62 | 298 | 1.49 | 256.78 | 252 | 9 | 8.58E-03 | **** | 6.64E+00 | T |
| 0 | 185.79 | 65 | 299 | 1.17 | 371.19 | 366 | 10 | 8.97E-03 | **** | 5.86E+00 | T |
| 0 | 208.99 | 96 | 226 | 1.06 | 417.60 | 413 | 10 | 1.34E-02 | 61.8 | 5.47E+00 | T |
| 0 | 462.45 | 45 | 68 | 1.08 | 924.73 | 920 | 11 | 6.26E-03 | 76.1 | 3.03E+00 | T |
| 0 | 727.43 | 65 | 70 | 1.68 | 1454.84 | 1448 | 15 | 9.07E-03 | 61.4 | 2.08E+00 | T |
| 0 | 794.47 | 25 | 51 | 1.46 | 1588.94 | 1581 | 12 | 3.44E-03 | **** | 1.92E+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]G246328004.CNF;1
* Acquisition date   : 18-FEB-2010 11:08:24   Detector SN#      :
* Detector ID        : GAM12                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.21          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G246328004             Analyst initials: MXR1
* Batch Number       : 950786                 Sample Quantity : 1.60610E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24.5MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                  LCS Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 1.740E+01 | 1.743E+00 | 3.987E-01 | 2.843E-02 | 43.628 |
| SN-126 | 7.812E-02 | 7.284E-02 | 9.682E-02 | 7.379E-03 | 0.807 |
| TL-208 | 2.727E-01 | 5.736E-02 | 3.640E-02 | 2.604E-03 | 7.491 |
| BI-211 | 2.036E+00 | 3.526E-01 | 1.923E-01 | 1.209E-02 | 10.589 |
| PB-212 | 7.764E-01 | 8.938E-02 | 6.658E-02 | 4.728E-03 | 11.661 |
| PO-212 | 7.764E-01 | 8.938E-02 | 6.658E-02 | 4.728E-03 | 11.661 |
| BI-214 | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| PB-214 | 7.083E-01 | 1.281E-01 | 6.704E-02 | 5.476E-03 | 10.566 |
| PO-214 | 7.083E-01 | 1.281E-01 | 6.704E-02 | 5.476E-03 | 10.566 |
| PO-216 | 7.764E-01 | 8.938E-02 | 6.658E-02 | 4.728E-03 | 11.661 |
| PO-218 | 7.083E-01 | 1.281E-01 | 6.704E-02 | 5.476E-03 | 10.566 |
| RA-224 | 2.746E+00 | 8.874E-01 | 7.578E-01 | 4.180E-02 | 3.623 |
| RA-226 | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| AC-228 | 6.661E-01 | 1.955E-01 | 1.503E-01 | 1.650E-02 | 4.432 |
| RA-228 | 6.661E-01 | 1.955E-01 | 1.503E-01 | 1.650E-02 | 4.432 |
| TH-228 | 7.896E-01 | 9.090E-02 | 6.772E-02 | 4.808E-03 | 11.661 |
| TH-230 | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| TH-232 | 6.661E-01 | 1.955E-01 | 1.503E-01 | 1.650E-02 | 4.432 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-234 | 1.089E+00 | 1.369E+00 | 1.405E+00 | 2.392E-01 | 0.775 |
| U-234 | 5.927E-01 | 1.264E-01 | 8.203E-02 | 6.753E-03 | 7.226 |
| NP-237 | 2.294E-01 | 2.191E-01 | 2.841E-01 | 6.241E-02 | 0.808 |
| U-238 | 1.089E+00 | 1.369E+00 | 1.405E+00 | 2.392E-01 | 0.775 |
| AM-243 | 1.548E-01 | 5.072E-02 | 6.177E-02 | 4.197E-03 | 2.507 |
| ANH-511 | 9.122E-02 | 5.601E-02 | 3.146E-02 | 1.918E-03 | 2.899 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 1.481E-01 | | 2.228E-01 | 3.797E-01 | 2.613E-02 | 0.390 |
| NA-22 | 4.903E-04 | | 3.208E-02 | 5.283E-02 | 3.402E-03 | 0.009 |
| NA-24 | 6.082E-01 | | 1.797E+00 | Half-Life too short | | |
| AL-26 | -1.762E-02 | | 2.025E-02 | 2.584E-02 | 1.482E-03 | -0.682 |
| TI-44 | 1.656E-01 | + | 3.226E-02 | 4.646E-02 | 3.250E-03 | 3.565 |
| SC-46 | -1.205E-02 | | 3.075E-02 | 4.767E-02 | 3.951E-03 | -0.253 |
| V-48 | -1.392E-02 | | 5.502E-02 | 8.555E-02 | 6.591E-03 | -0.163 |
| CR-51 | 6.811E-02 | | 2.683E-01 | 4.520E-01 | 2.874E-02 | 0.151 |
| MN-52 | -3.816E-02 | | 2.333E-01 | 3.700E-01 | 2.542E-02 | -0.103 |
| MN-54 | -1.093E-02 | | 3.068E-02 | 4.833E-02 | 3.800E-03 | -0.226 |
| CO-56 | -6.307E-03 | | 3.110E-02 | 4.956E-02 | 3.942E-03 | -0.127 |
| CO-57 | -1.121E-02 | | 1.792E-02 | 2.796E-02 | 1.749E-03 | -0.401 |
| CO-58 | 7.513E-03 | | 2.891E-02 | 4.846E-02 | 3.729E-03 | 0.155 |
| FE-59 | -2.105E-02 | | 6.872E-02 | 1.107E-01 | 8.178E-03 | -0.190 |
| CO-60 | 3.646E-02 | | 2.718E-02 | 5.221E-02 | 3.646E-03 | 0.698 |
| ZN-65 | -4.896E-02 | | 8.161E-02 | 1.068E-01 | 6.720E-03 | -0.458 |
| GE-68 | 1.385E+00 | | 9.767E-01 | 1.833E+00 | 1.236E-01 | 0.756 |
| AS-73 | 1.571E-01 | | 5.617E-01 | 9.674E-01 | 6.246E-02 | 0.162 |
| AS-74 | 5.286E-02 | | 7.133E-02 | 1.262E-01 | 8.030E-03 | 0.419 |
| SE-75 | -4.044E-03 | | 2.912E-02 | 4.848E-02 | 2.748E-03 | -0.083 |
| BR-77 | -3.493E+00 | | 1.300E+01 | 2.025E+01 | 1.242E+00 | -0.172 |
| SR-82 | -1.967E-01 | | 2.891E-01 | 4.400E-01 | 3.256E-02 | -0.447 |
| RB-83 | -5.657E-03 | | 5.029E-02 | 7.956E-02 | 4.878E-03 | -0.071 |
| RB-84 | -9.585E-03 | | 5.139E-02 | 8.150E-02 | 6.705E-03 | -0.118 |
| KR-85 | 9.196E+00 | | 5.855E+00 | 9.532E+00 | 5.821E-01 | 0.965 |
| SR-85 | 4.807E-02 | | 3.061E-02 | 4.983E-02 | 3.043E-03 | 0.965 |
| RB-86 | 5.917E-01 | | 6.678E-01 | 1.203E+00 | 8.122E-02 | 0.492 |
| Y-88 | -1.749E-02 | | 2.907E-02 | 4.237E-02 | 2.385E-03 | -0.413 |
| ZR-88 | -5.080E-03 | | 2.441E-02 | 3.769E-02 | 2.067E-03 | -0.135 |
| Y-91 | 3.423E+00 | | 1.455E+01 | 2.457E+01 | 1.420E+00 | 0.139 |
| NB-94 | -1.420E-02 | | 2.385E-02 | 3.721E-02 | 2.534E-03 | -0.382 |
| NB-95 | 3.495E-02 | | 3.087E-02 | 5.554E-02 | 4.062E-03 | 0.629 |
| NB-95M | 7.356E-02 | | 9.638E-02 | 1.507E-01 | 1.099E-02 | 0.488 |
| ZR-95 | 1.996E-02 | | 5.174E-02 | 8.809E-02 | 7.276E-03 | 0.227 |
| NB-97 | -2.709E-01 | | 2.146E-01 | Half-Life too short | | |
| ZR-97 | 1.569E+01 | | 4.689E+00 | Half-Life too short | | |
| MO-99 | 9.377E+00 | | 1.264E+01 | 2.220E+01 | 3.192E+00 | 0.422 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| TC-99M | -5.421E+12 | | 2.448E+12 | Half-Life too short | | |
| RH-101 | -1.597E-03 | | 2.240E-02 | 3.548E-02 | 1.877E-03 | -0.045 |
| RH-102 | -2.043E-02 | | 2.103E-02 | 3.083E-02 | 1.831E-03 | -0.663 |
| RU-103 | 2.963E-03 | | 2.992E-02 | 4.843E-02 | 6.178E-03 | 0.061 |
| RH-106 | -1.144E-02 | | 2.200E-01 | 3.653E-01 | 4.405E-02 | -0.031 |
| RU-106 | -1.144E-02 | | 2.200E-01 | 3.653E-01 | 2.346E-02 | -0.031 |
| AG-108M | 1.070E-03 | | 2.435E-02 | 3.963E-02 | 2.470E-03 | 0.027 |
| CD-109 | 1.619E+00 | | 7.321E-01 | 1.012E+00 | 7.744E-02 | 1.600 |
| AG-110M | -1.807E-02 | | 2.492E-02 | 3.859E-02 | 2.630E-03 | -0.468 |
| IN-111 | -6.113E-02 | | 1.205E+00 | 1.787E+00 | 9.891E-02 | -0.034 |
| IN-113M | 6.593E-03 | | 3.250E-02 | 5.389E-02 | 3.173E-03 | 0.122 |
| SN-113 | 6.593E-03 | | 3.250E-02 | 5.389E-02 | 3.173E-03 | 0.122 |
| IN-114M | 6.945E-02 | | 1.427E-01 | 2.096E-01 | 1.100E-02 | 0.331 |
| CD-115 | -2.225E+00 | | 1.417E+01 | 2.229E+01 | 1.373E+00 | -0.100 |
| SN-117M | 2.371E-02 | | 4.053E-02 | 6.739E-02 | 3.560E-03 | 0.352 |
| SB-122 | 2.167E+00 | | 2.279E+00 | 4.108E+00 | 2.580E-01 | 0.528 |
| I-123 | 6.001E+00 | | 2.018E+01 | Half-Life too short | | |
| TE-123M | 2.885E-03 | | 1.940E-02 | 3.155E-02 | 1.690E-03 | 0.091 |
| I-124 | -4.608E-01 | | 6.777E-01 | 8.968E-01 | 5.723E-02 | -0.514 |
| SB-124 | 3.097E-03 | | 5.210E-02 | 8.780E-02 | 5.859E-03 | 0.035 |
| SB-125 | 2.587E-03 | | 6.748E-02 | 1.099E-01 | 6.532E-03 | 0.024 |
| TE-125M | -4.314E+00 | | 6.647E+00 | 1.035E+01 | 8.933E-01 | -0.417 |
| I-126 | -5.479E-02 | | 1.372E-01 | 2.192E-01 | 1.429E-02 | -0.250 |
| SB-126 | 6.789E-02 | | 1.247E-01 | 1.914E-01 | 1.331E-02 | 0.355 |
| SB-127 | 2.739E-01 | | 1.387E+00 | 2.336E+00 | 2.481E-01 | 0.117 |
| XE-127 | 3.316E-03 | | 3.482E-02 | 5.559E-02 | 2.956E-03 | 0.060 |
| I-131 | -8.590E-02 | | 9.550E-02 | 1.462E-01 | 9.229E-03 | -0.588 |
| TE-132 | -2.227E-01 | | 7.129E-01 | 1.188E+00 | 1.737E-01 | -0.187 |
| BA-133 | -3.161E-02 | | 3.448E-02 | 4.484E-02 | 5.144E-03 | -0.705 |
| I-133 | 3.550E-03 | | 9.454E-03 | Half-Life too short | | |
| CS-134 | 3.971E-02 | + | 4.997E-02 | 6.485E-02 | 4.944E-03 | 0.612 |
| CS-135 | 5.341E-02 | | 1.068E-01 | 1.838E-01 | 1.382E-02 | 0.291 |
| I-135 | 1.186E+11 | | 2.204E+11 | Half-Life too short | | |
| CS-136 | -7.965E-02 | | 8.303E-02 | 1.233E-01 | 9.264E-03 | -0.646 |
| BA-137M | 1.390E-02 | | 2.546E-02 | 4.421E-02 | 2.866E-03 | 0.314 |
| CS-137 | 1.470E-02 | | 2.692E-02 | 4.674E-02 | 3.040E-03 | 0.314 |
| CE-139 | 2.914E-04 | | 1.977E-02 | 3.182E-02 | 1.631E-03 | 0.009 |
| BA-140 | 1.445E-01 | | 1.971E-01 | 3.423E-01 | 1.116E-01 | 0.422 |
| LA-140 | -6.686E-02 | | 5.737E-02 | 7.161E-02 | 4.663E-03 | -0.934 |
| CE-141 | -5.780E-03 | | 4.536E-02 | 7.308E-02 | 4.254E-03 | -0.079 |
| CE-143 | 1.244E-03 | | 1.978E-04 | Half-Life too short | | |
| CE-144 | -1.634E-01 | | 1.362E-01 | 2.041E-01 | 2.906E-02 | -0.801 |
| PM-144 | 2.562E-02 | | 2.426E-02 | 4.370E-02 | 2.957E-03 | 0.586 |
| PR-144 | 1.738E+00 | | 1.646E+00 | 2.964E+00 | 2.004E-01 | 0.586 |
| PM-146 | 3.440E-02 | | 3.233E-02 | 5.635E-02 | 4.872E-03 | 0.610 |
| ND-147 | -2.105E-01 | | 4.438E-01 | 6.734E-01 | 9.215E-02 | -0.313 |
| PM-149 | -6.267E+01 | | 1.039E+02 | 1.661E+02 | 2.346E+01 | -0.377 |
| EU-152 | 1.121E-02 | | 6.339E-02 | 9.362E-02 | 6.000E-03 | 0.120 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| GD-153 | -7.832E-02 | | 6.367E-02 | 8.677E-02 | 6.033E-03 | -0.903 |
| EU-154 | -4.998E-04 | | 8.931E-02 | 1.467E-01 | 1.429E-02 | -0.003 |
| EU-155 | 2.017E-02 | | 7.095E-02 | 1.187E-01 | 8.000E-03 | 0.170 |
| TB-160 | -4.654E-02 | | 1.061E-01 | 1.635E-01 | 1.343E-02 | -0.285 |
| HO-166M | 2.010E-02 | | 4.387E-02 | 7.535E-02 | 5.186E-03 | 0.267 |
| TM-171 | -6.177E+00 | | 2.054E+01 | 3.053E+01 | 1.976E+00 | -0.202 |
| LU-176 | 8.622E-03 | | 1.607E-02 | 2.764E-02 | 1.571E-03 | 0.312 |
| LU-177 | 2.164E+00 | + | 1.343E+00 | 1.634E+00 | 8.742E-02 | 1.324 |
| LU-177M | -1.327E-02 | | 1.197E-01 | 1.931E-01 | 1.084E-02 | -0.069 |
| HF-181 | -2.510E-04 | | 3.069E-02 | 4.933E-02 | 2.945E-03 | -0.005 |
| W-181 | -1.258E-01 | | 2.694E-01 | 3.972E-01 | 2.552E-02 | -0.317 |
| TA-182 | -2.475E-02 | | 1.637E-01 | 2.665E-01 | 1.581E-02 | -0.093 |
| RE-183 | -4.541E-04 | | 7.467E-02 | 1.202E-01 | 6.251E-03 | -0.004 |
| RE-184 | -3.946E-02 | | 1.498E-01 | 2.483E-01 | 1.382E-02 | -0.159 |
| OS-185 | -3.411E-02 | | 3.133E-02 | 4.673E-02 | 3.020E-03 | -0.730 |
| RE-188 | -2.806E-02 | | 1.159E-01 | 1.847E-01 | 9.903E-03 | -0.152 |
| W-188 | -1.940E+00 | | 5.144E+00 | 7.282E+00 | 4.127E-01 | -0.266 |
| IR-192 | -1.733E-02 | | 2.285E-02 | 3.585E-02 | 2.049E-03 | -0.483 |
| AU-195 | 1.422E-01 | | 1.729E-01 | 2.676E-01 | 1.840E-02 | 0.532 |
| TL-200 | 2.566E-04 | | 5.044E-04 | Half-Life | too short | |
| TL-201 | -6.505E+00 | | 7.391E+00 | 1.129E+01 | 5.789E-01 | -0.576 |
| TL-202 | 1.632E-02 | | 5.555E-02 | 9.211E-02 | 5.305E-03 | 0.177 |
| HG-203 | 1.805E-02 | | 2.794E-02 | 4.843E-02 | 2.912E-03 | 0.373 |
| BI-207 | 4.443E-03 | | 3.846E-02 | 6.497E-02 | 4.482E-03 | 0.068 |
| TL-207 | -2.955E-01 | | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| PO-209 | -2.631E+00 | | 5.701E+00 | 8.755E+00 | 7.306E-01 | -0.301 |
| BI-210 | 1.532E+00 | | 2.288E+00 | 3.946E+00 | 2.973E-01 | 0.388 |
| PB-210 | 1.532E+00 | | 2.288E+00 | 3.946E+00 | 2.973E-01 | 0.388 |
| PO-210 | 1.532E+00 | | 2.287E+00 | 3.946E+00 | 2.531E-01 | 0.388 |
| PB-211 | -2.352E-01 | | 6.789E-01 | 1.052E+00 | 6.554E-01 | -0.224 |
| BI-212 | 6.229E-01 | + | 3.863E-01 | 4.595E-01 | 3.978E-02 | 1.356 |
| PO-215 | -2.955E-01 | | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| RN-219 | 4.980E-02 | | 2.786E-01 | 4.607E-01 | 6.218E-02 | 0.108 |
| RN-220 | -1.371E+01 | | 1.664E+01 | 2.587E+01 | 1.613E+00 | -0.530 |
| RA-223 | -2.955E-01 | | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| AC-227 | -4.607E-02 | | 2.381E-01 | 3.956E-01 | 5.487E-02 | -0.116 |
| TH-227 | -4.607E-02 | | 2.381E-01 | 3.956E-01 | 6.657E-02 | -0.116 |
| TH-229 | 8.294E-02 | | 3.446E-01 | 5.565E-01 | 2.930E-02 | 0.149 |
| PA-231 | -2.279E-01 | | 9.773E-01 | 1.608E+00 | 2.206E-01 | -0.142 |
| TH-231 | -2.955E-01 | | 5.038E-01 | 8.016E-01 | 1.321E-01 | -0.369 |
| U-231 | -3.267E-01 | | 1.051E+00 | 1.531E+00 | 1.078E-01 | -0.213 |
| PA-233 | 2.299E-02 | | 4.308E-02 | 7.396E-02 | 4.475E-03 | 0.311 |
| PA-234 | 1.593E-01 | | 2.203E-01 | 3.806E-01 | 7.039E-02 | 0.419 |
| PA-234M | -2.313E-01 | | 3.646E+00 | 6.248E+00 | 5.655E-01 | -0.037 |
| U-235 | 8.285E-02 | | 1.498E-01 | 2.456E-01 | 3.989E-02 | 0.337 |
| NP-236 | -4.842E-02 | | 5.485E-02 | 8.407E-02 | 4.408E-03 | -0.576 |
| NP-239 | -1.046E-02 | | 1.286E-01 | 2.102E-01 | 1.327E-02 | -0.050 |
| AM-241 | -1.032E-01 | | 1.130E-01 | 1.628E-01 | 1.157E-02 | -0.634 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 2.004E-03 | | 6.325E-02 | 1.046E-01 | 6.969E-03 | 0.019 |
| AM-246 | 7.807E-02 | | 1.112E-01 | 1.975E-01 | 1.328E-02 | 0.395 |
| CM-247 | -4.008E-03 | | 2.495E-02 | 4.017E-02 | 2.228E-03 | -0.100 |
| CF-249 | 1.629E-02 | | 2.783E-02 | 4.744E-02 | 2.608E-03 | 0.343 |
| CF-251 | -3.270E-02 | | 8.618E-02 | 1.351E-01 | 6.984E-03 | -0.242 |

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]G246328004             *
* Acquisition date   : 18-FEB-2010 11:08:24 Detector SN#      :                 *
* Detector ID        : GAM12                      Sensitivity   : 5.000          *
* Geometry           : CAN                        Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000        *
* Elapsed real time  : 0 02:00:01.21             Half life ratio : 8.000        *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID              *
* Sample ID          : G246328004                 Analyst initials: MXR1          *
* Batch Number       : 950786                     Sample Quantity : 1.6061E+02 GRAM *
* Recovery           : 1.00000                     Carrier Weight  : 0.00000      *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 10-FEB-2009 09:20:24 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 | 1.740E+01 | 1.708E+00 | 2.015E-01 | 8.715E-01 |
| SN-126 | 7.812E-02 | 7.138E-02 | 5.298E-02 | 3.642E-02 |
| TL-208 | 2.727E-01 | 5.621E-02 | 1.890E-02 | 2.868E-02 |
| BI-211 | 2.036E+00 | 3.456E-01 | 1.013E-01 | 1.763E-01 |
| PB-212 | 7.764E-01 | 8.759E-02 | 3.546E-02 | 4.469E-02 |
| PO-212 | 7.764E-01 | 8.759E-02 | 3.546E-02 | 4.469E-02 |
| BI-214 | 5.927E-01 | 1.238E-01 | 4.255E-02 | 6.319E-02 |
| PB-214 | 7.083E-01 | 1.256E-01 | 3.532E-02 | 6.406E-02 |
| PO-214 | 7.083E-01 | 1.256E-01 | 3.532E-02 | 6.406E-02 |
| PO-216 | 7.764E-01 | 8.759E-02 | 3.546E-02 | 4.469E-02 |
| PO-218 | 7.083E-01 | 1.256E-01 | 3.532E-02 | 6.406E-02 |
| RA-224 | 2.746E+00 | 8.696E-01 | 4.035E-01 | 4.437E-01 |
| RA-226 | 5.927E-01 | 1.238E-01 | 4.255E-02 | 6.319E-02 |
| AC-228 | 6.661E-01 | 1.916E-01 | 7.704E-02 | 9.776E-02 |
| RA-228 | 6.661E-01 | 1.916E-01 | 7.704E-02 | 9.776E-02 |
| TH-228 | 7.896E-01 | 8.909E-02 | 3.607E-02 | 4.545E-02 |
| TH-230 | 5.927E-01 | 1.238E-01 | 4.255E-02 | 6.318E-02 |
| TH-232 | 6.661E-01 | 1.916E-01 | 7.704E-02 | 9.776E-02 |
| TH-234 | 1.089E+00 | 1.342E+00 | 7.752E-01 | 6.847E-01 |
| U-234 | 5.927E-01 | 1.238E-01 | 4.255E-02 | 6.318E-02 |
| NP-237 | 2.294E-01 | 2.147E-01 | 1.555E-01 | 1.095E-01 |
| U-238 | 1.089E+00 | 1.342E+00 | 7.752E-01 | 6.847E-01 |
| AM-243 | 1.548E-01 | 4.970E-02 | 3.394E-02 | 2.536E-02 |
| ANH-511 | 9.122E-02 | 5.489E-02 | 1.640E-02 | 2.801E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 1.481E-01 | 2.183E-01 | 1.983E-01 | 1.114E-01 NOT IDENT. |
| NA-22 | 4.903E-04 | 3.144E-02 | 2.681E-02 | 1.604E-02 NOT IDENT. |
| NA-24 | 6.082E+05 | 3.522E+06 | 0.000E+00 | 1.797E+06 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| AL-26 | -1.762E-02 | 1.984E-02 | 1.297E-02 | 1.012E-02 | NOT IDENT. |
| TI-44 | 1.656E-01 | 3.161E-02 | 2.549E-02 | 1.613E-02 | FAIL ABUN |
| SC-46 | -1.205E-02 | 3.013E-02 | 2.445E-02 | 1.537E-02 | FAIL ABUN |
| V-48 | -1.392E-02 | 5.392E-02 | 4.375E-02 | 2.751E-02 | NOT IDENT. |
| CR-51 | 6.811E-02 | 2.630E-01 | 2.388E-01 | 1.342E-01 | NOT IDENT. |
| MN-52 | -3.816E-02 | 2.286E-01 | 1.871E-01 | 1.166E-01 | NOT IDENT. |
| MN-54 | -1.093E-02 | 3.006E-02 | 2.484E-02 | 1.534E-02 | NOT IDENT. |
| CO-56 | -6.307E-03 | 3.048E-02 | 2.546E-02 | 1.555E-02 | NOT IDENT. |
| CO-57 | -1.121E-02 | 1.756E-02 | 1.517E-02 | 8.960E-03 | NOT IDENT. |
| CO-58 | 7.513E-03 | 2.833E-02 | 2.493E-02 | 1.445E-02 | NOT IDENT. |
| FE-59 | -2.105E-02 | 6.735E-02 | 5.644E-02 | 3.436E-02 | NOT IDENT. |
| CO-60 | 3.646E-02 | 2.664E-02 | 2.646E-02 | 1.359E-02 | NOT IDENT. |
| ZN-65 | -4.896E-02 | 7.998E-02 | 5.443E-02 | 4.081E-02 | NOT IDENT. |
| GE-68 | 1.385E+00 | 9.572E-01 | 9.350E-01 | 4.884E-01 | NOT IDENT. |
| AS-73 | 1.571E-01 | 5.505E-01 | 5.361E-01 | 2.809E-01 | NOT IDENT. |
| AS-74 | 5.286E-02 | 6.990E-02 | 6.548E-02 | 3.566E-02 | NOT IDENT. |
| SE-75 | -4.044E-03 | 2.853E-02 | 2.575E-02 | 1.456E-02 | NOT IDENT. |
| BR-77 | -3.493E+00 | 1.274E+01 | 1.055E+01 | 6.499E+00 | FAIL ABUN |
| SR-82 | -1.967E-01 | 2.833E-01 | 2.266E-01 | 1.445E-01 | NOT IDENT. |
| RB-83 | -5.657E-03 | 4.929E-02 | 4.146E-02 | 2.515E-02 | NOT IDENT. |
| RB-84 | -9.585E-03 | 5.037E-02 | 4.182E-02 | 2.570E-02 | NOT IDENT. |
| KR-85 | 9.196E+00 | 5.738E+00 | 4.968E+00 | 2.927E+00 | NOT IDENT. |
| SR-85 | 4.807E-02 | 3.000E-02 | 2.597E-02 | 1.530E-02 | NOT IDENT. |
| RB-86 | 5.917E-01 | 6.545E-01 | 6.137E-01 | 3.339E-01 | NOT IDENT. |
| Y-88 | -1.749E-02 | 2.849E-02 | 2.126E-02 | 1.454E-02 | NOT IDENT. |
| ZR-88 | -5.080E-03 | 2.392E-02 | 1.980E-02 | 1.221E-02 | NOT IDENT. |
| Y-91 | 3.423E+00 | 1.426E+01 | 1.249E+01 | 7.274E+00 | NOT IDENT. |
| NB-94 | -1.420E-02 | 2.338E-02 | 1.922E-02 | 1.193E-02 | NOT IDENT. |
| NB-95 | 3.495E-02 | 3.025E-02 | 2.862E-02 | 1.543E-02 | NOT IDENT. |
| NB-95M | 7.356E-02 | 9.446E-02 | 8.031E-02 | 4.819E-02 | NOT IDENT. |
| ZR-95 | 1.996E-02 | 5.070E-02 | 4.541E-02 | 2.587E-02 | NOT IDENT. |
| NB-97 | -2.709E+05 | 4.207E+05 | 0.000E+00 | 2.146E+05 | SHORT HLIF |
| ZR-97 | 1.569E+07 | 9.190E+06 | 0.000E+00 | 4.689E+06 | SHORT HLIF |
| MO-99 | 9.377E+00 | 1.238E+01 | 1.145E+01 | 6.318E+00 | NOT IDENT. |
| TC-99M | -5.421E+18 | 4.798E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -1.597E-03 | 2.195E-02 | 1.899E-02 | 1.120E-02 | FAIL ABUN |
| RH-102 | -2.043E-02 | 2.061E-02 | 1.610E-02 | 1.051E-02 | NOT IDENT. |
| RU-103 | 2.963E-03 | 2.932E-02 | 2.527E-02 | 1.496E-02 | FAIL ABUN |
| RH-106 | -1.144E-02 | 2.156E-01 | 1.894E-01 | 1.100E-01 | FAIL ABUN |
| RU-106 | -1.144E-02 | 2.156E-01 | 1.894E-01 | 1.100E-01 | FAIL ABUN |
| AG-108M | 1.070E-03 | 2.387E-02 | 2.076E-02 | 1.218E-02 | NOT IDENT. |
| CD-109 | 1.619E+00 | 7.175E-01 | 5.537E-01 | 3.661E-01 | NOT IDENT. |
| AG-110M | -1.807E-02 | 2.442E-02 | 1.997E-02 | 1.246E-02 | NOT IDENT. |
| IN-111 | -6.113E-02 | 1.181E+00 | 9.511E-01 | 6.027E-01 | NOT IDENT. |
| IN-113M | 6.593E-03 | 3.185E-02 | 2.831E-02 | 1.625E-02 | NOT IDENT. |
| SN-113 | 6.593E-03 | 3.185E-02 | 2.831E-02 | 1.625E-02 | NOT IDENT. |
| IN-114M | 6.945E-02 | 1.398E-01 | 1.123E-01 | 7.133E-02 | NOT IDENT. |
| CD-115 | -2.225E+00 | 1.388E+01 | 1.161E+01 | 7.083E+00 | NOT IDENT. |
| SN-117M | 2.371E-02 | 3.972E-02 | 3.630E-02 | 2.027E-02 | NOT IDENT. |
| SB-122 | 2.167E+00 | 2.233E+00 | 2.136E+00 | 1.139E+00 | NOT IDENT. |
| I-123 | 6.001E+06 | 3.955E+07 | 0.000E+00 | 2.018E+07 | SHORT HLIF |
| TE-123M | 2.885E-03 | 1.902E-02 | 1.699E-02 | 9.702E-03 | NOT IDENT. |
| I-124 | -4.608E-01 | 6.642E-01 | 4.653E-01 | 3.389E-01 | NOT IDENT. |
| SB-124 | 3.097E-03 | 5.106E-02 | 4.417E-02 | 2.605E-02 | FAIL ABUN |
| SB-125 | 2.587E-03 | 6.613E-02 | 5.758E-02 | 3.374E-02 | FAIL ABUN |
| TE-125M | -4.314E+00 | 6.514E+00 | 5.632E+00 | 3.323E+00 | NOT IDENT. |
| I-126 | -5.479E-02 | 1.345E-01 | 1.134E-01 | 6.861E-02 | NOT IDENT. |
| SB-126 | 6.789E-02 | 1.222E-01 | 9.877E-02 | 6.235E-02 | NOT IDENT. |
| SB-127 | 2.739E-01 | 1.359E+00 | 1.208E+00 | 6.935E-01 | NOT IDENT. |
| XE-127 | 3.316E-03 | 3.412E-02 | 2.974E-02 | 1.741E-02 | NOT IDENT. |
| I-131 | -8.590E-02 | 9.359E-02 | 7.695E-02 | 4.775E-02 | NOT IDENT. |
| TE-132 | -2.227E-01 | 6.987E-01 | 6.338E-01 | 3.565E-01 | NOT IDENT. |
| BA-133 | -3.161E-02 | 3.380E-02 | 2.362E-02 | 1.724E-02 | NOT IDENT. |
| I-133 | 3.550E+03 | 1.853E+04 | 0.000E+00 | 9.454E+03 | SHORT HLIF |
| CS-134 | 3.971E-02 | 4.897E-02 | 3.338E-02 | 2.498E-02 | FAIL ABUN |
| CS-135 | 5.341E-02 | 1.047E-01 | 9.760E-02 | 5.340E-02 | NOT IDENT. |
| I-135 | 1.186E+17 | 4.319E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -7.965E-02 | 8.137E-02 | 6.294E-02 | 4.151E-02 | FAIL ABUN |
| BA-137M | 1.390E-02 | 2.495E-02 | 2.288E-02 | 1.273E-02 | NOT IDENT. |
| CS-137 | 1.470E-02 | 2.638E-02 | 2.418E-02 | 1.346E-02 | NOT IDENT. |
| CE-139 | 2.914E-04 | 1.937E-02 | 1.712E-02 | 9.884E-03 | NOT IDENT. |
| BA-140 | 1.445E-01 | 1.932E-01 | 1.782E-01 | 9.855E-02 | NOT IDENT. |
| LA-140 | -6.686E-02 | 5.623E-02 | 3.609E-02 | 2.869E-02 | NOT IDENT. |
| CE-141 | -5.780E-03 | 4.445E-02 | 3.945E-02 | 2.268E-02 | NOT IDENT. |
| CE-143 | 1.244E+03 | 3.877E+02 | 0.000E+00 | 1.978E+02 | SHORT HLIF |
| CE-144 | -1.634E-01 | 1.334E-01 | 1.104E-01 | 6.809E-02 | NOT IDENT. |
| PM-144 | 2.562E-02 | 2.378E-02 | 2.258E-02 | 1.213E-02 | NOT IDENT. |
| PR-144 | 1.738E+00 | 1.613E+00 | 1.531E+00 | 8.229E-01 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PM-146 | 3.440E-02 | 3.168E-02 | 2.948E-02 | 1.616E-02 | NOT IDENT. |
| ND-147 | -2.105E-01 | 4.350E-01 | 3.507E-01 | 2.219E-01 | FAIL ABUN |
| PM-149 | -6.267E+01 | 1.018E+02 | 8.803E+01 | 5.195E+01 | NOT IDENT. |
| EU-152 | 1.121E-02 | 6.212E-02 | 4.936E-02 | 3.170E-02 | NOT IDENT. |
| GD-153 | -7.832E-02 | 6.240E-02 | 4.734E-02 | 3.184E-02 | NOT IDENT. |
| EU-154 | -4.998E-04 | 8.752E-02 | 7.445E-02 | 4.465E-02 | NOT IDENT. |
| EU-155 | 2.017E-02 | 6.953E-02 | 6.463E-02 | 3.547E-02 | FAIL ABUN |
| TB-160 | -4.654E-02 | 1.040E-01 | 8.390E-02 | 5.305E-02 | FAIL ABUN |
| HO-166M | 2.010E-02 | 4.299E-02 | 3.891E-02 | 2.193E-02 | FAIL ABUN |
| TM-171 | -6.177E+00 | 2.013E+01 | 1.682E+01 | 1.027E+01 | NOT IDENT. |
| LU-176 | 8.622E-03 | 1.575E-02 | 1.462E-02 | 8.034E-03 | FAIL ABUN |
| LU-177 | 2.164E+00 | 1.317E+00 | 8.738E-01 | 6.717E-01 | FAIL ABUN |
| LU-177M | -1.327E-02 | 1.173E-01 | 1.013E-01 | 5.984E-02 | NOT IDENT. |
| HF-181 | -2.510E-04 | 3.007E-02 | 2.576E-02 | 1.534E-02 | NOT IDENT. |
| W-181 | -1.258E-01 | 2.641E-01 | 2.190E-01 | 1.347E-01 | NOT IDENT. |
| TA-182 | -2.475E-02 | 1.604E-01 | 1.354E-01 | 8.183E-02 | FAIL ABUN |
| RE-183 | -4.541E-04 | 7.318E-02 | 6.472E-02 | 3.734E-02 | FAIL ABUN |
| RE-184 | -3.946E-02 | 1.468E-01 | 1.321E-01 | 7.491E-02 | NOT IDENT. |
| OS-185 | -3.411E-02 | 3.070E-02 | 2.420E-02 | 1.566E-02 | NOT IDENT. |
| RE-188 | -2.806E-02 | 1.136E-01 | 9.955E-02 | 5.794E-02 | NOT IDENT. |
| W-188 | -1.940E+00 | 5.042E+00 | 3.857E+00 | 2.572E+00 | FAIL ABUN |
| IR-192 | -1.733E-02 | 2.239E-02 | 1.895E-02 | 1.142E-02 | FAIL ABUN |
| AU-195 | 1.422E-01 | 1.694E-01 | 1.460E-01 | 8.643E-02 | FAIL ABUN |
| TL-200 | 2.566E+02 | 9.887E+02 | 0.000E+00 | 5.044E+02 | SHORT HLIF |
| TL-201 | -6.505E+00 | 7.243E+00 | 6.074E+00 | 3.695E+00 | NOT IDENT. |
| TL-202 | 1.632E-02 | 5.444E-02 | 4.823E-02 | 2.778E-02 | NOT IDENT. |
| HG-203 | 1.805E-02 | 2.738E-02 | 2.568E-02 | 1.397E-02 | NOT IDENT. |
| BI-207 | 4.443E-03 | 3.769E-02 | 3.315E-02 | 1.923E-02 | FAIL ABUN |
| TL-207 | -2.955E-01 | 4.937E-01 | 4.233E-01 | 2.519E-01 | FAIL ABUN |
| PO-209 | -2.631E+00 | 5.587E+00 | 4.490E+00 | 2.851E+00 | NOT IDENT. |
| BI-210 | 1.532E+00 | 2.242E+00 | 2.195E+00 | 1.144E+00 | NOT IDENT. |
| PB-210 | 1.532E+00 | 2.242E+00 | 2.195E+00 | 1.144E+00 | NOT IDENT. |
| PO-210 | 1.532E+00 | 2.241E+00 | 2.195E+00 | 1.144E+00 | NOT IDENT. |
| PB-211 | -2.352E-01 | 6.653E-01 | 5.520E-01 | 3.395E-01 | NOT IDENT. |
| BI-212 | 6.229E-01 | 3.786E-01 | 2.371E-01 | 1.932E-01 | FAIL ABUN |
| PO-215 | -2.955E-01 | 4.937E-01 | 4.233E-01 | 2.519E-01 | FAIL ABUN |
| RN-219 | 4.980E-02 | 2.730E-01 | 2.418E-01 | 1.393E-01 | NOT IDENT. |
| RN-220 | -1.371E+01 | 1.631E+01 | 1.346E+01 | 8.320E+00 | NOT IDENT. |
| RA-223 | -2.955E-01 | 4.937E-01 | 4.233E-01 | 2.519E-01 | FAIL ABUN |
| AC-227 | -4.607E-02 | 2.333E-01 | 2.103E-01 | 1.190E-01 | NOT IDENT. |
| TH-227 | -4.607E-02 | 2.333E-01 | 2.103E-01 | 1.190E-01 | FAIL ABUN |
| TH-229 | 8.294E-02 | 3.377E-01 | 2.981E-01 | 1.723E-01 | FAIL ABUN |
| PA-231 | -2.279E-01 | 9.578E-01 | 8.525E-01 | 4.886E-01 | NOT IDENT. |
| TH-231 | -2.955E-01 | 4.937E-01 | 4.233E-01 | 2.519E-01 | FAIL ABUN |
| U-231 | -3.267E-01 | 1.030E+00 | 8.356E-01 | 5.255E-01 | FAIL ABUN |
| PA-233 | 2.299E-02 | 4.222E-02 | 3.910E-02 | 2.154E-02 | FAIL ABUN |
| PA-234 | 1.593E-01 | 2.159E-01 | 1.949E-01 | 1.101E-01 | FAIL ABUN |
| PA-234M | -2.313E-01 | 3.573E+00 | 3.194E+00 | 1.823E+00 | NOT IDENT. |
| U-235 | 8.285E-02 | 1.468E-01 | 1.326E-01 | 7.491E-02 | FAIL ABUN |
| NP-236 | -4.842E-02 | 5.375E-02 | 4.527E-02 | 2.742E-02 | NOT IDENT. |
| NP-239 | -1.046E-02 | 1.260E-01 | 1.142E-01 | 6.431E-02 | FAIL ABUN |
| AM-241 | -1.032E-01 | 1.108E-01 | 8.999E-02 | 5.651E-02 | NOT IDENT. |
| CM-243 | 2.004E-03 | 6.199E-02 | 5.700E-02 | 3.163E-02 | FAIL ABUN |
| AM-246 | 7.807E-02 | 1.090E-01 | 1.007E-01 | 5.560E-02 | NOT IDENT. |
| CM-247 | -4.008E-03 | 2.445E-02 | 2.109E-02 | 1.248E-02 | NOT IDENT. |
| CF-249 | 1.629E-02 | 2.728E-02 | 2.493E-02 | 1.392E-02 | NOT IDENT. |
| CF-251 | -3.270E-02 | 8.445E-02 | 7.254E-02 | 4.309E-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 | 178.6575 |
| 46.50 | 178.6575 |
| 46.50 | 178.6575 |
| 48.70 | 210.7135 |
| 49.72 | 194.3115 |
| 51.35 | 202.2364 |
| 52.39 | 205.5051 |
| 52.97 | 205.8852 |
| 53.15 | 206.0027 |
| 53.44 | 205.3251 |
| 54.07 | 210.9410 |
| 56.28 | 207.1399 |
| 56.28 | 207.1418 |
| 57.37 | 0.0000 |
| 57.53 | 209.6811 |
| 57.53 | 209.6824 |
| 57.60 | 209.7255 |
| 57.98 | 227.5346 |
| 57.98 | 227.5346 |
| 59.32 | 240.7884 |
| 59.32 | 240.7884 |
| 59.40 | 252.7546 |
| 59.54 | 252.8587 |
| 59.72 | 251.6675 |
| 60.01 | 239.9501 |
| 61.10 | 203.4731 |
| 61.14 | 203.4967 |
| 61.30 | 203.5901 |
| 63.00 | 247.8133 |
| 63.29 | 248.0155 |
| 63.29 | 248.0155 |
| 63.58 | 248.2180 |
| 64.28 | 258.9929 |
| 65.12 | 258.2520 |
| 65.20 | 260.9998 |
| 65.20 | 260.9998 |
| 66.05 | 262.9581 |
| 66.72 | 256.6824 |
| 66.83 | 256.7607 |
| 66.91 | 275.7405 |
| 67.20 | 265.1350 |
| 67.20 | 265.1350 |
| 67.75 | 282.8674 |
| 67.85 | 282.9454 |
| 68.90 | 282.6532 |
| 68.90 | 282.6532 |
| 69.30 | 268.8055 |
| 69.67 | 260.0822 |
| 70.82 | 264.9635 |
| 70.82 | 264.9635 |
| 70.83 | 264.9709 |
| 72.80 | 291.0326 |
| 72.87 | 291.0859 |
| 72.87 | 291.0859 |
| 74.67 | 295.1758 |
| 74.81 | 295.2802 |
| 74.81 | 295.2802 |
| 74.81 | 295.2802 |
| 74.81 | 295.2802 |
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| 74.97 | 295.3986 |
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| 75.70 | 295.9382 |
| 77.11 | 296.9733 |
| 77.11 | 296.9733 |

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| 77.11 | 296.9733 |
| 77.11 | 296.9733 |
| 77.11 | 296.9733 |
| 77.11 | 296.9733 |
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| 79.62 | 262.4903 |
| 79.80 | 262.6036 |
| 79.80 | 262.6036 |
| 80.11 | 279.5746 |
| 80.18 | 279.6204 |
| 80.30 | 279.7012 |
| 80.30 | 279.7012 |
| 80.57 | 257.4908 |
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| 81.07 | 320.8467 |
| 81.07 | 320.8467 |
| 81.07 | 320.8467 |
| 82.60 | 273.3542 |
| 83.37 | 269.0557 |
| 83.78 | 265.0850 |
| 83.78 | 265.0850 |
| 83.78 | 265.0850 |
| 83.78 | 265.0850 |
| 84.21 | 234.2974 |
| 84.90 | 241.7395 |
| 85.43 | 300.0659 |
| 86.29 | 338.9456 |
| 86.50 | 340.5267 |
| 86.54 | 340.5579 |
| 86.59 | 340.5963 |
| 86.72 | 340.6970 |
| 86.79 | 340.7501 |
| 86.94 | 349.3890 |
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| 87.30 | 349.6724 |
| 87.30 | 349.6724 |
| 87.30 | 349.6724 |
| 87.30 | 349.6724 |
| 87.30 | 349.6724 |
| 87.57 | 349.8864 |
| 87.88 | 227.7271 |
| 88.03 | 227.8040 |
| 88.36 | 227.9724 |
| 88.47 | 228.0286 |
| 89.95 | 225.9196 |
| 91.11 | 226.4982 |
| 92.29 | 227.0816 |
| 92.38 | 227.1262 |
| 92.38 | 227.1262 |
| 93.35 | 227.6024 |
| 94.00 | 227.9206 |
| 94.67 | 228.2449 |
| 94.67 | 228.2473 |
| 94.90 | 228.3594 |
| 94.90 | 228.3594 |
| 94.90 | 228.3594 |
| 94.90 | 228.3594 |
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| 95.87 | 227.3812 |
| 96.73 | 271.3235 |
| 97.43 | 267.3610 |
| 98.44 | 216.9590 |
| 98.44 | 216.9601 |
| 98.88 | 196.7538 |
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| 99.55 | 203.1554 |
| 99.86 | 203.2850 |
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| 100.10 | 207.4780 |
| 103.18 | 211.7175 |
| 103.76 | 199.2065 |
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| 105.31 | 197.8532 |
| 108.00 | 215.7214 |
| 109.28 | 224.1930 |

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| 111.00 | 201.0466 |
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| 112.95 | 212.7790 |
| 115.19 | 232.7316 |
| 116.30 | 198.0280 |
| 117.00 | 205.3281 |
| 117.00 | 205.3281 |
| 117.66 | 205.5771 |
| 121.11 | 211.9339 |
| 121.62 | 195.8880 |
| 121.78 | 195.9440 |
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| 122.32 | 217.4733 |
| 122.32 | 217.4733 |
| 122.32 | 217.4733 |
| 122.32 | 217.4733 |
| 123.07 | 210.0292 |
| 127.23 | 226.0162 |
| 129.76 | 176.0411 |
| 131.20 | 174.9245 |
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| 133.54 | 213.4287 |
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| 136.25 | 175.8835 |
| 136.48 | 176.9900 |
| 140.51 | 245.2234 |
| 140.51 | 0.0000 |
| 142.18 | 218.5604 |
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| 143.76 | 202.2559 |
| 144.24 | 187.6493 |
| 144.24 | 187.6493 |
| 144.24 | 187.6493 |
| 144.24 | 187.6493 |
| 145.22 | 219.6141 |
| 145.44 | 221.8027 |
| 147.16 | 208.6331 |
| 152.43 | 167.6222 |
| 152.70 | 181.5761 |
| 153.22 | 196.6829 |
| 154.21 | 186.2715 |
| 154.21 | 186.2715 |
| 154.21 | 186.2715 |
| 154.21 | 186.2715 |
| 155.03 | 197.2201 |
| 156.02 | 215.7605 |
| 158.56 | 178.8624 |
| 159.00 | 0.0000 |
| 159.00 | 188.6808 |
| 160.31 | 216.0502 |
| 161.27 | 207.6992 |
| 162.32 | 187.4308 |
| 162.64 | 163.6709 |
| 163.35 | 181.1987 |
| 163.89 | 185.6831 |
| 165.85 | 178.5826 |
| 167.43 | 213.9085 |
| 171.28 | 158.0083 |
| 171.86 | 182.2954 |
| 172.10 | 182.3562 |
| 176.55 | 190.1056 |
| 176.60 | 190.1187 |
| 181.06 | 211.8378 |
| 184.41 | 211.1061 |
| 185.71 | 208.1091 |
| 186.00 | 208.1885 |
| 190.27 | 173.8927 |
| 192.34 | 199.7462 |
| 193.63 | 171.8149 |
| 197.04 | 189.5857 |
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| 200.40 | 180.1207 |
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| 202.84 | 193.2418 |
| 205.31 | 182.3557 |

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| 209.75 | 200.6317 |
| 209.75 | 200.6317 |
| 210.97 | 162.8175 |
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| 218.09 | 165.3518 |
| 222.10 | 198.2914 |
| 223.80 | 170.5448 |
| 226.40 | 171.0495 |
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| 228.18 | 189.9458 |
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| 238.63 | 187.6817 |
| 238.63 | 187.6817 |
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| 241.98 | 188.3611 |
| 241.98 | 188.3611 |
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| 252.85 | 133.3758 |
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| 256.20 | 125.6437 |
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| 262.80 | 122.8258 |
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| 268.24 | 139.1640 |
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| 269.46 | 131.9503 |
| 269.46 | 131.9503 |
| 269.46 | 131.9503 |
| 269.46 | 131.9503 |
| 271.23 | 132.1816 |
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| 277.60 | 117.1925 |
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| 278.60 | 117.3060 |
| 279.20 | 122.9645 |
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| 283.67 | 116.9415 |
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| 286.10 | 111.5861 |
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| 295.21 | 136.1821 |
| 295.21 | 136.1821 |

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| 295.21 | 136.1821 |
| 295.96 | 162.0177 |
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| 299.80 | 125.3593 |
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| 300.09 | 121.5938 |
| 300.09 | 121.5938 |
| 300.09 | 121.5938 |
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| 306.84 | 97.4865 |
| 308.46 | 111.0280 |
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| 323.87 | 151.3392 |
| 323.87 | 151.3392 |
| 323.87 | 151.3392 |
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| 334.30 | 109.6194 |
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| 338.28 | 104.0914 |
| 338.28 | 104.0914 |
| 338.28 | 104.0914 |
| 338.32 | 104.0963 |
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| 338.32 | 104.0963 |
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| 351.07 | 74.4244 |
| 351.92 | 74.4759 |
| 351.92 | 74.4759 |
| 351.92 | 74.4759 |
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| 369.80 | 72.5120 |
| 374.96 | 93.0234 |
| 383.85 | 105.8678 |
| 387.95 | 84.7515 |
| 388.63 | 99.0973 |
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| 391.69 | 95.2265 |
| 392.90 | 99.4111 |
| 398.62 | 98.7993 |
| 400.65 | 86.5776 |
| 401.10 | 82.4817 |
| 401.81 | 82.5244 |
| 402.60 | 86.6993 |
| 404.84 | 99.2461 |
| 410.95 | 98.6428 |
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| 415.76 | 88.5616 |
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| 433.93 | 88.6284 |
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| 439.89 | 76.2759 |
| 443.98 | 77.5480 |
| 444.90 | 75.4700 |
| 445.03 | 72.2874 |
| 445.03 | 72.2874 |
| 445.03 | 72.2874 |
| 445.03 | 72.2874 |
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| 473.00 | 71.4523 |
| 475.06 | 86.7224 |
| 475.35 | 78.0645 |
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| 511.85 | 65.4234 |
| 511.85 | 65.4234 |
| 513.99 | 63.9523 |
| 513.99 | 63.9523 |
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| 529.87 | 0.0000 |
| 531.02 | 67.2876 |
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| 563.90 | 54.8408 |
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| 569.32 | 67.8394 |
| 569.50 | 67.8466 |
| 569.67 | 60.5167 |
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| 602.71 | 66.8848 |
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| 609.31 | 71.1739 |
| 609.31 | 71.1739 |
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| 621.84 | 58.4383 |
| 621.84 | 58.4383 |
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| 661.65 | 55.7613 |
| 664.57 | 0.0000 |
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| 666.33 | 61.6688 |
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| 696.49 | 46.9172 |
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| 742.81 | 51.9035 |
| 744.21 | 51.9353 |
| 747.13 | 48.0023 |
| 751.79 | 60.1245 |
| 752.31 | 53.1229 |
| 753.82 | 51.1519 |
| 755.35 | 49.1782 |
| 756.15 | 48.1910 |
| 756.87 | 50.2148 |
| 763.93 | 65.4792 |
| 765.79 | 46.3762 |
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| 766.84 | 41.3543 |
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| 778.57 | 65.8903 |
| 778.89 | 54.7475 |
| 783.80 | 44.7015 |
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| 792.07 | 39.0802 |

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| 846.75 | 55.2463 |
| 848.13 | 51.1043 |
| 856.28 | 0.0000 |
| 856.80 | 66.9766 |
| 860.37 | 37.7271 |
| 867.32 | 35.7274 |
| 867.82 | 33.6320 |
| 871.10 | 51.5648 |
| 873.19 | 41.0747 |
| 874.81 | 37.9389 |
| 875.33 | 0.0000 |
| 876.40 | 27.4168 |
| 879.36 | 49.6174 |
| 880.27 | 48.5785 |
| 880.51 | 48.5830 |
| 881.50 | 42.2627 |
| 883.24 | 37.0038 |
| 884.67 | 30.6773 |
| 889.25 | 51.9249 |
| 896.60 | 52.0685 |
| 898.02 | 56.3500 |
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| 911.07 | 42.7363 |
| 911.07 | 42.7363 |
| 911.07 | 42.7363 |
| 919.63 | 38.5849 |
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| 926.50 | 47.2785 |
| 935.52 | 33.4196 |
| 937.48 | 48.5475 |
| 944.10 | 45.4197 |
| 946.00 | 34.6289 |
| 949.00 | 45.4997 |
| 962.29 | 43.5391 |
| 964.01 | 43.5654 |
| 966.15 | 56.3149 |
| 968.20 | 66.5356 |
| 969.11 | 34.5519 |
| 969.11 | 34.5519 |
| 969.11 | 34.5519 |
| 977.42 | 47.0554 |
| 980.50 | 38.3419 |
| 983.50 | 40.5753 |
| 989.30 | 38.4598 |
| 996.32 | 53.2398 |
| 1001.03 | 44.1318 |
| 1001.68 | 48.7397 |
| 1004.76 | 59.8386 |
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| 1024.50 | 0.0000 |
| 1034.80 | 42.7806 |
| 1036.00 | 41.8671 |
| 1037.82 | 45.6165 |
| 1038.57 | 38.1772 |
| 1038.76 | 0.0000 |
| 1045.16 | 33.5962 |
| 1046.59 | 45.7481 |
| 1048.07 | 47.6403 |

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| 1050.47 | 39.2639 |
| 1050.47 | 39.2639 |
| 1062.04 | 39.4126 |
| 1063.62 | 42.2498 |
| 1076.63 | 40.5435 |
| 1077.35 | 33.9507 |
| 1078.86 | 41.5150 |
| 1085.78 | 43.4993 |
| 1099.22 | 46.5356 |
| 1112.02 | 44.8179 |
| 1112.84 | 48.6447 |
| 1115.52 | 60.5483 |
| 1120.29 | 39.1966 |
| 1120.29 | 39.1966 |
| 1120.29 | 39.1966 |
| 1120.29 | 39.1966 |
| 1120.51 | 45.8926 |
| 1121.28 | 52.5987 |
| 1124.00 | 0.0000 |
| 1129.67 | 43.1470 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 50.4448 |
| 1173.22 | 45.6670 |
| 1175.09 | 46.6660 |
| 1177.93 | 53.5162 |
| 1189.05 | 46.8594 |
| 1204.90 | 50.0226 |
| 1205.75 | 0.0000 |
| 1213.00 | 65.8713 |
| 1221.42 | 66.0322 |
| 1230.97 | 69.1797 |
| 1235.34 | 60.3621 |
| 1236.41 | 0.0000 |
| 1238.25 | 45.5564 |
| 1246.25 | 43.6759 |
| 1260.41 | 0.0000 |
| 1271.85 | 42.9930 |
| 1274.45 | 37.0211 |
| 1274.54 | 37.0226 |
| 1291.56 | 49.2612 |
| 1298.22 | 0.0000 |
| 1312.09 | 27.2977 |
| 1325.50 | 28.4124 |
| 1325.50 | 28.4124 |
| 1332.49 | 15.2496 |
| 1333.61 | 22.3724 |
| 1360.21 | 22.5317 |
| 1362.66 | 0.0000 |
| 1365.15 | 15.3827 |
| 1368.21 | 19.5010 |
| 1368.53 | 0.0000 |
| 1376.25 | 16.4564 |
| 1384.27 | 17.5216 |
| 1394.10 | 20.6665 |
| 1395.20 | 32.0419 |
| 1407.95 | 18.6665 |
| 1434.06 | 25.0547 |
| 1436.60 | 20.8919 |
| 1457.56 | 0.0000 |
| 1460.81 | 19.8178 |
| 1489.15 | 16.9336 |
| 1509.49 | 14.8904 |
| 1596.49 | 18.6112 |
| 1620.62 | 18.7144 |
| 1678.03 | 0.0000 |
| 1691.02 | 10.4560 |
| 1691.02 | 10.4560 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 5.0698 |
| 1764.49 | 5.0698 |
| 1764.49 | 5.0698 |
| 1764.49 | 5.0698 |
| 1770.23 | 10.1517 |
| 1771.40 | 20.3086 |
| 1791.20 | 0.0000 |
| 1808.65 | 12.6699 |

1836.01

17.6422

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328004

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 3.2789E+00 | ug/g |
| Total Uranium Counting Unc. | 3.9929E+00 | ug/g |
| Total Uranium Tpu | 2.0372E-06 | ug/g |
| Total Uranium Mda | 2.3069E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 950786                          SAMPLE ID   : G246328004
*  ANALYST       : MXR1                             DETECTOR    : GAM12
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 18-FEB-2010 11:08:24.20          SAMPLE ALQT  : 160.610 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 4.495E+00
GROSS GAMMA ERROR (pCi/GRAM ) : 8.579E-01
GROSS GAMMA MDA (pCi/GRAM ) : 1.519E+00
GROSS GAMMA DLC (pCi/GRAM ) : 7.305E-01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:10:47.14

```
*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328005.CNF;1
Sample date       : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:08:50
Sample ID        : G246328005          Sample quantity  : 1.56000E+02 GRAM
Detector name    : GAM20              Detector geometry: CAN
Elapsed live time: 0 02:00:00.00      Elapsed real time: 0 02:00:34.37 0.5%
Energy tolerance : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit  : 75.00000           Sensitivity     : 5.00000
Batch ID        : 950786              Detector SN#    :
Matrix Spike ID  :                    LCS ID          : 1032-A
*****
```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 46.72* | 85 | 289 | 1.24 | 93.47 | 90 | 8 | 1.19E-02 | 37.2 | |
| 2 | 0 | 63.21* | 225 | 552 | 0.99 | 126.39 | 122 | 10 | 3.13E-02 | 21.1 | |
| 3 | 5 | 74.89 | 278 | 417 | 0.96 | 149.72 | 146 | 14 | 3.87E-02 | 12.7 | 2.06E+00 |
| 4 | 5 | 77.22* | 518 | 357 | 1.02 | 154.37 | 146 | 14 | 7.20E-02 | 7.5 | |
| 5 | 2 | 87.41 | 205 | 418 | 1.27 | 174.72 | 171 | 22 | 2.84E-02 | 18.2 | 2.89E+00 |
| 6 | 2 | 90.05 | 132 | 397 | 1.27 | 180.00 | 171 | 22 | 1.83E-02 | 27.8 | |
| 7 | 2 | 92.70* | 527 | 317 | 1.15 | 185.30 | 171 | 22 | 7.32E-02 | 7.7 | |
| 8 | 0 | 185.80* | 181 | 265 | 0.98 | 371.23 | 367 | 10 | 2.51E-02 | 19.5 | |
| 9 | 6 | 238.61* | 887 | 142 | 1.22 | 476.71 | 469 | 21 | 1.23E-01 | 4.1 | 1.51E+00 |
| 10 | 6 | 241.64 | 222 | 189 | 1.61 | 482.76 | 469 | 21 | 3.08E-02 | 14.9 | |
| 11 | 0 | 270.15 | 66 | 120 | 0.71 | 539.71 | 536 | 8 | 9.23E-03 | 31.1 | |
| 12 | 0 | 295.23 | 248 | 137 | 1.05 | 589.81 | 585 | 9 | 3.44E-02 | 10.6 | |
| 13 | 0 | 300.02 | 84 | 110 | 1.26 | 599.38 | 596 | 9 | 1.17E-02 | 25.1 | |
| 14 | 0 | 338.30* | 140 | 172 | 1.02 | 675.86 | 671 | 10 | 1.95E-02 | 19.8 | |
| 15 | 0 | 351.87* | 466 | 156 | 1.18 | 702.97 | 697 | 13 | 6.47E-02 | 7.3 | |
| 16 | 0 | 463.11 | 99 | 120 | 2.30 | 925.25 | 917 | 16 | 1.38E-02 | 26.6 | |
| 17 | 0 | 510.66* | 110 | 136 | 1.61 | 1020.27 | 1012 | 17 | 1.53E-02 | 29.6 | |
| 18 | 0 | 583.14* | 275 | 93 | 1.43 | 1165.13 | 1157 | 15 | 3.82E-02 | 9.9 | |
| 19 | 0 | 609.29* | 362 | 72 | 1.39 | 1217.41 | 1211 | 13 | 5.03E-02 | 7.2 | |
| 20 | 0 | 661.49 | 85 | 36 | 1.02 | 1321.77 | 1316 | 12 | 1.18E-02 | 17.8 | |
| 21 | 0 | 727.15 | 84 | 51 | 1.68 | 1453.03 | 1447 | 12 | 1.16E-02 | 20.2 | |
| 22 | 0 | 861.34 | 26 | 55 | 1.32 | 1721.36 | 1713 | 11 | 3.65E-03 | 58.0 | |
| 23 | 0 | 911.18* | 187 | 66 | 1.31 | 1821.04 | 1815 | 14 | 2.59E-02 | 11.9 | |
| 24 | 0 | 969.05 | 126 | 21 | 1.69 | 1936.78 | 1932 | 11 | 1.75E-02 | 11.5 | |
| 25 | 0 | 1120.41 | 90 | 41 | 1.27 | 2239.59 | 2234 | 11 | 1.24E-02 | 17.5 | |
| 26 | 0 | 1460.85* | 1178 | 14 | 1.76 | 2920.96 | 2914 | 15 | 1.64E-01 | 3.0 | |
| 27 | 0 | 1764.99* | 43 | 14 | 1.32 | 3530.06 | 3522 | 13 | 5.94E-03 | 23.9 | |

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328005.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 11:08:50
Sample ID        : G246328005             Sample quantity  : 156.00 GRAM
Sample type      : SOLID                  Sample geometry  :
Detector name    : GAMMA20               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:34.37   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 | * | 2.119E+01 | 2.246E+00 | 3.341E-01 | 2.913E-02 | 63.436 |
| CD-109 | + | 88.03 | * | 1.954E+00 | 7.364E-01 | 7.731E-01 | 7.311E-02 | 2.528 |
| SN-126 | + | 64.28 | | 1.221E+00 | 5.436E-01 | 4.740E-01 | 6.862E-02 | 2.576 |
| | + | 86.94 | | 7.964E-01 | 4.403E-01 | 3.172E-01 | 1.317E-01 | 2.511 |
| | + | 87.57 | * | 1.916E-01 | 7.218E-02 | 7.599E-02 | 7.148E-03 | 2.521 |
| BA-137M | + | 661.65 | * | 9.329E-02 | 3.456E-02 | 3.582E-02 | 3.595E-03 | 2.604 |
| CS-137 | + | 661.65 | * | 9.861E-02 | 3.654E-02 | 3.787E-02 | 3.806E-03 | 2.604 |
| TL-208 | | 277.35 | | 2.182E-01 | 2.563E-01 | 4.446E-01 | 5.912E-02 | 0.491 |
| | + | 510.84 | | 4.105E-01 | 2.485E-01 | 1.443E-01 | 1.804E-02 | 2.845 |
| | + | 583.14 | * | 2.916E-01 | 6.512E-02 | 3.803E-02 | 3.910E-03 | 7.669 |
| | + | 860.37 | | 2.598E-01 | 3.028E-01 | 2.924E-01 | 3.099E-02 | 0.888 |
| BI-210 | + | 46.50 | * | 2.707E+00 | 2.032E+00 | 2.333E+00 | 2.164E-01 | 1.160 |
| PB-210 | + | 46.50 | * | 2.707E+00 | 2.032E+00 | 2.333E+00 | 2.164E-01 | 1.160 |
| PO-210 | + | 46.50 | * | 2.707E+00 | 2.029E+00 | 2.333E+00 | 1.957E-01 | 1.160 |
| BI-211 | | 72.87 | | 1.402E+00 | 2.164E+00 | 3.250E+00 | 2.566E-01 | 0.431 |
| | + | 351.07 | * | 2.181E+00 | 3.809E-01 | 2.127E-01 | 2.038E-02 | 10.254 |
| PB-212 | + | 74.81 | | 1.035E+00 | 2.922E-01 | 3.385E-01 | 4.178E-02 | 3.058 |
| | + | 77.11 | | 1.107E+00 | 1.902E-01 | 1.948E-01 | 1.611E-02 | 5.683 |
| | + | 87.30 | | 8.860E-01 | 3.454E-01 | 3.521E-01 | 4.826E-02 | 2.517 |
| | + | 238.63 | * | 9.113E-01 | 1.226E-01 | 6.303E-02 | 6.703E-03 | 14.457 |
| | + | 300.09 | | 1.331E+00 | 6.860E-01 | 7.833E-01 | 8.957E-02 | 1.699 |
| PO-212 | + | 74.81 | | 1.035E+00 | 2.922E-01 | 3.385E-01 | 4.178E-02 | 3.058 |
| | + | 77.11 | | 1.107E+00 | 1.902E-01 | 1.948E-01 | 1.611E-02 | 5.683 |
| | + | 87.30 | | 8.860E-01 | 3.454E-01 | 3.521E-01 | 4.826E-02 | 2.517 |
| | + | 115.19 | | -2.241E-01 | 2.590E+00 | 4.109E+00 | 3.451E-01 | -0.055 |
| | + | 238.63 | * | 9.113E-01 | 1.226E-01 | 6.303E-02 | 6.703E-03 | 14.457 |
| | + | 300.09 | | 1.331E+00 | 6.860E-01 | 7.833E-01 | 8.957E-02 | 1.699 |
| BI-214 | + | 609.31 | * | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| | + | 1120.29 | | 9.161E-01 | 3.350E-01 | 3.701E-01 | 4.004E-02 | 2.475 |
| | + | 1764.49 | | 5.923E-01 | 2.868E-01 | 1.679E-01 | 1.379E-02 | 3.528 |
| PB-214 | + | 74.81 | | 1.784E+00 | 4.931E-01 | 5.833E-01 | 6.386E-02 | 3.058 |
| | + | 77.11 | | 1.898E+00 | 3.567E-01 | 3.339E-01 | 3.755E-02 | 5.683 |
| | + | 87.30 | | 1.518E+00 | 5.837E-01 | 6.031E-01 | 7.320E-02 | 2.517 |
| | + | 241.98 | | 1.370E+00 | 4.371E-01 | 3.795E-01 | 4.243E-02 | 3.609 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 295.21 | | 6.884E-01 | 1.669E-01 | 1.491E-01 | 1.740E-02 | 4.617 |
| | + | 351.92 | * | 7.586E-01 | 1.383E-01 | 7.414E-02 | 8.079E-03 | 10.233 |
| | + | 74.81 | | 1.784E+00 | 4.931E-01 | 5.833E-01 | 6.386E-02 | 3.058 |
| | + | 77.11 | | 1.898E+00 | 3.567E-01 | 3.339E-01 | 3.755E-02 | 5.683 |
| | + | 87.30 | | 1.518E+00 | 5.837E-01 | 6.031E-01 | 7.320E-02 | 2.517 |
| | + | 241.98 | | 1.370E+00 | 4.371E-01 | 3.795E-01 | 4.243E-02 | 3.609 |
| PO-216 | + | 295.21 | | 6.884E-01 | 1.669E-01 | 1.491E-01 | 1.740E-02 | 4.617 |
| | + | 351.92 | * | 7.586E-01 | 1.383E-01 | 7.414E-02 | 8.079E-03 | 10.233 |
| | + | 74.81 | | 1.035E+00 | 2.922E-01 | 3.385E-01 | 4.178E-02 | 3.058 |
| | + | 77.11 | | 1.107E+00 | 1.902E-01 | 1.948E-01 | 1.611E-02 | 5.683 |
| | + | 87.30 | | 8.860E-01 | 3.454E-01 | 3.521E-01 | 4.826E-02 | 2.517 |
| | + | 238.63 | * | 9.113E-01 | 1.226E-01 | 6.303E-02 | 6.703E-03 | 14.457 |
| PO-218 | + | 300.09 | | 1.331E+00 | 6.860E-01 | 7.833E-01 | 8.957E-02 | 1.699 |
| | + | 74.81 | | 1.784E+00 | 4.931E-01 | 5.833E-01 | 6.386E-02 | 3.058 |
| | + | 77.11 | | 1.898E+00 | 3.567E-01 | 3.339E-01 | 3.755E-02 | 5.683 |
| | + | 87.30 | | 1.518E+00 | 5.837E-01 | 6.031E-01 | 7.320E-02 | 2.517 |
| | + | 241.98 | | 1.370E+00 | 4.371E-01 | 3.795E-01 | 4.243E-02 | 3.609 |
| | + | 295.21 | | 6.884E-01 | 1.669E-01 | 1.491E-01 | 1.740E-02 | 4.617 |
| RA-224 | + | 351.92 | * | 7.586E-01 | 1.383E-01 | 7.414E-02 | 8.079E-03 | 10.233 |
| RA-226 | + | 240.98 | * | 2.597E+00 | 8.158E-01 | 7.172E-01 | 6.932E-02 | 3.621 |
| AC-228 | + | 609.31 | * | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| | + | 1120.29 | | 9.161E-01 | 3.350E-01 | 3.701E-01 | 4.004E-02 | 2.475 |
| | + | 1764.49 | | 5.923E-01 | 2.868E-01 | 1.679E-01 | 1.379E-02 | 3.528 |
| | + | 338.32 | | 7.256E-01 | 4.158E-01 | 2.667E-01 | 1.105E-01 | 2.720 |
| | + | 911.07 | * | 8.709E-01 | 2.331E-01 | 1.540E-01 | 1.886E-02 | 5.656 |
| | + | 969.11 | | 1.034E+00 | 3.409E-01 | 2.939E-01 | 6.973E-02 | 3.517 |
| TH-228 | + | 338.32 | | 7.256E-01 | 4.158E-01 | 2.667E-01 | 1.105E-01 | 2.720 |
| | + | 911.07 | * | 8.709E-01 | 2.331E-01 | 1.540E-01 | 1.886E-02 | 5.656 |
| | + | 969.11 | | 1.034E+00 | 3.409E-01 | 2.939E-01 | 6.973E-02 | 3.517 |
| | + | 74.81 | | 1.053E+00 | 2.806E-01 | 3.443E-01 | 2.802E-02 | 3.058 |
| | + | 77.11 | | 1.126E+00 | 1.934E-01 | 1.981E-01 | 1.638E-02 | 5.683 |
| | + | 87.30 | | 9.011E-01 | 3.395E-01 | 3.581E-01 | 3.356E-02 | 2.517 |
| TH-230 | + | 238.63 | * | 9.268E-01 | 1.246E-01 | 6.411E-02 | 6.817E-03 | 14.457 |
| | + | 300.09 | | 1.354E+00 | 1.054E+00 | 7.967E-01 | 4.738E-01 | 1.699 |
| | + | 609.31 | * | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| | + | 1120.29 | | 9.160E-01 | 3.350E-01 | 3.701E-01 | 4.004E-02 | 2.475 |
| | + | 1764.49 | | 5.923E-01 | 2.868E-01 | 1.679E-01 | 1.379E-02 | 3.528 |
| | + | 338.32 | | 7.256E-01 | 2.952E-01 | 2.667E-01 | 2.499E-02 | 2.720 |
| TH-232 | + | 911.07 | * | 8.709E-01 | 2.331E-01 | 1.540E-01 | 1.886E-02 | 5.656 |
| | + | 969.11 | | 1.034E+00 | 3.409E-01 | 2.939E-01 | 6.973E-02 | 3.517 |
| | + | 63.29 | * | 3.084E+00 | 1.405E+00 | 1.190E+00 | 2.067E-01 | 2.592 |
| | + | 92.38 | | 3.270E+00 | 7.844E-01 | 5.069E-01 | 9.295E-02 | 6.451 |
| | + | 609.31 | * | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| | + | 1120.29 | | 9.160E-01 | 3.350E-01 | 3.701E-01 | 4.004E-02 | 2.475 |
| U-234 | + | 1764.49 | | 5.923E-01 | 2.868E-01 | 1.679E-01 | 1.379E-02 | 3.528 |
| | + | 86.50 | * | 5.626E-01 | 2.417E-01 | 2.552E-01 | 5.773E-02 | 2.205 |
| | + | 95.87 | | -7.546E-01 | 7.542E-01 | 9.874E-01 | 2.444E-01 | -0.764 |
| | + | 63.29 | * | 3.084E+00 | 1.405E+00 | 1.190E+00 | 2.067E-01 | 2.592 |
| | + | 92.38 | | 3.270E+00 | 5.875E-01 | 5.069E-01 | 4.634E-02 | 6.451 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AM-243 | + | 74.67 | * | 1.678E-01 | 4.470E-02 | 5.500E-02 | 4.427E-03 | 3.051 |
| | + | 86.72 | | 2.110E+01 | 7.948E+00 | 9.555E+00 | 8.889E-01 | 2.208 |
| | | 117.66 | | -3.344E+00 | 2.743E+00 | 4.132E+00 | 3.459E-01 | -0.809 |
| | | 142.18 | | -1.263E+00 | 1.250E+01 | 1.987E+01 | 1.677E+00 | -0.064 |
| ANH-511 | + | 511.00 | * | 8.866E-02 | 5.317E-02 | 3.118E-02 | 2.905E-03 | 2.844 |

---- 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 | * | -2.882E-02 | 2.256E-01 | 3.620E-01 | 3.519E-02 | -0.080 |
| NA-22 | | 1274.54 | * | -2.051E-04 | 3.350E-02 | 5.396E-02 | 4.470E-03 | -0.004 |
| NA-24 | | 1368.53 | * | 3.498E-01 | 3.350E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -8.840E-01 | 1.268E+00 | 1.904E+00 | 1.613E-01 | -0.464 |
| | | 1808.65 | * | -2.306E-03 | 2.131E-02 | 3.424E-02 | 2.781E-03 | -0.067 |
| TI-44 | | 67.85 | | -6.014E-03 | 3.087E-02 | 4.477E-02 | 3.369E-03 | -0.134 |
| | + | 78.38 | * | 2.043E-01 | 3.510E-02 | 5.020E-02 | 4.213E-03 | 4.070 |
| SC-46 | | 889.25 | * | -1.525E-02 | 2.807E-02 | 4.367E-02 | 4.354E-03 | -0.349 |
| | + | 1120.51 | | 1.592E-01 | 5.726E-02 | 9.447E-02 | 8.081E-03 | 1.685 |
| V-48 | | 944.10 | | -1.593E-02 | 6.392E-01 | 1.049E+00 | 1.024E-01 | -0.015 |
| | | 983.50 | * | -2.824E-02 | 5.465E-02 | 8.451E-02 | 8.077E-03 | -0.334 |
| | | 1312.09 | | -6.405E-02 | 6.644E-02 | 9.277E-02 | 7.740E-03 | -0.690 |
| CR-51 | | 320.08 | * | -1.926E-01 | 2.573E-01 | 4.035E-01 | 4.045E-02 | -0.477 |
| MN-52 | | 744.21 | | 1.946E-01 | 2.169E-01 | 3.879E-01 | 3.941E-02 | 0.502 |
| | | 848.13 | | -4.506E+00 | 6.146E+00 | 9.419E+00 | 9.491E-01 | -0.478 |
| | | 935.52 | | 2.984E-01 | 2.337E-01 | 4.276E-01 | 4.189E-02 | 0.698 |
| | | 1246.25 | | -4.220E+00 | 6.580E+00 | 9.842E+00 | 8.085E-01 | -0.429 |
| | | 1333.61 | | 6.700E-01 | 4.572E+00 | 7.491E+00 | 6.276E-01 | 0.089 |
| | | 1434.06 | * | -7.151E-03 | 1.860E-01 | 3.092E-01 | 2.616E-02 | -0.023 |
| MN-54 | | 834.83 | * | 4.820E-03 | 2.546E-02 | 4.297E-02 | 4.341E-03 | 0.112 |
| CO-56 | | 846.75 | * | -1.302E-02 | 2.895E-02 | 4.586E-02 | 4.622E-03 | -0.284 |
| | | 977.42 | | 1.583E+00 | 2.023E+00 | 3.592E+00 | 3.445E-01 | 0.441 |
| | | 1037.82 | | -2.005E-01 | 2.071E-01 | 2.958E-01 | 2.854E-02 | -0.678 |
| | | 1175.09 | | -1.547E-01 | 1.391E+00 | 2.224E+00 | 1.789E-01 | -0.070 |
| | | 1238.25 | | 6.369E-02 | 7.073E-02 | 1.227E-01 | 1.038E-02 | 0.519 |
| | | 1360.21 | | 5.996E-01 | 5.991E-01 | 1.144E+00 | 9.621E-02 | 0.524 |
| | | 1771.40 | | -6.509E-02 | 1.790E-01 | 2.744E-01 | 2.250E-02 | -0.237 |
| CO-57 | | 122.06 | * | -1.296E-02 | 1.843E-02 | 2.856E-02 | 2.384E-03 | -0.454 |
| | | 136.48 | | 1.268E-01 | 1.446E-01 | 2.408E-01 | 2.180E-02 | 0.527 |
| CO-58 | | 810.76 | * | 4.198E-03 | 2.839E-02 | 4.783E-02 | 4.857E-03 | 0.088 |
| FE-59 | | 142.65 | | 9.109E-01 | 2.007E+00 | 3.271E+00 | 2.763E-01 | 0.278 |
| | | 192.34 | | -1.845E-01 | 6.123E-01 | 1.022E+00 | 1.403E-01 | -0.181 |
| | | 1099.22 | * | -6.119E-02 | 6.529E-02 | 9.413E-02 | 8.878E-03 | -0.650 |
| | | 1291.56 | | 2.910E-02 | 8.129E-02 | 1.372E-01 | 1.305E-02 | 0.212 |
| CO-60 | | 1173.22 | | -2.645E-02 | 3.002E-02 | 4.338E-02 | 3.488E-03 | -0.610 |
| | | 1332.49 | * | 1.725E-02 | 2.843E-02 | 4.929E-02 | 4.129E-03 | 0.350 |
| ZN-65 | | 1115.52 | * | -2.190E-02 | 7.797E-02 | 1.051E-01 | 9.047E-03 | -0.208 |
| GE-68 | | 1077.35 | * | -5.847E-01 | 8.800E-01 | 1.323E+00 | 1.180E-01 | -0.442 |
| AS-73 | | 53.44 | * | 6.178E-02 | 3.917E-01 | 6.506E-01 | 4.830E-02 | 0.095 |

---- 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 | * | -1.263E-02 | 7.263E-02 | 1.145E-01 | 1.120E-02 | -0.110 |
| | | 634.78 | | -8.480E-03 | 2.472E-01 | 4.157E-01 | 4.135E-02 | -0.020 |
| SE-75 | | 66.05 | | -1.597E+00 | 3.242E+00 | 4.598E+00 | 4.350E-01 | -0.347 |
| | | 96.73 | | -2.443E-01 | 5.672E-01 | 7.967E-01 | 1.100E-01 | -0.307 |
| | | 121.11 | | -5.109E-03 | 9.741E-02 | 1.562E-01 | 1.719E-02 | -0.033 |
| | | 136.00 | | 2.257E-02 | 2.716E-02 | 4.517E-02 | 3.816E-03 | 0.500 |
| | | 198.60 | | -4.288E-01 | 1.233E+00 | 2.016E+00 | 2.029E-01 | -0.213 |
| | | 264.65 | * | -7.047E-03 | 2.977E-02 | 4.738E-02 | 4.691E-03 | -0.149 |
| | | 279.53 | | 2.283E-02 | 7.554E-02 | 1.281E-01 | 1.311E-02 | 0.178 |
| | | 303.91 | | 1.488E-01 | 1.422E+00 | 2.098E+00 | 2.596E-01 | 0.071 |
| | | 400.65 | | -4.899E-02 | 1.707E-01 | 2.732E-01 | 2.998E-02 | -0.179 |
| BR-77 | + | 87.88 | | 7.218E+02 | 2.720E+02 | 3.820E+02 | 3.607E+01 | 1.890 |
| | | 200.40 | | -2.585E+01 | 1.867E+02 | 3.139E+02 | 2.887E+01 | -0.082 |
| | + | 239.00 | | 2.508E+02 | 3.181E+01 | 4.352E+01 | 4.198E+00 | 5.763 |
| | | 249.79 | | -8.035E+01 | 7.575E+01 | 1.186E+02 | 1.156E+01 | -0.677 |
| | | 281.68 | | -1.779E+01 | 1.036E+02 | 1.710E+02 | 1.700E+01 | -0.104 |
| | | 297.23 | | 1.621E+02 | 1.006E+02 | 1.272E+02 | 1.251E+01 | 1.275 |
| | | 303.76 | | 2.150E+01 | 2.054E+02 | 3.031E+02 | 2.966E+01 | 0.071 |
| | | 439.47 | | 1.857E+01 | 1.815E+02 | 2.980E+02 | 2.618E+01 | 0.062 |
| | | 484.57 | | -2.209E+02 | 2.717E+02 | 4.074E+02 | 3.722E+01 | -0.542 |
| | | 520.65 | * | 1.153E-01 | 1.192E+01 | 1.926E+01 | 1.806E+00 | 0.006 |
| | | 574.64 | | 6.504E+00 | 2.619E+02 | 4.065E+02 | 3.937E+01 | 0.016 |
| | | 578.91 | | 2.085E+01 | 1.066E+02 | 1.532E+02 | 1.488E+01 | 0.136 |
| | | 585.48 | | 9.293E+02 | 2.958E+02 | 5.091E+02 | 4.959E+01 | 1.825 |
| | | 755.35 | | 5.092E+00 | 1.924E+02 | 3.220E+02 | 3.272E+01 | 0.016 |
| | | 817.79 | | -1.258E+02 | 1.520E+02 | 2.292E+02 | 2.321E+01 | -0.549 |
| SR-82 | | 698.33 | | 5.206E+00 | 2.521E+01 | 4.298E+01 | 4.345E+00 | 0.121 |
| | | 776.49 | * | 3.852E-03 | 2.749E-01 | 4.587E-01 | 4.661E-02 | 0.008 |
| | | 1395.20 | | -2.953E+00 | 7.150E+00 | 1.120E+01 | 9.455E-01 | -0.264 |
| RB-83 | | 520.41 | * | -1.295E-02 | 4.708E-02 | 7.401E-02 | 6.942E-03 | -0.175 |
| | | 529.64 | | 1.384E-02 | 7.611E-02 | 1.247E-01 | 1.177E-02 | 0.111 |
| | | 552.65 | | 2.115E-02 | 1.504E-01 | 2.449E-01 | 2.343E-02 | 0.086 |
| RB-84 | | 881.50 | * | -2.794E-03 | 4.983E-02 | 8.189E-02 | 8.183E-03 | -0.034 |
| KR-85 | | 513.99 | * | 9.909E+00 | 5.735E+00 | 9.438E+00 | 8.813E-01 | 1.050 |
| SR-85 | | 513.99 | * | 5.180E-02 | 2.998E-02 | 4.934E-02 | 4.607E-03 | 1.050 |
| RB-86 | | 1076.63 | * | -2.047E-01 | 5.708E-01 | 8.912E-01 | 7.957E-02 | -0.230 |
| Y-88 | | 898.02 | | -8.058E-03 | 2.839E-02 | 4.543E-02 | 4.533E-03 | -0.177 |
| | | 1836.01 | * | -7.682E-03 | 2.522E-02 | 3.879E-02 | 3.130E-03 | -0.198 |
| ZR-88 | | 392.90 | * | -3.478E-03 | 2.031E-02 | 3.287E-02 | 2.749E-03 | -0.106 |
| Y-91 | | 1204.90 | * | -1.165E+01 | 1.504E+01 | 2.243E+01 | 1.821E+00 | -0.519 |
| NB-94 | | 702.63 | * | -2.072E-03 | 2.394E-02 | 3.985E-02 | 4.032E-03 | -0.052 |
| | | 871.10 | | 9.057E-03 | 2.313E-02 | 3.977E-02 | 3.986E-03 | 0.228 |
| NB-95 | | 765.79 | * | 2.746E-02 | 3.081E-02 | 5.483E-02 | 5.572E-03 | 0.501 |
| NB-95M | | 235.69 | * | 1.007E-02 | 9.205E-02 | 1.374E-01 | 1.477E-02 | 0.073 |
| ZR-95 | | 724.18 | | 8.851E-03 | 6.866E-02 | 1.017E-01 | 1.096E-02 | 0.087 |
| | | 756.15 | * | -1.271E-02 | 4.941E-02 | 8.049E-02 | 8.784E-03 | -0.158 |
| NB-97 | | 657.90 | * | -2.064E-01 | 4.941E-02 | Half-Life | too short | |
| | | 1024.50 | | -2.030E+00 | 4.941E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | 1.127E+01 | 4.941E-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 | | | 1.158E+01 | 4.941E-02 | Half-Life too short | | |
| | 507.63 | * | | 1.600E+01 | 4.941E-02 | Half-Life too short | | |
| | 602.52 | | | -6.500E+00 | 4.941E-02 | Half-Life too short | | |
| | 1021.30 | | | 1.067E+01 | 4.941E-02 | Half-Life too short | | |
| | 1147.95 | | | -6.228E+00 | 4.941E-02 | Half-Life too short | | |
| | 1362.66 | | | -7.216E+00 | 4.941E-02 | Half-Life too short | | |
| | 1750.46 | | | -5.686E+00 | 4.941E-02 | Half-Life too short | | |
| MO-99 | 140.51 | | | -3.664E+01 | 3.180E+01 | 4.458E+01 | 1.232E+01 | -0.822 |
| | 181.06 | | | 1.006E+01 | 2.123E+01 | 3.071E+01 | 5.664E+00 | 0.328 |
| | 366.43 | | | 3.108E+01 | 8.335E+01 | 1.411E+02 | 1.255E+01 | 0.220 |
| | 739.58 | * | | -7.609E+00 | 1.370E+01 | 2.172E+01 | 3.498E+00 | -0.350 |
| | 778.00 | | | 5.158E+00 | 3.658E+01 | 6.176E+01 | 6.276E+00 | 0.084 |
| TC-99M | 140.51 | * | | -5.517E+12 | 3.658E+01 | Half-Life too short | | |
| RH-101 | 127.23 | | | -1.347E-02 | 2.211E-02 | 3.436E-02 | 2.866E-03 | -0.392 |
| | 198.01 | * | | -6.969E-03 | 2.230E-02 | 3.655E-02 | 3.350E-03 | -0.191 |
| | 325.23 | | | 1.804E-02 | 1.471E-01 | 2.455E-01 | 2.344E-02 | 0.073 |
| RH-102 | 418.52 | | | -3.772E-02 | 1.965E-01 | 3.163E-01 | 2.721E-02 | -0.119 |
| | 475.06 | * | | 5.777E-05 | 2.087E-02 | 3.387E-02 | 3.071E-03 | 0.002 |
| | 631.29 | | | 8.710E-04 | 3.760E-02 | 6.013E-02 | 5.974E-03 | 0.014 |
| | 697.49 | | | -8.629E-03 | 5.500E-02 | 9.109E-02 | 9.208E-03 | -0.095 |
| | 766.84 | | | 1.243E-01 | 7.861E-02 | 1.452E-01 | 1.476E-02 | 0.856 |
| | 1046.59 | | | -1.239E-02 | 8.050E-02 | 1.293E-01 | 1.184E-02 | -0.096 |
| | 1112.84 | | | 1.687E-02 | 1.913E-01 | 2.960E-01 | 2.552E-02 | 0.057 |
| RU-103 | 497.08 | * | | -1.772E-02 | 3.035E-02 | 4.648E-02 | 6.757E-03 | -0.381 |
| + | 610.33 | | | 8.067E+00 | 1.821E+00 | 2.069E+00 | 3.590E-01 | 3.899 |
| RH-106 | 511.85 | + | | 4.444E-01 | 2.665E-01 | 3.267E-01 | 3.046E-02 | 1.360 |
| | 621.84 | * | | -7.441E-02 | 2.382E-01 | 3.687E-01 | 5.241E-02 | -0.202 |
| | 1050.47 | | | -5.945E-01 | 1.625E+00 | 2.544E+00 | 2.322E-01 | -0.234 |
| RU-106 | 511.85 | + | | 4.444E-01 | 2.665E-01 | 3.267E-01 | 3.046E-02 | 1.360 |
| | 621.84 | * | | -7.441E-02 | 2.380E-01 | 3.687E-01 | 3.649E-02 | -0.202 |
| | 1050.47 | | | -5.945E-01 | 1.625E+00 | 2.544E+00 | 2.322E-01 | -0.234 |
| AG-108M | 433.93 | * | | 4.095E-03 | 2.242E-02 | 3.710E-02 | 3.367E-03 | 0.110 |
| | 614.37 | | | 5.773E-03 | 2.634E-02 | 3.789E-02 | 3.852E-03 | 0.152 |
| | 722.95 | | | -4.561E-03 | 2.778E-02 | 3.948E-02 | 4.118E-03 | -0.116 |
| AG-110M | 657.75 | * | | -1.404E-02 | 2.323E-02 | 3.093E-02 | 3.169E-03 | -0.454 |
| | 677.61 | | | -3.324E-02 | 2.046E-01 | 3.388E-01 | 3.483E-02 | -0.098 |
| | 706.67 | | | -7.421E-02 | 1.482E-01 | 2.377E-01 | 2.454E-02 | -0.312 |
| | 763.93 | | | -7.920E-02 | 1.212E-01 | 1.906E-01 | 1.976E-02 | -0.416 |
| | 884.67 | | | -4.223E-03 | 3.354E-02 | 5.469E-02 | 5.592E-03 | -0.077 |
| | 937.48 | | | -1.722E-02 | 8.318E-02 | 1.341E-01 | 1.350E-02 | -0.128 |
| | 1384.27 | | | -5.196E-02 | 1.025E-01 | 1.587E-01 | 1.377E-02 | -0.327 |
| IN-111 | 171.28 | | | 1.432E+00 | 1.094E+00 | 1.845E+00 | 1.624E-01 | 0.776 |
| | 245.39 | * | | 9.576E-01 | 1.208E+00 | 1.889E+00 | 1.834E-01 | 0.507 |
| IN-113M | 391.69 | * | | -2.143E-02 | 2.940E-02 | 4.534E-02 | 3.912E-03 | -0.473 |
| SN-113 | 391.69 | * | | -2.143E-02 | 2.940E-02 | 4.534E-02 | 3.912E-03 | -0.473 |
| IN-114M | 190.27 | * | | 7.071E-02 | 1.303E-01 | 2.021E-01 | 1.831E-02 | 0.350 |
| CD-115 | 260.90 | | | -4.406E+01 | 1.524E+02 | 2.507E+02 | 2.466E+01 | -0.176 |
| | 492.35 | | | -1.826E+01 | 4.816E+01 | 7.554E+01 | 6.943E+00 | -0.242 |
| | 527.90 | * | | 1.006E+01 | 1.352E+01 | 2.316E+01 | 2.183E+00 | 0.434 |

---- 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 | | | -7.560E-01 | 1.827E+00 | 2.844E+00 | 2.445E-01 | -0.266 |
| | 158.56 | * | | 2.794E-02 | 4.311E-02 | 7.070E-02 | 6.102E-03 | 0.395 |
| SB-122 | 563.90 | * | | 1.049E+00 | 2.325E+00 | 3.883E+00 | 3.739E-01 | 0.270 |
| | 692.80 | | | 5.046E+00 | 5.288E+01 | 8.626E+01 | 8.713E+00 | 0.058 |
| I-123 | 159.00 | * | | 3.770E+01 | 5.288E+01 | Half-Life | too short | |
| | 528.96 | | | -1.053E+02 | 5.288E+01 | Half-Life | too short | |
| TE-123M | 159.00 | * | | 1.811E-02 | 2.024E-02 | 3.358E-02 | 2.917E-03 | 0.539 |
| I-124 | 602.71 | * | | 1.540E-01 | 7.066E-01 | 1.013E+00 | 9.947E-02 | 0.152 |
| | 722.78 | | | -3.973E-01 | 3.965E+00 | 5.691E+00 | 5.772E-01 | -0.070 |
| | 1325.50 | | | 2.025E+01 | 3.427E+01 | 5.926E+01 | 4.958E+00 | 0.342 |
| | 1376.25 | | | 2.923E+01 | 2.573E+01 | 4.920E+01 | 4.144E+00 | 0.594 |
| | 1509.49 | | | 1.428E+01 | 1.444E+01 | 2.731E+01 | 2.315E+00 | 0.523 |
| | 1691.02 | | | -2.500E-01 | 3.638E+00 | 5.933E+00 | 4.947E-01 | -0.042 |
| SB-124 | 602.71 | | | 6.730E-03 | 3.088E-02 | 4.428E-02 | 4.348E-03 | 0.152 |
| | 645.85 | | | 1.518E-01 | 3.287E-01 | 5.757E-01 | 6.007E-02 | 0.264 |
| | 709.31 | | | 1.820E+00 | 2.001E+00 | 3.584E+00 | 3.630E-01 | 0.508 |
| | 713.82 | | | -4.961E-02 | 1.206E+00 | 2.013E+00 | 2.650E-01 | -0.025 |
| | 722.78 | | | -2.517E-02 | 2.512E-01 | 3.605E-01 | 3.714E-02 | -0.070 |
| | + 968.20 | | | 1.087E+01 | 2.700E+00 | 4.815E+00 | 4.642E-01 | 2.257 |
| | 1045.16 | | | 7.864E-01 | 1.734E+00 | 2.973E+00 | 2.725E-01 | 0.265 |
| | 1325.50 | | | 1.370E+00 | 2.318E+00 | 4.010E+00 | 3.354E-01 | 0.342 |
| | 1368.21 | | | 1.633E-01 | 9.703E-01 | 1.673E+00 | 2.233E-01 | 0.098 |
| | 1436.60 | | | 3.795E-01 | 2.307E+00 | 3.961E+00 | 3.352E-01 | 0.096 |
| | 1691.02 | * | | -3.736E-03 | 5.436E-02 | 8.865E-02 | 7.704E-03 | -0.042 |
| SB-125 | 427.89 | * | | 2.517E-02 | 5.977E-02 | 1.009E-01 | 8.928E-03 | 0.250 |
| | + 463.38 | | | 7.243E-01 | 3.915E-01 | 4.143E-01 | 3.988E-02 | 1.748 |
| | 600.56 | | | -1.165E-01 | 1.311E-01 | 1.918E-01 | 1.989E-02 | -0.608 |
| | 635.90 | | | 4.038E-02 | 1.730E-01 | 2.977E-01 | 3.144E-02 | 0.136 |
| TE-125M | 109.28 | * | | 9.647E-01 | 6.823E+00 | 1.107E+01 | 1.133E+00 | 0.087 |
| I-126 | 388.63 | | | -1.176E-01 | 1.514E-01 | 2.331E-01 | 1.963E-02 | -0.504 |
| | 666.33 | * | | 5.599E-02 | 1.391E-01 | 2.144E-01 | 2.154E-02 | 0.261 |
| | 753.82 | | | 1.775E-01 | 1.093E+00 | 1.852E+00 | 1.882E-01 | 0.096 |
| SB-126 | 223.80 | | | 2.080E+00 | 3.007E+00 | 5.225E+00 | 4.956E-01 | 0.398 |
| | 278.60 | | | 7.453E-01 | 1.902E+00 | 3.237E+00 | 3.222E-01 | 0.230 |
| | + 296.50 | | | 7.600E+00 | 1.780E+00 | 2.667E+00 | 2.625E-01 | 2.850 |
| | 414.70 | | | -2.574E-02 | 5.615E-02 | 8.843E-02 | 7.577E-03 | -0.291 |
| | 415.30 | | | -1.287E+00 | 4.550E+00 | 7.268E+00 | 6.232E-01 | -0.177 |
| | 555.20 | | | -1.823E+00 | 3.298E+00 | 5.034E+00 | 4.825E-01 | -0.362 |
| | 573.80 | | | -9.368E-02 | 8.381E-01 | 1.332E+00 | 1.289E-01 | -0.070 |
| | 593.00 | | | -2.343E-01 | 7.674E-01 | 1.194E+00 | 1.167E-01 | -0.196 |
| | 656.30 | | | -1.518E+00 | 2.545E+00 | 3.404E+00 | 3.411E-01 | -0.446 |
| | 666.33 | | | 2.350E-02 | 5.838E-02 | 8.998E-02 | 9.040E-03 | 0.261 |
| | 675.00 | | | -1.278E+00 | 1.464E+00 | 2.254E+00 | 2.269E-01 | -0.567 |
| | 695.00 | | | -2.217E-02 | 6.048E-02 | 9.832E-02 | 9.936E-03 | -0.226 |
| | 697.00 | | | -6.662E-02 | 2.106E-01 | 3.439E-01 | 3.477E-02 | -0.194 |
| | 720.50 | * | | -5.847E-02 | 1.166E-01 | 1.669E-01 | 1.692E-02 | -0.350 |
| | 856.80 | | | -1.797E-01 | 4.373E-01 | 5.924E-01 | 5.958E-02 | -0.303 |
| | 989.30 | | | 8.271E-01 | 9.389E-01 | 1.682E+00 | 1.603E-01 | 0.492 |
| | 1034.80 | | | 2.666E+00 | 6.391E+00 | 1.095E+01 | 1.012E+00 | 0.243 |

---- 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 | | | -9.366E-01 | 3.998E+00 | 6.319E+00 | 5.144E-01 | -0.148 |
| | 61.10 | | | 1.515E+01 | 4.793E+01 | 7.158E+01 | 7.652E+00 | 0.212 |
| | 252.40 | | | 8.954E-01 | 4.026E+00 | 6.801E+00 | 2.886E+00 | 0.132 |
| | 290.80 | | | 6.245E-01 | 2.302E+01 | 3.379E+01 | 4.287E+00 | 0.018 |
| | 411.60 | | | 8.654E+00 | 1.163E+01 | 1.993E+01 | 3.207E+00 | 0.434 |
| | 444.90 | | | 1.070E+00 | 1.025E+01 | 1.682E+01 | 2.217E+00 | 0.064 |
| | 473.00 | | | -2.525E-01 | 1.692E+00 | 2.713E+00 | 3.702E-01 | -0.093 |
| | 543.00 | | | 3.429E+00 | 1.580E+01 | 2.595E+01 | 3.990E+00 | 0.132 |
| | 603.60 | | | 6.978E+00 | 1.201E+01 | 1.798E+01 | 2.488E+00 | 0.388 |
| | 685.20 | * | | 3.194E-01 | 1.312E+00 | 2.247E+00 | 2.930E-01 | 0.142 |
| | 698.50 | | | 1.965E+00 | 1.478E+01 | 2.505E+01 | 4.274E+00 | 0.078 |
| | 722.20 | | | 2.534E+00 | 2.702E+01 | 3.989E+01 | 5.142E+00 | 0.064 |
| | 783.80 | | | 3.013E+00 | 3.387E+00 | 6.047E+00 | 8.467E-01 | 0.498 |
| | 57.60 | | | 2.775E+00 | 3.249E+00 | 5.526E+00 | 3.948E-01 | 0.502 |
| XE-127 | 145.22 | | | 3.979E-01 | 5.424E-01 | 8.784E-01 | 7.442E-02 | 0.453 |
| | 172.10 | | | 9.944E-02 | 8.497E-02 | 1.426E-01 | 1.257E-02 | 0.697 |
| | 202.84 | * | | 4.180E-03 | 3.240E-02 | 5.512E-02 | 5.088E-03 | 0.076 |
| | 374.96 | | | 5.004E-03 | 1.358E-01 | 2.239E-01 | 1.952E-02 | 0.022 |
| | 80.18 | | | 6.833E-01 | 3.553E+00 | 5.225E+00 | 4.515E-01 | 0.131 |
| I-131 | 284.30 | | | -7.171E-01 | 1.167E+00 | 1.868E+00 | 1.930E-01 | -0.384 |
| | 364.48 | * | | -6.966E-02 | 9.342E-02 | 1.451E-01 | 1.363E-02 | -0.480 |
| | 636.97 | | | 3.218E-01 | 1.200E+00 | 2.069E+00 | 2.149E-01 | 0.155 |
| | 722.89 | | | -7.781E-01 | 5.498E+00 | 7.841E+00 | 7.999E-01 | -0.099 |
| TE-132 | 49.72 | | | -8.061E+00 | 1.356E+01 | 1.926E+01 | 2.078E+00 | -0.419 |
| | 111.76 | | | -8.721E+00 | 3.240E+01 | 5.159E+01 | 5.795E+00 | -0.169 |
| | 116.30 | | | -7.904E+00 | 2.937E+01 | 4.612E+01 | 5.159E+00 | -0.171 |
| | 228.16 | * | | -1.971E-01 | 6.654E-01 | 1.101E+00 | 1.826E-01 | -0.179 |
| BA-133 | 53.15 | | | 5.952E-01 | 1.669E+00 | 2.796E+00 | 2.083E-01 | 0.213 |
| | 79.62 | | | 2.962E-01 | 8.676E-01 | 1.284E+00 | 1.947E-01 | 0.231 |
| | 81.00 | | | -1.740E-02 | 6.562E-02 | 9.406E-02 | 1.495E-02 | -0.185 |
| | 276.40 | | | 1.281E-01 | 2.569E-01 | 4.389E-01 | 6.704E-02 | 0.292 |
| | 302.84 | | | -1.494E-02 | 9.922E-02 | 1.429E-01 | 2.011E-02 | -0.105 |
| | 356.01 | * | | 8.114E-04 | 3.070E-02 | 4.455E-02 | 6.018E-03 | 0.018 |
| | 383.85 | | | 2.259E-02 | 2.057E-01 | 3.405E-01 | 4.271E-02 | 0.066 |
| | 510.53 | + | | 3.954E+00 | 2.057E-01 | Half-Life | too short | |
| I-133 | 529.87 | * | | 2.000E-03 | 2.057E-01 | Half-Life | too short | |
| | 706.58 | | | -5.582E-01 | 2.057E-01 | Half-Life | too short | |
| | 856.28 | | | -6.557E-01 | 2.057E-01 | Half-Life | too short | |
| | 875.33 | | | -2.915E-01 | 2.057E-01 | Half-Life | too short | |
| | 1236.41 | | | 1.294E+00 | 2.057E-01 | Half-Life | too short | |
| | 1298.22 | | | -2.004E-01 | 2.057E-01 | Half-Life | too short | |
| | 475.35 | | | 1.255E-01 | 1.365E+00 | 2.232E+00 | 2.024E-01 | 0.056 |
| CS-134 | 563.23 | | | 6.938E-02 | 2.486E-01 | 4.095E-01 | 3.972E-02 | 0.169 |
| | 569.32 | | | -6.713E-02 | 1.453E-01 | 2.234E-01 | 2.181E-02 | -0.300 |
| | 604.70 | | | 1.110E-02 | 2.495E-02 | 3.681E-02 | 3.625E-03 | 0.301 |
| | 795.84 | * | | 6.534E-02 | 3.208E-02 | 6.144E-02 | 6.270E-03 | 1.063 |
| | 801.93 | | | 1.391E-01 | 2.799E-01 | 4.858E-01 | 4.948E-02 | 0.286 |
| | 1038.57 | | | -2.081E+00 | 2.477E+00 | 3.601E+00 | 3.318E-01 | -0.578 |
| | 1167.94 | | | 7.953E-01 | 1.807E+00 | 3.062E+00 | 2.478E-01 | 0.260 |

---- 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 | | | -5.078E-01 | 7.291E-01 | 1.083E+00 | 9.542E-02 | -0.469 |
| | 268.24 | * | | 4.719E-02 | 1.142E-01 | 1.735E-01 | 1.922E-02 | 0.272 |
| | 288.45 | | | -2.113E+09 | 1.142E-01 | Half-Life | too short | |
| | 417.63 | | | 8.004E+11 | 1.142E-01 | Half-Life | too short | |
| | 546.56 | | | -1.599E+11 | 1.142E-01 | Half-Life | too short | |
| | 836.80 | | | 1.164E+12 | 1.142E-01 | Half-Life | too short | |
| | 1038.76 | | | -1.056E+12 | 1.142E-01 | Half-Life | too short | |
| | 1124.00 | | | 3.309E+12 | 1.142E-01 | Half-Life | too short | |
| | 1131.51 | | | 6.959E+11 | 1.142E-01 | Half-Life | too short | |
| | 1260.41 | * | | 8.515E+10 | 1.142E-01 | Half-Life | too short | |
| | 1457.56 | | | 2.796E+13 | 1.142E-01 | Half-Life | too short | |
| | 1678.03 | | | 4.371E+11 | 1.142E-01 | Half-Life | too short | |
| | 1706.46 | | | -1.085E+12 | 1.142E-01 | Half-Life | too short | |
| | 1791.20 | | | -4.383E+11 | 1.142E-01 | Half-Life | too short | |
| CS-136 + | 66.91 | | | -1.184E-01 | 5.729E-01 | 8.247E-01 | 1.222E-01 | -0.144 |
| | 86.29 | | | 2.756E+00 | 1.071E+00 | 1.421E+00 | 1.887E-01 | 1.939 |
| | 153.22 | | | 1.596E-02 | 5.177E-01 | 8.256E-01 | 7.914E-02 | 0.019 |
| | 163.89 | | | 1.272E-01 | 8.304E-01 | 1.329E+00 | 1.293E-01 | 0.096 |
| | 176.55 | | | 9.680E-02 | 2.739E-01 | 4.420E-01 | 4.137E-02 | 0.219 |
| | 273.65 | | | -2.127E-01 | 3.797E-01 | 5.323E-01 | 5.549E-02 | -0.400 |
| | 340.57 | | | 1.634E-01 | 1.094E-01 | 1.765E-01 | 1.689E-02 | 0.926 |
| | 818.51 | | | -4.022E-03 | 5.288E-02 | 8.713E-02 | 8.830E-03 | -0.046 |
| | 1048.07 | * | | 1.938E-02 | 8.288E-02 | 1.389E-01 | 1.318E-02 | 0.140 |
| | 1235.34 | | | -2.021E-01 | 5.005E-01 | 7.778E-01 | 8.978E-02 | -0.260 |
| CE-139 BA-140 | 165.85 | * | | 1.062E-02 | 2.132E-02 | 3.468E-02 | 3.028E-03 | 0.306 |
| | 162.64 | | | -3.058E-01 | 5.796E-01 | 8.931E-01 | 8.202E-02 | -0.342 |
| | 304.84 | | | 6.996E-01 | 9.357E-01 | 1.436E+00 | 4.079E-01 | 0.487 |
| | 423.70 | | | 4.361E-01 | 1.399E+00 | 2.330E+00 | 7.555E-01 | 0.187 |
| LA-140 | 537.32 | * | | 6.099E-02 | 1.887E-01 | 3.116E-01 | 1.040E-01 | 0.196 |
| | 328.77 | | | 2.315E-01 | 2.241E-01 | 3.880E-01 | 3.858E-02 | 0.597 |
| | 432.53 | | | 4.075E-01 | 1.538E+00 | 2.562E+00 | 2.342E-01 | 0.159 |
| | 487.03 | | | 8.298E-02 | 1.028E-01 | 1.777E-01 | 1.716E-02 | 0.467 |
| | 751.79 | | | 2.522E-01 | 1.281E+00 | 2.176E+00 | 2.384E-01 | 0.116 |
| | 815.85 | | | -2.816E-01 | 2.285E-01 | 3.224E-01 | 3.542E-02 | -0.874 |
| | 867.82 | | | -7.070E-01 | 1.025E+00 | 1.564E+00 | 1.631E-01 | -0.452 |
| | 919.63 | | | 3.898E-01 | 2.172E+00 | 3.556E+00 | 4.152E-01 | 0.110 |
| | 925.24 | | | -1.773E-01 | 7.944E-01 | 1.275E+00 | 1.315E-01 | -0.139 |
| | 1596.49 | * | | -2.175E-02 | 6.091E-02 | 9.469E-02 | 7.994E-03 | -0.230 |
| CE-141 CE-143 | 145.44 | * | | 2.956E-02 | 4.913E-02 | 7.914E-02 | 6.833E-03 | 0.373 |
| | 57.37 | | | 1.417E-03 | 4.913E-02 | Half-Life | too short | |
| + | 231.56 | | | 1.853E-03 | 4.913E-02 | Half-Life | too short | |
| | 293.26 | * | | 6.483E-04 | 4.913E-02 | Half-Life | too short | |
| | 350.59 | | | 4.388E-02 | 4.913E-02 | Half-Life | too short | |
| | 490.36 | | | -4.687E-03 | 4.913E-02 | Half-Life | too short | |
| | 664.57 | | | 1.538E-03 | 4.913E-02 | Half-Life | too short | |
| | 721.93 | | | 3.613E-04 | 4.913E-02 | Half-Life | too short | |
| | 80.11 | | | 2.828E-01 | 1.401E+00 | 2.061E+00 | 1.766E-01 | 0.137 |
| CE-144 | 133.54 | * | | -1.356E-01 | 1.447E-01 | 2.182E-01 | 3.366E-02 | -0.622 |
| PM-144 | 476.78 | | | 2.124E-02 | 4.754E-02 | 7.988E-02 | 7.868E-03 | 0.266 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 618.01 | | 1.007E-02 | 2.141E-02 | 3.578E-02 | 3.611E-03 | 0.281 |
| | | 696.49 | * | -1.975E-02 | 2.515E-02 | 3.937E-02 | 3.981E-03 | -0.502 |
| | | 778.57 | | -4.950E-02 | 1.539E+00 | 2.557E+00 | 2.599E-01 | -0.019 |
| PR-144 | | 696.49 | * | -1.340E+00 | 1.706E+00 | 2.671E+00 | 2.699E-01 | -0.502 |
| | | 1489.15 | | -1.441E+00 | 7.519E+00 | 1.213E+01 | 1.028E+00 | -0.119 |
| PM-146 | | 453.90 | * | 1.434E-02 | 3.012E-02 | 5.081E-02 | 5.565E-03 | 0.282 |
| | | 633.02 | | -7.114E-01 | 1.000E+00 | 1.417E+00 | 5.342E-01 | -0.502 |
| | | 735.90 | | -3.950E-03 | 1.049E-01 | 1.747E-01 | 5.085E-02 | -0.023 |
| | | 747.13 | | -7.828E-02 | 6.710E-02 | 9.842E-02 | 1.480E-02 | -0.795 |
| ND-147 | + | 91.11 | | 4.689E-01 | 2.648E-01 | 4.447E-01 | 4.400E-02 | 1.054 |
| | | 319.41 | | 7.875E-01 | 2.372E+00 | 4.018E+00 | 3.866E-01 | 0.196 |
| | | 439.89 | | 8.083E-01 | 4.868E+00 | 8.032E+00 | 7.060E-01 | 0.101 |
| | | 531.02 | * | 1.074E-01 | 4.424E-01 | 7.283E-01 | 1.125E-01 | 0.147 |
| PM-149 | | 285.90 | * | -2.967E+01 | 1.076E+02 | 1.761E+02 | 2.872E+01 | -0.169 |
| EU-152 | | 121.78 | | -2.298E-02 | 5.243E-02 | 8.237E-02 | 7.979E-03 | -0.279 |
| | | 244.69 | | 1.968E-01 | 2.336E-01 | 3.666E-01 | 3.557E-02 | 0.537 |
| | | 344.27 | * | -2.315E-02 | 6.817E-02 | 1.060E-01 | 1.034E-02 | -0.218 |
| | | 443.98 | | 1.267E-01 | 7.150E-01 | 1.180E+00 | 1.041E-01 | 0.107 |
| | | 778.89 | | -1.984E-02 | 1.790E-01 | 2.951E-01 | 2.998E-02 | -0.067 |
| | | 867.32 | | -6.021E-01 | 5.914E-01 | 8.347E-01 | 8.373E-02 | -0.721 |
| | | 964.01 | | 2.551E-01 | 2.201E-01 | 3.598E-01 | 3.476E-02 | 0.709 |
| | | 1085.78 | | -1.955E-01 | 3.030E-01 | 4.591E-01 | 4.065E-02 | -0.426 |
| | | 1112.02 | | -4.218E-02 | 2.485E-01 | 3.977E-01 | 3.432E-02 | -0.106 |
| | | 1407.95 | | 9.177E-02 | 1.251E-01 | 2.288E-01 | 1.932E-02 | 0.401 |
| GD-153 | | 69.67 | | -6.470E-01 | 1.008E+00 | 1.610E+00 | 1.232E-01 | -0.402 |
| | | 83.37 | | 3.245E+00 | 1.040E+01 | 1.533E+01 | 1.366E+00 | 0.212 |
| | | 97.43 | * | 5.095E-03 | 5.985E-02 | 8.612E-02 | 7.638E-03 | 0.059 |
| | | 103.18 | | -2.790E-02 | 7.192E-02 | 1.141E-01 | 9.871E-03 | -0.244 |
| EU-154 | | 123.07 | | -1.823E-02 | 3.726E-02 | 5.835E-02 | 6.507E-03 | -0.312 |
| | | 247.94 | | 7.296E-02 | 2.518E-01 | 3.997E-01 | 4.929E-02 | 0.183 |
| | | 591.81 | | 1.958E-01 | 4.499E-01 | 7.481E-01 | 9.383E-02 | 0.262 |
| | | 723.30 | | -3.032E-02 | 1.192E-01 | 1.671E-01 | 1.826E-02 | -0.181 |
| | | 756.87 | | 6.040E-02 | 5.236E-01 | 8.831E-01 | 1.159E-01 | 0.068 |
| | | 873.19 | | 6.552E-02 | 2.031E-01 | 3.469E-01 | 4.601E-02 | 0.189 |
| | | 996.32 | | -1.195E-01 | 2.631E-01 | 4.089E-01 | 7.441E-02 | -0.292 |
| | | 1004.76 | | -1.101E-01 | 1.693E-01 | 2.590E-01 | 3.173E-02 | -0.425 |
| | | 1274.45 | * | 2.886E-02 | 9.087E-02 | 1.517E-01 | 1.676E-02 | 0.190 |
| EU-155 | | 48.70 | | 9.184E-01 | 1.099E+00 | 1.709E+00 | 1.367E-01 | 0.537 |
| | | 60.01 | | -1.068E-01 | 2.922E+00 | 4.289E+00 | 3.043E-01 | -0.025 |
| | + | 86.54 | | 2.309E-01 | 8.704E-02 | 1.202E-01 | 1.125E-02 | 1.921 |
| | | 105.31 | * | 5.680E-02 | 7.437E-02 | 1.240E-01 | 1.078E-02 | 0.458 |
| TB-160 | + | 86.79 | | 6.273E-01 | 2.364E-01 | 3.291E-01 | 3.064E-02 | 1.906 |
| | | 197.04 | | 2.659E-02 | 3.793E-01 | 6.326E-01 | 5.790E-02 | 0.042 |
| | | 215.65 | | 2.336E-01 | 4.936E-01 | 8.513E-01 | 7.994E-02 | 0.274 |
| | + | 298.57 | | 1.971E-01 | 1.009E-01 | 1.442E-01 | 1.417E-02 | 1.367 |
| | | 879.36 | * | -1.933E-03 | 9.424E-02 | 1.555E-01 | 1.555E-02 | -0.012 |
| | | 962.29 | | 5.673E-02 | 3.953E-01 | 6.224E-01 | 6.019E-02 | 0.091 |
| | | 966.15 | | 4.902E-01 | 1.688E-01 | 3.114E-01 | 3.006E-02 | 1.574 |
| | | 1177.93 | | -1.342E-01 | 2.441E-01 | 3.695E-01 | 2.976E-02 | -0.363 |

---- 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 | | | 1.360E-01 | 5.423E-01 | 8.988E-01 | 7.432E-02 | 0.151 |
| | 80.57 | | | -6.274E-04 | 1.793E-01 | 2.608E-01 | 2.247E-02 | -0.002 |
| | 184.41 | | + | 9.780E-02 | 3.914E-02 | 4.934E-02 | 4.431E-03 | 1.982 |
| | 280.46 | | | 4.439E-03 | 5.830E-02 | 9.765E-02 | 9.716E-03 | 0.045 |
| | 410.95 | | | 2.084E-01 | 1.697E-01 | 3.001E-01 | 2.561E-02 | 0.694 |
| | 711.68 | | * | -1.340E-02 | 4.492E-02 | 7.340E-02 | 7.436E-03 | -0.183 |
| TM-171 | 752.31 | | | 7.126E-02 | 1.841E-01 | 3.179E-01 | 3.231E-02 | 0.224 |
| | 810.29 | | | 1.556E-03 | 4.150E-02 | 6.923E-02 | 7.017E-03 | 0.022 |
| | 51.35 | | | -4.561E+00 | 1.403E+01 | 2.171E+01 | 1.659E+00 | -0.210 |
| | 52.39 | | | 5.548E+00 | 6.990E+00 | 1.193E+01 | 8.981E-01 | 0.465 |
| | 59.40 | | | 4.248E+00 | 1.557E+01 | 2.325E+01 | 1.645E+00 | 0.183 |
| | 66.72 | | * | -4.006E+00 | 1.882E+01 | 2.710E+01 | 2.019E+00 | -0.148 |
| LU-176 | 88.36 | | + | 4.544E-01 | 1.712E-01 | 2.405E-01 | 2.268E-02 | 1.889 |
| | 201.83 | | | -8.053E-04 | 1.959E-02 | 3.309E-02 | 3.049E-03 | -0.024 |
| | 306.84 | | * | -7.664E-03 | 1.540E-02 | 2.465E-02 | 2.405E-03 | -0.311 |
| | 401.10 | | | 2.815E-01 | 4.240E+00 | 6.983E+00 | 5.895E-01 | 0.040 |
| LU-177 | 112.95 | | | 2.030E-01 | 1.418E+00 | 2.299E+00 | 1.938E-01 | 0.088 |
| | 208.36 | | * | 8.832E-01 | 9.313E-01 | 1.630E+00 | 1.515E-01 | 0.542 |
| LU-177M | 52.97 | | | 2.092E-01 | 7.562E-01 | 1.263E+00 | 9.430E-02 | 0.166 |
| | 54.07 | | | -3.392E-01 | 4.151E-01 | 6.583E-01 | 4.852E-02 | -0.515 |
| | 61.30 | | | 6.527E-01 | 8.974E-01 | 1.367E+00 | 9.777E-02 | 0.478 |
| | 121.62 | | | -1.338E-01 | 2.714E-01 | 4.253E-01 | 3.547E-02 | -0.315 |
| | 147.16 | | | -3.935E-02 | 4.782E-01 | 7.596E-01 | 6.451E-02 | -0.052 |
| | 171.86 | | | 4.017E-01 | 3.339E-01 | 5.611E-01 | 4.943E-02 | 0.716 |
| | 218.09 | | | -1.552E-01 | 5.673E-01 | 9.435E-01 | 8.887E-02 | -0.164 |
| | 268.79 | | + | 1.052E+00 | 6.619E-01 | 9.761E-01 | 9.657E-02 | 1.078 |
| | 319.02 | | | 6.245E-02 | 1.656E-01 | 2.814E-01 | 2.708E-02 | 0.222 |
| | 367.43 | | | -4.532E-02 | 5.767E-01 | 9.434E-01 | 8.368E-02 | -0.048 |
| | 413.65 | | * | -1.762E-01 | 1.279E-01 | 1.857E-01 | 1.590E-02 | -0.949 |
| | 56.28 | | | 5.619E-02 | 4.939E-01 | 8.174E-01 | 5.897E-02 | 0.069 |
| HF-181 | 57.53 | | | 2.453E-01 | 2.725E-01 | 4.641E-01 | 3.318E-02 | 0.528 |
| | 65.20 | | | 3.581E-01 | 6.573E-01 | 9.816E-01 | 7.223E-02 | 0.365 |
| | 133.02 | | | -2.941E-02 | 4.709E-02 | 7.293E-02 | 6.103E-03 | -0.403 |
| | 136.25 | | | 2.849E-01 | 3.248E-01 | 5.410E-01 | 4.539E-02 | 0.527 |
| | 345.85 | | | -8.748E-03 | 1.508E-01 | 2.174E-01 | 2.011E-02 | -0.040 |
| | 482.03 | | * | 1.179E-02 | 2.878E-02 | 4.833E-02 | 4.407E-03 | 0.244 |
| W-181 | 56.28 | | | 2.207E-02 | 1.896E-01 | 3.138E-01 | 2.264E-02 | 0.070 |
| | 57.53 | | | 9.436E-02 | 1.047E-01 | 1.783E-01 | 1.275E-02 | 0.529 |
| TA-182 | 65.20 | | * | 1.365E-01 | 2.505E-01 | 3.741E-01 | 2.752E-02 | 0.365 |
| | 67.75 | | | 2.009E-02 | 7.289E-02 | 1.082E-01 | 8.134E-03 | 0.186 |
| | 100.10 | | | 7.383E-02 | 1.220E-01 | 1.998E-01 | 1.749E-02 | 0.370 |
| | 152.43 | | | 5.404E-02 | 2.399E-01 | 3.863E-01 | 3.304E-02 | 0.140 |
| | 222.10 | | | 1.519E-01 | 2.359E-01 | 4.091E-01 | 3.873E-02 | 0.371 |
| | 1001.68 | | | 1.068E-01 | 1.626E+00 | 2.597E+00 | 2.455E-01 | 0.041 |
| RE-183 | 1121.28 | | + | 4.380E-01 | 1.575E-01 | 2.651E-01 | 2.266E-02 | 1.652 |
| | 1189.05 | | | 4.143E-02 | 2.439E-01 | 4.014E-01 | 3.243E-02 | 0.103 |
| | 1221.42 | | * | -2.782E-02 | 1.542E-01 | 2.449E-01 | 1.998E-02 | -0.114 |
| | 1230.97 | | | 7.449E-02 | 3.565E-01 | 5.874E-01 | 4.806E-02 | 0.127 |
| | 57.98 | | | 3.333E-02 | 1.114E-01 | 1.772E-01 | 1.263E-02 | 0.188 |

---- 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 | | 1.908E-02 | 6.512E-02 | 9.732E-02 | 6.889E-03 | 0.196 |
| | | 67.20 | | -1.552E-02 | 1.362E-01 | 1.970E-01 | 1.474E-02 | -0.079 |
| | | 162.32 | * | -4.294E-02 | 7.900E-02 | 1.217E-01 | 1.056E-02 | -0.353 |
| | | 208.81 | | 1.120E+00 | 7.039E-01 | 1.255E+00 | 1.167E-01 | 0.892 |
| | | 291.72 | | -4.627E-01 | 7.339E-01 | 1.016E+00 | 1.003E-01 | -0.456 |
| | | 57.98 | | 1.215E-01 | 4.061E-01 | 6.461E-01 | 4.605E-02 | 0.188 |
| | | 59.32 | | 6.951E-02 | 2.372E-01 | 3.545E-01 | 2.509E-02 | 0.196 |
| | | 67.20 | | -5.654E-02 | 4.962E-01 | 7.179E-01 | 5.371E-02 | -0.079 |
| | | 161.27 | | -2.753E-01 | 2.545E-01 | 3.788E-01 | 3.282E-02 | -0.727 |
| | | 216.55 | | 1.267E-01 | 1.720E-01 | 3.001E-01 | 2.821E-02 | 0.422 |
| | | 252.85 | * | 2.427E-02 | 1.555E-01 | 2.628E-01 | 2.568E-02 | 0.092 |
| | | 318.01 | | 2.879E-01 | 2.887E-01 | 5.081E-01 | 4.896E-02 | 0.567 |
| | | 792.07 | | -5.462E-01 | 6.678E-01 | 1.019E+00 | 1.035E-01 | -0.536 |
| | | 903.28 | | 1.392E-01 | 7.371E-01 | 1.208E+00 | 1.199E-01 | 0.115 |
| OS-185 | | 920.93 | | -8.376E-02 | 3.011E-01 | 4.806E-01 | 4.737E-02 | -0.174 |
| | | 59.72 | | 3.324E-02 | 1.735E-01 | 2.579E-01 | 1.826E-02 | 0.129 |
| | | 61.14 | | 3.425E-02 | 9.920E-02 | 1.484E-01 | 1.060E-02 | 0.231 |
| | | 69.30 | | -9.994E-02 | 1.826E-01 | 2.927E-01 | 2.232E-02 | -0.341 |
| | | 592.07 | | 9.265E-01 | 1.855E+00 | 3.103E+00 | 3.032E-01 | 0.299 |
| | | 646.12 | * | 2.064E-02 | 2.765E-02 | 4.948E-02 | 4.941E-03 | 0.417 |
| | | 717.42 | | 4.852E-01 | 6.166E-01 | 1.099E+00 | 1.114E-01 | 0.442 |
| | | 874.81 | | -1.762E-01 | 3.984E-01 | 6.266E-01 | 6.274E-02 | -0.281 |
| | | 880.27 | | 2.145E-01 | 5.242E-01 | 9.032E-01 | 9.028E-02 | 0.237 |
| | | 155.03 | * | 6.925E-02 | 1.231E-01 | 2.012E-01 | 1.728E-02 | 0.344 |
| RE-188 | | 477.96 | | -1.495E+00 | 2.192E+00 | 3.340E+00 | 3.036E-01 | -0.448 |
| | | 633.10 | | -1.747E+00 | 2.004E+00 | 2.889E+00 | 2.872E-01 | -0.605 |
| | W-188 | + | 63.58 | 1.263E+02 | 5.396E+01 | 6.384E+01 | 4.640E+00 | 1.978 |
| IR-192 | | 227.08 | | -7.750E+00 | 8.739E+00 | 1.400E+01 | 1.333E+00 | -0.554 |
| | | 290.67 | * | 5.273E-01 | 5.842E+00 | 8.618E+00 | 8.522E-01 | 0.061 |
| | | 295.96 | + | 5.341E-01 | 1.252E-01 | 1.961E-01 | 1.942E-02 | 2.724 |
| | | 308.46 | | -2.718E-02 | 6.305E-02 | 1.015E-01 | 9.929E-03 | -0.268 |
| AU-195 | | 316.51 | * | 1.871E-02 | 2.242E-02 | 3.913E-02 | 3.784E-03 | 0.478 |
| | | 468.07 | | -3.605E-02 | 5.644E-02 | 7.424E-02 | 7.133E-03 | -0.486 |
| | | 604.41 | | 1.736E-01 | 3.398E-01 | 5.050E-01 | 6.992E-02 | 0.344 |
| | | 612.46 | | 8.195E-01 | 5.227E-01 | 8.637E-01 | 9.498E-02 | 0.949 |
| | | 65.12 | | 9.896E-02 | 1.168E-01 | 1.766E-01 | 1.299E-02 | 0.560 |
| | | 66.83 | | -1.460E-02 | 6.280E-02 | 9.031E-02 | 6.735E-03 | -0.162 |
| | | 75.70 | + | 5.469E-01 | 1.457E-01 | 2.787E-01 | 2.269E-02 | 1.962 |
| | | 98.88 | * | 2.086E-01 | 1.704E-01 | 2.600E-01 | 2.290E-02 | 0.802 |
| | | 129.76 | | 2.129E+00 | 1.962E+00 | 3.296E+00 | 2.752E-01 | 0.646 |
| | TL-200 | | 367.94 | * | -1.952E-04 | 1.962E+00 | Half-Life | too short |
| TL-201 | | 579.30 | | 7.723E-04 | 1.962E+00 | Half-Life | too short | |
| | | 828.27 | | 5.222E-03 | 1.962E+00 | Half-Life | too short | |
| | | 1205.75 | | 5.815E-04 | 1.962E+00 | Half-Life | too short | |
| | | 68.90 | | -1.796E+00 | 4.347E+00 | 7.008E+00 | 5.323E-01 | -0.256 |
| | | 70.82 | | -6.831E-03 | 2.765E+00 | 4.044E+00 | 3.128E-01 | -0.002 |
| | 80.30 | | 3.358E-01 | 5.055E+00 | 7.384E+00 | 6.340E-01 | 0.045 | |
| | 135.34 | | -8.959E+00 | 2.686E+01 | 4.223E+01 | 3.541E+00 | -0.212 | |
| | 167.43 | * | 2.210E+00 | 7.523E+00 | 1.212E+01 | 1.060E+00 | 0.182 | |

---- 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 | | -1.178E-01 | 2.850E-01 | 4.595E-01 | 3.490E-02 | -0.256 |
| | | 70.82 | | -4.467E-04 | 1.808E-01 | 2.644E-01 | 2.045E-02 | -0.002 |
| | | 80.30 | | 2.196E-02 | 3.307E-01 | 4.830E-01 | 4.147E-02 | 0.045 |
| | | 439.56 | * | 5.821E-03 | 5.690E-02 | 9.346E-02 | 8.210E-03 | 0.062 |
| HG-203 | | 70.83 | | 5.637E-03 | 7.257E-01 | 1.062E+00 | 1.387E-01 | 0.005 |
| | | 72.87 | | 2.866E-01 | 4.433E-01 | 6.644E-01 | 8.465E-02 | 0.431 |
| | | 82.60 | | 1.178E-01 | 7.822E-01 | 1.146E+00 | 1.590E-01 | 0.103 |
| | | 279.20 | * | 1.136E-02 | 2.879E-02 | 4.904E-02 | 4.987E-03 | 0.232 |
| BI-207 | | 72.80 | | 5.737E-02 | 1.253E-01 | 1.867E-01 | 1.474E-02 | 0.307 |
| | + | 74.97 | | 3.013E-01 | 8.024E-02 | 1.348E-01 | 1.089E-02 | 2.234 |
| | | 84.90 | | 3.988E-02 | 1.331E-01 | 1.958E-01 | 1.779E-02 | 0.204 |
| | | 569.67 | | -8.864E-03 | 2.273E-02 | 3.522E-02 | 3.403E-03 | -0.252 |
| | | 1063.62 | * | 2.687E-02 | 3.639E-02 | 6.400E-02 | 5.778E-03 | 0.420 |
| | | 1770.23 | | -1.210E+00 | 4.953E-01 | 4.700E-01 | 3.856E-02 | -2.574 |
| TL-207 | | 81.07 | | -3.702E-02 | 1.447E-01 | 2.077E-01 | 1.800E-02 | -0.178 |
| | | 83.78 | | 2.385E-02 | 8.802E-02 | 1.294E-01 | 1.159E-02 | 0.184 |
| | | 94.90 | | 4.797E-01 | 1.775E-01 | 2.831E-01 | 2.546E-02 | 1.695 |
| | | 122.32 | | -1.010E+00 | 1.278E+00 | 1.971E+00 | 1.771E-01 | -0.512 |
| | | 144.24 | | 4.464E-01 | 5.113E-01 | 8.322E-01 | 7.907E-02 | 0.536 |
| | | 154.21 | | 7.923E-02 | 2.808E-01 | 4.532E-01 | 4.277E-02 | 0.175 |
| | + | 269.46 | | 2.444E-01 | 1.538E-01 | 2.287E-01 | 2.300E-02 | 1.068 |
| | | 323.87 | * | -4.121E-01 | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| | + | 338.28 | | 3.030E+00 | 1.261E+00 | 1.706E+00 | 2.191E-01 | 1.777 |
| | | 445.03 | | 2.429E-01 | 1.717E+00 | 2.825E+00 | 3.458E-01 | 0.086 |
| PO-209 | | 260.50 | | 5.493E-01 | 6.328E+00 | 1.064E+01 | 1.047E+00 | 0.052 |
| | | 262.80 | | -1.346E+00 | 1.722E+01 | 2.867E+01 | 2.825E+00 | -0.047 |
| | | 896.60 | * | -2.120E+00 | 5.029E+00 | 7.918E+00 | 7.875E-01 | -0.268 |
| PB-211 | | 404.84 | * | 2.704E-01 | 6.309E-01 | 1.029E+00 | 6.445E-01 | 0.263 |
| | | 427.08 | | 7.777E-01 | 1.431E+00 | 2.302E+00 | 1.430E+00 | 0.338 |
| | | 831.96 | | -7.158E-01 | 9.258E-01 | 1.220E+00 | 7.673E-01 | -0.587 |
| BI-212 | + | 727.18 | * | 7.591E-01 | 3.191E-01 | 4.676E-01 | 5.307E-02 | 1.624 |
| | | 785.46 | | 2.411E-01 | 1.201E+00 | 2.037E+00 | 2.069E-01 | 0.118 |
| | | 1620.62 | | 9.171E-01 | 8.697E-01 | 1.672E+00 | 1.408E-01 | 0.548 |
| PO-215 | | 81.07 | | -3.702E-02 | 1.447E-01 | 2.077E-01 | 1.800E-02 | -0.178 |
| | | 83.78 | | 2.385E-02 | 8.802E-02 | 1.294E-01 | 1.159E-02 | 0.184 |
| | | 94.90 | | 4.797E-01 | 1.775E-01 | 2.831E-01 | 2.546E-02 | 1.695 |
| | | 122.32 | | -1.010E+00 | 1.278E+00 | 1.971E+00 | 1.771E-01 | -0.512 |
| | | 144.24 | | 4.464E-01 | 5.113E-01 | 8.322E-01 | 7.907E-02 | 0.536 |
| | | 154.21 | | 7.923E-02 | 2.808E-01 | 4.532E-01 | 4.277E-02 | 0.175 |
| | + | 269.46 | | 2.444E-01 | 1.538E-01 | 2.287E-01 | 2.300E-02 | 1.068 |
| | | 323.87 | * | -4.121E-01 | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| | + | 338.28 | | 3.030E+00 | 1.261E+00 | 1.706E+00 | 2.191E-01 | 1.777 |
| | | 445.03 | | 2.429E-01 | 1.717E+00 | 2.825E+00 | 3.458E-01 | 0.086 |
| RN-219 | + | 271.23 | | 3.136E-01 | 1.980E-01 | 3.001E-01 | 3.424E-02 | 1.045 |
| | | 401.81 | * | -5.102E-02 | 2.643E-01 | 4.262E-01 | 6.362E-02 | -0.120 |
| RN-220 | | 549.76 | * | 1.388E+01 | 1.870E+01 | 3.196E+01 | 3.054E+00 | 0.434 |
| RA-223 | | 81.07 | | -3.702E-02 | 1.447E-01 | 2.077E-01 | 1.800E-02 | -0.178 |
| | | 83.78 | | 2.385E-02 | 8.802E-02 | 1.294E-01 | 1.159E-02 | 0.184 |
| | | 94.90 | | 4.797E-01 | 1.775E-01 | 2.831E-01 | 2.546E-02 | 1.695 |

---- 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 | | -1.010E+00 | 1.278E+00 | 1.971E+00 | 1.771E-01 | -0.512 |
| | | 144.24 | | 4.464E-01 | 5.113E-01 | 8.322E-01 | 7.907E-02 | 0.536 |
| | | 154.21 | | 7.923E-02 | 2.808E-01 | 4.532E-01 | 4.277E-02 | 0.175 |
| | + | 269.46 | | 2.444E-01 | 1.538E-01 | 2.287E-01 | 2.300E-02 | 1.068 |
| | | 323.87 | * | -4.121E-01 | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| | + | 338.28 | | 3.030E+00 | 1.261E+00 | 1.706E+00 | 2.191E-01 | 1.777 |
| | | 445.03 | | 2.429E-01 | 1.717E+00 | 2.825E+00 | 3.458E-01 | 0.086 |
| | | 79.80 | | 3.044E-01 | 1.084E+00 | 1.598E+00 | 3.432E-01 | 0.190 |
| | | 236.00 | | 2.233E-01 | 1.797E-01 | 2.836E-01 | 3.677E-02 | 0.788 |
| | | 256.20 | * | -3.605E-02 | 2.541E-01 | 4.220E-01 | 6.769E-02 | -0.085 |
| | | 286.10 | | -1.793E-01 | 1.020E+00 | 1.682E+00 | 2.368E-01 | -0.107 |
| | + | 299.80 | | 2.467E+00 | 1.318E+00 | 1.844E+00 | 3.339E-01 | 1.338 |
| TH-227 | | 304.40 | | 5.145E-01 | 1.250E+00 | 1.893E+00 | 3.598E-01 | 0.272 |
| | | 334.20 | | 2.647E-01 | 1.739E+00 | 2.560E+00 | 5.064E-01 | 0.103 |
| | | 79.80 | | 3.044E-01 | 1.084E+00 | 1.598E+00 | 3.476E-01 | 0.190 |
| | + | 94.00 | | 1.264E+01 | 3.397E+00 | 3.201E+00 | 7.025E-01 | 3.948 |
| | | 236.00 | | 2.233E-01 | 1.793E-01 | 2.836E-01 | 3.366E-02 | 0.788 |
| | | 256.20 | * | -3.605E-02 | 2.541E-01 | 4.220E-01 | 7.873E-02 | -0.085 |
| | | 286.10 | | -1.793E-01 | 1.036E+00 | 1.682E+00 | 1.690E+00 | -0.107 |
| | + | 299.80 | | 2.467E+00 | 1.318E+00 | 1.844E+00 | 3.339E-01 | 1.338 |
| | | 304.40 | | 5.145E-01 | 1.250E+00 | 1.893E+00 | 3.598E-01 | 0.272 |
| | | 334.20 | | 2.647E-01 | 1.739E+00 | 2.560E+00 | 5.064E-01 | 0.103 |
| | | 85.43 | | 1.049E-01 | 1.344E-01 | 2.017E-01 | 1.846E-02 | 0.520 |
| | + | 88.47 | | 2.616E-01 | 9.855E-02 | 1.381E-01 | 1.301E-02 | 1.894 |
| TH-229 | | 100.00 | | 8.506E-02 | 1.257E-01 | 2.063E-01 | 1.807E-02 | 0.412 |
| | | 193.63 | * | -1.163E-01 | 3.205E-01 | 5.334E-01 | 4.858E-02 | -0.218 |
| | | 210.97 | | 4.541E-01 | 5.232E-01 | 9.141E-01 | 8.531E-02 | 0.497 |
| | | 283.67 | * | -5.859E-01 | 1.032E+00 | 1.655E+00 | 2.642E-01 | -0.354 |
| PA-231 | + | 301.29 | | 9.867E-01 | 5.124E-01 | 7.032E-01 | 9.215E-02 | 1.403 |
| TH-231 | | 81.07 | | -3.702E-02 | 1.447E-01 | 2.077E-01 | 1.800E-02 | -0.178 |
| | | 83.78 | | 2.385E-02 | 8.802E-02 | 1.294E-01 | 1.159E-02 | 0.184 |
| | | 94.90 | | 4.797E-01 | 1.775E-01 | 2.831E-01 | 2.546E-02 | 1.695 |
| | | 122.32 | | -1.010E+00 | 1.278E+00 | 1.971E+00 | 1.771E-01 | -0.512 |
| U-231 | | 144.24 | | 4.464E-01 | 5.113E-01 | 8.322E-01 | 7.907E-02 | 0.536 |
| | | 154.21 | | 7.923E-02 | 2.808E-01 | 4.532E-01 | 4.277E-02 | 0.175 |
| | + | 269.46 | | 2.444E-01 | 1.538E-01 | 2.287E-01 | 2.300E-02 | 1.068 |
| | | 323.87 | * | -4.121E-01 | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| | + | 338.28 | | 3.030E+00 | 1.261E+00 | 1.706E+00 | 2.191E-01 | 1.777 |
| | | 445.03 | | 2.429E-01 | 1.717E+00 | 2.825E+00 | 3.458E-01 | 0.086 |
| | | 84.21 | | 1.945E-01 | 5.172E+00 | 7.514E+00 | 6.770E-01 | 0.026 |
| | + | 92.29 | | 1.693E+01 | 3.041E+00 | 4.700E+00 | 4.299E-01 | 3.601 |
| | | 95.87 | * | -1.160E+00 | 1.128E+00 | 1.518E+00 | 1.357E-01 | -0.764 |
| | | 108.00 | | -9.590E-01 | 1.959E+00 | 3.089E+00 | 2.632E-01 | -0.311 |
| | + | 75.28 | | 8.791E+00 | 2.594E+00 | 4.057E+00 | 6.111E-01 | 2.167 |
| | + | 86.59 | | 3.750E+00 | 1.704E+00 | 1.957E+00 | 5.292E-01 | 1.916 |
| | + | 300.12 | | 6.877E-01 | 3.618E-01 | 5.118E-01 | 7.982E-02 | 1.344 |
| PA-233 | | 311.98 | * | 2.790E-02 | 4.103E-02 | 7.100E-02 | 7.044E-03 | 0.393 |
| | | 340.50 | | 8.530E-01 | 5.258E-01 | 8.006E-01 | 1.930E-01 | 1.065 |
| | | 398.62 | | 1.459E-01 | 1.366E+00 | 2.256E+00 | 5.994E-01 | 0.065 |

---- 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 | | 1.649E-01 | 1.096E+00 | 1.813E+00 | 3.904E-01 | 0.091 |
| | | 63.00 | | 3.595E+00 | 1.605E+00 | 1.854E+00 | 2.740E-01 | 1.939 |
| | | 94.67 | | 4.140E-01 | 1.353E-01 | 2.234E-01 | 2.832E-02 | 1.853 |
| | | 98.44 | | 5.038E-02 | 7.411E-02 | 1.024E-01 | 5.717E-02 | 0.492 |
| | | 99.86 | | 3.546E-01 | 3.150E-01 | 5.257E-01 | 4.609E-02 | 0.674 |
| | | 111.00 | | -7.308E-04 | 1.329E-01 | 2.142E-01 | 2.566E-02 | -0.003 |
| | | 131.20 | | 5.422E-02 | 7.308E-02 | 1.211E-01 | 1.012E-02 | 0.448 |
| | | 152.70 | | 3.467E-02 | 2.294E-01 | 3.680E-01 | 6.262E-02 | 0.094 |
| | | 186.00 | | 3.521E+00 | 1.761E+00 | 1.918E+00 | 6.008E-01 | 1.835 |
| | | 226.40 | | -2.385E-01 | 2.694E-01 | 4.297E-01 | 5.931E-02 | -0.555 |
| | | 227.20 | | -2.193E-01 | 2.886E-01 | 4.658E-01 | 4.436E-02 | -0.471 |
| | | 248.90 | | -4.729E-01 | 5.498E-01 | 8.586E-01 | 1.963E-01 | -0.551 |
| | | 293.70 | | 2.296E+00 | 7.501E-01 | 1.113E+00 | 1.999E-01 | 2.062 |
| | | 369.80 | | -7.895E-02 | 5.428E-01 | 8.825E-01 | 1.929E-01 | -0.089 |
| | | 568.70 | | -7.178E-01 | 7.651E-01 | 1.123E+00 | 1.084E-01 | -0.639 |
| | | 569.50 | | -9.272E-02 | 2.007E-01 | 3.086E-01 | 2.981E-02 | -0.300 |
| | | 574.00 | | -2.094E-01 | 1.078E+00 | 1.700E+00 | 1.646E-01 | -0.123 |
| | | 699.00 | | 7.235E-02 | 5.034E-01 | 8.536E-01 | 1.690E-01 | 0.085 |
| | | 706.10 | | -1.027E-01 | 7.398E-01 | 1.223E+00 | 5.494E-01 | -0.084 |
| | | 733.00 | | -9.090E-02 | 2.975E-01 | 4.144E-01 | 9.463E-02 | -0.219 |
| | | 742.81 | | 5.175E-01 | 1.060E+00 | 1.744E+00 | 1.176E+00 | 0.297 |
| | | 796.30 | | 8.034E-01 | 6.657E-01 | 1.158E+00 | 3.194E-01 | 0.694 |
| | | 805.60 | | 3.787E-01 | 7.690E-01 | 1.317E+00 | 4.096E-01 | 0.288 |
| | | 819.60 | | 5.453E-01 | 8.285E-01 | 1.423E+00 | 5.464E-01 | 0.383 |
| | | 826.30 | | -5.951E-02 | 5.693E-01 | 9.343E-01 | 4.209E-01 | -0.064 |
| | | 831.60 | | -4.177E-01 | 4.407E-01 | 6.294E-01 | 1.907E-01 | -0.664 |
| | | 876.40 | | 9.877E-02 | 5.566E-01 | 9.226E-01 | 9.496E-01 | 0.107 |
| | | 880.51 | | 9.483E-02 | 1.847E-01 | 3.215E-01 | 3.214E-02 | 0.295 |
| | | 883.24 | | -7.940E-02 | 2.011E-01 | 3.063E-01 | 2.065E-01 | -0.259 |
| | | 899.00 | | -9.342E-02 | 5.680E-01 | 9.189E-01 | 4.043E-01 | -0.102 |
| | | 925.00 | | -1.666E-01 | 7.468E-01 | 1.198E+00 | 1.179E-01 | -0.139 |
| | | 926.50 | | 3.409E-02 | 1.093E-01 | 1.860E-01 | 4.785E-02 | 0.183 |
| | | 946.00 | * | -1.212E-01 | 2.084E-01 | 3.188E-01 | 6.155E-02 | -0.380 |
| | | 949.00 | | 1.230E-01 | 3.136E-01 | 5.363E-01 | 5.221E-02 | 0.229 |
| | | 980.50 | | -7.312E-02 | 5.114E-01 | 8.264E-01 | 7.912E-02 | -0.088 |
| | | 1394.10 | | 4.049E-02 | 7.375E-01 | 1.245E+00 | 8.102E-01 | 0.033 |
| PA-234M | + | 766.42 | | 1.034E+01 | 9.742E+00 | 1.498E+01 | 7.644E+00 | 0.690 |
| | | 1001.03 | * | 1.624E+00 | 3.432E+00 | 5.875E+00 | 6.285E-01 | 0.276 |
| U-235 | + | 89.95 | | 1.662E+00 | 1.058E+00 | 1.243E+00 | 3.860E-01 | 1.337 |
| | | 93.35 | | 3.931E+00 | 1.264E+00 | 1.095E+00 | 3.083E-01 | 3.592 |
| | | 105.00 | | 9.178E-01 | 7.594E-01 | 1.212E+00 | 3.615E-01 | 0.757 |
| | | 143.76 | * | 4.415E-02 | 1.584E-01 | 2.516E-01 | 4.384E-02 | 0.176 |
| | | 163.35 | | -5.464E-02 | 3.324E-01 | 5.229E-01 | 9.994E-02 | -0.104 |
| NP-236 | + | 185.71 | | 1.304E-01 | 5.218E-02 | 7.019E-02 | 6.317E-03 | 1.858 |
| | | 205.31 | | -4.623E-01 | 3.762E-01 | 5.786E-01 | 1.121E-01 | -0.799 |
| | | 94.67 | | 3.173E-01 | 9.891E-02 | 1.698E-01 | 1.529E-02 | 1.869 |
| | | 98.44 | | 3.805E-02 | 5.195E-02 | 7.742E-02 | 6.831E-03 | 0.491 |
| | | 111.00 | | -5.528E-04 | 1.005E-01 | 1.620E-01 | 1.371E-02 | -0.003 |
| | | 160.31 | * | -1.646E-02 | 5.720E-02 | 8.950E-02 | 7.744E-03 | -0.184 |

---- 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 | | 1.238E-01 | 1.072E-01 | 1.790E-01 | 1.571E-02 | 0.692 |
| | | 117.00 | * | -1.861E-01 | 1.375E-01 | 2.055E-01 | 1.722E-02 | -0.906 |
| | | 209.75 | | 1.110E+00 | 5.361E-01 | 9.677E-01 | 9.017E-02 | 1.147 |
| | | 228.18 | | -2.579E-02 | 1.457E-01 | 2.430E-01 | 2.317E-02 | -0.106 |
| | | 277.60 | | 7.043E-02 | 1.245E-01 | 2.138E-01 | 2.127E-02 | 0.329 |
| | | 334.30 | | 1.615E-01 | 9.859E-01 | 1.453E+00 | 1.370E-01 | 0.111 |
| AM-241 | | 59.54 | * | 2.142E-02 | 9.025E-02 | 1.345E-01 | 1.052E-02 | 0.159 |
| CM-243 | | 99.55 | | 1.274E-01 | 1.103E-01 | 1.842E-01 | 1.617E-02 | 0.692 |
| | | 103.76 | * | 1.330E-02 | 6.498E-02 | 1.060E-01 | 9.151E-03 | 0.125 |
| | | 117.00 | | -1.915E-01 | 1.415E-01 | 2.114E-01 | 1.771E-02 | -0.906 |
| | | 209.75 | | 1.094E+00 | 5.285E-01 | 9.541E-01 | 8.890E-02 | 1.147 |
| | | 228.18 | | -2.606E-02 | 1.473E-01 | 2.455E-01 | 2.341E-02 | -0.106 |
| | | 277.60 | | 7.101E-02 | 1.256E-01 | 2.156E-01 | 2.145E-02 | 0.329 |
| AM-246 | | 798.80 | | -1.854E-01 | 1.032E-01 | 1.392E-01 | 1.413E-02 | -1.331 |
| | | 1036.00 | | -9.999E-02 | 1.900E-01 | 2.897E-01 | 2.674E-02 | -0.345 |
| | | 1062.04 | | 3.784E-02 | 1.539E-01 | 2.582E-01 | 2.334E-02 | 0.147 |
| | | 1078.86 | * | -5.395E-03 | 9.675E-02 | 1.568E-01 | 1.397E-02 | -0.034 |
| | | 278.00 | | 2.523E-01 | 5.161E-01 | 8.830E-01 | 8.786E-02 | 0.286 |
| CM-247 | | 287.40 | | -2.857E-01 | 8.352E-01 | 1.362E+00 | 1.350E-01 | -0.210 |
| | | 402.60 | * | -1.145E-02 | 2.435E-02 | 3.838E-02 | 3.246E-03 | -0.298 |
| CF-249 | | 252.85 | | 9.037E-02 | 5.790E-01 | 9.785E-01 | 9.563E-02 | 0.092 |
| | | 333.44 | | -3.438E-02 | 1.291E-01 | 1.829E-01 | 1.727E-02 | -0.188 |
| CF-251 | | 387.95 | * | -5.967E-03 | 2.694E-02 | 4.348E-02 | 3.669E-03 | -0.137 |
| | | 176.60 | * | 3.285E-02 | 8.583E-02 | 1.387E-01 | 1.231E-02 | 0.237 |
| | | 227.00 | | -2.341E-01 | 2.572E-01 | 4.112E-01 | 3.915E-02 | -0.569 |
| | | 285.00 | | -5.466E-01 | 1.163E+00 | 1.881E+00 | 1.866E-01 | -0.291 |

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]G246328005      *
* Acquisition date   : 18-FEB-2010 11:08:50 Detector SN#      :              *
* Detector ID        : GAM20                      Sensitivity    : 5.000        *
* Geometry           : CAN                      Energy tolerance: 1.500        *
* Elapsed live time  : 0 02:00:00.00             Abundance limit : 75.000       *
* Elapsed real time  : 0 02:00:34.37             Half life ratio : 8.000       *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID            *
* Sample ID          : G246328005             Analyst initials: MXRl          *
* Batch Number       : 950786                 Sample Quantity : 1.5600E+02 GRAM  *
* Recovery           : 1.00000                Carrier Weight  : 0.00000       *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                                         *
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope      :              *
* MSD DPM             : 0.000                      MSD Isotope :              *
* LCS DPM             : 0.000                      LCS Isotope  :              *
* LCSD DPM           : 0.000                      LCSD Isotope :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.119E+01 | 2.201E+00 | 3.370E-01 | 0.000E+00 |
| CD-109 | 1.954E+00 | 7.216E-01 | 8.400E-01 | 0.000E+00 |
| SN-126 | 1.916E-01 | 7.073E-02 | 8.258E-02 | 0.000E+00 |
| BA-137M | 9.329E-02 | 3.387E-02 | 3.694E-02 | 0.000E+00 |
| CS-137 | 9.861E-02 | 3.581E-02 | 3.905E-02 | 0.000E+00 |
| TL-208 | 2.916E-01 | 6.381E-02 | 3.935E-02 | 0.000E+00 |
| BI-210 | 2.707E+00 | 1.992E+00 | 2.575E+00 | 0.000E+00 |
| PB-210 | 2.707E+00 | 1.992E+00 | 2.575E+00 | 0.000E+00 |
| PO-210 | 2.707E+00 | 1.989E+00 | 2.575E+00 | 0.000E+00 |
| BI-211 | 2.181E+00 | 3.732E-01 | 2.231E-01 | 0.000E+00 |
| PB-212 | 9.113E-01 | 1.201E-01 | 6.679E-02 | 0.000E+00 |
| PO-212 | 9.113E-01 | 1.201E-01 | 6.679E-02 | 0.000E+00 |
| BI-214 | 7.231E-01 | 1.292E-01 | 7.579E-02 | 0.000E+00 |
| PB-214 | 7.586E-01 | 1.355E-01 | 7.776E-02 | 0.000E+00 |
| PO-214 | 7.586E-01 | 1.355E-01 | 7.776E-02 | 0.000E+00 |
| PO-216 | 9.113E-01 | 1.201E-01 | 6.679E-02 | 0.000E+00 |
| PO-218 | 7.586E-01 | 1.355E-01 | 7.776E-02 | 0.000E+00 |
| RA-224 | 2.597E+00 | 7.995E-01 | 7.597E-01 | 0.000E+00 |
| RA-226 | 7.231E-01 | 1.292E-01 | 7.579E-02 | 0.000E+00 |
| AC-228 | 8.709E-01 | 2.284E-01 | 1.574E-01 | 0.000E+00 |
| RA-228 | 8.709E-01 | 2.284E-01 | 1.574E-01 | 0.000E+00 |
| TH-228 | 9.268E-01 | 1.222E-01 | 6.793E-02 | 0.000E+00 |
| TH-230 | 7.231E-01 | 1.292E-01 | 7.579E-02 | 0.000E+00 |
| TH-232 | 8.709E-01 | 2.284E-01 | 1.574E-01 | 0.000E+00 |
| TH-234 | 3.084E+00 | 1.377E+00 | 1.303E+00 | 0.000E+00 |
| U-234 | 7.231E-01 | 1.292E-01 | 7.579E-02 | 0.000E+00 |
| NP-237 | 5.626E-01 | 2.368E-01 | 2.774E-01 | 0.000E+00 |
| U-238 | 3.084E+00 | 1.377E+00 | 1.303E+00 | 0.000E+00 |
| AM-243 | 1.678E-01 | 4.380E-02 | 6.000E-02 | 0.000E+00 |
| ANH-511 | 8.866E-02 | 5.210E-02 | 3.238E-02 | 0.000E+00 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM | K.L. Act error) Ided | MDA (pCi/GRAM |) | |
|---------|-----------------------|--------------------------|------------------|-----------|------------|
| BE-7 | -2.882E-02 | 2.211E-01 | 3.766E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -2.051E-04 | 3.283E-02 | 5.464E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 3.104E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -2.306E-03 | 2.088E-02 | 3.432E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.440E-02 | 5.470E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -1.525E-02 | 2.751E-02 | 4.467E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -2.824E-02 | 5.356E-02 | 8.620E-02 | 0.000E+00 | NOT IDENT. |
| CR-51 | -1.926E-01 | 2.522E-01 | 4.243E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -7.151E-03 | 1.823E-01 | 3.120E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 4.820E-03 | 2.495E-02 | 4.403E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -1.302E-02 | 2.838E-02 | 4.697E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -1.296E-02 | 1.806E-02 | 3.078E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | 4.198E-03 | 2.782E-02 | 4.905E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -6.119E-02 | 6.398E-02 | 9.571E-02 | 0.000E+00 | NOT IDENT. |
| CO-60 | 1.725E-02 | 2.786E-02 | 4.985E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -2.190E-02 | 7.641E-02 | 1.068E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -5.847E-01 | 8.624E-01 | 1.346E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 6.178E-02 | 3.839E-01 | 7.156E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | -1.263E-02 | 7.118E-02 | 1.184E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -7.047E-03 | 2.917E-02 | 5.007E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 1.153E-01 | 1.168E+01 | 1.999E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | 3.852E-03 | 2.694E-01 | 4.710E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -1.295E-02 | 4.614E-02 | 7.683E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | -2.794E-03 | 4.883E-02 | 8.378E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 5.620E+00 | 9.800E+00 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 2.938E-02 | 5.123E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | -2.047E-01 | 5.594E-01 | 9.068E-01 | 0.000E+00 | NOT IDENT. |
| Y-88 | -7.682E-03 | 2.471E-02 | 3.887E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -3.478E-03 | 1.991E-02 | 3.437E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -1.165E+01 | 1.474E+01 | 2.275E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -2.072E-03 | 2.346E-02 | 4.103E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 2.746E-02 | 3.019E-02 | 5.632E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 1.007E-02 | 9.021E-02 | 1.457E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.271E-02 | 4.842E-02 | 8.270E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 3.922E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 8.282E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -7.609E+00 | 1.343E+01 | 2.233E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 4.779E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -6.969E-03 | 2.186E-02 | 3.891E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 5.777E-05 | 2.045E-02 | 3.525E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -1.772E-02 | 2.974E-02 | 4.831E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -7.441E-02 | 2.334E-01 | 3.809E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -7.441E-02 | 2.333E-01 | 3.809E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 4.095E-03 | 2.197E-02 | 3.870E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -1.404E-02 | 2.277E-02 | 3.190E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 9.576E-01 | 1.184E+00 | 2.000E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -2.143E-02 | 2.881E-02 | 4.743E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -2.143E-02 | 2.881E-02 | 4.743E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 7.071E-02 | 1.277E-01 | 2.154E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 1.006E+01 | 1.325E+01 | 2.403E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 2.794E-02 | 4.224E-02 | 7.570E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 1.049E+00 | 2.278E+00 | 4.021E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 4.129E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.811E-02 | 1.984E-02 | 3.595E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | 1.540E-01 | 6.925E-01 | 1.047E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -3.736E-03 | 5.327E-02 | 8.905E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | 2.517E-02 | 5.857E-02 | 1.053E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 9.647E-01 | 6.687E+00 | 1.197E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 5.599E-02 | 1.363E-01 | 2.211E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -5.847E-02 | 1.143E-01 | 1.717E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 3.194E-01 | 1.286E+00 | 2.315E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 4.180E-03 | 3.175E-02 | 5.865E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | -6.966E-02 | 9.155E-02 | 1.520E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.971E-01 | 6.521E-01 | 1.168E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 8.114E-04 | 3.009E-02 | 4.671E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 1.833E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 3.144E-02 | 6.304E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 4.719E-02 | 1.119E-01 | 1.833E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 4.097E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | 1.938E-02 | 8.122E-02 | 1.414E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | 1.062E-02 | 2.089E-02 | 3.709E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 6.099E-02 | 1.849E-01 | 3.232E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -2.175E-02 | 5.969E-02 | 9.527E-02 | 0.000E+00 | NOT IDENT. |
| CE-141 | 2.956E-02 | 4.815E-02 | 8.492E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 3.143E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | -1.356E-01 | 1.418E-01 | 2.346E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -1.975E-02 | 2.465E-02 | 4.054E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -1.340E+00 | 1.672E+00 | 2.750E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.434E-02 | 2.952E-02 | 5.294E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 1.074E-01 | 4.336E-01 | 7.556E-01 | 0.000E+00 | FAIL ABUN |
| PM-149 | -2.967E+01 | 1.055E+02 | 1.857E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | -2.315E-02 | 6.681E-02 | 1.112E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | 5.095E-03 | 5.866E-02 | 9.335E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | 2.886E-02 | 8.905E-02 | 1.536E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 5.680E-02 | 7.288E-02 | 1.341E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | -1.933E-03 | 9.236E-02 | 1.591E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -1.340E-02 | 4.402E-02 | 7.555E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | -4.006E+00 | 1.845E+01 | 2.964E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -7.664E-03 | 1.509E-02 | 2.595E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 8.832E-01 | 9.127E-01 | 1.733E+00 | 0.000E+00 | NOT IDENT. |
| LU-177M | -1.762E-01 | 1.253E-01 | 1.940E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | 1.179E-02 | 2.821E-02 | 5.027E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 1.365E-01 | 2.455E-01 | 4.094E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -2.782E-02 | 1.511E-01 | 2.483E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -4.294E-02 | 7.742E-02 | 1.302E-01 | 0.000E+00 | NOT IDENT. |
| RE-184 | 2.427E-02 | 1.524E-01 | 2.780E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 2.064E-02 | 2.709E-02 | 5.106E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 6.925E-02 | 1.206E-01 | 2.156E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 5.273E-01 | 5.725E+00 | 9.085E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | 1.871E-02 | 2.197E-02 | 4.116E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.086E-01 | 1.670E-01 | 2.817E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.341E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 2.210E+00 | 7.373E+00 | 1.296E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 5.821E-03 | 5.576E-02 | 9.745E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | 1.136E-02 | 2.821E-02 | 5.175E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 2.687E-02 | 3.566E-02 | 6.514E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -4.121E-01 | 4.412E-01 | 7.254E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -2.120E+00 | 4.929E+00 | 8.097E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 2.704E-01 | 6.182E-01 | 1.075E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 3.127E-01 | 4.810E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -4.121E-01 | 4.412E-01 | 7.254E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | -5.102E-02 | 2.590E-01 | 4.454E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 1.388E+01 | 1.832E+01 | 3.313E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -4.121E-01 | 4.412E-01 | 7.254E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -3.605E-02 | 2.490E-01 | 4.463E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -3.605E-02 | 2.490E-01 | 4.463E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -1.163E-01 | 3.141E-01 | 5.682E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -5.859E-01 | 1.012E+00 | 1.746E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -4.121E-01 | 4.412E-01 | 7.254E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -1.160E+00 | 1.105E+00 | 1.646E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 2.790E-02 | 4.021E-02 | 7.471E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | -1.212E-01 | 2.043E-01 | 3.255E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 1.624E+00 | 3.363E+00 | 5.990E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 4.415E-02 | 1.552E-01 | 2.700E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -1.646E-02 | 5.605E-02 | 9.580E-02 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.861E-01 | 1.348E-01 | 2.217E-01 | 0.000E+00 | NOT IDENT. |
| AM-241 | 2.142E-02 | 8.845E-02 | 1.475E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 1.330E-02 | 6.368E-02 | 1.147E-01 | 0.000E+00 | NOT IDENT. |
| AM-246 | -5.395E-03 | 9.481E-02 | 1.595E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -1.145E-02 | 2.386E-02 | 4.011E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | -5.967E-03 | 2.640E-02 | 4.548E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 3.285E-02 | 8.411E-02 | 1.481E-01 | 0.000E+00 | NOT IDENT. |

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328005.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:08:50
Sample ID          : G246328005          Sample quantity   : 1.56000E+02 GRAM
Detector name      : GAM20              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:34.37 0.5%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity        : 5.00000
Batch ID           : 950786             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 | 1178 | 10.67* | 1.253E+00 | 2.119E+01 | 2.119E+01 | 10.60 |
| CD-109 | 88.03 | 205 | 3.72* | 6.945E+00 | 1.905E+00 | 1.954E+00 | 37.68 |
| SN-126 | 64.28 | 225 | 9.60 | 4.623E+00 | 1.221E+00 | 1.221E+00 | 44.52 |
| | 86.94 | 205 | 8.90 | 6.945E+00 | 7.964E-01 | 7.964E-01 | 55.28 |
| | 87.57 | 205 | 37.00* | 6.945E+00 | 1.916E-01 | 1.916E-01 | 37.68 |
| BA-137M | 661.65 | 85 | 89.98* | 2.435E+00 | 9.319E-02 | 9.329E-02 | 37.05 |
| CS-137 | 661.65 | 85 | 85.12* | 2.435E+00 | 9.851E-02 | 9.861E-02 | 37.05 |
| TL-208 | 277.35 | ----- | 6.80 | 4.722E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 110 | 21.60 | 2.994E+00 | 4.105E-01 | 4.105E-01 | 60.54 |
| | 583.14 | 275 | 84.20* | 2.697E+00 | 2.916E-01 | 2.916E-01 | 22.33 |
| | 860.37 | 26 | 12.46 | 1.952E+00 | 2.598E-01 | 2.598E-01 | 116.55 |
| BI-210 | 46.50 | 85 | 4.05* | 1.877E+00 | 2.703E+00 | 2.707E+00 | 75.07 |
| PB-210 | 46.50 | 85 | 4.05* | 1.877E+00 | 2.703E+00 | 2.707E+00 | 75.07 |
| PO-210 | 46.50 | 85 | 4.05* | 1.877E+00 | 2.703E+00 | 2.707E+00 | 74.96 |
| BI-211 | 72.87 | ----- | 1.27 | 5.845E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 466 | 12.94* | 3.970E+00 | 2.181E+00 | 2.181E+00 | 17.46 |
| PB-212 | 74.81 | 278 | 10.70 | 6.048E+00 | 1.035E+00 | 1.035E+00 | 28.22 |
| | 77.11 | 518 | 18.00 | 6.261E+00 | 1.107E+00 | 1.107E+00 | 17.18 |
| | 87.30 | 205 | 8.00 | 6.945E+00 | 8.860E-01 | 8.860E-01 | 38.98 |
| | 238.63 | 887 | 44.60* | 5.249E+00 | 9.113E-01 | 9.113E-01 | 13.45 |
| | 300.09 | 84 | 3.41 | 4.462E+00 | 1.331E+00 | 1.331E+00 | 51.54 |
| PO-212 | 74.81 | 278 | 10.70 | 6.048E+00 | 1.035E+00 | 1.035E+00 | 28.22 |
| | 77.11 | 518 | 18.00 | 6.261E+00 | 1.107E+00 | 1.107E+00 | 17.18 |
| | 87.30 | 205 | 8.00 | 6.945E+00 | 8.860E-01 | 8.860E-01 | 38.98 |
| | 115.19 | ----- | 0.60 | 7.430E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 887 | 44.60* | 5.249E+00 | 9.113E-01 | 9.113E-01 | 13.45 |
| | 300.09 | 84 | 3.41 | 4.462E+00 | 1.331E+00 | 1.331E+00 | 51.54 |
| BI-214 | 609.31 | 362 | 46.30* | 2.603E+00 | 7.231E-01 | 7.231E-01 | 18.23 |
| | 1120.29 | 90 | 15.10 | 1.557E+00 | 9.160E-01 | 9.161E-01 | 36.57 |
| | 1764.49 | 43 | 15.80 | 1.100E+00 | 5.923E-01 | 5.923E-01 | 48.42 |
| PB-214 | 74.81 | 278 | 6.21 | 6.048E+00 | 1.784E+00 | 1.784E+00 | 27.64 |
| | 77.11 | 518 | 10.50 | 6.261E+00 | 1.898E+00 | 1.898E+00 | 18.79 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 87.30 | 205 | 4.67 | 6.945E+00 | 1.518E+00 | 1.518E+00 | 38.46 |
| | 241.98 | 222 | 7.49 | 5.204E+00 | 1.369E+00 | 1.370E+00 | 31.91 |
| | 295.21 | 248 | 19.20 | 4.514E+00 | 6.884E-01 | 6.884E-01 | 24.24 |
| | 351.92 | 466 | 37.20* | 3.970E+00 | 7.586E-01 | 7.586E-01 | 18.23 |
| | 74.81 | 278 | 6.21 | 6.048E+00 | 1.784E+00 | 1.784E+00 | 27.64 |
| | 77.11 | 518 | 10.50 | 6.261E+00 | 1.898E+00 | 1.898E+00 | 18.79 |
| | 87.30 | 205 | 4.67 | 6.945E+00 | 1.518E+00 | 1.518E+00 | 38.46 |
| | 241.98 | 222 | 7.49 | 5.204E+00 | 1.369E+00 | 1.370E+00 | 31.91 |
| PO-216 | 295.21 | 248 | 19.20 | 4.514E+00 | 6.884E-01 | 6.884E-01 | 24.24 |
| | 351.92 | 466 | 37.20* | 3.970E+00 | 7.586E-01 | 7.586E-01 | 18.23 |
| | 74.81 | 278 | 10.70 | 6.048E+00 | 1.035E+00 | 1.035E+00 | 28.22 |
| | 77.11 | 518 | 18.00 | 6.261E+00 | 1.107E+00 | 1.107E+00 | 17.18 |
| | 87.30 | 205 | 8.00 | 6.945E+00 | 8.860E-01 | 8.860E-01 | 38.98 |
| | 238.63 | 887 | 44.60* | 5.249E+00 | 9.113E-01 | 9.113E-01 | 13.45 |
| | 300.09 | 84 | 3.41 | 4.462E+00 | 1.331E+00 | 1.331E+00 | 51.54 |
| | 74.81 | 278 | 6.21 | 6.048E+00 | 1.784E+00 | 1.784E+00 | 27.64 |
| PO-218 | 77.11 | 518 | 10.50 | 6.261E+00 | 1.898E+00 | 1.898E+00 | 18.79 |
| | 87.30 | 205 | 4.67 | 6.945E+00 | 1.518E+00 | 1.518E+00 | 38.46 |
| | 241.98 | 222 | 7.49 | 5.204E+00 | 1.369E+00 | 1.370E+00 | 31.91 |
| | 295.21 | 248 | 19.20 | 4.514E+00 | 6.884E-01 | 6.884E-01 | 24.24 |
| | 351.92 | 466 | 37.20* | 3.970E+00 | 7.586E-01 | 7.586E-01 | 18.23 |
| | 240.98 | 222 | 3.95* | 5.204E+00 | 2.597E+00 | 2.597E+00 | 31.42 |
| | 609.31 | 362 | 46.30* | 2.603E+00 | 7.231E-01 | 7.231E-01 | 18.23 |
| | 1120.29 | 90 | 15.10 | 1.557E+00 | 9.160E-01 | 9.161E-01 | 36.57 |
| AC-228 | 1764.49 | 43 | 15.80 | 1.100E+00 | 5.923E-01 | 5.923E-01 | 48.42 |
| | 338.32 | 140 | 11.40 | 4.087E+00 | 7.256E-01 | 7.256E-01 | 57.30 |
| | 911.07 | 187 | 27.70* | 1.860E+00 | 8.709E-01 | 8.709E-01 | 26.76 |
| | 969.11 | 126 | 16.60 | 1.764E+00 | 1.034E+00 | 1.034E+00 | 32.98 |
| | 338.32 | 140 | 11.40 | 4.087E+00 | 7.256E-01 | 7.256E-01 | 57.30 |
| | 911.07 | 187 | 27.70* | 1.860E+00 | 8.709E-01 | 8.709E-01 | 26.76 |
| | 969.11 | 126 | 16.60 | 1.764E+00 | 1.034E+00 | 1.034E+00 | 32.98 |
| | 74.81 | 278 | 10.70 | 6.048E+00 | 1.035E+00 | 1.053E+00 | 26.66 |
| TH-228 | 77.11 | 518 | 18.00 | 6.261E+00 | 1.107E+00 | 1.126E+00 | 17.18 |
| | 87.30 | 205 | 8.00 | 6.945E+00 | 8.860E-01 | 9.011E-01 | 37.68 |
| | 238.63 | 887 | 44.60* | 5.249E+00 | 9.113E-01 | 9.268E-01 | 13.45 |
| | 300.09 | 84 | 3.41 | 4.462E+00 | 1.331E+00 | 1.354E+00 | 77.86 |
| | 609.31 | 362 | 46.30* | 2.603E+00 | 7.231E-01 | 7.231E-01 | 18.23 |
| | 1120.29 | 90 | 15.10 | 1.557E+00 | 9.160E-01 | 9.160E-01 | 36.57 |
| | 1764.49 | 43 | 15.80 | 1.100E+00 | 5.923E-01 | 5.923E-01 | 48.42 |
| | 338.32 | 140 | 11.40 | 4.087E+00 | 7.256E-01 | 7.256E-01 | 40.69 |
| TH-232 | 911.07 | 187 | 27.70* | 1.860E+00 | 8.709E-01 | 8.709E-01 | 26.76 |
| | 969.11 | 126 | 16.60 | 1.764E+00 | 1.034E+00 | 1.034E+00 | 32.98 |
| | 63.29 | 225 | 3.80* | 4.623E+00 | 3.084E+00 | 3.084E+00 | 45.56 |
| | 92.38 | 527 | 5.41 | 7.164E+00 | 3.270E+00 | 3.270E+00 | 23.99 |
| | 609.31 | 362 | 46.30* | 2.603E+00 | 7.231E-01 | 7.231E-01 | 18.23 |
| | 1120.29 | 90 | 15.10 | 1.557E+00 | 9.160E-01 | 9.160E-01 | 36.57 |
| | 1764.49 | 43 | 15.80 | 1.100E+00 | 5.923E-01 | 5.923E-01 | 48.42 |
| | 86.50 | 205 | 12.60* | 6.945E+00 | 5.626E-01 | 5.626E-01 | 42.96 |
| NP-237 | 95.87 | ----- | 2.60 | 7.260E+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 | 225 | 3.80* | 4.623E+00 | 3.084E+00 | 3.084E+00 | 45.56 |
| | 92.38 | 527 | 5.41 | 7.164E+00 | 3.270E+00 | 3.270E+00 | 17.97 |
| AM-243 | 74.67 | 278 | 66.00* | 6.048E+00 | 1.678E-01 | 1.678E-01 | 26.63 |
| | 86.72 | 205 | 0.34 | 6.945E+00 | 2.110E+01 | 2.110E+01 | 37.68 |
| | 117.66 | ----- | 0.55 | 7.416E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 7.067E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 110 | 100.00* | 2.994E+00 | 8.866E-02 | 8.866E-02 | 59.96 |

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 | 2.119E+01 | 2.119E+01 | 0.225E+01 | 10.60 | |
| CD-109 | 464.00D | 1.03 | 1.905E+00 | 1.954E+00 | 0.736E+00 | 37.68 | |
| SN-126 | 1.00E+05Y | 1.00 | 1.916E-01 | 1.916E-01 | 0.722E-01 | 37.68 | |
| BA-137M | 30.17Y | 1.00 | 9.319E-02 | 9.329E-02 | 3.456E-02 | 37.05 | |
| CS-137 | 30.17Y | 1.00 | 9.851E-02 | 9.861E-02 | 3.654E-02 | 37.05 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.916E-01 | 2.916E-01 | 0.651E-01 | 22.33 | |
| BI-210 | 22.26Y | 1.00 | 2.703E+00 | 2.707E+00 | 2.032E+00 | 75.07 | |
| PB-210 | 22.26Y | 1.00 | 2.703E+00 | 2.707E+00 | 2.032E+00 | 75.07 | |
| PO-210 | 22.26Y | 1.00 | 2.703E+00 | 2.707E+00 | 2.029E+00 | 74.96 | |
| BI-211 | 7.04E+08Y | 1.00 | 2.181E+00 | 2.181E+00 | 0.381E+00 | 17.46 | |
| PB-212 | 1.41E+10Y | 1.00 | 9.113E-01 | 9.113E-01 | 1.226E-01 | 13.45 | |
| PO-212 | 1.41E+10Y | 1.00 | 9.113E-01 | 9.113E-01 | 1.226E-01 | 13.45 | |
| BI-214 | 1600.00Y | 1.00 | 7.231E-01 | 7.231E-01 | 1.318E-01 | 18.23 | |
| PB-214 | 1600.00Y | 1.00 | 7.586E-01 | 7.586E-01 | 1.383E-01 | 18.23 | |
| PO-214 | 1600.00Y | 1.00 | 7.586E-01 | 7.586E-01 | 1.383E-01 | 18.23 | |
| PO-216 | 1.41E+10Y | 1.00 | 9.113E-01 | 9.113E-01 | 1.226E-01 | 13.45 | |
| PO-218 | 1600.00Y | 1.00 | 7.586E-01 | 7.586E-01 | 1.383E-01 | 18.23 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.597E+00 | 2.597E+00 | 0.816E+00 | 31.42 | |
| RA-226 | 1600.00Y | 1.00 | 7.231E-01 | 7.231E-01 | 1.318E-01 | 18.23 | |
| AC-228 | 1.41E+10Y | 1.00 | 8.709E-01 | 8.709E-01 | 2.331E-01 | 26.76 | |
| RA-228 | 1.41E+10Y | 1.00 | 8.709E-01 | 8.709E-01 | 2.331E-01 | 26.76 | |
| TH-228 | 1.91Y | 1.02 | 9.113E-01 | 9.268E-01 | 1.246E-01 | 13.45 | |
| TH-230 | 4.47E+09Y | 1.00 | 7.231E-01 | 7.231E-01 | 1.318E-01 | 18.23 | |
| TH-232 | 1.41E+10Y | 1.00 | 8.709E-01 | 8.709E-01 | 2.331E-01 | 26.76 | |
| TH-234 | 4.47E+09Y | 1.00 | 3.084E+00 | 3.084E+00 | 1.405E+00 | 45.56 | |
| U-234 | 4.47E+09Y | 1.00 | 7.231E-01 | 7.231E-01 | 1.318E-01 | 18.23 | |
| NP-237 | 2.14E+06Y | 1.00 | 5.626E-01 | 5.626E-01 | 2.417E-01 | 42.96 | |
| U-238 | 4.47E+09Y | 1.00 | 3.084E+00 | 3.084E+00 | 1.405E+00 | 45.56 | |
| AM-243 | 7380.00Y | 1.00 | 1.678E-01 | 1.678E-01 | 0.447E-01 | 26.63 | |
| ANH-511 | 1.00E+09Y | 1.00 | 8.866E-02 | 8.866E-02 | 5.317E-02 | 59.96 | |

Total Activity : 5.507E+01 5.515E+01

Grand Total Activity : 5.507E+01 5.515E+01

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

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

Unidentified Energy Lines
Sample ID : G246328005

Page : 5
Acquisition date : 18-FEB-2010 11:08:50

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 2 | 90.05 | 132 | 397 | 1.27 | 180.00 | 171 | 22 | 1.83E-02 | 55.6 | 7.06E+00 | T |
| 0 | 185.80 | 181 | 265 | 0.98 | 371.23 | 367 | 10 | 2.51E-02 | 39.0 | 6.18E+00 | T |
| 0 | 270.15 | 66 | 120 | 0.71 | 539.71 | 536 | 8 | 9.23E-03 | 62.1 | 4.81E+00 | T |
| 0 | 463.11 | 99 | 120 | 2.30 | 925.25 | 917 | 16 | 1.38E-02 | 53.2 | 3.23E+00 | T |
| 0 | 727.15 | 84 | 51 | 1.68 | 1453.03 | 1447 | 12 | 1.16E-02 | 40.5 | 2.25E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328005.CNF;1
* Acquisition date   : 18-FEB-2010 11:08:50   Detector SN#      :
* Detector ID        : GAM20                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:34.37          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G246328005             Analyst initials: MXR1
* Batch Number       : 950786                 Sample Quantity  : 1.56000E+02 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11.7MS Isotope      :
* MSD ID             :                          MSD Isotope   :
* LCS ID             : 1032-A                   LCS Isotope    :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.119E+01 | 2.246E+00 | 3.341E-01 | 2.913E-02 | 63.436 |
| CD-109 | 1.954E+00 | 7.364E-01 | 7.731E-01 | 7.311E-02 | 2.528 |
| SN-126 | 1.916E-01 | 7.218E-02 | 7.599E-02 | 7.148E-03 | 2.521 |
| BA-137M | 9.329E-02 | 3.456E-02 | 3.582E-02 | 3.595E-03 | 2.604 |
| CS-137 | 9.861E-02 | 3.654E-02 | 3.787E-02 | 3.806E-03 | 2.604 |
| TL-208 | 2.916E-01 | 6.512E-02 | 3.803E-02 | 3.910E-03 | 7.669 |
| BI-210 | 2.707E+00 | 2.032E+00 | 2.333E+00 | 2.164E-01 | 1.160 |
| PB-210 | 2.707E+00 | 2.032E+00 | 2.333E+00 | 2.164E-01 | 1.160 |
| PO-210 | 2.707E+00 | 2.029E+00 | 2.333E+00 | 1.957E-01 | 1.160 |
| BI-211 | 2.181E+00 | 3.809E-01 | 2.127E-01 | 2.038E-02 | 10.254 |
| PB-212 | 9.113E-01 | 1.226E-01 | 6.303E-02 | 6.703E-03 | 14.457 |
| PO-212 | 9.113E-01 | 1.226E-01 | 6.303E-02 | 6.703E-03 | 14.457 |
| BI-214 | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| PB-214 | 7.586E-01 | 1.383E-01 | 7.414E-02 | 8.079E-03 | 10.233 |
| PO-214 | 7.586E-01 | 1.383E-01 | 7.414E-02 | 8.079E-03 | 10.233 |
| PO-216 | 9.113E-01 | 1.226E-01 | 6.303E-02 | 6.703E-03 | 14.457 |
| PO-218 | 7.586E-01 | 1.383E-01 | 7.414E-02 | 8.079E-03 | 10.233 |
| RA-224 | 2.597E+00 | 8.158E-01 | 7.172E-01 | 6.932E-02 | 3.621 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-226 | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| AC-228 | 8.709E-01 | 2.331E-01 | 1.540E-01 | 1.886E-02 | 5.656 |
| RA-228 | 8.709E-01 | 2.331E-01 | 1.540E-01 | 1.886E-02 | 5.656 |
| TH-228 | 9.268E-01 | 1.246E-01 | 6.411E-02 | 6.817E-03 | 14.457 |
| TH-230 | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| TH-232 | 8.709E-01 | 2.331E-01 | 1.540E-01 | 1.886E-02 | 5.656 |
| TH-234 | 3.084E+00 | 1.405E+00 | 1.190E+00 | 2.067E-01 | 2.592 |
| U-234 | 7.231E-01 | 1.318E-01 | 7.333E-02 | 8.160E-03 | 9.861 |
| NP-237 | 5.626E-01 | 2.417E-01 | 2.552E-01 | 5.773E-02 | 2.205 |
| U-238 | 3.084E+00 | 1.405E+00 | 1.190E+00 | 2.067E-01 | 2.592 |
| AM-243 | 1.678E-01 | 4.470E-02 | 5.500E-02 | 4.427E-03 | 3.051 |
| ANH-511 | 8.866E-02 | 5.317E-02 | 3.118E-02 | 2.905E-03 | 2.844 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -2.882E-02 | | 2.256E-01 | 3.620E-01 | 3.519E-02 | -0.080 |
| NA-22 | -2.051E-04 | | 3.350E-02 | 5.396E-02 | 4.470E-03 | -0.004 |
| NA-24 | 3.498E-01 | | 1.584E+00 | Half-Life too short | | |
| AL-26 | -2.306E-03 | | 2.131E-02 | 3.424E-02 | 2.781E-03 | -0.067 |
| TI-44 | 2.043E-01 | + | 3.510E-02 | 5.020E-02 | 4.213E-03 | 4.070 |
| SC-46 | -1.525E-02 | | 2.807E-02 | 4.367E-02 | 4.354E-03 | -0.349 |
| V-48 | -2.824E-02 | | 5.465E-02 | 8.451E-02 | 8.077E-03 | -0.334 |
| CR-51 | -1.926E-01 | | 2.573E-01 | 4.035E-01 | 4.045E-02 | -0.477 |
| MN-52 | -7.151E-03 | | 1.860E-01 | 3.092E-01 | 2.616E-02 | -0.023 |
| MN-54 | 4.820E-03 | | 2.546E-02 | 4.297E-02 | 4.341E-03 | 0.112 |
| CO-56 | -1.302E-02 | | 2.895E-02 | 4.586E-02 | 4.622E-03 | -0.284 |
| CO-57 | -1.296E-02 | | 1.843E-02 | 2.856E-02 | 2.384E-03 | -0.454 |
| CO-58 | 4.198E-03 | | 2.839E-02 | 4.783E-02 | 4.857E-03 | 0.088 |
| FE-59 | -6.119E-02 | | 6.529E-02 | 9.413E-02 | 8.878E-03 | -0.650 |
| CO-60 | 1.725E-02 | | 2.843E-02 | 4.929E-02 | 4.129E-03 | 0.350 |
| ZN-65 | -2.190E-02 | | 7.797E-02 | 1.051E-01 | 9.047E-03 | -0.208 |
| GE-68 | -5.847E-01 | | 8.800E-01 | 1.323E+00 | 1.180E-01 | -0.442 |
| AS-73 | 6.178E-02 | | 3.917E-01 | 6.506E-01 | 4.830E-02 | 0.095 |
| AS-74 | -1.263E-02 | | 7.263E-02 | 1.145E-01 | 1.120E-02 | -0.110 |
| SE-75 | -7.047E-03 | | 2.977E-02 | 4.738E-02 | 4.691E-03 | -0.149 |
| BR-77 | 1.153E-01 | | 1.192E+01 | 1.926E+01 | 1.806E+00 | 0.006 |
| SR-82 | 3.852E-03 | | 2.749E-01 | 4.587E-01 | 4.661E-02 | 0.008 |
| RB-83 | -1.295E-02 | | 4.708E-02 | 7.401E-02 | 6.942E-03 | -0.175 |
| RB-84 | -2.794E-03 | | 4.983E-02 | 8.189E-02 | 8.183E-03 | -0.034 |
| KR-85 | 9.909E+00 | | 5.735E+00 | 9.438E+00 | 8.813E-01 | 1.050 |
| SR-85 | 5.180E-02 | | 2.998E-02 | 4.934E-02 | 4.607E-03 | 1.050 |
| RB-86 | -2.047E-01 | | 5.708E-01 | 8.912E-01 | 7.957E-02 | -0.230 |
| Y-88 | -7.682E-03 | | 2.522E-02 | 3.879E-02 | 3.130E-03 | -0.198 |
| ZR-88 | -3.478E-03 | | 2.031E-02 | 3.287E-02 | 2.749E-03 | -0.106 |
| Y-91 | -1.165E+01 | | 1.504E+01 | 2.243E+01 | 1.821E+00 | -0.519 |
| NB-94 | -2.072E-03 | | 2.394E-02 | 3.985E-02 | 4.032E-03 | -0.052 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| NB-95 | 2.746E-02 | | 3.081E-02 | 5.483E-02 | 5.572E-03 | 0.501 |
| NB-95M | 1.007E-02 | | 9.205E-02 | 1.374E-01 | 1.477E-02 | 0.073 |
| ZR-95 | -1.271E-02 | | 4.941E-02 | 8.049E-02 | 8.784E-03 | -0.158 |
| NB-97 | -2.064E-01 | | 2.001E-01 | Half-Life too short | | |
| ZR-97 | 1.600E+01 | | 4.225E+00 | Half-Life too short | | |
| MO-99 | -7.609E+00 | | 1.370E+01 | 2.172E+01 | 3.498E+00 | -0.350 |
| TC-99M | -5.517E+12 | | 2.438E+12 | Half-Life too short | | |
| RH-101 | -6.969E-03 | | 2.230E-02 | 3.655E-02 | 3.350E-03 | -0.191 |
| RH-102 | 5.777E-05 | | 2.087E-02 | 3.387E-02 | 3.071E-03 | 0.002 |
| RU-103 | -1.772E-02 | | 3.035E-02 | 4.648E-02 | 6.757E-03 | -0.381 |
| RH-106 | -7.441E-02 | | 2.382E-01 | 3.687E-01 | 5.241E-02 | -0.202 |
| RU-106 | -7.441E-02 | | 2.380E-01 | 3.687E-01 | 3.649E-02 | -0.202 |
| AG-108M | 4.095E-03 | | 2.242E-02 | 3.710E-02 | 3.367E-03 | 0.110 |
| AG-110M | -1.404E-02 | | 2.323E-02 | 3.093E-02 | 3.169E-03 | -0.454 |
| IN-111 | 9.576E-01 | | 1.208E+00 | 1.889E+00 | 1.834E-01 | 0.507 |
| IN-113M | -2.143E-02 | | 2.940E-02 | 4.534E-02 | 3.912E-03 | -0.473 |
| SN-113 | -2.143E-02 | | 2.940E-02 | 4.534E-02 | 3.912E-03 | -0.473 |
| IN-114M | 7.071E-02 | | 1.303E-01 | 2.021E-01 | 1.831E-02 | 0.350 |
| CD-115 | 1.006E+01 | | 1.352E+01 | 2.316E+01 | 2.183E+00 | 0.434 |
| SN-117M | 2.794E-02 | | 4.311E-02 | 7.070E-02 | 6.102E-03 | 0.395 |
| SB-122 | 1.049E+00 | | 2.325E+00 | 3.883E+00 | 3.739E-01 | 0.270 |
| I-123 | 3.770E+01 | | 2.106E+01 | Half-Life too short | | |
| TE-123M | 1.811E-02 | | 2.024E-02 | 3.358E-02 | 2.917E-03 | 0.539 |
| I-124 | 1.540E-01 | | 7.066E-01 | 1.013E+00 | 9.947E-02 | 0.152 |
| SB-124 | -3.736E-03 | | 5.436E-02 | 8.865E-02 | 7.704E-03 | -0.042 |
| SB-125 | 2.517E-02 | | 5.977E-02 | 1.009E-01 | 8.928E-03 | 0.250 |
| TE-125M | 9.647E-01 | | 6.823E+00 | 1.107E+01 | 1.133E+00 | 0.087 |
| I-126 | 5.599E-02 | | 1.391E-01 | 2.144E-01 | 2.154E-02 | 0.261 |
| SB-126 | -5.847E-02 | | 1.166E-01 | 1.669E-01 | 1.692E-02 | -0.350 |
| SB-127 | 3.194E-01 | | 1.312E+00 | 2.247E+00 | 2.930E-01 | 0.142 |
| XE-127 | 4.180E-03 | | 3.240E-02 | 5.512E-02 | 5.088E-03 | 0.076 |
| I-131 | -6.966E-02 | | 9.342E-02 | 1.451E-01 | 1.363E-02 | -0.480 |
| TE-132 | -1.971E-01 | | 6.654E-01 | 1.101E+00 | 1.826E-01 | -0.179 |
| BA-133 | 8.114E-04 | | 3.070E-02 | 4.455E-02 | 6.018E-03 | 0.018 |
| I-133 | 2.000E-03 | | 9.351E-03 | Half-Life too short | | |
| CS-134 | 6.534E-02 | | 3.208E-02 | 6.144E-02 | 6.270E-03 | 1.063 |
| CS-135 | 4.719E-02 | | 1.142E-01 | 1.735E-01 | 1.922E-02 | 0.272 |
| I-135 | 8.515E+10 | | 2.090E+11 | Half-Life too short | | |
| CS-136 | 1.938E-02 | | 8.288E-02 | 1.389E-01 | 1.318E-02 | 0.140 |
| CE-139 | 1.062E-02 | | 2.132E-02 | 3.468E-02 | 3.028E-03 | 0.306 |
| BA-140 | 6.099E-02 | | 1.887E-01 | 3.116E-01 | 1.040E-01 | 0.196 |
| LA-140 | -2.175E-02 | | 6.091E-02 | 9.469E-02 | 7.994E-03 | -0.230 |
| CE-141 | 2.956E-02 | | 4.913E-02 | 7.914E-02 | 6.833E-03 | 0.373 |
| CE-143 | 6.483E-04 | | 1.603E-04 | Half-Life too short | | |
| CE-144 | -1.356E-01 | | 1.447E-01 | 2.182E-01 | 3.366E-02 | -0.622 |
| PM-144 | -1.975E-02 | | 2.515E-02 | 3.937E-02 | 3.981E-03 | -0.502 |
| PR-144 | -1.340E+00 | | 1.706E+00 | 2.671E+00 | 2.699E-01 | -0.502 |
| PM-146 | 1.434E-02 | | 3.012E-02 | 5.081E-02 | 5.565E-03 | 0.282 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ND-147 | 1.074E-01 | | 4.424E-01 | 7.283E-01 | 1.125E-01 | 0.147 |
| PM-149 | -2.967E+01 | | 1.076E+02 | 1.761E+02 | 2.872E+01 | -0.169 |
| EU-152 | -2.315E-02 | | 6.817E-02 | 1.060E-01 | 1.034E-02 | -0.218 |
| GD-153 | 5.095E-03 | | 5.985E-02 | 8.612E-02 | 7.638E-03 | 0.059 |
| EU-154 | 2.886E-02 | | 9.087E-02 | 1.517E-01 | 1.676E-02 | 0.190 |
| EU-155 | 5.680E-02 | | 7.437E-02 | 1.240E-01 | 1.078E-02 | 0.458 |
| TB-160 | -1.933E-03 | | 9.424E-02 | 1.555E-01 | 1.555E-02 | -0.012 |
| HO-166M | -1.340E-02 | | 4.492E-02 | 7.340E-02 | 7.436E-03 | -0.183 |
| TM-171 | -4.006E+00 | | 1.882E+01 | 2.710E+01 | 2.019E+00 | -0.148 |
| LU-176 | -7.664E-03 | | 1.540E-02 | 2.465E-02 | 2.405E-03 | -0.311 |
| LU-177 | 8.832E-01 | | 9.313E-01 | 1.630E+00 | 1.515E-01 | 0.542 |
| LU-177M | -1.762E-01 | | 1.279E-01 | 1.857E-01 | 1.590E-02 | -0.949 |
| HF-181 | 1.179E-02 | | 2.878E-02 | 4.833E-02 | 4.407E-03 | 0.244 |
| W-181 | 1.365E-01 | | 2.505E-01 | 3.741E-01 | 2.752E-02 | 0.365 |
| TA-182 | -2.782E-02 | | 1.542E-01 | 2.449E-01 | 1.998E-02 | -0.114 |
| RE-183 | -4.294E-02 | | 7.900E-02 | 1.217E-01 | 1.056E-02 | -0.353 |
| RE-184 | 2.427E-02 | | 1.555E-01 | 2.628E-01 | 2.568E-02 | 0.092 |
| OS-185 | 2.064E-02 | | 2.765E-02 | 4.948E-02 | 4.941E-03 | 0.417 |
| RE-188 | 6.925E-02 | | 1.231E-01 | 2.012E-01 | 1.728E-02 | 0.344 |
| W-188 | 5.273E-01 | | 5.842E+00 | 8.618E+00 | 8.522E-01 | 0.061 |
| IR-192 | 1.871E-02 | | 2.242E-02 | 3.913E-02 | 3.784E-03 | 0.478 |
| AU-195 | 2.086E-01 | | 1.704E-01 | 2.600E-01 | 2.290E-02 | 0.802 |
| TL-200 | -1.952E-04 | | 4.766E-04 | Half-Life too short | | |
| TL-201 | 2.210E+00 | | 7.523E+00 | 1.212E+01 | 1.060E+00 | 0.182 |
| TL-202 | 5.821E-03 | | 5.690E-02 | 9.346E-02 | 8.210E-03 | 0.062 |
| HG-203 | 1.136E-02 | | 2.879E-02 | 4.904E-02 | 4.987E-03 | 0.232 |
| BI-207 | 2.687E-02 | | 3.639E-02 | 6.400E-02 | 5.778E-03 | 0.420 |
| TL-207 | -4.121E-01 | | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| PO-209 | -2.120E+00 | | 5.029E+00 | 7.918E+00 | 7.875E-01 | -0.268 |
| PB-211 | 2.704E-01 | | 6.309E-01 | 1.029E+00 | 6.445E-01 | 0.263 |
| BI-212 | 7.591E-01 | + | 3.191E-01 | 4.676E-01 | 5.307E-02 | 1.624 |
| PO-215 | -4.121E-01 | | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| RN-219 | -5.102E-02 | | 2.643E-01 | 4.262E-01 | 6.362E-02 | -0.120 |
| RN-220 | 1.388E+01 | | 1.870E+01 | 3.196E+01 | 3.054E+00 | 0.434 |
| RA-223 | -4.121E-01 | | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| AC-227 | -3.605E-02 | | 2.541E-01 | 4.220E-01 | 6.769E-02 | -0.085 |
| TH-227 | -3.605E-02 | | 2.541E-01 | 4.220E-01 | 7.873E-02 | -0.085 |
| TH-229 | -1.163E-01 | | 3.205E-01 | 5.334E-01 | 4.858E-02 | -0.218 |
| PA-231 | -5.859E-01 | | 1.032E+00 | 1.655E+00 | 2.642E-01 | -0.354 |
| TH-231 | -4.121E-01 | | 4.502E-01 | 6.901E-01 | 1.255E-01 | -0.597 |
| U-231 | -1.160E+00 | | 1.128E+00 | 1.518E+00 | 1.357E-01 | -0.764 |
| PA-233 | 2.790E-02 | | 4.103E-02 | 7.100E-02 | 7.044E-03 | 0.393 |
| PA-234 | -1.212E-01 | | 2.084E-01 | 3.188E-01 | 6.155E-02 | -0.380 |
| PA-234M | 1.624E+00 | | 3.432E+00 | 5.875E+00 | 6.285E-01 | 0.276 |
| U-235 | 4.415E-02 | | 1.584E-01 | 2.516E-01 | 4.384E-02 | 0.176 |
| NP-236 | -1.646E-02 | | 5.720E-02 | 8.950E-02 | 7.744E-03 | -0.184 |
| NP-239 | -1.861E-01 | | 1.375E-01 | 2.055E-01 | 1.722E-02 | -0.906 |
| AM-241 | 2.142E-02 | | 9.025E-02 | 1.345E-01 | 1.052E-02 | 0.159 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 1.330E-02 | | 6.498E-02 | 1.060E-01 | 9.151E-03 | 0.125 |
| AM-246 | -5.395E-03 | | 9.675E-02 | 1.568E-01 | 1.397E-02 | -0.034 |
| CM-247 | -1.145E-02 | | 2.435E-02 | 3.838E-02 | 3.246E-03 | -0.298 |
| CF-249 | -5.967E-03 | | 2.694E-02 | 4.348E-02 | 3.669E-03 | -0.137 |
| CF-251 | 3.285E-02 | | 8.583E-02 | 1.387E-01 | 1.231E-02 | 0.237 |

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]G246328005          *
* Acquisition date   : 18-FEB-2010 11:08:50 Detector SN# :                  *
* Detector ID        : GAM20 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:34.37 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328005 Analyst initials: MXR1                 *
* Batch Number       : 950786 Sample Quantity : 1.5600E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 26-AUG-2009 06:32:11 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                  *
* LCS DPM             : 0.000 LCS Isotope :                  *
* LCSD DPM            : 0.000 LCSD Isotope :                  *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.119E+01 | 2.201E+00 | 1.686E-01 | 1.123E+00 |
| CD-109 | 1.954E+00 | 7.216E-01 | 4.203E-01 | 3.682E-01 |
| SN-126 | 1.916E-01 | 7.073E-02 | 4.132E-02 | 3.609E-02 |
| BA-137M | 9.329E-02 | 3.387E-02 | 1.848E-02 | 1.728E-02 |
| CS-137 | 9.861E-02 | 3.581E-02 | 1.954E-02 | 1.827E-02 |
| TL-208 | 2.916E-01 | 6.381E-02 | 1.969E-02 | 3.256E-02 |
| BI-210 | 2.707E+00 | 1.992E+00 | 1.288E+00 | 1.016E+00 |
| PB-210 | 2.707E+00 | 1.992E+00 | 1.288E+00 | 1.016E+00 |
| PO-210 | 2.707E+00 | 1.989E+00 | 1.288E+00 | 1.015E+00 |
| BI-211 | 2.181E+00 | 3.732E-01 | 1.116E-01 | 1.904E-01 |
| PB-212 | 9.113E-01 | 1.201E-01 | 3.341E-02 | 6.128E-02 |
| PO-212 | 9.113E-01 | 1.201E-01 | 3.341E-02 | 6.128E-02 |
| BI-214 | 7.231E-01 | 1.292E-01 | 3.792E-02 | 6.592E-02 |
| PB-214 | 7.586E-01 | 1.355E-01 | 3.890E-02 | 6.914E-02 |
| PO-214 | 7.586E-01 | 1.355E-01 | 3.890E-02 | 6.914E-02 |
| PO-216 | 9.113E-01 | 1.201E-01 | 3.341E-02 | 6.128E-02 |
| PO-218 | 7.586E-01 | 1.355E-01 | 3.890E-02 | 6.914E-02 |
| RA-224 | 2.597E+00 | 7.995E-01 | 3.801E-01 | 4.079E-01 |
| RA-226 | 7.231E-01 | 1.292E-01 | 3.792E-02 | 6.592E-02 |
| AC-228 | 8.709E-01 | 2.284E-01 | 7.875E-02 | 1.165E-01 |
| RA-228 | 8.709E-01 | 2.284E-01 | 7.875E-02 | 1.165E-01 |
| TH-228 | 9.268E-01 | 1.222E-01 | 3.398E-02 | 6.232E-02 |
| TH-230 | 7.231E-01 | 1.292E-01 | 3.792E-02 | 6.592E-02 |
| TH-232 | 8.709E-01 | 2.284E-01 | 7.875E-02 | 1.165E-01 |
| TH-234 | 3.084E+00 | 1.377E+00 | 6.520E-01 | 7.025E-01 |
| U-234 | 7.231E-01 | 1.292E-01 | 3.792E-02 | 6.592E-02 |
| NP-237 | 5.626E-01 | 2.368E-01 | 1.388E-01 | 1.208E-01 |
| U-238 | 3.084E+00 | 1.377E+00 | 6.520E-01 | 7.025E-01 |
| AM-243 | 1.678E-01 | 4.380E-02 | 3.002E-02 | 2.235E-02 |
| ANH-511 | 8.866E-02 | 5.210E-02 | 1.620E-02 | 2.658E-02 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|---------------|--------------------|----------------------|
| BE-7 | -2.882E-02 | 2.211E-01 | 1.884E-01 | 1.128E-01 NOT IDENT. |
| NA-22 | -2.051E-04 | 3.283E-02 | 2.734E-02 | 1.675E-02 NOT IDENT. |
| NA-24 | 3.498E+05 | 3.104E+06 | 0.000E+00 | 1.584E+06 SHORT HLIF |
| AL-26 | -2.306E-03 | 2.088E-02 | 1.717E-02 | 1.065E-02 NOT IDENT. |
| TI-44 | 2.043E-01 | 3.440E-02 | 2.737E-02 | 1.755E-02 FAIL ABUN |
| SC-46 | -1.525E-02 | 2.751E-02 | 2.235E-02 | 1.404E-02 FAIL ABUN |
| V-48 | -2.824E-02 | 5.356E-02 | 4.313E-02 | 2.733E-02 NOT IDENT. |
| CR-51 | -1.926E-01 | 2.522E-01 | 2.123E-01 | 1.287E-01 NOT IDENT. |
| MN-52 | -7.151E-03 | 1.823E-01 | 1.561E-01 | 9.299E-02 NOT IDENT. |
| MN-54 | 4.820E-03 | 2.495E-02 | 2.203E-02 | 1.273E-02 NOT IDENT. |
| CO-56 | -1.302E-02 | 2.838E-02 | 2.350E-02 | 1.448E-02 NOT IDENT. |
| CO-57 | -1.296E-02 | 1.806E-02 | 1.540E-02 | 9.215E-03 NOT IDENT. |
| CO-58 | 4.198E-03 | 2.782E-02 | 2.454E-02 | 1.420E-02 NOT IDENT. |
| FE-59 | -6.119E-02 | 6.398E-02 | 4.789E-02 | 3.264E-02 NOT IDENT. |
| CO-60 | 1.725E-02 | 2.786E-02 | 2.494E-02 | 1.421E-02 NOT IDENT. |
| ZN-65 | -2.190E-02 | 7.641E-02 | 5.345E-02 | 3.899E-02 NOT IDENT. |
| GE-68 | -5.847E-01 | 8.624E-01 | 6.732E-01 | 4.400E-01 NOT IDENT. |
| AS-73 | 6.178E-02 | 3.839E-01 | 3.580E-01 | 1.958E-01 NOT IDENT. |
| AS-74 | -1.263E-02 | 7.118E-02 | 5.922E-02 | 3.632E-02 NOT IDENT. |
| SE-75 | -7.047E-03 | 2.917E-02 | 2.505E-02 | 1.488E-02 NOT IDENT. |
| BR-77 | 1.153E-01 | 1.168E+01 | 1.000E+01 | 5.959E+00 FAIL ABUN |
| SR-82 | 3.852E-03 | 2.694E-01 | 2.356E-01 | 1.375E-01 NOT IDENT. |
| RB-83 | -1.295E-02 | 4.614E-02 | 3.844E-02 | 2.354E-02 NOT IDENT. |
| RB-84 | -2.794E-03 | 4.883E-02 | 4.192E-02 | 2.491E-02 NOT IDENT. |
| KR-85 | 9.909E+00 | 5.620E+00 | 4.903E+00 | 2.868E+00 NOT IDENT. |
| SR-85 | 5.180E-02 | 2.938E-02 | 2.563E-02 | 1.499E-02 NOT IDENT. |
| RB-86 | -2.047E-01 | 5.594E-01 | 4.537E-01 | 2.854E-01 NOT IDENT. |
| Y-88 | -7.682E-03 | 2.471E-02 | 1.945E-02 | 1.261E-02 NOT IDENT. |
| ZR-88 | -3.478E-03 | 1.991E-02 | 1.720E-02 | 1.016E-02 NOT IDENT. |
| Y-91 | -1.165E+01 | 1.474E+01 | 1.138E+01 | 7.520E+00 NOT IDENT. |
| NB-94 | -2.072E-03 | 2.346E-02 | 2.053E-02 | 1.197E-02 NOT IDENT. |
| NB-95 | 2.746E-02 | 3.019E-02 | 2.818E-02 | 1.540E-02 NOT IDENT. |
| NB-95M | 1.007E-02 | 9.021E-02 | 7.288E-02 | 4.603E-02 NOT IDENT. |
| ZR-95 | -1.271E-02 | 4.842E-02 | 4.138E-02 | 2.471E-02 NOT IDENT. |
| NB-97 | -2.064E+05 | 3.922E+05 | 0.000E+00 | 2.001E+05 SHORT HLIF |
| ZR-97 | 1.600E+07 | 8.282E+06 | 0.000E+00 | 4.225E+06 SHORT HLIF |
| MO-99 | -7.609E+00 | 1.343E+01 | 1.117E+01 | 6.852E+00 NOT IDENT. |
| TC-99M | -5.517E+18 | 4.779E+18 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| RH-101 | -6.969E-03 | 2.186E-02 | 1.947E-02 | 1.115E-02 NOT IDENT. |
| RH-102 | 5.777E-05 | 2.045E-02 | 1.763E-02 | 1.043E-02 NOT IDENT. |
| RU-103 | -1.772E-02 | 2.974E-02 | 2.417E-02 | 1.517E-02 FAIL ABUN |
| RH-106 | -7.441E-02 | 2.334E-01 | 1.905E-01 | 1.191E-01 FAIL ABUN |
| RU-106 | -7.441E-02 | 2.333E-01 | 1.905E-01 | 1.190E-01 FAIL ABUN |
| AG-108M | 4.095E-03 | 2.197E-02 | 1.936E-02 | 1.121E-02 NOT IDENT. |
| AG-110M | -1.404E-02 | 2.277E-02 | 1.596E-02 | 1.161E-02 NOT IDENT. |
| IN-111 | 9.576E-01 | 1.184E+00 | 1.001E+00 | 6.042E-01 NOT IDENT. |
| IN-113M | -2.143E-02 | 2.881E-02 | 2.373E-02 | 1.470E-02 NOT IDENT. |
| SN-113 | -2.143E-02 | 2.881E-02 | 2.373E-02 | 1.470E-02 NOT IDENT. |
| IN-114M | 7.071E-02 | 1.277E-01 | 1.078E-01 | 6.515E-02 NOT IDENT. |
| CD-115 | 1.006E+01 | 1.325E+01 | 1.202E+01 | 6.758E+00 NOT IDENT. |
| SN-117M | 2.794E-02 | 4.224E-02 | 3.787E-02 | 2.155E-02 NOT IDENT. |
| SB-122 | 1.049E+00 | 2.278E+00 | 2.012E+00 | 1.162E+00 NOT IDENT. |
| I-123 | 3.770E+07 | 4.129E+07 | 0.000E+00 | 2.106E+07 SHORT HLIF |
| TE-123M | 1.811E-02 | 1.984E-02 | 1.798E-02 | 1.012E-02 NOT IDENT. |
| I-124 | 1.540E-01 | 6.925E-01 | 5.241E-01 | 3.533E-01 NOT IDENT. |
| SB-124 | -3.736E-03 | 5.327E-02 | 4.455E-02 | 2.718E-02 FAIL ABUN |
| SB-125 | 2.517E-02 | 5.857E-02 | 5.266E-02 | 2.988E-02 FAIL ABUN |
| TE-125M | 9.647E-01 | 6.687E+00 | 5.988E+00 | 3.411E+00 NOT IDENT. |
| I-126 | 5.599E-02 | 1.363E-01 | 1.106E-01 | 6.956E-02 NOT IDENT. |
| SB-126 | -5.847E-02 | 1.143E-01 | 8.591E-02 | 5.832E-02 FAIL ABUN |
| SB-127 | 3.194E-01 | 1.286E+00 | 1.158E+00 | 6.559E-01 NOT IDENT. |
| XE-127 | 4.180E-03 | 3.175E-02 | 2.934E-02 | 1.620E-02 NOT IDENT. |
| I-131 | -6.966E-02 | 9.155E-02 | 7.607E-02 | 4.671E-02 NOT IDENT. |
| TE-132 | -1.971E-01 | 6.521E-01 | 5.846E-01 | 3.327E-01 NOT IDENT. |
| BA-133 | 8.114E-04 | 3.009E-02 | 2.337E-02 | 1.535E-02 NOT IDENT. |
| I-133 | 2.000E+03 | 1.833E+04 | 0.000E+00 | 9.351E+03 SHORT HLIF |
| CS-134 | 6.534E-02 | 3.144E-02 | 3.154E-02 | 1.604E-02 NOT IDENT. |
| CS-135 | 4.719E-02 | 1.119E-01 | 9.168E-02 | 5.711E-02 NOT IDENT. |
| I-135 | 8.515E+16 | 4.097E+17 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| CS-136 | 1.938E-02 | 8.122E-02 | 7.075E-02 | 4.144E-02 FAIL ABUN |
| CE-139 | 1.062E-02 | 2.089E-02 | 1.856E-02 | 1.066E-02 NOT IDENT. |
| BA-140 | 6.099E-02 | 1.849E-01 | 1.617E-01 | 9.433E-02 NOT IDENT. |
| LA-140 | -2.175E-02 | 5.969E-02 | 4.766E-02 | 3.045E-02 NOT IDENT. |
| CE-141 | 2.956E-02 | 4.815E-02 | 4.248E-02 | 2.457E-02 NOT IDENT. |
| CE-143 | 6.483E+02 | 3.143E+02 | 0.000E+00 | 1.603E+02 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | -1.356E-01 | 1.418E-01 | 1.174E-01 | 7.235E-02 | NOT IDENT. |
| PM-144 | -1.975E-02 | 2.465E-02 | 2.028E-02 | 1.258E-02 | NOT IDENT. |
| PR-144 | -1.340E+00 | 1.672E+00 | 1.376E+00 | 8.531E-01 | NOT IDENT. |
| PM-146 | 1.434E-02 | 2.952E-02 | 2.648E-02 | 1.506E-02 | NOT IDENT. |
| ND-147 | 1.074E-01 | 4.336E-01 | 3.780E-01 | 2.212E-01 | FAIL ABUN |
| PM-149 | -2.967E+01 | 1.055E+02 | 9.292E+01 | 5.381E+01 | NOT IDENT. |
| EU-152 | -2.315E-02 | 6.681E-02 | 5.563E-02 | 3.409E-02 | NOT IDENT. |
| GD-153 | 5.095E-03 | 5.866E-02 | 4.670E-02 | 2.993E-02 | NOT IDENT. |
| EU-154 | 2.886E-02 | 8.905E-02 | 7.683E-02 | 4.544E-02 | NOT IDENT. |
| EU-155 | 5.680E-02 | 7.288E-02 | 6.710E-02 | 3.718E-02 | FAIL ABUN |
| TB-160 | -1.933E-03 | 9.236E-02 | 7.960E-02 | 4.712E-02 | FAIL ABUN |
| HO-166M | -1.340E-02 | 4.402E-02 | 3.780E-02 | 2.246E-02 | FAIL ABUN |
| TM-171 | -4.006E+00 | 1.845E+01 | 1.483E+01 | 9.412E+00 | NOT IDENT. |
| LU-176 | -7.664E-03 | 1.509E-02 | 1.298E-02 | 7.698E-03 | FAIL ABUN |
| LU-177 | 8.832E-01 | 9.127E-01 | 8.669E-01 | 4.656E-01 | NOT IDENT. |
| LU-177M | -1.762E-01 | 1.253E-01 | 9.705E-02 | 6.394E-02 | FAIL ABUN |
| HF-181 | 1.179E-02 | 2.821E-02 | 2.515E-02 | 1.439E-02 | NOT IDENT. |
| W-181 | 1.365E-01 | 2.455E-01 | 2.048E-01 | 1.252E-01 | NOT IDENT. |
| TA-182 | -2.782E-02 | 1.511E-01 | 1.242E-01 | 7.708E-02 | FAIL ABUN |
| RE-183 | -4.294E-02 | 7.742E-02 | 6.514E-02 | 3.950E-02 | NOT IDENT. |
| RE-184 | 2.427E-02 | 1.524E-01 | 1.391E-01 | 7.774E-02 | NOT IDENT. |
| OS-185 | 2.064E-02 | 2.709E-02 | 2.555E-02 | 1.382E-02 | NOT IDENT. |
| RE-188 | 6.925E-02 | 1.206E-01 | 1.079E-01 | 6.153E-02 | NOT IDENT. |
| W-188 | 5.273E-01 | 5.725E+00 | 4.545E+00 | 2.921E+00 | FAIL ABUN |
| IR-192 | 1.871E-02 | 2.197E-02 | 2.059E-02 | 1.121E-02 | FAIL ABUN |
| AU-195 | 2.086E-01 | 1.670E-01 | 1.410E-01 | 8.521E-02 | FAIL ABUN |
| TL-200 | -1.952E+02 | 9.341E+02 | 0.000E+00 | 4.766E+02 | SHORT HLIF |
| TL-201 | 2.210E+00 | 7.373E+00 | 6.482E+00 | 3.762E+00 | NOT IDENT. |
| TL-202 | 5.821E-03 | 5.576E-02 | 4.875E-02 | 2.845E-02 | NOT IDENT. |
| HG-203 | 1.136E-02 | 2.821E-02 | 2.589E-02 | 1.440E-02 | NOT IDENT. |
| BI-207 | 2.687E-02 | 3.566E-02 | 3.259E-02 | 1.820E-02 | FAIL ABUN |
| TL-207 | -4.121E-01 | 4.412E-01 | 3.629E-01 | 2.251E-01 | FAIL ABUN |
| PO-209 | -2.120E+00 | 4.929E+00 | 4.051E+00 | 2.515E+00 | NOT IDENT. |
| PB-211 | 2.704E-01 | 6.182E-01 | 5.379E-01 | 3.154E-01 | NOT IDENT. |
| BI-212 | 7.591E-01 | 3.127E-01 | 2.406E-01 | 1.596E-01 | FAIL ABUN |
| PO-215 | -4.121E-01 | 4.412E-01 | 3.629E-01 | 2.251E-01 | FAIL ABUN |
| RN-219 | -5.102E-02 | 2.590E-01 | 2.228E-01 | 1.322E-01 | FAIL ABUN |
| RN-220 | 1.388E+01 | 1.832E+01 | 1.657E+01 | 9.349E+00 | NOT IDENT. |
| RA-223 | -4.121E-01 | 4.412E-01 | 3.629E-01 | 2.251E-01 | FAIL ABUN |
| AC-227 | -3.605E-02 | 2.490E-01 | 2.233E-01 | 1.270E-01 | FAIL ABUN |
| TH-227 | -3.605E-02 | 2.490E-01 | 2.233E-01 | 1.270E-01 | FAIL ABUN |
| TH-229 | -1.163E-01 | 3.141E-01 | 2.843E-01 | 1.603E-01 | FAIL ABUN |
| PA-231 | -5.859E-01 | 1.012E+00 | 8.733E-01 | 5.162E-01 | FAIL ABUN |
| TH-231 | -4.121E-01 | 4.412E-01 | 3.629E-01 | 2.251E-01 | FAIL ABUN |
| U-231 | -1.160E+00 | 1.105E+00 | 8.233E-01 | 5.640E-01 | FAIL ABUN |
| PA-233 | 2.790E-02 | 4.021E-02 | 3.738E-02 | 2.052E-02 | FAIL ABUN |
| PA-234 | -1.212E-01 | 2.043E-01 | 1.629E-01 | 1.042E-01 | FAIL ABUN |
| PA-234M | 1.624E+00 | 3.363E+00 | 2.997E+00 | 1.716E+00 | NOT IDENT. |
| U-235 | 4.415E-02 | 1.552E-01 | 1.351E-01 | 7.921E-02 | FAIL ABUN |
| NP-236 | -1.646E-02 | 5.605E-02 | 4.793E-02 | 2.860E-02 | NOT IDENT. |
| NP-239 | -1.861E-01 | 1.348E-01 | 1.109E-01 | 6.876E-02 | NOT IDENT. |
| AM-241 | 2.142E-02 | 8.845E-02 | 7.380E-02 | 4.513E-02 | NOT IDENT. |
| CM-243 | 1.330E-02 | 6.368E-02 | 5.739E-02 | 3.249E-02 | NOT IDENT. |
| AM-246 | -5.395E-03 | 9.481E-02 | 7.980E-02 | 4.837E-02 | NOT IDENT. |
| CM-247 | -1.145E-02 | 2.386E-02 | 2.007E-02 | 1.217E-02 | NOT IDENT. |
| CF-249 | -5.967E-03 | 2.640E-02 | 2.276E-02 | 1.347E-02 | NOT IDENT. |
| CF-251 | 3.285E-02 | 8.411E-02 | 7.411E-02 | 4.292E-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 | 241.1853 |
| 46.50 | 241.1853 |
| 46.50 | 241.1853 |
| 48.70 | 199.3287 |
| 49.72 | 236.4743 |
| 51.35 | 232.2596 |
| 52.39 | 207.7418 |
| 52.97 | 236.5698 |
| 53.15 | 236.6547 |
| 53.44 | 238.7653 |
| 54.07 | 275.6148 |
| 56.28 | 274.8219 |
| 56.28 | 274.8233 |
| 57.37 | 0.0000 |
| 57.53 | 265.5374 |
| 57.53 | 265.5381 |
| 57.60 | 265.5727 |
| 57.98 | 287.8615 |
| 57.98 | 287.8615 |
| 59.32 | 293.3787 |
| 59.32 | 293.3787 |
| 59.40 | 293.4221 |
| 59.54 | 293.4991 |
| 59.72 | 293.5977 |
| 60.01 | 307.2443 |
| 61.10 | 316.8743 |
| 61.14 | 316.8968 |
| 61.30 | 307.9763 |
| 63.00 | 350.6220 |
| 63.29 | 350.8044 |
| 63.29 | 350.8044 |
| 63.58 | 350.9868 |
| 64.28 | 377.6074 |
| 65.12 | 382.7076 |
| 65.20 | 382.7616 |
| 65.20 | 382.7616 |
| 66.05 | 390.9092 |
| 66.72 | 379.2305 |
| 66.83 | 382.3374 |
| 66.91 | 382.3912 |
| 67.20 | 382.5835 |
| 67.20 | 382.5835 |
| 67.75 | 358.6328 |
| 67.85 | 386.0520 |
| 68.90 | 393.8533 |
| 68.90 | 393.8533 |
| 69.30 | 409.3583 |
| 69.67 | 409.6166 |
| 70.82 | 386.4778 |
| 70.82 | 386.4778 |
| 70.83 | 386.4836 |
| 72.80 | 419.9367 |
| 72.87 | 421.5176 |
| 72.87 | 421.5176 |
| 74.67 | 382.2772 |
| 74.81 | 382.3645 |
| 74.81 | 382.3645 |
| 74.81 | 382.3645 |
| 74.81 | 382.3645 |
| 74.81 | 382.3645 |
| 74.81 | 382.3645 |
| 74.97 | 382.4631 |
| 75.28 | 382.6547 |
| 75.70 | 382.9128 |
| 77.11 | 383.7779 |
| 77.11 | 383.7779 |

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|--------|----------|
| 77.11 | 383.7779 |
| 77.11 | 383.7779 |
| 77.11 | 383.7779 |
| 77.11 | 383.7779 |
| 77.11 | 383.7779 |
| 78.38 | 321.6611 |
| 79.62 | 334.6820 |
| 79.80 | 325.4766 |
| 79.80 | 325.4766 |
| 80.11 | 325.6336 |
| 80.18 | 325.6689 |
| 80.30 | 331.9341 |
| 80.30 | 331.9341 |
| 80.57 | 332.0729 |
| 81.00 | 344.7155 |
| 81.07 | 344.7528 |
| 81.07 | 344.7528 |
| 81.07 | 344.7528 |
| 81.07 | 344.7528 |
| 82.60 | 345.5624 |
| 83.37 | 335.0550 |
| 83.78 | 336.8243 |
| 83.78 | 336.8243 |
| 83.78 | 336.8243 |
| 83.78 | 336.8243 |
| 84.21 | 349.5249 |
| 84.90 | 340.5152 |
| 85.43 | 347.0393 |
| 86.29 | 360.0050 |
| 86.50 | 392.9975 |
| 86.54 | 393.0205 |
| 86.59 | 393.0493 |
| 86.72 | 393.1239 |
| 86.79 | 393.1642 |
| 86.94 | 304.9924 |
| 87.30 | 305.1543 |
| 87.30 | 305.1543 |
| 87.30 | 305.1543 |
| 87.30 | 305.1543 |
| 87.30 | 305.1543 |
| 87.30 | 305.1543 |
| 87.57 | 305.2746 |
| 87.88 | 305.4142 |
| 88.03 | 305.4811 |
| 88.36 | 305.6281 |
| 88.47 | 305.6771 |
| 89.95 | 306.3351 |
| 91.11 | 306.8459 |
| 92.29 | 307.3628 |
| 92.38 | 307.4029 |
| 92.38 | 307.4029 |
| 93.35 | 307.8247 |
| 94.00 | 308.1069 |
| 94.67 | 308.3935 |
| 94.67 | 308.3965 |
| 94.90 | 248.8029 |
| 94.90 | 248.8029 |
| 94.90 | 248.8029 |
| 94.90 | 248.8029 |
| 95.87 | 326.8965 |
| 95.87 | 326.8965 |
| 96.73 | 279.6232 |
| 97.43 | 270.3500 |
| 98.44 | 245.2436 |
| 98.44 | 245.2436 |
| 98.88 | 232.6429 |
| 99.55 | 237.1077 |
| 99.55 | 237.1077 |
| 99.86 | 227.6341 |
| 100.00 | 244.7002 |
| 100.10 | 244.7341 |
| 103.18 | 272.4537 |
| 103.76 | 250.2079 |
| 105.00 | 224.9120 |
| 105.31 | 249.6459 |
| 108.00 | 287.0744 |
| 109.28 | 282.1609 |

| | |
|--------|----------|
| 111.00 | 282.7773 |
| 111.00 | 282.7773 |
| 111.76 | 303.5748 |
| 112.95 | 278.0611 |
| 115.19 | 269.0703 |
| 116.30 | 261.8335 |
| 117.00 | 292.5044 |
| 117.00 | 292.5044 |
| 117.66 | 287.2985 |
| 121.11 | 245.8775 |
| 121.62 | 259.1476 |
| 121.78 | 257.0097 |
| 122.06 | 270.2241 |
| 122.32 | 275.7788 |
| 122.32 | 275.7788 |
| 122.32 | 275.7788 |
| 122.32 | 275.7788 |
| 123.07 | 262.8809 |
| 127.23 | 256.4579 |
| 129.76 | 216.3609 |
| 131.20 | 223.3499 |
| 133.02 | 249.2935 |
| 133.54 | 254.9808 |
| 135.34 | 238.8327 |
| 136.00 | 205.6578 |
| 136.25 | 206.8262 |
| 136.48 | 206.8792 |
| 140.51 | 263.6514 |
| 140.51 | 0.0000 |
| 142.18 | 250.6989 |
| 142.65 | 245.2255 |
| 143.76 | 241.0330 |
| 144.24 | 223.2110 |
| 144.24 | 223.2110 |
| 144.24 | 223.2110 |
| 144.24 | 223.2110 |
| 145.22 | 227.9351 |
| 145.44 | 227.9888 |
| 147.16 | 254.2822 |
| 152.43 | 225.1341 |
| 152.70 | 228.5908 |
| 153.22 | 235.5065 |
| 154.21 | 225.5451 |
| 154.21 | 225.5451 |
| 154.21 | 225.5451 |
| 154.21 | 225.5451 |
| 155.03 | 215.5243 |
| 156.02 | 253.2115 |
| 158.56 | 210.6016 |
| 159.00 | 0.0000 |
| 159.00 | 198.1661 |
| 160.31 | 231.4973 |
| 161.27 | 240.8500 |
| 162.32 | 228.5299 |
| 162.64 | 222.8880 |
| 163.35 | 219.6113 |
| 163.89 | 212.8620 |
| 165.85 | 205.2426 |
| 167.43 | 205.5576 |
| 171.28 | 169.4349 |
| 171.86 | 168.3744 |
| 172.10 | 168.4130 |
| 176.55 | 179.5451 |
| 176.60 | 179.5546 |
| 181.06 | 193.6741 |
| 184.41 | 193.2168 |
| 185.71 | 208.5133 |
| 186.00 | 208.5678 |
| 190.27 | 167.4919 |
| 192.34 | 185.0734 |
| 193.63 | 187.0479 |
| 197.04 | 180.5249 |
| 198.01 | 195.7339 |
| 198.60 | 197.6039 |
| 200.40 | 202.3493 |
| 201.83 | 210.5935 |
| 202.84 | 196.5466 |
| 205.31 | 242.4098 |

| | |
|--------|----------|
| 208.36 | 212.6515 |
| 208.81 | 193.9610 |
| 209.75 | 171.7500 |
| 209.75 | 171.7500 |
| 210.97 | 196.1012 |
| 215.65 | 164.4964 |
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| 218.09 | 181.9359 |
| 222.10 | 167.1637 |
| 223.80 | 163.7716 |
| 226.40 | 189.4971 |
| 227.00 | 191.4007 |
| 227.08 | 191.4119 |
| 227.20 | 187.8022 |
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| 228.18 | 164.3392 |
| 228.18 | 164.3392 |
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| 235.69 | 178.2701 |
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| 236.00 | 181.2350 |
| 238.63 | 173.9111 |
| 238.63 | 173.9111 |
| 238.63 | 173.9111 |
| 238.63 | 173.9111 |
| 239.00 | 173.9603 |
| 240.98 | 174.2227 |
| 241.98 | 174.3532 |
| 241.98 | 174.3532 |
| 241.98 | 174.3532 |
| 244.69 | 127.9979 |
| 245.39 | 131.0088 |
| 247.94 | 133.9614 |
| 248.90 | 157.7319 |
| 249.79 | 162.4514 |
| 252.40 | 137.7936 |
| 252.85 | 139.6893 |
| 252.85 | 139.6893 |
| 254.15 | 0.0000 |
| 256.20 | 145.5950 |
| 256.20 | 145.5950 |
| 260.50 | 134.8843 |
| 260.90 | 140.5072 |
| 262.80 | 130.4489 |
| 264.65 | 133.2855 |
| 268.24 | 128.7082 |
| 268.79 | 128.7565 |
| 269.46 | 125.8216 |
| 269.46 | 125.8216 |
| 269.46 | 125.8216 |
| 269.46 | 125.8216 |
| 271.23 | 139.4750 |
| 273.65 | 159.2407 |
| 276.40 | 145.8092 |
| 277.35 | 133.6667 |
| 277.60 | 142.1639 |
| 277.60 | 142.1639 |
| 278.00 | 143.1448 |
| 278.60 | 146.0291 |
| 279.20 | 139.4907 |
| 279.53 | 140.4651 |
| 280.46 | 141.4982 |
| 281.68 | 136.8955 |
| 283.67 | 138.9699 |
| 284.30 | 136.1931 |
| 285.00 | 133.4182 |
| 285.90 | 127.8191 |
| 286.10 | 128.7825 |
| 286.10 | 128.7825 |
| 287.40 | 136.4766 |
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| 290.67 | 136.7754 |
| 290.80 | 136.7886 |
| 291.72 | 145.9969 |
| 293.26 | 0.0000 |
| 293.70 | 152.2778 |
| 295.21 | 133.3755 |
| 295.21 | 133.3755 |

| | |
|--------|----------|
| 295.21 | 133.3755 |
| 295.96 | 133.4418 |
| 296.50 | 133.4888 |
| 297.23 | 133.5529 |
| 298.57 | 133.6703 |
| 299.80 | 133.7772 |
| 299.80 | 133.7772 |
| 300.09 | 113.4138 |
| 300.09 | 113.4138 |
| 300.09 | 113.4138 |
| 300.09 | 113.4138 |
| 300.12 | 113.4156 |
| 301.29 | 113.2475 |
| 302.84 | 105.7017 |
| 303.76 | 95.0344 |
| 303.91 | 95.0435 |
| 304.40 | 88.9399 |
| 304.40 | 88.9399 |
| 304.84 | 79.7621 |
| 306.84 | 107.5105 |
| 308.46 | 113.3870 |
| 311.98 | 93.4167 |
| 316.51 | 88.8555 |
| 318.01 | 86.0381 |
| 319.02 | 94.7984 |
| 319.41 | 95.7884 |
| 320.08 | 119.0605 |
| 323.87 | 130.0129 |
| 323.87 | 130.0129 |
| 323.87 | 130.0129 |
| 323.87 | 130.0129 |
| 325.23 | 112.6423 |
| 328.77 | 100.2370 |
| 333.44 | 118.6739 |
| 334.20 | 112.4789 |
| 334.20 | 112.4789 |
| 334.30 | 112.4859 |
| 338.28 | 123.3257 |
| 338.28 | 123.3257 |
| 338.28 | 123.3257 |
| 338.28 | 123.3257 |
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| 340.50 | 106.6318 |
| 340.57 | 106.6368 |
| 344.27 | 112.2593 |
| 345.85 | 105.3974 |
| 350.59 | 0.0000 |
| 351.07 | 95.6620 |
| 351.92 | 95.7094 |
| 351.92 | 95.7094 |
| 351.92 | 95.7094 |
| 355.39 | 0.0000 |
| 356.01 | 87.0345 |
| 364.48 | 109.3219 |
| 366.43 | 74.6201 |
| 367.43 | 83.6219 |
| 367.94 | 0.0000 |
| 369.80 | 85.7271 |
| 374.96 | 89.9739 |
| 383.85 | 93.4300 |
| 387.95 | 95.6538 |
| 388.63 | 101.7320 |
| 391.69 | 94.8391 |
| 391.69 | 94.8391 |
| 392.90 | 86.8241 |
| 398.62 | 83.0398 |
| 400.65 | 90.2249 |
| 401.10 | 79.0926 |
| 401.81 | 84.1943 |
| 402.60 | 92.3483 |
| 404.84 | 79.2497 |
| 410.95 | 78.4839 |
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| 432.53 | 76.2651 |
| 433.93 | 79.4121 |
| 439.47 | 93.0762 |
| 439.56 | 93.0803 |
| 439.89 | 93.0954 |
| 443.98 | 92.2484 |
| 444.90 | 94.3645 |
| 445.03 | 94.3700 |
| 445.03 | 94.3700 |
| 445.03 | 94.3700 |
| 445.03 | 94.3700 |
| 453.90 | 73.9489 |
| 463.38 | 87.8901 |
| 468.07 | 95.6364 |
| 473.00 | 85.1392 |
| 475.06 | 81.0135 |
| 475.35 | 79.9719 |
| 476.78 | 72.6545 |
| 477.59 | 75.8419 |
| 477.96 | 85.3370 |
| 482.03 | 62.2779 |
| 484.57 | 83.4867 |
| 487.03 | 60.3059 |
| 490.36 | 0.0000 |
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| 497.08 | 85.0305 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 69.5168 |
| 511.00 | 69.5212 |
| 511.85 | 69.5480 |
| 511.85 | 69.5480 |
| 513.99 | 65.1158 |
| 513.99 | 65.1158 |
| 520.41 | 67.6642 |
| 520.65 | 63.3735 |
| 527.90 | 60.3425 |
| 528.96 | 0.0000 |
| 529.64 | 69.0156 |
| 529.87 | 0.0000 |
| 531.02 | 65.8196 |
| 537.32 | 56.2609 |
| 543.00 | 61.8219 |
| 546.56 | 0.0000 |
| 549.76 | 60.9116 |
| 552.65 | 74.0533 |
| 555.20 | 81.7635 |
| 563.23 | 63.4428 |
| 563.90 | 63.4605 |
| 568.70 | 93.1866 |
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| 569.50 | 81.1543 |
| 569.67 | 81.1611 |
| 573.80 | 73.6084 |
| 574.00 | 73.6145 |
| 574.64 | 67.8239 |
| 578.91 | 54.6057 |
| 579.30 | 0.0000 |
| 583.14 | 59.5519 |
| 585.48 | 67.1142 |
| 591.81 | 63.0796 |
| 592.07 | 61.9797 |
| 593.00 | 75.2881 |
| 595.88 | 74.2668 |
| 600.56 | 85.5112 |
| 602.52 | 0.0000 |
| 602.71 | 64.0213 |
| 602.71 | 64.0213 |
| 603.60 | 55.1476 |
| 604.41 | 55.1658 |
| 604.70 | 56.9516 |
| 609.31 | 62.4036 |

| | |
|--------|---------|
| 609.31 | 62.4036 |
| 609.31 | 62.4036 |
| 609.31 | 62.4036 |
| 610.33 | 57.0781 |
| 612.46 | 42.8438 |
| 614.37 | 46.4496 |
| 618.01 | 51.4341 |
| 621.84 | 71.6680 |
| 621.84 | 71.6680 |
| 631.29 | 56.1935 |
| 633.02 | 65.2270 |
| 633.10 | 67.4780 |
| 634.78 | 55.8182 |
| 635.90 | 51.3390 |
| 636.97 | 54.9640 |
| 645.85 | 48.8188 |
| 646.12 | 45.2075 |
| 656.30 | 52.9429 |
| 657.75 | 49.9445 |
| 657.90 | 0.0000 |
| 661.65 | 49.1063 |
| 661.65 | 49.1063 |
| 664.57 | 0.0000 |
| 666.33 | 47.0664 |
| 666.33 | 47.0664 |
| 675.00 | 65.7967 |
| 677.61 | 57.6259 |
| 685.20 | 57.7844 |
| 692.80 | 61.6200 |
| 695.00 | 70.8735 |
| 696.49 | 81.0412 |
| 696.49 | 81.0412 |
| 697.00 | 71.8434 |
| 697.49 | 71.8567 |
| 698.33 | 65.4271 |
| 698.50 | 65.4306 |
| 699.00 | 66.3644 |
| 702.63 | 70.1404 |
| 706.10 | 68.3795 |
| 706.58 | 0.0000 |
| 706.67 | 72.0891 |
| 709.31 | 53.6543 |
| 711.68 | 73.1425 |
| 713.82 | 65.7842 |
| 717.42 | 48.2396 |
| 720.50 | 61.0280 |
| 721.93 | 0.0000 |
| 722.20 | 41.8151 |
| 722.78 | 46.4709 |
| 722.78 | 46.4709 |
| 722.89 | 46.4722 |
| 722.95 | 46.4734 |
| 723.30 | 49.5781 |
| 724.18 | 52.6920 |
| 727.18 | 45.6109 |
| 733.00 | 60.6249 |
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| 739.58 | 70.1074 |
| 742.81 | 57.0833 |
| 744.21 | 50.5564 |
| 747.13 | 74.0355 |
| 751.79 | 51.6243 |
| 752.31 | 48.8173 |
| 753.82 | 51.6592 |
| 755.35 | 53.5655 |
| 756.15 | 57.3394 |
| 756.87 | 52.6518 |
| 763.93 | 76.3370 |
| 765.79 | 56.5811 |
| 766.42 | 55.6496 |
| 766.84 | 50.9401 |
| 776.49 | 53.9413 |
| 778.00 | 50.1805 |
| 778.57 | 51.1365 |
| 778.89 | 53.0359 |
| 783.80 | 43.6349 |
| 785.46 | 53.1494 |
| 792.07 | 61.8230 |

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| 795.84 | 32.3772 |
| 796.30 | 43.8112 |
| 798.80 | 81.0198 |
| 801.93 | 49.6145 |
| 805.60 | 57.3149 |
| 810.29 | 51.6599 |
| 810.76 | 51.6678 |
| 815.85 | 52.7092 |
| 817.79 | 52.7415 |
| 818.51 | 43.1620 |
| 819.60 | 36.4600 |
| 826.30 | 49.9979 |
| 828.27 | 0.0000 |
| 831.60 | 59.7113 |
| 831.96 | 57.7910 |
| 834.83 | 51.0940 |
| 836.80 | 0.0000 |
| 846.75 | 58.0562 |
| 848.13 | 60.0156 |
| 856.28 | 0.0000 |
| 856.80 | 59.8510 |
| 860.37 | 40.4836 |
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| 867.82 | 49.6640 |
| 871.10 | 39.9650 |
| 873.19 | 40.9654 |
| 874.81 | 46.8398 |
| 875.33 | 0.0000 |
| 876.40 | 39.0518 |
| 879.36 | 42.0184 |
| 880.27 | 38.1193 |
| 880.51 | 36.1671 |
| 881.50 | 44.9780 |
| 883.24 | 46.9582 |
| 884.67 | 44.0420 |
| 889.25 | 51.9416 |
| 896.60 | 47.1434 |
| 898.02 | 46.1796 |
| 899.00 | 45.2105 |
| 903.28 | 48.1095 |
| 911.07 | 50.3015 |
| 911.07 | 50.3015 |
| 911.07 | 50.3015 |
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| 920.93 | 42.5318 |
| 925.00 | 38.6201 |
| 925.24 | 38.6230 |
| 926.50 | 32.6922 |
| 935.52 | 37.7430 |
| 937.48 | 54.6576 |
| 944.10 | 39.8262 |
| 946.00 | 48.8122 |
| 949.00 | 41.8749 |
| 962.29 | 53.7894 |
| 964.01 | 40.0479 |
| 966.15 | 28.3838 |
| 968.20 | 76.8482 |
| 969.11 | 59.1541 |
| 969.11 | 59.1541 |
| 969.11 | 59.1541 |
| 977.42 | 33.1619 |
| 980.50 | 44.2535 |
| 983.50 | 49.3230 |
| 989.30 | 31.2535 |
| 996.32 | 50.5054 |
| 1001.03 | 47.5347 |
| 1001.68 | 50.5774 |
| 1004.76 | 63.7813 |
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| 1024.50 | 0.0000 |
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| 1038.57 | 41.8829 |
| 1038.76 | 0.0000 |
| 1045.16 | 36.8385 |
| 1046.59 | 44.0162 |
| 1048.07 | 39.9388 |

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| 1050.47 | 46.1118 |
| 1050.47 | 46.1118 |
| 1062.04 | 36.9984 |
| 1063.62 | 34.9579 |
| 1076.63 | 42.2953 |
| 1077.35 | 48.4940 |
| 1078.86 | 40.2549 |
| 1085.78 | 55.8352 |
| 1099.22 | 50.8375 |
| 1112.02 | 58.2859 |
| 1112.84 | 58.5571 |
| 1115.52 | 57.2961 |
| 1120.29 | 60.4922 |
| 1120.29 | 60.4922 |
| 1120.29 | 60.4922 |
| 1120.29 | 60.4922 |
| 1120.51 | 66.0578 |
| 1121.28 | 50.4220 |
| 1124.00 | 0.0000 |
| 1129.67 | 57.4949 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 44.3133 |
| 1173.22 | 49.6529 |
| 1175.09 | 35.9341 |
| 1177.93 | 46.5352 |
| 1189.05 | 57.2616 |
| 1204.90 | 69.1831 |
| 1205.75 | 0.0000 |
| 1213.00 | 62.9151 |
| 1221.42 | 64.1074 |
| 1230.97 | 56.7524 |
| 1235.34 | 73.9594 |
| 1236.41 | 0.0000 |
| 1238.25 | 60.0633 |
| 1246.25 | 53.7256 |
| 1260.41 | 0.0000 |
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| 1291.56 | 26.0520 |
| 1298.22 | 0.0000 |
| 1312.09 | 44.7056 |
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| 1325.50 | 26.2465 |
| 1332.49 | 25.1899 |
| 1333.61 | 28.4832 |
| 1360.21 | 12.8538 |
| 1362.66 | 0.0000 |
| 1365.15 | 22.9767 |
| 1368.21 | 14.7148 |
| 1368.53 | 0.0000 |
| 1376.25 | 15.6608 |
| 1384.27 | 24.9148 |
| 1394.10 | 19.4183 |
| 1395.20 | 22.1973 |
| 1407.95 | 19.4739 |
| 1434.06 | 18.6466 |
| 1436.60 | 15.8573 |
| 1457.56 | 0.0000 |
| 1460.81 | 15.9354 |
| 1489.15 | 16.9680 |
| 1509.49 | 14.1968 |
| 1596.49 | 18.2833 |
| 1620.62 | 10.6330 |
| 1678.03 | 0.0000 |
| 1691.02 | 13.7066 |
| 1691.02 | 13.7066 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 6.8005 |
| 1764.49 | 6.8005 |
| 1764.49 | 6.8005 |
| 1764.49 | 6.8005 |
| 1770.23 | 47.6504 |
| 1771.40 | 16.8796 |
| 1791.20 | 0.0000 |
| 1808.65 | 11.9912 |

1836.01

14.0541

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328005

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 9.1963E+00 | ug/g |
| Total Uranium Counting Unc. | 4.0971E+00 | ug/g |
| Total Uranium Tpu | 2.0904E-06 | ug/g |
| Total Uranium Mda | 1.9407E+00 | ug/g |

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 950786                          SAMPLE ID   : G246328005
*  ANALYST       : MXR1                             DETECTOR    : GAM20
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 18-FEB-2010 11:08:50.59          SAMPLE ALQT  : 156.000 GRAM
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 5.839E+00
GROSS GAMMA ERROR (pCi/GRAM )   : 8.061E-01
GROSS GAMMA MDA (pCi/GRAM )     : 1.778E+00
GROSS GAMMA DLC (pCi/GRAM )     : 8.590E-01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:17:23.92

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328006.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:16:20
Sample ID          : G246328006      Sample quantity      : 1.22420E+02 GRAM
Detector name      : GAM25           Detector geometry    : CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time  : 0 02:00:02.17  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials   : MXR1
Abundance limit    : 75.00000        Sensitivity        : 5.00000
Batch ID          : 950786           Detector SN#       :
Matrix Spike ID    :                 LCS ID              : 1032-A
*****

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| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|-------|----------|
| 1 | 0 | 46.62* | 152 | 507 | 0.95 | 92.81 | 89 | 8 | 2.11E-02 | 28.1 | |
| 2 | 0 | 63.31* | 317 | 762 | 0.90 | 126.17 | 122 | 9 | 4.40E-02 | 17.1 | |
| 3 | 2 | 72.89 | 93 | 343 | 0.95 | 145.33 | 143 | 18 | 1.29E-02 | 29.4 | 5.46E+00 |
| 4 | 2 | 74.81* | 924 | 491 | 0.94 | 149.17 | 143 | 18 | 1.28E-01 | 5.0 | |
| 5 | 2 | 77.05* | 1466 | 372 | 0.90 | 153.66 | 143 | 18 | 2.04E-01 | 3.3 | |
| 6 | 2 | 79.22 | 64 | 346 | 0.86 | 157.99 | 143 | 18 | 8.93E-03 | 49.5 | |
| 7 | 5 | 84.19* | 195 | 497 | 1.14 | 167.93 | 164 | 27 | 2.70E-02 | 19.9 | 2.70E+00 |
| 8 | 5 | 87.15 | 568 | 469 | 1.19 | 173.86 | 164 | 27 | 7.88E-02 | 7.4 | |
| 9 | 5 | 89.75 | 312 | 432 | 1.11 | 179.06 | 164 | 27 | 4.33E-02 | 12.6 | |
| 10 | 5 | 92.68* | 512 | 400 | 1.23 | 184.92 | 164 | 27 | 7.12E-02 | 8.7 | |
| 11 | 0 | 128.91 | 130 | 324 | 0.99 | 257.37 | 254 | 7 | 1.80E-02 | 24.7 | |
| 12 | 0 | 186.19* | 167 | 540 | 1.29 | 371.92 | 365 | 12 | 2.32E-02 | 29.6 | |
| 13 | 0 | 209.20 | 119 | 266 | 0.67 | 417.93 | 414 | 8 | 1.65E-02 | 25.5 | |
| 14 | 5 | 238.56* | 1627 | 171 | 0.97 | 476.65 | 470 | 19 | 2.26E-01 | 2.8 | 9.98E-01 |
| 15 | 5 | 241.47 | 362 | 289 | 1.77 | 482.48 | 470 | 19 | 5.03E-02 | 13.7 | |
| 16 | 0 | 269.93 | 183 | 288 | 2.17 | 539.38 | 533 | 15 | 2.55E-02 | 21.4 | |
| 17 | 0 | 277.44 | 67 | 159 | 1.09 | 554.40 | 551 | 8 | 9.30E-03 | 35.2 | |
| 18 | 0 | 295.01* | 474 | 202 | 1.22 | 589.55 | 583 | 12 | 6.58E-02 | 7.6 | |
| 19 | 0 | 299.64 | 112 | 188 | 1.06 | 598.80 | 595 | 9 | 1.56E-02 | 23.9 | |
| 20 | 0 | 327.68 | 97 | 161 | 1.29 | 654.87 | 650 | 10 | 1.35E-02 | 26.4 | |
| 21 | 0 | 338.15 | 289 | 186 | 1.17 | 675.81 | 671 | 10 | 4.02E-02 | 10.6 | |
| 22 | 0 | 351.77* | 755 | 192 | 1.10 | 703.05 | 697 | 12 | 1.05E-01 | 5.2 | |
| 23 | 0 | 463.05 | 87 | 100 | 1.26 | 925.60 | 921 | 9 | 1.21E-02 | 23.5 | |
| 24 | 0 | 510.44* | 115 | 158 | 1.46 | 1020.38 | 1012 | 15 | 1.60E-02 | 28.3 | |
| 25 | 0 | 582.99* | 418 | 140 | 1.36 | 1165.48 | 1161 | 12 | 5.81E-02 | 7.6 | |
| 26 | 0 | 609.18* | 474 | 126 | 1.31 | 1217.86 | 1211 | 12 | 6.58E-02 | 6.7 | |
| 27 | 0 | 661.57* | 17 | 75 | 1.26 | 1322.62 | 1318 | 9 | 2.40E-03 | 102.7 | |
| 28 | 0 | 726.85 | 128 | 66 | 1.33 | 1453.19 | 1447 | 12 | 1.78E-02 | 15.5 | |
| 29 | 0 | 768.98 | 33 | 102 | 1.92 | 1537.45 | 1529 | 13 | 4.63E-03 | 64.5 | |
| 30 | 0 | 787.11 | 12 | 85 | 1.37 | 1573.70 | 1567 | 11 | 1.69E-03 | 148.0 | |
| 31 | 0 | 795.86 | 52 | 76 | 0.96 | 1591.21 | 1584 | 15 | 7.21E-03 | 39.6 | |
| 32 | 0 | 860.39 | 66 | 52 | 2.00 | 1720.26 | 1714 | 11 | 9.14E-03 | 24.6 | |
| 33 | 0 | 910.93* | 326 | 77 | 1.64 | 1821.34 | 1813 | 17 | 4.53E-02 | 8.3 | |
| 34 | 0 | 964.92 | 45 | 59 | 1.90 | 1929.33 | 1925 | 9 | 6.18E-03 | 34.4 | |
| 35 | 0 | 968.73 | 153 | 39 | 2.09 | 1936.96 | 1933 | 9 | 2.12E-02 | 10.9 | |
| 36 | 0 | 1120.18* | 83 | 74 | 1.39 | 2239.85 | 2235 | 13 | 1.15E-02 | 24.5 | |
| 37 | 0 | 1460.43* | 1292 | 60 | 1.86 | 2920.39 | 2910 | 20 | 1.80E-01 | 3.2 | |
| 38 | 0 | 1630.22 | 28 | 0 | 1.73 | 3260.00 | 3255 | 11 | 3.89E-03 | 18.9 | |

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|-----|
| 39 | 0 | 1763.98* | 74 | 12 | 2.43 | 3527.54 | 3520 | 16 | 1.03E-02 | 16.4 | |

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

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328006.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 1-FEB-2010 12:00:00 Acquisition date : 18-FEB-2010 11:16:20
 Sample ID : G246328006 Sample quantity : 122.42 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA25 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:02.17 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 | * | 3.350E+01 | 3.554E+00 | 5.678E-01 | 4.835E-02 | 59.005 |
| CD-109 | + | 88.03 | * | 5.101E+00 | 9.325E-01 | 7.799E-01 | 8.381E-02 | 6.540 |
| SN-126 | + | 64.28 | | 1.034E+00 | 3.894E-01 | 3.118E-01 | 4.968E-02 | 3.318 |
| | + | 86.94 | | 2.079E+00 | 9.227E-01 | 3.163E-01 | 1.323E-01 | 6.572 |
| | + | 87.57 | * | 5.000E-01 | 9.141E-02 | 7.629E-02 | 8.180E-03 | 6.554 |
| BA-137M | + | 661.65 | * | 2.641E-02 | 5.431E-02 | 7.070E-02 | 7.832E-03 | 0.374 |
| CS-137 | + | 661.65 | * | 2.792E-02 | 5.741E-02 | 7.474E-02 | 8.289E-03 | 0.374 |
| TL-208 | + | 277.35 | | 6.374E-01 | 4.572E-01 | 5.512E-01 | 7.830E-02 | 1.156 |
| | + | 510.84 | | 5.817E-01 | 3.385E-01 | 2.272E-01 | 3.008E-02 | 2.561 |
| | + | 583.14 | * | 6.100E-01 | 1.151E-01 | 6.713E-02 | 7.567E-03 | 9.087 |
| | + | 860.37 | | 9.169E-01 | 4.611E-01 | 5.094E-01 | 5.325E-02 | 1.800 |
| BI-210 | + | 46.50 | * | 1.254E+00 | 7.152E-01 | 6.387E-01 | 6.585E-02 | 1.963 |
| PB-210 | + | 46.50 | * | 1.254E+00 | 7.152E-01 | 6.387E-01 | 6.585E-02 | 1.963 |
| PO-210 | + | 46.50 | * | 1.254E+00 | 7.134E-01 | 6.387E-01 | 6.083E-02 | 1.963 |
| BI-211 | + | 72.87 | | 2.309E+00 | 1.376E+00 | 2.303E+00 | 2.324E-01 | 1.003 |
| | + | 351.07 | * | 4.604E+00 | 6.827E-01 | 3.162E-01 | 3.332E-02 | 14.561 |
| PB-212 | + | 74.81 | | 2.731E+00 | 4.668E-01 | 2.750E-01 | 3.797E-02 | 9.930 |
| | + | 77.11 | | 2.586E+00 | 3.159E-01 | 1.648E-01 | 1.689E-02 | 15.692 |
| | + | 87.30 | | 2.312E+00 | 4.819E-01 | 3.524E-01 | 5.164E-02 | 6.562 |
| | + | 238.63 | * | 2.095E+00 | 2.662E-01 | 8.291E-02 | 9.439E-03 | 25.262 |
| | + | 300.09 | | 2.273E+00 | 1.121E+00 | 1.108E+00 | 1.381E-01 | 2.051 |
| PO-212 | + | 74.81 | | 2.731E+00 | 4.668E-01 | 2.750E-01 | 3.797E-02 | 9.930 |
| | + | 77.11 | | 2.586E+00 | 3.159E-01 | 1.648E-01 | 1.689E-02 | 15.692 |
| | + | 87.30 | | 2.312E+00 | 4.819E-01 | 3.524E-01 | 5.164E-02 | 6.562 |
| | + | 115.19 | | 1.796E+00 | 2.774E+00 | 4.798E+00 | 5.950E-01 | 0.374 |
| | + | 238.63 | * | 2.095E+00 | 2.662E-01 | 8.291E-02 | 9.439E-03 | 25.262 |
| | + | 300.09 | | 2.273E+00 | 1.121E+00 | 1.108E+00 | 1.381E-01 | 2.051 |
| BI-214 | + | 609.31 | * | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| | + | 1120.29 | | 1.200E+00 | 6.029E-01 | 6.157E-01 | 6.682E-02 | 1.949 |
| | + | 1764.49 | | 1.522E+00 | 5.137E-01 | 2.998E-01 | 2.470E-02 | 5.078 |
| PB-214 | + | 74.81 | | 4.706E+00 | 7.582E-01 | 4.739E-01 | 5.959E-02 | 9.930 |
| | + | 77.11 | | 4.434E+00 | 6.382E-01 | 2.826E-01 | 3.608E-02 | 15.692 |
| | + | 87.30 | | 3.961E+00 | 7.860E-01 | 6.037E-01 | 7.966E-02 | 6.562 |
| | + | 241.98 | | 2.803E+00 | 8.365E-01 | 5.002E-01 | 5.966E-02 | 5.603 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 295.21 | | 1.679E+00 | 3.336E-01 | 1.907E-01 | 2.419E-02 | 8.802 |
| | + | 351.92 | * | 1.602E+00 | 2.518E-01 | 1.103E-01 | 1.295E-02 | 14.525 |
| | + | 74.81 | | 4.706E+00 | 7.582E-01 | 4.739E-01 | 5.959E-02 | 9.930 |
| | + | 77.11 | | 4.434E+00 | 6.382E-01 | 2.826E-01 | 3.608E-02 | 15.692 |
| | + | 87.30 | | 3.961E+00 | 7.860E-01 | 6.037E-01 | 7.966E-02 | 6.562 |
| PO-216 | + | 241.98 | | 2.803E+00 | 8.365E-01 | 5.002E-01 | 5.966E-02 | 5.603 |
| | + | 295.21 | | 1.679E+00 | 3.336E-01 | 1.907E-01 | 2.419E-02 | 8.802 |
| | + | 351.92 | * | 1.602E+00 | 2.518E-01 | 1.103E-01 | 1.295E-02 | 14.525 |
| | + | 74.81 | | 2.731E+00 | 4.668E-01 | 2.750E-01 | 3.797E-02 | 9.930 |
| | + | 77.11 | | 2.586E+00 | 3.159E-01 | 1.648E-01 | 1.689E-02 | 15.692 |
| PO-218 | + | 87.30 | | 2.312E+00 | 4.819E-01 | 3.524E-01 | 5.164E-02 | 6.562 |
| | + | 238.63 | * | 2.095E+00 | 2.662E-01 | 8.291E-02 | 9.439E-03 | 25.262 |
| | + | 300.09 | | 2.273E+00 | 1.121E+00 | 1.108E+00 | 1.381E-01 | 2.051 |
| | + | 74.81 | | 4.706E+00 | 7.582E-01 | 4.739E-01 | 5.959E-02 | 9.930 |
| | + | 77.11 | | 4.434E+00 | 6.382E-01 | 2.826E-01 | 3.608E-02 | 15.692 |
| RA-224 | + | 87.30 | | 3.961E+00 | 7.860E-01 | 6.037E-01 | 7.966E-02 | 6.562 |
| | + | 241.98 | | 2.803E+00 | 8.365E-01 | 5.002E-01 | 5.966E-02 | 5.603 |
| | + | 295.21 | | 1.679E+00 | 3.336E-01 | 1.907E-01 | 2.419E-02 | 8.802 |
| | + | 351.92 | * | 1.602E+00 | 2.518E-01 | 1.103E-01 | 1.295E-02 | 14.525 |
| | + | 240.98 | * | 5.314E+00 | 1.558E+00 | 9.448E-01 | 9.928E-02 | 5.625 |
| RA-226 | + | 609.31 | * | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| | + | 1120.29 | | 1.200E+00 | 6.029E-01 | 6.157E-01 | 6.682E-02 | 1.949 |
| | + | 1764.49 | | 1.522E+00 | 5.137E-01 | 2.998E-01 | 2.470E-02 | 5.078 |
| | + | 338.32 | | 1.935E+00 | 9.044E-01 | 3.706E-01 | 1.544E-01 | 5.220 |
| | + | 911.07 | * | 2.153E+00 | 4.406E-01 | 2.312E-01 | 2.750E-02 | 9.311 |
| AC-228 | + | 969.11 | | 1.777E+00 | 5.712E-01 | 4.034E-01 | 9.521E-02 | 4.406 |
| | + | 338.32 | | 1.935E+00 | 9.044E-01 | 3.706E-01 | 1.544E-01 | 5.220 |
| | + | 911.07 | * | 2.153E+00 | 4.406E-01 | 2.312E-01 | 2.750E-02 | 9.311 |
| | + | 969.11 | | 1.777E+00 | 5.712E-01 | 4.034E-01 | 9.521E-02 | 4.406 |
| | + | 74.81 | | 2.778E+00 | 3.987E-01 | 2.797E-01 | 2.860E-02 | 9.930 |
| TH-228 | + | 77.11 | | 2.631E+00 | 3.213E-01 | 1.676E-01 | 1.718E-02 | 15.693 |
| | + | 87.30 | | 2.352E+00 | 4.300E-01 | 3.584E-01 | 3.838E-02 | 6.562 |
| | + | 238.63 | * | 2.130E+00 | 2.708E-01 | 8.433E-02 | 9.600E-03 | 25.262 |
| | + | 300.09 | | 2.312E+00 | 1.767E+00 | 1.127E+00 | 6.727E-01 | 2.051 |
| | + | 609.31 | * | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| TH-230 | + | 1120.29 | | 1.200E+00 | 6.029E-01 | 6.156E-01 | 6.682E-02 | 1.949 |
| | + | 1764.49 | | 1.522E+00 | 5.137E-01 | 2.998E-01 | 2.470E-02 | 5.078 |
| | + | 338.32 | | 1.935E+00 | 4.567E-01 | 3.706E-01 | 3.863E-02 | 5.220 |
| | + | 911.07 | * | 2.153E+00 | 4.406E-01 | 2.312E-01 | 2.750E-02 | 9.311 |
| | + | 969.11 | | 1.777E+00 | 5.712E-01 | 4.034E-01 | 9.521E-02 | 4.406 |
| TH-234 | + | 63.29 | * | 2.613E+00 | 1.015E+00 | 7.865E-01 | 1.464E-01 | 3.323 |
| | + | 92.38 | | 3.142E+00 | 8.157E-01 | 5.212E-01 | 1.007E-01 | 6.028 |
| | + | 609.31 | * | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| | + | 1120.29 | | 1.200E+00 | 6.029E-01 | 6.156E-01 | 6.682E-02 | 1.949 |
| | + | 1764.49 | | 1.522E+00 | 5.137E-01 | 2.998E-01 | 2.470E-02 | 5.078 |
| NP-237 | + | 86.50 | * | 1.468E+00 | 4.048E-01 | 2.230E-01 | 5.179E-02 | 6.585 |
| | + | 95.87 | | -4.924E-01 | 6.875E-01 | 1.007E+00 | 2.581E-01 | -0.489 |
| | + | 63.29 | * | 2.613E+00 | 1.015E+00 | 7.865E-01 | 1.464E-01 | 3.323 |
| | + | 92.38 | | 3.142E+00 | 6.449E-01 | 5.212E-01 | 5.721E-02 | 6.028 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| AM-243 | + | 74.67 | * | 4.428E-01 | 6.336E-02 | 4.457E-02 | 4.526E-03 | 9.934 |
| | + | 86.72 | | 5.506E+01 | 1.007E+01 | 8.369E+00 | 8.938E-01 | 6.579 |
| | | 117.66 | | -3.144E+00 | 3.004E+00 | 4.822E+00 | 6.064E-01 | -0.652 |
| | | 142.18 | | -4.928E+00 | 1.476E+01 | 2.429E+01 | 2.743E+00 | -0.203 |
| ANH-511 | + | 511.00 | * | 1.257E-01 | 7.237E-02 | 4.909E-02 | 5.053E-03 | 2.560 |

---- 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 | * | -3.293E-02 | 3.482E-01 | 5.633E-01 | 5.964E-02 | -0.058 |
| NA-22 | | 1274.54 | * | -1.219E-03 | 5.530E-02 | 9.074E-02 | 7.441E-03 | -0.013 |
| NA-24 | | 1368.53 | * | 1.127E+00 | 5.530E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -2.020E+00 | 2.006E+00 | 2.935E+00 | 2.505E-01 | -0.688 |
| | | 1808.65 | * | -9.926E-03 | 3.559E-02 | 5.556E-02 | 4.553E-03 | -0.179 |
| TI-44 | | 67.85 | | 7.997E-03 | 2.080E-02 | 3.335E-02 | 3.319E-03 | 0.240 |
| | + | 78.38 | * | 2.103E-02 | 2.095E-02 | 4.676E-02 | 4.815E-03 | 0.450 |
| SC-46 | | 889.25 | * | -2.827E-02 | 4.526E-02 | 6.900E-02 | 6.607E-03 | -0.410 |
| | + | 1120.51 | | 2.086E-01 | 1.039E-01 | 1.467E-01 | 1.261E-02 | 1.422 |
| V-48 | | 944.10 | | -6.870E-01 | 1.067E+00 | 1.586E+00 | 1.488E-01 | -0.433 |
| | | 983.50 | * | 1.344E-02 | 8.648E-02 | 1.415E-01 | 1.311E-02 | 0.095 |
| | | 1312.09 | | 4.842E-02 | 1.051E-01 | 1.803E-01 | 1.469E-02 | 0.269 |
| CR-51 | | 320.08 | * | -1.809E-01 | 3.394E-01 | 5.522E-01 | 6.132E-02 | -0.328 |
| MN-52 | | 744.21 | | 2.517E-01 | 3.122E-01 | 5.499E-01 | 5.941E-02 | 0.458 |
| | | 848.13 | | 5.799E-01 | 9.542E+00 | 1.568E+01 | 1.571E+00 | 0.037 |
| | | 935.52 | | 2.594E-01 | 3.998E-01 | 6.815E-01 | 6.408E-02 | 0.381 |
| | | 1246.25 | | -1.069E+01 | 1.139E+01 | 1.720E+01 | 1.412E+00 | -0.621 |
| | | 1333.61 | | 1.258E+00 | 7.669E+00 | 1.277E+01 | 1.038E+00 | 0.098 |
| | | 1434.06 | * | 1.943E-01 | 2.947E-01 | 5.260E-01 | 4.335E-02 | 0.369 |
| MN-54 | | 834.83 | * | -3.237E-02 | 4.542E-02 | 6.985E-02 | 7.088E-03 | -0.463 |
| CO-56 | | 846.75 | * | -2.633E-03 | 4.336E-02 | 7.047E-02 | 7.071E-03 | -0.037 |
| | | 977.42 | | 1.817E+00 | 3.545E+00 | 5.985E+00 | 5.558E-01 | 0.304 |
| | | 1037.82 | | -8.077E-02 | 3.597E-01 | 5.912E-01 | 5.610E-02 | -0.137 |
| | | 1175.09 | | 1.658E+00 | 2.907E+00 | 5.021E+00 | 4.133E-01 | 0.330 |
| | | 1238.25 | | 1.525E-01 | 1.192E-01 | 2.122E-01 | 1.799E-02 | 0.719 |
| | | 1360.21 | | -3.981E-01 | 1.215E+00 | 1.891E+00 | 1.543E-01 | -0.211 |
| | | 1771.40 | | -7.028E-01 | 3.601E-01 | 4.011E-01 | 3.302E-02 | -1.752 |
| CO-57 | | 122.06 | * | -3.282E-04 | 1.958E-02 | 3.302E-02 | 4.258E-03 | -0.010 |
| | | 136.48 | | 8.289E-02 | 1.725E-01 | 2.941E-01 | 3.605E-02 | 0.282 |
| CO-58 | | 810.76 | * | -2.027E-02 | 4.520E-02 | 7.116E-02 | 7.383E-03 | -0.285 |
| FE-59 | | 142.65 | | 2.478E-01 | 2.370E+00 | 3.974E+00 | 4.470E-01 | 0.062 |
| | | 192.34 | | 1.637E-01 | 8.897E-01 | 1.466E+00 | 2.054E-01 | 0.112 |
| | | 1099.22 | * | -1.695E-02 | 1.159E-01 | 1.910E-01 | 1.799E-02 | -0.089 |
| | | 1291.56 | | -7.478E-02 | 1.445E-01 | 2.238E-01 | 2.103E-02 | -0.334 |
| CO-60 | | 1173.22 | | 6.946E-02 | 5.554E-02 | 1.004E-01 | 8.265E-03 | 0.692 |
| | | 1332.49 | * | 3.611E-02 | 4.772E-02 | 8.420E-02 | 6.839E-03 | 0.429 |
| ZN-65 | | 1115.52 | * | 8.575E-02 | 1.145E-01 | 1.791E-01 | 1.547E-02 | 0.479 |
| GE-68 | | 1077.35 | * | 8.348E-01 | 1.554E+00 | 2.705E+00 | 2.394E-01 | 0.309 |
| AS-73 | | 53.44 | * | 1.932E-01 | 1.890E-01 | 3.147E-01 | 3.020E-02 | 0.614 |

----- 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 | * | -7.618E-02 | 1.124E-01 | 1.687E-01 | 1.829E-02 | -0.451 |
| | | 634.78 | | -1.157E-03 | 4.039E-01 | 6.778E-01 | 7.454E-02 | -0.002 |
| SE-75 | | 66.05 | | -3.333E+00 | 2.317E+00 | 3.092E+00 | 3.564E-01 | -1.078 |
| | | 96.73 | | -4.823E-01 | 5.958E-01 | 8.773E-01 | 1.352E-01 | -0.550 |
| | | 121.11 | | -5.965E-02 | 1.052E-01 | 1.726E-01 | 2.537E-02 | -0.346 |
| | | 136.00 | | 5.612E-03 | 3.256E-02 | 5.493E-02 | 6.516E-03 | 0.102 |
| | | 198.60 | | -5.023E-02 | 1.661E+00 | 2.670E+00 | 2.803E-01 | -0.019 |
| | | 264.65 | * | -2.841E-02 | 4.696E-02 | 6.288E-02 | 6.891E-03 | -0.452 |
| | | 279.53 | | -2.215E-02 | 1.164E-01 | 1.612E-01 | 1.839E-02 | -0.137 |
| | | 303.91 | | -1.363E+00 | 2.226E+00 | 3.159E+00 | 4.206E-01 | -0.431 |
| | | 400.65 | | 1.241E-01 | 2.648E-01 | 4.503E-01 | 5.208E-02 | 0.276 |
| BR-77 | + | 87.88 | | 1.887E+03 | 3.449E+02 | 4.425E+02 | 4.752E+01 | 4.264 |
| | | 200.40 | | -7.552E+00 | 2.515E+02 | 4.089E+02 | 3.962E+01 | -0.018 |
| | + | 239.00 | | 5.774E+02 | 6.867E+01 | 7.205E+01 | 7.544E+00 | 8.014 |
| | | 249.79 | | -3.581E+01 | 1.041E+02 | 1.629E+02 | 1.738E+01 | -0.220 |
| | | 281.68 | | 1.222E+02 | 1.609E+02 | 2.402E+02 | 2.677E+01 | 0.509 |
| | | 297.23 | | 3.055E+02 | 1.346E+02 | 1.799E+02 | 1.982E+01 | 1.698 |
| | | 303.76 | | -1.865E+02 | 3.237E+02 | 4.616E+02 | 5.053E+01 | -0.404 |
| | | 439.47 | | 5.242E+01 | 2.573E+02 | 4.281E+02 | 4.124E+01 | 0.122 |
| | | 484.57 | | -5.153E+01 | 4.216E+02 | 6.798E+02 | 6.846E+01 | -0.076 |
| | | 520.65 | * | 8.461E+00 | 1.947E+01 | 3.249E+01 | 3.369E+00 | 0.260 |
| | | 574.64 | | 1.629E-01 | 3.899E+02 | 6.245E+02 | 6.698E+01 | 0.000 |
| | | 578.91 | | -2.627E+01 | 1.887E+02 | 2.592E+02 | 2.786E+01 | -0.101 |
| | | 585.48 | | 2.150E+03 | 4.949E+02 | 8.398E+02 | 9.056E+01 | 2.560 |
| | | 755.35 | | -8.072E-02 | 3.253E+02 | 5.376E+02 | 5.775E+01 | 0.000 |
| | | 817.79 | | -2.404E+01 | 2.848E+02 | 4.639E+02 | 4.778E+01 | -0.052 |
| SR-82 | | 698.33 | | -2.739E+01 | 4.070E+01 | 6.418E+01 | 7.057E+00 | -0.427 |
| | | 776.49 | * | -6.370E-01 | 4.559E-01 | 6.505E-01 | 6.904E-02 | -0.979 |
| | | 1395.20 | | 1.369E+00 | 1.208E+01 | 2.000E+01 | 1.641E+00 | 0.068 |
| RB-83 | | 520.41 | * | 3.542E-02 | 7.584E-02 | 1.268E-01 | 1.315E-02 | 0.279 |
| | | 529.64 | | 3.469E-02 | 1.109E-01 | 1.835E-01 | 1.915E-02 | 0.189 |
| | | 552.65 | | -1.011E-02 | 2.135E-01 | 3.418E-01 | 3.621E-02 | -0.030 |
| RB-84 | | 881.50 | * | 2.280E-02 | 8.017E-02 | 1.340E-01 | 1.296E-02 | 0.170 |
| KR-85 | | 513.99 | * | 5.062E+00 | 8.744E+00 | 1.304E+01 | 1.345E+00 | 0.388 |
| SR-85 | | 513.99 | * | 2.646E-02 | 4.571E-02 | 6.815E-02 | 7.031E-03 | 0.388 |
| RB-86 | | 1076.63 | * | 4.952E-01 | 1.080E+00 | 1.867E+00 | 1.653E-01 | 0.265 |
| Y-88 | | 898.02 | | -9.975E-03 | 4.926E-02 | 7.854E-02 | 7.470E-03 | -0.127 |
| | | 1836.01 | * | 2.807E-04 | 3.701E-02 | 6.103E-02 | 4.988E-03 | 0.005 |
| ZR-88 | | 392.90 | * | 5.689E-03 | 3.231E-02 | 5.412E-02 | 4.926E-03 | 0.105 |
| Y-91 | | 1204.90 | * | -7.096E+00 | 2.390E+01 | 3.857E+01 | 3.174E+00 | -0.184 |
| NB-94 | | 702.63 | * | -5.957E-03 | 3.955E-02 | 6.509E-02 | 7.147E-03 | -0.092 |
| | | 871.10 | | 2.440E-02 | 3.940E-02 | 6.768E-02 | 6.621E-03 | 0.361 |
| NB-95 | | 765.79 | * | 4.588E-02 | 5.664E-02 | 8.763E-02 | 9.360E-03 | 0.524 |
| NB-95M | | 235.69 | * | -1.570E-02 | 1.319E-01 | 1.873E-01 | 2.147E-02 | -0.084 |
| ZR-95 | | 724.18 | | 1.971E-01 | 1.281E-01 | 2.091E-01 | 2.405E-02 | 0.942 |
| | | 756.15 | * | -1.193E-02 | 8.133E-02 | 1.327E-01 | 1.520E-02 | -0.090 |
| NB-97 | | 657.90 | * | -1.456E-01 | 8.133E-02 | Half-Life | too short | |
| | | 1024.50 | | -5.083E+01 | 8.133E-02 | Half-Life | too short | |
| ZR-97 | | 254.15 | | 8.435E-01 | 8.133E-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 | | | 1.619E+00 | 8.133E-02 | Half-Life | too short | |
| | 507.63 | * | | 1.771E+01 | 8.133E-02 | Half-Life | too short | |
| | 602.52 | | | -3.858E+01 | 8.133E-02 | Half-Life | too short | |
| | 1021.30 | | | 1.045E+01 | 8.133E-02 | Half-Life | too short | |
| | 1147.95 | | | -2.054E+01 | 8.133E-02 | Half-Life | too short | |
| | 1362.66 | | | 4.314E+01 | 8.133E-02 | Half-Life | too short | |
| | 1750.46 | | | -3.428E+01 | 8.133E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -1.416E+01 | 3.436E+01 | 5.602E+01 | 1.607E+01 | -0.253 |
| | 181.06 | | | -1.377E+01 | 2.811E+01 | 3.955E+01 | 7.356E+00 | -0.348 |
| | 366.43 | | | -8.268E+01 | 1.305E+02 | 2.082E+02 | 2.040E+01 | -0.397 |
| | 739.58 | * | | -6.625E-01 | 2.053E+01 | 3.342E+01 | 5.528E+00 | -0.020 |
| | 778.00 | | | -3.072E+01 | 6.035E+01 | 9.494E+01 | 1.007E+01 | -0.324 |
| TC-99M | 140.51 | * | | -2.158E+12 | 6.035E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | 1.368E-02 | 2.845E-02 | 4.404E-02 | 5.511E-03 | 0.311 |
| | 198.01 | * | | 2.311E-02 | 3.003E-02 | 4.999E-02 | 4.817E-03 | 0.462 |
| | 325.23 | | | 1.574E-01 | 2.153E-01 | 3.381E-01 | 3.601E-02 | 0.465 |
| RH-102 | 418.52 | | | -2.953E-01 | 3.115E-01 | 4.798E-01 | 4.511E-02 | -0.615 |
| | 475.06 | * | | 9.323E-04 | 3.089E-02 | 5.046E-02 | 5.038E-03 | 0.018 |
| | 631.29 | | | -2.195E-02 | 5.915E-02 | 9.650E-02 | 1.060E-02 | -0.227 |
| | 697.49 | | | -1.428E-02 | 8.638E-02 | 1.420E-01 | 1.562E-02 | -0.101 |
| | 766.84 | | | 1.608E-01 | 1.501E-01 | 2.358E-01 | 2.517E-02 | 0.682 |
| | 1046.59 | | | -6.625E-02 | 1.260E-01 | 2.007E-01 | 1.808E-02 | -0.330 |
| | 1112.84 | | | -5.904E-02 | 2.837E-01 | 4.288E-01 | 3.707E-02 | -0.138 |
| RU-103 | 497.08 | * | | -1.521E-02 | 4.372E-02 | 6.893E-02 | 1.045E-02 | -0.221 |
| + | 610.33 | | | 1.459E+01 | 3.269E+00 | 3.417E+00 | 6.140E-01 | 4.269 |
| RH-106 | 511.85 | + | | 6.298E-01 | 3.627E-01 | 4.458E-01 | 4.592E-02 | 1.413 |
| | 621.84 | * | | -1.242E-01 | 3.092E-01 | 5.019E-01 | 7.512E-02 | -0.247 |
| | 1050.47 | | | 2.777E+00 | 2.748E+00 | 4.959E+00 | 4.459E-01 | 0.560 |
| RU-106 | 511.85 | + | | 6.298E-01 | 3.627E-01 | 4.458E-01 | 4.592E-02 | 1.413 |
| | 621.84 | * | | -1.242E-01 | 3.090E-01 | 5.019E-01 | 5.495E-02 | -0.247 |
| | 1050.47 | | | 2.777E+00 | 2.748E+00 | 4.959E+00 | 4.459E-01 | 0.560 |
| AG-108M | 433.93 | * | | 8.777E-03 | 3.522E-02 | 5.880E-02 | 5.810E-03 | 0.149 |
| | 614.37 | | | -9.751E-03 | 4.345E-02 | 6.212E-02 | 6.951E-03 | -0.157 |
| | 722.95 | | | 4.854E-02 | 5.189E-02 | 8.183E-02 | 9.144E-03 | 0.593 |
| AG-110M | 657.75 | * | | 2.351E-03 | 4.202E-02 | 6.155E-02 | 6.936E-03 | 0.038 |
| | 677.61 | | | -2.540E-01 | 3.362E-01 | 5.253E-01 | 5.904E-02 | -0.484 |
| | 706.67 | | | -1.301E-03 | 2.491E-01 | 4.140E-01 | 4.619E-02 | -0.003 |
| | 763.93 | | | 5.214E-02 | 2.090E-01 | 3.075E-01 | 3.348E-02 | 0.170 |
| | 884.67 | | | -2.463E-02 | 5.585E-02 | 8.689E-02 | 8.584E-03 | -0.283 |
| | 937.48 | | | -7.252E-02 | 1.334E-01 | 2.046E-01 | 1.981E-02 | -0.354 |
| | 1384.27 | | | -2.180E-02 | 1.844E-01 | 2.961E-01 | 2.501E-02 | -0.074 |
| IN-111 | 171.28 | | | 7.870E-01 | 1.324E+00 | 2.241E+00 | 2.024E-01 | 0.351 |
| | 245.39 | * | | -3.768E-01 | 1.656E+00 | 2.317E+00 | 2.454E-01 | -0.163 |
| IN-113M | 391.69 | * | | 2.365E-02 | 4.658E-02 | 7.950E-02 | 7.425E-03 | 0.297 |
| SN-113 | 391.69 | * | | 2.365E-02 | 4.658E-02 | 7.950E-02 | 7.425E-03 | 0.297 |
| IN-114M | 190.27 | * | | -1.070E-01 | 1.909E-01 | 2.686E-01 | 2.543E-02 | -0.398 |
| CD-115 | 260.90 | | | 2.255E+01 | 2.239E+02 | 3.591E+02 | 3.902E+01 | 0.063 |
| | 492.35 | | | -1.382E-02 | 6.564E+01 | 1.067E+02 | 1.081E+01 | 0.000 |
| | 527.90 | * | | -8.409E+00 | 2.004E+01 | 3.118E+01 | 3.250E+00 | -0.270 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SN-117M | | 156.02 | | -1.880E+00 | 2.199E+00 | 3.501E+00 | 3.492E-01 | -0.537 |
| | | 158.56 | * | -1.031E-02 | 5.049E-02 | 8.288E-02 | 8.047E-03 | -0.124 |
| SB-122 | | 563.90 | * | 4.562E+00 | 3.779E+00 | 6.560E+00 | 6.994E-01 | 0.696 |
| | | 692.80 | | 8.254E+01 | 7.906E+01 | 1.406E+02 | 1.548E+01 | 0.587 |
| I-123 | | 159.00 | * | -1.885E+01 | 7.906E+01 | Half-Life | too short | |
| | | 528.96 | | 3.161E+02 | 7.906E+01 | Half-Life | too short | |
| TE-123M | | 159.00 | * | -9.002E-03 | 2.408E-02 | 3.919E-02 | 3.805E-03 | -0.230 |
| I-124 | | 602.71 | * | -8.569E-01 | 1.152E+00 | 1.564E+00 | 1.700E-01 | -0.548 |
| | | 722.78 | | 5.268E+00 | 7.463E+00 | 1.153E+01 | 1.257E+00 | 0.457 |
| | | 1325.50 | | -3.369E+01 | 6.088E+01 | 9.382E+01 | 7.629E+00 | -0.359 |
| | | 1376.25 | | 6.742E+01 | 4.548E+01 | 8.625E+01 | 7.055E+00 | 0.782 |
| | | 1509.49 | | 3.097E+01 | 2.531E+01 | 4.715E+01 | 3.910E+00 | 0.657 |
| | | 1691.02 | | 2.411E+00 | 5.817E+00 | 1.032E+01 | 8.555E-01 | 0.234 |
| SB-124 | | 602.71 | | -3.742E-02 | 5.030E-02 | 6.832E-02 | 7.426E-03 | -0.548 |
| | | 645.85 | | 2.305E-01 | 5.475E-01 | 9.456E-01 | 1.082E-01 | 0.244 |
| | | 709.31 | | 2.277E+00 | 3.329E+00 | 5.783E+00 | 6.338E-01 | 0.394 |
| | | 713.82 | | -1.284E+00 | 1.851E+00 | 2.888E+00 | 3.985E-01 | -0.445 |
| | | 722.78 | | 3.334E-01 | 4.725E-01 | 7.298E-01 | 8.067E-02 | 0.457 |
| | + | 968.20 | | 1.869E+01 | 4.433E+00 | 8.081E+00 | 7.528E-01 | 2.313 |
| | | 1045.16 | | -1.849E+00 | 2.706E+00 | 4.231E+00 | 3.815E-01 | -0.437 |
| | | 1325.50 | | -2.278E+00 | 4.116E+00 | 6.343E+00 | 5.158E-01 | -0.359 |
| | | 1368.21 | | 6.233E-01 | 1.915E+00 | 3.259E+00 | 4.300E-01 | 0.191 |
| | | 1436.60 | | -1.412E+00 | 3.695E+00 | 5.606E+00 | 4.622E-01 | -0.252 |
| | | 1691.02 | * | 3.600E-02 | 8.685E-02 | 1.541E-01 | 1.332E-02 | 0.234 |
| SB-125 | | 427.89 | * | -9.319E-03 | 9.389E-02 | 1.534E-01 | 1.482E-02 | -0.061 |
| | + | 463.38 | | 8.494E-01 | 4.085E-01 | 6.106E-01 | 6.392E-02 | 1.391 |
| | | 600.56 | | 6.440E-02 | 1.993E-01 | 3.258E-01 | 3.705E-02 | 0.198 |
| | | 635.90 | | 2.513E-01 | 2.867E-01 | 5.099E-01 | 5.892E-02 | 0.493 |
| TE-125M | | 109.28 | * | 2.388E+00 | 7.261E+00 | 1.229E+01 | 1.632E+00 | 0.194 |
| I-126 | | 388.63 | | 5.890E-02 | 2.301E-01 | 3.876E-01 | 3.558E-02 | 0.152 |
| | | 666.33 | * | -9.351E-03 | 2.621E-01 | 3.796E-01 | 4.202E-02 | -0.025 |
| | | 753.82 | | 7.017E-01 | 1.911E+00 | 3.208E+00 | 3.449E-01 | 0.219 |
| SB-126 | | 223.80 | | 1.484E+00 | 4.295E+00 | 7.051E+00 | 7.175E-01 | 0.211 |
| | + | 278.60 | | 4.674E+00 | 3.327E+00 | 4.469E+00 | 4.983E-01 | 1.046 |
| | + | 296.50 | | 1.854E+01 | 3.497E+00 | 4.065E+00 | 4.482E-01 | 4.560 |
| | | 414.70 | | 1.104E-01 | 9.209E-02 | 1.617E-01 | 1.513E-02 | 0.683 |
| | | 415.30 | | 8.888E+00 | 7.575E+00 | 1.329E+01 | 1.245E+00 | 0.669 |
| | | 555.20 | | 1.789E+00 | 4.573E+00 | 7.586E+00 | 8.048E-01 | 0.236 |
| | | 573.80 | | 4.910E-01 | 1.282E+00 | 2.115E+00 | 2.267E-01 | 0.232 |
| | | 593.00 | | 1.216E-01 | 1.129E+00 | 1.819E+00 | 1.968E-01 | 0.067 |
| | | 656.30 | | 4.094E-01 | 4.696E+00 | 6.900E+00 | 7.634E-01 | 0.059 |
| | | 666.33 | | -3.924E-03 | 1.100E-01 | 1.593E-01 | 1.764E-02 | -0.025 |
| | | 675.00 | | -3.697E-02 | 2.390E+00 | 3.985E+00 | 4.405E-01 | -0.009 |
| | | 695.00 | | -5.751E-03 | 1.001E-01 | 1.660E-01 | 1.827E-02 | -0.035 |
| | | 697.00 | | 6.286E-02 | 3.314E-01 | 5.593E-01 | 6.151E-02 | 0.112 |
| | | 720.50 | * | 2.979E-02 | 2.143E-01 | 3.133E-01 | 3.420E-02 | 0.095 |
| | | 856.80 | | 2.451E-01 | 6.408E-01 | 9.498E-01 | 9.434E-02 | 0.258 |
| | | 989.30 | | -1.095E+00 | 1.604E+00 | 2.392E+00 | 2.212E-01 | -0.458 |
| | | 1034.80 | | 5.041E+00 | 1.122E+01 | 1.953E+01 | 1.770E+00 | 0.258 |

----- 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 | | | -3.195E-01 | 6.895E+00 | 1.135E+01 | 9.340E-01 | -0.028 |
| | 61.10 | | | 1.243E+00 | 3.096E+01 | 4.553E+01 | 5.762E+00 | 0.027 |
| | 252.40 | | | 3.464E+00 | 5.802E+00 | 9.300E+00 | 3.968E+00 | 0.373 |
| | 290.80 | | | -5.949E+00 | 2.823E+01 | 4.163E+01 | 5.677E+00 | -0.143 |
| | 411.60 | | | -1.808E+01 | 1.941E+01 | 2.988E+01 | 4.937E+00 | -0.605 |
| | 444.90 | | | -7.548E-01 | 1.395E+01 | 2.278E+01 | 3.137E+00 | -0.033 |
| | 473.00 | | | 7.756E-01 | 2.521E+00 | 4.197E+00 | 5.988E-01 | 0.185 |
| | 543.00 | | | 2.341E+00 | 2.368E+01 | 3.845E+01 | 6.162E+00 | 0.061 |
| | 603.60 | | | -8.629E+00 | 2.003E+01 | 2.814E+01 | 4.110E+00 | -0.307 |
| | 685.20 | * | | -4.766E-01 | 2.086E+00 | 3.414E+00 | 4.706E-01 | -0.140 |
| | 698.50 | | | -1.648E+01 | 2.412E+01 | 3.782E+01 | 6.657E+00 | -0.436 |
| | 722.20 | | | 2.763E+01 | 5.248E+01 | 7.970E+01 | 1.076E+01 | 0.347 |
| | 783.80 | | | 3.919E+00 | 7.374E+00 | 1.106E+01 | 1.582E+00 | 0.354 |
| | 57.60 | | | -2.003E+00 | 1.832E+00 | 2.777E+00 | 2.707E-01 | -0.721 |
| XE-127 | 145.22 | | | -6.023E-02 | 6.218E-01 | 1.024E+00 | 1.129E-01 | -0.059 |
| | 172.10 | | | -7.328E-02 | 1.070E-01 | 1.702E-01 | 1.541E-02 | -0.431 |
| | 202.84 | * | | 3.781E-03 | 4.411E-02 | 7.207E-02 | 7.020E-03 | 0.052 |
| | 374.96 | | | 7.867E-02 | 2.179E-01 | 3.698E-01 | 3.541E-02 | 0.213 |
| I-131 | 80.18 | + | | 3.394E+00 | 3.380E+00 | 4.869E+00 | 5.079E-01 | 0.697 |
| | 284.30 | | | -8.297E-01 | 1.779E+00 | 2.729E+00 | 3.136E-01 | -0.304 |
| | 364.48 | * | | 6.427E-02 | 1.285E-01 | 2.207E-01 | 2.267E-02 | 0.291 |
| | 636.97 | | | 1.175E+00 | 1.871E+00 | 3.283E+00 | 3.741E-01 | 0.358 |
| TE-132 | 722.89 | | | 7.801E+00 | 1.042E+01 | 1.615E+01 | 1.770E+00 | 0.483 |
| | 49.72 | | | -1.356E+00 | 4.890E+00 | 7.161E+00 | 8.639E-01 | -0.189 |
| | 111.76 | | | -1.167E+01 | 3.270E+01 | 5.464E+01 | 7.782E+00 | -0.214 |
| | 116.30 | | | 2.783E+01 | 3.143E+01 | 5.459E+01 | 7.921E+00 | 0.510 |
| BA-133 | 228.16 | * | | -4.034E-01 | 9.623E-01 | 1.512E+00 | 2.572E-01 | -0.267 |
| | 53.15 | | | 1.196E+00 | 7.772E-01 | 1.314E+00 | 1.260E-01 | 0.910 |
| | 79.62 | + | | 8.069E-01 | 8.100E-01 | 1.146E+00 | 1.864E-01 | 0.704 |
| | 81.00 | | | 1.684E-02 | 6.718E-02 | 8.582E-02 | 1.452E-02 | 0.196 |
| | 276.40 | + | | 6.301E-01 | 4.544E-01 | 6.364E-01 | 1.022E-01 | 0.990 |
| | 302.84 | | | 6.889E-02 | 1.428E-01 | 2.208E-01 | 3.292E-02 | 0.312 |
| | 356.01 | * | | -2.671E-02 | 4.895E-02 | 6.850E-02 | 9.712E-03 | -0.390 |
| | 383.85 | | | -9.184E-02 | 2.862E-01 | 4.647E-01 | 6.086E-02 | -0.198 |
| I-133 | 510.53 | + | | 5.626E+00 | 2.862E-01 | Half-Life | too short | |
| | 529.87 | * | | 1.589E-02 | 2.862E-01 | Half-Life | too short | |
| | 706.58 | | | -3.615E-01 | 2.862E-01 | Half-Life | too short | |
| | 856.28 | | | -4.255E-01 | 2.862E-01 | Half-Life | too short | |
| | 875.33 | | | -3.093E-01 | 2.862E-01 | Half-Life | too short | |
| | 1236.41 | | | 4.254E+00 | 2.862E-01 | Half-Life | too short | |
| | 1298.22 | | | 3.614E-01 | 2.862E-01 | Half-Life | too short | |
| CS-134 | 475.35 | | | 5.476E-02 | 2.009E+00 | 3.282E+00 | 3.278E-01 | 0.017 |
| | 563.23 | | | 3.287E-01 | 4.102E-01 | 6.956E-01 | 7.461E-02 | 0.473 |
| | 569.32 | | | -1.004E-01 | 2.140E-01 | 3.292E-01 | 3.552E-02 | -0.305 |
| | 604.70 | | | 1.009E-03 | 4.073E-02 | 6.000E-02 | 6.537E-03 | 0.017 |
| | 795.84 | + | * | 1.112E-01 | 8.890E-02 | 9.972E-02 | 1.050E-02 | 1.115 |
| | 801.93 | | | -3.234E-01 | 5.076E-01 | 6.831E-01 | 7.151E-02 | -0.473 |
| | 1038.57 | | | 1.291E-02 | 4.229E+00 | 7.093E+00 | 6.417E-01 | 0.002 |
| | 1167.94 | | | -4.421E+00 | 3.374E+00 | 4.991E+00 | 4.128E-01 | -0.886 |

---- 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 | | | 5.398E-01 | 1.423E+00 | 2.431E+00 | 2.086E-01 | 0.222 |
| | 268.24 | * | | 1.675E-01 | 1.558E-01 | 2.608E-01 | 3.147E-02 | 0.642 |
| | 288.45 | | | 7.324E+11 | 1.558E-01 | Half-Life | too short | |
| | 417.63 | | | -2.254E+12 | 1.558E-01 | Half-Life | too short | |
| | 546.56 | | | 9.792E+11 | 1.558E-01 | Half-Life | too short | |
| | 836.80 | | | 2.594E+12 | 1.558E-01 | Half-Life | too short | |
| | 1038.76 | | | 2.656E+11 | 1.558E-01 | Half-Life | too short | |
| | 1124.00 | | | 1.455E+12 | 1.558E-01 | Half-Life | too short | |
| | 1131.51 | | | 3.588E+11 | 1.558E-01 | Half-Life | too short | |
| | 1260.41 | * | | -9.986E+10 | 1.558E-01 | Half-Life | too short | |
| | 1457.56 | | | 1.041E+14 | 1.558E-01 | Half-Life | too short | |
| | 1678.03 | | | -8.142E+11 | 1.558E-01 | Half-Life | too short | |
| | 1706.46 | | | 2.756E+12 | 1.558E-01 | Half-Life | too short | |
| | 1791.20 | | | -3.437E+11 | 1.558E-01 | Half-Life | too short | |
| CS-136 + | 66.91 | | | 2.348E-01 | 4.014E-01 | 5.966E-01 | 9.669E-02 | 0.394 |
| | 86.29 | | | 7.194E+00 | 1.483E+00 | 1.605E+00 | 2.295E-01 | 4.482 |
| | 153.22 | | | 7.093E-01 | 6.567E-01 | 1.130E+00 | 1.257E-01 | 0.628 |
| | 163.89 | | | -7.263E-01 | 9.886E-01 | 1.573E+00 | 1.592E-01 | -0.462 |
| | 176.55 | | | -1.573E-01 | 3.556E-01 | 5.719E-01 | 5.506E-02 | -0.275 |
| | 273.65 | | | -1.647E-01 | 6.981E-01 | 7.480E-01 | 8.620E-02 | -0.220 |
| | 340.57 | | | 1.428E-01 | 1.590E-01 | 2.487E-01 | 2.634E-02 | 0.574 |
| | 818.51 | | | -2.839E-02 | 1.018E-01 | 1.631E-01 | 1.680E-02 | -0.174 |
| | 1048.07 | * | | -6.761E-02 | 1.362E-01 | 2.179E-01 | 2.038E-02 | -0.310 |
| | 1235.34 | | | 7.649E-01 | 8.543E-01 | 1.486E+00 | 1.718E-01 | 0.515 |
| | 165.85 | * | | 1.696E-02 | 2.454E-02 | 4.179E-02 | 3.727E-03 | 0.406 |
| | 162.64 | | | -1.838E-01 | 6.937E-01 | 1.133E+00 | 1.104E-01 | -0.162 |
| | 304.84 | | | -6.301E-01 | 1.360E+00 | 2.050E+00 | 5.908E-01 | -0.307 |
| | 423.70 | | | 1.351E+00 | 2.216E+00 | 3.721E+00 | 1.215E+00 | 0.363 |
| LA-140 + | 537.32 | * | | 9.566E-03 | 2.910E-01 | 4.703E-01 | 1.584E-01 | 0.020 |
| | 328.77 | | | 8.850E-01 | 4.774E-01 | 6.114E-01 | 6.720E-02 | 1.448 |
| | 432.53 | | | 1.282E+00 | 2.418E+00 | 4.108E+00 | 4.082E-01 | 0.312 |
| | 487.03 | | | -3.816E-02 | 1.646E-01 | 2.631E-01 | 2.776E-02 | -0.145 |
| | 751.79 | | | 2.658E-01 | 2.212E+00 | 3.647E+00 | 4.199E-01 | 0.073 |
| | 815.85 | | | 1.565E-01 | 4.266E-01 | 7.204E-01 | 8.039E-02 | 0.217 |
| | 867.82 | | | -2.214E-01 | 1.821E+00 | 2.937E+00 | 3.002E-01 | -0.075 |
| | 919.63 | | | -9.068E-02 | 3.640E+00 | 5.540E+00 | 6.271E-01 | -0.016 |
| | 925.24 | | | 7.179E-02 | 1.458E+00 | 2.373E+00 | 2.355E-01 | 0.030 |
| | 1596.49 | * | | -6.217E-02 | 1.011E-01 | 1.527E-01 | 1.270E-02 | -0.407 |
| | 145.44 | * | | -6.819E-03 | 5.542E-02 | 9.193E-02 | 1.022E-02 | -0.074 |
| | 57.37 | | | -5.877E-04 | 5.542E-02 | Half-Life | too short | |
| | 231.56 | | | -3.312E-05 | 5.542E-02 | Half-Life | too short | |
| | 293.26 | * | | 1.550E-03 | 5.542E-02 | Half-Life | too short | |
| CE-141 CE-143 + CE-144 + | 350.59 | | | 9.287E-02 | 5.542E-02 | Half-Life | too short | |
| | 490.36 | | | -2.257E-03 | 5.542E-02 | Half-Life | too short | |
| | 664.57 | | | 1.705E-03 | 5.542E-02 | Half-Life | too short | |
| | 721.93 | | | 2.140E-03 | 5.542E-02 | Half-Life | too short | |
| | 80.11 | | | 1.336E+00 | 1.331E+00 | 1.913E+00 | 1.984E-01 | 0.698 |
| | 133.54 | * | | -1.094E-01 | 1.739E-01 | 2.824E-01 | 4.992E-02 | -0.387 |
| | 476.78 | | | -6.807E-02 | 7.345E-02 | 1.109E-01 | 1.187E-02 | -0.614 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 618.01 | | -2.745E-03 | 2.985E-02 | 4.983E-02 | 5.544E-03 | -0.055 |
| | | 696.49 | * | 2.239E-02 | 3.848E-02 | 6.663E-02 | 7.331E-03 | 0.336 |
| | | 778.57 | | -7.691E-01 | 2.666E+00 | 4.162E+00 | 4.413E-01 | -0.185 |
| PR-144 | | 696.49 | * | 1.518E+00 | 2.610E+00 | 4.519E+00 | 4.971E-01 | 0.336 |
| | | 1489.15 | | -9.296E+00 | 1.351E+01 | 1.937E+01 | 1.604E+00 | -0.480 |
| PM-146 | | 453.90 | * | 3.013E-02 | 4.453E-02 | 7.615E-02 | 8.891E-03 | 0.396 |
| | | 633.02 | | -3.556E-01 | 1.498E+00 | 2.460E+00 | 9.346E-01 | -0.145 |
| | | 735.90 | | 6.955E-02 | 1.626E-01 | 2.766E-01 | 8.118E-02 | 0.251 |
| | | 747.13 | | -5.836E-02 | 1.009E-01 | 1.580E-01 | 2.444E-02 | -0.369 |
| ND-147 | + | 91.11 | | 1.070E+00 | 2.962E-01 | 3.968E-01 | 4.554E-02 | 2.697 |
| | | 319.41 | | -8.477E-01 | 3.264E+00 | 5.413E+00 | 5.816E-01 | -0.157 |
| | | 439.89 | | 2.729E+00 | 6.733E+00 | 1.135E+01 | 1.094E+00 | 0.240 |
| | | 531.02 | * | 3.075E-01 | 6.487E-01 | 1.085E+00 | 1.743E-01 | 0.284 |
| PM-149 | | 285.90 | * | -1.573E+01 | 1.577E+02 | 2.477E+02 | 4.226E+01 | -0.063 |
| EU-152 | | 121.78 | | -1.024E-02 | 5.598E-02 | 9.370E-02 | 1.291E-02 | -0.109 |
| | | 244.69 | | -2.897E-02 | 3.241E-01 | 4.590E-01 | 4.855E-02 | -0.063 |
| | | 344.27 | * | -1.673E-02 | 9.835E-02 | 1.577E-01 | 1.693E-02 | -0.106 |
| | | 443.98 | | 8.431E-03 | 9.815E-01 | 1.611E+00 | 1.559E-01 | 0.005 |
| | | 778.89 | | -7.253E-02 | 3.081E-01 | 4.834E-01 | 5.123E-02 | -0.150 |
| | | 867.32 | | -4.897E-01 | 1.028E+00 | 1.555E+00 | 1.527E-01 | -0.315 |
| | + | 964.01 | | 5.956E-01 | 4.138E-01 | 6.854E-01 | 6.393E-02 | 0.869 |
| | | 1085.78 | | -1.399E-01 | 4.632E-01 | 7.528E-01 | 6.629E-02 | -0.186 |
| | | 1112.02 | | -1.498E-01 | 3.711E-01 | 5.819E-01 | 5.034E-02 | -0.257 |
| | | 1407.95 | | 2.174E-02 | 2.165E-01 | 3.568E-01 | 2.931E-02 | 0.061 |
| GD-153 | | 69.67 | | -8.519E-01 | 8.842E-01 | 1.222E+00 | 1.222E-01 | -0.697 |
| | + | 83.37 | | 3.002E+01 | 1.237E+01 | 1.627E+01 | 1.711E+00 | 1.845 |
| | | 97.43 | * | -3.088E-02 | 6.248E-02 | 9.275E-02 | 1.045E-02 | -0.333 |
| | | 103.18 | | -7.932E-02 | 7.676E-02 | 1.249E-01 | 1.450E-02 | -0.635 |
| EU-154 | | 123.07 | | 2.014E-02 | 3.957E-02 | 6.795E-02 | 1.006E-02 | 0.296 |
| | | 247.94 | | 5.325E-02 | 3.228E-01 | 5.220E-01 | 6.816E-02 | 0.102 |
| | | 591.81 | | 4.823E-01 | 6.844E-01 | 1.152E+00 | 1.540E-01 | 0.419 |
| | | 723.30 | | 2.109E-01 | 2.178E-01 | 3.442E-01 | 4.004E-02 | 0.613 |
| | | 756.87 | | 8.736E-02 | 8.685E-01 | 1.446E+00 | 1.964E-01 | 0.060 |
| | | 873.19 | | 1.122E-01 | 3.441E-01 | 5.770E-01 | 7.541E-02 | 0.194 |
| | | 996.32 | | -1.329E-01 | 4.239E-01 | 6.592E-01 | 1.191E-01 | -0.202 |
| | | 1004.76 | | 1.833E-01 | 2.674E-01 | 4.545E-01 | 5.484E-02 | 0.403 |
| | | 1274.45 | * | -5.551E-02 | 1.585E-01 | 2.522E-01 | 2.771E-02 | -0.220 |
| EU-155 | | 48.70 | | 1.665E-01 | 3.662E-01 | 5.589E-01 | 5.320E-02 | 0.298 |
| | | 60.01 | | 1.606E+00 | 1.774E+00 | 2.709E+00 | 2.665E-01 | 0.593 |
| | + | 86.54 | | 6.026E-01 | 1.104E-01 | 1.384E-01 | 1.487E-02 | 4.354 |
| | | 105.31 | * | 1.001E-01 | 8.224E-02 | 1.446E-01 | 1.709E-02 | 0.693 |
| TB-160 | + | 86.79 | | 1.637E+00 | 2.993E-01 | 3.855E-01 | 4.119E-02 | 4.247 |
| | | 197.04 | | -2.858E-01 | 5.228E-01 | 8.180E-01 | 7.865E-02 | -0.349 |
| | | 215.65 | | 1.278E-01 | 6.998E-01 | 1.144E+00 | 1.145E-01 | 0.112 |
| | + | 298.57 | | 3.367E-01 | 1.649E-01 | 2.123E-01 | 2.336E-02 | 1.586 |
| | | 879.36 | * | 2.988E-02 | 1.605E-01 | 2.660E-01 | 2.577E-02 | 0.112 |
| | | 962.29 | | 5.745E-01 | 7.917E-01 | 1.187E+00 | 1.108E-01 | 0.484 |
| | + | 966.15 | | 4.162E-01 | 2.891E-01 | 6.093E-01 | 5.679E-02 | 0.683 |
| | | 1177.93 | | -2.125E-01 | 4.715E-01 | 7.399E-01 | 6.090E-02 | -0.287 |

---- 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 | | 1.692E-01 | 8.880E-01 | 1.486E+00 | 1.217E-01 | 0.114 |
| | | 80.57 | | 1.714E-01 | 1.707E-01 | 2.381E-01 | 2.474E-02 | 0.720 |
| | | 184.41 | | 5.865E-02 | 3.429E-02 | 6.011E-02 | 5.611E-03 | 0.976 |
| | | 280.46 | | -3.485E-04 | 9.017E-02 | 1.268E-01 | 1.414E-02 | -0.003 |
| | | 410.95 | | -4.272E-02 | 2.664E-01 | 4.356E-01 | 4.058E-02 | -0.098 |
| | | 711.68 | * | -1.413E-02 | 7.096E-02 | 1.161E-01 | 1.272E-02 | -0.122 |
| | | 752.31 | | 9.381E-02 | 3.188E-01 | 5.325E-01 | 5.730E-02 | 0.176 |
| TM-171 | | 810.29 | | -4.178E-02 | 6.787E-02 | 1.051E-01 | 1.089E-02 | -0.397 |
| | | 51.35 | | -7.722E+00 | 5.857E+00 | 8.804E+00 | 8.408E-01 | -0.877 |
| | | 52.39 | | 4.746E+00 | 3.154E+00 | 5.340E+00 | 5.111E-01 | 0.889 |
| | | 59.40 | | 7.041E+00 | 9.110E+00 | 1.386E+01 | 1.363E+00 | 0.508 |
| | | 66.72 | * | 3.971E+00 | 1.313E+01 | 1.934E+01 | 1.920E+00 | 0.205 |
| LU-176 | + | 88.36 | | 1.186E+00 | 2.168E-01 | 2.616E-01 | 2.815E-02 | 4.534 |
| | | 201.83 | | -7.039E-03 | 2.620E-02 | 4.207E-02 | 4.089E-03 | -0.167 |
| | | 306.84 | * | -3.439E-03 | 2.206E-02 | 3.697E-02 | 4.034E-03 | -0.093 |
| | | 401.10 | | 4.842E+00 | 6.766E+00 | 1.167E+01 | 1.074E+00 | 0.415 |
| LU-177 | | 112.95 | | -1.207E+00 | 1.495E+00 | 2.442E+00 | 2.991E-01 | -0.494 |
| LU-177M | + | 208.36 | * | 3.256E+00 | 1.690E+00 | 2.256E+00 | 2.224E-01 | 1.443 |
| | | 52.97 | | 5.077E-01 | 3.496E-01 | 5.899E-01 | 5.655E-02 | 0.861 |
| | | 54.07 | | 9.816E-02 | 1.974E-01 | 3.230E-01 | 3.106E-02 | 0.304 |
| | | 61.30 | | 3.639E-02 | 5.851E-01 | 8.609E-01 | 8.477E-02 | 0.042 |
| | | 121.62 | | -1.184E-01 | 2.912E-01 | 4.823E-01 | 6.201E-02 | -0.246 |
| | | 147.16 | | -1.912E-01 | 5.452E-01 | 8.939E-01 | 9.689E-02 | -0.214 |
| | | 171.86 | | -1.526E-01 | 4.132E-01 | 6.684E-01 | 6.047E-02 | -0.228 |
| | | 218.09 | | -4.270E-01 | 8.041E-01 | 1.263E+00 | 1.271E-01 | -0.338 |
| | | 268.79 | + | 3.677E+00 | 1.624E+00 | 1.450E+00 | 1.594E-01 | 2.536 |
| | | 319.02 | | 6.781E-04 | 2.312E-01 | 3.897E-01 | 4.189E-02 | 0.002 |
| | | 367.43 | | -1.097E-01 | 8.661E-01 | 1.432E+00 | 1.399E-01 | -0.077 |
| | | 413.65 | * | 1.546E-01 | 1.978E-01 | 3.403E-01 | 3.181E-02 | 0.454 |
| | | 56.28 | | 1.640E-01 | 2.480E-01 | 4.073E-01 | 3.948E-02 | 0.403 |
| | | 57.53 | | -1.197E-01 | 1.505E-01 | 2.318E-01 | 2.259E-02 | -0.516 |
| | | 65.20 | | 1.657E-01 | 4.191E-01 | 6.209E-01 | 6.145E-02 | 0.267 |
| HF-181 | | 133.02 | | 1.013E-02 | 5.896E-02 | 9.520E-02 | 1.148E-02 | 0.106 |
| | | 136.25 | | 1.213E-01 | 3.882E-01 | 6.582E-01 | 7.766E-02 | 0.184 |
| | | 345.85 | | -6.649E-02 | 2.138E-01 | 3.071E-01 | 3.155E-02 | -0.217 |
| | | 482.03 | * | 2.341E-02 | 4.569E-02 | 7.711E-02 | 7.747E-03 | 0.304 |
| | | 56.28 | | 6.309E-02 | 9.520E-02 | 1.564E-01 | 1.516E-02 | 0.403 |
| | | 57.53 | | -4.595E-02 | 5.782E-02 | 8.903E-02 | 8.677E-03 | -0.516 |
| | | 65.20 | * | 6.314E-02 | 1.597E-01 | 2.366E-01 | 2.342E-02 | 0.267 |
| TA-182 | | 67.75 | | 4.698E-03 | 5.070E-02 | 8.000E-02 | 7.960E-03 | 0.059 |
| | | 100.10 | | 3.637E-02 | 1.269E-01 | 2.189E-01 | 2.500E-02 | 0.166 |
| | | 152.43 | | 7.167E-02 | 3.070E-01 | 5.148E-01 | 5.320E-02 | 0.139 |
| | | 222.10 | | 8.236E-02 | 3.363E-01 | 5.499E-01 | 5.576E-02 | 0.150 |
| | | 1001.68 | | 3.934E-01 | 2.566E+00 | 4.178E+00 | 3.844E-01 | 0.094 |
| RE-183 | + | 1121.28 | | 5.737E-01 | 2.857E-01 | 4.033E-01 | 3.465E-02 | 1.423 |
| | | 1189.05 | | -5.119E-02 | 4.067E-01 | 6.659E-01 | 5.481E-02 | -0.077 |
| | | 1221.42 | * | 1.408E-01 | 2.544E-01 | 4.367E-01 | 3.591E-02 | 0.322 |
| | | 1230.97 | | 1.077E-01 | 5.974E-01 | 9.989E-01 | 8.211E-02 | 0.108 |
| | | 57.98 | | -2.739E-02 | 5.961E-02 | 9.331E-02 | 9.112E-03 | -0.294 |

---- 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 | | 1.374E-02 | 3.843E-02 | 5.746E-02 | 5.648E-03 | 0.239 |
| | | 67.20 | | 5.328E-02 | 9.676E-02 | 1.439E-01 | 1.430E-02 | 0.370 |
| | | 162.32 | * | 2.824E-02 | 9.100E-02 | 1.527E-01 | 1.421E-02 | 0.185 |
| | + | 208.81 | | 2.462E+00 | 1.278E+00 | 1.729E+00 | 1.706E-01 | 1.424 |
| | | 291.72 | | -4.721E-01 | 9.183E-01 | 1.320E+00 | 1.461E-01 | -0.358 |
| | | 57.98 | | -9.984E-02 | 2.173E-01 | 3.401E-01 | 3.322E-02 | -0.294 |
| | | 59.32 | | 5.005E-02 | 1.400E-01 | 2.093E-01 | 2.057E-02 | 0.239 |
| | | 67.20 | | 1.942E-01 | 3.526E-01 | 5.245E-01 | 5.212E-02 | 0.370 |
| | | 161.27 | | -2.661E-02 | 2.993E-01 | 4.934E-01 | 4.648E-02 | -0.054 |
| | | 216.55 | | 1.519E-01 | 2.447E-01 | 4.079E-01 | 4.091E-02 | 0.372 |
| | | 252.85 | * | 4.015E-02 | 2.239E-01 | 3.616E-01 | 3.878E-02 | 0.111 |
| | | 318.01 | | -9.957E-02 | 4.118E-01 | 6.843E-01 | 7.366E-02 | -0.146 |
| OS-185 | | 792.07 | | -6.957E-01 | 2.099E+00 | 1.843E+00 | 1.936E-01 | -0.377 |
| | | 903.28 | | -4.853E-01 | 1.376E+00 | 1.839E+00 | 1.741E-01 | -0.264 |
| | | 920.93 | | -1.412E-02 | 5.245E-01 | 8.482E-01 | 8.001E-02 | -0.017 |
| | | 59.72 | | 1.186E-01 | 1.037E-01 | 1.599E-01 | 1.573E-02 | 0.742 |
| | | 61.14 | | 5.514E-04 | 6.424E-02 | 9.431E-02 | 9.285E-03 | 0.006 |
| | | 69.30 | | -8.174E-02 | 1.426E-01 | 2.200E-01 | 2.197E-02 | -0.372 |
| | | 592.07 | | 1.995E+00 | 2.827E+00 | 4.764E+00 | 5.154E-01 | 0.419 |
| | | 646.12 | * | 1.126E-02 | 4.552E-02 | 7.771E-02 | 8.575E-03 | 0.145 |
| | | 717.42 | | 8.728E-02 | 1.022E+00 | 1.708E+00 | 1.866E-01 | 0.051 |
| | | 874.81 | | -1.451E-01 | 6.807E-01 | 1.087E+00 | 1.059E-01 | -0.133 |
| | | 880.27 | | 6.642E-02 | 8.904E-01 | 1.460E+00 | 1.413E-01 | 0.045 |
| | | 155.03 | * | 1.479E-01 | 1.551E-01 | 2.663E-01 | 2.683E-02 | 0.555 |
| RE-188 | | 477.96 | | 6.947E-04 | 3.306E+00 | 5.386E+00 | 5.391E-01 | 0.000 |
| | | 633.10 | | -7.713E-01 | 3.068E+00 | 5.052E+00 | 5.553E-01 | -0.153 |
| W-188 | + | 63.58 | | 1.070E+02 | 3.799E+01 | 4.291E+01 | 4.236E+00 | 2.493 |
| | | 227.08 | | -1.674E+00 | 1.215E+01 | 1.945E+01 | 1.992E+00 | -0.086 |
| IR-192 | + | 290.67 | * | -2.058E+00 | 7.177E+00 | 1.052E+01 | 1.165E+00 | -0.196 |
| | | 295.96 | | 1.302E+00 | 2.461E-01 | 3.063E-01 | 3.393E-02 | 4.253 |
| AU-195 | | 308.46 | | -3.045E-02 | 8.934E-02 | 1.480E-01 | 1.617E-02 | -0.206 |
| | | 316.51 | * | 1.947E-02 | 3.258E-02 | 5.667E-02 | 6.120E-03 | 0.344 |
| | | 468.07 | | 7.041E-03 | 7.538E-02 | 1.147E-01 | 1.200E-02 | 0.061 |
| | | 604.41 | | -5.979E-02 | 5.547E-01 | 8.063E-01 | 1.178E-01 | -0.074 |
| | | 612.46 | | 5.478E-01 | 8.249E-01 | 1.287E+00 | 1.538E-01 | 0.426 |
| | | 65.12 | | 2.997E-02 | 7.354E-02 | 1.090E-01 | 1.079E-02 | 0.275 |
| | | 66.83 | | 2.377E-02 | 4.375E-02 | 6.510E-02 | 6.464E-03 | 0.365 |
| | + | 75.70 | | 1.443E+00 | 2.065E-01 | 2.930E-01 | 2.987E-02 | 4.925 |
| | | 98.88 | * | 2.152E-01 | 1.655E-01 | 2.870E-01 | 3.256E-02 | 0.750 |
| | + | 129.76 | | 6.517E+00 | 3.313E+00 | 4.524E+00 | 5.574E-01 | 1.441 |
| | | 367.94 | * | -3.454E-05 | 3.313E+00 | Half-Life | too short | |
| | | 579.30 | | 2.534E-04 | 3.313E+00 | Half-Life | too short | |
| TL-200 | | 828.27 | | 1.553E-02 | 3.313E+00 | Half-Life | too short | |
| | | 1205.75 | | 3.325E-03 | 3.313E+00 | Half-Life | too short | |
| | | 68.90 | | 2.210E+00 | 3.327E+00 | 5.380E+00 | 5.368E-01 | 0.411 |
| | | 70.82 | | 3.242E-01 | 2.122E+00 | 3.104E+00 | 3.114E-01 | 0.104 |
| | + | 80.30 | | 4.814E+00 | 4.794E+00 | 6.856E+00 | 7.115E-01 | 0.702 |
| | | 135.34 | | -8.265E+00 | 3.224E+01 | 5.342E+01 | 6.344E+00 | -0.155 |
| TL-201 | | 167.43 | * | -5.061E+00 | 8.844E+00 | 1.418E+01 | 1.268E+00 | -0.357 |

---- 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 | | 1.448E-01 | 2.180E-01 | 3.525E-01 | 3.517E-02 | 0.411 |
| | | 70.82 | | 2.118E-02 | 1.387E-01 | 2.028E-01 | 2.034E-02 | 0.104 |
| | + | 80.30 | | 3.146E-01 | 3.133E-01 | 4.481E-01 | 4.650E-02 | 0.702 |
| | | 439.56 | * | 3.564E-02 | 7.932E-02 | 1.341E-01 | 1.292E-02 | 0.266 |
| HG-203 | | 70.83 | | 8.787E-02 | 5.564E-01 | 8.139E-01 | 1.184E-01 | 0.108 |
| | + | 72.87 | | 4.721E-01 | 2.853E-01 | 5.489E-01 | 7.800E-02 | 0.860 |
| | | 82.60 | | 6.692E-01 | 8.272E-01 | 1.087E+00 | 1.628E-01 | 0.616 |
| | | 279.20 | * | -2.533E-02 | 4.669E-02 | 6.268E-02 | 7.114E-03 | -0.404 |
| BI-207 | + | 72.80 | | 1.346E-01 | 8.025E-02 | 1.541E-01 | 1.555E-02 | 0.874 |
| | + | 74.97 | | 7.948E-01 | 1.137E-01 | 1.455E-01 | 1.479E-02 | 5.462 |
| | + | 84.90 | | 3.862E-01 | 1.591E-01 | 2.087E-01 | 2.210E-02 | 1.851 |
| | | 569.67 | | -8.730E-03 | 3.380E-02 | 5.302E-02 | 5.671E-03 | -0.165 |
| | | 1063.62 | * | 4.545E-02 | 6.474E-02 | 1.141E-01 | 1.018E-02 | 0.398 |
| | | 1770.23 | | -6.060E-01 | 6.940E-01 | 7.476E-01 | 6.156E-02 | -0.811 |
| TL-207 | | 81.07 | | 3.750E-02 | 1.483E-01 | 1.896E-01 | 1.974E-02 | 0.198 |
| | + | 83.78 | | 2.546E-01 | 1.049E-01 | 1.411E-01 | 1.486E-02 | 1.805 |
| | | 94.90 | | 1.547E-01 | 1.610E-01 | 2.585E-01 | 2.873E-02 | 0.598 |
| | | 122.32 | | -2.124E-01 | 1.358E+00 | 2.275E+00 | 3.028E-01 | -0.093 |
| | | 144.24 | | 3.869E-01 | 5.886E-01 | 9.969E-01 | 1.188E-01 | 0.388 |
| | | 154.21 | | 3.279E-01 | 3.587E-01 | 6.145E-01 | 6.694E-02 | 0.534 |
| | + | 269.46 | | 8.539E-01 | 3.775E-01 | 3.537E-01 | 3.942E-02 | 2.414 |
| | | 323.87 | * | 1.392E-01 | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| | + | 338.28 | | 8.078E+00 | 2.035E+00 | 2.688E+00 | 3.665E-01 | 3.005 |
| | | 445.03 | | 1.038E+00 | 2.260E+00 | 3.822E+00 | 4.920E-01 | 0.271 |
| PO-209 | | 260.50 | | 5.894E+00 | 9.040E+00 | 1.494E+01 | 1.622E+00 | 0.394 |
| | | 262.80 | | 2.666E+00 | 2.460E+01 | 3.946E+01 | 4.300E+00 | 0.068 |
| | | 896.60 | * | -3.468E+00 | 8.457E+00 | 1.319E+01 | 1.252E+00 | -0.263 |
| PB-211 | | 404.84 | * | -6.484E-01 | 1.038E+00 | 1.510E+00 | 9.477E-01 | -0.429 |
| | | 427.08 | | -1.191E+00 | 2.236E+00 | 3.336E+00 | 2.077E+00 | -0.357 |
| | | 831.96 | | -1.365E+00 | 1.723E+00 | 2.261E+00 | 1.422E+00 | -0.604 |
| BI-212 | + | 727.18 | * | 1.621E+00 | 5.381E-01 | 7.787E-01 | 9.356E-02 | 2.082 |
| | | 785.46 | | 5.157E-01 | 2.471E+00 | 3.604E+00 | 3.802E-01 | 0.143 |
| | | 1620.62 | | 1.639E+00 | 1.471E+00 | 2.803E+00 | 2.330E-01 | 0.585 |
| PO-215 | | 81.07 | | 3.750E-02 | 1.483E-01 | 1.896E-01 | 1.974E-02 | 0.198 |
| | + | 83.78 | | 2.546E-01 | 1.049E-01 | 1.411E-01 | 1.486E-02 | 1.805 |
| | | 94.90 | | 1.547E-01 | 1.610E-01 | 2.585E-01 | 2.873E-02 | 0.598 |
| | | 122.32 | | -2.124E-01 | 1.358E+00 | 2.275E+00 | 3.028E-01 | -0.093 |
| | | 144.24 | | 3.869E-01 | 5.886E-01 | 9.969E-01 | 1.188E-01 | 0.388 |
| | | 154.21 | | 3.279E-01 | 3.587E-01 | 6.145E-01 | 6.694E-02 | 0.534 |
| | + | 269.46 | | 8.539E-01 | 3.775E-01 | 3.537E-01 | 3.942E-02 | 2.414 |
| | | 323.87 | * | 1.392E-01 | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| | + | 338.28 | | 8.078E+00 | 2.035E+00 | 2.688E+00 | 3.665E-01 | 3.005 |
| | | 445.03 | | 1.038E+00 | 2.260E+00 | 3.822E+00 | 4.920E-01 | 0.271 |
| RN-219 | + | 271.23 | | 1.096E+00 | 4.880E-01 | 4.617E-01 | 5.726E-02 | 2.373 |
| | | 401.81 | * | 2.311E-01 | 4.116E-01 | 7.027E-01 | 1.080E-01 | 0.329 |
| RN-220 | | 549.76 | * | 3.359E+00 | 2.776E+01 | 4.510E+01 | 4.769E+00 | 0.074 |
| RA-223 | | 81.07 | | 3.750E-02 | 1.483E-01 | 1.896E-01 | 1.974E-02 | 0.198 |
| | + | 83.78 | | 2.546E-01 | 1.049E-01 | 1.411E-01 | 1.486E-02 | 1.805 |
| | | 94.90 | | 1.547E-01 | 1.610E-01 | 2.585E-01 | 2.873E-02 | 0.598 |

---- 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 | | -2.124E-01 | 1.358E+00 | 2.275E+00 | 3.028E-01 | -0.093 |
| | | 144.24 | | 3.869E-01 | 5.886E-01 | 9.969E-01 | 1.188E-01 | 0.388 |
| | | 154.21 | | 3.279E-01 | 3.587E-01 | 6.145E-01 | 6.694E-02 | 0.534 |
| | + | 269.46 | | 8.539E-01 | 3.775E-01 | 3.537E-01 | 3.942E-02 | 2.414 |
| | | 323.87 | * | 1.392E-01 | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| | + | 338.28 | | 8.078E+00 | 2.035E+00 | 2.688E+00 | 3.665E-01 | 3.005 |
| | | 445.03 | | 1.038E+00 | 2.260E+00 | 3.822E+00 | 4.920E-01 | 0.271 |
| | + | 79.80 | | 1.026E+00 | 1.041E+00 | 1.455E+00 | 3.238E-01 | 0.705 |
| | | 236.00 | | 1.436E-01 | 2.466E-01 | 3.653E-01 | 4.956E-02 | 0.393 |
| | | 256.20 | * | -2.941E-01 | 3.827E-01 | 5.787E-01 | 9.640E-02 | -0.508 |
| | | 286.10 | | 5.182E-02 | 1.490E+00 | 2.361E+00 | 3.530E-01 | 0.022 |
| | + | 299.80 | | 4.213E+00 | 2.161E+00 | 2.777E+00 | 5.213E-01 | 1.517 |
| | | 304.40 | | -7.326E-01 | 1.895E+00 | 2.737E+00 | 5.372E-01 | -0.268 |
| | | 334.20 | | 5.414E-01 | 2.466E+00 | 3.710E+00 | 7.536E-01 | 0.146 |
| TH-227 | + | 79.80 | | 1.026E+00 | 1.042E+00 | 1.455E+00 | 3.277E-01 | 0.705 |
| | + | 94.00 | | 1.214E+01 | 3.479E+00 | 2.787E+00 | 6.370E-01 | 4.356 |
| | | 236.00 | | 1.436E-01 | 2.465E-01 | 3.653E-01 | 4.575E-02 | 0.393 |
| | | 256.20 | * | -2.941E-01 | 3.837E-01 | 5.787E-01 | 1.110E-01 | -0.508 |
| | | 286.10 | | 5.182E-02 | 1.491E+00 | 2.361E+00 | 2.376E+00 | 0.022 |
| | + | 299.80 | | 4.213E+00 | 2.161E+00 | 2.777E+00 | 5.213E-01 | 1.517 |
| TH-229 | | 304.40 | | -7.326E-01 | 1.895E+00 | 2.737E+00 | 5.372E-01 | -0.268 |
| | | 334.20 | | 5.414E-01 | 2.466E+00 | 3.710E+00 | 7.536E-01 | 0.146 |
| | + | 85.43 | | 3.812E-01 | 1.570E-01 | 2.034E-01 | 2.159E-02 | 1.874 |
| | + | 88.47 | | 3.777E-01 | 1.037E-01 | 1.483E-01 | 1.597E-02 | 2.547 |
| | | 100.00 | | 1.568E-02 | 1.339E-01 | 2.250E-01 | 2.568E-02 | 0.070 |
| | | 193.63 | * | 2.818E-01 | 4.631E-01 | 7.765E-01 | 7.407E-02 | 0.363 |
| PA-231 | | 210.97 | | 8.313E-01 | 7.280E-01 | 1.128E+00 | 1.118E-01 | 0.737 |
| | | 283.67 | * | 4.485E-01 | 1.477E+00 | 2.381E+00 | 3.985E-01 | 0.188 |
| | | 301.29 | | 1.618E+00 | 6.591E-01 | 1.080E+00 | 1.512E-01 | 1.499 |
| TH-231 | | 81.07 | | 3.750E-02 | 1.483E-01 | 1.896E-01 | 1.974E-02 | 0.198 |
| | + | 83.78 | | 2.546E-01 | 1.049E-01 | 1.411E-01 | 1.486E-02 | 1.805 |
| | | 94.90 | | 1.547E-01 | 1.610E-01 | 2.585E-01 | 2.873E-02 | 0.598 |
| U-231 | | 122.32 | | -2.124E-01 | 1.358E+00 | 2.275E+00 | 3.028E-01 | -0.093 |
| | | 144.24 | | 3.869E-01 | 5.886E-01 | 9.969E-01 | 1.188E-01 | 0.388 |
| | | 154.21 | | 3.279E-01 | 3.587E-01 | 6.145E-01 | 6.694E-02 | 0.534 |
| | + | 269.46 | | 8.539E-01 | 3.775E-01 | 3.537E-01 | 3.942E-02 | 2.414 |
| | | 323.87 | * | 1.392E-01 | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| | + | 338.28 | | 8.078E+00 | 2.035E+00 | 2.688E+00 | 3.665E-01 | 3.005 |
| | | 445.03 | | 1.038E+00 | 2.260E+00 | 3.822E+00 | 4.920E-01 | 0.271 |
| | + | 84.21 | | 1.489E+01 | 6.133E+00 | 8.324E+00 | 8.787E-01 | 1.788 |
| | + | 92.29 | | 1.628E+01 | 3.341E+00 | 4.493E+00 | 4.929E-01 | 3.623 |
| | | 95.87 | * | -7.575E-01 | 1.043E+00 | 1.549E+00 | 1.730E-01 | -0.489 |
| | | 108.00 | | -4.106E-01 | 2.124E+00 | 3.585E+00 | 4.273E-01 | -0.115 |
| | + | 75.28 | | 2.319E+01 | 4.437E+00 | 4.259E+00 | 6.931E-01 | 5.446 |
| | + | 86.59 | | 9.788E+00 | 3.063E+00 | 2.261E+00 | 6.228E-01 | 4.329 |
| | + | 300.12 | | 1.175E+00 | 5.927E-01 | 7.672E-01 | 1.255E-01 | 1.531 |
| PA-233 | | 311.98 | * | 1.224E-02 | 5.993E-02 | 1.023E-01 | 1.130E-02 | 0.120 |
| | | 340.50 | | 8.070E-01 | 7.322E-01 | 1.124E+00 | 2.756E-01 | 0.718 |
| | | 398.62 | | -3.944E-01 | 2.102E+00 | 3.433E+00 | 9.206E-01 | -0.115 |

----- 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 | | 1.501E+00 | 1.850E+00 | 3.151E+00 | 6.889E-01 | 0.476 |
| | | 63.00 | | 3.046E+00 | 1.151E+00 | 1.226E+00 | 1.989E-01 | 2.485 |
| | | 94.67 | | 1.996E-01 | 1.205E-01 | 1.947E-01 | 2.773E-02 | 1.025 |
| | | 98.44 | | 8.242E-02 | 8.051E-02 | 1.151E-01 | 6.479E-02 | 0.716 |
| | | 99.86 | | 5.327E-02 | 3.391E-01 | 5.708E-01 | 6.510E-02 | 0.093 |
| | | 111.00 | | -1.136E-01 | 1.419E-01 | 2.280E-01 | 3.371E-02 | -0.498 |
| | | 131.20 | | 5.816E-02 | 9.614E-02 | 1.493E-01 | 1.823E-02 | 0.390 |
| | | 152.70 | | 2.659E-01 | 2.919E-01 | 4.964E-01 | 8.915E-02 | 0.536 |
| | | 186.00 | | 3.989E+00 | 2.676E+00 | 2.619E+00 | 8.232E-01 | 1.523 |
| | | 226.40 | | -1.885E-02 | 3.793E-01 | 6.103E-01 | 8.729E-02 | -0.031 |
| | | 227.20 | | -1.317E-01 | 4.048E-01 | 6.411E-01 | 6.567E-02 | -0.205 |
| | | 248.90 | | 1.338E-01 | 7.308E-01 | 1.182E+00 | 2.750E-01 | 0.113 |
| | | 293.70 | | 8.058E+00 | 1.942E+00 | 1.714E+00 | 3.193E-01 | 4.701 |
| | | 369.80 | | 5.068E-01 | 8.250E-01 | 1.414E+00 | 3.144E-01 | 0.358 |
| | | 568.70 | | -1.090E+00 | 1.152E+00 | 1.697E+00 | 1.814E-01 | -0.642 |
| | | 569.50 | | -1.072E-01 | 2.978E-01 | 4.628E-01 | 4.950E-02 | -0.232 |
| | | 574.00 | | 5.876E-01 | 1.657E+00 | 2.727E+00 | 2.924E-01 | 0.215 |
| | | 699.00 | | -7.277E-01 | 8.218E-01 | 1.255E+00 | 2.543E-01 | -0.580 |
| | | 706.10 | | 1.086E-01 | 1.234E+00 | 2.064E+00 | 9.308E-01 | 0.053 |
| | | 733.00 | | -2.801E-03 | 4.438E-01 | 6.678E-01 | 1.546E-01 | -0.004 |
| | | 742.81 | | -5.811E-01 | 1.557E+00 | 2.413E+00 | 1.630E+00 | -0.241 |
| | | 796.30 | | 2.158E+00 | 1.811E+00 | 1.954E+00 | 5.411E-01 | 1.104 |
| | | 805.60 | | 2.401E-01 | 1.074E+00 | 1.795E+00 | 5.601E-01 | 0.134 |
| | | 819.60 | | 6.057E-02 | 1.536E+00 | 2.526E+00 | 9.711E-01 | 0.024 |
| | | 826.30 | | -1.195E-01 | 1.049E+00 | 1.702E+00 | 7.671E-01 | -0.070 |
| | | 831.60 | | -6.632E-01 | 8.020E-01 | 1.183E+00 | 3.587E-01 | -0.561 |
| | | 876.40 | | -5.822E-01 | 1.137E+00 | 1.484E+00 | 1.527E+00 | -0.392 |
| | | 880.51 | | 3.150E-02 | 3.155E-01 | 5.186E-01 | 5.018E-02 | 0.061 |
| | | 883.24 | | 1.439E-01 | 3.304E-01 | 5.365E-01 | 3.614E-01 | 0.268 |
| | | 899.00 | | 3.776E-01 | 9.897E-01 | 1.641E+00 | 7.204E-01 | 0.230 |
| | | 925.00 | | 4.080E-01 | 1.340E+00 | 2.234E+00 | 2.106E-01 | 0.183 |
| | | 926.50 | | -5.053E-02 | 2.113E-01 | 3.340E-01 | 8.539E-02 | -0.151 |
| | | 946.00 | * | -2.360E-01 | 3.375E-01 | 4.949E-01 | 9.464E-02 | -0.477 |
| | | 949.00 | | 1.882E-01 | 4.918E-01 | 8.246E-01 | 7.726E-02 | 0.228 |
| | | 980.50 | | -2.998E-01 | 8.736E-01 | 1.359E+00 | 1.261E-01 | -0.221 |
| | | 1394.10 | | -2.602E-01 | 1.220E+00 | 1.906E+00 | 1.239E+00 | -0.137 |
| | | 766.42 | | 1.795E+01 | 1.786E+01 | 2.447E+01 | 1.251E+01 | 0.734 |
| | | 1001.03 | * | 3.792E-01 | 5.714E+00 | 9.235E+00 | 9.673E-01 | 0.041 |
| U-235 | + | 89.95 | | 3.791E+00 | 1.531E+00 | 1.396E+00 | 4.404E-01 | 2.716 |
| | | 93.35 | | 3.777E+00 | 1.271E+00 | 1.035E+00 | 2.987E-01 | 3.649 |
| | | 105.00 | | 8.792E-01 | 8.420E-01 | 1.410E+00 | 4.355E-01 | 0.624 |
| | | 143.76 | * | 1.383E-01 | 1.821E-01 | 3.075E-01 | 5.807E-02 | 0.450 |
| NP-236 | + | 163.35 | | -1.035E-01 | 3.936E-01 | 6.420E-01 | 1.242E-01 | -0.161 |
| | | 185.71 | | 1.477E-01 | 8.866E-02 | 9.631E-02 | 9.017E-03 | 1.534 |
| | | 205.31 | | 4.734E-02 | 5.294E-01 | 7.724E-01 | 1.517E-01 | 0.061 |
| | | 94.67 | | 1.538E-01 | 9.053E-02 | 1.480E-01 | 1.643E-02 | 1.039 |
| | | 98.44 | | 6.229E-02 | 5.024E-02 | 8.704E-02 | 9.853E-03 | 0.716 |
| NP-236 | | 111.00 | | -8.595E-02 | 1.071E-01 | 1.725E-01 | 2.089E-02 | -0.498 |
| | | 160.31 | * | 2.334E-03 | 6.608E-02 | 1.096E-01 | 1.044E-02 | 0.021 |

----- 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 | | 7.580E-02 | 1.129E-01 | 1.929E-01 | 2.197E-02 | 0.393 |
| | | 117.00 | * | -8.055E-02 | 1.471E-01 | 2.429E-01 | 3.042E-02 | -0.332 |
| | + | 209.75 | | 1.907E+00 | 9.900E-01 | 1.339E+00 | 1.324E-01 | 1.424 |
| | | 228.18 | | -8.835E-02 | 2.119E-01 | 3.337E-01 | 3.424E-02 | -0.265 |
| | + | 277.60 | | 3.074E-01 | 2.188E-01 | 3.042E-01 | 3.387E-02 | 1.011 |
| AM-241 | | 334.30 | | 2.698E-01 | 1.395E+00 | 2.095E+00 | 2.199E-01 | 0.129 |
| | | 59.54 | * | 4.747E-02 | 5.345E-02 | 8.163E-02 | 8.481E-03 | 0.582 |
| CM-243 | | 99.55 | | 7.801E-02 | 1.161E-01 | 1.986E-01 | 2.261E-02 | 0.393 |
| | | 103.76 | * | 2.407E-02 | 6.923E-02 | 1.194E-01 | 1.391E-02 | 0.202 |
| | | 117.00 | | -8.288E-02 | 1.514E-01 | 2.499E-01 | 3.131E-02 | -0.332 |
| | + | 209.75 | | 1.880E+00 | 9.760E-01 | 1.320E+00 | 1.305E-01 | 1.424 |
| | | 228.18 | | -8.929E-02 | 2.142E-01 | 3.372E-01 | 3.461E-02 | -0.265 |
| AM-246 | + | 277.60 | | 3.099E-01 | 2.206E-01 | 3.067E-01 | 3.415E-02 | 1.011 |
| | | 798.80 | | -2.082E-02 | 1.666E-01 | 2.332E-01 | 2.438E-02 | -0.089 |
| | | 1036.00 | | -5.126E-03 | 3.427E-01 | 5.741E-01 | 5.201E-02 | -0.009 |
| | | 1062.04 | | 1.022E-01 | 2.892E-01 | 4.970E-01 | 4.440E-02 | 0.206 |
| | | 1078.86 | * | 7.988E-02 | 1.755E-01 | 3.036E-01 | 2.685E-02 | 0.263 |
| CM-247 | + | 278.00 | | 1.275E+00 | 9.074E-01 | 1.251E+00 | 1.393E-01 | 1.019 |
| | | 287.40 | | -8.021E-02 | 1.172E+00 | 1.844E+00 | 2.048E-01 | -0.043 |
| CF-249 | | 402.60 | * | 1.739E-02 | 3.723E-02 | 6.334E-02 | 5.839E-03 | 0.275 |
| | | 252.85 | | 1.495E-01 | 8.339E-01 | 1.347E+00 | 1.444E-01 | 0.111 |
| | | 333.44 | | 2.795E-02 | 1.995E-01 | 2.791E-01 | 2.934E-02 | 0.100 |
| | | 387.95 | * | 2.171E-02 | 3.954E-02 | 6.776E-02 | 6.235E-03 | 0.320 |
| CF-251 | | 176.60 | * | -4.892E-02 | 1.112E-01 | 1.789E-01 | 1.639E-02 | -0.273 |
| | | 227.00 | | -3.635E-02 | 3.585E-01 | 5.750E-01 | 5.887E-02 | -0.063 |
| | | 285.00 | | -5.008E-01 | 1.731E+00 | 2.686E+00 | 2.988E-01 | -0.186 |

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]G246328006
* Acquisition date   : 18-FEB-2010 11:16:20 Detector SN#      :
* Detector ID        : GAM25 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:02.17 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G246328006 Analyst initials: MXR1
* Batch Number       : 950786 Sample Quantity : 1.2242E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43 MS Isotope      :
* MSD DPM            : 0.000 MSD Isotope      :
* LCS DPM            : 0.000 LCS Isotope      :
* LCSD DPM           : 0.000 LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 3.350E+01 | 3.483E+00 | 5.668E-01 | 0.000E+00 |
| CD-109 | 5.101E+00 | 9.139E-01 | 8.070E-01 | 0.000E+00 |
| SN-126 | 5.000E-01 | 8.958E-02 | 7.894E-02 | 0.000E+00 |
| BA-137M | 2.641E-02 | 5.322E-02 | 7.132E-02 | 0.000E+00 |
| CS-137 | 2.792E-02 | 5.626E-02 | 7.539E-02 | 0.000E+00 |
| TL-208 | 6.100E-01 | 1.128E-01 | 6.782E-02 | 0.000E+00 |
| BI-210 | 1.254E+00 | 7.009E-01 | 6.660E-01 | 0.000E+00 |
| PB-210 | 1.254E+00 | 7.009E-01 | 6.660E-01 | 0.000E+00 |
| PO-210 | 1.254E+00 | 6.992E-01 | 6.660E-01 | 0.000E+00 |
| BI-211 | 4.604E+00 | 6.690E-01 | 3.216E-01 | 0.000E+00 |
| PB-212 | 2.095E+00 | 2.609E-01 | 8.473E-02 | 0.000E+00 |
| PO-212 | 2.095E+00 | 2.609E-01 | 8.473E-02 | 0.000E+00 |
| BI-214 | 1.308E+00 | 2.310E-01 | 1.222E-01 | 0.000E+00 |
| PB-214 | 1.602E+00 | 2.467E-01 | 1.121E-01 | 0.000E+00 |
| PO-214 | 1.602E+00 | 2.467E-01 | 1.121E-01 | 0.000E+00 |
| PO-216 | 2.095E+00 | 2.609E-01 | 8.473E-02 | 0.000E+00 |
| PO-218 | 1.602E+00 | 2.467E-01 | 1.121E-01 | 0.000E+00 |
| RA-224 | 5.314E+00 | 1.527E+00 | 9.654E-01 | 0.000E+00 |
| RA-226 | 1.308E+00 | 2.310E-01 | 1.222E-01 | 0.000E+00 |
| AC-228 | 2.153E+00 | 4.318E-01 | 2.323E-01 | 0.000E+00 |
| RA-228 | 2.153E+00 | 4.318E-01 | 2.323E-01 | 0.000E+00 |
| TH-228 | 2.130E+00 | 2.654E-01 | 8.618E-02 | 0.000E+00 |
| TH-230 | 1.308E+00 | 2.310E-01 | 1.222E-01 | 0.000E+00 |
| TH-232 | 2.153E+00 | 4.318E-01 | 2.323E-01 | 0.000E+00 |
| TH-234 | 2.613E+00 | 9.951E-01 | 8.170E-01 | 0.000E+00 |
| U-234 | 1.308E+00 | 2.310E-01 | 1.222E-01 | 0.000E+00 |
| NP-237 | 1.468E+00 | 3.967E-01 | 2.308E-01 | 0.000E+00 |
| U-238 | 2.613E+00 | 9.951E-01 | 8.170E-01 | 0.000E+00 |
| AM-243 | 4.428E-01 | 6.209E-02 | 4.621E-02 | 0.000E+00 |
| ANH-511 | 1.257E-01 | 7.092E-02 | 4.968E-02 | 0.000E+00 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM | K.L. Act error) Ided | MDA (pCi/GRAM |) | |
|---------|-----------------------|--------------------------|------------------|-----------|------------|
| BE-7 | -3.293E-02 | 3.412E-01 | 5.706E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -1.219E-03 | 5.420E-02 | 9.075E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 6.149E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -9.926E-03 | 3.488E-02 | 5.531E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 2.103E-02 | 2.053E-02 | 4.845E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -2.827E-02 | 4.436E-02 | 6.933E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 1.344E-02 | 8.475E-02 | 1.420E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -1.809E-01 | 3.326E-01 | 5.622E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 1.943E-01 | 2.888E-01 | 5.253E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -3.237E-02 | 4.451E-02 | 7.025E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -2.633E-03 | 4.249E-02 | 7.086E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -3.282E-04 | 1.919E-02 | 3.403E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -2.027E-02 | 4.430E-02 | 7.159E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -1.695E-02 | 1.136E-01 | 1.914E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | 3.611E-02 | 4.677E-02 | 8.416E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 8.575E-02 | 1.122E-01 | 1.794E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 8.348E-01 | 1.523E+00 | 2.711E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 1.932E-01 | 1.852E-01 | 3.276E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | -7.618E-02 | 1.101E-01 | 1.704E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -2.841E-02 | 4.602E-02 | 6.418E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 8.461E+00 | 1.908E+01 | 3.287E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -6.370E-01 | 4.468E-01 | 6.548E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 3.542E-02 | 7.432E-02 | 1.284E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 2.280E-02 | 7.857E-02 | 1.347E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 5.062E+00 | 8.569E+00 | 1.319E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 2.646E-02 | 4.480E-02 | 6.897E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 4.952E-01 | 1.058E+00 | 1.871E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 2.807E-04 | 3.627E-02 | 6.075E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 5.689E-03 | 3.166E-02 | 5.496E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -7.096E+00 | 2.342E+01 | 3.860E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -5.957E-03 | 3.876E-02 | 6.560E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 4.588E-02 | 5.551E-02 | 8.823E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | -1.570E-02 | 1.293E-01 | 1.915E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.193E-02 | 7.970E-02 | 1.337E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 7.309E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 1.318E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -6.625E-01 | 2.012E+01 | 3.367E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 5.146E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 2.311E-02 | 2.943E-02 | 5.121E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 9.323E-04 | 3.027E-02 | 5.112E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -1.521E-02 | 4.284E-02 | 6.978E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -1.242E-01 | 3.030E-01 | 5.066E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -1.242E-01 | 3.028E-01 | 5.066E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 8.777E-03 | 3.451E-02 | 5.963E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | 2.351E-03 | 4.118E-02 | 6.209E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | -3.768E-01 | 1.623E+00 | 2.367E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 2.365E-02 | 4.565E-02 | 8.073E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 2.365E-02 | 4.565E-02 | 8.073E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | -1.070E-01 | 1.871E-01 | 2.753E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -8.409E+00 | 1.964E+01 | 3.154E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | -1.031E-02 | 4.948E-02 | 8.514E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 4.562E+00 | 3.703E+00 | 6.631E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 4.943E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -9.002E-03 | 2.360E-02 | 4.026E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -8.569E-01 | 1.129E+00 | 1.580E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | 3.600E-02 | 8.512E-02 | 1.535E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | -9.319E-03 | 9.201E-02 | 1.556E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 2.388E+00 | 7.116E+00 | 1.268E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -9.351E-03 | 2.569E-01 | 3.829E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | 2.979E-02 | 2.101E-01 | 3.157E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -4.766E-01 | 2.044E+00 | 3.442E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 3.781E-03 | 4.323E-02 | 7.380E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 6.427E-02 | 1.259E-01 | 2.243E-01 | 0.000E+00 | FAIL ABUN |
| TE-132 | -4.034E-01 | 9.430E-01 | 1.547E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -2.671E-02 | 4.797E-02 | 6.965E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 2.675E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 0.000E+00 | 8.712E-02 | 1.003E-01 | 0.000E+00 | FAIL ABUN |
| CS-135 | 1.675E-01 | 1.527E-01 | 2.661E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 7.034E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -6.761E-02 | 1.334E-01 | 2.185E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | 1.696E-02 | 2.405E-02 | 4.291E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 9.566E-03 | 2.852E-01 | 4.757E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -6.217E-02 | 9.912E-02 | 1.523E-01 | 0.000E+00 | FAIL ABUN |
| CE-141 | -6.819E-03 | 5.431E-02 | 9.453E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 5.271E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | -1.094E-01 | 1.704E-01 | 2.907E-01 | 0.000E+00 | FAIL ABUN |
| PM-144 | 2.239E-02 | 3.771E-02 | 6.716E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | 1.518E+00 | 2.558E+00 | 4.556E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 3.013E-02 | 4.364E-02 | 7.718E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 3.075E-01 | 6.358E-01 | 1.097E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | -1.573E+01 | 1.545E+02 | 2.526E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | -1.673E-02 | 9.638E-02 | 1.604E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | -3.088E-02 | 6.123E-02 | 9.585E-02 | 0.000E+00 | FAIL ABUN |
| EU-154 | -5.551E-02 | 1.553E-01 | 2.522E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.001E-01 | 8.060E-02 | 1.493E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 2.988E-02 | 1.573E-01 | 2.673E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -1.413E-02 | 6.954E-02 | 1.170E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | 3.971E+00 | 1.287E+01 | 2.008E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -3.439E-03 | 2.162E-02 | 3.766E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 1.656E+00 | 2.310E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | 1.546E-01 | 1.938E-01 | 3.454E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | 2.341E-02 | 4.478E-02 | 7.810E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 6.314E-02 | 1.565E-01 | 2.457E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 1.408E-01 | 2.493E-01 | 4.370E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 2.824E-02 | 8.918E-02 | 1.568E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 4.015E-02 | 2.194E-01 | 3.693E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 1.126E-02 | 4.461E-02 | 7.841E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.479E-01 | 1.520E-01 | 2.736E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -2.058E+00 | 7.033E+00 | 1.072E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 1.947E-02 | 3.193E-02 | 5.770E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.152E-01 | 1.622E-01 | 2.965E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.409E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -5.061E+00 | 8.667E+00 | 1.455E+01 | 0.000E+00 | FAIL ABUN |
| TL-202 | 3.564E-02 | 7.773E-02 | 1.360E-01 | 0.000E+00 | FAIL ABUN |
| HG-203 | -2.533E-02 | 4.576E-02 | 6.392E-02 | 0.000E+00 | FAIL ABUN |
| BI-207 | 4.545E-02 | 6.344E-02 | 1.144E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | 1.392E-01 | 6.197E-01 | 9.733E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -3.468E+00 | 8.288E+00 | 1.325E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -6.484E-01 | 1.017E+00 | 1.533E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 5.273E-01 | 7.845E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 1.392E-01 | 6.197E-01 | 9.733E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | 2.311E-01 | 4.034E-01 | 7.134E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 3.359E+00 | 2.721E+01 | 4.560E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 1.392E-01 | 6.197E-01 | 9.733E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -2.941E-01 | 3.750E-01 | 5.908E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -2.941E-01 | 3.760E-01 | 5.908E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 2.818E-01 | 4.538E-01 | 7.956E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 4.485E-01 | 1.448E+00 | 2.427E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | 1.392E-01 | 6.197E-01 | 9.733E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -7.575E-01 | 1.022E+00 | 1.601E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 1.224E-02 | 5.873E-02 | 1.042E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | -2.360E-01 | 3.307E-01 | 4.969E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 3.792E-01 | 5.599E+00 | 9.266E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.383E-01 | 1.784E-01 | 3.163E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 2.334E-03 | 6.476E-02 | 1.126E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -8.055E-02 | 1.442E-01 | 2.504E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 4.747E-02 | 5.238E-02 | 8.487E-02 | 0.000E+00 | NOT IDENT. |
| CM-243 | 2.407E-02 | 6.784E-02 | 1.233E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 7.988E-02 | 1.720E-01 | 3.043E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 1.739E-02 | 3.649E-02 | 6.430E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 2.171E-02 | 3.875E-02 | 6.882E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -4.892E-02 | 1.090E-01 | 1.836E-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]G246328006.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:16:20
Sample ID          : G246328006      Sample quantity   : 1.22420E+02 GRAM
Detector name      : GAM25           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:02.17  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000         Sensitivity       : 5.00000
Batch ID           : 950786           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 | 1292 | 10.67* | 1.109E+00 | 3.350E+01 | 3.350E+01 | 10.61 |
| CD-109 | 88.03 | 568 | 3.72* | 9.406E+00 | 4.973E+00 | 5.101E+00 | 18.28 |
| SN-126 | 64.28 | 317 | 9.60 | 9.778E+00 | 1.034E+00 | 1.034E+00 | 37.64 |
| | 86.94 | 568 | 8.90 | 9.406E+00 | 2.079E+00 | 2.079E+00 | 44.39 |
| | 87.57 | 568 | 37.00* | 9.406E+00 | 5.000E-01 | 5.000E-01 | 18.28 |
| BA-137M | 661.65 | 17 | 89.98* | 2.231E+00 | 2.639E-02 | 2.641E-02 | 205.62 |
| CS-137 | 661.65 | 17 | 85.12* | 2.231E+00 | 2.789E-02 | 2.792E-02 | 205.62 |
| TL-208 | 277.35 | 67 | 6.80 | 4.737E+00 | 6.374E-01 | 6.374E-01 | 71.73 |
| | 510.84 | 115 | 21.60 | 2.810E+00 | 5.817E-01 | 5.817E-01 | 58.19 |
| | 583.14 | 418 | 84.20* | 2.497E+00 | 6.100E-01 | 6.100E-01 | 18.86 |
| | 860.37 | 66 | 12.46 | 1.765E+00 | 9.169E-01 | 9.169E-01 | 50.28 |
| BI-210 | 46.50 | 152 | 4.05* | 9.197E+00 | 1.252E+00 | 1.254E+00 | 57.05 |
| PB-210 | 46.50 | 152 | 4.05* | 9.197E+00 | 1.252E+00 | 1.254E+00 | 57.05 |
| PO-210 | 46.50 | 152 | 4.05* | 9.197E+00 | 1.252E+00 | 1.254E+00 | 56.91 |
| BI-211 | 72.87 | 93 | 1.27 | 9.724E+00 | 2.309E+00 | 2.309E+00 | 59.60 |
| | 351.07 | 755 | 12.94* | 3.887E+00 | 4.604E+00 | 4.604E+00 | 14.83 |
| PB-212 | 74.81 | 924 | 10.70 | 9.694E+00 | 2.731E+00 | 2.731E+00 | 17.09 |
| | 77.11 | 1466 | 18.00 | 9.653E+00 | 2.586E+00 | 2.586E+00 | 12.21 |
| | 87.30 | 568 | 8.00 | 9.406E+00 | 2.312E+00 | 2.312E+00 | 20.84 |
| | 238.63 | 1627 | 44.60* | 5.340E+00 | 2.095E+00 | 2.095E+00 | 12.71 |
| | 300.09 | 112 | 3.41 | 4.448E+00 | 2.273E+00 | 2.273E+00 | 49.33 |
| PO-212 | 74.81 | 924 | 10.70 | 9.694E+00 | 2.731E+00 | 2.731E+00 | 17.09 |
| | 77.11 | 1466 | 18.00 | 9.653E+00 | 2.586E+00 | 2.586E+00 | 12.21 |
| | 87.30 | 568 | 8.00 | 9.406E+00 | 2.312E+00 | 2.312E+00 | 20.84 |
| | 115.19 | ----- | 0.60 | 8.498E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1627 | 44.60* | 5.340E+00 | 2.095E+00 | 2.095E+00 | 12.71 |
| | 300.09 | 112 | 3.41 | 4.448E+00 | 2.273E+00 | 2.273E+00 | 49.33 |
| BI-214 | 609.31 | 474 | 46.30* | 2.401E+00 | 1.308E+00 | 1.308E+00 | 18.03 |
| | 1120.29 | 83 | 15.10 | 1.398E+00 | 1.200E+00 | 1.200E+00 | 50.24 |
| | 1764.49 | 74 | 15.80 | 9.415E-01 | 1.522E+00 | 1.522E+00 | 33.75 |
| PB-214 | 74.81 | 924 | 6.21 | 9.694E+00 | 4.706E+00 | 4.706E+00 | 16.11 |
| | 77.11 | 1466 | 10.50 | 9.653E+00 | 4.434E+00 | 4.434E+00 | 14.39 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 87.30 | 568 | 4.67 | 9.406E+00 | 3.961E+00 | 3.961E+00 | 19.84 |
| | 241.98 | 362 | 7.49 | 5.290E+00 | 2.803E+00 | 2.803E+00 | 29.84 |
| | 295.21 | 474 | 19.20 | 4.505E+00 | 1.679E+00 | 1.679E+00 | 19.87 |
| | 351.92 | 755 | 37.20* | 3.887E+00 | 1.602E+00 | 1.602E+00 | 15.72 |
| | 74.81 | 924 | 6.21 | 9.694E+00 | 4.706E+00 | 4.706E+00 | 16.11 |
| | 77.11 | 1466 | 10.50 | 9.653E+00 | 4.434E+00 | 4.434E+00 | 14.39 |
| | 87.30 | 568 | 4.67 | 9.406E+00 | 3.961E+00 | 3.961E+00 | 19.84 |
| | 241.98 | 362 | 7.49 | 5.290E+00 | 2.803E+00 | 2.803E+00 | 29.84 |
| | 295.21 | 474 | 19.20 | 4.505E+00 | 1.679E+00 | 1.679E+00 | 19.87 |
| | 351.92 | 755 | 37.20* | 3.887E+00 | 1.602E+00 | 1.602E+00 | 15.72 |
| PO-216 | 74.81 | 924 | 10.70 | 9.694E+00 | 2.731E+00 | 2.731E+00 | 17.09 |
| | 77.11 | 1466 | 18.00 | 9.653E+00 | 2.586E+00 | 2.586E+00 | 12.21 |
| | 87.30 | 568 | 8.00 | 9.406E+00 | 2.312E+00 | 2.312E+00 | 20.84 |
| | 238.63 | 1627 | 44.60* | 5.340E+00 | 2.095E+00 | 2.095E+00 | 12.71 |
| | 300.09 | 112 | 3.41 | 4.448E+00 | 2.273E+00 | 2.273E+00 | 49.33 |
| PO-218 | 74.81 | 924 | 6.21 | 9.694E+00 | 4.706E+00 | 4.706E+00 | 16.11 |
| | 77.11 | 1466 | 10.50 | 9.653E+00 | 4.434E+00 | 4.434E+00 | 14.39 |
| | 87.30 | 568 | 4.67 | 9.406E+00 | 3.961E+00 | 3.961E+00 | 19.84 |
| | 241.98 | 362 | 7.49 | 5.290E+00 | 2.803E+00 | 2.803E+00 | 29.84 |
| | 295.21 | 474 | 19.20 | 4.505E+00 | 1.679E+00 | 1.679E+00 | 19.87 |
| RA-224 | 351.92 | 755 | 37.20* | 3.887E+00 | 1.602E+00 | 1.602E+00 | 15.72 |
| RA-226 | 240.98 | 362 | 3.95* | 5.290E+00 | 5.314E+00 | 5.314E+00 | 29.31 |
| AC-228 | 609.31 | 474 | 46.30* | 2.401E+00 | 1.308E+00 | 1.308E+00 | 18.03 |
| | 1120.29 | 83 | 15.10 | 1.398E+00 | 1.200E+00 | 1.200E+00 | 50.24 |
| | 1764.49 | 74 | 15.80 | 9.415E-01 | 1.522E+00 | 1.522E+00 | 33.75 |
| | 338.32 | 289 | 11.40 | 4.020E+00 | 1.935E+00 | 1.935E+00 | 46.75 |
| | 911.07 | 326 | 27.70* | 1.678E+00 | 2.153E+00 | 2.153E+00 | 20.47 |
| RA-228 | 969.11 | 153 | 16.60 | 1.589E+00 | 1.777E+00 | 1.777E+00 | 32.14 |
| | 338.32 | 289 | 11.40 | 4.020E+00 | 1.935E+00 | 1.935E+00 | 46.75 |
| | 911.07 | 326 | 27.70* | 1.678E+00 | 2.153E+00 | 2.153E+00 | 20.47 |
| TH-228 | 969.11 | 153 | 16.60 | 1.589E+00 | 1.777E+00 | 1.777E+00 | 32.14 |
| | 74.81 | 924 | 10.70 | 9.694E+00 | 2.731E+00 | 2.778E+00 | 14.35 |
| | 77.11 | 1466 | 18.00 | 9.653E+00 | 2.586E+00 | 2.631E+00 | 12.21 |
| | 87.30 | 568 | 8.00 | 9.406E+00 | 2.312E+00 | 2.352E+00 | 18.28 |
| | 238.63 | 1627 | 44.60* | 5.340E+00 | 2.095E+00 | 2.130E+00 | 12.71 |
| TH-230 | 300.09 | 112 | 3.41 | 4.448E+00 | 2.273E+00 | 2.312E+00 | 76.41 |
| | 609.31 | 474 | 46.30* | 2.401E+00 | 1.308E+00 | 1.308E+00 | 18.03 |
| | 1120.29 | 83 | 15.10 | 1.398E+00 | 1.200E+00 | 1.200E+00 | 50.24 |
| TH-232 | 1764.49 | 74 | 15.80 | 9.415E-01 | 1.522E+00 | 1.522E+00 | 33.75 |
| | 338.32 | 289 | 11.40 | 4.020E+00 | 1.935E+00 | 1.935E+00 | 23.61 |
| | 911.07 | 326 | 27.70* | 1.678E+00 | 2.153E+00 | 2.153E+00 | 20.47 |
| TH-234 | 969.11 | 153 | 16.60 | 1.589E+00 | 1.777E+00 | 1.777E+00 | 32.14 |
| | 63.29 | 317 | 3.80* | 9.778E+00 | 2.613E+00 | 2.613E+00 | 38.86 |
| U-234 | 92.38 | 512 | 5.41 | 9.243E+00 | 3.142E+00 | 3.142E+00 | 25.96 |
| | 609.31 | 474 | 46.30* | 2.401E+00 | 1.308E+00 | 1.308E+00 | 18.03 |
| | 1120.29 | 83 | 15.10 | 1.398E+00 | 1.200E+00 | 1.200E+00 | 50.24 |
| NP-237 | 1764.49 | 74 | 15.80 | 9.415E-01 | 1.522E+00 | 1.522E+00 | 33.75 |
| | 86.50 | 568 | 12.60* | 9.406E+00 | 1.468E+00 | 1.468E+00 | 27.57 |
| | 95.87 | ----- | 2.60 | 9.143E+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 | 317 | 3.80* | 9.778E+00 | 2.613E+00 | 2.613E+00 | 38.86 |
| | 92.38 | 512 | 5.41 | 9.243E+00 | 3.142E+00 | 3.142E+00 | 20.53 |
| AM-243 | 74.67 | 924 | 66.00* | 9.694E+00 | 4.428E-01 | 4.428E-01 | 14.31 |
| | 86.72 | 568 | 0.34 | 9.406E+00 | 5.506E+01 | 5.506E+01 | 18.28 |
| | 117.66 | ----- | 0.55 | 8.415E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 7.617E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 115 | 100.00* | 2.810E+00 | 1.257E-01 | 1.257E-01 | 57.59 |

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 | 3.350E+01 | 3.350E+01 | 0.355E+01 | 10.61 | |
| CD-109 | 464.00D | 1.03 | 4.973E+00 | 5.101E+00 | 0.933E+00 | 18.28 | |
| SN-126 | 1.00E+05Y | 1.00 | 5.000E-01 | 5.000E-01 | 0.914E-01 | 18.28 | |
| BA-137M | 30.17Y | 1.00 | 2.639E-02 | 2.641E-02 | 5.431E-02 | 205.62 | |
| CS-137 | 30.17Y | 1.00 | 2.789E-02 | 2.792E-02 | 5.741E-02 | 205.62 | |
| TL-208 | 1.41E+10Y | 1.00 | 6.100E-01 | 6.100E-01 | 1.151E-01 | 18.86 | |
| BI-210 | 22.26Y | 1.00 | 1.252E+00 | 1.254E+00 | 0.715E+00 | 57.05 | |
| PB-210 | 22.26Y | 1.00 | 1.252E+00 | 1.254E+00 | 0.715E+00 | 57.05 | |
| PO-210 | 22.26Y | 1.00 | 1.252E+00 | 1.254E+00 | 0.713E+00 | 56.91 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.604E+00 | 4.604E+00 | 0.683E+00 | 14.83 | |
| PB-212 | 1.41E+10Y | 1.00 | 2.095E+00 | 2.095E+00 | 0.266E+00 | 12.71 | |
| PO-212 | 1.41E+10Y | 1.00 | 2.095E+00 | 2.095E+00 | 0.266E+00 | 12.71 | |
| BI-214 | 1600.00Y | 1.00 | 1.308E+00 | 1.308E+00 | 0.236E+00 | 18.03 | |
| PB-214 | 1600.00Y | 1.00 | 1.602E+00 | 1.602E+00 | 0.252E+00 | 15.72 | |
| PO-214 | 1600.00Y | 1.00 | 1.602E+00 | 1.602E+00 | 0.252E+00 | 15.72 | |
| PO-216 | 1.41E+10Y | 1.00 | 2.095E+00 | 2.095E+00 | 0.266E+00 | 12.71 | |
| PO-218 | 1600.00Y | 1.00 | 1.602E+00 | 1.602E+00 | 0.252E+00 | 15.72 | |
| RA-224 | 1.41E+10Y | 1.00 | 5.314E+00 | 5.314E+00 | 1.558E+00 | 29.31 | |
| RA-226 | 1600.00Y | 1.00 | 1.308E+00 | 1.308E+00 | 0.236E+00 | 18.03 | |
| AC-228 | 1.41E+10Y | 1.00 | 2.153E+00 | 2.153E+00 | 0.441E+00 | 20.47 | |
| RA-228 | 1.41E+10Y | 1.00 | 2.153E+00 | 2.153E+00 | 0.441E+00 | 20.47 | |
| TH-228 | 1.91Y | 1.02 | 2.095E+00 | 2.130E+00 | 0.271E+00 | 12.71 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.308E+00 | 1.308E+00 | 0.236E+00 | 18.03 | |
| TH-232 | 1.41E+10Y | 1.00 | 2.153E+00 | 2.153E+00 | 0.441E+00 | 20.47 | |
| TH-234 | 4.47E+09Y | 1.00 | 2.613E+00 | 2.613E+00 | 1.015E+00 | 38.86 | |
| U-234 | 4.47E+09Y | 1.00 | 1.308E+00 | 1.308E+00 | 0.236E+00 | 18.03 | |
| NP-237 | 2.14E+06Y | 1.00 | 1.468E+00 | 1.468E+00 | 0.405E+00 | 27.57 | |
| U-238 | 4.47E+09Y | 1.00 | 2.613E+00 | 2.613E+00 | 1.015E+00 | 38.86 | |
| AM-243 | 7380.00Y | 1.00 | 4.428E-01 | 4.428E-01 | 0.634E-01 | 14.31 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.257E-01 | 1.257E-01 | 0.724E-01 | 57.59 | |

Total Activity : 8.545E+01 8.562E+01

Grand Total Activity : 8.545E+01 8.562E+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 |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 2 | 79.22 | 64 | 346 | 0.86 | 157.99 | 143 | 18 | 8.93E-03 | 99.1 | 9.61E+00 | T |
| 5 | 84.19 | 195 | 497 | 1.14 | 167.93 | 164 | 27 | 2.70E-02 | 39.8 | 9.49E+00 | T |
| 5 | 89.75 | 312 | 432 | 1.11 | 179.06 | 164 | 27 | 4.33E-02 | 25.2 | 9.33E+00 | T |
| 0 | 128.91 | 130 | 324 | 0.99 | 257.37 | 254 | 7 | 1.80E-02 | 49.3 | 8.04E+00 | T |
| 0 | 186.19 | 167 | 540 | 1.29 | 371.92 | 365 | 12 | 2.32E-02 | 59.3 | 6.41E+00 | T |
| 0 | 209.20 | 119 | 266 | 0.67 | 417.93 | 414 | 8 | 1.65E-02 | 51.0 | 5.90E+00 | T |
| 0 | 269.93 | 183 | 288 | 2.17 | 539.38 | 533 | 15 | 2.55E-02 | 42.8 | 4.84E+00 | T |
| 0 | 327.68 | 97 | 161 | 1.29 | 654.87 | 650 | 10 | 1.35E-02 | 52.8 | 4.13E+00 | T |
| 0 | 463.05 | 87 | 100 | 1.26 | 925.60 | 921 | 9 | 1.21E-02 | 46.9 | 3.06E+00 | T |
| 0 | 726.85 | 128 | 66 | 1.33 | 1453.19 | 1447 | 12 | 1.78E-02 | 30.9 | 2.05E+00 | T |
| 0 | 768.98 | 33 | 102 | 1.92 | 1537.45 | 1529 | 13 | 4.63E-03 | **** | 1.95E+00 | |
| 0 | 787.11 | 12 | 85 | 1.37 | 1573.70 | 1567 | 11 | 1.69E-03 | **** | 1.91E+00 | |
| 0 | 795.86 | 52 | 76 | 0.96 | 1591.21 | 1584 | 15 | 7.21E-03 | 79.2 | 1.89E+00 | T |
| 0 | 964.92 | 45 | 59 | 1.90 | 1929.33 | 1925 | 9 | 6.18E-03 | 68.8 | 1.59E+00 | T |
| 0 | 1630.22 | 28 | 0 | 1.73 | 3260.00 | 3255 | 11 | 3.89E-03 | 37.8 | 1.01E+00 | |

Flags: "T" = Tentatively associated

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*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328006.CNF;1
* Acquisition date   : 18-FEB-2010 11:16:20   Detector SN#      :
* Detector ID        : GAM25                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance  : 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit     : 75.00000
* Elapsed real time  : 0 02:00:02.17          Half life ratio    : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G246328006             Analyst initials  : MXR1
* Batch Number       : 950786                 Sample Quantity   : 1.22420E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43.34MS Isotope      :
* MSD ID             :                          MSD Isotope    :
* LCS ID             : 1032-A                   LCS Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 3.350E+01 | 3.554E+00 | 5.678E-01 | 4.835E-02 | 59.005 |
| CD-109 | 5.101E+00 | 9.325E-01 | 7.799E-01 | 8.381E-02 | 6.540 |
| SN-126 | 5.000E-01 | 9.141E-02 | 7.629E-02 | 8.180E-03 | 6.554 |
| BA-137M | 2.641E-02 | 5.431E-02 | 7.070E-02 | 7.832E-03 | 0.374 |
| CS-137 | 2.792E-02 | 5.741E-02 | 7.474E-02 | 8.289E-03 | 0.374 |
| TL-208 | 6.100E-01 | 1.151E-01 | 6.713E-02 | 7.567E-03 | 9.087 |
| BI-210 | 1.254E+00 | 7.152E-01 | 6.387E-01 | 6.585E-02 | 1.963 |
| PB-210 | 1.254E+00 | 7.152E-01 | 6.387E-01 | 6.585E-02 | 1.963 |
| PO-210 | 1.254E+00 | 7.134E-01 | 6.387E-01 | 6.083E-02 | 1.963 |
| BI-211 | 4.604E+00 | 6.827E-01 | 3.162E-01 | 3.332E-02 | 14.561 |
| PB-212 | 2.095E+00 | 2.662E-01 | 8.291E-02 | 9.439E-03 | 25.262 |
| PO-212 | 2.095E+00 | 2.662E-01 | 8.291E-02 | 9.439E-03 | 25.262 |
| BI-214 | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| PB-214 | 1.602E+00 | 2.518E-01 | 1.103E-01 | 1.295E-02 | 14.525 |
| PO-214 | 1.602E+00 | 2.518E-01 | 1.103E-01 | 1.295E-02 | 14.525 |
| PO-216 | 2.095E+00 | 2.662E-01 | 8.291E-02 | 9.439E-03 | 25.262 |
| PO-218 | 1.602E+00 | 2.518E-01 | 1.103E-01 | 1.295E-02 | 14.525 |
| RA-224 | 5.314E+00 | 1.558E+00 | 9.448E-01 | 9.928E-02 | 5.625 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-226 | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| AC-228 | 2.153E+00 | 4.406E-01 | 2.312E-01 | 2.750E-02 | 9.311 |
| RA-228 | 2.153E+00 | 4.406E-01 | 2.312E-01 | 2.750E-02 | 9.311 |
| TH-228 | 2.130E+00 | 2.708E-01 | 8.433E-02 | 9.600E-03 | 25.262 |
| TH-230 | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| TH-232 | 2.153E+00 | 4.406E-01 | 2.312E-01 | 2.750E-02 | 9.311 |
| TH-234 | 2.613E+00 | 1.015E+00 | 7.865E-01 | 1.464E-01 | 3.323 |
| U-234 | 1.308E+00 | 2.357E-01 | 1.210E-01 | 1.460E-02 | 10.807 |
| NP-237 | 1.468E+00 | 4.048E-01 | 2.230E-01 | 5.179E-02 | 6.585 |
| U-238 | 2.613E+00 | 1.015E+00 | 7.865E-01 | 1.464E-01 | 3.323 |
| AM-243 | 4.428E-01 | 6.336E-02 | 4.457E-02 | 4.526E-03 | 9.934 |
| ANH-511 | 1.257E-01 | 7.237E-02 | 4.909E-02 | 5.053E-03 | 2.560 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | -3.293E-02 | | 3.482E-01 | 5.633E-01 | 5.964E-02 | -0.058 |
| NA-22 | -1.219E-03 | | 5.530E-02 | 9.074E-02 | 7.441E-03 | -0.013 |
| NA-24 | 1.127E+00 | | 3.137E+00 | Half-Life | too short | |
| AL-26 | -9.926E-03 | | 3.559E-02 | 5.556E-02 | 4.553E-03 | -0.179 |
| TI-44 | 2.103E-02 | + | 2.095E-02 | 4.676E-02 | 4.815E-03 | 0.450 |
| SC-46 | -2.827E-02 | | 4.526E-02 | 6.900E-02 | 6.607E-03 | -0.410 |
| V-48 | 1.344E-02 | | 8.648E-02 | 1.415E-01 | 1.311E-02 | 0.095 |
| CR-51 | -1.809E-01 | | 3.394E-01 | 5.522E-01 | 6.132E-02 | -0.328 |
| MN-52 | 1.943E-01 | | 2.947E-01 | 5.260E-01 | 4.335E-02 | 0.369 |
| MN-54 | -3.237E-02 | | 4.542E-02 | 6.985E-02 | 7.088E-03 | -0.463 |
| CO-56 | -2.633E-03 | | 4.336E-02 | 7.047E-02 | 7.071E-03 | -0.037 |
| CO-57 | -3.282E-04 | | 1.958E-02 | 3.302E-02 | 4.258E-03 | -0.010 |
| CO-58 | -2.027E-02 | | 4.520E-02 | 7.116E-02 | 7.383E-03 | -0.285 |
| FE-59 | -1.695E-02 | | 1.159E-01 | 1.910E-01 | 1.799E-02 | -0.089 |
| CO-60 | 3.611E-02 | | 4.772E-02 | 8.420E-02 | 6.839E-03 | 0.429 |
| ZN-65 | 8.575E-02 | | 1.145E-01 | 1.791E-01 | 1.547E-02 | 0.479 |
| GE-68 | 8.348E-01 | | 1.554E+00 | 2.705E+00 | 2.394E-01 | 0.309 |
| AS-73 | 1.932E-01 | | 1.890E-01 | 3.147E-01 | 3.020E-02 | 0.614 |
| AS-74 | -7.618E-02 | | 1.124E-01 | 1.687E-01 | 1.829E-02 | -0.451 |
| SE-75 | -2.841E-02 | | 4.696E-02 | 6.288E-02 | 6.891E-03 | -0.452 |
| BR-77 | 8.461E+00 | | 1.947E+01 | 3.249E+01 | 3.369E+00 | 0.260 |
| SR-82 | -6.370E-01 | | 4.559E-01 | 6.505E-01 | 6.904E-02 | -0.979 |
| RB-83 | 3.542E-02 | | 7.584E-02 | 1.268E-01 | 1.315E-02 | 0.279 |
| RB-84 | 2.280E-02 | | 8.017E-02 | 1.340E-01 | 1.296E-02 | 0.170 |
| KR-85 | 5.062E+00 | | 8.744E+00 | 1.304E+01 | 1.345E+00 | 0.388 |
| SR-85 | 2.646E-02 | | 4.571E-02 | 6.815E-02 | 7.031E-03 | 0.388 |
| RB-86 | 4.952E-01 | | 1.080E+00 | 1.867E+00 | 1.653E-01 | 0.265 |
| Y-88 | 2.807E-04 | | 3.701E-02 | 6.103E-02 | 4.988E-03 | 0.005 |
| ZR-88 | 5.689E-03 | | 3.231E-02 | 5.412E-02 | 4.926E-03 | 0.105 |
| Y-91 | -7.096E+00 | | 2.390E+01 | 3.857E+01 | 3.174E+00 | -0.184 |
| NB-94 | -5.957E-03 | | 3.955E-02 | 6.509E-02 | 7.147E-03 | -0.092 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| NB-95 | 4.588E-02 | | 5.664E-02 | 8.763E-02 | 9.360E-03 | 0.524 |
| NB-95M | -1.570E-02 | | 1.319E-01 | 1.873E-01 | 2.147E-02 | -0.084 |
| ZR-95 | -1.193E-02 | | 8.133E-02 | 1.327E-01 | 1.520E-02 | -0.090 |
| NB-97 | -1.456E-01 | | 3.729E-01 | Half-Life | too short | |
| ZR-97 | 1.771E+01 | | 6.723E+00 | Half-Life | too short | |
| MO-99 | -6.625E-01 | | 2.053E+01 | 3.342E+01 | 5.528E+00 | -0.020 |
| TC-99M | -2.158E+12 | | 2.625E+12 | Half-Life | too short | |
| RH-101 | 2.311E-02 | | 3.003E-02 | 4.999E-02 | 4.817E-03 | 0.462 |
| RH-102 | 9.323E-04 | | 3.089E-02 | 5.046E-02 | 5.038E-03 | 0.018 |
| RU-103 | -1.521E-02 | | 4.372E-02 | 6.893E-02 | 1.045E-02 | -0.221 |
| RH-106 | -1.242E-01 | | 3.092E-01 | 5.019E-01 | 7.512E-02 | -0.247 |
| RU-106 | -1.242E-01 | | 3.090E-01 | 5.019E-01 | 5.495E-02 | -0.247 |
| AG-108M | 8.777E-03 | | 3.522E-02 | 5.880E-02 | 5.810E-03 | 0.149 |
| AG-110M | 2.351E-03 | | 4.202E-02 | 6.155E-02 | 6.936E-03 | 0.038 |
| IN-111 | -3.768E-01 | | 1.656E+00 | 2.317E+00 | 2.454E-01 | -0.163 |
| IN-113M | 2.365E-02 | | 4.658E-02 | 7.950E-02 | 7.425E-03 | 0.297 |
| SN-113 | 2.365E-02 | | 4.658E-02 | 7.950E-02 | 7.425E-03 | 0.297 |
| IN-114M | -1.070E-01 | | 1.909E-01 | 2.686E-01 | 2.543E-02 | -0.398 |
| CD-115 | -8.409E+00 | | 2.004E+01 | 3.118E+01 | 3.250E+00 | -0.270 |
| SN-117M | -1.031E-02 | | 5.049E-02 | 8.288E-02 | 8.047E-03 | -0.124 |
| SB-122 | 4.562E+00 | | 3.779E+00 | 6.560E+00 | 6.994E-01 | 0.696 |
| I-123 | -1.885E+01 | | 2.522E+01 | Half-Life | too short | |
| TE-123M | -9.002E-03 | | 2.408E-02 | 3.919E-02 | 3.805E-03 | -0.230 |
| I-124 | -8.569E-01 | | 1.152E+00 | 1.564E+00 | 1.700E-01 | -0.548 |
| SB-124 | 3.600E-02 | | 8.685E-02 | 1.541E-01 | 1.332E-02 | 0.234 |
| SB-125 | -9.319E-03 | | 9.389E-02 | 1.534E-01 | 1.482E-02 | -0.061 |
| TE-125M | 2.388E+00 | | 7.261E+00 | 1.229E+01 | 1.632E+00 | 0.194 |
| I-126 | -9.351E-03 | | 2.621E-01 | 3.796E-01 | 4.202E-02 | -0.025 |
| SB-126 | 2.979E-02 | | 2.143E-01 | 3.133E-01 | 3.420E-02 | 0.095 |
| SB-127 | -4.766E-01 | | 2.086E+00 | 3.414E+00 | 4.706E-01 | -0.140 |
| XE-127 | 3.781E-03 | | 4.411E-02 | 7.207E-02 | 7.020E-03 | 0.052 |
| I-131 | 6.427E-02 | | 1.285E-01 | 2.207E-01 | 2.267E-02 | 0.291 |
| TE-132 | -4.034E-01 | | 9.623E-01 | 1.512E+00 | 2.572E-01 | -0.267 |
| BA-133 | -2.671E-02 | | 4.895E-02 | 6.850E-02 | 9.712E-03 | -0.390 |
| I-133 | 1.589E-02 | | 1.365E-02 | Half-Life | too short | |
| CS-134 | 1.112E-01 | + | 8.890E-02 | 9.972E-02 | 1.050E-02 | 1.115 |
| CS-135 | 1.675E-01 | | 1.558E-01 | 2.608E-01 | 3.147E-02 | 0.642 |
| I-135 | -9.986E+10 | | 3.589E+11 | Half-Life | too short | |
| CS-136 | -6.761E-02 | | 1.362E-01 | 2.179E-01 | 2.038E-02 | -0.310 |
| CE-139 | 1.696E-02 | | 2.454E-02 | 4.179E-02 | 3.727E-03 | 0.406 |
| BA-140 | 9.566E-03 | | 2.910E-01 | 4.703E-01 | 1.584E-01 | 0.020 |
| LA-140 | -6.217E-02 | | 1.011E-01 | 1.527E-01 | 1.270E-02 | -0.407 |
| CE-141 | -6.819E-03 | | 5.542E-02 | 9.193E-02 | 1.022E-02 | -0.074 |
| CE-143 | 1.550E-03 | | 2.689E-04 | Half-Life | too short | |
| CE-144 | -1.094E-01 | | 1.739E-01 | 2.824E-01 | 4.992E-02 | -0.387 |
| PM-144 | 2.239E-02 | | 3.848E-02 | 6.663E-02 | 7.331E-03 | 0.336 |
| PR-144 | 1.518E+00 | | 2.610E+00 | 4.519E+00 | 4.971E-01 | 0.336 |
| PM-146 | 3.013E-02 | | 4.453E-02 | 7.615E-02 | 8.891E-03 | 0.396 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ND-147 | 3.075E-01 | | 6.487E-01 | 1.085E+00 | 1.743E-01 | 0.284 |
| PM-149 | -1.573E+01 | | 1.577E+02 | 2.477E+02 | 4.226E+01 | -0.063 |
| EU-152 | -1.673E-02 | | 9.835E-02 | 1.577E-01 | 1.693E-02 | -0.106 |
| GD-153 | -3.088E-02 | | 6.248E-02 | 9.275E-02 | 1.045E-02 | -0.333 |
| EU-154 | -5.551E-02 | | 1.585E-01 | 2.522E-01 | 2.771E-02 | -0.220 |
| EU-155 | 1.001E-01 | | 8.224E-02 | 1.446E-01 | 1.709E-02 | 0.693 |
| TB-160 | 2.988E-02 | | 1.605E-01 | 2.660E-01 | 2.577E-02 | 0.112 |
| HO-166M | -1.413E-02 | | 7.096E-02 | 1.161E-01 | 1.272E-02 | -0.122 |
| TM-171 | 3.971E+00 | | 1.313E+01 | 1.934E+01 | 1.920E+00 | 0.205 |
| LU-176 | -3.439E-03 | | 2.206E-02 | 3.697E-02 | 4.034E-03 | -0.093 |
| LU-177 | 3.256E+00 | + | 1.690E+00 | 2.256E+00 | 2.224E-01 | 1.443 |
| LU-177M | 1.546E-01 | | 1.978E-01 | 3.403E-01 | 3.181E-02 | 0.454 |
| HF-181 | 2.341E-02 | | 4.569E-02 | 7.711E-02 | 7.747E-03 | 0.304 |
| W-181 | 6.314E-02 | | 1.597E-01 | 2.366E-01 | 2.342E-02 | 0.267 |
| TA-182 | 1.408E-01 | | 2.544E-01 | 4.367E-01 | 3.591E-02 | 0.322 |
| RE-183 | 2.824E-02 | | 9.100E-02 | 1.527E-01 | 1.421E-02 | 0.185 |
| RE-184 | 4.015E-02 | | 2.239E-01 | 3.616E-01 | 3.878E-02 | 0.111 |
| OS-185 | 1.126E-02 | | 4.552E-02 | 7.771E-02 | 8.575E-03 | 0.145 |
| RE-188 | 1.479E-01 | | 1.551E-01 | 2.663E-01 | 2.683E-02 | 0.555 |
| W-188 | -2.058E+00 | | 7.177E+00 | 1.052E+01 | 1.165E+00 | -0.196 |
| IR-192 | 1.947E-02 | | 3.258E-02 | 5.667E-02 | 6.120E-03 | 0.344 |
| AU-195 | 2.152E-01 | | 1.655E-01 | 2.870E-01 | 3.256E-02 | 0.750 |
| TL-200 | -3.454E-05 | | 7.190E-04 | Half-Life too short | | |
| TL-201 | -5.061E+00 | | 8.844E+00 | 1.418E+01 | 1.268E+00 | -0.357 |
| TL-202 | 3.564E-02 | | 7.932E-02 | 1.341E-01 | 1.292E-02 | 0.266 |
| HG-203 | -2.533E-02 | | 4.669E-02 | 6.268E-02 | 7.114E-03 | -0.404 |
| BI-207 | 4.545E-02 | | 6.474E-02 | 1.141E-01 | 1.018E-02 | 0.398 |
| TL-207 | 1.392E-01 | | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| PO-209 | -3.468E+00 | | 8.457E+00 | 1.319E+01 | 1.252E+00 | -0.263 |
| PB-211 | -6.484E-01 | | 1.038E+00 | 1.510E+00 | 9.477E-01 | -0.429 |
| BI-212 | 1.621E+00 | + | 5.381E-01 | 7.787E-01 | 9.356E-02 | 2.082 |
| PO-215 | 1.392E-01 | | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| RN-219 | 2.311E-01 | | 4.116E-01 | 7.027E-01 | 1.080E-01 | 0.329 |
| RN-220 | 3.359E+00 | | 2.776E+01 | 4.510E+01 | 4.769E+00 | 0.074 |
| RA-223 | 1.392E-01 | | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| AC-227 | -2.941E-01 | | 3.827E-01 | 5.787E-01 | 9.640E-02 | -0.508 |
| TH-227 | -2.941E-01 | | 3.837E-01 | 5.787E-01 | 1.110E-01 | -0.508 |
| TH-229 | 2.818E-01 | | 4.631E-01 | 7.765E-01 | 7.407E-02 | 0.363 |
| PA-231 | 4.485E-01 | | 1.477E+00 | 2.381E+00 | 3.985E-01 | 0.188 |
| TH-231 | 1.392E-01 | | 6.324E-01 | 9.561E-01 | 1.797E-01 | 0.146 |
| U-231 | -7.575E-01 | | 1.043E+00 | 1.549E+00 | 1.730E-01 | -0.489 |
| PA-233 | 1.224E-02 | | 5.993E-02 | 1.023E-01 | 1.130E-02 | 0.120 |
| PA-234 | -2.360E-01 | | 3.375E-01 | 4.949E-01 | 9.464E-02 | -0.477 |
| PA-234M | 3.792E-01 | | 5.714E+00 | 9.235E+00 | 9.673E-01 | 0.041 |
| U-235 | 1.383E-01 | | 1.821E-01 | 3.075E-01 | 5.807E-02 | 0.450 |
| NP-236 | 2.334E-03 | | 6.608E-02 | 1.096E-01 | 1.044E-02 | 0.021 |
| NP-239 | -8.055E-02 | | 1.471E-01 | 2.429E-01 | 3.042E-02 | -0.332 |
| AM-241 | 4.747E-02 | | 5.345E-02 | 8.163E-02 | 8.481E-03 | 0.582 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 2.407E-02 | | 6.923E-02 | 1.194E-01 | 1.391E-02 | 0.202 |
| AM-246 | 7.988E-02 | | 1.755E-01 | 3.036E-01 | 2.685E-02 | 0.263 |
| CM-247 | 1.739E-02 | | 3.723E-02 | 6.334E-02 | 5.839E-03 | 0.275 |
| CF-249 | 2.171E-02 | | 3.954E-02 | 6.776E-02 | 6.235E-03 | 0.320 |
| CF-251 | -4.892E-02 | | 1.112E-01 | 1.789E-01 | 1.639E-02 | -0.273 |

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]G246328006           *
* Acquisition date   : 18-FEB-2010 11:16:20 Detector SN# :                 *
* Detector ID        : GAM25 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                        *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:02.17 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328006 Analyst initials: MXR1                 *
* Batch Number       : 950786 Sample Quantity : 1.2242E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                              *
*
* CALIB. DATE/TIME   : 7-OCT-2009 09:38:43 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM            : 0.000 LCSD Isotope :                              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 3.350E+01 | 3.483E+00 | 2.836E-01 | 1.777E+00 |
| CD-109 | 5.101E+00 | 9.139E-01 | 4.037E-01 | 4.663E-01 |
| SN-126 | 5.000E-01 | 8.958E-02 | 3.949E-02 | 4.570E-02 |
| BA-137M | 2.641E-02 | 5.322E-02 | 3.568E-02 | 2.716E-02 |
| CS-137 | 2.792E-02 | 5.626E-02 | 3.772E-02 | 2.871E-02 |
| TL-208 | 6.100E-01 | 1.128E-01 | 3.393E-02 | 5.753E-02 |
| BI-210 | 1.254E+00 | 7.009E-01 | 3.332E-01 | 3.576E-01 |
| PB-210 | 1.254E+00 | 7.009E-01 | 3.332E-01 | 3.576E-01 |
| PO-210 | 1.254E+00 | 6.992E-01 | 3.332E-01 | 3.567E-01 |
| BI-211 | 4.604E+00 | 6.690E-01 | 1.609E-01 | 3.413E-01 |
| PB-212 | 2.095E+00 | 2.609E-01 | 4.239E-02 | 1.331E-01 |
| PO-212 | 2.095E+00 | 2.609E-01 | 4.239E-02 | 1.331E-01 |
| BI-214 | 1.308E+00 | 2.310E-01 | 6.112E-02 | 1.179E-01 |
| PB-214 | 1.602E+00 | 2.467E-01 | 5.610E-02 | 1.259E-01 |
| PO-214 | 1.602E+00 | 2.467E-01 | 5.610E-02 | 1.259E-01 |
| PO-216 | 2.095E+00 | 2.609E-01 | 4.239E-02 | 1.331E-01 |
| PO-218 | 1.602E+00 | 2.467E-01 | 5.610E-02 | 1.259E-01 |
| RA-224 | 5.314E+00 | 1.527E+00 | 4.830E-01 | 7.789E-01 |
| RA-226 | 1.308E+00 | 2.310E-01 | 6.112E-02 | 1.179E-01 |
| AC-228 | 2.153E+00 | 4.318E-01 | 1.162E-01 | 2.203E-01 |
| RA-228 | 2.153E+00 | 4.318E-01 | 1.162E-01 | 2.203E-01 |
| TH-228 | 2.130E+00 | 2.654E-01 | 4.311E-02 | 1.354E-01 |
| TH-230 | 1.308E+00 | 2.310E-01 | 6.112E-02 | 1.178E-01 |
| TH-232 | 2.153E+00 | 4.318E-01 | 1.162E-01 | 2.203E-01 |
| TH-234 | 2.613E+00 | 9.951E-01 | 4.088E-01 | 5.077E-01 |
| U-234 | 1.308E+00 | 2.310E-01 | 6.112E-02 | 1.178E-01 |
| NP-237 | 1.468E+00 | 3.967E-01 | 1.154E-01 | 2.024E-01 |
| U-238 | 2.613E+00 | 9.951E-01 | 4.088E-01 | 5.077E-01 |
| AM-243 | 4.428E-01 | 6.209E-02 | 2.312E-02 | 3.168E-02 |
| ANH-511 | 1.257E-01 | 7.092E-02 | 2.485E-02 | 3.619E-02 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|---------------|--------------------|----------------------|
| BE-7 | -3.293E-02 | 3.412E-01 | 2.855E-01 | 1.741E-01 NOT IDENT. |
| NA-22 | -1.219E-03 | 5.420E-02 | 4.540E-02 | 2.765E-02 NOT IDENT. |
| NA-24 | 1.127E+06 | 6.149E+06 | 0.000E+00 | 3.137E+06 SHORT HLIF |
| AL-26 | -9.926E-03 | 3.488E-02 | 2.767E-02 | 1.779E-02 NOT IDENT. |
| TI-44 | 2.103E-02 | 2.053E-02 | 2.424E-02 | 1.047E-02 FAIL ABUN |
| SC-46 | -2.827E-02 | 4.436E-02 | 3.469E-02 | 2.263E-02 FAIL ABUN |
| V-48 | 1.344E-02 | 8.475E-02 | 7.103E-02 | 4.324E-02 NOT IDENT. |
| CR-51 | -1.809E-01 | 3.326E-01 | 2.813E-01 | 1.697E-01 NOT IDENT. |
| MN-52 | 1.943E-01 | 2.888E-01 | 2.628E-01 | 1.473E-01 NOT IDENT. |
| MN-54 | -3.237E-02 | 4.451E-02 | 3.514E-02 | 2.271E-02 NOT IDENT. |
| CO-56 | -2.633E-03 | 4.249E-02 | 3.545E-02 | 2.168E-02 NOT IDENT. |
| CO-57 | -3.282E-04 | 1.919E-02 | 1.702E-02 | 9.792E-03 NOT IDENT. |
| CO-58 | -2.027E-02 | 4.430E-02 | 3.581E-02 | 2.260E-02 NOT IDENT. |
| FE-59 | -1.695E-02 | 1.136E-01 | 9.577E-02 | 5.796E-02 NOT IDENT. |
| CO-60 | 3.611E-02 | 4.677E-02 | 4.211E-02 | 2.386E-02 NOT IDENT. |
| ZN-65 | 8.575E-02 | 1.122E-01 | 8.976E-02 | 5.726E-02 NOT IDENT. |
| GE-68 | 8.348E-01 | 1.523E+00 | 1.356E+00 | 7.771E-01 NOT IDENT. |
| AS-73 | 1.932E-01 | 1.852E-01 | 1.639E-01 | 9.451E-02 NOT IDENT. |
| AS-74 | -7.618E-02 | 1.101E-01 | 8.527E-02 | 5.620E-02 NOT IDENT. |
| SE-75 | -2.841E-02 | 4.602E-02 | 3.211E-02 | 2.348E-02 NOT IDENT. |
| BR-77 | 8.461E+00 | 1.908E+01 | 1.645E+01 | 9.735E+00 FAIL ABUN |
| SR-82 | -6.370E-01 | 4.468E-01 | 3.276E-01 | 2.279E-01 NOT IDENT. |
| RB-83 | 3.542E-02 | 7.432E-02 | 6.421E-02 | 3.792E-02 NOT IDENT. |
| RB-84 | 2.280E-02 | 7.857E-02 | 6.740E-02 | 4.008E-02 NOT IDENT. |
| KR-85 | 5.062E+00 | 8.569E+00 | 6.600E+00 | 4.372E+00 NOT IDENT. |
| SR-85 | 2.646E-02 | 4.480E-02 | 3.450E-02 | 2.286E-02 NOT IDENT. |
| RB-86 | 4.952E-01 | 1.058E+00 | 9.362E-01 | 5.398E-01 NOT IDENT. |
| Y-88 | 2.807E-04 | 3.627E-02 | 3.039E-02 | 1.851E-02 NOT IDENT. |
| ZR-88 | 5.689E-03 | 3.166E-02 | 2.749E-02 | 1.616E-02 NOT IDENT. |
| Y-91 | -7.096E+00 | 2.342E+01 | 1.931E+01 | 1.195E+01 NOT IDENT. |
| NB-94 | -5.957E-03 | 3.876E-02 | 3.282E-02 | 1.978E-02 NOT IDENT. |
| NB-95 | 4.588E-02 | 5.551E-02 | 4.414E-02 | 2.832E-02 NOT IDENT. |
| NB-95M | -1.570E-02 | 1.293E-01 | 9.579E-02 | 6.596E-02 NOT IDENT. |
| ZR-95 | -1.193E-02 | 7.970E-02 | 6.687E-02 | 4.066E-02 NOT IDENT. |
| NB-97 | -1.456E+05 | 7.309E+05 | 0.000E+00 | 3.729E+05 SHORT HLIF |
| ZR-97 | 1.771E+07 | 1.318E+07 | 0.000E+00 | 6.723E+06 SHORT HLIF |
| MO-99 | -6.625E-01 | 2.012E+01 | 1.684E+01 | 1.027E+01 NOT IDENT. |
| TC-99M | -2.158E+18 | 5.146E+18 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| RH-101 | 2.311E-02 | 2.943E-02 | 2.562E-02 | 1.502E-02 NOT IDENT. |
| RH-102 | 9.323E-04 | 3.027E-02 | 2.558E-02 | 1.544E-02 NOT IDENT. |
| RU-103 | -1.521E-02 | 4.284E-02 | 3.491E-02 | 2.186E-02 FAIL ABUN |
| RH-106 | -1.242E-01 | 3.030E-01 | 2.535E-01 | 1.546E-01 FAIL ABUN |
| RU-106 | -1.242E-01 | 3.028E-01 | 2.535E-01 | 1.545E-01 FAIL ABUN |
| AG-108M | 8.777E-03 | 3.451E-02 | 2.983E-02 | 1.761E-02 NOT IDENT. |
| AG-110M | 2.351E-03 | 4.118E-02 | 3.106E-02 | 2.101E-02 NOT IDENT. |
| IN-111 | -3.768E-01 | 1.623E+00 | 1.184E+00 | 8.280E-01 NOT IDENT. |
| IN-113M | 2.365E-02 | 4.565E-02 | 4.039E-02 | 2.329E-02 NOT IDENT. |
| SN-113 | 2.365E-02 | 4.565E-02 | 4.039E-02 | 2.329E-02 NOT IDENT. |
| IN-114M | -1.070E-01 | 1.871E-01 | 1.377E-01 | 9.546E-02 NOT IDENT. |
| CD-115 | -8.409E+00 | 1.964E+01 | 1.578E+01 | 1.002E+01 NOT IDENT. |
| SN-117M | -1.031E-02 | 4.948E-02 | 4.259E-02 | 2.525E-02 NOT IDENT. |
| SB-122 | 4.562E+00 | 3.703E+00 | 3.317E+00 | 1.889E+00 NOT IDENT. |
| I-123 | -1.885E+07 | 4.943E+07 | 0.000E+00 | 2.522E+07 SHORT HLIF |
| TE-123M | -9.002E-03 | 2.360E-02 | 2.014E-02 | 1.204E-02 NOT IDENT. |
| I-124 | -8.569E-01 | 1.129E+00 | 7.904E-01 | 5.759E-01 NOT IDENT. |
| SB-124 | 3.600E-02 | 8.512E-02 | 7.681E-02 | 4.343E-02 FAIL ABUN |
| SB-125 | -9.319E-03 | 9.201E-02 | 7.785E-02 | 4.694E-02 FAIL ABUN |
| TE-125M | 2.388E+00 | 7.116E+00 | 6.344E+00 | 3.631E+00 NOT IDENT. |
| I-126 | -9.351E-03 | 2.569E-01 | 1.916E-01 | 1.311E-01 NOT IDENT. |
| SB-126 | 2.979E-02 | 2.101E-01 | 1.579E-01 | 1.072E-01 FAIL ABUN |
| SB-127 | -4.766E-01 | 2.044E+00 | 1.722E+00 | 1.043E+00 NOT IDENT. |
| XE-127 | 3.781E-03 | 4.323E-02 | 3.692E-02 | 2.205E-02 NOT IDENT. |
| I-131 | 6.427E-02 | 1.259E-01 | 1.122E-01 | 6.423E-02 FAIL ABUN |
| TE-132 | -4.034E-01 | 9.430E-01 | 7.737E-01 | 4.811E-01 NOT IDENT. |
| BA-133 | -2.671E-02 | 4.797E-02 | 3.484E-02 | 2.447E-02 FAIL ABUN |
| I-133 | 1.589E+04 | 2.675E+04 | 0.000E+00 | 1.365E+04 SHORT HLIF |
| CS-134 | 1.112E-01 | 8.712E-02 | 5.020E-02 | 4.445E-02 FAIL ABUN |
| CS-135 | 1.675E-01 | 1.527E-01 | 1.331E-01 | 7.792E-02 NOT IDENT. |
| I-135 | -9.986E+16 | 7.034E+17 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| CS-136 | -6.761E-02 | 1.334E-01 | 1.093E-01 | 6.809E-02 FAIL ABUN |
| CE-139 | 1.696E-02 | 2.405E-02 | 2.147E-02 | 1.227E-02 NOT IDENT. |
| BA-140 | 9.566E-03 | 2.852E-01 | 2.380E-01 | 1.455E-01 NOT IDENT. |
| LA-140 | -6.217E-02 | 9.912E-02 | 7.620E-02 | 5.057E-02 FAIL ABUN |
| CE-141 | -6.819E-03 | 5.431E-02 | 4.729E-02 | 2.771E-02 NOT IDENT. |
| CE-143 | 1.550E+03 | 5.271E+02 | 0.000E+00 | 2.689E+02 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | -1.094E-01 | 1.704E-01 | 1.454E-01 | 8.694E-02 | FAIL ABUN |
| PM-144 | 2.239E-02 | 3.771E-02 | 3.360E-02 | 1.924E-02 | NOT IDENT. |
| PR-144 | 1.518E+00 | 2.558E+00 | 2.279E+00 | 1.305E+00 | NOT IDENT. |
| PM-146 | 3.013E-02 | 4.364E-02 | 3.861E-02 | 2.227E-02 | NOT IDENT. |
| ND-147 | 3.075E-01 | 6.358E-01 | 5.489E-01 | 3.244E-01 | FAIL ABUN |
| PM-149 | -1.573E+01 | 1.545E+02 | 1.264E+02 | 7.883E+01 | NOT IDENT. |
| EU-152 | -1.673E-02 | 9.638E-02 | 8.023E-02 | 4.918E-02 | FAIL ABUN |
| GD-153 | -3.088E-02 | 6.123E-02 | 4.795E-02 | 3.124E-02 | FAIL ABUN |
| EU-154 | -5.551E-02 | 1.553E-01 | 1.262E-01 | 7.923E-02 | NOT IDENT. |
| EU-155 | 1.001E-01 | 8.060E-02 | 7.468E-02 | 4.112E-02 | FAIL ABUN |
| TB-160 | 2.988E-02 | 1.573E-01 | 1.337E-01 | 8.027E-02 | FAIL ABUN |
| HO-166M | -1.413E-02 | 6.954E-02 | 5.856E-02 | 3.548E-02 | FAIL ABUN |
| TM-171 | 3.971E+00 | 1.287E+01 | 1.005E+01 | 6.565E+00 | NOT IDENT. |
| LU-176 | -3.439E-03 | 2.162E-02 | 1.884E-02 | 1.103E-02 | FAIL ABUN |
| LU-177 | 3.256E+00 | 1.656E+00 | 1.156E+00 | 8.451E-01 | FAIL ABUN |
| LU-177M | 1.546E-01 | 1.938E-01 | 1.728E-01 | 9.890E-02 | FAIL ABUN |
| HF-181 | 2.341E-02 | 4.478E-02 | 3.907E-02 | 2.285E-02 | NOT IDENT. |
| W-181 | 6.314E-02 | 1.565E-01 | 1.229E-01 | 7.985E-02 | NOT IDENT. |
| TA-182 | 1.408E-01 | 2.493E-01 | 2.186E-01 | 1.272E-01 | FAIL ABUN |
| RE-183 | 2.824E-02 | 8.918E-02 | 7.845E-02 | 4.550E-02 | FAIL ABUN |
| RE-184 | 4.015E-02 | 2.194E-01 | 1.847E-01 | 1.120E-01 | NOT IDENT. |
| OS-185 | 1.126E-02 | 4.461E-02 | 3.923E-02 | 2.276E-02 | NOT IDENT. |
| RE-188 | 1.479E-01 | 1.520E-01 | 1.369E-01 | 7.754E-02 | NOT IDENT. |
| W-188 | -2.058E+00 | 7.033E+00 | 5.366E+00 | 3.588E+00 | FAIL ABUN |
| IR-192 | 1.947E-02 | 3.193E-02 | 2.887E-02 | 1.629E-02 | FAIL ABUN |
| AU-195 | 2.152E-01 | 1.622E-01 | 1.483E-01 | 8.276E-02 | FAIL ABUN |
| TL-200 | -3.454E+01 | 1.409E+03 | 0.000E+00 | 7.190E+02 | SHORT HLIF |
| TL-201 | -5.061E+00 | 8.667E+00 | 7.280E+00 | 4.422E+00 | FAIL ABUN |
| TL-202 | 3.564E-02 | 7.773E-02 | 6.802E-02 | 3.966E-02 | FAIL ABUN |
| HG-203 | -2.533E-02 | 4.576E-02 | 3.198E-02 | 2.335E-02 | FAIL ABUN |
| BI-207 | 4.545E-02 | 6.344E-02 | 5.721E-02 | 3.237E-02 | FAIL ABUN |
| TL-207 | 1.392E-01 | 6.197E-01 | 4.869E-01 | 3.162E-01 | FAIL ABUN |
| PO-209 | -3.468E+00 | 8.288E+00 | 6.631E+00 | 4.229E+00 | NOT IDENT. |
| PB-211 | -6.484E-01 | 1.017E+00 | 7.669E-01 | 5.191E-01 | NOT IDENT. |
| BI-212 | 1.621E+00 | 5.273E-01 | 3.925E-01 | 2.691E-01 | FAIL ABUN |
| PO-215 | 1.392E-01 | 6.197E-01 | 4.869E-01 | 3.162E-01 | FAIL ABUN |
| RN-219 | 2.311E-01 | 4.034E-01 | 3.569E-01 | 2.058E-01 | FAIL ABUN |
| RN-220 | 3.359E+00 | 2.721E+01 | 2.281E+01 | 1.388E+01 | NOT IDENT. |
| RA-223 | 1.392E-01 | 6.197E-01 | 4.869E-01 | 3.162E-01 | FAIL ABUN |
| AC-227 | -2.941E-01 | 3.750E-01 | 2.956E-01 | 1.913E-01 | FAIL ABUN |
| TH-227 | -2.941E-01 | 3.760E-01 | 2.956E-01 | 1.919E-01 | FAIL ABUN |
| TH-229 | 2.818E-01 | 4.538E-01 | 3.980E-01 | 2.315E-01 | FAIL ABUN |
| PA-231 | 4.485E-01 | 1.448E+00 | 1.214E+00 | 7.386E-01 | NOT IDENT. |
| TH-231 | 1.392E-01 | 6.197E-01 | 4.869E-01 | 3.162E-01 | FAIL ABUN |
| U-231 | -7.575E-01 | 1.022E+00 | 8.009E-01 | 5.216E-01 | FAIL ABUN |
| PA-233 | 1.224E-02 | 5.873E-02 | 5.213E-02 | 2.996E-02 | FAIL ABUN |
| PA-234 | -2.360E-01 | 3.307E-01 | 2.486E-01 | 1.687E-01 | FAIL ABUN |
| PA-234M | 3.792E-01 | 5.599E+00 | 4.636E+00 | 2.857E+00 | NOT IDENT. |
| U-235 | 1.383E-01 | 1.784E-01 | 1.582E-01 | 9.104E-02 | FAIL ABUN |
| NP-236 | 2.334E-03 | 6.476E-02 | 5.632E-02 | 3.304E-02 | NOT IDENT. |
| NP-239 | -8.055E-02 | 1.442E-01 | 1.253E-01 | 7.357E-02 | FAIL ABUN |
| AM-241 | 4.747E-02 | 5.238E-02 | 4.246E-02 | 2.673E-02 | NOT IDENT. |
| CM-243 | 2.407E-02 | 6.784E-02 | 6.170E-02 | 3.461E-02 | FAIL ABUN |
| AM-246 | 7.988E-02 | 1.720E-01 | 1.523E-01 | 8.773E-02 | NOT IDENT. |
| CM-247 | 1.739E-02 | 3.649E-02 | 3.217E-02 | 1.862E-02 | FAIL ABUN |
| CF-249 | 2.171E-02 | 3.875E-02 | 3.443E-02 | 1.977E-02 | NOT IDENT. |
| CF-251 | -4.892E-02 | 1.090E-01 | 9.184E-02 | 5.562E-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 | 276.9958 |
| 46.50 | 276.9958 |
| 46.50 | 276.9958 |
| 48.70 | 256.8172 |
| 49.72 | 289.6859 |
| 51.35 | 347.2622 |
| 52.39 | 258.0503 |
| 52.97 | 276.2191 |
| 53.15 | 274.2338 |
| 53.44 | 299.8268 |
| 54.07 | 305.0166 |
| 56.28 | 289.9949 |
| 56.28 | 289.9989 |
| 57.37 | 0.0000 |
| 57.53 | 364.0303 |
| 57.53 | 364.0327 |
| 57.60 | 380.8855 |
| 57.98 | 362.4384 |
| 57.98 | 362.4384 |
| 59.32 | 367.3355 |
| 59.32 | 367.3355 |
| 59.40 | 346.4530 |
| 59.54 | 346.6398 |
| 59.72 | 339.3724 |
| 60.01 | 360.7971 |
| 61.10 | 425.6994 |
| 61.14 | 428.7835 |
| 61.30 | 429.0435 |
| 63.00 | 419.6152 |
| 63.29 | 420.0652 |
| 63.29 | 420.0652 |
| 63.58 | 420.5130 |
| 64.28 | 421.5918 |
| 65.12 | 378.4455 |
| 65.20 | 378.5555 |
| 65.20 | 378.5555 |
| 66.05 | 473.4892 |
| 66.72 | 396.0253 |
| 66.83 | 388.4769 |
| 66.91 | 388.5846 |
| 67.20 | 399.7896 |
| 67.20 | 399.7896 |
| 67.75 | 423.3735 |
| 67.85 | 417.7222 |
| 68.90 | 400.6186 |
| 68.90 | 400.6186 |
| 69.30 | 459.4853 |
| 69.67 | 485.7639 |
| 70.82 | 411.0820 |
| 70.82 | 411.0820 |
| 70.83 | 411.0953 |
| 72.80 | 397.6961 |
| 72.87 | 397.7887 |
| 72.87 | 397.7887 |
| 74.67 | 400.1541 |
| 74.81 | 400.3366 |
| 74.81 | 400.3366 |
| 74.81 | 400.3366 |
| 74.81 | 400.3366 |
| 74.81 | 400.3366 |
| 74.81 | 400.3366 |
| 74.81 | 400.3366 |
| 74.97 | 400.5449 |
| 75.28 | 400.9485 |
| 75.70 | 401.4962 |
| 77.11 | 403.3165 |
| 77.11 | 403.3165 |

| | |
|--------|----------|
| 77.11 | 403.3165 |
| 77.11 | 403.3165 |
| 77.11 | 403.3165 |
| 77.11 | 403.3165 |
| 77.11 | 403.3165 |
| 78.38 | 404.9415 |
| 79.62 | 366.7079 |
| 79.80 | 340.3613 |
| 79.80 | 340.3613 |
| 80.11 | 340.6883 |
| 80.18 | 340.7615 |
| 80.30 | 350.5590 |
| 80.30 | 350.5590 |
| 80.57 | 350.8511 |
| 81.00 | 341.6242 |
| 81.07 | 341.6974 |
| 81.07 | 341.6974 |
| 81.07 | 341.6974 |
| 81.07 | 341.6974 |
| 82.60 | 343.2959 |
| 83.37 | 341.6495 |
| 83.78 | 342.0724 |
| 83.78 | 342.0724 |
| 83.78 | 342.0724 |
| 83.78 | 342.0724 |
| 84.21 | 342.5125 |
| 84.90 | 343.2175 |
| 85.43 | 343.7558 |
| 86.29 | 344.6252 |
| 86.50 | 344.8367 |
| 86.54 | 344.8773 |
| 86.59 | 344.9286 |
| 86.72 | 345.0589 |
| 86.79 | 345.1273 |
| 86.94 | 345.2811 |
| 87.30 | 345.6421 |
| 87.30 | 345.6421 |
| 87.30 | 345.6421 |
| 87.30 | 345.6421 |
| 87.30 | 345.6421 |
| 87.30 | 345.6421 |
| 87.57 | 345.9134 |
| 87.88 | 346.2231 |
| 88.03 | 346.3727 |
| 88.36 | 346.7017 |
| 88.47 | 346.8127 |
| 89.95 | 348.2825 |
| 91.11 | 349.4254 |
| 92.29 | 334.7204 |
| 92.38 | 334.8051 |
| 92.38 | 334.8051 |
| 93.35 | 335.7045 |
| 94.00 | 336.3062 |
| 94.67 | 293.6498 |
| 94.67 | 293.6534 |
| 94.90 | 295.0994 |
| 94.90 | 295.0994 |
| 94.90 | 295.0994 |
| 94.90 | 295.0994 |
| 95.87 | 319.9020 |
| 95.87 | 319.9020 |
| 96.73 | 344.7273 |
| 97.43 | 328.8639 |
| 98.44 | 274.1544 |
| 98.44 | 274.1544 |
| 98.88 | 271.9238 |
| 99.55 | 280.0670 |
| 99.55 | 280.0670 |
| 99.86 | 295.6299 |
| 100.00 | 295.7375 |
| 100.10 | 295.8187 |
| 103.18 | 320.5241 |
| 103.76 | 276.2496 |
| 105.00 | 284.0245 |
| 105.31 | 279.9272 |
| 108.00 | 311.3836 |
| 109.28 | 269.6112 |

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| 111.00 | 289.1428 |
| 111.00 | 289.1428 |
| 111.76 | 284.4064 |
| 112.95 | 300.1823 |
| 115.19 | 266.3803 |
| 116.30 | 244.0043 |
| 117.00 | 279.0621 |
| 117.00 | 279.0621 |
| 117.66 | 296.4020 |
| 121.11 | 255.6865 |
| 121.62 | 253.2862 |
| 121.78 | 245.2915 |
| 122.06 | 246.3447 |
| 122.32 | 252.7854 |
| 122.32 | 252.7854 |
| 122.32 | 252.7854 |
| 122.32 | 252.7854 |
| 123.07 | 228.8801 |
| 127.23 | 259.1807 |
| 129.76 | 288.0322 |
| 131.20 | 258.6520 |
| 133.02 | 269.5914 |
| 133.54 | 291.2707 |
| 135.34 | 272.9374 |
| 136.00 | 252.9271 |
| 136.25 | 250.2768 |
| 136.48 | 244.8306 |
| 140.51 | 266.4859 |
| 140.51 | 0.0000 |
| 142.18 | 271.1315 |
| 142.65 | 268.5701 |
| 143.76 | 240.9271 |
| 144.24 | 244.9243 |
| 144.24 | 244.9243 |
| 144.24 | 244.9243 |
| 144.24 | 244.9243 |
| 145.22 | 262.3868 |
| 145.44 | 271.9424 |
| 147.16 | 260.5400 |
| 152.43 | 280.4102 |
| 152.70 | 255.6577 |
| 153.22 | 257.8245 |
| 154.21 | 261.1841 |
| 154.21 | 261.1841 |
| 154.21 | 261.1841 |
| 154.21 | 261.1841 |
| 155.03 | 248.1213 |
| 156.02 | 285.1902 |
| 158.56 | 235.2258 |
| 159.00 | 0.0000 |
| 159.00 | 238.3200 |
| 160.31 | 224.3241 |
| 161.27 | 229.5781 |
| 162.32 | 208.5708 |
| 162.64 | 232.0950 |
| 163.35 | 230.4375 |
| 163.89 | 241.4120 |
| 165.85 | 196.1568 |
| 167.43 | 226.2097 |
| 171.28 | 198.0245 |
| 171.86 | 223.9907 |
| 172.10 | 236.9724 |
| 176.55 | 236.7734 |
| 176.60 | 236.7927 |
| 181.06 | 255.1659 |
| 184.41 | 224.6874 |
| 185.71 | 225.1616 |
| 186.00 | 225.2655 |
| 190.27 | 249.7977 |
| 192.34 | 228.5759 |
| 193.63 | 216.7137 |
| 197.04 | 229.2198 |
| 198.01 | 197.5070 |
| 198.60 | 217.3486 |
| 200.40 | 220.0224 |
| 201.83 | 232.9824 |
| 202.84 | 221.8793 |
| 205.31 | 227.4055 |

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| 208.36 | 234.7359 |
| 208.81 | 201.7871 |
| 209.75 | 189.4354 |
| 209.75 | 189.4354 |
| 210.97 | 177.1226 |
| 215.65 | 204.8603 |
| 216.55 | 191.3086 |
| 218.09 | 221.5523 |
| 222.10 | 212.0961 |
| 223.80 | 207.2300 |
| 226.40 | 205.8208 |
| 227.00 | 202.7563 |
| 227.08 | 202.7793 |
| 227.20 | 208.2057 |
| 228.16 | 208.4787 |
| 228.18 | 208.4845 |
| 228.18 | 208.4845 |
| 231.56 | 0.0000 |
| 235.69 | 222.6145 |
| 236.00 | 222.7058 |
| 236.00 | 222.7058 |
| 238.63 | 191.7142 |
| 238.63 | 191.7142 |
| 238.63 | 191.7142 |
| 238.63 | 191.7142 |
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| 240.98 | 192.3070 |
| 241.98 | 192.5580 |
| 241.98 | 192.5580 |
| 241.98 | 192.5580 |
| 244.69 | 162.3185 |
| 245.39 | 162.4650 |
| 247.94 | 149.6928 |
| 248.90 | 147.6551 |
| 249.79 | 163.3832 |
| 252.40 | 148.3113 |
| 252.85 | 166.2487 |
| 252.85 | 166.2487 |
| 254.15 | 0.0000 |
| 256.20 | 197.1979 |
| 256.20 | 197.1979 |
| 260.50 | 146.4351 |
| 260.90 | 164.5381 |
| 262.80 | 147.9773 |
| 264.65 | 163.0283 |
| 268.24 | 160.3232 |
| 268.79 | 160.4294 |
| 269.46 | 160.5585 |
| 269.46 | 160.5585 |
| 269.46 | 160.5585 |
| 269.46 | 160.5585 |
| 271.23 | 160.8970 |
| 273.65 | 181.9578 |
| 276.40 | 182.5466 |
| 277.35 | 155.1627 |
| 277.60 | 155.2094 |
| 277.60 | 155.2094 |
| 278.00 | 150.1047 |
| 278.60 | 169.2031 |
| 279.20 | 177.9585 |
| 279.53 | 155.5582 |
| 280.46 | 150.5349 |
| 281.68 | 129.9545 |
| 283.67 | 143.5642 |
| 284.30 | 171.4743 |
| 285.00 | 160.0173 |
| 285.90 | 148.5729 |
| 286.10 | 148.6068 |
| 286.10 | 148.6068 |
| 287.40 | 144.1772 |
| 288.45 | 0.0000 |
| 290.67 | 138.6411 |
| 290.80 | 135.8592 |
| 291.72 | 145.8133 |
| 293.26 | 0.0000 |
| 293.70 | 133.4894 |
| 295.21 | 133.7144 |
| 295.21 | 133.7144 |

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| 295.21 | 133.7144 |
| 295.96 | 140.8691 |
| 296.50 | 140.9521 |
| 297.23 | 141.0669 |
| 298.57 | 141.2744 |
| 299.80 | 138.6355 |
| 299.80 | 138.6355 |
| 300.09 | 138.6786 |
| 300.09 | 138.6786 |
| 300.09 | 138.6786 |
| 300.09 | 138.6786 |
| 300.12 | 138.6834 |
| 301.29 | 130.3588 |
| 302.84 | 129.1596 |
| 303.76 | 160.5450 |
| 303.91 | 159.1488 |
| 304.40 | 143.5946 |
| 304.40 | 143.5946 |
| 304.84 | 143.4265 |
| 306.84 | 132.7463 |
| 308.46 | 141.0105 |
| 311.98 | 135.2678 |
| 316.51 | 123.3117 |
| 318.01 | 132.5212 |
| 319.02 | 121.8308 |
| 319.41 | 122.7831 |
| 320.08 | 125.5785 |
| 323.87 | 110.2891 |
| 323.87 | 110.2891 |
| 323.87 | 110.2891 |
| 323.87 | 110.2891 |
| 325.23 | 107.5367 |
| 328.77 | 158.9681 |
| 333.44 | 146.5308 |
| 334.20 | 139.3109 |
| 334.20 | 139.3109 |
| 334.30 | 139.3248 |
| 338.28 | 141.7173 |
| 338.28 | 141.7173 |
| 338.28 | 141.7173 |
| 338.28 | 141.7173 |
| 338.32 | 141.7220 |
| 338.32 | 141.7220 |
| 338.32 | 141.7220 |
| 340.50 | 153.4635 |
| 340.57 | 153.4736 |
| 344.27 | 139.6446 |
| 345.85 | 133.5015 |
| 350.59 | 0.0000 |
| 351.07 | 124.8582 |
| 351.92 | 124.9605 |
| 351.92 | 124.9605 |
| 351.92 | 124.9605 |
| 355.39 | 0.0000 |
| 356.01 | 142.2982 |
| 364.48 | 104.7451 |
| 366.43 | 125.7327 |
| 367.43 | 113.5474 |
| 367.94 | 0.0000 |
| 369.80 | 104.3117 |
| 374.96 | 132.4356 |
| 383.85 | 113.3294 |
| 387.95 | 108.9222 |
| 388.63 | 120.5616 |
| 391.69 | 117.9846 |
| 391.69 | 117.9846 |
| 392.90 | 122.9499 |
| 398.62 | 119.6686 |
| 400.65 | 114.0293 |
| 401.10 | 107.2490 |
| 401.81 | 106.3389 |
| 402.60 | 110.3154 |
| 404.84 | 133.0242 |
| 410.95 | 140.5954 |
| 411.60 | 162.3136 |
| 413.65 | 125.1455 |
| 414.70 | 112.4344 |
| 415.30 | 109.5298 |

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| 415.76 | 118.4564 |
| 417.63 | 0.0000 |
| 418.52 | 139.5047 |
| 423.70 | 102.3430 |
| 427.08 | 116.5751 |
| 427.89 | 107.6786 |
| 432.53 | 104.0809 |
| 433.93 | 111.2100 |
| 439.47 | 104.6586 |
| 439.56 | 97.6216 |
| 439.89 | 97.6468 |
| 443.98 | 100.9933 |
| 444.90 | 101.0666 |
| 445.03 | 87.9372 |
| 445.03 | 87.9372 |
| 445.03 | 87.9372 |
| 445.03 | 87.9372 |
| 453.90 | 88.5466 |
| 463.38 | 91.8559 |
| 468.07 | 97.3953 |
| 473.00 | 98.0992 |
| 475.06 | 98.2500 |
| 475.35 | 97.2373 |
| 476.78 | 115.9802 |
| 477.59 | 99.4702 |
| 477.96 | 97.4252 |
| 482.03 | 86.2827 |
| 484.57 | 99.9814 |
| 487.03 | 102.2483 |
| 490.36 | 0.0000 |
| 492.35 | 85.8850 |
| 497.08 | 93.5331 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 93.3852 |
| 511.00 | 93.3959 |
| 511.85 | 100.2474 |
| 511.85 | 100.2474 |
| 513.99 | 102.0989 |
| 513.99 | 102.0989 |
| 520.41 | 84.3932 |
| 520.65 | 85.4736 |
| 527.90 | 86.9722 |
| 528.96 | 0.0000 |
| 529.64 | 77.4009 |
| 529.87 | 0.0000 |
| 531.02 | 73.1672 |
| 537.32 | 76.7202 |
| 543.00 | 75.9259 |
| 546.56 | 0.0000 |
| 549.76 | 80.6236 |
| 552.65 | 81.8665 |
| 555.20 | 72.1633 |
| 563.23 | 84.6276 |
| 563.90 | 78.0679 |
| 568.70 | 110.2905 |
| 569.32 | 92.6799 |
| 569.50 | 92.6927 |
| 569.67 | 92.7030 |
| 573.80 | 84.0922 |
| 574.00 | 84.1038 |
| 574.64 | 85.2456 |
| 578.91 | 94.1319 |
| 579.30 | 0.0000 |
| 583.14 | 97.9419 |
| 585.48 | 67.7673 |
| 591.81 | 67.1393 |
| 592.07 | 67.1484 |
| 593.00 | 73.9056 |
| 595.88 | 98.7153 |
| 600.56 | 86.6227 |
| 602.52 | 0.0000 |
| 602.71 | 111.1415 |
| 602.71 | 111.1415 |
| 603.60 | 103.6881 |
| 604.41 | 94.7179 |
| 604.70 | 94.7358 |
| 609.31 | 88.9657 |

| | |
|--------|----------|
| 609.31 | 88.9657 |
| 609.31 | 88.9657 |
| 609.31 | 88.9657 |
| 610.33 | 84.4945 |
| 612.46 | 77.0479 |
| 614.37 | 78.6496 |
| 618.01 | 64.5708 |
| 621.84 | 71.0969 |
| 621.84 | 71.0969 |
| 631.29 | 85.2417 |
| 633.02 | 82.5732 |
| 633.10 | 82.5776 |
| 634.78 | 76.2299 |
| 635.90 | 64.3313 |
| 636.97 | 64.3706 |
| 645.85 | 71.1705 |
| 646.12 | 71.1818 |
| 656.30 | 82.1289 |
| 657.75 | 74.4414 |
| 657.90 | 0.0000 |
| 661.65 | 98.8522 |
| 661.65 | 98.8522 |
| 664.57 | 0.0000 |
| 666.33 | 91.9402 |
| 666.33 | 91.9402 |
| 675.00 | 77.0372 |
| 677.61 | 85.6147 |
| 685.20 | 80.3018 |
| 692.80 | 71.1456 |
| 695.00 | 93.0713 |
| 696.49 | 76.9876 |
| 696.49 | 76.9876 |
| 697.00 | 82.7137 |
| 697.49 | 89.3918 |
| 698.33 | 97.9958 |
| 698.50 | 98.0034 |
| 699.00 | 100.8863 |
| 702.63 | 97.2661 |
| 706.10 | 92.6663 |
| 706.58 | 0.0000 |
| 706.67 | 94.6059 |
| 709.31 | 80.3845 |
| 711.68 | 90.0642 |
| 713.82 | 85.3692 |
| 717.42 | 77.8419 |
| 720.50 | 85.0251 |
| 721.93 | 0.0000 |
| 722.20 | 73.8609 |
| 722.78 | 72.2772 |
| 722.78 | 72.2772 |
| 722.89 | 72.2809 |
| 722.95 | 67.4639 |
| 723.30 | 67.4758 |
| 724.18 | 72.3285 |
| 727.18 | 64.3929 |
| 733.00 | 70.5821 |
| 735.90 | 64.0326 |
| 739.58 | 67.0695 |
| 742.81 | 75.9415 |
| 744.21 | 53.5861 |
| 747.13 | 77.0829 |
| 751.79 | 68.4602 |
| 752.31 | 65.5425 |
| 753.82 | 66.5723 |
| 755.35 | 76.4194 |
| 756.15 | 75.4698 |
| 756.87 | 72.5565 |
| 763.93 | 73.7933 |
| 765.79 | 75.5024 |
| 766.42 | 78.8086 |
| 766.84 | 83.7528 |
| 776.49 | 89.0969 |
| 778.00 | 75.2931 |
| 778.57 | 74.8730 |
| 778.89 | 74.8860 |
| 783.80 | 87.7575 |
| 785.46 | 84.5123 |
| 792.07 | 89.7693 |

| | |
|---------|---------|
| 795.84 | 61.9516 |
| 796.30 | 61.9652 |
| 798.80 | 61.7043 |
| 801.93 | 66.8066 |
| 805.60 | 59.2261 |
| 810.29 | 75.4541 |
| 810.76 | 71.4455 |
| 815.85 | 67.5807 |
| 817.79 | 78.7465 |
| 818.51 | 80.7930 |
| 819.60 | 76.7923 |
| 826.30 | 83.1111 |
| 828.27 | 0.0000 |
| 831.60 | 93.4734 |
| 831.96 | 93.4892 |
| 834.83 | 91.5754 |
| 836.80 | 0.0000 |
| 846.75 | 59.3353 |
| 848.13 | 61.4194 |
| 856.28 | 0.0000 |
| 856.80 | 54.8073 |
| 860.37 | 61.7563 |
| 867.32 | 74.5638 |
| 867.82 | 68.1560 |
| 871.10 | 54.8102 |
| 873.19 | 57.9646 |
| 874.81 | 63.1847 |
| 875.33 | 0.0000 |
| 876.40 | 68.4122 |
| 879.36 | 57.0840 |
| 880.27 | 58.1451 |
| 880.51 | 57.1122 |
| 881.50 | 52.9810 |
| 883.24 | 50.9416 |
| 884.67 | 62.4170 |
| 889.25 | 65.6670 |
| 896.60 | 63.7834 |
| 898.02 | 65.9147 |
| 899.00 | 58.6154 |
| 903.28 | 69.9072 |
| 911.07 | 56.8121 |
| 911.07 | 56.8121 |
| 911.07 | 56.8121 |
| 919.63 | 55.4333 |
| 920.93 | 59.1609 |
| 925.00 | 53.9708 |
| 925.24 | 59.2676 |
| 926.50 | 66.7114 |
| 935.52 | 64.8348 |
| 937.48 | 71.2693 |
| 944.10 | 55.4633 |
| 946.00 | 57.6413 |
| 949.00 | 50.2312 |
| 962.29 | 80.5884 |
| 964.01 | 62.7226 |
| 966.15 | 32.2852 |
| 968.20 | 59.2378 |
| 969.11 | 55.6678 |
| 969.11 | 55.6678 |
| 969.11 | 55.6678 |
| 977.42 | 54.0503 |
| 980.50 | 63.8571 |
| 983.50 | 52.0137 |
| 989.30 | 61.9068 |
| 996.32 | 60.9875 |
| 1001.03 | 63.2817 |
| 1001.68 | 63.2973 |
| 1004.76 | 60.0958 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 53.4192 |
| 1036.00 | 58.9740 |
| 1037.82 | 60.8572 |
| 1038.57 | 53.4947 |
| 1038.76 | 0.0000 |
| 1045.16 | 59.1745 |
| 1046.59 | 60.1335 |
| 1048.07 | 64.7933 |

| | |
|---------|----------|
| 1050.47 | 51.8802 |
| 1050.47 | 51.8802 |
| 1062.04 | 67.9207 |
| 1063.62 | 60.5117 |
| 1076.63 | 67.3506 |
| 1077.35 | 62.6898 |
| 1078.86 | 62.7225 |
| 1085.78 | 63.8192 |
| 1099.22 | 71.6706 |
| 1112.02 | 67.1755 |
| 1112.84 | 68.2295 |
| 1115.52 | 53.6595 |
| 1120.29 | 83.0671 |
| 1120.29 | 83.0671 |
| 1120.29 | 83.0671 |
| 1120.29 | 83.0671 |
| 1120.51 | 75.0654 |
| 1121.28 | 70.0610 |
| 1124.00 | 0.0000 |
| 1129.67 | 73.8333 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 104.3086 |
| 1173.22 | 58.0542 |
| 1175.09 | 71.6453 |
| 1177.93 | 81.4023 |
| 1189.05 | 81.7065 |
| 1204.90 | 83.1150 |
| 1205.75 | 0.0000 |
| 1213.00 | 93.1407 |
| 1221.42 | 79.6322 |
| 1230.97 | 82.8379 |
| 1235.34 | 89.8669 |
| 1236.41 | 0.0000 |
| 1238.25 | 84.0212 |
| 1246.25 | 84.2356 |
| 1260.41 | 0.0000 |
| 1271.85 | 55.9476 |
| 1274.45 | 68.9916 |
| 1274.54 | 61.9924 |
| 1291.56 | 51.2656 |
| 1298.22 | 0.0000 |
| 1312.09 | 42.4854 |
| 1325.50 | 54.8459 |
| 1325.50 | 54.8459 |
| 1332.49 | 35.6238 |
| 1333.61 | 40.7259 |
| 1360.21 | 30.7874 |
| 1362.66 | 0.0000 |
| 1365.15 | 29.8048 |
| 1368.21 | 25.7161 |
| 1368.53 | 0.0000 |
| 1376.25 | 21.6528 |
| 1384.27 | 33.0716 |
| 1394.10 | 25.9115 |
| 1395.20 | 24.8828 |
| 1407.95 | 33.2982 |
| 1434.06 | 16.7728 |
| 1436.60 | 22.0297 |
| 1457.56 | 0.0000 |
| 1460.81 | 22.1792 |
| 1489.15 | 27.6737 |
| 1509.49 | 19.2642 |
| 1596.49 | 25.3389 |
| 1620.62 | 15.1077 |
| 1678.03 | 0.0000 |
| 1691.02 | 13.4512 |
| 1691.02 | 13.4512 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 9.7771 |
| 1764.49 | 9.7771 |
| 1764.49 | 9.7771 |
| 1764.49 | 9.7771 |
| 1770.23 | 23.9856 |
| 1771.40 | 41.1299 |
| 1791.20 | 0.0000 |
| 1808.65 | 15.8030 |

1836.01

11.9259

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328006

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 7.8380E+00 | ug/g |
| Total Uranium Counting Unc. | 2.9617E+00 | ug/g |
| Total Uranium Tpu | 1.5111E-06 | ug/g |
| Total Uranium Mda | 1.2183E+00 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 950786          SAMPLE ID   : G246328006
*  ANALYST       : MXR1           DETECTOR    : GAM25
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 18-FEB-2010 11:16:20.16  SAMPLE ALQT: 122.420 GRAM
*
*****

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```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.114E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.600E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 3.857E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.873E+00

```

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:18:24.11

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328007.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:16:48
Sample ID          : G246328007      Sample quantity      : 1.63130E+02 GRAM
Detector name      : GAM19           Detector geometry    : CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time  : 0 02:00:01.29  0.0%
Energy tolerance   : 1.50000 keV     Analyst Initials   : MXR1
Abundance limit    : 75.00000        Sensitivity        : 5.00000
Batch ID           : 950786          Detector SN#       :
Matrix Spike ID    :                 LCS ID              : 1032-A
*****
```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 63.39* | 138 | 366 | 1.24 | 126.64 | 122 | 8 | 1.92E-02 | 26.2 | |
| 2 | 2 | 74.86 | 314 | 472 | 1.62 | 149.56 | 142 | 18 | 4.35E-02 | 15.2 | 9.99E-01 |
| 3 | 2 | 77.09 | 444 | 373 | 1.36 | 154.01 | 142 | 18 | 6.16E-02 | 9.3 | |
| 4 | 0 | 86.21 | 273 | 525 | 3.65 | 172.24 | 166 | 12 | 3.79E-02 | 17.8 | |
| 5 | 0 | 93.12* | 326 | 553 | 1.35 | 186.06 | 181 | 11 | 4.53E-02 | 15.9 | |
| 6 | 0 | 185.94* | 172 | 387 | 1.40 | 371.55 | 365 | 15 | 2.39E-02 | 26.9 | |
| 7 | 0 | 209.26 | 56 | 190 | 0.98 | 418.16 | 414 | 8 | 7.75E-03 | 44.8 | |
| 8 | 0 | 238.44* | 629 | 387 | 1.30 | 476.48 | 471 | 10 | 8.73E-02 | 7.2 | |
| 9 | 0 | 241.76 | 108 | 233 | 1.83 | 483.12 | 480 | 8 | 1.50E-02 | 27.0 | |
| 10 | 0 | 270.53 | 77 | 194 | 2.61 | 540.61 | 533 | 13 | 1.07E-02 | 39.0 | |
| 11 | 1 | 294.89 | 276 | 113 | 1.67 | 589.30 | 583 | 23 | 3.84E-02 | 9.3 | 3.54E+00 |
| 12 | 1 | 299.79 | 71 | 118 | 1.68 | 599.09 | 583 | 23 | 9.85E-03 | 31.6 | |
| 13 | 0 | 328.48 | 92 | 130 | 1.16 | 656.46 | 650 | 13 | 1.28E-02 | 27.6 | |
| 14 | 0 | 338.04* | 98 | 158 | 1.16 | 675.55 | 671 | 10 | 1.36E-02 | 27.1 | |
| 15 | 0 | 351.71* | 416 | 142 | 1.43 | 702.88 | 697 | 14 | 5.77E-02 | 7.9 | |
| 16 | 0 | 510.84* | 73 | 123 | 2.78 | 1020.99 | 1013 | 17 | 1.01E-02 | 42.9 | |
| 17 | 0 | 567.96* | 94 | 125 | 1.47 | 1135.17 | 1128 | 16 | 1.31E-02 | 29.4 | |
| 18 | 0 | 583.06* | 253 | 71 | 1.70 | 1165.37 | 1158 | 15 | 3.51E-02 | 9.9 | |
| 19 | 0 | 609.15* | 285 | 88 | 1.42 | 1217.54 | 1212 | 14 | 3.96E-02 | 9.4 | |
| 20 | 0 | 662.45 | 110 | 61 | 1.02 | 1324.10 | 1318 | 16 | 1.53E-02 | 18.4 | |
| 21 | 0 | 727.06 | 78 | 71 | 1.46 | 1453.30 | 1445 | 15 | 1.08E-02 | 26.2 | |
| 22 | 0 | 795.73 | 34 | 43 | 1.41 | 1590.60 | 1584 | 13 | 4.73E-03 | 45.1 | |
| 23 | 0 | 860.79 | 51 | 33 | 0.96 | 1720.70 | 1715 | 12 | 7.02E-03 | 26.8 | |
| 24 | 0 | 911.24* | 178 | 61 | 1.79 | 1821.61 | 1816 | 16 | 2.48E-02 | 12.4 | |
| 25 | 0 | 969.06 | 86 | 68 | 1.31 | 1937.25 | 1932 | 11 | 1.20E-02 | 21.5 | |
| 26 | 0 | 1120.97 | 78 | 77 | 1.66 | 2241.08 | 2233 | 17 | 1.08E-02 | 28.2 | |
| 27 | 0 | 1460.75 | 953 | 9 | 2.00 | 2920.86 | 2912 | 17 | 1.32E-01 | 3.3 | |
| 28 | 0 | 1510.36 | 11 | 13 | 0.73 | 3020.13 | 3014 | 11 | 1.48E-03 | 74.0 | |
| 29 | 0 | 1621.22 | 17 | 6 | 2.39 | 3241.97 | 3237 | 10 | 2.33E-03 | 38.5 | |
| 30 | 0 | 1764.48* | 67 | 3 | 1.22 | 3528.69 | 3522 | 16 | 9.30E-03 | 14.7 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 13:18:27

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328007.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 11:16:48
Sample ID        : G246328007             Sample quantity  : 163.13 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA19                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:01.29   0.0%
Peak Width (FWHM): 3.00                    Confidence level  : 5.00 %
Energy tolerance : 1.50 keV                 Half life ratio  : 8.00 %
Errors propagated: Yes                       Systematic Error : 0.00 %
Efficiency type  : Empirical                 Efficiencies at  : Peak Energy
Abundance limit  : 75.00                     WTM error limit  : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 1.758E+01 | 1.753E+00 | 3.517E-01 | 2.619E-02 | 49.977 |
| SN-126 | + | 64.28 | | 9.114E-01 | 4.950E-01 | 5.667E-01 | 8.276E-02 | 1.608 |
| | + | 86.94 | | 1.171E+00 | 6.399E-01 | 4.633E-01 | 1.919E-01 | 2.527 |
| | + | 87.57 | * | 2.816E-01 | 1.035E-01 | 1.102E-01 | 9.832E-03 | 2.555 |
| BA-137M | + | 661.65 | * | 1.228E-01 | 4.571E-02 | 3.821E-02 | 2.225E-03 | 3.214 |
| CS-137 | + | 661.65 | * | 1.298E-01 | 4.833E-02 | 4.039E-02 | 2.362E-03 | 3.214 |
| TL-208 | | 277.35 | | 1.737E-01 | 2.747E-01 | 4.654E-01 | 4.911E-02 | 0.373 |
| | + | 510.84 | | 2.733E-01 | 2.359E-01 | 1.516E-01 | 1.548E-02 | 1.802 |
| | + | 583.14 | * | 2.702E-01 | 5.639E-02 | 4.399E-02 | 2.991E-03 | 6.142 |
| | + | 860.37 | | 5.082E-01 | 2.760E-01 | 3.021E-01 | 2.705E-02 | 1.682 |
| BI-211 | | 72.87 | | 6.221E+00 | 2.339E+00 | 4.082E+00 | 3.198E-01 | 1.524 |
| | + | 351.07 | * | 1.951E+00 | 3.324E-01 | 2.247E-01 | 1.435E-02 | 8.681 |
| BI-212 | + | 727.18 | * | 7.138E-01 | 3.791E-01 | 3.197E-01 | 2.662E-02 | 2.232 |
| | | 785.46 | | -1.658E-01 | 1.301E+00 | 2.085E+00 | 1.525E-01 | -0.080 |
| | + | 1620.62 | | 1.296E+00 | 1.001E+00 | 1.249E+00 | 8.337E-02 | 1.038 |
| PB-212 | + | 74.81 | | 1.329E+00 | 4.346E-01 | 3.885E-01 | 4.764E-02 | 3.421 |
| | + | 77.11 | | 1.070E+00 | 2.177E-01 | 2.211E-01 | 1.786E-02 | 4.842 |
| | + | 87.30 | | 1.302E+00 | 4.961E-01 | 5.136E-01 | 6.874E-02 | 2.536 |
| | + | 238.63 | * | 6.464E-01 | 1.037E-01 | 8.560E-02 | 6.178E-03 | 7.551 |
| | + | 300.09 | | 1.122E+00 | 7.162E-01 | 9.044E-01 | 7.470E-02 | 1.241 |
| PO-212 | + | 74.81 | | 1.329E+00 | 4.346E-01 | 3.885E-01 | 4.764E-02 | 3.421 |
| | + | 77.11 | | 1.070E+00 | 2.177E-01 | 2.211E-01 | 1.786E-02 | 4.842 |
| | + | 87.30 | | 1.302E+00 | 4.961E-01 | 5.136E-01 | 6.874E-02 | 2.536 |
| | | 115.19 | | -1.676E-02 | 2.737E+00 | 4.430E+00 | 2.820E-01 | -0.004 |
| | + | 238.63 | * | 6.464E-01 | 1.037E-01 | 8.560E-02 | 6.178E-03 | 7.551 |
| | + | 300.09 | | 1.122E+00 | 7.162E-01 | 9.044E-01 | 7.470E-02 | 1.241 |
| BI-214 | + | 609.31 | * | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| | + | 1120.29 | | 8.118E-01 | 4.646E-01 | 3.398E-01 | 3.108E-02 | 2.389 |
| | + | 1764.49 | | 9.467E-01 | 2.846E-01 | 1.887E-01 | 1.144E-02 | 5.016 |
| PB-214 | + | 74.81 | | 2.290E+00 | 7.374E-01 | 6.694E-01 | 7.268E-02 | 3.421 |
| | + | 77.11 | | 1.835E+00 | 3.985E-01 | 3.790E-01 | 4.209E-02 | 4.842 |
| | + | 87.30 | | 2.231E+00 | 8.380E-01 | 8.799E-01 | 1.036E-01 | 2.536 |
| | + | 241.98 | | 6.663E-01 | 3.641E-01 | 5.860E-01 | 4.673E-02 | 1.137 |
| | + | 295.21 | | 7.677E-01 | 1.576E-01 | 1.586E-01 | 1.353E-02 | 4.842 |

----- Identified Nuclides -----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 351.92 | * | 6.786E-01 | 1.209E-01 | 7.833E-02 | 6.458E-03 | 8.664 |
| | + | 74.81 | | 2.290E+00 | 7.374E-01 | 6.694E-01 | 7.268E-02 | 3.421 |
| | + | 77.11 | | 1.835E+00 | 3.985E-01 | 3.790E-01 | 4.209E-02 | 4.842 |
| | + | 87.30 | | 2.231E+00 | 8.380E-01 | 8.799E-01 | 1.036E-01 | 2.536 |
| | + | 241.98 | | 6.663E-01 | 3.641E-01 | 5.860E-01 | 4.673E-02 | 1.137 |
| PO-216 | + | 295.21 | | 7.677E-01 | 1.576E-01 | 1.586E-01 | 1.353E-02 | 4.842 |
| | + | 351.92 | * | 6.786E-01 | 1.209E-01 | 7.833E-02 | 6.458E-03 | 8.664 |
| | + | 74.81 | | 1.329E+00 | 4.346E-01 | 3.885E-01 | 4.764E-02 | 3.421 |
| | + | 77.11 | | 1.070E+00 | 2.177E-01 | 2.211E-01 | 1.786E-02 | 4.842 |
| | + | 87.30 | | 1.302E+00 | 4.961E-01 | 5.136E-01 | 6.874E-02 | 2.536 |
| PO-218 | + | 238.63 | * | 6.464E-01 | 1.037E-01 | 8.560E-02 | 6.178E-03 | 7.551 |
| | + | 300.09 | | 1.122E+00 | 7.162E-01 | 9.044E-01 | 7.470E-02 | 1.241 |
| | + | 74.81 | | 2.290E+00 | 7.374E-01 | 6.694E-01 | 7.268E-02 | 3.421 |
| | + | 77.11 | | 1.835E+00 | 3.985E-01 | 3.790E-01 | 4.209E-02 | 4.842 |
| | + | 87.30 | | 2.231E+00 | 8.380E-01 | 8.799E-01 | 1.036E-01 | 2.536 |
| RA-224 | + | 241.98 | | 6.663E-01 | 3.641E-01 | 5.860E-01 | 4.673E-02 | 1.137 |
| | + | 295.21 | | 7.677E-01 | 1.576E-01 | 1.586E-01 | 1.353E-02 | 4.842 |
| | + | 351.92 | * | 6.786E-01 | 1.209E-01 | 7.833E-02 | 6.458E-03 | 8.664 |
| | + | 240.98 | * | 1.263E+00 | 6.867E-01 | 9.736E-01 | 5.517E-02 | 1.298 |
| | + | 609.31 | * | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| RA-226 | + | 1120.29 | | 8.118E-01 | 4.646E-01 | 3.398E-01 | 3.108E-02 | 2.389 |
| | + | 1764.49 | | 9.467E-01 | 2.846E-01 | 1.887E-01 | 1.144E-02 | 5.016 |
| | + | 338.32 | | 5.068E-01 | 3.434E-01 | 2.763E-01 | 1.126E-01 | 1.834 |
| | + | 911.07 | * | 8.491E-01 | 2.318E-01 | 1.706E-01 | 1.930E-02 | 4.978 |
| | + | 969.11 | | 7.215E-01 | 3.527E-01 | 3.312E-01 | 7.676E-02 | 2.179 |
| RA-228 | + | 338.32 | | 5.068E-01 | 3.434E-01 | 2.763E-01 | 1.126E-01 | 1.834 |
| | + | 911.07 | * | 8.491E-01 | 2.318E-01 | 1.706E-01 | 1.930E-02 | 4.978 |
| | + | 969.11 | | 7.215E-01 | 3.527E-01 | 3.312E-01 | 7.676E-02 | 2.179 |
| | + | 74.81 | | 1.352E+00 | 4.239E-01 | 3.951E-01 | 3.168E-02 | 3.421 |
| | + | 77.11 | | 1.089E+00 | 2.214E-01 | 2.248E-01 | 1.816E-02 | 4.842 |
| TH-228 | + | 87.30 | | 1.325E+00 | 4.869E-01 | 5.224E-01 | 4.646E-02 | 2.536 |
| | + | 238.63 | * | 6.574E-01 | 1.055E-01 | 8.706E-02 | 6.284E-03 | 7.551 |
| | + | 300.09 | | 1.142E+00 | 9.871E-01 | 9.198E-01 | 5.421E-01 | 1.241 |
| | + | 609.31 | * | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| | + | 1120.29 | | 8.118E-01 | 4.645E-01 | 3.398E-01 | 3.108E-02 | 2.389 |
| TH-230 | + | 1764.49 | | 9.466E-01 | 2.846E-01 | 1.887E-01 | 1.144E-02 | 5.016 |
| | + | 338.32 | | 5.068E-01 | 2.759E-01 | 2.763E-01 | 1.597E-02 | 1.834 |
| | + | 911.07 | * | 8.491E-01 | 2.318E-01 | 1.706E-01 | 1.930E-02 | 4.978 |
| | + | 969.11 | | 7.215E-01 | 3.527E-01 | 3.312E-01 | 7.676E-02 | 2.179 |
| | + | 63.29 | * | 2.302E+00 | 1.270E+00 | 1.471E+00 | 2.574E-01 | 1.565 |
| TH-234 | + | 92.38 | | 2.166E+00 | 7.908E-01 | 6.273E-01 | 1.126E-01 | 3.453 |
| | + | 609.31 | * | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| | + | 1120.29 | | 8.118E-01 | 4.645E-01 | 3.398E-01 | 3.108E-02 | 2.389 |
| | + | 1764.49 | | 9.466E-01 | 2.846E-01 | 1.887E-01 | 1.144E-02 | 5.016 |
| | + | 86.50 | * | 8.269E-01 | 3.486E-01 | 2.998E-01 | 6.727E-02 | 2.758 |
| NP-237 | + | 95.87 | | 6.526E-02 | 8.261E-01 | 1.189E+00 | 2.901E-01 | 0.055 |
| | + | 63.29 | * | 2.302E+00 | 1.270E+00 | 1.471E+00 | 2.574E-01 | 1.565 |
| | + | 92.38 | | 2.166E+00 | 7.119E-01 | 6.273E-01 | 5.239E-02 | 3.453 |
| | + | 74.67 | * | 2.155E-01 | 6.752E-02 | 6.316E-02 | 5.009E-03 | 3.411 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 86.72 | | 3.101E+01 | 1.140E+01 | 1.122E+01 | 9.916E-01 | 2.764 |
| | | 117.66 | | -7.749E-01 | 2.867E+00 | 4.613E+00 | 2.866E-01 | -0.168 |
| | | 142.18 | | 7.590E+00 | 1.364E+01 | 2.264E+01 | 1.260E+00 | 0.335 |
| ANH-511 | + | 511.00 | * | 5.903E-02 | 5.072E-02 | 3.276E-02 | 1.933E-03 | 1.802 |

---- 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 | * | 3.810E-01 | 2.641E-01 | 4.761E-01 | 3.232E-02 | 0.800 |
| NA-22 | | 1274.54 | * | 7.134E-03 | 3.442E-02 | 5.831E-02 | 3.889E-03 | 0.122 |
| NA-24 | | 1368.53 | * | 3.451E+00 | 3.442E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -2.405E-01 | 1.396E+00 | 2.121E+00 | 1.308E-01 | -0.113 |
| | | 1808.65 | * | 1.307E-02 | 2.057E-02 | 3.807E-02 | 2.223E-03 | 0.343 |
| TI-44 | | 67.85 | | -2.467E-02 | 4.450E-02 | 5.193E-02 | 3.964E-03 | -0.475 |
| | + | 78.38 | * | 1.975E-01 | 4.017E-02 | 5.584E-02 | 4.558E-03 | 3.538 |
| SC-46 | | 889.25 | * | 2.445E-03 | 3.100E-02 | 5.042E-02 | 4.381E-03 | 0.048 |
| | + | 1120.51 | | 1.411E-01 | 8.021E-02 | 9.566E-02 | 6.034E-03 | 1.475 |
| V-48 | | 944.10 | | 2.610E-01 | 7.007E-01 | 1.174E+00 | 9.887E-02 | 0.222 |
| | | 983.50 | * | 3.491E-02 | 6.083E-02 | 1.034E-01 | 8.311E-03 | 0.338 |
| | | 1312.09 | | 4.851E-02 | 6.741E-02 | 1.203E-01 | 8.557E-03 | 0.403 |
| CR-51 | | 320.08 | * | -5.516E-02 | 2.701E-01 | 4.474E-01 | 2.895E-02 | -0.123 |
| MN-52 | | 744.21 | | 1.591E-01 | 2.181E-01 | 3.785E-01 | 2.574E-02 | 0.420 |
| | | 848.13 | | 4.358E-01 | 6.620E+00 | 1.077E+01 | 8.761E-01 | 0.040 |
| | | 935.52 | | 1.550E-01 | 2.375E-01 | 4.076E-01 | 3.465E-02 | 0.380 |
| | | 1246.25 | | 1.725E+00 | 6.738E+00 | 1.147E+01 | 7.250E-01 | 0.150 |
| | | 1333.61 | | 2.446E+00 | 4.384E+00 | 7.772E+00 | 5.727E-01 | 0.315 |
| | | 1434.06 | * | 3.305E-02 | 2.003E-01 | 3.390E-01 | 2.446E-02 | 0.097 |
| MN-54 | | 834.83 | * | 1.238E-04 | 2.763E-02 | 4.473E-02 | 3.558E-03 | 0.003 |
| CO-56 | | 846.75 | * | 1.809E-02 | 3.040E-02 | 5.198E-02 | 4.217E-03 | 0.348 |
| | | 977.42 | | -8.156E-01 | 2.406E+00 | 3.723E+00 | 3.017E-01 | -0.219 |
| | | 1037.82 | | -5.879E-02 | 2.195E-01 | 3.577E-01 | 2.845E-02 | -0.164 |
| | | 1175.09 | | -1.272E-01 | 1.751E+00 | 2.900E+00 | 1.595E-01 | -0.044 |
| | | 1238.25 | | 1.366E-01 | 7.057E-02 | 1.336E-01 | 8.777E-03 | 1.022 |
| | | 1360.21 | | -3.187E-01 | 6.517E-01 | 9.952E-01 | 7.302E-02 | -0.320 |
| | | 1771.40 | | -2.822E-02 | 1.600E-01 | 2.085E-01 | 1.256E-02 | -0.135 |
| CO-57 | | 122.06 | * | 7.819E-03 | 1.932E-02 | 3.200E-02 | 1.910E-03 | 0.244 |
| | | 136.48 | | -1.621E-01 | 1.586E-01 | 2.449E-01 | 1.617E-02 | -0.662 |
| CO-58 | | 810.76 | * | -1.138E-02 | 2.749E-02 | 4.246E-02 | 3.254E-03 | -0.268 |
| FE-59 | | 142.65 | | 6.836E-01 | 2.187E+00 | 3.593E+00 | 1.998E-01 | 0.190 |
| | | 192.34 | | -9.134E-03 | 8.373E-01 | 1.176E+00 | 1.365E-01 | -0.008 |
| | | 1099.22 | * | -3.683E-02 | 7.035E-02 | 1.115E-01 | 8.371E-03 | -0.330 |
| | | 1291.56 | | 7.213E-03 | 8.846E-02 | 1.482E-01 | 1.227E-02 | 0.049 |
| CO-60 | | 1173.22 | | 9.727E-03 | 3.396E-02 | 5.808E-02 | 3.183E-03 | 0.167 |
| | | 1332.49 | * | 2.389E-03 | 2.727E-02 | 4.570E-02 | 3.368E-03 | 0.052 |
| ZN-65 | | 1115.52 | * | 2.009E-02 | 6.981E-02 | 1.048E-01 | 6.700E-03 | 0.192 |
| GE-68 | | 1077.35 | * | 8.979E-01 | 8.938E-01 | 1.637E+00 | 1.133E-01 | 0.548 |
| AS-73 | | 53.44 | * | -3.941E-02 | 5.809E-01 | 9.572E-01 | 7.080E-02 | -0.041 |
| AS-74 | | 595.88 | * | -5.468E-02 | 7.016E-02 | 1.071E-01 | 6.345E-03 | -0.510 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SE-75 | 634.78 | | | -1.254E-01 | 2.811E-01 | 4.417E-01 | 2.596E-02 | -0.284 |
| | 66.05 | | | -3.021E-01 | 3.844E+00 | 5.528E+00 | 5.307E-01 | -0.055 |
| | 96.73 | | | 3.713E-02 | 6.685E-01 | 9.608E-01 | 1.264E-01 | 0.039 |
| | 121.11 | | | 6.933E-02 | 1.041E-01 | 1.741E-01 | 1.631E-02 | 0.398 |
| | 136.00 | | | -2.790E-02 | 2.989E-02 | 4.639E-02 | 2.671E-03 | -0.601 |
| | 198.60 | | | 2.636E-01 | 1.344E+00 | 2.182E+00 | 1.490E-01 | 0.121 |
| | 264.65 | * | | -2.672E-03 | 3.441E-02 | 5.027E-02 | 2.923E-03 | -0.053 |
| | 279.53 | | | -1.679E-02 | 7.958E-02 | 1.325E-01 | 8.299E-03 | -0.127 |
| | 303.91 | | | 5.702E-01 | 1.672E+00 | 2.513E+00 | 2.400E-01 | 0.227 |
| | 400.65 | | | 4.794E-02 | 1.783E-01 | 3.023E-01 | 2.714E-02 | 0.159 |
| BR-77 | 87.88 | | | 4.701E+02 | 3.880E+02 | 4.363E+02 | 3.905E+01 | 1.077 |
| | 200.40 | | | -1.115E+02 | 2.178E+02 | 3.413E+02 | 1.857E+01 | -0.327 |
| | 239.00 | + | | 1.782E+02 | 2.746E+01 | 4.236E+01 | 2.397E+00 | 4.207 |
| | 249.79 | | | -4.636E+01 | 8.707E+01 | 1.347E+02 | 7.680E+00 | -0.344 |
| | 281.68 | | | -6.084E+01 | 1.145E+02 | 1.874E+02 | 1.086E+01 | -0.325 |
| | 297.23 | | | 2.140E+02 | 7.711E+01 | 1.405E+02 | 8.169E+00 | 1.523 |
| | 303.76 | | | 9.517E+01 | 2.425E+02 | 3.661E+02 | 2.130E+01 | 0.260 |
| | 439.47 | | | 6.788E+01 | 1.633E+02 | 2.797E+02 | 1.606E+01 | 0.243 |
| | 484.57 | | | -2.047E+02 | 2.813E+02 | 4.382E+02 | 2.567E+01 | -0.467 |
| | 520.65 | * | | 2.772E-01 | 1.255E+01 | 2.074E+01 | 1.226E+00 | 0.013 |
| SR-82 | 574.64 | | | -1.171E+02 | 3.505E+02 | 4.127E+02 | 2.449E+01 | -0.284 |
| | 578.91 | | | 1.154E+02 | 1.126E+02 | 1.798E+02 | 1.067E+01 | 0.642 |
| | 585.48 | | | 9.205E+02 | 2.770E+02 | 5.015E+02 | 2.974E+01 | 1.835 |
| | 755.35 | | | 1.408E+02 | 2.019E+02 | 3.497E+02 | 2.426E+01 | 0.403 |
| | 817.79 | | | 9.595E+01 | 1.761E+02 | 3.001E+02 | 2.320E+01 | 0.320 |
| | 698.33 | | | -5.274E+00 | 2.819E+01 | 4.526E+01 | 2.828E+00 | -0.117 |
| | 776.49 | * | | -3.066E-01 | 2.958E-01 | 4.280E-01 | 3.082E-02 | -0.716 |
| | 1395.20 | | | 2.767E+00 | 7.868E+00 | 1.366E+01 | 9.953E-01 | 0.203 |
| | 520.41 | * | | -1.126E-02 | 4.902E-02 | 7.934E-02 | 4.690E-03 | -0.142 |
| | 529.64 | | | -5.814E-02 | 7.276E-02 | 1.113E-01 | 6.591E-03 | -0.522 |
| RB-83 | 552.65 | | | -6.713E-05 | 1.293E-01 | 2.129E-01 | 1.263E-02 | 0.000 |
| | 881.50 | * | | -7.594E-03 | 5.869E-02 | 9.350E-02 | 8.025E-03 | -0.081 |
| RB-84 | 513.99 | * | | 1.657E+01 | 6.005E+00 | 1.066E+01 | 6.297E-01 | 1.554 |
| KR-85 | 513.99 | * | | 8.662E-02 | 3.139E-02 | 5.576E-02 | 3.292E-03 | 1.554 |
| SR-85 | 1076.63 | * | | 6.219E-01 | 6.061E-01 | 1.112E+00 | 7.702E-02 | 0.559 |
| RB-86 | 898.02 | | | 8.700E-03 | 3.073E-02 | 5.106E-02 | 4.520E-03 | 0.170 |
| Y-88 | 1836.01 | * | | 2.429E-03 | 2.037E-02 | 3.420E-02 | 1.952E-03 | 0.071 |
| ZR-88 | 392.90 | * | | 1.342E-02 | 2.029E-02 | 3.539E-02 | 1.970E-03 | 0.379 |
| Y-91 | 1204.90 | * | | -1.336E+00 | 1.447E+01 | 2.389E+01 | 1.395E+00 | -0.056 |
| NB-94 | 702.63 | * | | -4.398E-03 | 2.676E-02 | 4.304E-02 | 2.711E-03 | -0.102 |
| | 871.10 | | | 1.311E-02 | 2.351E-02 | 4.030E-02 | 3.402E-03 | 0.325 |
| NB-95 | 765.79 | * | | 3.395E-02 | 3.377E-02 | 5.840E-02 | 4.127E-03 | 0.581 |
| NB-95M | 235.69 | * | | 3.229E-01 | 1.178E-01 | 1.889E-01 | 1.399E-02 | 1.710 |
| ZR-95 | 724.18 | | | 4.530E-02 | 8.094E-02 | 1.216E-01 | 9.130E-03 | 0.373 |
| | 756.15 | * | | 3.995E-02 | 5.082E-02 | 8.871E-02 | 7.101E-03 | 0.450 |
| NB-97 | 657.90 | * | | -4.140E-01 | 5.082E-02 | Half-Life | too short | |
| | 1024.50 | | | -2.258E+01 | 5.082E-02 | Half-Life | too short | |
| ZR-97 | 254.15 | | | 1.669E+01 | 5.082E-02 | Half-Life | too short | |
| | 355.39 | | | 1.194E+01 | 5.082E-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 |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 507.63 | * | | 2.314E+01 | 5.082E-02 | Half-Life | too short | |
| | 602.52 | | | 1.432E+01 | 5.082E-02 | Half-Life | too short | |
| | 1021.30 | | | -2.496E+00 | 5.082E-02 | Half-Life | too short | |
| | 1147.95 | | | 2.025E+00 | 5.082E-02 | Half-Life | too short | |
| | 1362.66 | | | -1.296E+01 | 5.082E-02 | Half-Life | too short | |
| | 1750.46 | | | 1.398E+01 | 5.082E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -1.087E+01 | 3.260E+01 | 5.141E+01 | 1.383E+01 | -0.212 |
| | 181.06 | | | -2.278E-01 | 2.295E+01 | 3.229E+01 | 5.484E+00 | -0.007 |
| | 366.43 | | | -1.938E+01 | 9.646E+01 | 1.590E+02 | 9.050E+00 | -0.122 |
| | 739.58 | * | | -1.369E+01 | 1.324E+01 | 1.897E+01 | 2.694E+00 | -0.722 |
| | 778.00 | | | -3.089E+01 | 3.752E+01 | 5.534E+01 | 3.996E+00 | -0.558 |
| TC-99M | 140.51 | * | | -1.659E+12 | 3.752E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | -5.194E-04 | 2.478E-02 | 4.025E-02 | 2.349E-03 | -0.013 |
| | 198.01 | * | | 1.302E-02 | 2.429E-02 | 4.010E-02 | 2.175E-03 | 0.325 |
| | 325.23 | | | 1.431E-01 | 1.652E-01 | 2.592E-01 | 1.505E-02 | 0.552 |
| RH-102 | 418.52 | | | 8.237E-02 | 1.964E-01 | 3.363E-01 | 1.907E-02 | 0.245 |
| | 475.06 | * | | -6.647E-03 | 2.318E-02 | 3.761E-02 | 2.195E-03 | -0.177 |
| | 631.29 | | | 2.024E-02 | 4.028E-02 | 6.878E-02 | 4.046E-03 | 0.294 |
| | 697.49 | | | 3.689E-04 | 6.029E-02 | 9.838E-02 | 6.136E-03 | 0.004 |
| | 766.84 | | | 7.712E-02 | 8.970E-02 | 1.531E-01 | 1.084E-02 | 0.504 |
| | 1046.59 | | | -6.976E-02 | 8.130E-02 | 1.236E-01 | 9.047E-03 | -0.564 |
| | 1112.84 | | | -6.358E-02 | 1.704E-01 | 2.420E-01 | 1.554E-02 | -0.263 |
| RU-103 | 497.08 | * | | 4.045E-03 | 2.732E-02 | 4.572E-02 | 5.798E-03 | 0.088 |
| | 610.33 | + | | 6.407E+00 | 1.555E+00 | 1.961E+00 | 3.031E-01 | 3.268 |
| RH-106 | 511.85 | + | | 2.959E-01 | 2.542E-01 | 3.264E-01 | 1.927E-02 | 0.906 |
| | 621.84 | * | | -3.566E-02 | 2.326E-01 | 3.760E-01 | 4.431E-02 | -0.095 |
| | 1050.47 | | | 1.181E+00 | 1.659E+00 | 2.966E+00 | 2.156E-01 | 0.398 |
| RU-106 | 511.85 | + | | 2.959E-01 | 2.542E-01 | 3.264E-01 | 1.927E-02 | 0.906 |
| | 621.84 | * | | -3.566E-02 | 2.326E-01 | 3.760E-01 | 2.217E-02 | -0.095 |
| | 1050.47 | | | 1.181E+00 | 1.659E+00 | 2.966E+00 | 2.156E-01 | 0.398 |
| AG-108M | 433.93 | * | | -1.092E-02 | 2.280E-02 | 3.649E-02 | 2.273E-03 | -0.299 |
| | 614.37 | | | -4.555E-03 | 3.091E-02 | 4.303E-02 | 2.750E-03 | -0.106 |
| | 722.95 | | | 7.418E-03 | 3.240E-02 | 4.702E-02 | 3.282E-03 | 0.158 |
| CD-109 | 88.03 | * | | 1.310E+00 | 1.049E+00 | 1.182E+00 | 1.058E-01 | 1.108 |
| AG-110M | 657.75 | * | | -2.375E-02 | 2.978E-02 | 3.756E-02 | 2.331E-03 | -0.632 |
| | 677.61 | | | -4.561E-03 | 2.216E-01 | 3.611E-01 | 2.293E-02 | -0.013 |
| | 706.67 | | | -1.124E-01 | 1.637E-01 | 2.506E-01 | 1.671E-02 | -0.448 |
| | 763.93 | | | -1.491E-02 | 1.282E-01 | 2.061E-01 | 1.513E-02 | -0.072 |
| | 884.67 | | | 2.310E-03 | 3.978E-02 | 6.457E-02 | 5.749E-03 | 0.036 |
| | 937.48 | | | 3.199E-02 | 8.319E-02 | 1.393E-01 | 1.226E-02 | 0.230 |
| | 1384.27 | | | -1.139E-01 | 1.062E-01 | 1.439E-01 | 1.092E-02 | -0.791 |
| IN-111 | 171.28 | | | -2.328E-01 | 1.179E+00 | 1.884E+00 | 9.891E-02 | -0.124 |
| | 245.39 | * | | 1.392E+00 | 1.373E+00 | 2.065E+00 | 1.174E-01 | 0.674 |
| IN-113M | 391.69 | * | | -6.165E-03 | 2.912E-02 | 4.778E-02 | 2.851E-03 | -0.129 |
| SN-113 | 391.69 | * | | -6.165E-03 | 2.912E-02 | 4.778E-02 | 2.851E-03 | -0.129 |
| IN-114M | 190.27 | * | | 1.175E-01 | 1.561E-01 | 2.305E-01 | 1.239E-02 | 0.510 |
| CD-115 | 260.90 | | | -5.405E+01 | 1.663E+02 | 2.598E+02 | 1.492E+01 | -0.208 |
| | 492.35 | | | 1.257E+01 | 4.331E+01 | 7.331E+01 | 4.305E+00 | 0.172 |
| | 527.90 | * | | -7.742E+00 | 1.382E+01 | 2.107E+01 | 1.247E+00 | -0.367 |

---- 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 | | | 9.584E-01 | 1.936E+00 | 3.200E+00 | 1.715E-01 | 0.300 |
| | 158.56 | * | | -5.298E-03 | 4.680E-02 | 7.532E-02 | 4.009E-03 | -0.070 |
| SB-122 | 563.90 | * | | 5.472E-01 | 2.890E+00 | 4.205E+00 | 2.496E-01 | 0.130 |
| | 692.80 | | | 4.716E+00 | 5.006E+01 | 8.236E+01 | 5.092E+00 | 0.057 |
| I-123 | 159.00 | * | | -2.443E+01 | 5.006E+01 | Half-Life | too short | |
| | 528.96 | | | -1.678E+03 | 5.006E+01 | Half-Life | too short | |
| TE-123M | 159.00 | * | | -1.166E-02 | 2.283E-02 | 3.607E-02 | 1.948E-03 | -0.323 |
| I-124 | 602.71 | * | | 3.848E-01 | 7.521E-01 | 1.130E+00 | 6.689E-02 | 0.340 |
| | 722.78 | | | 9.902E-01 | 4.597E+00 | 6.660E+00 | 4.354E-01 | 0.149 |
| | 1325.50 | | | -1.420E+01 | 3.450E+01 | 5.418E+01 | 3.946E+00 | -0.262 |
| | 1376.25 | | | 3.360E+01 | 3.032E+01 | 5.699E+01 | 4.169E+00 | 0.590 |
| + | 1509.49 | | | 1.238E+01 | 1.834E+01 | 2.814E+01 | 1.979E+00 | 0.440 |
| | 1691.02 | | | -1.030E+00 | 4.240E+00 | 6.636E+00 | 4.245E-01 | -0.155 |
| SB-124 | 602.71 | | | 1.680E-02 | 3.284E-02 | 4.935E-02 | 2.922E-03 | 0.340 |
| | 645.85 | | | -2.319E-01 | 3.625E-01 | 5.565E-01 | 3.670E-02 | -0.417 |
| | 709.31 | | | 4.238E-01 | 2.129E+00 | 3.530E+00 | 2.251E-01 | 0.120 |
| | 713.82 | | | 7.630E-01 | 1.245E+00 | 2.135E+00 | 2.259E-01 | 0.357 |
| | 722.78 | | | 6.268E-02 | 2.910E-01 | 4.215E-01 | 2.859E-02 | 0.149 |
| + | 968.20 | | | 7.588E+00 | 3.324E+00 | 5.101E+00 | 4.181E-01 | 1.487 |
| | 1045.16 | | | -4.112E-01 | 1.694E+00 | 2.765E+00 | 2.028E-01 | -0.149 |
| | 1325.50 | | | -9.597E-01 | 2.333E+00 | 3.663E+00 | 2.668E-01 | -0.262 |
| | 1368.21 | | | 1.129E+00 | 1.201E+00 | 2.233E+00 | 2.833E-01 | 0.506 |
| | 1436.60 | | | 1.647E+00 | 2.601E+00 | 4.695E+00 | 3.384E-01 | 0.351 |
| | 1691.02 | * | | -1.537E-02 | 6.331E-02 | 9.908E-02 | 6.786E-03 | -0.155 |
| SB-125 | 427.89 | * | | 2.013E-02 | 6.540E-02 | 1.110E-01 | 6.610E-03 | 0.181 |
| | 463.38 | | | 2.814E-01 | 2.143E-01 | 3.834E-01 | 2.596E-02 | 0.734 |
| | 600.56 | | | 3.433E-02 | 1.268E-01 | 2.127E-01 | 1.449E-02 | 0.161 |
| | 635.90 | | | -6.153E-02 | 2.004E-01 | 3.191E-01 | 2.188E-02 | -0.193 |
| TE-125M | 109.28 | * | | -6.188E+00 | 7.516E+00 | 1.182E+01 | 1.045E+00 | -0.524 |
| I-126 | 388.63 | | | -3.072E-02 | 1.425E-01 | 2.338E-01 | 1.305E-02 | -0.131 |
| | 666.33 | * | | 9.357E-02 | 1.522E-01 | 2.326E-01 | 1.367E-02 | 0.402 |
| | 753.82 | | | 2.923E-01 | 1.167E+00 | 1.942E+00 | 1.343E-01 | 0.150 |
| SB-126 | 223.80 | | | 1.051E+00 | 3.351E+00 | 5.460E+00 | 3.047E-01 | 0.193 |
| | 278.60 | | | 1.430E+00 | 1.990E+00 | 3.467E+00 | 2.007E-01 | 0.412 |
| | 296.50 | | | 6.090E+00 | 1.433E+00 | 2.682E+00 | 1.559E-01 | 2.270 |
| | 414.70 | | | 5.700E-03 | 5.791E-02 | 9.699E-02 | 5.487E-03 | 0.059 |
| | 415.30 | | | -1.253E-01 | 4.660E+00 | 7.736E+00 | 4.378E-01 | -0.016 |
| | 555.20 | | | -2.445E+00 | 2.985E+00 | 4.537E+00 | 2.693E-01 | -0.539 |
| | 573.80 | | | -9.150E-01 | 1.005E+00 | 1.271E+00 | 7.544E-02 | -0.720 |
| | 593.00 | | | 2.134E-01 | 7.235E-01 | 1.218E+00 | 7.218E-02 | 0.175 |
| | 656.30 | | | -8.160E-01 | 3.165E+00 | 4.327E+00 | 2.525E-01 | -0.189 |
| | 666.33 | | | 3.927E-02 | 6.386E-02 | 9.763E-02 | 5.737E-03 | 0.402 |
| | 675.00 | | | -3.622E-01 | 1.515E+00 | 2.417E+00 | 1.444E-01 | -0.150 |
| | 695.00 | | | 1.756E-02 | 6.375E-02 | 1.065E-01 | 6.609E-03 | 0.165 |
| | 697.00 | | | -2.427E-02 | 2.350E-01 | 3.801E-01 | 2.369E-02 | -0.064 |
| | 720.50 | * | | -6.916E-02 | 1.314E-01 | 1.710E-01 | 1.113E-02 | -0.404 |
| | 856.80 | | | -2.049E-01 | 3.903E-01 | 4.933E-01 | 4.069E-02 | -0.415 |
| | 989.30 | | | -3.265E-01 | 1.115E+00 | 1.733E+00 | 1.383E-01 | -0.188 |
| | 1034.80 | | | -4.372E+00 | 7.089E+00 | 1.112E+01 | 8.300E-01 | -0.393 |

---- 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 | | | -6.736E-02 | 3.896E+00 | 6.475E+00 | 3.841E-01 | -0.010 |
| | 61.10 | | | 9.265E+01 | 6.595E+01 | 1.009E+02 | 1.105E+01 | 0.918 |
| | 252.40 | | | -2.452E-01 | 4.621E+00 | 7.355E+00 | 3.066E+00 | -0.033 |
| | 290.80 | | | -1.237E+01 | 2.532E+01 | 3.568E+01 | 3.514E+00 | -0.347 |
| | 411.60 | | | -1.591E+00 | 1.158E+01 | 1.908E+01 | 2.816E+00 | -0.083 |
| | 444.90 | | | -2.238E+00 | 9.238E+00 | 1.503E+01 | 1.707E+00 | -0.149 |
| | 473.00 | | | -1.039E+00 | 1.760E+00 | 2.780E+00 | 3.269E-01 | -0.374 |
| | 543.00 | | | 4.342E+00 | 1.646E+01 | 2.768E+01 | 3.726E+00 | 0.157 |
| | 603.60 | | | 1.564E+00 | 1.338E+01 | 1.926E+01 | 2.198E+00 | 0.081 |
| | 685.20 | * | | -2.557E-01 | 1.415E+00 | 2.272E+00 | 2.333E-01 | -0.113 |
| XE-127 | 698.50 | | | -2.442E+00 | 1.670E+01 | 2.691E+01 | 4.063E+00 | -0.091 |
| | 722.20 | | | 3.096E+00 | 3.261E+01 | 4.648E+01 | 4.785E+00 | 0.067 |
| | 783.80 | | | 8.161E-02 | 3.571E+00 | 5.808E+00 | 7.020E-01 | 0.014 |
| | 57.60 | | | -2.224E+00 | 4.928E+00 | 7.370E+00 | 5.522E-01 | -0.302 |
| | 145.22 | | | 3.977E-01 | 5.724E-01 | 9.414E-01 | 5.196E-02 | 0.422 |
| | 172.10 | | | 3.714E-04 | 9.250E-02 | 1.494E-01 | 7.848E-03 | 0.002 |
| I-131 | 202.84 | * | | 1.185E-02 | 3.927E-02 | 6.185E-02 | 3.374E-03 | 0.192 |
| | 374.96 | | | 4.701E-02 | 1.462E-01 | 2.490E-01 | 1.407E-02 | 0.189 |
| | 80.18 | | | 4.676E+00 | 5.587E+00 | 6.240E+00 | 5.218E-01 | 0.749 |
| | 284.30 | | | -9.004E-02 | 1.301E+00 | 2.183E+00 | 1.412E-01 | -0.041 |
| | 364.48 | * | | 1.848E-02 | 9.415E-02 | 1.593E-01 | 1.020E-02 | 0.116 |
| TE-132 | 636.97 | | | -4.273E-01 | 1.309E+00 | 2.078E+00 | 1.367E-01 | -0.206 |
| | 722.89 | | | 1.435E+00 | 6.399E+00 | 9.282E+00 | 6.155E-01 | 0.155 |
| | 49.72 | | | -1.501E+01 | 1.945E+01 | 3.104E+01 | 3.195E+00 | -0.484 |
| | 111.76 | | | 1.210E+00 | 3.435E+01 | 5.568E+01 | 5.520E+00 | 0.022 |
| BA-133 | 116.30 | | | -3.396E+01 | 3.191E+01 | 4.899E+01 | 4.761E+00 | -0.693 |
| | 228.16 | * | | 2.457E-01 | 7.895E-01 | 1.284E+00 | 1.884E-01 | 0.191 |
| | 53.15 | | | -1.379E+00 | 2.489E+00 | 4.016E+00 | 2.966E-01 | -0.343 |
| | 79.62 | | | 1.398E+00 | 1.255E+00 | 1.615E+00 | 2.426E-01 | 0.866 |
| | 81.00 | | | 6.335E-02 | 1.012E-01 | 1.107E-01 | 1.742E-02 | 0.572 |
| I-133 | 276.40 | | | 3.148E-01 | 2.881E-01 | 4.691E-01 | 6.079E-02 | 0.671 |
| | 302.84 | | | 1.053E-01 | 1.108E-01 | 1.737E-01 | 2.027E-02 | 0.606 |
| | 356.01 | * | | 1.186E-02 | 3.272E-02 | 4.919E-02 | 5.669E-03 | 0.241 |
| | 383.85 | | | 2.737E-02 | 2.026E-01 | 3.410E-01 | 3.673E-02 | 0.080 |
| | 510.53 | + | | 2.644E+00 | 2.026E-01 | Half-Life | too short | |
| | 529.87 | * | | -1.588E-02 | 2.026E-01 | Half-Life | too short | |
| | 706.58 | | | -9.415E-01 | 2.026E-01 | Half-Life | too short | |
| | 856.28 | | | -1.545E-01 | 2.026E-01 | Half-Life | too short | |
| | 875.33 | | | 2.102E-02 | 2.026E-01 | Half-Life | too short | |
| | 1236.41 | | | 2.689E+00 | 2.026E-01 | Half-Life | too short | |
| CS-134 | 1298.22 | | | -1.017E-01 | 2.026E-01 | Half-Life | too short | |
| | 475.35 | | | -3.774E-02 | 1.522E+00 | 2.516E+00 | 1.469E-01 | -0.015 |
| | 563.23 | | | -3.376E-02 | 3.071E-01 | 4.320E-01 | 2.615E-02 | -0.078 |
| | 569.32 | + | | 5.466E-01 | 3.226E-01 | 3.553E-01 | 2.169E-02 | 1.538 |
| | 604.70 | | | 4.133E-03 | 2.869E-02 | 4.139E-02 | 2.462E-03 | 0.100 |
| | 795.84 | * | | 5.266E-02 | 4.763E-02 | 5.969E-02 | 4.488E-03 | 0.882 |
| | 801.93 | | | 2.173E-01 | 3.599E-01 | 5.364E-01 | 4.066E-02 | 0.405 |
| | 1038.57 | | | -1.968E-01 | 2.694E+00 | 4.483E+00 | 3.325E-01 | -0.044 |
| | 1167.94 | | | 2.653E-01 | 1.765E+00 | 2.986E+00 | 1.662E-01 | 0.089 |

----- 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 | | | 2.657E-01 | 8.521E-01 | 1.471E+00 | 1.146E-01 | 0.181 |
| | 268.24 | * | | 1.468E-01 | 1.251E-01 | 1.987E-01 | 1.516E-02 | 0.739 |
| | 288.45 | | | 2.614E+12 | 1.251E-01 | Half-Life | too short | |
| | 417.63 | | | 1.182E+12 | 1.251E-01 | Half-Life | too short | |
| | 546.56 | | | -2.752E+11 | 1.251E-01 | Half-Life | too short | |
| | 836.80 | | | -3.863E+11 | 1.251E-01 | Half-Life | too short | |
| | 1038.76 | | | -9.609E+10 | 1.251E-01 | Half-Life | too short | |
| | 1124.00 | | | 3.149E+12 | 1.251E-01 | Half-Life | too short | |
| | 1131.51 | | | 4.917E+11 | 1.251E-01 | Half-Life | too short | |
| | 1260.41 | * | | 2.644E+11 | 1.251E-01 | Half-Life | too short | |
| | 1457.56 | | | 3.147E+13 | 1.251E-01 | Half-Life | too short | |
| | 1678.03 | | | -4.072E+11 | 1.251E-01 | Half-Life | too short | |
| | 1706.46 | | | 2.144E+11 | 1.251E-01 | Half-Life | too short | |
| | 1791.20 | | | 9.225E+10 | 1.251E-01 | Half-Life | too short | |
| CS-136 + | 66.91 | | | -4.970E-01 | 7.442E-01 | 9.584E-01 | 1.428E-01 | -0.519 |
| | 86.29 | | | 4.052E+00 | 1.539E+00 | 1.684E+00 | 2.184E-01 | 2.406 |
| | 153.22 | | | -2.005E-01 | 5.716E-01 | 9.111E-01 | 6.294E-02 | -0.220 |
| | 163.89 | | | -5.498E-01 | 9.045E-01 | 1.419E+00 | 9.678E-02 | -0.387 |
| | 176.55 | | | 3.697E-03 | 2.970E-01 | 4.795E-01 | 2.908E-02 | 0.008 |
| | 273.65 | | | -4.431E-01 | 4.206E-01 | 5.687E-01 | 3.752E-02 | -0.779 |
| | 340.57 | | | 1.781E-01 | 1.159E-01 | 1.878E-01 | 1.154E-02 | 0.948 |
| | 818.51 | | | 6.101E-02 | 6.270E-02 | 1.107E-01 | 8.581E-03 | 0.551 |
| | 1048.07 | * | | -2.229E-02 | 8.332E-02 | 1.357E-01 | 1.049E-02 | -0.164 |
| | 1235.34 | | | 2.167E-01 | 5.080E-01 | 8.725E-01 | 8.918E-02 | 0.248 |
| | 165.85 | * | | -1.582E-02 | 2.277E-02 | 3.555E-02 | 1.856E-03 | -0.445 |
| | 162.64 | | | 5.939E-01 | 6.253E-01 | 1.053E+00 | 6.373E-02 | 0.564 |
| | 304.84 | | | 9.977E-02 | 1.098E+00 | 1.618E+00 | 4.416E-01 | 0.062 |
| | 423.70 | | | -3.340E-01 | 1.468E+00 | 2.393E+00 | 7.601E-01 | -0.140 |
| LA-140 + | 537.32 | * | | -1.129E-01 | 2.000E-01 | 3.078E-01 | 1.002E-01 | -0.367 |
| | 328.77 | | | 6.513E-01 | 3.619E-01 | 4.419E-01 | 2.870E-02 | 1.474 |
| | 432.53 | | | 1.040E+00 | 1.557E+00 | 2.710E+00 | 1.717E-01 | 0.384 |
| | 487.03 | | | 2.521E-02 | 1.064E-01 | 1.792E-01 | 1.186E-02 | 0.141 |
| | 751.79 | | | -3.863E-01 | 1.396E+00 | 2.208E+00 | 1.770E-01 | -0.175 |
| | 815.85 | | | -3.617E-02 | 2.772E-01 | 4.432E-01 | 3.901E-02 | -0.082 |
| | 867.82 | | | -4.739E-01 | 1.213E+00 | 1.670E+00 | 1.481E-01 | -0.284 |
| | 919.63 | | | 5.563E-01 | 2.390E+00 | 3.449E+00 | 3.677E-01 | 0.161 |
| | 925.24 | | | 2.578E-01 | 7.985E-01 | 1.338E+00 | 1.222E-01 | 0.193 |
| | 1596.49 | * | | -4.344E-02 | 6.116E-02 | 8.630E-02 | 5.839E-03 | -0.503 |
| | 145.44 | * | | 3.518E-02 | 5.158E-02 | 8.480E-02 | 4.883E-03 | 0.415 |
| | 57.37 | | | -8.370E-04 | 5.158E-02 | Half-Life | too short | |
| | 231.56 | | | -7.305E-04 | 5.158E-02 | Half-Life | too short | |
| | 293.26 | * | | 1.115E-03 | 5.158E-02 | Half-Life | too short | |
| CE-141 CE-143 + | 350.59 | | | 3.936E-02 | 5.158E-02 | Half-Life | too short | |
| | 490.36 | | | 1.129E-03 | 5.158E-02 | Half-Life | too short | |
| | 664.57 | | | 3.725E-03 | 5.158E-02 | Half-Life | too short | |
| | 721.93 | | | 2.078E-04 | 5.158E-02 | Half-Life | too short | |
| | 80.11 | | | 1.941E+00 | 2.205E+00 | 2.471E+00 | 2.048E-01 | 0.785 |
| | 133.54 | * | | 3.005E-02 | 1.539E-01 | 2.521E-01 | 3.572E-02 | 0.119 |
| | 476.78 | | | 3.600E-02 | 5.434E-02 | 9.380E-02 | 6.546E-03 | 0.384 |
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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 |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 618.01 | | | 3.342E-03 | 2.318E-02 | 3.749E-02 | 2.341E-03 | 0.089 |
| | 696.49 | * | | -6.861E-03 | 2.664E-02 | 4.249E-02 | 2.648E-03 | -0.161 |
| | 778.57 | | | 1.244E-01 | 1.526E+00 | 2.499E+00 | 1.807E-01 | 0.050 |
| PR-144 | 696.49 | * | | -4.654E-01 | 1.807E+00 | 2.882E+00 | 1.794E-01 | -0.161 |
| | 1489.15 | | | 1.465E+00 | 7.577E+00 | 1.291E+01 | 9.151E-01 | 0.113 |
| PM-146 | 453.90 | * | | 1.503E-03 | 3.224E-02 | 5.364E-02 | 4.619E-03 | 0.028 |
| | 633.02 | | | -4.208E-03 | 1.024E+00 | 1.676E+00 | 6.175E-01 | -0.003 |
| | 735.90 | | | -5.777E-04 | 1.021E-01 | 1.660E-01 | 4.661E-02 | -0.003 |
| | 747.13 | | | 2.636E-02 | 6.940E-02 | 1.166E-01 | 1.518E-02 | 0.226 |
| ND-147 | 91.11 | | | 5.858E-01 | 4.264E-01 | 4.988E-01 | 4.607E-02 | 1.174 |
| | 319.41 | | | 5.400E-01 | 2.616E+00 | 4.442E+00 | 2.582E-01 | 0.122 |
| | 439.89 | | | 2.862E+00 | 4.335E+00 | 7.553E+00 | 4.341E-01 | 0.379 |
| | 531.02 | * | | -2.171E-01 | 4.263E-01 | 6.694E-01 | 9.087E-02 | -0.324 |
| PM-149 | 285.90 | * | | 1.711E+01 | 1.239E+02 | 2.099E+02 | 2.977E+01 | 0.082 |
| EU-152 | 121.78 | | | 8.807E-03 | 5.628E-02 | 9.223E-02 | 7.140E-03 | 0.095 |
| | 244.69 | | | 3.128E-01 | 2.764E-01 | 4.180E-01 | 2.375E-02 | 0.748 |
| | 344.27 | * | | -3.327E-02 | 8.619E-02 | 1.139E-01 | 7.414E-03 | -0.292 |
| | 443.98 | | | 3.407E-01 | 6.482E-01 | 1.118E+00 | 6.435E-02 | 0.305 |
| | 778.89 | | | 7.134E-02 | 1.755E-01 | 2.971E-01 | 2.148E-02 | 0.240 |
| | 867.32 | | | -9.820E-02 | 6.695E-01 | 9.100E-01 | 7.634E-02 | -0.108 |
| | 964.01 | | | 2.544E-01 | 2.448E-01 | 3.850E-01 | 3.171E-02 | 0.661 |
| | 1085.78 | | | 1.382E-01 | 2.713E-01 | 4.775E-01 | 3.249E-02 | 0.290 |
| | 1112.02 | | | -1.612E-01 | 2.284E-01 | 3.199E-01 | 2.058E-02 | -0.504 |
| | 1407.95 | | | 4.516E-03 | 1.373E-01 | 2.278E-01 | 1.655E-02 | 0.020 |
| GD-153 | 69.67 | | | 2.476E-01 | 1.306E+00 | 1.903E+00 | 1.464E-01 | 0.130 |
| | 83.37 | | | 1.031E+01 | 1.287E+01 | 1.796E+01 | 1.534E+00 | 0.574 |
| | 97.43 | * | | 5.686E-02 | 6.686E-02 | 1.002E-01 | 7.789E-03 | 0.568 |
| | 103.18 | | | -7.934E-02 | 8.254E-02 | 1.292E-01 | 9.352E-03 | -0.614 |
| EU-154 | 123.07 | | | -3.858E-03 | 4.004E-02 | 6.488E-02 | 6.156E-03 | -0.059 |
| | 247.94 | | | 1.267E-02 | 2.844E-01 | 4.395E-01 | 4.166E-02 | 0.029 |
| | 591.81 | | | 2.171E-01 | 4.230E-01 | 7.250E-01 | 7.141E-02 | 0.299 |
| | 723.30 | | | 1.797E-02 | 1.386E-01 | 1.985E-01 | 1.529E-02 | 0.091 |
| | 756.87 | | | 1.766E-01 | 5.389E-01 | 9.039E-01 | 9.798E-02 | 0.195 |
| | 873.19 | | | -1.296E-01 | 2.240E-01 | 3.379E-01 | 4.101E-02 | -0.384 |
| | 996.32 | | | -3.232E-01 | 2.885E-01 | 3.941E-01 | 6.868E-02 | -0.820 |
| | 1004.76 | | | -3.280E-02 | 1.537E-01 | 2.526E-01 | 2.792E-02 | -0.130 |
| | 1274.45 | * | | 1.901E-02 | 9.595E-02 | 1.624E-01 | 1.607E-02 | 0.117 |
| EU-155 | 48.70 | | | 6.420E-01 | 1.602E+00 | 2.694E+00 | 1.889E-01 | 0.238 |
| | 60.01 | | | 4.143E-01 | 3.988E+00 | 5.805E+00 | 4.368E-01 | 0.071 |
| | 86.54 | | | 3.394E-01 | 1.248E-01 | 1.397E-01 | 1.244E-02 | 2.430 |
| | 105.31 | * | | 1.517E-02 | 8.468E-02 | 1.379E-01 | 9.922E-03 | 0.110 |
| TB-160 | 86.79 | + | | 9.222E-01 | 3.390E-01 | 3.749E-01 | 3.316E-02 | 2.460 |
| | 197.04 | | | 1.273E-01 | 4.168E-01 | 6.807E-01 | 3.688E-02 | 0.187 |
| | 215.65 | | | -9.622E-02 | 5.712E-01 | 9.083E-01 | 5.027E-02 | -0.106 |
| | 298.57 | + | | 1.663E-01 | 1.056E-01 | 1.552E-01 | 9.023E-03 | 1.071 |
| | 879.36 | * | | 1.556E-02 | 1.150E-01 | 1.881E-01 | 1.609E-02 | 0.083 |
| | 962.29 | | | 1.239E-01 | 4.382E-01 | 6.593E-01 | 5.441E-02 | 0.188 |
| | 966.15 | | | 4.380E-01 | 2.007E-01 | 3.406E-01 | 2.798E-02 | 1.286 |
| | 1177.93 | | | 1.887E-01 | 2.781E-01 | 4.913E-01 | 2.718E-02 | 0.384 |

---- 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 | | | 1.259E-01 | 5.161E-01 | 8.797E-01 | 5.829E-02 | 0.143 |
| | 80.57 | | | 1.089E-01 | 2.870E-01 | 3.082E-01 | 2.564E-02 | 0.354 |
| | 184.41 | | | 6.300E-02 | 3.239E-02 | 5.155E-02 | 2.750E-03 | 1.222 |
| | 280.46 | | | -3.904E-02 | 6.184E-02 | 1.006E-01 | 5.828E-03 | -0.388 |
| | 410.95 | | | 2.477E-02 | 1.657E-01 | 2.786E-01 | 1.572E-02 | 0.089 |
| | 711.68 | * | | -4.003E-03 | 4.567E-02 | 7.384E-02 | 4.730E-03 | -0.054 |
| TM-171 | 752.31 | | | -4.565E-02 | 2.065E-01 | 3.286E-01 | 2.267E-02 | -0.139 |
| | 810.29 | | | -7.716E-03 | 4.014E-02 | 6.364E-02 | 4.858E-03 | -0.121 |
| | 51.35 | | | -2.163E+01 | 2.074E+01 | 3.267E+01 | 2.383E+00 | -0.662 |
| | 52.39 | | | -1.153E+01 | 1.082E+01 | 1.703E+01 | 1.252E+00 | -0.677 |
| | 59.40 | | | 4.101E-01 | 2.170E+01 | 3.146E+01 | 2.367E+00 | 0.013 |
| | 66.72 | * | | -1.646E+01 | 2.285E+01 | 3.172E+01 | 2.411E+00 | -0.519 |
| LU-176 | 88.36 | | | 1.650E-01 | 2.545E-01 | 2.755E-01 | 2.454E-02 | 0.599 |
| | 201.83 | | | 3.629E-04 | 2.228E-02 | 3.585E-02 | 1.953E-03 | 0.010 |
| | 306.84 | * | | -9.641E-03 | 1.909E-02 | 2.926E-02 | 1.702E-03 | -0.330 |
| | 401.10 | | | 6.038E-01 | 4.674E+00 | 7.852E+00 | 4.399E-01 | 0.077 |
| LU-177 | 112.95 | | | -3.823E-01 | 1.538E+00 | 2.463E+00 | 1.604E-01 | -0.155 |
| LU-177M | 208.36 | + | * | 1.237E+00 | 1.111E+00 | 1.690E+00 | 9.278E-02 | 0.732 |
| | 52.97 | | | -7.467E-01 | 1.131E+00 | 1.815E+00 | 1.339E-01 | -0.411 |
| | 54.07 | | | 2.608E-01 | 5.988E-01 | 1.006E+00 | 7.461E-02 | 0.259 |
| | 61.30 | | | 2.199E+00 | 1.246E+00 | 1.940E+00 | 1.460E-01 | 1.133 |
| | 121.62 | | | 5.532E-02 | 2.913E-01 | 4.780E-01 | 2.858E-02 | 0.116 |
| | 147.16 | | | -3.602E-01 | 5.140E-01 | 8.069E-01 | 4.430E-02 | -0.446 |
| | 171.86 | | | -5.232E-02 | 3.653E-01 | 5.857E-01 | 3.076E-02 | -0.089 |
| | 218.09 | | | 1.855E-01 | 6.292E-01 | 1.025E+00 | 5.688E-02 | 0.181 |
| | 268.79 | | | 8.446E-01 | 5.649E-01 | 1.018E+00 | 5.872E-02 | 0.829 |
| | 319.02 | | | 7.087E-02 | 1.844E-01 | 3.162E-01 | 1.837E-02 | 0.224 |
| | 367.43 | | | 2.647E-01 | 6.385E-01 | 1.095E+00 | 6.227E-02 | 0.242 |
| | 413.65 | * | | -1.640E-02 | 1.206E-01 | 1.986E-01 | 1.123E-02 | -0.083 |
| | 56.28 | | | 3.790E-01 | 6.974E-01 | 1.174E+00 | 8.771E-02 | 0.323 |
| | 57.53 | | | -1.792E-01 | 4.129E-01 | 6.181E-01 | 4.630E-02 | -0.290 |
| HF-181 | 65.20 | | | 9.201E-01 | 8.039E-01 | 1.220E+00 | 9.236E-02 | 0.754 |
| | 133.02 | | | -2.139E-03 | 5.159E-02 | 8.365E-02 | 4.787E-03 | -0.026 |
| | 136.25 | | | -3.509E-01 | 3.548E-01 | 5.490E-01 | 3.110E-02 | -0.639 |
| | 345.85 | | | 3.804E-02 | 1.567E-01 | 2.330E-01 | 1.343E-02 | 0.163 |
| | 482.03 | * | | -3.203E-02 | 3.418E-02 | 5.261E-02 | 3.079E-03 | -0.609 |
| | 56.28 | | | 1.508E-01 | 2.675E-01 | 4.508E-01 | 3.366E-02 | 0.334 |
| W-181 | 57.53 | | | -6.876E-02 | 1.586E-01 | 2.374E-01 | 1.778E-02 | -0.290 |
| TA-182 | 65.20 | * | | 3.506E-01 | 3.063E-01 | 4.651E-01 | 3.519E-02 | 0.754 |
| | 67.75 | | | -2.325E-02 | 1.046E-01 | 1.252E-01 | 9.552E-03 | -0.186 |
| | 100.10 | | | 1.173E-01 | 1.408E-01 | 2.326E-01 | 1.748E-02 | 0.504 |
| | 152.43 | | | 2.468E-02 | 2.643E-01 | 4.298E-01 | 2.326E-02 | 0.057 |
| | 222.10 | | | -8.719E-02 | 2.670E-01 | 4.206E-01 | 2.343E-02 | -0.207 |
| | 1001.68 | | | 1.640E+00 | 1.564E+00 | 2.816E+00 | 2.209E-01 | 0.582 |
| RE-183 | 1121.28 | + | | 3.882E-01 | 2.206E-01 | 2.626E-01 | 1.653E-02 | 1.478 |
| | 1189.05 | | | 1.279E-01 | 1.925E-01 | 3.434E-01 | 1.943E-02 | 0.372 |
| | 1221.42 | * | | -1.112E-01 | 1.484E-01 | 2.276E-01 | 1.373E-02 | -0.488 |
| | 1230.97 | | | -1.214E-01 | 3.668E-01 | 5.924E-01 | 3.638E-02 | -0.205 |
| | 57.98 | | | -3.918E-02 | 1.649E-01 | 2.358E-01 | 1.768E-02 | -0.166 |

----- 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 | | 1.785E-03 | 9.077E-02 | 1.316E-01 | 9.896E-03 | 0.014 |
| | | 67.20 | | -1.131E-01 | 1.755E-01 | 2.272E-01 | 1.730E-02 | -0.498 |
| | | 162.32 | * | 9.491E-02 | 8.360E-02 | 1.420E-01 | 7.479E-03 | 0.669 |
| | + | 208.81 | | 9.353E-01 | 8.398E-01 | 1.274E+00 | 6.999E-02 | 0.734 |
| | | 291.72 | | -5.136E-01 | 8.223E-01 | 1.148E+00 | 6.667E-02 | -0.447 |
| | | 57.98 | | -1.428E-01 | 6.012E-01 | 8.597E-01 | 6.446E-02 | -0.166 |
| | | 59.32 | | 6.501E-03 | 3.306E-01 | 4.793E-01 | 3.605E-02 | 0.014 |
| | | 67.20 | | -4.120E-01 | 6.395E-01 | 8.281E-01 | 6.305E-02 | -0.498 |
| | | 161.27 | | 2.775E-01 | 2.709E-01 | 4.579E-01 | 2.419E-02 | 0.606 |
| | | 216.55 | | 7.606E-02 | 1.979E-01 | 3.239E-01 | 1.794E-02 | 0.235 |
| | | 252.85 | * | 1.398E-02 | 1.803E-01 | 2.893E-01 | 1.653E-02 | 0.048 |
| | | 318.01 | | 9.026E-02 | 3.235E-01 | 5.514E-01 | 3.205E-02 | 0.164 |
| | | 792.07 | | -2.292E-01 | 8.963E-01 | 1.186E+00 | 8.777E-02 | -0.193 |
| | | 903.28 | | -7.808E-01 | 8.111E-01 | 1.126E+00 | 9.873E-02 | -0.694 |
| OS-185 | | 920.93 | | -4.436E-02 | 3.168E-01 | 4.870E-01 | 4.201E-02 | -0.091 |
| | | 59.72 | | -5.751E-03 | 2.414E-01 | 3.491E-01 | 2.627E-02 | -0.016 |
| | | 61.14 | | 2.031E-01 | 1.358E-01 | 2.097E-01 | 1.578E-02 | 0.969 |
| | | 69.30 | | 9.404E-02 | 2.328E-01 | 3.430E-01 | 2.634E-02 | 0.274 |
| | | 592.07 | | 9.389E-01 | 1.752E+00 | 3.011E+00 | 1.784E-01 | 0.312 |
| | | 646.12 | * | -1.928E-02 | 3.038E-02 | 4.664E-02 | 2.731E-03 | -0.413 |
| | | 717.42 | | -2.615E-02 | 6.622E-01 | 1.075E+00 | 6.958E-02 | -0.024 |
| | | 874.81 | | -1.487E-01 | 4.652E-01 | 7.261E-01 | 6.166E-02 | -0.205 |
| | | 880.27 | | -2.226E-01 | 6.286E-01 | 9.775E-01 | 8.374E-02 | -0.228 |
| | | 155.03 | * | 1.664E-01 | 1.352E-01 | 2.300E-01 | 1.236E-02 | 0.724 |
| RE-188 | | 477.96 | | 3.789E+00 | 2.491E+00 | 4.516E+00 | 2.639E-01 | 0.839 |
| | | 633.10 | | -8.671E-03 | 2.107E+00 | 3.449E+00 | 2.028E-01 | -0.003 |
| W-188 | + | 63.58 | | 9.427E+01 | 4.982E+01 | 7.315E+01 | 5.517E+00 | 1.289 |
| IR-192 | | 227.08 | | -1.628E+00 | 1.014E+01 | 1.610E+01 | 9.013E-01 | -0.101 |
| | | 290.67 | * | -2.408E+00 | 6.368E+00 | 9.062E+00 | 5.263E-01 | -0.266 |
| | + | 295.96 | | 5.956E-01 | 1.166E-01 | 1.900E-01 | 1.122E-02 | 3.135 |
| | | 308.46 | | -2.815E-02 | 7.183E-02 | 1.179E-01 | 6.937E-03 | -0.239 |
| AU-195 | | 316.51 | * | -9.632E-03 | 2.555E-02 | 4.193E-02 | 2.450E-03 | -0.230 |
| | | 468.07 | | -4.462E-02 | 4.851E-02 | 7.455E-02 | 4.999E-03 | -0.598 |
| | | 604.41 | | 7.744E-02 | 3.874E-01 | 5.624E-01 | 6.418E-02 | 0.138 |
| | | 612.46 | | 7.623E-01 | 5.980E-01 | 9.624E-01 | 7.368E-02 | 0.792 |
| | | 65.12 | | 1.817E-01 | 1.422E-01 | 2.169E-01 | 1.641E-02 | 0.838 |
| | | 66.83 | | -5.073E-02 | 7.555E-02 | 1.052E-01 | 7.996E-03 | -0.482 |
| | + | 75.70 | | 7.022E-01 | 2.200E-01 | 3.294E-01 | 2.632E-02 | 2.132 |
| | | 98.88 | * | 2.825E-01 | 1.946E-01 | 2.994E-01 | 2.285E-02 | 0.944 |
| | | 129.76 | | 1.898E+00 | 2.188E+00 | 3.681E+00 | 2.129E-01 | 0.516 |
| | | 367.94 | * | 3.623E-04 | 2.188E+00 | Half-Life | too short | |
| TL-200 | | 579.30 | | 7.632E-03 | 2.188E+00 | Half-Life | too short | |
| | | 828.27 | | 2.819E-03 | 2.188E+00 | Half-Life | too short | |
| | | 1205.75 | | 1.338E-03 | 2.188E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | 3.018E+00 | 5.675E+00 | 8.409E+00 | 6.448E-01 | 0.359 |
| | | 70.82 | | 1.042E+00 | 3.292E+00 | 4.823E+00 | 3.733E-01 | 0.216 |
| | | 80.30 | | 6.021E+00 | 7.893E+00 | 8.764E+00 | 7.274E-01 | 0.687 |
| | | 135.34 | | -1.202E+01 | 2.917E+01 | 4.647E+01 | 2.640E+00 | -0.259 |
| | | 167.43 | * | -3.807E+00 | 8.148E+00 | 1.287E+01 | 6.724E-01 | -0.296 |

----- 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 | | 1.977E-01 | 3.718E-01 | 5.509E-01 | 4.224E-02 | 0.359 |
| | | 70.82 | | 6.810E-02 | 2.150E-01 | 3.151E-01 | 2.439E-02 | 0.216 |
| | | 80.30 | | 3.935E-01 | 5.158E-01 | 5.727E-01 | 4.754E-02 | 0.687 |
| HG-203 | | 439.56 | * | 2.200E-02 | 5.121E-02 | 8.778E-02 | 5.041E-03 | 0.251 |
| | | 70.83 | | 2.546E-01 | 8.640E-01 | 1.264E+00 | 1.652E-01 | 0.201 |
| | | 72.87 | | 1.272E+00 | 4.949E-01 | 8.345E-01 | 1.060E-01 | 1.524 |
| | | 82.60 | | 1.313E+00 | 1.204E+00 | 1.361E+00 | 1.858E-01 | 0.965 |
| BI-207 | | 279.20 | * | 9.651E-03 | 3.041E-02 | 5.202E-02 | 3.199E-03 | 0.186 |
| | | 72.80 | | 3.662E-01 | 1.497E-01 | 2.356E-01 | 1.845E-02 | 1.554 |
| | + | 74.97 | | 3.868E-01 | 1.212E-01 | 1.684E-01 | 1.338E-02 | 2.297 |
| | + | 84.90 | | 6.398E-01 | 2.352E-01 | 2.441E-01 | 2.117E-02 | 2.621 |
| | | 569.67 | | 9.641E-02 | 3.033E-02 | 5.458E-02 | 3.239E-03 | 1.766 |
| TL-207 | | 1063.62 | * | -9.513E-03 | 3.980E-02 | 6.462E-02 | 4.589E-03 | -0.147 |
| | | 1770.23 | | 1.121E-01 | 2.786E-01 | 4.498E-01 | 2.713E-02 | 0.249 |
| | | 81.07 | | 1.374E-01 | 2.223E-01 | 2.439E-01 | 2.039E-02 | 0.563 |
| | | 83.78 | | 8.697E-02 | 1.086E-01 | 1.516E-01 | 1.300E-02 | 0.574 |
| | | 94.90 | | 5.863E-01 | 2.147E-01 | 3.392E-01 | 2.731E-02 | 1.728 |
| | | 122.32 | | 6.945E-01 | 1.324E+00 | 2.203E+00 | 1.505E-01 | 0.315 |
| | | 144.24 | | 3.924E-01 | 5.450E-01 | 8.969E-01 | 6.298E-02 | 0.438 |
| | | 154.21 | | 1.592E-01 | 3.085E-01 | 5.104E-01 | 3.407E-02 | 0.312 |
| | + | 269.46 | | 2.839E-01 | 2.223E-01 | 2.428E-01 | 1.465E-02 | 1.169 |
| | | 323.87 | * | -2.812E-01 | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| PO-209 | + | 338.28 | | 2.116E+00 | 1.167E+00 | 1.625E+00 | 1.710E-01 | 1.302 |
| | | 445.03 | | -6.113E-01 | 1.560E+00 | 2.509E+00 | 2.571E-01 | -0.244 |
| | | 260.50 | | -1.400E+00 | 6.926E+00 | 1.091E+01 | 6.263E-01 | -0.128 |
| | | 262.80 | | -3.551E+00 | 2.040E+01 | 2.957E+01 | 1.700E+00 | -0.120 |
| | | 896.60 | * | -1.415E+00 | 5.598E+00 | 8.780E+00 | 7.719E-01 | -0.161 |
| BI-210 | | 46.50 | * | -4.862E-01 | 2.374E+00 | 3.858E+00 | 2.940E-01 | -0.126 |
| PB-210 | | 46.50 | * | -4.862E-01 | 2.374E+00 | 3.858E+00 | 2.940E-01 | -0.126 |
| PO-210 | | 46.50 | * | -4.862E-01 | 2.374E+00 | 3.858E+00 | 2.514E-01 | -0.126 |
| PB-211 | | 404.84 | * | -2.522E-01 | 6.871E-01 | 1.085E+00 | 6.764E-01 | -0.232 |
| PO-215 | | 427.08 | | 6.077E-01 | 1.478E+00 | 2.448E+00 | 1.513E+00 | 0.248 |
| | | 831.96 | | 3.873E-01 | 9.221E-01 | 1.501E+00 | 9.395E-01 | 0.258 |
| | | 81.07 | | 1.374E-01 | 2.223E-01 | 2.439E-01 | 2.039E-02 | 0.563 |
| | | 83.78 | | 8.697E-02 | 1.086E-01 | 1.516E-01 | 1.300E-02 | 0.574 |
| | | 94.90 | | 5.863E-01 | 2.147E-01 | 3.392E-01 | 2.731E-02 | 1.728 |
| | | 122.32 | | 6.945E-01 | 1.324E+00 | 2.203E+00 | 1.505E-01 | 0.315 |
| | | 144.24 | | 3.924E-01 | 5.450E-01 | 8.969E-01 | 6.298E-02 | 0.438 |
| | | 154.21 | | 1.592E-01 | 3.085E-01 | 5.104E-01 | 3.407E-02 | 0.312 |
| | + | 269.46 | | 2.839E-01 | 2.223E-01 | 2.428E-01 | 1.465E-02 | 1.169 |
| | | 323.87 | * | -2.812E-01 | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| RN-219 | + | 338.28 | | 2.116E+00 | 1.167E+00 | 1.625E+00 | 1.710E-01 | 1.302 |
| | | 445.03 | | -6.113E-01 | 1.560E+00 | 2.509E+00 | 2.571E-01 | -0.244 |
| | + | 271.23 | | 3.643E-01 | 2.859E-01 | 3.156E-01 | 2.552E-02 | 1.154 |
| | | 401.81 | * | 4.352E-02 | 2.913E-01 | 4.899E-01 | 6.625E-02 | 0.089 |
| | | 549.76 | * | 1.778E+00 | 1.704E+01 | 2.833E+01 | 1.681E+00 | 0.063 |
| RN-220 | | 81.07 | | 1.374E-01 | 2.223E-01 | 2.439E-01 | 2.039E-02 | 0.563 |
| RA-223 | | 83.78 | | 8.697E-02 | 1.086E-01 | 1.516E-01 | 1.300E-02 | 0.574 |
| | | 94.90 | | 5.863E-01 | 2.147E-01 | 3.392E-01 | 2.731E-02 | 1.728 |

---- 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 | | 6.945E-01 | 1.324E+00 | 2.203E+00 | 1.505E-01 | 0.315 |
| | | 144.24 | | 3.924E-01 | 5.450E-01 | 8.969E-01 | 6.298E-02 | 0.438 |
| | | 154.21 | | 1.592E-01 | 3.085E-01 | 5.104E-01 | 3.407E-02 | 0.312 |
| | + | 269.46 | | 2.839E-01 | 2.223E-01 | 2.428E-01 | 1.465E-02 | 1.169 |
| | | 323.87 | * | -2.812E-01 | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| | + | 338.28 | | 2.116E+00 | 1.167E+00 | 1.625E+00 | 1.710E-01 | 1.302 |
| | | 445.03 | | -6.113E-01 | 1.560E+00 | 2.509E+00 | 2.571E-01 | -0.244 |
| | | 79.80 | | 9.900E-01 | 1.562E+00 | 1.960E+00 | 4.186E-01 | 0.505 |
| | | 236.00 | | 1.143E+00 | 2.579E-01 | 4.059E-01 | 4.207E-02 | 2.817 |
| | | 256.20 | * | 1.657E-01 | 2.948E-01 | 4.844E-01 | 6.747E-02 | 0.342 |
| | | 286.10 | | 3.430E-01 | 1.172E+00 | 2.000E+00 | 2.312E-01 | 0.171 |
| | + | 299.80 | | 2.080E+00 | 1.359E+00 | 1.932E+00 | 3.147E-01 | 1.077 |
| TH-227 | | 304.40 | | 3.485E-01 | 1.467E+00 | 2.186E+00 | 3.783E-01 | 0.159 |
| | | 334.20 | | 6.676E-01 | 2.776E+00 | 2.826E+00 | 5.179E-01 | 0.236 |
| | | 79.80 | | 9.900E-01 | 1.563E+00 | 1.960E+00 | 4.241E-01 | 0.505 |
| | + | 94.00 | | 8.370E+00 | 3.220E+00 | 3.299E+00 | 7.125E-01 | 2.538 |
| | | 236.00 | | 1.143E+00 | 2.509E-01 | 4.059E-01 | 3.636E-02 | 2.817 |
| | | 256.20 | * | 1.657E-01 | 2.952E-01 | 4.844E-01 | 8.173E-02 | 0.342 |
| | | 286.10 | | 3.430E-01 | 1.221E+00 | 2.000E+00 | 2.004E+00 | 0.171 |
| | + | 299.80 | | 2.080E+00 | 1.359E+00 | 1.932E+00 | 3.147E-01 | 1.077 |
| | | 304.40 | | 3.485E-01 | 1.467E+00 | 2.186E+00 | 3.783E-01 | 0.159 |
| | | 334.20 | | 6.676E-01 | 2.776E+00 | 2.826E+00 | 5.179E-01 | 0.236 |
| | + | 85.43 | | 6.315E-01 | 2.321E-01 | 2.546E-01 | 2.221E-02 | 2.480 |
| | | 88.47 | | 9.173E-02 | 1.463E-01 | 1.581E-01 | 1.406E-02 | 0.580 |
| PA-231 | | 100.00 | | 1.222E-01 | 1.446E-01 | 2.390E-01 | 1.798E-02 | 0.511 |
| | | 193.63 | * | -1.307E-01 | 3.949E-01 | 6.018E-01 | 3.247E-02 | -0.217 |
| | | 210.97 | | 9.274E-01 | 6.382E-01 | 9.795E-01 | 5.394E-02 | 0.947 |
| | | 283.67 | * | -2.795E-01 | 1.148E+00 | 1.907E+00 | 2.628E-01 | -0.147 |
| | | 301.29 | | 6.609E-01 | 4.752E-01 | 7.582E-01 | 7.932E-02 | 0.872 |
| | TH-231 | 81.07 | | 1.374E-01 | 2.223E-01 | 2.439E-01 | 2.039E-02 | 0.563 |
| | | 83.78 | | 8.697E-02 | 1.086E-01 | 1.516E-01 | 1.300E-02 | 0.574 |
| | | 94.90 | | 5.863E-01 | 2.147E-01 | 3.392E-01 | 2.731E-02 | 1.728 |
| | | 122.32 | | 6.945E-01 | 1.324E+00 | 2.203E+00 | 1.505E-01 | 0.315 |
| | | 144.24 | | 3.924E-01 | 5.450E-01 | 8.969E-01 | 6.298E-02 | 0.438 |
| | | 154.21 | | 1.592E-01 | 3.085E-01 | 5.104E-01 | 3.407E-02 | 0.312 |
| | + | 269.46 | | 2.839E-01 | 2.223E-01 | 2.428E-01 | 1.465E-02 | 1.169 |
| U-231 | | 323.87 | * | -2.812E-01 | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| | + | 338.28 | | 2.116E+00 | 1.167E+00 | 1.625E+00 | 1.710E-01 | 1.302 |
| | | 445.03 | | -6.113E-01 | 1.560E+00 | 2.509E+00 | 2.571E-01 | -0.244 |
| | | 84.21 | | 5.680E+00 | 5.972E+00 | 8.923E+00 | 7.687E-01 | 0.637 |
| | + | 92.29 | | 1.122E+01 | 3.689E+00 | 4.712E+00 | 3.941E-01 | 2.382 |
| | | 95.87 | * | 1.004E-01 | 1.271E+00 | 1.829E+00 | 1.453E-01 | 0.055 |
| | | 108.00 | | 4.403E-02 | 2.174E+00 | 3.551E+00 | 2.436E-01 | 0.012 |
| | PA-233 | 75.28 | | 1.129E+01 | 3.816E+00 | 5.138E+00 | 7.703E-01 | 2.196 |
| | + | 86.59 | | 5.513E+00 | 2.463E+00 | 2.263E+00 | 6.085E-01 | 2.436 |
| | + | 300.12 | | 5.799E-01 | 3.751E-01 | 5.475E-01 | 7.360E-02 | 1.059 |
| | | 311.98 | * | 4.454E-02 | 4.759E-02 | 8.381E-02 | 5.175E-03 | 0.531 |
| | | 340.50 | | 8.846E-01 | 5.515E-01 | 8.432E-01 | 1.936E-01 | 1.049 |
| | | 398.62 | | -5.838E-01 | 1.486E+00 | 2.396E+00 | 6.184E-01 | -0.244 |

---- 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 | | -4.404E-01 | 1.115E+00 | 1.794E+00 | 3.687E-01 | -0.245 |
| | | 63.00 | | 2.684E+00 | 1.460E+00 | 2.121E+00 | 3.165E-01 | 1.266 |
| | | 94.67 | | 5.890E-01 | 1.696E-01 | 2.582E-01 | 3.107E-02 | 2.281 |
| | | 98.44 | | 1.092E-01 | 9.838E-02 | 1.195E-01 | 6.653E-02 | 0.913 |
| | | 99.86 | | 3.488E-01 | 3.766E-01 | 6.060E-01 | 4.568E-02 | 0.576 |
| | | 111.00 | | 5.257E-02 | 1.411E-01 | 2.336E-01 | 2.515E-02 | 0.225 |
| | | 131.20 | | 2.540E-02 | 8.089E-02 | 1.332E-01 | 7.667E-03 | 0.191 |
| | | 152.70 | | -6.144E-03 | 2.528E-01 | 4.089E-01 | 6.407E-02 | -0.015 |
| | | 186.00 | | 3.363E+00 | 2.078E+00 | 1.908E+00 | 5.815E-01 | 1.762 |
| | | 226.40 | | -3.817E-02 | 3.118E-01 | 4.963E-01 | 5.687E-02 | -0.077 |
| | | 227.20 | | -1.600E-02 | 3.335E-01 | 5.330E-01 | 2.984E-02 | -0.030 |
| | | 248.90 | | -6.470E-01 | 6.454E-01 | 9.455E-01 | 2.029E-01 | -0.684 |
| | | 293.70 | | 3.685E+00 | 9.080E-01 | 1.167E+00 | 1.877E-01 | 3.157 |
| | | 369.80 | | -2.155E-01 | 6.189E-01 | 1.007E+00 | 2.094E-01 | -0.214 |
| | | 568.70 | | 2.768E+00 | 1.633E+00 | 1.838E+00 | 1.091E-01 | 1.506 |
| | | 569.50 | | 6.919E-01 | 2.694E-01 | 4.893E-01 | 2.904E-02 | 1.414 |
| | | 574.00 | | -1.167E+00 | 1.302E+00 | 1.651E+00 | 9.798E-02 | -0.707 |
| | | 699.00 | | 6.341E-02 | 5.605E-01 | 9.223E-01 | 1.673E-01 | 0.069 |
| | | 706.10 | | -4.490E-01 | 8.283E-01 | 1.247E+00 | 5.513E-01 | -0.360 |
| | | 733.00 | | 1.505E-01 | 2.952E-01 | 4.425E-01 | 9.519E-02 | 0.340 |
| | | 742.81 | | 4.435E-01 | 1.017E+00 | 1.651E+00 | 1.107E+00 | 0.269 |
| | | 796.30 | | 1.022E+00 | 9.605E-01 | 1.153E+00 | 3.079E-01 | 0.886 |
| | | 805.60 | | 2.884E-01 | 7.298E-01 | 1.221E+00 | 3.708E-01 | 0.236 |
| | | 819.60 | | 4.310E-01 | 9.573E-01 | 1.596E+00 | 6.040E-01 | 0.270 |
| | | 826.30 | | -3.458E-01 | 6.284E-01 | 9.268E-01 | 4.133E-01 | -0.373 |
| | | 831.60 | | 1.740E-01 | 4.609E-01 | 7.692E-01 | 2.280E-01 | 0.226 |
| | | 876.40 | | 5.752E-01 | 8.696E-01 | 1.122E+00 | 1.154E+00 | 0.512 |
| | | 880.51 | | -6.600E-02 | 2.254E-01 | 3.529E-01 | 3.024E-02 | -0.187 |
| | | 883.24 | | -7.631E-02 | 2.375E-01 | 3.619E-01 | 2.433E-01 | -0.211 |
| | | 899.00 | | 4.679E-01 | 6.201E-01 | 1.026E+00 | 4.491E-01 | 0.456 |
| | | 925.00 | | 1.996E-01 | 7.452E-01 | 1.241E+00 | 1.066E-01 | 0.161 |
| | | 926.50 | | 1.588E-02 | 1.173E-01 | 1.895E-01 | 4.789E-02 | 0.084 |
| | | 946.00 | * | 1.667E-02 | 2.288E-01 | 3.709E-01 | 6.923E-02 | 0.045 |
| | | 949.00 | | -1.165E-01 | 3.462E-01 | 5.365E-01 | 4.496E-02 | -0.217 |
| | | 980.50 | | 2.507E-01 | 5.901E-01 | 9.884E-01 | 7.977E-02 | 0.254 |
| | | 1394.10 | | -5.495E-02 | 8.102E-01 | 1.324E+00 | 8.598E-01 | -0.041 |
| PA-234M | | 766.42 | | 8.256E+00 | 1.008E+01 | 1.576E+01 | 7.959E+00 | 0.524 |
| | | 1001.03 | * | 3.309E+00 | 3.533E+00 | 6.301E+00 | 5.866E-01 | 0.525 |
| U-235 | + | 89.95 | | -1.081E-01 | 1.430E+00 | 1.469E+00 | 4.534E-01 | -0.074 |
| | | 93.35 | | 2.604E+00 | 1.102E+00 | 1.071E+00 | 2.988E-01 | 2.432 |
| | | 105.00 | | 3.880E-01 | 8.351E-01 | 1.363E+00 | 4.013E-01 | 0.285 |
| | | 143.76 | * | 3.765E-02 | 1.699E-01 | 2.742E-01 | 4.446E-02 | 0.137 |
| | | 163.35 | | -1.276E-01 | 3.636E-01 | 5.771E-01 | 1.028E-01 | -0.221 |
| NP-236 | + | 185.71 | | 1.246E-01 | 6.727E-02 | 7.033E-02 | 3.758E-03 | 1.771 |
| | | 205.31 | | 7.994E-03 | 4.607E-01 | 6.467E-01 | 1.156E-01 | 0.012 |
| | | 94.67 | | 4.495E-01 | 1.225E-01 | 1.961E-01 | 1.584E-02 | 2.292 |
| | | 98.44 | | 8.251E-02 | 5.884E-02 | 9.037E-02 | 6.936E-03 | 0.913 |
| | | 111.00 | | 3.976E-02 | 1.067E-01 | 1.767E-01 | 1.174E-02 | 0.225 |
| | | 160.31 | * | -3.779E-02 | 6.284E-02 | 9.882E-02 | 5.235E-03 | -0.382 |

---- 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 | | 1.306E-01 | 1.263E-01 | 2.040E-01 | 1.544E-02 | 0.640 |
| | | 117.00 | * | -1.008E-01 | 1.463E-01 | 2.294E-01 | 1.435E-02 | -0.439 |
| | + | 209.75 | | 7.244E-01 | 6.505E-01 | 1.010E+00 | 5.556E-02 | 0.717 |
| | | 228.18 | | 5.419E-02 | 1.740E-01 | 2.832E-01 | 1.587E-02 | 0.191 |
| | | 277.60 | | 9.289E-02 | 1.329E-01 | 2.262E-01 | 1.309E-02 | 0.411 |
| | | 334.30 | | 4.589E-01 | 1.575E+00 | 1.617E+00 | 9.360E-02 | 0.284 |
| AM-241 | | 59.54 | * | 2.744E-05 | 1.257E-01 | 1.820E-01 | 1.499E-02 | 0.000 |
| CM-243 | | 99.55 | | 1.344E-01 | 1.300E-01 | 2.100E-01 | 1.589E-02 | 0.640 |
| | | 103.76 | * | -3.566E-02 | 7.660E-02 | 1.215E-01 | 8.737E-03 | -0.294 |
| | | 117.00 | | -1.037E-01 | 1.506E-01 | 2.361E-01 | 1.476E-02 | -0.439 |
| | + | 209.75 | | 7.142E-01 | 6.413E-01 | 9.961E-01 | 5.478E-02 | 0.717 |
| | | 228.18 | | 5.476E-02 | 1.758E-01 | 2.862E-01 | 1.604E-02 | 0.191 |
| | | 277.60 | | 9.365E-02 | 1.340E-01 | 2.281E-01 | 1.320E-02 | 0.411 |
| AM-246 | | 798.80 | | -6.658E-02 | 1.202E-01 | 1.546E-01 | 1.157E-02 | -0.431 |
| | | 1036.00 | | -2.539E-02 | 2.162E-01 | 3.583E-01 | 2.669E-02 | -0.071 |
| | | 1062.04 | | -2.773E-02 | 1.815E-01 | 2.977E-01 | 2.120E-02 | -0.093 |
| | | 1078.86 | * | 1.109E-01 | 9.944E-02 | 1.841E-01 | 1.270E-02 | 0.602 |
| CM-247 | | 278.00 | | 4.480E-01 | 5.423E-01 | 9.495E-01 | 5.496E-02 | 0.472 |
| | | 287.40 | | 5.842E-01 | 9.832E-01 | 1.618E+00 | 9.392E-02 | 0.361 |
| | | 402.60 | * | -5.694E-04 | 2.580E-02 | 4.290E-02 | 2.406E-03 | -0.013 |
| CF-249 | | 252.85 | | 5.207E-02 | 6.716E-01 | 1.077E+00 | 6.157E-02 | 0.048 |
| | | 333.44 | | 4.496E-02 | 2.052E-01 | 2.084E-01 | 1.207E-02 | 0.216 |
| CF-251 | | 387.95 | * | -8.095E-03 | 2.486E-02 | 4.041E-02 | 2.257E-03 | -0.200 |
| | | 176.60 | * | -9.898E-03 | 9.351E-02 | 1.501E-01 | 7.928E-03 | -0.066 |
| | | 227.00 | | -4.794E-02 | 2.985E-01 | 4.743E-01 | 2.655E-02 | -0.101 |
| | | 285.00 | | -2.933E-01 | 1.303E+00 | 2.168E+00 | 1.257E-01 | -0.135 |

VAX/VMS Nuclide Identification Report Generated

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA300:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328007
* Acquisition date   : 18-FEB-2010 11:16:48 Detector SN#      :
* Detector ID        : GAM19 Sensitivity      : 5.000
* Geometry           : CAN Energy tolerance: 1.500
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000
* Elapsed real time  : 0 02:00:01.29 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID
* Sample ID          : G246328007 Analyst initials: MXR1
* Batch Number       : 950786 Sample Quantity : 1.6313E+02 GRAM
* Recovery           : 1.00000 Carrier Weight : 0.00000
*****
*                               QC DATA                               *
*
* Standard Weight    : 0.00000
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :
* MSD DPM             : 0.000 MSD Isotope      :
* LCS DPM             : 0.000 LCS Isotope      :
* LCSD DPM            : 0.000 LCSD Isotope     :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 1.758E+01 | 1.718E+00 | 3.556E-01 | 0.000E+00 |
| SN-126 | 2.816E-01 | 1.014E-01 | 1.210E-01 | 0.000E+00 |
| BA-137M | 1.228E-01 | 4.480E-02 | 3.959E-02 | 0.000E+00 |
| CS-137 | 1.298E-01 | 4.736E-02 | 4.185E-02 | 0.000E+00 |
| TL-208 | 2.702E-01 | 5.527E-02 | 4.575E-02 | 0.000E+00 |
| BI-211 | 1.951E+00 | 3.258E-01 | 2.372E-01 | 0.000E+00 |
| BI-212 | 7.138E-01 | 3.715E-01 | 3.303E-01 | 0.000E+00 |
| PB-212 | 6.464E-01 | 1.017E-01 | 9.137E-02 | 0.000E+00 |
| PO-212 | 6.464E-01 | 1.017E-01 | 9.137E-02 | 0.000E+00 |
| BI-214 | 5.743E-01 | 1.143E-01 | 8.475E-02 | 0.000E+00 |
| PB-214 | 6.786E-01 | 1.185E-01 | 8.268E-02 | 0.000E+00 |
| PO-214 | 6.786E-01 | 1.185E-01 | 8.268E-02 | 0.000E+00 |
| PO-216 | 6.464E-01 | 1.017E-01 | 9.137E-02 | 0.000E+00 |
| PO-218 | 6.786E-01 | 1.185E-01 | 8.268E-02 | 0.000E+00 |
| RA-224 | 1.263E+00 | 6.730E-01 | 1.039E+00 | 0.000E+00 |
| RA-226 | 5.743E-01 | 1.143E-01 | 8.475E-02 | 0.000E+00 |
| AC-228 | 8.491E-01 | 2.271E-01 | 1.750E-01 | 0.000E+00 |
| RA-228 | 8.491E-01 | 2.271E-01 | 1.750E-01 | 0.000E+00 |
| TH-228 | 6.574E-01 | 1.034E-01 | 9.293E-02 | 0.000E+00 |
| TH-230 | 5.743E-01 | 1.143E-01 | 8.475E-02 | 0.000E+00 |
| TH-232 | 8.491E-01 | 2.271E-01 | 1.750E-01 | 0.000E+00 |
| TH-234 | 2.302E+00 | 1.245E+00 | 1.628E+00 | 0.000E+00 |
| U-234 | 5.743E-01 | 1.143E-01 | 8.475E-02 | 0.000E+00 |
| NP-237 | 8.269E-01 | 3.416E-01 | 3.291E-01 | 0.000E+00 |
| U-238 | 2.302E+00 | 1.245E+00 | 1.628E+00 | 0.000E+00 |
| AM-243 | 2.155E-01 | 6.617E-02 | 6.961E-02 | 0.000E+00 |
| ANH-511 | 5.903E-02 | 4.971E-02 | 3.420E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) |
|---------|-------------------------------------|--------------------------|--------------------|
|---------|-------------------------------------|--------------------------|--------------------|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | 3.810E-01 | 2.588E-01 | 4.980E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | 7.134E-03 | 3.373E-02 | 5.920E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 3.762E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 1.307E-02 | 2.016E-02 | 3.822E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.937E-02 | 6.146E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 2.445E-03 | 3.038E-02 | 5.176E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 3.491E-02 | 5.962E-02 | 1.058E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -5.516E-02 | 2.647E-01 | 4.735E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 3.305E-02 | 1.963E-01 | 3.429E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.238E-04 | 2.708E-02 | 4.601E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 1.809E-02 | 2.980E-02 | 5.344E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | 7.819E-03 | 1.894E-02 | 3.480E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -1.138E-02 | 2.694E-02 | 4.372E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -3.683E-02 | 6.895E-02 | 1.138E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | 2.389E-03 | 2.673E-02 | 4.633E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 2.009E-02 | 6.841E-02 | 1.068E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 8.979E-01 | 8.760E-01 | 1.671E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -3.941E-02 | 5.693E-01 | 1.064E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -5.468E-02 | 6.875E-02 | 1.113E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -2.672E-03 | 3.372E-02 | 5.350E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 2.772E-01 | 1.230E+01 | 2.164E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -3.066E-01 | 2.899E-01 | 4.412E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -1.126E-02 | 4.804E-02 | 8.279E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | -7.594E-03 | 5.751E-02 | 9.602E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 5.885E+00 | 1.113E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 3.077E-02 | 5.820E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 6.219E-01 | 5.939E-01 | 1.135E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 2.429E-03 | 1.997E-02 | 3.432E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | 1.342E-02 | 1.988E-02 | 3.723E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -1.336E+00 | 1.418E+01 | 2.430E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -4.398E-03 | 2.623E-02 | 4.451E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 3.395E-02 | 3.309E-02 | 6.023E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 0.000E+00 | 1.155E-01 | 2.017E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 3.995E-02 | 4.980E-02 | 9.153E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 5.012E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 8.606E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | -1.369E+01 | 1.298E+01 | 1.958E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 4.882E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.302E-02 | 2.381E-02 | 4.303E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -6.647E-03 | 2.272E-02 | 3.935E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 4.045E-03 | 2.677E-02 | 4.777E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | -3.566E-02 | 2.279E-01 | 3.902E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -3.566E-02 | 2.279E-01 | 3.902E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.092E-02 | 2.234E-02 | 3.828E-02 | 0.000E+00 | NOT IDENT. |
| CD-109 | 0.000E+00 | 1.028E+00 | 1.297E+00 | 0.000E+00 | NOT IDENT. |
| AG-110M | -2.375E-02 | 2.918E-02 | 3.892E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 1.392E+00 | 1.345E+00 | 2.203E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -6.165E-03 | 2.854E-02 | 5.027E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -6.165E-03 | 2.854E-02 | 5.027E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.175E-01 | 1.529E-01 | 2.476E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -7.742E+00 | 1.355E+01 | 2.198E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | -5.298E-03 | 4.587E-02 | 8.133E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 5.472E-01 | 2.832E+00 | 4.377E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 4.687E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -1.166E-02 | 2.237E-02 | 3.894E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | 3.848E-01 | 7.371E-01 | 1.174E+00 | 0.000E+00 | FAIL ABUN |
| SB-124 | -1.537E-02 | 6.204E-02 | 9.969E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | 2.013E-02 | 6.409E-02 | 1.165E-01 | 0.000E+00 | NOT IDENT. |
| TE-125M | -6.188E+00 | 7.365E+00 | 1.289E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 9.357E-02 | 1.491E-01 | 2.410E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -6.916E-02 | 1.288E-01 | 1.767E-01 | 0.000E+00 | NOT IDENT. |
| SB-127 | -2.557E-01 | 1.387E+00 | 2.351E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 1.185E-02 | 3.848E-02 | 6.632E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 1.848E-02 | 9.227E-02 | 1.680E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 2.457E-01 | 7.737E-01 | 1.372E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 1.186E-02 | 3.206E-02 | 5.190E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 1.771E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 5.266E-02 | 4.668E-02 | 6.150E-02 | 0.000E+00 | FAIL ABUN |
| CS-135 | 1.468E-01 | 1.226E-01 | 2.114E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 4.422E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.229E-02 | 8.165E-02 | 1.387E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | -1.582E-02 | 2.231E-02 | 3.833E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.129E-01 | 1.960E-01 | 3.208E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -4.344E-02 | 5.994E-02 | 8.700E-02 | 0.000E+00 | FAIL ABUN |
| CE-141 | 3.518E-02 | 5.055E-02 | 9.178E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 3.979E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 3.005E-02 | 1.509E-01 | 2.735E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -6.861E-03 | 2.611E-02 | 4.395E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | -4.654E-01 | 1.771E+00 | 2.981E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.503E-03 | 3.159E-02 | 5.620E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -2.171E-01 | 4.177E-01 | 6.980E-01 | 0.000E+00 | NOT IDENT. |
| PM-149 | 1.711E+01 | 1.214E+02 | 2.229E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | -3.327E-02 | 8.446E-02 | 1.203E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | 5.686E-02 | 6.553E-02 | 1.096E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | 1.901E-02 | 9.403E-02 | 1.649E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.517E-02 | 8.299E-02 | 1.506E-01 | 0.000E+00 | FAIL ABUN |
| TE-160 | 1.556E-02 | 1.127E-01 | 1.932E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -4.003E-03 | 4.476E-02 | 7.633E-02 | 0.000E+00 | NOT IDENT. |
| TM-171 | -1.646E+01 | 2.239E+01 | 3.506E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -9.641E-03 | 1.871E-02 | 3.100E-02 | 0.000E+00 | NOT IDENT. |
| LU-177 | 1.237E+00 | 1.088E+00 | 1.811E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -1.640E-02 | 1.182E-01 | 2.087E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -3.203E-02 | 3.350E-02 | 5.502E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 3.506E-01 | 3.002E-01 | 5.144E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -1.112E-01 | 1.454E-01 | 2.314E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 9.491E-02 | 8.193E-02 | 1.532E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 1.398E-02 | 1.767E-01 | 3.083E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -1.928E-02 | 2.977E-02 | 4.835E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.664E-01 | 1.325E-01 | 2.485E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -2.408E+00 | 6.241E+00 | 9.618E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | -9.632E-03 | 2.504E-02 | 4.439E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.825E-01 | 1.907E-01 | 3.275E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.018E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -3.807E+00 | 7.985E+00 | 1.387E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 2.200E-02 | 5.019E-02 | 9.205E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | 9.651E-03 | 2.980E-02 | 5.528E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | -9.513E-03 | 3.900E-02 | 6.598E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -2.812E-01 | 5.027E-01 | 7.493E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.415E+00 | 5.486E+00 | 9.012E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | -4.862E-01 | 2.327E+00 | 4.305E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | -4.862E-01 | 2.327E+00 | 4.305E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | -4.862E-01 | 2.327E+00 | 4.305E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -2.522E-01 | 6.733E-01 | 1.141E+00 | 0.000E+00 | NOT IDENT. |
| PO-215 | -2.812E-01 | 5.027E-01 | 7.493E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | 4.352E-02 | 2.855E-01 | 5.151E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 1.778E+00 | 1.670E+01 | 2.951E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -2.812E-01 | 5.027E-01 | 7.493E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | 1.657E-01 | 2.889E-01 | 5.160E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | 1.657E-01 | 2.893E-01 | 5.160E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -1.307E-01 | 3.870E-01 | 6.461E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | -2.795E-01 | 1.125E+00 | 2.026E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -2.812E-01 | 5.027E-01 | 7.493E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | 1.004E-01 | 1.245E+00 | 2.002E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 4.454E-02 | 4.664E-02 | 8.878E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | 1.667E-02 | 2.242E-01 | 3.801E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 3.309E+00 | 3.463E+00 | 6.446E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 3.765E-02 | 1.665E-01 | 2.969E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -3.779E-02 | 6.159E-02 | 1.067E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.008E-01 | 1.434E-01 | 2.498E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 2.744E-05 | 1.232E-01 | 2.018E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -3.566E-02 | 7.507E-02 | 1.327E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 1.109E-01 | 9.745E-02 | 1.879E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -5.694E-04 | 2.528E-02 | 4.510E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | -8.095E-03 | 2.436E-02 | 4.253E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -9.898E-03 | 9.164E-02 | 1.615E-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]G246328007.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:16:48
Sample ID          : G246328007          Sample quantity  : 1.63130E+02 GRAM
Detector name      : GAM19              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.29  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             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 | 953 | 10.67* | 1.169E+00 | 1.758E+01 | 1.758E+01 | 9.97 |
| SN-126 | 64.28 | 138 | 9.60 | 3.638E+00 | 9.114E-01 | 9.114E-01 | 54.31 |
| | 86.94 | 273 | 8.90 | 6.028E+00 | 1.171E+00 | 1.171E+00 | 54.66 |
| | 87.57 | 273 | 37.00* | 6.028E+00 | 2.816E-01 | 2.816E-01 | 36.76 |
| BA-137M | 661.65 | 110 | 89.98* | 2.299E+00 | 1.227E-01 | 1.228E-01 | 37.22 |
| CS-137 | 661.65 | 110 | 85.12* | 2.299E+00 | 1.297E-01 | 1.298E-01 | 37.23 |
| TL-208 | 277.35 | ----- | 6.80 | 4.511E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 73 | 21.60 | 2.842E+00 | 2.733E-01 | 2.733E-01 | 86.33 |
| | 583.14 | 253 | 84.20* | 2.555E+00 | 2.702E-01 | 2.702E-01 | 20.87 |
| | 860.37 | 51 | 12.46 | 1.836E+00 | 5.082E-01 | 5.082E-01 | 54.30 |
| BI-211 | 72.87 | ----- | 1.27 | 4.857E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 416 | 12.94* | 3.788E+00 | 1.951E+00 | 1.951E+00 | 17.04 |
| BI-212 | 727.18 | 78 | 11.80* | 2.125E+00 | 7.138E-01 | 7.138E-01 | 53.11 |
| | 785.46 | ----- | 1.97 | 1.988E+00 | ----- | Line Not Found | ----- |
| | 1620.62 | 17 | 2.75 | 1.085E+00 | 1.296E+00 | 1.296E+00 | 77.19 |
| PB-212 | 74.81 | 314 | 10.70 | 5.073E+00 | 1.329E+00 | 1.329E+00 | 32.70 |
| | 77.11 | 444 | 18.00 | 5.297E+00 | 1.070E+00 | 1.070E+00 | 20.34 |
| | 87.30 | 273 | 8.00 | 6.028E+00 | 1.302E+00 | 1.302E+00 | 38.10 |
| | 238.63 | 629 | 44.60* | 5.018E+00 | 6.464E-01 | 6.464E-01 | 16.05 |
| | 300.09 | 71 | 3.41 | 4.264E+00 | 1.122E+00 | 1.122E+00 | 63.81 |
| PO-212 | 74.81 | 314 | 10.70 | 5.073E+00 | 1.329E+00 | 1.329E+00 | 32.70 |
| | 77.11 | 444 | 18.00 | 5.297E+00 | 1.070E+00 | 1.070E+00 | 20.34 |
| | 87.30 | 273 | 8.00 | 6.028E+00 | 1.302E+00 | 1.302E+00 | 38.10 |
| | 115.19 | ----- | 0.60 | 6.866E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 629 | 44.60* | 5.018E+00 | 6.464E-01 | 6.464E-01 | 16.05 |
| | 300.09 | 71 | 3.41 | 4.264E+00 | 1.122E+00 | 1.122E+00 | 63.81 |
| BI-214 | 609.31 | 285 | 46.30* | 2.465E+00 | 5.743E-01 | 5.743E-01 | 20.30 |
| | 1120.29 | 78 | 15.10 | 1.455E+00 | 8.118E-01 | 8.118E-01 | 57.22 |
| | 1764.49 | 67 | 15.80 | 1.030E+00 | 9.466E-01 | 9.467E-01 | 30.06 |
| PB-214 | 74.81 | 314 | 6.21 | 5.073E+00 | 2.290E+00 | 2.290E+00 | 32.20 |
| | 77.11 | 444 | 10.50 | 5.297E+00 | 1.835E+00 | 1.835E+00 | 21.72 |
| | 87.30 | 273 | 4.67 | 6.028E+00 | 2.231E+00 | 2.231E+00 | 37.56 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 241.98 | 108 | 7.49 | 4.971E+00 | 6.663E-01 | 6.663E-01 | 54.64 |
| | 295.21 | 276 | 19.20 | 4.316E+00 | 7.677E-01 | 7.677E-01 | 20.52 |
| | 351.92 | 416 | 37.20* | 3.788E+00 | 6.786E-01 | 6.786E-01 | 17.82 |
| | 74.81 | 314 | 6.21 | 5.073E+00 | 2.290E+00 | 2.290E+00 | 32.20 |
| | 77.11 | 444 | 10.50 | 5.297E+00 | 1.835E+00 | 1.835E+00 | 21.72 |
| | 87.30 | 273 | 4.67 | 6.028E+00 | 2.231E+00 | 2.231E+00 | 37.56 |
| | 241.98 | 108 | 7.49 | 4.971E+00 | 6.663E-01 | 6.663E-01 | 54.64 |
| | 295.21 | 276 | 19.20 | 4.316E+00 | 7.677E-01 | 7.677E-01 | 20.52 |
| PO-216 | 351.92 | 416 | 37.20* | 3.788E+00 | 6.786E-01 | 6.786E-01 | 17.82 |
| | 74.81 | 314 | 10.70 | 5.073E+00 | 1.329E+00 | 1.329E+00 | 32.70 |
| | 77.11 | 444 | 18.00 | 5.297E+00 | 1.070E+00 | 1.070E+00 | 20.34 |
| | 87.30 | 273 | 8.00 | 6.028E+00 | 1.302E+00 | 1.302E+00 | 38.10 |
| | 238.63 | 629 | 44.60* | 5.018E+00 | 6.464E-01 | 6.464E-01 | 16.05 |
| | 300.09 | 71 | 3.41 | 4.264E+00 | 1.122E+00 | 1.122E+00 | 63.81 |
| | 74.81 | 314 | 6.21 | 5.073E+00 | 2.290E+00 | 2.290E+00 | 32.20 |
| | 77.11 | 444 | 10.50 | 5.297E+00 | 1.835E+00 | 1.835E+00 | 21.72 |
| PO-218 | 87.30 | 273 | 4.67 | 6.028E+00 | 2.231E+00 | 2.231E+00 | 37.56 |
| | 241.98 | 108 | 7.49 | 4.971E+00 | 6.663E-01 | 6.663E-01 | 54.64 |
| | 295.21 | 276 | 19.20 | 4.316E+00 | 7.677E-01 | 7.677E-01 | 20.52 |
| | 351.92 | 416 | 37.20* | 3.788E+00 | 6.786E-01 | 6.786E-01 | 17.82 |
| | 240.98 | 108 | 3.95* | 4.971E+00 | 1.263E+00 | 1.263E+00 | 54.35 |
| | 609.31 | 285 | 46.30* | 2.465E+00 | 5.743E-01 | 5.743E-01 | 20.30 |
| | 1120.29 | 78 | 15.10 | 1.455E+00 | 8.118E-01 | 8.118E-01 | 57.22 |
| | 1764.49 | 67 | 15.80 | 1.030E+00 | 9.466E-01 | 9.467E-01 | 30.06 |
| AC-228 | 338.32 | 98 | 11.40 | 3.902E+00 | 5.068E-01 | 5.068E-01 | 67.76 |
| | 911.07 | 178 | 27.70* | 1.746E+00 | 8.491E-01 | 8.491E-01 | 27.30 |
| | 969.11 | 86 | 16.60 | 1.654E+00 | 7.215E-01 | 7.215E-01 | 48.88 |
| RA-228 | 338.32 | 98 | 11.40 | 3.902E+00 | 5.068E-01 | 5.068E-01 | 67.76 |
| | 911.07 | 178 | 27.70* | 1.746E+00 | 8.491E-01 | 8.491E-01 | 27.30 |
| | 969.11 | 86 | 16.60 | 1.654E+00 | 7.215E-01 | 7.215E-01 | 48.88 |
| TH-228 | 74.81 | 314 | 10.70 | 5.073E+00 | 1.329E+00 | 1.352E+00 | 31.36 |
| | 77.11 | 444 | 18.00 | 5.297E+00 | 1.070E+00 | 1.089E+00 | 20.34 |
| | 87.30 | 273 | 8.00 | 6.028E+00 | 1.302E+00 | 1.325E+00 | 36.76 |
| | 238.63 | 629 | 44.60* | 5.018E+00 | 6.464E-01 | 6.574E-01 | 16.05 |
| | 300.09 | 71 | 3.41 | 4.264E+00 | 1.122E+00 | 1.142E+00 | 86.47 |
| TH-230 | 609.31 | 285 | 46.30* | 2.465E+00 | 5.743E-01 | 5.743E-01 | 20.30 |
| | 1120.29 | 78 | 15.10 | 1.455E+00 | 8.118E-01 | 8.118E-01 | 57.22 |
| | 1764.49 | 67 | 15.80 | 1.030E+00 | 9.466E-01 | 9.466E-01 | 30.06 |
| TH-232 | 338.32 | 98 | 11.40 | 3.902E+00 | 5.068E-01 | 5.068E-01 | 54.44 |
| | 911.07 | 178 | 27.70* | 1.746E+00 | 8.491E-01 | 8.491E-01 | 27.30 |
| | 969.11 | 86 | 16.60 | 1.654E+00 | 7.215E-01 | 7.215E-01 | 48.88 |
| TH-234 | 63.29 | 138 | 3.80* | 3.638E+00 | 2.302E+00 | 2.302E+00 | 55.16 |
| | 92.38 | 326 | 5.41 | 6.403E+00 | 2.166E+00 | 2.166E+00 | 36.51 |
| U-234 | 609.31 | 285 | 46.30* | 2.465E+00 | 5.743E-01 | 5.743E-01 | 20.30 |
| | 1120.29 | 78 | 15.10 | 1.455E+00 | 8.118E-01 | 8.118E-01 | 57.22 |
| | 1764.49 | 67 | 15.80 | 1.030E+00 | 9.466E-01 | 9.466E-01 | 30.06 |
| NP-237 | 86.50 | 273 | 12.60* | 6.028E+00 | 8.269E-01 | 8.269E-01 | 42.16 |
| | 95.87 | ----- | 2.60 | 6.515E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 138 | 3.80* | 3.638E+00 | 2.302E+00 | 2.302E+00 | 55.16 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 92.38 | 326 | 5.41 | 6.403E+00 | 2.166E+00 | 2.166E+00 | 32.87 |
| AM-243 | 74.67 | 314 | 66.00* | 5.073E+00 | 2.155E-01 | 2.155E-01 | 31.34 |
| | 86.72 | 273 | 0.34 | 6.028E+00 | 3.101E+01 | 3.101E+01 | 36.76 |
| | 117.66 | ----- | 0.55 | 6.871E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.659E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 73 | 100.00* | 2.842E+00 | 5.903E-02 | 5.903E-02 | 85.93 |

Flag: "*" = Keyline

Total number of lines in spectrum 30
Number of unidentified lines 0
Number of lines tentatively identified by NID 30 100.00%

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 | 1.758E+01 | 1.758E+01 | 0.175E+01 | 9.97 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.816E-01 | 2.816E-01 | 1.035E-01 | 36.76 | |
| BA-137M | 30.17Y | 1.00 | 1.227E-01 | 1.228E-01 | 0.457E-01 | 37.22 | |
| CS-137 | 30.17Y | 1.00 | 1.297E-01 | 1.298E-01 | 0.483E-01 | 37.23 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.702E-01 | 2.702E-01 | 0.564E-01 | 20.87 | |
| BI-211 | 7.04E+08Y | 1.00 | 1.951E+00 | 1.951E+00 | 0.332E+00 | 17.04 | |
| BI-212 | 1.41E+10Y | 1.00 | 7.138E-01 | 7.138E-01 | 3.791E-01 | 53.11 | |
| PB-212 | 1.41E+10Y | 1.00 | 6.464E-01 | 6.464E-01 | 1.037E-01 | 16.05 | |
| PO-212 | 1.41E+10Y | 1.00 | 6.464E-01 | 6.464E-01 | 1.037E-01 | 16.05 | |
| BI-214 | 1600.00Y | 1.00 | 5.743E-01 | 5.743E-01 | 1.166E-01 | 20.30 | |
| PB-214 | 1600.00Y | 1.00 | 6.786E-01 | 6.786E-01 | 1.209E-01 | 17.82 | |
| PO-214 | 1600.00Y | 1.00 | 6.786E-01 | 6.786E-01 | 1.209E-01 | 17.82 | |
| PO-216 | 1.41E+10Y | 1.00 | 6.464E-01 | 6.464E-01 | 1.037E-01 | 16.05 | |
| PO-218 | 1600.00Y | 1.00 | 6.786E-01 | 6.786E-01 | 1.209E-01 | 17.82 | |
| RA-224 | 1.41E+10Y | 1.00 | 1.263E+00 | 1.263E+00 | 0.687E+00 | 54.35 | |
| RA-226 | 1600.00Y | 1.00 | 5.743E-01 | 5.743E-01 | 1.166E-01 | 20.30 | |
| AC-228 | 1.41E+10Y | 1.00 | 8.491E-01 | 8.491E-01 | 2.318E-01 | 27.30 | |
| RA-228 | 1.41E+10Y | 1.00 | 8.491E-01 | 8.491E-01 | 2.318E-01 | 27.30 | |
| TH-228 | 1.91Y | 1.02 | 6.464E-01 | 6.574E-01 | 1.055E-01 | 16.05 | |
| TH-230 | 4.47E+09Y | 1.00 | 5.743E-01 | 5.743E-01 | 1.166E-01 | 20.30 | |
| TH-232 | 1.41E+10Y | 1.00 | 8.491E-01 | 8.491E-01 | 2.318E-01 | 27.30 | |
| TH-234 | 4.47E+09Y | 1.00 | 2.302E+00 | 2.302E+00 | 1.270E+00 | 55.16 | |
| U-234 | 4.47E+09Y | 1.00 | 5.743E-01 | 5.743E-01 | 1.166E-01 | 20.30 | |
| NP-237 | 2.14E+06Y | 1.00 | 8.269E-01 | 8.269E-01 | 3.486E-01 | 42.16 | |
| U-238 | 4.47E+09Y | 1.00 | 2.302E+00 | 2.302E+00 | 1.270E+00 | 55.16 | |
| AM-243 | 7380.00Y | 1.00 | 2.155E-01 | 2.155E-01 | 0.675E-01 | 31.34 | |
| ANH-511 | 1.00E+09Y | 1.00 | 5.903E-02 | 5.903E-02 | 5.072E-02 | 85.93 | |
| Total Activity : | | | 3.748E+01 | 3.749E+01 | | | |

Grand Total Activity : 3.748E+01 3.749E+01

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

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

Unidentified Energy Lines
Sample ID : G246328007

Page : 5
Acquisition date : 18-FEB-2010 11:16:48

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 185.94 | 172 | 387 | 1.40 | 371.55 | 365 | 15 | 2.39E-02 | 53.7 | 5.88E+00 | T |
| 0 | 209.26 | 56 | 190 | 0.98 | 418.16 | 414 | 8 | 7.75E-03 | 89.6 | 5.47E+00 | T |
| 0 | 270.53 | 77 | 194 | 2.61 | 540.61 | 533 | 13 | 1.07E-02 | 78.1 | 4.59E+00 | T |
| 0 | 328.48 | 92 | 130 | 1.16 | 656.46 | 650 | 13 | 1.28E-02 | 55.2 | 3.99E+00 | T |
| 0 | 567.96 | 94 | 125 | 1.47 | 1135.17 | 1128 | 16 | 1.31E-02 | 58.7 | 2.61E+00 | T |
| 0 | 795.73 | 34 | 43 | 1.41 | 1590.60 | 1584 | 13 | 4.73E-03 | 90.1 | 1.97E+00 | T |
| 0 | 1510.36 | 11 | 13 | 0.73 | 3020.13 | 3014 | 11 | 1.48E-03 | **** | 1.14E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328007.CNF;1  *
* Acquisition date   : 18-FEB-2010 11:16:48  Detector SN#      :              *
* Detector ID        : GAM19                      Sensitivity    : 5.00000      *
* Geometry           : CAN                      Energy tolerance: 1.50000      *
* Elapsed live time  : 0 02:00:00.00           Abundance limit  : 75.00000      *
* Elapsed real time  : 0 02:00:01.29           Half life ratio   : 8.00000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00.  Nuclide Library   : SOLID          *
* Sample ID          : G246328007              Analyst initials: MXR1           *
* Batch Number       : 950786                  Sample Quantity  : 1.63130E+02 GRAM *
*****
*                                     QC DATA                                *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54.1MS Isotope       :              *
* MSD ID             :                          MSD Isotope    :              *
* LCS ID             : 1032-A                  LCS Isotope     :              *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 1.758E+01 | 1.753E+00 | 3.517E-01 | 2.619E-02 | 49.977 |
| SN-126 | 2.816E-01 | 1.035E-01 | 1.102E-01 | 9.832E-03 | 2.555 |
| BA-137M | 1.228E-01 | 4.571E-02 | 3.821E-02 | 2.225E-03 | 3.214 |
| CS-137 | 1.298E-01 | 4.833E-02 | 4.039E-02 | 2.362E-03 | 3.214 |
| TL-208 | 2.702E-01 | 5.639E-02 | 4.399E-02 | 2.991E-03 | 6.142 |
| BI-211 | 1.951E+00 | 3.324E-01 | 2.247E-01 | 1.435E-02 | 8.681 |
| BI-212 | 7.138E-01 | 3.791E-01 | 3.197E-01 | 2.662E-02 | 2.232 |
| PB-212 | 6.464E-01 | 1.037E-01 | 8.560E-02 | 6.178E-03 | 7.551 |
| PO-212 | 6.464E-01 | 1.037E-01 | 8.560E-02 | 6.178E-03 | 7.551 |
| BI-214 | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| PB-214 | 6.786E-01 | 1.209E-01 | 7.833E-02 | 6.458E-03 | 8.664 |
| PO-214 | 6.786E-01 | 1.209E-01 | 7.833E-02 | 6.458E-03 | 8.664 |
| PO-216 | 6.464E-01 | 1.037E-01 | 8.560E-02 | 6.178E-03 | 7.551 |
| PO-218 | 6.786E-01 | 1.209E-01 | 7.833E-02 | 6.458E-03 | 8.664 |
| RA-224 | 1.263E+00 | 6.867E-01 | 9.736E-01 | 5.517E-02 | 1.298 |
| RA-226 | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| AC-228 | 8.491E-01 | 2.318E-01 | 1.706E-01 | 1.930E-02 | 4.978 |
| RA-228 | 8.491E-01 | 2.318E-01 | 1.706E-01 | 1.930E-02 | 4.978 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-228 | 6.574E-01 | 1.055E-01 | 8.706E-02 | 6.284E-03 | 7.551 |
| TH-230 | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| TH-232 | 8.491E-01 | 2.318E-01 | 1.706E-01 | 1.930E-02 | 4.978 |
| TH-234 | 2.302E+00 | 1.270E+00 | 1.471E+00 | 2.574E-01 | 1.565 |
| U-234 | 5.743E-01 | 1.166E-01 | 8.160E-02 | 6.416E-03 | 7.038 |
| NP-237 | 8.269E-01 | 3.486E-01 | 2.998E-01 | 6.727E-02 | 2.758 |
| U-238 | 2.302E+00 | 1.270E+00 | 1.471E+00 | 2.574E-01 | 1.565 |
| AM-243 | 2.155E-01 | 6.752E-02 | 6.316E-02 | 5.009E-03 | 3.411 |
| ANH-511 | 5.903E-02 | 5.072E-02 | 3.276E-02 | 1.933E-03 | 1.802 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 3.810E-01 | | 2.641E-01 | 4.761E-01 | 3.232E-02 | 0.800 |
| NA-22 | 7.134E-03 | | 3.442E-02 | 5.831E-02 | 3.889E-03 | 0.122 |
| NA-24 | 3.451E+00 | | 1.919E+00 | Half-Life too short | | |
| AL-26 | 1.307E-02 | | 2.057E-02 | 3.807E-02 | 2.223E-03 | 0.343 |
| TI-44 | 1.975E-01 | + | 4.017E-02 | 5.584E-02 | 4.558E-03 | 3.538 |
| SC-46 | 2.445E-03 | | 3.100E-02 | 5.042E-02 | 4.381E-03 | 0.048 |
| V-48 | 3.491E-02 | | 6.083E-02 | 1.034E-01 | 8.311E-03 | 0.338 |
| CR-51 | -5.516E-02 | | 2.701E-01 | 4.474E-01 | 2.895E-02 | -0.123 |
| MN-52 | 3.305E-02 | | 2.003E-01 | 3.390E-01 | 2.446E-02 | 0.097 |
| MN-54 | 1.238E-04 | | 2.763E-02 | 4.473E-02 | 3.558E-03 | 0.003 |
| CO-56 | 1.809E-02 | | 3.040E-02 | 5.198E-02 | 4.217E-03 | 0.348 |
| CO-57 | 7.819E-03 | | 1.932E-02 | 3.200E-02 | 1.910E-03 | 0.244 |
| CO-58 | -1.138E-02 | | 2.749E-02 | 4.246E-02 | 3.254E-03 | -0.268 |
| FE-59 | -3.683E-02 | | 7.035E-02 | 1.115E-01 | 8.371E-03 | -0.330 |
| CO-60 | 2.389E-03 | | 2.727E-02 | 4.570E-02 | 3.368E-03 | 0.052 |
| ZN-65 | 2.009E-02 | | 6.981E-02 | 1.048E-01 | 6.700E-03 | 0.192 |
| GE-68 | 8.979E-01 | | 8.938E-01 | 1.637E+00 | 1.133E-01 | 0.548 |
| AS-73 | -3.941E-02 | | 5.809E-01 | 9.572E-01 | 7.080E-02 | -0.041 |
| AS-74 | -5.468E-02 | | 7.016E-02 | 1.071E-01 | 6.345E-03 | -0.510 |
| SE-75 | -2.672E-03 | | 3.441E-02 | 5.027E-02 | 2.923E-03 | -0.053 |
| BR-77 | 2.772E-01 | | 1.255E+01 | 2.074E+01 | 1.226E+00 | 0.013 |
| SR-82 | -3.066E-01 | | 2.958E-01 | 4.280E-01 | 3.082E-02 | -0.716 |
| RB-83 | -1.126E-02 | | 4.902E-02 | 7.934E-02 | 4.690E-03 | -0.142 |
| RB-84 | -7.594E-03 | | 5.869E-02 | 9.350E-02 | 8.025E-03 | -0.081 |
| KR-85 | 1.657E+01 | | 6.005E+00 | 1.066E+01 | 6.297E-01 | 1.554 |
| SR-85 | 8.662E-02 | | 3.139E-02 | 5.576E-02 | 3.292E-03 | 1.554 |
| RB-86 | 6.219E-01 | | 6.061E-01 | 1.112E+00 | 7.702E-02 | 0.559 |
| Y-88 | 2.429E-03 | | 2.037E-02 | 3.420E-02 | 1.952E-03 | 0.071 |
| ZR-88 | 1.342E-02 | | 2.029E-02 | 3.539E-02 | 1.970E-03 | 0.379 |
| Y-91 | -1.336E+00 | | 1.447E+01 | 2.389E+01 | 1.395E+00 | -0.056 |
| NB-94 | -4.398E-03 | | 2.676E-02 | 4.304E-02 | 2.711E-03 | -0.102 |
| NB-95 | 3.395E-02 | | 3.377E-02 | 5.840E-02 | 4.127E-03 | 0.581 |
| NB-95M | 3.229E-01 | | 1.178E-01 | 1.889E-01 | 1.399E-02 | 1.710 |
| ZR-95 | 3.995E-02 | | 5.082E-02 | 8.871E-02 | 7.101E-03 | 0.450 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| NB-97 | -4.140E-01 | | 2.557E-01 | Half-Life too short | | |
| ZR-97 | 2.314E+01 | | 4.391E+00 | Half-Life too short | | |
| MO-99 | -1.369E+01 | | 1.324E+01 | 1.897E+01 | 2.694E+00 | -0.722 |
| TC-99M | -1.659E+12 | | 2.491E+12 | Half-Life too short | | |
| RH-101 | 1.302E-02 | | 2.429E-02 | 4.010E-02 | 2.175E-03 | 0.325 |
| RH-102 | -6.647E-03 | | 2.318E-02 | 3.761E-02 | 2.195E-03 | -0.177 |
| RU-103 | 4.045E-03 | | 2.732E-02 | 4.572E-02 | 5.798E-03 | 0.088 |
| RH-106 | -3.566E-02 | | 2.326E-01 | 3.760E-01 | 4.431E-02 | -0.095 |
| RU-106 | -3.566E-02 | | 2.326E-01 | 3.760E-01 | 2.217E-02 | -0.095 |
| AG-108M | -1.092E-02 | | 2.280E-02 | 3.649E-02 | 2.273E-03 | -0.299 |
| CD-109 | 1.310E+00 | | 1.049E+00 | 1.182E+00 | 1.058E-01 | 1.108 |
| AG-110M | -2.375E-02 | | 2.978E-02 | 3.756E-02 | 2.331E-03 | -0.632 |
| IN-111 | 1.392E+00 | | 1.373E+00 | 2.065E+00 | 1.174E-01 | 0.674 |
| IN-113M | -6.165E-03 | | 2.912E-02 | 4.778E-02 | 2.851E-03 | -0.129 |
| SN-113 | -6.165E-03 | | 2.912E-02 | 4.778E-02 | 2.851E-03 | -0.129 |
| IN-114M | 1.175E-01 | | 1.561E-01 | 2.305E-01 | 1.239E-02 | 0.510 |
| CD-115 | -7.742E+00 | | 1.382E+01 | 2.107E+01 | 1.247E+00 | -0.367 |
| SN-117M | -5.298E-03 | | 4.680E-02 | 7.532E-02 | 4.009E-03 | -0.070 |
| SB-122 | 5.472E-01 | | 2.890E+00 | 4.205E+00 | 2.496E-01 | 0.130 |
| I-123 | -2.443E+01 | | 2.391E+01 | Half-Life too short | | |
| TE-123M | -1.166E-02 | | 2.283E-02 | 3.607E-02 | 1.948E-03 | -0.323 |
| I-124 | 3.848E-01 | | 7.521E-01 | 1.130E+00 | 6.689E-02 | 0.340 |
| SB-124 | -1.537E-02 | | 6.331E-02 | 9.908E-02 | 6.786E-03 | -0.155 |
| SB-125 | 2.013E-02 | | 6.540E-02 | 1.110E-01 | 6.610E-03 | 0.181 |
| TE-125M | -6.188E+00 | | 7.516E+00 | 1.182E+01 | 1.045E+00 | -0.524 |
| I-126 | 9.357E-02 | | 1.522E-01 | 2.326E-01 | 1.367E-02 | 0.402 |
| SB-126 | -6.916E-02 | | 1.314E-01 | 1.710E-01 | 1.113E-02 | -0.404 |
| SB-127 | -2.557E-01 | | 1.415E+00 | 2.272E+00 | 2.333E-01 | -0.113 |
| XE-127 | 1.185E-02 | | 3.927E-02 | 6.185E-02 | 3.374E-03 | 0.192 |
| I-131 | 1.848E-02 | | 9.415E-02 | 1.593E-01 | 1.020E-02 | 0.116 |
| TE-132 | 2.457E-01 | | 7.895E-01 | 1.284E+00 | 1.884E-01 | 0.191 |
| BA-133 | 1.186E-02 | | 3.272E-02 | 4.919E-02 | 5.669E-03 | 0.241 |
| I-133 | -1.588E-02 | | 9.034E-03 | Half-Life too short | | |
| CS-134 | 5.266E-02 | + | 4.763E-02 | 5.969E-02 | 4.488E-03 | 0.882 |
| CS-135 | 1.468E-01 | | 1.251E-01 | 1.987E-01 | 1.516E-02 | 0.739 |
| I-135 | 2.644E+11 | | 2.256E+11 | Half-Life too short | | |
| CS-136 | -2.229E-02 | | 8.332E-02 | 1.357E-01 | 1.049E-02 | -0.164 |
| CE-139 | -1.582E-02 | | 2.277E-02 | 3.555E-02 | 1.856E-03 | -0.445 |
| BA-140 | -1.129E-01 | | 2.000E-01 | 3.078E-01 | 1.002E-01 | -0.367 |
| LA-140 | -4.344E-02 | | 6.116E-02 | 8.630E-02 | 5.839E-03 | -0.503 |
| CE-141 | 3.518E-02 | | 5.158E-02 | 8.480E-02 | 4.883E-03 | 0.415 |
| CE-143 | 1.115E-03 | | 2.030E-04 | Half-Life too short | | |
| CE-144 | 3.005E-02 | | 1.539E-01 | 2.521E-01 | 3.572E-02 | 0.119 |
| PM-144 | -6.861E-03 | | 2.664E-02 | 4.249E-02 | 2.648E-03 | -0.161 |
| PR-144 | -4.654E-01 | | 1.807E+00 | 2.882E+00 | 1.794E-01 | -0.161 |
| PM-146 | 1.503E-03 | | 3.224E-02 | 5.364E-02 | 4.619E-03 | 0.028 |
| ND-147 | -2.171E-01 | | 4.263E-01 | 6.694E-01 | 9.087E-02 | -0.324 |
| PM-149 | 1.711E+01 | | 1.239E+02 | 2.099E+02 | 2.977E+01 | 0.082 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | -3.327E-02 | | 8.619E-02 | 1.139E-01 | 7.414E-03 | -0.292 |
| GD-153 | 5.686E-02 | | 6.686E-02 | 1.002E-01 | 7.789E-03 | 0.568 |
| EU-154 | 1.901E-02 | | 9.595E-02 | 1.624E-01 | 1.607E-02 | 0.117 |
| EU-155 | 1.517E-02 | | 8.468E-02 | 1.379E-01 | 9.922E-03 | 0.110 |
| TB-160 | 1.556E-02 | | 1.150E-01 | 1.881E-01 | 1.609E-02 | 0.083 |
| HO-166M | -4.003E-03 | | 4.567E-02 | 7.384E-02 | 4.730E-03 | -0.054 |
| TM-171 | -1.646E+01 | | 2.285E+01 | 3.172E+01 | 2.411E+00 | -0.519 |
| LU-176 | -9.641E-03 | | 1.909E-02 | 2.926E-02 | 1.702E-03 | -0.330 |
| LU-177 | 1.237E+00 | + | 1.111E+00 | 1.690E+00 | 9.278E-02 | 0.732 |
| LU-177M | -1.640E-02 | | 1.206E-01 | 1.986E-01 | 1.123E-02 | -0.083 |
| HF-181 | -3.203E-02 | | 3.418E-02 | 5.261E-02 | 3.079E-03 | -0.609 |
| W-181 | 3.506E-01 | | 3.063E-01 | 4.651E-01 | 3.519E-02 | 0.754 |
| TA-182 | -1.112E-01 | | 1.484E-01 | 2.276E-01 | 1.373E-02 | -0.488 |
| RE-183 | 9.491E-02 | | 8.360E-02 | 1.420E-01 | 7.479E-03 | 0.669 |
| RE-184 | 1.398E-02 | | 1.803E-01 | 2.893E-01 | 1.653E-02 | 0.048 |
| OS-185 | -1.928E-02 | | 3.038E-02 | 4.664E-02 | 2.731E-03 | -0.413 |
| RE-188 | 1.664E-01 | | 1.352E-01 | 2.300E-01 | 1.236E-02 | 0.724 |
| W-188 | -2.408E+00 | | 6.368E+00 | 9.062E+00 | 5.263E-01 | -0.266 |
| IR-192 | -9.632E-03 | | 2.555E-02 | 4.193E-02 | 2.450E-03 | -0.230 |
| AU-195 | 2.825E-01 | | 1.946E-01 | 2.994E-01 | 2.285E-02 | 0.944 |
| TL-200 | 3.623E-04 | | 5.195E-04 | Half-Life too short | | |
| TL-201 | -3.807E+00 | | 8.148E+00 | 1.287E+01 | 6.724E-01 | -0.296 |
| TL-202 | 2.200E-02 | | 5.121E-02 | 8.778E-02 | 5.041E-03 | 0.251 |
| HG-203 | 9.651E-03 | | 3.041E-02 | 5.202E-02 | 3.199E-03 | 0.186 |
| BI-207 | -9.513E-03 | | 3.980E-02 | 6.462E-02 | 4.589E-03 | -0.147 |
| TL-207 | -2.812E-01 | | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| PO-209 | -1.415E+00 | | 5.598E+00 | 8.780E+00 | 7.719E-01 | -0.161 |
| BI-210 | -4.862E-01 | | 2.374E+00 | 3.858E+00 | 2.940E-01 | -0.126 |
| PB-210 | -4.862E-01 | | 2.374E+00 | 3.858E+00 | 2.940E-01 | -0.126 |
| PO-210 | -4.862E-01 | | 2.374E+00 | 3.858E+00 | 2.514E-01 | -0.126 |
| PB-211 | -2.522E-01 | | 6.871E-01 | 1.085E+00 | 6.764E-01 | -0.232 |
| PO-215 | -2.812E-01 | | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| RN-219 | 4.352E-02 | | 2.913E-01 | 4.899E-01 | 6.625E-02 | 0.089 |
| RN-220 | 1.778E+00 | | 1.704E+01 | 2.833E+01 | 1.681E+00 | 0.063 |
| RA-223 | -2.812E-01 | | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| AC-227 | 1.657E-01 | | 2.948E-01 | 4.844E-01 | 6.747E-02 | 0.342 |
| TH-227 | 1.657E-01 | | 2.952E-01 | 4.844E-01 | 8.173E-02 | 0.342 |
| TH-229 | -1.307E-01 | | 3.949E-01 | 6.018E-01 | 3.247E-02 | -0.217 |
| PA-231 | -2.795E-01 | | 1.148E+00 | 1.907E+00 | 2.628E-01 | -0.147 |
| TH-231 | -2.812E-01 | | 5.129E-01 | 7.082E-01 | 1.170E-01 | -0.397 |
| U-231 | 1.004E-01 | | 1.271E+00 | 1.829E+00 | 1.453E-01 | 0.055 |
| PA-233 | 4.454E-02 | | 4.759E-02 | 8.381E-02 | 5.175E-03 | 0.531 |
| PA-234 | 1.667E-02 | | 2.288E-01 | 3.709E-01 | 6.923E-02 | 0.045 |
| PA-234M | 3.309E+00 | | 3.533E+00 | 6.301E+00 | 5.866E-01 | 0.525 |
| U-235 | 3.765E-02 | | 1.699E-01 | 2.742E-01 | 4.446E-02 | 0.137 |
| NP-236 | -3.779E-02 | | 6.284E-02 | 9.882E-02 | 5.235E-03 | -0.382 |
| NP-239 | -1.008E-01 | | 1.463E-01 | 2.294E-01 | 1.435E-02 | -0.439 |
| AM-241 | 2.744E-05 | | 1.257E-01 | 1.820E-01 | 1.499E-02 | 0.000 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -3.566E-02 | | 7.660E-02 | 1.215E-01 | 8.737E-03 | -0.294 |
| AM-246 | 1.109E-01 | | 9.944E-02 | 1.841E-01 | 1.270E-02 | 0.602 |
| CM-247 | -5.694E-04 | | 2.580E-02 | 4.290E-02 | 2.406E-03 | -0.013 |
| CF-249 | -8.095E-03 | | 2.486E-02 | 4.041E-02 | 2.257E-03 | -0.200 |
| CF-251 | -9.898E-03 | | 9.351E-02 | 1.501E-01 | 7.928E-03 | -0.066 |

VAX/VMS Nuclide Identification Report Generated

```
*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                          *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G246328007             *
* Acquisition date   : 18-FEB-2010 11:16:48 Detector SN#      :              *
* Detector ID        : GAM19 Sensitivity      : 5.000           *
* Geometry           : CAN Energy tolerance: 1.500           *
* Elapsed live time: 0 02:00:00.00 Abundance limit : 75.000    *
* Elapsed real time: 0 02:00:01.29 Half life ratio : 8.000     *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID             *
* Sample ID          : G246328007 Analyst initials: MXR1       *
* Batch Number       : 950786 Sample Quantity : 1.6313E+02 GRAM *
* Recovery           : 1.00000 Carrier Weight : 0.00000        *
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 12-MAR-2009 10:24:54 MS Isotope      :              *
* MSD DPM             : 0.000 MSD Isotope      :              *
* LCS DPM             : 0.000 LCS Isotope      :              *
* LCSD DPM            : 0.000 LCSD Isotope     :              *
*****
```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 1.758E+01 | 1.718E+00 | 1.779E-01 | 8.764E-01 |
| SN-126 | 2.816E-01 | 1.014E-01 | 6.052E-02 | 5.176E-02 |
| BA-137M | 1.228E-01 | 4.480E-02 | 1.980E-02 | 2.286E-02 |
| CS-137 | 1.298E-01 | 4.736E-02 | 2.094E-02 | 2.416E-02 |
| TL-208 | 2.702E-01 | 5.527E-02 | 2.289E-02 | 2.820E-02 |
| BI-211 | 1.951E+00 | 3.258E-01 | 1.187E-01 | 1.662E-01 |
| BI-212 | 7.138E-01 | 3.715E-01 | 1.652E-01 | 1.896E-01 |
| PB-212 | 6.464E-01 | 1.017E-01 | 4.571E-02 | 5.187E-02 |
| PO-212 | 6.464E-01 | 1.017E-01 | 4.571E-02 | 5.187E-02 |
| BI-214 | 5.743E-01 | 1.143E-01 | 4.240E-02 | 5.829E-02 |
| PB-214 | 6.786E-01 | 1.185E-01 | 4.136E-02 | 6.047E-02 |
| PO-214 | 6.786E-01 | 1.185E-01 | 4.136E-02 | 6.047E-02 |
| PO-216 | 6.464E-01 | 1.017E-01 | 4.571E-02 | 5.187E-02 |
| PO-218 | 6.786E-01 | 1.185E-01 | 4.136E-02 | 6.047E-02 |
| RA-224 | 1.263E+00 | 6.730E-01 | 5.198E-01 | 3.434E-01 |
| RA-226 | 5.743E-01 | 1.143E-01 | 4.240E-02 | 5.829E-02 |
| AC-228 | 8.491E-01 | 2.271E-01 | 8.755E-02 | 1.159E-01 |
| RA-228 | 8.491E-01 | 2.271E-01 | 8.755E-02 | 1.159E-01 |
| TH-228 | 6.574E-01 | 1.034E-01 | 4.649E-02 | 5.275E-02 |
| TH-230 | 5.743E-01 | 1.143E-01 | 4.240E-02 | 5.829E-02 |
| TH-232 | 8.491E-01 | 2.271E-01 | 8.755E-02 | 1.159E-01 |
| TH-234 | 2.302E+00 | 1.245E+00 | 8.147E-01 | 6.350E-01 |
| U-234 | 5.743E-01 | 1.143E-01 | 4.240E-02 | 5.829E-02 |
| NP-237 | 8.269E-01 | 3.416E-01 | 1.646E-01 | 1.743E-01 |
| U-238 | 2.302E+00 | 1.245E+00 | 8.147E-01 | 6.350E-01 |
| AM-243 | 2.155E-01 | 6.617E-02 | 3.483E-02 | 3.376E-02 |
| ANH-511 | 5.903E-02 | 4.971E-02 | 1.711E-02 | 2.536E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|-----|
|---------|-------------------------------------|---------------|--------------------|-----|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | 3.810E-01 | 2.588E-01 | 2.492E-01 | 1.321E-01 | NOT IDENT. |
| NA-22 | 7.134E-03 | 3.373E-02 | 2.962E-02 | 1.721E-02 | NOT IDENT. |
| NA-24 | 3.451E+06 | 3.762E+06 | 0.000E+00 | 1.919E+06 | SHORT HLIF |
| AL-26 | 1.307E-02 | 2.016E-02 | 1.912E-02 | 1.029E-02 | NOT IDENT. |
| TI-44 | 1.975E-01 | 3.937E-02 | 3.075E-02 | 2.009E-02 | FAIL ABUN |
| SC-46 | 2.445E-03 | 3.038E-02 | 2.590E-02 | 1.550E-02 | FAIL ABUN |
| V-48 | 3.491E-02 | 5.962E-02 | 5.293E-02 | 3.042E-02 | NOT IDENT. |
| CR-51 | -5.516E-02 | 2.647E-01 | 2.369E-01 | 1.350E-01 | NOT IDENT. |
| MN-52 | 3.305E-02 | 1.963E-01 | 1.716E-01 | 1.001E-01 | NOT IDENT. |
| MN-54 | 1.238E-04 | 2.708E-02 | 2.302E-02 | 1.381E-02 | NOT IDENT. |
| CO-56 | 1.809E-02 | 2.980E-02 | 2.674E-02 | 1.520E-02 | NOT IDENT. |
| CO-57 | 7.819E-03 | 1.894E-02 | 1.741E-02 | 9.661E-03 | NOT IDENT. |
| CO-58 | -1.138E-02 | 2.694E-02 | 2.187E-02 | 1.374E-02 | NOT IDENT. |
| FE-59 | -3.683E-02 | 6.895E-02 | 5.692E-02 | 3.518E-02 | NOT IDENT. |
| CO-60 | 2.389E-03 | 2.673E-02 | 2.318E-02 | 1.364E-02 | NOT IDENT. |
| ZN-65 | 2.009E-02 | 6.841E-02 | 5.345E-02 | 3.490E-02 | NOT IDENT. |
| GE-68 | 8.979E-01 | 8.760E-01 | 8.359E-01 | 4.469E-01 | NOT IDENT. |
| AS-73 | -3.941E-02 | 5.693E-01 | 5.325E-01 | 2.904E-01 | NOT IDENT. |
| AS-74 | -5.468E-02 | 6.875E-02 | 5.569E-02 | 3.508E-02 | NOT IDENT. |
| SE-75 | -2.672E-03 | 3.372E-02 | 2.677E-02 | 1.720E-02 | NOT IDENT. |
| BR-77 | 2.772E-01 | 1.230E+01 | 1.083E+01 | 6.274E+00 | FAIL ABUN |
| SR-82 | -3.066E-01 | 2.899E-01 | 2.207E-01 | 1.479E-01 | NOT IDENT. |
| RB-83 | -1.126E-02 | 4.804E-02 | 4.142E-02 | 2.451E-02 | NOT IDENT. |
| RB-84 | -7.594E-03 | 5.751E-02 | 4.804E-02 | 2.934E-02 | NOT IDENT. |
| KR-85 | 1.657E+01 | 5.885E+00 | 5.569E+00 | 3.002E+00 | NOT IDENT. |
| SR-85 | 8.662E-02 | 3.077E-02 | 2.912E-02 | 1.570E-02 | NOT IDENT. |
| RB-86 | 6.219E-01 | 5.939E-01 | 5.676E-01 | 3.030E-01 | NOT IDENT. |
| Y-88 | 2.429E-03 | 1.997E-02 | 1.717E-02 | 1.019E-02 | NOT IDENT. |
| ZR-88 | 1.342E-02 | 1.988E-02 | 1.863E-02 | 1.015E-02 | NOT IDENT. |
| Y-91 | -1.336E+00 | 1.418E+01 | 1.216E+01 | 7.235E+00 | NOT IDENT. |
| NB-94 | -4.398E-03 | 2.623E-02 | 2.227E-02 | 1.338E-02 | NOT IDENT. |
| NB-95 | 3.395E-02 | 3.309E-02 | 3.013E-02 | 1.688E-02 | NOT IDENT. |
| NB-95M | 3.229E-01 | 1.155E-01 | 1.009E-01 | 5.891E-02 | NOT IDENT. |
| ZR-95 | 3.995E-02 | 4.980E-02 | 4.579E-02 | 2.541E-02 | NOT IDENT. |
| NB-97 | -4.140E+05 | 5.012E+05 | 0.000E+00 | 2.557E+05 | SHORT HLIF |
| ZR-97 | 2.314E+07 | 8.606E+06 | 0.000E+00 | 4.391E+06 | SHORT HLIF |
| MO-99 | -1.369E+01 | 1.298E+01 | 9.797E+00 | 6.620E+00 | NOT IDENT. |
| TC-99M | -1.659E+18 | 4.882E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 1.302E-02 | 2.381E-02 | 2.153E-02 | 1.215E-02 | NOT IDENT. |
| RH-102 | -6.647E-03 | 2.272E-02 | 1.969E-02 | 1.159E-02 | NOT IDENT. |
| RU-103 | 4.045E-03 | 2.677E-02 | 2.390E-02 | 1.366E-02 | FAIL ABUN |
| RH-106 | -3.566E-02 | 2.279E-01 | 1.952E-01 | 1.163E-01 | FAIL ABUN |
| RU-106 | -3.566E-02 | 2.279E-01 | 1.952E-01 | 1.163E-01 | FAIL ABUN |
| AG-108M | -1.092E-02 | 2.234E-02 | 1.915E-02 | 1.140E-02 | NOT IDENT. |
| CD-109 | 1.310E+00 | 1.028E+00 | 6.488E-01 | 5.244E-01 | NOT IDENT. |
| AG-110M | -2.375E-02 | 2.918E-02 | 1.947E-02 | 1.489E-02 | NOT IDENT. |
| IN-111 | 1.392E+00 | 1.345E+00 | 1.102E+00 | 6.864E-01 | NOT IDENT. |
| IN-113M | -6.165E-03 | 2.854E-02 | 2.515E-02 | 1.456E-02 | NOT IDENT. |
| SN-113 | -6.165E-03 | 2.854E-02 | 2.515E-02 | 1.456E-02 | NOT IDENT. |
| IN-114M | 1.175E-01 | 1.529E-01 | 1.239E-01 | 7.803E-02 | NOT IDENT. |
| CD-115 | -7.742E+00 | 1.355E+01 | 1.100E+01 | 6.911E+00 | NOT IDENT. |
| SN-117M | -5.298E-03 | 4.587E-02 | 4.069E-02 | 2.340E-02 | NOT IDENT. |
| SB-122 | 5.472E-01 | 2.832E+00 | 2.190E+00 | 1.445E+00 | NOT IDENT. |
| I-123 | -2.443E+07 | 4.687E+07 | 0.000E+00 | 2.391E+07 | SHORT HLIF |
| TE-123M | -1.166E-02 | 2.237E-02 | 1.948E-02 | 1.141E-02 | NOT IDENT. |
| I-124 | 3.848E-01 | 7.371E-01 | 5.874E-01 | 3.761E-01 | FAIL ABUN |
| SB-124 | -1.537E-02 | 6.204E-02 | 4.988E-02 | 3.165E-02 | FAIL ABUN |
| SB-125 | 2.013E-02 | 6.409E-02 | 5.829E-02 | 3.270E-02 | NOT IDENT. |
| TE-125M | -6.188E+00 | 7.365E+00 | 6.449E+00 | 3.758E+00 | NOT IDENT. |
| I-126 | 9.357E-02 | 1.491E-01 | 1.206E-01 | 7.609E-02 | NOT IDENT. |
| SB-126 | -6.916E-02 | 1.288E-01 | 8.840E-02 | 6.569E-02 | NOT IDENT. |
| SB-127 | -2.557E-01 | 1.387E+00 | 1.176E+00 | 7.077E-01 | NOT IDENT. |
| XE-127 | 1.185E-02 | 3.848E-02 | 3.318E-02 | 1.963E-02 | NOT IDENT. |
| I-131 | 1.848E-02 | 9.227E-02 | 8.404E-02 | 4.708E-02 | NOT IDENT. |
| TE-132 | 2.457E-01 | 7.737E-01 | 6.866E-01 | 3.948E-01 | NOT IDENT. |
| BA-133 | 1.186E-02 | 3.206E-02 | 2.597E-02 | 1.636E-02 | NOT IDENT. |
| I-133 | -1.588E+04 | 1.771E+04 | 0.000E+00 | 9.034E+03 | SHORT HLIF |
| CS-134 | 5.266E-02 | 4.668E-02 | 3.077E-02 | 2.382E-02 | FAIL ABUN |
| CS-135 | 1.468E-01 | 1.226E-01 | 1.057E-01 | 6.256E-02 | NOT IDENT. |
| I-135 | 2.644E+17 | 4.422E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.229E-02 | 8.165E-02 | 6.937E-02 | 4.166E-02 | FAIL ABUN |
| CE-139 | -1.582E-02 | 2.231E-02 | 1.918E-02 | 1.138E-02 | NOT IDENT. |
| BA-140 | -1.129E-01 | 1.960E-01 | 1.605E-01 | 1.000E-01 | NOT IDENT. |
| LA-140 | -4.344E-02 | 5.994E-02 | 4.352E-02 | 3.058E-02 | FAIL ABUN |
| CE-141 | 3.518E-02 | 5.055E-02 | 4.592E-02 | 2.579E-02 | NOT IDENT. |
| CE-143 | 1.115E+03 | 3.979E+02 | 0.000E+00 | 2.030E+02 | SHORT HLIF |
| CE-144 | 3.005E-02 | 1.509E-01 | 1.368E-01 | 7.697E-02 | NOT IDENT. |
| PM-144 | -6.861E-03 | 2.611E-02 | 2.199E-02 | 1.332E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | -4.654E-01 | 1.771E+00 | 1.492E+00 | 9.034E-01 | NOT IDENT. |
| PM-146 | 1.503E-03 | 3.159E-02 | 2.811E-02 | 1.612E-02 | NOT IDENT. |
| ND-147 | -2.171E-01 | 4.177E-01 | 3.492E-01 | 2.131E-01 | NOT IDENT. |
| PM-149 | 1.711E+01 | 1.214E+02 | 1.115E+02 | 6.193E+01 | NOT IDENT. |
| EU-152 | -3.327E-02 | 8.446E-02 | 6.019E-02 | 4.309E-02 | NOT IDENT. |
| GD-153 | 5.686E-02 | 6.553E-02 | 5.483E-02 | 3.343E-02 | NOT IDENT. |
| EU-154 | 1.901E-02 | 9.403E-02 | 8.249E-02 | 4.798E-02 | NOT IDENT. |
| EU-155 | 1.517E-02 | 8.299E-02 | 7.535E-02 | 4.234E-02 | FAIL ABUN |
| TB-160 | 1.556E-02 | 1.127E-01 | 9.666E-02 | 5.751E-02 | FAIL ABUN |
| HO-166M | -4.003E-03 | 4.476E-02 | 3.819E-02 | 2.284E-02 | NOT IDENT. |
| TM-171 | -1.646E+01 | 2.239E+01 | 1.754E+01 | 1.142E+01 | NOT IDENT. |
| LU-176 | -9.641E-03 | 1.871E-02 | 1.551E-02 | 9.544E-03 | NOT IDENT. |
| LU-177 | 1.237E+00 | 1.088E+00 | 9.059E-01 | 5.553E-01 | FAIL ABUN |
| LU-177M | -1.640E-02 | 1.182E-01 | 1.044E-01 | 6.029E-02 | NOT IDENT. |
| HF-181 | -3.203E-02 | 3.350E-02 | 2.753E-02 | 1.709E-02 | NOT IDENT. |
| W-181 | 3.506E-01 | 3.002E-01 | 2.574E-01 | 1.532E-01 | NOT IDENT. |
| TA-182 | -1.112E-01 | 1.454E-01 | 1.158E-01 | 7.420E-02 | FAIL ABUN |
| RE-183 | 9.491E-02 | 8.193E-02 | 7.664E-02 | 4.180E-02 | FAIL ABUN |
| RE-184 | 1.398E-02 | 1.767E-01 | 1.542E-01 | 9.017E-02 | NOT IDENT. |
| OS-185 | -1.928E-02 | 2.977E-02 | 2.419E-02 | 1.519E-02 | NOT IDENT. |
| RE-188 | 1.664E-01 | 1.325E-01 | 1.243E-01 | 6.760E-02 | NOT IDENT. |
| W-188 | -2.408E+00 | 6.241E+00 | 4.812E+00 | 3.184E+00 | FAIL ABUN |
| IR-192 | -9.632E-03 | 2.504E-02 | 2.221E-02 | 1.278E-02 | FAIL ABUN |
| AU-195 | 2.825E-01 | 1.907E-01 | 1.638E-01 | 9.731E-02 | FAIL ABUN |
| TL-200 | 3.623E+02 | 1.018E+03 | 0.000E+00 | 5.195E+02 | SHORT HLIF |
| TL-201 | -3.807E+00 | 7.985E+00 | 6.941E+00 | 4.074E+00 | NOT IDENT. |
| TL-202 | 2.200E-02 | 5.019E-02 | 4.605E-02 | 2.561E-02 | NOT IDENT. |
| HG-203 | 9.651E-03 | 2.980E-02 | 2.766E-02 | 1.521E-02 | NOT IDENT. |
| BI-207 | -9.513E-03 | 3.900E-02 | 3.301E-02 | 1.990E-02 | FAIL ABUN |
| TL-207 | -2.812E-01 | 5.027E-01 | 3.749E-01 | 2.565E-01 | FAIL ABUN |
| PO-209 | -1.415E+00 | 5.486E+00 | 4.509E+00 | 2.799E+00 | NOT IDENT. |
| BI-210 | -4.862E-01 | 2.327E+00 | 2.154E+00 | 1.187E+00 | NOT IDENT. |
| PB-210 | -4.862E-01 | 2.327E+00 | 2.154E+00 | 1.187E+00 | NOT IDENT. |
| PO-210 | -4.862E-01 | 2.327E+00 | 2.154E+00 | 1.187E+00 | NOT IDENT. |
| PB-211 | -2.522E-01 | 6.733E-01 | 5.708E-01 | 3.435E-01 | NOT IDENT. |
| PO-215 | -2.812E-01 | 5.027E-01 | 3.749E-01 | 2.565E-01 | FAIL ABUN |
| RN-219 | 4.352E-02 | 2.855E-01 | 2.577E-01 | 1.457E-01 | FAIL ABUN |
| RN-220 | 1.778E+00 | 1.670E+01 | 1.476E+01 | 8.521E+00 | NOT IDENT. |
| RA-223 | -2.812E-01 | 5.027E-01 | 3.749E-01 | 2.565E-01 | FAIL ABUN |
| AC-227 | 1.657E-01 | 2.889E-01 | 2.581E-01 | 1.474E-01 | FAIL ABUN |
| TH-227 | 1.657E-01 | 2.893E-01 | 2.581E-01 | 1.476E-01 | FAIL ABUN |
| TH-229 | -1.307E-01 | 3.870E-01 | 3.233E-01 | 1.974E-01 | FAIL ABUN |
| PA-231 | -2.795E-01 | 1.125E+00 | 1.013E+00 | 5.740E-01 | NOT IDENT. |
| TH-231 | -2.812E-01 | 5.027E-01 | 3.749E-01 | 2.565E-01 | FAIL ABUN |
| U-231 | 1.004E-01 | 1.245E+00 | 1.002E+00 | 6.354E-01 | FAIL ABUN |
| PA-233 | 4.454E-02 | 4.664E-02 | 4.442E-02 | 2.380E-02 | FAIL ABUN |
| PA-234 | 1.667E-02 | 2.242E-01 | 1.901E-01 | 1.144E-01 | FAIL ABUN |
| PA-234M | 3.309E+00 | 3.463E+00 | 3.225E+00 | 1.767E+00 | NOT IDENT. |
| U-235 | 3.765E-02 | 1.665E-01 | 1.485E-01 | 8.495E-02 | FAIL ABUN |
| NP-236 | -3.779E-02 | 6.159E-02 | 5.337E-02 | 3.142E-02 | NOT IDENT. |
| NP-239 | -1.008E-01 | 1.434E-01 | 1.250E-01 | 7.317E-02 | FAIL ABUN |
| AM-241 | 2.744E-05 | 1.232E-01 | 1.010E-01 | 6.285E-02 | NOT IDENT. |
| CM-243 | -3.566E-02 | 7.507E-02 | 6.639E-02 | 3.830E-02 | FAIL ABUN |
| AM-246 | 1.109E-01 | 9.745E-02 | 9.399E-02 | 4.972E-02 | NOT IDENT. |
| CM-247 | -5.694E-04 | 2.528E-02 | 2.256E-02 | 1.290E-02 | NOT IDENT. |
| CF-249 | -8.095E-03 | 2.436E-02 | 2.128E-02 | 1.243E-02 | NOT IDENT. |
| CF-251 | -9.898E-03 | 9.164E-02 | 8.082E-02 | 4.675E-02 | NOT IDENT. |

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*                                     *
*               GEL Laboratories LLC                                     *
*               2040 SAVAGE ROAD                                         *
*               CHARLESTON ,SC 29417                                    *
*               GAMMA SPECTROSCOPY BACKGROUND REPORT                    *
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| ENERGY | MDA COUNTS |
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| 46.50 | 280.8557 |
| 46.50 | 280.8557 |
| 46.50 | 280.8557 |
| 48.70 | 264.0649 |
| 49.72 | 303.4090 |
| 51.35 | 304.9660 |
| 52.39 | 313.1610 |
| 52.97 | 310.4307 |
| 53.15 | 310.4948 |
| 53.44 | 294.9202 |
| 54.07 | 289.2473 |
| 56.28 | 311.5837 |
| 56.28 | 310.6020 |
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| 57.53 | 354.3348 |
| 57.53 | 354.3359 |
| 57.60 | 354.3620 |
| 57.98 | 340.3279 |
| 57.98 | 340.3279 |
| 59.32 | 351.8640 |
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| 59.40 | 351.8940 |
| 59.54 | 351.9471 |
| 59.72 | 352.0144 |
| 60.01 | 347.3862 |
| 61.10 | 339.8828 |
| 61.14 | 339.8966 |
| 61.30 | 343.1160 |
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| 63.29 | 358.4842 |
| 63.58 | 337.5908 |
| 64.28 | 366.3826 |
| 65.12 | 357.1714 |
| 65.20 | 357.2002 |
| 65.20 | 357.2002 |
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| 66.72 | 384.7776 |
| 66.83 | 380.0500 |
| 66.91 | 383.6588 |
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| 67.75 | 374.0307 |
| 67.85 | 400.5991 |
| 68.90 | 352.1486 |
| 68.90 | 352.1486 |
| 69.30 | 352.2875 |
| 69.67 | 368.3621 |
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| 70.82 | 384.7366 |
| 70.83 | 386.3374 |
| 72.80 | 372.6734 |
| 72.87 | 386.8952 |
| 72.87 | 386.8952 |
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| 74.81 | 387.6053 |
| 74.81 | 387.6053 |
| 74.81 | 387.6053 |
| 74.81 | 387.6053 |
| 74.81 | 387.6053 |
| 74.81 | 387.6053 |
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| 77.11 | 388.4350 |

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| 77.11 | 388.4350 |
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| 77.11 | 388.4350 |
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| 94.90 | 344.1216 |
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| 95.87 | 349.2899 |
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| 122.32 | 258.1028 |
| 122.32 | 258.1028 |
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| 144.24 | 265.1019 |
| 144.24 | 265.1019 |
| 144.24 | 265.1019 |
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| 147.16 | 310.0361 |
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| 152.70 | 285.6299 |
| 153.22 | 299.5303 |
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| 154.21 | 271.0173 |
| 154.21 | 271.0173 |
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| 156.02 | 267.0628 |
| 158.56 | 271.7390 |
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| 162.64 | 230.7442 |
| 163.35 | 271.4524 |
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| 165.85 | 266.5021 |
| 167.43 | 263.5371 |
| 171.28 | 238.3597 |
| 171.86 | 240.5874 |
| 172.10 | 234.1747 |
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| 176.60 | 230.4706 |
| 181.06 | 236.6662 |
| 184.41 | 240.5691 |
| 185.71 | 242.4724 |
| 186.00 | 242.5117 |
| 190.27 | 208.3535 |
| 192.34 | 229.4451 |
| 193.63 | 234.8229 |
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| 202.84 | 238.4686 |
| 205.31 | 246.7758 |

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| 210.97 | 193.0814 |
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| 226.40 | 214.4728 |
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| 227.20 | 211.2393 |
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| 241.98 | 415.2275 |
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| 249.79 | 183.3276 |
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| 252.85 | 172.3911 |
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| 256.20 | 163.6853 |
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| 277.60 | 154.9274 |
| 277.60 | 154.9274 |
| 278.00 | 154.8539 |
| 278.60 | 156.7052 |
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| 280.46 | 174.9604 |
| 281.68 | 175.9593 |
| 283.67 | 168.8463 |
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| 286.10 | 163.5688 |
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| 295.21 | 150.5101 |
| 295.21 | 150.5101 |

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| 297.23 | 150.6370 |
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| 320.08 | 125.3103 |
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| 323.87 | 126.1130 |
| 323.87 | 126.1130 |
| 323.87 | 126.1130 |
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| 338.28 | 131.7660 |
| 338.28 | 131.7660 |
| 338.28 | 131.7660 |
| 338.32 | 131.7677 |
| 338.32 | 131.7677 |
| 338.32 | 131.7677 |
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| 351.92 | 106.3281 |
| 351.92 | 106.3281 |
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| 383.85 | 92.4660 |
| 387.95 | 85.0397 |
| 388.63 | 86.0046 |
| 391.69 | 88.9351 |
| 391.69 | 88.9351 |
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| 398.62 | 107.1665 |
| 400.65 | 93.0055 |
| 401.10 | 97.7658 |
| 401.81 | 99.6885 |
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| 444.90 | 82.8212 |
| 445.03 | 86.6766 |
| 445.03 | 86.6766 |
| 445.03 | 86.6766 |
| 445.03 | 86.6766 |
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| 511.85 | 75.6864 |
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| 513.99 | 60.6531 |
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| 602.71 | 70.5588 |
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| 609.31 | 75.7306 |
| 609.31 | 75.7306 |
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| 661.65 | 54.5729 |
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| 666.33 | 49.5133 |
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| 753.82 | 53.3346 |
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| 831.96 | 49.9995 |
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| 911.07 | 59.4674 |
| 911.07 | 59.4674 |
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| 926.50 | 31.4518 |
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| 937.48 | 44.5625 |
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| 949.00 | 54.4666 |
| 962.29 | 54.6057 |
| 964.01 | 47.3408 |
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| 969.11 | 72.1746 |
| 969.11 | 72.1746 |
| 977.42 | 55.8584 |
| 980.50 | 48.2206 |
| 983.50 | 44.9579 |
| 989.30 | 53.7887 |
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| 1001.68 | 36.6764 |
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| 1038.57 | 42.4661 |
| 1038.76 | 0.0000 |
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| 1046.59 | 51.7731 |
| 1048.07 | 45.3134 |

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| 1050.47 | 37.9320 |
| 1062.04 | 51.9167 |
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| 1077.35 | 34.3954 |
| 1078.86 | 31.6163 |
| 1085.78 | 35.3792 |
| 1099.22 | 55.0604 |
| 1112.02 | 47.3887 |
| 1112.84 | 46.3035 |
| 1115.52 | 41.7132 |
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| 1120.29 | 48.7056 |
| 1120.29 | 48.7056 |
| 1120.29 | 48.7056 |
| 1120.51 | 48.7077 |
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| 1129.67 | 55.0382 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
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| 1189.05 | 31.2705 |
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| 1221.42 | 62.8740 |
| 1230.97 | 66.7900 |
| 1235.34 | 66.8355 |
| 1236.41 | 0.0000 |
| 1238.25 | 46.8068 |
| 1246.25 | 47.8251 |
| 1260.41 | 0.0000 |
| 1271.85 | 36.4955 |
| 1274.45 | 45.1564 |
| 1274.54 | 45.1583 |
| 1291.56 | 33.7183 |
| 1298.22 | 0.0000 |
| 1312.09 | 31.8936 |
| 1325.50 | 34.8647 |
| 1325.50 | 34.8647 |
| 1332.49 | 27.1455 |
| 1333.61 | 23.2715 |
| 1360.21 | 24.3398 |
| 1362.66 | 0.0000 |
| 1365.15 | 21.4351 |
| 1368.21 | 15.5964 |
| 1368.53 | 0.0000 |
| 1376.25 | 18.5431 |
| 1384.27 | 28.3357 |
| 1394.10 | 22.5068 |
| 1395.20 | 19.5736 |
| 1407.95 | 27.4554 |
| 1434.06 | 18.7016 |
| 1436.60 | 15.7546 |
| 1457.56 | 0.0000 |
| 1460.81 | 16.7980 |
| 1489.15 | 13.8895 |
| 1509.49 | 12.9344 |
| 1596.49 | 19.1314 |
| 1620.62 | 12.1221 |
| 1678.03 | 0.0000 |
| 1691.02 | 18.3516 |
| 1691.02 | 18.3516 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 8.2331 |
| 1764.49 | 8.2331 |
| 1764.49 | 8.2331 |
| 1764.49 | 8.2331 |
| 1770.23 | 5.2965 |
| 1771.40 | 8.8285 |
| 1791.20 | 0.0000 |
| 1808.65 | 7.2435 |

1836.01

7.2677

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328007

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 6.8673E+00 | ug/g |
| Total Uranium Counting Unc. | 3.7036E+00 | ug/g |
| Total Uranium Tpu | 1.8896E-06 | ug/g |
| Total Uranium Mda | 2.4247E+00 | ug/g |


```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GROSS GAMMA REPORT                             *
*
*****
*
*   BATCH ID      : 950786                SAMPLE ID   : G246328007                *
*   ANALYST       : MXR1                  DETECTOR    : GAM19                  *
*   SAMPLE DATE   : 1-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00          *
*   ANALYSIS DATE : 18-FEB-2010 11:16:48.87  SAMPLE ALQT: 163.130 GRAM          *
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 5.153E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 9.036E-01
GROSS GAMMA MDA     (pCi/GRAM ) : 2.417E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.171E+00

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:47:59.23

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328008.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:47:35
Sample ID          : G246328008          Sample quantity  : 1.25380E+02 GRAM
Detector name      : GAM01              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.24  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             Detector SN#       :
Matrix Spike ID    :                    LCS ID            : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 63.38* | 149 | 579 | 1.50 | 127.49 | 122 | 11 | 2.08E-02 | 32.9 | |
| 2 | 2 | 74.82* | 374 | 489 | 1.30 | 150.36 | 145 | 15 | 5.19E-02 | 11.8 | 2.18E+00 |
| 3 | 2 | 77.11 | 639 | 405 | 1.16 | 154.94 | 145 | 15 | 8.87E-02 | 6.9 | |
| 4 | 0 | 87.35 | 172 | 498 | 1.20 | 175.40 | 172 | 7 | 2.39E-02 | 22.8 | |
| 5 | 0 | 92.97* | 250 | 521 | 1.62 | 186.63 | 183 | 9 | 3.47E-02 | 18.9 | |
| 6 | 0 | 129.21 | 168 | 486 | 1.54 | 259.07 | 253 | 13 | 2.34E-02 | 28.2 | |
| 7 | 0 | 186.24* | 181 | 427 | 1.29 | 373.07 | 368 | 11 | 2.52E-02 | 24.3 | |
| 8 | 0 | 209.55 | 115 | 300 | 1.11 | 419.67 | 416 | 10 | 1.60E-02 | 29.5 | |
| 9 | 2 | 238.99* | 1189 | 230 | 1.25 | 478.51 | 471 | 20 | 1.65E-01 | 3.8 | 2.26E+00 |
| 10 | 2 | 241.97 | 234 | 231 | 1.55 | 484.46 | 471 | 20 | 3.25E-02 | 15.2 | |
| 11 | 0 | 270.67 | 104 | 188 | 1.54 | 541.84 | 538 | 9 | 1.44E-02 | 25.9 | |
| 12 | 0 | 277.82 | 78 | 137 | 0.85 | 556.12 | 553 | 8 | 1.08E-02 | 28.4 | |
| 13 | 3 | 295.64* | 355 | 130 | 1.39 | 591.75 | 586 | 23 | 4.94E-02 | 7.7 | 1.36E+00 |
| 14 | 3 | 300.34 | 89 | 169 | 1.78 | 601.15 | 586 | 23 | 1.24E-02 | 31.1 | |
| 15 | 0 | 338.76* | 189 | 170 | 1.38 | 677.94 | 672 | 10 | 2.62E-02 | 15.1 | |
| 16 | 0 | 352.17* | 592 | 249 | 1.28 | 704.75 | 698 | 14 | 8.22E-02 | 7.1 | |
| 17 | 0 | 462.82 | 92 | 95 | 1.20 | 925.91 | 922 | 10 | 1.27E-02 | 22.3 | |
| 18 | 0 | 511.37* | 100 | 124 | 2.49 | 1022.95 | 1016 | 15 | 1.39E-02 | 29.9 | |
| 19 | 0 | 583.48* | 297 | 107 | 1.47 | 1167.08 | 1162 | 12 | 4.12E-02 | 9.3 | |
| 20 | 0 | 609.53* | 422 | 107 | 1.64 | 1219.14 | 1214 | 14 | 5.87E-02 | 7.2 | |
| 21 | 0 | 727.56* | 128 | 97 | 1.85 | 1455.06 | 1445 | 18 | 1.78E-02 | 20.5 | |
| 22 | 0 | 911.55* | 258 | 56 | 1.47 | 1822.80 | 1815 | 15 | 3.58E-02 | 9.0 | |
| 23 | 0 | 969.34* | 127 | 54 | 1.42 | 1938.28 | 1934 | 12 | 1.76E-02 | 15.1 | |
| 24 | 0 | 1121.02* | 104 | 68 | 2.55 | 2241.44 | 2233 | 20 | 1.44E-02 | 20.7 | |
| 25 | 0 | 1461.08* | 1196 | 19 | 1.98 | 2921.05 | 2915 | 16 | 1.66E-01 | 3.0 | |
| 26 | 0 | 1764.84* | 80 | 7 | 1.27 | 3528.07 | 3522 | 13 | 1.11E-02 | 13.8 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 13:48:03

Configuration : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328008.CNF;1
 Analyses by : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
 Sample title : MXR1
 Sample date : 1-FEB-2010 12:00:00 Acquisition date : 18-FEB-2010 11:47:35
 Sample ID : G246328008 Sample quantity : 125.38 GRAM
 Sample type : SOLID Sample geometry :
 Detector name : GAMMA1 Detector geometry: CAN
 Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:01.24 0.0%
 Peak Width (FWHM): 3.00 Confidence level : 5.00 %
 Energy tolerance : 1.50 keV Half life ratio : 8.00
 Errors propagated: Yes Systematic Error : 0.00 %
 Efficiency type : Empirical Efficiencies at : Peak Energy
 Abundance limit : 75.00 WTM error limit : 3.00

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 | * | 3.550E+01 | 3.821E+00 | 6.099E-01 | 5.422E-02 | 58.216 |
| CD-109 | + | 88.03 | * | 2.737E+00 | 1.274E+00 | 1.755E+00 | 1.661E-01 | 1.559 |
| SN-126 | + | 64.28 | | 1.671E+00 | 1.127E+00 | 9.498E-01 | 1.398E-01 | 1.760 |
| | + | 86.94 | | 1.115E+00 | 6.878E-01 | 7.270E-01 | 3.018E-01 | 1.534 |
| | + | 87.57 | * | 2.683E-01 | 1.249E-01 | 1.783E-01 | 1.680E-02 | 1.504 |
| HG-203 | | 70.83 | | -8.847E-02 | 1.435E+00 | 2.060E+00 | 2.734E-01 | -0.043 |
| | | 72.87 | | 1.379E+00 | 8.550E-01 | 1.293E+00 | 1.672E-01 | 1.066 |
| | | 82.60 | | -3.938E-01 | 1.435E+00 | 2.169E+00 | 3.024E-01 | -0.182 |
| | + | 279.20 | * | 1.003E-01 | 5.776E-02 | 8.056E-02 | 7.554E-03 | 1.245 |
| TL-208 | + | 277.35 | | 8.853E-01 | 5.153E-01 | 7.068E-01 | 8.983E-02 | 1.253 |
| | + | 510.84 | | 5.800E-01 | 3.537E-01 | 2.348E-01 | 2.791E-02 | 2.470 |
| | + | 583.14 | * | 4.928E-01 | 1.018E-01 | 6.949E-02 | 6.311E-03 | 7.092 |
| | | 860.37 | | 4.934E-01 | 3.593E-01 | 6.521E-01 | 6.249E-02 | 0.757 |
| BI-211 | | 72.87 | | 6.743E+00 | 4.126E+00 | 6.322E+00 | 5.185E-01 | 1.066 |
| | + | 351.07 | * | 4.247E+00 | 7.134E-01 | 3.824E-01 | 3.479E-02 | 11.105 |
| PB-212 | + | 74.81 | | 2.518E+00 | 6.709E-01 | 6.501E-01 | 8.137E-02 | 3.873 |
| | + | 77.11 | | 2.425E+00 | 3.946E-01 | 3.668E-01 | 3.113E-02 | 6.610 |
| | + | 87.30 | | 1.241E+00 | 5.908E-01 | 8.092E-01 | 1.110E-01 | 1.533 |
| | + | 238.63 | * | 1.836E+00 | 2.316E-01 | 1.031E-01 | 1.043E-02 | 17.819 |
| | + | 300.09 | | 2.146E+00 | 1.353E+00 | 1.444E+00 | 1.561E-01 | 1.486 |
| PO-212 | + | 74.81 | | 2.518E+00 | 6.709E-01 | 6.501E-01 | 8.137E-02 | 3.873 |
| | + | 77.11 | | 2.425E+00 | 3.946E-01 | 3.668E-01 | 3.113E-02 | 6.610 |
| | + | 87.30 | | 1.241E+00 | 5.908E-01 | 8.092E-01 | 1.110E-01 | 1.533 |
| | | 115.19 | | 1.957E+00 | 4.232E+00 | 6.858E+00 | 5.959E-01 | 0.285 |
| | + | 238.63 | * | 1.836E+00 | 2.316E-01 | 1.031E-01 | 1.043E-02 | 17.819 |
| | + | 300.09 | | 2.146E+00 | 1.353E+00 | 1.444E+00 | 1.561E-01 | 1.486 |
| BI-214 | + | 609.31 | * | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| | + | 1120.29 | | 1.728E+00 | 7.373E-01 | 5.406E-01 | 5.784E-02 | 3.197 |
| | + | 1764.49 | | 1.829E+00 | 5.285E-01 | 4.058E-01 | 3.403E-02 | 4.506 |
| PB-214 | + | 74.81 | | 4.338E+00 | 1.129E+00 | 1.120E+00 | 1.248E-01 | 3.873 |
| | + | 77.11 | | 4.157E+00 | 7.470E-01 | 6.289E-01 | 7.172E-02 | 6.610 |
| | + | 87.30 | | 2.126E+00 | 1.003E+00 | 1.386E+00 | 1.684E-01 | 1.533 |
| | + | 241.98 | | 2.175E+00 | 7.025E-01 | 6.208E-01 | 6.631E-02 | 3.504 |
| | + | 295.21 | | 1.498E+00 | 2.849E-01 | 2.528E-01 | 2.792E-02 | 5.926 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 351.92 | * | 1.477E+00 | 2.598E-01 | 1.333E-01 | 1.397E-02 | 11.081 |
| | + | 74.81 | | 4.338E+00 | 1.129E+00 | 1.120E+00 | 1.248E-01 | 3.873 |
| | + | 77.11 | | 4.157E+00 | 7.470E-01 | 6.289E-01 | 7.172E-02 | 6.610 |
| | + | 87.30 | | 2.126E+00 | 1.003E+00 | 1.386E+00 | 1.684E-01 | 1.533 |
| | + | 241.98 | | 2.175E+00 | 7.025E-01 | 6.208E-01 | 6.631E-02 | 3.504 |
| PO-216 | + | 295.21 | | 1.498E+00 | 2.849E-01 | 2.528E-01 | 2.792E-02 | 5.926 |
| | + | 351.92 | * | 1.477E+00 | 2.598E-01 | 1.333E-01 | 1.397E-02 | 11.081 |
| | + | 74.81 | | 2.518E+00 | 6.709E-01 | 6.501E-01 | 8.137E-02 | 3.873 |
| | + | 77.11 | | 2.425E+00 | 3.946E-01 | 3.668E-01 | 3.113E-02 | 6.610 |
| | + | 87.30 | | 1.241E+00 | 5.908E-01 | 8.092E-01 | 1.110E-01 | 1.533 |
| PO-218 | + | 238.63 | * | 1.836E+00 | 2.316E-01 | 1.031E-01 | 1.043E-02 | 17.819 |
| | + | 300.09 | | 2.146E+00 | 1.353E+00 | 1.444E+00 | 1.561E-01 | 1.486 |
| | + | 74.81 | | 4.338E+00 | 1.129E+00 | 1.120E+00 | 1.248E-01 | 3.873 |
| | + | 77.11 | | 4.157E+00 | 7.470E-01 | 6.289E-01 | 7.172E-02 | 6.610 |
| | + | 87.30 | | 2.126E+00 | 1.003E+00 | 1.386E+00 | 1.684E-01 | 1.533 |
| RA-224 | + | 241.98 | | 2.175E+00 | 7.025E-01 | 6.208E-01 | 6.631E-02 | 3.504 |
| | + | 295.21 | | 1.498E+00 | 2.849E-01 | 2.528E-01 | 2.792E-02 | 5.926 |
| | + | 351.92 | * | 1.477E+00 | 2.598E-01 | 1.333E-01 | 1.397E-02 | 11.081 |
| | + | 240.98 | * | 4.124E+00 | 1.312E+00 | 1.173E+00 | 1.066E-01 | 3.516 |
| | + | 609.31 | * | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| AC-228 | + | 1120.29 | | 1.728E+00 | 7.373E-01 | 5.406E-01 | 5.783E-02 | 3.197 |
| | + | 1764.49 | | 1.829E+00 | 5.285E-01 | 4.058E-01 | 3.403E-02 | 4.506 |
| | + | 338.32 | | 1.492E+00 | 7.640E-01 | 4.425E-01 | 1.827E-01 | 3.372 |
| | + | 911.07 | * | 1.931E+00 | 4.146E-01 | 2.824E-01 | 3.269E-02 | 6.838 |
| | + | 969.11 | | 1.679E+00 | 6.412E-01 | 6.644E-01 | 1.559E-01 | 2.528 |
| TH-228 | + | 338.32 | | 1.492E+00 | 7.640E-01 | 4.425E-01 | 1.827E-01 | 3.372 |
| | + | 911.07 | * | 1.931E+00 | 4.146E-01 | 2.824E-01 | 3.269E-02 | 6.838 |
| | + | 969.11 | | 1.679E+00 | 6.412E-01 | 6.644E-01 | 1.559E-01 | 2.528 |
| | + | 74.81 | | 2.561E+00 | 6.396E-01 | 6.612E-01 | 5.554E-02 | 3.873 |
| | + | 77.11 | | 2.466E+00 | 4.013E-01 | 3.731E-01 | 3.166E-02 | 6.610 |
| TH-230 | + | 87.30 | | 1.262E+00 | 5.875E-01 | 8.230E-01 | 7.729E-02 | 1.533 |
| | + | 238.63 | * | 1.868E+00 | 2.355E-01 | 1.048E-01 | 1.061E-02 | 17.819 |
| | + | 300.09 | | 2.182E+00 | 1.875E+00 | 1.468E+00 | 8.715E-01 | 1.486 |
| | + | 609.31 | * | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| | + | 1120.29 | | 1.728E+00 | 7.373E-01 | 5.405E-01 | 5.783E-02 | 3.197 |
| TH-232 | + | 1764.49 | | 1.828E+00 | 5.285E-01 | 4.058E-01 | 3.403E-02 | 4.506 |
| | + | 338.32 | | 1.492E+00 | 4.704E-01 | 4.425E-01 | 3.895E-02 | 3.372 |
| | + | 911.07 | * | 1.931E+00 | 4.146E-01 | 2.824E-01 | 3.269E-02 | 6.838 |
| | + | 969.11 | | 1.679E+00 | 6.412E-01 | 6.644E-01 | 1.559E-01 | 2.528 |
| | + | 63.29 | * | 4.222E+00 | 2.876E+00 | 2.509E+00 | 4.410E-01 | 1.683 |
| U-234 | + | 92.38 | | 2.509E+00 | 1.053E+00 | 1.164E+00 | 2.133E-01 | 2.156 |
| | + | 609.31 | * | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| | + | 1120.29 | | 1.728E+00 | 7.373E-01 | 5.405E-01 | 5.783E-02 | 3.197 |
| | + | 1764.49 | | 1.828E+00 | 5.285E-01 | 4.058E-01 | 3.403E-02 | 4.506 |
| | + | 86.50 | * | 7.878E-01 | 4.012E-01 | 4.814E-01 | 1.090E-01 | 1.636 |
| NP-237 | + | 95.87 | | -9.067E-01 | 1.283E+00 | 1.728E+00 | 4.276E-01 | -0.525 |
| | + | 63.29 | * | 4.222E+00 | 2.876E+00 | 2.509E+00 | 4.410E-01 | 1.683 |
| | + | 92.38 | | 2.509E+00 | 9.746E-01 | 1.164E+00 | 1.063E-01 | 2.156 |
| | + | 74.67 | * | 4.082E-01 | 1.019E-01 | 1.058E-01 | 8.794E-03 | 3.860 |
| | + | | | | | | | |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 86.72 | | 2.954E+01 | 1.375E+01 | 1.844E+01 | 1.721E+00 | 1.602 |
| | | 117.66 | | -9.363E-01 | 4.573E+00 | 7.194E+00 | 6.272E-01 | -0.130 |
| | | 142.18 | | 6.985E+00 | 2.036E+01 | 3.491E+01 | 2.986E+00 | 0.200 |
| ANH-511 | + | 511.00 | * | 1.253E-01 | 7.569E-02 | 5.074E-02 | 4.300E-03 | 2.469 |

---- 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 | * | 2.138E-01 | 4.016E-01 | 6.695E-01 | 6.091E-02 | 0.319 |
| NA-22 | | 1274.54 | * | -2.056E-02 | 5.625E-02 | 9.098E-02 | 7.640E-03 | -0.226 |
| NA-24 | | 1368.53 | * | -8.738E-01 | 5.625E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -1.840E+00 | 2.729E+00 | 3.413E+00 | 2.851E-01 | -0.539 |
| | | 1808.65 | * | 4.300E-03 | 2.532E-02 | 4.328E-02 | 3.586E-03 | 0.099 |
| TI-44 | | 67.85 | | 2.842E-03 | 6.239E-02 | 9.019E-02 | 7.151E-03 | 0.032 |
| | + | 78.38 | * | 4.475E-01 | 7.283E-02 | 9.194E-02 | 7.890E-03 | 4.867 |
| SC-46 | | 889.25 | * | -3.517E-02 | 5.112E-02 | 7.783E-02 | 7.036E-03 | -0.452 |
| | + | 1120.51 | | 3.004E-01 | 1.266E-01 | 1.607E-01 | 1.350E-02 | 1.870 |
| V-48 | | 944.10 | | -5.434E-01 | 1.233E+00 | 1.917E+00 | 1.727E-01 | -0.283 |
| | | 983.50 | * | -5.925E-02 | 8.782E-02 | 1.312E-01 | 1.171E-02 | -0.452 |
| | | 1312.09 | | -4.086E-02 | 1.087E-01 | 1.735E-01 | 1.471E-02 | -0.236 |
| CR-51 | | 320.08 | * | -1.105E-01 | 4.773E-01 | 7.714E-01 | 7.256E-02 | -0.143 |
| MN-52 | | 744.21 | | 1.225E-01 | 3.608E-01 | 6.133E-01 | 5.262E-02 | 0.200 |
| | | 848.13 | | -1.262E+01 | 1.056E+01 | 1.517E+01 | 1.356E+00 | -0.831 |
| | | 935.52 | | 3.266E-01 | 3.763E-01 | 6.636E-01 | 5.985E-02 | 0.492 |
| | | 1246.25 | | 3.052E+00 | 1.140E+01 | 1.950E+01 | 1.621E+00 | 0.157 |
| | | 1333.61 | | -3.134E+00 | 7.873E+00 | 1.248E+01 | 1.064E+00 | -0.251 |
| | | 1434.06 | * | 2.937E-02 | 3.391E-01 | 5.686E-01 | 4.908E-02 | 0.052 |
| MN-54 | | 834.83 | * | 1.805E-02 | 5.091E-02 | 8.512E-02 | 7.576E-03 | 0.212 |
| CO-56 | | 846.75 | * | -5.259E-02 | 4.806E-02 | 6.975E-02 | 6.232E-03 | -0.754 |
| | | 977.42 | | -2.101E-01 | 3.652E+00 | 5.543E+00 | 4.957E-01 | -0.038 |
| | | 1037.82 | | 8.157E-02 | 4.018E-01 | 6.633E-01 | 6.115E-02 | 0.123 |
| | | 1175.09 | | 1.483E-01 | 2.916E+00 | 4.915E+00 | 3.981E-01 | 0.030 |
| | | 1238.25 | | 1.914E-01 | 1.259E-01 | 2.304E-01 | 1.970E-02 | 0.830 |
| | | 1360.21 | | 4.614E-02 | 1.134E+00 | 1.895E+00 | 1.623E-01 | 0.024 |
| | | 1771.40 | | -1.208E+00 | 4.709E-01 | 4.479E-01 | 3.749E-02 | -2.697 |
| CO-57 | | 122.06 | * | -1.586E-03 | 3.077E-02 | 4.869E-02 | 4.286E-03 | -0.033 |
| | | 136.48 | | -2.435E-02 | 2.375E-01 | 4.017E-01 | 3.711E-02 | -0.061 |
| CO-58 | | 810.76 | * | -1.018E-03 | 5.038E-02 | 8.270E-02 | 7.316E-03 | -0.012 |
| FE-59 | | 142.65 | | 2.956E-01 | 3.320E+00 | 5.542E+00 | 4.739E-01 | 0.053 |
| | | 192.34 | | -3.374E-01 | 1.141E+00 | 1.823E+00 | 2.462E-01 | -0.185 |
| | | 1099.22 | * | -6.961E-02 | 1.179E-01 | 1.776E-01 | 1.637E-02 | -0.392 |
| | | 1291.56 | | -6.571E-02 | 1.543E-01 | 2.454E-01 | 2.360E-02 | -0.268 |
| CO-60 | | 1173.22 | | -3.212E-02 | 5.897E-02 | 9.438E-02 | 7.638E-03 | -0.340 |
| | | 1332.49 | * | -1.389E-02 | 4.855E-02 | 7.805E-02 | 6.653E-03 | -0.178 |
| ZN-65 | | 1115.52 | * | 3.617E-02 | 1.220E-01 | 1.767E-01 | 1.491E-02 | 0.205 |
| GE-68 | | 1077.35 | * | -3.606E-01 | 1.651E+00 | 2.605E+00 | 2.243E-01 | -0.138 |
| AS-73 | | 53.44 | * | 5.524E-01 | 1.122E+00 | 1.864E+00 | 1.508E-01 | 0.296 |
| AS-74 | | 595.88 | * | -1.791E-02 | 1.149E-01 | 1.903E-01 | 1.603E-02 | -0.094 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| SE-75 | 634.78 | | | 4.225E-02 | 4.411E-01 | 7.418E-01 | 6.163E-02 | 0.057 |
| | 66.05 | | | 1.470E+00 | 6.520E+00 | 9.517E+00 | 9.332E-01 | 0.154 |
| | 96.73 | | | -1.411E+00 | 1.086E+00 | 1.410E+00 | 1.947E-01 | -1.001 |
| | 121.11 | | | 1.028E-01 | 1.638E-01 | 2.666E-01 | 3.023E-02 | 0.386 |
| | 136.00 | | | -1.310E-02 | 4.589E-02 | 7.452E-02 | 6.450E-03 | -0.176 |
| | 198.60 | | | 1.239E+00 | 2.099E+00 | 3.547E+00 | 3.451E-01 | 0.349 |
| | 264.65 | * | | 2.311E-02 | 5.445E-02 | 8.899E-02 | 8.175E-03 | 0.260 |
| | 279.53 | | | 1.036E-02 | 1.469E-01 | 2.137E-01 | 2.019E-02 | 0.048 |
| | 303.91 | | | 2.523E+00 | 2.527E+00 | 3.923E+00 | 4.635E-01 | 0.643 |
| | 400.65 | | | -2.232E-02 | 3.355E-01 | 5.410E-01 | 5.798E-02 | -0.041 |
| BR-77 | 87.88 | | + | 1.019E+03 | 4.743E+02 | 7.079E+02 | 6.691E+01 | 1.439 |
| | 200.40 | | | -1.766E+02 | 3.259E+02 | 5.324E+02 | 4.696E+01 | -0.332 |
| | 239.00 | | + | 5.094E+02 | 6.005E+01 | 7.677E+01 | 6.970E+00 | 6.636 |
| | 249.79 | | | -1.699E+02 | 1.395E+02 | 2.115E+02 | 1.929E+01 | -0.804 |
| | 281.68 | | | -5.317E+01 | 2.047E+02 | 2.899E+02 | 2.650E+01 | -0.183 |
| | 297.23 | | | 6.957E+02 | 1.494E+02 | 2.658E+02 | 2.418E+01 | 2.617 |
| | 303.76 | | | 3.582E+02 | 3.663E+02 | 5.694E+02 | 5.162E+01 | 0.629 |
| | 439.47 | | | 2.760E+01 | 2.938E+02 | 4.768E+02 | 3.953E+01 | 0.058 |
| | 484.57 | | | 1.470E+02 | 4.805E+02 | 7.882E+02 | 6.646E+01 | 0.187 |
| | 520.65 | * | | 1.254E+01 | 2.246E+01 | 3.740E+01 | 3.173E+00 | 0.335 |
| SR-82 | 574.64 | | | 1.857E+02 | 4.412E+02 | 7.614E+02 | 6.445E+01 | 0.244 |
| | 578.91 | | | -9.923E+01 | 2.098E+02 | 2.915E+02 | 2.466E+01 | -0.340 |
| | 585.48 | | | 2.716E+03 | 5.661E+02 | 1.013E+03 | 8.560E+01 | 2.681 |
| | 755.35 | | | -1.165E+02 | 3.279E+02 | 5.237E+02 | 4.517E+01 | -0.222 |
| | 817.79 | | | -2.842E+02 | 2.858E+02 | 4.231E+02 | 3.743E+01 | -0.672 |
| | 698.33 | | | -8.808E+00 | 4.243E+01 | 6.924E+01 | 5.798E+00 | -0.127 |
| | 776.49 | * | | -4.342E-01 | 4.662E-01 | 6.984E-01 | 6.080E-02 | -0.622 |
| | 1395.20 | | | -1.569E+00 | 1.296E+01 | 2.112E+01 | 1.817E+00 | -0.074 |
| | 520.41 | * | | 5.024E-02 | 8.738E-02 | 1.457E-01 | 1.236E-02 | 0.345 |
| | 529.64 | | | -5.213E-02 | 1.218E-01 | 1.988E-01 | 1.687E-02 | -0.262 |
| RB-83 | 552.65 | | | -2.146E-02 | 2.359E-01 | 3.941E-01 | 3.345E-02 | -0.054 |
| | 881.50 | * | | 3.703E-02 | 9.165E-02 | 1.554E-01 | 1.402E-02 | 0.238 |
| KR-85 | 513.99 | * | | 1.256E+01 | 1.042E+01 | 1.609E+01 | 1.364E+00 | 0.781 |
| SR-85 | 513.99 | * | | 6.568E-02 | 5.451E-02 | 8.413E-02 | 7.133E-03 | 0.781 |
| RB-86 | 1076.63 | * | | -9.489E-02 | 1.120E+00 | 1.792E+00 | 1.544E-01 | -0.053 |
| Y-88 | 898.02 | | | -2.869E-02 | 5.158E-02 | 7.946E-02 | 7.229E-03 | -0.361 |
| ZR-88 | 1836.01 | * | | 3.632E-02 | 4.249E-02 | 8.013E-02 | 6.590E-03 | 0.453 |
| | 392.90 | * | | -6.955E-03 | 3.826E-02 | 6.127E-02 | 4.934E-03 | -0.114 |
| Y-91 | 1204.90 | * | | -1.898E-01 | 2.259E+01 | 3.782E+01 | 3.099E+00 | -0.005 |
| NB-94 | 702.63 | * | | -3.116E-03 | 4.161E-02 | 6.864E-02 | 5.761E-03 | -0.045 |
| | 871.10 | | | 4.293E-02 | 4.188E-02 | 7.477E-02 | 6.727E-03 | 0.574 |
| NB-95 | 765.79 | * | | 2.444E-02 | 5.530E-02 | 9.420E-02 | 8.163E-03 | 0.259 |
| NB-95M | 235.69 | * | | 1.332E-01 | 1.667E-01 | 2.543E-01 | 2.609E-02 | 0.524 |
| ZR-95 | 724.18 | | | 1.112E-01 | 1.376E-01 | 2.138E-01 | 1.978E-02 | 0.520 |
| NB-97 | 756.15 | * | | -1.146E-02 | 8.048E-02 | 1.311E-01 | 1.246E-02 | -0.087 |
| | 657.90 | * | | -4.190E-01 | 8.048E-02 | Half-Life too short | | |
| ZR-97 | 1024.50 | | | 5.661E+00 | 8.048E-02 | Half-Life too short | | |
| | 254.15 | | | 1.782E+01 | 8.048E-02 | Half-Life too short | | |
| | 355.39 | | | 3.994E+00 | 8.048E-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 |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 507.63 | * | | 4.871E+00 | 8.048E-02 | Half-Life | too short | |
| | 602.52 | | | -3.893E+01 | 8.048E-02 | Half-Life | too short | |
| | 1021.30 | | | -4.897E+01 | 8.048E-02 | Half-Life | too short | |
| | 1147.95 | | | 5.366E+00 | 8.048E-02 | Half-Life | too short | |
| | 1362.66 | | | -7.746E+00 | 8.048E-02 | Half-Life | too short | |
| | 1750.46 | | | 1.826E-01 | 8.048E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -1.259E+01 | 4.868E+01 | 8.159E+01 | 2.258E+01 | -0.154 |
| | 181.06 | | | -8.128E+00 | 3.570E+01 | 5.215E+01 | 9.545E+00 | -0.156 |
| | 366.43 | | | 1.216E+02 | 1.650E+02 | 2.805E+02 | 2.372E+01 | 0.433 |
| | 739.58 | * | | 7.857E+00 | 2.150E+01 | 3.664E+01 | 5.551E+00 | 0.214 |
| | 778.00 | | | -4.808E+01 | 6.486E+01 | 9.940E+01 | 8.661E+00 | -0.484 |
| TC-99M | 140.51 | * | | -2.026E+12 | 6.486E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | 2.335E-02 | 4.339E-02 | 6.285E-02 | 5.468E-03 | 0.372 |
| | 198.01 | * | | 4.172E-03 | 3.819E-02 | 6.340E-02 | 5.579E-03 | 0.066 |
| | 325.23 | | | -2.589E-01 | 3.017E-01 | 4.705E-01 | 4.199E-02 | -0.550 |
| RH-102 | 418.52 | | | -1.614E-01 | 3.406E-01 | 5.308E-01 | 4.350E-02 | -0.304 |
| | 475.06 | * | | -1.901E-02 | 3.530E-02 | 5.414E-02 | 4.552E-03 | -0.351 |
| | 631.29 | | | 3.075E-02 | 6.283E-02 | 1.089E-01 | 9.058E-03 | 0.282 |
| | 697.49 | | | 1.586E-02 | 9.046E-02 | 1.522E-01 | 1.274E-02 | 0.104 |
| | 766.84 | | | 6.242E-02 | 1.369E-01 | 2.334E-01 | 2.023E-02 | 0.267 |
| | 1046.59 | | | -3.422E-02 | 1.440E-01 | 2.270E-01 | 1.983E-02 | -0.151 |
| | 1112.84 | | | 7.841E-02 | 3.062E-01 | 4.414E-01 | 3.726E-02 | 0.178 |
| RU-103 | 497.08 | * | | -5.385E-02 | 5.161E-02 | 7.439E-02 | 1.046E-02 | -0.724 |
| + | 610.33 | | | 1.476E+01 | 3.250E+00 | 3.648E+00 | 6.043E-01 | 4.047 |
| RH-106 | 511.85 | + | | 6.279E-01 | 3.794E-01 | 5.078E-01 | 4.305E-02 | 1.237 |
| | 621.84 | * | | 1.460E-01 | 3.729E-01 | 6.410E-01 | 8.454E-02 | 0.228 |
| | 1050.47 | | | 4.581E-01 | 2.862E+00 | 4.702E+00 | 4.101E-01 | 0.097 |
| RU-106 | 511.85 | + | | 6.279E-01 | 3.794E-01 | 5.078E-01 | 4.304E-02 | 1.237 |
| | 621.84 | * | | 1.460E-01 | 3.726E-01 | 6.410E-01 | 5.355E-02 | 0.228 |
| | 1050.47 | | | 4.581E-01 | 2.862E+00 | 4.702E+00 | 4.101E-01 | 0.097 |
| AG-108M | 433.93 | * | | -1.546E-02 | 4.046E-02 | 6.339E-02 | 5.466E-03 | -0.244 |
| | 614.37 | | | 1.265E-02 | 4.912E-02 | 7.346E-02 | 6.409E-03 | 0.172 |
| | 722.95 | | | 2.880E-02 | 5.809E-02 | 8.799E-02 | 7.769E-03 | 0.327 |
| AG-110M | 657.75 | * | | -1.326E-02 | 4.046E-02 | 6.556E-02 | 5.558E-03 | -0.202 |
| | 677.61 | | | -4.528E-02 | 3.704E-01 | 6.097E-01 | 5.197E-02 | -0.074 |
| | 706.67 | | | 1.529E-02 | 2.565E-01 | 4.274E-01 | 3.700E-02 | 0.036 |
| | 763.93 | | | -4.320E-02 | 2.159E-01 | 3.508E-01 | 3.122E-02 | -0.123 |
| | 884.67 | | | -1.024E-02 | 6.395E-02 | 1.030E-01 | 9.572E-03 | -0.099 |
| | 937.48 | | | -1.518E-01 | 1.348E-01 | 1.919E-01 | 1.787E-02 | -0.791 |
| | 1384.27 | | | -4.613E-03 | 1.930E-01 | 3.193E-01 | 2.821E-02 | -0.014 |
| IN-111 | 171.28 | | | -8.838E-01 | 1.788E+00 | 2.946E+00 | 2.522E-01 | -0.300 |
| | 245.39 | * | | 1.050E+00 | 2.110E+00 | 3.179E+00 | 2.895E-01 | 0.330 |
| IN-113M | 391.69 | * | | -1.314E-03 | 5.555E-02 | 8.994E-02 | 7.491E-03 | -0.015 |
| SN-113 | 391.69 | * | | -1.314E-03 | 5.555E-02 | 8.994E-02 | 7.491E-03 | -0.015 |
| IN-114M | 190.27 | * | | 1.813E-01 | 2.399E-01 | 3.688E-01 | 3.220E-02 | 0.492 |
| CD-115 | 260.90 | | | -2.004E+02 | 2.797E+02 | 4.448E+02 | 4.067E+01 | -0.451 |
| | 492.35 | | | 5.169E+01 | 7.679E+01 | 1.294E+02 | 1.093E+01 | 0.399 |
| | 527.90 | * | | -7.721E+00 | 2.033E+01 | 3.323E+01 | 2.821E+00 | -0.232 |
| SN-117M | 156.02 | | | -1.234E+00 | 2.845E+00 | 4.724E+00 | 4.023E-01 | -0.261 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|------------|---------------------|-----------|----------------|-----------|---------|
| SB-122 | | 158.56 | * | 1.194E-02 | 6.914E-02 | 1.175E-01 | 1.000E-02 | 0.102 |
| | | 563.90 | * | 5.642E+00 | 4.224E+00 | 7.655E+00 | 6.490E-01 | 0.737 |
| | | 692.80 | | -1.749E+01 | 7.874E+01 | 1.282E+02 | 1.070E+01 | -0.136 |
| I-123 | | 159.00 | * | 3.161E+01 | 7.874E+01 | Half-Life | too short | |
| | | 528.96 | | -2.607E+03 | 7.874E+01 | Half-Life | too short | |
| TE-123M | | 159.00 | * | 1.469E-02 | 3.301E-02 | 5.663E-02 | 4.851E-03 | 0.259 |
| I-124 | | 602.71 | * | -1.018E+00 | 1.138E+00 | 1.653E+00 | 1.390E-01 | -0.616 |
| | | 722.78 | | 3.980E+00 | 8.269E+00 | 1.251E+01 | 1.062E+00 | 0.318 |
| | | 1325.50 | | -4.111E+01 | 6.183E+01 | 9.509E+01 | 8.091E+00 | -0.432 |
| SB-124 | | 1376.25 | | 4.632E+01 | 4.794E+01 | 8.850E+01 | 7.594E+00 | 0.523 |
| | | 1509.49 | | 1.911E+01 | 1.920E+01 | 3.717E+01 | 3.218E+00 | 0.514 |
| | | 1691.02 | | -1.072E+00 | 4.817E+00 | 7.428E+00 | 6.329E-01 | -0.144 |
| | | 602.71 | | -4.431E-02 | 4.951E-02 | 7.195E-02 | 6.051E-03 | -0.616 |
| | | 645.85 | | -3.585E-02 | 6.045E-01 | 1.003E+00 | 8.827E-02 | -0.036 |
| | | 709.31 | | 3.229E-02 | 3.317E+00 | 5.504E+00 | 4.638E-01 | 0.006 |
| | | 713.82 | | 1.546E-01 | 1.862E+00 | 3.108E+00 | 3.703E-01 | 0.050 |
| | | 722.78 | | 2.511E-01 | 5.217E-01 | 7.892E-01 | 6.847E-02 | 0.318 |
| | + | 968.20 | | 1.767E+01 | 5.551E+00 | 8.975E+00 | 8.043E-01 | 1.968 |
| | | 1045.16 | | 7.924E-01 | 3.080E+00 | 5.114E+00 | 4.470E-01 | 0.155 |
| | | 1325.50 | | -2.770E+00 | 4.166E+00 | 6.407E+00 | 5.452E-01 | -0.432 |
| | | 1368.21 | | -5.501E-01 | 2.254E+00 | 3.628E+00 | 4.877E-01 | -0.152 |
| | | 1436.60 | | 3.583E+00 | 4.202E+00 | 7.801E+00 | 6.736E-01 | 0.459 |
| SB-125 | | 1691.02 | * | -1.595E-02 | 7.168E-02 | 1.105E-01 | 9.799E-03 | -0.144 |
| | | 427.89 | * | 1.324E-02 | 1.131E-01 | 1.841E-01 | 1.549E-02 | 0.072 |
| | + | 463.38 | | 1.033E+00 | 4.708E-01 | 6.983E-01 | 6.333E-02 | 1.479 |
| | | 600.56 | | -8.296E-02 | 2.060E-01 | 3.343E-01 | 3.030E-02 | -0.248 |
| TE-125M | | 635.90 | | -2.168E-01 | 3.218E-01 | 5.067E-01 | 4.573E-02 | -0.428 |
| | | 109.28 | * | 1.397E+01 | 1.164E+01 | 1.931E+01 | 2.003E+00 | 0.723 |
| I-126 | | 388.63 | | 3.196E-01 | 2.749E-01 | 4.771E-01 | 3.864E-02 | 0.670 |
| | | 666.33 | * | -1.460E-01 | 2.426E-01 | 3.843E-01 | 3.157E-02 | -0.380 |
| | | 753.82 | | -9.879E-02 | 1.878E+00 | 3.088E+00 | 2.661E-01 | -0.032 |
| SB-126 | | 223.80 | | -1.141E+00 | 5.318E+00 | 8.772E+00 | 7.892E-01 | -0.130 |
| | + | 278.60 | | 6.500E+00 | 3.740E+00 | 5.628E+00 | 5.147E-01 | 1.155 |
| | + | 296.50 | | 1.656E+01 | 2.975E+00 | 4.764E+00 | 4.335E-01 | 3.476 |
| | | 414.70 | | -5.146E-02 | 1.011E-01 | 1.575E-01 | 1.287E-02 | -0.327 |
| | | 415.30 | | -9.179E-01 | 8.008E+00 | 1.283E+01 | 1.050E+00 | -0.072 |
| | | 555.20 | | -6.267E-01 | 5.155E+00 | 8.592E+00 | 7.290E-01 | -0.073 |
| | | 573.80 | | 4.623E-01 | 1.422E+00 | 2.439E+00 | 2.065E-01 | 0.190 |
| | | 593.00 | | -1.042E-01 | 1.175E+00 | 1.955E+00 | 1.648E-01 | -0.053 |
| | | 656.30 | | -2.937E+00 | 4.204E+00 | 6.574E+00 | 5.402E-01 | -0.447 |
| | | 666.33 | | -6.126E-02 | 1.018E-01 | 1.613E-01 | 1.325E-02 | -0.380 |
| | | 675.00 | | 1.248E+00 | 2.712E+00 | 4.667E+00 | 3.854E-01 | 0.267 |
| | | 695.00 | | -1.207E-02 | 9.950E-02 | 1.635E-01 | 1.367E-02 | -0.074 |
| | | 697.00 | | 2.054E-01 | 3.478E-01 | 6.034E-01 | 5.049E-02 | 0.340 |
| | | 720.50 | * | -1.026E-02 | 2.190E-01 | 3.153E-01 | 2.672E-02 | -0.033 |
| | 856.80 | | -1.016E+00 | 7.134E-01 | 1.013E+00 | 9.075E-02 | -1.003 | |
| | 989.30 | | 1.130E+00 | 1.667E+00 | 2.892E+00 | 2.577E-01 | 0.391 | |
| | 1034.80 | | -6.271E+00 | 1.272E+01 | 1.950E+01 | 1.712E+00 | -0.322 | |
| | 1213.00 | | -4.367E+00 | 6.589E+00 | 1.022E+01 | 8.399E-01 | -0.427 | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-127 | 61.10 | | | 7.208E+01 | 1.082E+02 | 1.617E+02 | 1.782E+01 | 0.446 |
| | 252.40 | | | 1.894E+00 | 7.349E+00 | 1.226E+01 | 5.184E+00 | 0.155 |
| | 290.80 | | | 2.586E+01 | 3.779E+01 | 5.728E+01 | 6.935E+00 | 0.451 |
| | 411.60 | | | 2.140E+01 | 2.163E+01 | 3.675E+01 | 5.843E+00 | 0.582 |
| | 444.90 | | | 9.577E+00 | 1.617E+01 | 2.712E+01 | 3.484E+00 | 0.353 |
| | 473.00 | | | -2.171E+00 | 2.884E+00 | 4.328E+00 | 5.725E-01 | -0.502 |
| | 543.00 | | | 1.863E+01 | 2.772E+01 | 4.860E+01 | 7.179E+00 | 0.383 |
| | 603.60 | | | -1.122E+00 | 2.153E+01 | 3.118E+01 | 4.018E+00 | -0.036 |
| | 685.20 | * | | 1.437E-01 | 2.331E+00 | 3.892E+00 | 4.564E-01 | 0.037 |
| | 698.50 | | | -3.416E+00 | 2.513E+01 | 4.125E+01 | 6.641E+00 | -0.083 |
| XE-127 | 722.20 | | | 1.873E+01 | 5.704E+01 | 8.500E+01 | 9.891E+00 | 0.220 |
| | 783.80 | | | 4.600E+00 | 6.483E+00 | 1.124E+01 | 1.462E+00 | 0.409 |
| | 57.60 | | | -1.713E+00 | 8.505E+00 | 1.304E+01 | 1.002E+00 | -0.131 |
| | 145.22 | | | 5.887E-02 | 8.513E-01 | 1.419E+00 | 1.211E-01 | 0.041 |
| | 172.10 | | | -8.378E-02 | 1.398E-01 | 2.293E-01 | 1.964E-02 | -0.365 |
| I-131 | 202.84 | * | | -2.465E-02 | 5.593E-02 | 9.173E-02 | 8.110E-03 | -0.269 |
| | 374.96 | | | 7.256E-02 | 2.362E-01 | 3.918E-01 | 3.263E-02 | 0.185 |
| | 80.18 | | | 4.156E+00 | 6.786E+00 | 1.001E+01 | 8.807E-01 | 0.415 |
| | 284.30 | | | 2.342E+00 | 2.119E+00 | 3.615E+00 | 3.461E-01 | 0.648 |
| TE-132 | 364.48 | * | | 1.541E-01 | 1.688E-01 | 2.893E-01 | 2.596E-02 | 0.533 |
| | 636.97 | | | -2.100E+00 | 2.135E+00 | 3.257E+00 | 2.870E-01 | -0.645 |
| | 722.89 | | | 5.702E+00 | 1.150E+01 | 1.742E+01 | 1.490E+00 | 0.327 |
| | 49.72 | | | -8.028E+00 | 3.987E+01 | 6.448E+01 | 7.264E+00 | -0.125 |
| BA-133 | 111.76 | | | -2.063E+01 | 5.417E+01 | 8.471E+01 | 9.661E+00 | -0.244 |
| | 116.30 | | | 1.533E+01 | 4.918E+01 | 7.917E+01 | 9.050E+00 | 0.194 |
| | 228.16 | * | | -1.007E-01 | 1.215E+00 | 2.015E+00 | 3.283E-01 | -0.050 |
| | 53.15 | | | 1.710E+00 | 4.746E+00 | 7.844E+00 | 6.374E-01 | 0.218 |
| I-133 | 79.62 | | | 1.466E+00 | 1.651E+00 | 2.450E+00 | 3.738E-01 | 0.598 |
| | 81.00 | | | -7.185E-02 | 1.309E-01 | 1.818E-01 | 2.905E-02 | -0.395 |
| | 276.40 | + | | 8.752E-01 | 5.136E-01 | 7.802E-01 | 1.152E-01 | 1.122 |
| | 302.84 | | | 1.140E-01 | 1.828E-01 | 2.755E-01 | 3.743E-02 | 0.414 |
| CS-134 | 356.01 | * | | 1.497E-02 | 5.919E-02 | 8.623E-02 | 1.137E-02 | 0.174 |
| | 383.85 | | | -2.244E-01 | 3.679E-01 | 5.711E-01 | 7.030E-02 | -0.393 |
| | 510.53 | + | | 5.707E+00 | 3.679E-01 | Half-Life | too short | |
| | 529.87 | * | | -1.600E-02 | 3.679E-01 | Half-Life | too short | |
| I-133 | 706.58 | | | 2.002E-01 | 3.679E-01 | Half-Life | too short | |
| | 856.28 | | | -3.225E+00 | 3.679E-01 | Half-Life | too short | |
| | 875.33 | | | -1.587E-01 | 3.679E-01 | Half-Life | too short | |
| | 1236.41 | | | 3.378E+00 | 3.679E-01 | Half-Life | too short | |
| | 1298.22 | | | -1.301E-01 | 3.679E-01 | Half-Life | too short | |
| | 475.35 | | | -1.536E-01 | 2.262E+00 | 3.609E+00 | 3.035E-01 | -0.043 |
| | 563.23 | | | 7.200E-01 | 4.544E-01 | 8.334E-01 | 7.136E-02 | 0.864 |
| | 569.32 | | | -7.768E-03 | 2.348E-01 | 3.933E-01 | 3.379E-02 | -0.020 |
| | 604.70 | | | 2.067E-02 | 4.281E-02 | 6.546E-02 | 5.516E-03 | 0.316 |
| | 795.84 | * | | 6.784E-02 | 5.579E-02 | 1.005E-01 | 8.885E-03 | 0.675 |
| CS-134 | 801.93 | | | 2.615E-01 | 4.662E-01 | 8.047E-01 | 7.117E-02 | 0.325 |
| | 1038.57 | | | 2.213E-01 | 4.857E+00 | 7.894E+00 | 6.918E-01 | 0.028 |
| | 1167.94 | | | 3.095E+00 | 3.225E+00 | 5.819E+00 | 4.729E-01 | 0.532 |
| | 1365.15 | | | 1.199E+00 | 1.514E+00 | 2.750E+00 | 2.465E-01 | 0.436 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CS-135 | 268.24 | * | | 3.022E-02 | 2.170E-01 | 3.178E-01 | 3.314E-02 | 0.095 |
| I-135 | 288.45 | | | -1.497E+12 | 2.170E-01 | Half-Life | too short | |
| | 417.63 | | | -3.031E+12 | 2.170E-01 | Half-Life | too short | |
| | 546.56 | | | -5.694E+11 | 2.170E-01 | Half-Life | too short | |
| | 836.80 | | | 5.935E+11 | 2.170E-01 | Half-Life | too short | |
| | 1038.76 | | | -1.201E+11 | 2.170E-01 | Half-Life | too short | |
| | 1124.00 | | | 4.708E+12 | 2.170E-01 | Half-Life | too short | |
| | 1131.51 | | | 1.062E+12 | 2.170E-01 | Half-Life | too short | |
| | 1260.41 | * | | -1.670E+11 | 2.170E-01 | Half-Life | too short | |
| | 1457.56 | | | 4.581E+13 | 2.170E-01 | Half-Life | too short | |
| | 1678.03 | | | 4.893E+11 | 2.170E-01 | Half-Life | too short | |
| | 1706.46 | | | 1.818E+12 | 2.170E-01 | Half-Life | too short | |
| | 1791.20 | | | -2.631E+11 | 2.170E-01 | Half-Life | too short | |
| CS-136 | 66.91 | | | 1.595E-01 | 1.148E+00 | 1.668E+00 | 2.509E-01 | 0.096 |
| + | 86.29 | | | 3.864E+00 | 1.836E+00 | 2.690E+00 | 3.580E-01 | 1.437 |
| | 153.22 | | | 5.031E-01 | 8.216E-01 | 1.418E+00 | 1.354E-01 | 0.355 |
| | 163.89 | | | -4.538E-01 | 1.394E+00 | 2.285E+00 | 2.185E-01 | -0.199 |
| | 176.55 | | | 2.456E-01 | 4.677E-01 | 8.018E-01 | 7.302E-02 | 0.306 |
| | 273.65 | | | 5.369E-01 | 8.443E-01 | 9.564E-01 | 9.266E-02 | 0.561 |
| | 340.57 | | | 5.102E-01 | 2.142E-01 | 3.477E-01 | 3.139E-02 | 1.467 |
| | 818.51 | | | 1.260E-02 | 9.916E-02 | 1.649E-01 | 1.461E-02 | 0.076 |
| | 1048.07 | * | | -6.266E-02 | 1.484E-01 | 2.289E-01 | 2.082E-02 | -0.274 |
| | 1235.34 | | | -1.779E-01 | 9.072E-01 | 1.496E+00 | 1.737E-01 | -0.119 |
| BA-137M | 661.65 | * | | 4.294E-03 | 4.354E-02 | 7.303E-02 | 5.982E-03 | 0.059 |
| CS-137 | 661.65 | * | | 4.540E-03 | 4.603E-02 | 7.720E-02 | 6.337E-03 | 0.059 |
| CE-139 | 165.85 | * | | -7.428E-03 | 3.470E-02 | 5.801E-02 | 4.940E-03 | -0.128 |
| BA-140 | 162.64 | | | -8.463E-02 | 9.789E-01 | 1.621E+00 | 1.462E-01 | -0.052 |
| | 304.84 | | | 7.523E-01 | 1.688E+00 | 2.506E+00 | 7.058E-01 | 0.300 |
| | 423.70 | | | -1.336E+00 | 2.656E+00 | 4.079E+00 | 1.318E+00 | -0.328 |
| | 537.32 | * | | -1.362E-01 | 3.455E-01 | 5.511E-01 | 1.825E-01 | -0.247 |
| LA-140 | 328.77 | | | 7.410E-01 | 4.395E-01 | 7.691E-01 | 7.201E-02 | 0.963 |
| | 432.53 | | | -2.288E-02 | 2.869E+00 | 4.624E+00 | 4.022E-01 | -0.005 |
| | 487.03 | | | 1.883E-01 | 1.793E-01 | 3.098E-01 | 2.782E-02 | 0.608 |
| | 751.79 | | | 7.452E-01 | 2.234E+00 | 3.748E+00 | 3.573E-01 | 0.199 |
| | 815.85 | | | -2.204E-01 | 4.496E-01 | 7.050E-01 | 6.919E-02 | -0.313 |
| | 867.82 | | | -1.445E+00 | 1.836E+00 | 2.755E+00 | 2.598E-01 | -0.525 |
| | 919.63 | | | 1.479E+00 | 3.904E+00 | 6.438E+00 | 7.075E-01 | 0.230 |
| | 925.24 | | | -9.628E-01 | 1.500E+00 | 2.274E+00 | 2.172E-01 | -0.423 |
| | 1596.49 | * | | -9.062E-02 | 1.134E-01 | 1.606E-01 | 1.385E-02 | -0.564 |
| CE-141 | 145.44 | * | | 2.050E-02 | 7.502E-02 | 1.283E-01 | 1.116E-02 | 0.160 |
| CE-143 | 57.37 | | | 1.171E-04 | 7.502E-02 | Half-Life | too short | |
| | 231.56 | | | -4.399E-03 | 7.502E-02 | Half-Life | too short | |
| | 293.26 | * | | 1.025E-03 | 7.502E-02 | Half-Life | too short | |
| | 350.59 | | | 6.833E-02 | 7.502E-02 | Half-Life | too short | |
| | 490.36 | | | -9.626E-03 | 7.502E-02 | Half-Life | too short | |
| | 664.57 | | | 3.318E-03 | 7.502E-02 | Half-Life | too short | |
| | 721.93 | | | 1.604E-03 | 7.502E-02 | Half-Life | too short | |
| CE-144 | 80.11 | | | 1.618E+00 | 2.670E+00 | 3.939E+00 | 3.435E-01 | 0.411 |
| | 133.54 | * | | 1.939E-02 | 2.689E-01 | 3.789E-01 | 5.899E-02 | 0.051 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PM-144 | | 476.78 | | 1.087E-03 | 8.307E-02 | 1.334E-01 | 1.232E-02 | 0.008 |
| | | 618.01 | | -1.296E-03 | 4.056E-02 | 6.385E-02 | 5.499E-03 | -0.020 |
| | | 696.49 | * | 1.348E-02 | 4.029E-02 | 6.862E-02 | 5.743E-03 | 0.196 |
| PR-144 | | 778.57 | | -1.134E+00 | 2.723E+00 | 4.316E+00 | 3.762E-01 | -0.263 |
| | | 696.49 | * | 9.144E-01 | 2.733E+00 | 4.655E+00 | 3.894E-01 | 0.196 |
| | | 1489.15 | | 3.658E+00 | 1.111E+01 | 1.949E+01 | 1.687E+00 | 0.188 |
| PM-146 | | 453.90 | * | 1.005E-02 | 5.260E-02 | 8.579E-02 | 9.012E-03 | 0.117 |
| | | 633.02 | | -3.661E-03 | 1.644E+00 | 2.743E+00 | 1.023E+00 | -0.001 |
| | | 735.90 | | -7.691E-02 | 1.764E-01 | 2.697E-01 | 7.709E-02 | -0.285 |
| ND-147 | | 747.13 | | -6.986E-04 | 1.099E-01 | 1.815E-01 | 2.544E-02 | -0.004 |
| | | 91.11 | | 6.802E-02 | 5.856E-01 | 7.036E-01 | 6.955E-02 | 0.097 |
| | | 319.41 | | -2.058E+00 | 4.563E+00 | 7.275E+00 | 6.527E-01 | -0.283 |
| PM-149 | | 439.89 | | 9.204E-01 | 7.896E+00 | 1.283E+01 | 1.064E+00 | 0.072 |
| | | 531.02 | * | 4.707E-01 | 7.077E-01 | 1.244E+00 | 1.851E-01 | 0.378 |
| | | 285.90 | * | -2.125E+01 | 2.036E+02 | 3.281E+02 | 5.197E+01 | -0.065 |
| EU-152 | | 121.78 | | 5.189E-03 | 8.927E-02 | 1.420E-01 | 1.430E-02 | 0.037 |
| | | 244.69 | | 4.668E-01 | 4.333E-01 | 6.729E-01 | 6.125E-02 | 0.694 |
| | | 344.27 | * | 2.996E-03 | 1.205E-01 | 1.902E-01 | 1.759E-02 | 0.016 |
| GD-153 | | 443.98 | | 8.072E-01 | 1.112E+00 | 1.886E+00 | 1.567E-01 | 0.428 |
| | | 778.89 | | -2.145E-02 | 3.078E-01 | 5.042E-01 | 4.394E-02 | -0.043 |
| | | 867.32 | | -6.663E-01 | 9.893E-01 | 1.506E+00 | 1.354E-01 | -0.442 |
| EU-154 | | 964.01 | | 9.728E-01 | 3.993E-01 | 7.088E-01 | 6.359E-02 | 1.372 |
| | | 1085.78 | | 3.754E-02 | 4.836E-01 | 7.865E-01 | 6.743E-02 | 0.048 |
| | | 1112.02 | | 6.147E-02 | 4.143E-01 | 6.386E-01 | 5.394E-02 | 0.096 |
| GD-153 | | 1407.95 | | 1.816E-01 | 2.580E-01 | 4.593E-01 | 3.956E-02 | 0.395 |
| | | 69.67 | | -9.207E-01 | 2.247E+00 | 3.171E+00 | 2.543E-01 | -0.290 |
| | | 83.37 | | -5.134E+00 | 2.051E+01 | 2.872E+01 | 2.587E+00 | -0.179 |
| EU-154 | | 97.43 | * | -5.396E-02 | 1.084E-01 | 1.495E-01 | 1.327E-02 | -0.361 |
| | | 103.18 | | -1.518E-01 | 1.259E-01 | 1.890E-01 | 1.649E-02 | -0.803 |
| | | 123.07 | | 6.078E-03 | 6.492E-02 | 9.831E-02 | 1.129E-02 | 0.062 |
| EU-154 | | 247.94 | | 8.172E-02 | 4.368E-01 | 6.792E-01 | 8.049E-02 | 0.120 |
| | | 591.81 | | -3.075E-01 | 6.944E-01 | 1.121E+00 | 1.293E-01 | -0.274 |
| | | 723.30 | | 1.002E-01 | 2.440E-01 | 3.664E-01 | 3.448E-02 | 0.273 |
| EU-154 | | 756.87 | | 1.658E-02 | 8.790E-01 | 1.454E+00 | 1.743E-01 | 0.011 |
| | | 873.19 | | 2.364E-01 | 3.664E-01 | 6.342E-01 | 7.938E-02 | 0.373 |
| | | 996.32 | | 8.359E-02 | 4.417E-01 | 7.302E-01 | 1.307E-01 | 0.114 |
| EU-155 | | 1004.76 | | -3.975E-02 | 2.719E-01 | 4.344E-01 | 5.138E-02 | -0.092 |
| | | 1274.45 | * | -4.188E-02 | 1.556E-01 | 2.541E-01 | 2.829E-02 | -0.165 |
| | | 48.70 | | 1.905E+00 | 3.390E+00 | 5.657E+00 | 4.841E-01 | 0.337 |
| EU-155 | | 60.01 | | 4.777E+00 | 6.703E+00 | 1.007E+01 | 7.609E-01 | 0.475 |
| | + | 86.54 | | 3.233E-01 | 1.506E-01 | 2.253E-01 | 2.117E-02 | 1.435 |
| | | 105.31 | * | 2.361E-02 | 1.264E-01 | 2.032E-01 | 1.788E-02 | 0.116 |
| TB-160 | + | 86.79 | | 8.787E-01 | 4.091E-01 | 6.105E-01 | 5.701E-02 | 1.439 |
| | | 197.04 | | -9.231E-02 | 6.559E-01 | 1.077E+00 | 9.472E-02 | -0.086 |
| | | 215.65 | | 4.273E-02 | 9.143E-01 | 1.419E+00 | 1.269E-01 | 0.030 |
| TB-160 | | 298.57 | | 1.631E-01 | 1.390E-01 | 2.405E-01 | 2.187E-02 | 0.678 |
| | | 879.36 | * | 9.840E-02 | 1.731E-01 | 2.981E-01 | 2.688E-02 | 0.330 |
| | | 962.29 | | 5.098E-01 | 7.414E-01 | 1.241E+00 | 1.113E-01 | 0.411 |
| | | 966.15 | | 5.330E-01 | 3.499E-01 | 5.611E-01 | 5.031E-02 | 0.950 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HO-166M | 1177.93 | | | 2.426E-01 | 4.824E-01 | 8.417E-01 | 6.825E-02 | 0.288 |
| | 1271.85 | | | 2.252E-01 | 9.089E-01 | 1.554E+00 | 1.302E-01 | 0.145 |
| | 80.57 | | | 2.425E-02 | 3.499E-01 | 5.032E-01 | 4.407E-02 | 0.048 |
| | 184.41 | | | 1.080E-01 | 4.674E-02 | 7.553E-02 | 6.555E-03 | 1.429 |
| | 280.46 | | | -4.009E-02 | 1.088E-01 | 1.528E-01 | 1.397E-02 | -0.262 |
| | 410.95 | | | 4.027E-01 | 3.058E-01 | 5.327E-01 | 4.345E-02 | 0.756 |
| | 711.68 | * | | -3.909E-02 | 7.149E-02 | 1.129E-01 | 9.522E-03 | -0.346 |
| TM-171 | 752.31 | | | -1.093E-01 | 3.260E-01 | 5.153E-01 | 4.438E-02 | -0.212 |
| | 810.29 | | | -1.221E-02 | 7.409E-02 | 1.200E-01 | 1.059E-02 | -0.102 |
| | 51.35 | | | -3.059E+01 | 4.171E+01 | 6.573E+01 | 5.470E+00 | -0.465 |
| | 52.39 | | | -9.727E+00 | 2.150E+01 | 3.434E+01 | 2.819E+00 | -0.283 |
| | 59.40 | | | 1.773E+01 | 3.594E+01 | 5.345E+01 | 4.028E+00 | 0.332 |
| | 66.72 | * | | 1.302E+01 | 3.787E+01 | 5.558E+01 | 4.377E+00 | 0.234 |
| | 88.36 | | | 6.363E-01 | 2.962E-01 | 4.437E-01 | 4.185E-02 | 1.434 |
| LU-176 | 201.83 | | | -2.166E-02 | 3.311E-02 | 5.377E-02 | 4.749E-03 | -0.403 |
| | 306.84 | * | | 9.976E-04 | 2.942E-02 | 4.248E-02 | 3.845E-03 | 0.023 |
| | 401.10 | | | -9.998E-01 | 8.682E+00 | 1.396E+01 | 1.131E+00 | -0.072 |
| LU-177 | 112.95 | | | -2.896E+00 | 2.421E+00 | 3.628E+00 | 3.146E-01 | -0.798 |
| | 208.36 | * | | 3.816E+00 | 2.281E+00 | 2.746E+00 | 2.440E-01 | 1.390 |
| LU-177M | 52.97 | | | 4.634E-01 | 2.156E+00 | 3.544E+00 | 2.886E-01 | 0.131 |
| | 54.07 | | | 7.692E-01 | 1.130E+00 | 1.889E+00 | 1.516E-01 | 0.407 |
| | 61.30 | | | 1.486E+00 | 2.010E+00 | 3.017E+00 | 2.301E-01 | 0.492 |
| | 121.62 | | | 1.343E-01 | 4.588E-01 | 7.370E-01 | 6.474E-02 | 0.182 |
| | 147.16 | | | -9.928E-02 | 7.466E-01 | 1.258E+00 | 1.073E-01 | -0.079 |
| | 171.86 | | | -3.342E-01 | 5.479E-01 | 8.981E-01 | 7.691E-02 | -0.372 |
| | 218.09 | | | 7.030E-02 | 9.770E-01 | 1.634E+00 | 1.464E-01 | 0.043 |
| | 268.79 | | | 1.260E+00 | 1.118E+00 | 1.731E+00 | 1.584E-01 | 0.728 |
| | 319.02 | | | -1.653E-01 | 3.174E-01 | 5.038E-01 | 4.520E-02 | -0.328 |
| | 367.43 | | | 1.479E-01 | 1.110E+00 | 1.821E+00 | 1.537E-01 | 0.081 |
| | 413.65 | * | | -2.167E-01 | 2.250E-01 | 3.387E-01 | 2.767E-02 | -0.640 |
| | 56.28 | | | 2.100E-01 | 1.266E+00 | 2.072E+00 | 1.616E-01 | 0.101 |
| | 57.53 | | | -1.595E-01 | 7.121E-01 | 1.091E+00 | 8.383E-02 | -0.146 |
| | 65.20 | | | 5.622E-01 | 1.364E+00 | 2.008E+00 | 1.568E-01 | 0.280 |
| | 133.02 | | | -2.729E-02 | 9.021E-02 | 1.242E-01 | 1.071E-02 | -0.220 |
| HF-181 | 136.25 | | | -1.470E-01 | 5.303E-01 | 8.907E-01 | 7.654E-02 | -0.165 |
| | 345.85 | | | -1.095E-01 | 2.730E-01 | 3.764E-01 | 3.282E-02 | -0.291 |
| | 482.03 | * | | -4.622E-02 | 5.625E-02 | 8.421E-02 | 7.096E-03 | -0.549 |
| | 56.28 | | | 8.076E-02 | 4.856E-01 | 7.951E-01 | 6.201E-02 | 0.102 |
| | 57.53 | | | -6.145E-02 | 2.735E-01 | 4.189E-01 | 3.219E-02 | -0.147 |
| | 65.20 | * | | 2.142E-01 | 5.197E-01 | 7.651E-01 | 5.973E-02 | 0.280 |
| | 67.75 | | | 4.720E-02 | 1.483E-01 | 2.173E-01 | 1.722E-02 | 0.217 |
| TA-182 | 100.10 | | | 2.866E-01 | 2.164E-01 | 3.622E-01 | 3.185E-02 | 0.791 |
| | 152.43 | | | 6.410E-02 | 3.808E-01 | 6.480E-01 | 5.521E-02 | 0.099 |
| | 222.10 | | | 2.852E-02 | 4.130E-01 | 6.902E-01 | 6.202E-02 | 0.041 |
| | 1001.68 | | | 1.281E-01 | 2.763E+00 | 4.534E+00 | 4.026E-01 | 0.028 |
| | 1121.28 | | | 8.263E-01 | 3.483E-01 | 4.368E-01 | 3.668E-02 | 1.892 |
| | 1189.05 | | | -5.934E-02 | 3.560E-01 | 5.877E-01 | 4.787E-02 | -0.101 |
| | 1221.42 | * | | 2.504E-03 | 2.676E-01 | 4.483E-01 | 3.695E-02 | 0.006 |
| | 1230.97 | | | 1.793E-01 | 6.387E-01 | 1.091E+00 | 9.025E-02 | 0.164 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RE-183 | 57.98 | | | 7.469E-02 | 2.862E-01 | 4.209E-01 | 3.219E-02 | 0.177 |
| | 59.32 | | | 7.292E-02 | 1.504E-01 | 2.236E-01 | 1.686E-02 | 0.326 |
| | 67.20 | | | 2.059E-02 | 2.703E-01 | 3.915E-01 | 3.092E-02 | 0.053 |
| | 162.32 | * | | -6.212E-03 | 1.319E-01 | 2.187E-01 | 1.862E-02 | -0.028 |
| | 208.81 | | + | 2.880E+00 | 1.721E+00 | 2.101E+00 | 1.868E-01 | 1.371 |
| RE-184 | 291.72 | | | 6.762E-01 | 1.233E+00 | 1.851E+00 | 1.688E-01 | 0.365 |
| | 57.98 | | | 2.722E-01 | 1.043E+00 | 1.534E+00 | 1.173E-01 | 0.177 |
| | 59.32 | | | 2.656E-01 | 5.478E-01 | 8.143E-01 | 6.142E-02 | 0.326 |
| | 67.20 | | | 7.504E-02 | 9.848E-01 | 1.426E+00 | 1.127E-01 | 0.053 |
| | 161.27 | | | -1.205E-01 | 4.136E-01 | 6.899E-01 | 5.874E-02 | -0.175 |
| | 216.55 | | | -1.305E-01 | 3.047E-01 | 4.980E-01 | 4.456E-02 | -0.262 |
| | 252.85 | * | | 1.465E-01 | 2.778E-01 | 4.716E-01 | 4.305E-02 | 0.311 |
| | 318.01 | | | 1.954E-01 | 5.377E-01 | 8.993E-01 | 8.076E-02 | 0.217 |
| | 792.07 | | | -6.437E-01 | 1.149E+00 | 1.792E+00 | 1.570E-01 | -0.359 |
| | 903.28 | | | 1.008E+00 | 1.329E+00 | 2.206E+00 | 1.997E-01 | 0.457 |
| | 920.93 | | | 9.316E-02 | 5.686E-01 | 9.420E-01 | 8.513E-02 | 0.099 |
| OS-185 | 59.72 | | | 1.216E-01 | 4.104E-01 | 6.038E-01 | 4.554E-02 | 0.201 |
| | 61.14 | | | 1.516E-01 | 2.224E-01 | 3.330E-01 | 2.538E-02 | 0.455 |
| | 69.30 | | | -5.693E-02 | 3.986E-01 | 5.704E-01 | 4.564E-02 | -0.100 |
| | 592.07 | | | -3.059E-01 | 2.841E+00 | 4.719E+00 | 3.980E-01 | -0.065 |
| | 646.12 | * | | 8.346E-03 | 4.999E-02 | 8.446E-02 | 6.978E-03 | 0.099 |
| | 717.42 | | | 8.719E-02 | 1.074E+00 | 1.746E+00 | 1.478E-01 | 0.050 |
| | 874.81 | | | -2.253E-01 | 7.292E-01 | 1.157E+00 | 1.042E-01 | -0.195 |
| | 880.27 | | | 3.279E-01 | 9.668E-01 | 1.632E+00 | 1.472E-01 | 0.201 |
| | 155.03 | * | | 1.815E-01 | 1.995E-01 | 3.474E-01 | 2.958E-02 | 0.523 |
| | 477.96 | | | 2.686E+00 | 3.875E+00 | 6.527E+00 | 5.493E-01 | 0.412 |
| RE-188 | 633.10 | | | -3.284E-01 | 3.378E+00 | 5.595E+00 | 4.651E-01 | -0.059 |
| | 63.58 | | + | 1.729E+02 | 1.146E+02 | 1.197E+02 | 9.255E+00 | 1.445 |
| W-188 | 227.08 | | | 9.249E+00 | 1.533E+01 | 2.616E+01 | 2.359E+00 | 0.354 |
| | 290.67 | * | | 6.758E+00 | 9.513E+00 | 1.446E+01 | 1.319E+00 | 0.467 |
| IR-192 | 295.96 | | + | 1.163E+00 | 2.091E-01 | 3.365E-01 | 3.083E-02 | 3.454 |
| | 308.46 | | | -1.900E-01 | 1.103E-01 | 1.587E-01 | 1.442E-02 | -1.197 |
| | 316.51 | * | | -3.181E-02 | 4.288E-02 | 6.709E-02 | 6.045E-03 | -0.474 |
| | 468.07 | | | 1.590E-02 | 9.277E-02 | 1.323E-01 | 1.194E-02 | 0.120 |
| | 604.41 | | | 2.573E-01 | 6.035E-01 | 9.162E-01 | 1.180E-01 | 0.281 |
| | 612.46 | | | 2.401E+00 | 1.037E+00 | 1.781E+00 | 1.727E-01 | 1.348 |
| AU-195 | 65.12 | | | 1.252E-01 | 2.409E-01 | 3.563E-01 | 2.780E-02 | 0.351 |
| | 66.83 | | | 2.417E-02 | 1.262E-01 | 1.838E-01 | 1.448E-02 | 0.132 |
| | 75.70 | | + | 1.330E+00 | 3.320E-01 | 5.528E-01 | 4.636E-02 | 2.406 |
| | 98.88 | * | | 2.357E-01 | 2.784E-01 | 4.561E-01 | 4.027E-02 | 0.517 |
| TL-200 | 129.76 | | + | 1.101E+01 | 6.280E+00 | 6.029E+00 | 5.223E-01 | 1.825 |
| | 367.94 | * | | -6.517E-04 | 6.280E+00 | Half-Life | too short | |
| | 579.30 | | | -2.395E-03 | 6.280E+00 | Half-Life | too short | |
| | 828.27 | | | -8.537E-03 | 6.280E+00 | Half-Life | too short | |
| TL-201 | 1205.75 | | | -1.777E-03 | 6.280E+00 | Half-Life | too short | |
| | 68.90 | | | -1.970E+00 | 9.856E+00 | 1.407E+01 | 1.123E+00 | -0.140 |
| | 70.82 | | | -3.527E-01 | 5.500E+00 | 7.896E+00 | 6.382E-01 | -0.045 |
| | 80.30 | | | 3.613E-01 | 9.911E+00 | 1.423E+01 | 1.243E+00 | 0.025 |
| | 135.34 | | | -1.009E+01 | 4.949E+01 | 7.348E+01 | 6.320E+00 | -0.137 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TL-202 | 167.43 | * | | 4.512E+00 | 1.237E+01 | 2.113E+01 | 1.801E+00 | 0.214 |
| | 68.90 | | | -1.286E-01 | 6.433E-01 | 9.181E-01 | 7.328E-02 | -0.140 |
| | 70.82 | | | -2.296E-02 | 3.580E-01 | 5.139E-01 | 4.154E-02 | -0.045 |
| | 80.30 | | | 2.353E-02 | 6.453E-01 | 9.268E-01 | 8.096E-02 | 0.025 |
| BI-207 | 439.56 | * | | 1.089E-02 | 9.173E-02 | 1.491E-01 | 1.236E-02 | 0.073 |
| | 72.80 | | | 3.322E-01 | 2.386E-01 | 3.630E-01 | 2.976E-02 | 0.915 |
| | 74.97 | | + | 7.328E-01 | 1.829E-01 | 2.708E-01 | 2.258E-02 | 2.705 |
| | 84.90 | | | 2.388E-01 | 2.561E-01 | 3.774E-01 | 3.454E-02 | 0.633 |
| | 569.67 | | | -1.717E-02 | 3.724E-02 | 6.046E-02 | 5.121E-03 | -0.284 |
| | 1063.62 | * | | 3.301E-02 | 6.789E-02 | 1.148E-01 | 9.952E-03 | 0.288 |
| TL-207 | 1770.23 | | | 5.742E-01 | 5.396E-01 | 9.925E-01 | 8.311E-02 | 0.579 |
| | 81.07 | | | -2.099E-01 | 2.910E-01 | 4.015E-01 | 3.533E-02 | -0.523 |
| | 83.78 | | | -2.683E-02 | 1.754E-01 | 2.470E-01 | 2.234E-02 | -0.109 |
| | 94.90 | | | 6.851E-01 | 3.070E-01 | 4.772E-01 | 4.290E-02 | 1.436 |
| | 122.32 | | | -2.805E-01 | 2.115E+00 | 3.334E+00 | 3.137E-01 | -0.084 |
| | 144.24 | | | 2.444E-01 | 8.169E-01 | 1.373E+00 | 1.314E-01 | 0.178 |
| | 154.21 | | | 3.093E-01 | 4.504E-01 | 7.789E-01 | 7.311E-02 | 0.397 |
| | 269.46 | | + | 5.761E-01 | 3.027E-01 | 4.181E-01 | 3.896E-02 | 1.378 |
| | 323.87 | * | | 5.004E-01 | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| | 338.28 | | + | 6.230E+00 | 2.039E+00 | 2.871E+00 | 3.571E-01 | 2.170 |
| | 445.03 | | | 1.760E+00 | 2.670E+00 | 4.499E+00 | 5.341E-01 | 0.391 |
| | 260.50 | | | -8.392E+00 | 1.151E+01 | 1.829E+01 | 1.673E+00 | -0.459 |
| | 262.80 | | | -1.208E+01 | 3.186E+01 | 5.165E+01 | 4.724E+00 | -0.234 |
| | 896.60 | * | | -1.132E+00 | 9.012E+00 | 1.454E+01 | 1.317E+00 | -0.078 |
| BI-210 | 46.50 | * | | -1.293E+00 | 5.225E+00 | 8.307E+00 | 7.842E-01 | -0.156 |
| PB-210 | 46.50 | * | | -1.293E+00 | 5.225E+00 | 8.307E+00 | 7.842E-01 | -0.156 |
| PO-210 | 46.50 | * | | -1.293E+00 | 5.225E+00 | 8.307E+00 | 7.122E-01 | -0.156 |
| PB-211 | 404.84 | * | | 1.327E-01 | 1.241E+00 | 2.017E+00 | 1.262E+00 | 0.066 |
| | 427.08 | | | -9.067E-01 | 2.575E+00 | 3.949E+00 | 2.452E+00 | -0.230 |
| | 831.96 | | | -5.256E-01 | 1.683E+00 | 2.639E+00 | 1.655E+00 | -0.199 |
| | 727.18 | * | + | 1.834E+00 | 7.741E-01 | 8.748E-01 | 8.669E-02 | 2.097 |
| BI-212 | 785.46 | | | 1.217E+00 | 2.224E+00 | 3.791E+00 | 3.313E-01 | 0.321 |
| | 1620.62 | | | 9.507E-01 | 1.394E+00 | 2.619E+00 | 2.254E-01 | 0.363 |
| PO-215 | 81.07 | | | -2.099E-01 | 2.910E-01 | 4.015E-01 | 3.533E-02 | -0.523 |
| | 83.78 | | | -2.683E-02 | 1.754E-01 | 2.470E-01 | 2.234E-02 | -0.109 |
| | 94.90 | | | 6.851E-01 | 3.070E-01 | 4.772E-01 | 4.290E-02 | 1.436 |
| | 122.32 | | | -2.805E-01 | 2.115E+00 | 3.334E+00 | 3.137E-01 | -0.084 |
| | 144.24 | | | 2.444E-01 | 8.169E-01 | 1.373E+00 | 1.314E-01 | 0.178 |
| | 154.21 | | | 3.093E-01 | 4.504E-01 | 7.789E-01 | 7.311E-02 | 0.397 |
| | 269.46 | | + | 5.761E-01 | 3.027E-01 | 4.181E-01 | 3.896E-02 | 1.378 |
| | 323.87 | * | | 5.004E-01 | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| | 338.28 | | + | 6.230E+00 | 2.039E+00 | 2.871E+00 | 3.571E-01 | 2.170 |
| | 445.03 | | | 1.760E+00 | 2.670E+00 | 4.499E+00 | 5.341E-01 | 0.391 |
| RN-219 | 271.23 | | + | 7.392E-01 | 3.904E-01 | 5.478E-01 | 5.894E-02 | 1.349 |
| | 401.81 | * | | 1.701E-01 | 5.452E-01 | 8.988E-01 | 1.325E-01 | 0.189 |
| RN-220 | 549.76 | * | | 8.470E+00 | 3.074E+01 | 5.271E+01 | 4.474E+00 | 0.161 |
| RA-223 | 81.07 | | | -2.099E-01 | 2.910E-01 | 4.015E-01 | 3.533E-02 | -0.523 |
| | 83.78 | | | -2.683E-02 | 1.754E-01 | 2.470E-01 | 2.234E-02 | -0.109 |
| | 94.90 | | | 6.851E-01 | 3.070E-01 | 4.772E-01 | 4.290E-02 | 1.436 |

---- 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 | | -2.805E-01 | 2.115E+00 | 3.334E+00 | 3.137E-01 | -0.084 |
| | | 144.24 | | 2.444E-01 | 8.169E-01 | 1.373E+00 | 1.314E-01 | 0.178 |
| | | 154.21 | | 3.093E-01 | 4.504E-01 | 7.789E-01 | 7.311E-02 | 0.397 |
| | + | 269.46 | | 5.761E-01 | 3.027E-01 | 4.181E-01 | 3.896E-02 | 1.378 |
| | | 323.87 | * | 5.004E-01 | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| | + | 338.28 | | 6.230E+00 | 2.039E+00 | 2.871E+00 | 3.571E-01 | 2.170 |
| | | 445.03 | | 1.760E+00 | 2.670E+00 | 4.499E+00 | 5.341E-01 | 0.391 |
| | | 79.80 | | 1.639E+00 | 2.099E+00 | 3.085E+00 | 6.643E-01 | 0.531 |
| | | 236.00 | | 4.258E-01 | 3.073E-01 | 4.781E-01 | 6.005E-02 | 0.891 |
| | | 256.20 | * | -1.873E-01 | 4.690E-01 | 7.601E-01 | 1.189E-01 | -0.246 |
| | | 286.10 | | -7.131E-01 | 1.922E+00 | 3.052E+00 | 4.133E-01 | -0.234 |
| | + | 299.80 | | 3.976E+00 | 2.568E+00 | 3.085E+00 | 5.468E-01 | 1.289 |
| TH-227 | | 304.40 | | 1.615E+00 | 2.241E+00 | 3.398E+00 | 6.337E-01 | 0.475 |
| | | 334.20 | | -1.926E+00 | 3.161E+00 | 4.266E+00 | 8.323E-01 | -0.452 |
| | | 79.80 | | 1.639E+00 | 2.100E+00 | 3.085E+00 | 6.727E-01 | 0.531 |
| | + | 94.00 | | 9.694E+00 | 4.236E+00 | 4.664E+00 | 1.024E+00 | 2.078 |
| | | 236.00 | | 4.258E-01 | 3.065E-01 | 4.781E-01 | 5.463E-02 | 0.891 |
| | | 256.20 | * | -1.873E-01 | 4.694E-01 | 7.601E-01 | 1.392E-01 | -0.246 |
| | | 286.10 | | -7.131E-01 | 2.049E+00 | 3.052E+00 | 3.064E+00 | -0.234 |
| | + | 299.80 | | 3.976E+00 | 2.568E+00 | 3.085E+00 | 5.468E-01 | 1.289 |
| | | 304.40 | | 1.615E+00 | 2.241E+00 | 3.398E+00 | 6.337E-01 | 0.475 |
| | | 334.20 | | -1.926E+00 | 3.161E+00 | 4.266E+00 | 8.323E-01 | -0.452 |
| | | 85.43 | | 4.254E-01 | 2.590E-01 | 3.900E-01 | 3.589E-02 | 1.091 |
| | + | 88.47 | | 3.663E-01 | 1.705E-01 | 2.545E-01 | 2.398E-02 | 1.439 |
| TH-229 | | 100.00 | | 3.029E-01 | 2.229E-01 | 3.734E-01 | 3.284E-02 | 0.811 |
| | | 193.63 | * | -4.185E-01 | 5.811E-01 | 9.423E-01 | 8.256E-02 | -0.444 |
| | + | 210.97 | | 2.214E+00 | 1.323E+00 | 1.610E+00 | 1.434E-01 | 1.375 |
| | | 283.67 | * | 1.624E+00 | 1.895E+00 | 3.130E+00 | 4.846E-01 | 0.519 |
| | + | 301.29 | | 1.591E+00 | 1.008E+00 | 1.234E+00 | 1.551E-01 | 1.289 |
| | | 81.07 | | -2.099E-01 | 2.910E-01 | 4.015E-01 | 3.533E-02 | -0.523 |
| | | 83.78 | | -2.683E-02 | 1.754E-01 | 2.470E-01 | 2.234E-02 | -0.109 |
| | | 94.90 | | 6.851E-01 | 3.070E-01 | 4.772E-01 | 4.290E-02 | 1.436 |
| | | 122.32 | | -2.805E-01 | 2.115E+00 | 3.334E+00 | 3.137E-01 | -0.084 |
| | | 144.24 | | 2.444E-01 | 8.169E-01 | 1.373E+00 | 1.314E-01 | 0.178 |
| | | 154.21 | | 3.093E-01 | 4.504E-01 | 7.789E-01 | 7.311E-02 | 0.397 |
| | + | 269.46 | | 5.761E-01 | 3.027E-01 | 4.181E-01 | 3.896E-02 | 1.378 |
| U-231 | | 323.87 | * | 5.004E-01 | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| | + | 338.28 | | 6.230E+00 | 2.039E+00 | 2.871E+00 | 3.571E-01 | 2.170 |
| | | 445.03 | | 1.760E+00 | 2.670E+00 | 4.499E+00 | 5.341E-01 | 0.391 |
| | | 84.21 | | 4.058E+00 | 1.003E+01 | 1.448E+01 | 1.315E+00 | 0.280 |
| | + | 92.29 | | 1.304E+01 | 5.067E+00 | 6.872E+00 | 6.279E-01 | 1.898 |
| | | 95.87 | * | -1.400E+00 | 1.955E+00 | 2.668E+00 | 2.386E-01 | -0.525 |
| | | 108.00 | | -1.632E+00 | 3.471E+00 | 5.417E+00 | 4.696E-01 | -0.301 |
| | + | 75.28 | | 2.138E+01 | 5.986E+00 | 8.238E+00 | 1.252E+00 | 2.595 |
| | + | 86.59 | | 5.252E+00 | 2.785E+00 | 3.659E+00 | 9.898E-01 | 1.435 |
| | + | 300.12 | | 1.109E+00 | 7.088E-01 | 8.624E-01 | 1.306E-01 | 1.285 |
| | | 311.98 | * | 9.451E-02 | 7.529E-02 | 1.315E-01 | 1.217E-02 | 0.719 |
| | | 340.50 | | 2.452E+00 | 1.098E+00 | 1.557E+00 | 3.721E-01 | 1.575 |
| PA-233 | | 398.62 | | -1.021E+00 | 2.614E+00 | 4.103E+00 | 1.086E+00 | -0.249 |

---- 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 | | -8.306E-01 | 1.925E+00 | 2.999E+00 | 6.413E-01 | -0.277 |
| | | 63.00 | | 4.922E+00 | 3.322E+00 | 3.467E+00 | 5.206E-01 | 1.419 |
| | | 94.67 | | 6.712E-01 | 2.369E-01 | 3.607E-01 | 4.570E-02 | 1.861 |
| | | 98.44 | | 6.509E-02 | 1.220E-01 | 1.809E-01 | 1.010E-01 | 0.360 |
| | | 99.86 | | 8.056E-01 | 5.662E-01 | 9.501E-01 | 8.361E-02 | 0.848 |
| | | 111.00 | | 9.905E-02 | 2.243E-01 | 3.632E-01 | 4.401E-02 | 0.273 |
| | | 131.20 | | 6.312E-02 | 1.431E-01 | 2.060E-01 | 1.780E-02 | 0.306 |
| | | 152.70 | | 1.505E-01 | 3.667E-01 | 6.280E-01 | 1.067E-01 | 0.240 |
| | | 186.00 | | 5.260E+00 | 3.042E+00 | 3.162E+00 | 9.876E-01 | 1.664 |
| | | 226.40 | | 1.404E-01 | 4.784E-01 | 8.060E-01 | 1.085E-01 | 0.174 |
| | | 227.20 | | 3.038E-01 | 5.083E-01 | 8.670E-01 | 7.818E-02 | 0.350 |
| | | 248.90 | | -6.900E-01 | 1.029E+00 | 1.545E+00 | 3.493E-01 | -0.447 |
| | | 293.70 | | 3.548E+00 | 1.165E+00 | 1.724E+00 | 3.025E-01 | 2.059 |
| | | 369.80 | | -8.028E-01 | 1.027E+00 | 1.558E+00 | 3.380E-01 | -0.515 |
| | | 568.70 | | -4.778E-01 | 1.179E+00 | 1.921E+00 | 1.627E-01 | -0.249 |
| | | 569.50 | | -1.312E-01 | 3.319E-01 | 5.417E-01 | 4.589E-02 | -0.242 |
| | | 574.00 | | 7.542E-01 | 1.824E+00 | 3.146E+00 | 2.663E-01 | 0.240 |
| | | 699.00 | | -2.015E-02 | 8.418E-01 | 1.394E+00 | 2.645E-01 | -0.014 |
| | | 706.10 | | 2.858E-01 | 1.274E+00 | 2.139E+00 | 9.530E-01 | 0.134 |
| | | 733.00 | | 1.383E-01 | 4.434E-01 | 6.625E-01 | 1.468E-01 | 0.209 |
| | | 742.81 | | -3.497E-01 | 1.644E+00 | 2.640E+00 | 1.774E+00 | -0.132 |
| | | 796.30 | | 1.407E+00 | 1.142E+00 | 1.963E+00 | 5.320E-01 | 0.717 |
| | | 805.60 | | 3.723E-01 | 1.201E+00 | 2.022E+00 | 6.208E-01 | 0.184 |
| | | 819.60 | | 2.787E-01 | 1.520E+00 | 2.533E+00 | 9.647E-01 | 0.110 |
| | | 826.30 | | -5.066E-01 | 1.062E+00 | 1.628E+00 | 7.290E-01 | -0.311 |
| | | 831.60 | | -1.862E-01 | 8.465E-01 | 1.362E+00 | 4.075E-01 | -0.137 |
| | | 876.40 | | -1.667E+00 | 2.026E+00 | 1.493E+00 | 1.535E+00 | -1.117 |
| | | 880.51 | | 3.481E-03 | 3.561E-01 | 5.831E-01 | 5.259E-02 | 0.006 |
| | | 883.24 | | 2.812E-01 | 4.050E-01 | 6.281E-01 | 4.226E-01 | 0.448 |
| | | 899.00 | | -4.824E-01 | 1.057E+00 | 1.613E+00 | 7.066E-01 | -0.299 |
| | | 925.00 | | -7.356E-01 | 1.424E+00 | 2.193E+00 | 1.981E-01 | -0.335 |
| | | 926.50 | | 4.487E-02 | 1.986E-01 | 3.312E-01 | 8.418E-02 | 0.135 |
| | | 946.00 | * | 8.888E-02 | 3.772E-01 | 6.276E-01 | 1.189E-01 | 0.142 |
| | | 949.00 | | 2.181E-01 | 5.541E-01 | 9.358E-01 | 8.420E-02 | 0.233 |
| | | 980.50 | | 4.436E-02 | 8.278E-01 | 1.352E+00 | 1.208E-01 | 0.033 |
| | | 1394.10 | | -8.884E-01 | 1.426E+00 | 1.936E+00 | 1.260E+00 | -0.459 |
| PA-234M | | 766.42 | | 9.433E+00 | 1.503E+01 | 2.468E+01 | 1.252E+01 | 0.382 |
| | | 1001.03 | * | -7.523E-01 | 6.209E+00 | 1.003E+01 | 1.023E+00 | -0.075 |
| U-235 | + | 89.95 | | 1.368E-01 | 1.994E+00 | 2.244E+00 | 6.968E-01 | 0.061 |
| | | 93.35 | | 3.016E+00 | 1.421E+00 | 1.551E+00 | 4.369E-01 | 1.944 |
| | | 105.00 | | 6.476E-01 | 1.232E+00 | 1.986E+00 | 5.932E-01 | 0.326 |
| | | 143.76 | * | 7.736E-02 | 2.514E-01 | 4.222E-01 | 7.376E-02 | 0.183 |
| NP-236 | + | 163.35 | | -1.100E-01 | 5.578E-01 | 9.190E-01 | 1.749E-01 | -0.120 |
| | | 185.71 | | 1.948E-01 | 9.634E-02 | 1.167E-01 | 1.014E-02 | 1.670 |
| | | 205.31 | | 4.233E-01 | 6.671E-01 | 1.011E+00 | 1.940E-01 | 0.419 |
| | | 94.67 | | 5.122E-01 | 1.740E-01 | 2.739E-01 | 2.466E-02 | 1.870 |
| | | 98.44 | | 4.917E-02 | 8.816E-02 | 1.367E-01 | 1.209E-02 | 0.360 |
| | | 111.00 | | 7.492E-02 | 1.695E-01 | 2.747E-01 | 2.380E-02 | 0.273 |
| | | 160.31 | * | 4.862E-03 | 9.264E-02 | 1.567E-01 | 1.334E-02 | 0.031 |

---- 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 | | 2.720E-01 | 1.908E-01 | 3.182E-01 | 2.803E-02 | 0.855 |
| | | 117.00 | * | 2.880E-02 | 2.264E-01 | 3.617E-01 | 3.150E-02 | 0.080 |
| | + | 209.75 | | 2.230E+00 | 1.333E+00 | 1.657E+00 | 1.474E-01 | 1.346 |
| | | 228.18 | | -2.185E-02 | 2.668E-01 | 4.423E-01 | 3.991E-02 | -0.049 |
| | + | 277.60 | | 4.270E-01 | 2.456E-01 | 3.726E-01 | 3.408E-02 | 1.146 |
| AM-241 | | 334.30 | | -1.118E+00 | 1.780E+00 | 2.412E+00 | 2.133E-01 | -0.463 |
| | | 59.54 | * | 3.570E-02 | 2.128E-01 | 3.111E-01 | 2.564E-02 | 0.115 |
| | CM-243 | 99.55 | | 2.799E-01 | 1.964E-01 | 3.274E-01 | 2.884E-02 | 0.855 |
| | | 103.76 | * | -3.972E-02 | 1.123E-01 | 1.763E-01 | 1.536E-02 | -0.225 |
| | | 117.00 | | 2.963E-02 | 2.329E-01 | 3.721E-01 | 3.241E-02 | 0.080 |
| AM-246 | + | 209.75 | | 2.199E+00 | 1.314E+00 | 1.633E+00 | 1.453E-01 | 1.346 |
| | | 228.18 | | -2.208E-02 | 2.696E-01 | 4.470E-01 | 4.033E-02 | -0.049 |
| | + | 277.60 | | 4.305E-01 | 2.477E-01 | 3.757E-01 | 3.436E-02 | 1.146 |
| | | 798.80 | | -2.423E-01 | 1.768E-01 | 2.531E-01 | 2.224E-02 | -0.958 |
| | | 1036.00 | | -2.827E-02 | 3.710E-01 | 5.953E-01 | 5.223E-02 | -0.047 |
| CM-247 | | 1062.04 | | -2.393E-03 | 2.971E-01 | 4.795E-01 | 4.160E-02 | -0.005 |
| | | 1078.86 | * | -5.980E-02 | 1.824E-01 | 2.841E-01 | 2.445E-02 | -0.210 |
| | + | 278.00 | | 1.771E+00 | 1.019E+00 | 1.542E+00 | 1.410E-01 | 1.149 |
| | | 287.40 | | -5.728E-01 | 1.515E+00 | 2.444E+00 | 2.231E-01 | -0.234 |
| | | 402.60 | * | 4.395E-02 | 4.884E-02 | 8.317E-02 | 6.745E-03 | 0.528 |
| CF-249 | | 252.85 | | 5.455E-01 | 1.035E+00 | 1.756E+00 | 1.603E-01 | 0.311 |
| | | 333.44 | | -3.248E-01 | 2.478E-01 | 3.151E-01 | 2.789E-02 | -1.031 |
| CF-251 | | 387.95 | * | 4.015E-02 | 4.969E-02 | 8.454E-02 | 6.857E-03 | 0.475 |
| | | 176.60 | * | 7.545E-02 | 1.460E-01 | 2.503E-01 | 2.155E-02 | 0.301 |
| | | 227.00 | | 2.362E-01 | 4.525E-01 | 7.696E-01 | 6.939E-02 | 0.307 |
| | | 285.00 | | 1.010E+00 | 2.179E+00 | 3.617E+00 | 3.304E-01 | 0.279 |

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]G246328008      *
* Acquisition date   : 18-FEB-2010 11:47:35 Detector SN# :                  *
* Detector ID        : GAM01 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.24 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328008 Analyst initials: MXR1                 *
* Batch Number       : 950786 Sample Quantity : 1.2538E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                              *
*
* Standard Weight    : 0.00000                                           *
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 3.550E+01 | 3.744E+00 | 6.094E-01 | 0.000E+00 |
| CD-109 | 2.737E+00 | 1.249E+00 | 1.824E+00 | 0.000E+00 |
| SN-126 | 2.683E-01 | 1.224E-01 | 1.854E-01 | 0.000E+00 |
| HG-203 | 1.003E-01 | 5.661E-02 | 8.242E-02 | 0.000E+00 |
| TL-208 | 4.928E-01 | 9.973E-02 | 7.036E-02 | 0.000E+00 |
| BI-211 | 4.247E+00 | 6.991E-01 | 3.900E-01 | 0.000E+00 |
| PB-212 | 1.836E+00 | 2.270E-01 | 1.057E-01 | 0.000E+00 |
| PO-212 | 1.836E+00 | 2.270E-01 | 1.057E-01 | 0.000E+00 |
| BI-214 | 1.323E+00 | 2.273E-01 | 1.393E-01 | 0.000E+00 |
| PB-214 | 1.477E+00 | 2.547E-01 | 1.360E-01 | 0.000E+00 |
| PO-214 | 1.477E+00 | 2.547E-01 | 1.360E-01 | 0.000E+00 |
| PO-216 | 1.836E+00 | 2.270E-01 | 1.057E-01 | 0.000E+00 |
| PO-218 | 1.477E+00 | 2.547E-01 | 1.360E-01 | 0.000E+00 |
| RA-224 | 4.124E+00 | 1.286E+00 | 1.203E+00 | 0.000E+00 |
| RA-226 | 1.323E+00 | 2.273E-01 | 1.393E-01 | 0.000E+00 |
| AC-228 | 1.931E+00 | 4.063E-01 | 2.842E-01 | 0.000E+00 |
| RA-228 | 1.931E+00 | 4.063E-01 | 2.842E-01 | 0.000E+00 |
| TH-228 | 1.868E+00 | 2.308E-01 | 1.075E-01 | 0.000E+00 |
| TH-230 | 1.323E+00 | 2.273E-01 | 1.393E-01 | 0.000E+00 |
| TH-232 | 1.931E+00 | 4.063E-01 | 2.842E-01 | 0.000E+00 |
| TH-234 | 4.222E+00 | 2.818E+00 | 2.620E+00 | 0.000E+00 |
| U-234 | 1.323E+00 | 2.273E-01 | 1.393E-01 | 0.000E+00 |
| NP-237 | 7.878E-01 | 3.931E-01 | 5.005E-01 | 0.000E+00 |
| U-238 | 4.222E+00 | 2.818E+00 | 2.620E+00 | 0.000E+00 |
| AM-243 | 4.082E-01 | 9.982E-02 | 1.102E-01 | 0.000E+00 |
| ANH-511 | 1.253E-01 | 7.418E-02 | 5.147E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 2.138E-01 | 3.936E-01 | 6.798E-01 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | -2.056E-02 | 5.513E-02 | 9.109E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 7.175E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 4.300E-03 | 2.482E-02 | 4.311E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 7.137E-02 | 9.571E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -3.517E-02 | 5.010E-02 | 7.834E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | -5.925E-02 | 8.607E-02 | 1.318E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -1.105E-01 | 4.677E-01 | 7.877E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 2.937E-02 | 3.323E-01 | 5.683E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.805E-02 | 4.989E-02 | 8.574E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -5.259E-02 | 4.710E-02 | 7.025E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | -1.586E-03 | 3.016E-02 | 5.038E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -1.018E-03 | 4.937E-02 | 8.334E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -6.961E-02 | 1.155E-01 | 1.782E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | -1.389E-02 | 4.758E-02 | 7.810E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 3.617E-02 | 1.196E-01 | 1.773E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -3.606E-01 | 1.618E+00 | 2.614E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 5.524E-01 | 1.100E+00 | 1.950E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -1.791E-02 | 1.126E-01 | 1.926E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 2.311E-02 | 5.336E-02 | 9.111E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | 1.254E+01 | 2.201E+01 | 3.793E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -4.342E-01 | 4.569E-01 | 7.042E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | 5.024E-02 | 8.564E-02 | 1.477E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 3.703E-02 | 8.981E-02 | 1.565E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 1.256E+01 | 1.022E+01 | 1.632E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 6.568E-02 | 5.342E-02 | 8.534E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | -9.489E-02 | 1.098E+00 | 1.798E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 3.632E-02 | 4.164E-02 | 7.980E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -6.955E-03 | 3.750E-02 | 6.239E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -1.898E-01 | 2.213E+01 | 3.790E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -3.116E-03 | 4.078E-02 | 6.931E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 2.444E-02 | 5.419E-02 | 9.502E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | 1.332E-01 | 1.634E-01 | 2.608E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.146E-02 | 7.887E-02 | 1.323E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 7.135E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 1.378E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 7.857E+00 | 2.107E+01 | 3.697E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 7.688E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 4.172E-03 | 3.742E-02 | 6.517E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -1.901E-02 | 3.460E-02 | 5.497E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | -5.385E-02 | 5.057E-02 | 7.549E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 1.460E-01 | 3.655E-01 | 6.485E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 1.460E-01 | 3.652E-01 | 6.485E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.546E-02 | 3.965E-02 | 6.445E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -1.326E-02 | 3.965E-02 | 6.627E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 1.050E+00 | 2.067E+00 | 3.259E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -1.314E-03 | 5.444E-02 | 9.158E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | -1.314E-03 | 5.444E-02 | 9.158E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.813E-01 | 2.351E-01 | 3.793E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | -7.721E+00 | 1.993E+01 | 3.369E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 1.194E-02 | 6.776E-02 | 1.212E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 5.642E+00 | 4.139E+00 | 7.754E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 6.963E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.469E-02 | 3.235E-02 | 5.838E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -1.018E+00 | 1.115E+00 | 1.673E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -1.595E-02 | 7.025E-02 | 1.102E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 1.324E-02 | 1.109E-01 | 1.872E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | 1.397E+01 | 1.141E+01 | 2.002E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -1.460E-01 | 2.378E-01 | 3.884E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -1.026E-02 | 2.147E-01 | 3.183E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 1.437E-01 | 2.285E+00 | 3.932E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -2.465E-02 | 5.481E-02 | 9.426E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 1.541E-01 | 1.655E-01 | 2.948E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.007E-01 | 1.191E+00 | 2.067E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | 1.497E-02 | 5.800E-02 | 8.792E-02 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 3.001E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 6.784E-02 | 5.467E-02 | 1.014E-01 | 0.000E+00 | NOT IDENT. |
| CS-135 | 3.022E-02 | 2.127E-01 | 3.253E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 7.882E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -6.266E-02 | 1.455E-01 | 2.299E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 4.294E-03 | 4.267E-02 | 7.381E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 4.540E-03 | 4.511E-02 | 7.802E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -7.428E-03 | 3.401E-02 | 5.977E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.362E-01 | 3.386E-01 | 5.587E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -9.062E-02 | 1.111E-01 | 1.602E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 2.050E-02 | 7.352E-02 | 1.324E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 5.021E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 1.939E-02 | 2.635E-01 | 3.916E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | 1.348E-02 | 3.948E-02 | 6.931E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 9.144E-01 | 2.678E+00 | 4.701E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.005E-02 | 5.155E-02 | 8.718E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 4.707E-01 | 6.936E-01 | 1.262E+00 | 0.000E+00 | NOT IDENT. |
| PM-149 | -2.125E+01 | 1.995E+02 | 3.356E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | 2.996E-03 | 1.181E-01 | 1.940E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | -5.396E-02 | 1.062E-01 | 1.552E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -4.188E-02 | 1.525E-01 | 2.544E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 2.361E-02 | 1.239E-01 | 2.107E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 9.840E-02 | 1.696E-01 | 3.001E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -3.909E-02 | 7.006E-02 | 1.140E-01 | 0.000E+00 | NOT IDENT. |
| TM-171 | 1.302E+01 | 3.712E+01 | 5.798E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 9.976E-04 | 2.883E-02 | 4.340E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 2.235E+00 | 2.821E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -2.167E-01 | 2.205E-01 | 3.446E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -4.622E-02 | 5.512E-02 | 8.550E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 2.142E-01 | 5.093E-01 | 7.984E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | 2.504E-03 | 2.622E-01 | 4.491E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -6.212E-03 | 1.292E-01 | 2.254E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 1.465E-01 | 2.723E-01 | 4.832E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | 8.346E-03 | 4.899E-02 | 8.539E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | 1.815E-01 | 1.955E-01 | 3.583E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 6.758E+00 | 9.323E+00 | 1.479E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | -3.181E-02 | 4.202E-02 | 6.852E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.357E-01 | 2.729E-01 | 4.733E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 1.779E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 4.512E+00 | 1.212E+01 | 2.177E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 1.089E-02 | 8.990E-02 | 1.516E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 3.301E-02 | 6.653E-02 | 1.152E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | 5.004E-01 | 8.260E-01 | 1.446E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.132E+00 | 8.832E+00 | 1.463E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -1.293E+00 | 5.121E+00 | 8.708E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | -1.293E+00 | 5.121E+00 | 8.708E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | -1.293E+00 | 5.121E+00 | 8.708E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 1.327E-01 | 1.216E+00 | 2.052E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 7.586E-01 | 8.830E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | 5.004E-01 | 8.260E-01 | 1.446E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 1.701E-01 | 5.343E-01 | 9.149E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 8.470E+00 | 3.012E+01 | 5.341E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 5.004E-01 | 8.260E-01 | 1.446E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -1.873E-01 | 4.596E-01 | 7.785E-01 | 0.000E+00 | FAIL ABUN |
| TH-227 | -1.873E-01 | 4.600E-01 | 7.785E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -4.185E-01 | 5.695E-01 | 9.690E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 1.624E+00 | 1.857E+00 | 3.202E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | 5.004E-01 | 8.260E-01 | 1.446E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -1.400E+00 | 1.916E+00 | 2.770E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 9.451E-02 | 7.378E-02 | 1.343E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 8.888E-02 | 3.696E-01 | 6.310E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -7.523E-01 | 6.084E+00 | 1.008E+01 | 0.000E+00 | NOT IDENT. |
| U-235 | 7.736E-02 | 2.464E-01 | 4.359E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 4.862E-03 | 9.079E-02 | 1.615E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | 2.880E-02 | 2.219E-01 | 3.745E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 3.570E-02 | 2.086E-01 | 3.250E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -3.972E-02 | 1.101E-01 | 1.829E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -5.980E-02 | 1.788E-01 | 2.851E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 4.395E-02 | 4.787E-02 | 8.465E-02 | 0.000E+00 | FAIL ABUN |
| CF-249 | 4.015E-02 | 4.870E-02 | 8.609E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | 7.545E-02 | 1.431E-01 | 2.578E-01 | 0.000E+00 | NOT IDENT. |

```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328008.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:47:35
Sample ID          : G246328008          Sample quantity  : 1.25380E+02 GRAM
Detector name      : GAM01              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.24  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             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 | 1196 | 10.67* | 9.455E-01 | 3.550E+01 | 3.550E+01 | 10.76 |
| CD-109 | 88.03 | 172 | 3.72* | 5.197E+00 | 2.668E+00 | 2.737E+00 | 46.55 |
| SN-126 | 64.28 | 149 | 9.60 | 2.789E+00 | 1.671E+00 | 1.671E+00 | 67.42 |
| | 86.94 | 172 | 8.90 | 5.197E+00 | 1.115E+00 | 1.115E+00 | 61.67 |
| | 87.57 | 172 | 37.00* | 5.197E+00 | 2.683E-01 | 2.683E-01 | 46.55 |
| HG-203 | 70.83 | ----- | 4.75 | 3.714E+00 | ----- | Line Not Found | ----- |
| | 72.87 | ----- | 8.00 | 3.944E+00 | ----- | Line Not Found | ----- |
| | 82.60 | ----- | 3.55 | 4.860E+00 | ----- | Line Not Found | ----- |
| | 279.20 | 78 | 77.30* | 3.880E+00 | 7.788E-02 | 1.003E-01 | 57.57 |
| TL-208 | 277.35 | 78 | 6.80 | 3.880E+00 | 8.853E-01 | 8.853E-01 | 58.21 |
| | 510.84 | 100 | 21.60 | 2.391E+00 | 5.800E-01 | 5.800E-01 | 60.99 |
| | 583.14 | 297 | 84.20* | 2.142E+00 | 4.928E-01 | 4.928E-01 | 20.65 |
| | 860.37 | ----- | 12.46 | 1.522E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 3.944E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 592 | 12.94* | 3.226E+00 | 4.247E+00 | 4.247E+00 | 16.80 |
| PB-212 | 74.81 | 374 | 10.70 | 4.152E+00 | 2.518E+00 | 2.518E+00 | 26.65 |
| | 77.11 | 639 | 18.00 | 4.380E+00 | 2.425E+00 | 2.425E+00 | 16.27 |
| | 87.30 | 172 | 8.00 | 5.197E+00 | 1.241E+00 | 1.241E+00 | 47.62 |
| | 238.63 | 1189 | 44.60* | 4.346E+00 | 1.836E+00 | 1.836E+00 | 12.61 |
| | 300.09 | 89 | 3.41 | 3.654E+00 | 2.146E+00 | 2.146E+00 | 63.05 |
| PO-212 | 74.81 | 374 | 10.70 | 4.152E+00 | 2.518E+00 | 2.518E+00 | 26.65 |
| | 77.11 | 639 | 18.00 | 4.380E+00 | 2.425E+00 | 2.425E+00 | 16.27 |
| | 87.30 | 172 | 8.00 | 5.197E+00 | 1.241E+00 | 1.241E+00 | 47.62 |
| | 115.19 | ----- | 0.60 | 6.043E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1189 | 44.60* | 4.346E+00 | 1.836E+00 | 1.836E+00 | 12.61 |
| | 300.09 | 89 | 3.41 | 3.654E+00 | 2.146E+00 | 2.146E+00 | 63.05 |
| BI-214 | 609.31 | 422 | 46.30* | 2.065E+00 | 1.323E+00 | 1.323E+00 | 17.53 |
| | 1120.29 | 104 | 15.10 | 1.193E+00 | 1.728E+00 | 1.728E+00 | 42.67 |
| | 1764.49 | 80 | 15.80 | 8.256E-01 | 1.828E+00 | 1.829E+00 | 28.90 |
| PB-214 | 74.81 | 374 | 6.21 | 4.152E+00 | 4.338E+00 | 4.338E+00 | 26.03 |
| | 77.11 | 639 | 10.50 | 4.380E+00 | 4.157E+00 | 4.157E+00 | 17.97 |
| | 87.30 | 172 | 4.67 | 5.197E+00 | 2.125E+00 | 2.126E+00 | 47.19 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 241.98 | 234 | 7.49 | 4.306E+00 | 2.175E+00 | 2.175E+00 | 32.30 |
| | 295.21 | 355 | 19.20 | 3.699E+00 | 1.498E+00 | 1.498E+00 | 19.02 |
| | 351.92 | 592 | 37.20* | 3.226E+00 | 1.477E+00 | 1.477E+00 | 17.59 |
| | 74.81 | 374 | 6.21 | 4.152E+00 | 4.338E+00 | 4.338E+00 | 26.03 |
| | 77.11 | 639 | 10.50 | 4.380E+00 | 4.157E+00 | 4.157E+00 | 17.97 |
| | 87.30 | 172 | 4.67 | 5.197E+00 | 2.125E+00 | 2.126E+00 | 47.19 |
| PO-216 | 241.98 | 234 | 7.49 | 4.306E+00 | 2.175E+00 | 2.175E+00 | 32.30 |
| | 295.21 | 355 | 19.20 | 3.699E+00 | 1.498E+00 | 1.498E+00 | 19.02 |
| | 351.92 | 592 | 37.20* | 3.226E+00 | 1.477E+00 | 1.477E+00 | 17.59 |
| | 74.81 | 374 | 10.70 | 4.152E+00 | 2.518E+00 | 2.518E+00 | 26.65 |
| | 77.11 | 639 | 18.00 | 4.380E+00 | 2.425E+00 | 2.425E+00 | 16.27 |
| | 87.30 | 172 | 8.00 | 5.197E+00 | 1.241E+00 | 1.241E+00 | 47.62 |
| PO-218 | 238.63 | 1189 | 44.60* | 4.346E+00 | 1.836E+00 | 1.836E+00 | 12.61 |
| | 300.09 | 89 | 3.41 | 3.654E+00 | 2.146E+00 | 2.146E+00 | 63.05 |
| | 74.81 | 374 | 6.21 | 4.152E+00 | 4.338E+00 | 4.338E+00 | 26.03 |
| | 77.11 | 639 | 10.50 | 4.380E+00 | 4.157E+00 | 4.157E+00 | 17.97 |
| | 87.30 | 172 | 4.67 | 5.197E+00 | 2.125E+00 | 2.126E+00 | 47.19 |
| | 241.98 | 234 | 7.49 | 4.306E+00 | 2.175E+00 | 2.175E+00 | 32.30 |
| RA-224 | 295.21 | 355 | 19.20 | 3.699E+00 | 1.498E+00 | 1.498E+00 | 19.02 |
| | 351.92 | 592 | 37.20* | 3.226E+00 | 1.477E+00 | 1.477E+00 | 17.59 |
| | 240.98 | 234 | 3.95* | 4.306E+00 | 4.124E+00 | 4.124E+00 | 31.81 |
| | 609.31 | 422 | 46.30* | 2.065E+00 | 1.323E+00 | 1.323E+00 | 17.53 |
| | 1120.29 | 104 | 15.10 | 1.193E+00 | 1.728E+00 | 1.728E+00 | 42.67 |
| | 1764.49 | 80 | 15.80 | 8.256E-01 | 1.828E+00 | 1.828E+00 | 28.90 |
| AC-228 | 338.32 | 189 | 11.40 | 3.326E+00 | 1.492E+00 | 1.492E+00 | 51.21 |
| | 911.07 | 258 | 27.70* | 1.444E+00 | 1.931E+00 | 1.931E+00 | 21.46 |
| | 969.11 | 127 | 16.60 | 1.364E+00 | 1.679E+00 | 1.679E+00 | 38.18 |
| | 338.32 | 189 | 11.40 | 3.326E+00 | 1.492E+00 | 1.492E+00 | 51.21 |
| | 911.07 | 258 | 27.70* | 1.444E+00 | 1.931E+00 | 1.931E+00 | 21.46 |
| | 969.11 | 127 | 16.60 | 1.364E+00 | 1.679E+00 | 1.679E+00 | 38.18 |
| TH-228 | 74.81 | 374 | 10.70 | 4.152E+00 | 2.518E+00 | 2.561E+00 | 24.98 |
| | 77.11 | 639 | 18.00 | 4.380E+00 | 2.425E+00 | 2.466E+00 | 16.27 |
| | 87.30 | 172 | 8.00 | 5.197E+00 | 1.241E+00 | 1.262E+00 | 46.55 |
| | 238.63 | 1189 | 44.60* | 4.346E+00 | 1.836E+00 | 1.868E+00 | 12.61 |
| | 300.09 | 89 | 3.41 | 3.654E+00 | 2.146E+00 | 2.182E+00 | 85.91 |
| | 609.31 | 422 | 46.30* | 2.065E+00 | 1.323E+00 | 1.323E+00 | 17.53 |
| TH-230 | 1120.29 | 104 | 15.10 | 1.193E+00 | 1.728E+00 | 1.728E+00 | 42.67 |
| | 1764.49 | 80 | 15.80 | 8.256E-01 | 1.828E+00 | 1.828E+00 | 28.90 |
| | 338.32 | 189 | 11.40 | 3.326E+00 | 1.492E+00 | 1.492E+00 | 31.53 |
| | 911.07 | 258 | 27.70* | 1.444E+00 | 1.931E+00 | 1.931E+00 | 21.46 |
| | 969.11 | 127 | 16.60 | 1.364E+00 | 1.679E+00 | 1.679E+00 | 38.18 |
| | 63.29 | 149 | 3.80* | 2.789E+00 | 4.222E+00 | 4.222E+00 | 68.11 |
| TH-234 | 92.38 | 250 | 5.41 | 5.509E+00 | 2.509E+00 | 2.509E+00 | 41.98 |
| | 609.31 | 422 | 46.30* | 2.065E+00 | 1.323E+00 | 1.323E+00 | 17.53 |
| | 1120.29 | 104 | 15.10 | 1.193E+00 | 1.728E+00 | 1.728E+00 | 42.67 |
| | 1764.49 | 80 | 15.80 | 8.256E-01 | 1.828E+00 | 1.828E+00 | 28.90 |
| | 86.50 | 172 | 12.60* | 5.197E+00 | 7.878E-01 | 7.878E-01 | 50.92 |
| | 95.87 | ----- | 2.60 | 5.636E+00 | ----- | Line Not Found | ----- |
| U-238 | 63.29 | 149 | 3.80* | 2.789E+00 | 4.222E+00 | 4.222E+00 | 68.11 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| AM-243 | 92.38 | 250 | 5.41 | 5.509E+00 | 2.509E+00 | 2.509E+00 | 38.85 |
| | 74.67 | 374 | 66.00* | 4.152E+00 | 4.082E-01 | 4.082E-01 | 24.95 |
| | 86.72 | 172 | 0.34 | 5.197E+00 | 2.954E+01 | 2.954E+01 | 46.55 |
| | 117.66 | ----- | 0.55 | 6.054E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 142.18 | ----- | 0.13 | 5.887E+00 | ----- | Line Not Found | ----- |
| | 511.00 | 100 | 100.00* | 2.391E+00 | 1.253E-01 | 1.253E-01 | 60.42 |

Flag: "*" = Keyline

Total number of lines in spectrum 26
Number of unidentified lines 0
Number of lines tentatively identified by NID 26 100.00%

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 | 3.550E+01 | 3.550E+01 | 0.382E+01 | 10.76 | |
| CD-109 | 464.00D | 1.03 | 2.668E+00 | 2.737E+00 | 1.274E+00 | 46.55 | |
| SN-126 | 1.00E+05Y | 1.00 | 2.683E-01 | 2.683E-01 | 1.249E-01 | 46.55 | |
| HG-203 | 46.60D | 1.29 | 7.788E-02 | 1.003E-01 | 0.578E-01 | 57.57 | |
| TL-208 | 1.41E+10Y | 1.00 | 4.928E-01 | 4.928E-01 | 1.018E-01 | 20.65 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.247E+00 | 4.247E+00 | 0.713E+00 | 16.80 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.836E+00 | 1.836E+00 | 0.232E+00 | 12.61 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.836E+00 | 1.836E+00 | 0.232E+00 | 12.61 | |
| BI-214 | 1600.00Y | 1.00 | 1.323E+00 | 1.323E+00 | 0.232E+00 | 17.53 | |
| PB-214 | 1600.00Y | 1.00 | 1.477E+00 | 1.477E+00 | 0.260E+00 | 17.59 | |
| PO-214 | 1600.00Y | 1.00 | 1.477E+00 | 1.477E+00 | 0.260E+00 | 17.59 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.836E+00 | 1.836E+00 | 0.232E+00 | 12.61 | |
| PO-218 | 1600.00Y | 1.00 | 1.477E+00 | 1.477E+00 | 0.260E+00 | 17.59 | |
| RA-224 | 1.41E+10Y | 1.00 | 4.124E+00 | 4.124E+00 | 1.312E+00 | 31.81 | |
| RA-226 | 1600.00Y | 1.00 | 1.323E+00 | 1.323E+00 | 0.232E+00 | 17.53 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.931E+00 | 1.931E+00 | 0.415E+00 | 21.46 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.931E+00 | 1.931E+00 | 0.415E+00 | 21.46 | |
| TH-228 | 1.91Y | 1.02 | 1.836E+00 | 1.868E+00 | 0.236E+00 | 12.61 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.323E+00 | 1.323E+00 | 0.232E+00 | 17.53 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.931E+00 | 1.931E+00 | 0.415E+00 | 21.46 | |
| TH-234 | 4.47E+09Y | 1.00 | 4.222E+00 | 4.222E+00 | 2.876E+00 | 68.11 | |
| U-234 | 4.47E+09Y | 1.00 | 1.323E+00 | 1.323E+00 | 0.232E+00 | 17.53 | |
| NP-237 | 2.14E+06Y | 1.00 | 7.878E-01 | 7.878E-01 | 4.012E-01 | 50.92 | |
| U-238 | 4.47E+09Y | 1.00 | 4.222E+00 | 4.222E+00 | 2.876E+00 | 68.11 | |
| AM-243 | 7380.00Y | 1.00 | 4.082E-01 | 4.082E-01 | 1.019E-01 | 24.95 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.253E-01 | 1.253E-01 | 0.757E-01 | 60.42 | |

Total Activity : 8.001E+01 8.013E+01

Grand Total Activity : 8.001E+01 8.013E+01

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

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

Unidentified Energy Lines
Sample ID : G246328008

Page : 5
Acquisition date : 18-FEB-2010 11:47:35

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 129.21 | 168 | 486 | 1.54 | 259.07 | 253 | 13 | 2.34E-02 | 56.4 | 6.02E+00 | T |
| 0 | 186.24 | 181 | 427 | 1.29 | 373.07 | 368 | 11 | 2.52E-02 | 48.7 | 5.16E+00 | T |
| 0 | 209.55 | 115 | 300 | 1.11 | 419.67 | 416 | 10 | 1.60E-02 | 59.1 | 4.77E+00 | T |
| 0 | 270.67 | 104 | 188 | 1.54 | 541.84 | 538 | 9 | 1.44E-02 | 51.7 | 3.96E+00 | T |
| 0 | 462.82 | 92 | 95 | 1.20 | 925.91 | 922 | 10 | 1.27E-02 | 44.7 | 2.59E+00 | T |
| 0 | 727.56 | 128 | 97 | 1.85 | 1455.06 | 1445 | 18 | 1.78E-02 | 41.0 | 1.77E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328008.CNF;1
* Acquisition date   : 18-FEB-2010 11:47:35  Detector SN#      :
* Detector ID        : GAM01                  Sensitivity       : 5.00000
* Geometry           : CAN                    Energy tolerance: 1.50000
* Elapsed live time  : 0 02:00:00.00          Abundance limit  : 75.00000
* Elapsed real time  : 0 02:00:01.24          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G246328008             Analyst initials: MXR1
* Batch Number       : 950786                 Sample Quantity : 1.25380E+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  :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 3.550E+01 | 3.821E+00 | 6.099E-01 | 5.422E-02 | 58.216 |
| CD-109 | 2.737E+00 | 1.274E+00 | 1.755E+00 | 1.661E-01 | 1.559 |
| SN-126 | 2.683E-01 | 1.249E-01 | 1.783E-01 | 1.680E-02 | 1.504 |
| HG-203 | 1.003E-01 | 5.776E-02 | 8.056E-02 | 7.554E-03 | 1.245 |
| TL-208 | 4.928E-01 | 1.018E-01 | 6.949E-02 | 6.311E-03 | 7.092 |
| BI-211 | 4.247E+00 | 7.134E-01 | 3.824E-01 | 3.479E-02 | 11.105 |
| PB-212 | 1.836E+00 | 2.316E-01 | 1.031E-01 | 1.043E-02 | 17.819 |
| PO-212 | 1.836E+00 | 2.316E-01 | 1.031E-01 | 1.043E-02 | 17.819 |
| BI-214 | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| PB-214 | 1.477E+00 | 2.598E-01 | 1.333E-01 | 1.397E-02 | 11.081 |
| PO-214 | 1.477E+00 | 2.598E-01 | 1.333E-01 | 1.397E-02 | 11.081 |
| PO-216 | 1.836E+00 | 2.316E-01 | 1.031E-01 | 1.043E-02 | 17.819 |
| PO-218 | 1.477E+00 | 2.598E-01 | 1.333E-01 | 1.397E-02 | 11.081 |
| RA-224 | 4.124E+00 | 1.312E+00 | 1.173E+00 | 1.066E-01 | 3.516 |
| RA-226 | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| AC-228 | 1.931E+00 | 4.146E-01 | 2.824E-01 | 3.269E-02 | 6.838 |
| RA-228 | 1.931E+00 | 4.146E-01 | 2.824E-01 | 3.269E-02 | 6.838 |
| TH-228 | 1.868E+00 | 2.355E-01 | 1.048E-01 | 1.061E-02 | 17.819 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-230 | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| TH-232 | 1.931E+00 | 4.146E-01 | 2.824E-01 | 3.269E-02 | 6.838 |
| TH-234 | 4.222E+00 | 2.876E+00 | 2.509E+00 | 4.410E-01 | 1.683 |
| U-234 | 1.323E+00 | 2.319E-01 | 1.377E-01 | 1.358E-02 | 9.607 |
| NP-237 | 7.878E-01 | 4.012E-01 | 4.814E-01 | 1.090E-01 | 1.636 |
| U-238 | 4.222E+00 | 2.876E+00 | 2.509E+00 | 4.410E-01 | 1.683 |
| AM-243 | 4.082E-01 | 1.019E-01 | 1.058E-01 | 8.794E-03 | 3.860 |
| ANH-511 | 1.253E-01 | 7.569E-02 | 5.074E-02 | 4.300E-03 | 2.469 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | 2.138E-01 | | 4.016E-01 | 6.695E-01 | 6.091E-02 | 0.319 |
| NA-22 | -2.056E-02 | | 5.625E-02 | 9.098E-02 | 7.640E-03 | -0.226 |
| NA-24 | -8.738E-01 | | 3.660E+00 | Half-Life | too short | |
| AL-26 | 4.300E-03 | | 2.532E-02 | 4.328E-02 | 3.586E-03 | 0.099 |
| TI-44 | 4.475E-01 | + | 7.283E-02 | 9.194E-02 | 7.890E-03 | 4.867 |
| SC-46 | -3.517E-02 | | 5.112E-02 | 7.783E-02 | 7.036E-03 | -0.452 |
| V-48 | -5.925E-02 | | 8.782E-02 | 1.312E-01 | 1.171E-02 | -0.452 |
| CR-51 | -1.105E-01 | | 4.773E-01 | 7.714E-01 | 7.256E-02 | -0.143 |
| MN-52 | 2.937E-02 | | 3.391E-01 | 5.686E-01 | 4.908E-02 | 0.052 |
| MN-54 | 1.805E-02 | | 5.091E-02 | 8.512E-02 | 7.576E-03 | 0.212 |
| CO-56 | -5.259E-02 | | 4.806E-02 | 6.975E-02 | 6.232E-03 | -0.754 |
| CO-57 | -1.586E-03 | | 3.077E-02 | 4.869E-02 | 4.286E-03 | -0.033 |
| CO-58 | -1.018E-03 | | 5.038E-02 | 8.270E-02 | 7.316E-03 | -0.012 |
| FE-59 | -6.961E-02 | | 1.179E-01 | 1.776E-01 | 1.637E-02 | -0.392 |
| CO-60 | -1.389E-02 | | 4.855E-02 | 7.805E-02 | 6.653E-03 | -0.178 |
| ZN-65 | 3.617E-02 | | 1.220E-01 | 1.767E-01 | 1.491E-02 | 0.205 |
| GE-68 | -3.606E-01 | | 1.651E+00 | 2.605E+00 | 2.243E-01 | -0.138 |
| AS-73 | 5.524E-01 | | 1.122E+00 | 1.864E+00 | 1.508E-01 | 0.296 |
| AS-74 | -1.791E-02 | | 1.149E-01 | 1.903E-01 | 1.603E-02 | -0.094 |
| SE-75 | 2.311E-02 | | 5.445E-02 | 8.899E-02 | 8.175E-03 | 0.260 |
| BR-77 | 1.254E+01 | | 2.246E+01 | 3.740E+01 | 3.173E+00 | 0.335 |
| SR-82 | -4.342E-01 | | 4.662E-01 | 6.984E-01 | 6.080E-02 | -0.622 |
| RB-83 | 5.024E-02 | | 8.738E-02 | 1.457E-01 | 1.236E-02 | 0.345 |
| RB-84 | 3.703E-02 | | 9.165E-02 | 1.554E-01 | 1.402E-02 | 0.238 |
| KR-85 | 1.256E+01 | | 1.042E+01 | 1.609E+01 | 1.364E+00 | 0.781 |
| SR-85 | 6.568E-02 | | 5.451E-02 | 8.413E-02 | 7.133E-03 | 0.781 |
| RB-86 | -9.489E-02 | | 1.120E+00 | 1.792E+00 | 1.544E-01 | -0.053 |
| Y-88 | 3.632E-02 | | 4.249E-02 | 8.013E-02 | 6.590E-03 | 0.453 |
| ZR-88 | -6.955E-03 | | 3.826E-02 | 6.127E-02 | 4.934E-03 | -0.114 |
| Y-91 | -1.898E-01 | | 2.259E+01 | 3.782E+01 | 3.099E+00 | -0.005 |
| NB-94 | -3.116E-03 | | 4.161E-02 | 6.864E-02 | 5.761E-03 | -0.045 |
| NB-95 | 2.444E-02 | | 5.530E-02 | 9.420E-02 | 8.163E-03 | 0.259 |
| NB-95M | 1.332E-01 | | 1.667E-01 | 2.543E-01 | 2.609E-02 | 0.524 |
| ZR-95 | -1.146E-02 | | 8.048E-02 | 1.311E-01 | 1.246E-02 | -0.087 |
| NB-97 | -4.190E-01 | | 3.640E-01 | 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 | 4.871E+00 | | 7.028E+00 | Half-Life too short | | |
| MO-99 | 7.857E+00 | | 2.150E+01 | 3.664E+01 | 5.551E+00 | 0.214 |
| TC-99M | -2.026E+12 | | 3.923E+12 | Half-Life too short | | |
| RH-101 | 4.172E-03 | | 3.819E-02 | 6.340E-02 | 5.579E-03 | 0.066 |
| RH-102 | -1.901E-02 | | 3.530E-02 | 5.414E-02 | 4.552E-03 | -0.351 |
| RU-103 | -5.385E-02 | | 5.161E-02 | 7.439E-02 | 1.046E-02 | -0.724 |
| RH-106 | 1.460E-01 | | 3.729E-01 | 6.410E-01 | 8.454E-02 | 0.228 |
| RU-106 | 1.460E-01 | | 3.726E-01 | 6.410E-01 | 5.355E-02 | 0.228 |
| AG-108M | -1.546E-02 | | 4.046E-02 | 6.339E-02 | 5.466E-03 | -0.244 |
| AG-110M | -1.326E-02 | | 4.046E-02 | 6.556E-02 | 5.558E-03 | -0.202 |
| IN-111 | 1.050E+00 | | 2.110E+00 | 3.179E+00 | 2.895E-01 | 0.330 |
| IN-113M | -1.314E-03 | | 5.555E-02 | 8.994E-02 | 7.491E-03 | -0.015 |
| SN-113 | -1.314E-03 | | 5.555E-02 | 8.994E-02 | 7.491E-03 | -0.015 |
| IN-114M | 1.813E-01 | | 2.399E-01 | 3.688E-01 | 3.220E-02 | 0.492 |
| CD-115 | -7.721E+00 | | 2.033E+01 | 3.323E+01 | 2.821E+00 | -0.232 |
| SN-117M | 1.194E-02 | | 6.914E-02 | 1.175E-01 | 1.000E-02 | 0.102 |
| SB-122 | 5.642E+00 | | 4.224E+00 | 7.655E+00 | 6.490E-01 | 0.737 |
| I-123 | 3.161E+01 | | 3.553E+01 | Half-Life too short | | |
| TE-123M | 1.469E-02 | | 3.301E-02 | 5.663E-02 | 4.851E-03 | 0.259 |
| I-124 | -1.018E+00 | | 1.138E+00 | 1.653E+00 | 1.390E-01 | -0.616 |
| SB-124 | -1.595E-02 | | 7.168E-02 | 1.105E-01 | 9.799E-03 | -0.144 |
| SB-125 | 1.324E-02 | | 1.131E-01 | 1.841E-01 | 1.549E-02 | 0.072 |
| TE-125M | 1.397E+01 | | 1.164E+01 | 1.931E+01 | 2.003E+00 | 0.723 |
| I-126 | -1.460E-01 | | 2.426E-01 | 3.843E-01 | 3.157E-02 | -0.380 |
| SB-126 | -1.026E-02 | | 2.190E-01 | 3.153E-01 | 2.672E-02 | -0.033 |
| SB-127 | 1.437E-01 | | 2.331E+00 | 3.892E+00 | 4.564E-01 | 0.037 |
| XE-127 | -2.465E-02 | | 5.593E-02 | 9.173E-02 | 8.110E-03 | -0.269 |
| I-131 | 1.541E-01 | | 1.688E-01 | 2.893E-01 | 2.596E-02 | 0.533 |
| TE-132 | -1.007E-01 | | 1.215E+00 | 2.015E+00 | 3.283E-01 | -0.050 |
| BA-133 | 1.497E-02 | | 5.919E-02 | 8.623E-02 | 1.137E-02 | 0.174 |
| I-133 | -1.600E-02 | | 1.531E-02 | Half-Life too short | | |
| CS-134 | 6.784E-02 | | 5.579E-02 | 1.005E-01 | 8.885E-03 | 0.675 |
| CS-135 | 3.022E-02 | | 2.170E-01 | 3.178E-01 | 3.314E-02 | 0.095 |
| I-135 | -1.670E+11 | | 4.021E+11 | Half-Life too short | | |
| CS-136 | -6.266E-02 | | 1.484E-01 | 2.289E-01 | 2.082E-02 | -0.274 |
| BA-137M | 4.294E-03 | | 4.354E-02 | 7.303E-02 | 5.982E-03 | 0.059 |
| CS-137 | 4.540E-03 | | 4.603E-02 | 7.720E-02 | 6.337E-03 | 0.059 |
| CE-139 | -7.428E-03 | | 3.470E-02 | 5.801E-02 | 4.940E-03 | -0.128 |
| BA-140 | -1.362E-01 | | 3.455E-01 | 5.511E-01 | 1.825E-01 | -0.247 |
| LA-140 | -9.062E-02 | | 1.134E-01 | 1.606E-01 | 1.385E-02 | -0.564 |
| CE-141 | 2.050E-02 | | 7.502E-02 | 1.283E-01 | 1.116E-02 | 0.160 |
| CE-143 | 1.025E-03 | | 2.562E-04 | Half-Life too short | | |
| CE-144 | 1.939E-02 | | 2.689E-01 | 3.789E-01 | 5.899E-02 | 0.051 |
| PM-144 | 1.348E-02 | | 4.029E-02 | 6.862E-02 | 5.743E-03 | 0.196 |
| PR-144 | 9.144E-01 | | 2.733E+00 | 4.655E+00 | 3.894E-01 | 0.196 |
| PM-146 | 1.005E-02 | | 5.260E-02 | 8.579E-02 | 9.012E-03 | 0.117 |
| ND-147 | 4.707E-01 | | 7.077E-01 | 1.244E+00 | 1.851E-01 | 0.378 |
| PM-149 | -2.125E+01 | | 2.036E+02 | 3.281E+02 | 5.197E+01 | -0.065 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | 2.996E-03 | | 1.205E-01 | 1.902E-01 | 1.759E-02 | 0.016 |
| GD-153 | -5.396E-02 | | 1.084E-01 | 1.495E-01 | 1.327E-02 | -0.361 |
| EU-154 | -4.188E-02 | | 1.556E-01 | 2.541E-01 | 2.829E-02 | -0.165 |
| EU-155 | 2.361E-02 | | 1.264E-01 | 2.032E-01 | 1.788E-02 | 0.116 |
| TB-160 | 9.840E-02 | | 1.731E-01 | 2.981E-01 | 2.688E-02 | 0.330 |
| HO-166M | -3.909E-02 | | 7.149E-02 | 1.129E-01 | 9.522E-03 | -0.346 |
| TM-171 | 1.302E+01 | | 3.787E+01 | 5.558E+01 | 4.377E+00 | 0.234 |
| LU-176 | 9.976E-04 | | 2.942E-02 | 4.248E-02 | 3.845E-03 | 0.023 |
| LU-177 | 3.816E+00 | + | 2.281E+00 | 2.746E+00 | 2.440E-01 | 1.390 |
| LU-177M | -2.167E-01 | | 2.250E-01 | 3.387E-01 | 2.767E-02 | -0.640 |
| HF-181 | -4.622E-02 | | 5.625E-02 | 8.421E-02 | 7.096E-03 | -0.549 |
| W-181 | 2.142E-01 | | 5.197E-01 | 7.651E-01 | 5.973E-02 | 0.280 |
| TA-182 | 2.504E-03 | | 2.676E-01 | 4.483E-01 | 3.695E-02 | 0.006 |
| RE-183 | -6.212E-03 | | 1.319E-01 | 2.187E-01 | 1.862E-02 | -0.028 |
| RE-184 | 1.465E-01 | | 2.778E-01 | 4.716E-01 | 4.305E-02 | 0.311 |
| OS-185 | 8.346E-03 | | 4.999E-02 | 8.446E-02 | 6.978E-03 | 0.099 |
| RE-188 | 1.815E-01 | | 1.995E-01 | 3.474E-01 | 2.958E-02 | 0.523 |
| W-188 | 6.758E+00 | | 9.513E+00 | 1.446E+01 | 1.319E+00 | 0.467 |
| IR-192 | -3.181E-02 | | 4.288E-02 | 6.709E-02 | 6.045E-03 | -0.474 |
| AU-195 | 2.357E-01 | | 2.784E-01 | 4.561E-01 | 4.027E-02 | 0.517 |
| TL-200 | -6.517E-04 | | 9.074E-04 | Half-Life too short | | |
| TL-201 | 4.512E+00 | | 1.237E+01 | 2.113E+01 | 1.801E+00 | 0.214 |
| TL-202 | 1.089E-02 | | 9.173E-02 | 1.491E-01 | 1.236E-02 | 0.073 |
| BI-207 | 3.301E-02 | | 6.789E-02 | 1.148E-01 | 9.952E-03 | 0.288 |
| TL-207 | 5.004E-01 | | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| PO-209 | -1.132E+00 | | 9.012E+00 | 1.454E+01 | 1.317E+00 | -0.078 |
| BI-210 | -1.293E+00 | | 5.225E+00 | 8.307E+00 | 7.842E-01 | -0.156 |
| PB-210 | -1.293E+00 | | 5.225E+00 | 8.307E+00 | 7.842E-01 | -0.156 |
| PO-210 | -1.293E+00 | | 5.225E+00 | 8.307E+00 | 7.122E-01 | -0.156 |
| PB-211 | 1.327E-01 | | 1.241E+00 | 2.017E+00 | 1.262E+00 | 0.066 |
| BI-212 | 1.834E+00 | + | 7.741E-01 | 8.748E-01 | 8.669E-02 | 2.097 |
| PO-215 | 5.004E-01 | | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| RN-219 | 1.701E-01 | | 5.452E-01 | 8.988E-01 | 1.325E-01 | 0.189 |
| RN-220 | 8.470E+00 | | 3.074E+01 | 5.271E+01 | 4.474E+00 | 0.161 |
| RA-223 | 5.004E-01 | | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| AC-227 | -1.873E-01 | | 4.690E-01 | 7.601E-01 | 1.189E-01 | -0.246 |
| TH-227 | -1.873E-01 | | 4.694E-01 | 7.601E-01 | 1.392E-01 | -0.246 |
| TH-229 | -4.185E-01 | | 5.811E-01 | 9.423E-01 | 8.256E-02 | -0.444 |
| PA-231 | 1.624E+00 | | 1.895E+00 | 3.130E+00 | 4.846E-01 | 0.519 |
| TH-231 | 5.004E-01 | | 8.428E-01 | 1.416E+00 | 2.529E-01 | 0.353 |
| U-231 | -1.400E+00 | | 1.955E+00 | 2.668E+00 | 2.386E-01 | -0.525 |
| PA-233 | 9.451E-02 | | 7.529E-02 | 1.315E-01 | 1.217E-02 | 0.719 |
| PA-234 | 8.888E-02 | | 3.772E-01 | 6.276E-01 | 1.189E-01 | 0.142 |
| PA-234M | -7.523E-01 | | 6.209E+00 | 1.003E+01 | 1.023E+00 | -0.075 |
| U-235 | 7.736E-02 | | 2.514E-01 | 4.222E-01 | 7.376E-02 | 0.183 |
| NP-236 | 4.862E-03 | | 9.264E-02 | 1.567E-01 | 1.334E-02 | 0.031 |
| NP-239 | 2.880E-02 | | 2.264E-01 | 3.617E-01 | 3.150E-02 | 0.080 |
| AM-241 | 3.570E-02 | | 2.128E-01 | 3.111E-01 | 2.564E-02 | 0.115 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -3.972E-02 | | 1.123E-01 | 1.763E-01 | 1.536E-02 | -0.225 |
| AM-246 | -5.980E-02 | | 1.824E-01 | 2.841E-01 | 2.445E-02 | -0.210 |
| CM-247 | 4.395E-02 | | 4.884E-02 | 8.317E-02 | 6.745E-03 | 0.528 |
| CF-249 | 4.015E-02 | | 4.969E-02 | 8.454E-02 | 6.857E-03 | 0.475 |
| CF-251 | 7.545E-02 | | 1.460E-01 | 2.503E-01 | 2.155E-02 | 0.301 |

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]G246328008          *
* Acquisition date   : 18-FEB-2010 11:47:35 Detector SN# :                 *
* Detector ID        : GAM01 Sensitivity      : 5.000                      *
* Geometry           : CAN Energy tolerance: 1.500                      *
* Elapsed live time  : 0 02:00:00.00 Abundance limit : 75.000             *
* Elapsed real time  : 0 02:00:01.24 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328008 Analyst initials: MXR1                 *
* Batch Number       : 950786 Sample Quantity : 1.2538E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 12-JAN-2010 15:15:52 MS Isotope :                 *
* MSD DPM             : 0.000 MSD Isotope :                 *
* LCS DPM             : 0.000 LCS Isotope :                 *
* LCSD DPM            : 0.000 LCSD Isotope :                 *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 3.550E+01 | 3.744E+00 | 3.049E-01 | 1.910E+00 |
| CD-109 | 2.737E+00 | 1.249E+00 | 9.128E-01 | 6.371E-01 |
| SN-126 | 2.683E-01 | 1.224E-01 | 9.273E-02 | 6.245E-02 |
| HG-203 | 1.003E-01 | 5.661E-02 | 4.124E-02 | 2.888E-02 |
| TL-208 | 4.928E-01 | 9.973E-02 | 3.520E-02 | 5.088E-02 |
| BI-211 | 4.247E+00 | 6.991E-01 | 1.951E-01 | 3.567E-01 |
| PB-212 | 1.836E+00 | 2.270E-01 | 5.286E-02 | 1.158E-01 |
| PO-212 | 1.836E+00 | 2.270E-01 | 5.286E-02 | 1.158E-01 |
| BI-214 | 1.323E+00 | 2.273E-01 | 6.971E-02 | 1.160E-01 |
| PB-214 | 1.477E+00 | 2.547E-01 | 6.802E-02 | 1.299E-01 |
| PO-214 | 1.477E+00 | 2.547E-01 | 6.802E-02 | 1.299E-01 |
| PO-216 | 1.836E+00 | 2.270E-01 | 5.286E-02 | 1.158E-01 |
| PO-218 | 1.477E+00 | 2.547E-01 | 6.802E-02 | 1.299E-01 |
| RA-224 | 4.124E+00 | 1.286E+00 | 6.016E-01 | 6.559E-01 |
| RA-226 | 1.323E+00 | 2.273E-01 | 6.971E-02 | 1.160E-01 |
| AC-228 | 1.931E+00 | 4.063E-01 | 1.422E-01 | 2.073E-01 |
| RA-228 | 1.931E+00 | 4.063E-01 | 1.422E-01 | 2.073E-01 |
| TH-228 | 1.868E+00 | 2.308E-01 | 5.376E-02 | 1.178E-01 |
| TH-230 | 1.323E+00 | 2.273E-01 | 6.971E-02 | 1.160E-01 |
| TH-232 | 1.931E+00 | 4.063E-01 | 1.422E-01 | 2.073E-01 |
| TH-234 | 4.222E+00 | 2.818E+00 | 1.311E+00 | 1.438E+00 |
| U-234 | 1.323E+00 | 2.273E-01 | 6.971E-02 | 1.160E-01 |
| NP-237 | 7.878E-01 | 3.931E-01 | 2.504E-01 | 2.006E-01 |
| U-238 | 4.222E+00 | 2.818E+00 | 1.311E+00 | 1.438E+00 |
| AM-243 | 4.082E-01 | 9.982E-02 | 5.511E-02 | 5.093E-02 |
| ANH-511 | 1.253E-01 | 7.418E-02 | 2.575E-02 | 3.785E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 2.138E-01 | 3.936E-01 | 3.401E-01 | 2.008E-01 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| NA-22 | -2.056E-02 | 5.513E-02 | 4.557E-02 | 2.813E-02 | NOT IDENT. |
| NA-24 | -8.738E+05 | 7.175E+06 | 0.000E+00 | 3.660E+06 | SHORT HLIF |
| AL-26 | 4.300E-03 | 2.482E-02 | 2.157E-02 | 1.266E-02 | NOT IDENT. |
| TI-44 | 4.475E-01 | 7.137E-02 | 4.788E-02 | 3.641E-02 | FAIL ABUN |
| SC-46 | -3.517E-02 | 5.010E-02 | 3.919E-02 | 2.556E-02 | FAIL ABUN |
| V-48 | -5.925E-02 | 8.607E-02 | 6.594E-02 | 4.391E-02 | NOT IDENT. |
| CR-51 | -1.105E-01 | 4.677E-01 | 3.941E-01 | 2.386E-01 | NOT IDENT. |
| MN-52 | 2.937E-02 | 3.323E-01 | 2.843E-01 | 1.695E-01 | NOT IDENT. |
| MN-54 | 1.805E-02 | 4.989E-02 | 4.290E-02 | 2.545E-02 | NOT IDENT. |
| CO-56 | -5.259E-02 | 4.710E-02 | 3.515E-02 | 2.403E-02 | NOT IDENT. |
| CO-57 | -1.586E-03 | 3.016E-02 | 2.521E-02 | 1.539E-02 | NOT IDENT. |
| CO-58 | -1.018E-03 | 4.937E-02 | 4.170E-02 | 2.519E-02 | NOT IDENT. |
| FE-59 | -6.961E-02 | 1.155E-01 | 8.913E-02 | 5.895E-02 | NOT IDENT. |
| CO-60 | -1.389E-02 | 4.758E-02 | 3.907E-02 | 2.427E-02 | NOT IDENT. |
| ZN-65 | 3.617E-02 | 1.196E-01 | 8.869E-02 | 6.102E-02 | NOT IDENT. |
| GE-68 | -3.606E-01 | 1.618E+00 | 1.308E+00 | 8.255E-01 | NOT IDENT. |
| AS-73 | 5.524E-01 | 1.100E+00 | 9.755E-01 | 5.611E-01 | NOT IDENT. |
| AS-74 | -1.791E-02 | 1.126E-01 | 9.635E-02 | 5.747E-02 | NOT IDENT. |
| SE-75 | 2.311E-02 | 5.336E-02 | 4.558E-02 | 2.722E-02 | NOT IDENT. |
| BR-77 | 1.254E+01 | 2.201E+01 | 1.898E+01 | 1.123E+01 | FAIL ABUN |
| SR-82 | -4.342E-01 | 4.569E-01 | 3.523E-01 | 2.331E-01 | NOT IDENT. |
| RB-83 | 5.024E-02 | 8.564E-02 | 7.390E-02 | 4.369E-02 | NOT IDENT. |
| RB-84 | 3.703E-02 | 8.981E-02 | 7.827E-02 | 4.582E-02 | NOT IDENT. |
| KR-85 | 1.256E+01 | 1.022E+01 | 8.164E+00 | 5.212E+00 | NOT IDENT. |
| SR-85 | 6.568E-02 | 5.342E-02 | 4.269E-02 | 2.725E-02 | NOT IDENT. |
| RB-86 | -9.489E-02 | 1.098E+00 | 8.998E-01 | 5.600E-01 | NOT IDENT. |
| Y-88 | 3.632E-02 | 4.164E-02 | 3.992E-02 | 2.124E-02 | NOT IDENT. |
| ZR-88 | -6.955E-03 | 3.750E-02 | 3.121E-02 | 1.913E-02 | NOT IDENT. |
| Y-91 | -1.898E-01 | 2.213E+01 | 1.896E+01 | 1.129E+01 | NOT IDENT. |
| NB-94 | -3.116E-03 | 4.078E-02 | 3.468E-02 | 2.081E-02 | NOT IDENT. |
| NB-95 | 2.444E-02 | 5.419E-02 | 4.754E-02 | 2.765E-02 | NOT IDENT. |
| NB-95M | 1.332E-01 | 1.634E-01 | 1.305E-01 | 8.337E-02 | NOT IDENT. |
| ZR-95 | -1.146E-02 | 7.887E-02 | 6.618E-02 | 4.024E-02 | NOT IDENT. |
| NB-97 | -4.190E+05 | 7.135E+05 | 0.000E+00 | 3.640E+05 | SHORT HLIF |
| ZR-97 | 4.871E+06 | 1.378E+07 | 0.000E+00 | 7.028E+06 | SHORT HLIF |
| MO-99 | 7.857E+00 | 2.107E+01 | 1.850E+01 | 1.075E+01 | NOT IDENT. |
| TC-99M | -2.026E+18 | 7.688E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 4.172E-03 | 3.742E-02 | 3.260E-02 | 1.909E-02 | NOT IDENT. |
| RH-102 | -1.901E-02 | 3.460E-02 | 2.750E-02 | 1.765E-02 | NOT IDENT. |
| RU-103 | -5.385E-02 | 5.057E-02 | 3.777E-02 | 2.580E-02 | FAIL ABUN |
| RH-106 | 1.460E-01 | 3.655E-01 | 3.244E-01 | 1.865E-01 | FAIL ABUN |
| RU-106 | 1.460E-01 | 3.652E-01 | 3.244E-01 | 1.863E-01 | FAIL ABUN |
| AG-108M | -1.546E-02 | 3.965E-02 | 3.224E-02 | 2.023E-02 | NOT IDENT. |
| AG-110M | -1.326E-02 | 3.965E-02 | 3.315E-02 | 2.023E-02 | NOT IDENT. |
| IN-111 | 1.050E+00 | 2.067E+00 | 1.630E+00 | 1.055E+00 | NOT IDENT. |
| IN-113M | -1.314E-03 | 5.444E-02 | 4.582E-02 | 2.778E-02 | NOT IDENT. |
| SN-113 | -1.314E-03 | 5.444E-02 | 4.582E-02 | 2.778E-02 | NOT IDENT. |
| IN-114M | 1.813E-01 | 2.351E-01 | 1.898E-01 | 1.199E-01 | NOT IDENT. |
| CD-115 | -7.721E+00 | 1.993E+01 | 1.686E+01 | 1.017E+01 | NOT IDENT. |
| SN-117M | 1.194E-02 | 6.776E-02 | 6.061E-02 | 3.457E-02 | NOT IDENT. |
| SB-122 | 5.642E+00 | 4.139E+00 | 3.880E+00 | 2.112E+00 | NOT IDENT. |
| I-123 | 3.161E+07 | 6.963E+07 | 0.000E+00 | 3.553E+07 | SHORT HLIF |
| TE-123M | 1.469E-02 | 3.235E-02 | 2.921E-02 | 1.651E-02 | NOT IDENT. |
| I-124 | -1.018E+00 | 1.115E+00 | 8.370E-01 | 5.688E-01 | NOT IDENT. |
| SB-124 | -1.595E-02 | 7.025E-02 | 5.514E-02 | 3.584E-02 | FAIL ABUN |
| SB-125 | 1.324E-02 | 1.109E-01 | 9.365E-02 | 5.656E-02 | FAIL ABUN |
| TE-125M | 1.397E+01 | 1.141E+01 | 1.001E+01 | 5.820E+00 | NOT IDENT. |
| I-126 | -1.460E-01 | 2.378E-01 | 1.943E-01 | 1.213E-01 | NOT IDENT. |
| SB-126 | -1.026E-02 | 2.147E-01 | 1.592E-01 | 1.095E-01 | FAIL ABUN |
| SB-127 | 1.437E-01 | 2.285E+00 | 1.967E+00 | 1.166E+00 | NOT IDENT. |
| XE-127 | -2.465E-02 | 5.481E-02 | 4.716E-02 | 2.796E-02 | NOT IDENT. |
| I-131 | 1.541E-01 | 1.655E-01 | 1.475E-01 | 8.442E-02 | NOT IDENT. |
| TE-132 | -1.007E-01 | 1.191E+00 | 1.034E+00 | 6.076E-01 | NOT IDENT. |
| BA-133 | 1.497E-02 | 5.800E-02 | 4.399E-02 | 2.959E-02 | FAIL ABUN |
| I-133 | -1.600E+04 | 3.001E+04 | 0.000E+00 | 1.531E+04 | SHORT HLIF |
| CS-134 | 6.784E-02 | 5.467E-02 | 5.071E-02 | 2.789E-02 | NOT IDENT. |
| CS-135 | 3.022E-02 | 2.127E-01 | 1.627E-01 | 1.085E-01 | NOT IDENT. |
| I-135 | -1.670E+17 | 7.882E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -6.266E-02 | 1.455E-01 | 1.150E-01 | 7.422E-02 | FAIL ABUN |
| BA-137M | 4.294E-03 | 4.267E-02 | 3.693E-02 | 2.177E-02 | NOT IDENT. |
| CS-137 | 4.540E-03 | 4.511E-02 | 3.904E-02 | 2.301E-02 | NOT IDENT. |
| CE-139 | -7.428E-03 | 3.401E-02 | 2.990E-02 | 1.735E-02 | NOT IDENT. |
| BA-140 | -1.362E-01 | 3.386E-01 | 2.795E-01 | 1.727E-01 | NOT IDENT. |
| LA-140 | -9.062E-02 | 1.111E-01 | 8.016E-02 | 5.670E-02 | NOT IDENT. |
| CE-141 | 2.050E-02 | 7.352E-02 | 6.625E-02 | 3.751E-02 | NOT IDENT. |
| CE-143 | 1.025E+03 | 5.021E+02 | 0.000E+00 | 2.562E+02 | SHORT HLIF |
| CE-144 | 1.939E-02 | 2.635E-01 | 1.959E-01 | 1.344E-01 | NOT IDENT. |
| PM-144 | 1.348E-02 | 3.948E-02 | 3.468E-02 | 2.014E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | 9.144E-01 | 2.678E+00 | 2.352E+00 | 1.366E+00 | NOT IDENT. |
| PM-146 | 1.005E-02 | 5.155E-02 | 4.361E-02 | 2.630E-02 | NOT IDENT. |
| ND-147 | 4.707E-01 | 6.936E-01 | 6.312E-01 | 3.539E-01 | NOT IDENT. |
| PM-149 | -2.125E+01 | 1.995E+02 | 1.679E+02 | 1.018E+02 | NOT IDENT. |
| EU-152 | 2.996E-03 | 1.181E-01 | 9.708E-02 | 6.023E-02 | NOT IDENT. |
| GD-153 | -5.396E-02 | 1.062E-01 | 7.762E-02 | 5.420E-02 | NOT IDENT. |
| EU-154 | -4.188E-02 | 1.525E-01 | 1.273E-01 | 7.780E-02 | NOT IDENT. |
| EU-155 | 2.361E-02 | 1.239E-01 | 1.054E-01 | 6.322E-02 | FAIL ABUN |
| TB-160 | 9.840E-02 | 1.696E-01 | 1.501E-01 | 8.654E-02 | FAIL ABUN |
| HO-166M | -3.909E-02 | 7.006E-02 | 5.701E-02 | 3.574E-02 | NOT IDENT. |
| TM-171 | 1.302E+01 | 3.712E+01 | 2.901E+01 | 1.894E+01 | NOT IDENT. |
| LU-176 | 9.976E-04 | 2.883E-02 | 2.171E-02 | 1.471E-02 | FAIL ABUN |
| LU-177 | 3.816E+00 | 2.235E+00 | 1.411E+00 | 1.140E+00 | FAIL ABUN |
| LU-177M | -2.167E-01 | 2.205E-01 | 1.724E-01 | 1.125E-01 | NOT IDENT. |
| HF-181 | -4.622E-02 | 5.512E-02 | 4.277E-02 | 2.812E-02 | NOT IDENT. |
| W-181 | 2.142E-01 | 5.093E-01 | 3.995E-01 | 2.599E-01 | NOT IDENT. |
| TA-182 | 2.504E-03 | 2.622E-01 | 2.247E-01 | 1.338E-01 | FAIL ABUN |
| RE-183 | -6.212E-03 | 1.292E-01 | 1.128E-01 | 6.593E-02 | FAIL ABUN |
| RE-184 | 1.465E-01 | 2.723E-01 | 2.417E-01 | 1.389E-01 | NOT IDENT. |
| OS-185 | 8.346E-03 | 4.899E-02 | 4.272E-02 | 2.499E-02 | NOT IDENT. |
| RE-188 | 1.815E-01 | 1.955E-01 | 1.792E-01 | 9.974E-02 | NOT IDENT. |
| W-188 | 6.758E+00 | 9.323E+00 | 7.400E+00 | 4.756E+00 | FAIL ABUN |
| IR-192 | -3.181E-02 | 4.202E-02 | 3.428E-02 | 2.144E-02 | FAIL ABUN |
| AU-195 | 2.357E-01 | 2.729E-01 | 2.368E-01 | 1.392E-01 | FAIL ABUN |
| TL-200 | -6.517E+02 | 1.779E+03 | 0.000E+00 | 9.074E+02 | SHORT HLIF |
| TL-201 | 4.512E+00 | 1.212E+01 | 1.089E+01 | 6.185E+00 | NOT IDENT. |
| TL-202 | 1.089E-02 | 8.990E-02 | 7.584E-02 | 4.587E-02 | NOT IDENT. |
| BI-207 | 3.301E-02 | 6.653E-02 | 5.766E-02 | 3.395E-02 | FAIL ABUN |
| TL-207 | 5.004E-01 | 8.260E-01 | 7.233E-01 | 4.214E-01 | FAIL ABUN |
| PO-209 | -1.132E+00 | 8.832E+00 | 7.320E+00 | 4.506E+00 | NOT IDENT. |
| BI-210 | -1.293E+00 | 5.121E+00 | 4.357E+00 | 2.613E+00 | NOT IDENT. |
| PB-210 | -1.293E+00 | 5.121E+00 | 4.357E+00 | 2.613E+00 | NOT IDENT. |
| PO-210 | -1.293E+00 | 5.121E+00 | 4.357E+00 | 2.613E+00 | NOT IDENT. |
| PB-211 | 1.327E-01 | 1.216E+00 | 1.027E+00 | 6.203E-01 | NOT IDENT. |
| BI-212 | 1.834E+00 | 7.586E-01 | 4.417E-01 | 3.871E-01 | FAIL ABUN |
| PO-215 | 5.004E-01 | 8.260E-01 | 7.233E-01 | 4.214E-01 | FAIL ABUN |
| RN-219 | 1.701E-01 | 5.343E-01 | 4.577E-01 | 2.726E-01 | FAIL ABUN |
| RN-220 | 8.470E+00 | 3.012E+01 | 2.672E+01 | 1.537E+01 | NOT IDENT. |
| RA-223 | 5.004E-01 | 8.260E-01 | 7.233E-01 | 4.214E-01 | FAIL ABUN |
| AC-227 | -1.873E-01 | 4.596E-01 | 3.895E-01 | 2.345E-01 | FAIL ABUN |
| TH-227 | -1.873E-01 | 4.600E-01 | 3.895E-01 | 2.347E-01 | FAIL ABUN |
| TH-229 | -4.185E-01 | 5.695E-01 | 4.848E-01 | 2.906E-01 | FAIL ABUN |
| PA-231 | 1.624E+00 | 1.857E+00 | 1.602E+00 | 9.476E-01 | FAIL ABUN |
| TH-231 | 5.004E-01 | 8.260E-01 | 7.233E-01 | 4.214E-01 | FAIL ABUN |
| U-231 | -1.400E+00 | 1.916E+00 | 1.386E+00 | 9.775E-01 | FAIL ABUN |
| PA-233 | 9.451E-02 | 7.378E-02 | 6.720E-02 | 3.764E-02 | FAIL ABUN |
| PA-234 | 8.888E-02 | 3.696E-01 | 3.157E-01 | 1.886E-01 | FAIL ABUN |
| PA-234M | -7.523E-01 | 6.084E+00 | 5.044E+00 | 3.104E+00 | NOT IDENT. |
| U-235 | 7.736E-02 | 2.464E-01 | 2.181E-01 | 1.257E-01 | FAIL ABUN |
| NP-236 | 4.862E-03 | 9.079E-02 | 8.080E-02 | 4.632E-02 | NOT IDENT. |
| NP-239 | 2.880E-02 | 2.219E-01 | 1.873E-01 | 1.132E-01 | FAIL ABUN |
| AM-241 | 3.570E-02 | 2.086E-01 | 1.626E-01 | 1.064E-01 | NOT IDENT. |
| CM-243 | -3.972E-02 | 1.101E-01 | 9.149E-02 | 5.617E-02 | FAIL ABUN |
| AM-246 | -5.980E-02 | 1.788E-01 | 1.427E-01 | 9.122E-02 | NOT IDENT. |
| CM-247 | 4.395E-02 | 4.787E-02 | 4.235E-02 | 2.442E-02 | FAIL ABUN |
| CF-249 | 4.015E-02 | 4.870E-02 | 4.307E-02 | 2.484E-02 | NOT IDENT. |
| CF-251 | 7.545E-02 | 1.431E-01 | 1.290E-01 | 7.302E-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 | 310.1594 |
| 46.50 | 310.1594 |
| 46.50 | 310.1594 |
| 48.70 | 277.6554 |
| 49.72 | 298.8464 |
| 51.35 | 312.2386 |
| 52.39 | 315.9926 |
| 52.97 | 286.2745 |
| 53.15 | 286.3748 |
| 53.44 | 288.6140 |
| 54.07 | 281.6914 |
| 56.28 | 312.1123 |
| 56.28 | 312.1138 |
| 57.37 | 0.0000 |
| 57.53 | 332.7279 |
| 57.53 | 332.7292 |
| 57.60 | 332.7712 |
| 57.98 | 312.5863 |
| 57.98 | 312.5863 |
| 59.32 | 302.3379 |
| 59.32 | 302.3379 |
| 59.40 | 302.3818 |
| 59.54 | 324.5138 |
| 59.72 | 324.6207 |
| 60.01 | 307.4487 |
| 61.10 | 325.4332 |
| 61.14 | 325.4564 |
| 61.30 | 325.5503 |
| 63.00 | 361.4098 |
| 63.29 | 361.5946 |
| 63.29 | 361.5946 |
| 63.58 | 361.7794 |
| 64.28 | 362.2230 |
| 65.12 | 405.7093 |
| 65.20 | 405.7657 |
| 65.20 | 405.7657 |
| 66.05 | 377.6754 |
| 66.72 | 376.5121 |
| 66.83 | 382.9669 |
| 66.91 | 383.0182 |
| 67.20 | 383.2068 |
| 67.20 | 383.2068 |
| 67.75 | 377.1711 |
| 67.85 | 396.4174 |
| 68.90 | 411.5290 |
| 68.90 | 411.5290 |
| 69.30 | 400.5871 |
| 69.67 | 424.8851 |
| 70.82 | 414.4471 |
| 70.82 | 414.4471 |
| 70.83 | 414.4531 |
| 72.80 | 404.5046 |
| 72.87 | 404.5506 |
| 72.87 | 404.5506 |
| 74.67 | 429.9649 |
| 74.81 | 430.0623 |
| 74.81 | 430.0623 |
| 74.81 | 430.0623 |
| 74.81 | 430.0623 |
| 74.81 | 430.0623 |
| 74.81 | 430.0623 |
| 74.81 | 430.0623 |
| 74.97 | 430.1699 |
| 75.28 | 430.3829 |
| 75.70 | 430.6671 |
| 77.11 | 431.6209 |
| 77.11 | 431.6209 |

| | |
|--------|----------|
| 77.11 | 431.6209 |
| 77.11 | 431.6209 |
| 77.11 | 431.6209 |
| 77.11 | 431.6209 |
| 77.11 | 431.6209 |
| 78.38 | 421.0924 |
| 79.62 | 368.1397 |
| 79.80 | 369.8708 |
| 79.80 | 369.8708 |
| 80.11 | 370.0457 |
| 80.18 | 370.0839 |
| 80.30 | 407.6557 |
| 80.30 | 407.6557 |
| 80.57 | 407.8236 |
| 81.00 | 450.5299 |
| 81.07 | 463.6386 |
| 81.07 | 463.6386 |
| 81.07 | 463.6386 |
| 81.07 | 463.6386 |
| 82.60 | 452.9244 |
| 83.37 | 460.3232 |
| 83.78 | 472.0781 |
| 83.78 | 472.0781 |
| 83.78 | 472.0781 |
| 83.78 | 472.0781 |
| 84.21 | 437.9348 |
| 84.90 | 418.6765 |
| 85.43 | 420.6465 |
| 86.29 | 501.7891 |
| 86.50 | 501.9427 |
| 86.54 | 501.9706 |
| 86.59 | 526.6968 |
| 86.72 | 526.7969 |
| 86.79 | 577.3378 |
| 86.94 | 577.4635 |
| 87.30 | 583.2579 |
| 87.30 | 583.2579 |
| 87.30 | 583.2579 |
| 87.30 | 583.2579 |
| 87.30 | 583.2579 |
| 87.30 | 583.2579 |
| 87.57 | 609.8569 |
| 87.88 | 573.8501 |
| 88.03 | 573.9749 |
| 88.36 | 534.6425 |
| 88.47 | 534.7266 |
| 89.95 | 535.8563 |
| 91.11 | 536.7338 |
| 92.29 | 613.9473 |
| 92.38 | 614.0264 |
| 92.38 | 614.0264 |
| 93.35 | 490.7749 |
| 94.00 | 317.6815 |
| 94.67 | 319.6377 |
| 94.67 | 319.6392 |
| 94.90 | 318.0749 |
| 94.90 | 318.0749 |
| 94.90 | 318.0749 |
| 94.90 | 318.0749 |
| 95.87 | 375.1917 |
| 95.87 | 375.1917 |
| 96.73 | 397.3343 |
| 97.43 | 352.5901 |
| 98.44 | 315.9208 |
| 98.44 | 315.9222 |
| 98.88 | 313.6524 |
| 99.55 | 288.2370 |
| 99.55 | 288.2370 |
| 99.86 | 297.2963 |
| 100.00 | 297.3518 |
| 100.10 | 296.2744 |
| 103.18 | 346.8628 |
| 103.76 | 311.1770 |
| 105.00 | 286.9204 |
| 105.31 | 306.1702 |
| 108.00 | 360.3061 |
| 109.28 | 303.1889 |

| | |
|--------|----------|
| 111.00 | 318.5790 |
| 111.00 | 318.5790 |
| 111.76 | 347.2476 |
| 112.95 | 363.6670 |
| 115.19 | 297.4270 |
| 116.30 | 301.2499 |
| 117.00 | 298.0762 |
| 117.00 | 298.0762 |
| 117.66 | 310.8850 |
| 121.11 | 276.5798 |
| 121.62 | 293.9701 |
| 121.78 | 303.2137 |
| 122.06 | 303.3124 |
| 122.32 | 304.5543 |
| 122.32 | 304.5543 |
| 122.32 | 304.5543 |
| 122.32 | 304.5543 |
| 123.07 | 292.6270 |
| 127.23 | 305.1245 |
| 129.76 | 300.2012 |
| 131.20 | 303.0079 |
| 133.02 | 301.8736 |
| 133.54 | 281.0965 |
| 135.34 | 309.2921 |
| 136.00 | 307.1124 |
| 136.25 | 309.0729 |
| 136.48 | 309.1497 |
| 140.51 | 336.8812 |
| 140.51 | 0.0000 |
| 142.18 | 323.3790 |
| 142.65 | 322.6598 |
| 143.76 | 317.7411 |
| 144.24 | 319.6665 |
| 144.24 | 319.6665 |
| 144.24 | 319.6665 |
| 144.24 | 319.6665 |
| 145.22 | 314.6914 |
| 145.44 | 314.7620 |
| 147.16 | 315.3242 |
| 152.43 | 290.3114 |
| 152.70 | 289.5002 |
| 153.22 | 285.1953 |
| 154.21 | 284.5888 |
| 154.21 | 284.5888 |
| 154.21 | 284.5888 |
| 154.21 | 284.5888 |
| 155.03 | 279.4653 |
| 156.02 | 311.9145 |
| 158.56 | 289.4043 |
| 159.00 | 0.0000 |
| 159.00 | 283.2553 |
| 160.31 | 300.6724 |
| 161.27 | 304.5470 |
| 162.32 | 291.3681 |
| 162.64 | 291.4596 |
| 163.35 | 296.1607 |
| 163.89 | 298.1152 |
| 165.85 | 296.8736 |
| 167.43 | 279.2462 |
| 171.28 | 276.6343 |
| 171.86 | 279.5057 |
| 172.10 | 279.5691 |
| 176.55 | 263.4056 |
| 176.60 | 263.4166 |
| 181.06 | 289.9303 |
| 184.41 | 276.1158 |
| 185.71 | 273.8616 |
| 186.00 | 273.9321 |
| 190.27 | 246.5431 |
| 192.34 | 263.0449 |
| 193.63 | 276.6900 |
| 197.04 | 242.2323 |
| 198.01 | 240.5757 |
| 198.60 | 226.7563 |
| 200.40 | 275.5014 |
| 201.83 | 277.6949 |
| 202.84 | 270.4701 |
| 205.31 | 240.7473 |

| | |
|--------|----------|
| 208.36 | 266.8370 |
| 208.81 | 266.9370 |
| 209.75 | 260.7629 |
| 209.75 | 260.7629 |
| 210.97 | 238.8649 |
| 215.65 | 223.6842 |
| 216.55 | 241.4531 |
| 218.09 | 227.5850 |
| 222.10 | 239.6775 |
| 223.80 | 246.6362 |
| 226.40 | 233.8288 |
| 227.00 | 224.4279 |
| 227.08 | 221.5893 |
| 227.20 | 221.6106 |
| 228.16 | 237.0033 |
| 228.18 | 237.0071 |
| 228.18 | 237.0071 |
| 231.56 | 0.0000 |
| 235.69 | 237.4138 |
| 236.00 | 228.2781 |
| 236.00 | 228.2781 |
| 238.63 | 206.2784 |
| 238.63 | 206.2784 |
| 238.63 | 206.2784 |
| 238.63 | 206.2784 |
| 239.00 | 206.3358 |
| 240.98 | 206.6409 |
| 241.98 | 206.7951 |
| 241.98 | 206.7951 |
| 241.98 | 206.7951 |
| 244.69 | 188.1275 |
| 245.39 | 177.4246 |
| 247.94 | 176.4692 |
| 248.90 | 201.0826 |
| 249.79 | 213.7886 |
| 252.40 | 195.7784 |
| 252.85 | 185.1770 |
| 252.85 | 185.1770 |
| 254.15 | 0.0000 |
| 256.20 | 217.6938 |
| 256.20 | 217.6938 |
| 260.50 | 207.6373 |
| 260.90 | 206.7207 |
| 262.80 | 197.2317 |
| 264.65 | 177.6550 |
| 268.24 | 205.4295 |
| 268.79 | 191.3905 |
| 269.46 | 196.1884 |
| 269.46 | 196.1884 |
| 269.46 | 196.1884 |
| 269.46 | 196.1884 |
| 271.23 | 199.5692 |
| 273.65 | 157.4023 |
| 276.40 | 176.0931 |
| 277.35 | 179.8895 |
| 277.60 | 167.6888 |
| 277.60 | 167.6888 |
| 278.00 | 161.8129 |
| 278.60 | 157.9321 |
| 279.20 | 180.1150 |
| 279.53 | 180.1539 |
| 280.46 | 169.1990 |
| 281.68 | 169.3374 |
| 283.67 | 151.6777 |
| 284.30 | 143.6725 |
| 285.00 | 168.5214 |
| 285.90 | 176.5578 |
| 286.10 | 186.5026 |
| 286.10 | 186.5026 |
| 287.40 | 190.6318 |
| 288.45 | 0.0000 |
| 290.67 | 143.2815 |
| 290.80 | 143.2947 |
| 291.72 | 154.5322 |
| 293.26 | 0.0000 |
| 293.70 | 162.7094 |
| 295.21 | 166.6611 |
| 295.21 | 166.6611 |

| | |
|--------|----------|
| 295.21 | 166.6611 |
| 295.96 | 166.7401 |
| 296.50 | 166.7987 |
| 297.23 | 166.8777 |
| 298.57 | 167.0229 |
| 299.80 | 167.1529 |
| 299.80 | 167.1529 |
| 300.09 | 167.1860 |
| 300.09 | 167.1860 |
| 300.09 | 167.1860 |
| 300.09 | 167.1860 |
| 300.12 | 167.1886 |
| 301.29 | 167.3134 |
| 302.84 | 137.9947 |
| 303.76 | 112.3862 |
| 303.91 | 112.3982 |
| 304.40 | 115.6447 |
| 304.40 | 115.6447 |
| 304.84 | 118.8896 |
| 306.84 | 119.0414 |
| 308.46 | 164.0496 |
| 311.98 | 124.0642 |
| 316.51 | 168.9214 |
| 318.01 | 141.7410 |
| 319.02 | 164.1160 |
| 319.41 | 164.1555 |
| 320.08 | 161.1811 |
| 323.87 | 162.5708 |
| 323.87 | 162.5708 |
| 323.87 | 162.5708 |
| 323.87 | 162.5708 |
| 325.23 | 218.6349 |
| 328.77 | 166.1090 |
| 333.44 | 196.2100 |
| 334.20 | 165.2198 |
| 334.20 | 165.2198 |
| 334.30 | 165.2297 |
| 338.28 | 145.5318 |
| 338.28 | 145.5318 |
| 338.28 | 145.5318 |
| 338.28 | 145.5318 |
| 338.32 | 145.5340 |
| 338.32 | 145.5340 |
| 338.32 | 145.5340 |
| 340.50 | 155.9823 |
| 340.57 | 155.9893 |
| 344.27 | 139.8723 |
| 345.85 | 148.2363 |
| 350.59 | 0.0000 |
| 351.07 | 132.1621 |
| 351.92 | 132.2266 |
| 351.92 | 132.2266 |
| 351.92 | 132.2266 |
| 355.39 | 0.0000 |
| 356.01 | 130.8785 |
| 364.48 | 118.6045 |
| 366.43 | 115.6103 |
| 367.43 | 125.0537 |
| 367.94 | 0.0000 |
| 369.80 | 133.5664 |
| 374.96 | 108.8306 |
| 383.85 | 134.5957 |
| 387.95 | 116.9755 |
| 388.63 | 105.4230 |
| 391.69 | 126.7126 |
| 391.69 | 126.7126 |
| 392.90 | 126.7950 |
| 398.62 | 132.4768 |
| 400.65 | 138.9836 |
| 401.10 | 140.0788 |
| 401.81 | 138.0060 |
| 402.60 | 127.4432 |
| 404.84 | 143.5405 |
| 410.95 | 106.6620 |
| 411.60 | 112.0335 |
| 413.65 | 142.0573 |
| 414.70 | 121.8295 |
| 415.30 | 104.7620 |

| | |
|--------|----------|
| 415.76 | 110.1337 |
| 417.63 | 0.0000 |
| 418.52 | 113.5000 |
| 423.70 | 123.4597 |
| 427.08 | 115.0655 |
| 427.89 | 108.6579 |
| 432.53 | 113.2224 |
| 433.93 | 114.3783 |
| 439.47 | 98.4621 |
| 439.56 | 98.4662 |
| 439.89 | 100.6459 |
| 443.98 | 83.4973 |
| 444.90 | 87.8744 |
| 445.03 | 85.7095 |
| 445.03 | 85.7095 |
| 445.03 | 85.7095 |
| 445.03 | 85.7095 |
| 453.90 | 96.9730 |
| 463.38 | 103.9773 |
| 468.07 | 94.7729 |
| 473.00 | 106.6458 |
| 475.06 | 101.2455 |
| 475.35 | 91.3524 |
| 476.78 | 96.9200 |
| 477.59 | 88.1421 |
| 477.96 | 88.1567 |
| 482.03 | 114.8180 |
| 484.57 | 88.4253 |
| 487.03 | 71.9259 |
| 490.36 | 0.0000 |
| 492.35 | 76.5363 |
| 497.08 | 103.3776 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 76.0512 |
| 511.00 | 76.0564 |
| 511.85 | 76.0844 |
| 511.85 | 76.0844 |
| 513.99 | 98.5542 |
| 513.99 | 98.5542 |
| 520.41 | 81.9846 |
| 520.65 | 81.9936 |
| 527.90 | 73.9121 |
| 528.96 | 0.0000 |
| 529.64 | 87.4989 |
| 529.87 | 0.0000 |
| 531.02 | 69.4974 |
| 537.32 | 90.5005 |
| 543.00 | 78.0173 |
| 546.56 | 0.0000 |
| 549.76 | 80.9670 |
| 552.65 | 84.7081 |
| 555.20 | 83.8849 |
| 563.23 | 75.0152 |
| 563.90 | 79.6105 |
| 568.70 | 92.6014 |
| 569.32 | 88.9577 |
| 569.50 | 98.1365 |
| 569.67 | 98.1417 |
| 573.80 | 88.2000 |
| 574.00 | 85.4506 |
| 574.64 | 85.4733 |
| 578.91 | 101.2720 |
| 579.30 | 0.0000 |
| 583.14 | 81.1529 |
| 585.48 | 76.9226 |
| 591.81 | 77.7328 |
| 592.07 | 72.1881 |
| 593.00 | 75.9161 |
| 595.88 | 82.4901 |
| 600.56 | 88.2136 |
| 602.52 | 0.0000 |
| 602.71 | 99.9047 |
| 602.71 | 99.9047 |
| 603.60 | 86.7686 |
| 604.41 | 79.0463 |
| 604.70 | 74.4063 |
| 609.31 | 89.4469 |

| | |
|--------|---------|
| 609.31 | 89.4469 |
| 609.31 | 89.4469 |
| 609.31 | 89.4469 |
| 610.33 | 89.4820 |
| 612.46 | 68.4098 |
| 614.37 | 71.5718 |
| 618.01 | 80.6320 |
| 621.84 | 69.2802 |
| 621.84 | 69.2802 |
| 631.29 | 63.8911 |
| 633.02 | 74.2747 |
| 633.10 | 75.2168 |
| 634.78 | 68.6781 |
| 635.90 | 81.8854 |
| 636.97 | 83.8004 |
| 645.85 | 72.7421 |
| 646.12 | 67.0808 |
| 656.30 | 75.8672 |
| 657.75 | 74.9574 |
| 657.90 | 0.0000 |
| 661.65 | 79.8164 |
| 661.65 | 79.8164 |
| 664.57 | 0.0000 |
| 666.33 | 87.5662 |
| 666.33 | 87.5662 |
| 675.00 | 70.6541 |
| 677.61 | 73.5861 |
| 685.20 | 73.7854 |
| 692.80 | 68.2179 |
| 695.00 | 72.1179 |
| 696.49 | 68.3063 |
| 696.49 | 68.3063 |
| 697.00 | 65.4317 |
| 697.49 | 72.1802 |
| 698.33 | 77.9783 |
| 698.50 | 77.0195 |
| 699.00 | 75.1074 |
| 702.63 | 82.9157 |
| 706.10 | 74.3268 |
| 706.58 | 0.0000 |
| 706.67 | 77.2383 |
| 709.31 | 69.5777 |
| 711.68 | 75.4387 |
| 713.82 | 60.0080 |
| 717.42 | 63.5277 |
| 720.50 | 66.2897 |
| 721.93 | 0.0000 |
| 722.20 | 69.5636 |
| 722.78 | 71.1956 |
| 722.78 | 71.1956 |
| 722.89 | 71.1974 |
| 722.95 | 71.1992 |
| 723.30 | 72.8265 |
| 724.18 | 74.4674 |
| 727.18 | 64.1711 |
| 733.00 | 47.0872 |
| 735.90 | 65.0114 |
| 739.58 | 56.6293 |
| 742.81 | 67.4418 |
| 744.21 | 61.6065 |
| 747.13 | 65.5818 |
| 751.79 | 55.8798 |
| 752.31 | 64.7142 |
| 753.82 | 61.8034 |
| 755.35 | 63.7971 |
| 756.15 | 57.9226 |
| 756.87 | 58.9189 |
| 763.93 | 87.5985 |
| 765.79 | 78.7891 |
| 766.42 | 74.8644 |
| 766.84 | 78.8145 |
| 776.49 | 70.1680 |
| 778.00 | 70.2026 |
| 778.57 | 66.2590 |
| 778.89 | 60.3313 |
| 783.80 | 66.3702 |
| 785.46 | 62.4417 |
| 792.07 | 67.5385 |

| | |
|---------|----------|
| 795.84 | 51.7093 |
| 796.30 | 50.7223 |
| 798.80 | 86.5943 |
| 801.93 | 52.8059 |
| 805.60 | 56.8567 |
| 810.29 | 65.9307 |
| 810.76 | 64.9413 |
| 815.85 | 68.0465 |
| 817.79 | 71.0901 |
| 818.51 | 56.0848 |
| 819.60 | 57.1044 |
| 826.30 | 68.2656 |
| 828.27 | 0.0000 |
| 831.60 | 79.4388 |
| 831.96 | 82.4645 |
| 834.83 | 71.4645 |
| 836.80 | 0.0000 |
| 846.75 | 67.6837 |
| 848.13 | 71.7540 |
| 856.28 | 0.0000 |
| 856.80 | 92.2064 |
| 860.37 | 47.6747 |
| 867.32 | 59.9709 |
| 867.82 | 60.9961 |
| 871.10 | 43.7559 |
| 873.19 | 47.8560 |
| 874.81 | 58.0660 |
| 875.33 | 0.0000 |
| 876.40 | 77.4584 |
| 879.36 | 47.9432 |
| 880.27 | 51.0168 |
| 880.51 | 58.1634 |
| 881.50 | 53.0766 |
| 883.24 | 47.9983 |
| 884.67 | 61.2993 |
| 889.25 | 66.4965 |
| 896.60 | 54.3366 |
| 898.02 | 60.5125 |
| 899.00 | 60.5297 |
| 903.28 | 50.0759 |
| 911.07 | 65.8875 |
| 911.07 | 65.8875 |
| 911.07 | 65.8875 |
| 919.63 | 49.3070 |
| 920.93 | 52.6510 |
| 925.00 | 55.8127 |
| 925.24 | 55.8167 |
| 926.50 | 42.3944 |
| 935.52 | 41.4658 |
| 937.48 | 63.2696 |
| 944.10 | 60.2699 |
| 946.00 | 51.9836 |
| 949.00 | 49.9465 |
| 962.29 | 69.6240 |
| 964.01 | 36.5697 |
| 966.15 | 78.4094 |
| 968.20 | 108.0913 |
| 969.11 | 116.8383 |
| 969.11 | 116.8383 |
| 969.11 | 116.8383 |
| 977.42 | 44.5690 |
| 980.50 | 41.9824 |
| 983.50 | 49.3695 |
| 989.30 | 39.9779 |
| 996.32 | 47.4313 |
| 1001.03 | 53.8227 |
| 1001.68 | 51.7216 |
| 1004.76 | 57.0454 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 58.5610 |
| 1036.00 | 50.0591 |
| 1037.82 | 50.0821 |
| 1038.57 | 50.0936 |
| 1038.76 | 0.0000 |
| 1045.16 | 45.9080 |
| 1046.59 | 53.4009 |
| 1048.07 | 54.4888 |

| | |
|---------|---------|
| 1050.47 | 48.1091 |
| 1050.47 | 48.1091 |
| 1062.04 | 54.6831 |
| 1063.62 | 49.3422 |
| 1076.63 | 57.0397 |
| 1077.35 | 58.1265 |
| 1078.86 | 55.9939 |
| 1085.78 | 46.3825 |
| 1099.22 | 57.3606 |
| 1112.02 | 50.2133 |
| 1112.84 | 45.2474 |
| 1115.52 | 47.0869 |
| 1120.29 | 48.9551 |
| 1120.29 | 48.9551 |
| 1120.29 | 48.9551 |
| 1120.29 | 48.9551 |
| 1120.51 | 48.9595 |
| 1121.28 | 48.9683 |
| 1124.00 | 0.0000 |
| 1129.67 | 70.8748 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 51.3538 |
| 1173.22 | 71.6174 |
| 1175.09 | 61.5448 |
| 1177.93 | 59.7473 |
| 1189.05 | 52.5306 |
| 1204.90 | 55.4980 |
| 1205.75 | 0.0000 |
| 1213.00 | 67.6504 |
| 1221.42 | 75.2058 |
| 1230.97 | 72.5791 |
| 1235.34 | 94.0752 |
| 1236.41 | 0.0000 |
| 1238.25 | 68.0395 |
| 1246.25 | 54.1555 |
| 1260.41 | 0.0000 |
| 1271.85 | 45.0742 |
| 1274.45 | 49.7996 |
| 1274.54 | 51.6789 |
| 1291.56 | 45.2715 |
| 1298.22 | 0.0000 |
| 1312.09 | 42.6306 |
| 1325.50 | 45.6035 |
| 1325.50 | 45.6035 |
| 1332.49 | 37.1084 |
| 1333.61 | 38.0697 |
| 1360.21 | 24.8849 |
| 1362.66 | 0.0000 |
| 1365.15 | 22.9941 |
| 1368.21 | 32.5958 |
| 1368.53 | 0.0000 |
| 1376.25 | 22.0875 |
| 1384.27 | 27.8955 |
| 1394.10 | 26.9883 |
| 1395.20 | 24.1018 |
| 1407.95 | 31.8976 |
| 1434.06 | 21.3787 |
| 1436.60 | 14.5837 |
| 1457.56 | 0.0000 |
| 1460.81 | 19.5386 |
| 1489.15 | 10.8066 |
| 1509.49 | 7.8903 |
| 1596.49 | 25.0661 |
| 1620.62 | 10.0712 |
| 1678.03 | 0.0000 |
| 1691.02 | 9.1794 |
| 1691.02 | 9.1794 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 14.4620 |
| 1764.49 | 14.4620 |
| 1764.49 | 14.4620 |
| 1764.49 | 14.4620 |
| 1770.23 | 5.3178 |
| 1771.40 | 56.8821 |
| 1791.20 | 0.0000 |
| 1808.65 | 5.2039 |

1836.01

8.3639

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328008

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 1.2597E+01 | ug/g |
| Total Uranium Counting Unc. | 8.3849E+00 | ug/g |
| Total Uranium Tpu | 4.2780E-06 | ug/g |
| Total Uranium Mda | 3.9002E+00 | ug/g |

```

*****
*
*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                          *
*                               GROSS GAMMA REPORT                            *
*
*****
*
*  BATCH ID      : 950786                      SAMPLE ID   : G246328008          *
*  ANALYST       : MXR1                        DETECTOR    : GAM01           *
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00      COUNT TIME  : 0 02:00:00.00      *
*  ANALYSIS DATE : 18-FEB-2010 11:47:35.28     SAMPLE ALQT : 125.380 GRAM      *
*
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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.019E+01
GROSS GAMMA ERROR   (pCi/GRAM ) : 1.426E+00
GROSS GAMMA MDA     (pCi/GRAM ) : 2.664E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 1.289E+00

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:49:00.28

```

*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328009.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:48:05
Sample ID          : G246328009          Sample quantity  : 1.66620E+02 GRAM
Detector name      : GAM07              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.07  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             Detector SN#      :
Matrix Spike ID    :                   LCS ID            : 1032-A
*****

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| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 46.55* | 129 | 408 | 0.91 | 92.76 | 87 | 12 | 1.79E-02 | 33.5 | |
| 2 | 0 | 63.18* | 82 | 436 | 0.83 | 126.02 | 122 | 9 | 1.13E-02 | 48.7 | |
| 3 | 4 | 74.88* | 169 | 323 | 0.85 | 149.40 | 146 | 13 | 2.34E-02 | 17.9 | 1.51E+00 |
| 4 | 4 | 77.13* | 421 | 419 | 1.12 | 153.92 | 146 | 13 | 5.84E-02 | 9.6 | |
| 5 | 0 | 87.11 | 131 | 324 | 1.08 | 173.86 | 171 | 7 | 1.81E-02 | 24.4 | |
| 6 | 0 | 93.23* | 188 | 479 | 1.58 | 186.10 | 182 | 12 | 2.61E-02 | 25.6 | |
| 7 | 0 | 186.15* | 208 | 236 | 1.57 | 371.91 | 367 | 12 | 2.88E-02 | 17.0 | |
| 8 | 0 | 209.48 | 64 | 248 | 1.19 | 418.56 | 413 | 10 | 8.87E-03 | 47.8 | |
| 9 | 4 | 238.76* | 770 | 133 | 1.07 | 477.12 | 469 | 18 | 1.07E-01 | 4.4 | 1.24E+00 |
| 10 | 4 | 241.74 | 186 | 167 | 1.63 | 483.07 | 469 | 18 | 2.58E-02 | 14.7 | |
| 11 | 0 | 270.32 | 93 | 139 | 2.00 | 540.23 | 536 | 11 | 1.29E-02 | 26.5 | |
| 12 | 0 | 295.28 | 217 | 122 | 1.08 | 590.13 | 585 | 10 | 3.01E-02 | 11.7 | |
| 13 | 0 | 338.43 | 127 | 132 | 1.38 | 676.42 | 672 | 9 | 1.76E-02 | 18.6 | |
| 14 | 0 | 352.09* | 399 | 99 | 1.41 | 703.73 | 699 | 9 | 5.54E-02 | 6.9 | |
| 15 | 0 | 409.58 | 34 | 88 | 1.24 | 818.69 | 813 | 10 | 4.69E-03 | 55.1 | |
| 16 | 0 | 464.52* | 54 | 104 | 1.95 | 928.56 | 920 | 16 | 7.56E-03 | 44.4 | |
| 17 | 0 | 511.51* | 67 | 124 | 1.74 | 1022.52 | 1016 | 17 | 9.26E-03 | 47.4 | |
| 18 | 0 | 583.41* | 215 | 93 | 1.42 | 1166.31 | 1161 | 13 | 2.99E-02 | 11.6 | |
| 19 | 0 | 609.62* | 251 | 84 | 1.31 | 1218.72 | 1211 | 13 | 3.49E-02 | 10.2 | |
| 20 | 0 | 727.43* | 69 | 41 | 1.00 | 1454.29 | 1449 | 11 | 9.57E-03 | 22.2 | |
| 21 | 0 | 768.54 | 33 | 38 | 0.63 | 1536.51 | 1532 | 9 | 4.52E-03 | 38.5 | |
| 22 | 0 | 860.88* | 52 | 36 | 1.50 | 1721.18 | 1714 | 13 | 7.19E-03 | 28.2 | |
| 23 | 0 | 911.58* | 161 | 35 | 1.79 | 1822.56 | 1816 | 13 | 2.23E-02 | 11.3 | |
| 24 | 0 | 969.60* | 92 | 52 | 1.68 | 1938.59 | 1931 | 12 | 1.28E-02 | 19.0 | |
| 25 | 0 | 1120.71* | 59 | 66 | 2.04 | 2240.77 | 2232 | 20 | 8.17E-03 | 36.9 | |
| 26 | 0 | 1461.29* | 815 | 22 | 1.86 | 2921.87 | 2912 | 18 | 1.13E-01 | 3.8 | |
| 27 | 0 | 1765.28* | 42 | 8 | 2.28 | 3529.81 | 3521 | 15 | 5.82E-03 | 22.6 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 13:49:05

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328009.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 11:48:05
Sample ID        : G246328009             Sample quantity  : 166.62 GRAM
Sample type      : SOLID                  Sample geometry   :
Detector name    : GAMMA7                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00          Elapsed real time: 0 02:00:01.07   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 | * | 1.524E+01 | 1.746E+00 | 3.407E-01 | 2.926E-02 | 44.727 |
| CD-109 | + | 88.03 | * | 1.187E+00 | 5.909E-01 | 8.481E-01 | 7.989E-02 | 1.400 |
| SN-126 | + | 64.28 | | 4.003E-01 | 3.941E-01 | 3.859E-01 | 5.597E-02 | 1.037 |
| | + | 86.94 | | 4.838E-01 | 3.103E-01 | 3.600E-01 | 1.494E-01 | 1.344 |
| | + | 87.57 | * | 1.164E-01 | 5.792E-02 | 8.509E-02 | 7.973E-03 | 1.368 |
| TL-208 | | 277.35 | | 1.653E-01 | 2.537E-01 | 4.224E-01 | 5.172E-02 | 0.391 |
| | + | 510.84 | | 2.525E-01 | 2.411E-01 | 1.549E-01 | 1.887E-02 | 1.630 |
| | + | 583.14 | * | 2.328E-01 | 5.859E-02 | 3.908E-02 | 3.738E-03 | 5.957 |
| | + | 860.37 | | 5.250E-01 | 3.002E-01 | 3.042E-01 | 2.975E-02 | 1.725 |
| BI-210 | + | 46.50 | * | 3.450E+00 | 2.335E+00 | 1.870E+00 | 1.754E-01 | 1.845 |
| PB-210 | + | 46.50 | * | 3.450E+00 | 2.335E+00 | 1.870E+00 | 1.754E-01 | 1.845 |
| PO-210 | + | 46.50 | * | 3.450E+00 | 2.331E+00 | 1.870E+00 | 1.591E-01 | 1.845 |
| BI-211 | | 72.87 | | 1.545E+00 | 1.799E+00 | 2.749E+00 | 2.170E-01 | 0.562 |
| | + | 351.07 | * | 1.888E+00 | 3.117E-01 | 2.023E-01 | 1.815E-02 | 9.334 |
| PB-212 | + | 74.81 | | 5.846E-01 | 2.211E-01 | 2.982E-01 | 3.678E-02 | 1.961 |
| | + | 77.11 | | 8.415E-01 | 1.762E-01 | 1.724E-01 | 1.423E-02 | 4.881 |
| | + | 87.30 | | 5.382E-01 | 2.732E-01 | 3.921E-01 | 5.365E-02 | 1.373 |
| | + | 238.63 | * | 7.927E-01 | 1.035E-01 | 6.203E-02 | 5.933E-03 | 12.779 |
| | | 300.09 | | 3.899E-01 | 5.762E-01 | 8.642E-01 | 8.963E-02 | 0.451 |
| PO-212 | + | 74.81 | | 5.846E-01 | 2.211E-01 | 2.982E-01 | 3.678E-02 | 1.961 |
| | + | 77.11 | | 8.415E-01 | 1.762E-01 | 1.724E-01 | 1.423E-02 | 4.881 |
| | + | 87.30 | | 5.382E-01 | 2.732E-01 | 3.921E-01 | 5.365E-02 | 1.373 |
| | | 115.19 | | -6.422E-01 | 2.330E+00 | 3.705E+00 | 3.191E-01 | -0.173 |
| | + | 238.63 | * | 7.927E-01 | 1.035E-01 | 6.203E-02 | 5.933E-03 | 12.779 |
| | | 300.09 | | 3.899E-01 | 5.762E-01 | 8.642E-01 | 8.963E-02 | 0.451 |
| BI-214 | + | 609.31 | * | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.368E-03 | 7.188 |
| | + | 1120.29 | | 6.210E-01 | 4.633E-01 | 3.398E-01 | 3.648E-02 | 1.828 |
| | + | 1764.49 | | 6.078E-01 | 2.792E-01 | 1.956E-01 | 1.608E-02 | 3.107 |
| PB-214 | + | 74.81 | | 1.007E+00 | 3.767E-01 | 5.138E-01 | 5.620E-02 | 1.961 |
| | + | 77.11 | | 1.443E+00 | 3.215E-01 | 2.956E-01 | 3.320E-02 | 4.881 |
| | + | 87.30 | | 9.220E-01 | 4.644E-01 | 6.718E-01 | 8.134E-02 | 1.373 |
| | + | 241.98 | | 1.149E+00 | 3.567E-01 | 3.711E-01 | 3.767E-02 | 3.095 |
| | + | 295.21 | | 6.052E-01 | 1.557E-01 | 1.448E-01 | 1.533E-02 | 4.178 |
| | + | 351.92 | * | 6.569E-01 | 1.137E-01 | 7.336E-02 | 7.612E-03 | 8.955 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 74.81 | | 1.007E+00 | 3.767E-01 | 5.138E-01 | 5.620E-02 | 1.961 |
| | + | 77.11 | | 1.443E+00 | 3.215E-01 | 2.956E-01 | 3.320E-02 | 4.881 |
| | + | 87.30 | | 9.220E-01 | 4.644E-01 | 6.718E-01 | 8.134E-02 | 1.373 |
| | + | 241.98 | | 1.149E+00 | 3.567E-01 | 3.711E-01 | 3.767E-02 | 3.095 |
| | + | 295.21 | | 6.052E-01 | 1.557E-01 | 1.448E-01 | 1.533E-02 | 4.178 |
| PO-216 | + | 351.92 | * | 6.569E-01 | 1.137E-01 | 7.336E-02 | 7.612E-03 | 8.955 |
| | + | 74.81 | | 5.846E-01 | 2.211E-01 | 2.982E-01 | 3.678E-02 | 1.961 |
| | + | 77.11 | | 8.415E-01 | 1.762E-01 | 1.724E-01 | 1.423E-02 | 4.881 |
| | + | 87.30 | | 5.382E-01 | 2.732E-01 | 3.921E-01 | 5.365E-02 | 1.373 |
| | + | 238.63 | * | 7.927E-01 | 1.035E-01 | 6.203E-02 | 5.933E-03 | 12.779 |
| PO-218 | + | 300.09 | | 3.899E-01 | 5.762E-01 | 8.642E-01 | 8.963E-02 | 0.451 |
| | + | 74.81 | | 1.007E+00 | 3.767E-01 | 5.138E-01 | 5.620E-02 | 1.961 |
| | + | 77.11 | | 1.443E+00 | 3.215E-01 | 2.956E-01 | 3.320E-02 | 4.881 |
| | + | 87.30 | | 9.220E-01 | 4.644E-01 | 6.718E-01 | 8.134E-02 | 1.373 |
| | + | 241.98 | | 1.149E+00 | 3.567E-01 | 3.711E-01 | 3.767E-02 | 3.095 |
| RA-224 | + | 295.21 | | 6.052E-01 | 1.557E-01 | 1.448E-01 | 1.533E-02 | 4.178 |
| | + | 351.92 | * | 6.569E-01 | 1.137E-01 | 7.336E-02 | 7.612E-03 | 8.955 |
| | + | 240.98 | * | 2.178E+00 | 6.652E-01 | 7.061E-01 | 5.971E-02 | 3.085 |
| | + | 609.31 | * | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.368E-03 | 7.188 |
| | + | 1120.29 | | 6.210E-01 | 4.633E-01 | 3.398E-01 | 3.648E-02 | 1.828 |
| AC-228 | + | 1764.49 | | 6.078E-01 | 2.792E-01 | 1.956E-01 | 1.608E-02 | 3.107 |
| | + | 338.32 | | 6.606E-01 | 3.672E-01 | 2.757E-01 | 1.137E-01 | 2.396 |
| | + | 911.07 | * | 7.704E-01 | 1.956E-01 | 1.505E-01 | 1.753E-02 | 5.120 |
| | + | 969.11 | | 7.763E-01 | 3.473E-01 | 1.825E-01 | 4.287E-02 | 4.254 |
| | + | 338.32 | | 6.606E-01 | 3.672E-01 | 2.757E-01 | 1.137E-01 | 2.396 |
| RA-228 | + | 911.07 | * | 7.704E-01 | 1.956E-01 | 1.505E-01 | 1.753E-02 | 5.120 |
| | + | 969.11 | | 7.763E-01 | 3.473E-01 | 1.825E-01 | 4.287E-02 | 4.254 |
| | + | 74.81 | | 5.946E-01 | 2.181E-01 | 3.033E-01 | 2.465E-02 | 1.961 |
| | + | 77.11 | | 8.558E-01 | 1.792E-01 | 1.753E-01 | 1.447E-02 | 4.881 |
| | + | 87.30 | | 5.474E-01 | 2.724E-01 | 3.988E-01 | 3.724E-02 | 1.373 |
| TH-228 | + | 238.63 | * | 8.062E-01 | 1.052E-01 | 6.309E-02 | 6.034E-03 | 12.779 |
| | + | 300.09 | | 3.966E-01 | 6.301E-01 | 8.789E-01 | 5.210E-01 | 0.451 |
| | + | 609.31 | * | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.367E-03 | 7.188 |
| | + | 1120.29 | | 6.210E-01 | 4.633E-01 | 3.398E-01 | 3.648E-02 | 1.828 |
| | + | 1764.49 | | 6.078E-01 | 2.792E-01 | 1.956E-01 | 1.608E-02 | 3.107 |
| TH-232 | + | 338.32 | | 6.606E-01 | 2.526E-01 | 2.757E-01 | 2.360E-02 | 2.396 |
| | + | 911.07 | * | 7.704E-01 | 1.956E-01 | 1.505E-01 | 1.753E-02 | 5.120 |
| | + | 969.11 | | 7.763E-01 | 3.473E-01 | 1.825E-01 | 4.287E-02 | 4.254 |
| | + | 63.29 | * | 1.011E+00 | 1.000E+00 | 9.679E-01 | 1.684E-01 | 1.045 |
| | + | 92.38 | | 1.111E+00 | 6.040E-01 | 5.712E-01 | 1.048E-01 | 1.945 |
| U-234 | + | 609.31 | * | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.367E-03 | 7.188 |
| | + | 1120.29 | | 6.210E-01 | 4.633E-01 | 3.398E-01 | 3.648E-02 | 1.828 |
| | + | 1764.49 | | 6.078E-01 | 2.792E-01 | 1.956E-01 | 1.608E-02 | 3.107 |
| | + | 86.50 | * | 3.417E-01 | 1.841E-01 | 2.424E-01 | 5.480E-02 | 1.410 |
| | + | 95.87 | | -2.581E-01 | 6.301E-01 | 8.757E-01 | 2.169E-01 | -0.295 |
| U-238 | + | 63.29 | * | 1.011E+00 | 1.000E+00 | 9.679E-01 | 1.684E-01 | 1.045 |
| | + | 92.38 | | 1.111E+00 | 5.776E-01 | 5.712E-01 | 5.233E-02 | 1.945 |
| | + | 74.67 | * | 9.477E-02 | 3.474E-02 | 4.843E-02 | 3.893E-03 | 1.957 |
| | + | 86.72 | | 1.281E+01 | 6.378E+00 | 9.078E+00 | 8.413E-01 | 1.412 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 117.66 | | -8.921E-02 | 2.340E+00 | 3.762E+00 | 3.236E-01 | -0.024 |
| | | 142.18 | | -5.346E+00 | 1.221E+01 | 1.905E+01 | 1.572E+00 | -0.281 |
| ANH-511 | + | 511.00 | * | 5.454E-02 | 5.188E-02 | 3.348E-02 | 2.975E-03 | 1.629 |

---- 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 | * | 2.047E-01 | 2.448E-01 | 4.178E-01 | 3.943E-02 | 0.490 |
| NA-22 | | 1274.54 | * | -1.988E-03 | 3.116E-02 | 5.112E-02 | 4.197E-03 | -0.039 |
| NA-24 | | 1368.53 | * | 7.017E-04 | 3.116E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -2.522E-01 | 1.399E+00 | 1.956E+00 | 1.643E-01 | -0.129 |
| | | 1808.65 | * | -9.666E-03 | 1.998E-02 | 3.084E-02 | 2.515E-03 | -0.313 |
| TI-44 | | 67.85 | | -1.813E-02 | 2.516E-02 | 3.544E-02 | 2.674E-03 | -0.512 |
| | + | 78.38 | * | 1.553E-01 | 3.252E-02 | 4.334E-02 | 3.628E-03 | 3.583 |
| SC-46 | | 889.25 | * | -9.014E-03 | 2.990E-02 | 4.696E-02 | 4.303E-03 | -0.192 |
| | + | 1120.51 | | 1.080E-01 | 8.024E-02 | 8.840E-02 | 7.470E-03 | 1.221 |
| V-48 | | 944.10 | | 4.359E-01 | 6.739E-01 | 1.167E+00 | 1.061E-01 | 0.374 |
| | | 983.50 | * | 3.357E-02 | 5.664E-02 | 9.707E-02 | 8.738E-03 | 0.346 |
| | | 1312.09 | | 7.843E-03 | 5.927E-02 | 9.938E-02 | 8.147E-03 | 0.079 |
| CR-51 | | 320.08 | * | 3.373E-02 | 2.494E-01 | 4.140E-01 | 3.742E-02 | 0.081 |
| MN-52 | | 744.21 | | 1.300E-01 | 2.054E-01 | 3.580E-01 | 3.250E-02 | 0.363 |
| | | 848.13 | | 3.452E+00 | 5.805E+00 | 1.005E+01 | 9.225E-01 | 0.344 |
| | | 935.52 | | 2.401E-01 | 2.249E-01 | 4.035E-01 | 3.674E-02 | 0.595 |
| | | 1246.25 | | -7.326E+00 | 7.000E+00 | 1.032E+01 | 8.453E-01 | -0.710 |
| | | 1333.61 | | -8.198E-01 | 4.970E+00 | 8.059E+00 | 6.603E-01 | -0.102 |
| | | 1434.06 | * | -1.149E-02 | 1.956E-01 | 3.169E-01 | 2.635E-02 | -0.036 |
| MN-54 | | 834.83 | * | 1.351E-02 | 2.798E-02 | 4.764E-02 | 4.373E-03 | 0.284 |
| CO-56 | | 846.75 | * | 3.234E-03 | 2.695E-02 | 4.450E-02 | 4.085E-03 | 0.073 |
| | | 977.42 | | 2.760E-01 | 2.025E+00 | 3.317E+00 | 2.991E-01 | 0.083 |
| | | 1037.82 | | 1.707E-01 | 2.408E-01 | 4.295E-01 | 3.985E-02 | 0.397 |
| | | 1175.09 | | 1.418E+00 | 1.687E+00 | 3.017E+00 | 2.455E-01 | 0.470 |
| | | 1238.25 | | 4.822E-02 | 6.904E-02 | 1.207E-01 | 1.020E-02 | 0.399 |
| | | 1360.21 | | 3.214E-01 | 6.791E-01 | 1.192E+00 | 9.816E-02 | 0.270 |
| | | 1771.40 | | -4.743E-01 | 2.245E-01 | 2.263E-01 | 1.858E-02 | -2.096 |
| CO-57 | | 122.06 | * | 1.723E-02 | 1.611E-02 | 2.722E-02 | 2.342E-03 | 0.633 |
| | | 136.48 | | -8.101E-02 | 1.474E-01 | 2.290E-01 | 2.062E-02 | -0.354 |
| CO-58 | | 810.76 | * | -4.689E-02 | 2.878E-02 | 3.785E-02 | 3.477E-03 | -1.239 |
| FE-59 | | 142.65 | | -2.166E-01 | 1.965E+00 | 3.082E+00 | 2.542E-01 | -0.070 |
| | | 192.34 | | 4.896E-01 | 6.420E-01 | 1.050E+00 | 1.379E-01 | 0.466 |
| | | 1099.22 | * | -2.613E-02 | 6.944E-02 | 1.117E-01 | 1.035E-02 | -0.234 |
| | | 1291.56 | | 6.891E-02 | 9.320E-02 | 1.660E-01 | 1.564E-02 | 0.415 |
| CO-60 | | 1173.22 | | 1.358E-03 | 3.269E-02 | 5.459E-02 | 4.442E-03 | 0.025 |
| | | 1332.49 | * | 5.648E-04 | 3.089E-02 | 5.122E-02 | 4.196E-03 | 0.011 |
| ZN-65 | | 1115.52 | * | 2.647E-02 | 7.364E-02 | 1.113E-01 | 9.442E-03 | 0.238 |
| GE-68 | | 1077.35 | * | -1.713E-02 | 8.929E-01 | 1.492E+00 | 1.293E-01 | -0.011 |
| AS-73 | | 53.44 | * | 9.964E-02 | 3.397E-01 | 5.715E-01 | 4.291E-02 | 0.174 |
| AS-74 | | 595.88 | * | -2.358E-02 | 6.995E-02 | 1.136E-01 | 1.018E-02 | -0.208 |
| | | 634.78 | | -1.342E-01 | 2.629E-01 | 4.165E-01 | 3.713E-02 | -0.322 |

---- 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 | | | 4.741E-01 | 2.540E+00 | 3.773E+00 | 3.580E-01 | 0.126 |
| | 96.73 | | | -3.975E-01 | 5.273E-01 | 7.240E-01 | 1.003E-01 | -0.549 |
| | 121.11 | | | 3.999E-02 | 8.546E-02 | 1.407E-01 | 1.576E-02 | 0.284 |
| | 136.00 | | | -1.871E-02 | 2.775E-02 | 4.283E-02 | 3.601E-03 | -0.437 |
| | 198.60 | | | -2.046E-01 | 1.154E+00 | 1.873E+00 | 1.722E-01 | -0.109 |
| | 264.65 | * | | 6.605E-04 | 3.111E-02 | 4.804E-02 | 4.102E-03 | 0.014 |
| | 279.53 | | | -3.935E-02 | 7.548E-02 | 1.211E-01 | 1.068E-02 | -0.325 |
| | 303.91 | | | -1.774E+00 | 1.397E+00 | 2.081E+00 | 2.379E-01 | -0.853 |
| | 400.65 | | | 1.354E-01 | 1.839E-01 | 3.135E-01 | 3.427E-02 | 0.432 |
| | 87.88 | + | | 4.419E+02 | 2.200E+02 | 3.240E+02 | 3.048E+01 | 1.364 |
| BR-77 | 200.40 | | + | -3.151E+01 | 1.796E+02 | 3.004E+02 | 2.469E+01 | -0.105 |
| | 239.00 | | | 2.199E+02 | 2.696E+01 | 4.198E+01 | 3.547E+00 | 5.239 |
| | 249.79 | | | -7.511E+01 | 7.460E+01 | 1.165E+02 | 9.877E+00 | -0.645 |
| | 281.68 | | | 1.638E+01 | 1.076E+02 | 1.799E+02 | 1.528E+01 | 0.091 |
| | 297.23 | | | 1.356E+02 | 8.276E+01 | 1.321E+02 | 1.129E+01 | 1.026 |
| | 303.76 | | | -2.603E+02 | 2.024E+02 | 3.025E+02 | 2.590E+01 | -0.861 |
| | 439.47 | | | 5.432E+01 | 1.755E+02 | 2.900E+02 | 2.498E+01 | 0.187 |
| | 484.57 | | | 1.634E+01 | 2.789E+02 | 4.490E+02 | 3.954E+01 | 0.036 |
| | 520.65 | * | | -1.215E+00 | 1.203E+01 | 1.897E+01 | 1.689E+00 | -0.064 |
| | 574.64 | | | -2.594E+02 | 2.535E+02 | 3.865E+02 | 3.466E+01 | -0.671 |
| SR-82 | 578.91 | | | 3.667E+01 | 1.119E+02 | 1.693E+02 | 1.518E+01 | 0.217 |
| | 585.48 | | | 1.320E+03 | 3.112E+02 | 5.660E+02 | 5.077E+01 | 2.332 |
| | 755.35 | | | 1.954E+02 | 1.993E+02 | 3.563E+02 | 3.241E+01 | 0.549 |
| | 817.79 | | | -7.199E+01 | 1.339E+02 | 2.028E+02 | 1.860E+01 | -0.355 |
| | 698.33 | | | -1.134E+01 | 2.372E+01 | 3.738E+01 | 3.352E+00 | -0.303 |
| | 776.49 | * | | -1.465E-01 | 2.707E-01 | 4.180E-01 | 3.817E-02 | -0.351 |
| | 1395.20 | | | -1.177E+00 | 7.102E+00 | 1.131E+01 | 9.363E-01 | -0.104 |
| | 520.41 | * | | -2.739E-03 | 4.689E-02 | 7.428E-02 | 6.616E-03 | -0.037 |
| | 529.64 | | | 1.208E-02 | 7.071E-02 | 1.207E-01 | 1.077E-02 | 0.100 |
| | 552.65 | | | -8.024E-02 | 1.396E-01 | 2.231E-01 | 1.998E-02 | -0.360 |
| RB-84 | 881.50 | * | | -1.109E-02 | 5.253E-02 | 8.333E-02 | 7.641E-03 | -0.133 |
| KR-85 | 513.99 | * | | 9.192E+00 | 5.303E+00 | 9.797E+00 | 8.712E-01 | 0.938 |
| SR-85 | 513.99 | * | | 4.807E-02 | 2.773E-02 | 5.123E-02 | 4.556E-03 | 0.938 |
| RB-86 | 1076.63 | * | | 2.385E-01 | 5.864E-01 | 1.022E+00 | 8.859E-02 | 0.233 |
| Y-88 | 898.02 | | | 1.385E-02 | 3.286E-02 | 5.493E-02 | 5.052E-03 | 0.252 |
| | 1836.01 | * | | 2.330E-03 | 2.209E-02 | 3.767E-02 | 3.057E-03 | 0.062 |
| ZR-88 | 392.90 | * | | -4.894E-03 | 2.096E-02 | 3.339E-02 | 2.781E-03 | -0.147 |
| Y-91 | 1204.90 | * | | -9.294E+00 | 1.487E+01 | 2.322E+01 | 1.896E+00 | -0.400 |
| NB-94 | 702.63 | * | | 1.922E-02 | 2.209E-02 | 3.926E-02 | 3.525E-03 | 0.490 |
| | 871.10 | | | -1.028E-02 | 2.218E-02 | 3.396E-02 | 3.116E-03 | -0.303 |
| NB-95 | 765.79 | * | | 1.318E-02 | 3.203E-02 | 4.811E-02 | 4.386E-03 | 0.274 |
| NB-95M | 235.69 | * | | -5.642E-03 | 9.130E-02 | 1.339E-01 | 1.300E-02 | -0.042 |
| ZR-95 | 724.18 | | | -4.820E-02 | 7.971E-02 | 1.048E-01 | 1.021E-02 | -0.460 |
| | 756.15 | * | | 5.038E-02 | 5.150E-02 | 9.184E-02 | 9.121E-03 | 0.549 |
| NB-97 | 657.90 | * | | -1.408E-01 | 5.150E-02 | Half-Life | too short | |
| | 1024.50 | | | 3.622E+01 | 5.150E-02 | Half-Life | too short | |
| ZR-97 | 254.15 | | | 2.089E+01 | 5.150E-02 | Half-Life | too short | |
| | 355.39 | | | 6.922E+00 | 5.150E-02 | Half-Life | too short | |
| | 507.63 | * | | 6.961E+00 | 5.150E-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 | | | -3.264E+01 | 5.150E-02 | Half-Life | too short | |
| | 1021.30 | | | -1.899E+01 | 5.150E-02 | Half-Life | too short | |
| | 1147.95 | | | -1.922E+01 | 5.150E-02 | Half-Life | too short | |
| | 1362.66 | | | -8.385E+00 | 5.150E-02 | Half-Life | too short | |
| | 1750.46 | | | -7.077E-01 | 5.150E-02 | Half-Life | too short | |
| MO-99 | 140.51 | | | -1.770E+01 | 3.009E+01 | 4.494E+01 | 1.240E+01 | -0.394 |
| | 181.06 | | | 1.057E+00 | 1.880E+01 | 2.826E+01 | 5.094E+00 | 0.037 |
| | 366.43 | | | 4.306E+01 | 9.110E+01 | 1.537E+02 | 1.302E+01 | 0.280 |
| | 739.58 | * | | 2.884E+00 | 1.292E+01 | 2.171E+01 | 3.353E+00 | 0.133 |
| | 778.00 | | | -1.741E+01 | 3.658E+01 | 5.688E+01 | 5.196E+00 | -0.306 |
| TC-99M | 140.51 | * | | -2.853E+12 | 3.658E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | -1.105E-02 | 2.141E-02 | 3.344E-02 | 2.840E-03 | -0.330 |
| | 198.01 | * | | -3.711E-04 | 2.089E-02 | 3.421E-02 | 2.806E-03 | -0.011 |
| | 325.23 | | | -1.038E-01 | 1.575E-01 | 2.474E-01 | 2.122E-02 | -0.420 |
| RH-102 | 418.52 | | | 1.822E-01 | 1.953E-01 | 3.382E-01 | 2.874E-02 | 0.539 |
| | 475.06 | * | | -2.470E-02 | 2.133E-02 | 3.047E-02 | 2.673E-03 | -0.811 |
| | 631.29 | | | 1.983E-02 | 3.678E-02 | 6.406E-02 | 5.716E-03 | 0.310 |
| | 697.49 | | | -4.367E-02 | 5.009E-02 | 7.535E-02 | 6.754E-03 | -0.580 |
| | 766.84 | | | 1.076E-01 | 8.344E-02 | 1.372E-01 | 1.251E-02 | 0.785 |
| | 1046.59 | | | -4.935E-02 | 8.399E-02 | 1.302E-01 | 1.145E-02 | -0.379 |
| | 1112.84 | | | 1.317E-01 | 1.789E-01 | 2.843E-01 | 2.414E-02 | 0.463 |
| RU-103 | 497.08 | * | | 5.093E-03 | 2.906E-02 | 4.720E-02 | 6.751E-03 | 0.108 |
| | 610.33 | + | | 5.713E+00 | 1.510E+00 | 1.935E+00 | 3.263E-01 | 2.952 |
| RH-106 | 511.85 | + | | 2.734E-01 | 2.601E-01 | 3.145E-01 | 2.795E-02 | 0.869 |
| | 621.84 | * | | 7.955E-02 | 2.025E-01 | 3.492E-01 | 4.737E-02 | 0.228 |
| | 1050.47 | | | 6.696E-01 | 1.609E+00 | 2.811E+00 | 2.468E-01 | 0.238 |
| RU-106 | 511.85 | + | | 2.734E-01 | 2.601E-01 | 3.145E-01 | 2.795E-02 | 0.869 |
| | 621.84 | * | | 7.955E-02 | 2.024E-01 | 3.492E-01 | 3.121E-02 | 0.228 |
| | 1050.47 | | | 6.696E-01 | 1.609E+00 | 2.811E+00 | 2.468E-01 | 0.238 |
| AG-108M | 433.93 | * | | -1.339E-02 | 2.213E-02 | 3.375E-02 | 3.013E-03 | -0.397 |
| | 614.37 | | | 1.959E-03 | 2.965E-02 | 4.331E-02 | 4.017E-03 | 0.045 |
| | 722.95 | | | -2.587E-02 | 3.491E-02 | 4.488E-02 | 4.198E-03 | -0.576 |
| AG-110M | 657.75 | * | | -8.016E-03 | 2.401E-02 | 3.861E-02 | 3.518E-03 | -0.208 |
| | 677.61 | | | -7.703E-02 | 2.291E-01 | 3.681E-01 | 3.364E-02 | -0.209 |
| | 706.67 | | | -1.296E-01 | 1.419E-01 | 2.127E-01 | 1.960E-02 | -0.610 |
| | 763.93 | | | 3.705E-02 | 1.126E-01 | 1.681E-01 | 1.571E-02 | 0.220 |
| | 884.67 | | | -4.024E-03 | 3.554E-02 | 5.699E-02 | 5.373E-03 | -0.071 |
| | 937.48 | | | -6.177E-02 | 8.281E-02 | 1.223E-01 | 1.149E-02 | -0.505 |
| | 1384.27 | | | -6.943E-02 | 1.170E-01 | 1.748E-01 | 1.489E-02 | -0.397 |
| IN-111 | 171.28 | | | -1.817E-01 | 1.112E+00 | 1.743E+00 | 1.387E-01 | -0.104 |
| | 245.39 | * | | 6.552E-01 | 1.238E+00 | 1.891E+00 | 1.602E-01 | 0.346 |
| IN-113M | 391.69 | * | | 1.216E-02 | 2.976E-02 | 4.986E-02 | 4.286E-03 | 0.244 |
| SN-113 | 391.69 | * | | 1.216E-02 | 2.976E-02 | 4.986E-02 | 4.286E-03 | 0.244 |
| IN-114M | 190.27 | * | | 6.760E-02 | 1.275E-01 | 1.972E-01 | 1.604E-02 | 0.343 |
| CD-115 | 260.90 | | | 6.808E+01 | 1.579E+02 | 2.690E+02 | 2.286E+01 | 0.253 |
| | 492.35 | | | 4.355E+00 | 4.591E+01 | 7.407E+01 | 6.542E+00 | 0.059 |
| | 527.90 | * | | 4.205E-01 | 1.293E+01 | 2.183E+01 | 1.948E+00 | 0.019 |
| SN-117M | 156.02 | | | -1.599E+00 | 1.724E+00 | 2.595E+00 | 2.090E-01 | -0.616 |
| | 158.56 | * | | 1.125E-02 | 4.046E-02 | 6.519E-02 | 5.227E-03 | 0.173 |

---- 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 | * | | 1.268E+00 | 2.252E+00 | 3.941E+00 | 3.533E-01 | 0.322 |
| | 692.80 | | | 4.160E+01 | 4.546E+01 | 8.131E+01 | 7.278E+00 | 0.512 |
| I-123 | 159.00 | * | | 2.531E+01 | 4.546E+01 | Half-Life too short | | |
| | 528.96 | | | 7.876E+02 | 4.546E+01 | Half-Life too short | | |
| TE-123M | 159.00 | * | | 1.175E-02 | 1.896E-02 | 3.108E-02 | 2.507E-03 | 0.378 |
| I-124 | 602.71 | * | | -4.891E-01 | 7.689E-01 | 1.034E+00 | 9.264E-02 | -0.473 |
| | 722.78 | | | -3.687E+00 | 4.975E+00 | 6.397E+00 | 5.777E-01 | -0.576 |
| | 1325.50 | | | -4.911E+00 | 3.408E+01 | 5.508E+01 | 4.513E+00 | -0.089 |
| | 1376.25 | | | 3.495E+01 | 3.075E+01 | 5.724E+01 | 4.724E+00 | 0.611 |
| | 1509.49 | | | 1.155E+01 | 1.577E+01 | 2.830E+01 | 2.366E+00 | 0.408 |
| | 1691.02 | | | -2.230E-01 | 3.086E+00 | 4.886E+00 | 4.059E-01 | -0.046 |
| SB-124 | 602.71 | | | -2.129E-02 | 3.346E-02 | 4.500E-02 | 4.032E-03 | -0.473 |
| | 645.85 | | | -1.076E-01 | 3.417E-01 | 5.506E-01 | 5.172E-02 | -0.195 |
| | 709.31 | | | -6.007E-01 | 1.860E+00 | 2.971E+00 | 2.673E-01 | -0.202 |
| | 713.82 | | | 1.883E-01 | 1.129E+00 | 1.891E+00 | 2.330E-01 | 0.100 |
| | 722.78 | | | -2.326E-01 | 3.139E-01 | 4.036E-01 | 3.716E-02 | -0.576 |
| + | 968.20 | | | 8.166E+00 | 3.196E+00 | 4.949E+00 | 4.474E-01 | 1.650 |
| | 1045.16 | | | -1.293E+00 | 1.837E+00 | 2.780E+00 | 2.446E-01 | -0.465 |
| | 1325.50 | | | -3.309E-01 | 2.296E+00 | 3.711E+00 | 3.041E-01 | -0.089 |
| | 1368.21 | | | 2.053E-04 | 1.246E+00 | 2.047E+00 | 2.710E-01 | 0.000 |
| | 1436.60 | | | -2.311E+00 | 2.608E+00 | 3.581E+00 | 2.978E-01 | -0.645 |
| | 1691.02 | * | | -3.318E-03 | 4.591E-02 | 7.270E-02 | 6.298E-03 | -0.046 |
| SB-125 | 427.89 | * | | 5.190E-02 | 5.802E-02 | 1.008E-01 | 8.785E-03 | 0.515 |
| + | 463.38 | | | 4.037E-01 | 3.602E-01 | 3.475E-01 | 3.264E-02 | 1.162 |
| | 600.56 | | | 1.961E-01 | 1.326E-01 | 2.427E-01 | 2.323E-02 | 0.808 |
| | 635.90 | | | -3.313E-02 | 1.861E-01 | 3.046E-01 | 2.920E-02 | -0.109 |
| TE-125M | 109.28 | * | | -4.544E-01 | 6.084E+00 | 9.797E+00 | 1.016E+00 | -0.046 |
| I-126 | 388.63 | | | -7.627E-02 | 1.543E-01 | 2.408E-01 | 2.009E-02 | -0.317 |
| | 666.33 | * | | -6.783E-02 | 1.425E-01 | 2.263E-01 | 2.006E-02 | -0.300 |
| | 753.82 | | | 1.324E+00 | 1.141E+00 | 2.066E+00 | 1.879E-01 | 0.641 |
| SB-126 | 223.80 | | | -4.349E-01 | 2.934E+00 | 4.884E+00 | 4.093E-01 | -0.089 |
| | 278.60 | | | 4.234E-01 | 1.874E+00 | 3.145E+00 | 2.670E-01 | 0.135 |
| + | 296.50 | | | 6.691E+00 | 1.670E+00 | 2.538E+00 | 2.169E-01 | 2.636 |
| | 414.70 | | | 1.503E-02 | 6.043E-02 | 9.257E-02 | 7.843E-03 | 0.162 |
| | 415.30 | | | -7.385E-01 | 5.035E+00 | 7.761E+00 | 6.579E-01 | -0.095 |
| | 555.20 | | | 2.545E-01 | 2.958E+00 | 5.000E+00 | 4.480E-01 | 0.051 |
| | 573.80 | | | -5.908E-01 | 7.810E-01 | 1.221E+00 | 1.095E-01 | -0.484 |
| | 593.00 | | | -3.238E-01 | 6.724E-01 | 1.074E+00 | 9.626E-02 | -0.302 |
| | 656.30 | | | -1.025E+00 | 2.557E+00 | 4.086E+00 | 3.623E-01 | -0.251 |
| | 666.33 | | | -2.847E-02 | 5.982E-02 | 9.498E-02 | 8.421E-03 | -0.300 |
| | 675.00 | | | 9.202E-01 | 1.697E+00 | 2.930E+00 | 2.606E-01 | 0.314 |
| | 695.00 | | | 7.148E-04 | 5.550E-02 | 9.186E-02 | 8.228E-03 | 0.008 |
| | 697.00 | | | -5.587E-02 | 1.909E-01 | 3.064E-01 | 2.746E-02 | -0.182 |
| | 720.50 | * | | -4.269E-02 | 1.241E-01 | 1.858E-01 | 1.677E-02 | -0.230 |
| | 856.80 | | | -1.973E-01 | 4.176E-01 | 5.424E-01 | 4.979E-02 | -0.364 |
| | 989.30 | | | 3.331E-01 | 9.080E-01 | 1.529E+00 | 1.374E-01 | 0.218 |
| | 1034.80 | | | -5.076E+00 | 7.343E+00 | 1.146E+01 | 1.013E+00 | -0.443 |
| | 1213.00 | | | 2.653E-01 | 3.939E+00 | 6.574E+00 | 5.373E-01 | 0.040 |
| SB-127 | 61.10 | | | 3.228E+00 | 3.937E+01 | 5.856E+01 | 6.301E+00 | 0.055 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 252.40 | | | 2.399E+00 | 4.048E+00 | 6.765E+00 | 2.852E+00 | 0.355 |
| | 290.80 | | | -1.708E+01 | 2.222E+01 | 2.987E+01 | 3.486E+00 | -0.572 |
| | 411.60 | | | 6.216E+00 | 1.301E+01 | 1.932E+01 | 3.102E+00 | 0.322 |
| | 444.90 | | | 1.743E+00 | 9.473E+00 | 1.549E+01 | 2.024E+00 | 0.113 |
| | 473.00 | | | -9.133E-01 | 1.612E+00 | 2.442E+00 | 3.288E-01 | -0.374 |
| | 543.00 | | | -4.083E+00 | 1.474E+01 | 2.415E+01 | 3.632E+00 | -0.169 |
| | 603.60 | | | -1.664E+01 | 1.401E+01 | 1.730E+01 | 2.292E+00 | -0.962 |
| | 685.20 | * | | 2.698E-01 | 1.217E+00 | 2.058E+00 | 2.505E-01 | 0.131 |
| | 698.50 | | | -1.903E+00 | 1.364E+01 | 2.222E+01 | 3.649E+00 | -0.086 |
| | 722.20 | | | -6.503E-01 | 3.383E+01 | 4.822E+01 | 5.806E+00 | -0.013 |
| | 783.80 | | | 5.095E-01 | 3.314E+00 | 5.516E+00 | 7.330E-01 | 0.092 |
| XE-127 | 57.60 | | | 5.279E-01 | 2.704E+00 | 4.518E+00 | 3.275E-01 | 0.117 |
| | 145.22 | | | 1.019E-01 | 5.062E-01 | 8.055E-01 | 6.613E-02 | 0.126 |
| | 172.10 | | | -4.135E-02 | 8.695E-02 | 1.337E-01 | 1.065E-02 | -0.309 |
| | 202.84 | * | | 7.095E-03 | 3.234E-02 | 5.337E-02 | 4.398E-03 | 0.133 |
| | 374.96 | | | -3.657E-03 | 1.350E-01 | 2.194E-01 | 1.849E-02 | -0.017 |
| I-131 | 80.18 | | | -7.831E-01 | 3.289E+00 | 4.710E+00 | 4.059E-01 | -0.166 |
| | 284.30 | | | 4.210E-01 | 1.217E+00 | 2.055E+00 | 1.845E-01 | 0.205 |
| | 364.48 | * | | 4.891E-02 | 9.131E-02 | 1.548E-01 | 1.388E-02 | 0.316 |
| | 636.97 | | | 5.443E-01 | 1.228E+00 | 2.122E+00 | 1.993E-01 | 0.257 |
| | 722.89 | | | -5.121E+00 | 6.910E+00 | 8.884E+00 | 8.082E-01 | -0.576 |
| TE-132 | 49.72 | | | 4.058E+00 | 1.141E+01 | 1.739E+01 | 1.889E+00 | 0.233 |
| | 111.76 | | | 1.733E+01 | 2.824E+01 | 4.682E+01 | 5.331E+00 | 0.370 |
| | 116.30 | | | -3.486E-01 | 2.648E+01 | 4.265E+01 | 4.845E+00 | -0.008 |
| | 228.16 | * | | 4.593E-01 | 6.883E-01 | 1.186E+00 | 1.892E-01 | 0.387 |
| BA-133 | 53.15 | | | 3.996E-01 | 1.442E+00 | 2.424E+00 | 1.826E-01 | 0.165 |
| | 79.62 | | | -2.632E-02 | 7.879E-01 | 1.142E+00 | 1.730E-01 | -0.023 |
| | 81.00 | | | -7.307E-02 | 6.341E-02 | 8.477E-02 | 1.346E-02 | -0.862 |
| | 276.40 | | | 2.193E-01 | 2.604E-01 | 4.216E-01 | 6.059E-02 | 0.520 |
| | 302.84 | | | -7.112E-02 | 9.376E-02 | 1.461E-01 | 1.935E-02 | -0.487 |
| | 356.01 | * | | -3.533E-04 | 3.279E-02 | 4.767E-02 | 6.260E-03 | -0.007 |
| | 383.85 | | | -7.599E-02 | 1.982E-01 | 3.122E-01 | 3.882E-02 | -0.243 |
| I-133 | 510.53 | + | | 2.485E+00 | 1.982E-01 | Half-Life | too short | |
| | 529.87 | * | | 3.432E-03 | 1.982E-01 | Half-Life | too short | |
| | 706.58 | | | -1.152E+00 | 1.982E-01 | Half-Life | too short | |
| | 856.28 | | | -5.256E-01 | 1.982E-01 | Half-Life | too short | |
| | 875.33 | | | -1.300E-01 | 1.982E-01 | Half-Life | too short | |
| | 1236.41 | | | 3.113E-01 | 1.982E-01 | Half-Life | too short | |
| | 1298.22 | | | -4.513E-01 | 1.982E-01 | Half-Life | too short | |
| CS-134 | 475.35 | | | -1.265E+00 | 1.391E+00 | 2.042E+00 | 1.792E-01 | -0.620 |
| | 563.23 | | | 9.249E-02 | 2.388E-01 | 4.128E-01 | 3.733E-02 | 0.224 |
| | 569.32 | | | 5.288E-02 | 1.376E-01 | 2.353E-01 | 2.137E-02 | 0.225 |
| | 604.70 | | | -4.962E-02 | 2.904E-02 | 3.301E-02 | 2.964E-03 | -1.503 |
| | 795.84 | * | | 1.413E-02 | 3.145E-02 | 5.373E-02 | 4.951E-03 | 0.263 |
| | 801.93 | | | -2.298E-01 | 2.910E-01 | 4.460E-01 | 4.106E-02 | -0.515 |
| | 1038.57 | | | 2.972E+00 | 2.969E+00 | 5.414E+00 | 4.778E-01 | 0.549 |
| | 1167.94 | | | -8.266E-01 | 1.674E+00 | 2.633E+00 | 2.151E-01 | -0.314 |
| | 1365.15 | | | 5.682E-01 | 8.671E-01 | 1.553E+00 | 1.343E-01 | 0.366 |
| CS-135 | 268.24 | * | | 5.880E-02 | 1.122E-01 | 1.708E-01 | 1.684E-02 | 0.344 |

---- 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 | | | -6.803E+11 | 1.122E-01 | Half-Life | too short | |
| | 417.63 | | | 1.833E+11 | 1.122E-01 | Half-Life | too short | |
| | 546.56 | | | 5.015E+10 | 1.122E-01 | Half-Life | too short | |
| | 836.80 | | | 2.097E+11 | 1.122E-01 | Half-Life | too short | |
| | 1038.76 | | | 1.651E+12 | 1.122E-01 | Half-Life | too short | |
| | 1124.00 | | | 4.048E+11 | 1.122E-01 | Half-Life | too short | |
| | 1131.51 | | | -3.066E+11 | 1.122E-01 | Half-Life | too short | |
| | 1260.41 | * | | -2.876E+10 | 1.122E-01 | Half-Life | too short | |
| | 1457.56 | | | 1.708E+13 | 1.122E-01 | Half-Life | too short | |
| | 1678.03 | | | 5.832E+11 | 1.122E-01 | Half-Life | too short | |
| | 1706.46 | | | -1.873E+11 | 1.122E-01 | Half-Life | too short | |
| | 1791.20 | | | -6.557E+11 | 1.122E-01 | Half-Life | too short | |
| CS-136 | 66.91 | | | -1.417E-03 | 4.522E-01 | 6.646E-01 | 9.860E-02 | -0.002 |
| | 86.29 | + | | 1.676E+00 | 8.494E-01 | 1.239E+00 | 1.643E-01 | 1.352 |
| | 153.22 | | | 5.295E-01 | 4.966E-01 | 8.291E-01 | 7.603E-02 | 0.639 |
| | 163.89 | | | 4.554E-01 | 8.352E-01 | 1.335E+00 | 1.209E-01 | 0.341 |
| | 176.55 | | | -1.426E-01 | 2.582E-01 | 4.263E-01 | 3.643E-02 | -0.334 |
| | 273.65 | | | -3.094E-01 | 3.736E-01 | 5.055E-01 | 4.586E-02 | -0.612 |
| | 340.57 | | | 2.103E-01 | 1.165E-01 | 1.891E-01 | 1.666E-02 | 1.112 |
| | 818.51 | | | -6.840E-02 | 4.964E-02 | 6.512E-02 | 5.979E-03 | -1.050 |
| | 1048.07 | * | | -1.911E-03 | 8.440E-02 | 1.391E-01 | 1.273E-02 | -0.014 |
| | 1235.34 | | | -4.546E-02 | 4.846E-01 | 7.963E-01 | 9.188E-02 | -0.057 |
| BA-137M | 661.65 | * | | 8.074E-03 | 2.528E-02 | 4.305E-02 | 3.810E-03 | 0.188 |
| CS-137 | 661.65 | * | | 8.535E-03 | 2.672E-02 | 4.551E-02 | 4.035E-03 | 0.188 |
| CE-139 | 165.85 | * | | -1.108E-02 | 2.113E-02 | 3.248E-02 | 2.569E-03 | -0.341 |
| BA-140 | 162.64 | | | 3.093E-02 | 5.925E-01 | 9.244E-01 | 7.856E-02 | 0.033 |
| | 304.84 | | | -2.802E-01 | 8.908E-01 | 1.432E+00 | 4.010E-01 | -0.196 |
| LA-140 | 423.70 | | | -8.605E-01 | 1.391E+00 | 2.077E+00 | 6.728E-01 | -0.414 |
| | 537.32 | * | | 2.240E-02 | 1.900E-01 | 3.225E-01 | 1.071E-01 | 0.069 |
| | 328.77 | | | 2.211E-01 | 2.296E-01 | 3.976E-01 | 3.602E-02 | 0.556 |
| | 432.53 | | | -5.381E-01 | 1.492E+00 | 2.329E+00 | 2.095E-01 | -0.231 |
| | 487.03 | | | -1.067E-02 | 1.090E-01 | 1.730E-01 | 1.615E-02 | -0.062 |
| | 751.79 | | | -6.080E-01 | 1.292E+00 | 2.019E+00 | 2.013E-01 | -0.301 |
| | 815.85 | | | 1.659E-01 | 2.151E-01 | 3.824E-01 | 3.866E-02 | 0.434 |
| | 867.82 | | | 3.539E-01 | 1.083E+00 | 1.730E+00 | 1.662E-01 | 0.205 |
| | 919.63 | | | 1.567E+00 | 2.138E+00 | 3.661E+00 | 4.051E-01 | 0.428 |
| | 925.24 | | | -2.034E-01 | 8.023E-01 | 1.256E+00 | 1.210E-01 | -0.162 |
| CE-141 | 1596.49 | * | | 5.445E-02 | 6.534E-02 | 1.208E-01 | 1.010E-02 | 0.451 |
| | 145.44 | * | | 5.458E-03 | 4.545E-02 | 7.290E-02 | 6.103E-03 | 0.075 |
| CE-143 | 57.37 | | | 2.450E-04 | 4.545E-02 | Half-Life | too short | |
| | 231.56 | | | -1.025E-03 | 4.545E-02 | Half-Life | too short | |
| + CE-144 | 293.26 | * | | 5.276E-04 | 4.545E-02 | Half-Life | too short | |
| | 350.59 | | | 3.852E-02 | 4.545E-02 | Half-Life | too short | |
| | 490.36 | | | 2.464E-03 | 4.545E-02 | Half-Life | too short | |
| | 664.57 | | | 4.617E-04 | 4.545E-02 | Half-Life | too short | |
| | 721.93 | | | 1.368E-03 | 4.545E-02 | Half-Life | too short | |
| PM-144 | 80.11 | | | -2.921E-01 | 1.294E+00 | 1.855E+00 | 1.584E-01 | -0.157 |
| | 133.54 | * | | -7.691E-02 | 1.428E-01 | 2.218E-01 | 3.424E-02 | -0.347 |
| | 476.78 | | | 5.045E-02 | 4.821E-02 | 8.369E-02 | 8.012E-03 | 0.603 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 618.01 | | 9.214E-03 | 2.050E-02 | 3.552E-02 | 3.259E-03 | 0.259 |
| | | 696.49 | * | -1.368E-02 | 2.232E-02 | 3.460E-02 | 3.101E-03 | -0.395 |
| | | 778.57 | | -9.724E-01 | 1.535E+00 | 2.340E+00 | 2.138E-01 | -0.416 |
| PR-144 | | 696.49 | * | -9.277E-01 | 1.514E+00 | 2.347E+00 | 2.103E-01 | -0.395 |
| | 1489.15 | | | 2.285E+00 | 6.922E+00 | 1.205E+01 | 1.006E+00 | 0.190 |
| PM-146 | | 453.90 | * | 2.623E-02 | 2.889E-02 | 4.992E-02 | 5.379E-03 | 0.525 |
| | | 633.02 | | -4.169E-01 | 9.679E-01 | 1.527E+00 | 5.716E-01 | -0.273 |
| | | 735.90 | | -5.253E-03 | 1.030E-01 | 1.687E-01 | 4.849E-02 | -0.031 |
| | | 747.13 | | -2.734E-02 | 6.088E-02 | 9.520E-02 | 1.364E-02 | -0.287 |
| ND-147 | | 91.11 | | 2.886E-01 | 2.709E-01 | 3.339E-01 | 3.305E-02 | 0.864 |
| | | 319.41 | | -4.425E-01 | 2.419E+00 | 3.927E+00 | 3.368E-01 | -0.113 |
| | | 439.89 | | -6.625E-01 | 4.680E+00 | 7.455E+00 | 6.425E-01 | -0.089 |
| | | 531.02 | * | 7.532E-02 | 4.224E-01 | 7.210E-01 | 1.091E-01 | 0.104 |
| PM-149 | | 285.90 | * | -2.697E+01 | 1.136E+02 | 1.853E+02 | 2.870E+01 | -0.146 |
| EU-152 | | 121.78 | | 3.744E-02 | 4.660E-02 | 7.782E-02 | 7.710E-03 | 0.481 |
| | | 244.69 | | 1.587E-01 | 2.462E-01 | 3.786E-01 | 3.206E-02 | 0.419 |
| | | 344.27 | * | -1.608E-02 | 6.814E-02 | 1.057E-01 | 9.586E-03 | -0.152 |
| | | 443.98 | | 4.717E-01 | 6.432E-01 | 1.099E+00 | 9.492E-02 | 0.429 |
| | | 778.89 | | -1.236E-01 | 1.754E-01 | 2.649E-01 | 2.420E-02 | -0.466 |
| | | 867.32 | | 3.398E-01 | 5.913E-01 | 9.443E-01 | 8.665E-02 | 0.360 |
| | | 964.01 | | 1.823E-02 | 2.626E-01 | 3.685E-01 | 3.335E-02 | 0.049 |
| | | 1085.78 | | -4.665E-02 | 2.614E-01 | 4.285E-01 | 3.696E-02 | -0.109 |
| | | 1112.02 | | 2.156E-01 | 2.426E-01 | 4.048E-01 | 3.439E-02 | 0.533 |
| | | 1407.95 | | 4.978E-02 | 1.406E-01 | 2.412E-01 | 1.999E-02 | 0.206 |
| GD-153 | | 69.67 | | -8.479E-01 | 8.335E-01 | 1.311E+00 | 1.005E-01 | -0.647 |
| | | 83.37 | | 7.548E+00 | 9.360E+00 | 1.417E+01 | 1.259E+00 | 0.533 |
| | | 97.43 | * | 7.958E-03 | 5.217E-02 | 7.634E-02 | 6.827E-03 | 0.104 |
| | | 103.18 | | -5.305E-02 | 6.577E-02 | 1.021E-01 | 8.959E-03 | -0.520 |
| EU-154 | | 123.07 | | 1.041E-02 | 3.287E-02 | 5.367E-02 | 6.081E-03 | 0.194 |
| | | 247.94 | | -1.743E-02 | 2.334E-01 | 3.876E-01 | 4.407E-02 | -0.045 |
| | | 591.81 | | -1.635E-01 | 4.207E-01 | 6.587E-01 | 7.857E-02 | -0.248 |
| | | 723.30 | | -7.585E-02 | 1.409E-01 | 1.864E-01 | 1.846E-02 | -0.407 |
| | | 756.87 | | 5.243E-01 | 5.495E-01 | 9.760E-01 | 1.203E-01 | 0.537 |
| | | 873.19 | | -1.337E-01 | 1.978E-01 | 2.935E-01 | 3.710E-02 | -0.456 |
| | | 996.32 | | 5.333E-02 | 2.488E-01 | 4.103E-01 | 7.360E-02 | 0.130 |
| | | 1004.76 | | -5.801E-02 | 1.510E-01 | 2.314E-01 | 2.749E-02 | -0.251 |
| | | 1274.45 | * | -1.891E-02 | 8.770E-02 | 1.413E-01 | 1.554E-02 | -0.134 |
| EU-155 | | 48.70 | | -5.254E-02 | 9.581E-01 | 1.427E+00 | 1.155E-01 | -0.037 |
| | | 60.01 | | -1.446E+00 | 2.468E+00 | 3.532E+00 | 2.543E-01 | -0.409 |
| | + | 86.54 | | 1.403E-01 | 6.983E-02 | 1.036E-01 | 9.668E-03 | 1.353 |
| | | 105.31 | * | 1.356E-02 | 6.851E-02 | 1.119E-01 | 9.889E-03 | 0.121 |
| TB-160 | + | 86.79 | | 3.812E-01 | 1.897E-01 | 2.803E-01 | 2.600E-02 | 1.360 |
| | | 197.04 | | -1.264E-02 | 3.412E-01 | 5.749E-01 | 4.711E-02 | -0.022 |
| | | 215.65 | | 2.939E-01 | 4.995E-01 | 8.626E-01 | 7.187E-02 | 0.341 |
| | | 298.57 | | 3.636E-02 | 8.575E-02 | 1.262E-01 | 1.079E-02 | 0.288 |
| | | 879.36 | * | 4.104E-02 | 9.813E-02 | 1.667E-01 | 1.529E-02 | 0.246 |
| | | 962.29 | | 8.194E-02 | 4.626E-01 | 6.742E-01 | 6.104E-02 | 0.122 |
| | | 966.15 | | 2.482E-01 | 1.850E-01 | 2.978E-01 | 2.693E-02 | 0.833 |
| | | 1177.93 | | 2.393E-01 | 2.826E-01 | 5.041E-01 | 4.104E-02 | 0.475 |

---- 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 | | | -2.030E-01 | 5.102E-01 | 8.033E-01 | 6.586E-02 | -0.253 |
| | 80.57 | | | -1.148E-01 | 1.687E-01 | 2.354E-01 | 2.021E-02 | -0.488 |
| | 184.41 | | | 5.008E-02 | 2.585E-02 | 4.281E-02 | 3.460E-03 | 1.170 |
| | 280.46 | | | -5.918E-02 | 5.953E-02 | 9.250E-02 | 7.855E-03 | -0.640 |
| | 410.95 | | + | 2.075E-01 | 2.294E-01 | 2.900E-01 | 2.450E-02 | 0.715 |
| | 711.68 | | * | 2.066E-02 | 4.017E-02 | 6.946E-02 | 6.254E-03 | 0.297 |
| TM-171 | 752.31 | | | 1.243E-02 | 1.854E-01 | 3.069E-01 | 2.790E-02 | 0.041 |
| | 810.29 | | | -6.054E-02 | 4.241E-02 | 5.771E-02 | 5.291E-03 | -1.049 |
| | 51.35 | | | -4.226E+00 | 1.348E+01 | 1.973E+01 | 1.524E+00 | -0.214 |
| | 52.39 | | | 3.113E+00 | 6.253E+00 | 1.061E+01 | 8.073E-01 | 0.293 |
| | 59.40 | | | 1.950E+00 | 1.296E+01 | 1.937E+01 | 1.393E+00 | 0.101 |
| | 66.72 | | * | -1.845E+00 | 1.509E+01 | 2.204E+01 | 1.648E+00 | -0.084 |
| LU-176 | 88.36 | | + | 2.760E-01 | 1.374E-01 | 2.041E-01 | 1.918E-02 | 1.352 |
| | 201.83 | | | 1.983E-03 | 1.836E-02 | 3.112E-02 | 2.562E-03 | 0.064 |
| | 306.84 | | * | -4.384E-03 | 1.586E-02 | 2.564E-02 | 2.196E-03 | -0.171 |
| | 401.10 | | | 2.187E+00 | 4.832E+00 | 8.088E+00 | 6.783E-01 | 0.270 |
| LU-177 | 112.95 | | | 4.868E-01 | 1.285E+00 | 2.109E+00 | 1.820E-01 | 0.231 |
| | 208.36 | | + | 1.413E+00 | 1.355E+00 | 1.599E+00 | 1.325E-01 | 0.883 |
| LU-177M | 52.97 | | | 1.258E-01 | 6.590E-01 | 1.104E+00 | 8.337E-02 | 0.114 |
| | 54.07 | | | 3.687E-02 | 3.534E-01 | 5.894E-01 | 4.395E-02 | 0.063 |
| | 61.30 | | | 1.792E-01 | 7.378E-01 | 1.107E+00 | 8.013E-02 | 0.162 |
| | 121.62 | | | 1.823E-01 | 2.400E-01 | 4.004E-01 | 3.441E-02 | 0.455 |
| | 147.16 | | | -4.402E-01 | 4.618E-01 | 6.977E-01 | 5.709E-02 | -0.631 |
| | 171.86 | | | -1.737E-01 | 3.403E-01 | 5.220E-01 | 4.158E-02 | -0.333 |
| | 218.09 | | | 2.474E-02 | 5.569E-01 | 9.375E-01 | 7.826E-02 | 0.026 |
| | 268.79 | | | 5.013E-01 | 5.979E-01 | 9.287E-01 | 7.892E-02 | 0.540 |
| | 319.02 | | | -4.013E-02 | 1.682E-01 | 2.720E-01 | 2.333E-02 | -0.148 |
| | 367.43 | | | 2.192E-01 | 6.051E-01 | 1.014E+00 | 8.580E-02 | 0.216 |
| | 413.65 | | * | 1.148E-01 | 1.290E-01 | 2.005E-01 | 1.698E-02 | 0.573 |
| | 56.28 | | | -3.227E-01 | 4.164E-01 | 6.660E-01 | 4.869E-02 | -0.485 |
| HF-181 | 57.53 | | | 4.007E-02 | 2.260E-01 | 3.773E-01 | 2.736E-02 | 0.106 |
| | 65.20 | | | 5.231E-02 | 5.168E-01 | 7.648E-01 | 5.659E-02 | 0.068 |
| | 133.02 | | | -1.407E-02 | 4.682E-02 | 7.384E-02 | 6.198E-03 | -0.191 |
| | 136.25 | | | -1.687E-01 | 3.287E-01 | 5.118E-01 | 4.269E-02 | -0.330 |
| | 345.85 | | | -8.002E-02 | 1.359E-01 | 2.043E-01 | 1.746E-02 | -0.392 |
| | 482.03 | | * | -3.703E-02 | 3.422E-02 | 4.954E-02 | 4.359E-03 | -0.747 |
| W-181 | 56.28 | | | -1.237E-01 | 1.598E-01 | 2.556E-01 | 1.869E-02 | -0.484 |
| | 57.53 | | | 1.534E-02 | 8.678E-02 | 1.449E-01 | 1.051E-02 | 0.106 |
| | 65.20 | | * | 1.993E-02 | 1.969E-01 | 2.914E-01 | 2.156E-02 | 0.068 |
| TA-182 | 67.75 | | | -4.328E-02 | 6.069E-02 | 8.553E-02 | 6.448E-03 | -0.506 |
| | 100.10 | | | 1.203E-01 | 1.095E-01 | 1.859E-01 | 1.646E-02 | 0.647 |
| | 152.43 | | | -2.198E-02 | 2.377E-01 | 3.763E-01 | 3.050E-02 | -0.058 |
| | 222.10 | | | 1.335E-02 | 2.257E-01 | 3.798E-01 | 3.180E-02 | 0.035 |
| | 1001.68 | | | -1.613E-01 | 1.524E+00 | 2.434E+00 | 2.179E-01 | -0.066 |
| | 1121.28 | | + | 2.970E-01 | 2.207E-01 | 2.368E-01 | 2.000E-02 | 1.254 |
| RE-183 | 1189.05 | | | 2.070E-02 | 2.120E-01 | 3.557E-01 | 2.900E-02 | 0.058 |
| | 1221.42 | | * | -2.836E-02 | 1.435E-01 | 2.334E-01 | 1.909E-02 | -0.122 |
| | 1230.97 | | | 1.258E-01 | 3.414E-01 | 5.849E-01 | 4.787E-02 | 0.215 |
| | 57.98 | | | 4.595E-02 | 9.077E-02 | 1.470E-01 | 1.063E-02 | 0.313 |

---- 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 | | 2.412E-02 | 5.329E-02 | 8.102E-02 | 5.827E-03 | 0.298 |
| | | 67.20 | | -8.668E-03 | 1.066E-01 | 1.559E-01 | 1.171E-02 | -0.056 |
| | | 162.32 | * | -4.753E-04 | 7.946E-02 | 1.236E-01 | 9.839E-03 | -0.004 |
| | + | 208.81 | | 1.066E+00 | 1.023E+00 | 1.236E+00 | 1.024E-01 | 0.862 |
| | | 291.72 | | -4.035E-01 | 6.840E-01 | 9.373E-01 | 7.997E-02 | -0.431 |
| | | 57.98 | | 1.675E-01 | 3.309E-01 | 5.357E-01 | 3.875E-02 | 0.313 |
| | | 59.32 | | 8.786E-02 | 1.941E-01 | 2.951E-01 | 2.122E-02 | 0.298 |
| | | 67.20 | | -3.159E-02 | 3.884E-01 | 5.682E-01 | 4.265E-02 | -0.056 |
| | | 161.27 | | -1.681E-01 | 2.486E-01 | 3.792E-01 | 3.025E-02 | -0.443 |
| | | 216.55 | | 1.290E-01 | 1.705E-01 | 2.969E-01 | 2.476E-02 | 0.435 |
| | | 252.85 | * | 1.225E-01 | 1.488E-01 | 2.594E-01 | 2.202E-02 | 0.472 |
| | | 318.01 | | -4.785E-02 | 2.903E-01 | 4.720E-01 | 4.048E-02 | -0.101 |
| OS-185 | | 792.07 | | -4.610E-01 | 6.455E-01 | 9.718E-01 | 8.893E-02 | -0.474 |
| | | 903.28 | | -4.671E-01 | 7.946E-01 | 1.168E+00 | 1.069E-01 | -0.400 |
| | | 920.93 | | 7.960E-02 | 3.248E-01 | 5.402E-01 | 4.931E-02 | 0.147 |
| | | 59.72 | | -1.115E-02 | 1.445E-01 | 2.133E-01 | 1.534E-02 | -0.052 |
| | | 61.14 | | 9.281E-03 | 8.114E-02 | 1.209E-01 | 8.748E-03 | 0.077 |
| | | 69.30 | | -1.777E-01 | 1.476E-01 | 2.298E-01 | 1.755E-02 | -0.773 |
| | | 592.07 | | -7.305E-01 | 1.677E+00 | 2.690E+00 | 2.412E-01 | -0.272 |
| | | 646.12 | * | -9.257E-03 | 2.858E-02 | 4.599E-02 | 4.089E-03 | -0.201 |
| | | 717.42 | | 5.660E-02 | 6.624E-01 | 1.101E+00 | 9.927E-02 | 0.051 |
| | | 874.81 | | -1.426E-01 | 3.906E-01 | 6.063E-01 | 5.562E-02 | -0.235 |
| | | 880.27 | | 1.323E-01 | 5.616E-01 | 9.356E-01 | 8.580E-02 | 0.141 |
| | | 155.03 | * | -5.480E-02 | 1.203E-01 | 1.865E-01 | 1.505E-02 | -0.294 |
| RE-188 | | 477.96 | | 8.332E-01 | 2.396E+00 | 3.947E+00 | 3.467E-01 | 0.211 |
| | | 633.10 | | -8.433E-01 | 1.969E+00 | 3.146E+00 | 2.806E-01 | -0.268 |
| W-188 | + | 63.58 | | 4.141E+01 | 4.044E+01 | 4.729E+01 | 3.464E+00 | 0.876 |
| | | 227.08 | | 8.745E+00 | 8.610E+00 | 1.511E+01 | 1.269E+00 | 0.579 |
| IR-192 | | 290.67 | * | -4.010E+00 | 5.598E+00 | 7.585E+00 | 6.470E-01 | -0.529 |
| | + | 295.96 | | 4.697E-01 | 1.173E-01 | 1.806E-01 | 1.554E-02 | 2.601 |
| | | 308.46 | | 4.223E-03 | 6.267E-02 | 1.038E-01 | 8.938E-03 | 0.041 |
| | | 316.51 | * | -6.489E-03 | 2.321E-02 | 3.745E-02 | 3.219E-03 | -0.173 |
| AU-195 | | 468.07 | | 2.529E-02 | 5.170E-02 | 7.668E-02 | 7.175E-03 | 0.330 |
| | | 604.41 | | -6.605E-01 | 4.052E-01 | 4.601E-01 | 6.095E-02 | -1.435 |
| | | 612.46 | | 6.421E-01 | 6.276E-01 | 9.975E-01 | 1.016E-01 | 0.644 |
| | | 65.12 | | 1.837E-02 | 9.115E-02 | 1.356E-01 | 1.003E-02 | 0.135 |
| | | 66.83 | | -8.204E-03 | 5.013E-02 | 7.303E-02 | 5.466E-03 | -0.112 |
| | + | 75.70 | | 3.089E-01 | 1.132E-01 | 2.386E-01 | 1.939E-02 | 1.294 |
| | | 98.88 | * | 1.015E-01 | 1.534E-01 | 2.310E-01 | 2.054E-02 | 0.440 |
| | | 129.76 | | 3.310E+00 | 1.940E+00 | 3.328E+00 | 2.811E-01 | 0.995 |
| TL-200 | | 367.94 | * | -1.037E-04 | 1.940E+00 | Half-Life | too short | |
| | | 579.30 | | 2.843E-03 | 1.940E+00 | Half-Life | too short | |
| | | 828.27 | | -4.327E-03 | 1.940E+00 | Half-Life | too short | |
| | | 1205.75 | | -3.737E-03 | 1.940E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | -5.079E+00 | 3.576E+00 | 5.505E+00 | 4.190E-01 | -0.923 |
| | | 70.82 | | 1.226E+00 | 2.310E+00 | 3.491E+00 | 2.702E-01 | 0.351 |
| | | 80.30 | | -1.212E+00 | 4.672E+00 | 6.681E+00 | 5.720E-01 | -0.181 |
| | | 135.34 | | -1.160E+01 | 2.680E+01 | 4.193E+01 | 3.503E+00 | -0.277 |
| | | 167.43 | * | -2.507E+00 | 7.361E+00 | 1.143E+01 | 9.051E-01 | -0.219 |

---- 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 | | -3.315E-01 | 2.334E-01 | 3.593E-01 | 2.734E-02 | -0.923 |
| | | 70.82 | | 7.982E-02 | 1.504E-01 | 2.272E-01 | 1.759E-02 | 0.351 |
| | | 80.30 | | -7.891E-02 | 3.042E-01 | 4.350E-01 | 3.724E-02 | -0.181 |
| HG-203 | | 439.56 | * | 1.430E-02 | 5.450E-02 | 8.972E-02 | 7.728E-03 | 0.159 |
| | | 70.83 | | 3.216E-01 | 6.036E-01 | 9.108E-01 | 1.190E-01 | 0.353 |
| | | 72.87 | | 3.159E-01 | 3.692E-01 | 5.622E-01 | 7.163E-02 | 0.562 |
| | | 82.60 | | 1.707E-02 | 6.628E-01 | 1.034E+00 | 1.433E-01 | 0.017 |
| | | 279.20 | * | -5.446E-03 | 2.855E-02 | 4.680E-02 | 4.088E-03 | -0.116 |
| BI-207 | | 72.80 | | 8.720E-02 | 1.049E-01 | 1.601E-01 | 1.263E-02 | 0.545 |
| | + | 74.97 | | 1.701E-01 | 6.237E-02 | 1.149E-01 | 9.265E-03 | 1.481 |
| | | 84.90 | | 9.789E-02 | 1.194E-01 | 1.807E-01 | 1.636E-02 | 0.542 |
| | | 569.67 | | 8.236E-03 | 2.142E-02 | 3.664E-02 | 3.285E-03 | 0.225 |
| | | 1063.62 | * | 1.355E-02 | 3.714E-02 | 6.447E-02 | 5.625E-03 | 0.210 |
| TL-207 | | 1770.23 | | 6.264E-02 | 2.941E-01 | 4.532E-01 | 3.723E-02 | 0.138 |
| | | 81.07 | | -1.648E-01 | 1.382E-01 | 1.866E-01 | 1.612E-02 | -0.883 |
| | | 83.78 | | 7.166E-02 | 7.896E-02 | 1.200E-01 | 1.072E-02 | 0.597 |
| | | 94.90 | | -8.036E-02 | 1.490E-01 | 2.333E-01 | 2.109E-02 | -0.344 |
| | | 122.32 | | 1.139E+00 | 1.119E+00 | 1.884E+00 | 1.738E-01 | 0.605 |
| | | 144.24 | | 3.205E-01 | 4.780E-01 | 7.769E-01 | 7.217E-02 | 0.412 |
| | | 154.21 | | 3.089E-01 | 2.686E-01 | 4.501E-01 | 4.047E-02 | 0.686 |
| | + | 269.46 | | 3.437E-01 | 1.849E-01 | 2.252E-01 | 1.955E-02 | 1.526 |
| | | 323.87 | * | -3.624E-01 | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| | + | 338.28 | | 2.759E+00 | 1.082E+00 | 1.595E+00 | 1.957E-01 | 1.730 |
| PO-209 | | 445.03 | | 1.594E-01 | 1.564E+00 | 2.541E+00 | 3.075E-01 | 0.063 |
| | | 260.50 | | 2.354E+00 | 6.437E+00 | 1.093E+01 | 9.287E-01 | 0.215 |
| | | 262.80 | | -1.714E+00 | 1.782E+01 | 2.946E+01 | 2.504E+00 | -0.058 |
| PB-211 | | 896.60 | * | -2.418E+00 | 5.889E+00 | 9.043E+00 | 8.281E-01 | -0.267 |
| | | 404.84 | * | -3.238E-01 | 8.274E-01 | 1.090E+00 | 6.829E-01 | -0.297 |
| | | 427.08 | | 5.463E-02 | 1.308E+00 | 2.119E+00 | 1.317E+00 | 0.026 |
| BI-212 | | 831.96 | | -6.371E-01 | 9.980E-01 | 1.389E+00 | 8.717E-01 | -0.459 |
| | + | 727.18 | * | 6.382E-01 | 2.912E-01 | 4.501E-01 | 4.669E-02 | 1.418 |
| | | 785.46 | | 1.176E+00 | 1.099E+00 | 1.992E+00 | 1.822E-01 | 0.590 |
| PO-215 | | 1620.62 | | 2.578E-01 | 8.531E-01 | 1.461E+00 | 1.221E-01 | 0.176 |
| | | 81.07 | | -1.648E-01 | 1.382E-01 | 1.866E-01 | 1.612E-02 | -0.883 |
| | | 83.78 | | 7.166E-02 | 7.896E-02 | 1.200E-01 | 1.072E-02 | 0.597 |
| | | 94.90 | | -8.036E-02 | 1.490E-01 | 2.333E-01 | 2.109E-02 | -0.344 |
| | | 122.32 | | 1.139E+00 | 1.119E+00 | 1.884E+00 | 1.738E-01 | 0.605 |
| | | 144.24 | | 3.205E-01 | 4.780E-01 | 7.769E-01 | 7.217E-02 | 0.412 |
| | | 154.21 | | 3.089E-01 | 2.686E-01 | 4.501E-01 | 4.047E-02 | 0.686 |
| | + | 269.46 | | 3.437E-01 | 1.849E-01 | 2.252E-01 | 1.955E-02 | 1.526 |
| | | 323.87 | * | -3.624E-01 | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| | + | 338.28 | | 2.759E+00 | 1.082E+00 | 1.595E+00 | 1.957E-01 | 1.730 |
| RN-219 | | 445.03 | | 1.594E-01 | 1.564E+00 | 2.541E+00 | 3.075E-01 | 0.063 |
| | + | 271.23 | | 4.410E-01 | 2.384E-01 | 2.980E-01 | 3.043E-02 | 1.480 |
| | | 401.81 | * | 2.971E-02 | 3.045E-01 | 4.972E-01 | 7.405E-02 | 0.060 |
| RN-220 | | 549.76 | * | 1.534E+01 | 1.779E+01 | 3.182E+01 | 2.849E+00 | 0.482 |
| RA-223 | | 81.07 | | -1.648E-01 | 1.382E-01 | 1.866E-01 | 1.612E-02 | -0.883 |
| | | 83.78 | | 7.166E-02 | 7.896E-02 | 1.200E-01 | 1.072E-02 | 0.597 |
| | | 94.90 | | -8.036E-02 | 1.490E-01 | 2.333E-01 | 2.109E-02 | -0.344 |

----- 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 | | 1.139E+00 | 1.119E+00 | 1.884E+00 | 1.738E-01 | 0.605 |
| | | 144.24 | | 3.205E-01 | 4.780E-01 | 7.769E-01 | 7.217E-02 | 0.412 |
| | | 154.21 | | 3.089E-01 | 2.686E-01 | 4.501E-01 | 4.047E-02 | 0.686 |
| | + | 269.46 | | 3.437E-01 | 1.849E-01 | 2.252E-01 | 1.955E-02 | 1.526 |
| | | 323.87 | * | -3.624E-01 | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| | + | 338.28 | | 2.759E+00 | 1.082E+00 | 1.595E+00 | 1.957E-01 | 1.730 |
| | | 445.03 | | 1.594E-01 | 1.564E+00 | 2.541E+00 | 3.075E-01 | 0.063 |
| | | 79.80 | | -9.588E-02 | 9.979E-01 | 1.441E+00 | 3.092E-01 | -0.067 |
| | | 236.00 | | 9.622E-02 | 1.651E-01 | 2.526E-01 | 3.061E-02 | 0.381 |
| | | 256.20 | * | -2.187E-01 | 2.555E-01 | 4.003E-01 | 6.116E-02 | -0.546 |
| | | 286.10 | | 8.907E-02 | 1.040E+00 | 1.730E+00 | 2.272E-01 | 0.051 |
| | | 299.80 | | 1.285E+00 | 1.046E+00 | 1.611E+00 | 2.812E-01 | 0.798 |
| TH-227 | | 304.40 | | -1.409E+00 | 1.239E+00 | 1.838E+00 | 3.383E-01 | -0.767 |
| | | 334.20 | | -7.696E-03 | 1.746E+00 | 2.510E+00 | 4.865E-01 | -0.003 |
| | | 79.80 | | -9.588E-02 | 9.979E-01 | 1.441E+00 | 3.132E-01 | -0.067 |
| | + | 94.00 | | 4.294E+00 | 2.391E+00 | 2.254E+00 | 4.950E-01 | 1.905 |
| | | 236.00 | | 9.622E-02 | 1.650E-01 | 2.526E-01 | 2.762E-02 | 0.381 |
| | | 256.20 | * | -2.187E-01 | 2.563E-01 | 4.003E-01 | 7.207E-02 | -0.546 |
| | | 286.10 | | 8.907E-02 | 1.044E+00 | 1.730E+00 | 1.736E+00 | 0.051 |
| | | 299.80 | | 1.285E+00 | 1.046E+00 | 1.611E+00 | 2.812E-01 | 0.798 |
| | | 304.40 | | -1.409E+00 | 1.239E+00 | 1.838E+00 | 3.383E-01 | -0.767 |
| | | 334.20 | | -7.696E-03 | 1.746E+00 | 2.510E+00 | 4.865E-01 | -0.003 |
| | | 85.43 | | 1.179E-01 | 1.187E-01 | 1.807E-01 | 1.648E-02 | 0.653 |
| | + | 88.47 | | 1.589E-01 | 7.908E-02 | 1.178E-01 | 1.106E-02 | 1.349 |
| PA-231 | | 100.00 | | 1.339E-01 | 1.174E-01 | 1.915E-01 | 1.697E-02 | 0.699 |
| | | 193.63 | * | -1.647E-01 | 3.148E-01 | 5.175E-01 | 4.226E-02 | -0.318 |
| | + | 210.97 | | 8.194E-01 | 7.861E-01 | 9.191E-01 | 7.630E-02 | 0.891 |
| | | 283.67 | * | 5.125E-01 | 1.065E+00 | 1.808E+00 | 2.734E-01 | 0.283 |
| | | 301.29 | | 3.521E-01 | 3.765E-01 | 6.352E-01 | 7.750E-02 | 0.554 |
| | | 81.07 | | -1.648E-01 | 1.382E-01 | 1.866E-01 | 1.612E-02 | -0.883 |
| | | 83.78 | | 7.166E-02 | 7.896E-02 | 1.200E-01 | 1.072E-02 | 0.597 |
| | | 94.90 | | -8.036E-02 | 1.490E-01 | 2.333E-01 | 2.109E-02 | -0.344 |
| | | 122.32 | | 1.139E+00 | 1.119E+00 | 1.884E+00 | 1.738E-01 | 0.605 |
| | | 144.24 | | 3.205E-01 | 4.780E-01 | 7.769E-01 | 7.217E-02 | 0.412 |
| | | 154.21 | | 3.089E-01 | 2.686E-01 | 4.501E-01 | 4.047E-02 | 0.686 |
| | + | 269.46 | | 3.437E-01 | 1.849E-01 | 2.252E-01 | 1.955E-02 | 1.526 |
| U-231 | | 323.87 | * | -3.624E-01 | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| | + | 338.28 | | 2.759E+00 | 1.082E+00 | 1.595E+00 | 1.957E-01 | 1.730 |
| | | 445.03 | | 1.594E-01 | 1.564E+00 | 2.541E+00 | 3.075E-01 | 0.063 |
| | | 84.21 | | 2.395E+00 | 4.656E+00 | 6.952E+00 | 6.242E-01 | 0.345 |
| | + | 92.29 | | 5.778E+00 | 3.003E+00 | 3.281E+00 | 3.007E-01 | 1.761 |
| | | 95.87 | * | -3.985E-01 | 9.685E-01 | 1.352E+00 | 1.217E-01 | -0.295 |
| | | 108.00 | | -4.738E-01 | 1.823E+00 | 2.912E+00 | 2.529E-01 | -0.163 |
| | + | 75.28 | | 4.964E+00 | 1.926E+00 | 3.525E+00 | 5.307E-01 | 1.408 |
| | + | 86.59 | | 2.278E+00 | 1.273E+00 | 1.682E+00 | 4.546E-01 | 1.355 |
| | | 300.12 | | 2.020E-01 | 2.985E-01 | 4.466E-01 | 6.626E-02 | 0.452 |
| | | 311.98 | * | 1.032E-02 | 4.302E-02 | 7.197E-02 | 6.347E-03 | 0.143 |
| | | 340.50 | | 1.013E+00 | 5.642E-01 | 8.462E-01 | 2.015E-01 | 1.197 |
| PA-233 | | 398.62 | | -8.889E-01 | 1.500E+00 | 2.292E+00 | 6.086E-01 | -0.388 |

---- 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 | | -9.202E-01 | 1.185E+00 | 1.771E+00 | 3.806E-01 | -0.520 |
| | + | 63.00 | | 1.179E+00 | 1.161E+00 | 1.373E+00 | 2.032E-01 | 0.859 |
| | + | 94.67 | | 3.829E-01 | 2.019E-01 | 1.752E-01 | 2.226E-02 | 2.185 |
| | | 98.44 | | 4.310E-02 | 6.510E-02 | 9.158E-02 | 5.113E-02 | 0.471 |
| | | 99.86 | | 3.371E-01 | 2.970E-01 | 4.844E-01 | 4.294E-02 | 0.696 |
| | | 111.00 | | -1.067E-01 | 1.215E-01 | 1.868E-01 | 2.262E-02 | -0.571 |
| | | 131.20 | | -9.794E-03 | 7.455E-02 | 1.187E-01 | 1.000E-02 | -0.083 |
| | | 152.70 | | 4.286E-02 | 2.266E-01 | 3.636E-01 | 6.106E-02 | 0.118 |
| | + | 186.00 | | 4.026E+00 | 1.853E+00 | 1.729E+00 | 5.374E-01 | 2.328 |
| | | 226.40 | | 1.745E-01 | 2.669E-01 | 4.605E-01 | 6.012E-02 | 0.379 |
| | | 227.20 | | 2.522E-01 | 2.870E-01 | 5.009E-01 | 4.207E-02 | 0.503 |
| | | 248.90 | | -2.545E-01 | 5.225E-01 | 8.410E-01 | 1.880E-01 | -0.303 |
| | | 293.70 | | 1.901E+00 | 6.401E-01 | 9.856E-01 | 1.701E-01 | 1.929 |
| | | 369.80 | | -5.850E-02 | 5.487E-01 | 8.866E-01 | 1.925E-01 | -0.066 |
| | | 568.70 | | 8.824E-02 | 6.893E-01 | 1.156E+00 | 1.037E-01 | 0.076 |
| | | 569.50 | | 7.306E-02 | 1.901E-01 | 3.251E-01 | 2.915E-02 | 0.225 |
| | | 574.00 | | -7.956E-01 | 1.022E+00 | 1.594E+00 | 1.430E-01 | -0.499 |
| | | 699.00 | | -2.524E-01 | 4.680E-01 | 7.286E-01 | 1.402E-01 | -0.346 |
| | | 706.10 | | -2.883E-01 | 7.050E-01 | 1.099E+00 | 4.907E-01 | -0.262 |
| | | 733.00 | | 1.153E-02 | 2.976E-01 | 4.269E-01 | 9.549E-02 | 0.027 |
| | | 742.81 | | 5.479E-01 | 1.029E+00 | 1.666E+00 | 1.121E+00 | 0.329 |
| | | 796.30 | | 2.463E-01 | 6.110E-01 | 1.034E+00 | 2.816E-01 | 0.238 |
| | | 805.60 | | 1.989E-01 | 7.066E-01 | 1.184E+00 | 3.647E-01 | 0.168 |
| | | 819.60 | | -1.166E+00 | 8.993E-01 | 1.028E+00 | 3.921E-01 | -1.135 |
| | | 826.30 | | 1.045E-01 | 5.700E-01 | 9.455E-01 | 4.241E-01 | 0.110 |
| | | 831.60 | | -1.922E-01 | 4.726E-01 | 7.346E-01 | 2.204E-01 | -0.262 |
| | | 876.40 | | -4.250E-02 | 5.694E-01 | 9.147E-01 | 9.408E-01 | -0.046 |
| | | 880.51 | | 3.615E-02 | 2.015E-01 | 3.336E-01 | 3.059E-02 | 0.108 |
| | | 883.24 | | 2.133E-02 | 2.026E-01 | 3.321E-01 | 2.235E-01 | 0.064 |
| | | 899.00 | | 5.501E-01 | 6.886E-01 | 1.134E+00 | 4.969E-01 | 0.485 |
| | | 925.00 | | -1.051E-01 | 7.514E-01 | 1.194E+00 | 1.089E-01 | -0.088 |
| | | 926.50 | | 1.346E-02 | 1.136E-01 | 1.864E-01 | 4.744E-02 | 0.072 |
| | | 946.00 | * | 4.543E-02 | 2.097E-01 | 3.469E-01 | 6.586E-02 | 0.131 |
| | | 949.00 | | -1.843E-01 | 3.067E-01 | 4.582E-01 | 4.161E-02 | -0.402 |
| | | 980.50 | | 2.758E-02 | 5.344E-01 | 8.661E-01 | 7.803E-02 | 0.032 |
| | | 1394.10 | | 1.563E-04 | 7.271E-01 | 1.193E+00 | 7.759E-01 | 0.000 |
| PA-234M | | 766.42 | | 8.886E+00 | 9.861E+00 | 1.408E+01 | 7.155E+00 | 0.631 |
| | | 1001.03 | * | 1.045E+00 | 3.364E+00 | 5.619E+00 | 5.762E-01 | 0.186 |
| U-235 | | 89.95 | | 3.195E-02 | 9.314E-01 | 1.072E+00 | 3.329E-01 | 0.030 |
| | + | 93.35 | | 1.336E+00 | 7.804E-01 | 7.589E-01 | 2.139E-01 | 1.760 |
| | | 105.00 | | -9.500E-04 | 6.749E-01 | 1.093E+00 | 3.265E-01 | -0.001 |
| | | 143.76 | * | 8.297E-02 | 1.486E-01 | 2.396E-01 | 4.150E-02 | 0.346 |
| | | 163.35 | | 6.147E-03 | 3.386E-01 | 5.273E-01 | 9.905E-02 | 0.012 |
| | + | 185.71 | | 1.491E-01 | 5.204E-02 | 6.373E-02 | 5.159E-03 | 2.340 |
| | | 205.31 | | -1.120E-01 | 3.742E-01 | 5.438E-01 | 1.029E-01 | -0.206 |
| NP-236 | + | 94.67 | | 2.904E-01 | 1.509E-01 | 1.330E-01 | 1.204E-02 | 2.183 |
| | | 98.44 | | 3.257E-02 | 4.582E-02 | 6.923E-02 | 6.167E-03 | 0.470 |
| | | 111.00 | | -8.068E-02 | 9.165E-02 | 1.413E-01 | 1.222E-02 | -0.571 |
| | | 160.31 | * | -2.721E-02 | 5.564E-02 | 8.589E-02 | 6.864E-03 | -0.317 |

---- 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 | | 8.438E-02 | 9.944E-02 | 1.602E-01 | 1.421E-02 | 0.527 |
| | | 117.00 | * | 4.113E-02 | 1.167E-01 | 1.914E-01 | 1.647E-02 | 0.215 |
| | + | 209.75 | | 8.254E-01 | 7.919E-01 | 9.690E-01 | 8.036E-02 | 0.852 |
| | | 228.18 | | 1.021E-01 | 1.506E-01 | 2.605E-01 | 2.189E-02 | 0.392 |
| | | 277.60 | | 8.629E-02 | 1.176E-01 | 2.031E-01 | 1.724E-02 | 0.425 |
| AM-241 | | 334.30 | | -2.752E-02 | 9.881E-01 | 1.417E+00 | 1.214E-01 | -0.019 |
| | | 59.54 | * | 1.623E-03 | 7.527E-02 | 1.117E-01 | 8.857E-03 | 0.015 |
| CM-243 | | 99.55 | | 8.683E-02 | 1.023E-01 | 1.649E-01 | 1.463E-02 | 0.527 |
| | | 103.76 | * | -4.318E-02 | 6.050E-02 | 9.439E-02 | 8.271E-03 | -0.458 |
| | | 117.00 | | 4.232E-02 | 1.201E-01 | 1.969E-01 | 1.694E-02 | 0.215 |
| | + | 209.75 | | 8.138E-01 | 7.808E-01 | 9.554E-01 | 7.922E-02 | 0.852 |
| | | 228.18 | | 1.032E-01 | 1.521E-01 | 2.632E-01 | 2.212E-02 | 0.392 |
| AM-246 | | 277.60 | | 8.701E-02 | 1.186E-01 | 2.048E-01 | 1.738E-02 | 0.425 |
| | | 798.80 | | -3.577E-02 | 9.627E-02 | 1.514E-01 | 1.387E-02 | -0.236 |
| | | 1036.00 | | 4.832E-02 | 2.270E-01 | 3.886E-01 | 3.434E-02 | 0.124 |
| | | 1062.04 | | 1.082E-01 | 1.643E-01 | 2.926E-01 | 2.555E-02 | 0.370 |
| | | 1078.86 | * | 5.653E-02 | 9.938E-02 | 1.757E-01 | 1.521E-02 | 0.322 |
| CM-247 | | 278.00 | | 4.549E-01 | 4.933E-01 | 8.589E-01 | 7.291E-02 | 0.530 |
| | | 287.40 | | 2.856E-01 | 8.268E-01 | 1.397E+00 | 1.190E-01 | 0.204 |
| | | 402.60 | * | 1.197E-02 | 2.794E-02 | 4.519E-02 | 3.794E-03 | 0.265 |
| CF-249 | | 252.85 | | 4.563E-01 | 5.542E-01 | 9.659E-01 | 8.198E-02 | 0.472 |
| | | 333.44 | | -2.654E-02 | 1.268E-01 | 1.786E-01 | 1.530E-02 | -0.149 |
| CF-251 | | 387.95 | * | -2.079E-03 | 2.712E-02 | 4.382E-02 | 3.657E-03 | -0.047 |
| | | 176.60 | * | -4.602E-02 | 8.058E-02 | 1.329E-01 | 1.065E-02 | -0.346 |
| | | 227.00 | | 2.564E-01 | 2.535E-01 | 4.449E-01 | 3.736E-02 | 0.576 |
| | | 285.00 | | -3.504E-01 | 1.227E+00 | 1.997E+00 | 1.699E-01 | -0.175 |

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]G246328009      *
* Acquisition date   : 18-FEB-2010 11:48:05 Detector SN#                   *
* Detector ID        : GAM07 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 02:00:01.07 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328009 Analyst initials: MXR1                  *
* Batch Number       : 950786 Sample Quantity : 1.6662E+02 GRAM           *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope                   :
* MSD DPM            : 0.000 MSD Isotope :                               *
* LCS DPM            : 0.000 LCS Isotope  :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 1.524E+01 | 1.711E+00 | 3.448E-01 | 0.000E+00 |
| CD-109 | 1.187E+00 | 5.791E-01 | 9.350E-01 | 0.000E+00 |
| SN-126 | 1.164E-01 | 5.676E-02 | 9.382E-02 | 0.000E+00 |
| TL-208 | 2.328E-01 | 5.741E-02 | 4.074E-02 | 0.000E+00 |
| BI-210 | 3.450E+00 | 2.288E+00 | 2.098E+00 | 0.000E+00 |
| PB-210 | 3.450E+00 | 2.288E+00 | 2.098E+00 | 0.000E+00 |
| PO-210 | 3.450E+00 | 2.284E+00 | 2.098E+00 | 0.000E+00 |
| BI-211 | 1.888E+00 | 3.055E-01 | 2.142E-01 | 0.000E+00 |
| PB-212 | 7.927E-01 | 1.014E-01 | 6.645E-02 | 0.000E+00 |
| PO-212 | 7.927E-01 | 1.014E-01 | 6.645E-02 | 0.000E+00 |
| BI-214 | 5.119E-01 | 1.145E-01 | 7.413E-02 | 0.000E+00 |
| PB-214 | 6.569E-01 | 1.115E-01 | 7.767E-02 | 0.000E+00 |
| PO-214 | 6.569E-01 | 1.115E-01 | 7.767E-02 | 0.000E+00 |
| PO-216 | 7.927E-01 | 1.014E-01 | 6.645E-02 | 0.000E+00 |
| PO-218 | 6.569E-01 | 1.115E-01 | 7.767E-02 | 0.000E+00 |
| RA-224 | 2.178E+00 | 6.519E-01 | 7.561E-01 | 0.000E+00 |
| RA-226 | 5.119E-01 | 1.145E-01 | 7.413E-02 | 0.000E+00 |
| AC-228 | 7.704E-01 | 1.916E-01 | 1.546E-01 | 0.000E+00 |
| RA-228 | 7.704E-01 | 1.916E-01 | 1.546E-01 | 0.000E+00 |
| TH-228 | 8.062E-01 | 1.031E-01 | 6.758E-02 | 0.000E+00 |
| TH-230 | 5.119E-01 | 1.145E-01 | 7.413E-02 | 0.000E+00 |
| TH-232 | 7.704E-01 | 1.916E-01 | 1.546E-01 | 0.000E+00 |
| TH-234 | 1.011E+00 | 9.804E-01 | 1.077E+00 | 0.000E+00 |
| U-234 | 5.119E-01 | 1.145E-01 | 7.413E-02 | 0.000E+00 |
| NP-237 | 3.417E-01 | 1.804E-01 | 2.673E-01 | 0.000E+00 |
| U-238 | 1.011E+00 | 9.804E-01 | 1.077E+00 | 0.000E+00 |
| AM-243 | 9.477E-02 | 3.405E-02 | 5.364E-02 | 0.000E+00 |
| ANH-511 | 5.454E-02 | 5.084E-02 | 3.504E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) |
|---------|-------------------------------------|--------------------------|--------------------|
|---------|-------------------------------------|--------------------------|--------------------|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | 2.047E-01 | 2.399E-01 | 4.382E-01 | 0.000E+00 | NOT IDENT. |
| NA-22 | -1.988E-03 | 3.054E-02 | 5.197E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 4.029E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | -9.666E-03 | 1.958E-02 | 3.098E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 3.187E-02 | 4.794E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | -9.014E-03 | 2.930E-02 | 4.830E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 3.357E-02 | 5.551E-02 | 9.951E-02 | 0.000E+00 | NOT IDENT. |
| CR-51 | 3.373E-02 | 2.444E-01 | 4.396E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | -1.149E-02 | 1.917E-01 | 3.209E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | 1.351E-02 | 2.742E-02 | 4.910E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | 3.234E-03 | 2.641E-02 | 4.584E-02 | 0.000E+00 | NOT IDENT. |
| CO-57 | 1.723E-02 | 1.579E-02 | 2.973E-02 | 0.000E+00 | NOT IDENT. |
| CO-58 | -4.689E-02 | 2.820E-02 | 3.905E-02 | 0.000E+00 | NOT IDENT. |
| FE-59 | -2.613E-02 | 6.805E-02 | 1.141E-01 | 0.000E+00 | NOT IDENT. |
| CO-60 | 5.648E-04 | 3.027E-02 | 5.199E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 2.647E-02 | 7.216E-02 | 1.136E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -1.713E-02 | 8.750E-01 | 1.525E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | 9.964E-02 | 3.329E-01 | 6.388E-01 | 0.000E+00 | NOT IDENT. |
| AS-74 | -2.358E-02 | 6.855E-02 | 1.183E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | 6.605E-04 | 3.049E-02 | 5.130E-02 | 0.000E+00 | NOT IDENT. |
| BR-77 | -1.215E+00 | 1.179E+01 | 1.984E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -1.465E-01 | 2.653E-01 | 4.318E-01 | 0.000E+00 | NOT IDENT. |
| RB-83 | -2.739E-03 | 4.595E-02 | 7.770E-02 | 0.000E+00 | NOT IDENT. |
| RB-84 | -1.109E-02 | 5.148E-02 | 8.573E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 9.192E+00 | 5.197E+00 | 1.025E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 4.807E-02 | 2.717E-02 | 5.361E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | 2.385E-01 | 5.747E-01 | 1.045E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 2.330E-03 | 2.165E-02 | 3.783E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -4.894E-03 | 2.054E-02 | 3.524E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -9.294E+00 | 1.457E+01 | 2.365E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 1.922E-02 | 2.164E-02 | 4.068E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | 1.318E-02 | 3.139E-02 | 4.972E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | -5.642E-03 | 8.947E-02 | 1.435E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 5.038E-02 | 5.047E-02 | 9.495E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 4.132E+05 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 9.013E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 2.884E+00 | 1.266E+01 | 2.246E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 4.776E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -3.711E-04 | 2.047E-02 | 3.685E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -2.470E-02 | 2.091E-02 | 3.196E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 5.093E-03 | 2.848E-02 | 4.945E-02 | 0.000E+00 | FAIL ABUN |
| RH-106 | 7.955E-02 | 1.985E-01 | 3.633E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 7.955E-02 | 1.983E-01 | 3.633E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -1.339E-02 | 2.169E-02 | 3.550E-02 | 0.000E+00 | NOT IDENT. |
| AG-110M | -8.016E-03 | 2.353E-02 | 4.010E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 6.552E-01 | 1.213E+00 | 2.024E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | 1.216E-02 | 2.916E-02 | 5.261E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 1.216E-02 | 2.916E-02 | 5.261E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | 6.760E-02 | 1.250E-01 | 2.126E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 4.205E-01 | 1.267E+01 | 2.283E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 1.125E-02 | 3.965E-02 | 7.068E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 1.268E+00 | 2.207E+00 | 4.113E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 4.000E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 1.175E-02 | 1.858E-02 | 3.369E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -4.891E-01 | 7.535E-01 | 1.077E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | -3.318E-03 | 4.500E-02 | 7.322E-02 | 0.000E+00 | FAIL ABUN |
| SB-125 | 5.190E-02 | 5.686E-02 | 1.060E-01 | 0.000E+00 | FAIL ABUN |
| TE-125M | -4.544E-01 | 5.962E+00 | 1.074E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | -6.783E-02 | 1.397E-01 | 2.349E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -4.269E-02 | 1.216E-01 | 1.924E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | 2.698E-01 | 1.193E+00 | 2.134E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 7.095E-03 | 3.170E-02 | 5.744E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 4.891E-02 | 8.948E-02 | 1.637E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 4.593E-01 | 6.746E-01 | 1.272E+00 | 0.000E+00 | NOT IDENT. |
| BA-133 | -3.533E-04 | 3.213E-02 | 5.046E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 1.742E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 1.413E-02 | 3.082E-02 | 5.546E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 5.880E-02 | 1.099E-01 | 1.823E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 4.526E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -1.911E-03 | 8.271E-02 | 1.423E-01 | 0.000E+00 | FAIL ABUN |
| BA-137M | 8.074E-03 | 2.477E-02 | 4.470E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 8.535E-03 | 2.619E-02 | 4.725E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | -1.108E-02 | 2.071E-02 | 3.517E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 2.240E-02 | 1.862E-01 | 3.370E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | 5.445E-02 | 6.404E-02 | 1.218E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 5.458E-03 | 4.454E-02 | 7.923E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 2.774E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | -7.691E-02 | 1.400E-01 | 2.416E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -1.368E-02 | 2.187E-02 | 3.586E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -9.277E-01 | 1.484E+00 | 2.433E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 2.623E-02 | 2.831E-02 | 5.245E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | 7.532E-02 | 4.140E-01 | 7.538E-01 | 0.000E+00 | NOT IDENT. |
| PM-149 | -2.697E+01 | 1.114E+02 | 1.974E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | -1.608E-02 | 6.678E-02 | 1.120E-01 | 0.000E+00 | NOT IDENT. |
| GD-153 | 7.958E-03 | 5.113E-02 | 8.393E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | -1.891E-02 | 8.595E-02 | 1.437E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 1.356E-02 | 6.714E-02 | 1.228E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 4.104E-02 | 9.617E-02 | 1.716E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | 2.066E-02 | 3.937E-02 | 7.196E-02 | 0.000E+00 | FAIL ABUN |
| TM-171 | -1.845E+00 | 1.479E+01 | 2.449E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | -4.384E-03 | 1.554E-02 | 2.726E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 1.413E+00 | 1.328E+00 | 1.720E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | 1.148E-01 | 1.264E-01 | 2.112E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -3.703E-02 | 3.354E-02 | 5.195E-02 | 0.000E+00 | NOT IDENT. |
| W-181 | 1.993E-02 | 1.929E-01 | 3.239E-01 | 0.000E+00 | NOT IDENT. |
| TA-182 | -2.836E-02 | 1.406E-01 | 2.376E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | -4.753E-04 | 7.787E-02 | 1.339E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 1.225E-01 | 1.459E-01 | 2.774E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -9.257E-03 | 2.800E-02 | 4.779E-02 | 0.000E+00 | NOT IDENT. |
| RE-188 | -5.480E-02 | 1.179E-01 | 2.024E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -4.010E+00 | 5.486E+00 | 8.078E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | -6.489E-03 | 2.275E-02 | 3.978E-02 | 0.000E+00 | FAIL ABUN |
| AU-195 | 1.015E-01 | 1.504E-01 | 2.538E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 9.538E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | -2.507E+00 | 7.214E+00 | 1.237E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 1.430E-02 | 5.341E-02 | 9.435E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | -5.446E-03 | 2.798E-02 | 4.989E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 1.355E-02 | 3.640E-02 | 6.592E-02 | 0.000E+00 | FAIL ABUN |
| TL-207 | -3.624E-01 | 4.467E-01 | 7.445E-01 | 0.000E+00 | FAIL ABUN |
| PO-209 | -2.418E+00 | 5.771E+00 | 9.299E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | -3.238E-01 | 8.109E-01 | 1.149E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 0.000E+00 | 2.854E-01 | 4.659E-01 | 0.000E+00 | FAIL ABUN |
| PO-215 | -3.624E-01 | 4.467E-01 | 7.445E-01 | 0.000E+00 | FAIL ABUN |
| RN-219 | 2.971E-02 | 2.984E-01 | 5.243E-01 | 0.000E+00 | FAIL ABUN |
| RN-220 | 1.534E+01 | 1.744E+01 | 3.323E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -3.624E-01 | 4.467E-01 | 7.445E-01 | 0.000E+00 | FAIL ABUN |
| AC-227 | -2.187E-01 | 2.503E-01 | 4.279E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | -2.187E-01 | 2.512E-01 | 4.279E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | -1.647E-01 | 3.085E-01 | 5.578E-01 | 0.000E+00 | FAIL ABUN |
| PA-231 | 5.125E-01 | 1.043E+00 | 1.927E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -3.624E-01 | 4.467E-01 | 7.445E-01 | 0.000E+00 | FAIL ABUN |
| U-231 | -3.985E-01 | 9.492E-01 | 1.487E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | 1.032E-02 | 4.216E-02 | 7.648E-02 | 0.000E+00 | FAIL ABUN |
| PA-234 | 4.543E-02 | 2.055E-01 | 3.561E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | 1.045E+00 | 3.297E+00 | 5.757E+00 | 0.000E+00 | NOT IDENT. |
| U-235 | 8.297E-02 | 1.456E-01 | 2.605E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -2.721E-02 | 5.453E-02 | 9.309E-02 | 0.000E+00 | FAIL ABUN |
| NP-239 | 4.113E-02 | 1.144E-01 | 2.093E-01 | 0.000E+00 | FAIL ABUN |
| AM-241 | 1.623E-03 | 7.376E-02 | 1.245E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -4.318E-02 | 5.929E-02 | 1.036E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 5.653E-02 | 9.739E-02 | 1.796E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 1.197E-02 | 2.738E-02 | 4.765E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | -2.079E-03 | 2.658E-02 | 4.626E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -4.602E-02 | 7.897E-02 | 1.437E-01 | 0.000E+00 | NOT IDENT. |

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 13:49:02.32

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246328009.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 11:48:05
Sample ID          : G246328009          Sample quantity  : 1.66620E+02 GRAM
Detector name      : GAM07              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:01.07  0.0%
Energy tolerance   : 1.50000 keV        Analyst Initials : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             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 | 815 | 10.67* | 1.129E+00 | 1.524E+01 | 1.524E+01 | 11.46 |
| CD-109 | 88.03 | 131 | 3.72* | 6.831E+00 | 1.157E+00 | 1.187E+00 | 49.77 |
| SN-126 | 64.28 | 82 | 9.60 | 4.783E+00 | 4.003E-01 | 4.003E-01 | 98.45 |
| | 86.94 | 131 | 8.90 | 6.831E+00 | 4.838E-01 | 4.838E-01 | 64.13 |
| | 87.57 | 131 | 37.00* | 6.831E+00 | 1.164E-01 | 1.164E-01 | 49.77 |
| TL-208 | 277.35 | ----- | 6.80 | 4.401E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 67 | 21.60 | 2.753E+00 | 2.525E-01 | 2.525E-01 | 95.49 |
| | 583.14 | 215 | 84.20* | 2.476E+00 | 2.328E-01 | 2.328E-01 | 25.16 |
| | 860.37 | 52 | 12.46 | 1.782E+00 | 5.250E-01 | 5.250E-01 | 57.19 |
| BI-210 | 46.50 | 129 | 4.05* | 2.078E+00 | 3.445E+00 | 3.450E+00 | 67.67 |
| PB-210 | 46.50 | 129 | 4.05* | 2.078E+00 | 3.445E+00 | 3.450E+00 | 67.67 |
| PO-210 | 46.50 | 129 | 4.05* | 2.078E+00 | 3.445E+00 | 3.450E+00 | 67.56 |
| BI-211 | 72.87 | ----- | 1.27 | 5.899E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 399 | 12.94* | 3.680E+00 | 1.888E+00 | 1.888E+00 | 16.51 |
| PB-212 | 74.81 | 169 | 10.70 | 6.078E+00 | 5.846E-01 | 5.846E-01 | 37.83 |
| | 77.11 | 421 | 18.00 | 6.259E+00 | 8.415E-01 | 8.415E-01 | 20.94 |
| | 87.30 | 131 | 8.00 | 6.831E+00 | 5.382E-01 | 5.382E-01 | 50.76 |
| | 238.63 | 770 | 44.60* | 4.908E+00 | 7.927E-01 | 7.927E-01 | 13.05 |
| | 300.09 | ----- | 3.41 | 4.151E+00 | ----- | Line Not Found | ----- |
| PO-212 | 74.81 | 169 | 10.70 | 6.078E+00 | 5.846E-01 | 5.846E-01 | 37.83 |
| | 77.11 | 421 | 18.00 | 6.259E+00 | 8.415E-01 | 8.415E-01 | 20.94 |
| | 87.30 | 131 | 8.00 | 6.831E+00 | 5.382E-01 | 5.382E-01 | 50.76 |
| | 115.19 | ----- | 0.60 | 7.150E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 770 | 44.60* | 4.908E+00 | 7.927E-01 | 7.927E-01 | 13.05 |
| | 300.09 | ----- | 3.41 | 4.151E+00 | ----- | Line Not Found | ----- |
| BI-214 | 609.31 | 251 | 46.30* | 2.388E+00 | 5.119E-01 | 5.119E-01 | 22.83 |
| | 1120.29 | 59 | 15.10 | 1.414E+00 | 6.210E-01 | 6.210E-01 | 74.61 |
| | 1764.49 | 42 | 15.80 | 9.830E-01 | 6.078E-01 | 6.078E-01 | 45.94 |
| PB-214 | 74.81 | 169 | 6.21 | 6.078E+00 | 1.007E+00 | 1.007E+00 | 37.40 |
| | 77.11 | 421 | 10.50 | 6.259E+00 | 1.443E+00 | 1.443E+00 | 22.29 |
| | 87.30 | 131 | 4.67 | 6.831E+00 | 9.220E-01 | 9.220E-01 | 50.36 |
| | 241.98 | 186 | 7.49 | 4.865E+00 | 1.149E+00 | 1.149E+00 | 31.05 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-214 | 295.21 | 217 | 19.20 | 4.202E+00 | 6.052E-01 | 6.052E-01 | 25.72 |
| | 351.92 | 399 | 37.20* | 3.680E+00 | 6.569E-01 | 6.569E-01 | 17.31 |
| | 74.81 | 169 | 6.21 | 6.078E+00 | 1.007E+00 | 1.007E+00 | 37.40 |
| | 77.11 | 421 | 10.50 | 6.259E+00 | 1.443E+00 | 1.443E+00 | 22.29 |
| | 87.30 | 131 | 4.67 | 6.831E+00 | 9.220E-01 | 9.220E-01 | 50.36 |
| | 241.98 | 186 | 7.49 | 4.865E+00 | 1.149E+00 | 1.149E+00 | 31.05 |
| PO-216 | 295.21 | 217 | 19.20 | 4.202E+00 | 6.052E-01 | 6.052E-01 | 25.72 |
| | 351.92 | 399 | 37.20* | 3.680E+00 | 6.569E-01 | 6.569E-01 | 17.31 |
| | 74.81 | 169 | 10.70 | 6.078E+00 | 5.846E-01 | 5.846E-01 | 37.83 |
| | 77.11 | 421 | 18.00 | 6.259E+00 | 8.415E-01 | 8.415E-01 | 20.94 |
| | 87.30 | 131 | 8.00 | 6.831E+00 | 5.382E-01 | 5.382E-01 | 50.76 |
| | 238.63 | 770 | 44.60* | 4.908E+00 | 7.927E-01 | 7.927E-01 | 13.05 |
| PO-218 | 300.09 | ----- | 3.41 | 4.151E+00 | ----- | Line Not Found | ----- |
| | 74.81 | 169 | 6.21 | 6.078E+00 | 1.007E+00 | 1.007E+00 | 37.40 |
| | 77.11 | 421 | 10.50 | 6.259E+00 | 1.443E+00 | 1.443E+00 | 22.29 |
| | 87.30 | 131 | 4.67 | 6.831E+00 | 9.220E-01 | 9.220E-01 | 50.36 |
| | 241.98 | 186 | 7.49 | 4.865E+00 | 1.149E+00 | 1.149E+00 | 31.05 |
| | 295.21 | 217 | 19.20 | 4.202E+00 | 6.052E-01 | 6.052E-01 | 25.72 |
| RA-224 | 351.92 | 399 | 37.20* | 3.680E+00 | 6.569E-01 | 6.569E-01 | 17.31 |
| | 240.98 | 186 | 3.95* | 4.865E+00 | 2.178E+00 | 2.178E+00 | 30.54 |
| RA-226 | 609.31 | 251 | 46.30* | 2.388E+00 | 5.119E-01 | 5.119E-01 | 22.83 |
| | 1120.29 | 59 | 15.10 | 1.414E+00 | 6.210E-01 | 6.210E-01 | 74.61 |
| AC-228 | 1764.49 | 42 | 15.80 | 9.830E-01 | 6.078E-01 | 6.078E-01 | 45.94 |
| | 338.32 | 127 | 11.40 | 3.792E+00 | 6.606E-01 | 6.606E-01 | 55.59 |
| | 911.07 | 161 | 27.70* | 1.695E+00 | 7.704E-01 | 7.704E-01 | 25.38 |
| RA-228 | 969.11 | 92 | 16.60 | 1.606E+00 | 7.763E-01 | 7.763E-01 | 44.74 |
| | 338.32 | 127 | 11.40 | 3.792E+00 | 6.606E-01 | 6.606E-01 | 55.59 |
| | 911.07 | 161 | 27.70* | 1.695E+00 | 7.704E-01 | 7.704E-01 | 25.38 |
| TH-228 | 969.11 | 92 | 16.60 | 1.606E+00 | 7.763E-01 | 7.763E-01 | 44.74 |
| | 74.81 | 169 | 10.70 | 6.078E+00 | 5.846E-01 | 5.946E-01 | 36.67 |
| | 77.11 | 421 | 18.00 | 6.259E+00 | 8.415E-01 | 8.558E-01 | 20.94 |
| TH-230 | 87.30 | 131 | 8.00 | 6.831E+00 | 5.382E-01 | 5.474E-01 | 49.77 |
| | 238.63 | 770 | 44.60* | 4.908E+00 | 7.927E-01 | 8.062E-01 | 13.05 |
| | 300.09 | ----- | 3.41 | 4.151E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 251 | 46.30* | 2.388E+00 | 5.119E-01 | 5.119E-01 | 22.83 |
| TH-232 | 1120.29 | 59 | 15.10 | 1.414E+00 | 6.210E-01 | 6.210E-01 | 74.61 |
| | 1764.49 | 42 | 15.80 | 9.830E-01 | 6.078E-01 | 6.078E-01 | 45.94 |
| | 338.32 | 127 | 11.40 | 3.792E+00 | 6.606E-01 | 6.606E-01 | 38.23 |
| TH-234 | 911.07 | 161 | 27.70* | 1.695E+00 | 7.704E-01 | 7.704E-01 | 25.38 |
| | 969.11 | 92 | 16.60 | 1.606E+00 | 7.763E-01 | 7.763E-01 | 44.74 |
| | 63.29 | 82 | 3.80* | 4.783E+00 | 1.011E+00 | 1.011E+00 | 98.92 |
| U-234 | 92.38 | 188 | 5.41 | 7.030E+00 | 1.111E+00 | 1.111E+00 | 54.35 |
| | 609.31 | 251 | 46.30* | 2.388E+00 | 5.119E-01 | 5.119E-01 | 22.83 |
| | 1120.29 | 59 | 15.10 | 1.414E+00 | 6.210E-01 | 6.210E-01 | 74.61 |
| NP-237 | 1764.49 | 42 | 15.80 | 9.830E-01 | 6.078E-01 | 6.078E-01 | 45.94 |
| | 86.50 | 131 | 12.60* | 6.831E+00 | 3.417E-01 | 3.417E-01 | 53.88 |
| U-238 | 95.87 | ----- | 2.60 | 7.087E+00 | ----- | Line Not Found | ----- |
| | 63.29 | 82 | 3.80* | 4.783E+00 | 1.011E+00 | 1.011E+00 | 98.92 |
| | 92.38 | 188 | 5.41 | 7.030E+00 | 1.111E+00 | 1.111E+00 | 51.98 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|--------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| AM-243 | 74.67 | 169 | 66.00* | 6.078E+00 | 9.477E-02 | 9.477E-02 | 36.66 |
| | 86.72 | 131 | 0.34 | 6.831E+00 | 1.281E+01 | 1.281E+01 | 49.77 |
| | 117.66 | ----- | 0.55 | 7.126E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 6.723E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 67 | 100.00* | 2.753E+00 | 5.454E-02 | 5.454E-02 | 95.12 |

Flag: "*" = Keyline

Total number of lines in spectrum 27
Number of unidentified lines 1
Number of lines tentatively identified by NID 26 96.30%

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 | 1.524E+01 | 1.524E+01 | 0.175E+01 | 11.46 | |
| CD-109 | 464.00D | 1.03 | 1.157E+00 | 1.187E+00 | 0.591E+00 | 49.77 | |
| SN-126 | 1.00E+05Y | 1.00 | 1.164E-01 | 1.164E-01 | 0.579E-01 | 49.77 | |
| TL-208 | 1.41E+10Y | 1.00 | 2.328E-01 | 2.328E-01 | 0.586E-01 | 25.16 | |
| BI-210 | 22.26Y | 1.00 | 3.445E+00 | 3.450E+00 | 2.335E+00 | 67.67 | |
| PB-210 | 22.26Y | 1.00 | 3.445E+00 | 3.450E+00 | 2.335E+00 | 67.67 | |
| PO-210 | 22.26Y | 1.00 | 3.445E+00 | 3.450E+00 | 2.331E+00 | 67.56 | |
| BI-211 | 7.04E+08Y | 1.00 | 1.888E+00 | 1.888E+00 | 0.312E+00 | 16.51 | |
| PB-212 | 1.41E+10Y | 1.00 | 7.927E-01 | 7.927E-01 | 1.035E-01 | 13.05 | |
| PO-212 | 1.41E+10Y | 1.00 | 7.927E-01 | 7.927E-01 | 1.035E-01 | 13.05 | |
| BI-214 | 1600.00Y | 1.00 | 5.119E-01 | 5.119E-01 | 1.169E-01 | 22.83 | |
| PB-214 | 1600.00Y | 1.00 | 6.569E-01 | 6.569E-01 | 1.137E-01 | 17.31 | |
| PO-214 | 1600.00Y | 1.00 | 6.569E-01 | 6.569E-01 | 1.137E-01 | 17.31 | |
| PO-216 | 1.41E+10Y | 1.00 | 7.927E-01 | 7.927E-01 | 1.035E-01 | 13.05 | |
| PO-218 | 1600.00Y | 1.00 | 6.569E-01 | 6.569E-01 | 1.137E-01 | 17.31 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.178E+00 | 2.178E+00 | 0.665E+00 | 30.54 | |
| RA-226 | 1600.00Y | 1.00 | 5.119E-01 | 5.119E-01 | 1.169E-01 | 22.83 | |
| AC-228 | 1.41E+10Y | 1.00 | 7.704E-01 | 7.704E-01 | 1.956E-01 | 25.38 | |
| RA-228 | 1.41E+10Y | 1.00 | 7.704E-01 | 7.704E-01 | 1.956E-01 | 25.38 | |
| TH-228 | 1.91Y | 1.02 | 7.927E-01 | 8.062E-01 | 1.052E-01 | 13.05 | |
| TH-230 | 4.47E+09Y | 1.00 | 5.119E-01 | 5.119E-01 | 1.169E-01 | 22.83 | |
| TH-232 | 1.41E+10Y | 1.00 | 7.704E-01 | 7.704E-01 | 1.956E-01 | 25.38 | |
| TH-234 | 4.47E+09Y | 1.00 | 1.011E+00 | 1.011E+00 | 1.000E+00 | 98.92 | |
| U-234 | 4.47E+09Y | 1.00 | 5.119E-01 | 5.119E-01 | 1.169E-01 | 22.83 | |
| NP-237 | 2.14E+06Y | 1.00 | 3.417E-01 | 3.417E-01 | 1.841E-01 | 53.88 | |
| U-238 | 4.47E+09Y | 1.00 | 1.011E+00 | 1.011E+00 | 1.000E+00 | 98.92 | |
| AM-243 | 7380.00Y | 1.00 | 9.477E-02 | 9.477E-02 | 3.474E-02 | 36.66 | |
| ANH-511 | 1.00E+09Y | 1.00 | 5.454E-02 | 5.454E-02 | 5.188E-02 | 95.12 | |

Total Activity : 4.316E+01 4.322E+01

Grand Total Activity : 4.316E+01 4.322E+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 | 186.15 | 208 | 236 | 1.57 | 371.91 | 367 | 12 | 2.88E-02 | 33.9 | 5.81E+00 | T |
| 0 | 209.48 | 64 | 248 | 1.19 | 418.56 | 413 | 10 | 8.87E-03 | 95.6 | 5.38E+00 | T |
| 0 | 270.32 | 93 | 139 | 2.00 | 540.23 | 536 | 11 | 1.29E-02 | 53.1 | 4.49E+00 | T |
| 0 | 409.58 | 34 | 88 | 1.24 | 818.69 | 813 | 10 | 4.69E-03 | **** | 3.28E+00 | T |
| 0 | 464.52 | 54 | 104 | 1.95 | 928.56 | 920 | 16 | 7.56E-03 | 88.7 | 2.97E+00 | T |
| 0 | 727.43 | 69 | 41 | 1.00 | 1454.29 | 1449 | 11 | 9.57E-03 | 44.4 | 2.06E+00 | T |
| 0 | 768.54 | 33 | 38 | 0.63 | 1536.51 | 1532 | 9 | 4.52E-03 | 77.0 | 1.97E+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]G246328009.CNF;1
* Acquisition date   : 18-FEB-2010 11:48:05   Detector SN#      :
* Detector ID        : GAM07                  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 02:00:01.07          Half life ratio    : 8.00000
*****
*
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00.   Nuclide Library   : SOLID
* Sample ID          : G246328009             Analyst initials  : MXR1
* Batch Number       : 950786                 Sample Quantity   : 1.66620E+02 GRAM
*****
*
*                               QC DATA                                   *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58.0MS Isotope        :
* MSD ID             :                      MSD Isotope        :
* LCS ID             : 1032-A                LCS Isotope        :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 1.524E+01 | 1.746E+00 | 3.407E-01 | 2.926E-02 | 44.727 |
| CD-109 | 1.187E+00 | 5.909E-01 | 8.481E-01 | 7.989E-02 | 1.400 |
| SN-126 | 1.164E-01 | 5.792E-02 | 8.509E-02 | 7.973E-03 | 1.368 |
| TL-208 | 2.328E-01 | 5.859E-02 | 3.908E-02 | 3.738E-03 | 5.957 |
| BI-210 | 3.450E+00 | 2.335E+00 | 1.870E+00 | 1.754E-01 | 1.845 |
| PB-210 | 3.450E+00 | 2.335E+00 | 1.870E+00 | 1.754E-01 | 1.845 |
| PO-210 | 3.450E+00 | 2.331E+00 | 1.870E+00 | 1.591E-01 | 1.845 |
| BI-211 | 1.888E+00 | 3.117E-01 | 2.023E-01 | 1.815E-02 | 9.334 |
| PB-212 | 7.927E-01 | 1.035E-01 | 6.203E-02 | 5.933E-03 | 12.779 |
| PO-212 | 7.927E-01 | 1.035E-01 | 6.203E-02 | 5.933E-03 | 12.779 |
| BI-214 | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.368E-03 | 7.188 |
| PB-214 | 6.569E-01 | 1.137E-01 | 7.336E-02 | 7.612E-03 | 8.955 |
| PO-214 | 6.569E-01 | 1.137E-01 | 7.336E-02 | 7.612E-03 | 8.955 |
| PO-216 | 7.927E-01 | 1.035E-01 | 6.203E-02 | 5.933E-03 | 12.779 |
| PO-218 | 6.569E-01 | 1.137E-01 | 7.336E-02 | 7.612E-03 | 8.955 |
| RA-224 | 2.178E+00 | 6.652E-01 | 7.061E-01 | 5.971E-02 | 3.085 |
| RA-226 | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.368E-03 | 7.188 |
| AC-228 | 7.704E-01 | 1.956E-01 | 1.505E-01 | 1.753E-02 | 5.120 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| RA-228 | 7.704E-01 | 1.956E-01 | 1.505E-01 | 1.753E-02 | 5.120 |
| TH-228 | 8.062E-01 | 1.052E-01 | 6.309E-02 | 6.034E-03 | 12.779 |
| TH-230 | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.367E-03 | 7.188 |
| TH-232 | 7.704E-01 | 1.956E-01 | 1.505E-01 | 1.753E-02 | 5.120 |
| TH-234 | 1.011E+00 | 1.000E+00 | 9.679E-01 | 1.684E-01 | 1.045 |
| U-234 | 5.119E-01 | 1.169E-01 | 7.121E-02 | 7.367E-03 | 7.188 |
| NP-237 | 3.417E-01 | 1.841E-01 | 2.424E-01 | 5.480E-02 | 1.410 |
| U-238 | 1.011E+00 | 1.000E+00 | 9.679E-01 | 1.684E-01 | 1.045 |
| AM-243 | 9.477E-02 | 3.474E-02 | 4.843E-02 | 3.893E-03 | 1.957 |
| ANH-511 | 5.454E-02 | 5.188E-02 | 3.348E-02 | 2.975E-03 | 1.629 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 2.047E-01 | | 2.448E-01 | 4.178E-01 | 3.943E-02 | 0.490 |
| NA-22 | -1.988E-03 | | 3.116E-02 | 5.112E-02 | 4.197E-03 | -0.039 |
| NA-24 | 7.017E-04 | | 2.056E+00 | Half-Life too short | | |
| AL-26 | -9.666E-03 | | 1.998E-02 | 3.084E-02 | 2.515E-03 | -0.313 |
| TI-44 | 1.553E-01 | + | 3.252E-02 | 4.334E-02 | 3.628E-03 | 3.583 |
| SC-46 | -9.014E-03 | | 2.990E-02 | 4.696E-02 | 4.303E-03 | -0.192 |
| V-48 | 3.357E-02 | | 5.664E-02 | 9.707E-02 | 8.738E-03 | 0.346 |
| CR-51 | 3.373E-02 | | 2.494E-01 | 4.140E-01 | 3.742E-02 | 0.081 |
| MN-52 | -1.149E-02 | | 1.956E-01 | 3.169E-01 | 2.635E-02 | -0.036 |
| MN-54 | 1.351E-02 | | 2.798E-02 | 4.764E-02 | 4.373E-03 | 0.284 |
| CO-56 | 3.234E-03 | | 2.695E-02 | 4.450E-02 | 4.085E-03 | 0.073 |
| CO-57 | 1.723E-02 | | 1.611E-02 | 2.722E-02 | 2.342E-03 | 0.633 |
| CO-58 | -4.689E-02 | | 2.878E-02 | 3.785E-02 | 3.477E-03 | -1.239 |
| FE-59 | -2.613E-02 | | 6.944E-02 | 1.117E-01 | 1.035E-02 | -0.234 |
| CO-60 | 5.648E-04 | | 3.089E-02 | 5.122E-02 | 4.196E-03 | 0.011 |
| ZN-65 | 2.647E-02 | | 7.364E-02 | 1.113E-01 | 9.442E-03 | 0.238 |
| GE-68 | -1.713E-02 | | 8.929E-01 | 1.492E+00 | 1.293E-01 | -0.011 |
| AS-73 | 9.964E-02 | | 3.397E-01 | 5.715E-01 | 4.291E-02 | 0.174 |
| AS-74 | -2.358E-02 | | 6.995E-02 | 1.136E-01 | 1.018E-02 | -0.208 |
| SE-75 | 6.605E-04 | | 3.111E-02 | 4.804E-02 | 4.102E-03 | 0.014 |
| BR-77 | -1.215E+00 | | 1.203E+01 | 1.897E+01 | 1.689E+00 | -0.064 |
| SR-82 | -1.465E-01 | | 2.707E-01 | 4.180E-01 | 3.817E-02 | -0.351 |
| RB-83 | -2.739E-03 | | 4.689E-02 | 7.428E-02 | 6.616E-03 | -0.037 |
| RB-84 | -1.109E-02 | | 5.253E-02 | 8.333E-02 | 7.641E-03 | -0.133 |
| KR-85 | 9.192E+00 | | 5.303E+00 | 9.797E+00 | 8.712E-01 | 0.938 |
| SR-85 | 4.807E-02 | | 2.773E-02 | 5.123E-02 | 4.556E-03 | 0.938 |
| RB-86 | 2.385E-01 | | 5.864E-01 | 1.022E+00 | 8.859E-02 | 0.233 |
| Y-88 | 2.330E-03 | | 2.209E-02 | 3.767E-02 | 3.057E-03 | 0.062 |
| ZR-88 | -4.894E-03 | | 2.096E-02 | 3.339E-02 | 2.781E-03 | -0.147 |
| Y-91 | -9.294E+00 | | 1.487E+01 | 2.322E+01 | 1.896E+00 | -0.400 |
| NB-94 | 1.922E-02 | | 2.209E-02 | 3.926E-02 | 3.525E-03 | 0.490 |
| NB-95 | 1.318E-02 | | 3.203E-02 | 4.811E-02 | 4.386E-03 | 0.274 |
| NB-95M | -5.642E-03 | | 9.130E-02 | 1.339E-01 | 1.300E-02 | -0.042 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| ZR-95 | 5.038E-02 | | 5.150E-02 | 9.184E-02 | 9.121E-03 | 0.549 |
| NB-97 | -1.408E-01 | | 2.108E-01 | Half-Life too short | | |
| ZR-97 | 6.961E+00 | | 4.598E+00 | Half-Life too short | | |
| MO-99 | 2.884E+00 | | 1.292E+01 | 2.171E+01 | 3.353E+00 | 0.133 |
| TC-99M | -2.853E+12 | | 2.437E+12 | Half-Life too short | | |
| RH-101 | -3.711E-04 | | 2.089E-02 | 3.421E-02 | 2.806E-03 | -0.011 |
| RH-102 | -2.470E-02 | | 2.133E-02 | 3.047E-02 | 2.673E-03 | -0.811 |
| RU-103 | 5.093E-03 | | 2.906E-02 | 4.720E-02 | 6.751E-03 | 0.108 |
| RH-106 | 7.955E-02 | | 2.025E-01 | 3.492E-01 | 4.737E-02 | 0.228 |
| RU-106 | 7.955E-02 | | 2.024E-01 | 3.492E-01 | 3.121E-02 | 0.228 |
| AG-108M | -1.339E-02 | | 2.213E-02 | 3.375E-02 | 3.013E-03 | -0.397 |
| AG-110M | -8.016E-03 | | 2.401E-02 | 3.861E-02 | 3.518E-03 | -0.208 |
| IN-111 | 6.552E-01 | | 1.238E+00 | 1.891E+00 | 1.602E-01 | 0.346 |
| IN-113M | 1.216E-02 | | 2.976E-02 | 4.986E-02 | 4.286E-03 | 0.244 |
| SN-113 | 1.216E-02 | | 2.976E-02 | 4.986E-02 | 4.286E-03 | 0.244 |
| IN-114M | 6.760E-02 | | 1.275E-01 | 1.972E-01 | 1.604E-02 | 0.343 |
| CD-115 | 4.205E-01 | | 1.293E+01 | 2.183E+01 | 1.948E+00 | 0.019 |
| SN-117M | 1.125E-02 | | 4.046E-02 | 6.519E-02 | 5.227E-03 | 0.173 |
| SB-122 | 1.268E+00 | | 2.252E+00 | 3.941E+00 | 3.533E-01 | 0.322 |
| I-123 | 2.531E+01 | | 2.041E+01 | Half-Life too short | | |
| TE-123M | 1.175E-02 | | 1.896E-02 | 3.108E-02 | 2.507E-03 | 0.378 |
| I-124 | -4.891E-01 | | 7.689E-01 | 1.034E+00 | 9.264E-02 | -0.473 |
| SB-124 | -3.318E-03 | | 4.591E-02 | 7.270E-02 | 6.298E-03 | -0.046 |
| SB-125 | 5.190E-02 | | 5.802E-02 | 1.008E-01 | 8.785E-03 | 0.515 |
| TE-125M | -4.544E-01 | | 6.084E+00 | 9.797E+00 | 1.016E+00 | -0.046 |
| I-126 | -6.783E-02 | | 1.425E-01 | 2.263E-01 | 2.006E-02 | -0.300 |
| SB-126 | -4.269E-02 | | 1.241E-01 | 1.858E-01 | 1.677E-02 | -0.230 |
| SB-127 | 2.698E-01 | | 1.217E+00 | 2.058E+00 | 2.505E-01 | 0.131 |
| XE-127 | 7.095E-03 | | 3.234E-02 | 5.337E-02 | 4.398E-03 | 0.133 |
| I-131 | 4.891E-02 | | 9.131E-02 | 1.548E-01 | 1.388E-02 | 0.316 |
| TE-132 | 4.593E-01 | | 6.883E-01 | 1.186E+00 | 1.892E-01 | 0.387 |
| BA-133 | -3.533E-04 | | 3.279E-02 | 4.767E-02 | 6.260E-03 | -0.007 |
| I-133 | 3.432E-03 | | 8.889E-03 | Half-Life too short | | |
| CS-134 | 1.413E-02 | | 3.145E-02 | 5.373E-02 | 4.951E-03 | 0.263 |
| CS-135 | 5.880E-02 | | 1.122E-01 | 1.708E-01 | 1.684E-02 | 0.344 |
| I-135 | -2.876E+10 | | 2.309E+11 | Half-Life too short | | |
| CS-136 | -1.911E-03 | | 8.440E-02 | 1.391E-01 | 1.273E-02 | -0.014 |
| BA-137M | 8.074E-03 | | 2.528E-02 | 4.305E-02 | 3.810E-03 | 0.188 |
| CS-137 | 8.535E-03 | | 2.672E-02 | 4.551E-02 | 4.035E-03 | 0.188 |
| CE-139 | -1.108E-02 | | 2.113E-02 | 3.248E-02 | 2.569E-03 | -0.341 |
| BA-140 | 2.240E-02 | | 1.900E-01 | 3.225E-01 | 1.071E-01 | 0.069 |
| LA-140 | 5.445E-02 | | 6.534E-02 | 1.208E-01 | 1.010E-02 | 0.451 |
| CE-141 | 5.458E-03 | | 4.545E-02 | 7.290E-02 | 6.103E-03 | 0.075 |
| CE-143 | 5.276E-04 | | 1.415E-04 | Half-Life too short | | |
| CE-144 | -7.691E-02 | | 1.428E-01 | 2.218E-01 | 3.424E-02 | -0.347 |
| PM-144 | -1.368E-02 | | 2.232E-02 | 3.460E-02 | 3.101E-03 | -0.395 |
| PR-144 | -9.277E-01 | | 1.514E+00 | 2.347E+00 | 2.103E-01 | -0.395 |
| PM-146 | 2.623E-02 | | 2.889E-02 | 4.992E-02 | 5.379E-03 | 0.525 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| ND-147 | 7.532E-02 | | 4.224E-01 | 7.210E-01 | 1.091E-01 | 0.104 |
| PM-149 | -2.697E+01 | | 1.136E+02 | 1.853E+02 | 2.870E+01 | -0.146 |
| EU-152 | -1.608E-02 | | 6.814E-02 | 1.057E-01 | 9.586E-03 | -0.152 |
| GD-153 | 7.958E-03 | | 5.217E-02 | 7.634E-02 | 6.827E-03 | 0.104 |
| EU-154 | -1.891E-02 | | 8.770E-02 | 1.413E-01 | 1.554E-02 | -0.134 |
| EU-155 | 1.356E-02 | | 6.851E-02 | 1.119E-01 | 9.889E-03 | 0.121 |
| TB-160 | 4.104E-02 | | 9.813E-02 | 1.667E-01 | 1.529E-02 | 0.246 |
| HO-166M | 2.066E-02 | | 4.017E-02 | 6.946E-02 | 6.254E-03 | 0.297 |
| TM-171 | -1.845E+00 | | 1.509E+01 | 2.204E+01 | 1.648E+00 | -0.084 |
| LU-176 | -4.384E-03 | | 1.586E-02 | 2.564E-02 | 2.196E-03 | -0.171 |
| LU-177 | 1.413E+00 | + | 1.355E+00 | 1.599E+00 | 1.325E-01 | 0.883 |
| LU-177M | 1.148E-01 | | 1.290E-01 | 2.005E-01 | 1.698E-02 | 0.573 |
| HF-181 | -3.703E-02 | | 3.422E-02 | 4.954E-02 | 4.359E-03 | -0.747 |
| W-181 | 1.993E-02 | | 1.969E-01 | 2.914E-01 | 2.156E-02 | 0.068 |
| TA-182 | -2.836E-02 | | 1.435E-01 | 2.334E-01 | 1.909E-02 | -0.122 |
| RE-183 | -4.753E-04 | | 7.946E-02 | 1.236E-01 | 9.839E-03 | -0.004 |
| RE-184 | 1.225E-01 | | 1.488E-01 | 2.594E-01 | 2.202E-02 | 0.472 |
| OS-185 | -9.257E-03 | | 2.858E-02 | 4.599E-02 | 4.089E-03 | -0.201 |
| RE-188 | -5.480E-02 | | 1.203E-01 | 1.865E-01 | 1.505E-02 | -0.294 |
| W-188 | -4.010E+00 | | 5.598E+00 | 7.585E+00 | 6.470E-01 | -0.529 |
| IR-192 | -6.489E-03 | | 2.321E-02 | 3.745E-02 | 3.219E-03 | -0.173 |
| AU-195 | 1.015E-01 | | 1.534E-01 | 2.310E-01 | 2.054E-02 | 0.440 |
| TL-200 | -1.037E-04 | | 4.866E-04 | Half-Life | too short | |
| TL-201 | -2.507E+00 | | 7.361E+00 | 1.143E+01 | 9.051E-01 | -0.219 |
| TL-202 | 1.430E-02 | | 5.450E-02 | 8.972E-02 | 7.728E-03 | 0.159 |
| HG-203 | -5.446E-03 | | 2.855E-02 | 4.680E-02 | 4.088E-03 | -0.116 |
| BI-207 | 1.355E-02 | | 3.714E-02 | 6.447E-02 | 5.625E-03 | 0.210 |
| TL-207 | -3.624E-01 | | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| PO-209 | -2.418E+00 | | 5.889E+00 | 9.043E+00 | 8.281E-01 | -0.267 |
| PB-211 | -3.238E-01 | | 8.274E-01 | 1.090E+00 | 6.829E-01 | -0.297 |
| BI-212 | 6.382E-01 | + | 2.912E-01 | 4.501E-01 | 4.669E-02 | 1.418 |
| PO-215 | -3.624E-01 | | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| RN-219 | 2.971E-02 | | 3.045E-01 | 4.972E-01 | 7.405E-02 | 0.060 |
| RN-220 | 1.534E+01 | | 1.779E+01 | 3.182E+01 | 2.849E+00 | 0.482 |
| RA-223 | -3.624E-01 | | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| AC-227 | -2.187E-01 | | 2.555E-01 | 4.003E-01 | 6.116E-02 | -0.546 |
| TH-227 | -2.187E-01 | | 2.563E-01 | 4.003E-01 | 7.207E-02 | -0.546 |
| TH-229 | -1.647E-01 | | 3.148E-01 | 5.175E-01 | 4.226E-02 | -0.318 |
| PA-231 | 5.125E-01 | | 1.065E+00 | 1.808E+00 | 2.734E-01 | 0.283 |
| TH-231 | -3.624E-01 | | 4.558E-01 | 7.014E-01 | 1.240E-01 | -0.517 |
| U-231 | -3.985E-01 | | 9.685E-01 | 1.352E+00 | 1.217E-01 | -0.295 |
| PA-233 | 1.032E-02 | | 4.302E-02 | 7.197E-02 | 6.347E-03 | 0.143 |
| PA-234 | 4.543E-02 | | 2.097E-01 | 3.469E-01 | 6.586E-02 | 0.131 |
| PA-234M | 1.045E+00 | | 3.364E+00 | 5.619E+00 | 5.762E-01 | 0.186 |
| U-235 | 8.297E-02 | | 1.486E-01 | 2.396E-01 | 4.150E-02 | 0.346 |
| NP-236 | -2.721E-02 | | 5.564E-02 | 8.589E-02 | 6.864E-03 | -0.317 |
| NP-239 | 4.113E-02 | | 1.167E-01 | 1.914E-01 | 1.647E-02 | 0.215 |
| AM-241 | 1.623E-03 | | 7.527E-02 | 1.117E-01 | 8.857E-03 | 0.015 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -4.318E-02 | | 6.050E-02 | 9.439E-02 | 8.271E-03 | -0.458 |
| AM-246 | 5.653E-02 | | 9.938E-02 | 1.757E-01 | 1.521E-02 | 0.322 |
| CM-247 | 1.197E-02 | | 2.794E-02 | 4.519E-02 | 3.794E-03 | 0.265 |
| CF-249 | -2.079E-03 | | 2.712E-02 | 4.382E-02 | 3.657E-03 | -0.047 |
| CF-251 | -4.602E-02 | | 8.058E-02 | 1.329E-01 | 1.065E-02 | -0.346 |

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]G246328009          *
* Acquisition date   : 18-FEB-2010 11:48:05 Detector SN# :                *
* Detector ID        : GAM07 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 02:00:01.07 Half life ratio : 8.000              *
*****
*
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246328009 Analyst initials: MXR1                  *
* Batch Number       : 950786 Sample Quantity : 1.6662E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 20-JUL-2009 15:29:58 MS Isotope :                  *
* MSD DPM            : 0.000 MSD Isotope :                               *
* LCS DPM            : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 1.524E+01 | 1.711E+00 | 1.725E-01 | 8.731E-01 |
| CD-109 | 1.187E+00 | 5.791E-01 | 4.678E-01 | 2.955E-01 |
| SN-126 | 1.164E-01 | 5.676E-02 | 4.694E-02 | 2.896E-02 |
| TL-208 | 2.328E-01 | 5.741E-02 | 2.038E-02 | 2.929E-02 |
| BI-210 | 3.450E+00 | 2.288E+00 | 1.050E+00 | 1.167E+00 |
| PB-210 | 3.450E+00 | 2.288E+00 | 1.050E+00 | 1.167E+00 |
| PO-210 | 3.450E+00 | 2.284E+00 | 1.050E+00 | 1.165E+00 |
| BI-211 | 1.888E+00 | 3.055E-01 | 1.072E-01 | 1.559E-01 |
| PB-212 | 7.927E-01 | 1.014E-01 | 3.324E-02 | 5.174E-02 |
| PO-212 | 7.927E-01 | 1.014E-01 | 3.324E-02 | 5.174E-02 |
| BI-214 | 5.119E-01 | 1.145E-01 | 3.709E-02 | 5.843E-02 |
| PB-214 | 6.569E-01 | 1.115E-01 | 3.886E-02 | 5.686E-02 |
| PO-214 | 6.569E-01 | 1.115E-01 | 3.886E-02 | 5.686E-02 |
| PO-216 | 7.927E-01 | 1.014E-01 | 3.324E-02 | 5.174E-02 |
| PO-218 | 6.569E-01 | 1.115E-01 | 3.886E-02 | 5.686E-02 |
| RA-224 | 2.178E+00 | 6.519E-01 | 3.783E-01 | 3.326E-01 |
| RA-226 | 5.119E-01 | 1.145E-01 | 3.709E-02 | 5.843E-02 |
| AC-228 | 7.704E-01 | 1.916E-01 | 7.736E-02 | 9.778E-02 |
| RA-228 | 7.704E-01 | 1.916E-01 | 7.736E-02 | 9.778E-02 |
| TH-228 | 8.062E-01 | 1.031E-01 | 3.381E-02 | 5.262E-02 |
| TH-230 | 5.119E-01 | 1.145E-01 | 3.709E-02 | 5.843E-02 |
| TH-232 | 7.704E-01 | 1.916E-01 | 7.736E-02 | 9.778E-02 |
| TH-234 | 1.011E+00 | 9.804E-01 | 5.388E-01 | 5.002E-01 |
| U-234 | 5.119E-01 | 1.145E-01 | 3.709E-02 | 5.843E-02 |
| NP-237 | 3.417E-01 | 1.804E-01 | 1.337E-01 | 9.206E-02 |
| U-238 | 1.011E+00 | 9.804E-01 | 5.388E-01 | 5.002E-01 |
| AM-243 | 9.477E-02 | 3.405E-02 | 2.683E-02 | 1.737E-02 |
| ANH-511 | 5.454E-02 | 5.084E-02 | 1.753E-02 | 2.594E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|-----|
|---------|-------------------------------------|---------------|--------------------|-----|

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| BE-7 | 2.047E-01 | 2.399E-01 | 2.192E-01 | 1.224E-01 | NOT IDENT. |
| NA-22 | -1.988E-03 | 3.054E-02 | 2.600E-02 | 1.558E-02 | NOT IDENT. |
| NA-24 | 7.017E+02 | 4.029E+06 | 0.000E+00 | 2.056E+06 | SHORT HLIF |
| AL-26 | -9.666E-03 | 1.958E-02 | 1.550E-02 | 9.992E-03 | NOT IDENT. |
| TI-44 | 1.553E-01 | 3.187E-02 | 2.398E-02 | 1.626E-02 | FAIL ABUN |
| SC-46 | -9.014E-03 | 2.930E-02 | 2.416E-02 | 1.495E-02 | FAIL ABUN |
| V-48 | 3.357E-02 | 5.551E-02 | 4.979E-02 | 2.832E-02 | NOT IDENT. |
| CR-51 | 3.373E-02 | 2.444E-01 | 2.200E-01 | 1.247E-01 | NOT IDENT. |
| MN-52 | -1.149E-02 | 1.917E-01 | 1.605E-01 | 9.778E-02 | NOT IDENT. |
| MN-54 | 1.351E-02 | 2.742E-02 | 2.456E-02 | 1.399E-02 | NOT IDENT. |
| CO-56 | 3.234E-03 | 2.641E-02 | 2.293E-02 | 1.348E-02 | NOT IDENT. |
| CO-57 | 1.723E-02 | 1.579E-02 | 1.487E-02 | 8.054E-03 | NOT IDENT. |
| CO-58 | -4.689E-02 | 2.820E-02 | 1.953E-02 | 1.439E-02 | NOT IDENT. |
| FE-59 | -2.613E-02 | 6.805E-02 | 5.707E-02 | 3.472E-02 | NOT IDENT. |
| CO-60 | 5.648E-04 | 3.027E-02 | 2.601E-02 | 1.544E-02 | NOT IDENT. |
| ZN-65 | 2.647E-02 | 7.216E-02 | 5.683E-02 | 3.682E-02 | NOT IDENT. |
| GE-68 | -1.713E-02 | 8.750E-01 | 7.629E-01 | 4.464E-01 | NOT IDENT. |
| AS-73 | 9.964E-02 | 3.329E-01 | 3.196E-01 | 1.699E-01 | NOT IDENT. |
| AS-74 | -2.358E-02 | 6.855E-02 | 5.920E-02 | 3.498E-02 | NOT IDENT. |
| SE-75 | 6.605E-04 | 3.049E-02 | 2.567E-02 | 1.556E-02 | NOT IDENT. |
| BR-77 | -1.215E+00 | 1.179E+01 | 9.927E+00 | 6.013E+00 | FAIL ABUN |
| SR-82 | -1.465E-01 | 2.653E-01 | 2.160E-01 | 1.353E-01 | NOT IDENT. |
| RB-83 | -2.739E-03 | 4.595E-02 | 3.888E-02 | 2.344E-02 | NOT IDENT. |
| RB-84 | -1.109E-02 | 5.148E-02 | 4.289E-02 | 2.626E-02 | NOT IDENT. |
| KR-85 | 9.192E+00 | 5.197E+00 | 5.129E+00 | 2.651E+00 | NOT IDENT. |
| SR-85 | 4.807E-02 | 2.717E-02 | 2.682E-02 | 1.386E-02 | NOT IDENT. |
| RB-86 | 2.385E-01 | 5.747E-01 | 5.226E-01 | 2.932E-01 | NOT IDENT. |
| Y-88 | 2.330E-03 | 2.165E-02 | 1.893E-02 | 1.105E-02 | NOT IDENT. |
| ZR-88 | -4.894E-03 | 2.054E-02 | 1.763E-02 | 1.048E-02 | NOT IDENT. |
| Y-91 | -9.294E+00 | 1.457E+01 | 1.183E+01 | 7.433E+00 | NOT IDENT. |
| NB-94 | 1.922E-02 | 2.164E-02 | 2.035E-02 | 1.104E-02 | NOT IDENT. |
| NB-95 | 1.318E-02 | 3.139E-02 | 2.488E-02 | 1.601E-02 | NOT IDENT. |
| NB-95M | -5.642E-03 | 8.947E-02 | 7.179E-02 | 4.565E-02 | NOT IDENT. |
| ZR-95 | 5.038E-02 | 5.047E-02 | 4.750E-02 | 2.575E-02 | NOT IDENT. |
| NB-97 | -1.408E+05 | 4.132E+05 | 0.000E+00 | 2.108E+05 | SHORT HLIF |
| ZR-97 | 6.961E+06 | 9.013E+06 | 0.000E+00 | 4.598E+06 | SHORT HLIF |
| MO-99 | 2.884E+00 | 1.266E+01 | 1.124E+01 | 6.460E+00 | NOT IDENT. |
| TC-99M | -2.853E+18 | 4.776E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -3.711E-04 | 2.047E-02 | 1.843E-02 | 1.045E-02 | NOT IDENT. |
| RH-102 | -2.470E-02 | 2.091E-02 | 1.599E-02 | 1.067E-02 | NOT IDENT. |
| RU-103 | 5.093E-03 | 2.848E-02 | 2.474E-02 | 1.453E-02 | FAIL ABUN |
| RH-106 | 7.955E-02 | 1.985E-01 | 1.818E-01 | 1.013E-01 | FAIL ABUN |
| RU-106 | 7.955E-02 | 1.983E-01 | 1.818E-01 | 1.012E-01 | FAIL ABUN |
| AG-108M | -1.339E-02 | 2.169E-02 | 1.776E-02 | 1.106E-02 | NOT IDENT. |
| AG-110M | -8.016E-03 | 2.353E-02 | 2.006E-02 | 1.200E-02 | NOT IDENT. |
| IN-111 | 6.552E-01 | 1.213E+00 | 1.013E+00 | 6.189E-01 | NOT IDENT. |
| IN-113M | 1.216E-02 | 2.916E-02 | 2.632E-02 | 1.488E-02 | NOT IDENT. |
| SN-113 | 1.216E-02 | 2.916E-02 | 2.632E-02 | 1.488E-02 | NOT IDENT. |
| IN-114M | 6.760E-02 | 1.250E-01 | 1.064E-01 | 6.375E-02 | NOT IDENT. |
| CD-115 | 4.205E-01 | 1.267E+01 | 1.142E+01 | 6.467E+00 | NOT IDENT. |
| SN-117M | 1.125E-02 | 3.965E-02 | 3.536E-02 | 2.023E-02 | NOT IDENT. |
| SB-122 | 1.268E+00 | 2.207E+00 | 2.058E+00 | 1.126E+00 | NOT IDENT. |
| I-123 | 2.531E+07 | 4.000E+07 | 0.000E+00 | 2.041E+07 | SHORT HLIF |
| TE-123M | 1.175E-02 | 1.858E-02 | 1.686E-02 | 9.478E-03 | NOT IDENT. |
| I-124 | -4.891E-01 | 7.535E-01 | 5.387E-01 | 3.845E-01 | NOT IDENT. |
| SB-124 | -3.318E-03 | 4.500E-02 | 3.663E-02 | 2.296E-02 | FAIL ABUN |
| SB-125 | 5.190E-02 | 5.686E-02 | 5.305E-02 | 2.901E-02 | FAIL ABUN |
| TE-125M | -4.544E-01 | 5.962E+00 | 5.371E+00 | 3.042E+00 | NOT IDENT. |
| I-126 | -6.783E-02 | 1.397E-01 | 1.175E-01 | 7.127E-02 | NOT IDENT. |
| SB-126 | -4.269E-02 | 1.216E-01 | 9.627E-02 | 6.204E-02 | FAIL ABUN |
| SB-127 | 2.698E-01 | 1.193E+00 | 1.068E+00 | 6.086E-01 | NOT IDENT. |
| XE-127 | 7.095E-03 | 3.170E-02 | 2.874E-02 | 1.617E-02 | NOT IDENT. |
| I-131 | 4.891E-02 | 8.948E-02 | 8.189E-02 | 4.565E-02 | NOT IDENT. |
| TE-132 | 4.593E-01 | 6.746E-01 | 6.362E-01 | 3.442E-01 | NOT IDENT. |
| BA-133 | -3.533E-04 | 3.213E-02 | 2.524E-02 | 1.639E-02 | NOT IDENT. |
| I-133 | 3.432E+03 | 1.742E+04 | 0.000E+00 | 8.889E+03 | SHORT HLIF |
| CS-134 | 1.413E-02 | 3.082E-02 | 2.775E-02 | 1.573E-02 | NOT IDENT. |
| CS-135 | 5.880E-02 | 1.099E-01 | 9.122E-02 | 5.609E-02 | NOT IDENT. |
| I-135 | -2.876E+16 | 4.526E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -1.911E-03 | 8.271E-02 | 7.120E-02 | 4.220E-02 | FAIL ABUN |
| BA-137M | 8.074E-03 | 2.477E-02 | 2.236E-02 | 1.264E-02 | NOT IDENT. |
| CS-137 | 8.535E-03 | 2.619E-02 | 2.364E-02 | 1.336E-02 | NOT IDENT. |
| CE-139 | -1.108E-02 | 2.071E-02 | 1.759E-02 | 1.056E-02 | NOT IDENT. |
| BA-140 | 2.240E-02 | 1.862E-01 | 1.686E-01 | 9.501E-02 | NOT IDENT. |
| LA-140 | 5.445E-02 | 6.404E-02 | 6.096E-02 | 3.267E-02 | NOT IDENT. |
| CE-141 | 5.458E-03 | 4.454E-02 | 3.964E-02 | 2.273E-02 | NOT IDENT. |
| CE-143 | 5.276E+02 | 2.774E+02 | 0.000E+00 | 1.415E+02 | SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| CE-144 | -7.691E-02 | 1.400E-01 | 1.209E-01 | 7.141E-02 | NOT IDENT. |
| PM-144 | -1.368E-02 | 2.187E-02 | 1.794E-02 | 1.116E-02 | NOT IDENT. |
| PR-144 | -9.277E-01 | 1.484E+00 | 1.217E+00 | 7.570E-01 | NOT IDENT. |
| PM-146 | 2.623E-02 | 2.831E-02 | 2.624E-02 | 1.444E-02 | NOT IDENT. |
| ND-147 | 7.532E-02 | 4.140E-01 | 3.771E-01 | 2.112E-01 | NOT IDENT. |
| PM-149 | -2.697E+01 | 1.114E+02 | 9.877E+01 | 5.682E+01 | NOT IDENT. |
| EU-152 | -1.608E-02 | 6.678E-02 | 5.605E-02 | 3.407E-02 | NOT IDENT. |
| GD-153 | 7.958E-03 | 5.113E-02 | 4.199E-02 | 2.609E-02 | NOT IDENT. |
| EU-154 | -1.891E-02 | 8.595E-02 | 7.187E-02 | 4.385E-02 | NOT IDENT. |
| EU-155 | 1.356E-02 | 6.714E-02 | 6.142E-02 | 3.426E-02 | FAIL ABUN |
| TB-160 | 4.104E-02 | 9.617E-02 | 8.583E-02 | 4.907E-02 | FAIL ABUN |
| HO-166M | 2.066E-02 | 3.937E-02 | 3.600E-02 | 2.008E-02 | FAIL ABUN |
| TM-171 | -1.845E+00 | 1.479E+01 | 1.225E+01 | 7.546E+00 | NOT IDENT. |
| LU-176 | -4.384E-03 | 1.554E-02 | 1.364E-02 | 7.930E-03 | FAIL ABUN |
| LU-177 | 1.413E+00 | 1.328E+00 | 8.605E-01 | 6.776E-01 | FAIL ABUN |
| LU-177M | 1.148E-01 | 1.264E-01 | 1.057E-01 | 6.448E-02 | NOT IDENT. |
| HF-181 | -3.703E-02 | 3.354E-02 | 2.599E-02 | 1.711E-02 | NOT IDENT. |
| W-181 | 1.993E-02 | 1.929E-01 | 1.620E-01 | 9.844E-02 | NOT IDENT. |
| TA-182 | -2.836E-02 | 1.406E-01 | 1.189E-01 | 7.175E-02 | FAIL ABUN |
| RE-183 | -4.753E-04 | 7.787E-02 | 6.698E-02 | 3.973E-02 | FAIL ABUN |
| RE-184 | 1.225E-01 | 1.459E-01 | 1.388E-01 | 7.441E-02 | NOT IDENT. |
| OS-185 | -9.257E-03 | 2.800E-02 | 2.391E-02 | 1.429E-02 | NOT IDENT. |
| RE-188 | -5.480E-02 | 1.179E-01 | 1.012E-01 | 6.017E-02 | NOT IDENT. |
| W-188 | -4.010E+00 | 5.486E+00 | 4.041E+00 | 2.799E+00 | FAIL ABUN |
| IR-192 | -6.489E-03 | 2.275E-02 | 1.990E-02 | 1.161E-02 | FAIL ABUN |
| AU-195 | 1.015E-01 | 1.504E-01 | 1.270E-01 | 7.671E-02 | FAIL ABUN |
| TL-200 | -1.037E+02 | 9.538E+02 | 0.000E+00 | 4.866E+02 | SHORT HLIF |
| TL-201 | -2.507E+00 | 7.214E+00 | 6.188E+00 | 3.681E+00 | NOT IDENT. |
| TL-202 | 1.430E-02 | 5.341E-02 | 4.720E-02 | 2.725E-02 | NOT IDENT. |
| HG-203 | -5.446E-03 | 2.798E-02 | 2.496E-02 | 1.428E-02 | NOT IDENT. |
| BI-207 | 1.355E-02 | 3.640E-02 | 3.298E-02 | 1.857E-02 | FAIL ABUN |
| TL-207 | -3.624E-01 | 4.467E-01 | 3.725E-01 | 2.279E-01 | FAIL ABUN |
| PO-209 | -2.418E+00 | 5.771E+00 | 4.652E+00 | 2.944E+00 | NOT IDENT. |
| PB-211 | -3.238E-01 | 8.109E-01 | 5.751E-01 | 4.137E-01 | NOT IDENT. |
| BI-212 | 6.382E-01 | 2.854E-01 | 2.331E-01 | 1.456E-01 | FAIL ABUN |
| PO-215 | -3.624E-01 | 4.467E-01 | 3.725E-01 | 2.279E-01 | FAIL ABUN |
| RN-219 | 2.971E-02 | 2.984E-01 | 2.623E-01 | 1.522E-01 | FAIL ABUN |
| RN-220 | 1.534E+01 | 1.744E+01 | 1.663E+01 | 8.896E+00 | NOT IDENT. |
| RA-223 | -3.624E-01 | 4.467E-01 | 3.725E-01 | 2.279E-01 | FAIL ABUN |
| AC-227 | -2.187E-01 | 2.503E-01 | 2.141E-01 | 1.277E-01 | NOT IDENT. |
| TH-227 | -2.187E-01 | 2.512E-01 | 2.141E-01 | 1.282E-01 | FAIL ABUN |
| TH-229 | -1.647E-01 | 3.085E-01 | 2.791E-01 | 1.574E-01 | FAIL ABUN |
| PA-231 | 5.125E-01 | 1.043E+00 | 9.642E-01 | 5.324E-01 | NOT IDENT. |
| TH-231 | -3.624E-01 | 4.467E-01 | 3.725E-01 | 2.279E-01 | FAIL ABUN |
| U-231 | -3.985E-01 | 9.492E-01 | 7.440E-01 | 4.843E-01 | FAIL ABUN |
| PA-233 | 1.032E-02 | 4.216E-02 | 3.826E-02 | 2.151E-02 | FAIL ABUN |
| PA-234 | 4.543E-02 | 2.055E-01 | 1.782E-01 | 1.048E-01 | FAIL ABUN |
| PA-234M | 1.045E+00 | 3.297E+00 | 2.880E+00 | 1.682E+00 | NOT IDENT. |
| U-235 | 8.297E-02 | 1.456E-01 | 1.303E-01 | 7.431E-02 | FAIL ABUN |
| NP-236 | -2.721E-02 | 5.453E-02 | 4.657E-02 | 2.782E-02 | FAIL ABUN |
| NP-239 | 4.113E-02 | 1.144E-01 | 1.047E-01 | 5.835E-02 | FAIL ABUN |
| AM-241 | 1.623E-03 | 7.376E-02 | 6.229E-02 | 3.763E-02 | NOT IDENT. |
| CM-243 | -4.318E-02 | 5.929E-02 | 5.182E-02 | 3.025E-02 | FAIL ABUN |
| AM-246 | 5.653E-02 | 9.739E-02 | 8.984E-02 | 4.969E-02 | NOT IDENT. |
| CM-247 | 1.197E-02 | 2.738E-02 | 2.384E-02 | 1.397E-02 | NOT IDENT. |
| CF-249 | -2.079E-03 | 2.658E-02 | 2.314E-02 | 1.356E-02 | NOT IDENT. |
| CF-251 | -4.602E-02 | 7.897E-02 | 7.188E-02 | 4.029E-02 | NOT IDENT. |

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

| | |
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| 46.50 | 223.1284 |
| 46.50 | 223.1284 |
| 46.50 | 223.1284 |
| 48.70 | 234.4042 |
| 49.72 | 215.0954 |
| 51.35 | 258.9267 |
| 52.39 | 233.3208 |
| 52.97 | 244.1986 |
| 53.15 | 239.5191 |
| 53.44 | 237.7764 |
| 54.07 | 246.7943 |
| 56.28 | 274.2092 |
| 56.28 | 274.2106 |
| 57.37 | 0.0000 |
| 57.53 | 251.7970 |
| 57.53 | 251.7983 |
| 57.60 | 251.8393 |
| 57.98 | 240.8220 |
| 57.98 | 240.8220 |
| 59.32 | 246.5484 |
| 59.32 | 246.5484 |
| 59.40 | 261.1855 |
| 59.54 | 264.1908 |
| 59.72 | 264.3026 |
| 60.01 | 289.3223 |
| 61.10 | 271.0116 |
| 61.14 | 271.0363 |
| 61.30 | 271.1365 |
| 63.00 | 283.4705 |
| 63.29 | 283.6564 |
| 63.29 | 283.6564 |
| 63.58 | 283.8420 |
| 64.28 | 303.9613 |
| 65.12 | 289.7468 |
| 65.20 | 289.7980 |
| 65.20 | 289.7980 |
| 66.05 | 271.0836 |
| 66.72 | 286.3150 |
| 66.83 | 286.3857 |
| 66.91 | 276.0469 |
| 67.20 | 274.7350 |
| 67.20 | 274.7350 |
| 67.75 | 304.7989 |
| 67.85 | 304.8646 |
| 68.90 | 337.8470 |
| 68.90 | 337.8470 |
| 69.30 | 335.1523 |
| 69.67 | 343.3804 |
| 70.82 | 303.8046 |
| 70.82 | 303.8046 |
| 70.83 | 303.8108 |
| 72.80 | 335.1125 |
| 72.87 | 335.1618 |
| 72.87 | 335.1618 |
| 74.67 | 341.9282 |
| 74.81 | 342.0251 |
| 74.81 | 342.0251 |
| 74.81 | 342.0251 |
| 74.81 | 342.0251 |
| 74.81 | 342.0251 |
| 74.81 | 342.0251 |
| 74.81 | 342.0251 |
| 74.97 | 342.1357 |
| 75.28 | 342.3502 |
| 75.70 | 342.6390 |
| 77.11 | 343.6057 |
| 77.11 | 343.6057 |

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| 77.11 | 343.6057 |
| 77.11 | 343.6057 |
| 77.11 | 343.6057 |
| 77.11 | 343.6057 |
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| 79.62 | 310.7735 |
| 79.80 | 310.8824 |
| 79.80 | 310.8824 |
| 80.11 | 312.5940 |
| 80.18 | 312.6363 |
| 80.30 | 312.7082 |
| 80.30 | 312.7082 |
| 80.57 | 335.7639 |
| 81.00 | 362.0094 |
| 81.07 | 362.0582 |
| 81.07 | 362.0582 |
| 81.07 | 362.0582 |
| 81.07 | 362.0582 |
| 82.60 | 322.3628 |
| 83.37 | 293.0633 |
| 83.78 | 288.6854 |
| 83.78 | 288.6854 |
| 83.78 | 288.6854 |
| 83.78 | 288.6854 |
| 84.21 | 304.2872 |
| 84.90 | 293.9070 |
| 85.43 | 295.7373 |
| 86.29 | 357.9192 |
| 86.50 | 393.5543 |
| 86.54 | 393.5835 |
| 86.59 | 393.6205 |
| 86.72 | 393.7138 |
| 86.79 | 393.7625 |
| 86.94 | 435.5776 |
| 87.30 | 419.3772 |
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| 87.30 | 419.3772 |
| 87.30 | 419.3772 |
| 87.30 | 419.3772 |
| 87.30 | 419.3772 |
| 87.57 | 423.7079 |
| 87.88 | 406.4127 |
| 88.03 | 406.5229 |
| 88.36 | 406.7674 |
| 88.47 | 356.2515 |
| 89.95 | 357.2026 |
| 91.11 | 357.9449 |
| 92.29 | 427.3118 |
| 92.38 | 427.3808 |
| 92.38 | 427.3808 |
| 93.35 | 329.1538 |
| 94.00 | 329.5283 |
| 94.67 | 329.9092 |
| 94.67 | 329.9124 |
| 94.90 | 330.0443 |
| 94.90 | 330.0443 |
| 94.90 | 330.0443 |
| 94.90 | 330.0443 |
| 95.87 | 249.5171 |
| 95.87 | 249.5171 |
| 96.73 | 268.7452 |
| 97.43 | 231.3014 |
| 98.44 | 215.9366 |
| 98.44 | 215.9366 |
| 98.88 | 225.5606 |
| 99.55 | 218.5508 |
| 99.55 | 218.5508 |
| 99.86 | 209.8172 |
| 100.00 | 209.8658 |
| 100.10 | 211.7990 |
| 103.18 | 254.1846 |
| 103.76 | 252.3061 |
| 105.00 | 247.5032 |
| 105.31 | 240.1882 |
| 108.00 | 259.3703 |
| 109.28 | 243.8527 |

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| 111.00 | 268.1046 |
| 111.00 | 268.1046 |
| 111.76 | 223.3264 |
| 112.95 | 235.5703 |
| 115.19 | 243.9356 |
| 116.30 | 227.0471 |
| 117.00 | 194.8178 |
| 117.00 | 194.8178 |
| 117.66 | 202.5947 |
| 121.11 | 188.3890 |
| 121.62 | 188.5307 |
| 121.78 | 188.5746 |
| 122.06 | 182.1092 |
| 122.32 | 186.5416 |
| 122.32 | 186.5416 |
| 122.32 | 186.5416 |
| 122.32 | 186.5416 |
| 123.07 | 199.8510 |
| 127.23 | 249.3891 |
| 129.76 | 203.9740 |
| 131.20 | 262.9394 |
| 133.02 | 249.2043 |
| 133.54 | 252.7079 |
| 135.34 | 245.5540 |
| 136.00 | 255.7833 |
| 136.25 | 250.3075 |
| 136.48 | 254.8366 |
| 140.51 | 243.9106 |
| 140.51 | 0.0000 |
| 142.18 | 253.4201 |
| 142.65 | 233.3822 |
| 143.76 | 216.8659 |
| 144.24 | 211.3814 |
| 144.24 | 211.3814 |
| 144.24 | 211.3814 |
| 144.24 | 211.3814 |
| 145.22 | 221.7833 |
| 145.44 | 237.6111 |
| 147.16 | 260.7115 |
| 152.43 | 232.9231 |
| 152.70 | 227.3193 |
| 153.22 | 197.8970 |
| 154.21 | 191.3088 |
| 154.21 | 191.3088 |
| 154.21 | 191.3088 |
| 154.21 | 191.3088 |
| 155.03 | 231.4003 |
| 156.02 | 239.6744 |
| 158.56 | 195.7740 |
| 159.00 | 0.0000 |
| 159.00 | 182.1325 |
| 160.31 | 227.1691 |
| 161.27 | 227.4329 |
| 162.32 | 211.6195 |
| 162.64 | 211.7000 |
| 163.35 | 215.3342 |
| 163.89 | 197.0386 |
| 165.85 | 225.2168 |
| 167.43 | 209.4377 |
| 171.28 | 206.8935 |
| 171.86 | 212.8484 |
| 172.10 | 212.9080 |
| 176.55 | 203.4691 |
| 176.60 | 203.4814 |
| 181.06 | 180.5266 |
| 184.41 | 164.2111 |
| 185.71 | 189.6076 |
| 186.00 | 189.6680 |
| 190.27 | 160.9864 |
| 192.34 | 155.8703 |
| 193.63 | 184.0848 |
| 197.04 | 165.0191 |
| 198.01 | 164.2884 |
| 198.60 | 167.9821 |
| 200.40 | 185.3972 |
| 201.83 | 182.0669 |
| 202.84 | 181.4831 |
| 205.31 | 189.5918 |

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| 208.36 | 176.9330 |
| 208.81 | 177.0133 |
| 209.75 | 159.9163 |
| 209.75 | 159.9163 |
| 210.97 | 174.6680 |
| 215.65 | 165.4274 |
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| 218.09 | 168.5721 |
| 222.10 | 162.7911 |
| 223.80 | 170.4269 |
| 226.40 | 156.9976 |
| 227.00 | 148.7707 |
| 227.08 | 148.7830 |
| 227.20 | 153.4201 |
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| 228.18 | 157.2635 |
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| 236.00 | 164.0077 |
| 238.63 | 168.1403 |
| 238.63 | 168.1403 |
| 238.63 | 168.1403 |
| 238.63 | 168.1403 |
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| 241.98 | 166.4058 |
| 241.98 | 166.4058 |
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| 245.39 | 138.3470 |
| 247.94 | 137.5322 |
| 248.90 | 138.5920 |
| 249.79 | 152.8551 |
| 252.40 | 121.9985 |
| 252.85 | 114.4779 |
| 252.85 | 114.4779 |
| 254.15 | 0.0000 |
| 256.20 | 154.6667 |
| 256.20 | 154.6667 |
| 260.50 | 132.3847 |
| 260.90 | 133.3841 |
| 262.80 | 137.4170 |
| 264.65 | 127.4394 |
| 268.24 | 119.6451 |
| 268.79 | 127.3734 |
| 269.46 | 124.3754 |
| 269.46 | 124.3754 |
| 269.46 | 124.3754 |
| 269.46 | 124.3754 |
| 271.23 | 120.1382 |
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| 277.35 | 123.6465 |
| 277.60 | 120.7733 |
| 277.60 | 120.7733 |
| 278.00 | 119.8469 |
| 278.60 | 141.1791 |
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| 280.46 | 161.7303 |
| 281.68 | 136.6863 |
| 283.67 | 127.1981 |
| 284.30 | 128.2335 |
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| 286.10 | 126.4731 |
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| 288.45 | 0.0000 |
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| 290.80 | 132.8083 |
| 291.72 | 123.5243 |
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| 293.70 | 109.6228 |
| 295.21 | 124.4517 |
| 295.21 | 124.4517 |

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| 295.21 | 124.4517 |
| 295.96 | 127.0747 |
| 296.50 | 150.6703 |
| 297.23 | 160.1793 |
| 298.57 | 114.7576 |
| 299.80 | 91.2650 |
| 299.80 | 91.2650 |
| 300.09 | 108.5975 |
| 300.09 | 108.5975 |
| 300.09 | 108.5975 |
| 300.09 | 108.5975 |
| 300.12 | 108.6009 |
| 301.29 | 103.5225 |
| 302.84 | 127.1635 |
| 303.76 | 134.1593 |
| 303.91 | 134.1738 |
| 304.40 | 129.2909 |
| 304.40 | 129.2909 |
| 304.84 | 109.5891 |
| 306.84 | 107.7792 |
| 308.46 | 101.9721 |
| 311.98 | 107.2073 |
| 316.51 | 109.5636 |
| 318.01 | 101.7090 |
| 319.02 | 103.7810 |
| 319.41 | 103.8112 |
| 320.08 | 96.8712 |
| 323.87 | 128.1875 |
| 323.87 | 128.1875 |
| 323.87 | 128.1875 |
| 323.87 | 128.1875 |
| 325.23 | 137.3366 |
| 328.77 | 112.5657 |
| 333.44 | 109.7181 |
| 334.20 | 111.3922 |
| 334.20 | 111.3922 |
| 334.30 | 111.4006 |
| 338.28 | 129.5273 |
| 338.28 | 129.5273 |
| 338.28 | 129.5273 |
| 338.28 | 129.5273 |
| 338.32 | 129.5313 |
| 338.32 | 129.5313 |
| 338.32 | 129.5313 |
| 340.50 | 111.8925 |
| 340.57 | 111.8976 |
| 344.27 | 106.8483 |
| 345.85 | 106.9654 |
| 350.59 | 0.0000 |
| 351.07 | 84.9494 |
| 351.92 | 91.9473 |
| 351.92 | 91.9473 |
| 351.92 | 91.9473 |
| 355.39 | 0.0000 |
| 356.01 | 77.0428 |
| 364.48 | 83.4620 |
| 366.43 | 83.5720 |
| 367.43 | 82.5952 |
| 367.94 | 0.0000 |
| 369.80 | 83.7599 |
| 374.96 | 86.1206 |
| 383.85 | 82.4464 |
| 387.95 | 91.0356 |
| 388.63 | 97.3565 |
| 391.69 | 78.6667 |
| 391.69 | 78.6667 |
| 392.90 | 89.2243 |
| 398.62 | 103.2427 |
| 400.65 | 85.4420 |
| 401.10 | 92.8514 |
| 401.81 | 102.3935 |
| 402.60 | 95.3527 |
| 404.84 | 113.3749 |
| 410.95 | 90.0237 |
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| 415.30 | 90.0197 |

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| 427.89 | 56.8438 |
| 432.53 | 75.2840 |
| 433.93 | 82.8805 |
| 439.47 | 78.8312 |
| 439.56 | 78.8346 |
| 439.89 | 85.3310 |
| 443.98 | 63.8795 |
| 444.90 | 74.7465 |
| 445.03 | 74.7528 |
| 445.03 | 74.7528 |
| 445.03 | 74.7528 |
| 445.03 | 74.7528 |
| 453.90 | 58.8005 |
| 463.38 | 75.5372 |
| 468.07 | 64.9785 |
| 473.00 | 77.0432 |
| 475.06 | 93.6588 |
| 475.35 | 90.3682 |
| 476.78 | 62.8656 |
| 477.59 | 71.7206 |
| 477.96 | 82.7717 |
| 482.03 | 102.8654 |
| 484.57 | 71.9943 |
| 487.03 | 75.4178 |
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| 497.08 | 65.7889 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 77.4987 |
| 511.00 | 77.5050 |
| 511.85 | 77.5392 |
| 511.85 | 77.5392 |
| 513.99 | 74.7000 |
| 513.99 | 74.7000 |
| 520.41 | 60.9510 |
| 520.65 | 60.9593 |
| 527.90 | 65.2641 |
| 528.96 | 0.0000 |
| 529.64 | 62.6003 |
| 529.87 | 0.0000 |
| 531.02 | 63.5520 |
| 537.32 | 62.8429 |
| 543.00 | 61.1931 |
| 546.56 | 0.0000 |
| 549.76 | 55.9008 |
| 552.65 | 75.2514 |
| 555.20 | 62.4816 |
| 563.23 | 59.9584 |
| 563.90 | 59.9774 |
| 568.70 | 62.8900 |
| 569.32 | 61.0597 |
| 569.50 | 61.0645 |
| 569.67 | 61.0693 |
| 573.80 | 74.1699 |
| 574.00 | 76.0302 |
| 574.64 | 82.5466 |
| 578.91 | 60.4091 |
| 579.30 | 0.0000 |
| 583.14 | 60.5297 |
| 585.48 | 54.3813 |
| 591.81 | 63.3729 |
| 592.07 | 62.6522 |
| 593.00 | 62.6800 |
| 595.88 | 74.0046 |
| 600.56 | 60.0828 |
| 602.52 | 0.0000 |
| 602.71 | 87.7074 |
| 602.71 | 87.7074 |
| 603.60 | 97.1449 |
| 604.41 | 100.3151 |
| 604.70 | 100.3281 |
| 609.31 | 56.5532 |

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|--------|---------|
| 609.31 | 56.5532 |
| 609.31 | 56.5532 |
| 609.31 | 56.5532 |
| 610.33 | 61.2946 |
| 612.46 | 75.5117 |
| 614.37 | 62.9818 |
| 618.01 | 49.2058 |
| 621.84 | 47.3950 |
| 621.84 | 47.3950 |
| 631.29 | 50.4496 |
| 633.02 | 63.8250 |
| 633.10 | 63.8267 |
| 634.78 | 63.8741 |
| 635.90 | 60.0899 |
| 636.97 | 51.5307 |
| 645.85 | 57.4790 |
| 646.12 | 56.5268 |
| 656.30 | 63.5121 |
| 657.75 | 62.5879 |
| 657.90 | 0.0000 |
| 661.65 | 60.7636 |
| 661.65 | 60.7636 |
| 664.57 | 0.0000 |
| 666.33 | 70.5494 |
| 666.33 | 70.5494 |
| 675.00 | 64.0181 |
| 677.61 | 68.9425 |
| 685.20 | 45.7825 |
| 692.80 | 42.0174 |
| 695.00 | 51.8367 |
| 696.49 | 58.7183 |
| 696.49 | 58.7183 |
| 697.00 | 54.8146 |
| 697.49 | 62.6578 |
| 698.33 | 60.7209 |
| 698.50 | 53.8694 |
| 699.00 | 59.7580 |
| 702.63 | 45.1308 |
| 706.10 | 58.9482 |
| 706.58 | 0.0000 |
| 706.67 | 65.8403 |
| 709.31 | 55.0895 |
| 711.68 | 46.2805 |
| 713.82 | 51.2484 |
| 717.42 | 60.2047 |
| 720.50 | 66.7024 |
| 721.93 | 0.0000 |
| 722.20 | 60.9786 |
| 722.78 | 72.5313 |
| 722.78 | 72.5313 |
| 722.89 | 72.5348 |
| 722.95 | 72.5366 |
| 723.30 | 65.9521 |
| 724.18 | 72.5724 |
| 727.18 | 49.5398 |
| 733.00 | 52.9635 |
| 735.90 | 52.6933 |
| 739.58 | 49.7815 |
| 742.81 | 47.8512 |
| 744.21 | 43.8872 |
| 747.13 | 51.9251 |
| 751.79 | 55.0201 |
| 752.31 | 49.0275 |
| 753.82 | 41.0470 |
| 755.35 | 42.0728 |
| 756.15 | 44.0902 |
| 756.87 | 44.1021 |
| 763.93 | 38.5261 |
| 765.79 | 46.9344 |
| 766.42 | 46.9458 |
| 766.84 | 43.5989 |
| 776.49 | 53.5202 |
| 778.00 | 51.5292 |
| 778.57 | 52.5510 |
| 778.89 | 52.5573 |
| 783.80 | 45.5658 |
| 785.46 | 32.4227 |
| 792.07 | 52.8163 |

| | |
|---------|---------|
| 795.84 | 45.7701 |
| 796.30 | 45.7778 |
| 798.80 | 53.9653 |
| 801.93 | 50.9692 |
| 805.60 | 46.9546 |
| 810.29 | 63.3941 |
| 810.76 | 65.4500 |
| 815.85 | 27.6631 |
| 817.79 | 35.8844 |
| 818.51 | 45.1236 |
| 819.60 | 50.2717 |
| 826.30 | 43.1936 |
| 828.27 | 0.0000 |
| 831.60 | 60.7905 |
| 831.96 | 64.9211 |
| 834.83 | 53.6402 |
| 836.80 | 0.0000 |
| 846.75 | 41.4355 |
| 848.13 | 37.3096 |
| 856.28 | 0.0000 |
| 856.80 | 50.2438 |
| 860.37 | 41.6328 |
| 867.32 | 32.7898 |
| 867.82 | 36.5219 |
| 871.10 | 40.7420 |
| 873.19 | 43.9072 |
| 874.81 | 40.7938 |
| 875.33 | 0.0000 |
| 876.40 | 40.8157 |
| 879.36 | 37.7139 |
| 880.27 | 41.9180 |
| 880.51 | 42.9689 |
| 881.50 | 47.1775 |
| 883.24 | 41.9600 |
| 884.67 | 45.1290 |
| 889.25 | 51.5050 |
| 896.60 | 54.7942 |
| 898.02 | 45.3316 |
| 899.00 | 43.2382 |
| 903.28 | 58.6711 |
| 911.07 | 45.5290 |
| 911.07 | 45.5290 |
| 911.07 | 45.5290 |
| 919.63 | 31.8545 |
| 920.93 | 40.3657 |
| 925.00 | 35.1012 |
| 925.24 | 36.1682 |
| 926.50 | 34.0547 |
| 935.52 | 33.0874 |
| 937.48 | 54.4677 |
| 944.10 | 34.2492 |
| 946.00 | 38.5541 |
| 949.00 | 45.0229 |
| 962.29 | 50.2373 |
| 964.01 | 64.6260 |
| 966.15 | 52.0952 |
| 968.20 | 71.9010 |
| 969.11 | 21.5767 |
| 969.11 | 21.5767 |
| 969.11 | 21.5767 |
| 977.42 | 35.6941 |
| 980.50 | 42.2249 |
| 983.50 | 37.9292 |
| 989.30 | 30.3980 |
| 996.32 | 35.9044 |
| 1001.03 | 37.0456 |
| 1001.68 | 42.5020 |
| 1004.76 | 44.7236 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 54.1217 |
| 1036.00 | 46.7998 |
| 1037.82 | 42.2340 |
| 1038.57 | 39.4884 |
| 1038.76 | 0.0000 |
| 1045.16 | 48.7666 |
| 1046.59 | 47.8677 |
| 1048.07 | 39.6004 |

| | |
|---------|---------|
| 1050.47 | 37.7852 |
| 1050.47 | 37.7852 |
| 1062.04 | 37.9137 |
| 1063.62 | 39.7806 |
| 1076.63 | 37.1452 |
| 1077.35 | 43.6552 |
| 1078.86 | 36.2404 |
| 1085.78 | 38.1756 |
| 1099.22 | 51.4081 |
| 1112.02 | 35.1776 |
| 1112.84 | 36.9948 |
| 1115.52 | 45.0723 |
| 1120.29 | 47.9536 |
| 1120.29 | 47.9536 |
| 1120.29 | 47.9536 |
| 1120.29 | 47.9536 |
| 1120.51 | 47.9557 |
| 1121.28 | 47.9661 |
| 1124.00 | 0.0000 |
| 1129.67 | 46.8661 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 45.7285 |
| 1173.22 | 48.6550 |
| 1175.09 | 41.9984 |
| 1177.93 | 45.8516 |
| 1189.05 | 43.1140 |
| 1204.90 | 65.4240 |
| 1205.75 | 0.0000 |
| 1213.00 | 56.8850 |
| 1221.42 | 55.0796 |
| 1230.97 | 49.4042 |
| 1235.34 | 64.9771 |
| 1236.41 | 0.0000 |
| 1238.25 | 58.2300 |
| 1246.25 | 63.2147 |
| 1260.41 | 0.0000 |
| 1271.85 | 40.1342 |
| 1274.45 | 40.1609 |
| 1274.54 | 38.2018 |
| 1291.56 | 30.4954 |
| 1298.22 | 0.0000 |
| 1312.09 | 27.6844 |
| 1325.50 | 30.7515 |
| 1325.50 | 30.7515 |
| 1332.49 | 31.7982 |
| 1333.61 | 32.7999 |
| 1360.21 | 19.0062 |
| 1362.66 | 0.0000 |
| 1365.15 | 19.0286 |
| 1368.21 | 23.0515 |
| 1368.53 | 0.0000 |
| 1376.25 | 21.0872 |
| 1384.27 | 29.1758 |
| 1394.10 | 17.1425 |
| 1395.20 | 18.1553 |
| 1407.95 | 25.2909 |
| 1434.06 | 18.3193 |
| 1436.60 | 24.4395 |
| 1457.56 | 0.0000 |
| 1460.81 | 15.3589 |
| 1489.15 | 10.3044 |
| 1509.49 | 12.4209 |
| 1596.49 | 11.5993 |
| 1620.62 | 12.7178 |
| 1678.03 | 0.0000 |
| 1691.02 | 8.6003 |
| 1691.02 | 8.6003 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 8.4133 |
| 1764.49 | 8.4133 |
| 1764.49 | 8.4133 |
| 1764.49 | 8.4133 |
| 1770.23 | 6.5508 |
| 1771.40 | 35.5707 |
| 1791.20 | 0.0000 |
| 1808.65 | 8.4843 |

1836.01

8.5279

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246328009

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 3.0469E+00 | ug/g |
| Total Uranium Counting Unc. | 2.9174E+00 | ug/g |
| Total Uranium Tpu | 1.4885E-06 | ug/g |
| Total Uranium Mda | 1.6039E+00 | ug/g |


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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON , SC 29417              *
*               GROSS GAMMA REPORT                 *
*
*****
*
*  BATCH ID      : 950786          SAMPLE ID   : G246328009
*  ANALYST       : MXR1            DETECTOR    : GAM07
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00  COUNT TIME : 0 02:00:00.00
*  ANALYSIS DATE: 18-FEB-2010 11:48:05.17  SAMPLE ALQT: 166.620 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 4.413E+00
GROSS GAMMA ERROR   (pCi/GRAM ) : 8.168E-01
GROSS GAMMA MDA     (pCi/GRAM ) : 1.737E+00
GROSS GAMMA DLC     (pCi/GRAM ) : 8.374E-01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 14:58:10.08

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246341002.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 12:57:15
Sample ID          : G246341002          Sample quantity  : 9.86700E+01 GRAM
Detector name      : GAM22              Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00      Elapsed real time: 0 02:00:08.97  0.1%
Energy tolerance   : 1.50000 keV        Analyst Initials  : MXR1
Abundance limit    : 75.00000           Sensitivity       : 5.00000
Batch ID           : 950786             Detector SN#      :
Matrix Spike ID    :                    LCS ID            : 1032-A
*****

```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|---------|-------|-------|------|---------|------|----|----------|------|----------|
| 1 | 10 | 53.59 | 1179 | 8649 | 2.41 | 107.45 | 101 | 30 | 1.64E-01 | 16.2 | 3.24E+00 |
| 2 | 10 | 57.17 | 1007 | 9424 | 2.09 | 114.60 | 101 | 30 | 1.40E-01 | 20.6 | |
| 3 | 10 | 59.52 | 1631 | 10926 | 2.48 | 119.30 | 101 | 30 | 2.27E-01 | 15.6 | |
| 4 | 10 | 61.99* | 2368 | 8085 | 1.88 | 124.24 | 101 | 30 | 3.29E-01 | 9.9 | |
| 5 | 10 | 63.26* | 20595 | 4439 | 0.98 | 126.77 | 101 | 30 | 2.86E+00 | 0.9 | |
| 6 | 2 | 74.67* | 536 | 7351 | 1.15 | 149.58 | 146 | 12 | 7.44E-02 | 27.0 | 1.27E+00 |
| 7 | 2 | 77.08* | 678 | 5285 | 0.86 | 154.39 | 146 | 12 | 9.41E-02 | 16.6 | |
| 8 | 0 | 84.06* | 3296 | 9575 | 1.18 | 168.33 | 165 | 8 | 4.58E-01 | 5.4 | |
| 9 | 5 | 92.56* | 55007 | 9497 | 1.14 | 185.32 | 181 | 14 | 7.64E+00 | 0.5 | 4.03E+01 |
| 10 | 5 | 94.54 | 3364 | 9311 | 1.70 | 189.27 | 181 | 14 | 4.67E-01 | 9.4 | |
| 11 | 0 | 98.49 | 4363 | 4974 | 1.12 | 197.17 | 194 | 9 | 6.06E-01 | 3.3 | |
| 12 | 6 | 105.40 | 624 | 3779 | 1.10 | 210.98 | 206 | 26 | 8.67E-02 | 16.7 | 6.24E+00 |
| 13 | 6 | 108.98 | 1578 | 5300 | 1.75 | 218.12 | 206 | 26 | 2.19E-01 | 9.2 | |
| 14 | 6 | 111.05 | 1694 | 4688 | 1.50 | 222.26 | 206 | 26 | 2.35E-01 | 8.5 | |
| 15 | 6 | 112.77* | 3257 | 3596 | 1.18 | 225.70 | 206 | 26 | 4.52E-01 | 3.7 | |
| 16 | 0 | 121.04 | 584 | 3225 | 1.09 | 242.22 | 239 | 8 | 8.10E-02 | 17.4 | |
| 17 | 0 | 131.44 | 222 | 2874 | 0.97 | 262.99 | 260 | 7 | 3.08E-02 | 40.6 | |
| 18 | 0 | 143.76* | 6480 | 3706 | 1.15 | 287.62 | 283 | 10 | 9.00E-01 | 2.2 | |
| 19 | 0 | 163.32 | 3062 | 3131 | 1.16 | 326.71 | 322 | 10 | 4.25E-01 | 3.9 | |
| 20 | 0 | 185.71* | 32932 | 3254 | 1.20 | 371.44 | 366 | 12 | 4.57E+00 | 0.7 | |
| 21 | 0 | 194.77 | 406 | 1344 | 1.10 | 389.54 | 385 | 8 | 5.65E-02 | 16.4 | |
| 22 | 4 | 202.15 | 623 | 1395 | 1.55 | 404.29 | 400 | 16 | 8.65E-02 | 11.4 | 3.22E+00 |
| 23 | 4 | 205.32 | 2765 | 1051 | 1.20 | 410.61 | 400 | 16 | 3.84E-01 | 2.7 | |
| 24 | 3 | 238.63* | 1348 | 920 | 1.28 | 477.17 | 472 | 16 | 1.87E-01 | 4.8 | 1.99E+00 |
| 25 | 3 | 241.57 | 352 | 1222 | 1.89 | 483.06 | 472 | 16 | 4.90E-02 | 22.1 | |
| 26 | 0 | 258.22 | 750 | 1079 | 1.26 | 516.32 | 510 | 12 | 1.04E-01 | 9.5 | |
| 27 | 0 | 295.35* | 413 | 881 | 1.24 | 590.52 | 584 | 11 | 5.74E-02 | 14.9 | |
| 28 | 0 | 338.45* | 235 | 624 | 1.53 | 676.66 | 671 | 10 | 3.27E-02 | 21.1 | |
| 29 | 0 | 351.82* | 728 | 837 | 1.30 | 703.38 | 697 | 13 | 1.01E-01 | 9.0 | |
| 30 | 0 | 510.88* | 214 | 715 | 2.28 | 1021.27 | 1011 | 22 | 2.98E-02 | 34.3 | |
| 31 | 0 | 569.82* | 47 | 399 | 2.10 | 1139.06 | 1132 | 11 | 6.48E-03 | 85.3 | |
| 32 | 0 | 583.23* | 449 | 324 | 1.67 | 1165.88 | 1161 | 11 | 6.24E-02 | 9.3 | |
| 33 | 0 | 609.16* | 641 | 352 | 1.47 | 1217.70 | 1210 | 15 | 8.90E-02 | 7.6 | |
| 34 | 0 | 661.57 | 2037 | 306 | 1.71 | 1322.47 | 1316 | 12 | 2.83E-01 | 2.8 | |
| 35 | 0 | 727.57 | 120 | 273 | 2.17 | 1454.41 | 1448 | 12 | 1.67E-02 | 28.9 | |
| 36 | 0 | 742.36 | 532 | 388 | 2.05 | 1483.96 | 1474 | 17 | 7.39E-02 | 9.5 | |
| 37 | 0 | 766.41 | 1898 | 404 | 2.03 | 1532.05 | 1523 | 19 | 2.64E-01 | 3.4 | |
| 38 | 0 | 786.19 | 274 | 300 | 1.93 | 1571.59 | 1566 | 12 | 3.81E-02 | 14.1 | |

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|-----|
| 39 | 0 | 880.66 | 237 | 236 | 4.12 | 1760.46 | 1749 | 22 | 3.29E-02 | 17.8 | |
| 40 | 0 | 911.17* | 365 | 149 | 2.09 | 1821.45 | 1813 | 17 | 5.08E-02 | 9.5 | |
| 41 | 0 | 946.30 | 154 | 144 | 1.69 | 1891.70 | 1887 | 13 | 2.14E-02 | 18.3 | |
| 42 | 0 | 969.31* | 170 | 262 | 1.22 | 1937.71 | 1929 | 22 | 2.36E-02 | 26.4 | |
| 43 | 0 | 1000.98* | 3956 | 194 | 2.03 | 2001.02 | 1993 | 19 | 5.50E-01 | 1.8 | |
| 44 | 0 | 1120.49* | 142 | 108 | 1.87 | 2240.01 | 2233 | 17 | 1.98E-02 | 19.4 | |
| 45 | 0 | 1238.79 | 57 | 133 | 1.99 | 2476.59 | 2467 | 13 | 7.86E-03 | 44.1 | |
| 46 | 0 | 1460.69* | 1423 | 54 | 2.56 | 2920.41 | 2908 | 22 | 1.98E-01 | 3.0 | |
| 47 | 0 | 1738.03 | 75 | 29 | 2.46 | 3475.23 | 3467 | 19 | 1.04E-02 | 20.7 | |
| 48 | 0 | 1764.22* | 137 | 14 | 3.21 | 3527.64 | 3516 | 20 | 1.90E-02 | 12.2 | |
| 49 | 0 | 1831.87 | 49 | 24 | 3.11 | 3662.99 | 3651 | 18 | 6.81E-03 | 24.6 | |
| 50 | 0 | 1875.28 | 39 | 8 | 2.62 | 3749.85 | 3743 | 12 | 5.39E-03 | 20.5 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 14:58:14

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G246341002.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 12:57:15
Sample ID        : G246341002             Sample quantity  : 98.670 GRAM
Sample type      : SOLID                   Sample geometry   :
Detector name    : GAMMA22                 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00           Elapsed real time: 0 02:00:08.97   0.1%
Peak Width (FWHM): 3.00                   Confidence level  : 5.00 %
Energy tolerance : 1.50 keV                Half life ratio   : 8.00
Errors propagated: Yes                     Systematic Error  : 0.00 %
Efficiency type  : Empirical                Efficiencies at   : Peak Energy
Abundance limit  : 75.00                   WTM error limit   : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.658E+01 | 2.915E+00 | 7.156E-01 | 6.556E-02 | 37.144 |
| CO-57 | + | 122.06 | * | 3.169E-01 | 1.130E-01 | 1.383E-01 | 1.140E-02 | 2.292 |
| | | 136.48 | | -7.778E-02 | 6.654E-01 | 1.087E+00 | 1.009E-01 | -0.072 |
| AS-73 | + | 53.44 | * | 2.007E+01 | 6.679E+00 | 5.232E+00 | 3.954E-01 | 3.835 |
| RB-84 | + | 881.50 | * | 6.646E-01 | 2.479E-01 | 1.798E-01 | 2.011E-02 | 3.696 |
| NB-95 | + | 765.79 | * | 2.714E+00 | 3.501E-01 | 1.202E-01 | 1.314E-02 | 22.582 |
| TE-125M | + | 109.28 | * | 3.076E+02 | 6.444E+01 | 5.259E+01 | 5.328E+00 | 5.849 |
| BA-137M | + | 661.65 | * | 2.401E+00 | 2.868E-01 | 1.031E-01 | 1.087E-02 | 23.297 |
| CS-137 | + | 661.65 | * | 2.538E+00 | 3.035E-01 | 1.089E-01 | 1.150E-02 | 23.297 |
| W-181 | + | 56.28 | | 7.084E+00 | 2.968E+00 | 2.271E+00 | 1.654E-01 | 3.120 |
| | + | 57.53 | | 4.064E+00 | 1.703E+00 | 1.211E+00 | 8.703E-02 | 3.356 |
| | | 65.20 | * | 1.660E+01 | 2.001E+00 | 2.608E+00 | 1.944E-01 | 6.365 |
| RE-183 | + | 57.98 | | 4.160E+00 | 1.743E+00 | 1.209E+00 | 8.650E-02 | 3.441 |
| | + | 59.32 | | 3.397E+00 | 1.087E+00 | 6.475E-01 | 4.580E-02 | 5.246 |
| | | 67.20 | | -2.381E+00 | 8.309E-01 | 1.151E+00 | 8.737E-02 | -2.068 |
| | + | 162.32 | * | 7.341E+00 | 9.101E-01 | 5.365E-01 | 5.176E-02 | 13.682 |
| | | 208.81 | | 1.210E+00 | 2.414E+00 | 3.510E+00 | 3.968E-01 | 0.345 |
| | | 291.72 | | -4.286E-01 | 2.064E+00 | 3.010E+00 | 4.101E-01 | -0.142 |
| TL-208 | | 277.35 | | 1.178E+00 | 7.847E-01 | 1.266E+00 | 2.087E-01 | 0.931 |
| | + | 510.84 | | 8.784E-01 | 6.129E-01 | 3.722E-01 | 4.851E-02 | 2.360 |
| | + | 583.14 | * | 5.163E-01 | 1.109E-01 | 1.050E-01 | 1.138E-02 | 4.919 |
| | | 860.37 | | 8.379E-01 | 4.709E-01 | 8.133E-01 | 9.477E-02 | 1.030 |
| BI-211 | | 72.87 | | 2.510E+01 | 1.284E+01 | 1.907E+01 | 1.526E+00 | 1.316 |
| | + | 351.07 | * | 3.963E+00 | 8.525E-01 | 6.184E-01 | 7.215E-02 | 6.409 |
| BI-212 | + | 727.18 | * | 1.162E+00 | 6.860E-01 | 8.008E-01 | 9.565E-02 | 1.451 |
| | + | 785.46 | | 1.683E+01 | 5.093E+00 | 5.077E+00 | 5.581E-01 | 3.316 |
| | | 1620.62 | | 9.865E-01 | 1.448E+00 | 2.566E+00 | 2.237E-01 | 0.384 |
| PB-212 | + | 74.81 | | 3.099E+00 | 1.715E+00 | 2.155E+00 | 2.674E-01 | 1.438 |
| | + | 77.11 | | 2.218E+00 | 7.588E-01 | 1.227E+00 | 1.026E-01 | 1.808 |
| | | 87.30 | | -1.728E+01 | 3.256E+00 | 2.656E+00 | 3.647E-01 | -6.508 |
| | + | 238.63 | * | 1.714E+00 | 2.801E-01 | 1.873E-01 | 2.474E-02 | 9.150 |
| | | 300.09 | | 2.904E+00 | 1.632E+00 | 2.458E+00 | 3.585E-01 | 1.181 |
| PO-212 | + | 74.81 | | 3.099E+00 | 1.715E+00 | 2.155E+00 | 2.674E-01 | 1.438 |
| | + | 77.11 | | 2.218E+00 | 7.588E-01 | 1.227E+00 | 1.026E-01 | 1.808 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 87.30 | | -1.728E+01 | 3.256E+00 | 2.656E+00 | 3.647E-01 | -6.508 |
| | | 115.19 | | 7.453E+01 | 1.541E+01 | 2.178E+01 | 1.804E+00 | 3.422 |
| | + | 238.63 | * | 1.714E+00 | 2.801E-01 | 1.873E-01 | 2.474E-02 | 9.150 |
| | | 300.09 | | 2.904E+00 | 1.632E+00 | 2.458E+00 | 3.585E-01 | 1.181 |
| BI-214 | + | 609.31 | * | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| | + | 1120.29 | | 1.529E+00 | 6.180E-01 | 5.260E-01 | 5.812E-02 | 2.906 |
| | + | 1764.49 | | 1.922E+00 | 4.969E-01 | 2.886E-01 | 2.404E-02 | 6.660 |
| PB-214 | + | 74.81 | | 5.339E+00 | 2.939E+00 | 3.713E+00 | 4.092E-01 | 1.438 |
| | + | 77.11 | | 3.802E+00 | 1.333E+00 | 2.103E+00 | 2.379E-01 | 1.808 |
| | | 87.30 | | -2.961E+01 | 5.250E+00 | 4.550E+00 | 5.535E-01 | -6.508 |
| | + | 241.98 | | 2.686E+00 | 1.241E+00 | 1.100E+00 | 1.513E-01 | 2.441 |
| | + | 295.21 | | 1.372E+00 | 4.568E-01 | 4.354E-01 | 6.483E-02 | 3.152 |
| | + | 351.92 | * | 1.379E+00 | 3.052E-01 | 2.155E-01 | 2.747E-02 | 6.397 |
| PO-214 | + | 74.81 | | 5.339E+00 | 2.939E+00 | 3.713E+00 | 4.092E-01 | 1.438 |
| | + | 77.11 | | 3.802E+00 | 1.333E+00 | 2.103E+00 | 2.379E-01 | 1.808 |
| | | 87.30 | | -2.961E+01 | 5.250E+00 | 4.550E+00 | 5.535E-01 | -6.508 |
| | + | 241.98 | | 2.686E+00 | 1.241E+00 | 1.100E+00 | 1.513E-01 | 2.441 |
| | + | 295.21 | | 1.372E+00 | 4.568E-01 | 4.354E-01 | 6.483E-02 | 3.152 |
| | + | 351.92 | * | 1.379E+00 | 3.052E-01 | 2.155E-01 | 2.747E-02 | 6.397 |
| PO-216 | + | 74.81 | | 3.099E+00 | 1.715E+00 | 2.155E+00 | 2.674E-01 | 1.438 |
| | + | 77.11 | | 2.218E+00 | 7.588E-01 | 1.227E+00 | 1.026E-01 | 1.808 |
| | | 87.30 | | -1.728E+01 | 3.256E+00 | 2.656E+00 | 3.647E-01 | -6.508 |
| | + | 238.63 | * | 1.714E+00 | 2.801E-01 | 1.873E-01 | 2.474E-02 | 9.150 |
| | | 300.09 | | 2.904E+00 | 1.632E+00 | 2.458E+00 | 3.585E-01 | 1.181 |
| PO-218 | + | 74.81 | | 5.339E+00 | 2.939E+00 | 3.713E+00 | 4.092E-01 | 1.438 |
| | + | 77.11 | | 3.802E+00 | 1.333E+00 | 2.103E+00 | 2.379E-01 | 1.808 |
| | | 87.30 | | -2.961E+01 | 5.250E+00 | 4.550E+00 | 5.535E-01 | -6.508 |
| | + | 241.98 | | 2.686E+00 | 1.241E+00 | 1.100E+00 | 1.513E-01 | 2.441 |
| | + | 295.21 | | 1.372E+00 | 4.568E-01 | 4.354E-01 | 6.483E-02 | 3.152 |
| | + | 351.92 | * | 1.379E+00 | 3.052E-01 | 2.155E-01 | 2.747E-02 | 6.397 |
| RA-224 | + | 240.98 | * | 5.092E+00 | 2.336E+00 | 2.129E+00 | 2.665E-01 | 2.392 |
| RA-226 | + | 609.31 | * | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| | + | 1120.29 | | 1.529E+00 | 6.180E-01 | 5.260E-01 | 5.812E-02 | 2.906 |
| | + | 1764.49 | | 1.922E+00 | 4.969E-01 | 2.886E-01 | 2.404E-02 | 6.660 |
| AC-228 | + | 338.32 | | 1.421E+00 | 8.470E-01 | 6.974E-01 | 2.934E-01 | 2.037 |
| | + | 911.07 | * | 1.800E+00 | 4.175E-01 | 2.832E-01 | 3.752E-02 | 6.356 |
| | + | 969.11 | | 1.471E+00 | 8.547E-01 | 4.987E-01 | 1.204E-01 | 2.950 |
| RA-228 | + | 338.32 | | 1.421E+00 | 8.470E-01 | 6.974E-01 | 2.934E-01 | 2.037 |
| | + | 911.07 | * | 1.800E+00 | 4.175E-01 | 2.832E-01 | 3.752E-02 | 6.356 |
| | + | 969.11 | | 1.471E+00 | 8.547E-01 | 4.987E-01 | 1.204E-01 | 2.950 |
| TH-228 | + | 74.81 | | 3.152E+00 | 1.719E+00 | 2.191E+00 | 1.806E-01 | 1.438 |
| | + | 77.11 | | 2.256E+00 | 7.718E-01 | 1.248E+00 | 1.044E-01 | 1.808 |
| | | 87.30 | | -1.758E+01 | 2.807E+00 | 2.701E+00 | 2.542E-01 | -6.508 |
| | + | 238.63 | * | 1.743E+00 | 2.849E-01 | 1.905E-01 | 2.517E-02 | 9.150 |
| | | 300.09 | | 2.953E+00 | 2.393E+00 | 2.500E+00 | 1.504E+00 | 1.181 |
| TH-230 | + | 609.31 | * | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| | + | 1120.29 | | 1.529E+00 | 6.180E-01 | 5.260E-01 | 5.812E-02 | 2.906 |
| | + | 1764.49 | | 1.922E+00 | 4.969E-01 | 2.886E-01 | 2.404E-02 | 6.660 |
| U-231 | + | 84.21 | | 4.164E+02 | 5.892E+01 | 5.239E+01 | 4.750E+00 | 7.948 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 92.29 | | 2.582E+03 | 2.365E+02 | 2.155E+01 | 1.965E+00 | 119.820 |
| | + | 95.87 | * | 9.618E+01 | 2.011E+01 | 8.400E+00 | 7.459E-01 | 11.451 |
| | + | 108.00 | | 9.081E+01 | 1.831E+01 | 1.554E+01 | 1.307E+00 | 5.842 |
| TH-232 | + | 338.32 | | 1.421E+00 | 6.235E-01 | 6.974E-01 | 8.294E-02 | 2.037 |
| | + | 911.07 | * | 1.800E+00 | 4.175E-01 | 2.832E-01 | 3.752E-02 | 6.356 |
| | + | 969.11 | | 1.471E+00 | 8.547E-01 | 4.987E-01 | 1.204E-01 | 2.950 |
| PA-234M | + | 766.42 | | 7.035E+02 | 3.633E+02 | 3.118E+01 | 1.596E+01 | 22.564 |
| | + | 1001.03 | * | 6.952E+02 | 8.355E+01 | 1.052E+01 | 1.205E+00 | 66.094 |
| TH-234 | + | 63.29 | * | 4.764E+02 | 8.335E+01 | 7.162E+00 | 1.247E+00 | 66.510 |
| | + | 92.38 | | 4.927E+02 | 9.038E+01 | 4.109E+00 | 7.529E-01 | 119.888 |
| U-234 | + | 609.31 | * | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| | + | 1120.29 | | 1.529E+00 | 6.180E-01 | 5.260E-01 | 5.812E-02 | 2.906 |
| | + | 1764.49 | | 1.922E+00 | 4.969E-01 | 2.886E-01 | 2.404E-02 | 6.660 |
| U-235 | | 89.95 | | 3.046E+01 | 1.123E+01 | 9.173E+00 | 2.849E+00 | 3.320 |
| | + | 93.35 | | 5.923E+02 | 1.670E+02 | 4.911E+00 | 1.383E+00 | 120.597 |
| | + | 105.00 | | 1.349E+01 | 6.037E+00 | 5.810E+00 | 1.732E+00 | 2.323 |
| | + | 143.76 | * | 2.807E+01 | 5.099E+00 | 1.034E+00 | 1.823E-01 | 27.160 |
| | + | 163.35 | | 3.086E+01 | 6.499E+00 | 2.260E+00 | 4.426E-01 | 13.658 |
| | + | 185.71 | | 3.049E+01 | 3.217E+00 | 1.879E-01 | 1.968E-02 | 162.246 |
| | + | 205.31 | | 3.085E+01 | 6.504E+00 | 1.938E+00 | 3.945E-01 | 15.922 |
| U-238 | + | 63.29 | * | 4.764E+02 | 8.335E+01 | 7.162E+00 | 1.247E+00 | 66.510 |
| | + | 92.38 | | 4.927E+02 | 4.512E+01 | 4.109E+00 | 3.744E-01 | 119.888 |
| AM-241 | + | 59.54 | * | 4.754E+00 | 1.529E+00 | 8.963E-01 | 7.006E-02 | 5.305 |
| AM-243 | + | 74.67 | * | 5.023E-01 | 2.740E-01 | 3.503E-01 | 2.855E-02 | 1.434 |
| | | 86.72 | | -3.567E+02 | 5.768E+01 | 6.275E+01 | 5.863E+00 | -5.684 |
| | | 117.66 | | -2.449E+01 | 1.928E+01 | 2.042E+01 | 1.687E+00 | -1.199 |
| | | 142.18 | | 1.592E+03 | 1.606E+02 | 1.439E+02 | 1.271E+01 | 11.061 |
| ANH-511 | + | 511.00 | * | 1.897E-01 | 1.314E-01 | 8.042E-02 | 8.058E-03 | 2.359 |

---- 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 | * | 2.060E-01 | 6.415E-01 | 1.047E+00 | 1.093E-01 | 0.197 |
| NA-22 | | 1274.54 | * | -2.197E-02 | 5.156E-02 | 8.273E-02 | 7.129E-03 | -0.266 |
| NA-24 | | 1368.53 | * | -5.468E+00 | 5.156E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -1.798E-01 | 2.377E+00 | 3.245E+00 | 2.826E-01 | -0.055 |
| | | 1808.65 | * | 3.815E-02 | 3.572E-02 | 6.595E-02 | 5.394E-03 | 0.578 |
| TI-44 | | 67.85 | | -2.140E-01 | 1.740E-01 | 2.689E-01 | 2.052E-02 | -0.796 |
| | + | 78.38 | * | 4.093E-01 | 1.400E-01 | 2.297E-01 | 1.948E-02 | 1.781 |
| SC-46 | | 889.25 | * | 3.367E-02 | 6.600E-02 | 9.713E-02 | 1.087E-02 | 0.347 |
| | + | 1120.51 | | 2.659E-01 | 1.060E-01 | 1.416E-01 | 1.252E-02 | 1.878 |
| V-48 | | 944.10 | | 5.579E+00 | 1.936E+00 | 3.099E+00 | 3.362E-01 | 1.800 |
| | | 983.50 | * | 1.189E-01 | 1.072E-01 | 1.858E-01 | 1.949E-02 | 0.640 |
| | | 1312.09 | | -2.788E-02 | 1.019E-01 | 1.646E-01 | 1.450E-02 | -0.169 |
| CR-51 | | 320.08 | * | 1.110E-01 | 7.272E-01 | 1.221E+00 | 1.582E-01 | 0.091 |
| MN-52 | | 744.21 | | 5.002E+00 | 9.279E-01 | 1.355E+00 | 1.472E-01 | 3.692 |
| | | 848.13 | | 2.657E+00 | 1.331E+01 | 2.237E+01 | 2.491E+00 | 0.119 |
| | | 935.52 | | 3.561E-01 | 4.445E-01 | 7.623E-01 | 8.322E-02 | 0.467 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 1246.25 | | | -2.530E-01 | 1.172E+01 | 1.800E+01 | 1.521E+00 | -0.014 |
| | 1333.61 | | | -2.391E+00 | 7.348E+00 | 1.177E+01 | 1.050E+00 | -0.203 |
| | 1434.06 | | | 5.968E-01 | 4.068E-01 | 7.360E-01 | 6.577E-02 | 0.811 |
| MN-54 | 834.83 | | * | -3.870E-02 | 5.745E-02 | 9.275E-02 | 1.030E-02 | -0.417 |
| CO-56 | 846.75 | | * | -1.545E-02 | 6.262E-02 | 1.031E-01 | 1.148E-02 | -0.150 |
| | 977.42 | | | -4.656E+00 | 5.140E+00 | 6.621E+00 | 6.983E-01 | -0.703 |
| | 1037.82 | | | -3.061E-01 | 4.061E-01 | 6.287E-01 | 6.483E-02 | -0.487 |
| | 1175.09 | | | 9.134E-03 | 2.528E+00 | 4.219E+00 | 3.397E-01 | 0.002 |
| | 1238.25 | | + | 1.729E-01 | 1.532E-01 | 2.114E-01 | 1.831E-02 | 0.818 |
| | 1360.21 | | | -5.295E-02 | 1.174E+00 | 1.922E+00 | 1.717E-01 | -0.028 |
| | 1771.40 | | | 6.479E-03 | 2.970E-01 | 4.159E-01 | 3.455E-02 | 0.016 |
| CO-58 | 810.76 | | * | 4.618E-03 | 6.470E-02 | 1.086E-01 | 1.202E-02 | 0.043 |
| FE-59 | 142.65 | | + | 3.731E+02 | 3.689E+01 | 2.510E+01 | 2.221E+00 | 14.864 |
| | 192.34 | | | 2.987E+00 | 2.742E+00 | 3.771E+00 | 5.600E-01 | 0.792 |
| | 1099.22 | | * | -1.523E-02 | 1.153E-01 | 1.857E-01 | 1.820E-02 | -0.082 |
| | 1291.56 | | | 6.565E-02 | 1.477E-01 | 2.517E-01 | 2.481E-02 | 0.261 |
| CO-60 | 1173.22 | | | -7.933E-03 | 5.032E-02 | 8.311E-02 | 6.684E-03 | -0.095 |
| | 1332.49 | | * | -2.489E-02 | 4.517E-02 | 7.087E-02 | 6.320E-03 | -0.351 |
| ZN-65 | 1115.52 | | * | 8.241E-03 | 1.277E-01 | 1.771E-01 | 1.580E-02 | 0.047 |
| GE-68 | 1077.35 | | * | 9.505E-01 | 1.473E+00 | 2.500E+00 | 2.356E-01 | 0.380 |
| AS-74 | 595.88 | | * | -3.363E-02 | 1.687E-01 | 2.775E-01 | 2.877E-02 | -0.121 |
| | 634.78 | | | -9.620E-01 | 6.609E-01 | 1.012E+00 | 1.061E-01 | -0.951 |
| SE-75 | 66.05 | | | -5.457E+01 | 1.961E+01 | 2.686E+01 | 2.563E+00 | -2.032 |
| | 96.73 | | | 4.197E+01 | 7.210E+00 | 5.858E+00 | 8.063E-01 | 7.165 |
| | 121.11 | | + | 1.715E+00 | 6.239E-01 | 7.942E-01 | 8.682E-02 | 2.159 |
| | 136.00 | | | -3.426E-02 | 1.309E-01 | 2.049E-01 | 1.778E-02 | -0.167 |
| | 198.60 | | | 1.218E+00 | 6.317E+00 | 6.666E+00 | 7.791E-01 | 0.183 |
| | 264.65 | | * | -1.436E-02 | 9.457E-02 | 1.459E-01 | 1.964E-02 | -0.098 |
| | 279.53 | | | 4.477E-02 | 2.244E-01 | 3.607E-01 | 5.120E-02 | 0.124 |
| | 303.91 | | | -5.258E+00 | 4.068E+00 | 6.478E+00 | 9.872E-01 | -0.812 |
| | 400.65 | | | -6.315E-03 | 4.749E-01 | 7.793E-01 | 9.121E-02 | -0.008 |
| BR-77 | 87.88 | | | -1.230E+04 | 2.468E+03 | 2.256E+03 | 2.139E+02 | -5.452 |
| | 200.40 | | | 1.980E+03 | 7.975E+02 | 1.178E+03 | 1.296E+02 | 1.680 |
| | 239.00 | | + | 4.821E+02 | 7.579E+01 | 8.315E+01 | 1.035E+01 | 5.798 |
| | 249.79 | | | -3.300E+01 | 2.423E+02 | 3.899E+02 | 5.013E+01 | -0.085 |
| | 281.68 | | | -3.344E+02 | 3.240E+02 | 4.976E+02 | 6.932E+01 | -0.672 |
| | 297.23 | | | 5.717E+02 | 2.233E+02 | 3.334E+02 | 4.484E+01 | 1.715 |
| | 303.76 | | | -7.499E+02 | 5.978E+02 | 9.587E+02 | 1.268E+02 | -0.782 |
| | 439.47 | | | 5.376E+01 | 4.653E+02 | 7.604E+02 | 7.319E+01 | 0.071 |
| | 484.57 | | | -1.791E+02 | 7.496E+02 | 1.199E+03 | 1.185E+02 | -0.149 |
| | 520.65 | | * | 1.701E+01 | 3.658E+01 | 5.619E+01 | 5.655E+00 | 0.303 |
| | 574.64 | | | -4.235E+02 | 7.428E+02 | 1.030E+03 | 1.060E+02 | -0.411 |
| | 578.91 | | | 7.576E+01 | 2.972E+02 | 4.307E+02 | 4.439E+01 | 0.176 |
| | 585.48 | | | 3.521E+03 | 7.516E+02 | 1.145E+03 | 1.182E+02 | 3.076 |
| | 755.35 | | | 2.407E+02 | 5.195E+02 | 8.572E+02 | 9.346E+01 | 0.281 |
| | 817.79 | | | -6.066E+01 | 3.668E+02 | 6.085E+02 | 6.738E+01 | -0.100 |
| SR-82 | 698.33 | | | 2.948E+00 | 6.429E+01 | 1.052E+02 | 1.125E+01 | 0.028 |
| | 776.49 | | * | -9.651E-01 | 8.062E-01 | 1.160E+00 | 1.272E-01 | -0.832 |
| | 1395.20 | | | 3.074E+00 | 1.368E+01 | 2.288E+01 | 2.046E+00 | 0.134 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RB-83 | 520.41 | * | | 5.982E-02 | 1.400E-01 | 2.147E-01 | 2.161E-02 | 0.279 |
| | 529.64 | | | -8.021E-02 | 1.948E-01 | 3.217E-01 | 3.251E-02 | -0.249 |
| | 552.65 | | | -3.924E-01 | 3.527E-01 | 5.615E-01 | 5.730E-02 | -0.699 |
| KR-85 | 513.99 | * | | 3.503E+01 | 1.440E+01 | 2.175E+01 | 2.182E+00 | 1.611 |
| SR-85 | 513.99 | * | | 1.833E-01 | 7.536E-02 | 1.138E-01 | 1.142E-02 | 1.611 |
| RB-86 | 1076.63 | * | | 3.531E-01 | 1.006E+00 | 1.677E+00 | 1.582E-01 | 0.211 |
| Y-88 | 898.02 | | | -6.638E-03 | 6.088E-02 | 1.003E-01 | 1.127E-02 | -0.066 |
| | 1836.01 | * | | 8.519E-02 | 4.701E-02 | 8.463E-02 | 6.843E-03 | 1.007 |
| ZR-88 | 392.90 | * | | -4.831E-03 | 5.852E-02 | 9.599E-02 | 8.938E-03 | -0.050 |
| Y-91 | 1204.90 | * | | -2.273E+01 | 2.059E+01 | 3.156E+01 | 2.595E+00 | -0.720 |
| NB-94 | 702.63 | * | | 1.718E-02 | 6.133E-02 | 1.011E-01 | 1.083E-02 | 0.170 |
| | 871.10 | | | -1.679E-02 | 6.000E-02 | 8.349E-02 | 9.326E-03 | -0.201 |
| NB-95M | 235.69 | * | | 8.957E-02 | 2.919E-01 | 4.178E-01 | 5.523E-02 | 0.214 |
| ZR-95 | 724.18 | | | 1.859E-01 | 1.800E-01 | 2.648E-01 | 3.019E-02 | 0.702 |
| | 756.15 | * | | 1.045E-01 | 1.351E-01 | 2.153E-01 | 2.499E-02 | 0.485 |
| NB-97 | 657.90 | * | | 7.468E+00 | 1.351E-01 | Half-Life | too short | |
| | 1024.50 | | | 1.727E+01 | 1.351E-01 | Half-Life | too short | |
| ZR-97 | 254.15 | | | -1.228E+01 | 1.351E-01 | Half-Life | too short | |
| | 355.39 | | | 3.337E+01 | 1.351E-01 | Half-Life | too short | |
| | 507.63 | * | | 5.980E+01 | 1.351E-01 | Half-Life | too short | |
| | 602.52 | | | 4.260E+01 | 1.351E-01 | Half-Life | too short | |
| | 1021.30 | | | -3.805E+01 | 1.351E-01 | Half-Life | too short | |
| | 1147.95 | | | -3.981E+01 | 1.351E-01 | Half-Life | too short | |
| | 1362.66 | | | 2.400E+01 | 1.351E-01 | Half-Life | too short | |
| | 1750.46 | | | -1.861E+01 | 1.351E-01 | Half-Life | too short | |
| MO-99 | 140.51 | | | -2.599E+01 | 1.475E+02 | 2.187E+02 | 6.067E+01 | -0.119 |
| | 181.06 | | | 1.026E+01 | 9.362E+01 | 1.366E+02 | 2.614E+01 | 0.075 |
| | 366.43 | | | -8.347E+00 | 2.540E+02 | 4.198E+02 | 4.453E+01 | -0.020 |
| | 739.58 | * | | 1.624E+02 | 5.359E+01 | 7.522E+01 | 1.245E+01 | 2.159 |
| | 778.00 | | | -7.819E+01 | 1.141E+02 | 1.640E+02 | 1.800E+01 | -0.477 |
| TC-99M | 140.51 | * | | -4.726E+12 | 1.141E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | -7.474E-02 | 1.192E-01 | 1.650E-01 | 1.379E-02 | -0.453 |
| | 198.01 | * | | 6.958E-03 | 1.148E-01 | 1.205E-01 | 1.314E-02 | 0.058 |
| | 325.23 | | | 7.031E-02 | 4.125E-01 | 6.921E-01 | 8.603E-02 | 0.102 |
| RH-102 | 418.52 | | | -6.771E-01 | 5.232E-01 | 8.117E-01 | 7.703E-02 | -0.834 |
| | 475.06 | * | | 6.773E-02 | 5.697E-02 | 9.511E-02 | 9.353E-03 | 0.712 |
| | 631.29 | | | 8.211E-02 | 9.042E-02 | 1.538E-01 | 1.611E-02 | 0.534 |
| | 697.49 | | | -6.747E-03 | 1.381E-01 | 2.253E-01 | 2.409E-02 | -0.030 |
| + | 766.84 | | | 6.695E+00 | 8.638E-01 | 7.612E-01 | 8.326E-02 | 8.796 |
| | 1046.59 | | | 5.377E-02 | 1.500E-01 | 2.456E-01 | 2.408E-02 | 0.219 |
| | 1112.84 | | | 1.459E-01 | 3.029E-01 | 4.377E-01 | 3.918E-02 | 0.333 |
| RU-103 | 497.08 | * | | 1.142E-02 | 7.755E-02 | 1.255E-01 | 1.883E-02 | 0.091 |
| + | 610.33 | | | 1.543E+01 | 3.604E+00 | 3.375E+00 | 5.966E-01 | 4.571 |
| RH-106 | 511.85 | + | | 9.511E-01 | 6.589E-01 | 5.704E-01 | 5.717E-02 | 1.668 |
| | 621.84 | * | | 9.987E-03 | 5.316E-01 | 8.786E-01 | 1.283E-01 | 0.011 |
| | 1050.47 | | | -2.516E+00 | 2.891E+00 | 4.423E+00 | 4.317E-01 | -0.569 |
| RU-106 | 511.85 | + | | 9.511E-01 | 6.589E-01 | 5.704E-01 | 5.717E-02 | 1.668 |
| | 621.84 | * | | 9.987E-03 | 5.316E-01 | 8.786E-01 | 9.177E-02 | 0.011 |
| | 1050.47 | | | -2.516E+00 | 2.891E+00 | 4.423E+00 | 4.317E-01 | -0.569 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| AG-108M | | 433.93 | * | -8.515E-03 | 5.985E-02 | 9.707E-02 | 9.609E-03 | -0.088 |
| | | 614.37 | | 4.682E-02 | 7.163E-02 | 1.053E-01 | 1.127E-02 | 0.445 |
| | | 722.95 | | 7.289E-03 | 7.583E-02 | 1.064E-01 | 1.177E-02 | 0.069 |
| CD-109 | | 88.03 | * | -3.022E+01 | 6.442E+00 | 6.028E+00 | 5.721E-01 | -5.012 |
| AG-110M | | 657.75 | * | 3.057E-01 | 8.555E-02 | 1.315E-01 | 1.414E-02 | 2.324 |
| | | 677.61 | | -3.169E-01 | 5.036E-01 | 8.006E-01 | 8.656E-02 | -0.396 |
| | | 706.67 | | 7.802E-02 | 3.802E-01 | 6.250E-01 | 6.827E-02 | 0.125 |
| | | 763.93 | | 8.051E+00 | 1.046E+00 | 1.090E+00 | 1.212E-01 | 7.389 |
| | | 884.67 | | 1.999E-01 | 9.318E-02 | 1.471E-01 | 1.678E-02 | 1.359 |
| | | 937.48 | | 1.775E-02 | 1.591E-01 | 2.540E-01 | 2.833E-02 | 0.070 |
| | | 1384.27 | | -3.584E-01 | 2.115E-01 | 2.921E-01 | 2.680E-02 | -1.227 |
| IN-111 | | 171.28 | | -2.322E-02 | 4.664E+00 | 7.760E+00 | 7.745E-01 | -0.003 |
| | | 245.39 | * | 2.805E+00 | 4.005E+00 | 5.773E+00 | 7.325E-01 | 0.486 |
| IN-113M | | 391.69 | * | -6.584E-02 | 8.524E-02 | 1.365E-01 | 1.304E-02 | -0.482 |
| SN-113 | | 391.69 | * | -6.584E-02 | 8.524E-02 | 1.365E-01 | 1.304E-02 | -0.482 |
| IN-114M | | 190.27 | * | 1.945E-02 | 6.605E-01 | 6.922E-01 | 7.359E-02 | 0.028 |
| CD-115 | | 260.90 | | 8.634E+02 | 5.743E+02 | 8.332E+02 | 1.107E+02 | 1.036 |
| | | 492.35 | | -1.700E+01 | 1.219E+02 | 1.954E+02 | 1.939E+01 | -0.087 |
| | | 527.90 | * | 1.705E+01 | 3.616E+01 | 6.144E+01 | 6.205E+00 | 0.277 |
| SN-117M | | 156.02 | | -4.133E+00 | 7.146E+00 | 1.186E+01 | 1.112E+00 | -0.349 |
| | | 158.56 | * | -4.957E-02 | 1.979E-01 | 2.901E-01 | 2.752E-02 | -0.171 |
| SB-122 | | 563.90 | * | -6.432E-01 | 6.971E+00 | 9.958E+00 | 1.021E+00 | -0.065 |
| | | 692.80 | | 9.184E+01 | 1.258E+02 | 2.107E+02 | 2.250E+01 | 0.436 |
| I-123 | | 159.00 | * | -5.392E+01 | 1.258E+02 | Half-Life too short | | |
| | | 528.96 | | -1.249E+03 | 1.258E+02 | Half-Life too short | | |
| TE-123M | | 159.00 | * | -2.357E-02 | 9.433E-02 | 1.382E-01 | 1.320E-02 | -0.170 |
| I-124 | | 602.71 | * | 8.474E-01 | 1.730E+00 | 2.526E+00 | 2.623E-01 | 0.336 |
| | | 722.78 | | 3.712E-01 | 1.087E+01 | 1.519E+01 | 1.639E+00 | 0.024 |
| | | 1325.50 | | 2.754E+01 | 5.487E+01 | 9.398E+01 | 8.346E+00 | 0.293 |
| | | 1376.25 | | 8.582E+01 | 5.367E+01 | 9.739E+01 | 8.704E+00 | 0.881 |
| | | 1509.49 | | 7.400E+01 | 3.101E+01 | 5.832E+01 | 5.183E+00 | 1.269 |
| | | 1691.02 | | 4.346E+00 | 6.428E+00 | 1.140E+01 | 9.745E-01 | 0.381 |
| SB-124 | | 602.71 | | 3.661E-02 | 7.472E-02 | 1.091E-01 | 1.133E-02 | 0.336 |
| | | 645.85 | | -1.498E-01 | 8.751E-01 | 1.430E+00 | 1.564E-01 | -0.105 |
| | | 709.31 | | 7.365E-03 | 5.029E+00 | 8.203E+00 | 8.812E-01 | 0.001 |
| | | 713.82 | | 8.953E-01 | 2.904E+00 | 4.718E+00 | 6.441E-01 | 0.190 |
| | | 722.78 | | 2.325E-02 | 6.807E-01 | 9.510E-01 | 1.040E-01 | 0.024 |
| | + | 968.20 | | 1.548E+01 | 8.346E+00 | 7.967E+00 | 8.471E-01 | 1.944 |
| | | 1045.16 | | 2.979E+00 | 3.159E+00 | 5.444E+00 | 5.348E-01 | 0.547 |
| | | 1325.50 | | 1.842E+00 | 3.670E+00 | 6.286E+00 | 5.582E-01 | 0.293 |
| | | 1368.21 | | -4.444E-01 | 2.211E+00 | 3.571E+00 | 4.885E-01 | -0.124 |
| | | 1436.60 | | 3.877E+00 | 5.211E+00 | 9.010E+00 | 8.052E-01 | 0.430 |
| | | 1691.02 | * | 6.419E-02 | 9.495E-02 | 1.683E-01 | 1.497E-02 | 0.381 |
| SB-125 | | 427.89 | * | -4.937E-02 | 1.688E-01 | 2.727E-01 | 2.646E-02 | -0.181 |
| | | 463.38 | | 4.511E-01 | 5.215E-01 | 8.655E-01 | 8.975E-02 | 0.521 |
| | | 600.56 | | 6.668E-02 | 3.220E-01 | 4.989E-01 | 5.444E-02 | 0.134 |
| | | 635.90 | | -2.759E-01 | 4.602E-01 | 7.384E-01 | 8.169E-02 | -0.374 |
| I-126 | | 388.63 | | 3.661E-01 | 4.250E-01 | 7.151E-01 | 6.771E-02 | 0.512 |
| | | 666.33 | * | 6.404E-02 | 4.067E-01 | 5.775E-01 | 6.102E-02 | 0.111 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-126 | | 753.82 | | 1.435E+00 | 2.919E+00 | 4.822E+00 | 5.255E-01 | 0.298 |
| | | 223.80 | | -6.392E+00 | 9.921E+00 | 1.590E+01 | 1.886E+00 | -0.402 |
| | | 278.60 | | 4.346E+00 | 5.680E+00 | 9.217E+00 | 1.288E+00 | 0.471 |
| | + | 296.50 | | 1.521E+01 | 4.974E+00 | 5.763E+00 | 7.764E-01 | 2.639 |
| | | 414.70 | | 3.993E-04 | 1.537E-01 | 2.515E-01 | 2.380E-02 | 0.002 |
| | | 415.30 | | 9.192E+00 | 1.256E+01 | 2.099E+01 | 1.987E+00 | 0.438 |
| | | 555.20 | | 2.239E+00 | 7.869E+00 | 1.325E+01 | 1.354E+00 | 0.169 |
| | | 573.80 | | -1.131E+00 | 2.359E+00 | 3.291E+00 | 3.385E-01 | -0.344 |
| | | 593.00 | | -4.218E-01 | 1.772E+00 | 2.913E+00 | 3.016E-01 | -0.145 |
| | | 656.30 | | 4.900E-01 | 7.285E+00 | 1.031E+01 | 1.086E+00 | 0.048 |
| | | 666.33 | | 2.688E-02 | 1.707E-01 | 2.424E-01 | 2.561E-02 | 0.111 |
| | | 675.00 | | -7.118E-01 | 3.626E+00 | 5.891E+00 | 6.246E-01 | -0.121 |
| | | 695.00 | | -1.345E-01 | 1.581E-01 | 2.490E-01 | 2.660E-02 | -0.540 |
| | | 697.00 | | -2.278E-01 | 5.425E-01 | 8.715E-01 | 9.319E-02 | -0.261 |
| | | 720.50 | * | -2.771E-01 | 3.149E-01 | 4.126E-01 | 4.449E-02 | -0.672 |
| | | 856.80 | | -7.650E-01 | 8.331E-01 | 1.322E+00 | 1.474E-01 | -0.579 |
| | | 989.30 | | -4.819E+00 | 2.051E+00 | 2.783E+00 | 2.903E-01 | -1.732 |
| | | 1034.80 | | -3.860E+00 | 1.225E+01 | 1.958E+01 | 1.947E+00 | -0.197 |
| | | 1213.00 | | 1.718E+00 | 5.560E+00 | 9.427E+00 | 7.794E-01 | 0.182 |
| | + | 64.28 | | 1.886E+02 | 2.753E+01 | 6.054E+00 | 8.793E-01 | 31.144 |
| SN-126 | | 86.94 | | -1.302E+01 | 5.691E+00 | 2.375E+00 | 9.861E-01 | -5.483 |
| | | 87.57 | * | -3.621E+00 | 5.907E-01 | 5.756E-01 | 5.435E-02 | -6.291 |
| SB-127 | + | 61.10 | | 3.353E+03 | 7.546E+02 | 6.010E+02 | 6.455E+01 | 5.579 |
| | | 252.40 | | -6.621E+00 | 1.483E+01 | 2.017E+01 | 8.732E+00 | -0.328 |
| | | 290.80 | | 4.384E+01 | 6.496E+01 | 9.715E+01 | 1.537E+01 | 0.451 |
| | | 411.60 | | 2.623E+01 | 3.137E+01 | 5.223E+01 | 8.672E+00 | 0.502 |
| | | 444.90 | | -1.170E+01 | 2.596E+01 | 4.150E+01 | 5.714E+00 | -0.282 |
| | | 473.00 | | 4.957E-02 | 4.562E+00 | 7.380E+00 | 1.047E+00 | 0.007 |
| | | 543.00 | | 9.852E+00 | 4.303E+01 | 7.241E+01 | 1.144E+01 | 0.136 |
| | | 603.60 | | 1.821E+01 | 3.098E+01 | 4.535E+01 | 6.471E+00 | 0.402 |
| | | 685.20 | * | -4.429E+00 | 3.366E+00 | 5.118E+00 | 6.908E-01 | -0.865 |
| | | 698.50 | | 3.200E-01 | 3.832E+01 | 6.261E+01 | 1.092E+01 | 0.005 |
| | | 722.20 | | -3.071E+01 | 7.841E+01 | 1.064E+02 | 1.428E+01 | -0.289 |
| | | 783.80 | | 4.659E+01 | 1.420E+01 | 2.029E+01 | 2.969E+00 | 2.297 |
| | + | 57.60 | | 1.269E+02 | 5.319E+01 | 4.248E+01 | 3.051E+00 | 2.988 |
| XE-127 | + | 145.22 | | 9.623E+01 | 9.513E+00 | 5.988E+00 | 5.355E-01 | 16.071 |
| | | 172.10 | | 8.040E-02 | 3.635E-01 | 6.063E-01 | 6.068E-02 | 0.133 |
| | + | 202.84 | * | 6.590E-01 | 1.670E-01 | 2.351E-01 | 2.606E-02 | 2.803 |
| I-131 | | 374.96 | | 3.143E-01 | 3.708E-01 | 6.259E-01 | 6.372E-02 | 0.502 |
| | | 80.18 | | 1.433E+01 | 3.149E+01 | 3.649E+01 | 3.182E+00 | 0.393 |
| | | 284.30 | | 5.900E-01 | 3.536E+00 | 5.672E+00 | 8.024E-01 | 0.104 |
| | | 364.48 | * | -1.430E-01 | 2.507E-01 | 4.070E-01 | 4.514E-02 | -0.351 |
| | | 636.97 | | -1.233E+00 | 3.124E+00 | 5.061E+00 | 5.516E-01 | -0.244 |
| TE-132 | | 722.89 | | 1.119E+00 | 1.506E+01 | 2.109E+01 | 2.288E+00 | 0.053 |
| | | 49.72 | | 1.826E+02 | 1.172E+02 | 1.781E+02 | 1.947E+01 | 1.025 |
| | + | 111.76 | | 1.553E+03 | 3.153E+02 | 3.818E+02 | 4.263E+01 | 4.068 |
| | | 116.30 | | 3.047E+02 | 1.792E+02 | 2.348E+02 | 2.612E+01 | 1.298 |
| BA-133 | | 228.16 | * | 1.662E+00 | 2.229E+00 | 3.653E+00 | 6.628E-01 | 0.455 |
| | + | 53.15 | | 8.360E+01 | 2.783E+01 | 2.412E+01 | 1.830E+00 | 3.466 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| I-133 | + | 79.62 | | -8.151E+00 | 7.655E+00 | 8.525E+00 | 1.297E+00 | -0.956 |
| | | 81.00 | | 2.459E-01 | 5.796E-01 | 6.696E-01 | 1.067E-01 | 0.367 |
| | | 276.40 | | 9.688E-01 | 7.821E-01 | 1.260E+00 | 2.280E-01 | 0.769 |
| | | 302.84 | | -2.457E-01 | 2.733E-01 | 4.438E-01 | 7.401E-02 | -0.554 |
| | | 356.01 | * | 3.695E-02 | 9.189E-02 | 1.342E-01 | 2.005E-02 | 0.275 |
| | | 383.85 | | -4.652E-01 | 5.594E-01 | 8.924E-01 | 1.194E-01 | -0.521 |
| | | 510.53 | | 8.985E+00 | 5.594E-01 | Half-Life | too short | |
| | | 529.87 | * | -2.001E-02 | 5.594E-01 | Half-Life | too short | |
| | | 706.58 | | 8.406E-01 | 5.594E-01 | Half-Life | too short | |
| | | 856.28 | | -3.922E+00 | 5.594E-01 | Half-Life | too short | |
| | | 875.33 | | 1.269E-01 | 5.594E-01 | Half-Life | too short | |
| | | 1236.41 | | 9.054E+00 | 5.594E-01 | Half-Life | too short | |
| CS-134 | + | 1298.22 | | -9.111E-01 | 5.594E-01 | Half-Life | too short | |
| | | 475.35 | | 4.263E+00 | 3.719E+00 | 6.203E+00 | 6.101E-01 | 0.687 |
| | | 563.23 | | -1.133E-01 | 7.397E-01 | 1.053E+00 | 1.087E-01 | -0.108 |
| | | 569.32 | | 2.924E-01 | 4.999E-01 | 6.260E-01 | 6.491E-02 | 0.467 |
| | | 604.70 | | 2.446E-02 | 6.399E-02 | 9.289E-02 | 9.672E-03 | 0.263 |
| | | 795.84 | * | 1.035E-01 | 8.474E-02 | 1.422E-01 | 1.574E-02 | 0.728 |
| | | 801.93 | | -1.279E+00 | 7.337E-01 | 1.068E+00 | 1.182E-01 | -1.198 |
| | | 1038.57 | | -2.920E+00 | 4.909E+00 | 7.691E+00 | 7.615E-01 | -0.380 |
| | | 1167.94 | | 1.427E-01 | 2.859E+00 | 4.787E+00 | 3.890E-01 | 0.030 |
| | | 1365.15 | | 8.376E-01 | 1.467E+00 | 2.525E+00 | 2.352E-01 | 0.332 |
| CS-135 | + | 268.24 | * | 7.344E-02 | 3.231E-01 | 5.215E-01 | 7.543E-02 | 0.141 |
| | | 288.45 | | 2.312E+12 | 3.231E-01 | Half-Life | too short | |
| | | 417.63 | | -2.676E+12 | 3.231E-01 | Half-Life | too short | |
| | | 546.56 | | 3.349E+12 | 3.231E-01 | Half-Life | too short | |
| | | 836.80 | | 2.123E+11 | 3.231E-01 | Half-Life | too short | |
| | | 1038.76 | | -2.123E+12 | 3.231E-01 | Half-Life | too short | |
| | | 1124.00 | | 1.678E+13 | 3.231E-01 | Half-Life | too short | |
| | | 1131.51 | | -1.227E+11 | 3.231E-01 | Half-Life | too short | |
| | | 1260.41 | * | -5.185E+11 | 3.231E-01 | Half-Life | too short | |
| | | 1457.56 | | 1.192E+14 | 3.231E-01 | Half-Life | too short | |
| CS-136 | + | 1678.03 | | -5.484E+09 | 3.231E-01 | Half-Life | too short | |
| | | 1706.46 | | -1.196E+12 | 3.231E-01 | Half-Life | too short | |
| | | 1791.20 | | -6.461E+11 | 3.231E-01 | Half-Life | too short | |
| | | 66.91 | | -1.035E+01 | 3.751E+00 | 4.850E+00 | 7.214E-01 | -2.135 |
| | | 86.29 | | -1.312E+01 | 6.161E+00 | 8.360E+00 | 1.113E+00 | -1.569 |
| | | 153.22 | | 1.545E+00 | 2.085E+00 | 3.521E+00 | 3.596E-01 | 0.439 |
| | | 163.89 | | 7.736E+01 | 1.017E+01 | 8.653E+00 | 9.215E-01 | 8.940 |
| | | 176.55 | | -5.700E-01 | 1.207E+00 | 1.987E+00 | 2.103E-01 | -0.287 |
| | | 273.65 | | -1.560E+00 | 1.070E+00 | 1.614E+00 | 2.284E-01 | -0.967 |
| | | 340.57 | | 6.430E-01 | 2.959E-01 | 4.479E-01 | 5.366E-02 | 1.436 |
| CE-139 | + | 818.51 | | -4.799E-02 | 1.304E-01 | 2.143E-01 | 2.375E-02 | -0.224 |
| | | 1048.07 | * | -2.924E-02 | 1.537E-01 | 2.429E-01 | 2.457E-02 | -0.120 |
| | | 1235.34 | | 1.814E+00 | 9.290E-01 | 1.475E+00 | 1.724E-01 | 1.230 |
| | | 165.85 | * | 2.872E-01 | 1.045E-01 | 1.556E-01 | 1.526E-02 | 1.845 |
| | | 162.64 | | 5.463E+01 | 6.967E+00 | 6.086E+00 | 6.154E-01 | 8.977 |
| | | 304.84 | | -1.967E+00 | 2.705E+00 | 4.351E+00 | 1.295E+00 | -0.452 |
| | | 423.70 | | 2.750E+00 | 3.850E+00 | 6.266E+00 | 2.047E+00 | 0.439 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| BA-140 | + | | | | | | | |
| | | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| LA-140 | 537.32 | * | | 4.483E-02 | 5.167E-01 | 8.667E-01 | 2.909E-01 | 0.052 |
| | 328.77 | | | 5.167E-01 | 6.038E-01 | 1.024E+00 | 1.294E-01 | 0.504 |
| | 432.53 | | | -2.762E+00 | 4.231E+00 | 6.731E+00 | 6.705E-01 | -0.410 |
| | 487.03 | | | 2.624E-02 | 2.830E-01 | 4.579E-01 | 4.746E-02 | 0.057 |
| | 751.79 | | | -1.070E+00 | 3.438E+00 | 5.369E+00 | 6.247E-01 | -0.199 |
| | 815.85 | | | -9.685E-02 | 5.594E-01 | 9.280E-01 | 1.100E-01 | -0.104 |
| | 867.82 | | | -1.204E+00 | 2.387E+00 | 3.866E+00 | 4.454E-01 | -0.311 |
| | 919.63 | | | -1.128E+01 | 6.036E+00 | 7.485E+00 | 9.498E-01 | -1.507 |
| CE-141 | 925.24 | | | 5.193E+00 | 2.141E+00 | 3.780E+00 | 4.320E-01 | 1.374 |
| | 1596.49 | * | | -1.852E-01 | 1.296E-01 | 1.870E-01 | 1.640E-02 | -0.990 |
| | 145.44 | * | | 5.525E+00 | 5.708E-01 | 5.065E-01 | 4.611E-02 | 10.908 |
| | 57.37 | | | 5.589E-02 | 5.708E-01 | Half-Life | too short | |
| | 231.56 | | | -5.274E-03 | 5.708E-01 | Half-Life | too short | |
| | 293.26 | * | | 1.848E-03 | 5.708E-01 | Half-Life | too short | |
| | 350.59 | | | 8.282E-02 | 5.708E-01 | Half-Life | too short | |
| | 490.36 | | | -4.326E-03 | 5.708E-01 | Half-Life | too short | |
| CE-143 | 664.57 | | | 1.271E-01 | 5.708E-01 | Half-Life | too short | |
| | 721.93 | | | -2.373E-03 | 5.708E-01 | Half-Life | too short | |
| | 80.11 | | | 4.486E+00 | 1.233E+01 | 1.427E+01 | 1.233E+00 | 0.314 |
| | 133.54 | * | | 3.187E-01 | 7.152E-01 | 1.075E+00 | 1.669E-01 | 0.296 |
| | 476.78 | | | 7.742E-02 | 1.309E-01 | 2.154E-01 | 2.274E-02 | 0.359 |
| | 618.01 | | | 3.893E-03 | 5.469E-02 | 8.865E-02 | 9.425E-03 | 0.044 |
| | 696.49 | * | | -2.933E-02 | 6.274E-02 | 1.006E-01 | 1.076E-02 | -0.292 |
| | 778.57 | | | -1.402E+00 | 4.902E+00 | 6.949E+00 | 7.627E-01 | -0.202 |
| PR-144 | 696.49 | * | | -1.989E+00 | 4.256E+00 | 6.822E+00 | 7.294E-01 | -0.292 |
| | 1489.15 | | | -1.060E+01 | 1.540E+01 | 2.335E+01 | 2.080E+00 | -0.454 |
| PM-146 | 453.90 | * | | 4.092E-02 | 8.549E-02 | 1.407E-01 | 1.635E-02 | 0.291 |
| | 633.02 | | | -6.662E-01 | 2.337E+00 | 3.786E+00 | 1.433E+00 | -0.176 |
| | 735.90 | | | 1.162E-01 | 3.392E-01 | 4.560E-01 | 1.338E-01 | 0.255 |
| | 747.13 | | | -9.863E-02 | 1.955E-01 | 2.623E-01 | 4.073E-02 | -0.376 |
| ND-147 | 91.11 | | | 2.798E+02 | 2.751E+01 | 5.044E+00 | 4.984E-01 | 55.474 |
| | 319.41 | | | 2.043E+00 | 7.032E+00 | 1.185E+01 | 1.500E+00 | 0.172 |
| | 439.89 | | | -8.806E-01 | 1.227E+01 | 1.993E+01 | 1.919E+00 | -0.044 |
| | 531.02 | * | | -5.980E-01 | 1.154E+00 | 1.892E+00 | 3.001E-01 | -0.316 |
| PM-149 | 285.90 | * | | -2.358E+02 | 3.414E+02 | 5.296E+02 | 1.002E+02 | -0.445 |
| | 121.78 | | | 9.155E-01 | 3.297E-01 | 4.233E-01 | 4.064E-02 | 2.163 |
| EU-152 | 244.69 | | | 7.300E-01 | 7.712E-01 | 1.117E+00 | 1.414E-01 | 0.653 |
| | 344.27 | * | | 3.428E-03 | 2.061E-01 | 2.979E-01 | 3.581E-02 | 0.012 |
| | 443.98 | | | -2.554E-01 | 1.778E+00 | 2.878E+00 | 2.778E-01 | -0.089 |
| | 778.89 | | | 1.562E-01 | 5.533E-01 | 8.090E-01 | 8.877E-02 | 0.193 |
| | 867.32 | | | -1.425E+00 | 1.315E+00 | 2.058E+00 | 2.298E-01 | -0.692 |
| | 964.01 | | | 6.889E-01 | 4.227E-01 | 6.601E-01 | 7.044E-02 | 1.044 |
| | 1085.78 | | | -1.431E-01 | 4.713E-01 | 7.498E-01 | 6.986E-02 | -0.191 |
| | 1112.02 | | | 3.354E-01 | 4.096E-01 | 6.298E-01 | 5.644E-02 | 0.533 |
| | 1407.95 | | | 3.221E-02 | 2.243E-01 | 3.719E-01 | 3.325E-02 | 0.087 |
| | 69.67 | | | 1.112E+01 | 6.410E+00 | 1.016E+01 | 7.888E-01 | 1.094 |
| GD-153 | 83.37 | | | 8.303E+02 | 1.175E+02 | 1.225E+02 | 1.100E+01 | 6.776 |
| | 97.43 | * | | 6.832E+00 | 7.500E-01 | 6.577E-01 | 5.784E-02 | 10.388 |
| | 103.18 | | | 6.084E-01 | 5.296E-01 | 6.094E-01 | 5.207E-02 | 0.998 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| EU-154 | | 123.07 | | 6.797E-02 | 1.983E-01 | 2.807E-01 | 3.114E-02 | 0.242 |
| | | 247.94 | | 2.747E-01 | 7.612E-01 | 1.239E+00 | 1.842E-01 | 0.222 |
| | | 591.81 | | -6.563E-01 | 1.098E+00 | 1.735E+00 | 2.256E-01 | -0.378 |
| | | 723.30 | | 5.290E-02 | 3.242E-01 | 4.565E-01 | 5.265E-02 | 0.116 |
| | | 756.87 | | 4.347E-01 | 1.512E+00 | 2.296E+00 | 3.149E-01 | 0.189 |
| | | 873.19 | | 1.474E-01 | 5.224E-01 | 7.571E-01 | 1.072E-01 | 0.195 |
| | | 996.32 | | 8.172E+00 | 1.746E+00 | 1.739E+00 | 3.247E-01 | 4.699 |
| | | 1004.76 | | 1.393E+01 | 1.944E+00 | 1.632E+00 | 2.106E-01 | 8.539 |
| | | 1274.45 | * | -6.313E-02 | 1.438E-01 | 2.304E-01 | 2.604E-02 | -0.274 |
| | | 48.70 | | 4.693E+00 | 9.606E+00 | 1.460E+01 | 1.189E+00 | 0.321 |
| EU-155 | + | 60.01 | | 1.548E+02 | 4.951E+01 | 3.389E+01 | 2.407E+00 | 4.566 |
| | | 86.54 | | -1.264E+00 | 5.051E-01 | 6.916E-01 | 6.504E-02 | -1.828 |
| | + | 105.31 | * | 1.378E+00 | 4.747E-01 | 6.668E-01 | 5.724E-02 | 2.067 |
| TB-160 | | 86.79 | | -1.051E+01 | 1.711E+00 | 1.869E+00 | 1.748E-01 | -5.623 |
| | | 197.04 | | 1.842E+00 | 2.020E+00 | 2.194E+00 | 2.386E-01 | 0.839 |
| | | 215.65 | | -1.252E+00 | 1.649E+00 | 2.642E+00 | 3.053E-01 | -0.474 |
| | | 298.57 | | 2.343E-01 | 2.399E-01 | 3.606E-01 | 4.833E-02 | 0.650 |
| | + | 879.36 | * | 1.298E+00 | 4.841E-01 | 4.487E-01 | 5.018E-02 | 2.892 |
| | | 962.29 | | 9.789E-01 | 7.467E-01 | 1.153E+00 | 1.232E-01 | 0.849 |
| | | 966.15 | | 1.414E+00 | 3.758E-01 | 6.075E-01 | 6.471E-02 | 2.327 |
| | | 1177.93 | | -4.689E-02 | 4.070E-01 | 6.737E-01 | 5.436E-02 | -0.070 |
| | | 1271.85 | | 1.347E-01 | 8.142E-01 | 1.364E+00 | 1.172E-01 | 0.099 |
| | | 80.57 | | 2.140E+00 | 1.571E+00 | 1.838E+00 | 1.597E-01 | 1.164 |
| HO-166M | + | 184.41 | | 2.287E+01 | 2.413E+00 | 5.785E-01 | 6.032E-02 | 39.524 |
| | | 280.46 | | -8.698E-02 | 1.747E-01 | 2.750E-01 | 3.841E-02 | -0.316 |
| | | 410.95 | | 1.488E-01 | 4.426E-01 | 7.322E-01 | 6.912E-02 | 0.203 |
| | | 711.68 | * | -6.666E-02 | 1.094E-01 | 1.711E-01 | 1.839E-02 | -0.390 |
| | | 752.31 | | 7.955E-02 | 4.844E-01 | 7.908E-01 | 8.614E-02 | 0.101 |
| | | 810.29 | | 1.360E-02 | 9.553E-02 | 1.608E-01 | 1.778E-02 | 0.085 |
| | | 51.35 | | 1.790E+02 | 1.268E+02 | 1.934E+02 | 1.509E+01 | 0.926 |
| TM-171 | + | 52.39 | | 3.488E+02 | 1.161E+02 | 1.047E+02 | 8.039E+00 | 3.330 |
| | + | 59.40 | | 8.149E+02 | 2.607E+02 | 1.807E+02 | 1.277E+01 | 4.509 |
| | | 66.72 | * | -3.629E+02 | 1.157E+02 | 1.589E+02 | 1.201E+01 | -2.283 |
| LU-176 | | 88.36 | | -1.402E-01 | 1.272E+00 | 1.447E+00 | 1.369E-01 | -0.097 |
| | + | 201.83 | | 3.892E-01 | 9.861E-02 | 1.227E-01 | 1.356E-02 | 3.172 |
| | | 306.84 | * | 1.823E-02 | 4.621E-02 | 7.826E-02 | 1.027E-02 | 0.233 |
| | | 401.10 | | -3.177E+00 | 1.233E+01 | 2.006E+01 | 1.880E+00 | -0.158 |
| LU-177 | + | 112.95 | | 1.328E+02 | 1.480E+01 | 1.648E+01 | 1.370E+00 | 8.059 |
| | | 208.36 | * | 2.547E+00 | 3.263E+00 | 4.770E+00 | 5.384E-01 | 0.534 |
| LU-177M | + | 52.97 | | 3.765E+01 | 1.253E+01 | 1.097E+01 | 8.348E-01 | 3.432 |
| | + | 54.07 | | 2.134E+01 | 7.102E+00 | 5.776E+00 | 4.326E-01 | 3.694 |
| | + | 61.30 | | 6.229E+01 | 1.311E+01 | 1.232E+01 | 8.860E-01 | 5.058 |
| | + | 121.62 | | 4.734E+00 | 1.689E+00 | 2.194E+00 | 1.807E-01 | 2.158 |
| | | 147.16 | | -7.108E-01 | 2.108E+00 | 3.105E+00 | 2.800E-01 | -0.229 |
| | | 171.86 | | 3.260E-01 | 1.424E+00 | 2.376E+00 | 2.376E-01 | 0.137 |
| | | 218.09 | | -7.259E-01 | 1.865E+00 | 3.017E+00 | 3.515E-01 | -0.241 |
| | | 268.79 | | 1.039E+00 | 1.655E+00 | 2.688E+00 | 3.654E-01 | 0.387 |
| | | 319.02 | | 2.020E-02 | 4.905E-01 | 8.217E-01 | 1.041E-01 | 0.025 |
| | | 367.43 | | 8.231E-01 | 1.678E+00 | 2.812E+00 | 2.969E-01 | 0.293 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HF-181 | | 413.65 | * | -1.053E-01 | 3.277E-01 | 5.308E-01 | 5.020E-02 | -0.198 |
| | + | 56.28 | | 1.847E+01 | 7.739E+00 | 6.429E+00 | 4.683E-01 | 2.873 |
| | + | 57.53 | | 1.059E+01 | 4.437E+00 | 3.552E+00 | 2.553E-01 | 2.981 |
| | | 65.20 | | 4.360E+01 | 5.254E+00 | 6.849E+00 | 5.106E-01 | 6.365 |
| | | 133.02 | | 2.868E-01 | 2.378E-01 | 3.611E-01 | 3.078E-02 | 0.794 |
| | | 136.25 | | -3.335E-01 | 1.559E+00 | 2.442E+00 | 2.107E-01 | -0.137 |
| TA-182 | | 345.85 | | -2.614E-01 | 4.277E-01 | 6.006E-01 | 6.946E-02 | -0.435 |
| | | 482.03 | * | -3.797E-02 | 8.290E-02 | 1.315E-01 | 1.298E-02 | -0.289 |
| | | 67.75 | | -6.313E-01 | 4.210E-01 | 6.465E-01 | 4.931E-02 | -0.976 |
| | | 100.10 | | 7.192E+00 | 1.128E+00 | 1.246E+00 | 1.080E-01 | 5.771 |
| | | 152.43 | | 8.284E-01 | 9.801E-01 | 1.658E+00 | 1.530E-01 | 0.500 |
| | | 222.10 | | 4.132E-01 | 7.685E-01 | 1.265E+00 | 1.493E-01 | 0.327 |
| | + | 1001.68 | | 3.098E+02 | 3.386E+01 | 2.328E+01 | 2.399E+00 | 13.304 |
| | + | 1121.28 | | 7.313E-01 | 2.916E-01 | 3.872E-01 | 3.419E-02 | 1.889 |
| | | 1189.05 | | -3.320E-01 | 3.751E-01 | 5.902E-01 | 4.800E-02 | -0.563 |
| | | 1221.42 | * | 3.810E-02 | 2.239E-01 | 3.759E-01 | 3.126E-02 | 0.101 |
| RE-184 | | 1230.97 | | -1.523E-01 | 6.456E-01 | 8.928E-01 | 7.472E-02 | -0.171 |
| | + | 57.98 | | 1.516E+01 | 6.351E+00 | 5.019E+00 | 3.592E-01 | 3.020 |
| | + | 59.32 | | 1.237E+01 | 3.957E+00 | 2.750E+00 | 1.945E-01 | 4.498 |
| | | 67.20 | | -8.673E+00 | 3.027E+00 | 4.194E+00 | 3.183E-01 | -2.068 |
| | | 161.27 | | 7.863E+00 | 1.481E+00 | 2.073E+00 | 1.991E-01 | 3.793 |
| | | 216.55 | | 1.724E-01 | 5.722E-01 | 9.405E-01 | 1.090E-01 | 0.183 |
| | | 252.85 | * | -3.792E-01 | 5.640E-01 | 7.726E-01 | 1.002E-01 | -0.491 |
| | | 318.01 | | 3.183E-01 | 8.412E-01 | 1.421E+00 | 1.806E-01 | 0.224 |
| | | 792.07 | | -2.171E-01 | 2.128E+00 | 2.915E+00 | 3.209E-01 | -0.074 |
| | | 903.28 | | 2.711E-01 | 1.633E+00 | 2.341E+00 | 2.614E-01 | 0.116 |
| OS-185 | | 920.93 | | -1.018E+00 | 8.068E-01 | 1.149E+00 | 1.268E-01 | -0.886 |
| | + | 59.72 | | 9.223E+00 | 2.950E+00 | 2.026E+00 | 1.434E-01 | 4.553 |
| | + | 61.14 | | 6.854E+00 | 1.442E+00 | 1.235E+00 | 8.872E-02 | 5.549 |
| | | 69.30 | | 1.564E+00 | 1.102E+00 | 1.829E+00 | 1.415E-01 | 0.855 |
| | | 592.07 | | -2.697E+00 | 4.421E+00 | 7.153E+00 | 7.404E-01 | -0.377 |
| | | 646.12 | * | 9.895E-03 | 7.325E-02 | 1.212E-01 | 1.273E-02 | 0.082 |
| | | 717.42 | | -1.704E-01 | 1.519E+00 | 2.463E+00 | 2.653E-01 | -0.069 |
| | | 874.81 | | 3.278E-01 | 1.033E+00 | 1.501E+00 | 1.678E-01 | 0.218 |
| | + | 880.27 | | 7.198E+00 | 2.685E+00 | 2.587E+00 | 2.893E-01 | 2.782 |
| | | 155.03 | * | -2.153E-01 | 4.998E-01 | 8.319E-01 | 7.765E-02 | -0.259 |
| RE-188 | | 477.96 | | 1.497E+00 | 6.130E+00 | 9.983E+00 | 9.833E-01 | 0.150 |
| | | 633.10 | | -1.191E+00 | 4.785E+00 | 7.807E+00 | 8.179E-01 | -0.153 |
| | + | 63.58 | | 1.952E+04 | 1.472E+03 | 7.050E+02 | 5.180E+01 | 27.684 |
| W-188 | | 227.08 | | 2.830E+01 | 2.809E+01 | 4.641E+01 | 5.563E+00 | 0.610 |
| | | 290.67 | * | 1.178E+01 | 1.623E+01 | 2.433E+01 | 3.323E+00 | 0.484 |
| IR-192 | + | 295.96 | | 1.065E+00 | 3.485E-01 | 4.088E-01 | 5.531E-02 | 2.606 |
| | | 308.46 | | 3.703E-02 | 1.819E-01 | 3.068E-01 | 4.016E-02 | 0.121 |
| | | 316.51 | * | 2.892E-02 | 6.563E-02 | 1.110E-01 | 1.419E-02 | 0.260 |
| | | 468.07 | | -1.100E-01 | 1.314E-01 | 2.043E-01 | 2.113E-02 | -0.538 |
| AU-195 | | 604.41 | | 5.077E-01 | 8.688E-01 | 1.272E+00 | 1.813E-01 | 0.399 |
| | | 612.46 | | 4.845E+00 | 1.559E+00 | 2.394E+00 | 2.752E-01 | 2.024 |
| | | 65.12 | | 9.837E+00 | 1.036E+00 | 1.247E+00 | 9.290E-02 | 7.888 |
| | | 66.83 | | -1.163E+00 | 3.841E-01 | 5.295E-01 | 4.005E-02 | -2.196 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | + | 75.70 | | 1.638E+00 | 8.932E-01 | 1.188E+00 | 9.787E-02 | 1.378 |
| | + | 98.88 | * | 1.993E+01 | 2.188E+00 | 1.890E+00 | 1.648E-01 | 10.545 |
| | | 129.76 | | 7.889E+00 | 9.970E+00 | 1.511E+01 | 1.273E+00 | 0.522 |
| TL-200 | | 367.94 | * | 2.036E-03 | 9.970E+00 | Half-Life | too short | |
| | | 579.30 | | 1.637E-02 | 9.970E+00 | Half-Life | too short | |
| | | 828.27 | | 1.045E-02 | 9.970E+00 | Half-Life | too short | |
| | | 1205.75 | | -9.862E-03 | 9.970E+00 | Half-Life | too short | |
| TL-201 | | 68.90 | | 2.646E+01 | 2.688E+01 | 4.458E+01 | 3.436E+00 | 0.594 |
| | | 70.82 | | 2.485E+01 | 1.736E+01 | 2.585E+01 | 2.028E+00 | 0.961 |
| | | 80.30 | | 4.954E+01 | 4.481E+01 | 5.234E+01 | 4.534E+00 | 0.947 |
| | | 135.34 | | 2.474E+01 | 1.362E+02 | 2.041E+02 | 1.754E+01 | 0.121 |
| | | 167.43 | * | 3.035E+00 | 3.521E+01 | 5.171E+01 | 5.097E+00 | 0.059 |
| TL-202 | | 68.90 | | 1.713E+00 | 1.740E+00 | 2.886E+00 | 2.224E-01 | 0.594 |
| | | 70.82 | | 1.604E+00 | 1.121E+00 | 1.669E+00 | 1.309E-01 | 0.961 |
| | | 80.30 | | 3.199E+00 | 2.893E+00 | 3.380E+00 | 2.928E-01 | 0.947 |
| | | 439.56 | * | 1.140E-02 | 1.435E-01 | 2.342E-01 | 2.255E-02 | 0.049 |
| HG-203 | | 70.83 | | 6.434E+00 | 4.534E+00 | 6.673E+00 | 8.761E-01 | 0.964 |
| | | 72.87 | | 5.138E+00 | 2.678E+00 | 3.903E+00 | 5.000E-01 | 1.316 |
| | + | 82.60 | | 6.317E+01 | 1.121E+01 | 8.835E+00 | 1.230E+00 | 7.149 |
| | | 279.20 | * | 6.025E-02 | 8.678E-02 | 1.407E-01 | 1.991E-02 | 0.428 |
| BI-207 | | 72.80 | | 1.405E+00 | 7.488E-01 | 1.112E+00 | 8.895E-02 | 1.264 |
| | + | 74.97 | | 9.018E-01 | 4.919E-01 | 6.513E-01 | 5.325E-02 | 1.385 |
| | + | 84.90 | | 1.068E+01 | 1.511E+00 | 1.525E+00 | 1.394E-01 | 7.004 |
| | + | 569.67 | | 4.549E-02 | 7.777E-02 | 9.787E-02 | 1.005E-02 | 0.465 |
| | | 1063.62 | * | 9.943E-03 | 6.607E-02 | 1.087E-01 | 1.044E-02 | 0.091 |
| | | 1770.23 | | 7.149E-01 | 6.876E-01 | 1.111E+00 | 9.232E-02 | 0.644 |
| TL-207 | | 81.07 | | 6.117E-01 | 1.277E+00 | 1.479E+00 | 1.292E-01 | 0.414 |
| | + | 83.78 | | 7.042E+00 | 9.963E-01 | 1.038E+00 | 9.360E-02 | 6.785 |
| | + | 94.90 | | 1.435E+01 | 3.000E+00 | 2.226E+00 | 1.990E-01 | 6.445 |
| | + | 122.32 | | 2.180E+01 | 7.810E+00 | 9.927E+00 | 8.834E-01 | 2.196 |
| | + | 144.24 | | 9.097E+01 | 9.815E+00 | 6.249E+00 | 6.186E-01 | 14.558 |
| | | 154.21 | | 3.066E-01 | 1.135E+00 | 1.908E+00 | 1.928E-01 | 0.161 |
| | | 269.46 | | 4.829E-01 | 3.874E-01 | 6.321E-01 | 8.681E-02 | 0.764 |
| | | 323.87 | * | -7.475E-01 | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| | + | 338.28 | | 5.932E+00 | 2.655E+00 | 3.418E+00 | 5.056E-01 | 1.735 |
| | | 445.03 | | -2.018E+00 | 4.275E+00 | 6.829E+00 | 8.775E-01 | -0.296 |
| PO-209 | | 260.50 | | 7.759E+01 | 2.577E+01 | 3.680E+01 | 4.885E+00 | 2.108 |
| | | 262.80 | | -9.659E+00 | 6.226E+01 | 8.685E+01 | 1.160E+01 | -0.111 |
| | | 896.60 | * | 4.037E+00 | 1.057E+01 | 1.785E+01 | 2.000E+00 | 0.226 |
| BI-210 | | 46.50 | * | -1.333E+01 | 1.225E+01 | 2.025E+01 | 1.881E+00 | -0.658 |
| PB-210 | | 46.50 | * | -1.333E+01 | 1.225E+01 | 2.025E+01 | 1.881E+00 | -0.658 |
| PO-210 | | 46.50 | * | -1.333E+01 | 1.224E+01 | 2.025E+01 | 1.703E+00 | -0.658 |
| PB-211 | | 404.84 | * | -1.502E+00 | 1.966E+00 | 2.752E+00 | 1.728E+00 | -0.546 |
| | | 427.08 | | -6.895E-01 | 3.773E+00 | 6.082E+00 | 3.787E+00 | -0.113 |
| | | 831.96 | | -1.521E-01 | 1.879E+00 | 3.121E+00 | 1.968E+00 | -0.049 |
| PO-215 | | 81.07 | | 6.117E-01 | 1.277E+00 | 1.479E+00 | 1.292E-01 | 0.414 |
| | + | 83.78 | | 7.042E+00 | 9.963E-01 | 1.038E+00 | 9.360E-02 | 6.785 |
| | + | 94.90 | | 1.435E+01 | 3.000E+00 | 2.226E+00 | 1.990E-01 | 6.445 |
| | + | 122.32 | | 2.180E+01 | 7.810E+00 | 9.927E+00 | 8.834E-01 | 2.196 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| RN-219 | + | 144.24 | | 9.097E+01 | 9.815E+00 | 6.249E+00 | 6.186E-01 | 14.558 |
| | | 154.21 | | 3.066E-01 | 1.135E+00 | 1.908E+00 | 1.928E-01 | 0.161 |
| | | 269.46 | | 4.829E-01 | 3.874E-01 | 6.321E-01 | 8.681E-02 | 0.764 |
| | | 323.87 | * | -7.475E-01 | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| | + | 338.28 | | 5.932E+00 | 2.655E+00 | 3.418E+00 | 5.056E-01 | 1.735 |
| | | 445.03 | | -2.018E+00 | 4.275E+00 | 6.829E+00 | 8.775E-01 | -0.296 |
| | | 271.23 | | 2.657E-01 | 5.003E-01 | 8.106E-01 | 1.201E-01 | 0.328 |
| | | 401.81 | * | 2.734E-01 | 7.575E-01 | 1.255E+00 | 1.942E-01 | 0.218 |
| | RN-220 | 549.76 | * | -6.843E+01 | 4.655E+01 | 7.280E+01 | 7.421E+00 | -0.940 |
| | RA-223 | 81.07 | | 6.117E-01 | 1.277E+00 | 1.479E+00 | 1.292E-01 | 0.414 |
| AC-227 | + | 83.78 | | 7.042E+00 | 9.963E-01 | 1.038E+00 | 9.360E-02 | 6.785 |
| | + | 94.90 | | 1.435E+01 | 3.000E+00 | 2.226E+00 | 1.990E-01 | 6.445 |
| | + | 122.32 | | 2.180E+01 | 7.810E+00 | 9.927E+00 | 8.834E-01 | 2.196 |
| | + | 144.24 | | 9.097E+01 | 9.815E+00 | 6.249E+00 | 6.186E-01 | 14.558 |
| | | 154.21 | | 3.066E-01 | 1.135E+00 | 1.908E+00 | 1.928E-01 | 0.161 |
| | | 269.46 | | 4.829E-01 | 3.874E-01 | 6.321E-01 | 8.681E-02 | 0.764 |
| | | 323.87 | * | -7.475E-01 | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| | + | 338.28 | | 5.932E+00 | 2.655E+00 | 3.418E+00 | 5.056E-01 | 1.735 |
| | | 445.03 | | -2.018E+00 | 4.275E+00 | 6.829E+00 | 8.775E-01 | -0.296 |
| | | 79.80 | | -7.941E+00 | 9.743E+00 | 1.087E+01 | 2.338E+00 | -0.730 |
| TH-227 | | 236.00 | | 9.739E-01 | 5.634E-01 | 8.127E-01 | 1.226E-01 | 1.198 |
| | | 256.20 | * | 3.761E+00 | 1.186E+00 | 1.528E+00 | 2.788E-01 | 2.462 |
| | | 286.10 | | -2.573E+00 | 3.146E+00 | 4.856E+00 | 8.276E-01 | -0.530 |
| | | 299.80 | | 4.742E+00 | 3.100E+00 | 4.561E+00 | 9.237E-01 | 1.040 |
| | | 304.40 | | -5.010E+00 | 3.688E+00 | 5.725E+00 | 1.201E+00 | -0.875 |
| | | 334.20 | | -1.180E+00 | 4.843E+00 | 6.941E+00 | 1.469E+00 | -0.170 |
| | + | 79.80 | | -7.941E+00 | 9.747E+00 | 1.087E+01 | 2.368E+00 | -0.730 |
| | + | 94.00 | | 1.148E+02 | 3.321E+01 | 3.328E+01 | 7.298E+00 | 3.449 |
| | | 236.00 | | 9.739E-01 | 5.611E-01 | 8.127E-01 | 1.150E-01 | 1.198 |
| | | 256.20 | * | 3.761E+00 | 1.239E+00 | 1.528E+00 | 3.144E-01 | 2.462 |
| TH-229 | | 286.10 | | -2.573E+00 | 4.056E+00 | 4.856E+00 | 4.902E+00 | -0.530 |
| | | 299.80 | | 4.742E+00 | 3.100E+00 | 4.561E+00 | 9.237E-01 | 1.040 |
| | | 304.40 | | -5.010E+00 | 3.688E+00 | 5.725E+00 | 1.201E+00 | -0.875 |
| | | 334.20 | | -1.180E+00 | 4.843E+00 | 6.941E+00 | 1.469E+00 | -0.170 |
| | + | 85.43 | | 1.054E+01 | 1.491E+00 | 1.443E+00 | 1.327E-01 | 7.307 |
| | | 88.47 | | 2.988E-01 | 7.343E-01 | 8.414E-01 | 7.948E-02 | 0.355 |
| | | 100.00 | | 8.415E+00 | 1.135E+00 | 1.324E+00 | 1.148E-01 | 6.357 |
| | + | 193.63 | * | 4.527E+00 | 1.565E+00 | 2.156E+00 | 2.318E-01 | 2.099 |
| | | 210.97 | | 1.882E+00 | 1.747E+00 | 2.699E+00 | 3.073E-01 | 0.697 |
| | PA-231 | 283.67 | * | -4.951E-01 | 3.056E+00 | 4.858E+00 | 9.071E-01 | -0.102 |
| TH-231 | | 301.29 | | 1.552E+00 | 1.128E+00 | 1.819E+00 | 2.892E-01 | 0.853 |
| | | 81.07 | | 6.117E-01 | 1.277E+00 | 1.479E+00 | 1.292E-01 | 0.414 |
| | + | 83.78 | | 7.042E+00 | 9.963E-01 | 1.038E+00 | 9.360E-02 | 6.785 |
| | + | 94.90 | | 1.435E+01 | 3.000E+00 | 2.226E+00 | 1.990E-01 | 6.445 |
| | + | 122.32 | | 2.180E+01 | 7.810E+00 | 9.927E+00 | 8.834E-01 | 2.196 |
| | + | 144.24 | | 9.097E+01 | 9.815E+00 | 6.249E+00 | 6.186E-01 | 14.558 |
| | | 154.21 | | 3.066E-01 | 1.135E+00 | 1.908E+00 | 1.928E-01 | 0.161 |
| | | 269.46 | | 4.829E-01 | 3.874E-01 | 6.321E-01 | 8.681E-02 | 0.764 |
| | | 323.87 | * | -7.475E-01 | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PA-233 | + | 338.28 | | 5.932E+00 | 2.655E+00 | 3.418E+00 | 5.056E-01 | 1.735 |
| | | 445.03 | | -2.018E+00 | 4.275E+00 | 6.829E+00 | 8.775E-01 | -0.296 |
| | + | 75.28 | | 2.631E+01 | 1.474E+01 | 1.901E+01 | 2.874E+00 | 1.384 |
| | | 86.59 | | -6.178E+01 | 1.870E+01 | 1.121E+01 | 3.034E+00 | -5.510 |
| | | 300.12 | | 1.501E+00 | 8.580E-01 | 1.270E+00 | 2.291E-01 | 1.182 |
| | | 311.98 | * | -2.934E-02 | 1.189E-01 | 1.979E-01 | 2.592E-02 | -0.148 |
| | | 340.50 | | 2.977E+00 | 1.462E+00 | 1.976E+00 | 4.972E-01 | 1.506 |
| PA-234 | | 398.62 | | -3.497E-01 | 3.818E+00 | 6.250E+00 | 1.680E+00 | -0.056 |
| | | 415.76 | | 2.753E+00 | 3.023E+00 | 4.993E+00 | 1.094E+00 | 0.551 |
| | + | 63.00 | | 5.553E+02 | 8.289E+01 | 2.074E+01 | 3.073E+00 | 26.768 |
| | + | 94.67 | | 1.023E+01 | 2.326E+00 | 1.882E+00 | 2.379E-01 | 5.437 |
| | + | 98.44 | | 8.017E+00 | 4.506E+00 | 7.668E-01 | 4.279E-01 | 10.456 |
| | + | 99.86 | | 4.156E+01 | 4.562E+00 | 3.505E+00 | 3.041E-01 | 11.856 |
| | + | 111.00 | | 6.433E+00 | 1.332E+00 | 1.478E+00 | 1.758E-01 | 4.351 |
| | + | 131.20 | | 4.864E-01 | 3.976E-01 | 5.693E-01 | 4.821E-02 | 0.854 |
| | | 152.70 | | 7.307E-01 | 9.360E-01 | 1.572E+00 | 2.730E-01 | 0.465 |
| | + | 186.00 | | 8.232E+02 | 2.618E+02 | 2.177E+01 | 6.919E+00 | 37.809 |
| | | 226.40 | | 7.646E-01 | 8.764E-01 | 1.441E+00 | 2.246E-01 | 0.531 |
| | | 227.20 | | 7.771E-01 | 9.298E-01 | 1.534E+00 | 1.839E-01 | 0.507 |
| | | 248.90 | | -6.571E-01 | 1.733E+00 | 2.761E+00 | 6.722E-01 | -0.238 |
| | | 293.70 | | 5.503E+00 | 1.896E+00 | 2.493E+00 | 5.042E-01 | 2.207 |
| | | 369.80 | | 2.143E-01 | 1.584E+00 | 2.628E+00 | 5.929E-01 | 0.082 |
| | + | 568.70 | | 1.480E+00 | 2.531E+00 | 3.203E+00 | 3.288E-01 | 0.462 |
| | + | 569.50 | | 4.037E-01 | 6.902E-01 | 8.655E-01 | 8.890E-02 | 0.466 |
| | | 574.00 | | -1.584E+00 | 3.039E+00 | 4.229E+00 | 4.350E-01 | -0.374 |
| | | 699.00 | | 4.958E-02 | 1.284E+00 | 2.100E+00 | 4.223E-01 | 0.024 |
| | | 706.10 | | 1.195E+00 | 1.959E+00 | 3.146E+00 | 1.417E+00 | 0.380 |
| | | 733.00 | | 6.728E-01 | 1.216E+00 | 1.116E+00 | 2.583E-01 | 0.603 |
| | + | 742.81 | | 2.563E+01 | 1.799E+01 | 6.303E+00 | 4.258E+00 | 4.066 |
| | | 796.30 | | 2.285E+00 | 1.745E+00 | 2.769E+00 | 7.727E-01 | 0.825 |
| | | 805.60 | | 2.432E-01 | 1.745E+00 | 2.842E+00 | 8.930E-01 | 0.086 |
| | | 819.60 | | -1.190E-01 | 1.945E+00 | 3.242E+00 | 1.253E+00 | -0.037 |
| | | 826.30 | | -1.707E-01 | 1.332E+00 | 2.209E+00 | 1.000E+00 | -0.077 |
| | | 831.60 | | -9.703E-02 | 9.765E-01 | 1.622E+00 | 4.973E-01 | -0.060 |
| | | 876.40 | | 1.387E+00 | 2.055E+00 | 2.236E+00 | 2.304E+00 | 0.620 |
| | + | 880.51 | | 2.565E+00 | 9.568E-01 | 9.316E-01 | 1.042E-01 | 2.753 |
| | | 883.24 | | 1.522E+00 | 1.171E+00 | 9.254E-01 | 6.256E-01 | 1.645 |
| | | 899.00 | | -2.331E-01 | 1.209E+00 | 1.975E+00 | 8.750E-01 | -0.118 |
| | | 925.00 | | 5.690E+00 | 2.010E+00 | 3.573E+00 | 3.931E-01 | 1.593 |
| | | 926.50 | | 5.272E-01 | 3.176E-01 | 5.118E-01 | 1.340E-01 | 1.030 |
| | + | 946.00 | * | 1.804E+00 | 7.524E-01 | 9.653E-01 | 1.919E-01 | 1.869 |
| | | 949.00 | | 2.164E+00 | 8.177E-01 | 1.315E+00 | 1.420E-01 | 1.647 |
| | | 980.50 | | 1.413E+00 | 1.123E+00 | 1.777E+00 | 1.868E-01 | 0.796 |
| NP-236 | | 1394.10 | | 3.983E-01 | 1.398E+00 | 2.313E+00 | 1.506E+00 | 0.172 |
| | + | 94.67 | | 7.762E+00 | 1.623E+00 | 1.435E+00 | 1.285E-01 | 5.410 |
| | + | 98.44 | | 6.060E+00 | 6.652E-01 | 5.796E-01 | 5.067E-02 | 10.456 |
| NP-237 | + | 111.00 | | 4.866E+00 | 9.191E-01 | 1.118E+00 | 9.331E-02 | 4.351 |
| | | 160.31 | * | 3.396E-02 | 2.602E-01 | 3.840E-01 | 3.671E-02 | 0.088 |
| | | 86.50 | * | -3.014E+00 | 1.378E+00 | 1.687E+00 | 3.821E-01 | -1.786 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | + | 95.87 | | 6.180E+01 | 1.925E+01 | 7.008E+00 | 1.733E+00 | 8.819 |
| | + | 99.55 | | 1.385E+01 | 1.521E+00 | 1.241E+00 | 1.079E-01 | 11.158 |
| | | 117.00 | * | 9.670E-01 | 9.140E-01 | 1.039E+00 | 8.591E-02 | 0.930 |
| | | 209.75 | | 2.495E+00 | 1.865E+00 | 2.748E+00 | 3.116E-01 | 0.908 |
| | | 228.18 | | 3.596E-01 | 4.817E-01 | 7.937E-01 | 9.549E-02 | 0.453 |
| | | 277.60 | | 4.180E-01 | 3.728E-01 | 6.067E-01 | 8.456E-02 | 0.689 |
| CM-243 | + | 334.30 | | 4.828E-01 | 2.699E+00 | 3.937E+00 | 4.748E-01 | 0.123 |
| | + | 99.55 | | 1.426E+01 | 1.565E+00 | 1.278E+00 | 1.110E-01 | 11.158 |
| | | 103.76 | * | 8.246E-01 | 4.975E-01 | 5.762E-01 | 4.912E-02 | 1.431 |
| | | 117.00 | | 9.950E-01 | 9.404E-01 | 1.070E+00 | 8.840E-02 | 0.930 |
| | | 209.75 | | 2.460E+00 | 1.839E+00 | 2.710E+00 | 3.072E-01 | 0.908 |
| | | 228.18 | | 3.634E-01 | 4.868E-01 | 8.021E-01 | 9.650E-02 | 0.453 |
| AM-246 | | 277.60 | | 4.214E-01 | 3.758E-01 | 6.117E-01 | 8.526E-02 | 0.689 |
| | | 798.80 | | 1.562E-01 | 2.498E-01 | 4.123E-01 | 4.547E-02 | 0.379 |
| | | 1036.00 | | -1.138E-01 | 3.702E-01 | 5.923E-01 | 5.881E-02 | -0.192 |
| | | 1062.04 | | 2.633E-01 | 2.855E-01 | 4.911E-01 | 4.724E-02 | 0.536 |
| | | 1078.86 | * | 1.028E-01 | 1.655E-01 | 2.806E-01 | 2.640E-02 | 0.366 |
| | | 278.00 | | 1.173E+00 | 1.534E+00 | 2.490E+00 | 3.475E-01 | 0.471 |
| CM-247 | | 287.40 | | 2.604E-01 | 2.500E+00 | 4.001E+00 | 5.505E-01 | 0.065 |
| | | 402.60 | * | 3.627E-02 | 6.795E-02 | 1.132E-01 | 1.062E-02 | 0.320 |
| | | 252.85 | | -1.412E+00 | 2.100E+00 | 2.876E+00 | 3.732E-01 | -0.491 |
| CF-249 | | 333.44 | | -2.395E-01 | 3.600E-01 | 5.065E-01 | 6.127E-02 | -0.473 |
| | | 387.95 | * | 5.954E-02 | 7.478E-02 | 1.257E-01 | 1.194E-02 | 0.474 |
| CF-251 | | 176.60 | * | -1.812E-01 | 3.760E-01 | 6.191E-01 | 6.289E-02 | -0.293 |
| | | 227.00 | | 8.690E-01 | 8.282E-01 | 1.369E+00 | 1.640E-01 | 0.635 |
| | | 285.00 | | -1.728E+00 | 3.556E+00 | 5.587E+00 | 7.728E-01 | -0.309 |

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]G246341002      *
* Acquisition date   : 18-FEB-2010 12:57:15 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 02:00:08.97 Half life ratio : 8.000              *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246341002 Analyst initials: MXR1                  *
* Batch Number       : 950786 Sample Quantity : 9.8670E+01 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.658E+01 | 2.857E+00 | 7.091E-01 | 0.000E+00 |
| CO-57 | 3.169E-01 | 1.108E-01 | 1.377E-01 | 0.000E+00 |
| AS-73 | 2.007E+01 | 6.545E+00 | 5.218E+00 | 0.000E+00 |
| RB-84 | 6.646E-01 | 2.430E-01 | 1.784E-01 | 0.000E+00 |
| NB-95 | 2.714E+00 | 3.431E-01 | 1.192E-01 | 0.000E+00 |
| TE-125M | 3.076E+02 | 6.315E+01 | 5.238E+01 | 0.000E+00 |
| BA-137M | 2.401E+00 | 2.811E-01 | 1.023E-01 | 0.000E+00 |
| CS-137 | 2.538E+00 | 2.975E-01 | 1.081E-01 | 0.000E+00 |
| W-181 | 1.660E+01 | 1.961E+00 | 2.600E+00 | 0.000E+00 |
| RE-183 | 7.341E+00 | 8.919E-01 | 5.339E-01 | 0.000E+00 |
| TL-208 | 5.163E-01 | 1.087E-01 | 1.042E-01 | 0.000E+00 |
| BI-211 | 3.963E+00 | 8.355E-01 | 6.145E-01 | 0.000E+00 |
| BI-212 | 1.162E+00 | 6.723E-01 | 7.946E-01 | 0.000E+00 |
| PB-212 | 1.714E+00 | 2.745E-01 | 1.862E-01 | 0.000E+00 |
| PO-212 | 1.714E+00 | 2.745E-01 | 1.862E-01 | 0.000E+00 |
| BI-214 | 1.381E+00 | 2.599E-01 | 1.838E-01 | 0.000E+00 |
| PB-214 | 1.379E+00 | 2.991E-01 | 2.141E-01 | 0.000E+00 |
| PO-214 | 1.379E+00 | 2.991E-01 | 2.141E-01 | 0.000E+00 |
| PO-216 | 1.714E+00 | 2.745E-01 | 1.862E-01 | 0.000E+00 |
| PO-218 | 1.379E+00 | 2.991E-01 | 2.141E-01 | 0.000E+00 |
| RA-224 | 5.092E+00 | 2.289E+00 | 2.117E+00 | 0.000E+00 |
| RA-226 | 1.381E+00 | 2.599E-01 | 1.838E-01 | 0.000E+00 |
| AC-228 | 1.800E+00 | 4.092E-01 | 2.809E-01 | 0.000E+00 |
| RA-228 | 1.800E+00 | 4.092E-01 | 2.809E-01 | 0.000E+00 |
| TH-228 | 1.743E+00 | 2.792E-01 | 1.894E-01 | 0.000E+00 |
| TH-230 | 1.381E+00 | 2.599E-01 | 1.838E-01 | 0.000E+00 |
| U-231 | 9.618E+01 | 1.971E+01 | 8.368E+00 | 0.000E+00 |
| TH-232 | 1.800E+00 | 4.092E-01 | 2.809E-01 | 0.000E+00 |
| PA-234M | 6.952E+02 | 8.188E+01 | 1.043E+01 | 0.000E+00 |
| TH-234 | 4.764E+02 | 8.168E+01 | 7.141E+00 | 0.000E+00 |
| U-234 | 1.381E+00 | 2.599E-01 | 1.838E-01 | 0.000E+00 |
| U-235 | 2.807E+01 | 4.997E+00 | 1.029E+00 | 0.000E+00 |
| U-238 | 4.764E+02 | 8.168E+01 | 7.141E+00 | 0.000E+00 |
| AM-241 | 4.754E+00 | 1.499E+00 | 8.937E-01 | 0.000E+00 |

| | | | | |
|---------|-----------|-----------|-----------|-----------|
| AM-243 | 5.023E-01 | 2.685E-01 | 3.491E-01 | 0.000E+00 |
| ANH-511 | 1.897E-01 | 1.288E-01 | 7.986E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM | K.L. Act error) Ided | MDA (pCi/GRAM |) | |
|---------|-----------------------------------|--------------------------|------------------|-----------|------------|
| BE-7 | 2.060E-01 | 6.287E-01 | 1.040E+00 | 0.000E+00 | NOT IDENT. |
| NA-22 | -2.197E-02 | 5.052E-02 | 8.200E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 7.874E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 3.815E-02 | 3.501E-02 | 6.533E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 1.372E-01 | 2.290E-01 | 0.000E+00 | FAIL ABUN |
| SC-46 | 3.367E-02 | 6.468E-02 | 9.635E-02 | 0.000E+00 | FAIL ABUN |
| V-48 | 1.189E-01 | 1.051E-01 | 1.843E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 1.110E-01 | 7.127E-01 | 1.214E+00 | 0.000E+00 | NOT IDENT. |
| MN-52 | 5.968E-01 | 3.987E-01 | 7.293E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -3.870E-02 | 5.630E-02 | 9.200E-02 | 0.000E+00 | NOT IDENT. |
| CO-56 | -1.545E-02 | 6.137E-02 | 1.023E-01 | 0.000E+00 | FAIL ABUN |
| CO-58 | 4.618E-03 | 6.341E-02 | 1.077E-01 | 0.000E+00 | NOT IDENT. |
| FE-59 | -1.523E-02 | 1.130E-01 | 1.841E-01 | 0.000E+00 | FAIL ABUN |
| CO-60 | -2.489E-02 | 4.426E-02 | 7.024E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 8.241E-03 | 1.251E-01 | 1.756E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 9.505E-01 | 1.443E+00 | 2.478E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | -3.363E-02 | 1.653E-01 | 2.755E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -1.436E-02 | 9.267E-02 | 1.451E-01 | 0.000E+00 | FAIL ABUN |
| BR-77 | 1.701E+01 | 3.585E+01 | 5.579E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -9.651E-01 | 7.901E-01 | 1.151E+00 | 0.000E+00 | NOT IDENT. |
| RB-83 | 5.982E-02 | 1.372E-01 | 2.132E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 1.412E+01 | 2.160E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 7.385E-02 | 1.130E-01 | 0.000E+00 | NOT IDENT. |
| RB-86 | 3.531E-01 | 9.861E-01 | 1.663E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 0.000E+00 | 4.607E-02 | 8.382E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -4.831E-03 | 5.735E-02 | 9.536E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | -2.273E+01 | 2.018E+01 | 3.129E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 1.718E-02 | 6.010E-02 | 1.003E-01 | 0.000E+00 | NOT IDENT. |
| NB-95M | 8.957E-02 | 2.860E-01 | 4.155E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | 1.045E-01 | 1.324E-01 | 2.136E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.667E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.435E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 0.000E+00 | 5.252E+01 | 7.463E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 2.630E+19 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 6.958E-03 | 1.126E-01 | 1.199E-01 | 0.000E+00 | NOT IDENT. |
| RH-102 | 6.773E-02 | 5.583E-02 | 9.445E-02 | 0.000E+00 | FAIL ABUN |
| RU-103 | 1.142E-02 | 7.600E-02 | 1.246E-01 | 0.000E+00 | FAIL ABUN |
| RH-106 | 9.987E-03 | 5.210E-01 | 8.720E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | 9.987E-03 | 5.210E-01 | 8.720E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | -8.515E-03 | 5.865E-02 | 9.642E-02 | 0.000E+00 | NOT IDENT. |
| CD-109 | -3.022E+01 | 6.313E+00 | 6.007E+00 | 0.000E+00 | NOT IDENT. |
| AG-110M | 0.000E+00 | 8.384E-02 | 1.305E-01 | 0.000E+00 | NOT IDENT. |
| IN-111 | 2.805E+00 | 3.925E+00 | 5.741E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -6.584E-02 | 8.354E-02 | 1.356E-01 | 0.000E+00 | NOT IDENT. |
| SN-113 | -6.584E-02 | 8.354E-02 | 1.356E-01 | 0.000E+00 | NOT IDENT. |
| IN-114M | 1.945E-02 | 6.473E-01 | 6.887E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 1.705E+01 | 3.544E+01 | 6.101E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | -4.957E-02 | 1.940E-01 | 2.888E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | -6.432E-01 | 6.831E+00 | 9.886E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.115E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -2.357E-02 | 9.244E-02 | 1.376E-01 | 0.000E+00 | NOT IDENT. |
| I-124 | 8.474E-01 | 1.695E+00 | 2.507E+00 | 0.000E+00 | NOT IDENT. |
| SB-124 | 6.419E-02 | 9.305E-02 | 1.667E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | -4.937E-02 | 1.654E-01 | 2.708E-01 | 0.000E+00 | NOT IDENT. |
| I-126 | 6.404E-02 | 3.986E-01 | 5.731E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -2.771E-01 | 3.086E-01 | 4.094E-01 | 0.000E+00 | FAIL ABUN |
| SN-126 | -3.621E+00 | 5.789E-01 | 5.735E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -4.429E+00 | 3.299E+00 | 5.079E+00 | 0.000E+00 | FAIL ABUN |
| XE-127 | 0.000E+00 | 1.636E-01 | 2.339E-01 | 0.000E+00 | FAIL ABUN |
| I-131 | -1.430E-01 | 2.457E-01 | 4.044E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 1.662E+00 | 2.184E+00 | 3.634E+00 | 0.000E+00 | FAIL ABUN |
| BA-133 | 3.695E-02 | 9.005E-02 | 1.334E-01 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 5.015E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 1.035E-01 | 8.305E-02 | 1.410E-01 | 0.000E+00 | FAIL ABUN |
| CS-135 | 7.344E-02 | 3.167E-01 | 5.185E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 7.475E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.924E-02 | 1.507E-01 | 2.409E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | 0.000E+00 | 1.024E-01 | 1.549E-01 | 0.000E+00 | NOT IDENT. |
| BA-140 | 4.483E-02 | 5.064E-01 | 8.605E-01 | 0.000E+00 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| LA-140 | -1.852E-01 | 1.270E-01 | 1.853E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 0.000E+00 | 5.594E-01 | 5.042E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 9.039E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 3.187E-01 | 7.009E-01 | 1.070E+00 | 0.000E+00 | NOT IDENT. |
| PM-144 | -2.933E-02 | 6.149E-02 | 9.981E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -1.989E+00 | 4.171E+00 | 6.770E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 4.092E-02 | 8.378E-02 | 1.397E-01 | 0.000E+00 | NOT IDENT. |
| ND-147 | -5.980E-01 | 1.131E+00 | 1.879E+00 | 0.000E+00 | FAIL ABUN |
| PM-149 | -2.358E+02 | 3.345E+02 | 5.264E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | 3.428E-03 | 2.020E-01 | 2.960E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | 0.000E+00 | 7.350E-01 | 6.552E-01 | 0.000E+00 | FAIL ABUN |
| EU-154 | -6.313E-02 | 1.409E-01 | 2.284E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 0.000E+00 | 4.652E-01 | 6.642E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 0.000E+00 | 4.744E-01 | 4.451E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -6.666E-02 | 1.072E-01 | 1.697E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | -3.629E+02 | 1.134E+02 | 1.585E+02 | 0.000E+00 | FAIL ABUN |
| LU-176 | 1.823E-02 | 4.528E-02 | 7.778E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 2.547E+00 | 3.197E+00 | 4.745E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -1.053E-01 | 3.212E-01 | 5.273E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -3.797E-02 | 8.125E-02 | 1.306E-01 | 0.000E+00 | FAIL ABUN |
| TA-182 | 3.810E-02 | 2.194E-01 | 3.726E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | -3.792E-01 | 5.527E-01 | 7.682E-01 | 0.000E+00 | FAIL ABUN |
| OS-185 | 9.895E-03 | 7.178E-02 | 1.203E-01 | 0.000E+00 | FAIL ABUN |
| RE-188 | -2.153E-01 | 4.898E-01 | 8.280E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 1.178E+01 | 1.590E+01 | 2.419E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | 2.892E-02 | 6.432E-02 | 1.103E-01 | 0.000E+00 | FAIL ABUN |
| AU-195 | 0.000E+00 | 2.144E+00 | 1.883E+00 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 2.807E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 3.035E+00 | 3.450E+01 | 5.146E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | 1.140E-02 | 1.406E-01 | 2.327E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | 6.025E-02 | 8.504E-02 | 1.399E-01 | 0.000E+00 | FAIL ABUN |
| BI-207 | 9.943E-03 | 6.475E-02 | 1.078E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -7.475E-01 | 1.223E+00 | 2.025E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 4.037E+00 | 1.036E+01 | 1.771E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -1.333E+01 | 1.201E+01 | 2.020E+01 | 0.000E+00 | NOT IDENT. |
| PB-210 | -1.333E+01 | 1.201E+01 | 2.020E+01 | 0.000E+00 | NOT IDENT. |
| PO-210 | -1.333E+01 | 1.199E+01 | 2.020E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -1.502E+00 | 1.927E+00 | 2.734E+00 | 0.000E+00 | NOT IDENT. |
| PO-215 | -7.475E-01 | 1.223E+00 | 2.025E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 2.734E-01 | 7.424E-01 | 1.247E+00 | 0.000E+00 | NOT IDENT. |
| RN-220 | -6.843E+01 | 4.562E+01 | 7.228E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -7.475E-01 | 1.223E+00 | 2.025E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | 0.000E+00 | 1.162E+00 | 1.519E+00 | 0.000E+00 | NOT IDENT. |
| TH-227 | 0.000E+00 | 1.214E+00 | 1.519E+00 | 0.000E+00 | FAIL ABUN |
| TH-229 | 0.000E+00 | 1.533E+00 | 2.145E+00 | 0.000E+00 | FAIL ABUN |
| PA-231 | -4.951E-01 | 2.995E+00 | 4.829E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | -7.475E-01 | 1.223E+00 | 2.025E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -2.934E-02 | 1.165E-01 | 1.967E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 0.000E+00 | 7.373E-01 | 9.574E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | 3.396E-02 | 2.550E-01 | 3.822E-01 | 0.000E+00 | FAIL ABUN |
| NP-237 | -3.014E+00 | 1.350E+00 | 1.681E+00 | 0.000E+00 | FAIL ABUN |
| NP-239 | 9.670E-01 | 8.957E-01 | 1.035E+00 | 0.000E+00 | FAIL ABUN |
| CM-243 | 0.000E+00 | 4.875E-01 | 5.739E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | 1.028E-01 | 1.622E-01 | 2.782E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 3.627E-02 | 6.659E-02 | 1.125E-01 | 0.000E+00 | NOT IDENT. |
| CF-249 | 5.954E-02 | 7.328E-02 | 1.249E-01 | 0.000E+00 | NOT IDENT. |
| CF-251 | -1.812E-01 | 3.685E-01 | 6.160E-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]G246341002.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 12:57:15
Sample ID          : G246341002      Sample quantity   : 9.86700E+01 GRAM
Detector name      : GAM22           Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00   Elapsed real time: 0 02:00:08.97 0.1%
Energy tolerance   : 1.50000 keV     Analyst Initials : MXR1
Abundance limit    : 75.00000        Sensitivity      : 5.00000
Batch ID           : 950786          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 | 1423 | 10.67* | 1.909E+00 | 2.658E+01 | 2.658E+01 | 10.97 |
| CO-57 | 122.06 | 584 | 85.51* | 8.558E+00 | 3.033E-01 | 3.169E-01 | 35.67 |
| | 136.48 | ----- | 10.60 | 8.461E+00 | ----- | Line Not Found | ----- |
| AS-73 | 53.44 | 1179 | 10.30* | 2.514E+00 | 1.731E+01 | 2.007E+01 | 33.29 |
| RB-84 | 881.50 | 237 | 67.70* | 2.868E+00 | 4.637E-01 | 6.646E-01 | 37.30 |
| NB-95 | 765.79 | 1898 | 99.81* | 3.208E+00 | 2.255E+00 | 2.714E+00 | 12.90 |
| TE-125M | 109.28 | 1578 | 0.28* | 8.457E+00 | 2.508E+02 | 3.076E+02 | 20.95 |
| BA-137M | 661.65 | 2037 | 89.98* | 3.590E+00 | 2.398E+00 | 2.401E+00 | 11.95 |
| CS-137 | 661.65 | 2037 | 85.12* | 3.590E+00 | 2.535E+00 | 2.538E+00 | 11.96 |
| W-181 | 56.28 | 1007 | 18.70 | 3.189E+00 | 6.423E+00 | 7.084E+00 | 41.90 |
| | 57.53 | 1007 | 32.60 | 3.189E+00 | 3.685E+00 | 4.064E+00 | 41.90 |
| | 65.20 | ----- | 13.80* | 4.674E+00 | ----- | Line Not Found | ----- |
| RE-183 | 57.98 | 1007 | 34.20 | 3.189E+00 | 3.512E+00 | 4.160E+00 | 41.90 |
| | 59.32 | 1631 | 59.50 | 3.636E+00 | 2.868E+00 | 3.397E+00 | 31.99 |
| | 67.20 | ----- | 25.30 | 5.016E+00 | ----- | Line Not Found | ----- |
| | 162.32 | 3062 | 23.40* | 8.031E+00 | 6.198E+00 | 7.341E+00 | 12.40 |
| | 208.81 | ----- | 2.97 | 7.192E+00 | ----- | Line Not Found | ----- |
| | 291.72 | ----- | 3.17 | 6.010E+00 | ----- | Line Not Found | ----- |
| TL-208 | 277.35 | ----- | 6.80 | 6.182E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 214 | 21.60 | 4.298E+00 | 8.784E-01 | 8.784E-01 | 69.78 |
| | 583.14 | 449 | 84.20* | 3.930E+00 | 5.163E-01 | 5.163E-01 | 21.49 |
| | 860.37 | ----- | 12.46 | 2.924E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 5.897E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 728 | 12.94* | 5.402E+00 | 3.963E+00 | 3.963E+00 | 21.51 |
| BI-212 | 727.18 | 120 | 11.80* | 3.341E+00 | 1.162E+00 | 1.162E+00 | 59.05 |
| | 785.46 | 274 | 1.97 | 3.144E+00 | 1.683E+01 | 1.683E+01 | 30.25 |
| | 1620.62 | ----- | 2.75 | 1.789E+00 | ----- | Line Not Found | ----- |
| PB-212 | 74.81 | 536 | 10.70 | 6.147E+00 | 3.099E+00 | 3.099E+00 | 55.34 |
| | 77.11 | 678 | 18.00 | 6.458E+00 | 2.218E+00 | 2.218E+00 | 34.22 |
| | 87.30 | ----- | 8.00 | 7.486E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1348 | 44.60* | 6.710E+00 | 1.714E+00 | 1.714E+00 | 16.35 |
| | 300.09 | ----- | 3.41 | 5.916E+00 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| PO-212 | 74.81 | 536 | 10.70 | 6.147E+00 | 3.099E+00 | 3.099E+00 | 55.34 |
| | 77.11 | 678 | 18.00 | 6.458E+00 | 2.218E+00 | 2.218E+00 | 34.22 |
| | 87.30 | ----- | 8.00 | 7.486E+00 | ----- | Line Not Found | ----- |
| | 115.19 | ----- | 0.60 | 8.535E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1348 | 44.60* | 6.710E+00 | 1.714E+00 | 1.714E+00 | 16.35 |
| BI-214 | 300.09 | ----- | 3.41 | 5.916E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 641 | 46.30* | 3.812E+00 | 1.381E+00 | 1.381E+00 | 19.20 |
| | 1120.29 | 142 | 15.10 | 2.345E+00 | 1.529E+00 | 1.529E+00 | 40.42 |
| | 1764.49 | 137 | 15.80 | 1.716E+00 | 1.922E+00 | 1.922E+00 | 25.85 |
| | 74.81 | 536 | 6.21 | 6.147E+00 | 5.339E+00 | 5.339E+00 | 55.05 |
| PB-214 | 77.11 | 678 | 10.50 | 6.458E+00 | 3.802E+00 | 3.802E+00 | 35.06 |
| | 87.30 | ----- | 4.67 | 7.486E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 352 | 7.49 | 6.666E+00 | 2.686E+00 | 2.686E+00 | 46.21 |
| | 295.21 | 413 | 19.20 | 5.969E+00 | 1.372E+00 | 1.372E+00 | 33.29 |
| | 351.92 | 728 | 37.20* | 5.402E+00 | 1.379E+00 | 1.379E+00 | 22.13 |
| PO-214 | 74.81 | 536 | 6.21 | 6.147E+00 | 5.339E+00 | 5.339E+00 | 55.05 |
| | 77.11 | 678 | 10.50 | 6.458E+00 | 3.802E+00 | 3.802E+00 | 35.06 |
| | 87.30 | ----- | 4.67 | 7.486E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 352 | 7.49 | 6.666E+00 | 2.686E+00 | 2.686E+00 | 46.21 |
| | 295.21 | 413 | 19.20 | 5.969E+00 | 1.372E+00 | 1.372E+00 | 33.29 |
| PO-216 | 351.92 | 728 | 37.20* | 5.402E+00 | 1.379E+00 | 1.379E+00 | 22.13 |
| | 74.81 | 536 | 10.70 | 6.147E+00 | 3.099E+00 | 3.099E+00 | 55.34 |
| | 77.11 | 678 | 18.00 | 6.458E+00 | 2.218E+00 | 2.218E+00 | 34.22 |
| | 87.30 | ----- | 8.00 | 7.486E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 1348 | 44.60* | 6.710E+00 | 1.714E+00 | 1.714E+00 | 16.35 |
| PO-218 | 300.09 | ----- | 3.41 | 5.916E+00 | ----- | Line Not Found | ----- |
| | 74.81 | 536 | 6.21 | 6.147E+00 | 5.339E+00 | 5.339E+00 | 55.05 |
| | 77.11 | 678 | 10.50 | 6.458E+00 | 3.802E+00 | 3.802E+00 | 35.06 |
| | 87.30 | ----- | 4.67 | 7.486E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 352 | 7.49 | 6.666E+00 | 2.686E+00 | 2.686E+00 | 46.21 |
| RA-224 | 295.21 | 413 | 19.20 | 5.969E+00 | 1.372E+00 | 1.372E+00 | 33.29 |
| | 351.92 | 728 | 37.20* | 5.402E+00 | 1.379E+00 | 1.379E+00 | 22.13 |
| | 240.98 | 352 | 3.95* | 6.666E+00 | 5.092E+00 | 5.092E+00 | 45.87 |
| | 609.31 | 641 | 46.30* | 3.812E+00 | 1.381E+00 | 1.381E+00 | 19.20 |
| | 1120.29 | 142 | 15.10 | 2.345E+00 | 1.529E+00 | 1.529E+00 | 40.42 |
| AC-228 | 1764.49 | 137 | 15.80 | 1.716E+00 | 1.922E+00 | 1.922E+00 | 25.85 |
| | 338.32 | 235 | 11.40 | 5.524E+00 | 1.421E+00 | 1.421E+00 | 59.62 |
| | 911.07 | 365 | 27.70* | 2.788E+00 | 1.800E+00 | 1.800E+00 | 23.20 |
| | 969.11 | 170 | 16.60 | 2.648E+00 | 1.471E+00 | 1.471E+00 | 58.10 |
| | 338.32 | 235 | 11.40 | 5.524E+00 | 1.421E+00 | 1.421E+00 | 59.62 |
| RA-228 | 911.07 | 365 | 27.70* | 2.788E+00 | 1.800E+00 | 1.800E+00 | 23.20 |
| | 969.11 | 170 | 16.60 | 2.648E+00 | 1.471E+00 | 1.471E+00 | 58.10 |
| | 74.81 | 536 | 10.70 | 6.147E+00 | 3.099E+00 | 3.152E+00 | 54.56 |
| | 77.11 | 678 | 18.00 | 6.458E+00 | 2.218E+00 | 2.256E+00 | 34.22 |
| | 87.30 | ----- | 8.00 | 7.486E+00 | ----- | Line Not Found | ----- |
| TH-228 | 238.63 | 1348 | 44.60* | 6.710E+00 | 1.714E+00 | 1.743E+00 | 16.35 |
| | 300.09 | ----- | 3.41 | 5.916E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 641 | 46.30* | 3.812E+00 | 1.381E+00 | 1.381E+00 | 19.20 |
| | 1120.29 | 142 | 15.10 | 2.345E+00 | 1.529E+00 | 1.529E+00 | 40.42 |
| | | | | | | | |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| U-231 | 1764.49 | 137 | 15.80 | 1.716E+00 | 1.922E+00 | 1.922E+00 | 25.85 |
| | 84.21 | 3296 | 7.00 | 7.209E+00 | 2.485E+01 | 4.164E+02 | 14.15 |
| | 92.29 | 55007 | 17.30 | 7.852E+00 | 1.541E+02 | 2.582E+03 | 9.16 |
| | 95.87 | 3364 | 28.00* | 7.964E+00 | 5.739E+00 | 9.618E+01 | 20.91 |
| TH-232 | 108.00 | 1578 | 13.10 | 8.457E+00 | 5.418E+00 | 9.081E+01 | 20.16 |
| | 338.32 | 235 | 11.40 | 5.524E+00 | 1.421E+00 | 1.421E+00 | 43.89 |
| | 911.07 | 365 | 27.70* | 2.788E+00 | 1.800E+00 | 1.800E+00 | 23.20 |
| | 969.11 | 170 | 16.60 | 2.648E+00 | 1.471E+00 | 1.471E+00 | 58.10 |
| PA-234M | 766.42 | 1898 | 0.32 | 3.208E+00 | 7.035E+02 | 7.035E+02 | 51.64 |
| | 1001.03 | 3956 | 0.84* | 2.578E+00 | 6.952E+02 | 6.952E+02 | 12.02 |
| TH-234 | 63.29 | 20595 | 3.80* | 4.328E+00 | 4.764E+02 | 4.764E+02 | 17.50 |
| | 92.38 | 55007 | 5.41 | 7.852E+00 | 4.927E+02 | 4.927E+02 | 18.35 |
| U-234 | 609.31 | 641 | 46.30* | 3.812E+00 | 1.381E+00 | 1.381E+00 | 19.20 |
| | 1120.29 | 142 | 15.10 | 2.345E+00 | 1.529E+00 | 1.529E+00 | 40.42 |
| U-235 | 1764.49 | 137 | 15.80 | 1.716E+00 | 1.922E+00 | 1.922E+00 | 25.85 |
| | 89.95 | ----- | 2.70 | 7.683E+00 | ----- | Line Not Found | ----- |
| | 93.35 | 55007 | 4.50 | 7.852E+00 | 5.923E+02 | 5.923E+02 | 28.20 |
| | 105.00 | 624 | 2.10 | 8.381E+00 | 1.349E+01 | 1.349E+01 | 44.73 |
| | 143.76 | 6480 | 10.50* | 8.364E+00 | 2.807E+01 | 2.807E+01 | 18.16 |
| | 163.35 | 3062 | 4.70 | 8.031E+00 | 3.086E+01 | 3.086E+01 | 21.06 |
| | 185.71 | 32932 | 54.00 | 7.610E+00 | 3.049E+01 | 3.049E+01 | 10.55 |
| | 205.31 | 2765 | 4.70 | 7.253E+00 | 3.085E+01 | 3.085E+01 | 21.08 |
| | 63.29 | 20595 | 3.80* | 4.328E+00 | 4.764E+02 | 4.764E+02 | 17.50 |
| | 92.38 | 55007 | 5.41 | 7.852E+00 | 4.927E+02 | 4.927E+02 | 9.16 |
| AM-241 | 59.54 | 1631 | 35.90* | 3.636E+00 | 4.754E+00 | 4.754E+00 | 32.16 |
| AM-243 | 74.67 | 536 | 66.00* | 6.147E+00 | 5.023E-01 | 5.023E-01 | 54.55 |
| | 86.72 | ----- | 0.34 | 7.440E+00 | ----- | Line Not Found | ----- |
| | 117.66 | ----- | 0.55 | 8.550E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 8.387E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 214 | 100.00* | 4.298E+00 | 1.897E-01 | 1.897E-01 | 69.28 |

Flag: "*" = Keyline

Total number of lines in spectrum 50
Number of unidentified lines 4
Number of lines tentatively identified by NID 46 92.00%

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 | 2.658E+01 | 2.658E+01 | 0.292E+01 | 10.97 | |
| CO-57 | 270.90D | 1.04 | 3.033E-01 | 3.169E-01 | 1.130E-01 | 35.67 | |
| AS-73 | 80.30D | 1.16 | 1.731E+01 | 2.007E+01 | 0.668E+01 | 33.29 | |
| RB-84 | 32.90D | 1.43 | 4.637E-01 | 6.646E-01 | 2.479E-01 | 37.30 | |
| NB-95 | 64.02D | 1.20 | 2.255E+00 | 2.714E+00 | 0.350E+00 | 12.90 | |
| TE-125M | 58.00D | 1.23 | 2.508E+02 | 3.076E+02 | 0.644E+02 | 20.95 | |
| BA-137M | 30.17Y | 1.00 | 2.398E+00 | 2.401E+00 | 0.287E+00 | 11.95 | |
| CS-137 | 30.17Y | 1.00 | 2.535E+00 | 2.538E+00 | 0.304E+00 | 11.96 | |
| W-181 | 120.95D | 1.10 | 3.685E+00 | 4.064E+00 | 1.703E+00 | 41.90 | K |
| RE-183 | 70.00D | 1.18 | 6.198E+00 | 7.341E+00 | 0.910E+00 | 12.40 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.163E-01 | 5.163E-01 | 1.109E-01 | 21.49 | |
| BI-211 | 7.04E+08Y | 1.00 | 3.963E+00 | 3.963E+00 | 0.853E+00 | 21.51 | |
| BI-212 | 1.41E+10Y | 1.00 | 1.162E+00 | 1.162E+00 | 0.686E+00 | 59.05 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.714E+00 | 1.714E+00 | 0.280E+00 | 16.35 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.714E+00 | 1.714E+00 | 0.280E+00 | 16.35 | |
| BI-214 | 1600.00Y | 1.00 | 1.381E+00 | 1.381E+00 | 0.265E+00 | 19.20 | |
| PB-214 | 1600.00Y | 1.00 | 1.379E+00 | 1.379E+00 | 0.305E+00 | 22.13 | |
| PO-214 | 1600.00Y | 1.00 | 1.379E+00 | 1.379E+00 | 0.305E+00 | 22.13 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.714E+00 | 1.714E+00 | 0.280E+00 | 16.35 | |
| PO-218 | 1600.00Y | 1.00 | 1.379E+00 | 1.379E+00 | 0.305E+00 | 22.13 | |
| RA-224 | 1.41E+10Y | 1.00 | 5.092E+00 | 5.092E+00 | 2.336E+00 | 45.87 | |
| RA-226 | 1600.00Y | 1.00 | 1.381E+00 | 1.381E+00 | 0.265E+00 | 19.20 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.800E+00 | 1.800E+00 | 0.418E+00 | 23.20 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.800E+00 | 1.800E+00 | 0.418E+00 | 23.20 | |
| TH-228 | 1.91Y | 1.02 | 1.714E+00 | 1.743E+00 | 0.285E+00 | 16.35 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.381E+00 | 1.381E+00 | 0.265E+00 | 19.20 | |
| U-231 | 4.20D | 16.8 | 5.739E+00 | 9.618E+01 | 2.011E+01 | 20.91 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.800E+00 | 1.800E+00 | 0.418E+00 | 23.20 | |
| PA-234M | 4.47E+09Y | 1.00 | 6.952E+02 | 6.952E+02 | 0.836E+02 | 12.02 | |
| TH-234 | 4.47E+09Y | 1.00 | 4.764E+02 | 4.764E+02 | 0.834E+02 | 17.50 | |
| U-234 | 4.47E+09Y | 1.00 | 1.381E+00 | 1.381E+00 | 0.265E+00 | 19.20 | |
| U-235 | 7.04E+08Y | 1.00 | 2.807E+01 | 2.807E+01 | 0.510E+01 | 18.16 | |
| U-238 | 4.47E+09Y | 1.00 | 4.764E+02 | 4.764E+02 | 0.834E+02 | 17.50 | |
| AM-241 | 432.20Y | 1.00 | 4.754E+00 | 4.754E+00 | 1.529E+00 | 32.16 | |
| AM-243 | 7380.00Y | 1.00 | 5.023E-01 | 5.023E-01 | 2.740E-01 | 54.55 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.897E-01 | 1.897E-01 | 1.314E-01 | 69.28 | |
| Total Activity : | | | 2.032E+03 | 2.185E+03 | | | |

Grand Total Activity : 2.032E+03 2.185E+03

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 |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 10 | 61.99 | 2368 | 8085 | 1.88 | 124.24 | 101 | 30 | 3.29E-01 | 19.8 | 4.10E+00 | T |
| 0 | 98.49 | 4363 | 4974 | 1.12 | 197.17 | 194 | 9 | 6.06E-01 | 6.6 | 8.15E+00 | T |
| 6 | 111.05 | 1694 | 4688 | 1.50 | 222.26 | 206 | 26 | 2.35E-01 | 16.9 | 8.49E+00 | T |
| 6 | 112.77 | 3257 | 3596 | 1.18 | 225.70 | 206 | 26 | 4.52E-01 | 7.4 | 8.51E+00 | T |
| 0 | 131.44 | 222 | 2874 | 0.97 | 262.99 | 260 | 7 | 3.08E-02 | 81.3 | 8.51E+00 | T |
| 0 | 194.77 | 406 | 1344 | 1.10 | 389.54 | 385 | 8 | 5.65E-02 | 32.8 | 7.44E+00 | T |
| 4 | 202.15 | 623 | 1395 | 1.55 | 404.29 | 400 | 16 | 8.65E-02 | 22.8 | 7.31E+00 | T |
| 0 | 258.22 | 750 | 1079 | 1.26 | 516.32 | 510 | 12 | 1.04E-01 | 19.0 | 6.43E+00 | |
| 0 | 569.82 | 47 | 399 | 2.10 | 1139.06 | 1132 | 11 | 6.48E-03 | **** | 3.99E+00 | T |
| 0 | 742.36 | 532 | 388 | 2.05 | 1483.96 | 1474 | 17 | 7.39E-02 | 19.0 | 3.29E+00 | T |
| 0 | 946.30 | 154 | 144 | 1.69 | 1891.70 | 1887 | 13 | 2.14E-02 | 36.7 | 2.70E+00 | T |
| 0 | 1238.79 | 57 | 133 | 1.99 | 2476.59 | 2467 | 13 | 7.86E-03 | 88.2 | 2.16E+00 | T |
| 0 | 1738.03 | 75 | 29 | 2.46 | 3475.23 | 3467 | 19 | 1.04E-02 | 41.4 | 1.73E+00 | |
| 0 | 1831.87 | 49 | 24 | 3.11 | 3662.99 | 3651 | 18 | 6.81E-03 | 49.1 | 1.69E+00 | |
| 0 | 1875.28 | 39 | 8 | 2.62 | 3749.85 | 3743 | 12 | 5.39E-03 | 40.9 | 1.68E+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]G246341002.CNF;1
* Acquisition date   : 18-FEB-2010 12:57:15  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 02:00:08.97           Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00.  Nuclide Library : SOLID
* Sample ID          : G246341002           Analyst initials: MXR1
* Batch Number       : 950786               Sample Quantity : 9.86700E+01 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 2-DEC-2009 16:47:28.08MS Isotope       :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A               LCS Isotope       :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.658E+01 | 2.915E+00 | 7.156E-01 | 6.556E-02 | 37.144 |
| CO-57 | 3.169E-01 | 1.130E-01 | 1.383E-01 | 1.140E-02 | 2.292 |
| AS-73 | 2.007E+01 | 6.679E+00 | 5.232E+00 | 3.954E-01 | 3.835 |
| RB-84 | 6.646E-01 | 2.479E-01 | 1.798E-01 | 2.011E-02 | 3.696 |
| NB-95 | 2.714E+00 | 3.501E-01 | 1.202E-01 | 1.314E-02 | 22.582 |
| TE-125M | 3.076E+02 | 6.444E+01 | 5.259E+01 | 5.328E+00 | 5.849 |
| BA-137M | 2.401E+00 | 2.868E-01 | 1.031E-01 | 1.087E-02 | 23.297 |
| CS-137 | 2.538E+00 | 3.035E-01 | 1.089E-01 | 1.150E-02 | 23.297 |
| W-181 | 4.064E+00 | 1.703E+00 | 2.608E+00 | 1.944E-01 | 1.558 |
| RE-183 | 7.341E+00 | 9.101E-01 | 5.365E-01 | 5.176E-02 | 13.682 |
| TL-208 | 5.163E-01 | 1.109E-01 | 1.050E-01 | 1.138E-02 | 4.919 |
| BI-211 | 3.963E+00 | 8.525E-01 | 6.184E-01 | 7.215E-02 | 6.409 |
| BI-212 | 1.162E+00 | 6.860E-01 | 8.008E-01 | 9.565E-02 | 1.451 |
| PB-212 | 1.714E+00 | 2.801E-01 | 1.873E-01 | 2.474E-02 | 9.150 |
| PO-212 | 1.714E+00 | 2.801E-01 | 1.873E-01 | 2.474E-02 | 9.150 |
| BI-214 | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| PB-214 | 1.379E+00 | 3.052E-01 | 2.155E-01 | 2.747E-02 | 6.397 |
| PO-214 | 1.379E+00 | 3.052E-01 | 2.155E-01 | 2.747E-02 | 6.397 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| PO-216 | 1.714E+00 | 2.801E-01 | 1.873E-01 | 2.474E-02 | 9.150 |
| PO-218 | 1.379E+00 | 3.052E-01 | 2.155E-01 | 2.747E-02 | 6.397 |
| RA-224 | 5.092E+00 | 2.336E+00 | 2.129E+00 | 2.665E-01 | 2.392 |
| RA-226 | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| AC-228 | 1.800E+00 | 4.175E-01 | 2.832E-01 | 3.752E-02 | 6.356 |
| RA-228 | 1.800E+00 | 4.175E-01 | 2.832E-01 | 3.752E-02 | 6.356 |
| TH-228 | 1.743E+00 | 2.849E-01 | 1.905E-01 | 2.517E-02 | 9.150 |
| TH-230 | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| U-231 | 9.618E+01 | 2.011E+01 | 8.400E+00 | 7.459E-01 | 11.451 |
| TH-232 | 1.800E+00 | 4.175E-01 | 2.832E-01 | 3.752E-02 | 6.356 |
| PA-234M | 6.952E+02 | 8.355E+01 | 1.052E+01 | 1.205E+00 | 66.094 |
| TH-234 | 4.764E+02 | 8.335E+01 | 7.162E+00 | 1.247E+00 | 66.510 |
| U-234 | 1.381E+00 | 2.652E-01 | 1.852E-01 | 2.153E-02 | 7.456 |
| U-235 | 2.807E+01 | 5.099E+00 | 1.034E+00 | 1.823E-01 | 27.160 |
| U-238 | 4.764E+02 | 8.335E+01 | 7.162E+00 | 1.247E+00 | 66.510 |
| AM-241 | 4.754E+00 | 1.529E+00 | 8.963E-01 | 7.006E-02 | 5.305 |
| AM-243 | 5.023E-01 | 2.740E-01 | 3.503E-01 | 2.855E-02 | 1.434 |
| ANH-511 | 1.897E-01 | 1.314E-01 | 8.042E-02 | 8.058E-03 | 2.359 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 2.060E-01 | | 6.415E-01 | 1.047E+00 | 1.093E-01 | 0.197 |
| NA-22 | -2.197E-02 | | 5.156E-02 | 8.273E-02 | 7.129E-03 | -0.266 |
| NA-24 | -5.468E+00 | | 4.017E+00 | Half-Life too short | | |
| AL-26 | 3.815E-02 | | 3.572E-02 | 6.595E-02 | 5.394E-03 | 0.578 |
| TI-44 | 4.093E-01 | + | 1.400E-01 | 2.297E-01 | 1.948E-02 | 1.781 |
| SC-46 | 3.367E-02 | | 6.600E-02 | 9.713E-02 | 1.087E-02 | 0.347 |
| V-48 | 1.189E-01 | | 1.072E-01 | 1.858E-01 | 1.949E-02 | 0.640 |
| CR-51 | 1.110E-01 | | 7.272E-01 | 1.221E+00 | 1.582E-01 | 0.091 |
| MN-52 | 5.968E-01 | | 4.068E-01 | 7.360E-01 | 6.577E-02 | 0.811 |
| MN-54 | -3.870E-02 | | 5.745E-02 | 9.275E-02 | 1.030E-02 | -0.417 |
| CO-56 | -1.545E-02 | | 6.262E-02 | 1.031E-01 | 1.148E-02 | -0.150 |
| CO-58 | 4.618E-03 | | 6.470E-02 | 1.086E-01 | 1.202E-02 | 0.043 |
| FE-59 | -1.523E-02 | | 1.153E-01 | 1.857E-01 | 1.820E-02 | -0.082 |
| CO-60 | -2.489E-02 | | 4.517E-02 | 7.087E-02 | 6.320E-03 | -0.351 |
| ZN-65 | 8.241E-03 | | 1.277E-01 | 1.771E-01 | 1.580E-02 | 0.047 |
| GE-68 | 9.505E-01 | | 1.473E+00 | 2.500E+00 | 2.356E-01 | 0.380 |
| AS-74 | -3.363E-02 | | 1.687E-01 | 2.775E-01 | 2.877E-02 | -0.121 |
| SE-75 | -1.436E-02 | | 9.457E-02 | 1.459E-01 | 1.964E-02 | -0.098 |
| BR-77 | 1.701E+01 | | 3.658E+01 | 5.619E+01 | 5.655E+00 | 0.303 |
| SR-82 | -9.651E-01 | | 8.062E-01 | 1.160E+00 | 1.272E-01 | -0.832 |
| RB-83 | 5.982E-02 | | 1.400E-01 | 2.147E-01 | 2.161E-02 | 0.279 |
| KR-85 | 3.503E+01 | | 1.440E+01 | 2.175E+01 | 2.182E+00 | 1.611 |
| SR-85 | 1.833E-01 | | 7.536E-02 | 1.138E-01 | 1.142E-02 | 1.611 |
| RB-86 | 3.531E-01 | | 1.006E+00 | 1.677E+00 | 1.582E-01 | 0.211 |
| Y-88 | 8.519E-02 | | 4.701E-02 | 8.463E-02 | 6.843E-03 | 1.007 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| ZR-88 | -4.831E-03 | | 5.852E-02 | 9.599E-02 | 8.938E-03 | -0.050 |
| Y-91 | -2.273E+01 | | 2.059E+01 | 3.156E+01 | 2.595E+00 | -0.720 |
| NB-94 | 1.718E-02 | | 6.133E-02 | 1.011E-01 | 1.083E-02 | 0.170 |
| NB-95M | 8.957E-02 | | 2.919E-01 | 4.178E-01 | 5.523E-02 | 0.214 |
| ZR-95 | 1.045E-01 | | 1.351E-01 | 2.153E-01 | 2.499E-02 | 0.485 |
| NB-97 | 7.468E+00 | | 8.504E-01 | Half-Life | too short | |
| ZR-97 | 5.980E+01 | | 1.242E+01 | Half-Life | too short | |
| MO-99 | 1.624E+02 | | 5.359E+01 | 7.522E+01 | 1.245E+01 | 2.159 |
| TC-99M | -4.726E+12 | | 1.342E+13 | Half-Life | too short | |
| RH-101 | 6.958E-03 | | 1.148E-01 | 1.205E-01 | 1.314E-02 | 0.058 |
| RH-102 | 6.773E-02 | | 5.697E-02 | 9.511E-02 | 9.353E-03 | 0.712 |
| RU-103 | 1.142E-02 | | 7.755E-02 | 1.255E-01 | 1.883E-02 | 0.091 |
| RH-106 | 9.987E-03 | | 5.316E-01 | 8.786E-01 | 1.283E-01 | 0.011 |
| RU-106 | 9.987E-03 | | 5.316E-01 | 8.786E-01 | 9.177E-02 | 0.011 |
| AG-108M | -8.515E-03 | | 5.985E-02 | 9.707E-02 | 9.609E-03 | -0.088 |
| CD-109 | -3.022E+01 | | 6.442E+00 | 6.028E+00 | 5.721E-01 | -5.012 |
| AG-110M | 3.057E-01 | | 8.555E-02 | 1.315E-01 | 1.414E-02 | 2.324 |
| IN-111 | 2.805E+00 | | 4.005E+00 | 5.773E+00 | 7.325E-01 | 0.486 |
| IN-113M | -6.584E-02 | | 8.524E-02 | 1.365E-01 | 1.304E-02 | -0.482 |
| SN-113 | -6.584E-02 | | 8.524E-02 | 1.365E-01 | 1.304E-02 | -0.482 |
| IN-114M | 1.945E-02 | | 6.605E-01 | 6.922E-01 | 7.359E-02 | 0.028 |
| CD-115 | 1.705E+01 | | 3.616E+01 | 6.144E+01 | 6.205E+00 | 0.277 |
| SN-117M | -4.957E-02 | | 1.979E-01 | 2.901E-01 | 2.752E-02 | -0.171 |
| SB-122 | -6.432E-01 | | 6.971E+00 | 9.958E+00 | 1.021E+00 | -0.065 |
| I-123 | -5.392E+01 | | 1.079E+02 | Half-Life | too short | |
| TE-123M | -2.357E-02 | | 9.433E-02 | 1.382E-01 | 1.320E-02 | -0.170 |
| I-124 | 8.474E-01 | | 1.730E+00 | 2.526E+00 | 2.623E-01 | 0.336 |
| SB-124 | 6.419E-02 | | 9.495E-02 | 1.683E-01 | 1.497E-02 | 0.381 |
| SB-125 | -4.937E-02 | | 1.688E-01 | 2.727E-01 | 2.646E-02 | -0.181 |
| I-126 | 6.404E-02 | | 4.067E-01 | 5.775E-01 | 6.102E-02 | 0.111 |
| SB-126 | -2.771E-01 | | 3.149E-01 | 4.126E-01 | 4.449E-02 | -0.672 |
| SN-126 | -3.621E+00 | | 5.907E-01 | 5.756E-01 | 5.435E-02 | -6.291 |
| SB-127 | -4.429E+00 | | 3.366E+00 | 5.118E+00 | 6.908E-01 | -0.865 |
| XE-127 | 6.590E-01 | + | 1.670E-01 | 2.351E-01 | 2.606E-02 | 2.803 |
| I-131 | -1.430E-01 | | 2.507E-01 | 4.070E-01 | 4.514E-02 | -0.351 |
| TE-132 | 1.662E+00 | | 2.229E+00 | 3.653E+00 | 6.628E-01 | 0.455 |
| BA-133 | 3.695E-02 | | 9.189E-02 | 1.342E-01 | 2.005E-02 | 0.275 |
| I-133 | -2.001E-02 | | 2.559E-02 | Half-Life | too short | |
| CS-134 | 1.035E-01 | | 8.474E-02 | 1.422E-01 | 1.574E-02 | 0.728 |
| CS-135 | 7.344E-02 | | 3.231E-01 | 5.215E-01 | 7.543E-02 | 0.141 |
| I-135 | -5.185E+11 | | 3.814E+11 | Half-Life | too short | |
| CS-136 | -2.924E-02 | | 1.537E-01 | 2.429E-01 | 2.457E-02 | -0.120 |
| CE-139 | 2.872E-01 | | 1.045E-01 | 1.556E-01 | 1.526E-02 | 1.845 |
| BA-140 | 4.483E-02 | | 5.167E-01 | 8.667E-01 | 2.909E-01 | 0.052 |
| LA-140 | -1.852E-01 | | 1.296E-01 | 1.870E-01 | 1.640E-02 | -0.990 |
| CE-141 | 5.525E+00 | | 5.708E-01 | 5.065E-01 | 4.611E-02 | 10.908 |
| CE-143 | 1.848E-03 | | 4.612E-04 | Half-Life | too short | |
| CE-144 | 3.187E-01 | | 7.152E-01 | 1.075E+00 | 1.669E-01 | 0.296 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| PM-144 | -2.933E-02 | | 6.274E-02 | 1.006E-01 | 1.076E-02 | -0.292 |
| PR-144 | -1.989E+00 | | 4.256E+00 | 6.822E+00 | 7.294E-01 | -0.292 |
| PM-146 | 4.092E-02 | | 8.549E-02 | 1.407E-01 | 1.635E-02 | 0.291 |
| ND-147 | -5.980E-01 | | 1.154E+00 | 1.892E+00 | 3.001E-01 | -0.316 |
| PM-149 | -2.358E+02 | | 3.414E+02 | 5.296E+02 | 1.002E+02 | -0.445 |
| EU-152 | 3.428E-03 | | 2.061E-01 | 2.979E-01 | 3.581E-02 | 0.012 |
| GD-153 | 6.832E+00 | + | 7.500E-01 | 6.577E-01 | 5.784E-02 | 10.388 |
| EU-154 | -6.313E-02 | | 1.438E-01 | 2.304E-01 | 2.604E-02 | -0.274 |
| EU-155 | 1.378E+00 | + | 4.747E-01 | 6.668E-01 | 5.724E-02 | 2.067 |
| TB-160 | 1.298E+00 | + | 4.841E-01 | 4.487E-01 | 5.018E-02 | 2.892 |
| HO-166M | -6.666E-02 | | 1.094E-01 | 1.711E-01 | 1.839E-02 | -0.390 |
| TM-171 | -3.629E+02 | | 1.157E+02 | 1.589E+02 | 1.201E+01 | -2.283 |
| LU-176 | 1.823E-02 | | 4.621E-02 | 7.826E-02 | 1.027E-02 | 0.233 |
| LU-177 | 2.547E+00 | | 3.263E+00 | 4.770E+00 | 5.384E-01 | 0.534 |
| LU-177M | -1.053E-01 | | 3.277E-01 | 5.308E-01 | 5.020E-02 | -0.198 |
| HF-181 | -3.797E-02 | | 8.290E-02 | 1.315E-01 | 1.298E-02 | -0.289 |
| TA-182 | 3.810E-02 | | 2.239E-01 | 3.759E-01 | 3.126E-02 | 0.101 |
| RE-184 | -3.792E-01 | | 5.640E-01 | 7.726E-01 | 1.002E-01 | -0.491 |
| OS-185 | 9.895E-03 | | 7.325E-02 | 1.212E-01 | 1.273E-02 | 0.082 |
| RE-188 | -2.153E-01 | | 4.998E-01 | 8.319E-01 | 7.765E-02 | -0.259 |
| W-188 | 1.178E+01 | | 1.623E+01 | 2.433E+01 | 3.323E+00 | 0.484 |
| IR-192 | 2.892E-02 | | 6.563E-02 | 1.110E-01 | 1.419E-02 | 0.260 |
| AU-195 | 1.993E+01 | + | 2.188E+00 | 1.890E+00 | 1.648E-01 | 10.545 |
| TL-200 | 2.036E-03 | | 1.432E-03 | Half-Life | too short | |
| TL-201 | 3.035E+00 | | 3.521E+01 | 5.171E+01 | 5.097E+00 | 0.059 |
| TL-202 | 1.140E-02 | | 1.435E-01 | 2.342E-01 | 2.255E-02 | 0.049 |
| HG-203 | 6.025E-02 | | 8.678E-02 | 1.407E-01 | 1.991E-02 | 0.428 |
| BI-207 | 9.943E-03 | | 6.607E-02 | 1.087E-01 | 1.044E-02 | 0.091 |
| TL-207 | -7.475E-01 | | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| PO-209 | 4.037E+00 | | 1.057E+01 | 1.785E+01 | 2.000E+00 | 0.226 |
| BI-210 | -1.333E+01 | | 1.225E+01 | 2.025E+01 | 1.881E+00 | -0.658 |
| PB-210 | -1.333E+01 | | 1.225E+01 | 2.025E+01 | 1.881E+00 | -0.658 |
| PO-210 | -1.333E+01 | | 1.224E+01 | 2.025E+01 | 1.703E+00 | -0.658 |
| PB-211 | -1.502E+00 | | 1.966E+00 | 2.752E+00 | 1.728E+00 | -0.546 |
| PO-215 | -7.475E-01 | | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| RN-219 | 2.734E-01 | | 7.575E-01 | 1.255E+00 | 1.942E-01 | 0.218 |
| RN-220 | -6.843E+01 | | 4.655E+01 | 7.280E+01 | 7.421E+00 | -0.940 |
| RA-223 | -7.475E-01 | | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| AC-227 | 3.761E+00 | | 1.186E+00 | 1.528E+00 | 2.788E-01 | 2.462 |
| TH-227 | 3.761E+00 | | 1.239E+00 | 1.528E+00 | 3.144E-01 | 2.462 |
| TH-229 | 4.527E+00 | + | 1.565E+00 | 2.156E+00 | 2.318E-01 | 2.099 |
| PA-231 | -4.951E-01 | | 3.056E+00 | 4.858E+00 | 9.071E-01 | -0.102 |
| TH-231 | -7.475E-01 | | 1.248E+00 | 2.038E+00 | 4.050E-01 | -0.367 |
| PA-233 | -2.934E-02 | | 1.189E-01 | 1.979E-01 | 2.592E-02 | -0.148 |
| PA-234 | 1.804E+00 | + | 7.524E-01 | 9.653E-01 | 1.919E-01 | 1.869 |
| NP-236 | 3.396E-02 | | 2.602E-01 | 3.840E-01 | 3.671E-02 | 0.088 |
| NP-237 | -3.014E+00 | | 1.378E+00 | 1.687E+00 | 3.821E-01 | -1.786 |
| NP-239 | 9.670E-01 | | 9.140E-01 | 1.039E+00 | 8.591E-02 | 0.930 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 8.246E-01 | | 4.975E-01 | 5.762E-01 | 4.912E-02 | 1.431 |
| AM-246 | 1.028E-01 | | 1.655E-01 | 2.806E-01 | 2.640E-02 | 0.366 |
| CM-247 | 3.627E-02 | | 6.795E-02 | 1.132E-01 | 1.062E-02 | 0.320 |
| CF-249 | 5.954E-02 | | 7.478E-02 | 1.257E-01 | 1.194E-02 | 0.474 |
| CF-251 | -1.812E-01 | | 3.760E-01 | 6.191E-01 | 6.289E-02 | -0.293 |

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]G246341002          *
* Acquisition date   : 18-FEB-2010 12:57:15 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 02:00:08.97             Half life ratio : 8.000      *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G246341002             Analyst initials: MXR1         *
* Batch Number       : 950786                 Sample Quantity : 9.8670E+01 GRAM *
* Recovery           : 1.00000                Carrier Weight  : 0.00000      *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME  : 2-DEC-2009 16:47:28 MS Isotope          :             *
* MSD DPM            : 0.000                    MSD Isotope    :             *
* LCS DPM            : 0.000                    LCS Isotope     :             *
* LCSD DPM           : 0.000                    LCSD Isotope    :             *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.658E+01 | 2.857E+00 | 3.548E-01 | 1.458E+00 |
| CO-57 | 3.169E-01 | 1.108E-01 | 6.889E-02 | 5.652E-02 |
| AS-73 | 2.007E+01 | 6.545E+00 | 2.611E+00 | 3.339E+00 |
| RB-84 | 6.646E-01 | 2.430E-01 | 8.924E-02 | 1.240E-01 |
| NB-95 | 2.714E+00 | 3.431E-01 | 5.965E-02 | 1.750E-01 |
| TE-125M | 3.076E+02 | 6.315E+01 | 2.620E+01 | 3.222E+01 |
| BA-137M | 2.401E+00 | 2.811E-01 | 5.117E-02 | 1.434E-01 |
| CS-137 | 2.538E+00 | 2.975E-01 | 5.409E-02 | 1.518E-01 |
| W-181 | 1.660E+01 | 1.961E+00 | 1.301E+00 | 1.000E+00 |
| RE-183 | 7.341E+00 | 8.919E-01 | 2.671E-01 | 4.551E-01 |
| TL-208 | 5.163E-01 | 1.087E-01 | 5.213E-02 | 5.547E-02 |
| BI-211 | 3.963E+00 | 8.355E-01 | 3.074E-01 | 4.263E-01 |
| BI-212 | 1.162E+00 | 6.723E-01 | 3.976E-01 | 3.430E-01 |
| PB-212 | 1.714E+00 | 2.745E-01 | 9.318E-02 | 1.401E-01 |
| PO-212 | 1.714E+00 | 2.745E-01 | 9.318E-02 | 1.401E-01 |
| BI-214 | 1.381E+00 | 2.599E-01 | 9.198E-02 | 1.326E-01 |
| PB-214 | 1.379E+00 | 2.991E-01 | 1.071E-01 | 1.526E-01 |
| PO-214 | 1.379E+00 | 2.991E-01 | 1.071E-01 | 1.526E-01 |
| PO-216 | 1.714E+00 | 2.745E-01 | 9.318E-02 | 1.401E-01 |
| PO-218 | 1.379E+00 | 2.991E-01 | 1.071E-01 | 1.526E-01 |
| RA-224 | 5.092E+00 | 2.289E+00 | 1.059E+00 | 1.168E+00 |
| RA-226 | 1.381E+00 | 2.599E-01 | 9.198E-02 | 1.326E-01 |
| AC-228 | 1.800E+00 | 4.092E-01 | 1.405E-01 | 2.088E-01 |
| RA-228 | 1.800E+00 | 4.092E-01 | 1.405E-01 | 2.088E-01 |
| TH-228 | 1.743E+00 | 2.792E-01 | 9.477E-02 | 1.425E-01 |
| TH-230 | 1.381E+00 | 2.599E-01 | 9.197E-02 | 1.326E-01 |
| U-231 | 9.618E+01 | 1.971E+01 | 4.186E+00 | 1.006E+01 |
| TH-232 | 1.800E+00 | 4.092E-01 | 1.405E-01 | 2.088E-01 |
| PA-234M | 6.952E+02 | 8.188E+01 | 5.218E+00 | 4.178E+01 |
| TH-234 | 4.764E+02 | 8.168E+01 | 3.573E+00 | 4.167E+01 |
| U-234 | 1.381E+00 | 2.599E-01 | 9.197E-02 | 1.326E-01 |
| U-235 | 2.807E+01 | 4.997E+00 | 5.147E-01 | 2.549E+00 |
| U-238 | 4.764E+02 | 8.168E+01 | 3.573E+00 | 4.167E+01 |
| AM-241 | 4.754E+00 | 1.499E+00 | 4.471E-01 | 7.646E-01 |

| | | | | |
|---------|-----------|-----------|-----------|-----------|
| AM-243 | 5.023E-01 | 2.685E-01 | 1.747E-01 | 1.370E-01 |
| ANH-511 | 1.897E-01 | 1.288E-01 | 3.995E-02 | 6.572E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU | |
|---------|-------------------------------------|---------------|--------------------|-----------|------------|
| BE-7 | 2.060E-01 | 6.287E-01 | 5.203E-01 | 3.208E-01 | NOT IDENT. |
| NA-22 | -2.197E-02 | 5.052E-02 | 4.102E-02 | 2.578E-02 | NOT IDENT. |
| NA-24 | -5.468E+06 | 7.874E+06 | 0.000E+00 | 4.017E+06 | SHORT HLIF |
| AL-26 | 3.815E-02 | 3.501E-02 | 3.268E-02 | 1.786E-02 | NOT IDENT. |
| TI-44 | 4.093E-01 | 1.372E-01 | 1.146E-01 | 7.002E-02 | FAIL ABUN |
| SC-46 | 3.367E-02 | 6.468E-02 | 4.820E-02 | 3.300E-02 | FAIL ABUN |
| V-48 | 1.189E-01 | 1.051E-01 | 9.219E-02 | 5.361E-02 | NOT IDENT. |
| CR-51 | 1.110E-01 | 7.127E-01 | 6.073E-01 | 3.636E-01 | NOT IDENT. |
| MN-52 | 5.968E-01 | 3.987E-01 | 3.649E-01 | 2.034E-01 | NOT IDENT. |
| MN-54 | -3.870E-02 | 5.630E-02 | 4.603E-02 | 2.872E-02 | NOT IDENT. |
| CO-56 | -1.545E-02 | 6.137E-02 | 5.119E-02 | 3.131E-02 | FAIL ABUN |
| CO-58 | 4.618E-03 | 6.341E-02 | 5.389E-02 | 3.235E-02 | NOT IDENT. |
| FE-59 | -1.523E-02 | 1.130E-01 | 9.210E-02 | 5.767E-02 | FAIL ABUN |
| CO-60 | -2.489E-02 | 4.426E-02 | 3.514E-02 | 2.258E-02 | NOT IDENT. |
| ZN-65 | 8.241E-03 | 1.251E-01 | 8.784E-02 | 6.385E-02 | NOT IDENT. |
| GE-68 | 9.505E-01 | 1.443E+00 | 1.240E+00 | 7.364E-01 | NOT IDENT. |
| AS-74 | -3.363E-02 | 1.653E-01 | 1.378E-01 | 8.434E-02 | NOT IDENT. |
| SE-75 | -1.436E-02 | 9.267E-02 | 7.259E-02 | 4.728E-02 | FAIL ABUN |
| BR-77 | 1.701E+01 | 3.585E+01 | 2.791E+01 | 1.829E+01 | FAIL ABUN |
| SR-82 | -9.651E-01 | 7.901E-01 | 5.759E-01 | 4.031E-01 | NOT IDENT. |
| RB-83 | 5.982E-02 | 1.372E-01 | 1.067E-01 | 7.000E-02 | NOT IDENT. |
| KR-85 | 3.503E+01 | 1.412E+01 | 1.080E+01 | 7.202E+00 | NOT IDENT. |
| SR-85 | 1.833E-01 | 7.385E-02 | 5.653E-02 | 3.768E-02 | NOT IDENT. |
| RB-86 | 3.531E-01 | 9.861E-01 | 8.317E-01 | 5.031E-01 | NOT IDENT. |
| Y-88 | 8.519E-02 | 4.607E-02 | 4.194E-02 | 2.350E-02 | NOT IDENT. |
| ZR-88 | -4.831E-03 | 5.735E-02 | 4.771E-02 | 2.926E-02 | NOT IDENT. |
| Y-91 | -2.273E+01 | 2.018E+01 | 1.565E+01 | 1.029E+01 | NOT IDENT. |
| NB-94 | 1.718E-02 | 6.010E-02 | 5.020E-02 | 3.066E-02 | NOT IDENT. |
| NB-95M | 8.957E-02 | 2.860E-01 | 2.079E-01 | 1.459E-01 | NOT IDENT. |
| ZR-95 | 1.045E-01 | 1.324E-01 | 1.069E-01 | 6.754E-02 | NOT IDENT. |
| NB-97 | 7.468E+06 | 1.667E+06 | 0.000E+00 | 8.504E+05 | SHORT HLIF |
| ZR-97 | 5.980E+07 | 2.435E+07 | 0.000E+00 | 1.242E+07 | SHORT HLIF |
| MO-99 | 1.624E+02 | 5.252E+01 | 3.734E+01 | 2.680E+01 | NOT IDENT. |
| TC-99M | -4.726E+18 | 2.630E+19 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 6.958E-03 | 1.126E-01 | 5.996E-02 | 5.742E-02 | NOT IDENT. |
| RH-102 | 6.773E-02 | 5.583E-02 | 4.725E-02 | 2.848E-02 | FAIL ABUN |
| RU-103 | 1.142E-02 | 7.600E-02 | 6.234E-02 | 3.878E-02 | FAIL ABUN |
| RH-106 | 9.987E-03 | 5.210E-01 | 4.363E-01 | 2.658E-01 | FAIL ABUN |
| RU-106 | 9.987E-03 | 5.210E-01 | 4.363E-01 | 2.658E-01 | FAIL ABUN |
| AG-108M | -8.515E-03 | 5.865E-02 | 4.824E-02 | 2.992E-02 | NOT IDENT. |
| CD-109 | -3.022E+01 | 6.313E+00 | 3.005E+00 | 3.221E+00 | NOT IDENT. |
| AG-110M | 3.057E-01 | 8.384E-02 | 6.531E-02 | 4.277E-02 | NOT IDENT. |
| IN-111 | 2.805E+00 | 3.925E+00 | 2.872E+00 | 2.002E+00 | NOT IDENT. |
| IN-113M | -6.584E-02 | 8.354E-02 | 6.786E-02 | 4.262E-02 | NOT IDENT. |
| SN-113 | -6.584E-02 | 8.354E-02 | 6.786E-02 | 4.262E-02 | NOT IDENT. |
| IN-114M | 1.945E-02 | 6.473E-01 | 3.445E-01 | 3.303E-01 | NOT IDENT. |
| CD-115 | 1.705E+01 | 3.544E+01 | 3.052E+01 | 1.808E+01 | NOT IDENT. |
| SN-117M | -4.957E-02 | 1.940E-01 | 1.445E-01 | 9.897E-02 | NOT IDENT. |
| SB-122 | -6.432E-01 | 6.831E+00 | 4.946E+00 | 3.485E+00 | NOT IDENT. |
| I-123 | -5.392E+07 | 2.115E+08 | 0.000E+00 | 1.079E+08 | SHORT HLIF |
| TE-123M | -2.357E-02 | 9.244E-02 | 6.883E-02 | 4.716E-02 | NOT IDENT. |
| I-124 | 8.474E-01 | 1.695E+00 | 1.254E+00 | 8.648E-01 | NOT IDENT. |
| SB-124 | 6.419E-02 | 9.305E-02 | 8.342E-02 | 4.748E-02 | FAIL ABUN |
| SB-125 | -4.937E-02 | 1.654E-01 | 1.355E-01 | 8.440E-02 | NOT IDENT. |
| I-126 | 6.404E-02 | 3.986E-01 | 2.867E-01 | 2.034E-01 | NOT IDENT. |
| SB-126 | -2.771E-01 | 3.086E-01 | 2.048E-01 | 1.575E-01 | FAIL ABUN |
| SN-126 | -3.621E+00 | 5.789E-01 | 2.869E-01 | 2.953E-01 | FAIL ABUN |
| SB-127 | -4.429E+00 | 3.299E+00 | 2.541E+00 | 1.683E+00 | FAIL ABUN |
| XE-127 | 6.590E-01 | 1.636E-01 | 1.170E-01 | 8.349E-02 | FAIL ABUN |
| I-131 | -1.430E-01 | 2.457E-01 | 2.023E-01 | 1.254E-01 | NOT IDENT. |
| TE-132 | 1.662E+00 | 2.184E+00 | 1.818E+00 | 1.114E+00 | FAIL ABUN |
| BA-133 | 3.695E-02 | 9.005E-02 | 6.672E-02 | 4.594E-02 | FAIL ABUN |
| I-133 | -2.001E+04 | 5.015E+04 | 0.000E+00 | 2.559E+04 | SHORT HLIF |
| CS-134 | 1.035E-01 | 8.305E-02 | 7.056E-02 | 4.237E-02 | FAIL ABUN |
| CS-135 | 7.344E-02 | 3.167E-01 | 2.594E-01 | 1.616E-01 | NOT IDENT. |
| I-135 | -5.185E+17 | 7.475E+17 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.924E-02 | 1.507E-01 | 1.205E-01 | 7.687E-02 | FAIL ABUN |
| CE-139 | 2.872E-01 | 1.024E-01 | 7.749E-02 | 5.225E-02 | NOT IDENT. |
| BA-140 | 4.483E-02 | 5.064E-01 | 4.305E-01 | 2.584E-01 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| LA-140 | -1.852E-01 | 1.270E-01 | 9.271E-02 | 6.478E-02 | NOT IDENT. |
| CE-141 | 5.525E+00 | 5.594E-01 | 2.523E-01 | 2.854E-01 | NOT IDENT. |
| CE-143 | 1.848E+03 | 9.039E+02 | 0.000E+00 | 4.612E+02 | SHORT HLIF |
| CE-144 | 3.187E-01 | 7.009E-01 | 5.356E-01 | 3.576E-01 | NOT IDENT. |
| PM-144 | -2.933E-02 | 6.149E-02 | 4.993E-02 | 3.137E-02 | NOT IDENT. |
| PR-144 | -1.989E+00 | 4.171E+00 | 3.387E+00 | 2.128E+00 | NOT IDENT. |
| PM-146 | 4.092E-02 | 8.378E-02 | 6.991E-02 | 4.274E-02 | NOT IDENT. |
| ND-147 | -5.980E-01 | 1.131E+00 | 9.400E-01 | 5.768E-01 | FAIL ABUN |
| PM-149 | -2.358E+02 | 3.345E+02 | 2.634E+02 | 1.707E+02 | NOT IDENT. |
| EU-152 | 3.428E-03 | 2.020E-01 | 1.481E-01 | 1.030E-01 | FAIL ABUN |
| GD-153 | 6.832E+00 | 7.350E-01 | 3.278E-01 | 3.750E-01 | FAIL ABUN |
| EU-154 | -6.313E-02 | 1.409E-01 | 1.143E-01 | 7.191E-02 | NOT IDENT. |
| EU-155 | 1.378E+00 | 4.652E-01 | 3.323E-01 | 2.374E-01 | FAIL ABUN |
| TB-160 | 1.298E+00 | 4.744E-01 | 2.227E-01 | 2.420E-01 | FAIL ABUN |
| HO-166M | -6.666E-02 | 1.072E-01 | 8.492E-02 | 5.468E-02 | FAIL ABUN |
| TM-171 | -3.629E+02 | 1.134E+02 | 7.927E+01 | 5.785E+01 | FAIL ABUN |
| LU-176 | 1.823E-02 | 4.528E-02 | 3.891E-02 | 2.310E-02 | FAIL ABUN |
| LU-177 | 2.547E+00 | 3.197E+00 | 2.374E+00 | 1.631E+00 | FAIL ABUN |
| LU-177M | -1.053E-01 | 3.212E-01 | 2.638E-01 | 1.639E-01 | FAIL ABUN |
| HF-181 | -3.797E-02 | 8.125E-02 | 6.534E-02 | 4.145E-02 | FAIL ABUN |
| TA-182 | 3.810E-02 | 2.194E-01 | 1.864E-01 | 1.119E-01 | FAIL ABUN |
| RE-184 | -3.792E-01 | 5.527E-01 | 3.843E-01 | 2.820E-01 | FAIL ABUN |
| OS-185 | 9.895E-03 | 7.178E-02 | 6.016E-02 | 3.662E-02 | FAIL ABUN |
| RE-188 | -2.153E-01 | 4.898E-01 | 4.142E-01 | 2.499E-01 | NOT IDENT. |
| W-188 | 1.178E+01 | 1.590E+01 | 1.210E+01 | 8.114E+00 | FAIL ABUN |
| IR-192 | 2.892E-02 | 6.432E-02 | 5.520E-02 | 3.281E-02 | FAIL ABUN |
| AU-195 | 1.993E+01 | 2.144E+00 | 9.419E-01 | 1.094E+00 | FAIL ABUN |
| TL-200 | 2.036E+03 | 2.807E+03 | 0.000E+00 | 1.432E+03 | SHORT HLIF |
| TL-201 | 3.035E+00 | 3.450E+01 | 2.575E+01 | 1.760E+01 | NOT IDENT. |
| TL-202 | 1.140E-02 | 1.406E-01 | 1.164E-01 | 7.175E-02 | NOT IDENT. |
| HG-203 | 6.025E-02 | 8.504E-02 | 6.997E-02 | 4.339E-02 | FAIL ABUN |
| BI-207 | 9.943E-03 | 6.475E-02 | 5.393E-02 | 3.304E-02 | FAIL ABUN |
| TL-207 | -7.475E-01 | 1.223E+00 | 1.013E+00 | 6.238E-01 | FAIL ABUN |
| PO-209 | 4.037E+00 | 1.036E+01 | 8.860E+00 | 5.286E+00 | NOT IDENT. |
| BI-210 | -1.333E+01 | 1.201E+01 | 1.011E+01 | 6.126E+00 | NOT IDENT. |
| PB-210 | -1.333E+01 | 1.201E+01 | 1.011E+01 | 6.126E+00 | NOT IDENT. |
| PO-210 | -1.333E+01 | 1.199E+01 | 1.011E+01 | 6.120E+00 | NOT IDENT. |
| PB-211 | -1.502E+00 | 1.927E+00 | 1.368E+00 | 9.830E-01 | NOT IDENT. |
| PO-215 | -7.475E-01 | 1.223E+00 | 1.013E+00 | 6.238E-01 | FAIL ABUN |
| RN-219 | 2.734E-01 | 7.424E-01 | 6.239E-01 | 3.788E-01 | NOT IDENT. |
| RN-220 | -6.843E+01 | 4.562E+01 | 3.616E+01 | 2.327E+01 | NOT IDENT. |
| RA-223 | -7.475E-01 | 1.223E+00 | 1.013E+00 | 6.238E-01 | FAIL ABUN |
| AC-227 | 3.761E+00 | 1.162E+00 | 7.599E-01 | 5.929E-01 | NOT IDENT. |
| TH-227 | 3.761E+00 | 1.214E+00 | 7.599E-01 | 6.194E-01 | FAIL ABUN |
| TH-229 | 4.527E+00 | 1.533E+00 | 1.073E+00 | 7.824E-01 | FAIL ABUN |
| PA-231 | -4.951E-01 | 2.995E+00 | 2.416E+00 | 1.528E+00 | NOT IDENT. |
| TH-231 | -7.475E-01 | 1.223E+00 | 1.013E+00 | 6.238E-01 | FAIL ABUN |
| PA-233 | -2.934E-02 | 1.165E-01 | 9.839E-02 | 5.943E-02 | FAIL ABUN |
| PA-234 | 1.804E+00 | 7.373E-01 | 4.790E-01 | 3.762E-01 | FAIL ABUN |
| NP-236 | 3.396E-02 | 2.550E-01 | 1.912E-01 | 1.301E-01 | FAIL ABUN |
| NP-237 | -3.014E+00 | 1.350E+00 | 8.412E-01 | 6.889E-01 | FAIL ABUN |
| NP-239 | 9.670E-01 | 8.957E-01 | 5.179E-01 | 4.570E-01 | FAIL ABUN |
| CM-243 | 8.246E-01 | 4.875E-01 | 2.871E-01 | 2.487E-01 | FAIL ABUN |
| AM-246 | 1.028E-01 | 1.622E-01 | 1.392E-01 | 8.277E-02 | NOT IDENT. |
| CM-247 | 3.627E-02 | 6.659E-02 | 5.626E-02 | 3.398E-02 | NOT IDENT. |
| CF-249 | 5.954E-02 | 7.328E-02 | 6.246E-02 | 3.739E-02 | NOT IDENT. |
| CF-251 | -1.812E-01 | 3.685E-01 | 3.082E-01 | 1.880E-01 | NOT IDENT. |

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*                               GEL Laboratories LLC                               *
*                               2040 SAVAGE ROAD                               *
*                               CHARLESTON ,SC 29417                           *
*                               GAMMA SPECTROSCOPY BACKGROUND REPORT             *
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| ENERGY | MDA COUNTS |
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| 46.50 | 3786.1006 |
| 46.50 | 3786.1006 |
| 46.50 | 3786.1006 |
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| 49.72 | 3719.8291 |
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| 52.97 | 4264.3662 |
| 53.15 | 4267.6895 |
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| 56.28 | 4324.5332 |
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| 57.98 | 4354.7568 |
| 59.32 | 4378.2637 |
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| 59.40 | 4379.6514 |
| 59.54 | 4382.0884 |
| 59.72 | 4385.2251 |
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| 66.72 | 5460.2090 |
| 66.83 | 5462.4141 |
| 66.91 | 5464.0259 |
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| 67.20 | 5518.4995 |
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| 67.85 | 5381.4819 |
| 68.90 | 5388.5171 |
| 68.90 | 5388.5171 |
| 69.30 | 5424.9360 |
| 69.67 | 5411.8374 |
| 70.82 | 5699.2412 |
| 70.82 | 5699.2412 |
| 70.83 | 5699.4448 |
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| 72.87 | 6024.3633 |
| 72.87 | 6024.3633 |
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| 77.11 | 6505.9971 |

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| 79.80 | 7222.2427 |
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| 80.30 | 6810.9673 |
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| 94.90 | 9777.9180 |
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| 98.44 | 3879.9114 |
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| 99.55 | 3549.8940 |
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| 122.32 | 3000.6956 |
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| 122.32 | 3000.6956 |
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| 338.28 | 616.7303 |
| 338.28 | 616.7303 |
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| 338.32 | 616.7621 |
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| 351.92 | 599.1584 |
| 351.92 | 599.1584 |
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| 391.69 | 576.8428 |
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| 445.03 | 486.4444 |
| 445.03 | 486.4444 |
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| 511.85 | 381.9652 |
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| 513.99 | 348.1014 |
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| 602.71 | 332.9520 |
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| 609.31 | 341.2628 |

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| 609.31 | 341.2628 |
| 609.31 | 341.2628 |
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| 661.65 | 353.3447 |
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| 666.33 | 342.1840 |
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| 696.49 | 383.3667 |
| 697.00 | 383.4733 |
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| 722.78 | 269.0846 |
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| 747.13 | 333.8414 |
| 751.79 | 313.0934 |
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| 778.57 | 348.0688 |
| 778.89 | 322.4539 |
| 783.80 | 340.0033 |
| 785.46 | 316.5224 |
| 792.07 | 333.9902 |

| | |
|---------|----------|
| 795.84 | 294.3892 |
| 796.30 | 287.9843 |
| 798.80 | 290.4918 |
| 801.93 | 347.1688 |
| 805.60 | 260.9482 |
| 810.29 | 245.7091 |
| 810.76 | 247.6262 |
| 815.85 | 229.5568 |
| 817.79 | 230.7010 |
| 818.51 | 239.1875 |
| 819.60 | 229.0253 |
| 826.30 | 244.7512 |
| 828.27 | 0.0000 |
| 831.60 | 242.5319 |
| 831.96 | 239.7518 |
| 834.83 | 257.9597 |
| 836.80 | 0.0000 |
| 846.75 | 230.9754 |
| 848.13 | 215.0174 |
| 856.28 | 0.0000 |
| 856.80 | 260.5590 |
| 860.37 | 194.3023 |
| 867.32 | 241.7274 |
| 867.82 | 220.7560 |
| 871.10 | 199.3054 |
| 873.19 | 187.7559 |
| 874.81 | 184.5340 |
| 875.33 | 0.0000 |
| 876.40 | 179.6286 |
| 879.36 | 189.2291 |
| 880.27 | 189.3047 |
| 880.51 | 189.3253 |
| 881.50 | 189.4077 |
| 883.24 | 185.2222 |
| 884.67 | 166.8057 |
| 889.25 | 162.0762 |
| 896.60 | 165.4982 |
| 898.02 | 183.0311 |
| 899.00 | 182.1381 |
| 903.28 | 168.1592 |
| 911.07 | 152.8960 |
| 911.07 | 152.8960 |
| 911.07 | 152.8960 |
| 919.63 | 272.1563 |
| 920.93 | 250.1793 |
| 925.00 | 154.7818 |
| 925.24 | 167.5349 |
| 926.50 | 181.3480 |
| 935.52 | 149.5640 |
| 937.48 | 158.5490 |
| 944.10 | 160.7122 |
| 946.00 | 159.1105 |
| 949.00 | 141.9910 |
| 962.29 | 123.6151 |
| 964.01 | 134.1531 |
| 966.15 | 148.2208 |
| 968.20 | 153.5784 |
| 969.11 | 153.6375 |
| 969.11 | 153.6375 |
| 969.11 | 153.6375 |
| 977.42 | 183.9294 |
| 980.50 | 124.7201 |
| 983.50 | 132.4512 |
| 989.30 | 201.1475 |
| 996.32 | 111.1921 |
| 1001.03 | 165.7074 |
| 1001.68 | 165.7503 |
| 1004.76 | 108.0196 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 123.8697 |
| 1036.00 | 122.9004 |
| 1037.82 | 139.3820 |
| 1038.57 | 133.2736 |
| 1038.76 | 0.0000 |
| 1045.16 | 106.8836 |
| 1046.59 | 116.1963 |
| 1048.07 | 121.4076 |

| | |
|---------|----------|
| 1050.47 | 134.9019 |
| 1050.47 | 134.9019 |
| 1062.04 | 106.5277 |
| 1063.62 | 122.1155 |
| 1076.63 | 103.9865 |
| 1077.35 | 97.7735 |
| 1078.86 | 95.7478 |
| 1085.78 | 112.6821 |
| 1099.22 | 121.6236 |
| 1112.02 | 96.6688 |
| 1112.84 | 103.2534 |
| 1115.52 | 127.3451 |
| 1120.29 | 110.9216 |
| 1120.29 | 110.9216 |
| 1120.29 | 110.9216 |
| 1120.29 | 110.9216 |
| 1120.51 | 123.6106 |
| 1121.28 | 123.6433 |
| 1124.00 | 0.0000 |
| 1129.67 | 116.8561 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 116.5414 |
| 1173.22 | 115.8080 |
| 1175.09 | 111.1724 |
| 1177.93 | 113.1665 |
| 1189.05 | 148.6153 |
| 1204.90 | 125.6151 |
| 1205.75 | 0.0000 |
| 1213.00 | 106.8696 |
| 1221.42 | 123.4334 |
| 1230.97 | 138.2168 |
| 1235.34 | 126.4528 |
| 1236.41 | 0.0000 |
| 1238.25 | 152.2300 |
| 1246.25 | 123.4688 |
| 1260.41 | 0.0000 |
| 1271.85 | 89.4731 |
| 1274.45 | 107.0660 |
| 1274.54 | 107.0694 |
| 1291.56 | 85.1362 |
| 1298.22 | 0.0000 |
| 1312.09 | 86.6653 |
| 1325.50 | 68.2335 |
| 1325.50 | 68.2335 |
| 1332.49 | 79.2798 |
| 1333.61 | 76.3326 |
| 1360.21 | 65.9537 |
| 1362.66 | 0.0000 |
| 1365.15 | 60.0458 |
| 1368.21 | 74.1242 |
| 1368.53 | 0.0000 |
| 1376.25 | 57.2314 |
| 1384.27 | 100.6439 |
| 1394.10 | 57.5323 |
| 1395.20 | 60.5786 |
| 1407.95 | 68.9110 |
| 1434.06 | 57.1758 |
| 1436.60 | 66.4143 |
| 1457.56 | 0.0000 |
| 1460.81 | 67.8973 |
| 1489.15 | 66.3574 |
| 1509.49 | 49.0023 |
| 1596.49 | 85.3491 |
| 1620.62 | 38.1684 |
| 1678.03 | 0.0000 |
| 1691.02 | 33.0177 |
| 1691.02 | 33.0177 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 19.5696 |
| 1764.49 | 19.5696 |
| 1764.49 | 19.5696 |
| 1764.49 | 19.5696 |
| 1770.23 | 32.0660 |
| 1771.40 | 28.5109 |
| 1791.20 | 0.0000 |
| 1808.65 | 22.9669 |

1836.01

18.0869

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G246341002

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 1.4302E+03 | ug/g |
| Total Uranium Counting Unc. | 2.4302E+02 | ug/g |
| Total Uranium Tpu | 1.2399E-04 | ug/g |
| Total Uranium Mda | 1.0631E+01 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 950786                          SAMPLE ID   : G246341002
*  ANALYST       : MXR1                             DETECTOR    : GAM22
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 18-FEB-2010 12:57:15.69          SAMPLE ALQT  : 98.670 GRAM
*
*****

```

```

GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.043E+02
GROSS GAMMA ERROR (pCi/GRAM )   : 6.147E+00
GROSS GAMMA MDA (pCi/GRAM )     : 1.586E+01
GROSS GAMMA DLC (pCi/GRAM )     : 7.869E+00

```

VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 15:52:35.82

```
*****
*                               GEL Laboratories LLC                      *
*                               2040 Savage Road                        *
*                               Charleston, SC 29414                    *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037546.CNF;1
Sample date        : 11-FEB-2010 00:00:00 Acquisition date : 18-FEB-2010 13:52:09
Sample ID          : G1202037546 Sample quantity : 1.71260E+02 GRAM
Detector name      : GAM01 Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00 Elapsed real time: 0 02:00:00.50 0.0%
Energy tolerance   : 1.50000 keV Analyst Initials : MXR1
Abundance limit    : 75.00000 Sensitivity : 5.00000
Batch ID           : 950786 Detector SN# :
Matrix Spike ID    : LCS ID : 1032-A
*****
```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|-------|----------|
| 1 | 0 | 63.85* | 34 | 158 | 2.08 | 128.44 | 122 | 14 | 4.69E-03 | 86.7 | |
| 2 | 2 | 92.92* | 35 | 77 | 1.34 | 186.53 | 180 | 14 | 4.81E-03 | 66.5 | 1.91E+00 |
| 3 | 0 | 239.03* | 18 | 55 | 1.42 | 478.60 | 474 | 9 | 2.56E-03 | 90.6 | |
| 4 | 0 | 511.29* | 24 | 39 | 2.24 | 1022.78 | 1015 | 17 | 3.39E-03 | 83.9 | |
| 5 | 0 | 1460.86* | 1 | 5 | 1.35 | 2920.61 | 2915 | 10 | 1.24E-04 | 697.7 | |

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

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037546.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 11-FEB-2010 00:00:00 Acquisition date : 18-FEB-2010 13:52:09
Sample ID         : G1202037546 Sample quantity : 171.26 GRAM
Sample type       : SOLID Sample geometry :
Detector name     : GAMMA1 Detector geometry: CAN
Elapsed live time: 0 02:00:00.00 Elapsed real time: 0 02:00:00.50 0.0%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type   : Empirical Efficiencies at : Peak Energy
Abundance limit   : 75.00 WTM error limit : 3.00

```

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 | * | 1.934E-02 | 2.699E-01 | 2.641E-01 | 2.348E-02 | 0.073 |
| TH-234 | + | 63.29 | * | 6.827E-01 | 1.190E+00 | 8.429E-01 | 1.481E-01 | 0.810 |
| | + | 92.38 | * | 2.548E-01 | 3.422E-01 | 3.068E-01 | 5.625E-02 | 0.830 |
| U-238 | + | 63.29 | * | 6.827E-01 | 1.190E+00 | 8.429E-01 | 1.481E-01 | 0.810 |
| | + | 92.38 | * | 2.548E-01 | 3.398E-01 | 3.068E-01 | 2.802E-02 | 0.830 |
| ANH-511 | + | 511.00 | * | 2.236E-02 | 3.758E-02 | 2.252E-02 | 1.909E-03 | 0.993 |

---- 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 | * | 1.058E-01 | 1.507E-01 | 2.631E-01 | 2.393E-02 | 0.402 |
| NA-22 | | 1274.54 | * | -1.237E-02 | 1.671E-02 | 2.343E-02 | 1.967E-03 | -0.528 |
| NA-24 | | 1368.53 | * | 9.748E-07 | 1.671E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | * | -4.071E-01 | 7.281E-01 | 1.014E+00 | 8.470E-02 | -0.401 |
| | | 1808.65 | * | 1.929E-03 | 2.132E-02 | 3.551E-02 | 2.942E-03 | 0.054 |
| TI-44 | | 67.85 | * | -7.352E-03 | 1.996E-02 | 2.755E-02 | 2.184E-03 | -0.267 |
| | | 78.38 | * | 3.086E-03 | 1.476E-02 | 2.413E-02 | 2.071E-03 | 0.128 |
| SC-46 | | 889.25 | * | -1.103E-03 | 1.681E-02 | 2.713E-02 | 2.453E-03 | -0.041 |
| | | 1120.51 | * | 4.871E-03 | 2.446E-02 | 4.105E-02 | 3.449E-03 | 0.119 |
| V-48 | | 944.10 | * | 2.003E-01 | 3.317E-01 | 5.941E-01 | 5.351E-02 | 0.337 |
| | | 983.50 | * | 7.200E-04 | 2.120E-02 | 3.468E-02 | 3.096E-03 | 0.021 |
| | | 1312.09 | * | 1.115E-03 | 2.491E-02 | 4.192E-02 | 3.554E-03 | 0.027 |
| CR-51 | | 320.08 | * | 2.153E-02 | 1.510E-01 | 2.510E-01 | 2.361E-02 | 0.086 |
| MN-52 | | 744.21 | * | -4.525E-03 | 4.530E-02 | 7.371E-02 | 6.323E-03 | -0.061 |
| | | 848.13 | * | -7.881E-01 | 1.196E+00 | 1.700E+00 | 1.520E-01 | -0.463 |
| | | 935.52 | * | 6.836E-03 | 4.726E-02 | 7.903E-02 | 7.128E-03 | 0.087 |
| | | 1246.25 | * | -1.010E+00 | 1.222E+00 | 1.688E+00 | 1.404E-01 | -0.598 |
| | | 1333.61 | * | -6.639E-02 | 9.234E-01 | 1.512E+00 | 1.289E-01 | -0.044 |
| | | 1434.06 | * | -3.374E-02 | 3.993E-02 | 4.729E-02 | 4.083E-03 | -0.713 |
| MN-54 | | 834.83 | * | -2.344E-02 | 1.974E-02 | 2.478E-02 | 2.206E-03 | -0.946 |
| CO-56 | | 846.75 | * | -6.258E-04 | 1.773E-02 | 2.890E-02 | 2.582E-03 | -0.022 |
| | | 977.42 | * | -7.353E-03 | 1.383E+00 | 2.245E+00 | 2.007E-01 | -0.003 |
| | | 1037.82 | * | -5.367E-02 | 1.233E-01 | 1.786E-01 | 1.647E-02 | -0.300 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 1175.09 | | | -3.620E-01 | 7.454E-01 | 1.107E+00 | 8.967E-02 | -0.327 |
| | 1238.25 | | | 5.617E-03 | 2.982E-02 | 5.172E-02 | 4.422E-03 | 0.109 |
| | 1360.21 | | | 2.245E-01 | 4.764E-01 | 8.689E-01 | 7.440E-02 | 0.258 |
| | 1771.40 | | | 3.104E-02 | 1.667E-01 | 2.829E-01 | 2.369E-02 | 0.110 |
| CO-57 | 122.06 | * | | -3.295E-03 | 1.134E-02 | 1.752E-02 | 1.542E-03 | -0.188 |
| | 136.48 | | | 6.292E-02 | 8.571E-02 | 1.527E-01 | 1.411E-02 | 0.412 |
| CO-58 | 810.76 | * | | 1.261E-02 | 1.637E-02 | 3.038E-02 | 2.687E-03 | 0.415 |
| FE-59 | 142.65 | | | 1.604E+00 | 1.179E+00 | 2.035E+00 | 1.740E-01 | 0.788 |
| | 192.34 | | | -3.821E-01 | 4.121E-01 | 6.381E-01 | 8.618E-02 | -0.599 |
| | 1099.22 | * | | 1.753E-02 | 3.920E-02 | 6.849E-02 | 6.313E-03 | 0.256 |
| | 1291.56 | | | -2.411E-02 | 4.063E-02 | 5.657E-02 | 5.441E-03 | -0.426 |
| CO-60 | 1173.22 | | | -2.555E-03 | 1.632E-02 | 2.645E-02 | 2.141E-03 | -0.097 |
| | 1332.49 | * | | -2.084E-03 | 1.805E-02 | 2.925E-02 | 2.493E-03 | -0.071 |
| ZN-65 | 1115.52 | * | | -4.942E-02 | 4.468E-02 | 5.547E-02 | 4.681E-03 | -0.891 |
| GE-68 | 1077.35 | * | | 1.497E-01 | 6.186E-01 | 1.043E+00 | 8.981E-02 | 0.144 |
| AS-73 | 53.44 | * | | -1.154E-02 | 3.920E-01 | 6.368E-01 | 5.154E-02 | -0.018 |
| AS-74 | 595.88 | * | | -2.255E-02 | 3.409E-02 | 5.197E-02 | 4.379E-03 | -0.434 |
| | 634.78 | | | 6.085E-02 | 1.362E-01 | 2.402E-01 | 1.996E-02 | 0.253 |
| SE-75 | 66.05 | | | 1.412E+00 | 1.955E+00 | 3.045E+00 | 2.985E-01 | 0.464 |
| | 96.73 | | | -6.365E-02 | 3.495E-01 | 4.868E-01 | 6.725E-02 | -0.131 |
| | 121.11 | | | -9.265E-04 | 5.899E-02 | 9.346E-02 | 1.060E-02 | -0.010 |
| | 136.00 | | | 9.466E-03 | 1.561E-02 | 2.761E-02 | 2.390E-03 | 0.343 |
| | 198.60 | | | -6.315E-01 | 8.980E-01 | 1.374E+00 | 1.337E-01 | -0.460 |
| | 264.65 | * | | -1.795E-03 | 2.134E-02 | 3.501E-02 | 3.216E-03 | -0.051 |
| | 279.53 | | | -2.595E-02 | 5.216E-02 | 8.201E-02 | 7.749E-03 | -0.316 |
| | 303.91 | | | 2.092E-01 | 1.072E+00 | 1.791E+00 | 2.116E-01 | 0.117 |
| | 400.65 | | | -6.783E-02 | 1.218E-01 | 1.832E-01 | 1.963E-02 | -0.370 |
| BR-77 | 87.88 | | | 7.042E+00 | 8.419E+00 | 1.304E+01 | 1.232E+00 | 0.540 |
| | 200.40 | | | -5.648E+00 | 8.450E+00 | 1.339E+01 | 1.181E+00 | -0.422 |
| + | 239.00 | | | 3.714E-01 | 6.735E-01 | 9.339E-01 | 8.479E-02 | 0.398 |
| | 249.79 | | | -2.648E+00 | 3.957E+00 | 5.844E+00 | 5.329E-01 | -0.453 |
| | 281.68 | | | -3.239E+00 | 5.145E+00 | 7.866E+00 | 7.190E-01 | -0.412 |
| | 297.23 | | | -2.845E-01 | 2.864E+00 | 4.666E+00 | 4.245E-01 | -0.061 |
| | 303.76 | | | 1.640E+00 | 1.054E+01 | 1.756E+01 | 1.592E+00 | 0.093 |
| | 439.47 | | | 2.531E+00 | 8.311E+00 | 1.389E+01 | 1.151E+00 | 0.182 |
| | 484.57 | | | 4.615E+00 | 1.196E+01 | 2.024E+01 | 1.706E+00 | 0.228 |
| | 520.65 | * | | -5.219E-01 | 5.729E-01 | 7.758E-01 | 6.582E-02 | -0.673 |
| | 574.64 | | | -4.671E+00 | 1.113E+01 | 1.763E+01 | 1.493E+00 | -0.265 |
| | 578.91 | | | -2.964E+00 | 5.111E+00 | 7.976E+00 | 6.746E-01 | -0.372 |
| | 585.48 | | | 1.277E+01 | 9.144E+00 | 1.765E+01 | 1.491E+00 | 0.723 |
| | 755.35 | | | -3.683E+00 | 7.728E+00 | 1.161E+01 | 1.001E+00 | -0.317 |
| | 817.79 | | | 3.590E+00 | 7.114E+00 | 1.265E+01 | 1.120E+00 | 0.284 |
| SR-82 | 698.33 | | | -1.739E+00 | 1.432E+01 | 2.338E+01 | 1.958E+00 | -0.074 |
| | 776.49 | * | | -5.606E-02 | 1.529E-01 | 2.372E-01 | 2.065E-02 | -0.236 |
| | 1395.20 | | | 1.236E+00 | 4.515E+00 | 7.948E+00 | 6.836E-01 | 0.156 |
| RB-83 | 520.41 | * | | -3.339E-02 | 3.160E-02 | 4.125E-02 | 3.499E-03 | -0.810 |
| | 529.64 | | | -3.101E-03 | 4.707E-02 | 7.869E-02 | 6.680E-03 | -0.039 |
| | 552.65 | | | 7.779E-02 | 9.341E-02 | 1.722E-01 | 1.461E-02 | 0.452 |
| RB-84 | 881.50 | * | | 4.083E-03 | 3.092E-02 | 5.168E-02 | 4.663E-03 | 0.079 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| KR-85 | 513.99 | * | | 9.152E+00 | 5.052E+00 | 8.673E+00 | 7.354E-01 | 1.055 |
| SR-85 | 513.99 | * | | 4.335E-02 | 2.393E-02 | 4.108E-02 | 3.483E-03 | 1.055 |
| RB-86 | 1076.63 | * | | -1.096E-01 | 3.118E-01 | 4.690E-01 | 4.040E-02 | -0.234 |
| Y-88 | 898.02 | * | | -6.559E-03 | 1.826E-02 | 2.772E-02 | 2.522E-03 | -0.237 |
| | 1836.01 | * | | 9.661E-03 | 1.985E-02 | 3.668E-02 | 3.017E-03 | 0.263 |
| ZR-88 | 392.90 | * | | -3.346E-03 | 1.495E-02 | 2.361E-02 | 1.901E-03 | -0.142 |
| Y-91 | 1204.90 | * | | 6.086E-01 | 6.186E+00 | 1.058E+01 | 8.669E-01 | 0.058 |
| NB-94 | 702.63 | * | | 1.445E-02 | 1.794E-02 | 3.265E-02 | 2.741E-03 | 0.443 |
| | 871.10 | * | | -2.754E-03 | 1.823E-02 | 2.909E-02 | 2.618E-03 | -0.095 |
| NB-95 | 765.79 | * | | -2.761E-03 | 1.719E-02 | 2.761E-02 | 2.393E-03 | -0.100 |
| NB-95M | 235.69 | * | | -1.681E-02 | 5.920E-02 | 8.367E-02 | 8.582E-03 | -0.201 |
| ZR-95 | 724.18 | * | | -3.563E-02 | 4.413E-02 | 6.439E-02 | 5.955E-03 | -0.553 |
| | 756.15 | * | | -1.107E-02 | 3.040E-02 | 4.711E-02 | 4.476E-03 | -0.235 |
| NB-97 | 657.90 | * | | -9.682E-06 | 3.040E-02 | Half-Life too short | | |
| | 1024.50 | * | | 4.601E-04 | 3.040E-02 | Half-Life too short | | |
| ZR-97 | 254.15 | * | | 1.174E-05 | 3.040E-02 | Half-Life too short | | |
| | 355.39 | * | | -9.418E-04 | 3.040E-02 | Half-Life too short | | |
| | 507.63 | * | | 3.612E-04 | 3.040E-02 | Half-Life too short | | |
| | 602.52 | * | | -1.581E-03 | 3.040E-02 | Half-Life too short | | |
| | 1021.30 | * | | 2.454E-03 | 3.040E-02 | Half-Life too short | | |
| | 1147.95 | * | | -6.717E-04 | 3.040E-02 | Half-Life too short | | |
| | 1362.66 | * | | -6.439E-04 | 3.040E-02 | Half-Life too short | | |
| | 1750.46 | * | | 4.295E-04 | 3.040E-02 | Half-Life too short | | |
| MO-99 | 140.51 | * | | -2.361E+00 | 1.884E+00 | 2.719E+00 | 7.524E-01 | -0.868 |
| | 181.06 | * | | 7.027E-01 | 1.216E+00 | 2.112E+00 | 3.865E-01 | 0.333 |
| | 366.43 | * | | -2.583E+00 | 6.155E+00 | 9.499E+00 | 8.032E-01 | -0.272 |
| | 739.58 | * | | 3.930E-01 | 7.922E-01 | 1.410E+00 | 2.136E-01 | 0.279 |
| | 778.00 | * | | 8.751E-01 | 2.451E+00 | 4.265E+00 | 3.716E-01 | 0.205 |
| TC-99M | 140.51 | * | | -2.055E+01 | 2.451E+00 | Half-Life too short | | |
| RH-101 | 127.23 | * | | 4.103E-03 | 1.438E-02 | 2.331E-02 | 2.028E-03 | 0.176 |
| | 198.01 | * | | -4.852E-03 | 1.704E-02 | 2.697E-02 | 2.373E-03 | -0.180 |
| | 325.23 | * | | 2.336E-02 | 1.155E-01 | 1.927E-01 | 1.720E-02 | 0.121 |
| RH-102 | 418.52 | * | | 9.181E-02 | 1.490E-01 | 2.576E-01 | 2.111E-02 | 0.356 |
| | 475.06 | * | | 3.976E-03 | 1.543E-02 | 2.557E-02 | 2.150E-03 | 0.156 |
| | 631.29 | * | | 1.217E-02 | 2.876E-02 | 5.052E-02 | 4.204E-03 | 0.241 |
| | 697.49 | * | | -1.649E-02 | 3.951E-02 | 6.179E-02 | 5.171E-03 | -0.267 |
| | 766.84 | * | | 3.793E-02 | 4.442E-02 | 8.310E-02 | 7.204E-03 | 0.456 |
| | 1046.59 | * | | -1.599E-02 | 4.932E-02 | 7.377E-02 | 6.444E-03 | -0.217 |
| | 1112.84 | * | | 6.955E-02 | 8.826E-02 | 1.663E-01 | 1.404E-02 | 0.418 |
| RU-103 | 497.08 | * | | 1.227E-02 | 1.858E-02 | 3.221E-02 | 4.529E-03 | 0.381 |
| | 610.33 | * | | -3.657E-01 | 4.083E-01 | 5.603E-01 | 9.282E-02 | -0.653 |
| RH-106 | 511.85 | * | + | 1.101E-01 | 1.851E-01 | 2.676E-01 | 2.269E-02 | 0.411 |
| | 621.84 | * | | -3.354E-02 | 1.603E-01 | 2.604E-01 | 3.433E-02 | -0.129 |
| | 1050.47 | * | | -7.296E-01 | 1.037E+00 | 1.404E+00 | 1.224E-01 | -0.520 |
| RU-106 | 511.85 | * | + | 1.101E-01 | 1.851E-01 | 2.676E-01 | 2.269E-02 | 0.411 |
| | 621.84 | * | | -3.354E-02 | 1.603E-01 | 2.604E-01 | 2.175E-02 | -0.129 |
| | 1050.47 | * | | -7.296E-01 | 1.037E+00 | 1.404E+00 | 1.224E-01 | -0.520 |
| AG-108M | 433.93 | * | | 3.835E-03 | 1.634E-02 | 2.714E-02 | 2.340E-03 | 0.141 |
| | 614.37 | * | | -7.723E-03 | 1.846E-02 | 2.908E-02 | 2.538E-03 | -0.266 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 722.95 | | | 1.789E-03 | 2.101E-02 | 3.520E-02 | 3.108E-03 | 0.051 |
| CD-109 | 88.03 | * | | 3.036E-01 | 3.477E-01 | 5.399E-01 | 5.109E-02 | 0.562 |
| AG-110M | 657.75 | * | | -1.060E-02 | 1.578E-02 | 2.349E-02 | 1.992E-03 | -0.451 |
| | 677.61 | | | 7.037E-03 | 1.469E-01 | 2.459E-01 | 2.097E-02 | 0.029 |
| | 706.67 | | | 4.797E-02 | 1.105E-01 | 1.931E-01 | 1.672E-02 | 0.248 |
| | 763.93 | | | -7.659E-02 | 7.136E-02 | 9.422E-02 | 8.386E-03 | -0.813 |
| | 884.67 | | | -1.567E-02 | 2.419E-02 | 3.469E-02 | 3.225E-03 | -0.452 |
| | 937.48 | | | -1.102E-02 | 5.558E-02 | 8.735E-02 | 8.137E-03 | -0.126 |
| | 1384.27 | | | 2.245E-02 | 6.919E-02 | 1.241E-01 | 1.096E-02 | 0.181 |
| IN-111 | 171.28 | | | -1.822E-03 | 6.975E-02 | 1.172E-01 | 1.003E-02 | -0.016 |
| | 245.39 | * | | 3.400E-05 | 7.788E-02 | 1.292E-01 | 1.176E-02 | 0.000 |
| IN-113M | 391.69 | * | | 1.408E-02 | 2.237E-02 | 3.871E-02 | 3.225E-03 | 0.364 |
| SN-113 | 391.69 | * | | 1.408E-02 | 2.237E-02 | 3.871E-02 | 3.225E-03 | 0.364 |
| IN-114M | 190.27 | * | | -7.177E-02 | 8.504E-02 | 1.341E-01 | 1.171E-02 | -0.535 |
| CD-115 | 260.90 | | | 2.205E+00 | 6.461E+00 | 1.099E+01 | 1.005E+00 | 0.201 |
| | 492.35 | | | 1.173E+00 | 1.765E+00 | 3.074E+00 | 2.597E-01 | 0.382 |
| | 527.90 | * | | 9.675E-03 | 5.221E-01 | 8.822E-01 | 7.489E-02 | 0.011 |
| SN-117M | 156.02 | | | 5.472E-01 | 6.857E-01 | 1.219E+00 | 1.038E-01 | 0.449 |
| | 158.56 | * | | -3.809E-03 | 1.745E-02 | 2.901E-02 | 2.470E-03 | -0.131 |
| SB-122 | 563.90 | * | | 5.131E-02 | 1.491E-01 | 2.606E-01 | 2.210E-02 | 0.197 |
| | 692.80 | | | -1.172E+00 | 3.066E+00 | 4.803E+00 | 4.009E-01 | -0.244 |
| I-123 | 159.00 | * | | 3.171E-05 | 3.066E+00 | Half-Life | too short | |
| | 528.96 | | | 1.926E-03 | 3.066E+00 | Half-Life | too short | |
| TE-123M | 159.00 | * | | 2.110E-03 | 1.266E-02 | 2.161E-02 | 1.851E-03 | 0.098 |
| I-124 | 602.71 | * | | -6.345E-02 | 1.048E-01 | 1.628E-01 | 1.369E-02 | -0.390 |
| | 722.78 | | | 2.145E-01 | 6.274E-01 | 1.087E+00 | 9.224E-02 | 0.197 |
| | 1325.50 | | | 4.099E+00 | 4.683E+00 | 9.152E+00 | 7.787E-01 | 0.448 |
| | 1376.25 | | | 1.116E+00 | 4.018E+00 | 7.084E+00 | 6.079E-01 | 0.158 |
| | 1509.49 | | | 7.796E-01 | 2.046E+00 | 3.714E+00 | 3.216E-01 | 0.210 |
| | 1691.02 | | | 9.195E-01 | 6.376E-01 | 1.407E+00 | 1.199E-01 | 0.653 |
| SB-124 | 602.71 | | | -1.180E-02 | 1.949E-02 | 3.028E-02 | 2.547E-03 | -0.390 |
| | 645.85 | | | -6.008E-02 | 2.277E-01 | 3.653E-01 | 3.215E-02 | -0.164 |
| | 709.31 | | | -1.100E+00 | 1.380E+00 | 2.030E+00 | 1.711E-01 | -0.542 |
| | 713.82 | | | -2.197E-02 | 7.359E-01 | 1.214E+00 | 1.447E-01 | -0.018 |
| | 722.78 | | | 5.785E-02 | 1.692E-01 | 2.931E-01 | 2.543E-02 | 0.197 |
| | 968.20 | | | 8.932E-01 | 1.154E+00 | 2.098E+00 | 1.880E-01 | 0.426 |
| | 1045.16 | | | 1.081E+00 | 9.473E-01 | 1.882E+00 | 1.645E-01 | 0.574 |
| | 1325.50 | | | 1.181E+00 | 1.349E+00 | 2.636E+00 | 2.243E-01 | 0.448 |
| | 1368.21 | | | -8.675E-02 | 6.680E-01 | 1.069E+00 | 1.438E-01 | -0.081 |
| | 1436.60 | | | -6.143E-01 | 1.428E+00 | 2.036E+00 | 1.758E-01 | -0.302 |
| | 1691.02 | * | | 5.849E-02 | 4.058E-02 | 8.950E-02 | 7.934E-03 | 0.653 |
| SB-125 | 427.89 | * | | -3.426E-03 | 4.016E-02 | 6.400E-02 | 5.385E-03 | -0.054 |
| | 463.38 | | | -2.230E-02 | 1.468E-01 | 2.313E-01 | 2.098E-02 | -0.096 |
| | 600.56 | | | 7.095E-03 | 1.011E-01 | 1.705E-01 | 1.545E-02 | 0.042 |
| | 635.90 | | | -2.074E-02 | 1.419E-01 | 2.323E-01 | 2.096E-02 | -0.089 |
| TE-125M | 109.28 | * | | 2.614E+00 | 3.683E+00 | 6.202E+00 | 6.419E-01 | 0.421 |
| I-126 | 388.63 | | | 3.837E-02 | 7.559E-02 | 1.289E-01 | 1.044E-02 | 0.298 |
| | 666.33 | * | | -2.767E-02 | 5.303E-02 | 8.076E-02 | 6.634E-03 | -0.343 |
| | 753.82 | | | -4.047E-02 | 4.514E-01 | 7.346E-01 | 6.331E-02 | -0.055 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| SB-126 | 223.80 | | | -2.559E-01 | 1.323E+00 | 2.171E+00 | 1.953E-01 | -0.118 |
| | 278.60 | | | -3.014E-01 | 8.330E-01 | 1.330E+00 | 1.216E-01 | -0.227 |
| | 296.50 | | | -9.580E-02 | 4.670E-01 | 7.341E-01 | 6.680E-02 | -0.131 |
| | 414.70 | | | -8.205E-03 | 2.720E-02 | 4.246E-02 | 3.471E-03 | -0.193 |
| | 415.30 | | | -1.922E-01 | 2.238E+00 | 3.582E+00 | 2.929E-01 | -0.054 |
| | 555.20 | | | 6.959E-01 | 1.339E+00 | 2.387E+00 | 2.026E-01 | 0.291 |
| | 573.80 | | | -6.670E-02 | 3.202E-01 | 5.223E-01 | 4.422E-02 | -0.128 |
| | 593.00 | | | -3.006E-01 | 2.896E-01 | 4.092E-01 | 3.450E-02 | -0.735 |
| | 656.30 | | | -6.000E-01 | 1.052E+00 | 1.601E+00 | 1.316E-01 | -0.375 |
| | 666.33 | | | -1.137E-02 | 2.178E-02 | 3.317E-02 | 2.725E-03 | -0.343 |
| | 675.00 | | | -2.592E-02 | 6.381E-01 | 1.055E+00 | 8.713E-02 | -0.025 |
| | 695.00 | | | 1.758E-02 | 2.469E-02 | 4.489E-02 | 3.752E-03 | 0.392 |
| | 697.00 | | | -5.144E-02 | 9.271E-02 | 1.421E-01 | 1.189E-02 | -0.362 |
| | 720.50 | * | | 5.843E-03 | 4.926E-02 | 8.216E-02 | 6.964E-03 | 0.071 |
| | 856.80 | | | -8.685E-02 | 1.316E-01 | 1.859E-01 | 1.666E-02 | -0.467 |
| | 989.30 | | | 2.719E-02 | 3.129E-01 | 5.187E-01 | 4.623E-02 | 0.052 |
| | 1034.80 | | | -3.100E-01 | 2.624E+00 | 4.137E+00 | 3.631E-01 | -0.075 |
| | 1213.00 | | | -2.055E-01 | 1.187E+00 | 1.729E+00 | 1.421E-01 | -0.119 |
| SN-126 | 64.28 | | + | 2.702E-01 | 4.704E-01 | 4.143E-01 | 6.096E-02 | 0.652 |
| | 86.94 | | | 4.132E-02 | 1.511E-01 | 2.207E-01 | 9.161E-02 | 0.187 |
| | 87.57 | * | | 2.324E-02 | 3.487E-02 | 5.318E-02 | 5.009E-03 | 0.437 |
| SB-127 | 61.10 | | | 4.266E+00 | 7.354E+00 | 1.126E+01 | 9.473E-01 | 0.379 |
| | 252.40 | | | -8.593E-02 | 5.389E-01 | 8.782E-01 | 3.661E-01 | -0.098 |
| | 290.80 | | | -1.851E-01 | 2.582E+00 | 4.220E+00 | 4.132E-01 | -0.044 |
| | 411.60 | | | -3.473E-01 | 1.580E+00 | 2.487E+00 | 3.534E-01 | -0.140 |
| | 444.90 | | | -2.573E-01 | 1.274E+00 | 1.996E+00 | 2.133E-01 | -0.129 |
| | 473.00 | | | 1.962E-02 | 2.205E-01 | 3.580E-01 | 3.991E-02 | 0.055 |
| | 543.00 | | | -1.339E+00 | 1.996E+00 | 3.038E+00 | 3.931E-01 | -0.441 |
| | 603.60 | | | 1.060E-01 | 1.604E+00 | 2.705E+00 | 2.904E-01 | 0.039 |
| | 685.20 | * | | 1.503E-01 | 1.858E-01 | 3.396E-01 | 3.164E-02 | 0.443 |
| | 698.50 | | | 7.624E-02 | 1.995E+00 | 3.328E+00 | 4.805E-01 | 0.023 |
| | 722.20 | | | 3.589E+00 | 3.905E+00 | 7.219E+00 | 6.643E-01 | 0.497 |
| | 783.80 | | | 1.628E-01 | 4.606E-01 | 7.984E-01 | 8.694E-02 | 0.204 |
| XE-127 | 57.60 | | | -2.070E+00 | 2.706E+00 | 3.887E+00 | 2.985E-01 | -0.533 |
| | 145.22 | | | -3.968E-02 | 2.870E-01 | 4.511E-01 | 3.852E-02 | -0.088 |
| | 172.10 | | | 6.080E-03 | 4.631E-02 | 7.870E-02 | 6.742E-03 | 0.077 |
| | 202.84 | * | | -3.296E-03 | 1.804E-02 | 2.973E-02 | 2.628E-03 | -0.111 |
| | 374.96 | | | -9.372E-02 | 8.224E-02 | 1.131E-01 | 9.417E-03 | -0.829 |
| I-131 | 80.18 | | | -6.108E-01 | 1.024E+00 | 1.572E+00 | 1.374E-01 | -0.388 |
| | 284.30 | | | 5.775E-02 | 4.136E-01 | 6.583E-01 | 6.270E-02 | 0.088 |
| | 364.48 | * | | 5.428E-03 | 2.799E-02 | 4.662E-02 | 4.159E-03 | 0.116 |
| | 636.97 | | | -2.731E-01 | 4.337E-01 | 6.620E-01 | 5.798E-02 | -0.413 |
| TE-132 | 722.89 | | | 2.206E-01 | 1.856E+00 | 3.124E+00 | 2.656E-01 | 0.071 |
| | 49.72 | | | -6.513E-01 | 1.982E+00 | 3.141E+00 | 2.861E-01 | -0.207 |
| | 111.76 | | | 1.823E-02 | 2.632E+00 | 4.191E+00 | 3.889E-01 | 0.004 |
| | 116.30 | | | 3.869E-01 | 2.465E+00 | 3.970E+00 | 3.697E-01 | 0.097 |
| BA-133 | 228.16 | * | | -1.784E-02 | 7.031E-02 | 1.146E-01 | 1.706E-02 | -0.156 |
| | 53.15 | | | -9.434E-01 | 1.860E+00 | 2.903E+00 | 2.359E-01 | -0.325 |
| | 79.62 | | | -5.204E-01 | 5.665E-01 | 8.403E-01 | 1.282E-01 | -0.619 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| I-133 | + | 81.00 | | -1.809E-02 | 4.171E-02 | 6.477E-02 | 1.035E-02 | -0.279 |
| | | 276.40 | | 2.942E-02 | 1.950E-01 | 3.257E-01 | 4.810E-02 | 0.090 |
| | | 302.84 | | 1.017E-02 | 7.427E-02 | 1.235E-01 | 1.678E-02 | 0.082 |
| | | 356.01 | * | -3.821E-03 | 2.188E-02 | 3.497E-02 | 4.612E-03 | -0.109 |
| | | 383.85 | | -1.910E-01 | 1.656E-01 | 2.303E-01 | 2.835E-02 | -0.829 |
| | | 510.53 | | 5.473E-04 | 1.656E-01 | Half-Life | too short | |
| | | 529.87 | * | -8.993E-07 | 1.656E-01 | Half-Life | too short | |
| | | 706.58 | | 2.265E-04 | 1.656E-01 | Half-Life | too short | |
| | | 856.28 | | -4.062E-04 | 1.656E-01 | Half-Life | too short | |
| | | 875.33 | | -9.715E-05 | 1.656E-01 | Half-Life | too short | |
| | | 1236.41 | | -2.922E-04 | 1.656E-01 | Half-Life | too short | |
| | | 1298.22 | | 1.469E-04 | 1.656E-01 | Half-Life | too short | |
| CS-134 | | 475.35 | | 0.000E+00 | 1.025E+00 | 1.643E+00 | 1.382E-01 | 0.000 |
| | | 563.23 | | 1.082E-01 | 1.794E-01 | 3.225E-01 | 2.761E-02 | 0.335 |
| | | 569.32 | | 3.127E-02 | 9.772E-02 | 1.704E-01 | 1.463E-02 | 0.184 |
| | | 604.70 | | -5.802E-03 | 1.868E-02 | 3.018E-02 | 2.543E-03 | -0.192 |
| | | 795.84 | * | 5.241E-03 | 2.130E-02 | 3.645E-02 | 3.221E-03 | 0.144 |
| | | 801.93 | | 8.392E-02 | 1.952E-01 | 3.423E-01 | 3.028E-02 | 0.245 |
| | | 1038.57 | | -1.745E+00 | 1.809E+00 | 2.268E+00 | 1.988E-01 | -0.769 |
| | | 1167.94 | | 1.912E-01 | 8.017E-01 | 1.422E+00 | 1.156E-01 | 0.134 |
| | | 1365.15 | | 2.142E-01 | 5.101E-01 | 9.390E-01 | 8.416E-02 | 0.228 |
| | | 268.24 | * | 8.790E-03 | 7.974E-02 | 1.330E-01 | 1.386E-02 | 0.066 |
| I-135 | | 288.45 | | -1.485E+01 | 7.974E-02 | Half-Life | too short | |
| | | 417.63 | | 6.516E+01 | 7.974E-02 | Half-Life | too short | |
| | | 546.56 | | 9.545E+00 | 7.974E-02 | Half-Life | too short | |
| | | 836.80 | | -2.486E+01 | 7.974E-02 | Half-Life | too short | |
| | | 1038.76 | | -4.360E+01 | 7.974E-02 | Half-Life | too short | |
| | | 1124.00 | | -8.541E+01 | 7.974E-02 | Half-Life | too short | |
| | | 1131.51 | | 1.048E+01 | 7.974E-02 | Half-Life | too short | |
| | | 1260.41 | * | 1.293E+01 | 7.974E-02 | Half-Life | too short | |
| | | 1457.56 | | 1.978E+01 | 7.974E-02 | Half-Life | too short | |
| | | 1678.03 | | 5.143E+00 | 7.974E-02 | Half-Life | too short | |
| | | 1706.46 | | -1.533E+00 | 7.974E-02 | Half-Life | too short | |
| | | 1791.20 | | -6.277E+00 | 7.974E-02 | Half-Life | too short | |
| CS-136 | | 66.91 | | -4.145E-02 | 2.298E-01 | 3.247E-01 | 4.882E-02 | -0.128 |
| | | 86.29 | | 4.889E-02 | 2.932E-01 | 4.545E-01 | 6.047E-02 | 0.108 |
| | | 153.22 | | -8.425E-02 | 1.968E-01 | 3.223E-01 | 3.075E-02 | -0.261 |
| | | 163.89 | | -5.991E-02 | 3.852E-01 | 6.174E-01 | 5.901E-02 | -0.097 |
| | | 176.55 | | -3.660E-02 | 1.176E-01 | 1.932E-01 | 1.758E-02 | -0.189 |
| | | 273.65 | | 2.427E-02 | 1.625E-01 | 2.714E-01 | 2.627E-02 | 0.089 |
| | | 340.57 | | 1.980E-02 | 3.976E-02 | 6.821E-02 | 6.152E-03 | 0.290 |
| | | 818.51 | | 2.132E-02 | 2.205E-02 | 4.218E-02 | 3.734E-03 | 0.506 |
| | | 1048.07 | * | -2.661E-02 | 3.386E-02 | 4.493E-02 | 4.082E-03 | -0.592 |
| | | 1235.34 | | -9.092E-02 | 1.399E-01 | 2.002E-01 | 2.322E-02 | -0.454 |
| BA-137M | | 661.65 | * | 1.401E-02 | 1.545E-02 | 2.907E-02 | 2.381E-03 | 0.482 |
| | | 661.65 | * | 1.481E-02 | 1.633E-02 | 3.073E-02 | 2.522E-03 | 0.482 |
| CE-139 | | 165.85 | * | 1.832E-04 | 1.376E-02 | 2.321E-02 | 1.977E-03 | 0.008 |
| BA-140 | | 162.64 | | 8.193E-02 | 2.558E-01 | 4.215E-01 | 3.802E-02 | 0.194 |
| | | 304.84 | | 3.082E-03 | 4.556E-01 | 7.486E-01 | 2.108E-01 | 0.004 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| LA-140 | | 423.70 | | 2.460E-02 | 5.353E-01 | 8.701E-01 | 2.812E-01 | 0.028 |
| | | 537.32 | * | 2.719E-02 | 8.806E-02 | 1.460E-01 | 4.832E-02 | 0.186 |
| | | 328.77 | | 7.995E-03 | 1.017E-01 | 1.677E-01 | 1.570E-02 | 0.048 |
| | | 432.53 | | 2.966E-01 | 6.773E-01 | 1.152E+00 | 1.002E-01 | 0.257 |
| | | 487.03 | | -1.747E-02 | 4.766E-02 | 7.240E-02 | 6.502E-03 | -0.241 |
| | | 751.79 | | 7.274E-02 | 5.418E-01 | 8.755E-01 | 8.345E-02 | 0.083 |
| | | 815.85 | | 1.726E-02 | 1.029E-01 | 1.739E-01 | 1.706E-02 | 0.099 |
| | | 867.82 | | -2.804E-01 | 4.804E-01 | 7.054E-01 | 6.651E-02 | -0.398 |
| | | 919.63 | | 8.560E-01 | 8.140E-01 | 1.579E+00 | 1.736E-01 | 0.542 |
| | | 925.24 | | -3.494E-01 | 2.863E-01 | 2.982E-01 | 2.848E-02 | -1.172 |
| CE-141 | 1596.49 | * | | 1.119E-02 | 2.822E-02 | 5.122E-02 | 4.419E-03 | 0.219 |
| CE-143 | 145.44 | * | | 4.328E-03 | 2.257E-02 | 3.874E-02 | 3.369E-03 | 0.112 |
| CE-143 | | 57.37 | | -9.330E+00 | 1.238E+01 | 1.780E+01 | 1.602E+00 | -0.524 |
| | | 231.56 | | -2.846E+00 | 2.817E+01 | 4.646E+01 | 1.472E+01 | -0.061 |
| | | 293.26 | * | 5.433E-01 | 1.374E+00 | 2.335E+00 | 5.050E-01 | 0.233 |
| | | 350.59 | | 3.967E+00 | 2.079E+01 | 3.313E+01 | 1.028E+01 | 0.120 |
| | | 490.36 | | 2.400E+01 | 3.361E+01 | 5.755E+01 | 1.814E+01 | 0.417 |
| | | 664.57 | | -1.734E+01 | 1.447E+01 | 1.751E+01 | 5.634E+00 | -0.990 |
| | | 721.93 | | 1.333E+01 | 1.607E+01 | 2.875E+01 | 8.367E+00 | 0.464 |
| | | 80.11 | | -5.416E-01 | 8.863E-01 | 1.359E+00 | 1.185E-01 | -0.399 |
| | | 133.54 | * | -2.236E-02 | 8.940E-02 | 1.380E-01 | 2.148E-02 | -0.162 |
| PM-144 | 476.78 | | | 5.371E-04 | 3.549E-02 | 5.703E-02 | 5.267E-03 | 0.009 |
| PR-144 | | 618.01 | | 2.669E-03 | 1.497E-02 | 2.562E-02 | 2.206E-03 | 0.104 |
| | | 696.49 | * | -2.998E-03 | 1.692E-02 | 2.739E-02 | 2.292E-03 | -0.109 |
| | | 778.57 | | 7.413E-01 | 1.061E+00 | 1.938E+00 | 1.689E-01 | 0.383 |
| | | 696.49 | * | -2.023E-01 | 1.142E+00 | 1.849E+00 | 1.547E-01 | -0.109 |
| | | 1489.15 | | -1.257E+00 | 6.765E+00 | 1.068E+01 | 9.241E-01 | -0.118 |
| | | 453.90 | * | 1.336E-02 | 2.359E-02 | 4.043E-02 | 4.246E-03 | 0.330 |
| | | 633.02 | | -1.038E-01 | 7.509E-01 | 1.230E+00 | 4.587E-01 | -0.084 |
| | | 735.90 | | -6.356E-02 | 7.674E-02 | 1.065E-01 | 3.044E-02 | -0.597 |
| | | 747.13 | | 7.603E-03 | 4.172E-02 | 7.098E-02 | 9.952E-03 | 0.107 |
| | | 91.11 | | -6.367E-02 | 9.056E-02 | 1.489E-01 | 1.472E-02 | -0.428 |
| ND-147 | 319.41 | | | -4.320E-01 | 1.039E+00 | 1.627E+00 | 1.460E-01 | -0.265 |
| PM-149 | | 439.89 | | 6.435E-01 | 1.959E+00 | 3.279E+00 | 2.719E-01 | 0.196 |
| | | 531.02 | * | -7.224E-02 | 1.663E-01 | 2.638E-01 | 3.923E-02 | -0.274 |
| | | 285.90 | * | -3.376E-01 | 4.636E+00 | 7.238E+00 | 1.145E+00 | -0.047 |
| | | 121.78 | | -4.032E-03 | 3.394E-02 | 5.328E-02 | 5.368E-03 | -0.076 |
| | | 244.69 | | 3.507E-02 | 1.606E-01 | 2.628E-01 | 2.392E-02 | 0.133 |
| | | 344.27 | * | 6.314E-03 | 5.004E-02 | 8.274E-02 | 7.650E-03 | 0.076 |
| | | 443.98 | | -1.020E-01 | 4.986E-01 | 7.817E-01 | 6.495E-02 | -0.131 |
| | | 778.89 | | 9.853E-02 | 1.228E-01 | 2.275E-01 | 1.982E-02 | 0.433 |
| | | 867.32 | | -1.726E-01 | 4.194E-01 | 6.366E-01 | 5.722E-02 | -0.271 |
| | | 964.01 | | -4.940E-02 | 1.297E-01 | 1.959E-01 | 1.757E-02 | -0.252 |
| EU-152 | | 1085.78 | | -9.813E-02 | 1.897E-01 | 2.716E-01 | 2.328E-02 | -0.361 |
| | | 1112.02 | | 2.943E-02 | 1.367E-01 | 2.302E-01 | 1.944E-02 | 0.128 |
| | | 1407.95 | | 4.641E-02 | 9.606E-02 | 1.752E-01 | 1.509E-02 | 0.265 |
| | | 69.67 | | 3.757E-01 | 6.735E-01 | 1.030E+00 | 8.265E-02 | 0.365 |
| | | 83.37 | | 3.966E-01 | 6.256E+00 | 9.460E+00 | 8.519E-01 | 0.042 |
| | | 97.43 | * | -9.652E-03 | 3.880E-02 | 5.320E-02 | 4.725E-03 | -0.181 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| GD-153 | | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| EU-154 | 103.18 | | -1.436E-02 | 4.551E-02 | 7.062E-02 | 6.160E-03 | -0.203 |
| | 123.07 | | 5.756E-03 | 2.299E-02 | 3.725E-02 | 4.277E-03 | 0.155 |
| | 247.94 | | 1.249E-01 | 1.732E-01 | 3.039E-01 | 3.601E-02 | 0.411 |
| | 591.81 | | 5.772E-02 | 2.780E-01 | 4.793E-01 | 5.528E-02 | 0.120 |
| | 723.30 | | -3.693E-02 | 8.997E-02 | 1.404E-01 | 1.321E-02 | -0.263 |
| | 756.87 | | -1.163E-01 | 3.414E-01 | 5.295E-01 | 6.345E-02 | -0.220 |
| | 873.19 | | 2.508E-02 | 1.587E-01 | 2.663E-01 | 3.334E-02 | 0.094 |
| | 996.32 | | 2.668E-02 | 1.398E-01 | 2.368E-01 | 4.239E-02 | 0.113 |
| | 1004.76 | | -1.291E-02 | 1.002E-01 | 1.582E-01 | 1.871E-02 | -0.082 |
| | 1274.45 | * | -3.365E-02 | 4.718E-02 | 6.669E-02 | 7.426E-03 | -0.505 |
| EU-155 | 48.70 | | -4.553E-01 | 1.269E+00 | 2.009E+00 | 1.719E-01 | -0.227 |
| | 60.01 | | 1.315E+00 | 2.384E+00 | 3.657E+00 | 2.765E-01 | 0.360 |
| | 86.54 | | 9.446E-03 | 4.020E-02 | 6.269E-02 | 5.889E-03 | 0.151 |
| | 105.31 | * | -1.631E-02 | 4.751E-02 | 7.349E-02 | 6.464E-03 | -0.222 |
| TB-160 | 86.79 | | 2.877E-02 | 1.082E-01 | 1.589E-01 | 1.484E-02 | 0.181 |
| | 197.04 | | -1.194E-01 | 2.741E-01 | 4.295E-01 | 3.776E-02 | -0.278 |
| | 215.65 | | -1.279E-01 | 3.224E-01 | 5.203E-01 | 4.652E-02 | -0.246 |
| | 298.57 | | -2.844E-02 | 5.157E-02 | 8.025E-02 | 7.296E-03 | -0.354 |
| | 879.36 | * | 5.022E-02 | 6.842E-02 | 1.246E-01 | 1.123E-02 | 0.403 |
| | 962.29 | | 2.842E-02 | 1.987E-01 | 3.322E-01 | 2.981E-02 | 0.086 |
| | 966.15 | | -9.031E-02 | 9.131E-02 | 1.215E-01 | 1.089E-02 | -0.744 |
| | 1177.93 | | -1.087E-03 | 1.142E-01 | 1.912E-01 | 1.551E-02 | -0.006 |
| | 1271.85 | | 1.382E-01 | 2.479E-01 | 4.655E-01 | 3.902E-02 | 0.297 |
| | 80.57 | | -4.142E-02 | 1.124E-01 | 1.757E-01 | 1.539E-02 | -0.236 |
| HO-166M | 184.41 | | 2.542E-02 | 1.779E-02 | 3.214E-02 | 2.789E-03 | 0.791 |
| | 280.46 | | -1.983E-02 | 4.310E-02 | 6.802E-02 | 6.219E-03 | -0.292 |
| | 410.95 | | -2.377E-02 | 1.246E-01 | 1.969E-01 | 1.606E-02 | -0.121 |
| | 711.68 | * | 1.425E-02 | 2.929E-02 | 5.189E-02 | 4.378E-03 | 0.275 |
| | 752.31 | | 4.067E-02 | 1.276E-01 | 2.121E-01 | 1.827E-02 | 0.192 |
| | 810.29 | | 5.014E-03 | 2.713E-02 | 4.604E-02 | 4.063E-03 | 0.109 |
| | 51.35 | | -4.699E+00 | 1.523E+01 | 2.416E+01 | 2.011E+00 | -0.194 |
| | 52.39 | | -8.249E+00 | 7.922E+00 | 1.171E+01 | 9.610E-01 | -0.705 |
| TM-171 | 59.40 | | 5.112E+00 | 1.303E+01 | 1.968E+01 | 1.483E+00 | 0.260 |
| | 66.72 | * | 1.957E+00 | 1.200E+01 | 1.764E+01 | 1.390E+00 | 0.111 |
| | 88.36 | | 9.543E-02 | 7.965E-02 | 1.273E-01 | 1.201E-02 | 0.750 |
| | 201.83 | | -2.894E-03 | 1.282E-02 | 2.106E-02 | 1.860E-03 | -0.137 |
| LU-176 | 306.84 | * | 7.307E-03 | 1.262E-02 | 2.183E-02 | 1.976E-03 | 0.335 |
| | 401.10 | | -2.955E+00 | 3.523E+00 | 5.119E+00 | 4.147E-01 | -0.577 |
| | 112.95 | | 2.477E-02 | 3.204E-01 | 5.131E-01 | 4.449E-02 | 0.048 |
| | 208.36 | * | -1.376E-01 | 2.102E-01 | 3.313E-01 | 2.944E-02 | -0.415 |
| LU-177 | 52.97 | | -4.708E-01 | 8.137E-01 | 1.262E+00 | 1.028E-01 | -0.373 |
| | 54.07 | | 3.176E-01 | 4.072E-01 | 7.029E-01 | 5.641E-02 | 0.452 |
| | 61.30 | | 5.088E-01 | 7.195E-01 | 1.114E+00 | 8.498E-02 | 0.457 |
| | 121.62 | | -3.180E-02 | 1.713E-01 | 2.673E-01 | 2.348E-02 | -0.119 |
| LU-177M | 147.16 | | -5.369E-01 | 2.682E-01 | 3.757E-01 | 3.206E-02 | -1.429 |
| | 171.86 | | 1.922E-02 | 2.078E-01 | 3.522E-01 | 3.017E-02 | 0.055 |
| | 218.09 | | 2.133E-01 | 3.975E-01 | 6.891E-01 | 6.173E-02 | 0.310 |
| | 268.79 | | 1.066E-01 | 3.857E-01 | 6.519E-01 | 5.965E-02 | 0.164 |
| | 319.02 | | -7.659E-02 | 1.238E-01 | 1.891E-01 | 1.697E-02 | -0.405 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| HF-181 | | 367.43 | | -2.141E-01 | 4.348E-01 | 6.651E-01 | 5.614E-02 | -0.322 |
| | | 413.65 | * | -6.718E-02 | 9.133E-02 | 1.344E-01 | 1.098E-02 | -0.500 |
| | | 56.28 | | 1.932E-02 | 4.122E-01 | 6.728E-01 | 5.247E-02 | 0.029 |
| | | 57.53 | | -1.757E-01 | 2.327E-01 | 3.346E-01 | 2.572E-02 | -0.525 |
| | + | 65.20 | | 4.664E-01 | 8.098E-01 | 6.159E-01 | 4.808E-02 | 0.757 |
| | | 133.02 | | 2.679E-03 | 2.523E-02 | 4.027E-02 | 3.473E-03 | 0.067 |
| W-181 | | 136.25 | | 1.082E-01 | 1.678E-01 | 2.975E-01 | 2.556E-02 | 0.364 |
| | | 345.85 | | 1.745E-02 | 8.449E-02 | 1.409E-01 | 1.229E-02 | 0.124 |
| | | 482.03 | * | -1.494E-02 | 1.847E-02 | 2.589E-02 | 2.181E-03 | -0.577 |
| | | 56.28 | | 8.034E-03 | 1.748E-01 | 2.853E-01 | 2.225E-02 | 0.028 |
| | | 57.53 | | -7.453E-02 | 9.877E-02 | 1.420E-01 | 1.091E-02 | -0.525 |
| | + | 65.20 | * | 1.964E-01 | 3.410E-01 | 2.593E-01 | 2.024E-02 | 0.757 |
| TA-182 | | 67.75 | | -3.518E-02 | 4.764E-02 | 6.282E-02 | 4.978E-03 | -0.560 |
| | | 100.10 | | 1.719E-02 | 7.676E-02 | 1.248E-01 | 1.098E-02 | 0.138 |
| | | 152.43 | | 3.279E-02 | 1.386E-01 | 2.382E-01 | 2.029E-02 | 0.138 |
| | | 222.10 | | -3.289E-02 | 1.604E-01 | 2.630E-01 | 2.363E-02 | -0.125 |
| | | 1001.68 | | -3.309E-01 | 1.030E+00 | 1.624E+00 | 1.442E-01 | -0.204 |
| | | 1121.28 | | 4.002E-02 | 6.702E-02 | 1.196E-01 | 1.005E-02 | 0.335 |
| RE-183 | | 1189.05 | | -1.848E-02 | 1.248E-01 | 2.035E-01 | 1.657E-02 | -0.091 |
| | | 1221.42 | * | -2.346E-02 | 6.266E-02 | 9.550E-02 | 7.872E-03 | -0.246 |
| | | 1230.97 | | 5.129E-02 | 1.511E-01 | 2.713E-01 | 2.244E-02 | 0.189 |
| | | 57.98 | | -6.628E-02 | 1.005E-01 | 1.352E-01 | 1.034E-02 | -0.490 |
| | | 59.32 | | 2.081E-02 | 5.025E-02 | 7.605E-02 | 5.736E-03 | 0.274 |
| | | 67.20 | | -1.913E-02 | 8.075E-02 | 1.133E-01 | 8.952E-03 | -0.169 |
| RE-184 | | 162.32 | * | 2.714E-02 | 5.294E-02 | 8.836E-02 | 7.522E-03 | 0.307 |
| | | 208.81 | | -2.423E-01 | 3.782E-01 | 5.965E-01 | 5.302E-02 | -0.406 |
| | | 291.72 | | -1.065E-01 | 4.297E-01 | 6.905E-01 | 6.295E-02 | -0.154 |
| | | 57.98 | | -2.552E-01 | 3.870E-01 | 5.203E-01 | 3.979E-02 | -0.490 |
| | | 59.32 | | 8.005E-02 | 1.933E-01 | 2.925E-01 | 2.206E-02 | 0.274 |
| | | 67.20 | | -7.361E-02 | 3.108E-01 | 4.362E-01 | 3.445E-02 | -0.169 |
| OS-185 | | 161.27 | | 7.749E-02 | 1.661E-01 | 2.885E-01 | 2.456E-02 | 0.269 |
| | | 216.55 | | 1.807E-02 | 1.199E-01 | 2.024E-01 | 1.811E-02 | 0.089 |
| | | 252.85 | * | -9.542E-03 | 1.092E-01 | 1.795E-01 | 1.639E-02 | -0.053 |
| | | 318.01 | | -1.189E-01 | 2.119E-01 | 3.257E-01 | 2.925E-02 | -0.365 |
| | | 792.07 | | -1.432E-01 | 4.604E-01 | 7.198E-01 | 6.307E-02 | -0.199 |
| | | 903.28 | | 1.687E-01 | 3.894E-01 | 6.920E-01 | 6.266E-02 | 0.244 |
| RE-188 | | 920.93 | | 3.512E-02 | 1.902E-01 | 3.219E-01 | 2.909E-02 | 0.109 |
| | | 59.72 | | 7.381E-02 | 1.337E-01 | 2.052E-01 | 1.548E-02 | 0.360 |
| | | 61.14 | | 4.662E-02 | 7.696E-02 | 1.182E-01 | 9.003E-03 | 0.395 |
| | | 69.30 | | 5.130E-02 | 1.197E-01 | 1.807E-01 | 1.446E-02 | 0.284 |
| | | 592.07 | | -2.991E-01 | 1.108E+00 | 1.785E+00 | 1.506E-01 | -0.168 |
| | | 646.12 | * | -1.087E-02 | 2.075E-02 | 3.204E-02 | 2.647E-03 | -0.339 |
| W-188 | | 717.42 | | -3.289E-01 | 4.171E-01 | 6.037E-01 | 5.109E-02 | -0.545 |
| | | 874.81 | | 9.485E-02 | 2.954E-01 | 5.079E-01 | 4.575E-02 | 0.187 |
| | | 880.27 | | 1.212E-01 | 3.922E-01 | 6.729E-01 | 6.069E-02 | 0.180 |
| | | 155.03 | * | 2.644E-03 | 7.039E-02 | 1.193E-01 | 1.016E-02 | 0.022 |
| | | 477.96 | | 1.528E+00 | 1.411E+00 | 2.577E+00 | 2.169E-01 | 0.593 |
| | | 633.10 | | -1.314E-01 | 1.395E+00 | 2.300E+00 | 1.912E-01 | -0.057 |
| W-188 | + | 63.58 | | 2.545E+01 | 4.419E+01 | 4.153E+01 | 3.212E+00 | 0.613 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| IR-192 | | 227.08 | | -7.819E-01 | 5.995E+00 | 9.880E+00 | 8.908E-01 | -0.079 |
| | | 290.67 | * | -2.725E-01 | 3.218E+00 | 5.253E+00 | 4.791E-01 | -0.052 |
| | | 295.96 | | -2.578E-03 | 5.101E-02 | 8.138E-02 | 7.455E-03 | -0.032 |
| | | 308.46 | | -2.898E-02 | 4.615E-02 | 7.088E-02 | 6.439E-03 | -0.409 |
| | | 316.51 | * | 1.618E-03 | 1.515E-02 | 2.512E-02 | 2.263E-03 | 0.064 |
| | | 468.07 | | -3.626E-03 | 3.119E-02 | 4.929E-02 | 4.449E-03 | -0.074 |
| | | 604.41 | | -9.269E-02 | 2.379E-01 | 3.805E-01 | 4.900E-02 | -0.244 |
| AU-195 | + | 612.46 | | -2.903E-01 | 3.139E-01 | 4.566E-01 | 4.426E-02 | -0.636 |
| | | 65.12 | | 9.208E-02 | 1.599E-01 | 1.232E-01 | 9.614E-03 | 0.747 |
| | | 66.83 | | -6.758E-03 | 3.996E-02 | 5.656E-02 | 4.457E-03 | -0.119 |
| | | 75.70 | | -3.890E-03 | 7.730E-02 | 1.164E-01 | 9.763E-03 | -0.033 |
| | | 98.88 | * | 3.010E-02 | 1.130E-01 | 1.639E-01 | 1.447E-02 | 0.184 |
| TL-200 | * | 129.76 | | 5.191E-01 | 1.264E+00 | 2.067E+00 | 1.791E-01 | 0.251 |
| | | 367.94 | * | -1.200E+00 | 1.855E+00 | 2.776E+00 | 2.342E-01 | -0.432 |
| | | 579.30 | | -1.153E+01 | 1.498E+01 | 2.270E+01 | 1.920E+00 | -0.508 |
| | | 828.27 | | 1.443E+01 | 1.960E+01 | 3.593E+01 | 3.191E+00 | 0.402 |
| TL-201 | | 1205.75 | | 5.922E+00 | 6.749E+00 | 1.338E+01 | 1.097E+00 | 0.442 |
| | | 68.90 | | 2.622E-01 | 3.399E-01 | 5.335E-01 | 4.258E-02 | 0.491 |
| | | 70.82 | | 8.485E-02 | 1.799E-01 | 3.019E-01 | 2.440E-02 | 0.281 |
| | | 80.30 | | -1.422E-01 | 3.775E-01 | 5.899E-01 | 5.153E-02 | -0.241 |
| TL-202 | * | 135.34 | | 5.196E-01 | 2.008E+00 | 3.245E+00 | 2.791E-01 | 0.160 |
| | | 167.43 | * | -1.210E-01 | 5.791E-01 | 9.611E-01 | 8.195E-02 | -0.126 |
| | | 68.90 | | 8.561E-02 | 1.110E-01 | 1.742E-01 | 1.390E-02 | 0.491 |
| | | 70.82 | | 2.763E-02 | 5.857E-02 | 9.831E-02 | 7.946E-03 | 0.281 |
| HG-203 | * | 80.30 | | -4.632E-02 | 1.230E-01 | 1.921E-01 | 1.678E-02 | -0.241 |
| | | 439.56 | * | 7.941E-03 | 2.374E-02 | 3.980E-02 | 3.299E-03 | 0.200 |
| | | 70.83 | | 1.646E-01 | 3.483E-01 | 5.839E-01 | 7.750E-02 | 0.282 |
| | | 72.87 | | -2.378E-01 | 2.130E-01 | 3.083E-01 | 3.987E-02 | -0.771 |
| BI-207 | * | 82.60 | | 2.113E-01 | 3.939E-01 | 6.578E-01 | 9.172E-02 | 0.321 |
| | | 279.20 | * | -1.457E-03 | 1.814E-02 | 2.970E-02 | 2.785E-03 | -0.049 |
| | | 72.80 | | -7.988E-02 | 6.939E-02 | 1.008E-01 | 8.259E-03 | -0.793 |
| | | 74.97 | | -2.315E-02 | 4.376E-02 | 6.299E-02 | 5.251E-03 | -0.367 |
| TL-207 | * | 84.90 | | -1.301E-01 | 8.567E-02 | 1.120E-01 | 1.025E-02 | -1.161 |
| | | 569.67 | | 5.948E-03 | 1.499E-02 | 2.639E-02 | 2.235E-03 | 0.225 |
| | | 1063.62 | * | 9.186E-03 | 2.290E-02 | 4.008E-02 | 3.474E-03 | 0.229 |
| | | 1770.23 | | -4.198E-01 | 4.217E-01 | 5.383E-01 | 4.508E-02 | -0.780 |
| TL-208 | | 81.07 | | 2.499E-03 | 8.902E-02 | 1.435E-01 | 1.263E-02 | 0.017 |
| | | 83.78 | | -3.280E-02 | 5.539E-02 | 7.935E-02 | 7.176E-03 | -0.413 |
| | | 94.90 | | 3.811E-02 | 1.088E-01 | 1.606E-01 | 1.444E-02 | 0.237 |
| | | 122.32 | | -2.573E-01 | 7.921E-01 | 1.219E+00 | 1.147E-01 | -0.211 |
| TL-208 | + | 144.24 | | 9.841E-02 | 3.354E-01 | 5.455E-01 | 5.222E-02 | 0.180 |
| | | 154.21 | | -6.513E-04 | 1.788E-01 | 3.021E-01 | 2.836E-02 | -0.002 |
| | | 269.46 | | 2.205E-02 | 9.386E-02 | 1.581E-01 | 1.473E-02 | 0.139 |
| | | 323.87 | * | 1.259E-01 | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| TL-208 | + | 338.28 | | -2.357E-01 | 5.188E-01 | 8.076E-01 | 1.005E-01 | -0.292 |
| | | 445.03 | | 1.970E-01 | 1.109E+00 | 1.828E+00 | 2.171E-01 | 0.108 |
| | | 277.35 | | 5.607E-02 | 1.923E-01 | 3.248E-01 | 4.127E-02 | 0.173 |
| | | 510.84 | * | 1.035E-01 | 1.742E-01 | 2.541E-01 | 3.020E-02 | 0.407 |
| | | 583.14 | * | -7.562E-03 | 2.276E-02 | 3.659E-02 | 3.323E-03 | -0.207 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|----------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-209 | | 860.37 | | 9.211E-02 | 1.320E-01 | 2.412E-01 | 2.311E-02 | 0.382 |
| | | 260.50 | | -1.239E+00 | 5.069E+00 | 8.212E+00 | 7.508E-01 | -0.151 |
| | | 262.80 | | 9.753E-01 | 1.407E+01 | 2.341E+01 | 2.141E+00 | 0.042 |
| BI-210 | | 896.60 | * | -1.230E+00 | 3.450E+00 | 5.239E+00 | 4.744E-01 | -0.235 |
| | | 46.50 | * | 3.791E-01 | 2.066E+00 | 3.225E+00 | 3.044E-01 | 0.118 |
| PB-210 | | 46.50 | * | 3.791E-01 | 2.066E+00 | 3.225E+00 | 3.044E-01 | 0.118 |
| PO-210 | | 46.50 | * | 3.791E-01 | 2.066E+00 | 3.225E+00 | 2.765E-01 | 0.118 |
| BI-211 | | 72.87 | | -1.338E+00 | 1.190E+00 | 1.734E+00 | 1.422E-01 | -0.771 |
| PB-211 | | 351.07 | * | 3.356E-02 | 1.192E-01 | 1.921E-01 | 1.747E-02 | 0.175 |
| | | 404.84 | * | -7.572E-02 | 4.905E-01 | 7.761E-01 | 4.859E-01 | -0.098 |
| | | 427.08 | | 3.983E-02 | 9.157E-01 | 1.486E+00 | 9.229E-01 | 0.027 |
| BI-212 | | 831.96 | | 8.182E-04 | 5.641E-01 | 9.263E-01 | 5.808E-01 | 0.001 |
| | | 727.18 | * | -1.377E-01 | 1.625E-01 | 2.310E-01 | 2.290E-02 | -0.596 |
| | | 785.46 | | 5.738E-01 | 9.193E-01 | 1.607E+00 | 1.405E-01 | 0.357 |
| PB-212 | | 1620.62 | | -4.357E-01 | 7.007E-01 | 1.039E+00 | 8.944E-02 | -0.419 |
| | | 74.81 | | -9.253E-02 | 1.505E-01 | 2.143E-01 | 2.682E-02 | -0.432 |
| | | 77.11 | | 8.939E-02 | 8.137E-02 | 1.408E-01 | 1.195E-02 | 0.635 |
| + PO-212 | | 87.30 | | 1.524E-02 | 1.702E-01 | 2.454E-01 | 3.367E-02 | 0.062 |
| | | 238.63 | * | 2.085E-02 | 3.781E-02 | 5.300E-02 | 5.366E-03 | 0.393 |
| | | 300.09 | | 1.182E-01 | 3.705E-01 | 6.268E-01 | 6.777E-02 | 0.189 |
| + BI-214 | | 74.81 | | -9.253E-02 | 1.505E-01 | 2.143E-01 | 2.682E-02 | -0.432 |
| | | 77.11 | | 8.939E-02 | 8.137E-02 | 1.408E-01 | 1.195E-02 | 0.635 |
| | | 87.30 | | 1.524E-02 | 1.702E-01 | 2.454E-01 | 3.367E-02 | 0.062 |
| + PO-212 | | 115.19 | | -1.169E-01 | 1.542E+00 | 2.435E+00 | 2.116E-01 | -0.048 |
| | | 238.63 | * | 2.085E-02 | 3.781E-02 | 5.300E-02 | 5.366E-03 | 0.393 |
| | | 300.09 | | 1.182E-01 | 3.705E-01 | 6.268E-01 | 6.777E-02 | 0.189 |
| PB-214 | | 609.31 | * | -5.064E-02 | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| | | 1120.29 | | 1.171E-02 | 1.535E-01 | 2.524E-01 | 2.701E-02 | 0.046 |
| | | 1764.49 | | 2.622E-02 | 1.711E-01 | 3.251E-01 | 2.727E-02 | 0.081 |
| PO-214 | | 74.81 | | -1.594E-01 | 2.591E-01 | 3.692E-01 | 4.114E-02 | -0.432 |
| | | 77.11 | | 1.532E-01 | 1.400E-01 | 2.414E-01 | 2.753E-02 | 0.635 |
| | | 87.30 | | 2.611E-02 | 2.916E-01 | 4.204E-01 | 5.108E-02 | 0.062 |
| + PO-214 | | 241.98 | | 6.006E-02 | 1.641E-01 | 2.502E-01 | 2.673E-02 | 0.240 |
| | | 295.21 | | 3.751E-03 | 7.120E-02 | 1.146E-01 | 1.266E-02 | 0.033 |
| | | 351.92 | * | 2.015E-02 | 4.133E-02 | 6.778E-02 | 7.102E-03 | 0.297 |
| PO-215 | | 74.81 | | -1.594E-01 | 2.591E-01 | 3.692E-01 | 4.114E-02 | -0.432 |
| | | 77.11 | | 1.532E-01 | 1.400E-01 | 2.414E-01 | 2.753E-02 | 0.635 |
| | | 87.30 | | 2.611E-02 | 2.916E-01 | 4.204E-01 | 5.108E-02 | 0.062 |
| + PO-215 | | 241.98 | | 6.006E-02 | 1.641E-01 | 2.502E-01 | 2.673E-02 | 0.240 |
| | | 295.21 | | 3.751E-03 | 7.120E-02 | 1.146E-01 | 1.266E-02 | 0.033 |
| | | 351.92 | * | 2.015E-02 | 4.133E-02 | 6.778E-02 | 7.102E-03 | 0.297 |
| PB-215 | | 81.07 | | 2.499E-03 | 8.902E-02 | 1.435E-01 | 1.263E-02 | 0.017 |
| | | 83.78 | | -3.280E-02 | 5.539E-02 | 7.935E-02 | 7.176E-03 | -0.413 |
| | | 94.90 | | 3.811E-02 | 1.088E-01 | 1.606E-01 | 1.444E-02 | 0.237 |
| + PO-215 | | 122.32 | | -2.573E-01 | 7.921E-01 | 1.219E+00 | 1.147E-01 | -0.211 |
| | | 144.24 | | 9.841E-02 | 3.354E-01 | 5.455E-01 | 5.222E-02 | 0.180 |
| | | 154.21 | | -6.513E-04 | 1.788E-01 | 3.021E-01 | 2.836E-02 | -0.002 |
| + PO-215 | | 269.46 | | 2.205E-02 | 9.386E-02 | 1.581E-01 | 1.473E-02 | 0.139 |
| | | 323.87 | * | 1.259E-01 | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-216 | | 338.28 | | -2.357E-01 | 5.188E-01 | 8.076E-01 | 1.005E-01 | -0.292 |
| | | 445.03 | | 1.970E-01 | 1.109E+00 | 1.828E+00 | 2.171E-01 | 0.108 |
| | | 74.81 | | -9.253E-02 | 1.505E-01 | 2.143E-01 | 2.682E-02 | -0.432 |
| | | 77.11 | | 8.939E-02 | 8.137E-02 | 1.408E-01 | 1.195E-02 | 0.635 |
| | | 87.30 | | 1.524E-02 | 1.702E-01 | 2.454E-01 | 3.367E-02 | 0.062 |
| PO-218 | + | 238.63 | * | 2.085E-02 | 3.781E-02 | 5.300E-02 | 5.366E-03 | 0.393 |
| | | 300.09 | | 1.182E-01 | 3.705E-01 | 6.268E-01 | 6.777E-02 | 0.189 |
| | | 74.81 | | -1.594E-01 | 2.591E-01 | 3.692E-01 | 4.114E-02 | -0.432 |
| | | 77.11 | | 1.532E-01 | 1.400E-01 | 2.414E-01 | 2.753E-02 | 0.635 |
| | | 87.30 | | 2.611E-02 | 2.916E-01 | 4.204E-01 | 5.108E-02 | 0.062 |
| RN-219 | | 241.98 | | 6.006E-02 | 1.641E-01 | 2.502E-01 | 2.673E-02 | 0.240 |
| | | 295.21 | | 3.751E-03 | 7.120E-02 | 1.146E-01 | 1.266E-02 | 0.033 |
| | | 351.92 | * | 2.015E-02 | 4.133E-02 | 6.778E-02 | 7.102E-03 | 0.297 |
| | | 271.23 | | -2.587E-02 | 1.285E-01 | 2.088E-01 | 2.246E-02 | -0.124 |
| | | 401.81 | * | -5.478E-02 | 2.085E-01 | 3.268E-01 | 4.816E-02 | -0.168 |
| RA-223 | | 549.76 | * | -1.102E+01 | 1.256E+01 | 1.853E+01 | 1.573E+00 | -0.595 |
| | | 81.07 | | 2.499E-03 | 8.902E-02 | 1.435E-01 | 1.263E-02 | 0.017 |
| | | 83.78 | | -3.280E-02 | 5.539E-02 | 7.935E-02 | 7.176E-03 | -0.413 |
| | | 94.90 | | 3.811E-02 | 1.088E-01 | 1.606E-01 | 1.444E-02 | 0.237 |
| | | 122.32 | | -2.573E-01 | 7.921E-01 | 1.219E+00 | 1.147E-01 | -0.211 |
| RA-224 | | 144.24 | | 9.841E-02 | 3.354E-01 | 5.455E-01 | 5.222E-02 | 0.180 |
| | | 154.21 | | -6.513E-04 | 1.788E-01 | 3.021E-01 | 2.836E-02 | -0.002 |
| | | 269.46 | | 2.205E-02 | 9.386E-02 | 1.581E-01 | 1.473E-02 | 0.139 |
| | | 323.87 | * | 1.259E-01 | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| | | 338.28 | | -2.357E-01 | 5.188E-01 | 8.076E-01 | 1.005E-01 | -0.292 |
| RA-226 | | 445.03 | | 1.970E-01 | 1.109E+00 | 1.828E+00 | 2.171E-01 | 0.108 |
| | | 240.98 | * | 6.352E-02 | 3.416E-01 | 5.091E-01 | 4.626E-02 | 0.125 |
| | | 609.31 | * | -5.064E-02 | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| | | 1120.29 | | 1.171E-02 | 1.535E-01 | 2.524E-01 | 2.701E-02 | 0.046 |
| | | 1764.49 | | 2.622E-02 | 1.711E-01 | 3.251E-01 | 2.727E-02 | 0.081 |
| AC-227 | | 79.80 | | -5.341E-01 | 7.082E-01 | 1.060E+00 | 2.282E-01 | -0.504 |
| | | 236.00 | | -6.046E-02 | 1.194E-01 | 1.639E-01 | 2.058E-02 | -0.369 |
| | | 256.20 | * | -1.212E-01 | 1.899E-01 | 2.949E-01 | 4.613E-02 | -0.411 |
| | | 286.10 | | -1.277E-01 | 8.257E-01 | 1.279E+00 | 1.732E-01 | -0.100 |
| | | 299.80 | | -5.090E-02 | 7.092E-01 | 1.158E+00 | 2.052E-01 | -0.044 |
| TH-227 | | 304.40 | | 3.595E-01 | 9.721E-01 | 1.647E+00 | 3.071E-01 | 0.218 |
| | | 334.20 | | 7.037E-02 | 1.194E+00 | 1.963E+00 | 3.830E-01 | 0.036 |
| | | 79.80 | | -5.341E-01 | 7.085E-01 | 1.060E+00 | 2.311E-01 | -0.504 |
| | + | 94.00 | | 9.846E-01 | 1.328E+00 | 1.844E+00 | 4.048E-01 | 0.534 |
| | | 236.00 | | -6.046E-02 | 1.193E-01 | 1.639E-01 | 1.872E-02 | -0.369 |
| AC-228 | | 256.20 | * | -1.212E-01 | 1.902E-01 | 2.949E-01 | 5.401E-02 | -0.411 |
| | | 286.10 | | -1.277E-01 | 8.354E-01 | 1.279E+00 | 1.284E+00 | -0.100 |
| | | 299.80 | | -5.090E-02 | 7.092E-01 | 1.158E+00 | 2.052E-01 | -0.044 |
| | | 304.40 | | 3.595E-01 | 9.721E-01 | 1.647E+00 | 3.071E-01 | 0.218 |
| | | 334.20 | | 7.037E-02 | 1.194E+00 | 1.963E+00 | 3.830E-01 | 0.036 |
| RA-228 | | 338.32 | | -5.413E-02 | 1.263E-01 | 1.942E-01 | 8.019E-02 | -0.279 |
| | | 911.07 | * | 1.057E-03 | 6.765E-02 | 1.217E-01 | 1.409E-02 | 0.009 |
| | | 969.11 | | -7.671E-04 | 1.347E-01 | 2.271E-01 | 5.328E-02 | -0.003 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|----------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TH-228 | 911.07 | * | | 1.057E-03 | 6.765E-02 | 1.217E-01 | 1.409E-02 | 0.009 |
| | 969.11 | | | -7.671E-04 | 1.347E-01 | 2.271E-01 | 5.328E-02 | -0.003 |
| | 74.81 | | | -9.323E-02 | 1.514E-01 | 2.159E-01 | 1.813E-02 | -0.432 |
| | 77.11 | | | 9.007E-02 | 8.198E-02 | 1.419E-01 | 1.204E-02 | 0.635 |
| | 87.30 | | | 1.536E-02 | 1.715E-01 | 2.473E-01 | 2.322E-02 | 0.062 |
| + TH-229 | 238.63 | * | | 2.100E-02 | 3.810E-02 | 5.340E-02 | 5.407E-03 | 0.393 |
| | 300.09 | | | 1.191E-01 | 3.797E-01 | 6.315E-01 | 3.748E-01 | 0.189 |
| | 85.43 | | | -6.632E-02 | 8.120E-02 | 1.138E-01 | 1.047E-02 | -0.583 |
| | 88.47 | | | 5.521E-02 | 4.582E-02 | 7.327E-02 | 6.904E-03 | 0.753 |
| | 100.00 | | | 7.399E-02 | 8.020E-02 | 1.374E-01 | 1.209E-02 | 0.538 |
| TH-230 | 193.63 | * | | -9.407E-02 | 2.540E-01 | 4.144E-01 | 3.631E-02 | -0.227 |
| | 210.97 | | | 4.210E-01 | 3.354E-01 | 6.099E-01 | 5.432E-02 | 0.690 |
| | 609.31 | * | | -5.064E-02 | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| | 1120.29 | | | 1.171E-02 | 1.535E-01 | 2.524E-01 | 2.701E-02 | 0.046 |
| | 1764.49 | | | 2.622E-02 | 1.711E-01 | 3.251E-01 | 2.727E-02 | 0.081 |
| PA-231 | 283.67 | * | | 3.904E-01 | 7.956E-01 | 1.348E+00 | 2.086E-01 | 0.290 |
| | 301.29 | | | 1.253E-01 | 2.819E-01 | 4.813E-01 | 6.050E-02 | 0.260 |
| TH-231 | 81.07 | | | 2.499E-03 | 8.902E-02 | 1.435E-01 | 1.263E-02 | 0.017 |
| | 83.78 | | | -3.280E-02 | 5.539E-02 | 7.935E-02 | 7.176E-03 | -0.413 |
| | 94.90 | | | 3.811E-02 | 1.088E-01 | 1.606E-01 | 1.444E-02 | 0.237 |
| | 122.32 | | | -2.573E-01 | 7.921E-01 | 1.219E+00 | 1.147E-01 | -0.211 |
| | 144.24 | | | 9.841E-02 | 3.354E-01 | 5.455E-01 | 5.222E-02 | 0.180 |
| U-231 | 154.21 | | | -6.513E-04 | 1.788E-01 | 3.021E-01 | 2.836E-02 | -0.002 |
| | 269.46 | | | 2.205E-02 | 9.386E-02 | 1.581E-01 | 1.473E-02 | 0.139 |
| | 323.87 | * | | 1.259E-01 | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| | 338.28 | | | -2.357E-01 | 5.188E-01 | 8.076E-01 | 1.005E-01 | -0.292 |
| | 445.03 | | | 1.970E-01 | 1.109E+00 | 1.828E+00 | 2.171E-01 | 0.108 |
| + U-231 | 84.21 | | | -5.290E-01 | 6.824E-01 | 9.599E-01 | 8.719E-02 | -0.551 |
| | 92.29 | | | 2.802E-01 | 3.737E-01 | 6.074E-01 | 5.550E-02 | 0.461 |
| | 95.87 | * | | -1.332E-01 | 1.488E-01 | 1.892E-01 | 1.693E-02 | -0.704 |
| | 108.00 | | | -2.429E-02 | 2.683E-01 | 4.243E-01 | 3.678E-02 | -0.057 |
| | 338.32 | | | -5.413E-02 | 1.244E-01 | 1.942E-01 | 1.709E-02 | -0.279 |
| TH-232 | 911.07 | * | | 1.057E-03 | 6.765E-02 | 1.217E-01 | 1.409E-02 | 0.009 |
| | 969.11 | | | -7.671E-04 | 1.347E-01 | 2.271E-01 | 5.328E-02 | -0.003 |
| | 75.28 | | | -4.871E-01 | 1.287E+00 | 1.881E+00 | 2.859E-01 | -0.259 |
| | 86.59 | | | 2.028E-01 | 6.558E-01 | 1.026E+00 | 2.775E-01 | 0.198 |
| | 300.12 | | | 6.381E-02 | 1.918E-01 | 3.247E-01 | 4.918E-02 | 0.197 |
| PA-233 | 311.98 | * | | 4.858E-03 | 3.074E-02 | 5.125E-02 | 4.744E-03 | 0.095 |
| | 340.50 | | | 1.387E-01 | 2.880E-01 | 4.907E-01 | 1.172E-01 | 0.283 |
| | 398.62 | | | -4.547E-02 | 1.012E+00 | 1.629E+00 | 4.312E-01 | -0.028 |
| | 415.76 | | | 3.998E-01 | 8.790E-01 | 1.488E+00 | 3.180E-01 | 0.269 |
| | 63.00 | | | 7.958E-01 | 1.385E+00 | 1.346E+00 | 2.020E-01 | 0.591 |
| + PA-234 | 94.67 | | | 1.096E-01 | 7.416E-02 | 1.293E-01 | 1.638E-02 | 0.848 |
| | 98.44 | | | 1.258E-02 | 4.730E-02 | 6.788E-02 | 3.789E-02 | 0.185 |
| | 99.86 | | | 2.155E-01 | 2.054E-01 | 3.547E-01 | 3.122E-02 | 0.607 |
| | 111.00 | | | -2.001E-02 | 8.295E-02 | 1.292E-01 | 1.566E-02 | -0.155 |
| | 131.20 | | | -3.452E-02 | 4.859E-02 | 7.188E-02 | 6.213E-03 | -0.480 |
| | 152.70 | | | 4.014E-02 | 1.396E-01 | 2.406E-01 | 4.089E-02 | 0.167 |
| | 186.00 | | | -9.859E-02 | 7.592E-01 | 1.274E+00 | 3.980E-01 | -0.077 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|----------------|-----------|---------|
| | 226.40 | | | -4.819E-03 | 1.989E-01 | 3.305E-01 | 4.449E-02 | -0.015 |
| | 227.20 | | | -3.054E-02 | 2.182E-01 | 3.593E-01 | 3.240E-02 | -0.085 |
| | 248.90 | | | -2.435E-01 | 4.515E-01 | 6.738E-01 | 1.523E-01 | -0.361 |
| | 293.70 | | | 1.310E-01 | 3.216E-01 | 5.471E-01 | 9.602E-02 | 0.239 |
| | 369.80 | | | -1.143E-01 | 4.339E-01 | 6.832E-01 | 1.482E-01 | -0.167 |
| | 568.70 | | | -2.789E-02 | 5.123E-01 | 8.547E-01 | 7.242E-02 | -0.033 |
| | 569.50 | | | 5.900E-02 | 1.340E-01 | 2.368E-01 | 2.006E-02 | 0.249 |
| | 574.00 | | | -1.186E-01 | 6.919E-01 | 1.134E+00 | 9.602E-02 | -0.105 |
| | 699.00 | | | -4.103E-02 | 3.710E-01 | 6.065E-01 | 1.151E-01 | -0.068 |
| | 706.10 | | | 2.878E-02 | 5.910E-01 | 9.858E-01 | 4.392E-01 | 0.029 |
| | 733.00 | | | 6.230E-02 | 1.860E-01 | 3.218E-01 | 7.133E-02 | 0.194 |
| | 742.81 | | | 3.027E-01 | 6.682E-01 | 1.130E+00 | 7.597E-01 | 0.268 |
| | 796.30 | | | 5.212E-03 | 4.122E-01 | 6.799E-01 | 1.843E-01 | 0.008 |
| | 805.60 | | | -2.017E-01 | 5.254E-01 | 8.060E-01 | 2.475E-01 | -0.250 |
| | 819.60 | | | -3.586E-01 | 5.850E-01 | 8.221E-01 | 3.131E-01 | -0.436 |
| | 826.30 | | | -2.084E-01 | 4.173E-01 | 6.081E-01 | 2.724E-01 | -0.343 |
| | 831.60 | | | 6.226E-02 | 2.945E-01 | 4.997E-01 | 1.495E-01 | 0.125 |
| | 876.40 | | | -1.786E-01 | 5.101E-01 | 7.327E-01 | 7.534E-01 | -0.244 |
| | 880.51 | | | 4.027E-02 | 1.490E-01 | 2.542E-01 | 2.293E-02 | 0.158 |
| | 883.24 | | | -1.158E-01 | 1.630E-01 | 1.982E-01 | 1.333E-01 | -0.584 |
| | 899.00 | | | 1.868E-01 | 3.871E-01 | 6.745E-01 | 2.955E-01 | 0.277 |
| | 925.00 | | | -5.709E-01 | 4.418E-01 | 4.359E-01 | 3.938E-02 | -1.310 |
| | 926.50 | | | 1.604E-02 | 6.272E-02 | 1.084E-01 | 2.756E-02 | 0.148 |
| | 946.00 | * | | -4.375E-02 | 1.639E-01 | 2.543E-01 | 4.818E-02 | -0.172 |
| | 949.00 | | | 1.368E-01 | 2.134E-01 | 3.865E-01 | 3.478E-02 | 0.354 |
| | 980.50 | | | -3.397E-02 | 3.502E-01 | 5.579E-01 | 4.985E-02 | -0.061 |
| PA-234M | 1394.10 | | | 1.335E-01 | 5.995E-01 | 1.035E+00 | 6.734E-01 | 0.129 |
| | 766.42 | | | 3.665E+00 | 5.109E+00 | 8.809E+00 | 4.470E+00 | 0.416 |
| U-234 | 1001.03 | * | | -1.321E+00 | 2.567E+00 | 3.904E+00 | 3.979E-01 | -0.338 |
| | 609.31 | * | | -5.064E-02 | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| | 1120.29 | | | 1.171E-02 | 1.535E-01 | 2.524E-01 | 2.701E-02 | 0.046 |
| U-235 | 1764.49 | | | 2.622E-02 | 1.711E-01 | 3.251E-01 | 2.727E-02 | 0.081 |
| | 89.95 | | | 2.103E-02 | 5.176E-01 | 7.415E-01 | 2.303E-01 | 0.028 |
| + | 93.35 | | | 3.063E-01 | 4.166E-01 | 6.212E-01 | 1.750E-01 | 0.493 |
| | 105.00 | | | -1.498E-01 | 4.732E-01 | 7.309E-01 | 2.183E-01 | -0.205 |
| | 143.76 | * | | 1.008E-01 | 1.044E-01 | 1.748E-01 | 3.053E-02 | 0.577 |
| | 163.35 | | | 1.341E-02 | 2.511E-01 | 4.080E-01 | 7.764E-02 | 0.033 |
| | 185.71 | | | -9.550E-03 | 2.836E-02 | 4.712E-02 | 4.095E-03 | -0.203 |
| | 205.31 | | | 5.673E-02 | 2.159E-01 | 3.683E-01 | 7.067E-02 | 0.154 |
| NP-236 | 94.67 | | | 8.422E-02 | 5.585E-02 | 9.829E-02 | 8.849E-03 | 0.857 |
| | 98.44 | | | 9.495E-03 | 3.537E-02 | 5.131E-02 | 4.538E-03 | 0.185 |
| | 111.00 | | | -1.513E-02 | 6.273E-02 | 9.776E-02 | 8.471E-03 | -0.155 |
| | 160.31 | * | | -2.010E-02 | 3.893E-02 | 6.339E-02 | 5.397E-03 | -0.317 |
| NP-237 | 86.50 | * | | 2.202E-02 | 9.838E-02 | 1.531E-01 | 3.466E-02 | 0.144 |
| | 95.87 | | | -4.081E-01 | 4.654E-01 | 5.795E-01 | 1.434E-01 | -0.704 |
| NP-239 | 99.55 | | | 5.517E-02 | 7.616E-02 | 1.210E-01 | 1.066E-02 | 0.456 |
| | 117.00 | * | | -1.567E-02 | 8.604E-02 | 1.345E-01 | 1.171E-02 | -0.117 |
| | 209.75 | | | 2.076E-01 | 3.318E-01 | 5.805E-01 | 5.164E-02 | 0.358 |
| | 228.18 | | | -3.029E-02 | 1.142E-01 | 1.861E-01 | 1.679E-02 | -0.163 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 277.60 | | 1.954E-02 | 9.346E-02 | 1.568E-01 | 1.435E-02 | 0.125 |
| | | 334.30 | | 2.702E-02 | 6.752E-01 | 1.108E+00 | 9.800E-02 | 0.024 |
| AM-241 | | 59.54 | * | 4.125E-02 | 7.468E-02 | 1.146E-01 | 9.448E-03 | 0.360 |
| AM-243 | | 74.67 | * | -1.722E-02 | 2.454E-02 | 3.474E-02 | 2.889E-03 | -0.496 |
| | | 86.72 | | 1.435E+00 | 3.693E+00 | 5.832E+00 | 5.442E-01 | 0.246 |
| | | 117.66 | | 1.681E-01 | 1.760E+00 | 2.818E+00 | 2.457E-01 | 0.060 |
| | | 142.18 | | 1.319E+01 | 7.703E+00 | 1.437E+01 | 1.229E+00 | 0.917 |
| CM-243 | | 99.55 | | 5.674E-02 | 7.833E-02 | 1.245E-01 | 1.097E-02 | 0.456 |
| | | 103.76 | * | 1.622E-02 | 4.165E-02 | 6.865E-02 | 5.981E-03 | 0.236 |
| | | 117.00 | | -1.612E-02 | 8.847E-02 | 1.383E-01 | 1.204E-02 | -0.117 |
| | | 209.75 | | 2.045E-01 | 3.269E-01 | 5.720E-01 | 5.089E-02 | 0.358 |
| | | 228.18 | | -3.059E-02 | 1.153E-01 | 1.880E-01 | 1.696E-02 | -0.163 |
| | | 277.60 | | 1.969E-02 | 9.418E-02 | 1.580E-01 | 1.446E-02 | 0.125 |
| AM-246 | | 798.80 | | -6.488E-02 | 7.030E-02 | 9.748E-02 | 8.564E-03 | -0.666 |
| | | 1036.00 | | 3.789E-02 | 1.216E-01 | 2.107E-01 | 1.848E-02 | 0.180 |
| | | 1062.04 | | -2.784E-02 | 1.001E-01 | 1.514E-01 | 1.314E-02 | -0.184 |
| | | 1078.86 | * | 7.556E-03 | 7.021E-02 | 1.156E-01 | 9.948E-03 | 0.065 |
| CM-247 | | 278.00 | | 1.323E-01 | 3.785E-01 | 6.427E-01 | 5.878E-02 | 0.206 |
| | | 287.40 | | -1.480E-01 | 6.018E-01 | 9.673E-01 | 8.831E-02 | -0.153 |
| | | 402.60 | * | 7.892E-03 | 1.783E-02 | 3.039E-02 | 2.464E-03 | 0.260 |
| CF-249 | | 252.85 | | -3.693E-02 | 4.226E-01 | 6.947E-01 | 6.341E-02 | -0.053 |
| | | 333.44 | | 1.936E-02 | 8.809E-02 | 1.471E-01 | 1.302E-02 | 0.132 |
| | | 387.95 | * | 1.401E-02 | 2.092E-02 | 3.636E-02 | 2.949E-03 | 0.385 |
| CF-251 | | 176.60 | * | -2.017E-02 | 6.019E-02 | 9.876E-02 | 8.500E-03 | -0.204 |
| | | 227.00 | | 6.891E-03 | 1.908E-01 | 3.185E-01 | 2.871E-02 | 0.022 |
| | | 285.00 | | -3.997E-01 | 9.541E-01 | 1.441E+00 | 1.316E-01 | -0.277 |

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]G1202037546
* Acquisition date   : 18-FEB-2010 13:52:09 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 02:00:00.50 Half life ratio : 8.000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 11-FEB-2010 00:00:00 Nuclide Library : SOLID
* Sample ID          : G1202037546 Analyst initials: MXR1
* Batch Number       : 950786 Sample Quantity : 1.7126E+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 | 1.934E-02 | 2.645E-01 | 2.677E-01 | 0.000E+00 |
| TH-234 | 6.827E-01 | 1.166E+00 | 9.441E-01 | 0.000E+00 |
| U-238 | 6.827E-01 | 1.166E+00 | 9.441E-01 | 0.000E+00 |
| ANH-511 | 2.236E-02 | 3.683E-02 | 2.366E-02 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error) Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|--------------------------|--------------------|----------------------|
| BE-7 | 1.058E-01 | 1.477E-01 | 2.769E-01 | 0.000E+00 NOT IDENT. |
| NA-22 | -1.237E-02 | 1.638E-02 | 2.386E-02 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 6.782E+01 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| AL-26 | 1.929E-03 | 2.089E-02 | 3.571E-02 | 0.000E+00 NOT IDENT. |
| TI-44 | 3.086E-03 | 1.447E-02 | 2.686E-02 | 0.000E+00 NOT IDENT. |
| SC-46 | -1.103E-03 | 1.648E-02 | 2.797E-02 | 0.000E+00 NOT IDENT. |
| V-48 | 7.200E-04 | 2.077E-02 | 3.563E-02 | 0.000E+00 NOT IDENT. |
| CR-51 | 2.153E-02 | 1.480E-01 | 2.676E-01 | 0.000E+00 NOT IDENT. |
| MN-52 | -3.374E-02 | 3.913E-02 | 4.796E-02 | 0.000E+00 NOT IDENT. |
| MN-54 | -2.344E-02 | 1.934E-02 | 2.561E-02 | 0.000E+00 NOT IDENT. |
| CO-56 | -6.258E-04 | 1.738E-02 | 2.985E-02 | 0.000E+00 NOT IDENT. |
| CO-57 | -3.295E-03 | 1.112E-02 | 1.925E-02 | 0.000E+00 NOT IDENT. |
| CO-58 | 1.261E-02 | 1.604E-02 | 3.142E-02 | 0.000E+00 NOT IDENT. |
| FE-59 | 1.753E-02 | 3.842E-02 | 7.010E-02 | 0.000E+00 NOT IDENT. |
| CO-60 | -2.084E-03 | 1.769E-02 | 2.974E-02 | 0.000E+00 NOT IDENT. |
| ZN-65 | -4.942E-02 | 4.379E-02 | 5.675E-02 | 0.000E+00 NOT IDENT. |
| GE-68 | 1.497E-01 | 6.062E-01 | 1.068E+00 | 0.000E+00 NOT IDENT. |
| AS-73 | -1.154E-02 | 3.841E-01 | 7.167E-01 | 0.000E+00 NOT IDENT. |
| AS-74 | -2.255E-02 | 3.341E-02 | 5.431E-02 | 0.000E+00 NOT IDENT. |
| SE-75 | -1.795E-03 | 2.091E-02 | 3.756E-02 | 0.000E+00 NOT IDENT. |
| BR-77 | -5.219E-01 | 5.614E-01 | 8.143E-01 | 0.000E+00 FAIL ABUN |
| SR-82 | -5.606E-02 | 1.499E-01 | 2.457E-01 | 0.000E+00 NOT IDENT. |
| RB-83 | -3.339E-02 | 3.097E-02 | 4.329E-02 | 0.000E+00 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| RB-84 | 4.083E-03 | 3.030E-02 | 5.330E-02 | 0.000E+00 | NOT IDENT. |
| KR-85 | 0.000E+00 | 4.951E+00 | 9.108E+00 | 0.000E+00 | NOT IDENT. |
| SR-85 | 0.000E+00 | 2.345E-02 | 4.314E-02 | 0.000E+00 | NOT IDENT. |
| RB-86 | -1.096E-01 | 3.055E-01 | 4.804E-01 | 0.000E+00 | NOT IDENT. |
| Y-88 | 9.661E-03 | 1.945E-02 | 3.687E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -3.346E-03 | 1.466E-02 | 2.501E-02 | 0.000E+00 | NOT IDENT. |
| Y-91 | 6.086E-01 | 6.062E+00 | 1.080E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | 1.445E-02 | 1.759E-02 | 3.394E-02 | 0.000E+00 | NOT IDENT. |
| NB-95 | -2.761E-03 | 1.684E-02 | 2.861E-02 | 0.000E+00 | NOT IDENT. |
| NB-95M | -1.681E-02 | 5.802E-02 | 9.009E-02 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.107E-02 | 2.979E-02 | 4.884E-02 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 2.523E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 6.286E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 3.930E-01 | 7.763E-01 | 1.463E+00 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 1.543E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -4.852E-03 | 1.670E-02 | 2.920E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | 3.976E-03 | 1.512E-02 | 2.692E-02 | 0.000E+00 | NOT IDENT. |
| RU-103 | 1.227E-02 | 1.821E-02 | 3.386E-02 | 0.000E+00 | NOT IDENT. |
| RH-106 | -3.354E-02 | 1.571E-01 | 2.717E-01 | 0.000E+00 | FAIL ABUN |
| RU-106 | -3.354E-02 | 1.571E-01 | 2.717E-01 | 0.000E+00 | FAIL ABUN |
| AG-108M | 3.835E-03 | 1.601E-02 | 2.865E-02 | 0.000E+00 | NOT IDENT. |
| CD-109 | 3.036E-01 | 3.408E-01 | 5.990E-01 | 0.000E+00 | NOT IDENT. |
| AG-110M | -1.060E-02 | 1.547E-02 | 2.447E-02 | 0.000E+00 | NOT IDENT. |
| IN-111 | 3.400E-05 | 7.633E-02 | 1.389E-01 | 0.000E+00 | NOT IDENT. |
| IN-113M | 1.408E-02 | 2.192E-02 | 4.101E-02 | 0.000E+00 | NOT IDENT. |
| SN-113 | 1.408E-02 | 2.192E-02 | 4.101E-02 | 0.000E+00 | NOT IDENT. |
| IN-114M | -7.177E-02 | 8.334E-02 | 1.453E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 9.675E-03 | 5.116E-01 | 9.256E-01 | 0.000E+00 | NOT IDENT. |
| SN-117M | -3.809E-03 | 1.710E-02 | 3.162E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 5.131E-02 | 1.461E-01 | 2.729E-01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 1.864E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 2.110E-03 | 1.240E-02 | 2.355E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | -6.345E-02 | 1.027E-01 | 1.700E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | 5.849E-02 | 3.977E-02 | 9.023E-02 | 0.000E+00 | NOT IDENT. |
| SB-125 | -3.426E-03 | 3.936E-02 | 6.761E-02 | 0.000E+00 | NOT IDENT. |
| TE-125M | 2.614E+00 | 3.609E+00 | 6.836E+00 | 0.000E+00 | NOT IDENT. |
| I-126 | -2.767E-02 | 5.197E-02 | 8.408E-02 | 0.000E+00 | NOT IDENT. |
| SB-126 | 5.843E-03 | 4.828E-02 | 8.532E-02 | 0.000E+00 | NOT IDENT. |
| SN-126 | 2.324E-02 | 3.418E-02 | 5.901E-02 | 0.000E+00 | FAIL ABUN |
| SB-127 | 1.503E-01 | 1.820E-01 | 3.532E-01 | 0.000E+00 | NOT IDENT. |
| XE-127 | -3.296E-03 | 1.768E-02 | 3.215E-02 | 0.000E+00 | NOT IDENT. |
| I-131 | 5.428E-03 | 2.743E-02 | 4.951E-02 | 0.000E+00 | NOT IDENT. |
| TE-132 | -1.784E-02 | 6.890E-02 | 1.236E-01 | 0.000E+00 | NOT IDENT. |
| BA-133 | -3.821E-03 | 2.145E-02 | 3.717E-02 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 6.692E+00 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 5.241E-03 | 2.087E-02 | 3.772E-02 | 0.000E+00 | NOT IDENT. |
| CS-135 | 8.790E-03 | 7.815E-02 | 1.426E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.318E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -2.661E-02 | 3.319E-02 | 4.606E-02 | 0.000E+00 | NOT IDENT. |
| BA-137M | 1.401E-02 | 1.514E-02 | 3.027E-02 | 0.000E+00 | NOT IDENT. |
| CS-137 | 1.481E-02 | 1.601E-02 | 3.200E-02 | 0.000E+00 | NOT IDENT. |
| CE-139 | 1.832E-04 | 1.348E-02 | 2.526E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | 2.719E-02 | 8.630E-02 | 1.531E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | 1.119E-02 | 2.766E-02 | 5.174E-02 | 0.000E+00 | NOT IDENT. |
| CE-141 | 4.328E-03 | 2.211E-02 | 4.233E-02 | 0.000E+00 | NOT IDENT. |
| CE-143 | 5.433E-01 | 1.346E+00 | 2.497E+00 | 0.000E+00 | NOT IDENT. |
| CE-144 | -2.236E-02 | 8.761E-02 | 1.512E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -2.998E-03 | 1.659E-02 | 2.848E-02 | 0.000E+00 | NOT IDENT. |
| PR-144 | -2.023E-01 | 1.119E+00 | 1.922E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | 1.336E-02 | 2.311E-02 | 4.262E-02 | 0.000E+00 | NOT IDENT. |
| ND-147 | -7.224E-02 | 1.629E-01 | 2.767E-01 | 0.000E+00 | NOT IDENT. |
| PM-149 | -3.376E-01 | 4.543E+00 | 7.746E+00 | 0.000E+00 | NOT IDENT. |
| EU-152 | 6.314E-03 | 4.904E-02 | 8.802E-02 | 0.000E+00 | NOT IDENT. |
| GD-153 | -9.652E-03 | 3.802E-02 | 5.884E-02 | 0.000E+00 | NOT IDENT. |
| EU-154 | -3.365E-02 | 4.623E-02 | 6.791E-02 | 0.000E+00 | NOT IDENT. |
| EU-155 | -1.631E-02 | 4.656E-02 | 8.109E-02 | 0.000E+00 | NOT IDENT. |
| TB-160 | 5.022E-02 | 6.706E-02 | 1.285E-01 | 0.000E+00 | NOT IDENT. |
| HO-166M | 1.425E-02 | 2.870E-02 | 5.391E-02 | 0.000E+00 | NOT IDENT. |
| TM-171 | 1.957E+00 | 1.176E+01 | 1.973E+01 | 0.000E+00 | NOT IDENT. |
| LU-176 | 7.307E-03 | 1.237E-02 | 2.331E-02 | 0.000E+00 | NOT IDENT. |
| LU-177 | -1.376E-01 | 2.060E-01 | 3.581E-01 | 0.000E+00 | NOT IDENT. |
| LU-177M | -6.718E-02 | 8.950E-02 | 1.422E-01 | 0.000E+00 | NOT IDENT. |
| HF-181 | -1.494E-02 | 1.810E-02 | 2.724E-02 | 0.000E+00 | FAIL ABUN |
| W-181 | 1.964E-01 | 3.341E-01 | 2.902E-01 | 0.000E+00 | FAIL ABUN |
| TA-182 | -2.346E-02 | 6.141E-02 | 9.739E-02 | 0.000E+00 | NOT IDENT. |
| RE-183 | 2.714E-02 | 5.188E-02 | 9.624E-02 | 0.000E+00 | NOT IDENT. |
| RE-184 | -9.542E-03 | 1.070E-01 | 1.929E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -1.087E-02 | 2.034E-02 | 3.340E-02 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| RE-188 | 2.644E-03 | 6.898E-02 | 1.301E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -2.725E-01 | 3.154E+00 | 5.619E+00 | 0.000E+00 | FAIL ABUN |
| IR-192 | 1.618E-03 | 1.485E-02 | 2.679E-02 | 0.000E+00 | NOT IDENT. |
| AU-195 | 3.010E-02 | 1.107E-01 | 1.812E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | -1.200E+00 | 1.818E+00 | 2.947E+00 | 0.000E+00 | NOT IDENT. |
| TL-201 | -1.210E-01 | 5.675E-01 | 1.046E+00 | 0.000E+00 | NOT IDENT. |
| TL-202 | 7.941E-03 | 2.326E-02 | 4.200E-02 | 0.000E+00 | NOT IDENT. |
| HG-203 | -1.457E-03 | 1.778E-02 | 3.181E-02 | 0.000E+00 | NOT IDENT. |
| BI-207 | 9.186E-03 | 2.244E-02 | 4.107E-02 | 0.000E+00 | NOT IDENT. |
| TL-207 | 1.259E-01 | 3.441E-01 | 6.322E-01 | 0.000E+00 | NOT IDENT. |
| TL-208 | -7.562E-03 | 2.231E-02 | 3.826E-02 | 0.000E+00 | FAIL ABUN |
| PO-209 | -1.230E+00 | 3.381E+00 | 5.400E+00 | 0.000E+00 | NOT IDENT. |
| BI-210 | 3.791E-01 | 2.025E+00 | 3.645E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 3.791E-01 | 2.025E+00 | 3.645E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 3.791E-01 | 2.025E+00 | 3.645E+00 | 0.000E+00 | NOT IDENT. |
| BI-211 | 3.356E-02 | 1.168E-01 | 2.042E-01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -7.572E-02 | 4.807E-01 | 8.214E-01 | 0.000E+00 | NOT IDENT. |
| BI-212 | -1.377E-01 | 1.593E-01 | 2.398E-01 | 0.000E+00 | NOT IDENT. |
| PB-212 | 2.085E-02 | 3.706E-02 | 5.704E-02 | 0.000E+00 | FAIL ABUN |
| PO-212 | 2.085E-02 | 3.706E-02 | 5.704E-02 | 0.000E+00 | FAIL ABUN |
| BI-214 | -5.064E-02 | 4.296E-02 | 6.118E-02 | 0.000E+00 | NOT IDENT. |
| PB-214 | 2.015E-02 | 4.050E-02 | 7.205E-02 | 0.000E+00 | NOT IDENT. |
| PO-214 | 2.015E-02 | 4.050E-02 | 7.205E-02 | 0.000E+00 | NOT IDENT. |
| PO-215 | 1.259E-01 | 3.441E-01 | 6.322E-01 | 0.000E+00 | NOT IDENT. |
| PO-216 | 2.085E-02 | 3.706E-02 | 5.704E-02 | 0.000E+00 | FAIL ABUN |
| PO-218 | 2.015E-02 | 4.050E-02 | 7.205E-02 | 0.000E+00 | NOT IDENT. |
| RN-219 | -5.478E-02 | 2.044E-01 | 3.459E-01 | 0.000E+00 | NOT IDENT. |
| RN-220 | -1.102E+01 | 1.231E+01 | 1.942E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | 1.259E-01 | 3.441E-01 | 6.322E-01 | 0.000E+00 | NOT IDENT. |
| RA-224 | 6.352E-02 | 3.347E-01 | 5.477E-01 | 0.000E+00 | NOT IDENT. |
| RA-226 | -5.064E-02 | 4.296E-02 | 6.118E-02 | 0.000E+00 | NOT IDENT. |
| AC-227 | -1.212E-01 | 1.861E-01 | 3.167E-01 | 0.000E+00 | NOT IDENT. |
| TH-227 | -1.212E-01 | 1.864E-01 | 3.167E-01 | 0.000E+00 | FAIL ABUN |
| AC-228 | 1.057E-03 | 6.629E-02 | 1.253E-01 | 0.000E+00 | NOT IDENT. |
| RA-228 | 1.057E-03 | 6.629E-02 | 1.253E-01 | 0.000E+00 | NOT IDENT. |
| TH-228 | 2.100E-02 | 3.734E-02 | 5.747E-02 | 0.000E+00 | FAIL ABUN |
| TH-229 | -9.407E-02 | 2.490E-01 | 4.489E-01 | 0.000E+00 | NOT IDENT. |
| TH-230 | -5.064E-02 | 4.296E-02 | 6.118E-02 | 0.000E+00 | NOT IDENT. |
| PA-231 | 3.904E-01 | 7.797E-01 | 1.442E+00 | 0.000E+00 | NOT IDENT. |
| TH-231 | 1.259E-01 | 3.441E-01 | 6.322E-01 | 0.000E+00 | NOT IDENT. |
| U-231 | -1.332E-01 | 1.459E-01 | 2.094E-01 | 0.000E+00 | FAIL ABUN |
| TH-232 | 1.057E-03 | 6.629E-02 | 1.253E-01 | 0.000E+00 | NOT IDENT. |
| PA-233 | 4.858E-03 | 3.013E-02 | 5.470E-02 | 0.000E+00 | NOT IDENT. |
| PA-234 | -4.375E-02 | 1.606E-01 | 2.616E-01 | 0.000E+00 | FAIL ABUN |
| PA-234M | -1.321E+00 | 2.516E+00 | 4.009E+00 | 0.000E+00 | NOT IDENT. |
| U-234 | -5.064E-02 | 4.296E-02 | 6.118E-02 | 0.000E+00 | NOT IDENT. |
| U-235 | 1.008E-01 | 1.023E-01 | 1.910E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -2.010E-02 | 3.815E-02 | 6.907E-02 | 0.000E+00 | NOT IDENT. |
| NP-237 | 2.202E-02 | 9.642E-02 | 1.699E-01 | 0.000E+00 | NOT IDENT. |
| NP-239 | -1.567E-02 | 8.432E-02 | 1.479E-01 | 0.000E+00 | NOT IDENT. |
| AM-241 | 4.125E-02 | 7.319E-02 | 1.286E-01 | 0.000E+00 | NOT IDENT. |
| AM-243 | -1.722E-02 | 2.405E-02 | 3.873E-02 | 0.000E+00 | NOT IDENT. |
| CM-243 | 1.622E-02 | 4.082E-02 | 7.579E-02 | 0.000E+00 | NOT IDENT. |
| AM-246 | 7.556E-03 | 6.880E-02 | 1.184E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 7.892E-03 | 1.747E-02 | 3.216E-02 | 0.000E+00 | NOT IDENT. |
| CF-249 | 1.401E-02 | 2.051E-02 | 3.853E-02 | 0.000E+00 | NOT IDENT. |
| CF-251 | -2.017E-02 | 5.899E-02 | 1.073E-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]G1202037546.CNF;1
Sample date        : 11-FEB-2010 00:00:00 Acquisition date : 18-FEB-2010 13:52:09
Sample ID          : G1202037546          Sample quantity  : 1.71260E+02 GRAM
Detector name      : GAM01                Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00        Elapsed real time: 0 02:00:00.50  0.0%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 950786                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 | 1 | 10.67* | 9.456E-01 | 1.934E-02 | 1.934E-02 | 1395.37 |
| TH-234 | 63.29 | 34 | 3.80* | 2.850E+00 | 6.827E-01 | 6.827E-01 | 174.33 |
| | 92.38 | 35 | 5.41 | 5.506E+00 | 2.548E-01 | 2.548E-01 | 134.32 |
| U-238 | 63.29 | 34 | 3.80* | 2.850E+00 | 6.827E-01 | 6.827E-01 | 174.33 |
| | 92.38 | 35 | 5.41 | 5.506E+00 | 2.548E-01 | 2.548E-01 | 133.37 |
| ANH-511 | 511.00 | 24 | 100.00* | 2.392E+00 | 2.236E-02 | 2.236E-02 | 168.10 |

Flag: "*" = Keyline

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 |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 1.934E-02 | 1.934E-02 | 26.99E-02 | 1395.37 | |
| TH-234 | 4.47E+09Y | 1.00 | 6.827E-01 | 6.827E-01 | 11.90E-01 | 174.33 | |
| U-238 | 4.47E+09Y | 1.00 | 6.827E-01 | 6.827E-01 | 11.90E-01 | 174.33 | |
| ANH-511 | 1.00E+09Y | 1.00 | 2.236E-02 | 2.236E-02 | 3.758E-02 | 168.10 | |
| Total Activity : | | | 1.407E+00 | 1.407E+00 | | | |

Grand Total Activity : 1.407E+00 1.407E+00

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

Unidentified Energy Lines
Sample ID : G1202037546

Page : 3
Acquisition date : 18-FEB-2010 13:52:09

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 239.03 | 18 | 55 | 1.42 | 478.60 | 474 | 9 | 2.56E-03 | **** | 4.34E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037546.CNF;1
* Acquisition date   : 18-FEB-2010 13:52:09  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 02:00:00.50          Half life ratio : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 11-FEB-2010 00:00:00  Nuclide Library : SOLID
* Sample ID          : G1202037546           Analyst initials: MXR1
* Batch Number       : 950786                Sample Quantity : 1.71260E+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 | 1.934E-02 | 2.699E-01 | 2.641E-01 | 2.348E-02 | 0.073 |
| TH-234 | 6.827E-01 | 1.190E+00 | 8.429E-01 | 1.481E-01 | 0.810 |
| U-238 | 6.827E-01 | 1.190E+00 | 8.429E-01 | 1.481E-01 | 0.810 |
| ANH-511 | 2.236E-02 | 3.758E-02 | 2.252E-02 | 1.909E-03 | 0.993 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | 1.058E-01 | | 1.507E-01 | 2.631E-01 | 2.393E-02 | 0.402 |
| NA-22 | -1.237E-02 | | 1.671E-02 | 2.343E-02 | 1.967E-03 | -0.528 |
| NA-24 | 9.748E-07 | | 3.460E-05 | Half-Life too short | | |
| AL-26 | 1.929E-03 | | 2.132E-02 | 3.551E-02 | 2.942E-03 | 0.054 |
| TI-44 | 3.086E-03 | | 1.476E-02 | 2.413E-02 | 2.071E-03 | 0.128 |
| SC-46 | -1.103E-03 | | 1.681E-02 | 2.713E-02 | 2.453E-03 | -0.041 |
| V-48 | 7.200E-04 | | 2.120E-02 | 3.468E-02 | 3.096E-03 | 0.021 |
| CR-51 | 2.153E-02 | | 1.510E-01 | 2.510E-01 | 2.361E-02 | 0.086 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| MN-52 | -3.374E-02 | | 3.993E-02 | 4.729E-02 | 4.083E-03 | -0.713 |
| MN-54 | -2.344E-02 | | 1.974E-02 | 2.478E-02 | 2.206E-03 | -0.946 |
| CO-56 | -6.258E-04 | | 1.773E-02 | 2.890E-02 | 2.582E-03 | -0.022 |
| CO-57 | -3.295E-03 | | 1.134E-02 | 1.752E-02 | 1.542E-03 | -0.188 |
| CO-58 | 1.261E-02 | | 1.637E-02 | 3.038E-02 | 2.687E-03 | 0.415 |
| FE-59 | 1.753E-02 | | 3.920E-02 | 6.849E-02 | 6.313E-03 | 0.256 |
| CO-60 | -2.084E-03 | | 1.805E-02 | 2.925E-02 | 2.493E-03 | -0.071 |
| ZN-65 | -4.942E-02 | | 4.468E-02 | 5.547E-02 | 4.681E-03 | -0.891 |
| GE-68 | 1.497E-01 | | 6.186E-01 | 1.043E+00 | 8.981E-02 | 0.144 |
| AS-73 | -1.154E-02 | | 3.920E-01 | 6.368E-01 | 5.154E-02 | -0.018 |
| AS-74 | -2.255E-02 | | 3.409E-02 | 5.197E-02 | 4.379E-03 | -0.434 |
| SE-75 | -1.795E-03 | | 2.134E-02 | 3.501E-02 | 3.216E-03 | -0.051 |
| BR-77 | -5.219E-01 | | 5.729E-01 | 7.758E-01 | 6.582E-02 | -0.673 |
| SR-82 | -5.606E-02 | | 1.529E-01 | 2.372E-01 | 2.065E-02 | -0.236 |
| RB-83 | -3.339E-02 | | 3.160E-02 | 4.125E-02 | 3.499E-03 | -0.810 |
| RB-84 | 4.083E-03 | | 3.092E-02 | 5.168E-02 | 4.663E-03 | 0.079 |
| KR-85 | 9.152E+00 | | 5.052E+00 | 8.673E+00 | 7.354E-01 | 1.055 |
| SR-85 | 4.335E-02 | | 2.393E-02 | 4.108E-02 | 3.483E-03 | 1.055 |
| RB-86 | -1.096E-01 | | 3.118E-01 | 4.690E-01 | 4.040E-02 | -0.234 |
| Y-88 | 9.661E-03 | | 1.985E-02 | 3.668E-02 | 3.017E-03 | 0.263 |
| ZR-88 | -3.346E-03 | | 1.495E-02 | 2.361E-02 | 1.901E-03 | -0.142 |
| Y-91 | 6.086E-01 | | 6.186E+00 | 1.058E+01 | 8.669E-01 | 0.058 |
| NB-94 | 1.445E-02 | | 1.794E-02 | 3.265E-02 | 2.741E-03 | 0.443 |
| NB-95 | -2.761E-03 | | 1.719E-02 | 2.761E-02 | 2.393E-03 | -0.100 |
| NB-95M | -1.681E-02 | | 5.920E-02 | 8.367E-02 | 8.582E-03 | -0.201 |
| ZR-95 | -1.107E-02 | | 3.040E-02 | 4.711E-02 | 4.476E-03 | -0.235 |
| NB-97 | -9.682E-06 | | 1.287E-05 | Half-Life too short | | |
| ZR-97 | 3.612E-04 | | 3.207E-04 | Half-Life too short | | |
| MO-99 | 3.930E-01 | | 7.922E-01 | 1.410E+00 | 2.136E-01 | 0.279 |
| TC-99M | -2.055E+01 | | 7.873E+00 | Half-Life too short | | |
| RH-101 | -4.852E-03 | | 1.704E-02 | 2.697E-02 | 2.373E-03 | -0.180 |
| RH-102 | 3.976E-03 | | 1.543E-02 | 2.557E-02 | 2.150E-03 | 0.156 |
| RU-103 | 1.227E-02 | | 1.858E-02 | 3.221E-02 | 4.529E-03 | 0.381 |
| RH-106 | -3.354E-02 | | 1.603E-01 | 2.604E-01 | 3.433E-02 | -0.129 |
| RU-106 | -3.354E-02 | | 1.603E-01 | 2.604E-01 | 2.175E-02 | -0.129 |
| AG-108M | 3.835E-03 | | 1.634E-02 | 2.714E-02 | 2.340E-03 | 0.141 |
| CD-109 | 3.036E-01 | | 3.477E-01 | 5.399E-01 | 5.109E-02 | 0.562 |
| AG-110M | -1.060E-02 | | 1.578E-02 | 2.349E-02 | 1.992E-03 | -0.451 |
| IN-111 | 3.400E-05 | | 7.788E-02 | 1.292E-01 | 1.176E-02 | 0.000 |
| IN-113M | 1.408E-02 | | 2.237E-02 | 3.871E-02 | 3.225E-03 | 0.364 |
| SN-113 | 1.408E-02 | | 2.237E-02 | 3.871E-02 | 3.225E-03 | 0.364 |
| IN-114M | -7.177E-02 | | 8.504E-02 | 1.341E-01 | 1.171E-02 | -0.535 |
| CD-115 | 9.675E-03 | | 5.221E-01 | 8.822E-01 | 7.489E-02 | 0.011 |
| SN-117M | -3.809E-03 | | 1.745E-02 | 2.901E-02 | 2.470E-03 | -0.131 |
| SB-122 | 5.131E-02 | | 1.491E-01 | 2.606E-01 | 2.210E-02 | 0.197 |
| I-123 | 3.171E-05 | | 9.510E-05 | Half-Life too short | | |
| TE-123M | 2.110E-03 | | 1.266E-02 | 2.161E-02 | 1.851E-03 | 0.098 |
| I-124 | -6.345E-02 | | 1.048E-01 | 1.628E-01 | 1.369E-02 | -0.390 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| SB-124 | 5.849E-02 | | 4.058E-02 | 8.950E-02 | 7.934E-03 | 0.653 |
| SB-125 | -3.426E-03 | | 4.016E-02 | 6.400E-02 | 5.385E-03 | -0.054 |
| TE-125M | 2.614E+00 | | 3.683E+00 | 6.202E+00 | 6.419E-01 | 0.421 |
| I-126 | -2.767E-02 | | 5.303E-02 | 8.076E-02 | 6.634E-03 | -0.343 |
| SB-126 | 5.843E-03 | | 4.926E-02 | 8.216E-02 | 6.964E-03 | 0.071 |
| SN-126 | 2.324E-02 | | 3.487E-02 | 5.318E-02 | 5.009E-03 | 0.437 |
| SB-127 | 1.503E-01 | | 1.858E-01 | 3.396E-01 | 3.164E-02 | 0.443 |
| XE-127 | -3.296E-03 | | 1.804E-02 | 2.973E-02 | 2.628E-03 | -0.111 |
| I-131 | 5.428E-03 | | 2.799E-02 | 4.662E-02 | 4.159E-03 | 0.116 |
| TE-132 | -1.784E-02 | | 7.031E-02 | 1.146E-01 | 1.706E-02 | -0.156 |
| BA-133 | -3.821E-03 | | 2.188E-02 | 3.497E-02 | 4.612E-03 | -0.109 |
| I-133 | -8.993E-07 | | 3.414E-06 | Half-Life too short | | |
| CS-134 | 5.241E-03 | | 2.130E-02 | 3.645E-02 | 3.221E-03 | 0.144 |
| CS-135 | 8.790E-03 | | 7.974E-02 | 1.330E-01 | 1.386E-02 | 0.066 |
| I-135 | 1.293E+01 | | 6.722E+00 | Half-Life too short | | |
| CS-136 | -2.661E-02 | | 3.386E-02 | 4.493E-02 | 4.082E-03 | -0.592 |
| BA-137M | 1.401E-02 | | 1.545E-02 | 2.907E-02 | 2.381E-03 | 0.482 |
| CS-137 | 1.481E-02 | | 1.633E-02 | 3.073E-02 | 2.522E-03 | 0.482 |
| CE-139 | 1.832E-04 | | 1.376E-02 | 2.321E-02 | 1.977E-03 | 0.008 |
| BA-140 | 2.719E-02 | | 8.806E-02 | 1.460E-01 | 4.832E-02 | 0.186 |
| LA-140 | 1.119E-02 | | 2.822E-02 | 5.122E-02 | 4.419E-03 | 0.219 |
| CE-141 | 4.328E-03 | | 2.257E-02 | 3.874E-02 | 3.369E-03 | 0.112 |
| CE-143 | 5.433E-01 | | 1.374E+00 | 2.335E+00 | 5.050E-01 | 0.233 |
| CE-144 | -2.236E-02 | | 8.940E-02 | 1.380E-01 | 2.148E-02 | -0.162 |
| PM-144 | -2.998E-03 | | 1.692E-02 | 2.739E-02 | 2.292E-03 | -0.109 |
| PR-144 | -2.023E-01 | | 1.142E+00 | 1.849E+00 | 1.547E-01 | -0.109 |
| PM-146 | 1.336E-02 | | 2.359E-02 | 4.043E-02 | 4.246E-03 | 0.330 |
| ND-147 | -7.224E-02 | | 1.663E-01 | 2.638E-01 | 3.923E-02 | -0.274 |
| PM-149 | -3.376E-01 | | 4.636E+00 | 7.238E+00 | 1.145E+00 | -0.047 |
| EU-152 | 6.314E-03 | | 5.004E-02 | 8.274E-02 | 7.650E-03 | 0.076 |
| GD-153 | -9.652E-03 | | 3.880E-02 | 5.320E-02 | 4.725E-03 | -0.181 |
| EU-154 | -3.365E-02 | | 4.718E-02 | 6.669E-02 | 7.426E-03 | -0.505 |
| EU-155 | -1.631E-02 | | 4.751E-02 | 7.349E-02 | 6.464E-03 | -0.222 |
| TB-160 | 5.022E-02 | | 6.842E-02 | 1.246E-01 | 1.123E-02 | 0.403 |
| HO-166M | 1.425E-02 | | 2.929E-02 | 5.189E-02 | 4.378E-03 | 0.275 |
| TM-171 | 1.957E+00 | | 1.200E+01 | 1.764E+01 | 1.390E+00 | 0.111 |
| LU-176 | 7.307E-03 | | 1.262E-02 | 2.183E-02 | 1.976E-03 | 0.335 |
| LU-177 | -1.376E-01 | | 2.102E-01 | 3.313E-01 | 2.944E-02 | -0.415 |
| LU-177M | -6.718E-02 | | 9.133E-02 | 1.344E-01 | 1.098E-02 | -0.500 |
| HF-181 | -1.494E-02 | | 1.847E-02 | 2.589E-02 | 2.181E-03 | -0.577 |
| W-181 | 1.964E-01 | + | 3.410E-01 | 2.593E-01 | 2.024E-02 | 0.757 |
| TA-182 | -2.346E-02 | | 6.266E-02 | 9.550E-02 | 7.872E-03 | -0.246 |
| RE-183 | 2.714E-02 | | 5.294E-02 | 8.836E-02 | 7.522E-03 | 0.307 |
| RE-184 | -9.542E-03 | | 1.092E-01 | 1.795E-01 | 1.639E-02 | -0.053 |
| OS-185 | -1.087E-02 | | 2.075E-02 | 3.204E-02 | 2.647E-03 | -0.339 |
| RE-188 | 2.644E-03 | | 7.039E-02 | 1.193E-01 | 1.016E-02 | 0.022 |
| W-188 | -2.725E-01 | | 3.218E+00 | 5.253E+00 | 4.791E-01 | -0.052 |
| IR-192 | 1.618E-03 | | 1.515E-02 | 2.512E-02 | 2.263E-03 | 0.064 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| AU-195 | 3.010E-02 | | 1.130E-01 | 1.639E-01 | 1.447E-02 | 0.184 |
| TL-200 | -1.200E+00 | | 1.855E+00 | 2.776E+00 | 2.342E-01 | -0.432 |
| TL-201 | -1.210E-01 | | 5.791E-01 | 9.611E-01 | 8.195E-02 | -0.126 |
| TL-202 | 7.941E-03 | | 2.374E-02 | 3.980E-02 | 3.299E-03 | 0.200 |
| HG-203 | -1.457E-03 | | 1.814E-02 | 2.970E-02 | 2.785E-03 | -0.049 |
| BI-207 | 9.186E-03 | | 2.290E-02 | 4.008E-02 | 3.474E-03 | 0.229 |
| TL-207 | 1.259E-01 | | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| TL-208 | -7.562E-03 | | 2.276E-02 | 3.659E-02 | 3.323E-03 | -0.207 |
| PO-209 | -1.230E+00 | | 3.450E+00 | 5.239E+00 | 4.744E-01 | -0.235 |
| BI-210 | 3.791E-01 | | 2.066E+00 | 3.225E+00 | 3.044E-01 | 0.118 |
| PB-210 | 3.791E-01 | | 2.066E+00 | 3.225E+00 | 3.044E-01 | 0.118 |
| PO-210 | 3.791E-01 | | 2.066E+00 | 3.225E+00 | 2.765E-01 | 0.118 |
| BI-211 | 3.356E-02 | | 1.192E-01 | 1.921E-01 | 1.747E-02 | 0.175 |
| PB-211 | -7.572E-02 | | 4.905E-01 | 7.761E-01 | 4.859E-01 | -0.098 |
| BI-212 | -1.377E-01 | | 1.625E-01 | 2.310E-01 | 2.290E-02 | -0.596 |
| PB-212 | 2.085E-02 | + | 3.781E-02 | 5.300E-02 | 5.366E-03 | 0.393 |
| PO-212 | 2.085E-02 | + | 3.781E-02 | 5.300E-02 | 5.366E-03 | 0.393 |
| BI-214 | -5.064E-02 | | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| PB-214 | 2.015E-02 | | 4.133E-02 | 6.778E-02 | 7.102E-03 | 0.297 |
| PO-214 | 2.015E-02 | | 4.133E-02 | 6.778E-02 | 7.102E-03 | 0.297 |
| PO-215 | 1.259E-01 | | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| PO-216 | 2.085E-02 | + | 3.781E-02 | 5.300E-02 | 5.366E-03 | 0.393 |
| PO-218 | 2.015E-02 | | 4.133E-02 | 6.778E-02 | 7.102E-03 | 0.297 |
| RN-219 | -5.478E-02 | | 2.085E-01 | 3.268E-01 | 4.816E-02 | -0.168 |
| RN-220 | -1.102E+01 | | 1.256E+01 | 1.853E+01 | 1.573E+00 | -0.595 |
| RA-223 | 1.259E-01 | | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| RA-224 | 6.352E-02 | | 3.416E-01 | 5.091E-01 | 4.626E-02 | 0.125 |
| RA-226 | -5.064E-02 | | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| AC-227 | -1.212E-01 | | 1.899E-01 | 2.949E-01 | 4.613E-02 | -0.411 |
| TH-227 | -1.212E-01 | | 1.902E-01 | 2.949E-01 | 5.401E-02 | -0.411 |
| AC-228 | 1.057E-03 | | 6.765E-02 | 1.217E-01 | 1.409E-02 | 0.009 |
| RA-228 | 1.057E-03 | | 6.765E-02 | 1.217E-01 | 1.409E-02 | 0.009 |
| TH-228 | 2.100E-02 | + | 3.810E-02 | 5.340E-02 | 5.407E-03 | 0.393 |
| TH-229 | -9.407E-02 | | 2.540E-01 | 4.144E-01 | 3.631E-02 | -0.227 |
| TH-230 | -5.064E-02 | | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| PA-231 | 3.904E-01 | | 7.956E-01 | 1.348E+00 | 2.086E-01 | 0.290 |
| TH-231 | 1.259E-01 | | 3.512E-01 | 5.931E-01 | 1.059E-01 | 0.212 |
| U-231 | -1.332E-01 | | 1.488E-01 | 1.892E-01 | 1.693E-02 | -0.704 |
| TH-232 | 1.057E-03 | | 6.765E-02 | 1.217E-01 | 1.409E-02 | 0.009 |
| PA-233 | 4.858E-03 | | 3.074E-02 | 5.125E-02 | 4.744E-03 | 0.095 |
| PA-234 | -4.375E-02 | | 1.639E-01 | 2.543E-01 | 4.818E-02 | -0.172 |
| PA-234M | -1.321E+00 | | 2.567E+00 | 3.904E+00 | 3.979E-01 | -0.338 |
| U-234 | -5.064E-02 | | 4.384E-02 | 5.859E-02 | 5.779E-03 | -0.864 |
| U-235 | 1.008E-01 | | 1.044E-01 | 1.748E-01 | 3.053E-02 | 0.577 |
| NP-236 | -2.010E-02 | | 3.893E-02 | 6.339E-02 | 5.397E-03 | -0.317 |
| NP-237 | 2.202E-02 | | 9.838E-02 | 1.531E-01 | 3.466E-02 | 0.144 |
| NP-239 | -1.567E-02 | | 8.604E-02 | 1.345E-01 | 1.171E-02 | -0.117 |
| AM-241 | 4.125E-02 | | 7.468E-02 | 1.146E-01 | 9.448E-03 | 0.360 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| AM-243 | -1.722E-02 | | 2.454E-02 | 3.474E-02 | 2.889E-03 | -0.496 |
| CM-243 | 1.622E-02 | | 4.165E-02 | 6.865E-02 | 5.981E-03 | 0.236 |
| AM-246 | 7.556E-03 | | 7.021E-02 | 1.156E-01 | 9.948E-03 | 0.065 |
| CM-247 | 7.892E-03 | | 1.783E-02 | 3.039E-02 | 2.464E-03 | 0.260 |
| CF-249 | 1.401E-02 | | 2.092E-02 | 3.636E-02 | 2.949E-03 | 0.385 |
| CF-251 | -2.017E-02 | | 6.019E-02 | 9.876E-02 | 8.500E-03 | -0.204 |

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]G1202037546             *
* Acquisition date   : 18-FEB-2010 13:52:09 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 02:00:00.50              Half life ratio : 8.000         *
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 11-FEB-2010 00:00:00 Nuclide Library : SOLID              *
* Sample ID          : G1202037546              Analyst initials: MXR1           *
* Batch Number       : 950786                   Sample Quantity : 1.7126E+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 | 1.934E-02 | 2.645E-01 | 1.339E-01 | 1.350E-01 |
| TH-234 | 6.827E-01 | 1.166E+00 | 4.723E-01 | 5.951E-01 |
| U-238 | 6.827E-01 | 1.166E+00 | 4.723E-01 | 5.951E-01 |
| ANH-511 | 2.236E-02 | 3.683E-02 | 1.184E-02 | 1.879E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | 1.058E-01 | 1.477E-01 | 1.385E-01 | 7.537E-02 NOT IDENT. |
| NA-22 | -1.237E-02 | 1.638E-02 | 1.193E-02 | 8.355E-03 NOT IDENT. |
| NA-24 | 9.748E-01 | 6.782E+01 | 0.000E+00 | 3.460E+01 SHORT HLIF |
| AL-26 | 1.929E-03 | 2.089E-02 | 1.787E-02 | 1.066E-02 NOT IDENT. |
| TI-44 | 3.086E-03 | 1.447E-02 | 1.344E-02 | 7.380E-03 NOT IDENT. |
| SC-46 | -1.103E-03 | 1.648E-02 | 1.400E-02 | 8.406E-03 NOT IDENT. |
| V-48 | 7.200E-04 | 2.077E-02 | 1.782E-02 | 1.060E-02 NOT IDENT. |
| CR-51 | 2.153E-02 | 1.480E-01 | 1.339E-01 | 7.549E-02 NOT IDENT. |
| MN-52 | -3.374E-02 | 3.913E-02 | 2.399E-02 | 1.997E-02 NOT IDENT. |
| MN-54 | -2.344E-02 | 1.934E-02 | 1.281E-02 | 9.868E-03 NOT IDENT. |
| CO-56 | -6.258E-04 | 1.738E-02 | 1.493E-02 | 8.866E-03 NOT IDENT. |
| CO-57 | -3.295E-03 | 1.112E-02 | 9.631E-03 | 5.672E-03 NOT IDENT. |
| CO-58 | 1.261E-02 | 1.604E-02 | 1.572E-02 | 8.185E-03 NOT IDENT. |
| FE-59 | 1.753E-02 | 3.842E-02 | 3.507E-02 | 1.960E-02 NOT IDENT. |
| CO-60 | -2.084E-03 | 1.769E-02 | 1.488E-02 | 9.027E-03 NOT IDENT. |
| ZN-65 | -4.942E-02 | 4.379E-02 | 2.839E-02 | 2.234E-02 NOT IDENT. |
| GE-68 | 1.497E-01 | 6.062E-01 | 5.344E-01 | 3.093E-01 NOT IDENT. |
| AS-73 | -1.154E-02 | 3.841E-01 | 3.586E-01 | 1.960E-01 NOT IDENT. |
| AS-74 | -2.255E-02 | 3.341E-02 | 2.717E-02 | 1.704E-02 NOT IDENT. |
| SE-75 | -1.795E-03 | 2.091E-02 | 1.879E-02 | 1.067E-02 NOT IDENT. |
| BR-77 | -5.219E-01 | 5.614E-01 | 4.074E-01 | 2.864E-01 FAIL ABUN |
| SR-82 | -5.606E-02 | 1.499E-01 | 1.229E-01 | 7.646E-02 NOT IDENT. |
| RB-83 | -3.339E-02 | 3.097E-02 | 2.166E-02 | 1.580E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| RB-84 | 4.083E-03 | 3.030E-02 | 2.667E-02 | 1.546E-02 | NOT IDENT. |
| KR-85 | 9.152E+00 | 4.951E+00 | 4.557E+00 | 2.526E+00 | NOT IDENT. |
| SR-85 | 4.335E-02 | 2.345E-02 | 2.158E-02 | 1.196E-02 | NOT IDENT. |
| RB-86 | -1.096E-01 | 3.055E-01 | 2.403E-01 | 1.559E-01 | NOT IDENT. |
| Y-88 | 9.661E-03 | 1.945E-02 | 1.845E-02 | 9.923E-03 | NOT IDENT. |
| ZR-88 | -3.346E-03 | 1.466E-02 | 1.251E-02 | 7.477E-03 | NOT IDENT. |
| Y-91 | 6.086E-01 | 6.062E+00 | 5.401E+00 | 3.093E+00 | NOT IDENT. |
| NB-94 | 1.445E-02 | 1.759E-02 | 1.698E-02 | 8.972E-03 | NOT IDENT. |
| NB-95 | -2.761E-03 | 1.684E-02 | 1.432E-02 | 8.593E-03 | NOT IDENT. |
| NB-95M | -1.681E-02 | 5.802E-02 | 4.507E-02 | 2.960E-02 | NOT IDENT. |
| ZR-95 | -1.107E-02 | 2.979E-02 | 2.444E-02 | 1.520E-02 | NOT IDENT. |
| NB-97 | -9.682E+00 | 2.523E+01 | 0.000E+00 | 1.287E+01 | SHORT HLIF |
| ZR-97 | 3.612E+02 | 6.286E+02 | 0.000E+00 | 3.207E+02 | SHORT HLIF |
| MO-99 | 3.930E-01 | 7.763E-01 | 7.318E-01 | 3.961E-01 | NOT IDENT. |
| TC-99M | -2.055E+07 | 1.543E+07 | 0.000E+00 | 7.873E+06 | SHORT HLIF |
| RH-101 | -4.852E-03 | 1.670E-02 | 1.461E-02 | 8.519E-03 | NOT IDENT. |
| RH-102 | 3.976E-03 | 1.512E-02 | 1.347E-02 | 7.716E-03 | NOT IDENT. |
| RU-103 | 1.227E-02 | 1.821E-02 | 1.694E-02 | 9.292E-03 | NOT IDENT. |
| RH-106 | -3.354E-02 | 1.571E-01 | 1.359E-01 | 8.016E-02 | FAIL ABUN |
| RU-106 | -3.354E-02 | 1.571E-01 | 1.359E-01 | 8.014E-02 | FAIL ABUN |
| AG-108M | 3.835E-03 | 1.601E-02 | 1.434E-02 | 8.171E-03 | NOT IDENT. |
| CD-109 | 3.036E-01 | 3.408E-01 | 2.997E-01 | 1.739E-01 | NOT IDENT. |
| AG-110M | -1.060E-02 | 1.547E-02 | 1.224E-02 | 7.892E-03 | NOT IDENT. |
| IN-111 | 3.400E-05 | 7.633E-02 | 6.951E-02 | 3.894E-02 | NOT IDENT. |
| IN-113M | 1.408E-02 | 2.192E-02 | 2.052E-02 | 1.119E-02 | NOT IDENT. |
| SN-113 | 1.408E-02 | 2.192E-02 | 2.052E-02 | 1.119E-02 | NOT IDENT. |
| IN-114M | -7.177E-02 | 8.334E-02 | 7.271E-02 | 4.252E-02 | NOT IDENT. |
| CD-115 | 9.675E-03 | 5.116E-01 | 4.631E-01 | 2.610E-01 | NOT IDENT. |
| SN-117M | -3.809E-03 | 1.710E-02 | 1.582E-02 | 8.723E-03 | NOT IDENT. |
| SB-122 | 5.131E-02 | 1.461E-01 | 1.365E-01 | 7.453E-02 | NOT IDENT. |
| I-123 | 3.171E+01 | 1.864E+02 | 0.000E+00 | 9.510E+01 | SHORT HLIF |
| TE-123M | 2.110E-03 | 1.240E-02 | 1.178E-02 | 6.328E-03 | NOT IDENT. |
| I-124 | -6.345E-02 | 1.027E-01 | 8.507E-02 | 5.238E-02 | NOT IDENT. |
| SB-124 | 5.849E-02 | 3.977E-02 | 4.514E-02 | 2.029E-02 | NOT IDENT. |
| SB-125 | -3.426E-03 | 3.936E-02 | 3.382E-02 | 2.008E-02 | NOT IDENT. |
| TE-125M | 2.614E+00 | 3.609E+00 | 3.420E+00 | 1.841E+00 | NOT IDENT. |
| I-126 | -2.767E-02 | 5.197E-02 | 4.206E-02 | 2.651E-02 | NOT IDENT. |
| SB-126 | 5.843E-03 | 4.828E-02 | 4.268E-02 | 2.463E-02 | NOT IDENT. |
| SN-126 | 2.324E-02 | 3.418E-02 | 2.952E-02 | 1.744E-02 | FAIL ABUN |
| SB-127 | 1.503E-01 | 1.820E-01 | 1.767E-01 | 9.288E-02 | NOT IDENT. |
| XE-127 | -3.296E-03 | 1.768E-02 | 1.609E-02 | 9.019E-03 | NOT IDENT. |
| I-131 | 5.428E-03 | 2.743E-02 | 2.477E-02 | 1.399E-02 | NOT IDENT. |
| TE-132 | -1.784E-02 | 6.890E-02 | 6.182E-02 | 3.515E-02 | NOT IDENT. |
| BA-133 | -3.821E-03 | 2.145E-02 | 1.859E-02 | 1.094E-02 | NOT IDENT. |
| I-133 | -8.993E-01 | 6.692E+00 | 0.000E+00 | 3.414E+00 | SHORT HLIF |
| CS-134 | 5.241E-03 | 2.087E-02 | 1.887E-02 | 1.065E-02 | NOT IDENT. |
| CS-135 | 8.790E-03 | 7.815E-02 | 7.133E-02 | 3.987E-02 | NOT IDENT. |
| I-135 | 1.293E+07 | 1.318E+07 | 0.000E+00 | 6.722E+06 | SHORT HLIF |
| CS-136 | -2.661E-02 | 3.319E-02 | 2.304E-02 | 1.693E-02 | NOT IDENT. |
| BA-137M | 1.401E-02 | 1.514E-02 | 1.515E-02 | 7.726E-03 | NOT IDENT. |
| CS-137 | 1.481E-02 | 1.601E-02 | 1.601E-02 | 8.167E-03 | NOT IDENT. |
| CE-139 | 1.832E-04 | 1.348E-02 | 1.264E-02 | 6.879E-03 | NOT IDENT. |
| BA-140 | 2.719E-02 | 8.630E-02 | 7.657E-02 | 4.403E-02 | NOT IDENT. |
| LA-140 | 1.119E-02 | 2.766E-02 | 2.589E-02 | 1.411E-02 | NOT IDENT. |
| CE-141 | 4.328E-03 | 2.211E-02 | 2.118E-02 | 1.128E-02 | NOT IDENT. |
| CE-143 | 5.433E-01 | 1.346E+00 | 1.249E+00 | 6.868E-01 | NOT IDENT. |
| CE-144 | -2.236E-02 | 8.761E-02 | 7.563E-02 | 4.470E-02 | NOT IDENT. |
| PM-144 | -2.998E-03 | 1.659E-02 | 1.425E-02 | 8.462E-03 | NOT IDENT. |
| PR-144 | -2.023E-01 | 1.119E+00 | 9.616E-01 | 5.712E-01 | NOT IDENT. |
| PM-146 | 1.336E-02 | 2.311E-02 | 2.133E-02 | 1.179E-02 | NOT IDENT. |
| ND-147 | -7.224E-02 | 1.629E-01 | 1.384E-01 | 8.314E-02 | NOT IDENT. |
| PM-149 | -3.376E-01 | 4.543E+00 | 3.875E+00 | 2.318E+00 | NOT IDENT. |
| EU-152 | 6.314E-03 | 4.904E-02 | 4.404E-02 | 2.502E-02 | NOT IDENT. |
| GD-153 | -9.652E-03 | 3.802E-02 | 2.944E-02 | 1.940E-02 | NOT IDENT. |
| EU-154 | -3.365E-02 | 4.623E-02 | 3.397E-02 | 2.359E-02 | NOT IDENT. |
| EU-155 | -1.631E-02 | 4.656E-02 | 4.057E-02 | 2.376E-02 | NOT IDENT. |
| TB-160 | 5.022E-02 | 6.706E-02 | 6.427E-02 | 3.421E-02 | NOT IDENT. |
| HO-166M | 1.425E-02 | 2.870E-02 | 2.697E-02 | 1.464E-02 | NOT IDENT. |
| TM-171 | 1.957E+00 | 1.176E+01 | 9.873E+00 | 6.002E+00 | NOT IDENT. |
| LU-176 | 7.307E-03 | 1.237E-02 | 1.166E-02 | 6.310E-03 | NOT IDENT. |
| LU-177 | -1.376E-01 | 2.060E-01 | 1.792E-01 | 1.051E-01 | NOT IDENT. |
| LU-177M | -6.718E-02 | 8.950E-02 | 7.113E-02 | 4.566E-02 | NOT IDENT. |
| HF-181 | -1.494E-02 | 1.810E-02 | 1.363E-02 | 9.237E-03 | FAIL ABUN |
| W-181 | 1.964E-01 | 3.341E-01 | 1.452E-01 | 1.705E-01 | FAIL ABUN |
| TA-182 | -2.346E-02 | 6.141E-02 | 4.873E-02 | 3.133E-02 | NOT IDENT. |
| RE-183 | 2.714E-02 | 5.188E-02 | 4.815E-02 | 2.647E-02 | NOT IDENT. |
| RE-184 | -9.542E-03 | 1.070E-01 | 9.649E-02 | 5.460E-02 | NOT IDENT. |
| OS-185 | -1.087E-02 | 2.034E-02 | 1.671E-02 | 1.038E-02 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| RE-188 | 2.644E-03 | 6.898E-02 | 6.508E-02 | 3.519E-02 | NOT IDENT. |
| W-188 | -2.725E-01 | 3.154E+00 | 2.811E+00 | 1.609E+00 | FAIL ABUN |
| IR-192 | 1.618E-03 | 1.485E-02 | 1.341E-02 | 7.575E-03 | NOT IDENT. |
| AU-195 | 3.010E-02 | 1.107E-01 | 9.064E-02 | 5.650E-02 | FAIL ABUN |
| TL-200 | -1.200E+00 | 1.818E+00 | 1.475E+00 | 9.275E-01 | NOT IDENT. |
| TL-201 | -1.210E-01 | 5.675E-01 | 5.232E-01 | 2.895E-01 | NOT IDENT. |
| TL-202 | 7.941E-03 | 2.326E-02 | 2.101E-02 | 1.187E-02 | NOT IDENT. |
| HG-203 | -1.457E-03 | 1.778E-02 | 1.591E-02 | 9.070E-03 | NOT IDENT. |
| BI-207 | 9.186E-03 | 2.244E-02 | 2.055E-02 | 1.145E-02 | NOT IDENT. |
| TL-207 | 1.259E-01 | 3.441E-01 | 3.163E-01 | 1.756E-01 | NOT IDENT. |
| TL-208 | -7.562E-03 | 2.231E-02 | 1.914E-02 | 1.138E-02 | FAIL ABUN |
| PO-209 | -1.230E+00 | 3.381E+00 | 2.702E+00 | 1.725E+00 | NOT IDENT. |
| BI-210 | 3.791E-01 | 2.025E+00 | 1.823E+00 | 1.033E+00 | NOT IDENT. |
| PB-210 | 3.791E-01 | 2.025E+00 | 1.823E+00 | 1.033E+00 | NOT IDENT. |
| PO-210 | 3.791E-01 | 2.025E+00 | 1.823E+00 | 1.033E+00 | NOT IDENT. |
| BI-211 | 3.356E-02 | 1.168E-01 | 1.022E-01 | 5.961E-02 | NOT IDENT. |
| PB-211 | -7.572E-02 | 4.807E-01 | 4.109E-01 | 2.453E-01 | NOT IDENT. |
| BI-212 | -1.377E-01 | 1.593E-01 | 1.200E-01 | 8.126E-02 | NOT IDENT. |
| PB-212 | 2.085E-02 | 3.706E-02 | 2.854E-02 | 1.891E-02 | FAIL ABUN |
| PO-212 | 2.085E-02 | 3.706E-02 | 2.854E-02 | 1.891E-02 | FAIL ABUN |
| BI-214 | -5.064E-02 | 4.296E-02 | 3.061E-02 | 2.192E-02 | NOT IDENT. |
| PB-214 | 2.015E-02 | 4.050E-02 | 3.605E-02 | 2.066E-02 | NOT IDENT. |
| PO-214 | 2.015E-02 | 4.050E-02 | 3.605E-02 | 2.066E-02 | NOT IDENT. |
| PO-215 | 1.259E-01 | 3.441E-01 | 3.163E-01 | 1.756E-01 | NOT IDENT. |
| PO-216 | 2.085E-02 | 3.706E-02 | 2.854E-02 | 1.891E-02 | FAIL ABUN |
| PO-218 | 2.015E-02 | 4.050E-02 | 3.605E-02 | 2.066E-02 | NOT IDENT. |
| RN-219 | -5.478E-02 | 2.044E-01 | 1.731E-01 | 1.043E-01 | NOT IDENT. |
| RN-220 | -1.102E+01 | 1.231E+01 | 9.715E+00 | 6.279E+00 | NOT IDENT. |
| RA-223 | 1.259E-01 | 3.441E-01 | 3.163E-01 | 1.756E-01 | NOT IDENT. |
| RA-224 | 6.352E-02 | 3.347E-01 | 2.740E-01 | 1.708E-01 | NOT IDENT. |
| RA-226 | -5.064E-02 | 4.296E-02 | 3.061E-02 | 2.192E-02 | NOT IDENT. |
| AC-227 | -1.212E-01 | 1.861E-01 | 1.584E-01 | 9.494E-02 | NOT IDENT. |
| TH-227 | -1.212E-01 | 1.864E-01 | 1.584E-01 | 9.511E-02 | FAIL ABUN |
| AC-228 | 1.057E-03 | 6.629E-02 | 6.271E-02 | 3.382E-02 | NOT IDENT. |
| RA-228 | 1.057E-03 | 6.629E-02 | 6.271E-02 | 3.382E-02 | NOT IDENT. |
| TH-228 | 2.100E-02 | 3.734E-02 | 2.875E-02 | 1.905E-02 | FAIL ABUN |
| TH-229 | -9.407E-02 | 2.490E-01 | 2.246E-01 | 1.270E-01 | NOT IDENT. |
| TH-230 | -5.064E-02 | 4.296E-02 | 3.061E-02 | 2.192E-02 | NOT IDENT. |
| PA-231 | 3.904E-01 | 7.797E-01 | 7.216E-01 | 3.978E-01 | NOT IDENT. |
| TH-231 | 1.259E-01 | 3.441E-01 | 3.163E-01 | 1.756E-01 | NOT IDENT. |
| U-231 | -1.332E-01 | 1.459E-01 | 1.048E-01 | 7.442E-02 | FAIL ABUN |
| TH-232 | 1.057E-03 | 6.629E-02 | 6.271E-02 | 3.382E-02 | NOT IDENT. |
| PA-233 | 4.858E-03 | 3.013E-02 | 2.736E-02 | 1.537E-02 | NOT IDENT. |
| PA-234 | -4.375E-02 | 1.606E-01 | 1.309E-01 | 8.194E-02 | FAIL ABUN |
| PA-234M | -1.321E+00 | 2.516E+00 | 2.006E+00 | 1.283E+00 | NOT IDENT. |
| U-234 | -5.064E-02 | 4.296E-02 | 3.061E-02 | 2.192E-02 | NOT IDENT. |
| U-235 | 1.008E-01 | 1.023E-01 | 9.558E-02 | 5.219E-02 | FAIL ABUN |
| NP-236 | -2.010E-02 | 3.815E-02 | 3.456E-02 | 1.947E-02 | NOT IDENT. |
| NP-237 | 2.202E-02 | 9.642E-02 | 8.502E-02 | 4.919E-02 | NOT IDENT. |
| NP-239 | -1.567E-02 | 8.432E-02 | 7.401E-02 | 4.302E-02 | NOT IDENT. |
| AM-241 | 4.125E-02 | 7.319E-02 | 6.436E-02 | 3.734E-02 | NOT IDENT. |
| AM-243 | -1.722E-02 | 2.405E-02 | 1.938E-02 | 1.227E-02 | NOT IDENT. |
| CM-243 | 1.622E-02 | 4.082E-02 | 3.792E-02 | 2.083E-02 | NOT IDENT. |
| AM-246 | 7.556E-03 | 6.880E-02 | 5.924E-02 | 3.510E-02 | NOT IDENT. |
| CM-247 | 7.892E-03 | 1.747E-02 | 1.609E-02 | 8.913E-03 | NOT IDENT. |
| CF-249 | 1.401E-02 | 2.051E-02 | 1.928E-02 | 1.046E-02 | NOT IDENT. |
| CF-251 | -2.017E-02 | 5.899E-02 | 5.368E-02 | 3.010E-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 | 73.7012 |
| 46.50 | 73.7012 |
| 46.50 | 73.7012 |
| 48.70 | 81.2399 |
| 49.72 | 78.3184 |
| 51.35 | 78.5766 |
| 52.39 | 91.1716 |
| 52.97 | 91.2759 |
| 53.15 | 91.3079 |
| 53.44 | 80.9780 |
| 54.07 | 68.6038 |
| 56.28 | 84.5522 |
| 56.28 | 84.5526 |
| 57.37 | 99.1611 |
| 57.53 | 97.9350 |
| 57.53 | 97.9354 |
| 57.60 | 97.9478 |
| 57.98 | 95.8179 |
| 57.98 | 95.8179 |
| 59.32 | 74.0098 |
| 59.32 | 74.0098 |
| 59.40 | 74.0206 |
| 59.54 | 69.3136 |
| 59.72 | 69.3365 |
| 60.01 | 70.9497 |
| 61.10 | 80.5684 |
| 61.14 | 80.5742 |
| 61.30 | 80.5974 |
| 63.00 | 76.0863 |
| 63.29 | 76.1252 |
| 63.29 | 76.1252 |
| 63.58 | 76.1641 |
| 64.28 | 76.2575 |
| 65.12 | 76.3688 |
| 65.20 | 76.3794 |
| 65.20 | 76.3794 |
| 66.05 | 63.7427 |
| 66.72 | 71.7926 |
| 66.83 | 79.7848 |
| 66.91 | 79.7955 |
| 67.20 | 79.8347 |
| 67.20 | 79.8347 |
| 67.75 | 91.0964 |
| 67.85 | 79.9229 |
| 68.90 | 57.6461 |
| 68.90 | 57.6461 |
| 69.30 | 72.1057 |
| 69.67 | 67.3403 |
| 70.82 | 69.6100 |
| 70.82 | 69.6100 |
| 70.83 | 69.6110 |
| 72.80 | 103.1406 |
| 72.87 | 103.1523 |
| 72.87 | 103.1523 |
| 74.67 | 103.4502 |
| 74.81 | 101.3179 |
| 74.81 | 101.3179 |
| 74.81 | 101.3179 |
| 74.81 | 101.3179 |
| 74.81 | 101.3179 |
| 74.81 | 101.3179 |
| 74.81 | 101.3179 |
| 74.97 | 101.3433 |
| 75.28 | 102.4721 |
| 75.70 | 100.3810 |
| 77.11 | 86.5405 |
| 77.11 | 86.5405 |

| | |
|--------|----------|
| 77.11 | 86.5405 |
| 77.11 | 86.5405 |
| 77.11 | 86.5405 |
| 77.11 | 86.5405 |
| 77.11 | 86.5405 |
| 78.38 | 101.8859 |
| 79.62 | 121.6273 |
| 79.80 | 115.1433 |
| 79.80 | 115.1433 |
| 80.11 | 113.0243 |
| 80.18 | 113.0359 |
| 80.30 | 106.5340 |
| 80.30 | 106.5340 |
| 80.57 | 104.4028 |
| 81.00 | 111.0001 |
| 81.07 | 97.9518 |
| 81.07 | 97.9518 |
| 81.07 | 97.9518 |
| 81.07 | 97.9518 |
| 82.60 | 83.9961 |
| 83.37 | 85.1844 |
| 83.78 | 99.4424 |
| 83.78 | 99.4424 |
| 83.78 | 99.4424 |
| 83.78 | 99.4424 |
| 84.21 | 101.6927 |
| 84.90 | 120.4037 |
| 85.43 | 102.9708 |
| 86.29 | 88.1833 |
| 86.50 | 88.2103 |
| 86.54 | 88.2152 |
| 86.59 | 86.9050 |
| 86.72 | 86.9215 |
| 86.79 | 90.5520 |
| 86.94 | 90.5717 |
| 87.30 | 97.2096 |
| 87.30 | 97.2096 |
| 87.30 | 97.2096 |
| 87.30 | 97.2096 |
| 87.30 | 97.2096 |
| 87.30 | 97.2096 |
| 87.57 | 80.7648 |
| 87.88 | 77.5027 |
| 88.03 | 77.5196 |
| 88.36 | 69.3055 |
| 88.47 | 69.3164 |
| 89.95 | 109.1559 |
| 91.11 | 79.5161 |
| 92.29 | 79.6472 |
| 92.38 | 79.6575 |
| 92.38 | 79.6575 |
| 93.35 | 79.7648 |
| 94.00 | 79.8362 |
| 94.67 | 79.9094 |
| 94.67 | 79.9098 |
| 94.90 | 86.5963 |
| 94.90 | 86.5963 |
| 94.90 | 86.5963 |
| 94.90 | 86.5963 |
| 95.87 | 96.7161 |
| 95.87 | 96.7161 |
| 96.73 | 83.4736 |
| 97.43 | 80.2101 |
| 98.44 | 75.2989 |
| 98.44 | 75.2993 |
| 98.88 | 77.0179 |
| 99.55 | 69.7131 |
| 99.55 | 69.7131 |
| 99.86 | 69.2946 |
| 100.00 | 69.3076 |
| 100.10 | 84.9693 |
| 103.18 | 86.4351 |
| 103.76 | 73.0199 |
| 105.00 | 87.7639 |
| 105.31 | 86.6732 |
| 108.00 | 88.0999 |
| 109.28 | 70.1407 |

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| 111.00 | 87.2974 |
| 111.00 | 87.2974 |
| 111.76 | 81.7053 |
| 112.95 | 76.1428 |
| 115.19 | 77.4906 |
| 116.30 | 77.5947 |
| 117.00 | 83.3700 |
| 117.00 | 83.3700 |
| 117.66 | 83.4361 |
| 121.11 | 79.1867 |
| 121.62 | 87.2724 |
| 121.78 | 83.8432 |
| 122.06 | 83.8705 |
| 122.32 | 82.7468 |
| 122.32 | 82.7468 |
| 122.32 | 82.7468 |
| 122.32 | 82.7468 |
| 123.07 | 73.6169 |
| 127.23 | 79.7484 |
| 129.76 | 81.1355 |
| 131.20 | 94.0369 |
| 133.02 | 73.2872 |
| 133.54 | 80.3133 |
| 135.34 | 72.3081 |
| 136.00 | 69.1503 |
| 136.25 | 68.2937 |
| 136.48 | 68.3107 |
| 140.51 | 112.5869 |
| 140.51 | 0.0000 |
| 142.18 | 63.4422 |
| 142.65 | 60.8293 |
| 143.76 | 67.9613 |
| 144.24 | 79.4751 |
| 144.24 | 79.4751 |
| 144.24 | 79.4751 |
| 144.24 | 79.4751 |
| 145.22 | 78.6728 |
| 145.44 | 78.6905 |
| 147.16 | 105.4033 |
| 152.43 | 78.3663 |
| 152.70 | 77.4970 |
| 153.22 | 92.6885 |
| 154.21 | 89.2128 |
| 154.21 | 89.2128 |
| 154.21 | 89.2128 |
| 154.21 | 89.2128 |
| 155.03 | 84.8217 |
| 156.02 | 74.1802 |
| 158.56 | 94.0788 |
| 159.00 | 0.0000 |
| 159.00 | 87.8450 |
| 160.31 | 106.8060 |
| 161.27 | 89.8369 |
| 162.32 | 84.5327 |
| 162.64 | 84.5593 |
| 163.35 | 97.2199 |
| 163.89 | 101.7735 |
| 165.85 | 93.8445 |
| 167.43 | 88.5635 |
| 171.28 | 76.1878 |
| 171.86 | 76.2288 |
| 172.10 | 76.2461 |
| 176.55 | 92.0552 |
| 176.60 | 92.0591 |
| 181.06 | 82.3666 |
| 184.41 | 95.4656 |
| 185.71 | 90.0619 |
| 186.00 | 82.7312 |
| 190.27 | 115.3364 |
| 192.34 | 100.7546 |
| 193.63 | 98.0908 |
| 197.04 | 82.6003 |
| 198.01 | 78.0245 |
| 198.60 | 84.5689 |
| 200.40 | 88.4211 |
| 201.83 | 76.4127 |
| 202.84 | 74.6124 |
| 205.31 | 61.6821 |

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| 208.36 | 75.8912 |
| 208.81 | 74.0450 |
| 209.75 | 62.8457 |
| 209.75 | 62.8457 |
| 210.97 | 56.3361 |
| 215.65 | 77.2841 |
| 216.55 | 70.7382 |
| 218.09 | 69.8809 |
| 222.10 | 78.6294 |
| 223.80 | 82.5283 |
| 226.40 | 77.9429 |
| 227.00 | 77.9792 |
| 227.08 | 82.7393 |
| 227.20 | 82.7473 |
| 228.16 | 83.7602 |
| 228.18 | 83.7615 |
| 228.18 | 83.7615 |
| 231.56 | 78.2538 |
| 235.69 | 76.5851 |
| 236.00 | 79.6675 |
| 236.00 | 79.6675 |
| 238.63 | 66.2010 |
| 238.63 | 66.2010 |
| 238.63 | 66.2010 |
| 238.63 | 66.2010 |
| 239.00 | 66.2194 |
| 240.98 | 67.6629 |
| 241.98 | 53.8629 |
| 241.98 | 53.8629 |
| 241.98 | 53.8629 |
| 244.69 | 62.7826 |
| 245.39 | 61.7129 |
| 247.94 | 53.1340 |
| 248.90 | 67.6720 |
| 249.79 | 65.7811 |
| 252.40 | 62.0288 |
| 252.85 | 62.0488 |
| 252.85 | 62.0488 |
| 254.15 | 0.0000 |
| 256.20 | 70.9449 |
| 256.20 | 70.9449 |
| 260.50 | 73.1117 |
| 260.90 | 63.3813 |
| 262.80 | 68.3476 |
| 264.65 | 64.5256 |
| 268.24 | 66.6470 |
| 268.79 | 63.7315 |
| 269.46 | 64.7422 |
| 269.46 | 64.7422 |
| 269.46 | 64.7422 |
| 269.46 | 64.7422 |
| 271.23 | 78.5706 |
| 273.65 | 74.7661 |
| 276.40 | 69.9773 |
| 277.35 | 64.1054 |
| 277.60 | 66.0891 |
| 277.60 | 66.0891 |
| 278.00 | 61.1732 |
| 278.60 | 71.0695 |
| 279.20 | 62.2108 |
| 279.53 | 67.1627 |
| 280.46 | 67.2052 |
| 281.68 | 64.2928 |
| 283.67 | 50.5121 |
| 284.30 | 51.5239 |
| 285.00 | 61.4608 |
| 285.90 | 55.5463 |
| 286.10 | 56.5460 |
| 286.10 | 56.5460 |
| 287.40 | 56.5938 |
| 288.45 | 0.0000 |
| 290.67 | 52.7355 |
| 290.80 | 52.7404 |
| 291.72 | 60.7375 |
| 293.26 | 50.8319 |
| 293.70 | 54.8347 |
| 295.21 | 55.8864 |
| 295.21 | 55.8864 |

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| 295.21 | 55.8864 |
| 295.96 | 57.9097 |
| 296.50 | 58.9289 |
| 297.23 | 59.9561 |
| 298.57 | 65.0089 |
| 299.80 | 60.0549 |
| 299.80 | 60.0549 |
| 300.09 | 52.0579 |
| 300.09 | 52.0579 |
| 300.09 | 52.0579 |
| 300.09 | 52.0579 |
| 300.12 | 52.0587 |
| 301.29 | 53.0995 |
| 302.84 | 58.1664 |
| 303.76 | 60.2069 |
| 303.91 | 60.2133 |
| 304.40 | 54.2085 |
| 304.40 | 54.2085 |
| 304.84 | 62.2564 |
| 306.84 | 47.2546 |
| 308.46 | 60.3864 |
| 311.98 | 44.3807 |
| 316.51 | 42.4832 |
| 318.01 | 51.6342 |
| 319.02 | 53.6923 |
| 319.41 | 53.7052 |
| 320.08 | 45.6173 |
| 323.87 | 52.8355 |
| 323.87 | 52.8355 |
| 323.87 | 52.8355 |
| 323.87 | 52.8355 |
| 325.23 | 53.8961 |
| 328.77 | 56.0490 |
| 333.44 | 52.1183 |
| 334.20 | 54.1872 |
| 334.20 | 54.1872 |
| 334.30 | 54.1904 |
| 338.28 | 45.0944 |
| 338.28 | 45.0944 |
| 338.28 | 45.0944 |
| 338.28 | 45.0944 |
| 338.32 | 45.0950 |
| 338.32 | 45.0950 |
| 338.32 | 45.0950 |
| 340.50 | 42.0742 |
| 340.57 | 42.0760 |
| 344.27 | 47.3098 |
| 345.85 | 43.2356 |
| 350.59 | 40.2574 |
| 351.07 | 41.3007 |
| 351.92 | 38.2217 |
| 351.92 | 38.2217 |
| 351.92 | 38.2217 |
| 355.39 | 0.0000 |
| 356.01 | 46.5944 |
| 364.48 | 33.2925 |
| 366.43 | 41.6614 |
| 367.43 | 43.7688 |
| 367.94 | 44.8234 |
| 369.80 | 43.8265 |
| 374.96 | 46.0437 |
| 383.85 | 57.8341 |
| 387.95 | 36.8842 |
| 388.63 | 43.2234 |
| 391.69 | 36.9579 |
| 391.69 | 36.9579 |
| 392.90 | 43.3216 |
| 398.62 | 36.0337 |
| 400.65 | 42.4377 |
| 401.10 | 49.8765 |
| 401.81 | 41.4018 |
| 402.60 | 31.8608 |
| 404.84 | 43.5938 |
| 410.95 | 41.5982 |
| 411.60 | 40.5455 |
| 413.65 | 49.1326 |
| 414.70 | 47.0219 |
| 415.30 | 43.8290 |

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| 415.76 | 36.3548 |
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| 418.52 | 33.1934 |
| 423.70 | 24.6919 |
| 427.08 | 26.8845 |
| 427.89 | 26.8955 |
| 432.53 | 29.1143 |
| 433.93 | 31.2922 |
| 439.47 | 33.5420 |
| 439.56 | 33.5434 |
| 439.89 | 35.7131 |
| 443.98 | 36.8690 |
| 444.90 | 34.7158 |
| 445.03 | 29.2931 |
| 445.03 | 29.2931 |
| 445.03 | 29.2931 |
| 445.03 | 29.2931 |
| 453.90 | 32.6875 |
| 463.38 | 39.4019 |
| 468.07 | 32.9073 |
| 473.00 | 30.7844 |
| 475.06 | 31.9143 |
| 475.35 | 35.2202 |
| 476.78 | 34.1423 |
| 477.59 | 26.4426 |
| 477.96 | 20.9372 |
| 482.03 | 34.2246 |
| 484.57 | 23.2116 |
| 487.03 | 34.3031 |
| 490.36 | 24.3811 |
| 492.35 | 24.4029 |
| 497.08 | 25.5665 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 27.9600 |
| 511.00 | 27.9619 |
| 511.85 | 27.9722 |
| 511.85 | 27.9722 |
| 513.99 | 34.0460 |
| 513.99 | 34.0460 |
| 520.41 | 32.5692 |
| 520.65 | 32.5728 |
| 527.90 | 29.7451 |
| 528.96 | 0.0000 |
| 529.64 | 27.0615 |
| 529.87 | 0.0000 |
| 531.02 | 29.7846 |
| 537.32 | 23.5301 |
| 543.00 | 29.9369 |
| 546.56 | 0.0000 |
| 549.76 | 32.7507 |
| 552.65 | 21.8602 |
| 555.20 | 25.5302 |
| 563.23 | 24.7001 |
| 563.90 | 26.5368 |
| 568.70 | 31.1728 |
| 569.32 | 26.5956 |
| 569.50 | 24.7634 |
| 569.67 | 24.7647 |
| 573.80 | 26.6438 |
| 574.00 | 25.7271 |
| 574.64 | 29.4102 |
| 578.91 | 38.6675 |
| 579.30 | 38.6726 |
| 583.14 | 33.1989 |
| 585.48 | 18.4614 |
| 591.81 | 20.3586 |
| 592.07 | 24.9882 |
| 593.00 | 31.4774 |
| 595.88 | 32.4399 |
| 600.56 | 37.1426 |
| 602.52 | 0.0000 |
| 602.71 | 40.8912 |
| 602.71 | 40.8912 |
| 603.60 | 34.3975 |
| 604.41 | 41.8480 |
| 604.70 | 40.9234 |
| 609.31 | 37.2695 |

| | |
|--------|---------|
| 609.31 | 37.2695 |
| 609.31 | 37.2695 |
| 609.31 | 37.2695 |
| 610.33 | 32.6237 |
| 612.46 | 34.5159 |
| 614.37 | 28.9399 |
| 618.01 | 22.4367 |
| 621.84 | 28.0865 |
| 621.84 | 28.0865 |
| 631.29 | 24.4290 |
| 633.02 | 30.0859 |
| 633.10 | 29.1465 |
| 634.78 | 22.5791 |
| 635.90 | 28.2363 |
| 636.97 | 32.9552 |
| 645.85 | 25.5070 |
| 646.12 | 29.2888 |
| 656.30 | 26.5535 |
| 657.75 | 25.6184 |
| 657.90 | 0.0000 |
| 661.65 | 13.3027 |
| 661.65 | 13.3027 |
| 664.57 | 30.4383 |
| 666.33 | 22.8434 |
| 666.33 | 22.8434 |
| 675.00 | 22.9148 |
| 677.61 | 21.9803 |
| 685.20 | 20.1233 |
| 692.80 | 25.9420 |
| 695.00 | 18.2699 |
| 696.49 | 25.9756 |
| 696.49 | 25.9756 |
| 697.00 | 31.7536 |
| 697.49 | 29.8345 |
| 698.33 | 27.9182 |
| 698.50 | 25.9941 |
| 699.00 | 27.9245 |
| 702.63 | 22.1751 |
| 706.10 | 30.8891 |
| 706.58 | 0.0000 |
| 706.67 | 25.1024 |
| 709.31 | 33.8225 |
| 711.68 | 18.3761 |
| 713.82 | 22.2610 |
| 717.42 | 27.1339 |
| 720.50 | 18.4318 |
| 721.93 | 18.4406 |
| 722.20 | 18.4424 |
| 722.78 | 22.3295 |
| 722.78 | 22.3295 |
| 722.89 | 24.2719 |
| 722.95 | 24.2725 |
| 723.30 | 29.1306 |
| 724.18 | 32.0533 |
| 727.18 | 27.2241 |
| 733.00 | 19.4844 |
| 735.90 | 27.3048 |
| 739.58 | 14.6455 |
| 742.81 | 15.6387 |
| 744.21 | 20.5355 |
| 747.13 | 16.6402 |
| 751.79 | 14.7052 |
| 752.31 | 12.7467 |
| 753.82 | 18.6391 |
| 755.35 | 17.6669 |
| 756.15 | 20.6165 |
| 756.87 | 18.6577 |
| 763.93 | 24.6063 |
| 765.79 | 19.6973 |
| 766.42 | 12.8058 |
| 766.84 | 11.8222 |
| 776.49 | 22.7305 |
| 778.00 | 16.8091 |
| 778.57 | 13.8452 |
| 778.89 | 12.8575 |
| 783.80 | 18.8214 |
| 785.46 | 14.8671 |
| 792.07 | 21.8507 |

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| 795.84 | 16.9050 |
| 796.30 | 17.9020 |
| 798.80 | 26.8741 |
| 801.93 | 16.9377 |
| 805.60 | 23.9396 |
| 810.29 | 14.9843 |
| 810.76 | 10.9901 |
| 815.85 | 16.0109 |
| 817.79 | 14.0178 |
| 818.51 | 9.0136 |
| 819.60 | 19.0348 |
| 826.30 | 21.0820 |
| 828.27 | 13.0587 |
| 831.60 | 16.0889 |
| 831.96 | 17.0963 |
| 834.83 | 26.1701 |
| 836.80 | 0.0000 |
| 846.75 | 17.1735 |
| 848.13 | 18.1912 |
| 856.28 | 0.0000 |
| 856.80 | 17.2254 |
| 860.37 | 12.1723 |
| 867.32 | 20.3291 |
| 867.82 | 22.3652 |
| 871.10 | 20.3516 |
| 873.19 | 18.3278 |
| 874.81 | 17.3179 |
| 875.33 | 0.0000 |
| 876.40 | 24.4605 |
| 879.36 | 14.2810 |
| 880.27 | 17.3457 |
| 880.51 | 17.3470 |
| 881.50 | 17.3520 |
| 883.24 | 21.4460 |
| 884.67 | 20.4331 |
| 889.25 | 14.3223 |
| 896.60 | 16.4035 |
| 898.02 | 16.4102 |
| 899.00 | 11.2852 |
| 903.28 | 9.2448 |
| 911.07 | 9.2654 |
| 911.07 | 9.2654 |
| 911.07 | 9.2654 |
| 919.63 | 7.2240 |
| 920.93 | 11.3561 |
| 925.00 | 14.4700 |
| 925.24 | 14.4710 |
| 926.50 | 7.2381 |
| 935.52 | 14.5130 |
| 937.48 | 18.6697 |
| 944.10 | 13.5088 |
| 946.00 | 20.7935 |
| 949.00 | 11.4461 |
| 962.29 | 12.5323 |
| 964.01 | 18.8073 |
| 966.15 | 26.1365 |
| 968.20 | 14.6446 |
| 969.11 | 12.5558 |
| 969.11 | 12.5558 |
| 969.11 | 12.5558 |
| 977.42 | 15.7302 |
| 980.50 | 14.6938 |
| 983.50 | 10.5042 |
| 989.30 | 8.4164 |
| 996.32 | 8.4322 |
| 1001.03 | 11.6088 |
| 1001.68 | 8.4443 |
| 1004.76 | 14.7896 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 12.7770 |
| 1036.00 | 8.5207 |
| 1037.82 | 12.7869 |
| 1038.57 | 18.1189 |
| 1038.76 | 0.0000 |
| 1045.16 | 5.3381 |
| 1046.59 | 12.8162 |
| 1048.07 | 17.0945 |

| | |
|---------|---------|
| 1050.47 | 16.0364 |
| 1050.47 | 16.0364 |
| 1062.04 | 12.8666 |
| 1063.62 | 9.6539 |
| 1076.63 | 18.2958 |
| 1077.35 | 13.9934 |
| 1078.86 | 13.9985 |
| 1085.78 | 16.1799 |
| 1099.22 | 11.9050 |
| 1112.02 | 10.8569 |
| 1112.84 | 6.5156 |
| 1115.52 | 23.9057 |
| 1120.29 | 11.9668 |
| 1120.29 | 11.9668 |
| 1120.29 | 11.9668 |
| 1120.29 | 11.9668 |
| 1120.51 | 10.8799 |
| 1121.28 | 7.6173 |
| 1124.00 | 0.0000 |
| 1129.67 | 14.1750 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 6.4192 |
| 1173.22 | 10.0999 |
| 1175.09 | 11.0229 |
| 1177.93 | 8.2727 |
| 1189.05 | 13.8239 |
| 1204.90 | 9.2497 |
| 1205.75 | 4.6259 |
| 1213.00 | 6.4870 |
| 1221.42 | 10.2131 |
| 1230.97 | 7.4440 |
| 1235.34 | 13.9716 |
| 1236.41 | 0.0000 |
| 1238.25 | 10.2525 |
| 1246.25 | 16.8069 |
| 1260.41 | 0.0000 |
| 1271.85 | 5.6343 |
| 1274.45 | 9.3962 |
| 1274.54 | 9.3962 |
| 1291.56 | 9.4316 |
| 1298.22 | 0.0000 |
| 1312.09 | 8.5261 |
| 1325.50 | 5.7004 |
| 1325.50 | 5.7004 |
| 1332.49 | 9.5150 |
| 1333.61 | 9.5174 |
| 1360.21 | 7.6569 |
| 1362.66 | 0.0000 |
| 1365.15 | 4.7904 |
| 1368.21 | 6.7109 |
| 1368.53 | 0.0000 |
| 1376.25 | 7.6826 |
| 1384.27 | 5.7715 |
| 1394.10 | 7.7109 |
| 1395.20 | 7.7126 |
| 1407.95 | 7.7327 |
| 1434.06 | 8.7458 |
| 1436.60 | 6.8057 |
| 1457.56 | 0.0000 |
| 1460.81 | 6.8385 |
| 1489.15 | 9.8242 |
| 1509.49 | 4.9314 |
| 1596.49 | 5.0132 |
| 1620.62 | 8.0570 |
| 1678.03 | 0.0000 |
| 1691.02 | 1.0199 |
| 1691.02 | 1.0199 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 5.1650 |
| 1764.49 | 5.1650 |
| 1764.49 | 5.1650 |
| 1764.49 | 5.1650 |
| 1770.23 | 19.6463 |
| 1771.40 | 9.3080 |
| 1791.20 | 0.0000 |
| 1808.65 | 7.2854 |

1836.01

4.1820

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202037546

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 2.0778E+00 | ug/g |
| Total Uranium Counting Unc. | 3.4705E+00 | ug/g |
| Total Uranium Tpu | 1.7706E-06 | ug/g |
| Total Uranium Mda | 1.4058E+00 | ug/g |

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                 *
*
*****
*
*   BATCH ID      : 950786                      SAMPLE ID   : G1202037546
*   ANALYST       : MXR1                        DETECTOR    : GAM01
*   SAMPLE DATE   : 11-FEB-2010 00:00:00.00    COUNT TIME   : 0 02:00:00.00
*   ANALYSIS DATE : 18-FEB-2010 13:52:09.28    SAMPLE ALQT  : 171.260 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 7.344E-02
GROSS GAMMA ERROR   (pCi/GRAM ) : 7.483E-02
GROSS GAMMA MDA     (pCi/GRAM ) : 2.138E-01
GROSS GAMMA DLC     (pCi/GRAM ) : 1.003E-01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 15:53:26.23

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037547.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 13:52:40
Sample ID          : G1202037547      Sample quantity   : 9.51500E+01 GRAM
Detector name      : GAM07            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:05.44  0.1%
Energy tolerance   : 1.50000 keV      Analyst Initials  : MXR1
Abundance limit    : 75.00000          Sensitivity       : 5.00000
Batch ID           : 950786            Detector SN#      :
Matrix Spike ID    :                   LCS ID           : 1032-A
*****
```

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|---------|-------|-------|------|---------|------|----|----------|------|----------|
| 1 | 0 | 53.16 | 557 | 9479 | 1.35 | 105.99 | 101 | 10 | 7.73E-02 | 32.9 | |
| 2 | 0 | 63.26* | 25791 | 11093 | 1.04 | 126.17 | 120 | 11 | 3.58E+00 | 1.0 | |
| 3 | 0 | 76.95* | 499 | 7632 | 0.96 | 153.55 | 152 | 7 | 6.93E-02 | 29.4 | |
| 4 | 0 | 84.13* | 3129 | 10598 | 1.01 | 167.90 | 164 | 9 | 4.35E-01 | 6.2 | |
| 5 | 2 | 92.65* | 52450 | 8900 | 1.12 | 184.95 | 180 | 15 | 7.28E+00 | 0.5 | 5.05E+01 |
| 6 | 2 | 94.70* | 2494 | 6661 | 1.26 | 189.04 | 180 | 15 | 3.46E-01 | 10.4 | |
| 7 | 0 | 98.55 | 4132 | 4118 | 1.10 | 196.73 | 194 | 8 | 5.74E-01 | 3.1 | |
| 8 | 6 | 105.54 | 921 | 3149 | 1.88 | 210.71 | 207 | 26 | 1.28E-01 | 10.5 | 1.24E+01 |
| 9 | 6 | 109.21 | 1741 | 4816 | 1.85 | 218.05 | 207 | 26 | 2.42E-01 | 8.3 | |
| 10 | 6 | 111.10 | 1282 | 3026 | 1.18 | 221.84 | 207 | 26 | 1.78E-01 | 8.3 | |
| 11 | 6 | 112.87 | 3447 | 3392 | 1.30 | 225.38 | 207 | 26 | 4.79E-01 | 3.5 | |
| 12 | 0 | 120.68 | 355 | 3385 | 1.28 | 241.00 | 237 | 9 | 4.92E-02 | 30.1 | |
| 13 | 0 | 131.61 | 180 | 1955 | 0.91 | 262.84 | 260 | 6 | 2.50E-02 | 39.6 | |
| 14 | 0 | 143.87* | 5646 | 3421 | 1.08 | 287.38 | 282 | 11 | 7.84E-01 | 2.4 | |
| 15 | 0 | 163.46* | 2532 | 2202 | 1.14 | 326.54 | 322 | 9 | 3.52E-01 | 3.9 | |
| 16 | 0 | 185.82* | 26751 | 1758 | 1.11 | 371.25 | 368 | 10 | 3.72E+00 | 0.7 | |
| 17 | 0 | 195.29 | 233 | 1105 | 1.02 | 390.20 | 386 | 8 | 3.24E-02 | 25.7 | |
| 18 | 2 | 202.35 | 415 | 995 | 1.31 | 404.30 | 400 | 16 | 5.76E-02 | 13.9 | 1.12E+00 |
| 19 | 2 | 205.43 | 2114 | 714 | 1.06 | 410.46 | 400 | 16 | 2.94E-01 | 3.0 | |
| 20 | 0 | 238.73* | 793 | 854 | 1.12 | 477.06 | 473 | 8 | 1.10E-01 | 7.4 | |
| 21 | 0 | 241.55 | 161 | 641 | 1.48 | 482.69 | 481 | 7 | 2.23E-02 | 27.5 | |
| 22 | 0 | 258.44 | 569 | 640 | 1.29 | 516.47 | 512 | 10 | 7.91E-02 | 9.3 | |
| 23 | 0 | 295.34 | 329 | 580 | 1.15 | 590.24 | 586 | 10 | 4.58E-02 | 14.8 | |
| 24 | 0 | 300.03* | 88 | 300 | 1.67 | 599.63 | 597 | 6 | 1.23E-02 | 33.2 | |
| 25 | 0 | 338.24 | 200 | 426 | 1.33 | 676.03 | 671 | 10 | 2.78E-02 | 20.6 | |
| 26 | 0 | 352.03* | 530 | 434 | 1.28 | 703.61 | 699 | 11 | 7.36E-02 | 8.8 | |
| 27 | 0 | 511.44* | 130 | 327 | 2.00 | 1022.38 | 1017 | 14 | 1.80E-02 | 33.3 | |
| 28 | 0 | 569.23* | 83 | 205 | 1.42 | 1137.95 | 1134 | 10 | 1.15E-02 | 34.2 | |
| 29 | 0 | 583.55* | 284 | 286 | 1.32 | 1166.58 | 1161 | 14 | 3.95E-02 | 14.1 | |
| 30 | 0 | 609.75* | 375 | 290 | 1.43 | 1218.97 | 1213 | 14 | 5.20E-02 | 11.2 | |
| 31 | 0 | 661.83 | 1215 | 252 | 1.44 | 1323.12 | 1317 | 12 | 1.69E-01 | 3.9 | |
| 32 | 0 | 727.68* | 43 | 168 | 1.20 | 1454.80 | 1449 | 10 | 5.95E-03 | 59.6 | |
| 33 | 0 | 743.15 | 309 | 239 | 1.47 | 1485.73 | 1480 | 13 | 4.29E-02 | 11.9 | |
| 34 | 0 | 766.65 | 1201 | 211 | 1.43 | 1532.73 | 1526 | 15 | 1.67E-01 | 3.9 | |
| 35 | 0 | 911.49* | 210 | 102 | 1.94 | 1822.38 | 1814 | 19 | 2.92E-02 | 13.7 | |
| 36 | 0 | 946.81 | 80 | 98 | 1.31 | 1893.01 | 1888 | 13 | 1.10E-02 | 28.0 | |
| 37 | 1 | 965.13 | 42 | 69 | 1.98 | 1929.64 | 1921 | 24 | 5.82E-03 | 44.7 | 1.52E+00 |
| 38 | 1 | 969.20* | 86 | 68 | 1.62 | 1937.79 | 1921 | 24 | 1.19E-02 | 20.7 | |

| Pk | It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | Fit |
|----|----|----------|------|-------|------|---------|------|----|----------|------|-----|
| 39 | 0 | 1001.36* | 2483 | 144 | 1.76 | 2002.09 | 1992 | 20 | 3.45E-01 | 2.3 | |
| 40 | 0 | 1120.50 | 100 | 39 | 2.08 | 2240.35 | 2232 | 14 | 1.39E-02 | 16.6 | |
| 41 | 0 | 1239.21 | 53 | 68 | 1.72 | 2477.75 | 2469 | 15 | 7.42E-03 | 36.9 | |
| 42 | 0 | 1461.26* | 792 | 27 | 1.83 | 2921.81 | 2913 | 18 | 1.10E-01 | 3.9 | |
| 43 | 0 | 1510.33* | 30 | 8 | 1.85 | 3019.94 | 3014 | 14 | 4.17E-03 | 28.1 | |
| 44 | 0 | 1591.48 | 67 | 14 | 6.57 | 3182.25 | 3166 | 28 | 9.31E-03 | 20.0 | |
| 45 | 0 | 1730.41 | 22 | 5 | 1.05 | 3460.08 | 3454 | 11 | 3.00E-03 | 30.0 | |
| 46 | 0 | 1738.39 | 60 | 7 | 2.58 | 3476.05 | 3470 | 14 | 8.33E-03 | 15.9 | |
| 47 | 0 | 1765.46* | 74 | 24 | 2.22 | 3530.19 | 3522 | 16 | 1.03E-02 | 19.4 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 15:53:28

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037547.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 1-FEB-2010 12:00:00   Acquisition date : 18-FEB-2010 13:52:40
Sample ID        : G1202037547           Sample quantity  : 95.150 GRAM
Sample type       : SOLID                 Sample geometry   :
Detector name     : GAMMA7               Detector geometry: CAN
Elapsed live time: 0 02:00:00.00         Elapsed real time: 0 02:00:05.44   0.1%
Peak Width (FWHM): 3.00                  Confidence level  : 5.00 %
Energy tolerance  : 1.50 keV              Half life ratio   : 8.00
Errors propagated : Yes                   Systematic Error  : 0.00 %
Efficiency type   : Empirical             Efficiencies at   : Peak Energy
Abundance limit   : 75.00                 WTM error limit   : 3.00

```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| K-40 | + | 1460.81 | * | 2.594E+01 | 3.012E+00 | 7.702E-01 | 6.614E-02 | 33.681 |
| CO-57 | + | 122.06 | * | 2.410E-01 | 1.464E-01 | 1.552E-01 | 1.335E-02 | 1.553 |
| | | 136.48 | | 2.881E-02 | 7.697E-01 | 1.232E+00 | 1.109E-01 | 0.023 |
| AS-73 | + | 53.44 | * | 7.686E+00 | 5.096E+00 | 4.687E+00 | 3.520E-01 | 1.640 |
| NB-95 | + | 765.79 | * | 2.901E+00 | 3.482E-01 | 1.488E-01 | 1.357E-02 | 19.492 |
| TE-125M | + | 109.28 | * | 4.147E+02 | 8.150E+01 | 6.031E+01 | 6.256E+00 | 6.877 |
| BA-137M | + | 661.65 | * | 2.390E+00 | 2.813E-01 | 1.292E-01 | 1.144E-02 | 18.496 |
| CS-137 | + | 661.65 | * | 2.527E+00 | 2.977E-01 | 1.366E-01 | 1.211E-02 | 18.496 |
| TL-208 | | 277.35 | | 1.093E+00 | 8.743E-01 | 1.485E+00 | 1.819E-01 | 0.736 |
| | + | 510.84 | | 8.619E-01 | 5.836E-01 | 5.071E-01 | 6.177E-02 | 1.700 |
| | + | 583.14 | * | 5.381E-01 | 1.599E-01 | 1.239E-01 | 1.185E-02 | 4.344 |
| | | 860.37 | | 9.920E-02 | 5.736E-01 | 9.370E-01 | 9.162E-02 | 0.106 |
| BI-211 | | 72.87 | | 1.462E+00 | 1.226E+01 | 2.016E+01 | 1.591E+00 | 0.072 |
| | + | 351.07 | * | 4.391E+00 | 8.705E-01 | 7.403E-01 | 6.641E-02 | 5.931 |
| PB-212 | | 74.81 | | 1.897E+00 | 1.604E+00 | 2.361E+00 | 2.912E-01 | 0.803 |
| | + | 77.11 | | 1.752E+00 | 1.040E+00 | 1.375E+00 | 1.135E-01 | 1.274 |
| | | 87.30 | | -1.208E+01 | 2.846E+00 | 2.866E+00 | 3.921E-01 | -4.215 |
| | + | 238.63 | * | 1.430E+00 | 2.516E-01 | 2.393E-01 | 2.289E-02 | 5.974 |
| | + | 300.09 | | 2.465E+00 | 1.657E+00 | 2.711E+00 | 2.812E-01 | 0.909 |
| PO-212 | | 74.81 | | 1.897E+00 | 1.604E+00 | 2.361E+00 | 2.912E-01 | 0.803 |
| | + | 77.11 | | 1.752E+00 | 1.040E+00 | 1.375E+00 | 1.135E-01 | 1.274 |
| | | 87.30 | | -1.208E+01 | 2.846E+00 | 2.866E+00 | 3.921E-01 | -4.215 |
| | | 115.19 | | 6.612E+01 | 1.695E+01 | 2.464E+01 | 2.122E+00 | 2.683 |
| | + | 238.63 | * | 1.430E+00 | 2.516E-01 | 2.393E-01 | 2.289E-02 | 5.974 |
| | + | 300.09 | | 2.465E+00 | 1.657E+00 | 2.711E+00 | 2.812E-01 | 0.909 |
| BI-214 | + | 609.31 | * | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| | + | 1120.29 | | 1.845E+00 | 6.428E-01 | 7.236E-01 | 7.769E-02 | 2.550 |
| | + | 1764.49 | | 1.881E+00 | 7.446E-01 | 4.116E-01 | 3.385E-02 | 4.569 |
| PB-214 | | 74.81 | | 3.268E+00 | 2.757E+00 | 4.068E+00 | 4.450E-01 | 0.803 |
| | + | 77.11 | | 3.004E+00 | 1.798E+00 | 2.358E+00 | 2.648E-01 | 1.274 |
| | | 87.30 | | -2.069E+01 | 4.694E+00 | 4.910E+00 | 5.945E-01 | -4.215 |
| | + | 241.98 | | 1.739E+00 | 9.742E-01 | 1.304E+00 | 1.324E-01 | 1.334 |
| | + | 295.21 | | 1.611E+00 | 5.060E-01 | 5.029E-01 | 5.323E-02 | 3.204 |
| | + | 351.92 | * | 1.527E+00 | 3.131E-01 | 2.551E-01 | 2.647E-02 | 5.987 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | | 74.81 | | 3.268E+00 | 2.757E+00 | 4.068E+00 | 4.450E-01 | 0.803 |
| | + | 77.11 | | 3.004E+00 | 1.798E+00 | 2.358E+00 | 2.648E-01 | 1.274 |
| | | 87.30 | | -2.069E+01 | 4.694E+00 | 4.910E+00 | 5.945E-01 | -4.215 |
| | + | 241.98 | | 1.739E+00 | 9.742E-01 | 1.304E+00 | 1.324E-01 | 1.334 |
| | + | 295.21 | | 1.611E+00 | 5.060E-01 | 5.029E-01 | 5.323E-02 | 3.204 |
| PO-216 | + | 351.92 | * | 1.527E+00 | 3.131E-01 | 2.551E-01 | 2.647E-02 | 5.987 |
| | | 74.81 | | 1.897E+00 | 1.604E+00 | 2.361E+00 | 2.912E-01 | 0.803 |
| | + | 77.11 | | 1.752E+00 | 1.040E+00 | 1.375E+00 | 1.135E-01 | 1.274 |
| | | 87.30 | | -1.208E+01 | 2.846E+00 | 2.866E+00 | 3.921E-01 | -4.215 |
| | + | 238.63 | * | 1.430E+00 | 2.516E-01 | 2.393E-01 | 2.289E-02 | 5.974 |
| PO-218 | + | 300.09 | | 2.465E+00 | 1.657E+00 | 2.711E+00 | 2.812E-01 | 0.909 |
| | | 74.81 | | 3.268E+00 | 2.757E+00 | 4.068E+00 | 4.450E-01 | 0.803 |
| | + | 77.11 | | 3.004E+00 | 1.798E+00 | 2.358E+00 | 2.648E-01 | 1.274 |
| | | 87.30 | | -2.069E+01 | 4.694E+00 | 4.910E+00 | 5.945E-01 | -4.215 |
| | + | 241.98 | | 1.739E+00 | 9.742E-01 | 1.304E+00 | 1.324E-01 | 1.334 |
| RA-224 | + | 295.21 | | 1.611E+00 | 5.060E-01 | 5.029E-01 | 5.323E-02 | 3.204 |
| | + | 351.92 | * | 1.527E+00 | 3.131E-01 | 2.551E-01 | 2.647E-02 | 5.987 |
| | + | 240.98 | * | 3.298E+00 | 1.838E+00 | 2.684E+00 | 2.269E-01 | 1.229 |
| | RA-226 | 609.31 | * | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| | + | 1120.29 | | 1.845E+00 | 6.428E-01 | 7.236E-01 | 7.769E-02 | 2.550 |
| AC-228 | + | 1764.49 | | 1.881E+00 | 7.446E-01 | 4.116E-01 | 3.385E-02 | 4.569 |
| | + | 338.32 | | 1.823E+00 | 1.063E+00 | 8.220E-01 | 3.391E-01 | 2.218 |
| | + | 911.07 | * | 1.764E+00 | 5.243E-01 | 3.456E-01 | 4.026E-02 | 5.104 |
| | + | 969.11 | | 1.270E+00 | 6.055E-01 | 5.626E-01 | 1.322E-01 | 2.257 |
| | RA-228 | 338.32 | | 1.823E+00 | 1.063E+00 | 8.220E-01 | 3.391E-01 | 2.218 |
| TH-228 | + | 911.07 | * | 1.764E+00 | 5.243E-01 | 3.456E-01 | 4.026E-02 | 5.104 |
| | + | 969.11 | | 1.270E+00 | 6.055E-01 | 5.626E-01 | 1.322E-01 | 2.257 |
| | | 74.81 | | 1.929E+00 | 1.621E+00 | 2.401E+00 | 1.952E-01 | 0.803 |
| | + | 77.11 | | 1.782E+00 | 1.058E+00 | 1.399E+00 | 1.155E-01 | 1.274 |
| | | 87.30 | | -1.229E+01 | 2.621E+00 | 2.915E+00 | 2.722E-01 | -4.215 |
| TH-230 | + | 238.63 | * | 1.454E+00 | 2.559E-01 | 2.434E-01 | 2.328E-02 | 5.974 |
| | + | 300.09 | | 2.507E+00 | 2.232E+00 | 2.757E+00 | 1.634E+00 | 0.909 |
| | + | 609.31 | * | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| | + | 1120.29 | | 1.845E+00 | 6.428E-01 | 7.236E-01 | 7.769E-02 | 2.550 |
| | + | 1764.49 | | 1.881E+00 | 7.446E-01 | 4.116E-01 | 3.385E-02 | 4.569 |
| U-231 | + | 84.21 | | 4.442E+02 | 6.804E+01 | 5.740E+01 | 5.154E+00 | 7.739 |
| | + | 92.29 | | 2.876E+03 | 2.648E+02 | 2.316E+01 | 2.123E+00 | 124.155 |
| | + | 95.87 | * | 8.391E+01 | 1.900E+01 | 9.045E+00 | 8.142E-01 | 9.277 |
| | + | 108.00 | | 1.232E+02 | 2.316E+01 | 1.789E+01 | 1.554E+00 | 6.886 |
| | TH-232 | 338.32 | | 1.823E+00 | 7.671E-01 | 8.220E-01 | 7.037E-02 | 2.218 |
| PA-234M | + | 911.07 | * | 1.764E+00 | 5.243E-01 | 3.456E-01 | 4.026E-02 | 5.104 |
| | + | 969.11 | | 1.270E+00 | 6.055E-01 | 5.626E-01 | 1.322E-01 | 2.257 |
| | + | 766.42 | | 7.517E+02 | 3.865E+02 | 3.860E+01 | 1.962E+01 | 19.476 |
| | + | 1001.03 | * | 7.472E+02 | 8.419E+01 | 1.330E+01 | 1.364E+00 | 56.172 |
| | TH-234 | 63.29 | * | 5.587E+02 | 9.786E+01 | 7.802E+00 | 1.358E+00 | 71.610 |
| U-234 | + | 92.38 | | 5.452E+02 | 1.002E+02 | 4.390E+00 | 8.055E-01 | 124.187 |
| | + | 609.31 | * | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| | + | 1120.29 | | 1.845E+00 | 6.428E-01 | 7.236E-01 | 7.769E-02 | 2.550 |
| | + | 1764.49 | | 1.881E+00 | 7.446E-01 | 4.116E-01 | 3.385E-02 | 4.569 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| U-235 | | 89.95 | | 3.379E+01 | 1.233E+01 | 9.896E+00 | 3.073E+00 | 3.414 |
| | + | 93.35 | | 6.555E+02 | 1.849E+02 | 5.264E+00 | 1.483E+00 | 124.521 |
| | + | 105.00 | | 2.408E+01 | 8.781E+00 | 6.931E+00 | 2.071E+00 | 3.473 |
| | + | 143.76 | * | 3.172E+01 | 5.702E+00 | 1.172E+00 | 2.030E-01 | 27.052 |
| | + | 163.35 | | 3.386E+01 | 6.885E+00 | 2.616E+00 | 4.914E-01 | 12.942 |
| | + | 185.71 | | 3.360E+01 | 2.759E+00 | 2.602E-01 | 2.106E-02 | 129.137 |
| | + | 205.31 | | 3.256E+01 | 6.453E+00 | 2.199E+00 | 4.161E-01 | 14.804 |
| U-238 | + | 63.29 | * | 5.587E+02 | 9.786E+01 | 7.802E+00 | 1.358E+00 | 71.610 |
| | + | 92.38 | | 5.452E+02 | 5.021E+01 | 4.390E+00 | 4.022E-01 | 124.187 |
| ANH-511 | + | 511.00 | * | 1.862E-01 | 1.251E-01 | 1.096E-01 | 9.735E-03 | 1.699 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| BE-7 | | 477.59 | * | 4.215E-01 | 7.817E-01 | 1.282E+00 | 1.210E-01 | 0.329 |
| NA-22 | | 1274.54 | * | -1.527E-03 | 5.823E-02 | 9.596E-02 | 7.877E-03 | -0.016 |
| NA-24 | | 1368.53 | * | -5.669E-01 | 5.823E-02 | Half-Life too short | | |
| AL-26 | | 1129.67 | | -2.448E+00 | 2.445E+00 | 3.692E+00 | 3.101E-01 | -0.663 |
| | | 1808.65 | * | 2.957E-03 | 4.647E-02 | 7.984E-02 | 6.511E-03 | 0.037 |
| TI-44 | | 67.85 | | -3.678E-01 | 1.931E-01 | 2.749E-01 | 2.074E-02 | -1.338 |
| | + | 78.38 | * | 3.234E-01 | 1.920E-01 | 2.491E-01 | 2.085E-02 | 1.298 |
| SC-46 | | 889.25 | * | -3.143E-02 | 7.573E-02 | 1.191E-01 | 1.091E-02 | -0.264 |
| | + | 1120.51 | | 3.211E-01 | 1.098E-01 | 1.666E-01 | 1.408E-02 | 1.927 |
| V-48 | | 944.10 | | 3.640E+00 | 2.255E+00 | 3.598E+00 | 3.271E-01 | 1.012 |
| | | 983.50 | * | 1.611E-01 | 1.310E-01 | 2.312E-01 | 2.082E-02 | 0.697 |
| | | 1312.09 | | -3.422E-02 | 1.152E-01 | 1.831E-01 | 1.501E-02 | -0.187 |
| CR-51 | | 320.08 | * | 8.472E-01 | 8.716E-01 | 1.477E+00 | 1.335E-01 | 0.574 |
| MN-52 | + | 744.21 | | 5.587E+00 | 1.418E+00 | 1.839E+00 | 1.669E-01 | 3.038 |
| | | 848.13 | | -1.055E+01 | 1.722E+01 | 2.685E+01 | 2.465E+00 | -0.393 |
| | | 935.52 | | 4.324E-01 | 5.105E-01 | 8.826E-01 | 8.037E-02 | 0.490 |
| | | 1246.25 | | 9.257E+00 | 1.267E+01 | 2.059E+01 | 1.686E+00 | 0.450 |
| | | 1333.61 | | -3.118E+00 | 8.981E+00 | 1.423E+01 | 1.166E+00 | -0.219 |
| | | 1434.06 | * | 7.440E-01 | 4.954E-01 | 9.384E-01 | 7.803E-02 | 0.793 |
| MN-54 | | 834.83 | * | 2.157E-02 | 7.383E-02 | 1.226E-01 | 1.125E-02 | 0.176 |
| CO-56 | | 846.75 | * | -7.824E-02 | 7.881E-02 | 1.190E-01 | 1.093E-02 | -0.657 |
| | | 977.42 | | -5.737E+00 | 5.471E+00 | 7.689E+00 | 6.934E-01 | -0.746 |
| | | 1037.82 | | -1.888E-01 | 4.374E-01 | 7.044E-01 | 6.535E-02 | -0.268 |
| | | 1175.09 | | -1.514E+00 | 3.049E+00 | 4.827E+00 | 3.929E-01 | -0.314 |
| | + | 1238.25 | | 2.825E-01 | 2.096E-01 | 2.563E-01 | 2.166E-02 | 1.102 |
| | | 1360.21 | | 4.260E-01 | 1.393E+00 | 2.378E+00 | 1.958E-01 | 0.179 |
| | | 1771.40 | | 6.456E-02 | 3.195E-01 | 4.851E-01 | 3.984E-02 | 0.133 |
| CO-58 | | 810.76 | * | -2.912E-02 | 8.613E-02 | 1.379E-01 | 1.267E-02 | -0.211 |
| FE-59 | + | 142.65 | | 4.218E+02 | 4.025E+01 | 2.896E+01 | 2.388E+00 | 14.564 |
| | | 192.34 | | 1.013E+00 | 3.074E+00 | 4.326E+00 | 5.680E-01 | 0.234 |
| | | 1099.22 | * | -1.090E-01 | 1.250E-01 | 1.902E-01 | 1.762E-02 | -0.573 |
| | | 1291.56 | | -1.651E-02 | 1.622E-01 | 2.646E-01 | 2.491E-02 | -0.062 |
| CO-60 | | 1173.22 | | 4.126E-02 | 6.118E-02 | 1.077E-01 | 8.763E-03 | 0.383 |
| | | 1332.49 | * | 1.104E-02 | 5.453E-02 | 9.233E-02 | 7.563E-03 | 0.120 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| ZN-65 | 1115.52 | * | | -3.899E-02 | 1.422E-01 | 1.972E-01 | 1.673E-02 | -0.198 |
| GE-68 | 1077.35 | * | | -5.495E-01 | 1.777E+00 | 2.891E+00 | 2.505E-01 | -0.190 |
| AS-74 | 595.88 | * | | 6.050E-02 | 2.023E-01 | 3.427E-01 | 3.073E-02 | 0.177 |
| | 634.78 | | | 1.363E-01 | 8.187E-01 | 1.373E+00 | 1.224E-01 | 0.099 |
| SE-75 | 66.05 | | | -5.724E+01 | 1.974E+01 | 2.690E+01 | 2.552E+00 | -2.128 |
| | 96.73 | | | 4.657E+01 | 7.939E+00 | 6.456E+00 | 8.943E-01 | 7.213 |
| + | 121.11 | | | 1.304E+00 | 7.977E-01 | 9.032E-01 | 1.012E-01 | 1.444 |
| | 136.00 | | | 4.748E-02 | 1.528E-01 | 2.338E-01 | 1.966E-02 | 0.203 |
| | 198.60 | | | -5.420E-01 | 7.059E+00 | 7.632E+00 | 7.015E-01 | -0.071 |
| | 264.65 | * | | -3.485E-02 | 1.014E-01 | 1.610E-01 | 1.374E-02 | -0.217 |
| | 279.53 | | | -7.928E-02 | 2.563E-01 | 4.207E-01 | 3.709E-02 | -0.188 |
| | 303.91 | | | 2.809E+00 | 5.227E+00 | 7.749E+00 | 8.859E-01 | 0.362 |
| | 400.65 | | | -4.176E-01 | 5.557E-01 | 8.682E-01 | 9.491E-02 | -0.481 |
| BR-77 | 87.88 | | | -1.542E+04 | 2.789E+03 | 2.442E+03 | 2.298E+02 | -6.313 |
| | 200.40 | | | 1.363E+03 | 9.137E+02 | 1.324E+03 | 1.088E+02 | 1.030 |
| + | 239.00 | | | 4.067E+02 | 6.922E+01 | 9.692E+01 | 8.190E+00 | 4.197 |
| | 249.79 | | | -8.813E+01 | 2.791E+02 | 4.611E+02 | 3.911E+01 | -0.191 |
| | 281.68 | | | -3.155E+02 | 3.692E+02 | 5.938E+02 | 5.046E+01 | -0.531 |
| | 297.23 | | | 6.129E+02 | 3.256E+02 | 3.855E+02 | 3.295E+01 | 1.590 |
| | 303.76 | | | 4.263E+02 | 7.797E+02 | 1.157E+03 | 9.908E+01 | 0.368 |
| | 439.47 | | | -1.734E+02 | 5.633E+02 | 8.948E+02 | 7.707E+01 | -0.194 |
| | 484.57 | | | 3.524E+02 | 9.289E+02 | 1.514E+03 | 1.333E+02 | 0.233 |
| | 520.65 | * | | 5.965E+00 | 4.087E+01 | 6.930E+01 | 6.173E+00 | 0.086 |
| | 574.64 | | | 5.443E+01 | 8.808E+02 | 1.289E+03 | 1.156E+02 | 0.042 |
| | 578.91 | | | -1.115E+02 | 3.606E+02 | 5.139E+02 | 4.609E+01 | -0.217 |
| | 585.48 | | | 2.643E+03 | 8.326E+02 | 1.368E+03 | 1.226E+02 | 1.933 |
| | 755.35 | | | -1.215E+02 | 6.510E+02 | 1.059E+03 | 9.634E+01 | -0.115 |
| | 817.79 | | | -1.510E+02 | 4.876E+02 | 7.806E+02 | 7.160E+01 | -0.193 |
| SR-82 | 698.33 | | | 3.260E+01 | 8.108E+01 | 1.365E+02 | 1.224E+01 | 0.239 |
| | 776.49 | * | | -3.168E-01 | 9.233E-01 | 1.486E+00 | 1.357E-01 | -0.213 |
| | 1395.20 | | | -3.838E+00 | 1.767E+01 | 2.820E+01 | 2.334E+00 | -0.136 |
| RB-83 | 520.41 | * | | 3.130E-02 | 1.553E-01 | 2.640E-01 | 2.351E-02 | 0.119 |
| | 529.64 | | | 8.357E-02 | 2.509E-01 | 4.278E-01 | 3.818E-02 | 0.195 |
| | 552.65 | | | -1.016E-01 | 4.319E-01 | 7.171E-01 | 6.423E-02 | -0.142 |
| RB-84 | 881.50 | * | | 3.793E-01 | 1.684E-01 | 3.029E-01 | 2.777E-02 | 1.252 |
| KR-85 | 513.99 | * | | 1.502E+01 | 1.714E+01 | 2.638E+01 | 2.346E+00 | 0.569 |
| SR-85 | 513.99 | * | | 7.863E-02 | 8.971E-02 | 1.381E-01 | 1.228E-02 | 0.569 |
| RB-86 | 1076.63 | * | | 2.091E-01 | 1.172E+00 | 1.993E+00 | 1.728E-01 | 0.105 |
| Y-88 | 898.02 | | | 7.387E-02 | 7.868E-02 | 1.351E-01 | 1.242E-02 | 0.547 |
| | 1836.01 | * | | -7.533E-02 | 6.582E-02 | 9.086E-02 | 7.374E-03 | -0.829 |
| ZR-88 | 392.90 | * | | -3.948E-02 | 7.219E-02 | 1.145E-01 | 9.537E-03 | -0.345 |
| Y-91 | 1204.90 | * | | -2.374E+00 | 2.427E+01 | 3.991E+01 | 3.259E+00 | -0.059 |
| NB-94 | 702.63 | * | | -2.722E-02 | 7.614E-02 | 1.235E-01 | 1.109E-02 | -0.220 |
| | 871.10 | | | -7.603E-03 | 6.216E-02 | 1.001E-01 | 9.188E-03 | -0.076 |
| NB-95M | 235.69 | * | | 1.408E-01 | 3.243E-01 | 4.846E-01 | 4.704E-02 | 0.291 |
| ZR-95 | 724.18 | | | -3.453E-02 | 2.391E-01 | 3.379E-01 | 3.294E-02 | -0.102 |
| | 756.15 | * | | -1.212E-02 | 1.626E-01 | 2.661E-01 | 2.643E-02 | -0.046 |
| NB-97 | 657.90 | * | | -3.904E-01 | 1.626E-01 | Half-Life too short | | |
| | 1024.50 | | | 3.873E+01 | 1.626E-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 |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| ZR-97 | 254.15 | | | 6.187E+01 | 1.626E-01 | Half-Life | too short | |
| | 355.39 | | | -1.700E+01 | 1.626E-01 | Half-Life | too short | |
| | 507.63 | * | | 1.164E+01 | 1.626E-01 | Half-Life | too short | |
| | 602.52 | | | 9.005E+01 | 1.626E-01 | Half-Life | too short | |
| | 1021.30 | | | 9.258E+00 | 1.626E-01 | Half-Life | too short | |
| | 1147.95 | | | -2.087E+00 | 1.626E-01 | Half-Life | too short | |
| | 1362.66 | | | -1.148E+01 | 1.626E-01 | Half-Life | too short | |
| | 1750.46 | | | 6.453E+01 | 1.626E-01 | Half-Life | too short | |
| MO-99 | 140.51 | | | 1.959E+02 | 1.833E+02 | 2.545E+02 | 7.022E+01 | 0.769 |
| | 181.06 | | | 3.066E+01 | 9.916E+01 | 1.570E+02 | 2.830E+01 | 0.195 |
| | 366.43 | | | -1.643E+02 | 3.198E+02 | 5.106E+02 | 4.325E+01 | -0.322 |
| | 739.58 | * | | 1.234E+01 | 5.360E+01 | 7.759E+01 | 1.198E+01 | 0.159 |
| | 778.00 | | | -3.005E+01 | 1.336E+02 | 2.165E+02 | 1.977E+01 | -0.139 |
| TC-99M | 140.51 | * | | 3.922E+13 | 1.336E+02 | Half-Life | too short | |
| RH-101 | 127.23 | | | -9.203E-02 | 1.253E-01 | 1.884E-01 | 1.600E-02 | -0.488 |
| | 198.01 | * | | -2.378E-02 | 1.290E-01 | 1.386E-01 | 1.137E-02 | -0.172 |
| | 325.23 | | | -1.688E-01 | 4.863E-01 | 7.888E-01 | 6.764E-02 | -0.214 |
| RH-102 | 418.52 | | | 2.260E-01 | 6.613E-01 | 1.085E+00 | 9.215E-02 | 0.208 |
| | 475.06 | * | | -1.428E-02 | 6.963E-02 | 1.106E-01 | 9.702E-03 | -0.129 |
| | 631.29 | | | -4.824E-02 | 1.165E-01 | 1.897E-01 | 1.692E-02 | -0.254 |
| | 697.49 | | | 7.097E-03 | 1.741E-01 | 2.883E-01 | 2.584E-02 | 0.025 |
| | 766.84 | + | | 7.155E+00 | 8.588E-01 | 1.012E+00 | 9.227E-02 | 7.070 |
| | 1046.59 | | | -2.130E-02 | 1.697E-01 | 2.786E-01 | 2.450E-02 | -0.076 |
| | 1112.84 | | | 8.860E-02 | 3.392E-01 | 5.057E-01 | 4.294E-02 | 0.175 |
| RU-103 | 497.08 | * | | 1.596E-02 | 9.746E-02 | 1.570E-01 | 2.245E-02 | 0.102 |
| | 610.33 | + | | 1.494E+01 | 4.182E+00 | 4.509E+00 | 7.602E-01 | 3.313 |
| RH-106 | 511.85 | + | | 9.333E-01 | 6.272E-01 | 7.342E-01 | 6.525E-02 | 1.271 |
| | 621.84 | * | | 3.087E-01 | 6.649E-01 | 1.131E+00 | 1.534E-01 | 0.273 |
| | 1050.47 | | | 1.898E-01 | 3.290E+00 | 5.546E+00 | 4.869E-01 | 0.034 |
| RU-106 | 511.85 | + | | 9.333E-01 | 6.272E-01 | 7.342E-01 | 6.525E-02 | 1.271 |
| | 621.84 | * | | 3.087E-01 | 6.642E-01 | 1.131E+00 | 1.011E-01 | 0.273 |
| | 1050.47 | | | 1.898E-01 | 3.290E+00 | 5.546E+00 | 4.869E-01 | 0.034 |
| AG-108M | 433.93 | * | | 2.460E-02 | 7.219E-02 | 1.182E-01 | 1.056E-02 | 0.208 |
| | 614.37 | | | -5.221E-03 | 8.960E-02 | 1.293E-01 | 1.199E-02 | -0.040 |
| | 722.95 | | | 9.897E-04 | 1.022E-01 | 1.462E-01 | 1.367E-02 | 0.007 |
| CD-109 | 88.03 | * | | -3.314E+01 | 6.939E+00 | 6.488E+00 | 6.112E-01 | -5.108 |
| AG-110M | 657.75 | * | | -3.332E-02 | 9.078E-02 | 1.273E-01 | 1.160E-02 | -0.262 |
| | 677.61 | | | -3.936E-01 | 6.368E-01 | 1.017E+00 | 9.294E-02 | -0.387 |
| | 706.67 | | | 2.620E-01 | 4.531E-01 | 7.689E-01 | 7.088E-02 | 0.341 |
| | 763.93 | | | 4.307E+00 | 7.045E-01 | 1.106E+00 | 1.034E-01 | 3.894 |
| | 884.67 | | | 2.829E-03 | 1.109E-01 | 1.804E-01 | 1.701E-02 | 0.016 |
| | 937.48 | | | 4.635E-02 | 1.856E-01 | 3.063E-01 | 2.878E-02 | 0.151 |
| | 1384.27 | | | -1.344E-01 | 2.267E-01 | 3.421E-01 | 2.914E-02 | -0.393 |
| IN-111 | 171.28 | | | -1.403E+00 | 5.610E+00 | 8.825E+00 | 7.023E-01 | -0.159 |
| | 245.39 | * | | -2.577E+00 | 4.583E+00 | 6.581E+00 | 5.574E-01 | -0.392 |
| IN-113M | 391.69 | * | | -8.817E-02 | 1.065E-01 | 1.668E-01 | 1.434E-02 | -0.529 |
| SN-113 | 391.69 | * | | -8.817E-02 | 1.065E-01 | 1.668E-01 | 1.434E-02 | -0.529 |
| IN-114M | 190.27 | * | | -4.287E-01 | 7.578E-01 | 7.995E-01 | 6.505E-02 | -0.536 |
| CD-115 | 260.90 | | | 7.207E+02 | 6.087E+02 | 9.306E+02 | 7.907E+01 | 0.774 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 492.35 | | | 1.275E+01 | 1.523E+02 | 2.446E+02 | 2.161E+01 | 0.052 |
| | 527.90 | * | | 2.660E+01 | 4.604E+01 | 7.923E+01 | 7.069E+00 | 0.336 |
| SN-117M | 156.02 | | | -9.257E+00 | 8.657E+00 | 1.343E+01 | 1.082E+00 | -0.689 |
| | 158.56 | * | | 7.428E-02 | 2.354E-01 | 3.345E-01 | 2.682E-02 | 0.222 |
| SB-122 | 563.90 | * | | 6.272E+00 | 8.279E+00 | 1.265E+01 | 1.134E+00 | 0.496 |
| | 692.80 | | | 1.901E+02 | 1.597E+02 | 2.777E+02 | 2.485E+01 | 0.684 |
| I-123 | 159.00 | * | | 2.018E+02 | 1.597E+02 | Half-Life | too short | |
| | 528.96 | | | 1.046E+04 | 1.597E+02 | Half-Life | too short | |
| TE-123M | 159.00 | * | | 8.403E-02 | 1.117E-01 | 1.601E-01 | 1.292E-02 | 0.525 |
| I-124 | 602.71 | * | | 1.990E+00 | 2.028E+00 | 3.254E+00 | 2.916E-01 | 0.612 |
| | 722.78 | | | 8.289E-01 | 1.482E+01 | 2.125E+01 | 1.919E+00 | 0.039 |
| | 1325.50 | | | 1.636E+00 | 7.194E+01 | 1.188E+02 | 9.735E+00 | 0.014 |
| | 1376.25 | | | 4.324E+01 | 5.916E+01 | 1.051E+02 | 8.676E+00 | 0.411 |
| + | 1509.49 | | | 6.330E+01 | 3.599E+01 | 6.070E+01 | 5.075E+00 | 1.043 |
| | 1691.02 | | | -3.719E+00 | 7.506E+00 | 1.091E+01 | 9.065E-01 | -0.341 |
| SB-124 | 602.71 | | | 8.548E-02 | 8.711E-02 | 1.398E-01 | 1.252E-02 | 0.612 |
| | 645.85 | | | -1.795E-01 | 1.055E+00 | 1.738E+00 | 1.632E-01 | -0.103 |
| | 709.31 | | | -3.202E+00 | 5.995E+00 | 9.602E+00 | 8.638E-01 | -0.333 |
| | 713.82 | | | -9.455E-01 | 3.360E+00 | 5.452E+00 | 6.717E-01 | -0.173 |
| | 722.78 | | | 5.160E-02 | 9.222E-01 | 1.323E+00 | 1.218E-01 | 0.039 |
| + | 968.20 | | | 1.337E+01 | 5.678E+00 | 9.499E+00 | 8.587E-01 | 1.408 |
| | 1045.16 | | | 7.437E-01 | 3.779E+00 | 6.341E+00 | 5.581E-01 | 0.117 |
| | 1325.50 | | | 1.087E-01 | 4.783E+00 | 7.899E+00 | 6.473E-01 | 0.014 |
| | 1368.21 | | | -1.564E-01 | 2.208E+00 | 3.590E+00 | 4.752E-01 | -0.044 |
| | 1436.60 | | | 1.023E+01 | 6.436E+00 | 1.225E+01 | 1.019E+00 | 0.835 |
| | 1691.02 | * | | -5.460E-02 | 1.102E-01 | 1.602E-01 | 1.388E-02 | -0.341 |
| SB-125 | 427.89 | * | | 1.449E-01 | 2.082E-01 | 3.459E-01 | 3.016E-02 | 0.419 |
| | 463.38 | | | 8.443E-01 | 6.599E-01 | 1.108E+00 | 1.041E-01 | 0.762 |
| | 600.56 | | | -1.666E-01 | 3.691E-01 | 6.025E-01 | 5.768E-02 | -0.276 |
| | 635.90 | | | 4.691E-01 | 5.763E-01 | 9.944E-01 | 9.534E-02 | 0.472 |
| I-126 | 388.63 | | | 4.059E-01 | 5.253E-01 | 8.777E-01 | 7.322E-02 | 0.462 |
| | 666.33 | * | | -1.992E-01 | 5.096E-01 | 7.125E-01 | 6.317E-02 | -0.280 |
| | 753.82 | | | 3.205E+00 | 3.476E+00 | 5.981E+00 | 5.440E-01 | 0.536 |
| SB-126 | 223.80 | | | -1.161E+01 | 1.093E+01 | 1.778E+01 | 1.490E+00 | -0.653 |
| | 278.60 | | | -4.090E-01 | 6.424E+00 | 1.063E+01 | 9.022E-01 | -0.038 |
| + | 296.50 | | | 1.790E+01 | 5.509E+00 | 6.883E+00 | 5.882E-01 | 2.600 |
| | 414.70 | | | 6.985E-02 | 1.849E-01 | 3.040E-01 | 2.576E-02 | 0.230 |
| | 415.30 | | | 1.190E+01 | 1.541E+01 | 2.572E+01 | 2.180E+00 | 0.462 |
| | 555.20 | | | 2.795E+00 | 9.454E+00 | 1.608E+01 | 1.440E+00 | 0.174 |
| | 573.80 | | | 7.839E-01 | 2.756E+00 | 4.093E+00 | 3.670E-01 | 0.192 |
| | 593.00 | | | -9.653E-01 | 2.180E+00 | 3.562E+00 | 3.194E-01 | -0.271 |
| | 656.30 | | | -7.532E-01 | 9.352E+00 | 1.340E+01 | 1.188E+00 | -0.056 |
| | 666.33 | | | -8.360E-02 | 2.139E-01 | 2.991E-01 | 2.652E-02 | -0.280 |
| | 675.00 | | | -1.113E+00 | 4.499E+00 | 7.349E+00 | 6.537E-01 | -0.151 |
| | 695.00 | | | -2.077E-01 | 1.995E-01 | 3.116E-01 | 2.791E-02 | -0.667 |
| | 697.00 | | | 4.366E-02 | 6.741E-01 | 1.118E+00 | 1.002E-01 | 0.039 |
| | 720.50 | * | | -3.069E-02 | 3.676E-01 | 5.686E-01 | 5.132E-02 | -0.054 |
| | 856.80 | | | -1.440E+00 | 1.100E+00 | 1.626E+00 | 1.492E-01 | -0.886 |
| | 989.30 | | | -1.187E+00 | 2.281E+00 | 3.490E+00 | 3.136E-01 | -0.340 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-------------------------|-----------|----------------|-----------|---------|
| SN-126 | + | 1034.80 | -1.752E+00 | 1.290E+01 | 2.137E+01 | 1.889E+00 | -0.082 |
| | | 1213.00 | 1.416E+00 | 7.301E+00 | 1.231E+01 | 1.006E+00 | 0.115 |
| | | 64.28 | 2.212E+02 | 3.233E+01 | 6.361E+00 | 9.225E-01 | 34.768 |
| | | 86.94 | -1.130E+01 | 5.133E+00 | 2.569E+00 | 1.066E+00 | -4.399 |
| SB-127 | * | 87.57 | -3.167E+00 | 6.652E-01 | 6.226E-01 | 5.834E-02 | -5.086 |
| | | 61.10 | 2.653E+03 | 4.707E+02 | 5.935E+02 | 6.403E+01 | 4.471 |
| | | 252.40 | -3.418E+00 | 1.510E+01 | 2.405E+01 | 1.014E+01 | -0.142 |
| | | 290.80 | -2.240E+01 | 7.765E+01 | 1.113E+02 | 1.301E+01 | -0.201 |
| | | 411.60 | -3.991E+00 | 3.837E+01 | 6.184E+01 | 9.939E+00 | -0.065 |
| | | 444.90 | -9.470E-01 | 3.205E+01 | 5.156E+01 | 6.748E+00 | -0.018 |
| | | 473.00 | -4.017E+00 | 5.689E+00 | 8.786E+00 | 1.185E+00 | -0.457 |
| | | 543.00 | -5.538E+00 | 5.360E+01 | 8.969E+01 | 1.351E+01 | -0.062 |
| | | 603.60 | 1.929E+01 | 3.878E+01 | 5.803E+01 | 7.704E+00 | 0.332 |
| | | 685.20 | * -9.170E-01 | 4.193E+00 | 6.857E+00 | 8.364E-01 | -0.134 |
| | | 698.50 | 2.612E+01 | 4.859E+01 | 8.204E+01 | 1.348E+01 | 0.318 |
| | | 722.20 | 5.845E+01 | 1.021E+02 | 1.518E+02 | 1.832E+01 | 0.385 |
| XE-127 | | 783.80 | 1.442E+00 | 1.445E+01 | 2.378E+01 | 3.166E+00 | 0.061 |
| | | 57.60 | 2.630E+00 | 3.346E+01 | 3.942E+01 | 2.858E+00 | 0.067 |
| | | 145.22 | 1.088E+02 | 1.038E+01 | 7.115E+00 | 5.841E-01 | 15.292 |
| | | 172.10 | -2.433E-01 | 4.296E-01 | 6.708E-01 | 5.344E-02 | -0.363 |
| | * | 202.84 | 6.044E-01 | 1.751E-01 | 2.539E-01 | 2.093E-02 | 2.380 |
| | | 374.96 | -3.369E-02 | 4.726E-01 | 7.675E-01 | 6.467E-02 | -0.044 |
| | | 80.18 | -6.059E-01 | 3.429E+01 | 3.961E+01 | 3.414E+00 | -0.015 |
| | | 284.30 | 7.617E-01 | 4.041E+00 | 6.731E+00 | 6.042E-01 | 0.113 |
| | * | 364.48 | -3.615E-02 | 3.141E-01 | 5.101E-01 | 4.575E-02 | -0.071 |
| | | 636.97 | 7.839E-01 | 3.958E+00 | 6.646E+00 | 6.242E-01 | 0.118 |
| | | 722.89 | 5.312E-01 | 2.041E+01 | 2.921E+01 | 2.657E+00 | 0.018 |
| | | 49.72 | 2.034E+02 | 9.616E+01 | 1.437E+02 | 1.565E+01 | 1.415 |
| TE-132 | + | 111.76 | 1.454E+03 | 2.925E+02 | 4.386E+02 | 5.004E+01 | 3.314 |
| | | 116.30 | 2.846E+02 | 2.339E+02 | 2.711E+02 | 3.086E+01 | 1.050 |
| | | 228.16 | * 1.684E+00 | 2.530E+00 | 4.286E+00 | 6.847E-01 | 0.393 |
| | | 53.15 | 3.201E+01 | 2.122E+01 | 2.077E+01 | 1.565E+00 | 1.541 |
| BA-133 | + | 79.62 | -1.699E+01 | 8.680E+00 | 9.226E+00 | 1.398E+00 | -1.842 |
| | | 81.00 | 1.639E-01 | 6.283E-01 | 7.282E-01 | 1.157E-01 | 0.225 |
| | | 276.40 | 7.676E-01 | 8.723E-01 | 1.472E+00 | 2.115E-01 | 0.522 |
| | | 302.84 | -2.629E-01 | 3.687E-01 | 5.137E-01 | 6.805E-02 | -0.512 |
| | * | 356.01 | -3.238E-02 | 1.119E-01 | 1.583E-01 | 2.079E-02 | -0.205 |
| | | 383.85 | -1.081E-01 | 6.843E-01 | 1.106E+00 | 1.375E-01 | -0.098 |
| | | 510.53 | 9.091E+00 | 6.843E-01 | Half-Life | too short | |
| | | 529.87 | * 1.063E-02 | 6.843E-01 | Half-Life | too short | |
| | | 706.58 | 2.392E+00 | 6.843E-01 | Half-Life | too short | |
| | | 856.28 | -6.722E+00 | 6.843E-01 | Half-Life | too short | |
| | | 875.33 | -1.901E-01 | 6.843E-01 | Half-Life | too short | |
| | | 1236.41 | 4.500E+00 | 6.843E-01 | Half-Life | too short | |
| CS-134 | | 1298.22 | -1.690E+00 | 6.843E-01 | Half-Life | too short | |
| | | 475.35 | 2.256E+00 | 4.445E+00 | 7.288E+00 | 6.394E-01 | 0.310 |
| | | 563.23 | 9.202E-01 | 8.471E-01 | 1.367E+00 | 1.237E-01 | 0.673 |
| | | 569.32 | 8.529E-01 | 5.885E-01 | 7.938E-01 | 7.208E-02 | 1.074 |
| | + | 604.70 | 4.152E-02 | 8.044E-02 | 1.205E-01 | 1.082E-02 | 0.345 |

---- 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 | * | | 1.480E-01 | 1.083E-01 | 1.880E-01 | 1.732E-02 | 0.787 |
| | 801.93 | | | -8.703E-01 | 8.885E-01 | 1.375E+00 | 1.266E-01 | -0.633 |
| | 1038.57 | | | -2.522E+00 | 5.484E+00 | 8.815E+00 | 7.779E-01 | -0.286 |
| | 1167.94 | | | -2.077E+00 | 3.128E+00 | 4.840E+00 | 3.955E-01 | -0.429 |
| | 1365.15 | | | -1.464E-01 | 1.575E+00 | 2.554E+00 | 2.209E-01 | -0.057 |
| | 268.24 | * | | -5.540E-03 | 3.524E-01 | 5.852E-01 | 5.770E-02 | -0.009 |
| | 288.45 | | | -3.144E+12 | 3.524E-01 | Half-Life | too short | |
| | 417.63 | | | 3.813E+12 | 3.524E-01 | Half-Life | too short | |
| | 546.56 | | | -1.780E+12 | 3.524E-01 | Half-Life | too short | |
| | 836.80 | | | 2.180E+12 | 3.524E-01 | Half-Life | too short | |
| | 1038.76 | | | -1.617E+12 | 3.524E-01 | Half-Life | too short | |
| | 1124.00 | | | 1.046E+13 | 3.524E-01 | Half-Life | too short | |
| | 1131.51 | | | -6.375E+11 | 3.524E-01 | Half-Life | too short | |
| | 1260.41 | * | | -2.488E+11 | 3.524E-01 | Half-Life | too short | |
| | 1457.56 | | | 4.085E+13 | 3.524E-01 | Half-Life | too short | |
| | 1678.03 | | | 2.455E+11 | 3.524E-01 | Half-Life | too short | |
| | 1706.46 | | | -2.081E+12 | 3.524E-01 | Half-Life | too short | |
| | 1791.20 | | | 1.248E+12 | 3.524E-01 | Half-Life | too short | |
| CS-136 | 66.91 | | | -8.998E+00 | 3.691E+00 | 4.903E+00 | 7.274E-01 | -1.835 |
| | 86.29 | | | 2.253E+00 | 6.279E+00 | 9.182E+00 | 1.218E+00 | 0.245 |
| | 153.22 | | | 3.556E+00 | 2.512E+00 | 4.064E+00 | 3.727E-01 | 0.875 |
| | 163.89 | + | | 8.505E+01 | 1.016E+01 | 1.016E+01 | 9.199E-01 | 8.372 |
| | 176.55 | | | -8.343E-01 | 1.318E+00 | 2.210E+00 | 1.889E-01 | -0.377 |
| | 273.65 | | | -2.945E-01 | 1.162E+00 | 1.913E+00 | 1.736E-01 | -0.154 |
| | 340.57 | | | 3.776E-01 | 3.336E-01 | 5.040E-01 | 4.440E-02 | 0.749 |
| | 818.51 | | | -2.813E-02 | 1.717E-01 | 2.776E-01 | 2.549E-02 | -0.101 |
| | 1048.07 | * | | -9.103E-02 | 1.800E-01 | 2.854E-01 | 2.611E-02 | -0.319 |
| | 1235.34 | | | 4.302E-01 | 1.104E+00 | 1.640E+00 | 1.892E-01 | 0.262 |
| CE-139 BA-140 | 165.85 | * | | 1.882E-01 | 1.182E-01 | 1.716E-01 | 1.357E-02 | 1.097 |
| | 162.64 | + | | 6.006E+01 | 6.921E+00 | 7.125E+00 | 6.055E-01 | 8.431 |
| | 304.84 | | | 2.104E+00 | 3.436E+00 | 5.305E+00 | 1.486E+00 | 0.397 |
| | 423.70 | | | -3.887E+00 | 5.042E+00 | 7.616E+00 | 2.467E+00 | -0.510 |
| LA-140 | 537.32 | * | | 1.811E-01 | 6.576E-01 | 1.114E+00 | 3.702E-01 | 0.163 |
| | 328.77 | | | 3.483E-01 | 7.258E-01 | 1.210E+00 | 1.096E-01 | 0.288 |
| | 432.53 | | | 7.188E-01 | 5.185E+00 | 8.419E+00 | 7.576E-01 | 0.085 |
| | 487.03 | | | 1.993E-01 | 3.498E-01 | 5.745E-01 | 5.364E-02 | 0.347 |
| | 751.79 | | | -1.007E+00 | 4.046E+00 | 6.556E+00 | 6.536E-01 | -0.154 |
| | 815.85 | | | -2.093E-01 | 7.253E-01 | 1.162E+00 | 1.175E-01 | -0.180 |
| | 867.82 | | | -5.519E-01 | 2.719E+00 | 4.352E+00 | 4.181E-01 | -0.127 |
| | 919.63 | | | -3.372E+00 | 6.874E+00 | 9.075E+00 | 1.004E+00 | -0.372 |
| | 925.24 | | | 6.729E+00 | 2.778E+00 | 5.041E+00 | 4.858E-01 | 1.335 |
| | 1596.49 | * | | 1.415E-01 | 1.602E-01 | 2.620E-01 | 2.192E-02 | 0.540 |
| CE-141 CE-143 | 145.44 | * | | 5.940E+00 | 5.914E-01 | 5.901E-01 | 4.940E-02 | 10.066 |
| | 57.37 | | | -8.864E-03 | 5.914E-01 | Half-Life | too short | |
| | 231.56 | | | -6.622E-03 | 5.914E-01 | Half-Life | too short | |
| | 293.26 | * | | 2.216E-03 | 5.914E-01 | Half-Life | too short | |
| | 350.59 | + | | 9.355E-02 | 5.914E-01 | Half-Life | too short | |
| | 490.36 | | | -2.045E-03 | 5.914E-01 | Half-Life | too short | |
| | 664.57 | | | 7.776E-02 | 5.914E-01 | Half-Life | too short | |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|------------|-----------|---------------------|-----------|---------|
| | 721.93 | | | 4.709E-03 | 5.914E-01 | Half-Life too short | | |
| CE-144 | 80.11 | | | -1.623E+00 | 1.338E+01 | 1.543E+01 | 1.318E+00 | -0.105 |
| | 133.54 | * | | 1.660E-01 | 8.361E-01 | 1.196E+00 | 1.846E-01 | 0.139 |
| PM-144 | 476.78 | | | 6.899E-02 | 1.597E-01 | 2.609E-01 | 2.498E-02 | 0.264 |
| | 618.01 | | | -8.610E-03 | 6.989E-02 | 1.127E-01 | 1.034E-02 | -0.076 |
| | 696.49 | * | | -3.869E-02 | 7.803E-02 | 1.257E-01 | 1.127E-02 | -0.308 |
| | 778.57 | | | -1.377E+00 | 5.502E+00 | 8.903E+00 | 8.136E-01 | -0.155 |
| PR-144 | 696.49 | * | | -2.624E+00 | 5.293E+00 | 8.529E+00 | 7.643E-01 | -0.308 |
| | 1489.15 | | | -4.895E+00 | 1.751E+01 | 2.738E+01 | 2.287E+00 | -0.179 |
| PM-146 | 453.90 | * | | -1.055E-02 | 1.058E-01 | 1.694E-01 | 1.825E-02 | -0.062 |
| | 633.02 | | | -7.923E-01 | 3.009E+00 | 4.916E+00 | 1.841E+00 | -0.161 |
| | 735.90 | | | 3.037E-01 | 3.676E-01 | 5.827E-01 | 1.674E-01 | 0.521 |
| | 747.13 | | | 2.663E-02 | 2.288E-01 | 3.289E-01 | 4.713E-02 | 0.081 |
| ND-147 | 91.11 | | | 1.693E+02 | 1.697E+01 | 5.330E+00 | 5.276E-01 | 31.756 |
| | 319.41 | | | 1.085E+00 | 8.466E+00 | 1.399E+01 | 1.200E+00 | 0.078 |
| | 439.89 | | | -7.168E-01 | 1.466E+01 | 2.358E+01 | 2.032E+00 | -0.030 |
| | 531.02 | * | | 7.989E-01 | 1.468E+00 | 2.517E+00 | 3.808E-01 | 0.317 |
| PM-149 | 285.90 | * | | 7.137E+00 | 3.837E+02 | 6.356E+02 | 9.846E+01 | 0.011 |
| EU-152 | 121.78 | + | | 6.962E-01 | 4.243E-01 | 4.793E-01 | 4.749E-02 | 1.452 |
| | 244.69 | | | -3.552E-01 | 8.586E-01 | 1.241E+00 | 1.051E-01 | -0.286 |
| | 344.27 | * | | -3.714E-02 | 2.193E-01 | 3.443E-01 | 3.121E-02 | -0.108 |
| | 443.98 | | | 5.957E-01 | 2.184E+00 | 3.561E+00 | 3.075E-01 | 0.167 |
| | 778.89 | | | -5.635E-02 | 6.379E-01 | 1.041E+00 | 9.512E-02 | -0.054 |
| | 867.32 | | | -6.117E-02 | 1.475E+00 | 2.391E+00 | 2.194E-01 | -0.026 |
| | 964.01 | + | | 7.138E-01 | 6.415E-01 | 8.671E-01 | 7.847E-02 | 0.823 |
| | 1085.78 | | | 2.012E-01 | 5.565E-01 | 9.609E-01 | 8.289E-02 | 0.209 |
| | 1112.02 | | | 1.248E-01 | 4.600E-01 | 7.127E-01 | 6.054E-02 | 0.175 |
| | 1407.95 | | | 1.751E-01 | 2.745E-01 | 4.829E-01 | 4.003E-02 | 0.363 |
| GD-153 | 69.67 | | | 9.069E+00 | 6.378E+00 | 1.057E+01 | 8.097E-01 | 0.858 |
| | 83.37 | + | | 8.801E+02 | 1.348E+02 | 1.346E+02 | 1.195E+01 | 6.541 |
| | 97.43 | + | * | 7.673E+00 | 8.350E-01 | 7.425E-01 | 6.640E-02 | 10.333 |
| | 103.18 | | | 9.716E-01 | 5.829E-01 | 6.869E-01 | 6.028E-02 | 1.414 |
| EU-154 | 123.07 | | | 2.496E-02 | 2.210E-01 | 3.171E-01 | 3.592E-02 | 0.079 |
| | 247.94 | | | 8.717E-01 | 8.577E-01 | 1.461E+00 | 1.661E-01 | 0.597 |
| | 591.81 | | | -9.882E-02 | 1.361E+00 | 2.140E+00 | 2.553E-01 | -0.046 |
| | 723.30 | | | -1.067E-02 | 4.270E-01 | 6.089E-01 | 6.029E-02 | -0.018 |
| | 756.87 | | | -1.480E-01 | 1.742E+00 | 2.850E+00 | 3.513E-01 | -0.052 |
| | 873.19 | | | 9.183E-02 | 5.670E-01 | 9.323E-01 | 1.178E-01 | 0.099 |
| | 996.32 | | | 1.042E+00 | 7.847E-01 | 1.213E+00 | 2.176E-01 | 0.859 |
| | 1004.76 | | | 5.897E+00 | 9.790E-01 | 1.438E+00 | 1.708E-01 | 4.102 |
| | 1274.45 | * | | -1.034E-02 | 1.637E-01 | 2.687E-01 | 2.954E-02 | -0.038 |
| EU-155 | 48.70 | | | 5.117E+00 | 7.445E+00 | 1.121E+01 | 9.074E-01 | 0.456 |
| | 60.01 | | | 6.246E+01 | 2.198E+01 | 3.291E+01 | 2.370E+00 | 1.898 |
| | 86.54 | | | -2.532E+00 | 5.909E-01 | 7.489E-01 | 6.986E-02 | -3.382 |
| | 105.31 | + | * | 2.459E+00 | 5.584E-01 | 7.526E-01 | 6.650E-02 | 3.267 |
| TB-160 | 86.79 | | | -7.066E+00 | 1.610E+00 | 2.029E+00 | 1.882E-01 | -3.482 |
| | 197.04 | | | 1.272E+00 | 1.950E+00 | 2.524E+00 | 2.068E-01 | 0.504 |
| | 215.65 | | | -6.019E-02 | 1.792E+00 | 3.009E+00 | 2.508E-01 | -0.020 |
| | 298.57 | + | | 3.655E-01 | 2.448E-01 | 4.267E-01 | 3.649E-02 | 0.857 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|----------------|-----------|---------|
| HO-166M | | 879.36 | * | 5.721E-02 | 3.265E-01 | 5.359E-01 | 4.915E-02 | 0.107 |
| | | 962.29 | | 9.530E-01 | 9.107E-01 | 1.440E+00 | 1.304E-01 | 0.662 |
| | + | 966.15 | | 4.993E-01 | 4.487E-01 | 6.527E-01 | 5.904E-02 | 0.765 |
| | | 1177.93 | | -3.776E-01 | 4.912E-01 | 7.544E-01 | 6.143E-02 | -0.500 |
| | | 1271.85 | | 1.043E-01 | 9.683E-01 | 1.619E+00 | 1.327E-01 | 0.064 |
| | | 80.57 | | -1.706E+00 | 1.764E+00 | 1.995E+00 | 1.714E-01 | -0.855 |
| | + | 184.41 | | 2.520E+01 | 2.069E+00 | 6.492E-01 | 5.247E-02 | 38.817 |
| | | 280.46 | | -7.459E-02 | 1.968E-01 | 3.221E-01 | 2.736E-02 | -0.232 |
| | | 410.95 | | 5.073E-01 | 5.358E-01 | 8.993E-01 | 7.599E-02 | 0.564 |
| | | 711.68 | * | -5.439E-02 | 1.245E-01 | 2.003E-01 | 1.803E-02 | -0.272 |
| TM-171 | | 752.31 | | -1.342E-01 | 5.918E-01 | 9.604E-01 | 8.732E-02 | -0.140 |
| | | 810.29 | | -1.752E-02 | 1.282E-01 | 2.078E-01 | 1.905E-02 | -0.084 |
| | | 51.35 | | 2.630E+02 | 1.075E+02 | 1.624E+02 | 1.254E+01 | 1.619 |
| | + | 52.39 | | 1.336E+02 | 8.856E+01 | 8.916E+01 | 6.784E+00 | 1.498 |
| | | 59.40 | | 2.783E+02 | 1.160E+02 | 1.741E+02 | 1.252E+01 | 1.599 |
| LU-176 | | 66.72 | * | -3.365E+02 | 1.155E+02 | 1.598E+02 | 1.195E+01 | -2.106 |
| | | 88.36 | | -5.998E+00 | 1.553E+00 | 1.550E+00 | 1.457E-01 | -3.869 |
| | + | 201.83 | | 3.567E-01 | 1.033E-01 | 1.433E-01 | 1.180E-02 | 2.489 |
| LU-177 | | 306.84 | * | -4.733E-03 | 5.669E-02 | 9.319E-02 | 7.983E-03 | -0.051 |
| | | 401.10 | | -1.148E+01 | 1.434E+01 | 2.238E+01 | 1.877E+00 | -0.513 |
| | + | 112.95 | | 1.738E+02 | 1.940E+01 | 1.891E+01 | 1.631E+00 | 9.192 |
| LU-177M | | 208.36 | * | 7.206E+00 | 3.556E+00 | 5.540E+00 | 4.589E-01 | 1.301 |
| | + | 52.97 | | 1.442E+01 | 9.561E+00 | 9.428E+00 | 7.119E-01 | 1.530 |
| | + | 54.07 | | 8.172E+00 | 5.418E+00 | 5.063E+00 | 3.775E-01 | 1.614 |
| HF-181 | | 61.30 | | 8.390E+01 | 9.346E+00 | 1.172E+01 | 8.482E-01 | 7.160 |
| | + | 121.62 | | 3.600E+00 | 2.187E+00 | 2.489E+00 | 2.139E-01 | 1.447 |
| | | 147.16 | | 2.068E+00 | 2.474E+00 | 3.568E+00 | 2.919E-01 | 0.580 |
| | | 171.86 | | -9.937E-01 | 1.681E+00 | 2.624E+00 | 2.090E-01 | -0.379 |
| | | 218.09 | | -1.704E+00 | 2.054E+00 | 3.372E+00 | 2.815E-01 | -0.505 |
| | | 268.79 | | 1.495E+00 | 1.797E+00 | 3.051E+00 | 2.593E-01 | 0.490 |
| | | 319.02 | | 1.871E-02 | 5.860E-01 | 9.650E-01 | 8.276E-02 | 0.019 |
| | | 367.43 | | -9.116E-01 | 2.147E+00 | 3.442E+00 | 2.914E-01 | -0.265 |
| | | 413.65 | * | -4.227E-01 | 4.006E-01 | 6.161E-01 | 5.216E-02 | -0.686 |
| | | 56.28 | | -9.863E+00 | 4.112E+00 | 5.843E+00 | 4.272E-01 | -1.688 |
| | | 57.53 | | 1.712E-02 | 2.797E+00 | 3.291E+00 | 2.386E-01 | 0.005 |
| | | 65.20 | | 7.069E+01 | 6.760E+00 | 7.411E+00 | 5.484E-01 | 9.539 |
| | + | 133.02 | | 3.259E-01 | 2.597E-01 | 3.989E-01 | 3.348E-02 | 0.817 |
| | | 136.25 | | 7.269E-01 | 1.727E+00 | 2.780E+00 | 2.319E-01 | 0.261 |
| | | 345.85 | | -1.807E-03 | 4.535E-01 | 7.168E-01 | 6.124E-02 | -0.003 |
| W-181 | | 482.03 | * | -9.823E-02 | 1.043E-01 | 1.590E-01 | 1.399E-02 | -0.618 |
| | | 56.28 | | -3.779E+00 | 1.576E+00 | 2.240E+00 | 1.638E-01 | -1.687 |
| | | 57.53 | | 4.277E-03 | 1.073E+00 | 1.263E+00 | 9.155E-02 | 0.003 |
| TA-182 | | 65.20 | * | 2.691E+01 | 2.573E+00 | 2.821E+00 | 2.087E-01 | 9.539 |
| | | 67.75 | | -9.569E-01 | 4.662E-01 | 6.611E-01 | 4.984E-02 | -1.447 |
| | | 100.10 | | 8.518E+00 | 1.155E+00 | 1.446E+00 | 1.281E-01 | 5.889 |
| | | 152.43 | | 1.124E+00 | 1.169E+00 | 1.887E+00 | 1.530E-01 | 0.596 |
| | | 222.10 | | 2.602E-01 | 8.428E-01 | 1.424E+00 | 1.192E-01 | 0.183 |
| | + | 1001.68 | | 3.330E+02 | 3.363E+01 | 3.150E+01 | 2.820E+00 | 10.572 |
| | + | 1121.28 | | 8.829E-01 | 3.019E-01 | 4.616E-01 | 3.898E-02 | 1.913 |

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

| Nuclide | Line Ided | Energy (keV) | Activity Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|--------------|---------------------|-----------|---------------------|-----------|---------|
| RE-183 | | 1189.05 | | -5.069E-01 | 4.485E-01 | 6.659E-01 | 5.429E-02 | -0.761 |
| | | 1221.42 | * | -1.378E-01 | 2.677E-01 | 4.226E-01 | 3.456E-02 | -0.326 |
| | | 1230.97 | | -6.228E-02 | 7.815E-01 | 1.103E+00 | 9.025E-02 | -0.056 |
| | | 57.98 | | 9.425E-01 | 9.365E-01 | 1.285E+00 | 9.293E-02 | 0.734 |
| | | 59.32 | | 1.229E+00 | 4.841E-01 | 7.262E-01 | 5.223E-02 | 1.693 |
| | | 67.20 | | -2.019E+00 | 8.340E-01 | 1.171E+00 | 8.791E-02 | -1.724 |
| RE-184 | + | 162.32 | * | 8.057E+00 | 8.966E-01 | 9.355E-01 | 7.448E-02 | 8.613 |
| | | 208.81 | | 4.140E+00 | 2.633E+00 | 4.070E+00 | 3.372E-01 | 1.017 |
| | | 291.72 | | 1.570E+00 | 2.393E+00 | 3.571E+00 | 3.047E-01 | 0.440 |
| | | 57.98 | | 3.434E+00 | 3.412E+00 | 4.680E+00 | 3.386E-01 | 0.734 |
| | | 59.32 | | 4.475E+00 | 1.762E+00 | 2.643E+00 | 1.901E-01 | 1.693 |
| | | 67.20 | | -7.352E+00 | 3.037E+00 | 4.265E+00 | 3.202E-01 | -1.724 |
| OS-185 | | 161.27 | | 4.087E+00 | 1.503E+00 | 2.201E+00 | 1.756E-01 | 1.857 |
| | | 216.55 | | -3.998E-01 | 6.345E-01 | 1.048E+00 | 8.740E-02 | -0.381 |
| | | 252.85 | * | 3.841E-02 | 5.898E-01 | 9.140E-01 | 7.757E-02 | 0.042 |
| | | 318.01 | | -5.816E-01 | 1.021E+00 | 1.644E+00 | 1.410E-01 | -0.354 |
| | | 792.07 | | -6.862E+00 | 2.666E+00 | 3.692E+00 | 3.378E-01 | -1.859 |
| | | 903.28 | | -9.327E-01 | 1.959E+00 | 2.733E+00 | 2.501E-01 | -0.341 |
| RE-188 | | 920.93 | | -1.096E+00 | 1.036E+00 | 1.434E+00 | 1.309E-01 | -0.764 |
| | | 59.72 | | 3.801E+00 | 1.314E+00 | 1.968E+00 | 1.415E-01 | 1.931 |
| | | 61.14 | | 6.161E+00 | 8.840E-01 | 1.223E+00 | 8.844E-02 | 5.039 |
| | | 69.30 | | 1.893E+00 | 1.140E+00 | 1.889E+00 | 1.443E-01 | 1.002 |
| | | 592.07 | | -4.709E-01 | 5.453E+00 | 8.837E+00 | 7.924E-01 | -0.053 |
| | | 646.12 | * | -2.149E-02 | 8.951E-02 | 1.468E-01 | 1.305E-02 | -0.146 |
| W-188 | | 717.42 | | 1.566E-01 | 1.903E+00 | 3.153E+00 | 2.843E-01 | 0.050 |
| | | 874.81 | | 4.078E-01 | 1.174E+00 | 1.952E+00 | 1.791E-01 | 0.209 |
| | | 880.27 | | 2.845E-01 | 1.817E+00 | 2.980E+00 | 2.732E-01 | 0.095 |
| | | 155.03 | * | -3.385E-01 | 6.020E-01 | 9.460E-01 | 7.633E-02 | -0.358 |
| | | 477.96 | | 2.460E+00 | 7.466E+00 | 1.214E+01 | 1.067E+00 | 0.203 |
| | | 633.10 | | -1.273E+00 | 6.187E+00 | 1.019E+01 | 9.086E-01 | -0.125 |
| IR-192 | + | 63.58 | | 2.290E+04 | 1.736E+03 | 7.147E+02 | 5.235E+01 | 32.040 |
| | | 227.08 | | 3.661E+01 | 3.147E+01 | 5.400E+01 | 4.535E+00 | 0.678 |
| | | 290.67 | * | -6.786E+00 | 1.923E+01 | 2.747E+01 | 2.343E+00 | -0.247 |
| | + | 295.96 | | 1.251E+00 | 3.853E-01 | 4.888E-01 | 4.207E-02 | 2.560 |
| | | 308.46 | | -7.255E-02 | 2.212E-01 | 3.603E-01 | 3.103E-02 | -0.201 |
| | | 316.51 | * | -1.930E-02 | 7.985E-02 | 1.303E-01 | 1.120E-02 | -0.148 |
| AU-195 | | 468.07 | | 1.907E-02 | 1.624E-01 | 2.621E-01 | 2.453E-02 | 0.073 |
| | | 604.41 | | 6.201E-01 | 1.110E+00 | 1.664E+00 | 2.203E-01 | 0.373 |
| | | 612.46 | | 1.685E+00 | 1.747E+00 | 2.675E+00 | 2.726E-01 | 0.630 |
| | | 65.12 | | 1.629E+01 | 1.436E+00 | 1.391E+00 | 1.029E-01 | 11.714 |
| | | 66.83 | | -1.060E+00 | 3.838E-01 | 5.335E-01 | 3.994E-02 | -1.987 |
| | + | 75.70 | | 1.558E+00 | 9.249E-01 | 1.253E+00 | 1.018E-01 | 1.244 |
| TL-200 | + | 98.88 | * | 2.238E+01 | 2.436E+00 | 2.165E+00 | 1.925E-01 | 10.339 |
| | | 129.76 | | 1.496E+00 | 1.193E+01 | 1.706E+01 | 1.442E+00 | 0.088 |
| | | 367.94 | * | -6.167E-04 | 1.193E+01 | Half-Life too short | | |
| | | 579.30 | | -3.451E-03 | 1.193E+01 | Half-Life too short | | |
| | | 828.27 | | -9.230E-03 | 1.193E+01 | Half-Life too short | | |
| | | 1205.75 | | -6.534E-03 | 1.193E+01 | Half-Life too short | | |
| TL-201 | | 68.90 | | 3.126E+01 | 2.786E+01 | 4.618E+01 | 3.514E+00 | 0.677 |

---- 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 | | 2.468E+00 | 1.653E+01 | 2.723E+01 | 2.107E+00 | 0.091 |
| | | 80.30 | | 7.887E+00 | 4.941E+01 | 5.723E+01 | 4.900E+00 | 0.138 |
| | | 135.34 | | 1.853E+02 | 1.612E+02 | 2.342E+02 | 1.957E+01 | 0.791 |
| | | 167.43 | * | 1.476E+01 | 4.181E+01 | 5.929E+01 | 4.696E+00 | 0.249 |
| | | 68.90 | | 2.011E+00 | 1.791E+00 | 2.970E+00 | 2.260E-01 | 0.677 |
| | | 70.82 | | 1.583E-01 | 1.060E+00 | 1.746E+00 | 1.351E-01 | 0.091 |
| HG-203 | | 80.30 | | 5.059E-01 | 3.169E+00 | 3.672E+00 | 3.143E-01 | 0.138 |
| | | 439.56 | * | -4.238E-02 | 1.724E-01 | 2.747E-01 | 2.366E-02 | -0.154 |
| | | 70.83 | | 6.548E-01 | 4.234E+00 | 6.972E+00 | 9.110E-01 | 0.094 |
| | | 72.87 | | 2.993E-01 | 2.510E+00 | 4.129E+00 | 5.260E-01 | 0.072 |
| BI-207 | | 82.60 | | 4.146E+01 | 8.402E+00 | 9.590E+00 | 1.329E+00 | 4.323 |
| | | 279.20 | * | -1.147E-02 | 9.807E-02 | 1.620E-01 | 1.415E-02 | -0.071 |
| | | 72.80 | | 5.694E-02 | 7.152E-01 | 1.176E+00 | 9.276E-02 | 0.048 |
| | | 74.97 | | 2.458E-01 | 4.645E-01 | 6.853E-01 | 5.526E-02 | 0.359 |
| TL-207 | + | 84.90 | | 1.132E+01 | 1.734E+00 | 1.682E+00 | 1.523E-01 | 6.732 |
| | + | 569.67 | | 1.327E-01 | 9.154E-02 | 1.239E-01 | 1.111E-02 | 1.071 |
| | | 1063.62 | * | 8.778E-03 | 6.816E-02 | 1.156E-01 | 1.009E-02 | 0.076 |
| | | 1770.23 | | 4.800E-01 | 6.881E-01 | 1.160E+00 | 9.532E-02 | 0.414 |
| | | 81.07 | | 3.985E-01 | 1.386E+00 | 1.608E+00 | 1.389E-01 | 0.248 |
| | + | 83.78 | | 7.463E+00 | 1.143E+00 | 1.140E+00 | 1.018E-01 | 6.544 |
| | + | 94.90 | | 1.244E+01 | 2.816E+00 | 2.545E+00 | 2.301E-01 | 4.887 |
| | | 122.32 | | 1.362E+01 | 7.631E+00 | 1.117E+01 | 1.030E+00 | 1.220 |
| | + | 144.24 | | 1.028E+02 | 1.077E+01 | 7.412E+00 | 6.885E-01 | 13.867 |
| | | 154.21 | | 1.499E+00 | 1.358E+00 | 2.192E+00 | 1.971E-01 | 0.684 |
| PO-209 | | 269.46 | | 3.601E-01 | 4.254E-01 | 7.218E-01 | 6.265E-02 | 0.499 |
| | | 323.87 | * | -9.336E-01 | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| | + | 338.28 | | 7.612E+00 | 3.272E+00 | 4.117E+00 | 5.051E-01 | 1.849 |
| | | 445.03 | | -3.827E-01 | 5.236E+00 | 8.407E+00 | 1.017E+00 | -0.046 |
| | | 260.50 | | 7.173E+01 | 2.622E+01 | 4.140E+01 | 3.518E+00 | 1.733 |
| | | 262.80 | | 8.541E+00 | 6.573E+01 | 9.669E+01 | 8.217E+00 | 0.088 |
| BI-210 | | 896.60 | * | 6.341E+00 | 1.434E+01 | 2.385E+01 | 2.184E+00 | 0.266 |
| | | 46.50 | * | -5.431E+00 | 8.630E+00 | 1.428E+01 | 1.339E+00 | -0.380 |
| | | 46.50 | * | -5.431E+00 | 8.630E+00 | 1.428E+01 | 1.339E+00 | -0.380 |
| PO-210 | | 46.50 | * | -5.431E+00 | 8.627E+00 | 1.428E+01 | 1.215E+00 | -0.380 |
| PB-211 | | 404.84 | * | -2.253E-01 | 2.020E+00 | 3.250E+00 | 2.036E+00 | -0.069 |
| BI-212 | | 427.08 | | 1.759E+00 | 4.780E+00 | 7.640E+00 | 4.746E+00 | 0.230 |
| | | 831.96 | | -1.823E+00 | 2.751E+00 | 3.897E+00 | 2.445E+00 | -0.468 |
| | + | 727.18 | * | 6.956E-01 | 8.326E-01 | 1.096E+00 | 1.137E-01 | 0.635 |
| | | 785.46 | | 1.520E+01 | 5.158E+00 | 9.134E+00 | 8.351E-01 | 1.664 |
| PO-215 | | 1620.62 | | 1.576E-01 | 1.886E+00 | 3.094E+00 | 2.585E-01 | 0.051 |
| | | 81.07 | | 3.985E-01 | 1.386E+00 | 1.608E+00 | 1.389E-01 | 0.248 |
| | + | 83.78 | | 7.463E+00 | 1.143E+00 | 1.140E+00 | 1.018E-01 | 6.544 |
| | + | 94.90 | | 1.244E+01 | 2.816E+00 | 2.545E+00 | 2.301E-01 | 4.887 |
| | | 122.32 | | 1.362E+01 | 7.631E+00 | 1.117E+01 | 1.030E+00 | 1.220 |
| | + | 144.24 | | 1.028E+02 | 1.077E+01 | 7.412E+00 | 6.885E-01 | 13.867 |
| | | 154.21 | | 1.499E+00 | 1.358E+00 | 2.192E+00 | 1.971E-01 | 0.684 |
| | | 269.46 | | 3.601E-01 | 4.254E-01 | 7.218E-01 | 6.265E-02 | 0.499 |
| | | 323.87 | * | -9.336E-01 | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| | + | 338.28 | | 7.612E+00 | 3.272E+00 | 4.117E+00 | 5.051E-01 | 1.849 |

---- 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 | | -3.827E-01 | 5.236E+00 | 8.407E+00 | 1.017E+00 | -0.046 |
| | | 271.23 | | 3.976E-01 | 5.573E-01 | 9.417E-01 | 9.614E-02 | 0.422 |
| | | 401.81 | * | -5.246E-01 | 8.800E-01 | 1.383E+00 | 2.061E-01 | -0.379 |
| RN-220 | | 549.76 | * | -1.802E+01 | 5.701E+01 | 9.435E+01 | 8.448E+00 | -0.191 |
| RA-223 | | 81.07 | | 3.985E-01 | 1.386E+00 | 1.608E+00 | 1.389E-01 | 0.248 |
| | + | 83.78 | | 7.463E+00 | 1.143E+00 | 1.140E+00 | 1.018E-01 | 6.544 |
| | + | 94.90 | | 1.244E+01 | 2.816E+00 | 2.545E+00 | 2.301E-01 | 4.887 |
| AC-227 | | 122.32 | | 1.362E+01 | 7.631E+00 | 1.117E+01 | 1.030E+00 | 1.220 |
| | + | 144.24 | | 1.028E+02 | 1.077E+01 | 7.412E+00 | 6.885E-01 | 13.867 |
| | | 154.21 | | 1.499E+00 | 1.358E+00 | 2.192E+00 | 1.971E-01 | 0.684 |
| | | 269.46 | | 3.601E-01 | 4.254E-01 | 7.218E-01 | 6.265E-02 | 0.499 |
| | | 323.87 | * | -9.336E-01 | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| | + | 338.28 | | 7.612E+00 | 3.272E+00 | 4.117E+00 | 5.051E-01 | 1.849 |
| | | 445.03 | | -3.827E-01 | 5.236E+00 | 8.407E+00 | 1.017E+00 | -0.046 |
| | | 79.80 | | -1.975E+01 | 1.135E+01 | 1.176E+01 | 2.523E+00 | -1.680 |
| | | 236.00 | | 4.129E-01 | 5.953E-01 | 8.948E-01 | 1.084E-01 | 0.461 |
| | | 256.20 | * | 1.715E+00 | 1.099E+00 | 1.657E+00 | 2.531E-01 | 1.035 |
| TH-227 | | 286.10 | | 1.849E-01 | 3.482E+00 | 5.774E+00 | 7.583E-01 | 0.032 |
| | + | 299.80 | | 4.569E+00 | 3.137E+00 | 5.343E+00 | 9.327E-01 | 0.855 |
| | | 304.40 | | 2.626E+00 | 4.700E+00 | 6.949E+00 | 1.279E+00 | 0.378 |
| | | 334.20 | | 3.048E+00 | 5.852E+00 | 8.587E+00 | 1.665E+00 | 0.355 |
| | | 79.80 | | -1.975E+01 | 1.137E+01 | 1.176E+01 | 2.556E+00 | -1.680 |
| | + | 94.00 | | 9.950E+01 | 3.006E+01 | 3.887E+01 | 8.537E+00 | 2.560 |
| | | 236.00 | | 4.129E-01 | 5.949E-01 | 8.948E-01 | 9.786E-02 | 0.461 |
| | | 256.20 | * | 1.715E+00 | 1.111E+00 | 1.657E+00 | 2.983E-01 | 1.035 |
| | | 286.10 | | 1.849E-01 | 3.487E+00 | 5.774E+00 | 5.795E+00 | 0.032 |
| | + | 299.80 | | 4.569E+00 | 3.137E+00 | 5.343E+00 | 9.327E-01 | 0.855 |
| TH-229 | | 304.40 | | 2.626E+00 | 4.700E+00 | 6.949E+00 | 1.279E+00 | 0.378 |
| | | 334.20 | | 3.048E+00 | 5.852E+00 | 8.587E+00 | 1.665E+00 | 0.355 |
| | + | 85.43 | | 1.117E+01 | 1.711E+00 | 1.598E+00 | 1.457E-01 | 6.992 |
| | | 88.47 | | -1.690E+00 | 8.285E-01 | 9.022E-01 | 8.472E-02 | -1.873 |
| | + | 100.00 | | 1.844E+01 | 2.007E+00 | 1.534E+00 | 1.359E-01 | 12.019 |
| | | 193.63 | * | 2.450E+00 | 1.586E+00 | 2.446E+00 | 1.997E-01 | 1.002 |
| | | 210.97 | | -9.219E-01 | 1.937E+00 | 2.983E+00 | 2.477E-01 | -0.309 |
| | | 283.67 | * | 1.475E+00 | 3.494E+00 | 5.852E+00 | 8.847E-01 | 0.252 |
| | + | 301.29 | | 1.827E+00 | 1.234E+00 | 2.140E+00 | 2.611E-01 | 0.854 |
| | | 81.07 | | 3.985E-01 | 1.386E+00 | 1.608E+00 | 1.389E-01 | 0.248 |
| TH-231 | + | 83.78 | | 7.463E+00 | 1.143E+00 | 1.140E+00 | 1.018E-01 | 6.544 |
| | + | 94.90 | | 1.244E+01 | 2.816E+00 | 2.545E+00 | 2.301E-01 | 4.887 |
| | | 122.32 | | 1.362E+01 | 7.631E+00 | 1.117E+01 | 1.030E+00 | 1.220 |
| | + | 144.24 | | 1.028E+02 | 1.077E+01 | 7.412E+00 | 6.885E-01 | 13.867 |
| | | 154.21 | | 1.499E+00 | 1.358E+00 | 2.192E+00 | 1.971E-01 | 0.684 |
| | | 269.46 | | 3.601E-01 | 4.254E-01 | 7.218E-01 | 6.265E-02 | 0.499 |
| | | 323.87 | * | -9.336E-01 | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| | + | 338.28 | | 7.612E+00 | 3.272E+00 | 4.117E+00 | 5.051E-01 | 1.849 |
| | | 445.03 | | -3.827E-01 | 5.236E+00 | 8.407E+00 | 1.017E+00 | -0.046 |
| | | 75.28 | | 1.036E+01 | 1.360E+01 | 2.001E+01 | 3.012E+00 | 0.518 |
| PA-233 | | 86.59 | | -4.135E+01 | 1.422E+01 | 1.215E+01 | 3.285E+00 | -3.402 |
| | + | 300.12 | | 1.274E+00 | 8.668E-01 | 1.492E+00 | 2.214E-01 | 0.854 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PA-234 | | 311.98 | * | -4.522E-02 | 1.463E-01 | 2.384E-01 | 2.102E-02 | -0.190 |
| | | 340.50 | | 1.846E+00 | 1.523E+00 | 2.226E+00 | 5.301E-01 | 0.829 |
| | | 398.62 | | 4.916E-01 | 4.575E+00 | 7.454E+00 | 1.979E+00 | 0.066 |
| | | 415.76 | | 1.590E+00 | 3.724E+00 | 6.110E+00 | 1.313E+00 | 0.260 |
| | + | 63.00 | | 6.512E+02 | 9.736E+01 | 2.091E+01 | 3.096E+00 | 31.148 |
| | + | 94.67 | | 8.872E+00 | 2.159E+00 | 2.200E+00 | 2.796E-01 | 4.033 |
| | + | 98.44 | | 9.002E+00 | 5.057E+00 | 8.741E-01 | 4.880E-01 | 10.299 |
| | + | 99.86 | | 4.666E+01 | 5.078E+00 | 4.029E+00 | 3.571E-01 | 11.582 |
| | + | 111.00 | | 5.971E+00 | 1.226E+00 | 1.639E+00 | 1.985E-01 | 3.643 |
| | + | 131.20 | | 5.036E-01 | 4.012E-01 | 6.336E-01 | 5.337E-02 | 0.795 |
| | | 152.70 | | 9.309E-01 | 1.125E+00 | 1.799E+00 | 3.020E-01 | 0.518 |
| | + | 186.00 | | 9.071E+02 | 2.821E+02 | 2.645E+01 | 8.218E+00 | 34.300 |
| | | 226.40 | | 1.160E+00 | 9.770E-01 | 1.665E+00 | 2.174E-01 | 0.697 |
| | | 227.20 | | 1.083E+00 | 1.042E+00 | 1.784E+00 | 1.498E-01 | 0.607 |
| | | 248.90 | | 3.436E-01 | 1.930E+00 | 3.233E+00 | 7.229E-01 | 0.106 |
| | | 293.70 | | 5.834E+00 | 2.042E+00 | 2.906E+00 | 5.016E-01 | 2.007 |
| | | 369.80 | | 1.783E+00 | 2.013E+00 | 3.331E+00 | 7.232E-01 | 0.535 |
| | + | 568.70 | | 4.318E+00 | 2.979E+00 | 3.991E+00 | 3.579E-01 | 1.082 |
| | + | 569.50 | | 1.178E+00 | 8.124E-01 | 1.098E+00 | 9.845E-02 | 1.073 |
| | | 574.00 | | 1.111E+00 | 3.552E+00 | 5.283E+00 | 4.739E-01 | 0.210 |
| | | 699.00 | | 1.267E+00 | 1.618E+00 | 2.742E+00 | 5.276E-01 | 0.462 |
| | | 706.10 | | 6.587E-01 | 2.298E+00 | 3.817E+00 | 1.705E+00 | 0.173 |
| | | 733.00 | | 4.646E-01 | 9.413E-01 | 1.385E+00 | 3.099E-01 | 0.335 |
| | + | 742.81 | | 2.509E+01 | 1.790E+01 | 8.384E+00 | 5.641E+00 | 2.992 |
| | | 796.30 | | 2.328E+00 | 2.191E+00 | 3.624E+00 | 9.866E-01 | 0.642 |
| | | 805.60 | | -1.020E+00 | 2.234E+00 | 3.522E+00 | 1.085E+00 | -0.290 |
| | | 819.60 | | 3.586E-01 | 2.588E+00 | 4.258E+00 | 1.625E+00 | 0.084 |
| | | 826.30 | | 1.354E+00 | 1.842E+00 | 2.971E+00 | 1.333E+00 | 0.456 |
| | | 831.60 | | -5.050E-01 | 1.287E+00 | 2.034E+00 | 6.104E-01 | -0.248 |
| | | 876.40 | | -1.759E+00 | 2.543E+00 | 2.716E+00 | 2.793E+00 | -0.648 |
| | | 880.51 | | 6.641E-01 | 6.280E-01 | 1.080E+00 | 9.906E-02 | 0.615 |
| | | 883.24 | | 7.829E-01 | 8.389E-01 | 1.135E+00 | 7.637E-01 | 0.690 |
| | | 899.00 | | 1.265E+00 | 1.647E+00 | 2.665E+00 | 1.168E+00 | 0.475 |
| | | 925.00 | | 6.797E+00 | 2.566E+00 | 4.711E+00 | 4.298E-01 | 1.443 |
| | | 926.50 | | 8.333E-01 | 4.284E-01 | 6.866E-01 | 1.748E-01 | 1.214 |
| | + | 946.00 | * | 1.594E+00 | 9.411E-01 | 1.166E+00 | 2.214E-01 | 1.367 |
| | | 949.00 | | 1.690E+00 | 9.308E-01 | 1.526E+00 | 1.385E-01 | 1.108 |
| | | 980.50 | | 9.145E-01 | 1.295E+00 | 2.201E+00 | 1.983E-01 | 0.416 |
| | | 1394.10 | | 1.413E+00 | 1.911E+00 | 3.036E+00 | 1.975E+00 | 0.465 |
| NP-236 | + | 94.67 | | 6.729E+00 | 1.524E+00 | 1.674E+00 | 1.516E-01 | 4.019 |
| | + | 98.44 | | 6.805E+00 | 7.406E-01 | 6.608E-01 | 5.886E-02 | 10.298 |
| | + | 111.00 | | 4.516E+00 | 8.443E-01 | 1.240E+00 | 1.072E-01 | 3.643 |
| | | 160.31 | * | -4.868E-02 | 3.132E-01 | 4.398E-01 | 3.515E-02 | -0.111 |
| NP-237 | | 86.50 | * | -6.144E+00 | 1.916E+00 | 1.826E+00 | 4.128E-01 | -3.365 |
| | + | 95.87 | | 5.358E+01 | 1.732E+01 | 7.944E+00 | 1.968E+00 | 6.744 |
| NP-239 | + | 99.55 | | 1.555E+01 | 1.693E+00 | 1.447E+00 | 1.284E-01 | 10.747 |
| | | 117.00 | * | 2.322E-01 | 1.053E+00 | 1.196E+00 | 1.029E-01 | 0.194 |
| | | 209.75 | | 1.011E+00 | 2.070E+00 | 3.117E+00 | 2.585E-01 | 0.324 |
| | | 228.18 | | 3.626E-01 | 5.431E-01 | 9.236E-01 | 7.761E-02 | 0.393 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 277.60 | | 4.254E-01 | 4.199E-01 | 7.141E-01 | 6.062E-02 | 0.596 |
| | | 334.30 | | 1.677E+00 | 3.301E+00 | 4.860E+00 | 4.163E-01 | 0.345 |
| AM-241 | | 59.54 | * | 1.763E+00 | 6.793E-01 | 1.015E+00 | 8.045E-02 | 1.737 |
| AM-243 | | 74.67 | * | 3.310E-01 | 2.592E-01 | 3.841E-01 | 3.087E-02 | 0.862 |
| | | 86.72 | | -2.357E+02 | 5.403E+01 | 6.823E+01 | 6.324E+00 | -3.455 |
| | | 117.66 | | -1.687E+00 | 2.107E+01 | 2.371E+01 | 2.039E+00 | -0.071 |
| | | 142.18 | | 1.373E+03 | 1.440E+02 | 1.569E+02 | 1.295E+01 | 8.752 |
| CM-243 | + | 99.55 | | 1.601E+01 | 1.742E+00 | 1.489E+00 | 1.321E-01 | 10.747 |
| | | 103.76 | * | 1.057E+00 | 4.783E-01 | 6.471E-01 | 5.670E-02 | 1.633 |
| | | 117.00 | | 2.389E-01 | 1.083E+00 | 1.230E+00 | 1.059E-01 | 0.194 |
| | | 209.75 | | 9.971E-01 | 2.040E+00 | 3.073E+00 | 2.548E-01 | 0.324 |
| | | 228.18 | | 3.664E-01 | 5.488E-01 | 9.333E-01 | 7.844E-02 | 0.393 |
| | | 277.60 | | 4.289E-01 | 4.234E-01 | 7.200E-01 | 6.112E-02 | 0.596 |
| AM-246 | | 798.80 | | -2.581E-01 | 3.199E-01 | 4.991E-01 | 4.570E-02 | -0.517 |
| | | 1036.00 | | 9.428E-02 | 3.910E-01 | 6.714E-01 | 5.932E-02 | 0.140 |
| | | 1062.04 | | 7.046E-02 | 2.954E-01 | 5.063E-01 | 4.421E-02 | 0.139 |
| | | 1078.86 | * | -1.646E-01 | 2.142E-01 | 3.336E-01 | 2.888E-02 | -0.493 |
| CM-247 | | 278.00 | | 8.114E-01 | 1.743E+00 | 2.927E+00 | 2.485E-01 | 0.277 |
| | | 287.40 | | -1.181E+00 | 2.796E+00 | 4.561E+00 | 3.885E-01 | -0.259 |
| | | 402.60 | * | -2.211E-02 | 7.790E-02 | 1.247E-01 | 1.047E-02 | -0.177 |
| CF-249 | | 252.85 | | 1.430E-01 | 2.196E+00 | 3.402E+00 | 2.887E-01 | 0.042 |
| | | 333.44 | | 7.171E-02 | 4.384E-01 | 6.354E-01 | 5.444E-02 | 0.113 |
| | | 387.95 | * | 4.697E-02 | 9.218E-02 | 1.527E-01 | 1.275E-02 | 0.308 |
| CF-251 | | 176.60 | * | -2.561E-01 | 4.098E-01 | 6.877E-01 | 5.508E-02 | -0.372 |
| | | 227.00 | | 1.085E+00 | 9.264E-01 | 1.589E+00 | 1.335E-01 | 0.683 |
| | | 285.00 | | -4.596E-01 | 4.006E+00 | 6.608E+00 | 5.623E-01 | -0.070 |

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]G1202037547      *
* Acquisition date   : 18-FEB-2010 13:52:40 Detector SN# :                   *
* Detector ID        : GAM07 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 02:00:05.44 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202037547 Analyst initials: MXR1                 *
* Batch Number       : 950786 Sample Quantity : 9.5150E+01 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                               *
*
* Standard Weight    : 0.00000                                             *
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope :                   *
* MSD DPM             : 0.000 MSD Isotope :                               *
* LCS DPM             : 0.000 LCS Isotope :                               *
* LCSD DPM           : 0.000 LCSD Isotope :                               *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.594E+01 | 2.952E+00 | 7.623E-01 | 0.000E+00 |
| CO-57 | 2.410E-01 | 1.435E-01 | 1.537E-01 | 0.000E+00 |
| AS-73 | 7.686E+00 | 4.994E+00 | 4.644E+00 | 0.000E+00 |
| NB-95 | 2.901E+00 | 3.413E-01 | 1.473E-01 | 0.000E+00 |
| TE-125M | 4.147E+02 | 7.987E+01 | 5.974E+01 | 0.000E+00 |
| BA-137M | 2.390E+00 | 2.757E-01 | 1.279E-01 | 0.000E+00 |
| CS-137 | 2.527E+00 | 2.918E-01 | 1.352E-01 | 0.000E+00 |
| TL-208 | 5.381E-01 | 1.567E-01 | 1.227E-01 | 0.000E+00 |
| BI-211 | 4.391E+00 | 8.531E-01 | 7.330E-01 | 0.000E+00 |
| PB-212 | 1.430E+00 | 2.466E-01 | 2.370E-01 | 0.000E+00 |
| PO-212 | 1.430E+00 | 2.466E-01 | 2.370E-01 | 0.000E+00 |
| BI-214 | 1.337E+00 | 3.225E-01 | 2.337E-01 | 0.000E+00 |
| PB-214 | 1.527E+00 | 3.069E-01 | 2.526E-01 | 0.000E+00 |
| PO-214 | 1.527E+00 | 3.069E-01 | 2.526E-01 | 0.000E+00 |
| PO-216 | 1.430E+00 | 2.466E-01 | 2.370E-01 | 0.000E+00 |
| PO-218 | 1.527E+00 | 3.069E-01 | 2.526E-01 | 0.000E+00 |
| RA-224 | 3.298E+00 | 1.801E+00 | 2.658E+00 | 0.000E+00 |
| RA-226 | 1.337E+00 | 3.225E-01 | 2.337E-01 | 0.000E+00 |
| AC-228 | 1.764E+00 | 5.138E-01 | 3.422E-01 | 0.000E+00 |
| RA-228 | 1.764E+00 | 5.138E-01 | 3.422E-01 | 0.000E+00 |
| TH-228 | 1.454E+00 | 2.508E-01 | 2.410E-01 | 0.000E+00 |
| TH-230 | 1.337E+00 | 3.225E-01 | 2.337E-01 | 0.000E+00 |
| U-231 | 8.391E+01 | 1.862E+01 | 8.960E+00 | 0.000E+00 |
| TH-232 | 1.764E+00 | 5.138E-01 | 3.422E-01 | 0.000E+00 |
| PA-234M | 7.472E+02 | 8.251E+01 | 1.317E+01 | 0.000E+00 |
| TH-234 | 5.587E+02 | 9.590E+01 | 7.729E+00 | 0.000E+00 |
| U-234 | 1.337E+00 | 3.225E-01 | 2.337E-01 | 0.000E+00 |
| U-235 | 3.172E+01 | 5.588E+00 | 1.161E+00 | 0.000E+00 |
| U-238 | 5.587E+02 | 9.590E+01 | 7.729E+00 | 0.000E+00 |
| ANH-511 | 1.862E-01 | 1.226E-01 | 1.085E-01 | 0.000E+00 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM | K.L. Act error) Ided | MDA (pCi/GRAM |) | |
|---------|-----------------------|--------------------------|------------------|-----------|------------|
| BE-7 | 4.215E-01 | 7.661E-01 | 1.270E+00 | 0.000E+00 | NOT IDENT. |
| NA-22 | -1.527E-03 | 5.707E-02 | 9.498E-02 | 0.000E+00 | NOT IDENT. |
| NA-24 | 0.000E+00 | 7.852E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| AL-26 | 2.957E-03 | 4.554E-02 | 7.902E-02 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 1.881E-01 | 2.468E-01 | 0.000E+00 | FAIL ABUN |
| SC-46 | -3.143E-02 | 7.421E-02 | 1.179E-01 | 0.000E+00 | FAIL ABUN |
| V-48 | 1.611E-01 | 1.284E-01 | 2.289E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | 8.472E-01 | 8.541E-01 | 1.462E+00 | 0.000E+00 | NOT IDENT. |
| MN-52 | 7.440E-01 | 4.855E-01 | 9.288E-01 | 0.000E+00 | FAIL ABUN |
| MN-54 | 2.157E-02 | 7.235E-02 | 1.213E-01 | 0.000E+00 | NOT IDENT. |
| CO-56 | -7.824E-02 | 7.724E-02 | 1.178E-01 | 0.000E+00 | FAIL ABUN |
| CO-58 | -2.912E-02 | 8.441E-02 | 1.365E-01 | 0.000E+00 | NOT IDENT. |
| FE-59 | -1.090E-01 | 1.225E-01 | 1.883E-01 | 0.000E+00 | FAIL ABUN |
| CO-60 | 1.104E-02 | 5.344E-02 | 9.139E-02 | 0.000E+00 | NOT IDENT. |
| ZN-65 | -3.899E-02 | 1.394E-01 | 1.952E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | -5.495E-01 | 1.742E+00 | 2.862E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 6.050E-02 | 1.982E-01 | 3.393E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -3.485E-02 | 9.936E-02 | 1.594E-01 | 0.000E+00 | FAIL ABUN |
| BR-77 | 5.965E+00 | 4.005E+01 | 6.861E+01 | 0.000E+00 | FAIL ABUN |
| SR-82 | -3.168E-01 | 9.048E-01 | 1.471E+00 | 0.000E+00 | NOT IDENT. |
| RB-83 | 3.130E-02 | 1.522E-01 | 2.613E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 0.000E+00 | 1.650E-01 | 2.999E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 1.502E+01 | 1.680E+01 | 2.612E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 7.863E-02 | 8.791E-02 | 1.367E-01 | 0.000E+00 | NOT IDENT. |
| RB-86 | 2.091E-01 | 1.148E+00 | 1.973E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | -7.533E-02 | 6.451E-02 | 8.993E-02 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -3.948E-02 | 7.074E-02 | 1.134E-01 | 0.000E+00 | NOT IDENT. |
| Y-91 | -2.374E+00 | 2.379E+01 | 3.950E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -2.722E-02 | 7.461E-02 | 1.223E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95M | 1.408E-01 | 3.178E-01 | 4.799E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.212E-02 | 1.594E-01 | 2.635E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.711E+06 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 3.002E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 1.234E+01 | 5.252E+01 | 7.681E+01 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 3.658E+19 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | -2.378E-02 | 1.264E-01 | 1.373E-01 | 0.000E+00 | NOT IDENT. |
| RH-102 | -1.428E-02 | 6.823E-02 | 1.095E-01 | 0.000E+00 | FAIL ABUN |
| RU-103 | 1.596E-02 | 9.551E-02 | 1.554E-01 | 0.000E+00 | FAIL ABUN |
| RH-106 | 3.087E-01 | 6.516E-01 | 1.120E+00 | 0.000E+00 | FAIL ABUN |
| RU-106 | 3.087E-01 | 6.509E-01 | 1.120E+00 | 0.000E+00 | FAIL ABUN |
| AG-108M | 2.460E-02 | 7.074E-02 | 1.171E-01 | 0.000E+00 | NOT IDENT. |
| CD-109 | -3.314E+01 | 6.800E+00 | 6.427E+00 | 0.000E+00 | NOT IDENT. |
| AG-110M | -3.332E-02 | 8.896E-02 | 1.261E-01 | 0.000E+00 | NOT IDENT. |
| IN-111 | -2.577E+00 | 4.491E+00 | 6.517E+00 | 0.000E+00 | NOT IDENT. |
| IN-113M | -8.817E-02 | 1.043E-01 | 1.651E-01 | 0.000E+00 | NOT IDENT. |
| SN-113 | -8.817E-02 | 1.043E-01 | 1.651E-01 | 0.000E+00 | NOT IDENT. |
| IN-114M | -4.287E-01 | 7.426E-01 | 7.918E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 2.660E+01 | 4.512E+01 | 7.845E+01 | 0.000E+00 | NOT IDENT. |
| SN-117M | 7.428E-02 | 2.307E-01 | 3.313E-01 | 0.000E+00 | NOT IDENT. |
| SB-122 | 6.272E+00 | 8.113E+00 | 1.252E+01 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 2.629E+08 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | 8.403E-02 | 1.094E-01 | 1.586E-01 | 0.000E+00 | NOT IDENT. |
| I-124 | 1.990E+00 | 1.988E+00 | 3.222E+00 | 0.000E+00 | FAIL ABUN |
| SB-124 | -5.460E-02 | 1.080E-01 | 1.586E-01 | 0.000E+00 | FAIL ABUN |
| SB-125 | 1.449E-01 | 2.040E-01 | 3.425E-01 | 0.000E+00 | NOT IDENT. |
| I-126 | -1.992E-01 | 4.994E-01 | 7.054E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -3.069E-02 | 3.602E-01 | 5.630E-01 | 0.000E+00 | FAIL ABUN |
| SN-126 | -3.167E+00 | 6.519E-01 | 6.168E-01 | 0.000E+00 | FAIL ABUN |
| SB-127 | -9.170E-01 | 4.109E+00 | 6.788E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | 0.000E+00 | 1.716E-01 | 2.515E-01 | 0.000E+00 | FAIL ABUN |
| I-131 | -3.615E-02 | 3.078E-01 | 5.051E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | 1.684E+00 | 2.480E+00 | 4.244E+00 | 0.000E+00 | FAIL ABUN |
| BA-133 | -3.238E-02 | 1.097E-01 | 1.568E-01 | 0.000E+00 | FAIL ABUN |
| I-133 | 0.000E+00 | 6.655E+04 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 1.480E-01 | 1.062E-01 | 1.862E-01 | 0.000E+00 | FAIL ABUN |
| CS-135 | -5.540E-03 | 3.454E-01 | 5.795E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 1.088E+18 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -9.103E-02 | 1.764E-01 | 2.825E-01 | 0.000E+00 | FAIL ABUN |
| CE-139 | 0.000E+00 | 1.159E-01 | 1.699E-01 | 0.000E+00 | NOT IDENT. |
| BA-140 | 1.811E-01 | 6.445E-01 | 1.103E+00 | 0.000E+00 | FAIL ABUN |
| LA-140 | 1.415E-01 | 1.570E-01 | 2.594E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | 0.000E+00 | 5.795E-01 | 5.845E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 0.000E+00 | 1.026E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CE-144 | 1.660E-01 | 8.194E-01 | 1.185E+00 | 0.000E+00 | NOT IDENT. |
| PM-144 | -3.869E-02 | 7.647E-02 | 1.245E-01 | 0.000E+00 | NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | -2.624E+00 | 5.187E+00 | 8.444E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | -1.055E-02 | 1.036E-01 | 1.677E-01 | 0.000E+00 | NOT IDENT. |
| ND-147 | 7.989E-01 | 1.438E+00 | 2.492E+00 | 0.000E+00 | NOT IDENT. |
| PM-149 | 7.137E+00 | 3.761E+02 | 6.294E+02 | 0.000E+00 | NOT IDENT. |
| EU-152 | -3.714E-02 | 2.149E-01 | 3.409E-01 | 0.000E+00 | FAIL ABUN |
| GD-153 | 0.000E+00 | 8.183E-01 | 7.355E-01 | 0.000E+00 | FAIL ABUN |
| EU-154 | -1.034E-02 | 1.604E-01 | 2.659E-01 | 0.000E+00 | NOT IDENT. |
| EU-155 | 0.000E+00 | 5.472E-01 | 7.455E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 5.721E-02 | 3.200E-01 | 5.305E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -5.439E-02 | 1.220E-01 | 1.983E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | -3.365E+02 | 1.132E+02 | 1.583E+02 | 0.000E+00 | FAIL ABUN |
| LU-176 | -4.733E-03 | 5.556E-02 | 9.228E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 0.000E+00 | 3.485E+00 | 5.487E+00 | 0.000E+00 | FAIL ABUN |
| LU-177M | -4.227E-01 | 3.926E-01 | 6.100E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -9.823E-02 | 1.022E-01 | 1.574E-01 | 0.000E+00 | FAIL ABUN |
| W-181 | 0.000E+00 | 2.521E+00 | 2.795E+00 | 0.000E+00 | NOT IDENT. |
| TA-182 | -1.378E-01 | 2.623E-01 | 4.183E-01 | 0.000E+00 | FAIL ABUN |
| RE-183 | 0.000E+00 | 8.787E-01 | 9.265E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 3.841E-02 | 5.780E-01 | 9.051E-01 | 0.000E+00 | NOT IDENT. |
| OS-185 | -2.149E-02 | 8.772E-02 | 1.453E-01 | 0.000E+00 | NOT IDENT. |
| RE-188 | -3.385E-01 | 5.900E-01 | 9.369E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | -6.786E+00 | 1.884E+01 | 2.720E+01 | 0.000E+00 | FAIL ABUN |
| IR-192 | -1.930E-02 | 7.825E-02 | 1.290E-01 | 0.000E+00 | FAIL ABUN |
| AU-195 | 0.000E+00 | 2.387E+00 | 2.144E+00 | 0.000E+00 | FAIL ABUN |
| TL-200 | 0.000E+00 | 3.639E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TL-201 | 1.476E+01 | 4.097E+01 | 5.872E+01 | 0.000E+00 | NOT IDENT. |
| TL-202 | -4.238E-02 | 1.690E-01 | 2.720E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | -1.147E-02 | 9.611E-02 | 1.604E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 8.778E-03 | 6.680E-02 | 1.145E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -9.336E-01 | 1.432E+00 | 2.308E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | 6.341E+00 | 1.405E+01 | 2.361E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | -5.431E+00 | 8.457E+00 | 1.414E+01 | 0.000E+00 | NOT IDENT. |
| PB-210 | -5.431E+00 | 8.457E+00 | 1.414E+01 | 0.000E+00 | NOT IDENT. |
| PO-210 | -5.431E+00 | 8.455E+00 | 1.414E+01 | 0.000E+00 | NOT IDENT. |
| PB-211 | -2.253E-01 | 1.979E+00 | 3.218E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 6.956E-01 | 8.160E-01 | 1.085E+00 | 0.000E+00 | FAIL ABUN |
| PO-215 | -9.336E-01 | 1.432E+00 | 2.308E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | -5.246E-01 | 8.624E-01 | 1.370E+00 | 0.000E+00 | NOT IDENT. |
| RN-220 | -1.802E+01 | 5.587E+01 | 9.341E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -9.336E-01 | 1.432E+00 | 2.308E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | 0.000E+00 | 1.077E+00 | 1.641E+00 | 0.000E+00 | FAIL ABUN |
| TH-227 | 0.000E+00 | 1.089E+00 | 1.641E+00 | 0.000E+00 | FAIL ABUN |
| TH-229 | 0.000E+00 | 1.555E+00 | 2.422E+00 | 0.000E+00 | FAIL ABUN |
| PA-231 | 1.475E+00 | 3.424E+00 | 5.795E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -9.336E-01 | 1.432E+00 | 2.308E+00 | 0.000E+00 | FAIL ABUN |
| PA-233 | -4.522E-02 | 1.434E-01 | 2.360E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 0.000E+00 | 9.223E-01 | 1.154E+00 | 0.000E+00 | FAIL ABUN |
| NP-236 | -4.868E-02 | 3.070E-01 | 4.356E-01 | 0.000E+00 | FAIL ABUN |
| NP-237 | -6.144E+00 | 1.878E+00 | 1.808E+00 | 0.000E+00 | FAIL ABUN |
| NP-239 | 2.322E-01 | 1.032E+00 | 1.184E+00 | 0.000E+00 | FAIL ABUN |
| AM-241 | 0.000E+00 | 6.657E-01 | 1.005E+00 | 0.000E+00 | NOT IDENT. |
| AM-243 | 3.310E-01 | 2.540E-01 | 3.805E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | 0.000E+00 | 4.688E-01 | 6.409E-01 | 0.000E+00 | FAIL ABUN |
| AM-246 | -1.646E-01 | 2.099E-01 | 3.302E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | -2.211E-02 | 7.635E-02 | 1.235E-01 | 0.000E+00 | NOT IDENT. |
| CF-249 | 4.697E-02 | 9.034E-02 | 1.512E-01 | 0.000E+00 | NOT IDENT. |
| CF-251 | -2.561E-01 | 4.016E-01 | 6.811E-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]G1202037547.CNF;1
Sample date        : 1-FEB-2010 12:00:00. Acquisition date : 18-FEB-2010 13:52:40
Sample ID          : G1202037547      Sample quantity   : 9.51500E+01 GRAM
Detector name      : GAM07            Detector geometry: CAN
Elapsed live time  : 0 02:00:00.00    Elapsed real time: 0 02:00:05.44  0.1%
Energy tolerance  : 1.50000 keV      Analyst Initials : MXR1
Abundance limit   : 75.00000         Sensitivity      : 5.00000
Batch ID          : 950786           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 | 792 | 10.67* | 1.129E+00 | 2.594E+01 | 2.594E+01 | 11.61 |
| CO-57 | 122.06 | 355 | 85.51* | 7.092E+00 | 2.307E-01 | 2.410E-01 | 60.74 |
| | 136.48 | ----- | 10.60 | 6.835E+00 | ----- | Line Not Found | ----- |
| AS-73 | 53.44 | 557 | 10.30* | 3.217E+00 | 6.630E+00 | 7.686E+00 | 66.30 |
| NB-95 | 765.79 | 1201 | 99.81* | 1.970E+00 | 2.410E+00 | 2.901E+00 | 12.00 |
| TE-125M | 109.28 | 1741 | 0.28* | 7.183E+00 | 3.380E+02 | 4.147E+02 | 19.65 |
| BA-137M | 661.65 | 1215 | 89.98* | 2.231E+00 | 2.388E+00 | 2.390E+00 | 11.77 |
| CS-137 | 661.65 | 1215 | 85.12* | 2.231E+00 | 2.524E+00 | 2.527E+00 | 11.78 |
| TL-208 | 277.35 | ----- | 6.80 | 4.401E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 130 | 21.60 | 2.753E+00 | 8.619E-01 | 8.619E-01 | 67.71 |
| | 583.14 | 284 | 84.20* | 2.475E+00 | 5.381E-01 | 5.381E-01 | 29.72 |
| | 860.37 | ----- | 12.46 | 1.783E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 5.899E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 530 | 12.94* | 3.680E+00 | 4.391E+00 | 4.391E+00 | 19.83 |
| PB-212 | 74.81 | ----- | 10.70 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 18.00 | 6.245E+00 | 1.752E+00 | 1.752E+00 | 59.37 |
| | 87.30 | ----- | 8.00 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 793 | 44.60* | 4.909E+00 | 1.430E+00 | 1.430E+00 | 17.60 |
| | 300.09 | 88 | 3.41 | 4.152E+00 | 2.465E+00 | 2.465E+00 | 67.22 |
| PO-212 | 74.81 | ----- | 10.70 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 18.00 | 6.245E+00 | 1.752E+00 | 1.752E+00 | 59.37 |
| | 87.30 | ----- | 8.00 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 115.19 | ----- | 0.60 | 7.150E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 793 | 44.60* | 4.909E+00 | 1.430E+00 | 1.430E+00 | 17.60 |
| | 300.09 | 88 | 3.41 | 4.152E+00 | 2.465E+00 | 2.465E+00 | 67.22 |
| BI-214 | 609.31 | 375 | 46.30* | 2.388E+00 | 1.337E+00 | 1.337E+00 | 24.62 |
| | 1120.29 | 100 | 15.10 | 1.414E+00 | 1.845E+00 | 1.845E+00 | 34.84 |
| | 1764.49 | 74 | 15.80 | 9.830E-01 | 1.881E+00 | 1.881E+00 | 39.59 |
| PB-214 | 74.81 | ----- | 6.21 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 10.50 | 6.245E+00 | 3.004E+00 | 3.004E+00 | 59.86 |
| | 87.30 | ----- | 4.67 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 161 | 7.49 | 4.868E+00 | 1.739E+00 | 1.739E+00 | 56.00 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|--------|-----------|-------------------------|------------------------|-------------------|
| | 295.21 | 329 | 19.20 | 4.201E+00 | 1.611E+00 | 1.611E+00 | 31.40 |
| | 351.92 | 530 | 37.20* | 3.680E+00 | 1.527E+00 | 1.527E+00 | 20.50 |
| PO-214 | 74.81 | ----- | 6.21 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 10.50 | 6.245E+00 | 3.004E+00 | 3.004E+00 | 59.86 |
| | 87.30 | ----- | 4.67 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 161 | 7.49 | 4.868E+00 | 1.739E+00 | 1.739E+00 | 56.00 |
| | 295.21 | 329 | 19.20 | 4.201E+00 | 1.611E+00 | 1.611E+00 | 31.40 |
| | 351.92 | 530 | 37.20* | 3.680E+00 | 1.527E+00 | 1.527E+00 | 20.50 |
| PO-216 | 74.81 | ----- | 10.70 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 18.00 | 6.245E+00 | 1.752E+00 | 1.752E+00 | 59.37 |
| | 87.30 | ----- | 8.00 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 793 | 44.60* | 4.909E+00 | 1.430E+00 | 1.430E+00 | 17.60 |
| | 300.09 | 88 | 3.41 | 4.152E+00 | 2.465E+00 | 2.465E+00 | 67.22 |
| PO-218 | 74.81 | ----- | 6.21 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 10.50 | 6.245E+00 | 3.004E+00 | 3.004E+00 | 59.86 |
| | 87.30 | ----- | 4.67 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 241.98 | 161 | 7.49 | 4.868E+00 | 1.739E+00 | 1.739E+00 | 56.00 |
| | 295.21 | 329 | 19.20 | 4.201E+00 | 1.611E+00 | 1.611E+00 | 31.40 |
| | 351.92 | 530 | 37.20* | 3.680E+00 | 1.527E+00 | 1.527E+00 | 20.50 |
| RA-224 | 240.98 | 161 | 3.95* | 4.868E+00 | 3.298E+00 | 3.298E+00 | 55.72 |
| RA-226 | 609.31 | 375 | 46.30* | 2.388E+00 | 1.337E+00 | 1.337E+00 | 24.62 |
| | 1120.29 | 100 | 15.10 | 1.414E+00 | 1.845E+00 | 1.845E+00 | 34.84 |
| | 1764.49 | 74 | 15.80 | 9.830E-01 | 1.881E+00 | 1.881E+00 | 39.59 |
| AC-228 | 338.32 | 200 | 11.40 | 3.794E+00 | 1.823E+00 | 1.823E+00 | 58.30 |
| | 911.07 | 210 | 27.70* | 1.695E+00 | 1.764E+00 | 1.764E+00 | 29.72 |
| | 969.11 | 86 | 16.60 | 1.606E+00 | 1.270E+00 | 1.270E+00 | 47.67 |
| RA-228 | 338.32 | 200 | 11.40 | 3.794E+00 | 1.823E+00 | 1.823E+00 | 58.30 |
| | 911.07 | 210 | 27.70* | 1.695E+00 | 1.764E+00 | 1.764E+00 | 29.72 |
| | 969.11 | 86 | 16.60 | 1.606E+00 | 1.270E+00 | 1.270E+00 | 47.67 |
| TH-228 | 74.81 | ----- | 10.70 | 6.073E+00 | ----- | Line Not Found | ----- |
| | 77.11 | 499 | 18.00 | 6.245E+00 | 1.752E+00 | 1.782E+00 | 59.37 |
| | 87.30 | ----- | 8.00 | 6.839E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 793 | 44.60* | 4.909E+00 | 1.430E+00 | 1.454E+00 | 17.60 |
| | 300.09 | 88 | 3.41 | 4.152E+00 | 2.465E+00 | 2.507E+00 | 89.02 |
| TH-230 | 609.31 | 375 | 46.30* | 2.388E+00 | 1.337E+00 | 1.337E+00 | 24.62 |
| | 1120.29 | 100 | 15.10 | 1.414E+00 | 1.845E+00 | 1.845E+00 | 34.84 |
| | 1764.49 | 74 | 15.80 | 9.830E-01 | 1.881E+00 | 1.881E+00 | 39.59 |
| U-231 | 84.21 | 3129 | 7.00 | 6.696E+00 | 2.634E+01 | 4.442E+02 | 15.32 |
| | 92.29 | 52450 | 17.30 | 7.015E+00 | 1.705E+02 | 2.876E+03 | 9.21 |
| | 95.87 | 2494 | 28.00* | 7.063E+00 | 4.975E+00 | 8.391E+01 | 22.64 |
| | 108.00 | 1741 | 13.10 | 7.183E+00 | 7.302E+00 | 1.232E+02 | 18.81 |
| TH-232 | 338.32 | 200 | 11.40 | 3.794E+00 | 1.823E+00 | 1.823E+00 | 42.08 |
| | 911.07 | 210 | 27.70* | 1.695E+00 | 1.764E+00 | 1.764E+00 | 29.72 |
| | 969.11 | 86 | 16.60 | 1.606E+00 | 1.270E+00 | 1.270E+00 | 47.67 |
| PA-234M | 766.42 | 1201 | 0.32 | 1.970E+00 | 7.517E+02 | 7.517E+02 | 51.42 |
| | 1001.03 | 2483 | 0.84* | 1.561E+00 | 7.472E+02 | 7.472E+02 | 11.27 |
| TH-234 | 63.29 | 25791 | 3.80* | 4.793E+00 | 5.587E+02 | 5.587E+02 | 17.52 |
| | 92.38 | 52450 | 5.41 | 7.015E+00 | 5.452E+02 | 5.452E+02 | 18.37 |
| U-234 | 609.31 | 375 | 46.30* | 2.388E+00 | 1.337E+00 | 1.337E+00 | 24.62 |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| | 1120.29 | 100 | 15.10 | 1.414E+00 | 1.845E+00 | 1.845E+00 | 34.84 |
| | 1764.49 | 74 | 15.80 | 9.830E-01 | 1.881E+00 | 1.881E+00 | 39.59 |
| U-235 | 89.95 | ----- | 2.70 | 6.936E+00 | ----- | Line Not Found | ----- |
| | 93.35 | 52450 | 4.50 | 7.015E+00 | 6.555E+02 | 6.555E+02 | 28.21 |
| | 105.00 | 921 | 2.10 | 7.183E+00 | 2.408E+01 | 2.408E+01 | 36.47 |
| | 143.76 | 5646 | 10.50* | 6.688E+00 | 3.172E+01 | 3.172E+01 | 17.98 |
| | 163.35 | 2532 | 4.70 | 6.276E+00 | 3.386E+01 | 3.386E+01 | 20.34 |
| | 185.71 | 26751 | 54.00 | 5.817E+00 | 3.360E+01 | 3.360E+01 | 8.21 |
| | 205.31 | 2114 | 4.70 | 5.449E+00 | 3.256E+01 | 3.256E+01 | 19.82 |
| U-238 | 63.29 | 25791 | 3.80* | 4.793E+00 | 5.587E+02 | 5.587E+02 | 17.52 |
| | 92.38 | 52450 | 5.41 | 7.015E+00 | 5.452E+02 | 5.452E+02 | 9.21 |
| ANH-511 | 511.00 | 130 | 100.00* | 2.753E+00 | 1.862E-01 | 1.862E-01 | 67.20 |

Flag: "*" = Keyline

Total number of lines in spectrum 47
Number of unidentified lines 5
Number of lines tentatively identified by NID 42 89.36%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|------------------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 2.594E+01 | 2.594E+01 | 0.301E+01 | 11.61 | |
| CO-57 | 270.90D | 1.04 | 2.307E-01 | 2.410E-01 | 1.464E-01 | 60.74 | |
| AS-73 | 80.30D | 1.16 | 6.630E+00 | 7.686E+00 | 5.096E+00 | 66.30 | |
| NB-95 | 64.02D | 1.20 | 2.410E+00 | 2.901E+00 | 0.348E+00 | 12.00 | |
| TE-125M | 58.00D | 1.23 | 3.380E+02 | 4.147E+02 | 0.815E+02 | 19.65 | |
| BA-137M | 30.17Y | 1.00 | 2.388E+00 | 2.390E+00 | 0.281E+00 | 11.77 | |
| CS-137 | 30.17Y | 1.00 | 2.524E+00 | 2.527E+00 | 0.298E+00 | 11.78 | |
| TL-208 | 1.41E+10Y | 1.00 | 5.381E-01 | 5.381E-01 | 1.599E-01 | 29.72 | |
| BI-211 | 7.04E+08Y | 1.00 | 4.391E+00 | 4.391E+00 | 0.870E+00 | 19.83 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.252E+00 | 17.60 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.252E+00 | 17.60 | |
| BI-214 | 1600.00Y | 1.00 | 1.337E+00 | 1.337E+00 | 0.329E+00 | 24.62 | |
| PB-214 | 1600.00Y | 1.00 | 1.527E+00 | 1.527E+00 | 0.313E+00 | 20.50 | |
| PO-214 | 1600.00Y | 1.00 | 1.527E+00 | 1.527E+00 | 0.313E+00 | 20.50 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.430E+00 | 1.430E+00 | 0.252E+00 | 17.60 | |
| PO-218 | 1600.00Y | 1.00 | 1.527E+00 | 1.527E+00 | 0.313E+00 | 20.50 | |
| RA-224 | 1.41E+10Y | 1.00 | 3.298E+00 | 3.298E+00 | 1.838E+00 | 55.72 | |
| RA-226 | 1600.00Y | 1.00 | 1.337E+00 | 1.337E+00 | 0.329E+00 | 24.62 | |
| AC-228 | 1.41E+10Y | 1.00 | 1.764E+00 | 1.764E+00 | 0.524E+00 | 29.72 | |
| RA-228 | 1.41E+10Y | 1.00 | 1.764E+00 | 1.764E+00 | 0.524E+00 | 29.72 | |
| TH-228 | 1.91Y | 1.02 | 1.430E+00 | 1.454E+00 | 0.256E+00 | 17.60 | |
| TH-230 | 4.47E+09Y | 1.00 | 1.337E+00 | 1.337E+00 | 0.329E+00 | 24.62 | |
| U-231 | 4.20D | 16.9 | 4.975E+00 | 8.391E+01 | 1.900E+01 | 22.64 | |
| TH-232 | 1.41E+10Y | 1.00 | 1.764E+00 | 1.764E+00 | 0.524E+00 | 29.72 | |
| PA-234M | 4.47E+09Y | 1.00 | 7.472E+02 | 7.472E+02 | 0.842E+02 | 11.27 | |
| TH-234 | 4.47E+09Y | 1.00 | 5.587E+02 | 5.587E+02 | 0.979E+02 | 17.52 | |
| U-234 | 4.47E+09Y | 1.00 | 1.337E+00 | 1.337E+00 | 0.329E+00 | 24.62 | |
| U-235 | 7.04E+08Y | 1.00 | 3.172E+01 | 3.172E+01 | 0.570E+01 | 17.98 | |
| U-238 | 4.47E+09Y | 1.00 | 5.587E+02 | 5.587E+02 | 0.979E+02 | 17.52 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.862E-01 | 1.862E-01 | 1.251E-01 | 67.20 | |
| Total Activity : | | | 2.309E+03 | 2.466E+03 | | | |

Grand Total Activity : 2.309E+03 2.466E+03

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

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

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|---------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 98.55 | 4132 | 4118 | 1.10 | 196.73 | 194 | 8 | 5.74E-01 | 6.3 | 7.13E+00 | T |
| 6 | 111.10 | 1282 | 3026 | 1.18 | 221.84 | 207 | 26 | 1.78E-01 | 16.6 | 7.18E+00 | T |
| 6 | 112.87 | 3447 | 3392 | 1.30 | 225.38 | 207 | 26 | 4.79E-01 | 7.1 | 7.17E+00 | T |
| 0 | 131.61 | 180 | 1955 | 0.91 | 262.84 | 260 | 6 | 2.50E-02 | 79.2 | 6.92E+00 | T |
| 0 | 195.29 | 233 | 1105 | 1.02 | 390.20 | 386 | 8 | 3.24E-02 | 51.3 | 5.63E+00 | |
| 2 | 202.35 | 415 | 995 | 1.31 | 404.30 | 400 | 16 | 5.76E-02 | 27.8 | 5.50E+00 | T |
| 0 | 258.44 | 569 | 640 | 1.29 | 516.47 | 512 | 10 | 7.91E-02 | 18.7 | 4.64E+00 | |
| 0 | 569.23 | 83 | 205 | 1.42 | 1137.95 | 1134 | 10 | 1.15E-02 | 68.4 | 2.53E+00 | T |
| 0 | 727.68 | 43 | 168 | 1.20 | 1454.80 | 1449 | 10 | 5.95E-03 | **** | 2.06E+00 | T |
| 0 | 743.15 | 309 | 239 | 1.47 | 1485.73 | 1480 | 13 | 4.29E-02 | 23.7 | 2.02E+00 | T |
| 0 | 946.81 | 80 | 98 | 1.31 | 1893.01 | 1888 | 13 | 1.10E-02 | 55.9 | 1.64E+00 | T |
| 1 | 965.13 | 42 | 69 | 1.98 | 1929.64 | 1921 | 24 | 5.82E-03 | 89.4 | 1.61E+00 | T |
| 0 | 1239.21 | 53 | 68 | 1.72 | 2477.75 | 2469 | 15 | 7.42E-03 | 73.7 | 1.30E+00 | T |
| 0 | 1510.33 | 30 | 8 | 1.85 | 3019.94 | 3014 | 14 | 4.17E-03 | 56.2 | 1.10E+00 | T |
| 0 | 1591.48 | 67 | 14 | 6.57 | 3182.25 | 3166 | 28 | 9.31E-03 | 39.9 | 1.06E+00 | |
| 0 | 1730.41 | 22 | 5 | 1.05 | 3460.08 | 3454 | 11 | 3.00E-03 | 60.0 | 9.96E-01 | |
| 0 | 1738.39 | 60 | 7 | 2.58 | 3476.05 | 3470 | 14 | 8.33E-03 | 31.9 | 9.93E-01 | |

Flags: "T" = Tentatively associated

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
*                               DETECTOR DATA                               *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037547.CNF;1
* Acquisition date   : 18-FEB-2010 13:52:40   Detector SN#      :
* Detector ID        : GAM07                  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 02:00:05.44          Half life ratio  : 8.00000
*****
*                               SAMPLE DATA                               *
*
* Sample date        : 1-FEB-2010 12:00:00.   Nuclide Library : SOLID
* Sample ID          : G1202037547           Analyst initials: MXR1
* Batch Number       : 950786                Sample Quantity : 9.51500E+01 GRAM
*****
*                               QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58.0MS Isotope      :
* MSD ID              :                      MSD Isotope      :
* LCS ID              : 1032-A                LCS Isotope      :
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| K-40 | 2.594E+01 | 3.012E+00 | 7.702E-01 | 6.614E-02 | 33.681 |
| CO-57 | 2.410E-01 | 1.464E-01 | 1.552E-01 | 1.335E-02 | 1.553 |
| AS-73 | 7.686E+00 | 5.096E+00 | 4.687E+00 | 3.520E-01 | 1.640 |
| NB-95 | 2.901E+00 | 3.482E-01 | 1.488E-01 | 1.357E-02 | 19.492 |
| TE-125M | 4.147E+02 | 8.150E+01 | 6.031E+01 | 6.256E+00 | 6.877 |
| BA-137M | 2.390E+00 | 2.813E-01 | 1.292E-01 | 1.144E-02 | 18.496 |
| CS-137 | 2.527E+00 | 2.977E-01 | 1.366E-01 | 1.211E-02 | 18.496 |
| TL-208 | 5.381E-01 | 1.599E-01 | 1.239E-01 | 1.185E-02 | 4.344 |
| BI-211 | 4.391E+00 | 8.705E-01 | 7.403E-01 | 6.641E-02 | 5.931 |
| PB-212 | 1.430E+00 | 2.516E-01 | 2.393E-01 | 2.289E-02 | 5.974 |
| PO-212 | 1.430E+00 | 2.516E-01 | 2.393E-01 | 2.289E-02 | 5.974 |
| BI-214 | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| PB-214 | 1.527E+00 | 3.131E-01 | 2.551E-01 | 2.647E-02 | 5.987 |
| PO-214 | 1.527E+00 | 3.131E-01 | 2.551E-01 | 2.647E-02 | 5.987 |
| PO-216 | 1.430E+00 | 2.516E-01 | 2.393E-01 | 2.289E-02 | 5.974 |
| PO-218 | 1.527E+00 | 3.131E-01 | 2.551E-01 | 2.647E-02 | 5.987 |
| RA-224 | 3.298E+00 | 1.838E+00 | 2.684E+00 | 2.269E-01 | 1.229 |
| RA-226 | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| AC-228 | 1.764E+00 | 5.243E-01 | 3.456E-01 | 4.026E-02 | 5.104 |
| RA-228 | 1.764E+00 | 5.243E-01 | 3.456E-01 | 4.026E-02 | 5.104 |
| TH-228 | 1.454E+00 | 2.559E-01 | 2.434E-01 | 2.328E-02 | 5.974 |
| TH-230 | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| U-231 | 8.391E+01 | 1.900E+01 | 9.045E+00 | 8.142E-01 | 9.277 |
| TH-232 | 1.764E+00 | 5.243E-01 | 3.456E-01 | 4.026E-02 | 5.104 |
| PA-234M | 7.472E+02 | 8.419E+01 | 1.330E+01 | 1.364E+00 | 56.172 |
| TH-234 | 5.587E+02 | 9.786E+01 | 7.802E+00 | 1.358E+00 | 71.610 |
| U-234 | 1.337E+00 | 3.291E-01 | 2.361E-01 | 2.442E-02 | 5.662 |
| U-235 | 3.172E+01 | 5.702E+00 | 1.172E+00 | 2.030E-01 | 27.052 |
| U-238 | 5.587E+02 | 9.786E+01 | 7.802E+00 | 1.358E+00 | 71.610 |
| ANH-511 | 1.862E-01 | 1.251E-01 | 1.096E-01 | 9.735E-03 | 1.699 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| BE-7 | 4.215E-01 | | 7.817E-01 | 1.282E+00 | 1.210E-01 | 0.329 |
| NA-22 | -1.527E-03 | | 5.823E-02 | 9.596E-02 | 7.877E-03 | -0.016 |
| NA-24 | -5.669E-01 | | 4.006E+00 | Half-Life | too short | |
| AL-26 | 2.957E-03 | | 4.647E-02 | 7.984E-02 | 6.511E-03 | 0.037 |
| TI-44 | 3.234E-01 | + | 1.920E-01 | 2.491E-01 | 2.085E-02 | 1.298 |
| SC-46 | -3.143E-02 | | 7.573E-02 | 1.191E-01 | 1.091E-02 | -0.264 |
| V-48 | 1.611E-01 | | 1.310E-01 | 2.312E-01 | 2.082E-02 | 0.697 |
| CR-51 | 8.472E-01 | | 8.716E-01 | 1.477E+00 | 1.335E-01 | 0.574 |
| MN-52 | 7.440E-01 | | 4.954E-01 | 9.384E-01 | 7.803E-02 | 0.793 |
| MN-54 | 2.157E-02 | | 7.383E-02 | 1.226E-01 | 1.125E-02 | 0.176 |
| CO-56 | -7.824E-02 | | 7.881E-02 | 1.190E-01 | 1.093E-02 | -0.657 |
| CO-58 | -2.912E-02 | | 8.613E-02 | 1.379E-01 | 1.267E-02 | -0.211 |
| FE-59 | -1.090E-01 | | 1.250E-01 | 1.902E-01 | 1.762E-02 | -0.573 |
| CO-60 | 1.104E-02 | | 5.453E-02 | 9.233E-02 | 7.563E-03 | 0.120 |
| ZN-65 | -3.899E-02 | | 1.422E-01 | 1.972E-01 | 1.673E-02 | -0.198 |
| GE-68 | -5.495E-01 | | 1.777E+00 | 2.891E+00 | 2.505E-01 | -0.190 |
| AS-74 | 6.050E-02 | | 2.023E-01 | 3.427E-01 | 3.073E-02 | 0.177 |
| SE-75 | -3.485E-02 | | 1.014E-01 | 1.610E-01 | 1.374E-02 | -0.217 |
| BR-77 | 5.965E+00 | | 4.087E+01 | 6.930E+01 | 6.173E+00 | 0.086 |
| SR-82 | -3.168E-01 | | 9.233E-01 | 1.486E+00 | 1.357E-01 | -0.213 |
| RB-83 | 3.130E-02 | | 1.553E-01 | 2.640E-01 | 2.351E-02 | 0.119 |
| RB-84 | 3.793E-01 | | 1.684E-01 | 3.029E-01 | 2.777E-02 | 1.252 |
| KR-85 | 1.502E+01 | | 1.714E+01 | 2.638E+01 | 2.346E+00 | 0.569 |
| SR-85 | 7.863E-02 | | 8.971E-02 | 1.381E-01 | 1.228E-02 | 0.569 |
| RB-86 | 2.091E-01 | | 1.172E+00 | 1.993E+00 | 1.728E-01 | 0.105 |
| Y-88 | -7.533E-02 | | 6.582E-02 | 9.086E-02 | 7.374E-03 | -0.829 |
| ZR-88 | -3.948E-02 | | 7.219E-02 | 1.145E-01 | 9.537E-03 | -0.345 |
| Y-91 | -2.374E+00 | | 2.427E+01 | 3.991E+01 | 3.259E+00 | -0.059 |
| NB-94 | -2.722E-02 | | 7.614E-02 | 1.235E-01 | 1.109E-02 | -0.220 |
| NB-95M | 1.408E-01 | | 3.243E-01 | 4.846E-01 | 4.704E-02 | 0.291 |
| ZR-95 | -1.212E-02 | | 1.626E-01 | 2.661E-01 | 2.643E-02 | -0.046 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| NB-97 | -3.904E-01 | | 8.727E-01 | Half-Life too short | | |
| ZR-97 | 1.164E+01 | | 1.531E+01 | Half-Life too short | | |
| MO-99 | 1.234E+01 | | 5.360E+01 | 7.759E+01 | 1.198E+01 | 0.159 |
| TC-99M | 3.922E+13 | | 1.866E+13 | Half-Life too short | | |
| RH-101 | -2.378E-02 | | 1.290E-01 | 1.386E-01 | 1.137E-02 | -0.172 |
| RH-102 | -1.428E-02 | | 6.963E-02 | 1.106E-01 | 9.702E-03 | -0.129 |
| RU-103 | 1.596E-02 | | 9.746E-02 | 1.570E-01 | 2.245E-02 | 0.102 |
| RH-106 | 3.087E-01 | | 6.649E-01 | 1.131E+00 | 1.534E-01 | 0.273 |
| RU-106 | 3.087E-01 | | 6.642E-01 | 1.131E+00 | 1.011E-01 | 0.273 |
| AG-108M | 2.460E-02 | | 7.219E-02 | 1.182E-01 | 1.056E-02 | 0.208 |
| CD-109 | -3.314E+01 | | 6.939E+00 | 6.488E+00 | 6.112E-01 | -5.108 |
| AG-110M | -3.332E-02 | | 9.078E-02 | 1.273E-01 | 1.160E-02 | -0.262 |
| IN-111 | -2.577E+00 | | 4.583E+00 | 6.581E+00 | 5.574E-01 | -0.392 |
| IN-113M | -8.817E-02 | | 1.065E-01 | 1.668E-01 | 1.434E-02 | -0.529 |
| SN-113 | -8.817E-02 | | 1.065E-01 | 1.668E-01 | 1.434E-02 | -0.529 |
| IN-114M | -4.287E-01 | | 7.578E-01 | 7.995E-01 | 6.505E-02 | -0.536 |
| CD-115 | 2.660E+01 | | 4.604E+01 | 7.923E+01 | 7.069E+00 | 0.336 |
| SN-117M | 7.428E-02 | | 2.354E-01 | 3.345E-01 | 2.682E-02 | 0.222 |
| SB-122 | 6.272E+00 | | 8.279E+00 | 1.265E+01 | 1.134E+00 | 0.496 |
| I-123 | 2.018E+02 | | 1.341E+02 | Half-Life too short | | |
| TE-123M | 8.403E-02 | | 1.117E-01 | 1.601E-01 | 1.292E-02 | 0.525 |
| I-124 | 1.990E+00 | | 2.028E+00 | 3.254E+00 | 2.916E-01 | 0.612 |
| SB-124 | -5.460E-02 | | 1.102E-01 | 1.602E-01 | 1.388E-02 | -0.341 |
| SB-125 | 1.449E-01 | | 2.082E-01 | 3.459E-01 | 3.016E-02 | 0.419 |
| I-126 | -1.992E-01 | | 5.096E-01 | 7.125E-01 | 6.317E-02 | -0.280 |
| SB-126 | -3.069E-02 | | 3.676E-01 | 5.686E-01 | 5.132E-02 | -0.054 |
| SN-126 | -3.167E+00 | | 6.652E-01 | 6.226E-01 | 5.834E-02 | -5.086 |
| SB-127 | -9.170E-01 | | 4.193E+00 | 6.857E+00 | 8.364E-01 | -0.134 |
| XE-127 | 6.044E-01 | + | 1.751E-01 | 2.539E-01 | 2.093E-02 | 2.380 |
| I-131 | -3.615E-02 | | 3.141E-01 | 5.101E-01 | 4.575E-02 | -0.071 |
| TE-132 | 1.684E+00 | | 2.530E+00 | 4.286E+00 | 6.847E-01 | 0.393 |
| BA-133 | -3.238E-02 | | 1.119E-01 | 1.583E-01 | 2.079E-02 | -0.205 |
| I-133 | 1.063E-02 | | 3.396E-02 | Half-Life too short | | |
| CS-134 | 1.480E-01 | | 1.083E-01 | 1.880E-01 | 1.732E-02 | 0.787 |
| CS-135 | -5.540E-03 | | 3.524E-01 | 5.852E-01 | 5.770E-02 | -0.009 |
| I-135 | -2.488E+11 | | 5.552E+11 | Half-Life too short | | |
| CS-136 | -9.103E-02 | | 1.800E-01 | 2.854E-01 | 2.611E-02 | -0.319 |
| CE-139 | 1.882E-01 | | 1.182E-01 | 1.716E-01 | 1.357E-02 | 1.097 |
| BA-140 | 1.811E-01 | | 6.576E-01 | 1.114E+00 | 3.702E-01 | 0.163 |
| LA-140 | 1.415E-01 | | 1.602E-01 | 2.620E-01 | 2.192E-02 | 0.540 |
| CE-141 | 5.940E+00 | | 5.914E-01 | 5.901E-01 | 4.940E-02 | 10.066 |
| CE-143 | 2.216E-03 | | 5.233E-04 | Half-Life too short | | |
| CE-144 | 1.660E-01 | | 8.361E-01 | 1.196E+00 | 1.846E-01 | 0.139 |
| PM-144 | -3.869E-02 | | 7.803E-02 | 1.257E-01 | 1.127E-02 | -0.308 |
| PR-144 | -2.624E+00 | | 5.293E+00 | 8.529E+00 | 7.643E-01 | -0.308 |
| PM-146 | -1.055E-02 | | 1.058E-01 | 1.694E-01 | 1.825E-02 | -0.062 |
| ND-147 | 7.989E-01 | | 1.468E+00 | 2.517E+00 | 3.808E-01 | 0.317 |
| PM-149 | 7.137E+00 | | 3.837E+02 | 6.356E+02 | 9.846E+01 | 0.011 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| EU-152 | -3.714E-02 | | 2.193E-01 | 3.443E-01 | 3.121E-02 | -0.108 |
| GD-153 | 7.673E+00 | + | 8.350E-01 | 7.425E-01 | 6.640E-02 | 10.333 |
| EU-154 | -1.034E-02 | | 1.637E-01 | 2.687E-01 | 2.954E-02 | -0.038 |
| EU-155 | 2.459E+00 | + | 5.584E-01 | 7.526E-01 | 6.650E-02 | 3.267 |
| TB-160 | 5.721E-02 | | 3.265E-01 | 5.359E-01 | 4.915E-02 | 0.107 |
| HO-166M | -5.439E-02 | | 1.245E-01 | 2.003E-01 | 1.803E-02 | -0.272 |
| TM-171 | -3.365E+02 | | 1.155E+02 | 1.598E+02 | 1.195E+01 | -2.106 |
| LU-176 | -4.733E-03 | | 5.669E-02 | 9.319E-02 | 7.983E-03 | -0.051 |
| LU-177 | 7.206E+00 | | 3.556E+00 | 5.540E+00 | 4.589E-01 | 1.301 |
| LU-177M | -4.227E-01 | | 4.006E-01 | 6.161E-01 | 5.216E-02 | -0.686 |
| HF-181 | -9.823E-02 | | 1.043E-01 | 1.590E-01 | 1.399E-02 | -0.618 |
| W-181 | 2.691E+01 | | 2.573E+00 | 2.821E+00 | 2.087E-01 | 9.539 |
| TA-182 | -1.378E-01 | | 2.677E-01 | 4.226E-01 | 3.456E-02 | -0.326 |
| RE-183 | 8.057E+00 | + | 8.966E-01 | 9.355E-01 | 7.448E-02 | 8.613 |
| RE-184 | 3.841E-02 | | 5.898E-01 | 9.140E-01 | 7.757E-02 | 0.042 |
| OS-185 | -2.149E-02 | | 8.951E-02 | 1.468E-01 | 1.305E-02 | -0.146 |
| RE-188 | -3.385E-01 | | 6.020E-01 | 9.460E-01 | 7.633E-02 | -0.358 |
| W-188 | -6.786E+00 | | 1.923E+01 | 2.747E+01 | 2.343E+00 | -0.247 |
| IR-192 | -1.930E-02 | | 7.985E-02 | 1.303E-01 | 1.120E-02 | -0.148 |
| AU-195 | 2.238E+01 | + | 2.436E+00 | 2.165E+00 | 1.925E-01 | 10.339 |
| TL-200 | -6.167E-04 | | 1.857E-03 | Half-Life too short | | |
| TL-201 | 1.476E+01 | | 4.181E+01 | 5.929E+01 | 4.696E+00 | 0.249 |
| TL-202 | -4.238E-02 | | 1.724E-01 | 2.747E-01 | 2.366E-02 | -0.154 |
| HG-203 | -1.147E-02 | | 9.807E-02 | 1.620E-01 | 1.415E-02 | -0.071 |
| BI-207 | 8.778E-03 | | 6.816E-02 | 1.156E-01 | 1.009E-02 | 0.076 |
| TL-207 | -9.336E-01 | | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| PO-209 | 6.341E+00 | | 1.434E+01 | 2.385E+01 | 2.184E+00 | 0.266 |
| BI-210 | -5.431E+00 | | 8.630E+00 | 1.428E+01 | 1.339E+00 | -0.380 |
| PB-210 | -5.431E+00 | | 8.630E+00 | 1.428E+01 | 1.339E+00 | -0.380 |
| PO-210 | -5.431E+00 | | 8.627E+00 | 1.428E+01 | 1.215E+00 | -0.380 |
| PB-211 | -2.253E-01 | | 2.020E+00 | 3.250E+00 | 2.036E+00 | -0.069 |
| BI-212 | 6.956E-01 | + | 8.326E-01 | 1.096E+00 | 1.137E-01 | 0.635 |
| PO-215 | -9.336E-01 | | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| RN-219 | -5.246E-01 | | 8.800E-01 | 1.383E+00 | 2.061E-01 | -0.379 |
| RN-220 | -1.802E+01 | | 5.701E+01 | 9.435E+01 | 8.448E+00 | -0.191 |
| RA-223 | -9.336E-01 | | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| AC-227 | 1.715E+00 | | 1.099E+00 | 1.657E+00 | 2.531E-01 | 1.035 |
| TH-227 | 1.715E+00 | | 1.111E+00 | 1.657E+00 | 2.983E-01 | 1.035 |
| TH-229 | 2.450E+00 | | 1.586E+00 | 2.446E+00 | 1.997E-01 | 1.002 |
| PA-231 | 1.475E+00 | | 3.494E+00 | 5.852E+00 | 8.847E-01 | 0.252 |
| TH-231 | -9.336E-01 | | 1.462E+00 | 2.331E+00 | 4.122E-01 | -0.401 |
| PA-233 | -4.522E-02 | | 1.463E-01 | 2.384E-01 | 2.102E-02 | -0.190 |
| PA-234 | 1.594E+00 | + | 9.411E-01 | 1.166E+00 | 2.214E-01 | 1.367 |
| NP-236 | -4.868E-02 | | 3.132E-01 | 4.398E-01 | 3.515E-02 | -0.111 |
| NP-237 | -6.144E+00 | | 1.916E+00 | 1.826E+00 | 4.128E-01 | -3.365 |
| NP-239 | 2.322E-01 | | 1.053E+00 | 1.196E+00 | 1.029E-01 | 0.194 |
| AM-241 | 1.763E+00 | | 6.793E-01 | 1.015E+00 | 8.045E-02 | 1.737 |
| AM-243 | 3.310E-01 | | 2.592E-01 | 3.841E-01 | 3.087E-02 | 0.862 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | 1.057E+00 | | 4.783E-01 | 6.471E-01 | 5.670E-02 | 1.633 |
| AM-246 | -1.646E-01 | | 2.142E-01 | 3.336E-01 | 2.888E-02 | -0.493 |
| CM-247 | -2.211E-02 | | 7.790E-02 | 1.247E-01 | 1.047E-02 | -0.177 |
| CF-249 | 4.697E-02 | | 9.218E-02 | 1.527E-01 | 1.275E-02 | 0.308 |
| CF-251 | -2.561E-01 | | 4.098E-01 | 6.877E-01 | 5.508E-02 | -0.372 |

VAX/VMS Nuclide Identification Report Generated

```
*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                    *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : SYS$SYSROOT:[ALPHA.ARCHIVE.GAMMA]G1202037547          *
* Acquisition date   : 18-FEB-2010 13:52:40 Detector SN# :                  *
* Detector ID        : GAM07 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 02:00:05.44 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 1-FEB-2010 12:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202037547 Analyst initials: MXR1                *
* Batch Number       : 950786 Sample Quantity : 9.5150E+01 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                 *
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 20-JUL-2009 15:29:58 MS Isotope :                  *
* MSD DPM             : 0.000 MSD Isotope :                  *
* LCS DPM             : 0.000 LCS Isotope :                  *
* LCSD DPM            : 0.000 LCSD Isotope :                  *
*****
```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| K-40 | 2.594E+01 | 2.952E+00 | 3.814E-01 | 1.506E+00 |
| CO-57 | 2.410E-01 | 1.435E-01 | 7.689E-02 | 7.319E-02 |
| AS-73 | 7.686E+00 | 4.994E+00 | 2.323E+00 | 2.548E+00 |
| NB-95 | 2.901E+00 | 3.413E-01 | 7.371E-02 | 1.741E-01 |
| TE-125M | 4.147E+02 | 7.987E+01 | 2.989E+01 | 4.075E+01 |
| BA-137M | 2.390E+00 | 2.757E-01 | 6.400E-02 | 1.407E-01 |
| CS-137 | 2.527E+00 | 2.918E-01 | 6.766E-02 | 1.489E-01 |
| TL-208 | 5.381E-01 | 1.567E-01 | 6.136E-02 | 7.995E-02 |
| BI-211 | 4.391E+00 | 8.531E-01 | 3.667E-01 | 4.352E-01 |
| PB-212 | 1.430E+00 | 2.466E-01 | 1.186E-01 | 1.258E-01 |
| PO-212 | 1.430E+00 | 2.466E-01 | 1.186E-01 | 1.258E-01 |
| BI-214 | 1.337E+00 | 3.225E-01 | 1.169E-01 | 1.645E-01 |
| PB-214 | 1.527E+00 | 3.069E-01 | 1.264E-01 | 1.566E-01 |
| PO-214 | 1.527E+00 | 3.069E-01 | 1.264E-01 | 1.566E-01 |
| PO-216 | 1.430E+00 | 2.466E-01 | 1.186E-01 | 1.258E-01 |
| PO-218 | 1.527E+00 | 3.069E-01 | 1.264E-01 | 1.566E-01 |
| RA-224 | 3.298E+00 | 1.801E+00 | 1.330E+00 | 9.189E-01 |
| RA-226 | 1.337E+00 | 3.225E-01 | 1.169E-01 | 1.645E-01 |
| AC-228 | 1.764E+00 | 5.138E-01 | 1.712E-01 | 2.621E-01 |
| RA-228 | 1.764E+00 | 5.138E-01 | 1.712E-01 | 2.621E-01 |
| TH-228 | 1.454E+00 | 2.508E-01 | 1.206E-01 | 1.280E-01 |
| TH-230 | 1.337E+00 | 3.225E-01 | 1.169E-01 | 1.645E-01 |
| U-231 | 8.391E+01 | 1.862E+01 | 4.482E+00 | 9.500E+00 |
| TH-232 | 1.764E+00 | 5.138E-01 | 1.712E-01 | 2.621E-01 |
| PA-234M | 7.472E+02 | 8.251E+01 | 6.588E+00 | 4.210E+01 |
| TH-234 | 5.587E+02 | 9.590E+01 | 3.867E+00 | 4.893E+01 |
| U-234 | 1.337E+00 | 3.225E-01 | 1.169E-01 | 1.645E-01 |
| U-235 | 3.172E+01 | 5.588E+00 | 5.810E-01 | 2.851E+00 |
| U-238 | 5.587E+02 | 9.590E+01 | 3.867E+00 | 4.893E+01 |
| ANH-511 | 1.862E-01 | 1.226E-01 | 5.427E-02 | 6.255E-02 |

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

Key-Line

| Nuclide | Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|---------------|--------------------|----------------------|
| BE-7 | 4.215E-01 | 7.661E-01 | 6.351E-01 | 3.908E-01 NOT IDENT. |
| NA-22 | -1.527E-03 | 5.707E-02 | 4.752E-02 | 2.912E-02 NOT IDENT. |
| NA-24 | -5.669E+05 | 7.852E+06 | 0.000E+00 | 4.006E+06 SHORT HLIF |
| AL-26 | 2.957E-03 | 4.554E-02 | 3.953E-02 | 2.323E-02 NOT IDENT. |
| TI-44 | 3.234E-01 | 1.881E-01 | 1.235E-01 | 9.599E-02 FAIL ABUN |
| SC-46 | -3.143E-02 | 7.421E-02 | 5.897E-02 | 3.786E-02 FAIL ABUN |
| V-48 | 1.611E-01 | 1.284E-01 | 1.145E-01 | 6.552E-02 NOT IDENT. |
| CR-51 | 8.472E-01 | 8.541E-01 | 7.317E-01 | 4.358E-01 NOT IDENT. |
| MN-52 | 7.440E-01 | 4.855E-01 | 4.647E-01 | 2.477E-01 FAIL ABUN |
| MN-54 | 2.157E-02 | 7.235E-02 | 6.071E-02 | 3.692E-02 NOT IDENT. |
| CO-56 | -7.824E-02 | 7.724E-02 | 5.896E-02 | 3.941E-02 FAIL ABUN |
| CO-58 | -2.912E-02 | 8.441E-02 | 6.829E-02 | 4.307E-02 NOT IDENT. |
| FE-59 | -1.090E-01 | 1.225E-01 | 9.419E-02 | 6.251E-02 FAIL ABUN |
| CO-60 | 1.104E-02 | 5.344E-02 | 4.572E-02 | 2.727E-02 NOT IDENT. |
| ZN-65 | -3.899E-02 | 1.394E-01 | 9.764E-02 | 7.110E-02 NOT IDENT. |
| GE-68 | -5.495E-01 | 1.742E+00 | 1.432E+00 | 8.886E-01 NOT IDENT. |
| AS-74 | 6.050E-02 | 1.982E-01 | 1.698E-01 | 1.011E-01 NOT IDENT. |
| SE-75 | -3.485E-02 | 9.936E-02 | 7.974E-02 | 5.069E-02 FAIL ABUN |
| BR-77 | 5.965E+00 | 4.005E+01 | 3.433E+01 | 2.043E+01 FAIL ABUN |
| SR-82 | -3.168E-01 | 9.048E-01 | 7.359E-01 | 4.616E-01 NOT IDENT. |
| RB-83 | 3.130E-02 | 1.522E-01 | 1.307E-01 | 7.766E-02 NOT IDENT. |
| RB-84 | 3.793E-01 | 1.650E-01 | 1.500E-01 | 8.420E-02 NOT IDENT. |
| KR-85 | 1.502E+01 | 1.680E+01 | 1.307E+01 | 8.569E+00 NOT IDENT. |
| SR-85 | 7.863E-02 | 8.791E-02 | 6.840E-02 | 4.485E-02 NOT IDENT. |
| RB-86 | 2.091E-01 | 1.148E+00 | 9.870E-01 | 5.858E-01 NOT IDENT. |
| Y-88 | -7.533E-02 | 6.451E-02 | 4.499E-02 | 3.291E-02 NOT IDENT. |
| ZR-88 | -3.948E-02 | 7.074E-02 | 5.672E-02 | 3.609E-02 NOT IDENT. |
| Y-91 | -2.374E+00 | 2.379E+01 | 1.976E+01 | 1.214E+01 NOT IDENT. |
| NB-94 | -2.722E-02 | 7.461E-02 | 6.118E-02 | 3.807E-02 NOT IDENT. |
| NB-95M | 1.408E-01 | 3.178E-01 | 2.401E-01 | 1.621E-01 NOT IDENT. |
| ZR-95 | -1.212E-02 | 1.594E-01 | 1.318E-01 | 8.130E-02 NOT IDENT. |
| NB-97 | -3.904E+05 | 1.711E+06 | 0.000E+00 | 8.727E+05 SHORT HLIF |
| ZR-97 | 1.164E+07 | 3.002E+07 | 0.000E+00 | 1.531E+07 SHORT HLIF |
| MO-99 | 1.234E+01 | 5.252E+01 | 3.843E+01 | 2.680E+01 NOT IDENT. |
| TC-99M | 3.922E+19 | 3.658E+19 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| RH-101 | -2.378E-02 | 1.264E-01 | 6.868E-02 | 6.448E-02 NOT IDENT. |
| RH-102 | -1.428E-02 | 6.823E-02 | 5.478E-02 | 3.481E-02 FAIL ABUN |
| RU-103 | 1.596E-02 | 9.551E-02 | 7.777E-02 | 4.873E-02 FAIL ABUN |
| RH-106 | 3.087E-01 | 6.516E-01 | 5.603E-01 | 3.325E-01 FAIL ABUN |
| RU-106 | 3.087E-01 | 6.509E-01 | 5.603E-01 | 3.321E-01 FAIL ABUN |
| AG-108M | 2.460E-02 | 7.074E-02 | 5.857E-02 | 3.609E-02 NOT IDENT. |
| CD-109 | -3.314E+01 | 6.800E+00 | 3.216E+00 | 3.469E+00 NOT IDENT. |
| AG-110M | -3.332E-02 | 8.896E-02 | 6.307E-02 | 4.539E-02 NOT IDENT. |
| IN-111 | -2.577E+00 | 4.491E+00 | 3.261E+00 | 2.291E+00 NOT IDENT. |
| IN-113M | -8.817E-02 | 1.043E-01 | 8.262E-02 | 5.323E-02 NOT IDENT. |
| SN-113 | -8.817E-02 | 1.043E-01 | 8.262E-02 | 5.323E-02 NOT IDENT. |
| IN-114M | -4.287E-01 | 7.426E-01 | 3.961E-01 | 3.789E-01 NOT IDENT. |
| CD-115 | 2.660E+01 | 4.512E+01 | 3.925E+01 | 2.302E+01 NOT IDENT. |
| SN-117M | 7.428E-02 | 2.307E-01 | 1.657E-01 | 1.177E-01 NOT IDENT. |
| SB-122 | 6.272E+00 | 8.113E+00 | 6.264E+00 | 4.140E+00 NOT IDENT. |
| I-123 | 2.018E+08 | 2.629E+08 | 0.000E+00 | 1.341E+08 SHORT HLIF |
| TE-123M | 8.403E-02 | 1.094E-01 | 7.935E-02 | 5.584E-02 NOT IDENT. |
| I-124 | 1.990E+00 | 1.988E+00 | 1.612E+00 | 1.014E+00 FAIL ABUN |
| SB-124 | -5.460E-02 | 1.080E-01 | 7.933E-02 | 5.511E-02 FAIL ABUN |
| SB-125 | 1.449E-01 | 2.040E-01 | 1.713E-01 | 1.041E-01 NOT IDENT. |
| I-126 | -1.992E-01 | 4.994E-01 | 3.529E-01 | 2.548E-01 NOT IDENT. |
| SB-126 | -3.069E-02 | 3.602E-01 | 2.816E-01 | 1.838E-01 FAIL ABUN |
| SN-126 | -3.167E+00 | 6.519E-01 | 3.086E-01 | 3.326E-01 FAIL ABUN |
| SB-127 | -9.170E-01 | 4.109E+00 | 3.396E+00 | 2.096E+00 NOT IDENT. |
| XE-127 | 6.044E-01 | 1.716E-01 | 1.258E-01 | 8.756E-02 FAIL ABUN |
| I-131 | -3.615E-02 | 3.078E-01 | 2.527E-01 | 1.570E-01 NOT IDENT. |
| TE-132 | 1.684E+00 | 2.480E+00 | 2.123E+00 | 1.265E+00 FAIL ABUN |
| BA-133 | -3.238E-02 | 1.097E-01 | 7.843E-02 | 5.596E-02 FAIL ABUN |
| I-133 | 1.063E+04 | 6.655E+04 | 0.000E+00 | 3.396E+04 SHORT HLIF |
| CS-134 | 1.480E-01 | 1.062E-01 | 9.313E-02 | 5.416E-02 FAIL ABUN |
| CS-135 | -5.540E-03 | 3.454E-01 | 2.899E-01 | 1.762E-01 NOT IDENT. |
| I-135 | -2.488E+17 | 1.088E+18 | 0.000E+00 | 0.000E+00 SHORT HLIF |
| CS-136 | -9.103E-02 | 1.764E-01 | 1.413E-01 | 9.000E-02 FAIL ABUN |
| CE-139 | 1.882E-01 | 1.159E-01 | 8.501E-02 | 5.912E-02 NOT IDENT. |
| BA-140 | 1.811E-01 | 6.445E-01 | 5.519E-01 | 3.288E-01 FAIL ABUN |
| LA-140 | 1.415E-01 | 1.570E-01 | 1.298E-01 | 8.011E-02 NOT IDENT. |
| CE-141 | 5.940E+00 | 5.795E-01 | 2.924E-01 | 2.957E-01 NOT IDENT. |
| CE-143 | 2.216E+03 | 1.026E+03 | 0.000E+00 | 5.233E+02 SHORT HLIF |
| CE-144 | 1.660E-01 | 8.194E-01 | 5.926E-01 | 4.181E-01 NOT IDENT. |
| PM-144 | -3.869E-02 | 7.647E-02 | 6.227E-02 | 3.902E-02 NOT IDENT. |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| PR-144 | -2.624E+00 | 5.187E+00 | 4.224E+00 | 2.647E+00 | NOT IDENT. |
| PM-146 | -1.055E-02 | 1.036E-01 | 8.390E-02 | 5.288E-02 | NOT IDENT. |
| ND-147 | 7.989E-01 | 1.438E+00 | 1.247E+00 | 7.339E-01 | NOT IDENT. |
| PM-149 | 7.137E+00 | 3.761E+02 | 3.149E+02 | 1.919E+02 | NOT IDENT. |
| EU-152 | -3.714E-02 | 2.149E-01 | 1.706E-01 | 1.097E-01 | FAIL ABUN |
| GD-153 | 7.673E+00 | 8.183E-01 | 3.680E-01 | 4.175E-01 | FAIL ABUN |
| EU-154 | -1.034E-02 | 1.604E-01 | 1.330E-01 | 8.184E-02 | NOT IDENT. |
| EU-155 | 2.459E+00 | 5.472E-01 | 3.730E-01 | 2.792E-01 | FAIL ABUN |
| TB-160 | 5.721E-02 | 3.200E-01 | 2.654E-01 | 1.632E-01 | FAIL ABUN |
| HO-166M | -5.439E-02 | 1.220E-01 | 9.920E-02 | 6.224E-02 | FAIL ABUN |
| TM-171 | -3.365E+02 | 1.132E+02 | 7.919E+01 | 5.774E+01 | FAIL ABUN |
| LU-176 | -4.733E-03 | 5.556E-02 | 4.617E-02 | 2.834E-02 | FAIL ABUN |
| LU-177 | 7.206E+00 | 3.485E+00 | 2.745E+00 | 1.778E+00 | FAIL ABUN |
| LU-177M | -4.227E-01 | 3.926E-01 | 3.052E-01 | 2.003E-01 | FAIL ABUN |
| HF-181 | -9.823E-02 | 1.022E-01 | 7.874E-02 | 5.213E-02 | FAIL ABUN |
| W-181 | 2.691E+01 | 2.521E+00 | 1.398E+00 | 1.286E+00 | NOT IDENT. |
| TA-182 | -1.378E-01 | 2.623E-01 | 2.093E-01 | 1.338E-01 | FAIL ABUN |
| RE-183 | 8.057E+00 | 8.787E-01 | 4.635E-01 | 4.483E-01 | FAIL ABUN |
| RE-184 | 3.841E-02 | 5.780E-01 | 4.528E-01 | 2.949E-01 | NOT IDENT. |
| OS-185 | -2.149E-02 | 8.772E-02 | 7.271E-02 | 4.475E-02 | NOT IDENT. |
| RE-188 | -3.385E-01 | 5.900E-01 | 4.687E-01 | 3.010E-01 | NOT IDENT. |
| W-188 | -6.786E+00 | 1.884E+01 | 1.361E+01 | 9.613E+00 | FAIL ABUN |
| IR-192 | -1.930E-02 | 7.825E-02 | 6.453E-02 | 3.993E-02 | FAIL ABUN |
| AU-195 | 2.238E+01 | 2.387E+00 | 1.073E+00 | 1.218E+00 | FAIL ABUN |
| TL-200 | -6.167E+02 | 3.639E+03 | 0.000E+00 | 1.857E+03 | SHORT HLIF |
| TL-201 | 1.476E+01 | 4.097E+01 | 2.938E+01 | 2.090E+01 | NOT IDENT. |
| TL-202 | -4.238E-02 | 1.690E-01 | 1.361E-01 | 8.621E-02 | NOT IDENT. |
| HG-203 | -1.147E-02 | 9.611E-02 | 8.025E-02 | 4.903E-02 | NOT IDENT. |
| BI-207 | 8.778E-03 | 6.680E-02 | 5.726E-02 | 3.408E-02 | FAIL ABUN |
| TL-207 | -9.336E-01 | 1.432E+00 | 1.155E+00 | 7.308E-01 | FAIL ABUN |
| PO-209 | 6.341E+00 | 1.405E+01 | 1.181E+01 | 7.169E+00 | NOT IDENT. |
| BI-210 | -5.431E+00 | 8.457E+00 | 7.077E+00 | 4.315E+00 | NOT IDENT. |
| PB-210 | -5.431E+00 | 8.457E+00 | 7.077E+00 | 4.315E+00 | NOT IDENT. |
| PO-210 | -5.431E+00 | 8.455E+00 | 7.077E+00 | 4.314E+00 | NOT IDENT. |
| PB-211 | -2.253E-01 | 1.979E+00 | 1.610E+00 | 1.010E+00 | NOT IDENT. |
| BI-212 | 6.956E-01 | 8.160E-01 | 5.427E-01 | 4.163E-01 | FAIL ABUN |
| PO-215 | -9.336E-01 | 1.432E+00 | 1.155E+00 | 7.308E-01 | FAIL ABUN |
| RN-219 | -5.246E-01 | 8.624E-01 | 6.853E-01 | 4.400E-01 | NOT IDENT. |
| RN-220 | -1.802E+01 | 5.587E+01 | 4.673E+01 | 2.850E+01 | NOT IDENT. |
| RA-223 | -9.336E-01 | 1.432E+00 | 1.155E+00 | 7.308E-01 | FAIL ABUN |
| AC-227 | 1.715E+00 | 1.077E+00 | 8.209E-01 | 5.495E-01 | FAIL ABUN |
| TH-227 | 1.715E+00 | 1.089E+00 | 8.209E-01 | 5.556E-01 | FAIL ABUN |
| TH-229 | 2.450E+00 | 1.555E+00 | 1.212E+00 | 7.932E-01 | FAIL ABUN |
| PA-231 | 1.475E+00 | 3.424E+00 | 2.899E+00 | 1.747E+00 | FAIL ABUN |
| TH-231 | -9.336E-01 | 1.432E+00 | 1.155E+00 | 7.308E-01 | FAIL ABUN |
| PA-233 | -4.522E-02 | 1.434E-01 | 1.181E-01 | 7.317E-02 | FAIL ABUN |
| PA-234 | 1.594E+00 | 9.223E-01 | 5.775E-01 | 4.706E-01 | FAIL ABUN |
| NP-236 | -4.868E-02 | 3.070E-01 | 2.179E-01 | 1.566E-01 | FAIL ABUN |
| NP-237 | -6.144E+00 | 1.878E+00 | 9.048E-01 | 9.582E-01 | FAIL ABUN |
| NP-239 | 2.322E-01 | 1.032E+00 | 5.926E-01 | 5.265E-01 | FAIL ABUN |
| AM-241 | 1.763E+00 | 6.657E-01 | 5.029E-01 | 3.397E-01 | NOT IDENT. |
| AM-243 | 3.310E-01 | 2.540E-01 | 1.904E-01 | 1.296E-01 | NOT IDENT. |
| CM-243 | 1.057E+00 | 4.688E-01 | 3.207E-01 | 2.392E-01 | FAIL ABUN |
| AM-246 | -1.646E-01 | 2.099E-01 | 1.652E-01 | 1.071E-01 | NOT IDENT. |
| CM-247 | -2.211E-02 | 7.635E-02 | 6.176E-02 | 3.895E-02 | NOT IDENT. |
| CF-249 | 4.697E-02 | 9.034E-02 | 7.564E-02 | 4.609E-02 | NOT IDENT. |
| CF-251 | -2.561E-01 | 4.016E-01 | 3.407E-01 | 2.049E-01 | 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 | 4308.1660 |
| 46.50 | 4308.1660 |
| 46.50 | 4308.1660 |
| 48.70 | 4520.4492 |
| 49.72 | 4508.4565 |
| 51.35 | 4826.6230 |
| 52.39 | 5475.3882 |
| 52.97 | 5483.4556 |
| 53.15 | 5485.9458 |
| 53.44 | 5489.9502 |
| 54.07 | 6008.0483 |
| 56.28 | 6596.9517 |
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| 57.98 | 6301.7021 |
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| 59.40 | 6452.3037 |
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| 66.91 | 5687.1602 |
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| 86.72 | 8621.5615 |
| 86.79 | 8622.6260 |
| 86.94 | 8975.1641 |
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| 93.35 | 8246.5527 |
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| 94.67 | 8265.4785 |
| 94.67 | 8265.5596 |
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| 94.90 | 8268.8613 |
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| 269.46 | 523.0291 |
| 269.46 | 523.0291 |
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| 277.60 | 515.9436 |
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| 286.10 | 466.0047 |
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| 295.21 | 489.1834 |

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| 323.87 | 409.5991 |
| 323.87 | 409.5991 |
| 323.87 | 409.5991 |
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| 338.28 | 375.4269 |
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| 351.92 | 362.6811 |
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| 364.48 | 348.2737 |
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| 387.95 | 325.4263 |
| 388.63 | 319.2876 |
| 391.69 | 370.2579 |
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| 404.84 | 294.0133 |
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| 445.03 | 279.5105 |
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| 445.03 | 279.5105 |
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| 511.85 | 270.8253 |
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| 609.31 | 202.6490 |
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| 661.65 | 199.6519 |
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| 696.49 | 219.2148 |
| 697.00 | 207.5126 |
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| 867.82 | 92.8698 |
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| 874.81 | 105.6456 |
| 875.33 | 0.0000 |
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| 911.07 | 78.3522 |
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| 969.11 | 66.8876 |
| 969.11 | 66.8876 |
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| 1050.47 | 56.2170 |
| 1062.04 | 44.3867 |
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| 1078.86 | 71.5515 |
| 1085.78 | 50.2800 |
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| 1120.29 | 70.9230 |
| 1120.29 | 70.9230 |
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| 1291.56 | 37.3815 |
| 1298.22 | 0.0000 |
| 1312.09 | 37.5717 |
| 1325.50 | 41.6633 |
| 1325.50 | 41.6633 |
| 1332.49 | 30.8045 |
| 1333.61 | 35.7817 |
| 1360.21 | 28.0091 |
| 1362.66 | 0.0000 |
| 1365.15 | 26.0391 |
| 1368.21 | 24.0537 |
| 1368.53 | 0.0000 |
| 1376.25 | 29.1204 |
| 1384.27 | 35.2122 |
| 1394.10 | 23.1928 |
| 1395.20 | 36.3105 |
| 1407.95 | 29.3375 |
| 1434.06 | 23.4080 |
| 1436.60 | 23.4211 |
| 1457.56 | 0.0000 |
| 1460.81 | 25.5981 |
| 1489.15 | 26.7913 |
| 1509.49 | 17.7441 |
| 1596.49 | 18.0769 |
| 1620.62 | 22.2561 |
| 1678.03 | 0.0000 |
| 1691.02 | 18.2756 |
| 1691.02 | 18.2756 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 12.1526 |
| 1764.49 | 12.1526 |
| 1764.49 | 12.1526 |
| 1764.49 | 12.1526 |
| 1770.23 | 9.8262 |
| 1771.40 | 9.8287 |
| 1791.20 | 0.0000 |
| 1808.65 | 13.1978 |

1836.01

34.1116

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202037547

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 1.6768E+03 | ug/g |
| Total Uranium Counting Unc. | 2.8532E+02 | ug/g |
| Total Uranium Tpu | 1.4557E-04 | ug/g |
| Total Uranium Mda | 1.1507E+01 | ug/g |

```

*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 950786                          SAMPLE ID   : G1202037547
*  ANALYST       : MXR1                             DETECTOR    : GAM07
*  SAMPLE DATE   : 1-FEB-2010 12:00:00.00          COUNT TIME   : 0 02:00:00.00
*  ANALYSIS DATE : 18-FEB-2010 13:52:40.05          SAMPLE ALQT  : 95.150 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 1.072E+02
GROSS GAMMA ERROR (pCi/GRAM )   : 5.866E+00
GROSS GAMMA MDA (pCi/GRAM )     : 2.588E+01
GROSS GAMMA DLC (pCi/GRAM )     : 1.285E+01

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VAX/VMS Nuclide Identification Report Generated 18-FEB-2010 15:48:34.96

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*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037548.CNF;1
Sample date        : 11-FEB-2010 00:00:00 Acquisition date : 18-FEB-2010 14:48:04
Sample ID          : G1202037548 Sample quantity      : 1.55440E+02 GRAM
Detector name      : GAM17 Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00 Elapsed real time: 0 01:00:06.12 0.2%
Energy tolerance   : 1.50000 keV Analyst Initials    : MXR1
Abundance limit    : 75.00000 Sensitivity           : 5.00000
Batch ID           : 950786 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 | 49.67 | 283 | 1391 | 1.83 | 98.96 | 95 | 12 | 7.87E-02 | 26.9 | |
| 2 | 3 | 57.47 | 140 | 748 | 1.14 | 114.57 | 112 | 12 | 3.88E-02 | 28.0 | 3.85E+00 |
| 3 | 3 | 59.55* | 6516 | 483 | 0.86 | 118.74 | 112 | 12 | 1.81E+00 | 1.3 | |
| 4 | 4 | 74.94* | 175 | 377 | 0.98 | 149.52 | 146 | 12 | 4.86E-02 | 18.6 | 3.89E+00 |
| 5 | 4 | 77.17* | 294 | 279 | 0.88 | 153.98 | 146 | 12 | 8.17E-02 | 10.5 | |
| 6 | 0 | 88.03* | 1612 | 497 | 1.01 | 175.71 | 171 | 11 | 4.48E-01 | 3.7 | |
| 7 | 0 | 92.81* | 103 | 291 | 1.04 | 185.27 | 182 | 9 | 2.85E-02 | 32.8 | |
| 8 | 0 | 122.19 | 247 | 312 | 0.96 | 244.05 | 239 | 11 | 6.86E-02 | 15.3 | |
| 9 | 0 | 185.69* | 95 | 237 | 1.02 | 371.11 | 366 | 11 | 2.64E-02 | 33.5 | |
| 10 | 3 | 238.58* | 421 | 143 | 1.03 | 476.93 | 473 | 18 | 1.17E-01 | 6.6 | 3.28E+00 |
| 11 | 3 | 241.49 | 95 | 172 | 1.51 | 482.75 | 473 | 18 | 2.64E-02 | 30.3 | |
| 12 | 0 | 294.96* | 119 | 176 | 1.20 | 589.75 | 583 | 11 | 3.31E-02 | 23.6 | |
| 13 | 0 | 300.91 | 48 | 227 | 2.54 | 601.65 | 595 | 13 | 1.33E-02 | 66.6 | |
| 14 | 0 | 337.95 | 84 | 126 | 1.26 | 675.76 | 671 | 9 | 2.33E-02 | 26.4 | |
| 15 | 0 | 351.68* | 162 | 195 | 1.15 | 703.23 | 697 | 12 | 4.51E-02 | 19.0 | |
| 16 | 0 | 510.74* | 67 | 120 | 1.84 | 1021.51 | 1015 | 13 | 1.85E-02 | 38.5 | |
| 17 | 0 | 582.95* | 154 | 68 | 1.16 | 1166.00 | 1160 | 13 | 4.28E-02 | 13.8 | |
| 18 | 0 | 608.94* | 157 | 88 | 1.54 | 1218.01 | 1212 | 15 | 4.36E-02 | 15.3 | |
| 19 | 0 | 661.22 | 1660 | 80 | 1.40 | 1322.62 | 1315 | 14 | 4.61E-01 | 2.7 | |
| 20 | 0 | 910.93* | 75 | 164 | 1.66 | 1822.37 | 1815 | 17 | 2.10E-02 | 40.8 | |
| 21 | 0 | 1172.43* | 1203 | 45 | 1.79 | 2345.74 | 2338 | 15 | 3.34E-01 | 3.1 | |
| 22 | 0 | 1331.54 | 1065 | 9 | 1.79 | 2664.21 | 2655 | 18 | 2.96E-01 | 3.1 | |
| 23 | 0 | 1763.31* | 20 | 7 | 1.67 | 3528.56 | 3524 | 9 | 5.57E-03 | 33.3 | |

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

VMS Nuclide Identification Report V3.1 Generated 18-FEB-2010 15:48:37

```

Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037548.CNF;1
Analyses by       : PEAK V16.9,PEAKEFF V2.2,ENBACK V1.6,NID V3.4,MINACT V2.8
Sample title      : MXR1
Sample date       : 11-FEB-2010 00:00:00 Acquisition date : 18-FEB-2010 14:48:04
Sample ID        : G1202037548 Sample quantity : 155.44 GRAM
Sample type      : SOLID Sample geometry :
Detector name    : GAMMA17 Detector geometry: CAN
Elapsed live time: 0 01:00:00.00 Elapsed real time: 0 01:00:06.12 0.2%
Peak Width (FWHM): 3.00 Confidence level : 5.00 %
Energy tolerance : 1.50 keV Half life ratio : 8.00
Errors propagated: Yes Systematic Error : 0.00 %
Efficiency type  : Empirical Efficiencies at : Peak Energy
Abundance limit  : 75.00 WTM error limit : 3.00
    
```

Full Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| CO-57 | + | 122.06 | * | 2.359E-01 | 7.709E-02 | 5.918E-02 | 6.933E-03 | 3.986 |
| | | 136.48 | | 2.347E-01 | 3.111E-01 | 5.295E-01 | 5.960E-02 | 0.443 |
| CO-60 | + | 1173.22 | | 6.211E+00 | 6.396E-01 | 1.395E-01 | 1.139E-02 | 44.536 |
| | + | 1332.49 | * | 6.140E+00 | 6.495E-01 | 9.995E-02 | 8.519E-03 | 61.425 |
| CD-109 | + | 88.03 | * | 3.176E+01 | 3.885E+00 | 1.615E+00 | 1.576E-01 | 19.671 |
| SN-126 | | 64.28 | | -4.453E-02 | 3.570E-01 | 5.873E-01 | 9.374E-02 | -0.076 |
| | + | 86.94 | | 1.313E+01 | 5.547E+00 | 6.651E-01 | 2.767E-01 | 19.736 |
| | + | 87.57 | * | 3.157E+00 | 3.862E-01 | 1.603E-01 | 1.564E-02 | 19.698 |
| BA-137M | + | 661.65 | * | 5.558E+00 | 5.568E-01 | 1.373E-01 | 1.157E-02 | 40.464 |
| CS-137 | + | 661.65 | * | 5.875E+00 | 5.894E-01 | 1.452E-01 | 1.226E-02 | 40.464 |
| W-181 | + | 56.28 | | 5.635E-01 | 3.207E-01 | 5.246E-01 | 5.259E-02 | 1.074 |
| | + | 57.53 | | 3.232E-01 | 1.840E-01 | 2.535E-01 | 2.546E-02 | 1.275 |
| | | 65.20 | * | -3.026E-01 | 2.485E-01 | 3.987E-01 | 3.949E-02 | -0.759 |
| TL-208 | | 277.35 | | 9.015E-01 | 6.828E-01 | 1.219E+00 | 1.552E-01 | 0.740 |
| | + | 510.84 | | 7.249E-01 | 5.657E-01 | 5.132E-01 | 6.269E-02 | 1.412 |
| | + | 583.14 | * | 4.877E-01 | 1.426E-01 | 1.275E-01 | 1.206E-02 | 3.826 |
| | | 860.37 | | 4.981E-01 | 8.057E-01 | 1.395E+00 | 1.312E-01 | 0.357 |
| BI-211 | | 72.87 | | 2.454E-01 | 3.139E+00 | 4.791E+00 | 4.685E-01 | 0.051 |
| | + | 351.07 | * | 2.082E+00 | 8.158E-01 | 6.604E-01 | 6.163E-02 | 3.153 |
| PB-212 | + | 74.81 | | 1.162E+00 | 4.610E-01 | 5.514E-01 | 7.451E-02 | 2.108 |
| | + | 77.11 | | 1.163E+00 | 2.689E-01 | 3.292E-01 | 3.210E-02 | 3.533 |
| | + | 87.30 | | 1.460E+01 | 2.307E+00 | 7.407E-01 | 1.035E-01 | 19.714 |
| | + | 238.63 | * | 1.133E+00 | 1.879E-01 | 1.528E-01 | 1.541E-02 | 7.417 |
| | + | 300.09 | | 2.042E+00 | 2.730E+00 | 2.335E+00 | 2.543E-01 | 0.874 |
| PO-212 | + | 74.81 | | 1.162E+00 | 4.610E-01 | 5.514E-01 | 7.451E-02 | 2.108 |
| | + | 77.11 | | 1.163E+00 | 2.689E-01 | 3.292E-01 | 3.210E-02 | 3.533 |
| | + | 87.30 | | 1.460E+01 | 2.307E+00 | 7.407E-01 | 1.035E-01 | 19.714 |
| | | 115.19 | | 1.275E+00 | 4.902E+00 | 8.232E+00 | 9.268E-01 | 0.155 |
| | + | 238.63 | * | 1.133E+00 | 1.879E-01 | 1.528E-01 | 1.541E-02 | 7.417 |
| | + | 300.09 | | 2.042E+00 | 2.730E+00 | 2.335E+00 | 2.543E-01 | 0.874 |
| BI-214 | + | 609.31 | * | 9.422E-01 | 3.046E-01 | 2.197E-01 | 2.234E-02 | 4.289 |
| | | 1120.29 | | 1.409E-01 | 7.373E-01 | 1.219E+00 | 1.303E-01 | 0.116 |
| | + | 1764.49 | | 9.119E-01 | 6.129E-01 | 4.849E-01 | 4.101E-02 | 1.880 |
| PB-214 | + | 74.81 | | 2.003E+00 | 7.861E-01 | 9.500E-01 | 1.164E-01 | 2.108 |

---- Identified Nuclides ----

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-214 | + | 77.11 | | 1.994E+00 | 4.853E-01 | 5.644E-01 | 6.983E-02 | 3.533 |
| | + | 87.30 | | 2.502E+01 | 3.617E+00 | 1.269E+00 | 1.578E-01 | 19.715 |
| | + | 241.98 | | 1.539E+00 | 9.464E-01 | 9.213E-01 | 9.808E-02 | 1.670 |
| | + | 295.21 | | 8.849E-01 | 4.284E-01 | 4.175E-01 | 4.637E-02 | 2.120 |
| | + | 351.92 | * | 7.242E-01 | 2.863E-01 | 2.303E-01 | 2.461E-02 | 3.145 |
| | + | 74.81 | | 2.003E+00 | 7.861E-01 | 9.500E-01 | 1.164E-01 | 2.108 |
| | + | 77.11 | | 1.994E+00 | 4.853E-01 | 5.644E-01 | 6.983E-02 | 3.533 |
| | + | 87.30 | | 2.502E+01 | 3.617E+00 | 1.269E+00 | 1.578E-01 | 19.715 |
| | + | 241.98 | | 1.539E+00 | 9.464E-01 | 9.213E-01 | 9.808E-02 | 1.670 |
| | + | 295.21 | | 8.849E-01 | 4.284E-01 | 4.175E-01 | 4.637E-02 | 2.120 |
| PO-216 | + | 351.92 | * | 7.242E-01 | 2.863E-01 | 2.303E-01 | 2.461E-02 | 3.145 |
| | + | 74.81 | | 1.162E+00 | 4.610E-01 | 5.514E-01 | 7.451E-02 | 2.108 |
| | + | 77.11 | | 1.163E+00 | 2.689E-01 | 3.292E-01 | 3.210E-02 | 3.533 |
| | + | 87.30 | | 1.460E+01 | 2.307E+00 | 7.407E-01 | 1.035E-01 | 19.714 |
| | + | 238.63 | * | 1.133E+00 | 1.879E-01 | 1.528E-01 | 1.541E-02 | 7.417 |
| PO-218 | + | 300.09 | | 2.042E+00 | 2.730E+00 | 2.335E+00 | 2.543E-01 | 0.874 |
| | + | 74.81 | | 2.003E+00 | 7.861E-01 | 9.500E-01 | 1.164E-01 | 2.108 |
| | + | 77.11 | | 1.994E+00 | 4.853E-01 | 5.644E-01 | 6.983E-02 | 3.533 |
| | + | 87.30 | | 2.502E+01 | 3.617E+00 | 1.269E+00 | 1.578E-01 | 19.715 |
| | + | 241.98 | | 1.539E+00 | 9.464E-01 | 9.213E-01 | 9.808E-02 | 1.670 |
| RA-224 | + | 295.21 | | 8.849E-01 | 4.284E-01 | 4.175E-01 | 4.637E-02 | 2.120 |
| | + | 351.92 | * | 7.242E-01 | 2.863E-01 | 2.303E-01 | 2.461E-02 | 3.145 |
| | + | 240.98 | * | 2.918E+00 | 1.787E+00 | 1.741E+00 | 1.574E-01 | 1.676 |
| | + | 609.31 | * | 9.422E-01 | 3.046E-01 | 2.197E-01 | 2.234E-02 | 4.289 |
| | + | 1120.29 | | 1.409E-01 | 7.373E-01 | 1.219E+00 | 1.303E-01 | 0.116 |
| TH-228 | + | 1764.49 | | 9.119E-01 | 6.129E-01 | 4.849E-01 | 4.101E-02 | 1.880 |
| | + | 74.81 | | 1.171E+00 | 4.516E-01 | 5.556E-01 | 5.459E-02 | 2.108 |
| | + | 77.11 | | 1.172E+00 | 2.709E-01 | 3.318E-01 | 3.234E-02 | 3.533 |
| | + | 87.30 | | 1.471E+01 | 1.800E+00 | 7.464E-01 | 7.282E-02 | 19.715 |
| | + | 238.63 | * | 1.142E+00 | 1.893E-01 | 1.540E-01 | 1.552E-02 | 7.417 |
| TH-230 | + | 300.09 | | 2.057E+00 | 3.002E+00 | 2.353E+00 | 1.397E+00 | 0.874 |
| | + | 609.31 | * | 9.422E-01 | 3.046E-01 | 2.196E-01 | 2.234E-02 | 4.289 |
| | + | 1120.29 | | 1.409E-01 | 7.373E-01 | 1.219E+00 | 1.303E-01 | 0.116 |
| | + | 1764.49 | | 9.119E-01 | 6.129E-01 | 4.849E-01 | 4.101E-02 | 1.880 |
| | + | 609.31 | * | 9.422E-01 | 3.046E-01 | 2.196E-01 | 2.234E-02 | 4.289 |
| U-234 | + | 1120.29 | | 1.409E-01 | 7.373E-01 | 1.219E+00 | 1.303E-01 | 0.116 |
| | + | 1764.49 | | 9.119E-01 | 6.129E-01 | 4.849E-01 | 4.101E-02 | 1.880 |
| | + | 609.31 | * | 9.422E-01 | 3.046E-01 | 2.196E-01 | 2.234E-02 | 4.289 |
| AM-241 | + | 59.54 | * | 1.303E+01 | 1.427E+00 | 2.197E-01 | 2.333E-02 | 59.300 |
| AM-243 | + | 74.67 | * | 1.884E-01 | 7.264E-02 | 8.937E-02 | 8.724E-03 | 2.109 |
| | + | 86.72 | | 3.477E+02 | 4.253E+01 | 1.859E+01 | 1.814E+00 | 18.698 |
| | + | 117.66 | | -3.494E+00 | 6.104E+00 | 8.677E+00 | 9.908E-01 | -0.403 |
| ANH-511 | + | 142.18 | | 7.339E-01 | 2.552E+01 | 4.194E+01 | 4.325E+00 | 0.017 |
| | + | 511.00 | * | 1.566E-01 | 1.215E-01 | 1.109E-01 | 9.904E-03 | 1.412 |

---- 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 | * | -2.123E-01 | 6.744E-01 | 1.080E+00 | 1.028E-01 | -0.196 |

---- 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 | * | | -2.684E-02 | 6.294E-02 | 9.232E-02 | 7.777E-03 | -0.291 |
| NA-24 | 1368.53 | * | | 8.122E-05 | 6.294E-02 | Half-Life too short | | |
| AL-26 | 1129.67 | | | 1.062E+00 | 4.158E+00 | 6.920E+00 | 5.783E-01 | 0.153 |
| | 1808.65 | * | | 1.514E-03 | 4.792E-02 | 7.899E-02 | 6.620E-03 | 0.019 |
| K-40 | 1460.81 | * | | 6.903E-01 | 6.679E-01 | 1.291E+00 | 1.146E-01 | 0.535 |
| TI-44 | 67.85 | | | 2.441E-02 | 3.664E-02 | 6.351E-02 | 6.255E-03 | 0.384 |
| | 78.38 | * | + | 2.146E-01 | 4.960E-02 | 7.381E-02 | 7.191E-03 | 2.908 |
| SC-46 | 889.25 | * | | 4.230E-02 | 9.822E-02 | 1.683E-01 | 1.473E-02 | 0.251 |
| | 1120.51 | | | 6.364E-02 | 1.153E-01 | 1.967E-01 | 1.651E-02 | 0.323 |
| V-48 | 944.10 | | | -6.169E-01 | 2.154E+00 | 3.476E+00 | 3.041E-01 | -0.177 |
| | 983.50 | * | | 3.384E-02 | 1.570E-01 | 2.621E-01 | 2.286E-02 | 0.129 |
| | 1312.09 | | | -3.030E-02 | 8.046E-02 | 1.251E-01 | 1.062E-02 | -0.242 |
| CR-51 | 320.08 | * | | -9.027E-02 | 5.595E-01 | 9.320E-01 | 8.900E-02 | -0.097 |
| MN-52 | 744.21 | | | -3.851E-01 | 2.059E-01 | 2.785E-01 | 2.421E-02 | -1.383 |
| | 848.13 | | | -1.207E+00 | 7.623E+00 | 1.251E+01 | 1.100E+00 | -0.096 |
| | 935.52 | | | 8.025E-03 | 3.132E-01 | 5.172E-01 | 4.526E-02 | 0.016 |
| | 1246.25 | | | 1.888E-01 | 3.910E+00 | 6.350E+00 | 5.304E-01 | 0.030 |
| | 1333.61 | | | 2.513E+02 | 2.760E+01 | 4.010E+01 | 3.418E+00 | 6.267 |
| | 1434.06 | * | | 1.534E-01 | 1.163E-01 | 2.500E-01 | 2.156E-02 | 0.614 |
| MN-54 | 834.83 | * | | -1.939E-03 | 9.798E-02 | 1.627E-01 | 1.431E-02 | -0.012 |
| CO-56 | 846.75 | * | | -3.764E-02 | 1.045E-01 | 1.687E-01 | 1.483E-02 | -0.223 |
| | 977.42 | | | 4.471E+00 | 8.438E+00 | 1.441E+01 | 1.258E+00 | 0.310 |
| | 1037.82 | | | 1.324E-01 | 8.145E-01 | 1.350E+00 | 1.228E-01 | 0.098 |
| | 1175.09 | | | 1.418E+02 | 1.693E+01 | 2.777E+01 | 2.270E+00 | 5.106 |
| | 1238.25 | | | 1.460E-01 | 1.208E-01 | 2.272E-01 | 1.952E-02 | 0.643 |
| | 1360.21 | | | 7.412E-01 | 1.165E+00 | 2.217E+00 | 1.897E-01 | 0.334 |
| | 1771.40 | | | -2.147E-01 | 3.763E-01 | 5.109E-01 | 4.315E-02 | -0.420 |
| CO-58 | 810.76 | * | | -7.259E-02 | 9.226E-02 | 1.432E-01 | 1.651E-02 | -0.507 |
| FE-59 | 142.65 | | | 1.235E+00 | 3.517E+00 | 5.874E+00 | 6.037E-01 | 0.210 |
| | 192.34 | | | 8.268E-01 | 1.314E+00 | 2.194E+00 | 2.947E-01 | 0.377 |
| | 1099.22 | * | | -5.058E-02 | 2.305E-01 | 3.678E-01 | 3.375E-02 | -0.138 |
| | 1291.56 | | | -1.156E-01 | 1.377E-01 | 1.714E-01 | 1.651E-02 | -0.675 |
| ZN-65 | 1115.52 | * | | 4.705E-02 | 2.216E-01 | 3.671E-01 | 3.091E-02 | 0.128 |
| GE-68 | 1077.35 | * | | 1.800E+00 | 3.688E+00 | 6.244E+00 | 5.329E-01 | 0.288 |
| AS-73 | 53.44 | * | | -6.006E-01 | 6.996E-01 | 9.545E-01 | 9.550E-02 | -0.629 |
| AS-74 | 595.88 | * | | 1.066E-01 | 1.431E-01 | 2.458E-01 | 2.165E-02 | 0.434 |
| | 634.78 | | | -2.070E-01 | 5.925E-01 | 9.191E-01 | 7.916E-02 | -0.225 |
| SE-75 | 66.05 | | | -3.834E+00 | 3.469E+00 | 5.592E+00 | 6.432E-01 | -0.686 |
| | 96.73 | | | -4.630E-01 | 9.594E-01 | 1.388E+00 | 2.036E-01 | -0.334 |
| | 121.11 | | + | 1.238E+00 | 4.142E-01 | 4.486E-01 | 6.138E-02 | 2.760 |
| | 136.00 | | | 6.921E-02 | 5.677E-02 | 9.836E-02 | 1.064E-02 | 0.704 |
| | 198.60 | | | 2.070E+00 | 2.945E+00 | 4.917E+00 | 4.737E-01 | 0.421 |
| | 264.65 | * | | -3.013E-02 | 7.875E-02 | 1.214E-01 | 1.115E-02 | -0.248 |
| | 279.53 | | | -1.438E-01 | 1.788E-01 | 2.884E-01 | 2.736E-02 | -0.499 |
| | 303.91 | | | 1.366E+00 | 4.027E+00 | 6.159E+00 | 7.325E-01 | 0.222 |
| | 400.65 | | | -4.370E-01 | 5.177E-01 | 8.074E-01 | 8.888E-02 | -0.541 |
| BR-77 | 87.88 | | + | 7.741E+02 | 9.468E+01 | 9.576E+01 | 9.346E+00 | 8.084 |
| | 200.40 | | | 1.572E+01 | 3.138E+01 | 5.189E+01 | 4.524E+00 | 0.303 |
| | 239.00 | | + | 2.030E+01 | 3.240E+00 | 5.492E+00 | 4.960E-01 | 3.697 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 249.79 | | | -5.887E+00 | 1.386E+01 | 2.139E+01 | 1.945E+00 | -0.275 |
| | 281.68 | | | -8.388E+00 | 1.644E+01 | 2.698E+01 | 2.477E+00 | -0.311 |
| | 297.23 | | | 2.397E+00 | 1.602E+01 | 1.779E+01 | 1.633E+00 | 0.135 |
| | 303.76 | | | 1.527E+01 | 4.005E+01 | 6.147E+01 | 5.636E+00 | 0.248 |
| | 439.47 | | | -1.005E+01 | 3.686E+01 | 5.967E+01 | 5.200E+00 | -0.168 |
| | 484.57 | | | -1.864E+01 | 6.035E+01 | 9.665E+01 | 8.587E+00 | -0.193 |
| | 520.65 | * | | 1.372E+00 | 2.710E+00 | 4.578E+00 | 4.092E-01 | 0.300 |
| | 574.64 | | | 3.261E+01 | 5.249E+01 | 8.906E+01 | 7.908E+00 | 0.366 |
| | 578.91 | | | -1.177E+01 | 2.396E+01 | 3.179E+01 | 2.819E+00 | -0.370 |
| | 585.48 | | | 1.367E+01 | 4.869E+01 | 7.080E+01 | 6.264E+00 | 0.193 |
| | 755.35 | | | -1.739E+01 | 4.182E+01 | 6.754E+01 | 5.886E+00 | -0.257 |
| | 817.79 | | | -1.202E+01 | 3.955E+01 | 6.426E+01 | 5.648E+00 | -0.187 |
| SR-82 | 698.33 | | | -1.776E+01 | 5.781E+01 | 9.491E+01 | 8.128E+00 | -0.187 |
| | 776.49 | * | | 9.182E-01 | 7.366E-01 | 1.344E+00 | 1.177E-01 | 0.683 |
| | 1395.20 | | | 1.922E+00 | 1.221E+01 | 2.108E+01 | 1.811E+00 | 0.091 |
| RB-83 | 520.41 | * | | 8.450E-02 | 1.518E-01 | 2.573E-01 | 2.299E-02 | 0.328 |
| | 529.64 | | | -1.577E-01 | 2.244E-01 | 3.450E-01 | 3.084E-02 | -0.457 |
| | 552.65 | | | -9.213E-02 | 4.140E-01 | 6.589E-01 | 5.880E-02 | -0.140 |
| RB-84 | 881.50 | * | | 4.811E-02 | 1.577E-01 | 2.677E-01 | 2.346E-02 | 0.180 |
| KR-85 | 513.99 | * | | 6.443E+00 | 1.734E+01 | 2.568E+01 | 2.294E+00 | 0.251 |
| SR-85 | 513.99 | * | | 3.053E-02 | 8.214E-02 | 1.217E-01 | 1.087E-02 | 0.251 |
| RB-86 | 1076.63 | * | | -4.406E-01 | 1.851E+00 | 2.958E+00 | 2.525E-01 | -0.149 |
| Y-88 | 898.02 | | | 4.642E-02 | 1.165E-01 | 1.984E-01 | 1.742E-02 | 0.234 |
| | 1836.01 | * | | 4.469E-02 | 5.443E-02 | 1.081E-01 | 9.013E-03 | 0.413 |
| ZR-88 | 392.90 | * | | -1.644E-02 | 6.512E-02 | 1.065E-01 | 8.974E-03 | -0.154 |
| Y-91 | 1204.90 | * | | 4.088E+00 | 2.630E+01 | 4.348E+01 | 3.588E+00 | 0.094 |
| NB-94 | 702.63 | * | | -4.528E-03 | 7.325E-02 | 1.232E-01 | 1.057E-02 | -0.037 |
| | 871.10 | | | 1.212E-01 | 9.804E-02 | 1.765E-01 | 1.549E-02 | 0.687 |
| NB-95 | 765.79 | * | | 3.094E-02 | 8.959E-02 | 1.539E-01 | 1.344E-02 | 0.201 |
| NB-95M | 235.69 | * | | -1.123E-01 | 2.129E-01 | 2.881E-01 | 2.941E-02 | -0.390 |
| ZR-95 | 724.18 | | | 6.819E-02 | 1.930E-01 | 3.330E-01 | 3.125E-02 | 0.205 |
| | 756.15 | * | | -1.868E-02 | 1.486E-01 | 2.464E-01 | 2.361E-02 | -0.076 |
| NB-97 | 657.90 | * | | 2.337E-04 | 1.486E-01 | Half-Life | too short | |
| | 1024.50 | | | 2.156E-03 | 1.486E-01 | Half-Life | too short | |
| ZR-97 | 254.15 | | | -5.865E-03 | 1.486E-01 | Half-Life | too short | |
| | 355.39 | | | 1.894E-03 | 1.486E-01 | Half-Life | too short | |
| | 507.63 | * | | 1.459E-03 | 1.486E-01 | Half-Life | too short | |
| | 602.52 | | | 1.096E-02 | 1.486E-01 | Half-Life | too short | |
| | 1021.30 | | | 4.120E-03 | 1.486E-01 | Half-Life | too short | |
| | 1147.95 | | | -1.952E-03 | 1.486E-01 | Half-Life | too short | |
| | 1362.66 | | | -8.828E-05 | 1.486E-01 | Half-Life | too short | |
| | 1750.46 | | | -3.547E-04 | 1.486E-01 | Half-Life | too short | |
| MO-99 | 140.51 | | | -4.404E+00 | 5.959E+00 | 9.176E+00 | 2.598E+00 | -0.480 |
| | 181.06 | | | 2.013E+00 | 4.276E+00 | 6.388E+00 | 1.165E+00 | 0.315 |
| | 366.43 | | | 7.139E+00 | 2.743E+01 | 4.645E+01 | 4.065E+00 | 0.154 |
| | 739.58 | * | | 3.893E+00 | 3.839E+00 | 6.912E+00 | 1.052E+00 | 0.563 |
| | 778.00 | | | 1.178E-03 | 1.205E+01 | 2.015E+01 | 1.764E+00 | 0.000 |
| TC-99M | 140.51 | * | | -4.017E+01 | 1.205E+01 | Half-Life | too short | |
| RH-101 | 127.23 | | | -4.466E-03 | 5.128E-02 | 7.527E-02 | 8.561E-03 | -0.059 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|---------------------|-----------|---------|
| RH-102 | 198.01 | * | | 5.673E-02 | 5.470E-02 | 9.288E-02 | 8.075E-03 | 0.611 |
| | 325.23 | | | 1.227E-01 | 4.262E-01 | 7.277E-01 | 6.615E-02 | 0.169 |
| | 418.52 | | | 5.145E-01 | 6.416E-01 | 1.111E+00 | 9.557E-02 | 0.463 |
| | 475.06 | * | | -6.619E-03 | 6.789E-02 | 1.106E-01 | 9.795E-03 | -0.060 |
| | 631.29 | | | 1.117E-01 | 1.260E-01 | 2.174E-01 | 1.877E-02 | 0.514 |
| | 697.49 | | | -5.268E-02 | 1.631E-01 | 2.675E-01 | 2.290E-02 | -0.197 |
| | 766.84 | | | 1.531E-01 | 2.451E-01 | 4.292E-01 | 3.750E-02 | 0.357 |
| RU-103 | 1046.59 | | | 5.505E-02 | 3.401E-01 | 5.635E-01 | 4.855E-02 | 0.098 |
| | 1112.84 | | | 8.824E-02 | 5.921E-01 | 9.754E-01 | 8.213E-02 | 0.090 |
| | 497.08 | * | | 4.261E-02 | 8.093E-02 | 1.370E-01 | 1.965E-02 | 0.311 |
| RH-106 | 610.33 | + | | 8.911E+00 | 3.116E+00 | 3.696E+00 | 6.191E-01 | 2.411 |
| | 511.85 | + | | 7.711E-01 | 5.984E-01 | 7.258E-01 | 6.482E-02 | 1.062 |
| RU-106 | 621.84 | * | | 1.153E-01 | 6.564E-01 | 1.073E+00 | 1.438E-01 | 0.107 |
| | 1050.47 | | | -4.563E+00 | 6.518E+00 | 9.962E+00 | 8.574E-01 | -0.458 |
| | 511.85 | + | | 7.711E-01 | 5.984E-01 | 7.258E-01 | 6.482E-02 | 1.062 |
| | 621.84 | * | | 1.153E-01 | 6.563E-01 | 1.073E+00 | 9.323E-02 | 0.107 |
| AG-108M | 1050.47 | | | -4.563E+00 | 6.518E+00 | 9.962E+00 | 8.574E-01 | -0.458 |
| | 433.93 | * | | 3.247E-02 | 7.746E-02 | 1.311E-01 | 1.183E-02 | 0.248 |
| AG-110M | 614.37 | | | -2.969E-03 | 8.936E-02 | 1.250E-01 | 1.132E-02 | -0.024 |
| | 722.95 | | | -5.107E-02 | 9.501E-02 | 1.528E-01 | 1.371E-02 | -0.334 |
| | 657.75 | * | | 1.276E-01 | 9.604E-02 | 1.531E-01 | 1.335E-02 | 0.833 |
| | 677.61 | | | -1.853E-01 | 7.054E-01 | 1.098E+00 | 9.594E-02 | -0.169 |
| | 706.67 | | | 6.594E-02 | 4.650E-01 | 7.914E-01 | 6.987E-02 | 0.083 |
| | 763.93 | | | -2.233E-01 | 3.708E-01 | 5.895E-01 | 5.289E-02 | -0.379 |
| IN-111 | 884.67 | | | -1.147E-01 | 1.294E-01 | 1.968E-01 | 1.778E-02 | -0.583 |
| | 937.48 | | | 2.149E-01 | 3.467E-01 | 5.954E-01 | 5.393E-02 | 0.361 |
| | 1384.27 | | | -1.564E-01 | 1.977E-01 | 2.600E-01 | 2.295E-02 | -0.601 |
| | 171.28 | | | -5.214E-03 | 2.385E-01 | 3.870E-01 | 3.249E-02 | -0.013 |
| | 245.39 | * | | -8.201E-02 | 3.274E-01 | 4.524E-01 | 4.103E-02 | -0.181 |
| IN-113M | 391.69 | * | | -8.615E-02 | 9.411E-02 | 1.470E-01 | 1.277E-02 | -0.586 |
| SN-113 | 391.69 | * | | -8.615E-02 | 9.411E-02 | 1.470E-01 | 1.277E-02 | -0.586 |
| IN-114M | 190.27 | * | | 4.107E-02 | 2.856E-01 | 4.159E-01 | 3.582E-02 | 0.099 |
| CD-115 | 260.90 | | | 2.696E+00 | 2.415E+01 | 3.855E+01 | 3.522E+00 | 0.070 |
| SN-117M | 492.35 | | | -9.696E-01 | 8.220E+00 | 1.333E+01 | 1.187E+00 | -0.073 |
| | 527.90 | * | | 1.050E+00 | 2.346E+00 | 3.950E+00 | 3.531E-01 | 0.266 |
| | 156.02 | | | -4.270E-01 | 2.282E+00 | 3.686E+00 | 3.393E-01 | -0.116 |
| SB-122 | 158.56 | * | | -2.066E-02 | 5.602E-02 | 8.941E-02 | 8.036E-03 | -0.231 |
| | 563.90 | * | | 2.731E-01 | 6.234E-01 | 1.048E+00 | 9.328E-02 | 0.261 |
| I-123 | 692.80 | | | -3.462E+00 | 1.413E+01 | 2.337E+01 | 1.997E+00 | -0.148 |
| | 159.00 | * | | -3.524E-04 | 1.413E+01 | Half-Life too short | | |
| TE-123M | 528.96 | | | -2.787E-02 | 1.413E+01 | Half-Life too short | | |
| | 159.00 | * | | -2.291E-02 | 4.162E-02 | 6.567E-02 | 5.911E-03 | -0.349 |
| I-124 | 602.71 | * | | 6.203E-01 | 4.522E-01 | 7.347E-01 | 6.452E-02 | 0.844 |
| | 722.78 | | | -2.350E+00 | 2.892E+00 | 4.540E+00 | 3.922E-01 | -0.517 |
| SB-124 | 1325.50 | | | 1.271E+01 | 1.679E+01 | 2.884E+01 | 2.455E+00 | 0.441 |
| | 1376.25 | | | 5.345E+00 | 1.407E+01 | 2.499E+01 | 2.143E+00 | 0.214 |
| | 1509.49 | | | 5.287E+00 | 7.911E+00 | 1.467E+01 | 1.269E+00 | 0.360 |
| | 1691.02 | | | 4.048E-01 | 2.178E+00 | 3.724E+00 | 3.185E-01 | 0.109 |
| | 602.71 | | | 1.151E-01 | 8.388E-02 | 1.363E-01 | 1.197E-02 | 0.844 |
| | | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 645.85 | | | 1.816E-01 | 1.085E+00 | 1.766E+00 | 1.600E-01 | 0.103 |
| | 709.31 | | | 1.320E+00 | 5.834E+00 | 9.989E+00 | 8.590E-01 | 0.132 |
| | 713.82 | | | -2.308E+00 | 3.517E+00 | 5.592E+00 | 6.729E-01 | -0.413 |
| | 722.78 | | | -6.318E-01 | 7.778E-01 | 1.221E+00 | 1.077E-01 | -0.517 |
| | 968.20 | | | 5.449E+00 | 6.910E+00 | 1.196E+01 | 1.044E+00 | 0.456 |
| | 1045.16 | | | 5.536E+00 | 6.616E+00 | 1.153E+01 | 9.938E-01 | 0.480 |
| | 1325.50 | | | 3.651E+00 | 4.823E+00 | 8.284E+00 | 7.051E-01 | 0.441 |
| | 1368.21 | | | 1.063E+00 | 2.103E+00 | 3.891E+00 | 5.230E-01 | 0.273 |
| | 1436.60 | | | -1.067E+00 | 4.796E+00 | 7.560E+00 | 6.519E-01 | -0.141 |
| | 1691.02 | * | | 2.567E-02 | 1.382E-01 | 2.362E-01 | 2.101E-02 | 0.109 |
| SB-125 | 427.89 | * | | 6.060E-02 | 2.006E-01 | 3.378E-01 | 2.980E-02 | 0.179 |
| | 463.38 | | | 8.482E-01 | 6.801E-01 | 1.192E+00 | 1.130E-01 | 0.711 |
| | 600.56 | | | -1.965E-01 | 3.899E-01 | 6.001E-01 | 5.649E-02 | -0.327 |
| | 635.90 | | | -5.565E-01 | 6.156E-01 | 8.986E-01 | 8.359E-02 | -0.619 |
| TE-125M | 109.28 | * | | 5.109E+00 | 1.099E+01 | 1.867E+01 | 2.292E+00 | 0.274 |
| I-126 | 388.63 | | | 7.025E-02 | 3.003E-01 | 5.058E-01 | 4.280E-02 | 0.139 |
| | 666.33 | * | | 5.714E-02 | 3.078E-01 | 4.394E-01 | 3.710E-02 | 0.130 |
| | 753.82 | | | -4.409E-01 | 2.162E+00 | 3.558E+00 | 3.100E-01 | -0.124 |
| SB-126 | 223.80 | | | -4.051E+00 | 4.984E+00 | 7.578E+00 | 6.764E-01 | -0.535 |
| | 278.60 | | | 1.455E+00 | 2.902E+00 | 5.046E+00 | 4.632E-01 | 0.288 |
| | 296.50 | | | 3.525E+00 | 2.584E+00 | 3.268E+00 | 3.000E-01 | 1.079 |
| | 414.70 | | | -7.873E-02 | 1.121E-01 | 1.770E-01 | 1.518E-02 | -0.445 |
| | 415.30 | | | -7.969E-01 | 9.197E+00 | 1.514E+01 | 1.299E+00 | -0.053 |
| | 555.20 | | | 3.063E-01 | 5.829E+00 | 9.495E+00 | 8.470E-01 | 0.032 |
| | 573.80 | | | -4.667E-01 | 1.657E+00 | 2.621E+00 | 2.328E-01 | -0.178 |
| | 593.00 | | | -1.021E+00 | 1.324E+00 | 1.978E+00 | 1.745E-01 | -0.516 |
| | 656.30 | | | 2.490E+00 | 5.447E+00 | 8.058E+00 | 6.821E-01 | 0.309 |
| | 666.33 | | | 2.347E-02 | 1.264E-01 | 1.805E-01 | 1.524E-02 | 0.130 |
| | 675.00 | | | 2.035E+00 | 2.928E+00 | 4.976E+00 | 4.218E-01 | 0.409 |
| | 695.00 | | | 4.844E-02 | 1.080E-01 | 1.884E-01 | 1.611E-02 | 0.257 |
| | 697.00 | | | -8.199E-02 | 3.702E-01 | 6.124E-01 | 5.242E-02 | -0.134 |
| | 720.50 | * | | -1.384E-01 | 2.196E-01 | 3.503E-01 | 3.024E-02 | -0.395 |
| | 856.80 | | | 3.312E-01 | 8.528E-01 | 1.456E+00 | 1.279E-01 | 0.228 |
| | 989.30 | | | -5.139E-01 | 2.553E+00 | 4.123E+00 | 3.593E-01 | -0.125 |
| | 1034.80 | | | -8.136E+00 | 1.628E+01 | 2.539E+01 | 2.194E+00 | -0.320 |
| | 1213.00 | | | 1.820E+00 | 4.365E+00 | 7.515E+00 | 6.218E-01 | 0.242 |
| SB-127 | 61.10 | | | 3.230E+02 | 3.941E+01 | 4.076E+01 | 4.337E+00 | 7.924 |
| | 252.40 | | | 5.429E-01 | 2.073E+00 | 3.328E+00 | 1.387E+00 | 0.163 |
| | 290.80 | | | 1.981E+00 | 9.821E+00 | 1.493E+01 | 1.472E+00 | 0.133 |
| | 411.60 | | | 3.744E-01 | 6.913E+00 | 1.149E+01 | 1.659E+00 | 0.033 |
| | 444.90 | | | 3.567E+00 | 5.931E+00 | 1.012E+01 | 1.117E+00 | 0.352 |
| | 473.00 | | | -2.196E-03 | 1.040E+00 | 1.706E+00 | 1.961E-01 | -0.001 |
| | 543.00 | | | -3.612E+00 | 9.513E+00 | 1.494E+01 | 1.978E+00 | -0.242 |
| | 603.60 | | | 8.438E+00 | 7.023E+00 | 1.121E+01 | 1.236E+00 | 0.753 |
| | 685.20 | * | | -6.007E-01 | 7.975E-01 | 1.172E+00 | 1.114E-01 | -0.512 |
| | 698.50 | | | -1.143E+00 | 8.081E+00 | 1.346E+01 | 1.958E+00 | -0.085 |
| | 722.20 | | | -2.704E+01 | 1.823E+01 | 2.673E+01 | 2.499E+00 | -1.011 |
| | 783.80 | | | 8.183E-01 | 2.036E+00 | 3.517E+00 | 3.838E-01 | 0.233 |
| XE-127 | 57.60 | + | | 8.904E+00 | 5.068E+00 | 9.935E+00 | 9.978E-01 | 0.896 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| I-131 | | 145.22 | | 1.168E-01 | 8.533E-01 | 1.409E+00 | 1.421E-01 | 0.083 |
| | | 172.10 | | -4.207E-02 | 1.563E-01 | 2.497E-01 | 2.099E-02 | -0.168 |
| | | 202.84 | * | -3.222E-02 | 6.777E-02 | 1.059E-01 | 9.259E-03 | -0.304 |
| | | 374.96 | | 1.575E-01 | 3.627E-01 | 6.198E-01 | 5.361E-02 | 0.254 |
| | | 80.18 | | -5.079E-01 | 2.780E+00 | 4.168E+00 | 4.065E-01 | -0.122 |
| | | 284.30 | | 6.612E-01 | 1.294E+00 | 2.256E+00 | 2.159E-01 | 0.293 |
| | | 364.48 | * | 7.248E-03 | 1.270E-01 | 2.128E-01 | 1.957E-02 | 0.034 |
| | | 636.97 | | -1.495E+00 | 1.817E+00 | 2.673E+00 | 2.417E-01 | -0.559 |
| TE-132 | + | 722.89 | | -4.974E+00 | 8.380E+00 | 1.341E+01 | 1.161E+00 | -0.371 |
| | | 49.72 | | 8.212E+00 | 4.499E+00 | 3.776E+00 | 3.989E-01 | 2.175 |
| | | 111.76 | | -1.051E+01 | 8.081E+00 | 1.226E+01 | 1.413E+00 | -0.858 |
| BA-133 | | 116.30 | | -2.897E+00 | 7.713E+00 | 1.252E+01 | 1.478E+00 | -0.231 |
| | | 228.16 | * | -4.408E-02 | 2.491E-01 | 3.937E-01 | 5.845E-02 | -0.112 |
| | | 53.15 | | -3.497E+00 | 2.899E+00 | 4.271E+00 | 4.273E-01 | -0.819 |
| | | 79.62 | | -3.658E-01 | 1.448E+00 | 2.161E+00 | 3.433E-01 | -0.169 |
| | | 81.00 | | -7.941E-02 | 1.164E-01 | 1.687E-01 | 2.786E-02 | -0.471 |
| | | 276.40 | | 1.189E+00 | 6.967E-01 | 1.243E+00 | 1.837E-01 | 0.957 |
| | | 302.84 | | -8.731E-02 | 2.957E-01 | 4.297E-01 | 5.866E-02 | -0.203 |
| | | 356.01 | * | 1.123E-02 | 9.502E-02 | 1.413E-01 | 1.888E-02 | 0.080 |
| I-133 | + | 383.85 | | -1.554E-01 | 6.703E-01 | 1.099E+00 | 1.379E-01 | -0.141 |
| | | 510.53 | | 3.889E-03 | 6.703E-01 | Half-Life | too short | |
| | | 529.87 | * | -3.007E-05 | 6.703E-01 | Half-Life | too short | |
| | | 706.58 | | 3.423E-04 | 6.703E-01 | Half-Life | too short | |
| | | 856.28 | | 2.332E-04 | 6.703E-01 | Half-Life | too short | |
| | | 875.33 | | -3.684E-04 | 6.703E-01 | Half-Life | too short | |
| | | 1236.41 | | 2.143E-03 | 6.703E-01 | Half-Life | too short | |
| | | 1298.22 | | -8.008E-04 | 6.703E-01 | Half-Life | too short | |
| CS-134 | | 475.35 | | 1.181E+00 | 4.394E+00 | 7.337E+00 | 6.499E-01 | 0.161 |
| | | 563.23 | | 3.023E-01 | 7.471E-01 | 1.252E+00 | 1.125E-01 | 0.242 |
| | | 569.32 | | 1.125E-01 | 4.535E-01 | 7.483E-01 | 6.739E-02 | 0.150 |
| | | 604.70 | | 2.534E-02 | 8.211E-02 | 1.197E-01 | 1.053E-02 | 0.212 |
| | | 795.84 | * | 1.008E-01 | 1.089E-01 | 1.945E-01 | 1.718E-02 | 0.518 |
| | | 801.93 | | -5.203E-01 | 9.247E-01 | 1.473E+00 | 1.300E-01 | -0.353 |
| | | 1038.57 | | -1.771E-01 | 1.077E+01 | 1.758E+01 | 1.517E+00 | -0.010 |
| | | 1167.94 | | 2.970E+00 | 7.324E+00 | 1.078E+01 | 8.836E-01 | 0.275 |
| CS-135 | | 1365.15 | | -5.050E-01 | 1.699E+00 | 2.653E+00 | 2.376E-01 | -0.190 |
| | | 268.24 | * | 6.114E-02 | 2.903E-01 | 4.655E-01 | 4.857E-02 | 0.131 |
| I-135 | | 288.45 | | -1.369E+02 | 2.903E-01 | Half-Life | too short | |
| | | 417.63 | | 1.048E+02 | 2.903E-01 | Half-Life | too short | |
| | | 546.56 | | -1.561E+02 | 2.903E-01 | Half-Life | too short | |
| | | 836.80 | | 1.001E+02 | 2.903E-01 | Half-Life | too short | |
| | | 1038.76 | | -2.972E+01 | 2.903E-01 | Half-Life | too short | |
| | | 1124.00 | | -4.723E+02 | 2.903E-01 | Half-Life | too short | |
| | | 1131.51 | | 6.101E+01 | 2.903E-01 | Half-Life | too short | |
| | | 1260.41 | * | 4.134E+01 | 2.903E-01 | Half-Life | too short | |
| | | 1457.56 | | -1.168E+01 | 2.903E-01 | Half-Life | too short | |
| | | 1678.03 | | 7.085E+01 | 2.903E-01 | Half-Life | too short | |
| | | 1706.46 | | -1.439E+02 | 2.903E-01 | Half-Life | too short | |
| | | 1791.20 | | 8.859E+01 | 2.903E-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 | 66.91 | | | 3.727E-01 | 3.968E-01 | 6.888E-01 | 1.113E-01 | 0.541 |
| | 86.29 | | | 5.840E+00 | 1.412E+00 | 2.088E+00 | 2.847E-01 | 2.797 |
| | 153.22 | | | 2.535E-01 | 6.335E-01 | 1.058E+00 | 1.098E-01 | 0.240 |
| | 163.89 | | | 4.317E-01 | 1.087E+00 | 1.809E+00 | 1.730E-01 | 0.239 |
| | 176.55 | | | 1.990E-03 | 3.694E-01 | 5.993E-01 | 5.370E-02 | 0.003 |
| | 273.65 | | | -3.376E-01 | 5.752E-01 | 8.723E-01 | 8.463E-02 | -0.387 |
| | 340.57 | | | 5.930E-02 | 1.738E-01 | 2.639E-01 | 2.436E-02 | 0.225 |
| | 818.51 | | | -1.153E-01 | 1.357E-01 | 2.100E-01 | 1.847E-02 | -0.549 |
| | 1048.07 | * | | -8.463E-02 | 2.116E-01 | 3.335E-01 | 2.992E-02 | -0.254 |
| | 1235.34 | | | 5.312E-01 | 6.146E-01 | 1.102E+00 | 1.282E-01 | 0.482 |
| CE-139 | 165.85 | * | | -3.999E-03 | 4.366E-02 | 7.070E-02 | 5.895E-03 | -0.057 |
| BA-140 | 162.64 | | | -1.478E-02 | 7.945E-01 | 1.293E+00 | 1.181E-01 | -0.011 |
| | 304.84 | | | -7.699E-02 | 1.735E+00 | 2.575E+00 | 7.260E-01 | -0.030 |
| LA-140 | 423.70 | | | -2.759E-01 | 2.772E+00 | 4.549E+00 | 1.475E+00 | -0.061 |
| | 537.32 | * | | -1.167E-01 | 3.756E-01 | 5.912E-01 | 1.964E-01 | -0.197 |
| | 328.77 | | | -1.131E-01 | 3.862E-01 | 6.380E-01 | 6.081E-02 | -0.177 |
| | 432.53 | | | 3.224E-01 | 3.246E+00 | 5.391E+00 | 4.904E-01 | 0.060 |
| | 487.03 | | | -1.024E-02 | 2.151E-01 | 3.510E-01 | 3.302E-02 | -0.029 |
| | 751.79 | | | -2.221E+00 | 2.664E+00 | 4.137E+00 | 3.980E-01 | -0.537 |
| | 815.85 | | | 6.190E-01 | 5.390E-01 | 9.751E-01 | 9.521E-02 | 0.635 |
| | 867.82 | | | -1.662E+00 | 2.681E+00 | 4.225E+00 | 3.898E-01 | -0.393 |
| | 919.63 | | | 7.879E-01 | 5.480E+00 | 8.650E+00 | 9.302E-01 | 0.091 |
| | 925.24 | | | -1.250E+00 | 2.283E+00 | 3.601E+00 | 3.344E-01 | -0.347 |
| CE-141 | 1596.49 | * | | -6.146E-02 | 8.888E-02 | 1.203E-01 | 1.038E-02 | -0.511 |
| | 145.44 | * | | -4.596E-02 | 7.768E-02 | 1.229E-01 | 1.253E-02 | -0.374 |
| CE-143 | 57.37 | + | | 4.017E+01 | 2.294E+01 | 4.296E+01 | 4.756E+00 | 0.935 |
| | 231.56 | | | 2.687E+01 | 9.737E+01 | 1.576E+02 | 4.989E+01 | 0.171 |
| | 293.26 | * | | 1.007E+01 | 6.350E+00 | 9.982E+00 | 2.162E+00 | 1.009 |
| | 350.59 | + | | 3.724E+02 | 1.830E+02 | 1.767E+02 | 5.494E+01 | 2.107 |
| | 490.36 | | | -1.283E+01 | 1.491E+02 | 2.423E+02 | 7.667E+01 | -0.053 |
| CE-144 | 664.57 | | | 1.071E+02 | 9.576E+01 | 1.399E+02 | 4.510E+01 | 0.766 |
| | 721.93 | | | -1.118E+02 | 8.036E+01 | 1.085E+02 | 3.162E+01 | -1.031 |
| | 80.11 | | | -5.147E-01 | 2.397E+00 | 3.588E+00 | 3.495E-01 | -0.143 |
| | 133.54 | * | | -4.221E-01 | 3.022E-01 | 4.447E-01 | 7.543E-02 | -0.949 |
| PM-144 | 476.78 | | | -2.366E-02 | 1.536E-01 | 2.491E-01 | 2.403E-02 | -0.095 |
| | 618.01 | | | 3.260E-02 | 6.554E-02 | 1.103E-01 | 9.861E-03 | 0.296 |
| | 696.49 | * | | -1.036E-02 | 7.186E-02 | 1.197E-01 | 1.024E-02 | -0.087 |
| PR-144 | 778.57 | | | -2.090E+00 | 5.368E+00 | 8.677E+00 | 7.596E-01 | -0.241 |
| | 696.49 | * | | -6.991E-01 | 4.850E+00 | 8.079E+00 | 6.913E-01 | -0.087 |
| | 1489.15 | | | -1.100E+00 | 1.709E+01 | 2.834E+01 | 2.450E+00 | -0.039 |
| PM-146 | 453.90 | * | | -2.817E-02 | 1.029E-01 | 1.661E-01 | 1.803E-02 | -0.170 |
| | 633.02 | | | 4.673E-01 | 3.209E+00 | 5.213E+00 | 1.948E+00 | 0.090 |
| | 735.90 | | | -6.982E-02 | 3.343E-01 | 5.504E-01 | 1.575E-01 | -0.127 |
| | 747.13 | | | 2.905E-02 | 1.984E-01 | 3.369E-01 | 4.745E-02 | 0.086 |
| ND-147 | 91.11 | | | 3.112E-01 | 2.513E-01 | 3.312E-01 | 3.487E-02 | 0.940 |
| | 319.41 | | | 1.825E+00 | 3.646E+00 | 6.320E+00 | 5.763E-01 | 0.289 |
| | 439.89 | | | -2.997E+00 | 8.436E+00 | 1.358E+01 | 1.184E+00 | -0.221 |
| PM-149 | 531.02 | * | | -2.570E-01 | 7.810E-01 | 1.240E+00 | 1.877E-01 | -0.207 |
| | 285.90 | * | | -5.265E+00 | 1.471E+01 | 2.434E+01 | 3.857E+00 | -0.216 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| EU-152 | + | 121.78 | | 6.972E-01 | 2.304E-01 | 2.594E-01 | 3.291E-02 | 2.688 |
| | | 244.69 | | 3.423E-02 | 6.059E-01 | 8.613E-01 | 7.807E-02 | 0.040 |
| | | 344.27 | * | -9.154E-02 | 1.910E-01 | 3.103E-01 | 2.936E-02 | -0.295 |
| | | 443.98 | | 1.901E-01 | 2.257E+00 | 3.740E+00 | 3.267E-01 | 0.051 |
| | | 778.89 | | -1.886E-01 | 6.150E-01 | 1.001E+00 | 8.763E-02 | -0.188 |
| | | 867.32 | | -5.863E-01 | 2.312E+00 | 3.755E+00 | 3.297E-01 | -0.156 |
| | | 964.01 | | 9.287E-02 | 8.821E-01 | 1.461E+00 | 1.277E-01 | 0.064 |
| | | 1085.78 | | -6.165E-01 | 1.163E+00 | 1.804E+00 | 1.535E-01 | -0.342 |
| | | 1112.02 | | -1.005E+00 | 8.913E-01 | 1.292E+00 | 1.088E-01 | -0.777 |
| | | 1407.95 | | 2.847E-01 | 2.891E-01 | 5.638E-01 | 4.851E-02 | 0.505 |
| GD-153 | | 69.67 | | -9.922E-01 | 1.367E+00 | 2.246E+00 | 2.205E-01 | -0.442 |
| | | 83.37 | | 1.437E+00 | 1.811E+01 | 2.766E+01 | 2.695E+00 | 0.052 |
| | | 97.43 | * | 5.653E-03 | 1.029E-01 | 1.549E-01 | 1.583E-02 | 0.037 |
| | | 103.18 | | -7.929E-02 | 1.247E-01 | 2.003E-01 | 2.110E-02 | -0.396 |
| EU-154 | + | 123.07 | | 4.892E-01 | 1.639E-01 | 1.771E-01 | 2.445E-02 | 2.762 |
| | | 247.94 | | 1.775E-01 | 7.274E-01 | 1.049E+00 | 1.241E-01 | 0.169 |
| | | 591.81 | | -6.533E-01 | 1.351E+00 | 2.080E+00 | 2.459E-01 | -0.314 |
| | | 723.30 | | -1.665E-01 | 4.005E-01 | 6.510E-01 | 6.215E-02 | -0.256 |
| | | 756.87 | | 1.164E+00 | 1.663E+00 | 2.944E+00 | 3.547E-01 | 0.395 |
| | | 873.19 | | -2.108E-01 | 8.800E-01 | 1.431E+00 | 1.768E-01 | -0.147 |
| | | 996.32 | | -8.424E-01 | 1.065E+00 | 1.611E+00 | 2.869E-01 | -0.523 |
| | | 1004.76 | | -2.982E-01 | 6.085E-01 | 9.541E-01 | 1.116E-01 | -0.313 |
| | | 1274.45 | * | -1.790E-02 | 1.673E-01 | 2.628E-01 | 2.931E-02 | -0.068 |
| EU-155 | + | 48.70 | | 4.620E+00 | 2.526E+00 | 1.951E+00 | 1.960E-01 | 2.368 |
| | + | 60.01 | | 4.226E+02 | 4.408E+01 | 2.478E+01 | 2.493E+00 | 17.055 |
| | + | 86.54 | | 3.792E+00 | 4.661E-01 | 3.352E-01 | 3.296E-02 | 11.310 |
| | | 105.31 | * | 1.791E-02 | 1.310E-01 | 2.197E-01 | 2.360E-02 | 0.082 |
| TB-160 | + | 86.79 | | 9.451E+00 | 1.156E+00 | 9.790E-01 | 9.550E-02 | 9.653 |
| | | 197.04 | | 2.280E-01 | 8.549E-01 | 1.399E+00 | 1.215E-01 | 0.163 |
| | | 215.65 | | 6.559E-01 | 1.282E+00 | 2.112E+00 | 1.871E-01 | 0.311 |
| | | 298.57 | | 9.269E-02 | 2.888E-01 | 3.277E-01 | 3.008E-02 | 0.283 |
| | | 879.36 | * | 1.528E-01 | 3.513E-01 | 6.021E-01 | 5.279E-02 | 0.254 |
| | | 962.29 | | -1.444E-01 | 1.482E+00 | 2.429E+00 | 2.123E-01 | -0.059 |
| | | 966.15 | | 4.006E-01 | 5.604E-01 | 9.618E-01 | 8.404E-02 | 0.417 |
| | | 1177.93 | | -4.319E-02 | 6.596E-01 | 9.076E-01 | 7.426E-02 | -0.048 |
| | | 1271.85 | | 1.250E-02 | 1.031E+00 | 1.660E+00 | 1.396E-01 | 0.008 |
| HO-166M | | 80.57 | | 4.020E-03 | 3.103E-01 | 4.700E-01 | 4.578E-02 | 0.009 |
| | + | 184.41 | | 1.327E-01 | 8.955E-02 | 9.338E-02 | 7.983E-03 | 1.421 |
| | | 280.46 | | -2.269E-01 | 1.483E-01 | 2.265E-01 | 2.080E-02 | -1.001 |
| | | 410.95 | | 2.726E-01 | 5.316E-01 | 9.073E-01 | 7.758E-02 | 0.300 |
| | | 711.68 | * | -1.479E-02 | 1.403E-01 | 2.342E-01 | 2.016E-02 | -0.063 |
| | | 752.31 | | -2.834E-01 | 6.261E-01 | 1.008E+00 | 8.781E-02 | -0.281 |
| | | 810.29 | | -5.595E-02 | 1.484E-01 | 2.394E-01 | 2.104E-02 | -0.234 |
| TM-171 | | 51.35 | | 3.223E+01 | 1.871E+01 | 3.282E+01 | 3.286E+00 | 0.982 |
| | | 52.39 | | -8.258E+00 | 1.184E+01 | 1.783E+01 | 1.784E+00 | -0.463 |
| | + | 59.40 | | 2.212E+03 | 2.308E+02 | 1.325E+02 | 1.335E+01 | 16.696 |
| LU-176 | | 66.72 | * | 6.872E+00 | 2.132E+01 | 3.658E+01 | 3.610E+00 | 0.188 |
| | + | 88.36 | | 7.489E+00 | 9.160E-01 | 9.181E-01 | 8.977E-02 | 8.156 |
| | | 201.83 | | -1.900E-02 | 4.925E-02 | 7.749E-02 | 6.767E-03 | -0.245 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| LU-177 | | 306.84 | * | 3.790E-02 | 4.746E-02 | 7.851E-02 | 7.193E-03 | 0.483 |
| | | 401.10 | | -8.478E+00 | 1.391E+01 | 2.211E+01 | 1.876E+00 | -0.383 |
| | | 112.95 | | -1.416E-01 | 9.972E-01 | 1.632E+00 | 1.815E-01 | -0.087 |
| | | 208.36 | * | 5.363E-01 | 8.509E-01 | 1.413E+00 | 1.242E-01 | 0.380 |
| | | 52.97 | | -1.429E+00 | 1.257E+00 | 1.858E+00 | 1.859E-01 | -0.769 |
| | | 54.07 | | -3.150E-01 | 8.888E-01 | 1.077E+00 | 1.078E-01 | -0.292 |
| | | 61.30 | | 1.272E+01 | 1.902E+00 | 2.777E+00 | 2.781E-01 | 4.582 |
| | + | 121.62 | | 3.465E+00 | 1.132E+00 | 1.289E+00 | 1.506E-01 | 2.688 |
| | | 147.16 | | -1.309E-01 | 8.805E-01 | 1.430E+00 | 1.420E-01 | -0.092 |
| | | 171.86 | | -8.147E-02 | 7.019E-01 | 1.132E+00 | 9.515E-02 | -0.072 |
| HF-181 | | 218.09 | | -1.484E+00 | 1.551E+00 | 2.341E+00 | 2.079E-01 | -0.634 |
| | | 268.79 | | 1.399E+00 | 1.403E+00 | 2.353E+00 | 2.155E-01 | 0.595 |
| | | 319.02 | | 3.849E-01 | 4.543E-01 | 8.011E-01 | 7.306E-02 | 0.480 |
| | | 367.43 | | 1.178E+00 | 1.872E+00 | 3.234E+00 | 2.826E-01 | 0.364 |
| | | 413.65 | * | -1.708E-01 | 3.739E-01 | 6.004E-01 | 5.144E-02 | -0.284 |
| | + | 56.28 | | 1.329E+00 | 7.564E-01 | 1.308E+00 | 1.311E-01 | 1.016 |
| | + | 57.53 | | 7.618E-01 | 4.337E-01 | 8.397E-01 | 8.433E-02 | 0.907 |
| | | 65.20 | | -7.188E-01 | 5.903E-01 | 9.472E-01 | 9.381E-02 | -0.759 |
| | | 133.02 | | -8.953E-02 | 8.350E-02 | 1.283E-01 | 1.408E-02 | -0.698 |
| | | 136.25 | | 6.899E-01 | 6.082E-01 | 1.051E+00 | 1.130E-01 | 0.656 |
| TA-182 | | 345.85 | | 5.385E-02 | 3.709E-01 | 5.540E-01 | 4.959E-02 | 0.097 |
| | | 482.03 | * | -3.094E-04 | 8.644E-02 | 1.416E-01 | 1.257E-02 | -0.002 |
| | | 67.75 | | 5.652E-02 | 8.316E-02 | 1.442E-01 | 1.420E-02 | 0.392 |
| | | 100.10 | | 7.499E-02 | 2.140E-01 | 3.629E-01 | 3.762E-02 | 0.207 |
| | | 152.43 | | 8.155E-02 | 4.614E-01 | 7.620E-01 | 7.244E-02 | 0.107 |
| | | 222.10 | | 6.548E-01 | 5.979E-01 | 1.012E+00 | 9.020E-02 | 0.647 |
| | | 1001.68 | | 3.548E+00 | 5.453E+00 | 9.397E+00 | 8.175E-01 | 0.378 |
| | | 1121.28 | | 3.515E-01 | 3.175E-01 | 5.668E-01 | 4.755E-02 | 0.620 |
| | | 1189.05 | | 2.356E-01 | 4.696E-01 | 8.145E-01 | 6.688E-02 | 0.289 |
| | | 1221.42 | * | 9.987E-02 | 2.326E-01 | 4.045E-01 | 3.355E-02 | 0.247 |
| RE-183 | | 1230.97 | | -1.631E-01 | 6.970E-01 | 1.082E+00 | 9.003E-02 | -0.151 |
| | + | 57.98 | | 3.181E-01 | 1.811E-01 | 5.319E-01 | 5.345E-02 | 0.598 |
| | + | 59.32 | | 8.478E+00 | 8.844E-01 | 5.088E-01 | 5.126E-02 | 16.665 |
| | | 67.20 | | 1.512E-01 | 1.405E-01 | 2.465E-01 | 2.431E-02 | 0.613 |
| | | 162.32 | * | 1.194E-01 | 1.578E-01 | 2.673E-01 | 2.314E-02 | 0.447 |
| | | 208.81 | | 2.040E+00 | 1.526E+00 | 2.615E+00 | 2.301E-01 | 0.780 |
| | | 291.72 | | -8.685E-01 | 1.623E+00 | 2.311E+00 | 2.122E-01 | -0.376 |
| | + | 57.98 | | 1.224E+00 | 6.969E-01 | 2.047E+00 | 2.057E-01 | 0.598 |
| | + | 59.32 | | 3.261E+01 | 3.401E+00 | 1.957E+00 | 1.972E-01 | 16.665 |
| | | 67.20 | | 5.820E-01 | 5.407E-01 | 9.487E-01 | 9.355E-02 | 0.613 |
| RE-184 | | 161.27 | | 2.774E-01 | 5.302E-01 | 8.885E-01 | 7.775E-02 | 0.312 |
| | | 216.55 | | 6.780E-01 | 4.684E-01 | 8.043E-01 | 7.132E-02 | 0.843 |
| | | 252.85 | * | 1.625E-01 | 4.127E-01 | 6.717E-01 | 6.116E-02 | 0.242 |
| | | 318.01 | | 5.540E-01 | 7.869E-01 | 1.378E+00 | 1.257E-01 | 0.402 |
| | | 792.07 | | -3.046E-01 | 2.325E+00 | 3.842E+00 | 3.369E-01 | -0.079 |
| | | 903.28 | | 1.979E+00 | 3.247E+00 | 5.142E+00 | 4.497E-01 | 0.385 |
| | | 920.93 | | -7.573E-01 | 1.265E+00 | 1.982E+00 | 1.734E-01 | -0.382 |
| | + | 59.72 | | 2.357E+01 | 2.458E+00 | 1.401E+00 | 1.411E-01 | 16.827 |
| | | 61.14 | | 2.864E+00 | 3.430E-01 | 3.946E-01 | 3.954E-02 | 7.256 |
| | | | | | | | | |
| OS-185 | | | | | | | | |
| | | | | | | | | |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | 69.30 | | | -5.800E-02 | 2.309E-01 | 3.873E-01 | 3.805E-02 | -0.150 |
| | 592.07 | | | -3.674E+00 | 5.251E+00 | 7.914E+00 | 6.983E-01 | -0.464 |
| | 646.12 | * | | 1.574E-02 | 9.669E-02 | 1.572E-01 | 1.342E-02 | 0.100 |
| | 717.42 | | | 9.171E-01 | 1.973E+00 | 3.434E+00 | 2.961E-01 | 0.267 |
| | 874.81 | | | -8.210E-02 | 1.605E+00 | 2.649E+00 | 2.324E-01 | -0.031 |
| | 880.27 | | | -2.387E-01 | 2.047E+00 | 3.359E+00 | 2.944E-01 | -0.071 |
| RE-188 | 155.03 | * | | 9.830E-02 | 2.319E-01 | 3.877E-01 | 3.602E-02 | 0.254 |
| | 477.96 | | | -3.243E+00 | 6.662E+00 | 1.054E+01 | 9.341E-01 | -0.308 |
| | 633.10 | | | 8.782E-01 | 6.025E+00 | 9.799E+00 | 8.450E-01 | 0.090 |
| W-188 | 63.58 | | | 6.622E+00 | 3.511E+01 | 5.547E+01 | 5.517E+00 | 0.119 |
| | 227.08 | | | 2.952E+00 | 2.094E+01 | 3.375E+01 | 3.021E+00 | 0.087 |
| | 290.67 | * | | 2.565E+00 | 1.222E+01 | 1.860E+01 | 1.709E+00 | 0.138 |
| IR-192 | 295.96 | | + | 6.289E-01 | 3.020E-01 | 3.810E-01 | 3.520E-02 | 1.651 |
| | 308.46 | | | -3.048E-02 | 1.603E-01 | 2.672E-01 | 2.458E-02 | -0.114 |
| | 316.51 | * | | -8.537E-03 | 5.827E-02 | 9.721E-02 | 8.894E-03 | -0.088 |
| | 468.07 | | | 2.675E-02 | 1.531E-01 | 2.541E-01 | 2.399E-02 | 0.105 |
| | 604.41 | | | 2.924E-01 | 1.040E+00 | 1.511E+00 | 1.983E-01 | 0.193 |
| | 612.46 | | | -1.123E+00 | 1.552E+00 | 1.965E+00 | 1.966E-01 | -0.572 |
| AU-195 | 65.12 | | | -1.298E-01 | 1.169E-01 | 1.887E-01 | 1.869E-02 | -0.688 |
| | 66.83 | | | 6.335E-02 | 6.813E-02 | 1.191E-01 | 1.175E-02 | 0.532 |
| | 75.70 | | + | 5.927E-01 | 2.285E-01 | 3.816E-01 | 3.722E-02 | 1.553 |
| | 98.88 | * | | 2.118E-01 | 2.748E-01 | 4.741E-01 | 4.883E-02 | 0.447 |
| | 129.76 | | | 2.891E+00 | 3.977E+00 | 6.778E+00 | 7.593E-01 | 0.427 |
| TL-200 | 367.94 | * | | 5.732E+00 | 8.029E+00 | 1.394E+01 | 1.217E+00 | 0.411 |
| | 579.30 | | | -3.502E+01 | 7.220E+01 | 9.585E+01 | 8.499E+00 | -0.365 |
| | 828.27 | | | -1.662E+01 | 1.063E+02 | 1.746E+02 | 1.535E+01 | -0.095 |
| | 1205.75 | | | 8.638E+00 | 3.114E+01 | 5.242E+01 | 4.327E+00 | 0.165 |
| TL-201 | 68.90 | | | 3.149E-01 | 7.005E-01 | 1.205E+00 | 1.185E-01 | 0.261 |
| | 70.82 | | | -3.512E-01 | 4.741E-01 | 6.935E-01 | 6.797E-02 | -0.506 |
| | 80.30 | | | 4.443E-01 | 1.018E+00 | 1.576E+00 | 1.535E-01 | 0.282 |
| | 135.34 | | | 7.057E+00 | 6.740E+00 | 1.162E+01 | 1.257E+00 | 0.607 |
| | 167.43 | * | | -1.919E-01 | 1.818E+00 | 2.938E+00 | 2.453E-01 | -0.065 |
| TL-202 | 68.90 | | | 1.025E-01 | 2.280E-01 | 3.924E-01 | 3.857E-02 | 0.261 |
| | 70.82 | | | -1.140E-01 | 1.539E-01 | 2.251E-01 | 2.206E-02 | -0.506 |
| | 80.30 | | | 1.443E-01 | 3.307E-01 | 5.116E-01 | 4.983E-02 | 0.282 |
| | 439.56 | * | | -3.033E-02 | 1.043E-01 | 1.687E-01 | 1.470E-02 | -0.180 |
| HG-203 | 70.83 | | | -6.755E-01 | 9.163E-01 | 1.336E+00 | 1.922E-01 | -0.505 |
| | 72.87 | | | 4.365E-02 | 5.583E-01 | 8.521E-01 | 1.192E-01 | 0.051 |
| | 82.60 | | | -2.896E-02 | 1.134E+00 | 1.821E+00 | 2.635E-01 | -0.016 |
| | 279.20 | * | | -2.564E-02 | 6.380E-02 | 1.057E-01 | 9.952E-03 | -0.242 |
| BI-207 | 72.80 | | | 4.252E-03 | 1.826E-01 | 2.779E-01 | 2.718E-02 | 0.015 |
| | 74.97 | | + | 3.381E-01 | 1.303E-01 | 1.993E-01 | 1.945E-02 | 1.696 |
| | 84.90 | | | 1.442E-02 | 2.418E-01 | 3.687E-01 | 3.594E-02 | 0.039 |
| | 569.67 | | | 3.113E-02 | 7.003E-02 | 1.173E-01 | 1.043E-02 | 0.265 |
| | 1063.62 | * | | 5.965E-02 | 1.489E-01 | 2.509E-01 | 2.151E-02 | 0.238 |
| | 1770.23 | | | -7.654E-01 | 8.852E-01 | 1.097E+00 | 9.263E-02 | -0.698 |
| TL-207 | 81.07 | | | -2.579E-01 | 2.608E-01 | 3.727E-01 | 3.630E-02 | -0.692 |
| | 83.78 | | | 1.007E-01 | 1.567E-01 | 2.455E-01 | 2.392E-02 | 0.410 |
| | 94.90 | | | 6.155E-02 | 2.724E-01 | 4.149E-01 | 4.188E-02 | 0.148 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| PO-209 | + | 122.32 | | 1.662E+01 | 5.460E+00 | 6.217E+00 | 7.567E-01 | 2.673 |
| | | 144.24 | | 8.587E-01 | 9.936E-01 | 1.697E+00 | 1.873E-01 | 0.506 |
| | | 154.21 | | 1.134E-01 | 5.809E-01 | 9.595E-01 | 9.744E-02 | 0.118 |
| | | 269.46 | | 3.236E-01 | 3.434E-01 | 5.737E-01 | 5.353E-02 | 0.564 |
| | | 323.87 | * | -3.690E-01 | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| | + | 338.28 | | 4.931E+00 | 2.681E+00 | 3.728E+00 | 4.693E-01 | 1.323 |
| | | 445.03 | | 3.310E+00 | 5.361E+00 | 9.153E+00 | 1.114E+00 | 0.362 |
| | | 260.50 | | 4.524E+00 | 1.874E+01 | 3.014E+01 | 2.753E+00 | 0.150 |
| | | 262.80 | | 7.919E-01 | 5.022E+01 | 7.962E+01 | 7.280E+00 | 0.010 |
| | | 896.60 | * | -3.803E+00 | 2.204E+01 | 3.596E+01 | 3.145E+00 | -0.106 |
| BI-210 | | 46.50 | * | 1.014E+00 | 1.240E+00 | 1.880E+00 | 2.040E-01 | 0.539 |
| PB-210 | | 46.50 | * | 1.014E+00 | 1.240E+00 | 1.880E+00 | 2.040E-01 | 0.539 |
| PO-210 | | 46.50 | * | 1.014E+00 | 1.239E+00 | 1.880E+00 | 1.900E-01 | 0.539 |
| PB-211 | | 404.84 | * | 7.223E-01 | 2.071E+00 | 3.424E+00 | 2.145E+00 | 0.211 |
| BI-212 | | 427.08 | | -1.330E+00 | 4.644E+00 | 7.403E+00 | 4.601E+00 | -0.180 |
| | | 831.96 | | 1.363E+00 | 3.303E+00 | 5.481E+00 | 3.436E+00 | 0.249 |
| | | 727.18 | * | 5.715E-01 | 6.831E-01 | 1.215E+00 | 1.219E-01 | 0.471 |
| | | 785.46 | | -1.293E-01 | 4.051E+00 | 6.751E+00 | 5.916E-01 | -0.019 |
| PO-215 | | 1620.62 | | 1.057E+00 | 2.305E+00 | 4.147E+00 | 3.573E-01 | 0.255 |
| | | 81.07 | | -2.579E-01 | 2.608E-01 | 3.727E-01 | 3.630E-02 | -0.692 |
| | | 83.78 | | 1.007E-01 | 1.567E-01 | 2.455E-01 | 2.392E-02 | 0.410 |
| | | 94.90 | | 6.155E-02 | 2.724E-01 | 4.149E-01 | 4.188E-02 | 0.148 |
| RN-219 | + | 122.32 | | 1.662E+01 | 5.460E+00 | 6.217E+00 | 7.567E-01 | 2.673 |
| | | 144.24 | | 8.587E-01 | 9.936E-01 | 1.697E+00 | 1.873E-01 | 0.506 |
| | | 154.21 | | 1.134E-01 | 5.809E-01 | 9.595E-01 | 9.744E-02 | 0.118 |
| | | 269.46 | | 3.236E-01 | 3.434E-01 | 5.737E-01 | 5.353E-02 | 0.564 |
| | | 323.87 | * | -3.690E-01 | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| | + | 338.28 | | 4.931E+00 | 2.681E+00 | 3.728E+00 | 4.693E-01 | 1.323 |
| | | 445.03 | | 3.310E+00 | 5.361E+00 | 9.153E+00 | 1.114E+00 | 0.362 |
| | | 271.23 | | -4.531E-02 | 4.441E-01 | 6.973E-01 | 7.512E-02 | -0.065 |
| | | 401.81 | * | 3.357E-01 | 8.606E-01 | 1.461E+00 | 2.184E-01 | 0.230 |
| | | 549.76 | * | 1.153E+01 | 5.647E+01 | 9.322E+01 | 8.322E+00 | 0.124 |
| RA-223 | | 81.07 | | -2.579E-01 | 2.608E-01 | 3.727E-01 | 3.630E-02 | -0.692 |
| AC-227 | | 83.78 | | 1.007E-01 | 1.567E-01 | 2.455E-01 | 2.392E-02 | 0.410 |
| | | 94.90 | | 6.155E-02 | 2.724E-01 | 4.149E-01 | 4.188E-02 | 0.148 |
| | + | 122.32 | | 1.662E+01 | 5.460E+00 | 6.217E+00 | 7.567E-01 | 2.673 |
| | | 144.24 | | 8.587E-01 | 9.936E-01 | 1.697E+00 | 1.873E-01 | 0.506 |
| | | 154.21 | | 1.134E-01 | 5.809E-01 | 9.595E-01 | 9.744E-02 | 0.118 |
| | | 269.46 | | 3.236E-01 | 3.434E-01 | 5.737E-01 | 5.353E-02 | 0.564 |
| | | 323.87 | * | -3.690E-01 | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| | + | 338.28 | | 4.931E+00 | 2.681E+00 | 3.728E+00 | 4.693E-01 | 1.323 |
| | | 445.03 | | 3.310E+00 | 5.361E+00 | 9.153E+00 | 1.114E+00 | 0.362 |
| | | 79.80 | | -4.716E-01 | 1.845E+00 | 2.752E+00 | 6.049E-01 | -0.171 |
| AC-227 | | 236.00 | | -1.223E-01 | 4.312E-01 | 5.968E-01 | 7.475E-02 | -0.205 |
| | | 256.20 | * | -9.313E-02 | 7.421E-01 | 1.165E+00 | 1.821E-01 | -0.080 |
| | | 286.10 | | -5.473E-01 | 2.558E+00 | 4.275E+00 | 5.805E-01 | -0.128 |
| | + | 299.80 | | 3.784E+00 | 5.088E+00 | 4.730E+00 | 8.405E-01 | 0.800 |
| | | 304.40 | | 7.286E-03 | 3.806E+00 | 5.670E+00 | 1.060E+00 | 0.001 |
| | | 334.20 | | 3.818E-01 | 5.041E+00 | 7.500E+00 | 1.470E+00 | 0.051 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| TH-227 | | 79.80 | | -4.716E-01 | 1.845E+00 | 2.752E+00 | 6.123E-01 | -0.171 |
| | + | 94.00 | | 5.370E+00 | 3.720E+00 | 3.865E+00 | 8.650E-01 | 1.390 |
| | | 236.00 | | -1.223E-01 | 4.312E-01 | 5.968E-01 | 6.795E-02 | -0.205 |
| | | 256.20 | * | -9.313E-02 | 7.421E-01 | 1.165E+00 | 2.132E-01 | -0.080 |
| | | 286.10 | | -5.473E-01 | 2.616E+00 | 4.275E+00 | 4.293E+00 | -0.128 |
| | + | 299.80 | | 3.784E+00 | 5.088E+00 | 4.730E+00 | 8.405E-01 | 0.800 |
| | | 304.40 | | 7.286E-03 | 3.806E+00 | 5.670E+00 | 1.060E+00 | 0.001 |
| AC-228 | | 334.20 | | 3.818E-01 | 5.041E+00 | 7.500E+00 | 1.470E+00 | 0.051 |
| | + | 338.32 | | 1.181E+00 | 7.928E-01 | 8.923E-01 | 3.689E-01 | 1.323 |
| | + | 911.07 | * | 1.113E+00 | 9.182E-01 | 9.034E-01 | 1.025E-01 | 1.232 |
| RA-228 | | 969.11 | | 5.968E-01 | 7.381E-01 | 1.260E+00 | 2.946E-01 | 0.474 |
| | + | 338.32 | | 1.181E+00 | 7.928E-01 | 8.923E-01 | 3.689E-01 | 1.323 |
| TH-229 | | 911.07 | * | 1.113E+00 | 9.182E-01 | 9.034E-01 | 1.025E-01 | 1.232 |
| | | 969.11 | | 5.968E-01 | 7.381E-01 | 1.260E+00 | 2.946E-01 | 0.474 |
| TH-229 | | 85.43 | | 4.305E-03 | 2.450E-01 | 3.726E-01 | 3.632E-02 | 0.012 |
| | + | 88.47 | | 4.311E+00 | 5.273E-01 | 5.253E-01 | 5.139E-02 | 8.206 |
| | | 100.00 | | 1.253E-03 | 2.354E-01 | 3.928E-01 | 4.070E-02 | 0.003 |
| | | 193.63 | * | 6.872E-02 | 7.966E-01 | 1.292E+00 | 1.118E-01 | 0.053 |
| PA-231 | | 210.97 | | -3.364E-01 | 1.323E+00 | 2.093E+00 | 1.846E-01 | -0.161 |
| | | 283.67 | * | 1.612E+00 | 2.529E+00 | 4.426E+00 | 6.865E-01 | 0.364 |
| TH-231 | + | 301.29 | | 1.514E+00 | 2.026E+00 | 1.942E+00 | 2.455E-01 | 0.779 |
| | | 81.07 | | -2.579E-01 | 2.608E-01 | 3.727E-01 | 3.630E-02 | -0.692 |
| U-231 | | 83.78 | | 1.007E-01 | 1.567E-01 | 2.455E-01 | 2.392E-02 | 0.410 |
| | | 94.90 | | 6.155E-02 | 2.724E-01 | 4.149E-01 | 4.188E-02 | 0.148 |
| | + | 122.32 | | 1.662E+01 | 5.460E+00 | 6.217E+00 | 7.567E-01 | 2.673 |
| | | 144.24 | | 8.587E-01 | 9.936E-01 | 1.697E+00 | 1.873E-01 | 0.506 |
| | | 154.21 | | 1.134E-01 | 5.809E-01 | 9.595E-01 | 9.744E-02 | 0.118 |
| | | 269.46 | | 3.236E-01 | 3.434E-01 | 5.737E-01 | 5.353E-02 | 0.564 |
| | + | 323.87 | * | -3.690E-01 | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| U-231 | | 338.28 | | 4.931E+00 | 2.681E+00 | 3.728E+00 | 4.693E-01 | 1.323 |
| | | 445.03 | | 3.310E+00 | 5.361E+00 | 9.153E+00 | 1.114E+00 | 0.362 |
| | | 84.21 | | 5.860E-01 | 1.994E+00 | 3.075E+00 | 2.996E-01 | 0.191 |
| | + | 92.29 | | 1.533E+00 | 1.016E+00 | 1.250E+00 | 1.245E-01 | 1.227 |
| TH-232 | | 95.87 | * | -3.366E-01 | 3.909E-01 | 5.493E-01 | 5.571E-02 | -0.613 |
| | | 108.00 | | 5.908E-01 | 7.682E-01 | 1.322E+00 | 1.430E-01 | 0.447 |
| | + | 338.32 | | 1.181E+00 | 6.336E-01 | 8.923E-01 | 8.040E-02 | 1.323 |
| PA-233 | + | 911.07 | * | 1.113E+00 | 9.182E-01 | 9.034E-01 | 1.025E-01 | 1.232 |
| | | 969.11 | | 5.968E-01 | 7.381E-01 | 1.260E+00 | 2.946E-01 | 0.474 |
| PA-233 | + | 75.28 | | 9.870E+00 | 4.006E+00 | 5.978E+00 | 9.574E-01 | 1.651 |
| | + | 86.59 | | 6.181E+01 | 1.742E+01 | 5.661E+00 | 1.540E+00 | 10.918 |
| | + | 300.12 | | 1.055E+00 | 1.415E+00 | 1.328E+00 | 2.019E-01 | 0.794 |
| | | 311.98 | * | -3.083E-02 | 1.124E-01 | 1.861E-01 | 1.745E-02 | -0.166 |
| | | 340.50 | | 4.926E-01 | 1.261E+00 | 1.915E+00 | 4.591E-01 | 0.257 |
| PA-234 | | 398.62 | | -4.373E+00 | 4.600E+00 | 6.912E+00 | 1.837E+00 | -0.633 |
| | | 415.76 | | -1.057E+00 | 3.698E+00 | 5.998E+00 | 1.292E+00 | -0.176 |
| | | 63.00 | | -1.463E-01 | 1.099E+00 | 1.710E+00 | 2.784E-01 | -0.086 |
| | | 94.67 | | 9.958E-02 | 1.972E-01 | 3.052E-01 | 4.107E-02 | 0.326 |
| | | 98.44 | | 1.523E-01 | 1.409E-01 | 1.993E-01 | 1.117E-01 | 0.764 |
| | | 99.86 | | -3.102E-02 | 5.935E-01 | 9.879E-01 | 1.023E-01 | -0.031 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| | | 111.00 | | -2.877E-01 | 2.497E-01 | 3.816E-01 | 5.298E-02 | -0.754 |
| | | 131.20 | | -6.576E-02 | 1.514E-01 | 2.434E-01 | 2.702E-02 | -0.270 |
| | | 152.70 | | 2.837E-01 | 4.561E-01 | 7.682E-01 | 1.344E-01 | 0.369 |
| | + | 186.00 | | 4.777E+00 | 3.528E+00 | 3.655E+00 | 1.140E+00 | 1.307 |
| | | 226.40 | | 6.616E-01 | 7.108E-01 | 1.190E+00 | 1.597E-01 | 0.556 |
| | | 227.20 | | -9.304E-02 | 7.700E-01 | 1.222E+00 | 1.094E-01 | -0.076 |
| | | 248.90 | | -5.268E-01 | 1.522E+00 | 2.358E+00 | 5.328E-01 | -0.223 |
| | + | 293.70 | | 4.247E+00 | 2.136E+00 | 2.454E+00 | 4.316E-01 | 1.731 |
| | | 369.80 | | -7.991E-01 | 1.854E+00 | 2.998E+00 | 6.540E-01 | -0.267 |
| | | 568.70 | | 8.739E-01 | 2.294E+00 | 3.823E+00 | 3.400E-01 | 0.229 |
| | | 569.50 | | 1.911E-01 | 6.267E-01 | 1.039E+00 | 9.236E-02 | 0.184 |
| | | 574.00 | | 5.899E-01 | 3.464E+00 | 5.680E+00 | 5.045E-01 | 0.104 |
| | | 699.00 | | -3.517E-01 | 1.484E+00 | 2.449E+00 | 4.667E-01 | -0.144 |
| | | 706.10 | | 5.174E-01 | 2.411E+00 | 4.107E+00 | 1.831E+00 | 0.126 |
| | | 733.00 | | -3.050E-02 | 8.352E-01 | 1.398E+00 | 3.106E-01 | -0.022 |
| | | 742.81 | | -5.131E-01 | 2.909E+00 | 4.768E+00 | 3.206E+00 | -0.108 |
| | | 796.30 | | 1.168E+00 | 2.124E+00 | 3.663E+00 | 9.926E-01 | 0.319 |
| | | 805.60 | | 8.151E-01 | 2.458E+00 | 4.189E+00 | 1.286E+00 | 0.195 |
| | | 819.60 | | -2.738E+00 | 3.510E+00 | 5.224E+00 | 1.989E+00 | -0.524 |
| | | 826.30 | | -2.724E+00 | 2.530E+00 | 3.312E+00 | 1.483E+00 | -0.822 |
| | | 831.60 | | 5.653E-01 | 1.669E+00 | 2.834E+00 | 8.471E-01 | 0.199 |
| | | 876.40 | | -1.514E+00 | 2.910E+00 | 3.880E+00 | 3.990E+00 | -0.390 |
| | | 880.51 | | -1.636E-01 | 7.767E-01 | 1.264E+00 | 1.108E-01 | -0.129 |
| | | 883.24 | | -6.995E-01 | 9.081E-01 | 1.187E+00 | 7.980E-01 | -0.589 |
| | | 899.00 | | -5.779E-01 | 2.559E+00 | 4.141E+00 | 1.811E+00 | -0.140 |
| | | 925.00 | | -6.832E-01 | 3.491E+00 | 5.671E+00 | 4.963E-01 | -0.120 |
| | | 926.50 | | 1.594E-02 | 5.287E-01 | 8.742E-01 | 2.214E-01 | 0.018 |
| | | 946.00 | * | 3.247E-01 | 9.728E-01 | 1.637E+00 | 3.082E-01 | 0.198 |
| | | 949.00 | | -4.443E-01 | 1.463E+00 | 2.357E+00 | 2.062E-01 | -0.189 |
| | | 980.50 | | -8.834E-01 | 2.318E+00 | 3.694E+00 | 3.223E-01 | -0.239 |
| PA-234M | | 1394.10 | | 8.403E-01 | 1.604E+00 | 2.834E+00 | 1.845E+00 | 0.296 |
| | | 766.42 | | 1.243E+01 | 2.647E+01 | 4.464E+01 | 2.266E+01 | 0.279 |
| TH-234 | | 1001.03 | * | 8.467E+00 | 1.304E+01 | 2.246E+01 | 2.254E+00 | 0.377 |
| | + | 63.29 | * | 9.068E-02 | 9.381E-01 | 1.476E+00 | 2.755E-01 | 0.061 |
| U-235 | | 92.38 | | 1.390E+00 | 9.476E-01 | 1.139E+00 | 2.137E-01 | 1.220 |
| | + | 89.95 | | 4.846E+00 | 2.263E+00 | 2.476E+00 | 7.732E-01 | 1.957 |
| | + | 93.35 | | 1.671E+00 | 1.194E+00 | 1.351E+00 | 3.848E-01 | 1.237 |
| | | 105.00 | | 2.204E-01 | 1.290E+00 | 2.165E+00 | 6.600E-01 | 0.102 |
| | | 143.76 | * | 3.087E-01 | 3.076E-01 | 5.230E-01 | 9.588E-02 | 0.590 |
| | | 163.35 | | -8.208E-02 | 7.366E-01 | 1.192E+00 | 2.272E-01 | -0.069 |
| | + | 185.71 | | 1.769E-01 | 1.194E-01 | 1.348E-01 | 1.154E-02 | 1.313 |
| | | 205.31 | | -6.784E-01 | 8.472E-01 | 1.280E+00 | 2.450E-01 | -0.530 |
| NP-236 | | 94.67 | | 7.634E-02 | 1.495E-01 | 2.316E-01 | 2.334E-02 | 0.330 |
| | | 98.44 | | 1.151E-01 | 8.556E-02 | 1.506E-01 | 1.548E-02 | 0.764 |
| | | 111.00 | | -2.176E-01 | 1.880E-01 | 2.887E-01 | 3.174E-02 | -0.754 |
| | | 160.31 | * | -1.286E-02 | 1.226E-01 | 1.987E-01 | 1.756E-02 | -0.065 |
| NP-237 | | 86.50 | * | 3.158E+00 | 8.377E-01 | 8.015E-01 | 1.829E-01 | 3.940 |
| | | 95.87 | | -1.028E+00 | 1.217E+00 | 1.677E+00 | 4.228E-01 | -0.613 |
| U-238 | | 63.29 | * | 9.068E-02 | 9.381E-01 | 1.476E+00 | 2.755E-01 | 0.061 |

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

| Nuclide | Line Ided | Energy (keV) | Key | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|-----------|--------------|-----|---------------------|-----------|----------------|-----------|---------|
| NP-239 | + | 92.38 | | 1.390E+00 | 9.215E-01 | 1.139E+00 | 1.135E-01 | 1.220 |
| | | 99.55 | | 7.100E-02 | 1.938E-01 | 3.290E-01 | 3.400E-02 | 0.216 |
| | | 117.00 | * | -2.022E-01 | 3.038E-01 | 4.287E-01 | 4.876E-02 | -0.472 |
| | | 209.75 | | 1.764E+00 | 1.296E+00 | 2.223E+00 | 1.958E-01 | 0.794 |
| | | 228.18 | | -7.401E-02 | 4.033E-01 | 6.373E-01 | 5.709E-02 | -0.116 |
| CM-243 | | 277.60 | | 4.218E-01 | 3.236E-01 | 5.815E-01 | 5.337E-02 | 0.725 |
| | | 334.30 | | 7.565E-02 | 2.849E+00 | 4.222E+00 | 3.816E-01 | 0.018 |
| | | 99.55 | | 7.302E-02 | 1.993E-01 | 3.384E-01 | 3.497E-02 | 0.216 |
| | | 103.76 | * | -1.186E-01 | 1.201E-01 | 1.885E-01 | 1.992E-02 | -0.629 |
| | | 117.00 | | -2.080E-01 | 3.124E-01 | 4.408E-01 | 5.014E-02 | -0.472 |
| AM-246 | | 209.75 | | 1.738E+00 | 1.277E+00 | 2.190E+00 | 1.929E-01 | 0.794 |
| | | 228.18 | | -7.475E-02 | 4.073E-01 | 6.436E-01 | 5.766E-02 | -0.116 |
| | | 277.60 | | 4.251E-01 | 3.261E-01 | 5.859E-01 | 5.378E-02 | 0.725 |
| | | 798.80 | | -2.187E-01 | 3.293E-01 | 5.172E-01 | 4.540E-02 | -0.423 |
| | | 1036.00 | | -5.755E-03 | 8.139E-01 | 1.330E+00 | 1.149E-01 | -0.004 |
| CM-247 | | 1062.04 | | -1.142E-01 | 6.431E-01 | 1.031E+00 | 8.846E-02 | -0.111 |
| | | 1078.86 | * | 2.986E-01 | 4.191E-01 | 7.220E-01 | 6.159E-02 | 0.414 |
| | | 278.00 | | 1.633E+00 | 1.324E+00 | 2.374E+00 | 2.179E-01 | 0.688 |
| | | 287.40 | | -7.645E-01 | 2.058E+00 | 3.404E+00 | 3.127E-01 | -0.225 |
| | | 402.60 | * | 5.150E-02 | 7.831E-02 | 1.350E-01 | 1.147E-02 | 0.381 |
| CF-249 | | 252.85 | | 6.287E-01 | 1.597E+00 | 2.599E+00 | 2.367E-01 | 0.242 |
| | | 333.44 | | 4.481E-01 | 3.573E-01 | 5.785E-01 | 5.231E-02 | 0.775 |
| | | 387.95 | * | 2.819E-02 | 8.597E-02 | 1.456E-01 | 1.234E-02 | 0.194 |
| CF-251 | | 176.60 | * | -5.573E-03 | 1.889E-01 | 3.059E-01 | 2.588E-02 | -0.018 |
| | | 227.00 | | 4.502E-01 | 6.598E-01 | 1.097E+00 | 9.815E-02 | 0.411 |
| | | 285.00 | | 1.424E+00 | 2.941E+00 | 5.120E+00 | 4.702E-01 | 0.278 |

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]G1202037548      *
* Acquisition date   : 18-FEB-2010 14:48:04 Detector SN# :                    *
* Detector ID        : GAM17 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 01:00:06.12 Half life ratio : 8.000                  *
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 11-FEB-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202037548 Analyst initials: MXR1                  *
* Batch Number       : 950786 Sample Quantity : 1.5544E+02 GRAM            *
* Recovery           : 1.00000 Carrier Weight : 0.00000                    *
*****
*                                     QC DATA                                *
*
* Standard Weight    : 0.00000                                              *
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36 MS Isotope :                    *
* MSD DPM             : 0.000 MSD Isotope :                                *
* LCS DPM             : 0.000 LCS Isotope :                                *
* LCSD DPM            : 0.000 LCSD Isotope :                                *
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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | |
|---------|-------------------------|-----------|--------------------|-----------|
| CO-57 | 2.359E-01 | 7.555E-02 | 6.373E-02 | 0.000E+00 |
| CO-60 | 6.140E+00 | 6.365E-01 | 1.011E-01 | 0.000E+00 |
| CD-109 | 3.176E+01 | 3.808E+00 | 1.753E+00 | 0.000E+00 |
| SN-126 | 3.157E+00 | 3.785E-01 | 1.740E-01 | 0.000E+00 |
| BA-137M | 5.558E+00 | 5.456E-01 | 1.416E-01 | 0.000E+00 |
| CS-137 | 5.875E+00 | 5.776E-01 | 1.497E-01 | 0.000E+00 |
| W-181 | -3.026E-01 | 2.435E-01 | 4.361E-01 | 0.000E+00 |
| TL-208 | 4.877E-01 | 1.397E-01 | 1.319E-01 | 0.000E+00 |
| BI-211 | 2.082E+00 | 7.994E-01 | 6.924E-01 | 0.000E+00 |
| PB-212 | 1.133E+00 | 1.841E-01 | 1.618E-01 | 0.000E+00 |
| PO-212 | 1.133E+00 | 1.841E-01 | 1.618E-01 | 0.000E+00 |
| BI-214 | 9.422E-01 | 2.985E-01 | 2.269E-01 | 0.000E+00 |
| PB-214 | 7.242E-01 | 2.805E-01 | 2.414E-01 | 0.000E+00 |
| PO-214 | 7.242E-01 | 2.805E-01 | 2.414E-01 | 0.000E+00 |
| PO-216 | 1.133E+00 | 1.841E-01 | 1.618E-01 | 0.000E+00 |
| PO-218 | 7.242E-01 | 2.805E-01 | 2.414E-01 | 0.000E+00 |
| RA-224 | 2.918E+00 | 1.751E+00 | 1.843E+00 | 0.000E+00 |
| RA-226 | 9.422E-01 | 2.985E-01 | 2.269E-01 | 0.000E+00 |
| TH-228 | 1.142E+00 | 1.855E-01 | 1.631E-01 | 0.000E+00 |
| TH-230 | 9.422E-01 | 2.985E-01 | 2.269E-01 | 0.000E+00 |
| U-234 | 9.422E-01 | 2.985E-01 | 2.269E-01 | 0.000E+00 |
| AM-241 | 1.303E+01 | 1.399E+00 | 2.408E-01 | 0.000E+00 |
| AM-243 | 1.884E-01 | 7.118E-02 | 9.742E-02 | 0.000E+00 |
| ANH-511 | 1.566E-01 | 1.191E-01 | 1.151E-01 | 0.000E+00 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Act error Ided | MDA (pCi/GRAM) | |
|---------|-------------------------------------|------------------------|--------------------|----------------------|
| BE-7 | -2.123E-01 | 6.609E-01 | 1.124E+00 | 0.000E+00 NOT IDENT. |
| NA-22 | -2.684E-02 | 6.168E-02 | 9.346E-02 | 0.000E+00 NOT IDENT. |
| NA-24 | 0.000E+00 | 2.293E+02 | 0.000E+00 | 0.000E+00 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| AL-26 | 1.514E-03 | 4.696E-02 | 7.918E-02 | 0.000E+00 | NOT IDENT. |
| K-40 | 6.903E-01 | 6.545E-01 | 1.302E+00 | 0.000E+00 | NOT IDENT. |
| TI-44 | 0.000E+00 | 4.861E-02 | 8.036E-02 | 0.000E+00 | FAIL ABUN |
| SC-46 | 4.230E-02 | 9.626E-02 | 1.721E-01 | 0.000E+00 | NOT IDENT. |
| V-48 | 3.384E-02 | 1.539E-01 | 2.673E-01 | 0.000E+00 | NOT IDENT. |
| CR-51 | -9.027E-02 | 5.483E-01 | 9.795E-01 | 0.000E+00 | NOT IDENT. |
| MN-52 | 1.534E-01 | 1.140E-01 | 2.523E-01 | 0.000E+00 | NOT IDENT. |
| MN-54 | -1.939E-03 | 9.602E-02 | 1.667E-01 | 0.000E+00 | NOT IDENT. |
| CO-56 | -3.764E-02 | 1.024E-01 | 1.727E-01 | 0.000E+00 | NOT IDENT. |
| CO-58 | -7.259E-02 | 9.042E-02 | 1.468E-01 | 0.000E+00 | NOT IDENT. |
| FE-59 | -5.058E-02 | 2.259E-01 | 3.739E-01 | 0.000E+00 | NOT IDENT. |
| ZN-65 | 4.705E-02 | 2.171E-01 | 3.731E-01 | 0.000E+00 | NOT IDENT. |
| GE-68 | 1.800E+00 | 3.614E+00 | 6.351E+00 | 0.000E+00 | NOT IDENT. |
| AS-73 | -6.006E-01 | 6.856E-01 | 1.049E+00 | 0.000E+00 | NOT IDENT. |
| AS-74 | 1.066E-01 | 1.403E-01 | 2.541E-01 | 0.000E+00 | NOT IDENT. |
| SE-75 | -3.013E-02 | 7.718E-02 | 1.282E-01 | 0.000E+00 | FAIL ABUN |
| BR-77 | 1.372E+00 | 2.656E+00 | 4.750E+00 | 0.000E+00 | FAIL ABUN |
| SR-82 | 9.182E-01 | 7.219E-01 | 1.380E+00 | 0.000E+00 | NOT IDENT. |
| RB-83 | 8.450E-02 | 1.488E-01 | 2.669E-01 | 0.000E+00 | NOT IDENT. |
| RB-84 | 4.811E-02 | 1.545E-01 | 2.738E-01 | 0.000E+00 | NOT IDENT. |
| KR-85 | 6.443E+00 | 1.699E+01 | 2.665E+01 | 0.000E+00 | NOT IDENT. |
| SR-85 | 3.053E-02 | 8.050E-02 | 1.263E-01 | 0.000E+00 | NOT IDENT. |
| RB-86 | -4.406E-01 | 1.814E+00 | 3.009E+00 | 0.000E+00 | NOT IDENT. |
| Y-88 | 4.469E-02 | 5.334E-02 | 1.083E-01 | 0.000E+00 | NOT IDENT. |
| ZR-88 | -1.644E-02 | 6.382E-02 | 1.113E-01 | 0.000E+00 | NOT IDENT. |
| Y-91 | 4.088E+00 | 2.577E+01 | 4.409E+01 | 0.000E+00 | NOT IDENT. |
| NB-94 | -4.528E-03 | 7.179E-02 | 1.268E-01 | 0.000E+00 | NOT IDENT. |
| NB-95 | 3.094E-02 | 8.780E-02 | 1.580E-01 | 0.000E+00 | NOT IDENT. |
| NB-95M | -1.123E-01 | 2.086E-01 | 3.052E-01 | 0.000E+00 | NOT IDENT. |
| ZR-95 | -1.868E-02 | 1.456E-01 | 2.530E-01 | 0.000E+00 | NOT IDENT. |
| NB-97 | 0.000E+00 | 1.747E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| ZR-97 | 0.000E+00 | 2.575E+03 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| MO-99 | 3.893E+00 | 3.763E+00 | 7.103E+00 | 0.000E+00 | NOT IDENT. |
| TC-99M | 0.000E+00 | 5.254E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| RH-101 | 5.673E-02 | 5.361E-02 | 9.883E-02 | 0.000E+00 | NOT IDENT. |
| RH-102 | -6.619E-03 | 6.653E-02 | 1.150E-01 | 0.000E+00 | NOT IDENT. |
| RU-103 | 4.261E-02 | 7.932E-02 | 1.423E-01 | 0.000E+00 | FAIL ABUN |
| RH-106 | 1.153E-01 | 6.432E-01 | 1.108E+00 | 0.000E+00 | FAIL ABUN |
| RU-106 | 1.153E-01 | 6.431E-01 | 1.108E+00 | 0.000E+00 | FAIL ABUN |
| AG-108M | 3.247E-02 | 7.591E-02 | 1.366E-01 | 0.000E+00 | NOT IDENT. |
| AG-110M | 1.276E-01 | 9.412E-02 | 1.579E-01 | 0.000E+00 | NOT IDENT. |
| IN-111 | -8.201E-02 | 3.208E-01 | 4.787E-01 | 0.000E+00 | NOT IDENT. |
| IN-113M | -8.615E-02 | 9.222E-02 | 1.536E-01 | 0.000E+00 | NOT IDENT. |
| SN-113 | -8.615E-02 | 9.222E-02 | 1.536E-01 | 0.000E+00 | NOT IDENT. |
| IN-114M | 4.107E-02 | 2.799E-01 | 4.430E-01 | 0.000E+00 | NOT IDENT. |
| CD-115 | 1.050E+00 | 2.300E+00 | 4.097E+00 | 0.000E+00 | NOT IDENT. |
| SN-117M | -2.066E-02 | 5.490E-02 | 9.567E-02 | 0.000E+00 | NOT IDENT. |
| SB-122 | 2.731E-01 | 6.110E-01 | 1.085E+00 | 0.000E+00 | NOT IDENT. |
| I-123 | 0.000E+00 | 6.272E+02 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| TE-123M | -2.291E-02 | 4.078E-02 | 7.026E-02 | 0.000E+00 | NOT IDENT. |
| I-124 | 6.203E-01 | 4.431E-01 | 7.593E-01 | 0.000E+00 | NOT IDENT. |
| SB-124 | 2.567E-02 | 1.354E-01 | 2.372E-01 | 0.000E+00 | NOT IDENT. |
| SB-125 | 6.060E-02 | 1.966E-01 | 3.524E-01 | 0.000E+00 | NOT IDENT. |
| TE-125M | 5.109E+00 | 1.077E+01 | 2.017E+01 | 0.000E+00 | NOT IDENT. |
| I-126 | 5.714E-02 | 3.016E-01 | 4.528E-01 | 0.000E+00 | NOT IDENT. |
| SB-126 | -1.384E-01 | 2.152E-01 | 3.603E-01 | 0.000E+00 | NOT IDENT. |
| SB-127 | -6.007E-01 | 7.815E-01 | 1.207E+00 | 0.000E+00 | NOT IDENT. |
| XE-127 | -3.222E-02 | 6.642E-02 | 1.126E-01 | 0.000E+00 | FAIL ABUN |
| I-131 | 7.248E-03 | 1.245E-01 | 2.229E-01 | 0.000E+00 | NOT IDENT. |
| TE-132 | -4.408E-02 | 2.441E-01 | 4.174E-01 | 0.000E+00 | FAIL ABUN |
| BA-133 | 1.123E-02 | 9.312E-02 | 1.481E-01 | 0.000E+00 | NOT IDENT. |
| I-133 | 0.000E+00 | 3.306E+01 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-134 | 1.008E-01 | 1.068E-01 | 1.995E-01 | 0.000E+00 | NOT IDENT. |
| CS-135 | 6.114E-02 | 2.845E-01 | 4.914E-01 | 0.000E+00 | NOT IDENT. |
| I-135 | 0.000E+00 | 5.450E+07 | 0.000E+00 | 0.000E+00 | SHORT HLIF |
| CS-136 | -8.463E-02 | 2.073E-01 | 3.394E-01 | 0.000E+00 | NOT IDENT. |
| CE-139 | -3.999E-03 | 4.279E-02 | 7.556E-02 | 0.000E+00 | NOT IDENT. |
| BA-140 | -1.167E-01 | 3.681E-01 | 6.129E-01 | 0.000E+00 | NOT IDENT. |
| LA-140 | -6.146E-02 | 8.710E-02 | 1.210E-01 | 0.000E+00 | NOT IDENT. |
| CE-141 | -4.596E-02 | 7.613E-02 | 1.318E-01 | 0.000E+00 | NOT IDENT. |
| CE-143 | 1.007E+01 | 6.223E+00 | 1.051E+01 | 0.000E+00 | FAIL ABUN |
| CE-144 | -4.221E-01 | 2.961E-01 | 4.779E-01 | 0.000E+00 | NOT IDENT. |
| PM-144 | -1.036E-02 | 7.042E-02 | 1.232E-01 | 0.000E+00 | NOT IDENT. |
| PR-144 | -6.991E-01 | 4.753E+00 | 8.317E+00 | 0.000E+00 | NOT IDENT. |
| PM-146 | -2.817E-02 | 1.008E-01 | 1.730E-01 | 0.000E+00 | NOT IDENT. |
| ND-147 | -2.570E-01 | 7.654E-01 | 1.286E+00 | 0.000E+00 | NOT IDENT. |
| PM-149 | -5.265E+00 | 1.441E+01 | 2.566E+01 | 0.000E+00 | NOT IDENT. |
| EU-152 | -9.154E-02 | 1.872E-01 | 3.255E-01 | 0.000E+00 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| GD-153 | 5.653E-03 | 1.009E-01 | 1.677E-01 | 0.000E+00 | NOT IDENT. |
| EU-154 | -1.790E-02 | 1.639E-01 | 2.660E-01 | 0.000E+00 | FAIL ABUN |
| EU-155 | 1.791E-02 | 1.284E-01 | 2.375E-01 | 0.000E+00 | FAIL ABUN |
| TB-160 | 1.528E-01 | 3.443E-01 | 6.159E-01 | 0.000E+00 | FAIL ABUN |
| HO-166M | -1.479E-02 | 1.375E-01 | 2.410E-01 | 0.000E+00 | FAIL ABUN |
| TM-171 | 6.872E+00 | 2.089E+01 | 3.998E+01 | 0.000E+00 | FAIL ABUN |
| LU-176 | 3.790E-02 | 4.651E-02 | 8.260E-02 | 0.000E+00 | FAIL ABUN |
| LU-177 | 5.363E-01 | 8.339E-01 | 1.501E+00 | 0.000E+00 | NOT IDENT. |
| LU-177M | -1.708E-01 | 3.664E-01 | 6.268E-01 | 0.000E+00 | FAIL ABUN |
| HF-181 | -3.094E-04 | 8.471E-02 | 1.472E-01 | 0.000E+00 | FAIL ABUN |
| TA-182 | 9.987E-02 | 2.279E-01 | 4.100E-01 | 0.000E+00 | NOT IDENT. |
| RE-183 | 1.194E-01 | 1.547E-01 | 2.858E-01 | 0.000E+00 | FAIL ABUN |
| RE-184 | 1.625E-01 | 4.044E-01 | 7.102E-01 | 0.000E+00 | FAIL ABUN |
| OS-185 | 1.574E-02 | 9.476E-02 | 1.622E-01 | 0.000E+00 | FAIL ABUN |
| RE-188 | 9.830E-02 | 2.273E-01 | 4.151E-01 | 0.000E+00 | NOT IDENT. |
| W-188 | 2.565E+00 | 1.198E+01 | 1.960E+01 | 0.000E+00 | NOT IDENT. |
| IR-192 | -8.537E-03 | 5.710E-02 | 1.022E-01 | 0.000E+00 | FAIL ABUN |
| AU-195 | 2.118E-01 | 2.693E-01 | 5.133E-01 | 0.000E+00 | FAIL ABUN |
| TL-200 | 5.732E+00 | 7.869E+00 | 1.459E+01 | 0.000E+00 | NOT IDENT. |
| TL-201 | -1.919E-01 | 1.781E+00 | 3.139E+00 | 0.000E+00 | NOT IDENT. |
| TL-202 | -3.033E-02 | 1.023E-01 | 1.758E-01 | 0.000E+00 | NOT IDENT. |
| HG-203 | -2.564E-02 | 6.252E-02 | 1.115E-01 | 0.000E+00 | NOT IDENT. |
| BI-207 | 5.965E-02 | 1.459E-01 | 2.553E-01 | 0.000E+00 | FAIL ABUN |
| TL-207 | -3.690E-01 | 1.228E+00 | 2.165E+00 | 0.000E+00 | FAIL ABUN |
| PO-209 | -3.803E+00 | 2.160E+01 | 3.677E+01 | 0.000E+00 | NOT IDENT. |
| BI-210 | 1.014E+00 | 1.215E+00 | 2.073E+00 | 0.000E+00 | NOT IDENT. |
| PB-210 | 1.014E+00 | 1.215E+00 | 2.073E+00 | 0.000E+00 | NOT IDENT. |
| PO-210 | 1.014E+00 | 1.214E+00 | 2.073E+00 | 0.000E+00 | NOT IDENT. |
| PB-211 | 7.223E-01 | 2.029E+00 | 3.576E+00 | 0.000E+00 | NOT IDENT. |
| BI-212 | 5.715E-01 | 6.694E-01 | 1.249E+00 | 0.000E+00 | NOT IDENT. |
| PO-215 | -3.690E-01 | 1.228E+00 | 2.165E+00 | 0.000E+00 | FAIL ABUN |
| RN-219 | 3.357E-01 | 8.434E-01 | 1.526E+00 | 0.000E+00 | NOT IDENT. |
| RN-220 | 1.153E+01 | 5.534E+01 | 9.658E+01 | 0.000E+00 | NOT IDENT. |
| RA-223 | -3.690E-01 | 1.228E+00 | 2.165E+00 | 0.000E+00 | FAIL ABUN |
| AC-227 | -9.313E-02 | 7.272E-01 | 1.231E+00 | 0.000E+00 | FAIL ABUN |
| TH-227 | -9.313E-02 | 7.273E-01 | 1.231E+00 | 0.000E+00 | FAIL ABUN |
| AC-228 | 0.000E+00 | 8.999E-01 | 9.232E-01 | 0.000E+00 | FAIL ABUN |
| RA-228 | 0.000E+00 | 8.999E-01 | 9.232E-01 | 0.000E+00 | FAIL ABUN |
| TH-229 | 6.872E-02 | 7.806E-01 | 1.376E+00 | 0.000E+00 | FAIL ABUN |
| PA-231 | 1.612E+00 | 2.478E+00 | 4.666E+00 | 0.000E+00 | FAIL ABUN |
| TH-231 | -3.690E-01 | 1.228E+00 | 2.165E+00 | 0.000E+00 | FAIL ABUN |
| U-231 | -3.366E-01 | 3.830E-01 | 5.952E-01 | 0.000E+00 | FAIL ABUN |
| TH-232 | 0.000E+00 | 8.999E-01 | 9.232E-01 | 0.000E+00 | FAIL ABUN |
| PA-233 | -3.083E-02 | 1.101E-01 | 1.957E-01 | 0.000E+00 | FAIL ABUN |
| PA-234 | 3.247E-01 | 9.533E-01 | 1.671E+00 | 0.000E+00 | FAIL ABUN |
| PA-234M | 8.467E+00 | 1.278E+01 | 2.289E+01 | 0.000E+00 | NOT IDENT. |
| TH-234 | 9.068E-02 | 9.193E-01 | 1.616E+00 | 0.000E+00 | FAIL ABUN |
| U-235 | 3.087E-01 | 3.015E-01 | 5.610E-01 | 0.000E+00 | FAIL ABUN |
| NP-236 | -1.286E-02 | 1.201E-01 | 2.126E-01 | 0.000E+00 | NOT IDENT. |
| NP-237 | 0.000E+00 | 8.209E-01 | 8.706E-01 | 0.000E+00 | NOT IDENT. |
| U-238 | 9.068E-02 | 9.193E-01 | 1.616E+00 | 0.000E+00 | FAIL ABUN |
| NP-239 | -2.022E-01 | 2.977E-01 | 4.622E-01 | 0.000E+00 | NOT IDENT. |
| CM-243 | -1.186E-01 | 1.177E-01 | 2.038E-01 | 0.000E+00 | NOT IDENT. |
| AM-246 | 2.986E-01 | 4.107E-01 | 7.343E-01 | 0.000E+00 | NOT IDENT. |
| CM-247 | 5.150E-02 | 7.674E-02 | 1.410E-01 | 0.000E+00 | NOT IDENT. |
| CF-249 | 2.819E-02 | 8.425E-02 | 1.523E-01 | 0.000E+00 | NOT IDENT. |
| CF-251 | -5.573E-03 | 1.851E-01 | 3.264E-01 | 0.000E+00 | NOT IDENT. |


```

*****
*                               GEL Laboratories LLC                               *
*                               2040 Savage Road                               *
*                               Charleston, SC 29414                           *
*****
Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037548.CNF;1
Sample date        : 11-FEB-2010 00:00:00 Acquisition date : 18-FEB-2010 14:48:04
Sample ID          : G1202037548          Sample quantity  : 1.55440E+02 GRAM
Detector name      : GAM17                Detector geometry: CAN
Elapsed live time  : 0 01:00:00.00        Elapsed real time: 0 01:00:06.12  0.2%
Energy tolerance   : 1.50000 keV          Analyst Initials : MXR1
Abundance limit    : 75.00000             Sensitivity       : 5.00000
Batch ID           : 950786               Detector SN#      :
Matrix Spike ID    :                     LCS ID           : 1032-A
*****

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Nuclide Line Activity Report

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| CO-57 | 122.06 | 247 | 85.51* | 6.034E+00 | 2.313E-01 | 2.359E-01 | 32.68 |
| | 136.48 | ----- | 10.60 | 5.740E+00 | ----- | Line Not Found | ----- |
| CO-60 | 1173.22 | 1203 | 100.00 | 9.381E-01 | 6.194E+00 | 6.211E+00 | 10.30 |
| | 1332.49 | 1065 | 100.00* | 8.401E-01 | 6.123E+00 | 6.140E+00 | 10.58 |
| CD-109 | 88.03 | 1612 | 3.72* | 6.665E+00 | 3.140E+01 | 3.176E+01 | 12.23 |
| SN-126 | 64.28 | ----- | 9.60 | 6.785E+00 | ----- | Line Not Found | ----- |
| | 86.94 | 1612 | 8.90 | 6.665E+00 | 1.313E+01 | 1.313E+01 | 42.26 |
| | 87.57 | 1612 | 37.00* | 6.665E+00 | 3.157E+00 | 3.157E+00 | 12.23 |
| BA-137M | 661.65 | 1660 | 89.98* | 1.604E+00 | 5.555E+00 | 5.558E+00 | 10.02 |
| CS-137 | 661.65 | 1660 | 85.12* | 1.604E+00 | 5.872E+00 | 5.875E+00 | 10.03 |
| W-181 | 56.28 | 140 | 18.70 | 6.691E+00 | 5.393E-01 | 5.635E-01 | 56.92 |
| | 57.53 | 140 | 32.60 | 6.691E+00 | 3.094E-01 | 3.232E-01 | 56.92 |
| | 65.20 | ----- | 13.80* | 6.792E+00 | ----- | Line Not Found | ----- |
| TL-208 | 277.35 | ----- | 6.80 | 3.568E+00 | ----- | Line Not Found | ----- |
| | 510.84 | 67 | 21.60 | 2.057E+00 | 7.249E-01 | 7.249E-01 | 78.05 |
| | 583.14 | 154 | 84.20* | 1.812E+00 | 4.877E-01 | 4.877E-01 | 29.23 |
| | 860.37 | ----- | 12.46 | 1.247E+00 | ----- | Line Not Found | ----- |
| BI-211 | 72.87 | ----- | 1.27 | 6.803E+00 | ----- | Line Not Found | ----- |
| | 351.07 | 162 | 12.94* | 2.909E+00 | 2.082E+00 | 2.082E+00 | 39.18 |
| PB-212 | 74.81 | 175 | 10.70 | 6.795E+00 | 1.162E+00 | 1.162E+00 | 39.66 |
| | 77.11 | 294 | 18.00 | 6.781E+00 | 1.163E+00 | 1.163E+00 | 23.11 |
| | 87.30 | 1612 | 8.00 | 6.665E+00 | 1.460E+01 | 1.460E+01 | 15.80 |
| | 238.63 | 421 | 44.60* | 4.022E+00 | 1.133E+00 | 1.133E+00 | 16.58 |
| | 300.09 | 48 | 3.41 | 3.333E+00 | 2.042E+00 | 2.042E+00 | 133.73 |
| PO-212 | 74.81 | 175 | 10.70 | 6.795E+00 | 1.162E+00 | 1.162E+00 | 39.66 |
| | 77.11 | 294 | 18.00 | 6.781E+00 | 1.163E+00 | 1.163E+00 | 23.11 |
| | 87.30 | 1612 | 8.00 | 6.665E+00 | 1.460E+01 | 1.460E+01 | 15.80 |
| | 115.19 | ----- | 0.60 | 6.177E+00 | ----- | Line Not Found | ----- |
| | 238.63 | 421 | 44.60* | 4.022E+00 | 1.133E+00 | 1.133E+00 | 16.58 |
| | 300.09 | 48 | 3.41 | 3.333E+00 | 2.042E+00 | 2.042E+00 | 133.73 |
| BI-214 | 609.31 | 157 | 46.30* | 1.737E+00 | 9.422E-01 | 9.422E-01 | 32.33 |
| | 1120.29 | ----- | 15.10 | 9.769E-01 | ----- | Line Not Found | ----- |

Nuclide Type:

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | 2-Sigma %Error |
|---------|---------|-------|---------|-----------|-------------------------|------------------------|-------------------|
| PB-214 | 1764.49 | 20 | 15.80 | 6.717E-01 | 9.119E-01 | 9.119E-01 | 67.21 |
| | 74.81 | 175 | 6.21 | 6.795E+00 | 2.003E+00 | 2.003E+00 | 39.25 |
| | 77.11 | 294 | 10.50 | 6.781E+00 | 1.994E+00 | 1.994E+00 | 24.33 |
| | 87.30 | 1612 | 4.67 | 6.665E+00 | 2.502E+01 | 2.502E+01 | 14.46 |
| | 241.98 | 95 | 7.49 | 3.985E+00 | 1.539E+00 | 1.539E+00 | 61.50 |
| | 295.21 | 119 | 19.20 | 3.389E+00 | 8.849E-01 | 8.849E-01 | 48.41 |
| PO-214 | 351.92 | 162 | 37.20* | 2.909E+00 | 7.242E-01 | 7.242E-01 | 39.53 |
| | 74.81 | 175 | 6.21 | 6.795E+00 | 2.003E+00 | 2.003E+00 | 39.25 |
| | 77.11 | 294 | 10.50 | 6.781E+00 | 1.994E+00 | 1.994E+00 | 24.33 |
| | 87.30 | 1612 | 4.67 | 6.665E+00 | 2.502E+01 | 2.502E+01 | 14.46 |
| | 241.98 | 95 | 7.49 | 3.985E+00 | 1.539E+00 | 1.539E+00 | 61.50 |
| | 295.21 | 119 | 19.20 | 3.389E+00 | 8.849E-01 | 8.849E-01 | 48.41 |
| PO-216 | 351.92 | 162 | 37.20* | 2.909E+00 | 7.242E-01 | 7.242E-01 | 39.53 |
| | 74.81 | 175 | 10.70 | 6.795E+00 | 1.162E+00 | 1.162E+00 | 39.66 |
| | 77.11 | 294 | 18.00 | 6.781E+00 | 1.163E+00 | 1.163E+00 | 23.11 |
| | 87.30 | 1612 | 8.00 | 6.665E+00 | 1.460E+01 | 1.460E+01 | 15.80 |
| | 238.63 | 421 | 44.60* | 4.022E+00 | 1.133E+00 | 1.133E+00 | 16.58 |
| | 300.09 | 48 | 3.41 | 3.333E+00 | 2.042E+00 | 2.042E+00 | 133.73 |
| PO-218 | 74.81 | 175 | 6.21 | 6.795E+00 | 2.003E+00 | 2.003E+00 | 39.25 |
| | 77.11 | 294 | 10.50 | 6.781E+00 | 1.994E+00 | 1.994E+00 | 24.33 |
| | 87.30 | 1612 | 4.67 | 6.665E+00 | 2.502E+01 | 2.502E+01 | 14.46 |
| | 241.98 | 95 | 7.49 | 3.985E+00 | 1.539E+00 | 1.539E+00 | 61.50 |
| | 295.21 | 119 | 19.20 | 3.389E+00 | 8.849E-01 | 8.849E-01 | 48.41 |
| | 351.92 | 162 | 37.20* | 2.909E+00 | 7.242E-01 | 7.242E-01 | 39.53 |
| RA-224 | 240.98 | 95 | 3.95* | 3.985E+00 | 2.918E+00 | 2.918E+00 | 61.25 |
| RA-226 | 609.31 | 157 | 46.30* | 1.737E+00 | 9.422E-01 | 9.422E-01 | 32.33 |
| | 1120.29 | ----- | 15.10 | 9.769E-01 | ----- | Line Not Found | ----- |
| | 1764.49 | 20 | 15.80 | 6.717E-01 | 9.119E-01 | 9.119E-01 | 67.21 |
| TH-228 | 74.81 | 175 | 10.70 | 6.795E+00 | 1.162E+00 | 1.171E+00 | 38.56 |
| | 77.11 | 294 | 18.00 | 6.781E+00 | 1.163E+00 | 1.172E+00 | 23.11 |
| | 87.30 | 1612 | 8.00 | 6.665E+00 | 1.460E+01 | 1.471E+01 | 12.23 |
| | 238.63 | 421 | 44.60* | 4.022E+00 | 1.133E+00 | 1.142E+00 | 16.58 |
| | 300.09 | 48 | 3.41 | 3.333E+00 | 2.042E+00 | 2.057E+00 | 145.91 |
| | 609.31 | 157 | 46.30* | 1.737E+00 | 9.422E-01 | 9.422E-01 | 32.33 |
| TH-230 | 1120.29 | ----- | 15.10 | 9.769E-01 | ----- | Line Not Found | ----- |
| | 1764.49 | 20 | 15.80 | 6.717E-01 | 9.119E-01 | 9.119E-01 | 67.21 |
| | 609.31 | 157 | 46.30* | 1.737E+00 | 9.422E-01 | 9.422E-01 | 32.33 |
| | 1120.29 | ----- | 15.10 | 9.769E-01 | ----- | Line Not Found | ----- |
| | 1764.49 | 20 | 15.80 | 6.717E-01 | 9.119E-01 | 9.119E-01 | 67.21 |
| | 59.54 | 6516 | 35.90* | 6.729E+00 | 1.303E+01 | 1.303E+01 | 10.95 |
| AM-241 | 74.67 | 175 | 66.00* | 6.795E+00 | 1.884E-01 | 1.884E-01 | 38.55 |
| AM-243 | 86.72 | 1612 | 0.34 | 6.665E+00 | 3.477E+02 | 3.477E+02 | 12.23 |
| | 117.66 | ----- | 0.55 | 6.127E+00 | ----- | Line Not Found | ----- |
| | 142.18 | ----- | 0.13 | 5.624E+00 | ----- | Line Not Found | ----- |
| ANH-511 | 511.00 | 67 | 100.00* | 2.057E+00 | 1.566E-01 | 1.566E-01 | 77.60 |

Flag: "*" = Keyline

Total number of lines in spectrum 23
Number of unidentified lines 0
Number of lines tentatively identified by NID 23 100.00%

Nuclide Type :

| Nuclide | Hlife | Decay | Uncorrected pCi/GRAM | Decay Corr pCi/GRAM | Decay Corr 2-Sigma Error | 2-Sigma %Error | Flags |
|---------|-----------|-------|-------------------------|------------------------|-----------------------------|-------------------|-------|
| CO-57 | 270.90D | 1.02 | 2.313E-01 | 2.359E-01 | 0.771E-01 | 32.68 | |
| CO-60 | 5.27Y | 1.00 | 6.123E+00 | 6.140E+00 | 0.650E+00 | 10.58 | |
| CD-109 | 464.00D | 1.01 | 3.140E+01 | 3.176E+01 | 0.389E+01 | 12.23 | |
| SN-126 | 1.00E+05Y | 1.00 | 3.157E+00 | 3.157E+00 | 0.386E+00 | 12.23 | |
| BA-137M | 30.17Y | 1.00 | 5.555E+00 | 5.558E+00 | 0.557E+00 | 10.02 | |
| CS-137 | 30.17Y | 1.00 | 5.872E+00 | 5.875E+00 | 0.589E+00 | 10.03 | |
| W-181 | 120.95D | 1.04 | 3.094E-01 | 3.232E-01 | 1.840E-01 | 56.92 | K |
| TL-208 | 1.41E+10Y | 1.00 | 4.877E-01 | 4.877E-01 | 1.426E-01 | 29.23 | |
| BI-211 | 7.04E+08Y | 1.00 | 2.082E+00 | 2.082E+00 | 0.816E+00 | 39.18 | |
| PB-212 | 1.41E+10Y | 1.00 | 1.133E+00 | 1.133E+00 | 0.188E+00 | 16.58 | |
| PO-212 | 1.41E+10Y | 1.00 | 1.133E+00 | 1.133E+00 | 0.188E+00 | 16.58 | |
| BI-214 | 1600.00Y | 1.00 | 9.422E-01 | 9.422E-01 | 3.046E-01 | 32.33 | |
| PB-214 | 1600.00Y | 1.00 | 7.242E-01 | 7.242E-01 | 2.863E-01 | 39.53 | |
| PO-214 | 1600.00Y | 1.00 | 7.242E-01 | 7.242E-01 | 2.863E-01 | 39.53 | |
| PO-216 | 1.41E+10Y | 1.00 | 1.133E+00 | 1.133E+00 | 0.188E+00 | 16.58 | |
| PO-218 | 1600.00Y | 1.00 | 7.242E-01 | 7.242E-01 | 2.863E-01 | 39.53 | |
| RA-224 | 1.41E+10Y | 1.00 | 2.918E+00 | 2.918E+00 | 1.787E+00 | 61.25 | |
| RA-226 | 1600.00Y | 1.00 | 9.422E-01 | 9.422E-01 | 3.046E-01 | 32.33 | |
| TH-228 | 1.91Y | 1.01 | 1.133E+00 | 1.142E+00 | 0.189E+00 | 16.58 | |
| TH-230 | 4.47E+09Y | 1.00 | 9.422E-01 | 9.422E-01 | 3.046E-01 | 32.33 | |
| U-234 | 4.47E+09Y | 1.00 | 9.422E-01 | 9.422E-01 | 3.046E-01 | 32.33 | |
| AM-241 | 432.20Y | 1.00 | 1.303E+01 | 1.303E+01 | 0.143E+01 | 10.95 | |
| AM-243 | 7380.00Y | 1.00 | 1.884E-01 | 1.884E-01 | 0.726E-01 | 38.55 | |
| ANH-511 | 1.00E+09Y | 1.00 | 1.566E-01 | 1.566E-01 | 1.215E-01 | 77.60 | |

Total Activity : 8.199E+01 8.240E+01

Grand Total Activity : 8.199E+01 8.240E+01

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

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

Unidentified Energy Lines
Sample ID : G1202037548

Page : 4
Acquisition date : 18-FEB-2010 14:48:04

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | Cts/Sec | %Err | %Eff | Flags |
|----|--------|------|-------|------|---------|------|----|----------|------|----------|-------|
| 0 | 49.67 | 283 | 1391 | 1.83 | 98.96 | 95 | 12 | 7.87E-02 | 53.8 | 6.46E+00 | T |
| 0 | 92.81 | 103 | 291 | 1.04 | 185.27 | 182 | 9 | 2.85E-02 | 65.6 | 6.59E+00 | T |
| 0 | 185.69 | 95 | 237 | 1.02 | 371.11 | 366 | 11 | 2.64E-02 | 66.9 | 4.81E+00 | T |
| 0 | 337.95 | 84 | 126 | 1.26 | 675.76 | 671 | 9 | 2.33E-02 | 52.9 | 3.01E+00 | T |
| 0 | 910.93 | 75 | 164 | 1.66 | 1822.37 | 1815 | 17 | 2.10E-02 | 81.7 | 1.18E+00 | T |

Flags: "T" = Tentatively associated

```

*****
*                                     GEL Laboratories LLC                      *
*                                     2040 Savage Road                        *
*                                     Charleston, SC 29414                     *
*****
*                                     DETECTOR DATA                          *
*
* Configuration      : DKA100:[CANBERRA.GAMMA.ARCHIVE.GAMMA]G1202037548.CNF;1
* Acquisition date   : 18-FEB-2010 14:48:04  Detector SN#      :
* Detector ID        : GAM17                  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 01:00:06.12          Half life ratio  : 8.00000
*****
*                                     SAMPLE DATA                            *
*
* Sample date        : 11-FEB-2010 00:00:00  Nuclide Library   : SOLID
* Sample ID          : G1202037548           Analyst initials: MXR1
* Batch Number       : 950786                Sample Quantity  : 1.55440E+02 GRAM
*****
*                                     QC DATA                               *
*
* CALIB. DATE/TIME   : 6-JAN-2010 11:41:36.18MS Isotope      :
* MSD ID             :                      MSD Isotope       :
* LCS ID             : 1032-A                LCS Isotope      :
*****

```

Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| CO-57 | 2.359E-01 | 7.709E-02 | 5.918E-02 | 6.933E-03 | 3.986 |
| CO-60 | 6.140E+00 | 6.495E-01 | 9.995E-02 | 8.519E-03 | 61.425 |
| CD-109 | 3.176E+01 | 3.885E+00 | 1.615E+00 | 1.576E-01 | 19.671 |
| SN-126 | 3.157E+00 | 3.862E-01 | 1.603E-01 | 1.564E-02 | 19.698 |
| BA-137M | 5.558E+00 | 5.568E-01 | 1.373E-01 | 1.157E-02 | 40.464 |
| CS-137 | 5.875E+00 | 5.894E-01 | 1.452E-01 | 1.226E-02 | 40.464 |
| W-181 | 3.232E-01 | 1.840E-01 | 3.987E-01 | 3.949E-02 | 0.811 |
| TL-208 | 4.877E-01 | 1.426E-01 | 1.275E-01 | 1.206E-02 | 3.826 |
| BI-211 | 2.082E+00 | 8.158E-01 | 6.604E-01 | 6.163E-02 | 3.153 |
| PB-212 | 1.133E+00 | 1.879E-01 | 1.528E-01 | 1.541E-02 | 7.417 |
| PO-212 | 1.133E+00 | 1.879E-01 | 1.528E-01 | 1.541E-02 | 7.417 |
| BI-214 | 9.422E-01 | 3.046E-01 | 2.197E-01 | 2.234E-02 | 4.289 |
| PB-214 | 7.242E-01 | 2.863E-01 | 2.303E-01 | 2.461E-02 | 3.145 |
| PO-214 | 7.242E-01 | 2.863E-01 | 2.303E-01 | 2.461E-02 | 3.145 |
| PO-216 | 1.133E+00 | 1.879E-01 | 1.528E-01 | 1.541E-02 | 7.417 |
| PO-218 | 7.242E-01 | 2.863E-01 | 2.303E-01 | 2.461E-02 | 3.145 |
| RA-224 | 2.918E+00 | 1.787E+00 | 1.741E+00 | 1.574E-01 | 1.676 |
| RA-226 | 9.422E-01 | 3.046E-01 | 2.197E-01 | 2.234E-02 | 4.289 |

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------|-----------|-------------------|-----------|---------|
| TH-228 | 1.142E+00 | 1.893E-01 | 1.540E-01 | 1.552E-02 | 7.417 |
| TH-230 | 9.422E-01 | 3.046E-01 | 2.196E-01 | 2.234E-02 | 4.289 |
| U-234 | 9.422E-01 | 3.046E-01 | 2.196E-01 | 2.234E-02 | 4.289 |
| AM-241 | 1.303E+01 | 1.427E+00 | 2.197E-01 | 2.333E-02 | 59.300 |
| AM-243 | 1.884E-01 | 7.264E-02 | 8.937E-02 | 8.724E-03 | 2.109 |
| ANH-511 | 1.566E-01 | 1.215E-01 | 1.109E-01 | 9.904E-03 | 1.412 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|---------------------|-----------|---------|
| BE-7 | -2.123E-01 | | 6.744E-01 | 1.080E+00 | 1.028E-01 | -0.196 |
| NA-22 | -2.684E-02 | | 6.294E-02 | 9.232E-02 | 7.777E-03 | -0.291 |
| NA-24 | 8.122E-05 | | 1.170E-04 | Half-Life too short | | |
| AL-26 | 1.514E-03 | | 4.792E-02 | 7.899E-02 | 6.620E-03 | 0.019 |
| K-40 | 6.903E-01 | | 6.679E-01 | 1.291E+00 | 1.146E-01 | 0.535 |
| TI-44 | 2.146E-01 | + | 4.960E-02 | 7.381E-02 | 7.191E-03 | 2.908 |
| SC-46 | 4.230E-02 | | 9.822E-02 | 1.683E-01 | 1.473E-02 | 0.251 |
| V-48 | 3.384E-02 | | 1.570E-01 | 2.621E-01 | 2.286E-02 | 0.129 |
| CR-51 | -9.027E-02 | | 5.595E-01 | 9.320E-01 | 8.900E-02 | -0.097 |
| MN-52 | 1.534E-01 | | 1.163E-01 | 2.500E-01 | 2.156E-02 | 0.614 |
| MN-54 | -1.939E-03 | | 9.798E-02 | 1.627E-01 | 1.431E-02 | -0.012 |
| CO-56 | -3.764E-02 | | 1.045E-01 | 1.687E-01 | 1.483E-02 | -0.223 |
| CO-58 | -7.259E-02 | | 9.226E-02 | 1.432E-01 | 1.261E-02 | -0.507 |
| FE-59 | -5.058E-02 | | 2.305E-01 | 3.678E-01 | 3.375E-02 | -0.138 |
| ZN-65 | 4.705E-02 | | 2.216E-01 | 3.671E-01 | 3.091E-02 | 0.128 |
| GE-68 | 1.800E+00 | | 3.688E+00 | 6.244E+00 | 5.329E-01 | 0.288 |
| AS-73 | -6.006E-01 | | 6.996E-01 | 9.545E-01 | 9.550E-02 | -0.629 |
| AS-74 | 1.066E-01 | | 1.431E-01 | 2.458E-01 | 2.165E-02 | 0.434 |
| SE-75 | -3.013E-02 | | 7.875E-02 | 1.214E-01 | 1.115E-02 | -0.248 |
| BR-77 | 1.372E+00 | | 2.710E+00 | 4.578E+00 | 4.092E-01 | 0.300 |
| SR-82 | 9.182E-01 | | 7.366E-01 | 1.344E+00 | 1.177E-01 | 0.683 |
| RB-83 | 8.450E-02 | | 1.518E-01 | 2.573E-01 | 2.299E-02 | 0.328 |
| RB-84 | 4.811E-02 | | 1.577E-01 | 2.677E-01 | 2.346E-02 | 0.180 |
| KR-85 | 6.443E+00 | | 1.734E+01 | 2.568E+01 | 2.294E+00 | 0.251 |
| SR-85 | 3.053E-02 | | 8.214E-02 | 1.217E-01 | 1.087E-02 | 0.251 |
| RB-86 | -4.406E-01 | | 1.851E+00 | 2.958E+00 | 2.525E-01 | -0.149 |
| Y-88 | 4.469E-02 | | 5.443E-02 | 1.081E-01 | 9.013E-03 | 0.413 |
| ZR-88 | -1.644E-02 | | 6.512E-02 | 1.065E-01 | 8.974E-03 | -0.154 |
| Y-91 | 4.088E+00 | | 2.630E+01 | 4.348E+01 | 3.588E+00 | 0.094 |
| NB-94 | -4.528E-03 | | 7.325E-02 | 1.232E-01 | 1.057E-02 | -0.037 |
| NB-95 | 3.094E-02 | | 8.959E-02 | 1.539E-01 | 1.344E-02 | 0.201 |
| NB-95M | -1.123E-01 | | 2.129E-01 | 2.881E-01 | 2.941E-02 | -0.390 |
| ZR-95 | -1.868E-02 | | 1.486E-01 | 2.464E-01 | 2.361E-02 | -0.076 |
| NB-97 | 2.337E-04 | | 8.916E-05 | Half-Life too short | | |
| ZR-97 | 1.459E-03 | | 1.314E-03 | Half-Life too short | | |
| MO-99 | 3.893E+00 | | 3.839E+00 | 6.912E+00 | 1.052E+00 | 0.563 |
| TC-99M | -4.017E+01 | | 2.680E+01 | 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 | 5.673E-02 | | 5.470E-02 | 9.288E-02 | 8.075E-03 | 0.611 |
| RH-102 | -6.619E-03 | | 6.789E-02 | 1.106E-01 | 9.795E-03 | -0.060 |
| RU-103 | 4.261E-02 | | 8.093E-02 | 1.370E-01 | 1.965E-02 | 0.311 |
| RH-106 | 1.153E-01 | | 6.564E-01 | 1.073E+00 | 1.438E-01 | 0.107 |
| RU-106 | 1.153E-01 | | 6.563E-01 | 1.073E+00 | 9.323E-02 | 0.107 |
| AG-108M | 3.247E-02 | | 7.746E-02 | 1.311E-01 | 1.183E-02 | 0.248 |
| AG-110M | 1.276E-01 | | 9.604E-02 | 1.531E-01 | 1.335E-02 | 0.833 |
| IN-111 | -8.201E-02 | | 3.274E-01 | 4.524E-01 | 4.103E-02 | -0.181 |
| IN-113M | -8.615E-02 | | 9.411E-02 | 1.470E-01 | 1.277E-02 | -0.586 |
| SN-113 | -8.615E-02 | | 9.411E-02 | 1.470E-01 | 1.277E-02 | -0.586 |
| IN-114M | 4.107E-02 | | 2.856E-01 | 4.159E-01 | 3.582E-02 | 0.099 |
| CD-115 | 1.050E+00 | | 2.346E+00 | 3.950E+00 | 3.531E-01 | 0.266 |
| SN-117M | -2.066E-02 | | 5.602E-02 | 8.941E-02 | 8.036E-03 | -0.231 |
| SB-122 | 2.731E-01 | | 6.234E-01 | 1.048E+00 | 9.328E-02 | 0.261 |
| I-123 | -3.524E-04 | | 3.200E-04 | Half-Life too short | | |
| TE-123M | -2.291E-02 | | 4.162E-02 | 6.567E-02 | 5.911E-03 | -0.349 |
| I-124 | 6.203E-01 | | 4.522E-01 | 7.347E-01 | 6.452E-02 | 0.844 |
| SB-124 | 2.567E-02 | | 1.382E-01 | 2.362E-01 | 2.101E-02 | 0.109 |
| SB-125 | 6.060E-02 | | 2.006E-01 | 3.378E-01 | 2.980E-02 | 0.179 |
| TE-125M | 5.109E+00 | | 1.099E+01 | 1.867E+01 | 2.292E+00 | 0.274 |
| I-126 | 5.714E-02 | | 3.078E-01 | 4.394E-01 | 3.710E-02 | 0.130 |
| SB-126 | -1.384E-01 | | 2.196E-01 | 3.503E-01 | 3.024E-02 | -0.395 |
| SB-127 | -6.007E-01 | | 7.975E-01 | 1.172E+00 | 1.114E-01 | -0.512 |
| XE-127 | -3.222E-02 | | 6.777E-02 | 1.059E-01 | 9.259E-03 | -0.304 |
| I-131 | 7.248E-03 | | 1.270E-01 | 2.128E-01 | 1.957E-02 | 0.034 |
| TE-132 | -4.408E-02 | | 2.491E-01 | 3.937E-01 | 5.845E-02 | -0.112 |
| BA-133 | 1.123E-02 | | 9.502E-02 | 1.413E-01 | 1.888E-02 | 0.080 |
| I-133 | -3.007E-05 | | 1.687E-05 | Half-Life too short | | |
| CS-134 | 1.008E-01 | | 1.089E-01 | 1.945E-01 | 1.718E-02 | 0.518 |
| CS-135 | 6.114E-02 | | 2.903E-01 | 4.655E-01 | 4.857E-02 | 0.131 |
| I-135 | 4.134E+01 | | 2.780E+01 | Half-Life too short | | |
| CS-136 | -8.463E-02 | | 2.116E-01 | 3.335E-01 | 2.992E-02 | -0.254 |
| CE-139 | -3.999E-03 | | 4.366E-02 | 7.070E-02 | 5.895E-03 | -0.057 |
| BA-140 | -1.167E-01 | | 3.756E-01 | 5.912E-01 | 1.964E-01 | -0.197 |
| LA-140 | -6.146E-02 | | 8.888E-02 | 1.203E-01 | 1.038E-02 | -0.511 |
| CE-141 | -4.596E-02 | | 7.768E-02 | 1.229E-01 | 1.253E-02 | -0.374 |
| CE-143 | 1.007E+01 | | 6.350E+00 | 9.982E+00 | 2.162E+00 | 1.009 |
| CE-144 | -4.221E-01 | | 3.022E-01 | 4.447E-01 | 7.543E-02 | -0.949 |
| PM-144 | -1.036E-02 | | 7.186E-02 | 1.197E-01 | 1.024E-02 | -0.087 |
| PR-144 | -6.991E-01 | | 4.850E+00 | 8.079E+00 | 6.913E-01 | -0.087 |
| PM-146 | -2.817E-02 | | 1.029E-01 | 1.661E-01 | 1.803E-02 | -0.170 |
| ND-147 | -2.570E-01 | | 7.810E-01 | 1.240E+00 | 1.877E-01 | -0.207 |
| PM-149 | -5.265E+00 | | 1.471E+01 | 2.434E+01 | 3.857E+00 | -0.216 |
| EU-152 | -9.154E-02 | | 1.910E-01 | 3.103E-01 | 2.936E-02 | -0.295 |
| GD-153 | 5.653E-03 | | 1.029E-01 | 1.549E-01 | 1.583E-02 | 0.037 |
| EU-154 | -1.790E-02 | | 1.673E-01 | 2.628E-01 | 2.931E-02 | -0.068 |
| EU-155 | 1.791E-02 | | 1.310E-01 | 2.197E-01 | 2.360E-02 | 0.082 |
| TB-160 | 1.528E-01 | | 3.513E-01 | 6.021E-01 | 5.279E-02 | 0.254 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| HO-166M | -1.479E-02 | | 1.403E-01 | 2.342E-01 | 2.016E-02 | -0.063 |
| TM-171 | 6.872E+00 | | 2.132E+01 | 3.658E+01 | 3.610E+00 | 0.188 |
| LU-176 | 3.790E-02 | | 4.746E-02 | 7.851E-02 | 7.193E-03 | 0.483 |
| LU-177 | 5.363E-01 | | 8.509E-01 | 1.413E+00 | 1.242E-01 | 0.380 |
| LU-177M | -1.708E-01 | | 3.739E-01 | 6.004E-01 | 5.144E-02 | -0.284 |
| HF-181 | -3.094E-04 | | 8.644E-02 | 1.416E-01 | 1.257E-02 | -0.002 |
| TA-182 | 9.987E-02 | | 2.326E-01 | 4.045E-01 | 3.355E-02 | 0.247 |
| RE-183 | 1.194E-01 | | 1.578E-01 | 2.673E-01 | 2.314E-02 | 0.447 |
| RE-184 | 1.625E-01 | | 4.127E-01 | 6.717E-01 | 6.116E-02 | 0.242 |
| OS-185 | 1.574E-02 | | 9.669E-02 | 1.572E-01 | 1.342E-02 | 0.100 |
| RE-188 | 9.830E-02 | | 2.319E-01 | 3.877E-01 | 3.602E-02 | 0.254 |
| W-188 | 2.565E+00 | | 1.222E+01 | 1.860E+01 | 1.709E+00 | 0.138 |
| IR-192 | -8.537E-03 | | 5.827E-02 | 9.721E-02 | 8.894E-03 | -0.088 |
| AU-195 | 2.118E-01 | | 2.748E-01 | 4.741E-01 | 4.883E-02 | 0.447 |
| TL-200 | 5.732E+00 | | 8.029E+00 | 1.394E+01 | 1.217E+00 | 0.411 |
| TL-201 | -1.919E-01 | | 1.818E+00 | 2.938E+00 | 2.453E-01 | -0.065 |
| TL-202 | -3.033E-02 | | 1.043E-01 | 1.687E-01 | 1.470E-02 | -0.180 |
| HG-203 | -2.564E-02 | | 6.380E-02 | 1.057E-01 | 9.952E-03 | -0.242 |
| BI-207 | 5.965E-02 | | 1.489E-01 | 2.509E-01 | 2.151E-02 | 0.238 |
| TL-207 | -3.690E-01 | | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| PO-209 | -3.803E+00 | | 2.204E+01 | 3.596E+01 | 3.145E+00 | -0.106 |
| BI-210 | 1.014E+00 | | 1.240E+00 | 1.880E+00 | 2.040E-01 | 0.539 |
| PB-210 | 1.014E+00 | | 1.240E+00 | 1.880E+00 | 2.040E-01 | 0.539 |
| PO-210 | 1.014E+00 | | 1.239E+00 | 1.880E+00 | 1.900E-01 | 0.539 |
| PB-211 | 7.223E-01 | | 2.071E+00 | 3.424E+00 | 2.145E+00 | 0.211 |
| BI-212 | 5.715E-01 | | 6.831E-01 | 1.215E+00 | 1.219E-01 | 0.471 |
| PO-215 | -3.690E-01 | | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| RN-219 | 3.357E-01 | | 8.606E-01 | 1.461E+00 | 2.184E-01 | 0.230 |
| RN-220 | 1.153E+01 | | 5.647E+01 | 9.322E+01 | 8.322E+00 | 0.124 |
| RA-223 | -3.690E-01 | | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| AC-227 | -9.313E-02 | | 7.421E-01 | 1.165E+00 | 1.821E-01 | -0.080 |
| TH-227 | -9.313E-02 | | 7.421E-01 | 1.165E+00 | 2.132E-01 | -0.080 |
| AC-228 | 1.113E+00 | + | 9.182E-01 | 9.034E-01 | 1.025E-01 | 1.232 |
| RA-228 | 1.113E+00 | + | 9.182E-01 | 9.034E-01 | 1.025E-01 | 1.232 |
| TH-229 | 6.872E-02 | | 7.966E-01 | 1.292E+00 | 1.118E-01 | 0.053 |
| PA-231 | 1.612E+00 | | 2.529E+00 | 4.426E+00 | 6.865E-01 | 0.364 |
| TH-231 | -3.690E-01 | | 1.253E+00 | 2.061E+00 | 3.697E-01 | -0.179 |
| U-231 | -3.366E-01 | | 3.909E-01 | 5.493E-01 | 5.571E-02 | -0.613 |
| TH-232 | 1.113E+00 | + | 9.182E-01 | 9.034E-01 | 1.025E-01 | 1.232 |
| PA-233 | -3.083E-02 | | 1.124E-01 | 1.861E-01 | 1.745E-02 | -0.166 |
| PA-234 | 3.247E-01 | | 9.728E-01 | 1.637E+00 | 3.082E-01 | 0.198 |
| PA-234M | 8.467E+00 | | 1.304E+01 | 2.246E+01 | 2.254E+00 | 0.377 |
| TH-234 | 9.068E-02 | | 9.381E-01 | 1.476E+00 | 2.755E-01 | 0.061 |
| U-235 | 3.087E-01 | | 3.076E-01 | 5.230E-01 | 9.588E-02 | 0.590 |
| NP-236 | -1.286E-02 | | 1.226E-01 | 1.987E-01 | 1.756E-02 | -0.065 |
| NP-237 | 3.158E+00 | | 8.377E-01 | 8.015E-01 | 1.829E-01 | 3.940 |
| U-238 | 9.068E-02 | | 9.381E-01 | 1.476E+00 | 2.755E-01 | 0.061 |
| NP-239 | -2.022E-01 | | 3.038E-01 | 4.287E-01 | 4.876E-02 | -0.472 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L. Ided | Act error | MDA (pCi/GRAM) | MDA error | Act/MDA |
|---------|------------------------------------|--------------|-----------|-------------------|-----------|---------|
| CM-243 | -1.186E-01 | | 1.201E-01 | 1.885E-01 | 1.992E-02 | -0.629 |
| AM-246 | 2.986E-01 | | 4.191E-01 | 7.220E-01 | 6.159E-02 | 0.414 |
| CM-247 | 5.150E-02 | | 7.831E-02 | 1.350E-01 | 1.147E-02 | 0.381 |
| CF-249 | 2.819E-02 | | 8.597E-02 | 1.456E-01 | 1.234E-02 | 0.194 |
| CF-251 | -5.573E-03 | | 1.889E-01 | 3.059E-01 | 2.588E-02 | -0.018 |

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]G1202037548          *
* Acquisition date   : 18-FEB-2010 14:48:04 Detector SN# :                  *
* Detector ID        : GAM17 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 01:00:06.12 Half life ratio : 8.000             *
*****
*                                     SAMPLE DATA                          *
*
* Sample date        : 11-FEB-2010 00:00:00 Nuclide Library : SOLID          *
* Sample ID          : G1202037548 Analyst initials: MXR1                *
* Batch Number       : 950786 Sample Quantity : 1.5544E+02 GRAM          *
* Recovery           : 1.00000 Carrier Weight : 0.00000                  *
*****
*                                     QC DATA                             *
*
* CALIB. DATE/TIME  : 6-JAN-2010 11:41:36 MS Isotope :                  *
* MSD DPM           : 0.000 MSD Isotope :                  *
* LCS DPM           : 0.000 LCS Isotope :                  *
* LCSD DPM          : 0.000 LCSD Isotope :                  *
*****

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Combined Activity-MDA Report

---- Identified Nuclides ----

| Nuclide | Activity (pCi/GRAM) | Act Error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------|-----------|--------------------|-----------|
| CO-57 | 2.359E-01 | 7.555E-02 | 3.189E-02 | 3.854E-02 |
| CO-60 | 6.140E+00 | 6.365E-01 | 5.056E-02 | 3.248E-01 |
| CD-109 | 3.176E+01 | 3.808E+00 | 8.771E-01 | 1.943E+00 |
| SN-126 | 3.157E+00 | 3.785E-01 | 8.708E-02 | 1.931E-01 |
| BA-137M | 5.558E+00 | 5.456E-01 | 7.084E-02 | 2.784E-01 |
| CS-137 | 5.875E+00 | 5.776E-01 | 7.488E-02 | 2.947E-01 |
| W-181 | -3.026E-01 | 2.435E-01 | 2.182E-01 | 1.243E-01 |
| TL-208 | 4.877E-01 | 1.397E-01 | 6.597E-02 | 7.128E-02 |
| BI-211 | 2.082E+00 | 7.994E-01 | 3.464E-01 | 4.079E-01 |
| PB-212 | 1.133E+00 | 1.841E-01 | 8.096E-02 | 9.395E-02 |
| PO-212 | 1.133E+00 | 1.841E-01 | 8.096E-02 | 9.395E-02 |
| BI-214 | 9.422E-01 | 2.985E-01 | 1.135E-01 | 1.523E-01 |
| PB-214 | 7.242E-01 | 2.805E-01 | 1.208E-01 | 1.431E-01 |
| PO-214 | 7.242E-01 | 2.805E-01 | 1.208E-01 | 1.431E-01 |
| PO-216 | 1.133E+00 | 1.841E-01 | 8.096E-02 | 9.395E-02 |
| PO-218 | 7.242E-01 | 2.805E-01 | 1.208E-01 | 1.431E-01 |
| RA-224 | 2.918E+00 | 1.751E+00 | 9.219E-01 | 8.936E-01 |
| RA-226 | 9.422E-01 | 2.985E-01 | 1.135E-01 | 1.523E-01 |
| TH-228 | 1.142E+00 | 1.855E-01 | 8.158E-02 | 9.467E-02 |
| TH-230 | 9.422E-01 | 2.985E-01 | 1.135E-01 | 1.523E-01 |
| U-234 | 9.422E-01 | 2.985E-01 | 1.135E-01 | 1.523E-01 |
| AM-241 | 1.303E+01 | 1.399E+00 | 1.205E-01 | 7.136E-01 |
| AM-243 | 1.884E-01 | 7.118E-02 | 4.874E-02 | 3.632E-02 |
| ANH-511 | 1.566E-01 | 1.191E-01 | 5.759E-02 | 6.075E-02 |

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

| Nuclide | Key-Line Activity (pCi/GRAM) | K.L Act error | DLC (pCi/GRAM) | TPU |
|---------|-------------------------------------|---------------|--------------------|----------------------|
| BE-7 | -2.123E-01 | 6.609E-01 | 5.622E-01 | 3.372E-01 NOT IDENT. |
| NA-22 | -2.684E-02 | 6.168E-02 | 4.676E-02 | 3.147E-02 NOT IDENT. |
| NA-24 | 8.122E+01 | 2.293E+02 | 0.000E+00 | 1.170E+02 SHORT HLIF |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| AL-26 | 1.514E-03 | 4.696E-02 | 3.961E-02 | 2.396E-02 | NOT IDENT. |
| K-40 | 6.903E-01 | 6.545E-01 | 6.512E-01 | 3.339E-01 | NOT IDENT. |
| TI-44 | 2.146E-01 | 4.861E-02 | 4.020E-02 | 2.480E-02 | FAIL ABUN |
| SC-46 | 4.230E-02 | 9.626E-02 | 8.608E-02 | 4.911E-02 | NOT IDENT. |
| V-48 | 3.384E-02 | 1.539E-01 | 1.337E-01 | 7.851E-02 | NOT IDENT. |
| CR-51 | -9.027E-02 | 5.483E-01 | 4.900E-01 | 2.797E-01 | NOT IDENT. |
| MN-52 | 1.534E-01 | 1.140E-01 | 1.262E-01 | 5.816E-02 | NOT IDENT. |
| MN-54 | -1.939E-03 | 9.602E-02 | 8.339E-02 | 4.899E-02 | NOT IDENT. |
| CO-56 | -3.764E-02 | 1.024E-01 | 8.642E-02 | 5.223E-02 | NOT IDENT. |
| CO-58 | -7.259E-02 | 9.042E-02 | 7.345E-02 | 4.613E-02 | NOT IDENT. |
| FE-59 | -5.058E-02 | 2.259E-01 | 1.870E-01 | 1.153E-01 | NOT IDENT. |
| ZN-65 | 4.705E-02 | 2.171E-01 | 1.866E-01 | 1.108E-01 | NOT IDENT. |
| GE-68 | 1.800E+00 | 3.614E+00 | 3.177E+00 | 1.844E+00 | NOT IDENT. |
| AS-73 | -6.006E-01 | 6.856E-01 | 5.248E-01 | 3.498E-01 | NOT IDENT. |
| AS-74 | 1.066E-01 | 1.403E-01 | 1.271E-01 | 7.156E-02 | NOT IDENT. |
| SE-75 | -3.013E-02 | 7.718E-02 | 6.413E-02 | 3.938E-02 | FAIL ABUN |
| BR-77 | 1.372E+00 | 2.656E+00 | 2.376E+00 | 1.355E+00 | FAIL ABUN |
| SR-82 | 9.182E-01 | 7.219E-01 | 6.904E-01 | 3.683E-01 | NOT IDENT. |
| RB-83 | 8.450E-02 | 1.488E-01 | 1.335E-01 | 7.591E-02 | NOT IDENT. |
| RB-84 | 4.811E-02 | 1.545E-01 | 1.370E-01 | 7.883E-02 | NOT IDENT. |
| KR-85 | 6.443E+00 | 1.699E+01 | 1.333E+01 | 8.670E+00 | NOT IDENT. |
| SR-85 | 3.053E-02 | 8.050E-02 | 6.317E-02 | 4.107E-02 | NOT IDENT. |
| RB-86 | -4.406E-01 | 1.814E+00 | 1.505E+00 | 9.255E-01 | NOT IDENT. |
| Y-88 | 4.469E-02 | 5.334E-02 | 5.418E-02 | 2.722E-02 | NOT IDENT. |
| ZR-88 | -1.644E-02 | 6.382E-02 | 5.570E-02 | 3.256E-02 | NOT IDENT. |
| Y-91 | 4.088E+00 | 2.577E+01 | 2.206E+01 | 1.315E+01 | NOT IDENT. |
| NB-94 | -4.528E-03 | 7.179E-02 | 6.345E-02 | 3.663E-02 | NOT IDENT. |
| NB-95 | 3.094E-02 | 8.780E-02 | 7.907E-02 | 4.480E-02 | NOT IDENT. |
| NB-95M | -1.123E-01 | 2.086E-01 | 1.527E-01 | 1.064E-01 | NOT IDENT. |
| ZR-95 | -1.868E-02 | 1.456E-01 | 1.266E-01 | 7.431E-02 | NOT IDENT. |
| NB-97 | 2.337E+02 | 1.747E+02 | 0.000E+00 | 8.916E+01 | SHORT HLIF |
| ZR-97 | 1.459E+03 | 2.575E+03 | 0.000E+00 | 1.314E+03 | SHORT HLIF |
| MO-99 | 3.893E+00 | 3.763E+00 | 3.554E+00 | 1.920E+00 | NOT IDENT. |
| TC-99M | -4.017E+07 | 5.254E+07 | 0.000E+00 | 2.680E+07 | SHORT HLIF |
| RH-101 | 5.673E-02 | 5.361E-02 | 4.944E-02 | 2.735E-02 | NOT IDENT. |
| RH-102 | -6.619E-03 | 6.653E-02 | 5.754E-02 | 3.394E-02 | NOT IDENT. |
| RU-103 | 4.261E-02 | 7.932E-02 | 7.122E-02 | 4.047E-02 | FAIL ABUN |
| RH-106 | 1.153E-01 | 6.432E-01 | 5.544E-01 | 3.282E-01 | FAIL ABUN |
| RU-106 | 1.153E-01 | 6.431E-01 | 5.544E-01 | 3.281E-01 | FAIL ABUN |
| AG-108M | 3.247E-02 | 7.591E-02 | 6.836E-02 | 3.873E-02 | NOT IDENT. |
| AG-110M | 1.276E-01 | 9.412E-02 | 7.899E-02 | 4.802E-02 | NOT IDENT. |
| IN-111 | -8.201E-02 | 3.208E-01 | 2.395E-01 | 1.637E-01 | NOT IDENT. |
| IN-113M | -8.615E-02 | 9.222E-02 | 7.687E-02 | 4.705E-02 | NOT IDENT. |
| SN-113 | -8.615E-02 | 9.222E-02 | 7.687E-02 | 4.705E-02 | NOT IDENT. |
| IN-114M | 4.107E-02 | 2.799E-01 | 2.216E-01 | 1.428E-01 | NOT IDENT. |
| CD-115 | 1.050E+00 | 2.300E+00 | 2.050E+00 | 1.173E+00 | NOT IDENT. |
| SN-117M | -2.066E-02 | 5.490E-02 | 4.786E-02 | 2.801E-02 | NOT IDENT. |
| SB-122 | 2.731E-01 | 6.110E-01 | 5.426E-01 | 3.117E-01 | NOT IDENT. |
| I-123 | -3.524E+02 | 6.272E+02 | 0.000E+00 | 3.200E+02 | SHORT HLIF |
| TE-123M | -2.291E-02 | 4.078E-02 | 3.515E-02 | 2.081E-02 | NOT IDENT. |
| I-124 | 6.203E-01 | 4.431E-01 | 3.799E-01 | 2.261E-01 | NOT IDENT. |
| SB-124 | 2.567E-02 | 1.354E-01 | 1.187E-01 | 6.909E-02 | NOT IDENT. |
| SB-125 | 6.060E-02 | 1.966E-01 | 1.763E-01 | 1.003E-01 | NOT IDENT. |
| TE-125M | 5.109E+00 | 1.077E+01 | 1.009E+01 | 5.496E+00 | NOT IDENT. |
| I-126 | 5.714E-02 | 3.016E-01 | 2.266E-01 | 1.539E-01 | NOT IDENT. |
| SB-126 | -1.384E-01 | 2.152E-01 | 1.802E-01 | 1.098E-01 | NOT IDENT. |
| SB-127 | -6.007E-01 | 7.815E-01 | 6.040E-01 | 3.987E-01 | NOT IDENT. |
| XE-127 | -3.222E-02 | 6.642E-02 | 5.635E-02 | 3.389E-02 | FAIL ABUN |
| I-131 | 7.248E-03 | 1.245E-01 | 1.115E-01 | 6.352E-02 | NOT IDENT. |
| TE-132 | -4.408E-02 | 2.441E-01 | 2.088E-01 | 1.245E-01 | FAIL ABUN |
| BA-133 | 1.123E-02 | 9.312E-02 | 7.408E-02 | 4.751E-02 | NOT IDENT. |
| I-133 | -3.007E+01 | 3.306E+01 | 0.000E+00 | 1.687E+01 | SHORT HLIF |
| CS-134 | 1.008E-01 | 1.068E-01 | 9.980E-02 | 5.447E-02 | NOT IDENT. |
| CS-135 | 6.114E-02 | 2.845E-01 | 2.459E-01 | 1.452E-01 | NOT IDENT. |
| I-135 | 4.134E+07 | 5.450E+07 | 0.000E+00 | 2.780E+07 | SHORT HLIF |
| CS-136 | -8.463E-02 | 2.073E-01 | 1.698E-01 | 1.058E-01 | NOT IDENT. |
| CE-139 | -3.999E-03 | 4.279E-02 | 3.780E-02 | 2.183E-02 | NOT IDENT. |
| BA-140 | -1.167E-01 | 3.681E-01 | 3.066E-01 | 1.878E-01 | NOT IDENT. |
| LA-140 | -6.146E-02 | 8.710E-02 | 6.054E-02 | 4.444E-02 | NOT IDENT. |
| CE-141 | -4.596E-02 | 7.613E-02 | 6.591E-02 | 3.884E-02 | NOT IDENT. |
| CE-143 | 1.007E+01 | 6.223E+00 | 5.260E+00 | 3.175E+00 | FAIL ABUN |
| CE-144 | -4.221E-01 | 2.961E-01 | 2.391E-01 | 1.511E-01 | NOT IDENT. |
| PM-144 | -1.036E-02 | 7.042E-02 | 6.165E-02 | 3.593E-02 | NOT IDENT. |
| PR-144 | -6.991E-01 | 4.753E+00 | 4.161E+00 | 2.425E+00 | NOT IDENT. |
| PM-146 | -2.817E-02 | 1.008E-01 | 8.655E-02 | 5.144E-02 | NOT IDENT. |
| ND-147 | -2.570E-01 | 7.654E-01 | 6.434E-01 | 3.905E-01 | NOT IDENT. |
| PM-149 | -5.265E+00 | 1.441E+01 | 1.284E+01 | 7.354E+00 | NOT IDENT. |
| EU-152 | -9.154E-02 | 1.872E-01 | 1.629E-01 | 9.550E-02 | FAIL ABUN |

| | | | | | |
|---------|------------|-----------|-----------|-----------|------------|
| GD-153 | 5.653E-03 | 1.009E-01 | 8.390E-02 | 5.146E-02 | NOT IDENT. |
| EU-154 | -1.790E-02 | 1.639E-01 | 1.331E-01 | 8.364E-02 | FAIL ABUN |
| EU-155 | 1.791E-02 | 1.284E-01 | 1.188E-01 | 6.552E-02 | FAIL ABUN |
| TB-160 | 1.528E-01 | 3.443E-01 | 3.081E-01 | 1.757E-01 | FAIL ABUN |
| HO-166M | -1.479E-02 | 1.375E-01 | 1.206E-01 | 7.017E-02 | FAIL ABUN |
| TM-171 | 6.872E+00 | 2.089E+01 | 2.000E+01 | 1.066E+01 | FAIL ABUN |
| LU-176 | 3.790E-02 | 4.651E-02 | 4.133E-02 | 2.373E-02 | FAIL ABUN |
| LU-177 | 5.363E-01 | 8.339E-01 | 7.510E-01 | 4.254E-01 | NOT IDENT. |
| LU-177M | -1.708E-01 | 3.664E-01 | 3.136E-01 | 1.870E-01 | FAIL ABUN |
| HF-181 | -3.094E-04 | 8.471E-02 | 7.365E-02 | 4.322E-02 | FAIL ABUN |
| TA-182 | 9.987E-02 | 2.279E-01 | 2.051E-01 | 1.163E-01 | NOT IDENT. |
| RE-183 | 1.194E-01 | 1.547E-01 | 1.430E-01 | 7.890E-02 | FAIL ABUN |
| RE-184 | 1.625E-01 | 4.044E-01 | 3.553E-01 | 2.064E-01 | FAIL ABUN |
| OS-185 | 1.574E-02 | 9.476E-02 | 8.114E-02 | 4.835E-02 | FAIL ABUN |
| RE-188 | 9.830E-02 | 2.273E-01 | 2.077E-01 | 1.160E-01 | NOT IDENT. |
| W-188 | 2.565E+00 | 1.198E+01 | 9.805E+00 | 6.112E+00 | NOT IDENT. |
| IR-192 | -8.537E-03 | 5.710E-02 | 5.113E-02 | 2.913E-02 | FAIL ABUN |
| AU-195 | 2.118E-01 | 2.693E-01 | 2.568E-01 | 1.374E-01 | FAIL ABUN |
| TL-200 | 5.732E+00 | 7.869E+00 | 7.301E+00 | 4.015E+00 | NOT IDENT. |
| TL-201 | -1.919E-01 | 1.781E+00 | 1.571E+00 | 9.088E-01 | NOT IDENT. |
| TL-202 | -3.033E-02 | 1.023E-01 | 8.797E-02 | 5.217E-02 | NOT IDENT. |
| HG-203 | -2.564E-02 | 6.252E-02 | 5.580E-02 | 3.190E-02 | NOT IDENT. |
| BI-207 | 5.965E-02 | 1.459E-01 | 1.277E-01 | 7.444E-02 | FAIL ABUN |
| TL-207 | -3.690E-01 | 1.228E+00 | 1.083E+00 | 6.266E-01 | FAIL ABUN |
| PO-209 | -3.803E+00 | 2.160E+01 | 1.840E+01 | 1.102E+01 | NOT IDENT. |
| BI-210 | 1.014E+00 | 1.215E+00 | 1.037E+00 | 6.199E-01 | NOT IDENT. |
| PB-210 | 1.014E+00 | 1.215E+00 | 1.037E+00 | 6.199E-01 | NOT IDENT. |
| PO-210 | 1.014E+00 | 1.214E+00 | 1.037E+00 | 6.196E-01 | NOT IDENT. |
| PB-211 | 7.223E-01 | 2.029E+00 | 1.789E+00 | 1.035E+00 | NOT IDENT. |
| BI-212 | 5.715E-01 | 6.694E-01 | 6.248E-01 | 3.415E-01 | NOT IDENT. |
| PO-215 | -3.690E-01 | 1.228E+00 | 1.083E+00 | 6.266E-01 | FAIL ABUN |
| RN-219 | 3.357E-01 | 8.434E-01 | 7.634E-01 | 4.303E-01 | NOT IDENT. |
| RN-220 | 1.153E+01 | 5.534E+01 | 4.832E+01 | 2.824E+01 | NOT IDENT. |
| RA-223 | -3.690E-01 | 1.228E+00 | 1.083E+00 | 6.266E-01 | FAIL ABUN |
| AC-227 | -9.313E-02 | 7.272E-01 | 6.160E-01 | 3.710E-01 | FAIL ABUN |
| TH-227 | -9.313E-02 | 7.273E-01 | 6.160E-01 | 3.711E-01 | FAIL ABUN |
| AC-228 | 1.113E+00 | 8.999E-01 | 4.619E-01 | 4.591E-01 | FAIL ABUN |
| RA-228 | 1.113E+00 | 8.999E-01 | 4.619E-01 | 4.591E-01 | FAIL ABUN |
| TH-229 | 6.872E-02 | 7.806E-01 | 6.882E-01 | 3.983E-01 | FAIL ABUN |
| PA-231 | 1.612E+00 | 2.478E+00 | 2.334E+00 | 1.264E+00 | FAIL ABUN |
| TH-231 | -3.690E-01 | 1.228E+00 | 1.083E+00 | 6.266E-01 | FAIL ABUN |
| U-231 | -3.366E-01 | 3.830E-01 | 2.978E-01 | 1.954E-01 | FAIL ABUN |
| TH-232 | 1.113E+00 | 8.999E-01 | 4.619E-01 | 4.591E-01 | FAIL ABUN |
| PA-233 | -3.083E-02 | 1.101E-01 | 9.789E-02 | 5.619E-02 | FAIL ABUN |
| PA-234 | 3.247E-01 | 9.533E-01 | 8.362E-01 | 4.864E-01 | FAIL ABUN |
| PA-234M | 8.467E+00 | 1.278E+01 | 1.145E+01 | 6.522E+00 | NOT IDENT. |
| TH-234 | 9.068E-02 | 9.193E-01 | 8.082E-01 | 4.690E-01 | FAIL ABUN |
| U-235 | 3.087E-01 | 3.015E-01 | 2.807E-01 | 1.538E-01 | FAIL ABUN |
| NP-236 | -1.286E-02 | 1.201E-01 | 1.064E-01 | 6.130E-02 | NOT IDENT. |
| NP-237 | 3.158E+00 | 8.209E-01 | 4.356E-01 | 4.188E-01 | NOT IDENT. |
| U-238 | 9.068E-02 | 9.193E-01 | 8.082E-01 | 4.690E-01 | FAIL ABUN |
| NP-239 | -2.022E-01 | 2.977E-01 | 2.312E-01 | 1.519E-01 | NOT IDENT. |
| CM-243 | -1.186E-01 | 1.177E-01 | 1.020E-01 | 6.007E-02 | NOT IDENT. |
| AM-246 | 2.986E-01 | 4.107E-01 | 3.674E-01 | 2.096E-01 | NOT IDENT. |
| CM-247 | 5.150E-02 | 7.674E-02 | 7.056E-02 | 3.915E-02 | NOT IDENT. |
| CF-249 | 2.819E-02 | 8.425E-02 | 7.619E-02 | 4.298E-02 | NOT IDENT. |
| CF-251 | -5.573E-03 | 1.851E-01 | 1.633E-01 | 9.446E-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 | 359.5320 |
| 46.50 | 359.5320 |
| 46.50 | 359.5320 |
| 48.70 | 622.4299 |
| 49.72 | 624.2836 |
| 51.35 | 627.2086 |
| 52.39 | 779.7522 |
| 52.97 | 816.6334 |
| 53.15 | 817.0399 |
| 53.44 | 808.3585 |
| 54.07 | 798.7050 |
| 56.28 | 776.5410 |
| 56.28 | 776.5456 |
| 57.37 | 555.2423 |
| 57.53 | 555.4776 |
| 57.53 | 555.4809 |
| 57.60 | 555.5796 |
| 57.98 | 556.1357 |
| 57.98 | 556.1357 |
| 59.32 | 558.0790 |
| 59.32 | 558.0790 |
| 59.40 | 558.1942 |
| 59.54 | 558.3965 |
| 59.72 | 558.6548 |
| 60.01 | 559.0712 |
| 61.10 | 314.5407 |
| 61.14 | 288.5744 |
| 61.30 | 288.6913 |
| 63.00 | 257.2756 |
| 63.29 | 249.6190 |
| 63.29 | 249.6190 |
| 63.58 | 249.7982 |
| 64.28 | 264.1155 |
| 65.12 | 309.8180 |
| 65.20 | 309.8778 |
| 65.20 | 309.8778 |
| 66.05 | 325.4270 |
| 66.72 | 286.4140 |
| 66.83 | 260.1261 |
| 66.91 | 260.1758 |
| 67.20 | 256.8382 |
| 67.20 | 256.8382 |
| 67.75 | 279.1905 |
| 67.85 | 281.0201 |
| 68.90 | 287.8964 |
| 68.90 | 287.8964 |
| 69.30 | 307.6135 |
| 69.67 | 328.2292 |
| 70.82 | 335.3104 |
| 70.82 | 335.3104 |
| 70.83 | 335.3181 |
| 72.80 | 330.1443 |
| 72.87 | 330.1952 |
| 72.87 | 330.1952 |
| 74.67 | 318.5545 |
| 74.81 | 318.6523 |
| 74.81 | 318.6523 |
| 74.81 | 318.6523 |
| 74.81 | 318.6523 |
| 74.81 | 318.6523 |
| 74.81 | 318.6523 |
| 74.97 | 318.7664 |
| 75.28 | 318.9836 |
| 75.70 | 319.2806 |
| 77.11 | 320.2656 |
| 77.11 | 320.2656 |

| | |
|--------|----------|
| 77.11 | 320.2656 |
| 77.11 | 320.2656 |
| 77.11 | 320.2656 |
| 77.11 | 320.2656 |
| 77.11 | 320.2656 |
| 78.38 | 290.9255 |
| 79.62 | 287.6279 |
| 79.80 | 287.7379 |
| 79.80 | 287.7379 |
| 80.11 | 298.7923 |
| 80.18 | 298.8376 |
| 80.30 | 269.0218 |
| 80.30 | 269.0218 |
| 80.57 | 285.4880 |
| 81.00 | 315.6830 |
| 81.07 | 332.0598 |
| 81.07 | 332.0598 |
| 81.07 | 332.0598 |
| 81.07 | 332.0598 |
| 82.60 | 300.3566 |
| 83.37 | 299.4659 |
| 83.78 | 280.5612 |
| 83.78 | 280.5612 |
| 83.78 | 280.5612 |
| 83.78 | 280.5612 |
| 84.21 | 302.7251 |
| 84.90 | 304.5234 |
| 85.43 | 321.3305 |
| 86.29 | 338.3983 |
| 86.50 | 345.4218 |
| 86.54 | 345.4486 |
| 86.59 | 345.4850 |
| 86.72 | 345.5750 |
| 86.79 | 345.6210 |
| 86.94 | 309.9140 |
| 87.30 | 310.1389 |
| 87.30 | 310.1389 |
| 87.30 | 310.1389 |
| 87.30 | 310.1389 |
| 87.30 | 310.1389 |
| 87.30 | 310.1389 |
| 87.57 | 310.3054 |
| 87.88 | 310.4977 |
| 88.03 | 310.5904 |
| 88.36 | 310.7929 |
| 88.47 | 310.8616 |
| 89.95 | 210.6177 |
| 91.11 | 211.0944 |
| 92.29 | 211.5768 |
| 92.38 | 162.8870 |
| 92.38 | 162.8870 |
| 93.35 | 163.1905 |
| 94.00 | 163.3922 |
| 94.67 | 174.7847 |
| 94.67 | 174.7866 |
| 94.90 | 174.8629 |
| 94.90 | 174.8629 |
| 94.90 | 174.8629 |
| 94.90 | 174.8629 |
| 95.87 | 197.6057 |
| 95.87 | 197.6057 |
| 96.73 | 193.7140 |
| 97.43 | 186.9379 |
| 98.44 | 162.4092 |
| 98.44 | 162.4092 |
| 98.88 | 180.3926 |
| 99.55 | 180.6143 |
| 99.55 | 180.6143 |
| 99.86 | 196.7178 |
| 100.00 | 196.7677 |
| 100.10 | 184.5635 |
| 103.18 | 177.0683 |
| 103.76 | 188.6253 |
| 105.00 | 160.5417 |
| 105.31 | 160.6294 |
| 108.00 | 162.3399 |
| 109.28 | 165.5699 |

| | |
|--------|----------|
| 111.00 | 199.6518 |
| 111.00 | 199.6518 |
| 111.76 | 201.8311 |
| 112.95 | 176.2341 |
| 115.19 | 175.9265 |
| 116.30 | 185.9326 |
| 117.00 | 197.7806 |
| 117.00 | 197.7806 |
| 117.66 | 196.5385 |
| 121.11 | 177.6279 |
| 121.62 | 177.7733 |
| 121.78 | 177.8186 |
| 122.06 | 177.8973 |
| 122.32 | 177.9704 |
| 122.32 | 177.9704 |
| 122.32 | 177.9704 |
| 122.32 | 177.9704 |
| 123.07 | 178.1824 |
| 127.23 | 184.7639 |
| 129.76 | 167.1811 |
| 131.20 | 183.4098 |
| 133.02 | 188.8828 |
| 133.54 | 201.9633 |
| 135.34 | 153.6240 |
| 136.00 | 156.7700 |
| 136.25 | 156.8275 |
| 136.48 | 168.8711 |
| 140.51 | 192.9824 |
| 140.51 | 0.0000 |
| 142.18 | 171.2814 |
| 142.65 | 167.3627 |
| 143.76 | 149.4513 |
| 144.24 | 154.6046 |
| 144.24 | 154.6046 |
| 144.24 | 154.6046 |
| 144.24 | 154.6046 |
| 145.22 | 158.8670 |
| 145.44 | 178.1467 |
| 147.16 | 155.2397 |
| 152.43 | 152.2830 |
| 152.70 | 137.0030 |
| 153.22 | 147.3311 |
| 154.21 | 157.7739 |
| 154.21 | 157.7739 |
| 154.21 | 157.7739 |
| 154.21 | 157.7739 |
| 155.03 | 150.7683 |
| 156.02 | 164.3197 |
| 158.56 | 165.9068 |
| 159.00 | 0.0000 |
| 159.00 | 175.2831 |
| 160.31 | 169.3886 |
| 161.27 | 157.1907 |
| 162.32 | 154.3004 |
| 162.64 | 178.1921 |
| 163.35 | 173.1718 |
| 163.89 | 152.5388 |
| 165.85 | 161.2471 |
| 167.43 | 142.8087 |
| 171.28 | 147.6954 |
| 171.86 | 149.8981 |
| 172.10 | 153.0888 |
| 176.55 | 144.4448 |
| 176.60 | 144.4546 |
| 181.06 | 139.9371 |
| 184.41 | 162.8520 |
| 185.71 | 157.7724 |
| 186.00 | 157.8266 |
| 190.27 | 151.1149 |
| 192.34 | 138.5860 |
| 193.63 | 149.5511 |
| 197.04 | 162.0132 |
| 198.01 | 152.4603 |
| 198.60 | 167.7085 |
| 200.40 | 170.2175 |
| 201.83 | 185.6918 |
| 202.84 | 176.1163 |
| 205.31 | 174.4165 |

| | |
|--------|----------|
| 208.36 | 170.6234 |
| 208.81 | 151.0105 |
| 209.75 | 148.9741 |
| 209.75 | 148.9741 |
| 210.97 | 189.7538 |
| 215.65 | 177.4760 |
| 216.55 | 151.1649 |
| 218.09 | 207.7746 |
| 222.10 | 150.9373 |
| 223.80 | 199.0079 |
| 226.40 | 142.6888 |
| 227.00 | 140.5452 |
| 227.08 | 158.4052 |
| 227.20 | 166.2351 |
| 228.16 | 166.3973 |
| 228.18 | 166.4003 |
| 228.18 | 166.4003 |
| 231.56 | 141.1963 |
| 235.69 | 165.4109 |
| 236.00 | 165.4632 |
| 236.00 | 165.4632 |
| 238.63 | 148.9659 |
| 238.63 | 148.9659 |
| 238.63 | 148.9659 |
| 238.63 | 148.9659 |
| 239.00 | 149.0197 |
| 240.98 | 149.3097 |
| 241.98 | 149.4547 |
| 241.98 | 149.4547 |
| 241.98 | 149.4547 |
| 244.69 | 126.0098 |
| 245.39 | 141.4303 |
| 247.94 | 134.9447 |
| 248.90 | 152.7361 |
| 249.79 | 156.2879 |
| 252.40 | 137.2339 |
| 252.85 | 133.8602 |
| 252.85 | 133.8602 |
| 254.15 | 0.0000 |
| 256.20 | 156.0879 |
| 256.20 | 156.0879 |
| 260.50 | 149.7994 |
| 260.90 | 147.5495 |
| 262.80 | 140.8788 |
| 264.65 | 144.5872 |
| 268.24 | 140.4183 |
| 268.79 | 124.2325 |
| 269.46 | 127.7918 |
| 269.46 | 127.7918 |
| 269.46 | 127.7918 |
| 269.46 | 127.7918 |
| 271.23 | 146.6129 |
| 273.65 | 162.0903 |
| 276.40 | 125.3716 |
| 277.35 | 128.1087 |
| 277.60 | 125.5047 |
| 277.60 | 125.5047 |
| 278.00 | 122.9144 |
| 278.60 | 139.6685 |
| 279.20 | 145.8959 |
| 279.53 | 145.9364 |
| 280.46 | 158.3734 |
| 281.68 | 124.1926 |
| 283.67 | 103.2301 |
| 284.30 | 105.9357 |
| 285.00 | 109.5331 |
| 285.90 | 124.6465 |
| 286.10 | 118.4789 |
| 286.10 | 118.4789 |
| 287.40 | 121.2672 |
| 288.45 | 0.0000 |
| 290.67 | 103.6757 |
| 290.80 | 103.6864 |
| 291.72 | 125.0906 |
| 293.26 | 119.5605 |
| 293.70 | 119.6057 |
| 295.21 | 146.1326 |
| 295.21 | 146.1326 |

| | |
|--------|----------|
| 295.21 | 146.1326 |
| 295.96 | 135.5258 |
| 296.50 | 135.5861 |
| 297.23 | 135.6696 |
| 298.57 | 135.8226 |
| 299.80 | 140.2529 |
| 299.80 | 140.2529 |
| 300.09 | 140.2888 |
| 300.09 | 140.2888 |
| 300.09 | 140.2888 |
| 300.09 | 140.2888 |
| 300.12 | 140.2912 |
| 301.29 | 140.4276 |
| 302.84 | 137.7375 |
| 303.76 | 119.1767 |
| 303.91 | 119.1909 |
| 304.40 | 126.4227 |
| 304.40 | 126.4227 |
| 304.84 | 127.9049 |
| 306.84 | 105.5635 |
| 308.46 | 120.7157 |
| 311.98 | 114.7372 |
| 316.51 | 117.8760 |
| 318.01 | 103.4917 |
| 319.02 | 101.7581 |
| 319.41 | 101.7888 |
| 320.08 | 118.2092 |
| 323.87 | 128.5967 |
| 323.87 | 128.5967 |
| 323.87 | 128.5967 |
| 323.87 | 128.5967 |
| 325.23 | 131.4734 |
| 328.77 | 151.0620 |
| 333.44 | 104.3783 |
| 334.20 | 133.8584 |
| 334.20 | 133.8584 |
| 334.30 | 133.8695 |
| 338.28 | 132.8005 |
| 338.28 | 132.8005 |
| 338.28 | 132.8005 |
| 338.28 | 132.8005 |
| 338.32 | 132.8049 |
| 338.32 | 132.8049 |
| 338.32 | 132.8049 |
| 340.50 | 118.2441 |
| 340.57 | 118.2500 |
| 344.27 | 132.4762 |
| 345.85 | 117.2367 |
| 350.59 | 122.8618 |
| 351.07 | 122.9061 |
| 351.92 | 122.9826 |
| 351.92 | 122.9826 |
| 351.92 | 122.9826 |
| 355.39 | 0.0000 |
| 356.01 | 113.6326 |
| 364.48 | 124.1105 |
| 366.43 | 126.1668 |
| 367.43 | 116.8347 |
| 367.94 | 113.1061 |
| 369.80 | 137.7951 |
| 374.96 | 116.5118 |
| 383.85 | 138.2031 |
| 387.95 | 117.5647 |
| 388.63 | 124.3129 |
| 391.69 | 143.7378 |
| 391.69 | 143.7378 |
| 392.90 | 138.1025 |
| 398.62 | 132.8578 |
| 400.65 | 128.2187 |
| 401.10 | 121.5069 |
| 401.81 | 107.0926 |
| 402.60 | 106.1832 |
| 404.84 | 116.9750 |
| 410.95 | 114.5340 |
| 411.60 | 123.3219 |
| 413.65 | 127.3780 |
| 414.70 | 137.1940 |
| 415.30 | 123.6204 |

| | |
|--------|----------|
| 415.76 | 125.6045 |
| 417.63 | 0.0000 |
| 418.52 | 107.2960 |
| 423.70 | 113.5255 |
| 427.08 | 117.6929 |
| 427.89 | 104.9967 |
| 432.53 | 123.0202 |
| 433.93 | 117.2187 |
| 439.47 | 120.5908 |
| 439.56 | 120.5964 |
| 439.89 | 123.5886 |
| 443.98 | 117.9541 |
| 444.90 | 108.1035 |
| 445.03 | 108.1118 |
| 445.03 | 108.1118 |
| 445.03 | 108.1118 |
| 445.03 | 108.1118 |
| 453.90 | 121.6631 |
| 463.38 | 111.3252 |
| 468.07 | 122.7000 |
| 473.00 | 112.9707 |
| 475.06 | 108.0564 |
| 475.35 | 101.0056 |
| 476.78 | 106.1440 |
| 477.59 | 108.2164 |
| 477.96 | 112.2855 |
| 482.03 | 100.3837 |
| 484.57 | 109.6710 |
| 487.03 | 103.7245 |
| 490.36 | 98.8279 |
| 492.35 | 103.0204 |
| 497.08 | 85.9098 |
| 507.63 | 0.0000 |
| 510.53 | 0.0000 |
| 510.84 | 103.0632 |
| 511.00 | 103.0724 |
| 511.85 | 102.2962 |
| 511.85 | 102.2962 |
| 513.99 | 90.8527 |
| 513.99 | 90.8527 |
| 520.41 | 84.9579 |
| 520.65 | 84.9679 |
| 527.90 | 78.0212 |
| 528.96 | 0.0000 |
| 529.64 | 91.6309 |
| 529.87 | 0.0000 |
| 531.02 | 84.4038 |
| 537.32 | 80.5060 |
| 543.00 | 83.8940 |
| 546.56 | 0.0000 |
| 549.76 | 71.5631 |
| 552.65 | 80.1029 |
| 555.20 | 77.0434 |
| 563.23 | 65.7047 |
| 563.90 | 64.6673 |
| 568.70 | 79.7035 |
| 569.32 | 82.9178 |
| 569.50 | 80.7987 |
| 569.67 | 77.6160 |
| 573.80 | 95.8914 |
| 574.00 | 82.0475 |
| 574.64 | 71.4165 |
| 578.91 | 82.0383 |
| 579.30 | 82.0547 |
| 583.14 | 74.9326 |
| 585.48 | 84.0226 |
| 591.81 | 75.2551 |
| 592.07 | 78.4893 |
| 593.00 | 77.4492 |
| 595.88 | 57.0921 |
| 600.56 | 82.0558 |
| 602.52 | 0.0000 |
| 602.71 | 53.6082 |
| 602.71 | 53.6082 |
| 603.60 | 55.3609 |
| 604.41 | 72.6899 |
| 604.70 | 72.7002 |
| 609.31 | 61.8028 |

| | |
|--------|---------|
| 609.31 | 61.8028 |
| 609.31 | 61.8028 |
| 609.31 | 61.8028 |
| 610.33 | 61.8323 |
| 612.46 | 76.4479 |
| 614.37 | 62.6045 |
| 618.01 | 55.5276 |
| 621.84 | 57.8102 |
| 621.84 | 57.8102 |
| 631.29 | 60.2586 |
| 633.02 | 69.0793 |
| 633.10 | 69.0831 |
| 634.78 | 69.1370 |
| 635.90 | 77.9574 |
| 636.97 | 74.7008 |
| 645.85 | 69.4926 |
| 646.12 | 71.7067 |
| 656.30 | 56.7453 |
| 657.75 | 63.8807 |
| 657.90 | 0.0000 |
| 661.65 | 77.7695 |
| 661.65 | 77.7695 |
| 664.57 | 81.8769 |
| 666.33 | 64.1285 |
| 666.33 | 64.1285 |
| 675.00 | 54.7646 |
| 677.61 | 70.4924 |
| 685.20 | 70.7289 |
| 692.80 | 74.7932 |
| 695.00 | 59.5321 |
| 696.49 | 66.7897 |
| 696.49 | 66.7897 |
| 697.00 | 66.8060 |
| 697.49 | 70.4304 |
| 698.33 | 67.7472 |
| 698.50 | 64.1392 |
| 699.00 | 65.9584 |
| 702.63 | 66.9668 |
| 706.10 | 72.5059 |
| 706.58 | 0.0000 |
| 706.67 | 71.6169 |
| 709.31 | 69.8809 |
| 711.68 | 73.5862 |
| 713.82 | 80.9279 |
| 717.42 | 65.5699 |
| 720.50 | 80.2441 |
| 721.93 | 96.7147 |
| 722.20 | 96.7276 |
| 722.78 | 85.7979 |
| 722.78 | 85.7979 |
| 722.89 | 81.2386 |
| 722.95 | 80.3258 |
| 723.30 | 80.3387 |
| 724.18 | 68.4961 |
| 727.18 | 64.9244 |
| 733.00 | 64.1655 |
| 735.90 | 65.1602 |
| 739.58 | 46.8762 |
| 742.81 | 57.0624 |
| 744.21 | 78.2764 |
| 747.13 | 56.2418 |
| 751.79 | 76.6717 |
| 752.31 | 69.2963 |
| 753.82 | 61.9423 |
| 755.35 | 67.5303 |
| 756.15 | 64.7773 |
| 756.87 | 49.0599 |
| 763.93 | 77.9769 |
| 765.79 | 68.7445 |
| 766.42 | 66.9041 |
| 766.84 | 65.9853 |
| 776.49 | 52.2457 |
| 778.00 | 65.3464 |
| 778.57 | 70.9624 |
| 778.89 | 67.2363 |
| 783.80 | 54.2674 |
| 785.46 | 65.5378 |
| 792.07 | 74.1551 |

| | |
|---------|----------|
| 795.84 | 57.3439 |
| 796.30 | 60.1750 |
| 798.80 | 73.4087 |
| 801.93 | 66.9022 |
| 805.60 | 63.2214 |
| 810.29 | 72.7891 |
| 810.76 | 78.4751 |
| 815.85 | 52.1023 |
| 817.79 | 77.7378 |
| 818.51 | 87.2428 |
| 819.60 | 85.3813 |
| 826.30 | 89.4010 |
| 828.27 | 73.2872 |
| 831.60 | 74.3323 |
| 831.96 | 72.4356 |
| 834.83 | 83.9631 |
| 836.80 | 0.0000 |
| 846.75 | 88.1682 |
| 848.13 | 86.2954 |
| 856.28 | 0.0000 |
| 856.80 | 76.9531 |
| 860.37 | 77.0527 |
| 867.32 | 80.1449 |
| 867.82 | 90.7825 |
| 871.10 | 62.8497 |
| 873.19 | 87.0886 |
| 874.81 | 81.3299 |
| 875.33 | 0.0000 |
| 876.40 | 91.0648 |
| 879.36 | 64.9766 |
| 880.27 | 75.6691 |
| 880.51 | 75.6749 |
| 881.50 | 63.0846 |
| 883.24 | 80.6048 |
| 884.67 | 77.7305 |
| 889.25 | 62.2859 |
| 896.60 | 85.8666 |
| 898.02 | 78.0996 |
| 899.00 | 91.7992 |
| 903.28 | 83.8330 |
| 911.07 | 87.2834 |
| 911.07 | 87.2834 |
| 911.07 | 87.2834 |
| 919.63 | 70.0828 |
| 920.93 | 83.6449 |
| 925.00 | 82.7777 |
| 925.24 | 90.6681 |
| 926.50 | 82.8208 |
| 935.52 | 93.9563 |
| 937.48 | 87.0912 |
| 944.10 | 105.1408 |
| 946.00 | 90.3202 |
| 949.00 | 103.3271 |
| 962.29 | 102.7888 |
| 964.01 | 106.8433 |
| 966.15 | 92.9296 |
| 968.20 | 86.9915 |
| 969.11 | 85.0187 |
| 969.11 | 85.0187 |
| 969.11 | 85.0187 |
| 977.42 | 75.2216 |
| 980.50 | 92.3661 |
| 983.50 | 79.3915 |
| 989.30 | 84.5763 |
| 996.32 | 83.7599 |
| 1001.03 | 66.7058 |
| 1001.68 | 65.7094 |
| 1004.76 | 78.9293 |
| 1021.30 | 0.0000 |
| 1024.50 | 0.0000 |
| 1034.80 | 71.5107 |
| 1036.00 | 62.3403 |
| 1037.82 | 64.4212 |
| 1038.57 | 66.4822 |
| 1038.76 | 0.0000 |
| 1045.16 | 59.4443 |
| 1046.59 | 70.7486 |
| 1048.07 | 76.9373 |

| | |
|---------|---------|
| 1050.47 | 78.0225 |
| 1050.47 | 78.0225 |
| 1062.04 | 67.9980 |
| 1063.62 | 62.8765 |
| 1076.63 | 83.8239 |
| 1077.35 | 70.3873 |
| 1078.86 | 64.2039 |
| 1085.78 | 77.8308 |
| 1099.22 | 71.8907 |
| 1112.02 | 83.6719 |
| 1112.84 | 61.7224 |
| 1115.52 | 58.6305 |
| 1120.29 | 59.7609 |
| 1120.29 | 59.7609 |
| 1120.29 | 59.7609 |
| 1120.29 | 59.7609 |
| 1120.51 | 52.4243 |
| 1121.28 | 44.0467 |
| 1124.00 | 0.0000 |
| 1129.67 | 50.4633 |
| 1131.51 | 0.0000 |
| 1147.95 | 0.0000 |
| 1167.94 | 54.9185 |
| 1173.22 | 33.7108 |
| 1175.09 | 23.0769 |
| 1177.93 | 26.6492 |
| 1189.05 | 20.3165 |
| 1204.90 | 21.4795 |
| 1205.75 | 20.4111 |
| 1213.00 | 17.2227 |
| 1221.42 | 12.9463 |
| 1230.97 | 25.9605 |
| 1235.34 | 20.5762 |
| 1236.41 | 0.0000 |
| 1238.25 | 15.1737 |
| 1246.25 | 16.2927 |
| 1260.41 | 0.0000 |
| 1271.85 | 17.4977 |
| 1274.45 | 14.2264 |
| 1274.54 | 17.5102 |
| 1291.56 | 14.2905 |
| 1298.22 | 0.0000 |
| 1312.09 | 14.7350 |
| 1325.50 | 9.5052 |
| 1325.50 | 9.5052 |
| 1332.49 | 13.8861 |
| 1333.61 | 9.5248 |
| 1360.21 | 5.5935 |
| 1362.66 | 0.0000 |
| 1365.15 | 11.2007 |
| 1368.21 | 6.5386 |
| 1368.53 | 0.0000 |
| 1376.25 | 13.1034 |
| 1384.27 | 11.2539 |
| 1394.10 | 5.6404 |
| 1395.20 | 8.4631 |
| 1407.95 | 7.5459 |
| 1434.06 | 1.8984 |
| 1436.60 | 9.4979 |
| 1457.56 | 0.0000 |
| 1460.81 | 9.5524 |
| 1489.15 | 7.6927 |
| 1509.49 | 9.6606 |
| 1596.49 | 11.8203 |
| 1620.62 | 8.9117 |
| 1678.03 | 0.0000 |
| 1691.02 | 9.0454 |
| 1691.02 | 9.0454 |
| 1706.46 | 0.0000 |
| 1750.46 | 0.0000 |
| 1764.49 | 5.2469 |
| 1764.49 | 5.2469 |
| 1764.49 | 5.2469 |
| 1764.49 | 5.2469 |
| 1770.23 | 12.2568 |
| 1771.40 | 9.1948 |
| 1791.20 | 0.0000 |
| 1808.65 | 5.1459 |

1836.01

3.1041

TOTAL URANIUM BY GAMMA SPEC REPORT
Sample:G1202037548

| | | |
|-----------------------------|------------|------|
| Total Uranium Activity | 4.1260E-01 | ug/g |
| Total Uranium Counting Unc. | 2.7384E+00 | ug/g |
| Total Uranium Tpu | 1.3972E-06 | ug/g |
| Total Uranium Mda | 2.4080E+00 | ug/g |

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*****
*
*               GEL Laboratories LLC               *
*               2040 SAVAGE ROAD                   *
*               CHARLESTON ,SC 29417                *
*               GROSS GAMMA REPORT                  *
*
*****
*
*  BATCH ID      : 950786                          SAMPLE ID   : G1202037548
*  ANALYST       : MXR1                             DETECTOR    : GAM17
*  SAMPLE DATE   : 11-FEB-2010 00:00:00.00          COUNT TIME   : 0 01:00:00.00
*  ANALYSIS DATE : 18-FEB-2010 14:48:04.09          SAMPLE ALQT  : 155.440 GRAM
*
*****

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GROSS GAMMA ACTIVITY (pCi/GRAM ) : 2.690E+01
GROSS GAMMA ERROR (pCi/GRAM )   : 2.767E+00
GROSS GAMMA MDA (pCi/GRAM )     : 5.577E+00
GROSS GAMMA DLC (pCi/GRAM )     : 2.725E+00

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Radiochemistry Batch Checklist, Rev10

Batch# 951367 Product: H3 Date: 2/23/10

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

GEL Laboratories, LLC

RADchecklistrev10, revised 1/13/2010

Primary Review Performed By:

[Signature] 2/23/10

Secondary Review Performed By:

[Signature] 2/23/10

LANL

2/22 - 3/5

Tritium Que Sheet

15-FEB-10

Batch #: 951367

Analyst: KKK2

First Client Due Date 05-MAR-10

Spike Isotope: Hydrogen-3

Spike Code: 0134-K

Expiration Date: 3/27/10

Internal Due Date: 22-FEB-10

LCS Isotope: Hydrogen-3

LCS Code: 0134-K

Expiration Date: 3/27/10

Vol: 0.1

Prep Date: 2/15/10

Initials: *YF*

Pipet ID: 2910968

Witness: DM 2-15-10

| Sample ID | Client Samp ID | Type | Hazard Code | Min CRDL | Matrix | Client | Sample Date | Aliquot In vial (g/mL) | LSC Rack # | Dist Rig # | Vol added for Dist (mL) | Initial Sample Aliquot (g/mL) | Final Wt (g) | total moisture |
|--------------|----------------------------|--------|-------------|-----------------|------------|--------|-------------|------------------------|------------|------------|-------------------------|-------------------------------|--------------|----------------|
| 246328001-1 | RE15-10-7332 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 5 | 1 | | 580.01 | 542.89 | 37.12 |
| 246328002-1 | RE15-10-7333 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 6 | 2 | | 492.39 | 464.32 | 28.07 |
| 246328003-1 | RE15-10-7336 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 7 | 3 | | 525.57 | 497.01 | 28.56 |
| 246328004-1 | RE15-10-7337 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 8 | 4 | | 614.79 | 580.36 | 34.43 |
| 246328005-1 | RE15-10-7334 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 9 | 5 | | 257.85 | 201.12 | 56.73 |
| 246328006-1 | RE15-10-7335 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 10 | 6 | | 365.27 | 321.44 | 43.83 |
| 246328007-1 | RE15-10-7338 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 11 | 7 | | 317.93 | 256.25 | 61.68 |
| 246328008-1 | RE15-10-7339 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 12 | 8 | | 395.90 | 343.64 | 52.26 |
| 246328009-1 | RE15-10-7342 | SAMPLE | | .25 pCi/mL SOIL | LANL010 | | 01-FEB-10 | 10 | 13 | 9 | | 611.06 | 576.84 | 34.22 |
| 1202038817-1 | MB for batch 951367 | MB | | .25 pCi/mL SOIL | QC ACCOUNT | | | 10 | 14 | 10 | | 20.00 | 0 | 20.00 |
| 1202038818-1 | RE15-10-7334(246328005DUP) | DUP | | .25 pCi/mL SOIL | QC ACCOUNT | | 01-FEB-10 | 10 | 15 | 5 | | 257.85 | 201.12 | 56.73 |
| 1202038819-1 | LCS for batch 951367 | LCS | | .25 pCi/mL SOIL | QC ACCOUNT | | | 10 | 16 | 11 | | 20.00 | 0 | 20.00 |

Bkg Rack #: 4/60-1

daily

Comments:

Bkg prepared with dead water? Yes/No

Instrument Used (circle as appropriate): LS6000 (Red) 2065155, LS6500 (Blue) 7067083, LS6500

(Gold) 7070506, LS6500 (Green) 7067404, Wallac (Yellow) 4140127, LS6000 (Brown) 7060655, Wallac

(Pink) 2200082, Wallac (White) 4140299, Purple 7069123, Silver 7060656, Orange DGO6095168

Calibration Used : Ecoscint Ultra (10 mL sample/13 mL Ecoscint Ultra)

Data Reviewed By: *Signature*

2/23/10

GEL Laboratories LLC, Radiochemistry Division

Page 1 of 1

| DATE | 2/12/2010 | INITIALS | KXK2 | BATCH NUMBER | 951367 | |
|-----------|----------------|---|-------------------------------|----------------|-----------------------------|------------------------|
| Sample # | Sample Wet (g) | % Moisture of Sample (Balance Interface using % Moisture Batch) | Total Moisture in Sample (mL) | Sample Dry (g) | mLs aliquoted into LSC vial | Collection Tube Number |
| 246328001 | 580.01 | 0.064 | 37.12 | 542.89 | 10 | |
| 246328002 | 492.39 | 0.057 | 28.07 | 464.32 | 10 | |
| 246328003 | 535.57 | 0.072 | 38.56 | 497.01 | 10 | |
| 246328004 | 614.79 | 0.056 | 34.43 | 580.36 | 10 | |
| 246328005 | 257.85 | 0.220 | 56.73 | 201.12 | 10 | |
| 246328006 | 365.27 | 0.120 | 43.83 | 321.44 | 10 | |
| 246328007 | 317.93 | 0.194 | 61.68 | 256.25 | 10 | |
| 246328008 | 395.90 | 0.132 | 52.26 | 343.64 | 10 | |
| 246328009 | 611.06 | 0.056 | 34.22 | 576.84 | 10 | |
| MB | 20.00 | 1.000 | 20.00 | 0.00 | 10 | |
| DUP | 257.85 | 0.220 | 56.73 | 201.12 | 10 | |
| LCS | 20.00 | 1.000 | 20.00 | 0.00 | 10 | |

Tritium Solid

Filename : H3VAC.XLS
File type : Excel
Version # : 1.2.6

Spike S/N :
Spike Exp Date :
Spike Activity (dpm/ml):
Spike Volume Added:

LCS S/N : 0134-K
LCS Exp Date : 3/27/2010
LCS Activity (dpm/ml): 2466.68
LCS Volume Added: 0.10

Batch : 951367
Analyst : KKK2
Prep Date : 2/15/2010

Procedure Code : LSC_VH3S
Paramname : Tritium
Required MDC : 250 pCi/L
Half-life of Tritium : 12.32 years

H-3 Abundance : 1
Method Uncertainty : 0.0691
Geometry: 10mL DW/13mL
Eoscient Ultra

Pipet, 0.1 ml Stdev : +/- 0.000701 ml
Pipet, 0.5 ml Stdev : +/- 0.002564 ml
Pipet, 1.0 ml Stdev : +/- 0.005480 ml
Pipet, 5.0 ml Stdev : +/- 0.025729 ml

| Sample Characteristics | | | | | | | | | | | |
|------------------------|--------------|-----------------------|------------------|--------------------------|-------------------------|-----------------------|----------------------|------------|------------------|--|--|
| Pos. | Sample ID | Wet Sample Weight (g) | Total Moisture L | Sample Aliquot In Vial L | Sample Aliquot Stdev. L | Dry Sample Weight (g) | % Moisture of Sample | Flg number | Sample Date/Time | | |
| 1 | 246328001.1 | 590.01 | 0.0371 | 0.0100 | 2.5729E-05 | 542.89 | 6.40% | 1 | 2/1/2010 12:00 | | |
| 2 | 246328002.1 | 492.39 | 0.0281 | 0.0100 | 2.5729E-05 | 464.32 | 5.70% | 2 | 2/1/2010 12:00 | | |
| 3 | 246328003.1 | 535.57 | 0.0366 | 0.0100 | 2.5729E-05 | 487.01 | 7.20% | 3 | 2/1/2010 12:00 | | |
| 4 | 246328004.1 | 814.78 | 0.0344 | 0.0100 | 2.5729E-05 | 580.36 | 5.60% | 4 | 2/1/2010 12:00 | | |
| 5 | 246328005.1 | 257.85 | 0.0567 | 0.0100 | 2.5729E-05 | 201.12 | 22.00% | 5 | 2/1/2010 12:00 | | |
| 6 | 246328006.1 | 365.27 | 0.0438 | 0.0100 | 2.5729E-05 | 321.44 | 12.00% | 6 | 2/1/2010 12:00 | | |
| 7 | 246328007.1 | 317.93 | 0.0617 | 0.0100 | 2.5729E-05 | 256.25 | 19.40% | 7 | 2/1/2010 12:00 | | |
| 8 | 246328008.1 | 395.90 | 0.0523 | 0.0100 | 2.5729E-05 | 343.64 | 13.20% | 8 | 2/1/2010 12:00 | | |
| 9 | 246328009.1 | 611.06 | 0.0342 | 0.0100 | 2.5729E-05 | 576.84 | 5.60% | 9 | 2/1/2010 12:00 | | |
| 10 | 1202038817.1 | 20.00 | 0.0200 | 0.0100 | 2.5729E-05 | 0.00 | 100.00% | 10 | 2/15/2010 0:00 | | |
| 11 | 1202038818.1 | 257.85 | 0.0567 | 0.0100 | 2.5729E-05 | 201.12 | 22.00% | 5 | 2/1/2010 12:00 | | |
| 12 | 1202038819.1 | 20.00 | 0.0200 | 0.0100 | 2.5729E-05 | 0.00 | 100.00% | 11 | 2/15/2010 0:00 | | |

| Count raw data | | | | Background | | | | Calibration Data | | | | Backgrounds | | | |
|----------------|--------------------|----------------------------|---------|--------------|------|-------------------------|-----------------------------|------------------|---------------|---------------------|----------------------------|-------------------------------------|--|--------------------|-----------------------------|
| Pos. | Rack Position # | Counting Time (min.) | Quench# | Gross cpm | cpm | Count Time (min.) | Count Start Date/Time | Sample Decay | Counted on | Calibration Date | Calibration Due Date | Detector Efficiency (cpm/dpm) | Detector Efficiency Error (cpm/dpm) | Rack Position # | Count Start Date/Time |
| 1 | 5 | 95.0298 | 805.21 | 2.25 | 1.37 | 95 | 2/16/2010 22:15 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1689 | 0.00792 | 4 | 2/16/2010 20:37 |
| 2 | 6 | 95.0298 | 805.88 | 1.86 | 1.37 | 95 | 2/16/2010 23:52 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1696 | 0.00792 | 4 | 2/16/2010 20:37 |
| 3 | 7 | 95.0298 | 804.8 | 1.89 | 1.37 | 95 | 2/17/2010 2:45 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1685 | 0.00792 | 4 | 2/16/2010 20:37 |
| 4 | 8 | 95.0298 | 804.52 | 1.84 | 1.37 | 95 | 2/17/2010 4:23 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1682 | 0.00792 | 4 | 2/16/2010 20:37 |
| 5 | 9 | 95.0131 | 804.04 | 1.44 | 1.37 | 95 | 2/17/2010 6:00 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1677 | 0.00792 | 4 | 2/16/2010 20:37 |
| 6 | 60-2 | 95 | 727.28 | 4.1 | 2.91 | 95 | 2/19/2010 22:03 | 0.997 | LSCYELLOW | 8/21/2009 | 8/31/2010 | 0.1961 | 0.00792 | 60-1 | 2/19/2010 20:27 |
| 7 | 11 | 95.0298 | 804.93 | 1.85 | 1.37 | 95 | 2/17/2010 9:16 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1686 | 0.00792 | 4 | 2/16/2010 20:37 |
| 8 | 12 | 95.0296 | 804.71 | 2 | 1.37 | 95 | 2/17/2010 10:53 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1684 | 0.00792 | 4 | 2/16/2010 20:37 |
| 9 | 13 | 95.0298 | 805.73 | 1.63 | 1.37 | 95 | 2/17/2010 12:31 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1695 | 0.00792 | 4 | 2/16/2010 20:37 |
| 10 | 14 | 95.0297 | 805.11 | 1.47 | 1.37 | 95 | 2/17/2010 14:08 | 1.000 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1688 | 0.00792 | 4 | 2/16/2010 20:37 |
| 11 | 15 | 95.0297 | 805.61 | 1.83 | 1.37 | 95 | 2/17/2010 15:46 | 0.998 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1693 | 0.00792 | 4 | 2/16/2010 20:37 |
| 12 | 16 | 15.0297 | 805.32 | 23.98 | 1.37 | 95 | 2/17/2010 17:23 | 1.000 | LSCPINK | 8/21/2009 | 8/31/2010 | 0.1690 | 0.00792 | 4 | 2/16/2010 20:37 |

REGISTRY

TUE 16 FEB 2010 20:35

*** DIRECTORY PATH :S:\LSC\Q\DA\951367A0 ***

PARAMETER GROUP: 8
ID: H-3(4)

00A PROGRAM MODE 6 ->

| ORDER | POS | ID | CTIME | COUNTS | CUCNTS | MCW | REP | STD | STMS | STIME |
|-------|-----|-----------|-------|--------|--------|-----|-----|-----|------|-------|
| 1 | 4 | BKG | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 2 | 5 | 246328001 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 3 | 6 | 246328002 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

| MCA INPUT | TRIGG. | INHIBIT | MEMORY SPLIT |
|-----------|--------|---------|--------------|
| 1 LRSUM | DCOS | G | L*R |
| 2 GSUM | G | | L*R |

| WINDOW | CHANNELS | MCA | HALF |
|--------|----------|-----|------|
| 1 | 1- 174 | 1 | 2 |
| 2 | 1- 174 | 1 | 2 |
| 3 | 60- 220 | 1 | 2 |
| 4 | 50- 320 | 1 | 1 |
| 5 | 50- 270 | 1 | 1 |
| 6 | 60- 220 | 1 | 1 |
| 7 | 1- 1024 | 2 | 1 |
| 8 | 1- 1024 | 2 | 2 |

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

| 1. POS | 2. ID | 3. CTIME | 4. SQP | 5. CPM1 | 6. CPM2 | 7. CPM3 |
|----------------------------|----------|-------------|-----------|------------|------------|------------|
| SEND SPECTRA 12 | | | | | | |
| RESOLUTION OF SPECTRA 1024 | | | | | | |
| LISTING Y | | | | | | |
| INSTRUMENT NUMBER 1 | | | | | | |

| POS | ID | CTIME | SQP | CPM1 | CPM2 | CPM3 |
|--------------|-------------|-----------|--------|------|------|------|
| Q010401N.001 | 16 FEB 2010 | 22:13 | | | | |
| 4 | BKG | 95:01.785 | 806.97 | 1.37 | 1.37 | 1.79 |
| Q020501N.001 | 16 FEB 2010 | 23:51 | | | | |
| 5 | 246328001 | 95:01.785 | 805.21 | 2.25 | 2.25 | 2.93 |
| Q030601N.001 | 17 FEB 2010 | 1:28 | | | | |
| 6 | 246328002 | 95:01.785 | 805.88 | 1.86 | 1.86 | 2.57 |

REGISTRY

WED 17 FEB 2010 2:44

*** DIRECTORY PATH :S:\LSC\Q\DA\951367A1 ***

PARAMETER GROUP: 8
ID: H-3(5)

OOA PROGRAM MODE 6 ->

| ORDER | POS | ID | CTIME | COUNTS | CUCNTS | MCW | REP | STD | STMS | STIME |
|-------|-----|------------|-------|--------|--------|-----|-----|-----|------|-------|
| 1 | 7 | 246328003 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 2 | 8 | 246328004 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 3 | 9 | 246328005 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 4 | 10 | 246328006 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 5 | 11 | 246328007 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 6 | 12 | 246328008 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 7 | 13 | 246328009 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 8 | 14 | 1202038817 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 9 | 15 | 1202038818 | 95:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |
| 10 | 16 | 1202038819 | 15:00 | 1.0E04 | NO LIM | 1 | 1 | Y | 1/10 | 1:00 |

NUMBER OF CYCLES 1
COINCIDENCE BIAS (L/H) L

| MCA INPUT | TRIGG. | INHIBIT | MEMORY SPLIT |
|-----------|--------|---------|--------------|
| 1 LRSUM | DCOS | G | L*R |
| 2 GSUM | G | | L*R |

| WINDOW | CHANNELS | MCA | HALF |
|--------|----------|-----|------|
| 1 | 1- 174 | 1 | 2 |
| 2 | 1- 174 | 1 | 2 |
| 3 | 60- 220 | 1 | 2 |
| 4 | 50- 320 | 1 | 1 |
| 5 | 50- 270 | 1 | 1 |
| 6 | 60- 220 | 1 | 1 |
| 7 | 1- 1024 | 2 | 1 |
| 8 | 1- 1024 | 2 | 2 |

SELECTED PRINTOUT FOR TERMINAL 1 (A)

SELECTED PRINTOUT FOR TERMINAL 2 (B)

| 1. POS | 2. ID | 3. CTIME | 4. SQP | 5. CPM1 | 6. CPM2 | 7. CPM3 |
|----------------------------|----------|-------------|-----------|------------|------------|------------|
| SEND SPECTRA 12 | | | | | | |
| RESOLUTION OF SPECTRA 1024 | | | | | | |
| LISTING Y | | | | | | |
| INSTRUMENT NUMBER 1 | | | | | | |

| POS | ID | CTIME | SQP | CPM1 | CPM2 | CPM3 |
|--------------|-------------|-----------|--------|------|------|------|
| Q010701N.001 | 17 FEB 2010 | 4:21 | | | | |
| 7 | 246328003 | 95:01.785 | 804.80 | 1.69 | 1.69 | 2.45 |
| Q020801N.001 | 17 FEB 2010 | 5:59 | | | | |
| 8 | 246328004 | 95:01.785 | 804.52 | 1.84 | 1.84 | 2.48 |
| Q030901N.001 | 17 FEB 2010 | 7:36 | | | | |

Page 1

9/25/10

| | | | REGISTRY | | | |
|---------------|----------------------|----------------------|-------------------|-----------------|-----------------|-----------------|
| 9 | 246328005 | 95:00.785 | 804.04 | 1.44 | 1.44 | 2.19 |
| 10 | 246328006 | 95:01.785 | 808.39 | 2.70 | 2.70 | 3.22 |
| 10 | 246328006 | 95:01.785 | 808.39 | 2.70 | 2.70 | 3.22 |
| 11 | 246328007 | 95:01.785 | 804.93 | 1.85 | 1.85 | 2.66 |
| 12 | 246328008 | 95:01.778 | 804.71 | 2.00 | 2.00 | 2.74 |
| 13 | 246328009 | 95:01.785 | 805.73 | 1.63 | 1.63 | 2.48 |
| 14 | 1202038817 | 95:01.784 | 805.11 | 1.47 | 1.47 | 1.96 |
| 15 | 1202038818 | 95:01.784 | 805.61 | 1.63 | 1.63 | 2.29 |
| 16 | 1202038819 | 15:01.784 | 805.32 | 23.98 | 23.98 | 26.34 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
TUE 16 FEB 2010 20:35
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s:\sc\files\pink\951367A0\U951367A0.xls

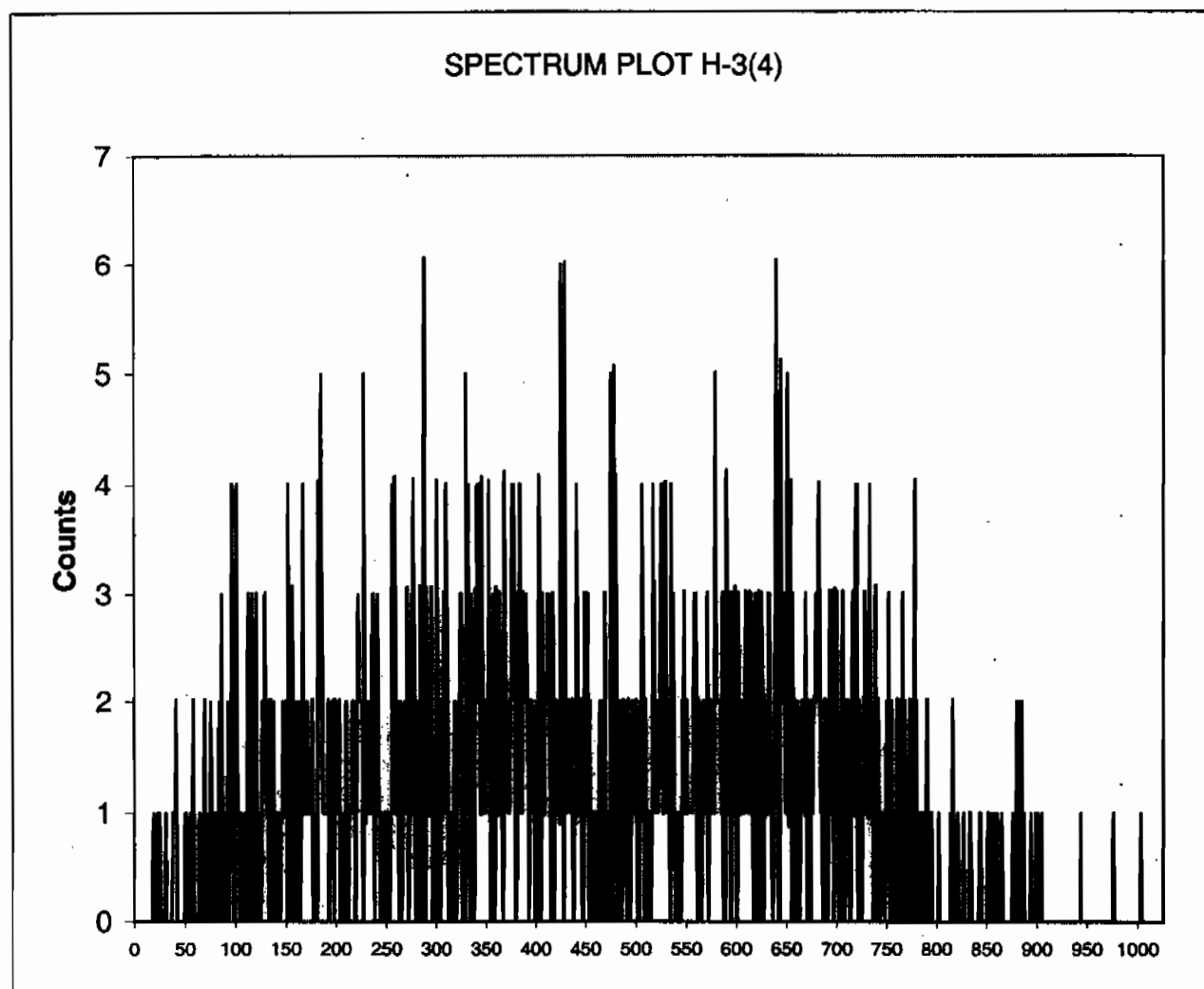
ID:
Comments:

H-3(4)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, BKG, 95.02975:
806.97
1-174

Channel Counts



| | |
|----|---|
| 31 | 1 |
| 32 | 0 |
| 33 | 0 |
| 34 | 0 |
| 35 | 0 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
TUE 16 FEB 2010 20:35
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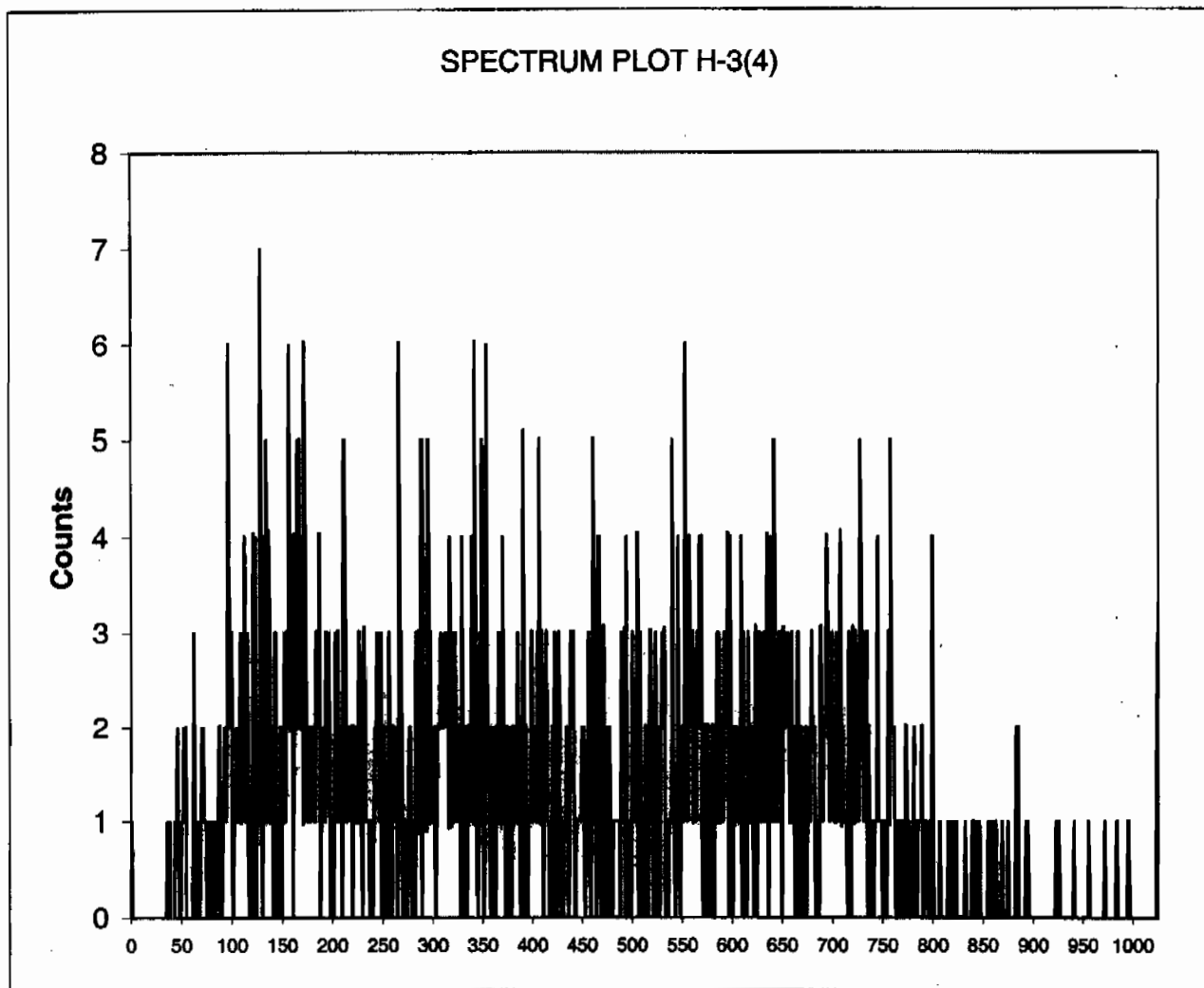
ID:
Comments:

H-3(4)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 246328001, 95.02975:
805.21
1-174

Channel Counts



| | |
|----|---|
| 31 | 0 |
| 32 | 0 |
| 33 | 0 |
| 34 | 0 |
| 35 | 0 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
TUE 16 FEB 2010 20:35
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s:\isc\files\pink\951367A0\U951367A0.xls

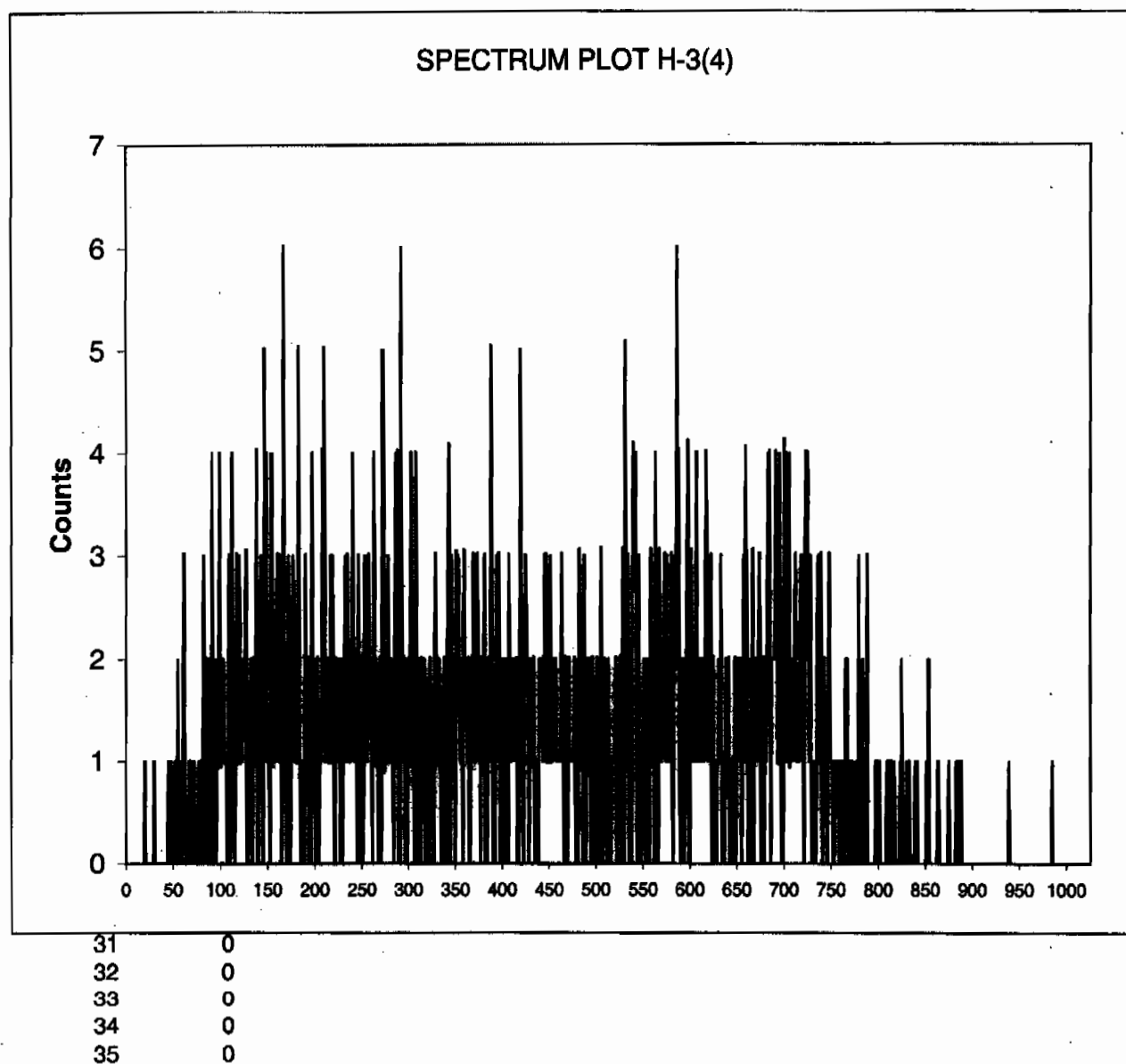
ID:
Comments:

H-3(4)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

3, 246328002, 95.02975:
805.88
1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
WED 17 FEB 2010 2:44
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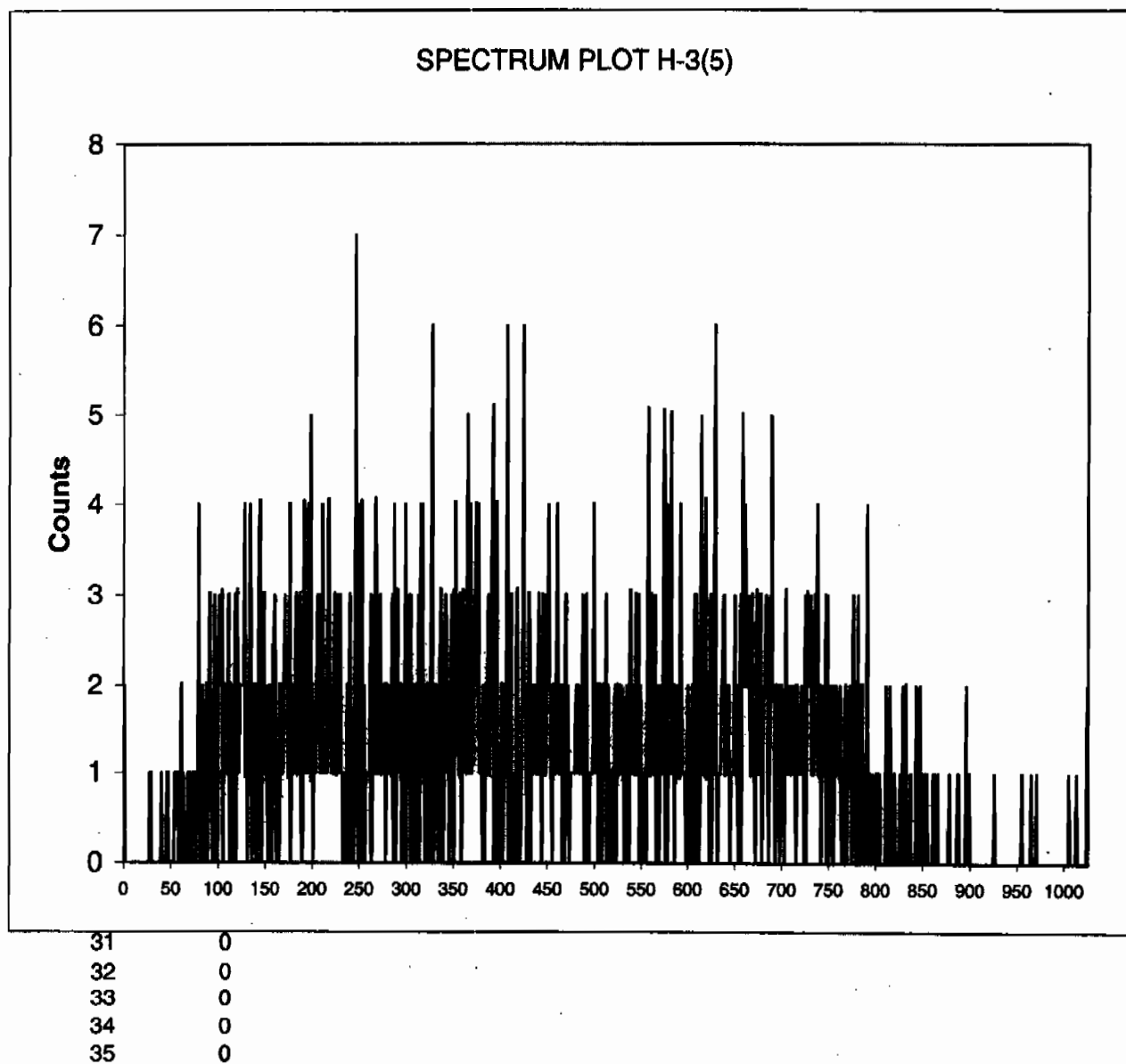
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Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

1, 246328003, 95.02975:
804.8
1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

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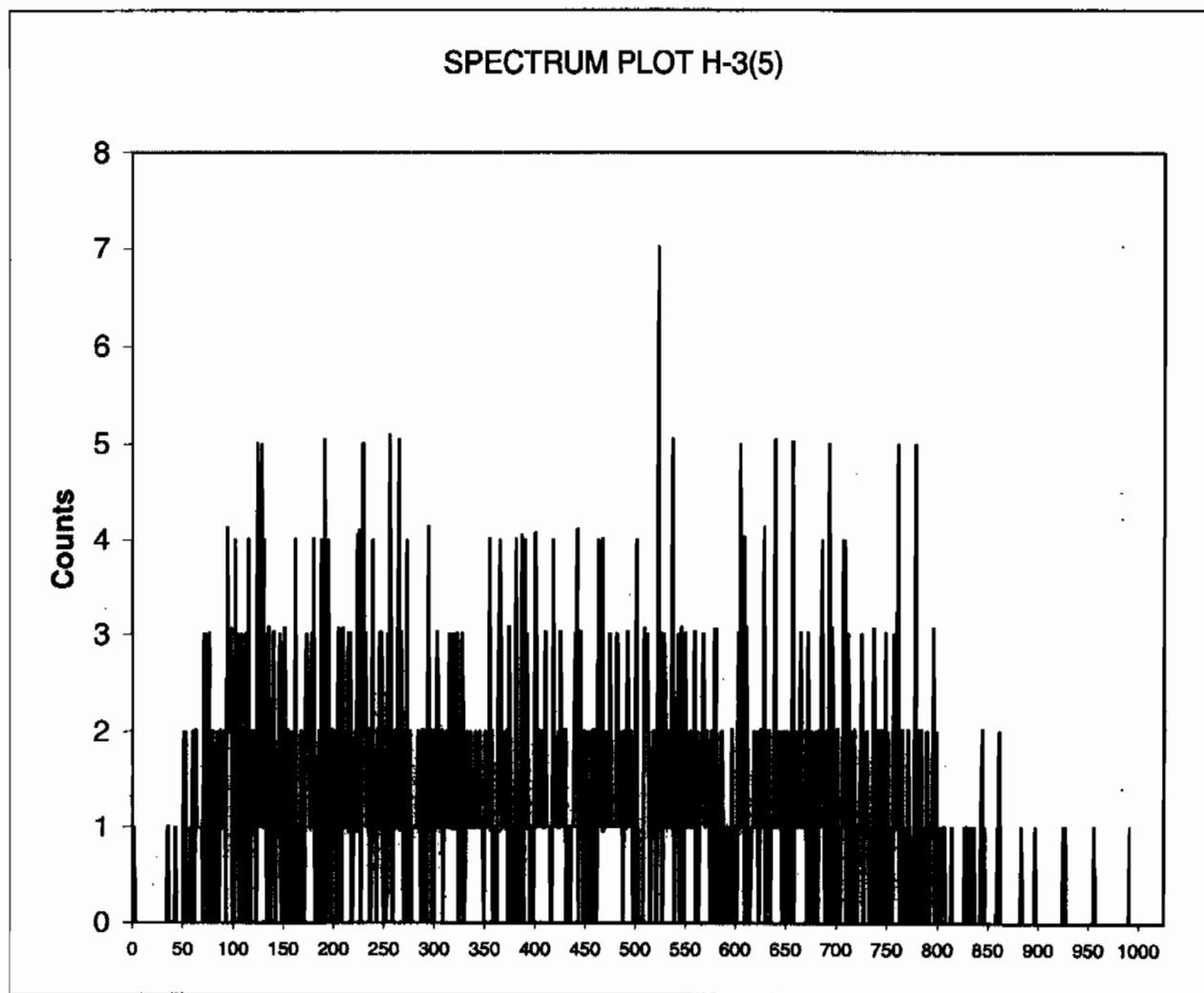
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

2, 246328004, 95.02975:
804.52
1-174

Channel Counts



| | |
|----|---|
| 31 | 0 |
| 32 | 0 |
| 33 | 0 |
| 34 | 0 |
| 35 | 1 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
WED 17 FEB 2010 2:44
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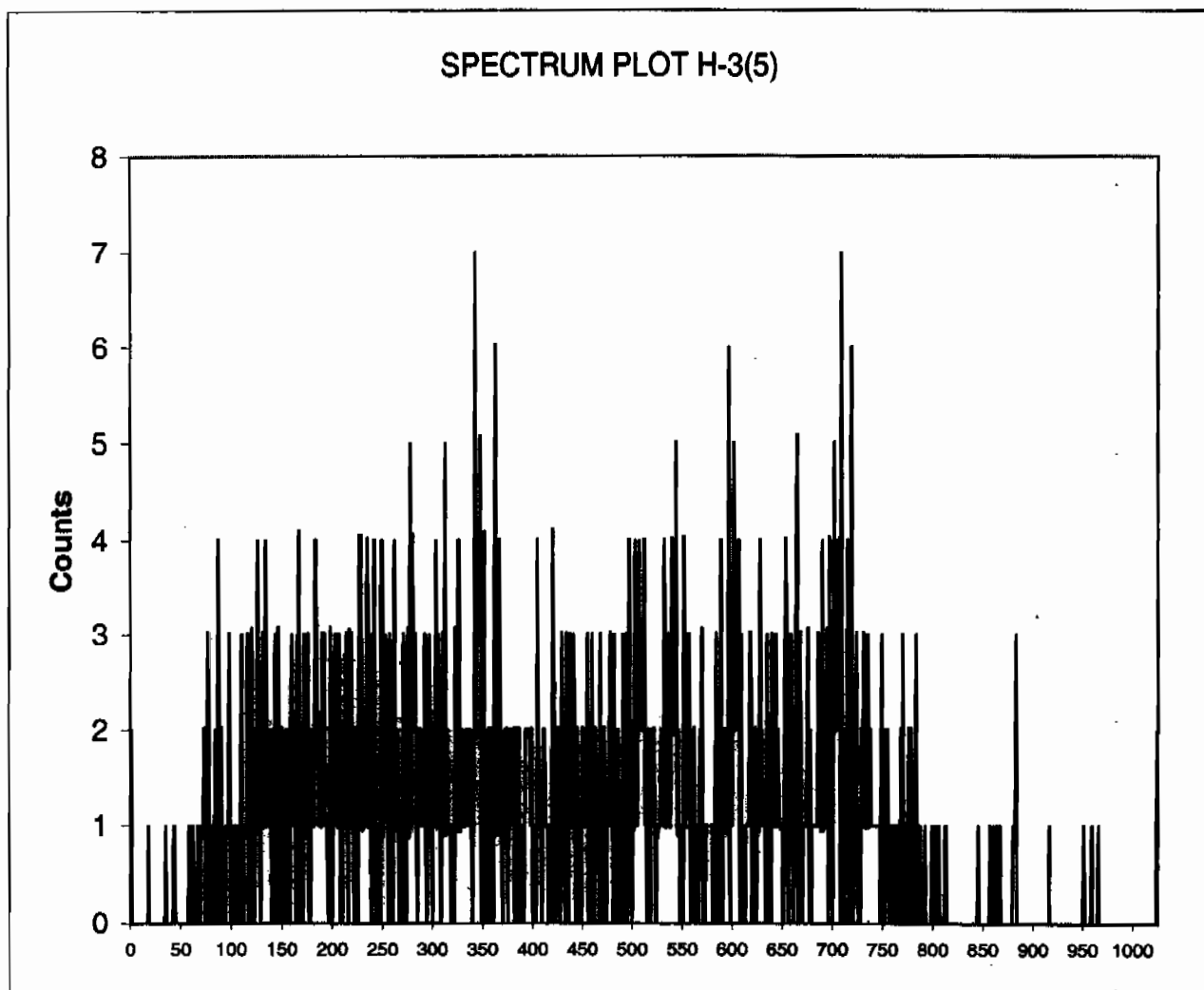
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Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

3, 246328005, 95.01308:
804.04
1-174

Channel Counts



| | |
|----|---|
| 31 | 0 |
| 32 | 0 |
| 33 | 0 |
| 34 | 0 |
| 35 | 1 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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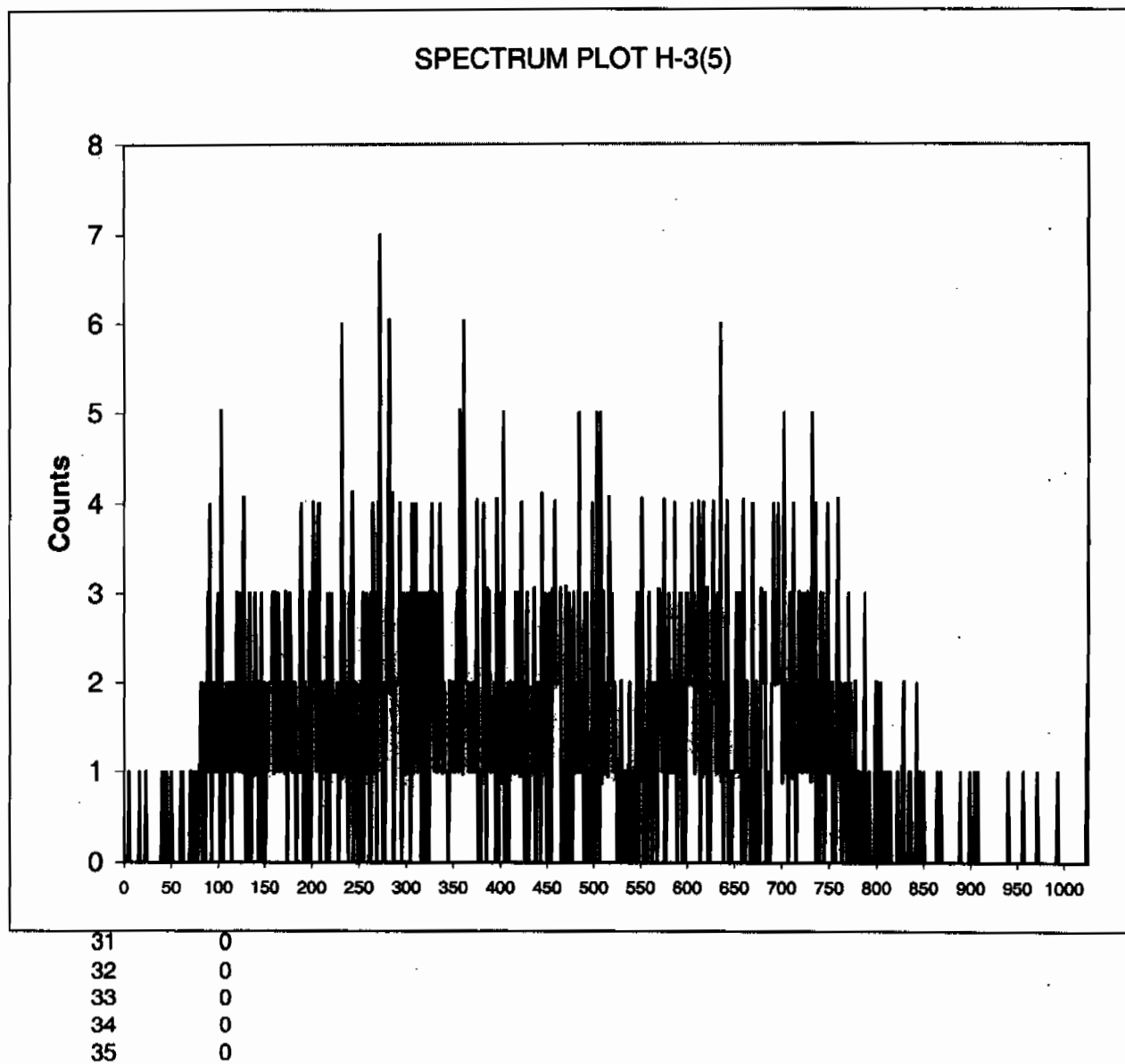
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

5, 246328007, 95.02975:
804.93
1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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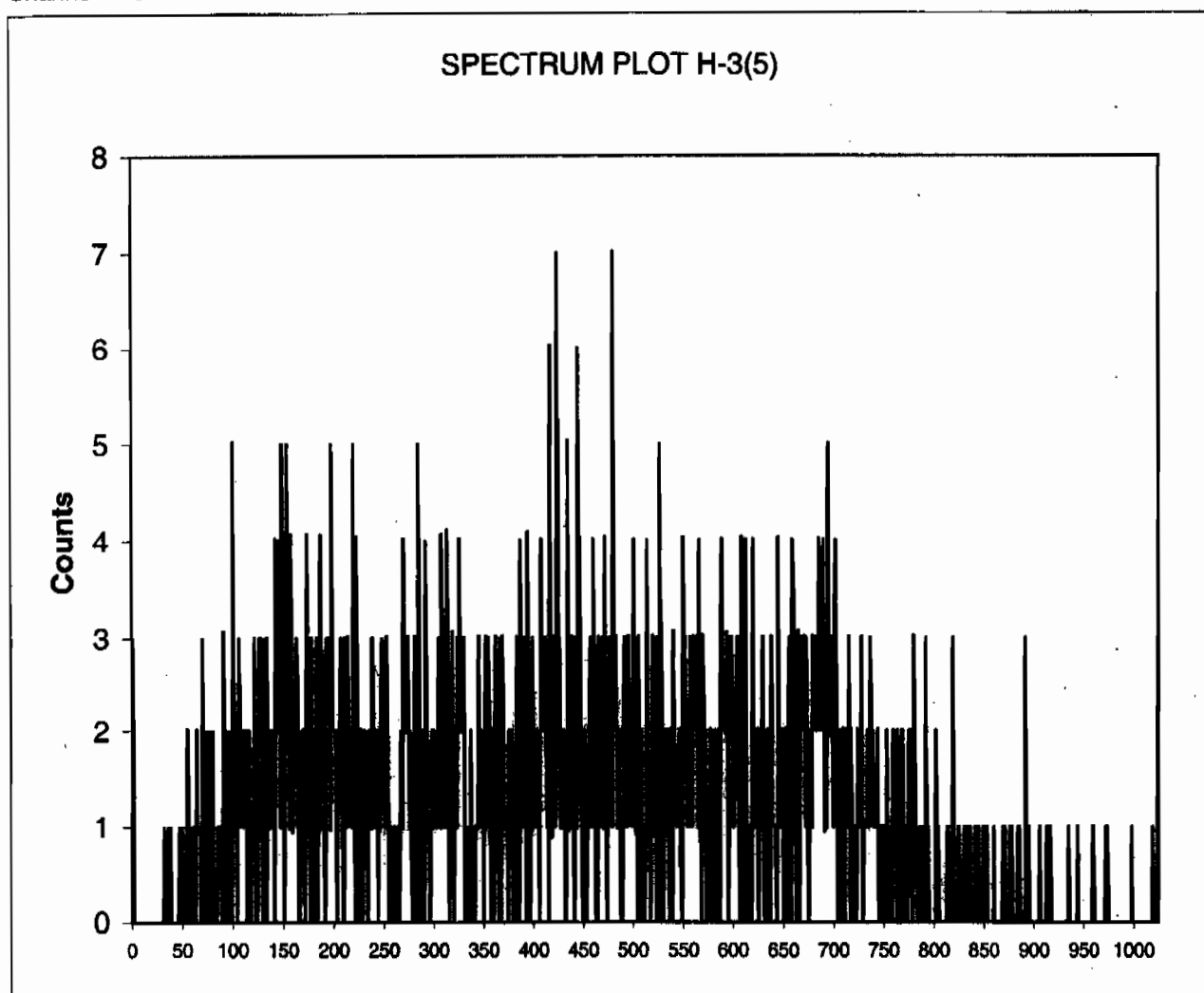
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

6, 246328008, 95.02963:
804.71
1-174

Channel Counts



| | |
|----|---|
| 31 | 0 |
| 32 | 1 |
| 33 | 0 |
| 34 | 0 |
| 35 | 0 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
WED 17 FEB 2010 2:44
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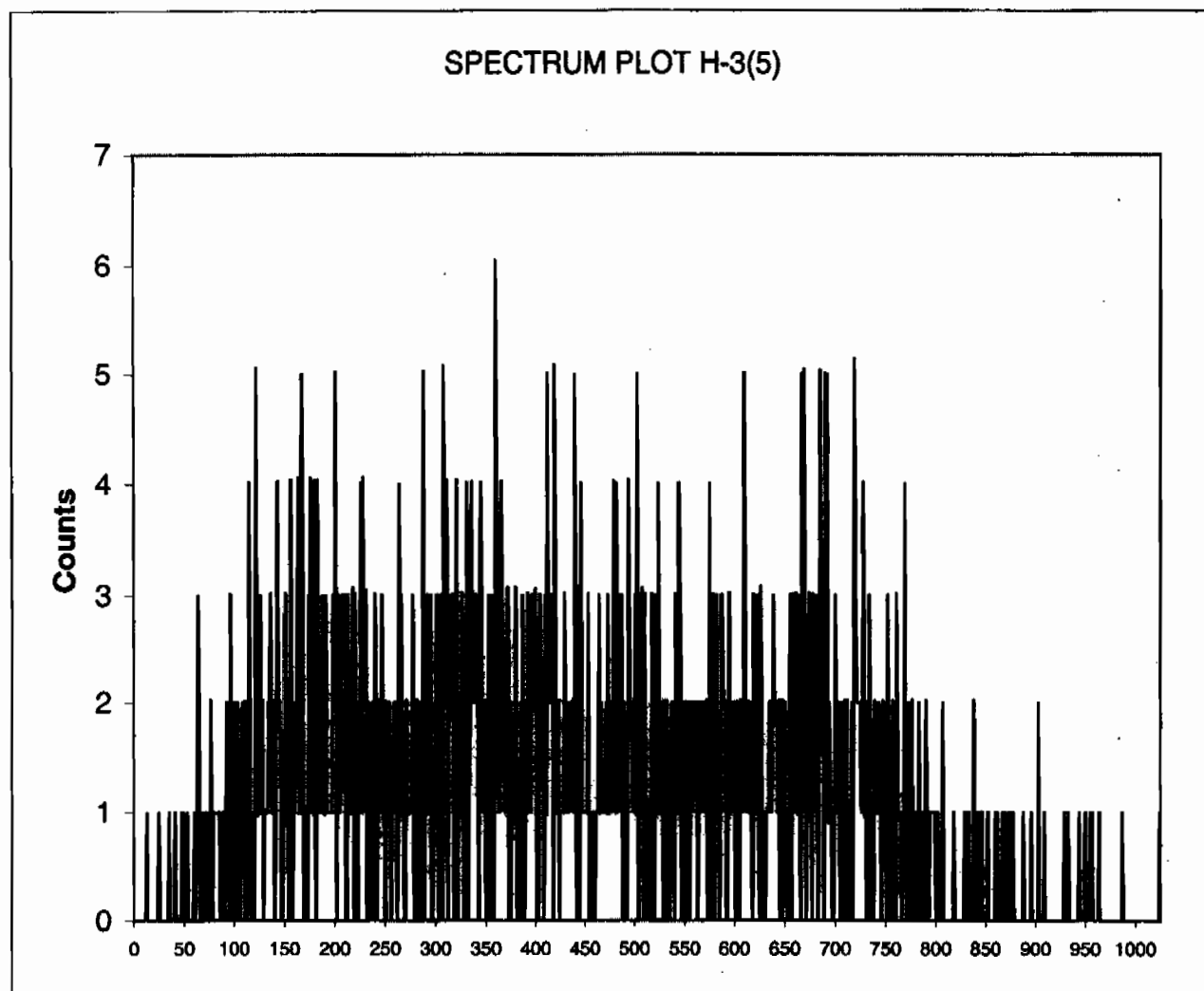
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

7, 246328009, 95.02975:
805.73
1-174

Channel Counts



| | |
|----|---|
| 31 | 0 |
| 32 | 0 |
| 33 | 0 |
| 34 | 0 |
| 35 | 1 |

Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
WED 17 FEB 2010 2:44
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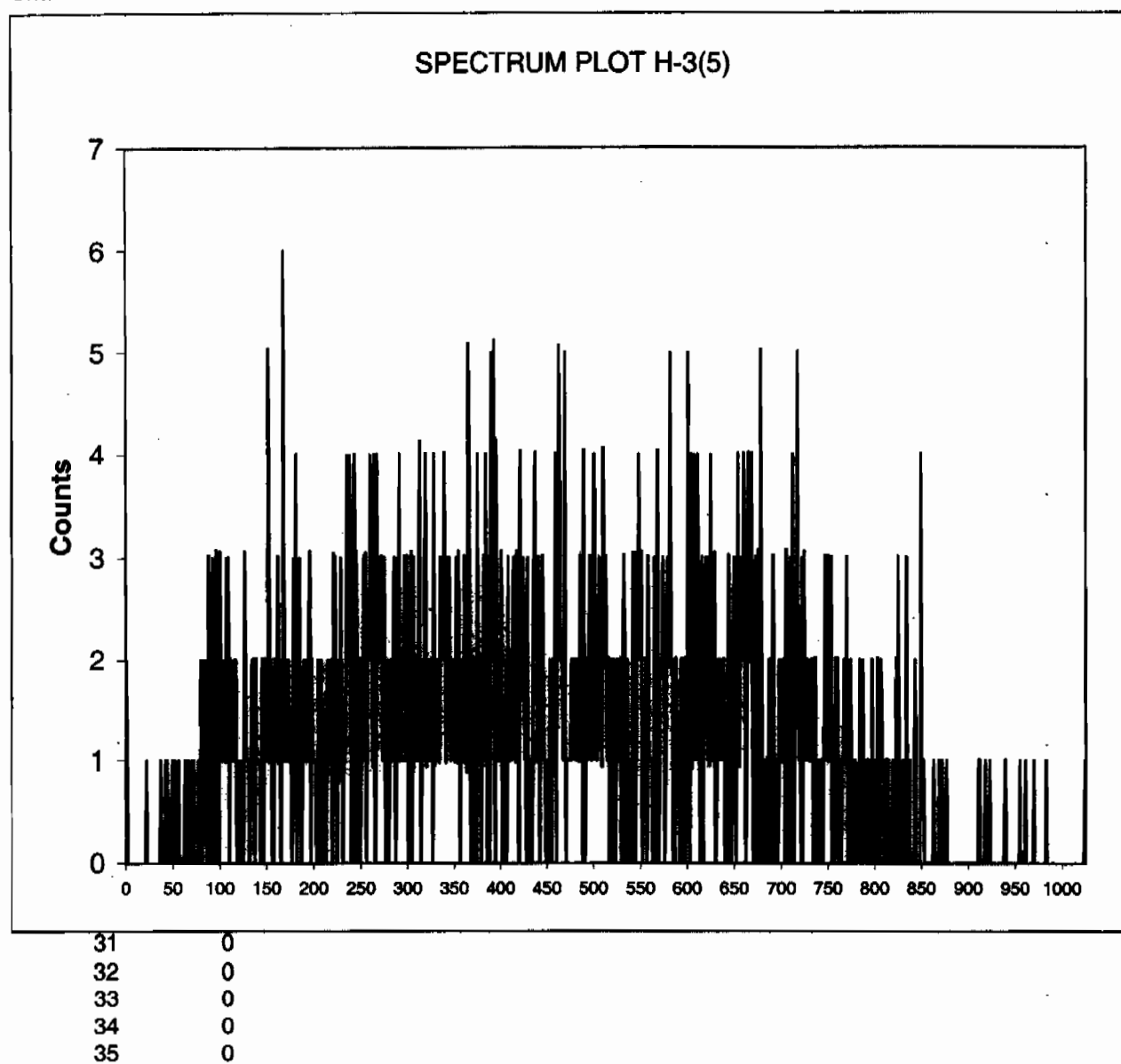
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

8, 1202038817, 95.02973:
805.11
1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
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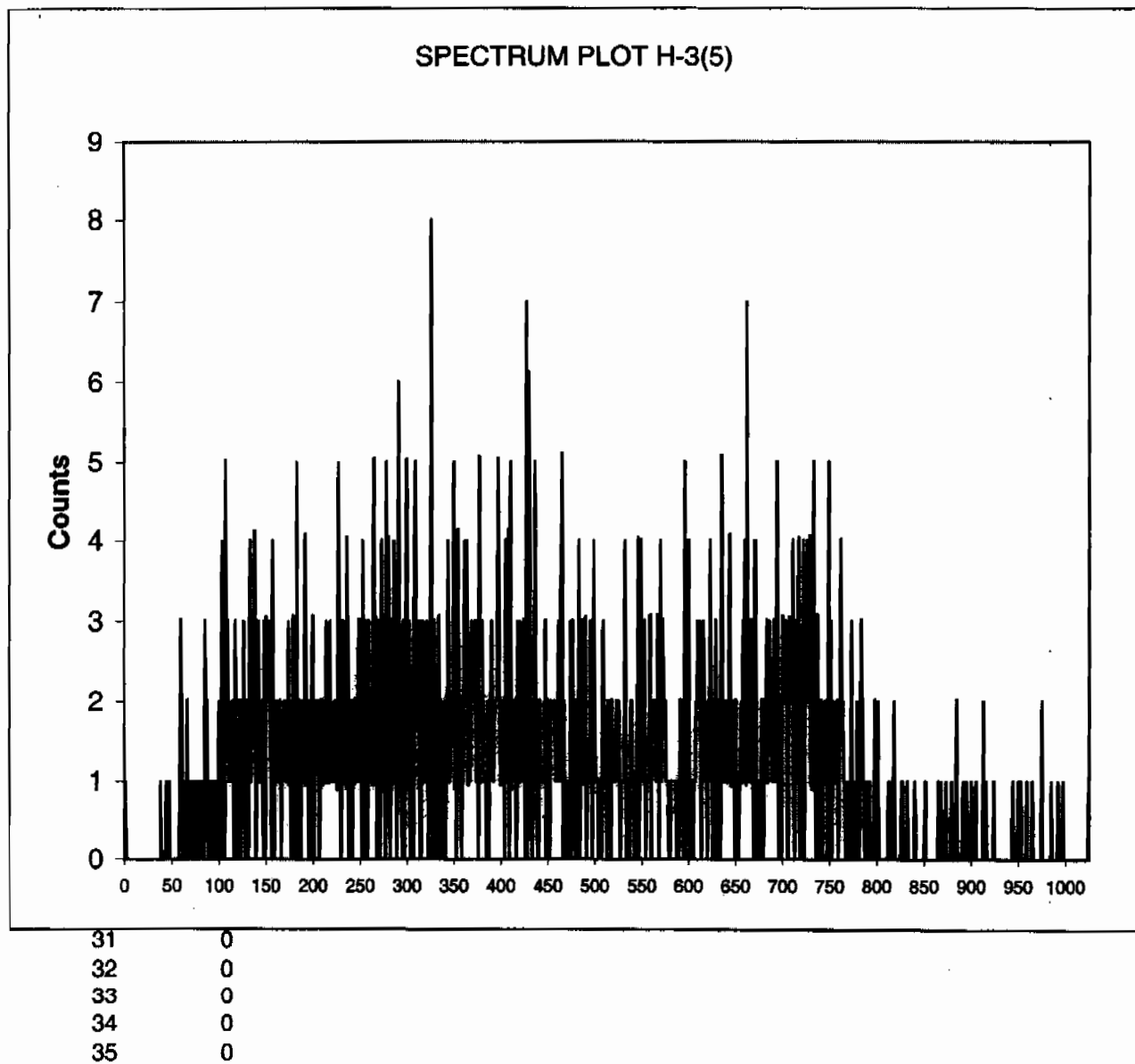
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

9, 1202038818, 95.02973:
805.61
1-174

Channel Counts



Instrument Type:
Data Capture Date:
FileName:
File Info:

Quantulus
WED 17 FEB 2010 2:44
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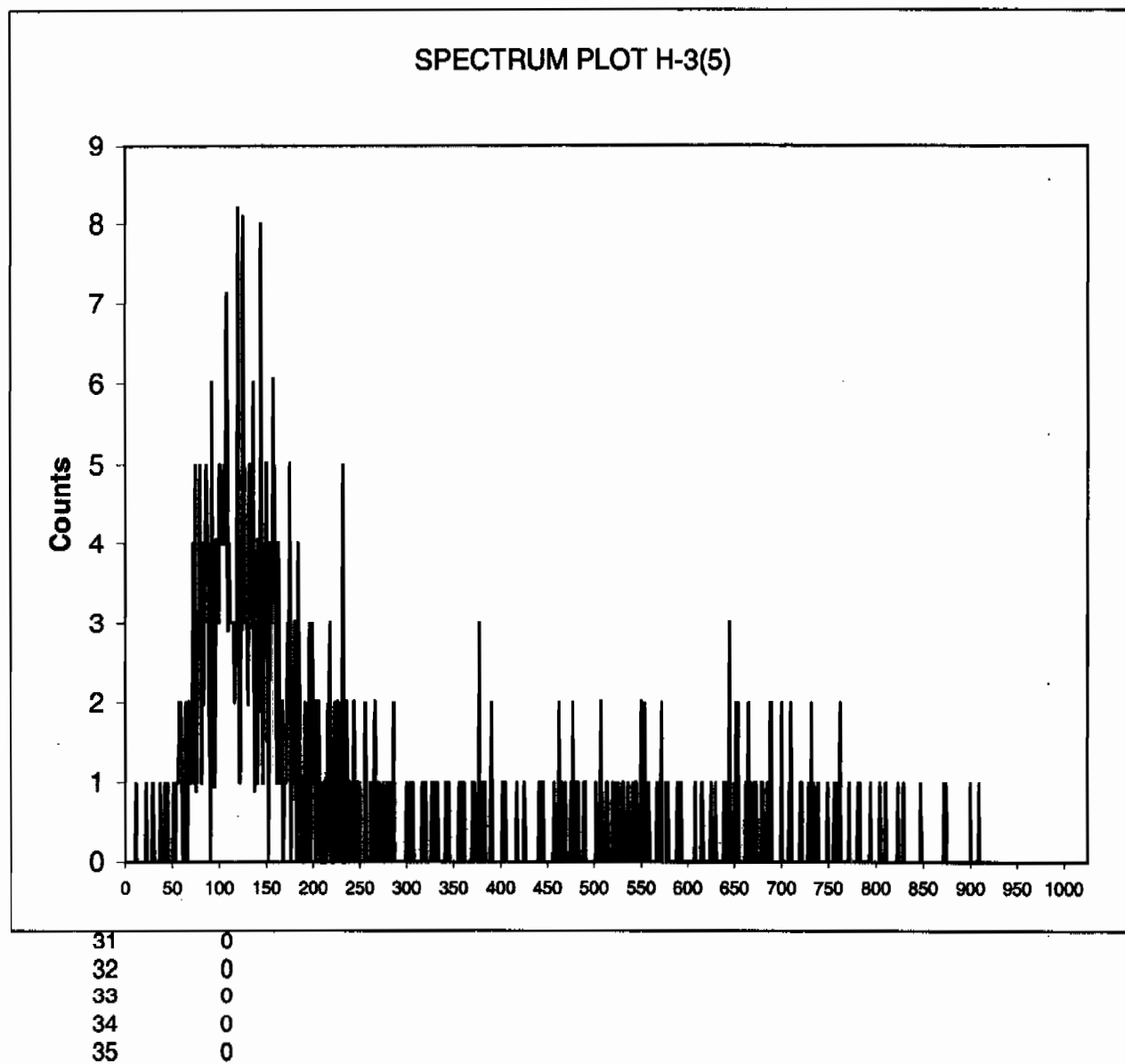
ID:
Comments:

H-3(5)
PINK

Sample, Rack-Pos, Time:
Quench:
Start, End, X-Axis

10, 1202038819, 15.02973:
805.32
1-174

Channel Counts



PROTOCOL : 10 H-3 95 min
DATE : 2010/02/19
TIME : 20:27
ID : P10AS245

H-3

Wallac 1414 WinSpectral v1.40 S/N 4140127

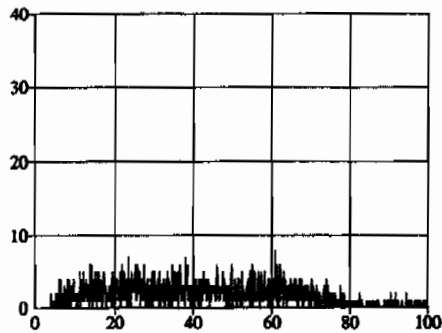
Counting mode : DPM
Quench index : SQP(E)
Isotope(s) : H3
H3 = ,12.43 y
Protocol name : H-3 95 min
Counting time : 5700
Repeats : 1
Cycles : 1
Replicates : 1
2 sigma % : 0.00
Minimum cpm : 0.00 Checking time: 10
Sp. library of isotope H3 : Wallac
Vial type : Diffuse
Liquid system : HiSafe
Advanced modes : Chemilum
Output to Display :
POS,DPM1,CPMw2,CLMM,FNCT2,
RACK,RACKPOS,FNCT1,SQPE,DATE,
TIME,CPMw1,CPM,CPM1,CTIME
Additions to Display : Listing,Header,Spectrum
Header : H-3
Spectrum : Rnd.Cos,Beta
Window 1 : 25- 190 /Beta
Window 2 : 25- 190 /Rnd.Cos
Window 3 : 1-1024 /Beta
Window 4 : 1-1024 /Beta
Window 5 : 1-1024 /Beta
Window 6 : 1-1024 /Beta
FNCT1 = FNCT1 : CTIME/60
FNCT2 = FNCT2 : CPMW1-CPMW2
FNCT3 = FNCT3 :
FNCT4 = FNCT4 :

Total activity:

H3 27.6 DPM 0.000 kBq

H-3

| | | | | |
|---------------|-----------------|---------------|---------|-------------------|
| Rack_position | Count_Time(min) | Quench_number | H-3_CPM | Run_Date |
| 60 1 | 95.00 | 736.52 | 2.91 | 2/19/2010 8:27 PM |

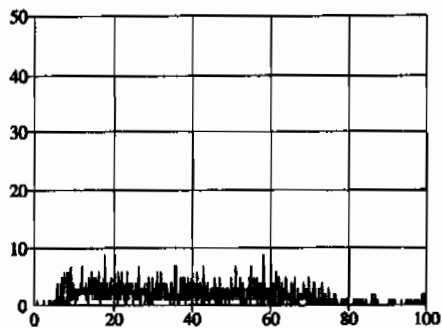


Counts
Chem

Counts
Beta

| | |
|-------------|-------|
| Gross_B_CPM | LUMEX |
| 3.10 | 0.00 |
| Lumex_CPM | DPM |
| 0.20 | 11.20 |

| | | | | |
|---------------|-----------------|---------------|---------|--------------------|
| Rack_position | Count_Time(min) | Quench_number | H-3_CPM | Run_Date |
| 60 2 | 95.00 | 727.29 | 4.10 | 2/19/2010 10:03 PM |



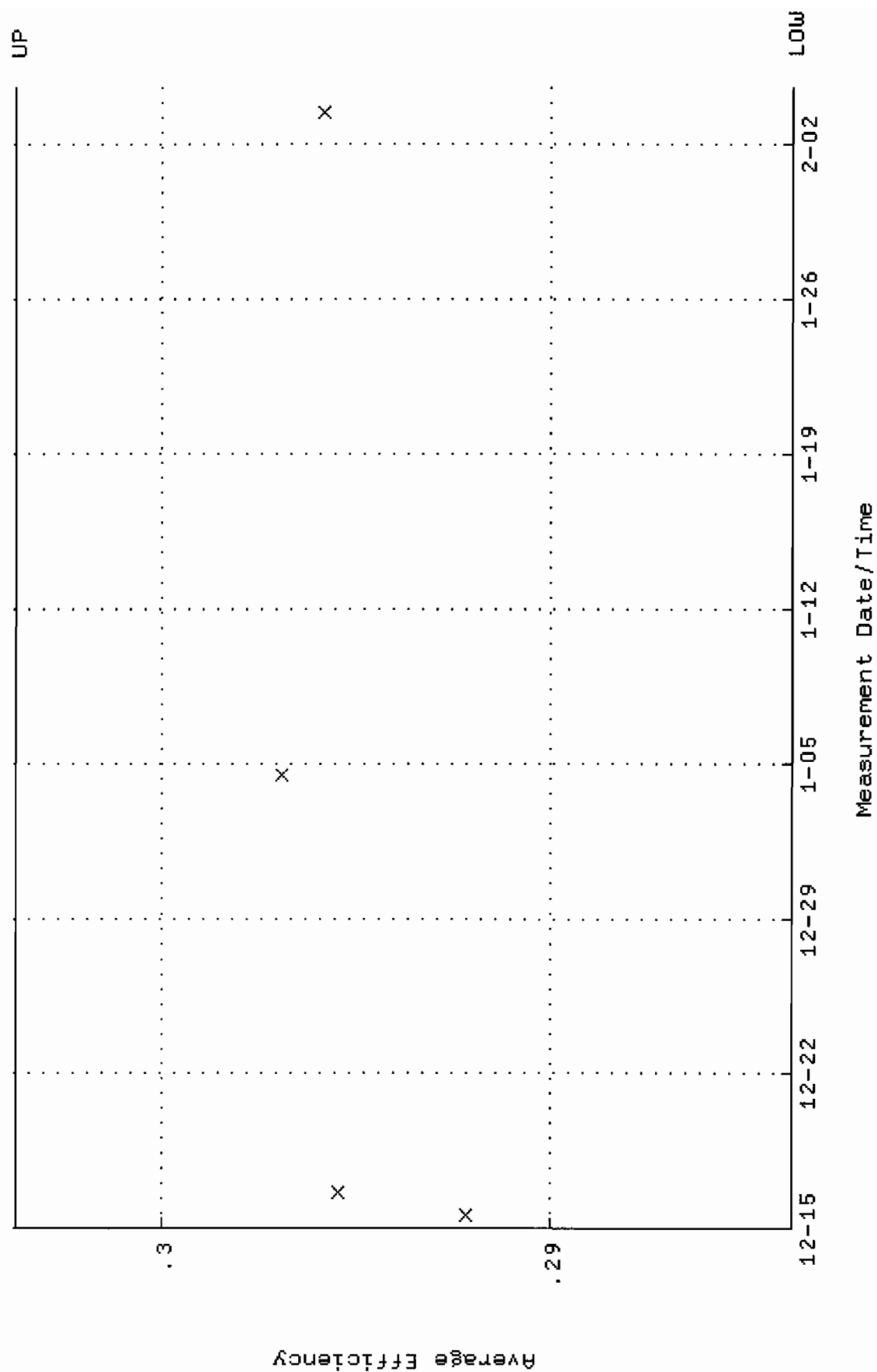
Counts
Chem

Counts
Beta

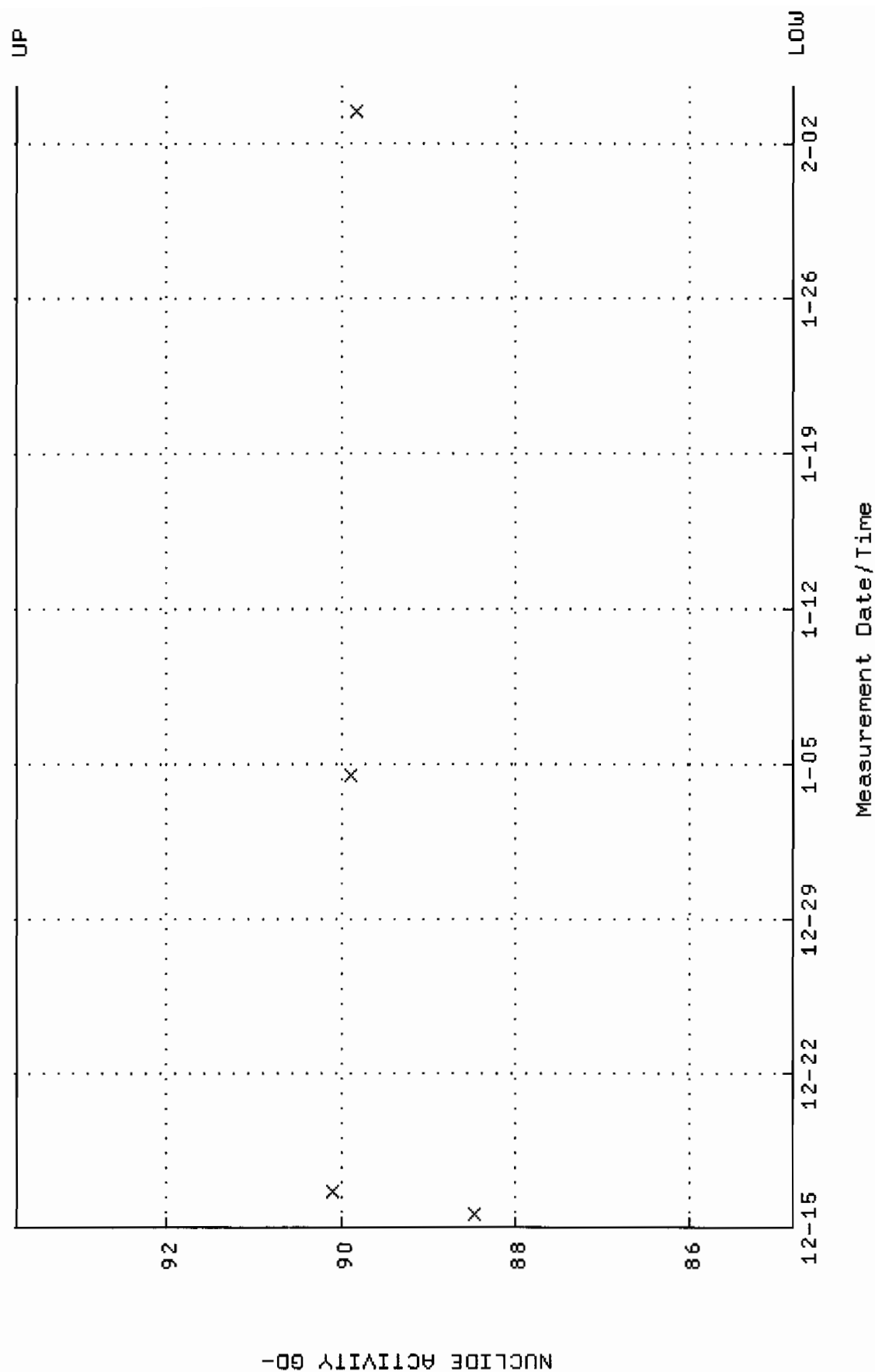
| | |
|-------------|-------|
| Gross_B_CPM | LUMEX |
| 4.30 | 0.00 |
| Lumex_CPM | DPM |
| 0.20 | 16.40 |

BACKGROUND AND EFFICIENCY DATA

QA filename : DKA100:[ENV_ALPHA.QA.W]W002.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.283765 through 0.303765



QA filename : DKA100:[ENV_ALPHA.QA.W]W002.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.8037 through 93.7305

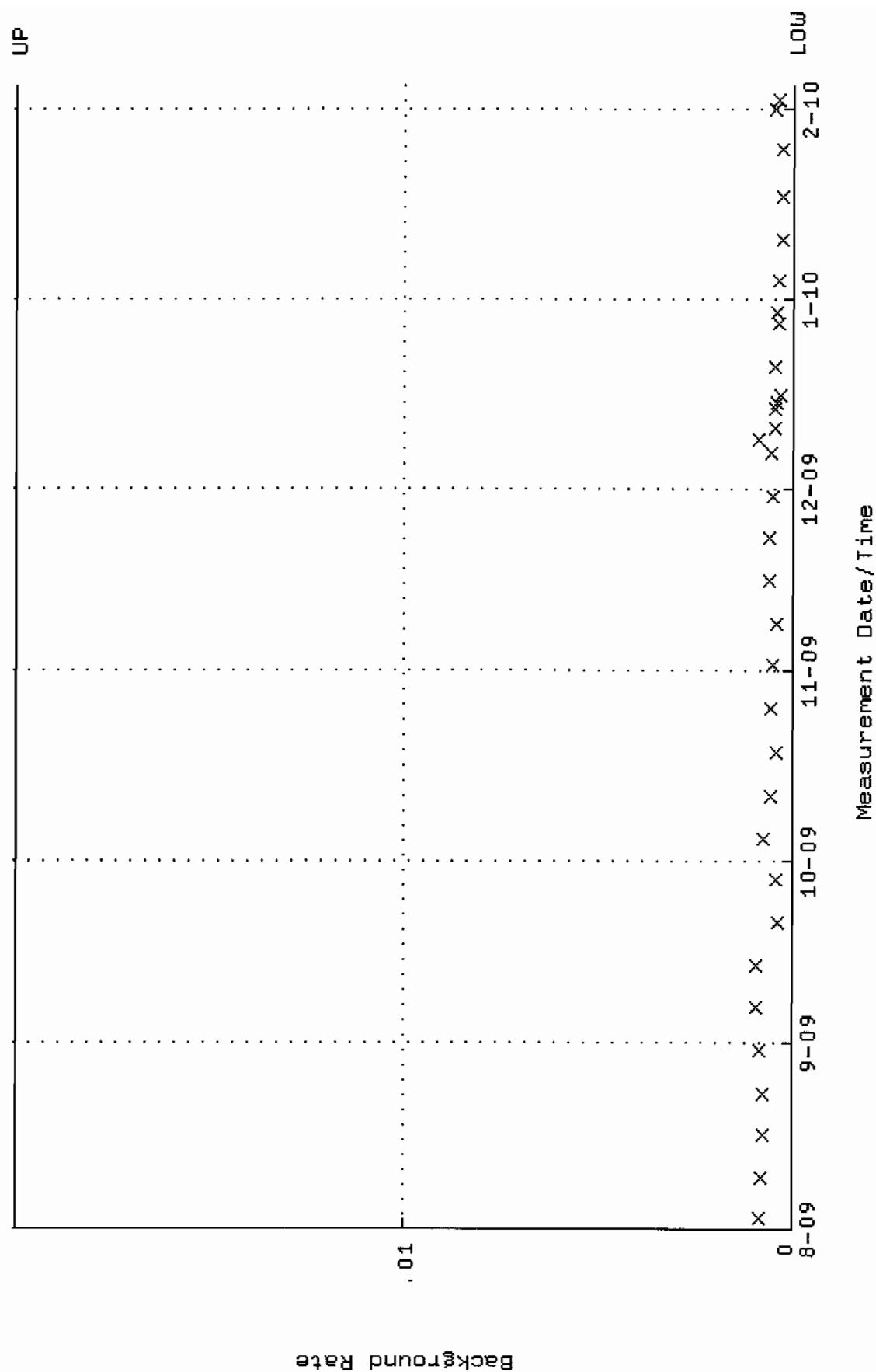


QA filename : DKA100:[ENV_ALPHA.QA.B]B002.QAF;1

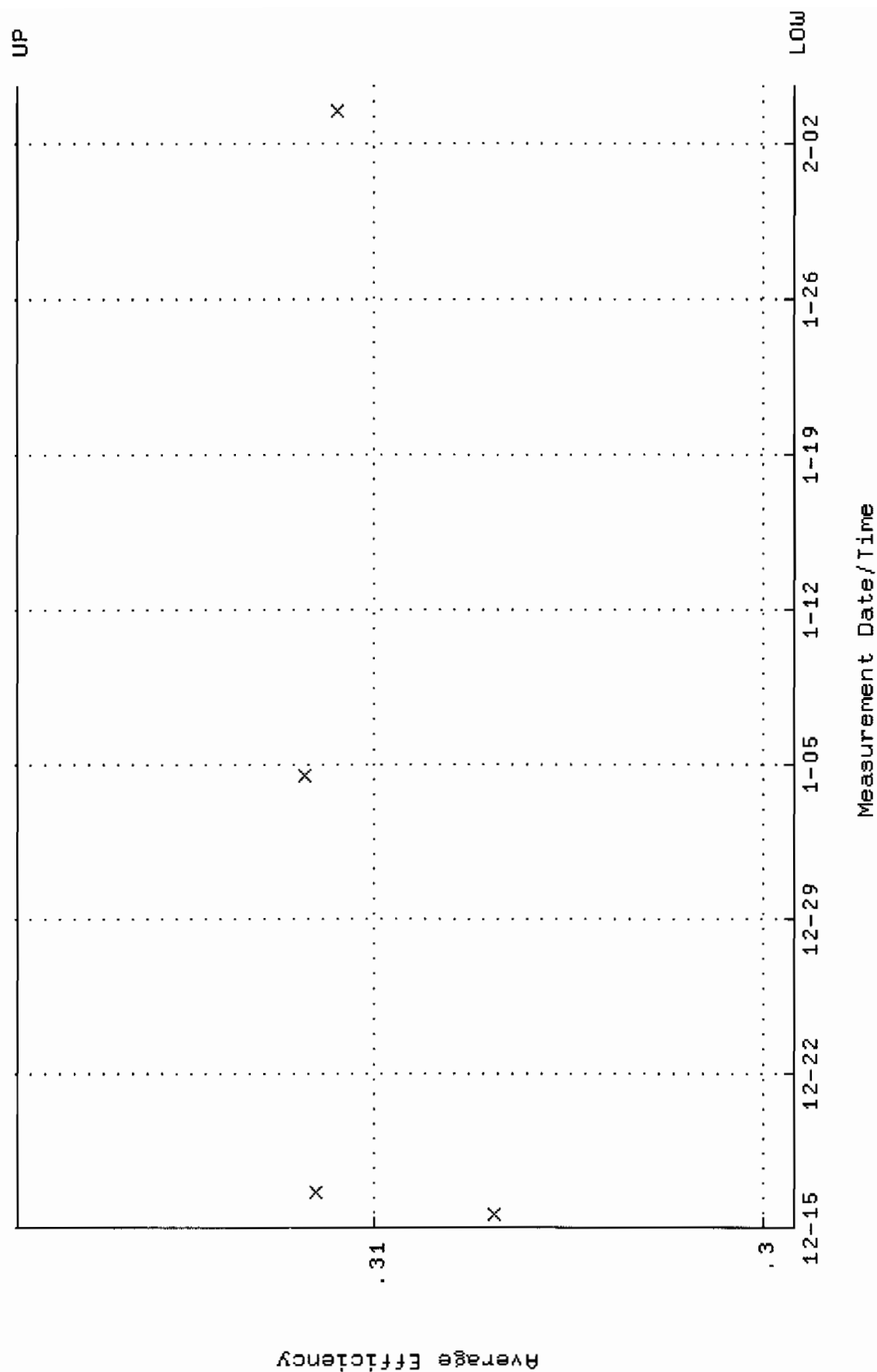
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00

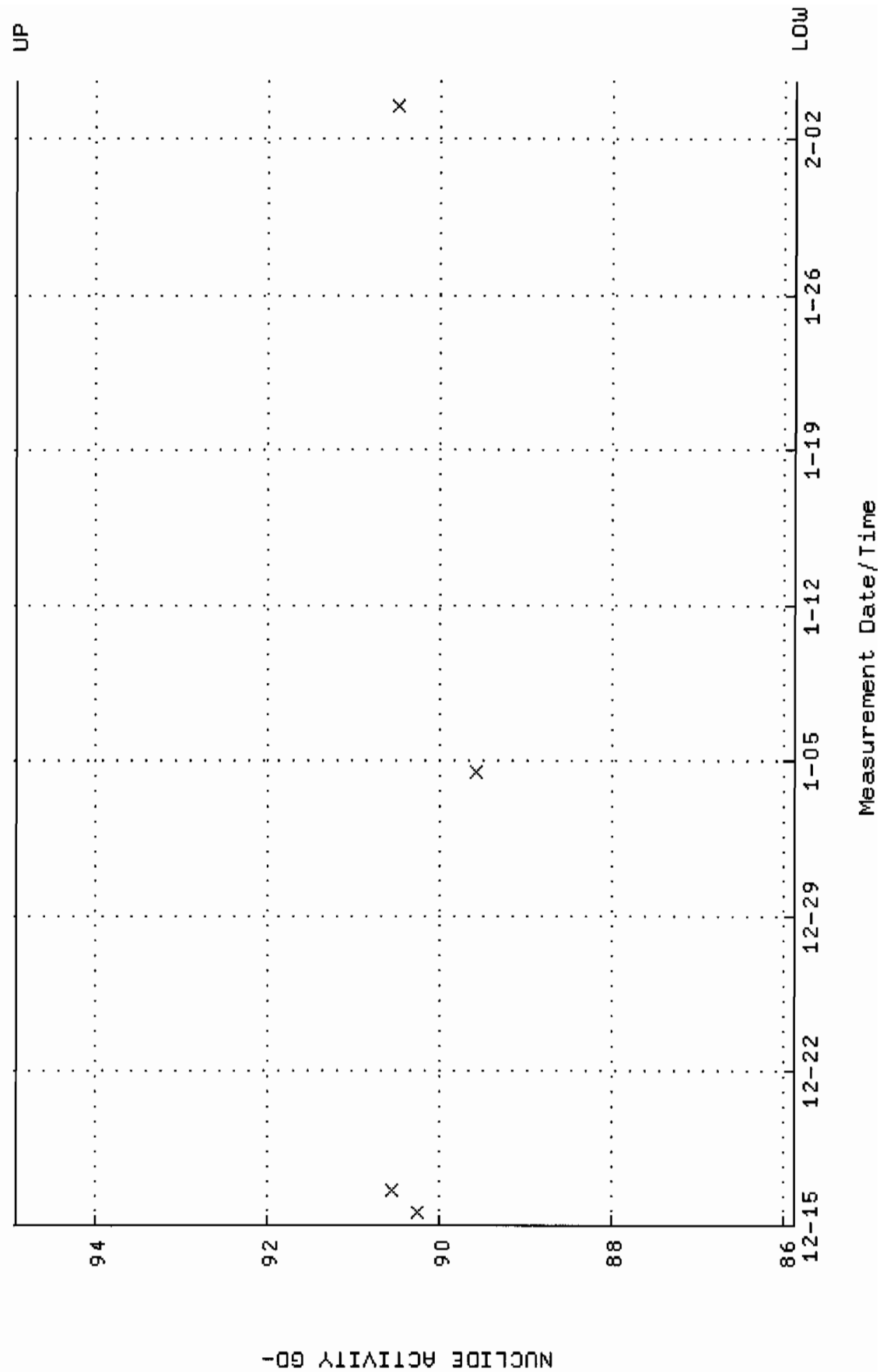
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



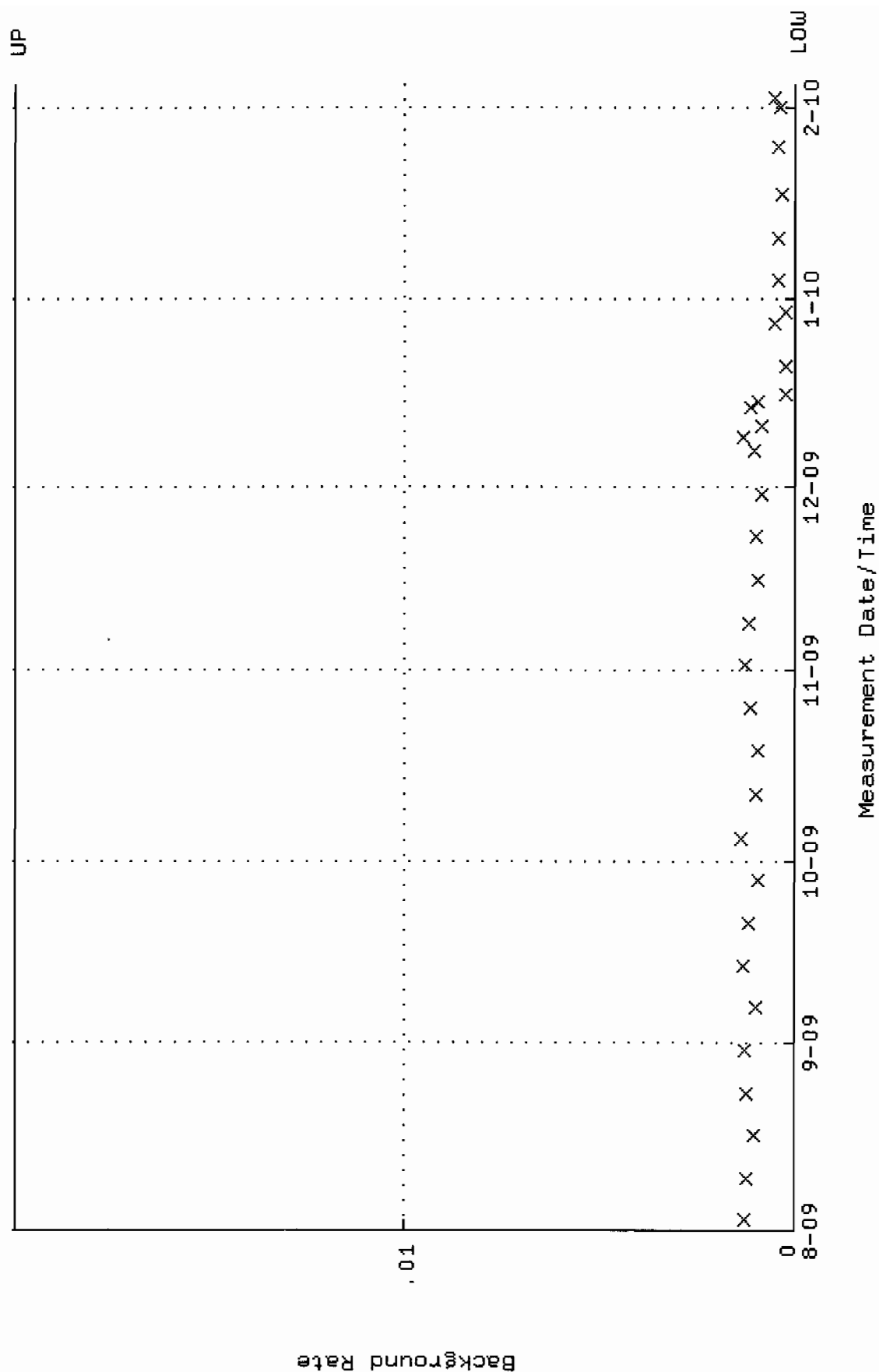
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.299193 through 0.319193



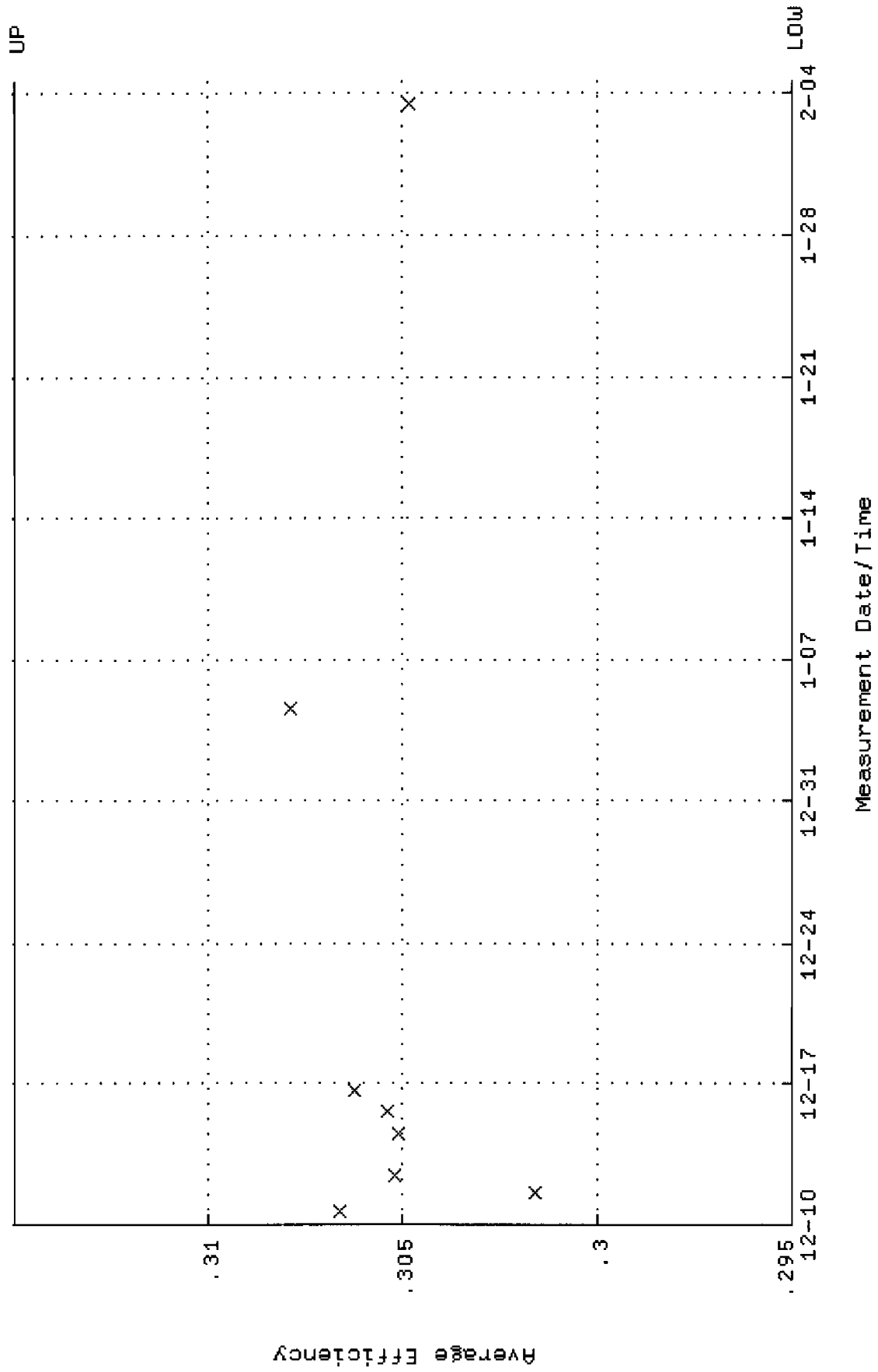
QA filename : DKA100:[ENV_ALPHA.QA.W]W003.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 85.8745 through 94.9139



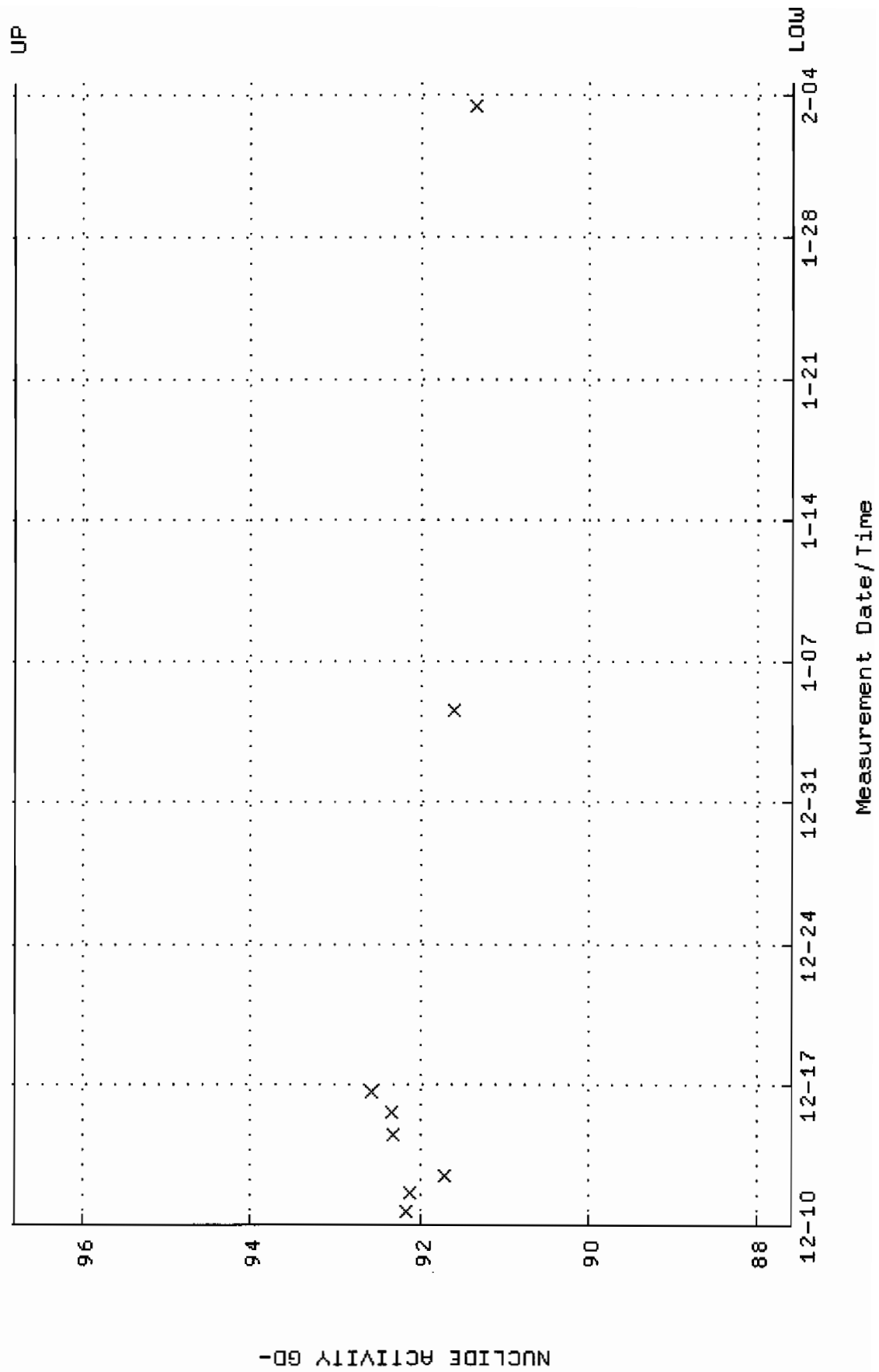
QA filename : DKA100:[ENV_ALPHA.QA.B]B003.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



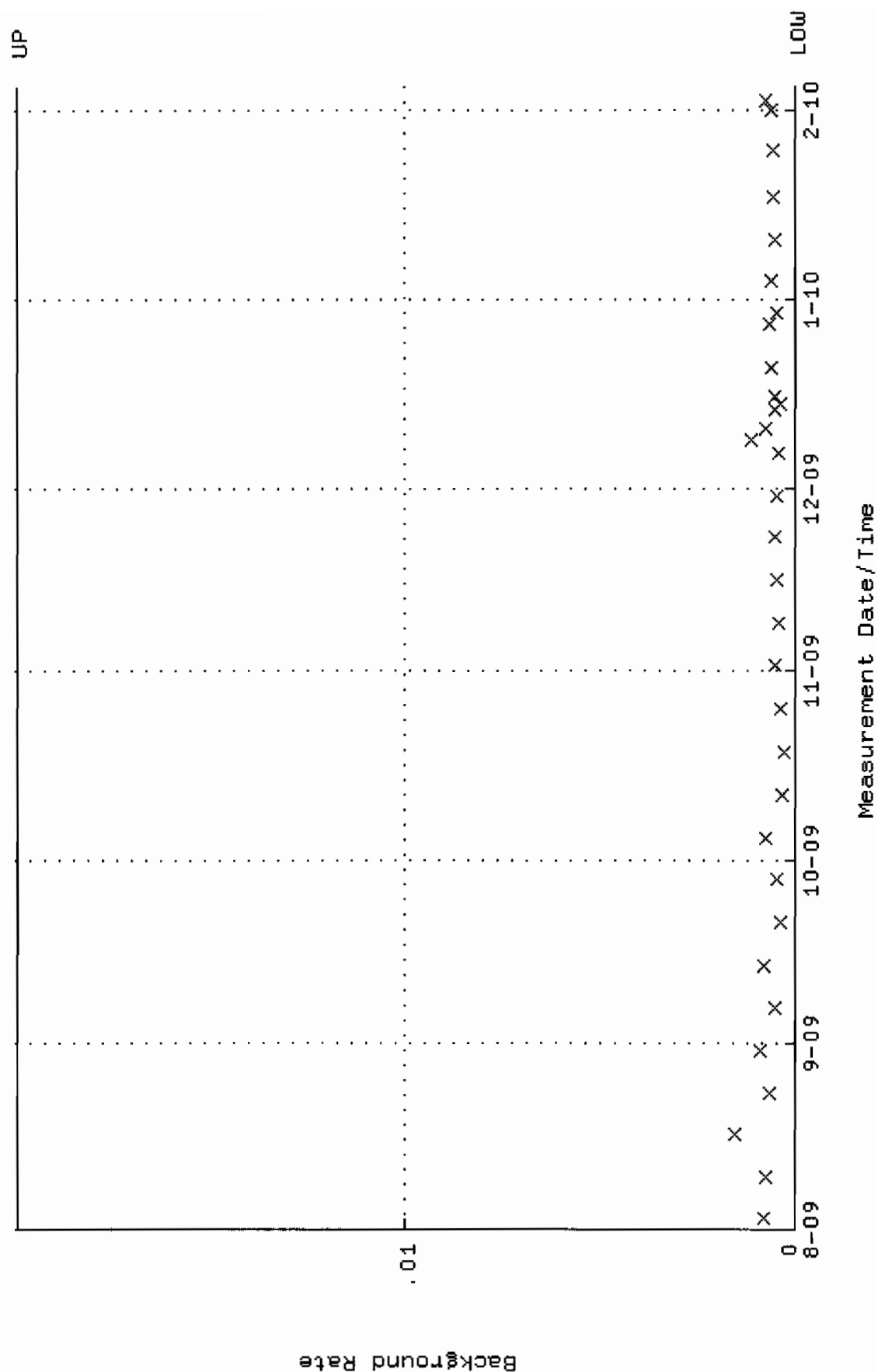
QA filename : DKA100:[ENV_ALPHA.QA.W]w004.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 10-DEC-2009 15:29:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.294995 through 0.314995



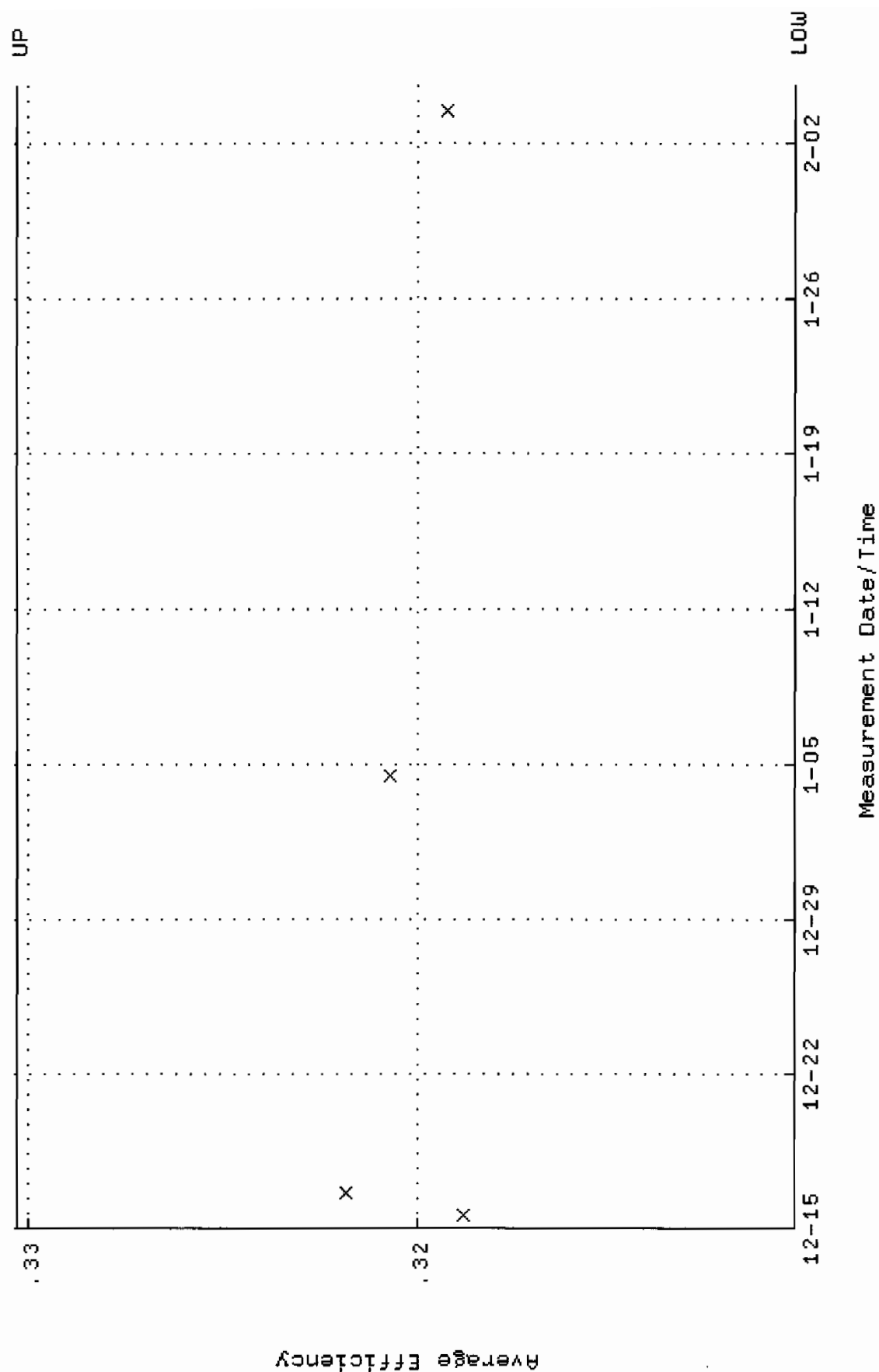
QA filename : DKA100:[ENV_ALPHA.QA.W]W004.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 10-DEC-2009 15:29:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.5863 through 96.8059



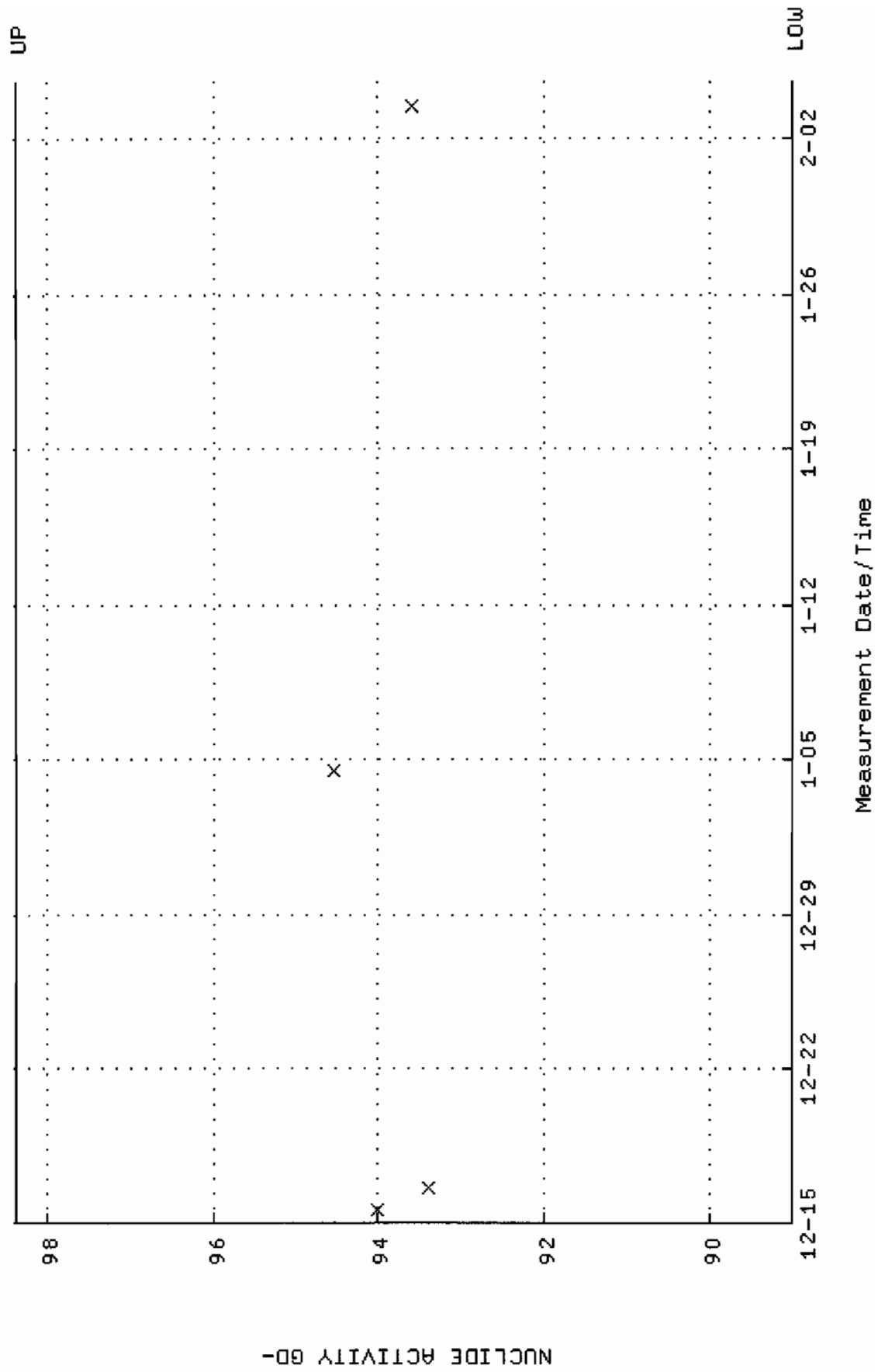
QA filename : DKA100:[ENV_ALPHA.QA.B]B004.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



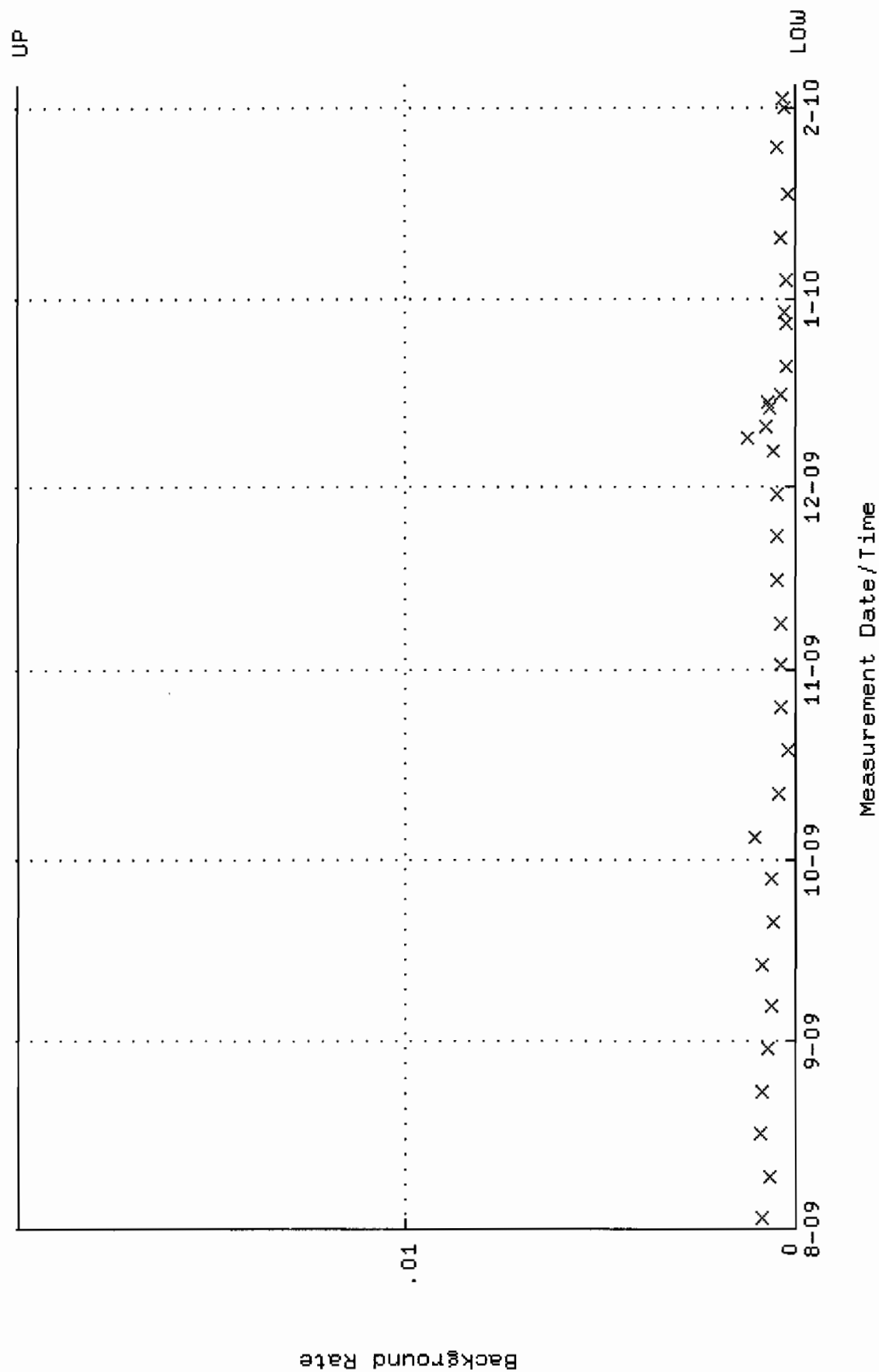
QA filename : DKA100:[ENV_ALPHA.QA.W]W005.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.310305 through 0.330305



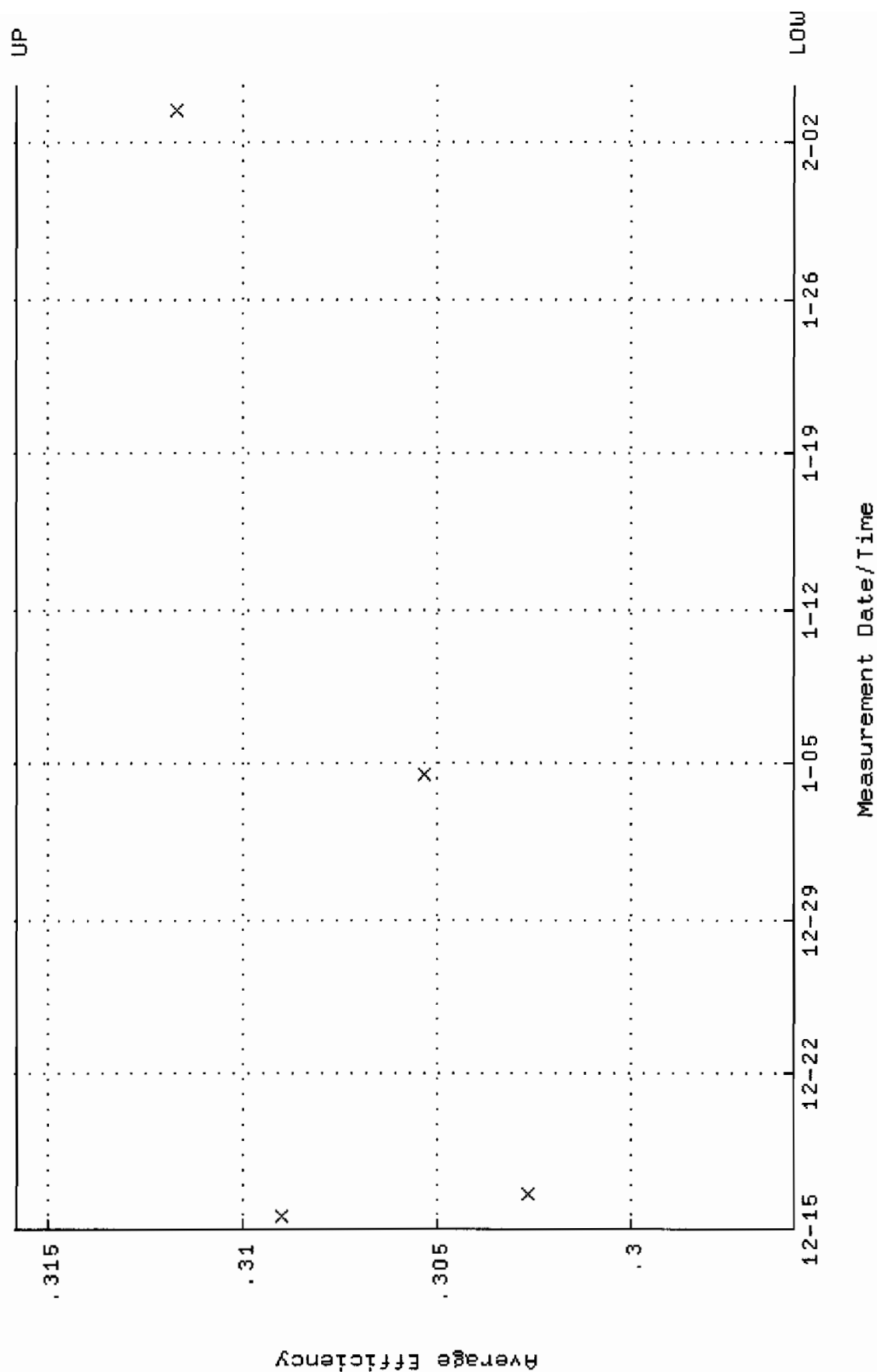
QA filename : DKA100:[ENV_ALPHA.QA.W]w005.QAF;6
Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
Lower/Upper Lmts: 89.0042 through 98.3730



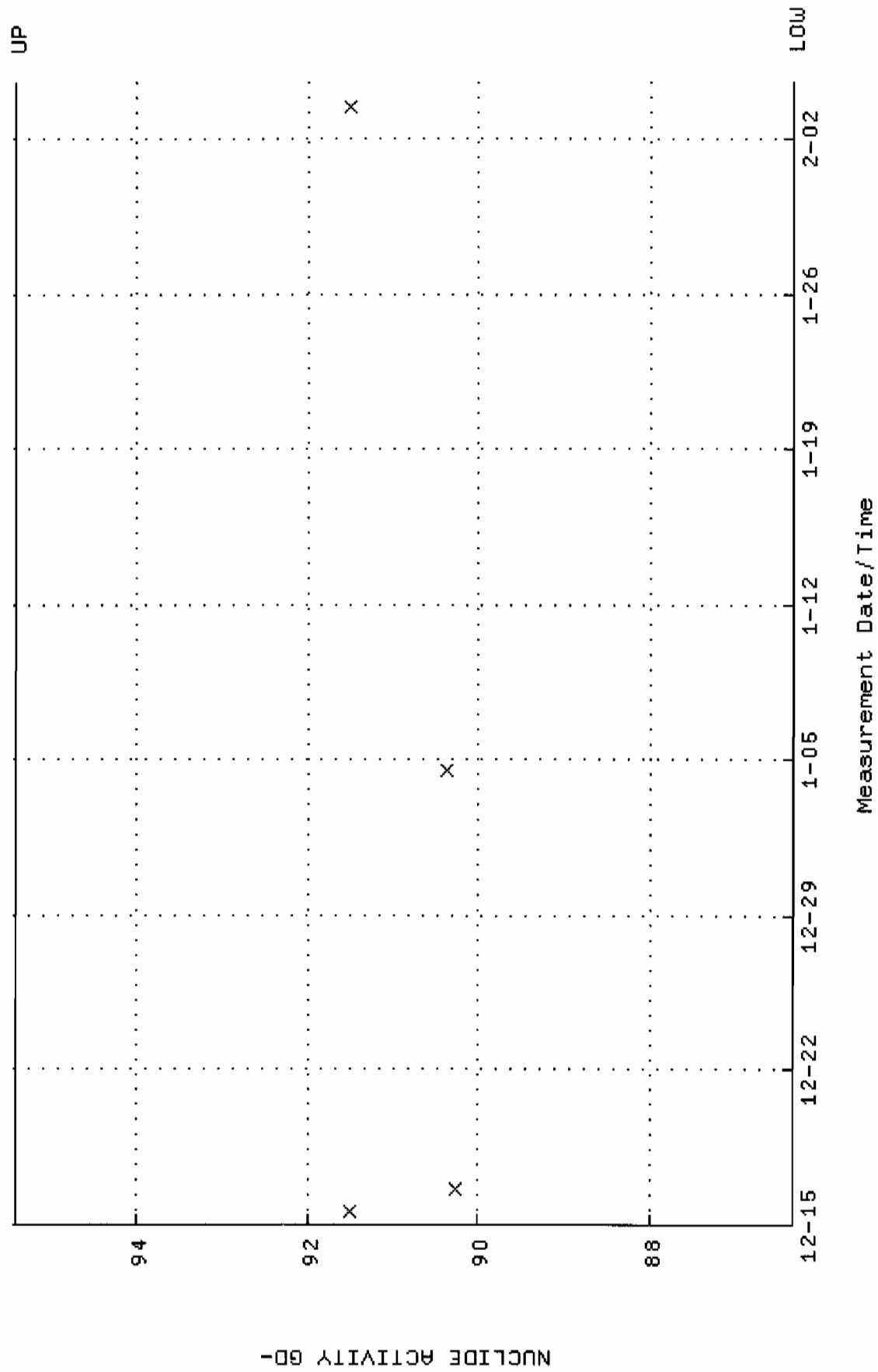
QA filename : DKA100:[ENV_ALPHA.QA.B]B0005.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.295821 through 0.315821



QA filename : DKA100:[ENV_ALPHA.QA.W]W006.QAF;6
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 15-DEC-2009 14:48:34 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.3237 through 95.4105

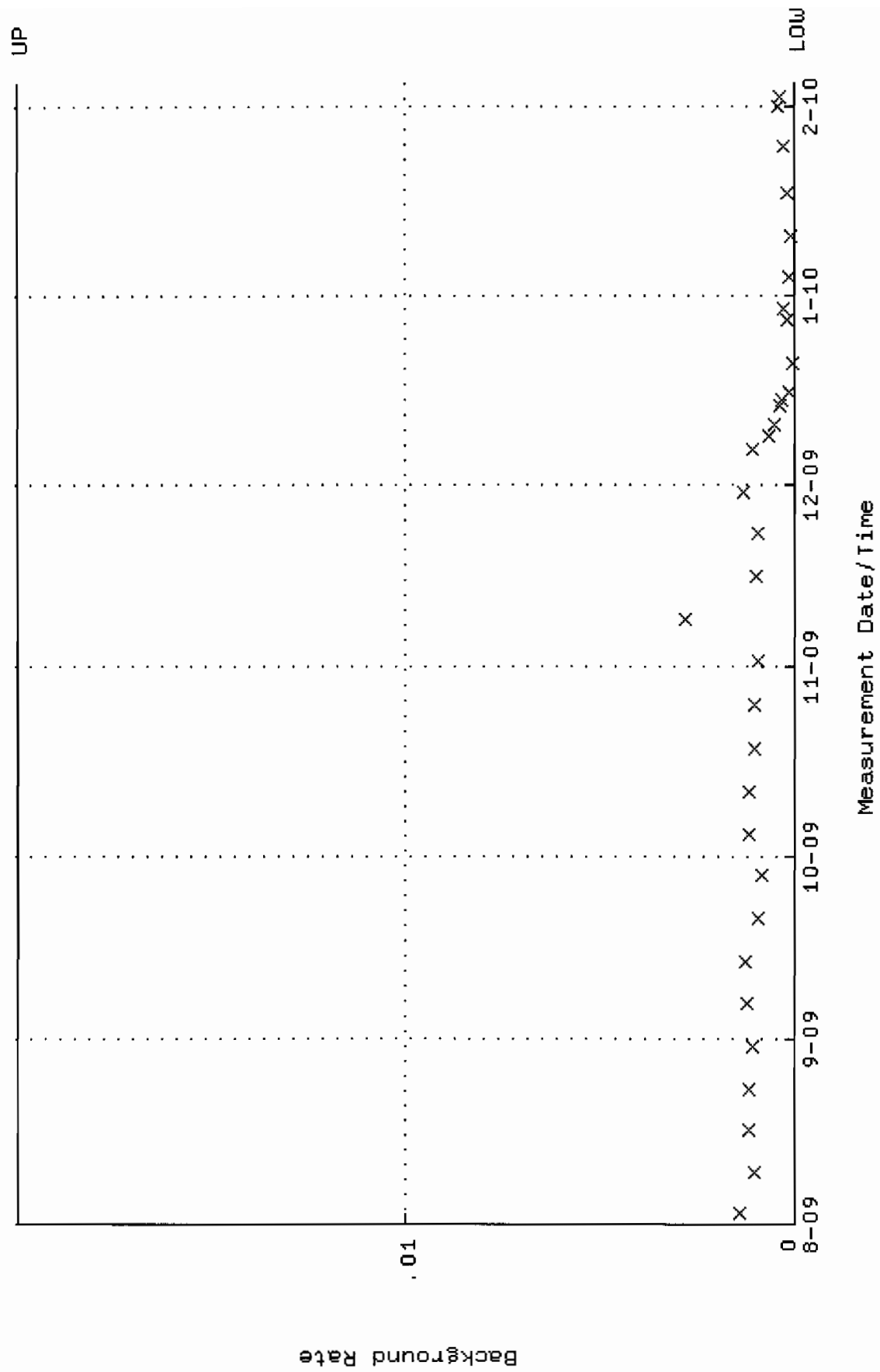


QA filename : DKA100:[ENV_ALPHA.QA.B]B006.QAF;2

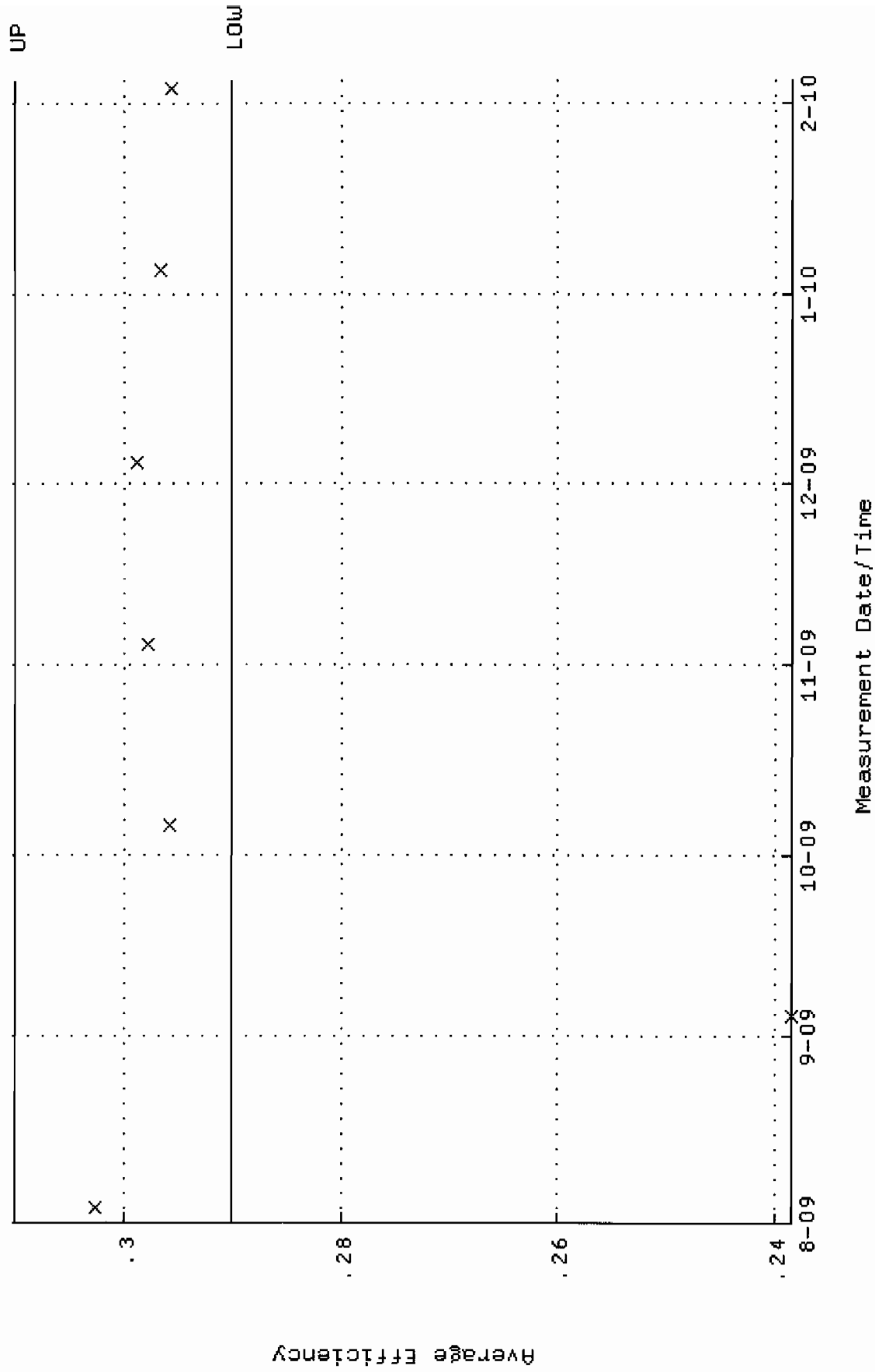
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:31 through 4-FEB-2010 12:00:00

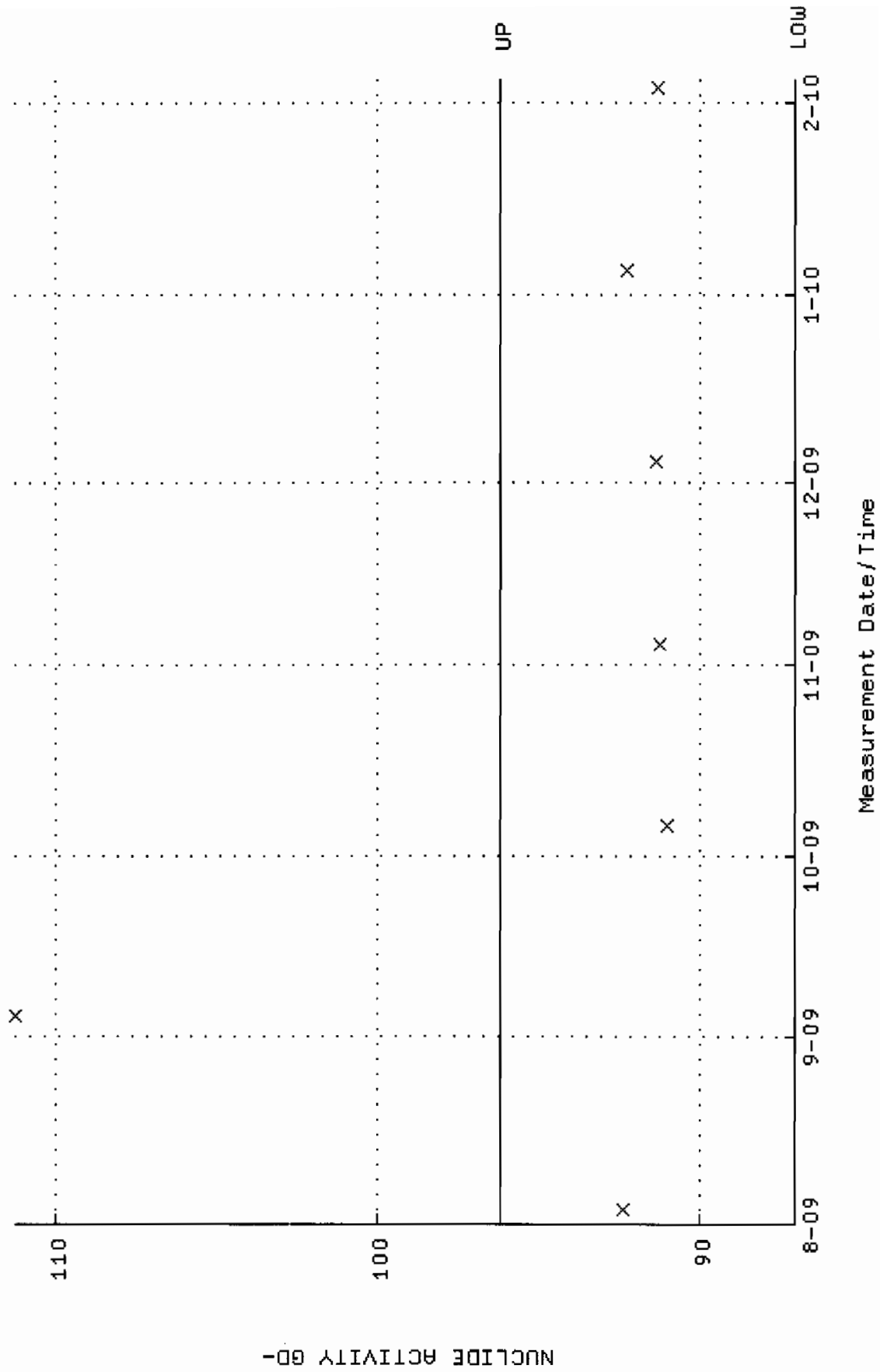
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



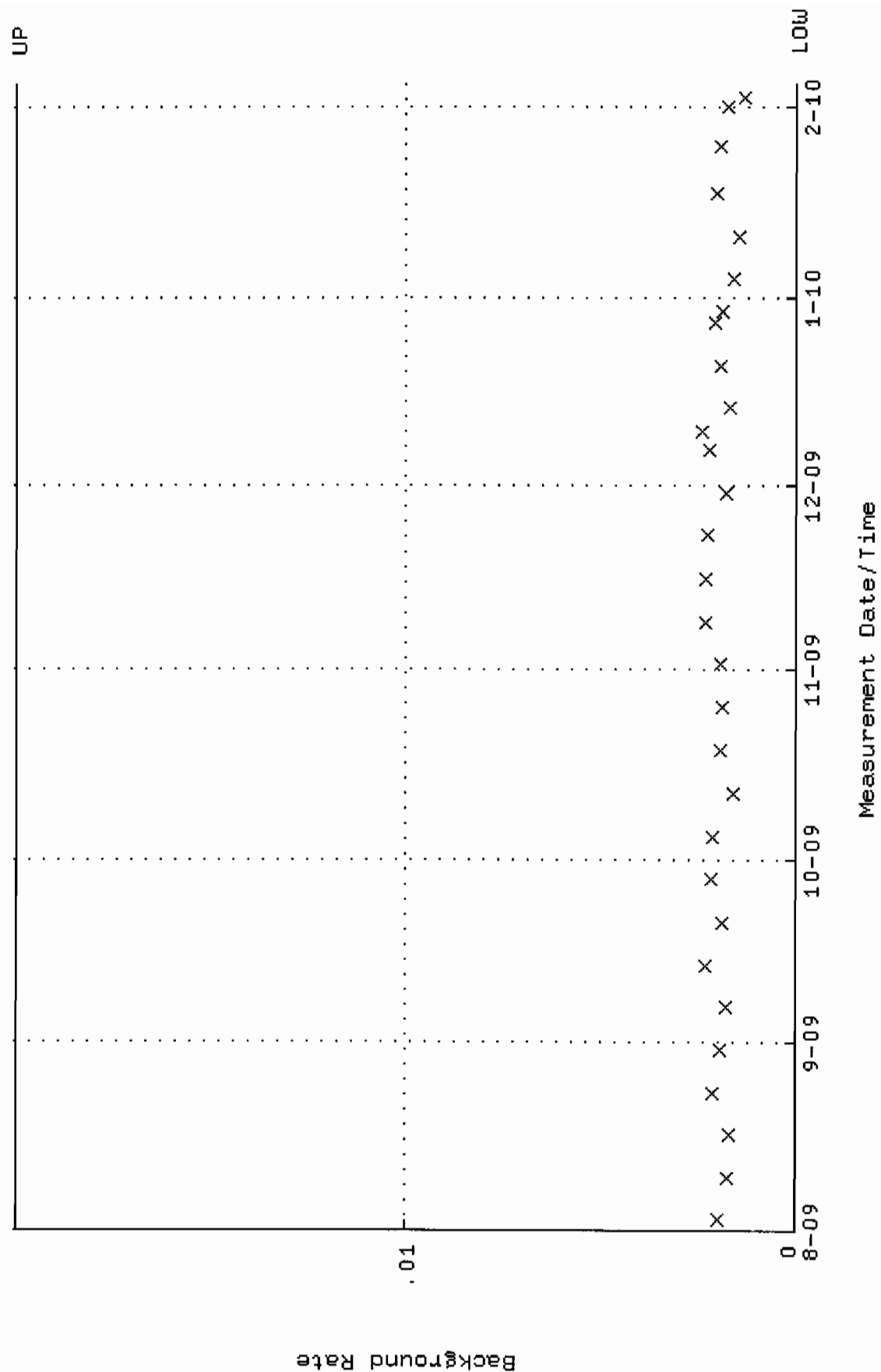
QA filename : DKA100:[ENV_ALPHA.QA.W]W007.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.290108 through 0.310108



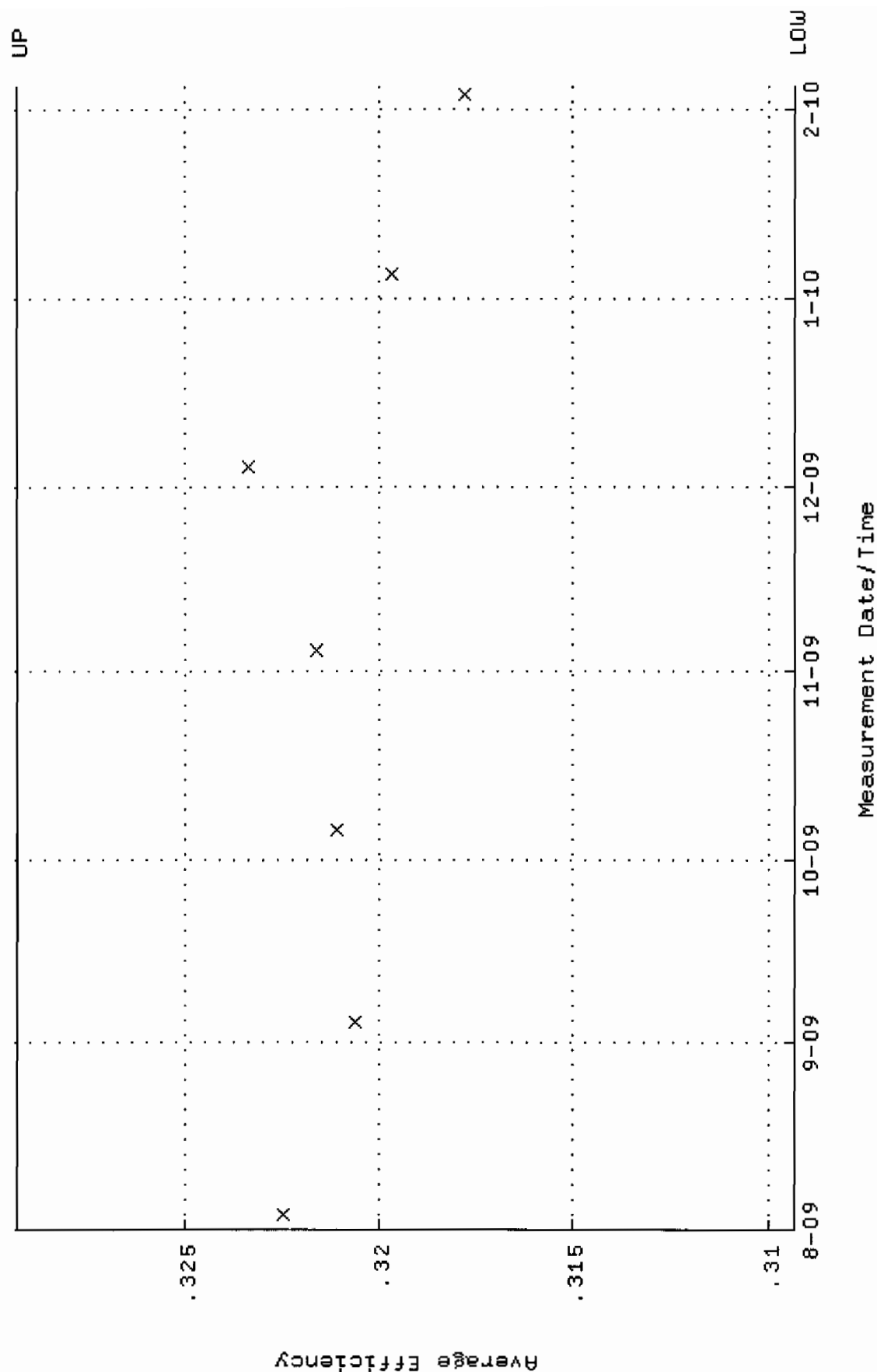
QA filename : DKA100:[ENV_ALPHA.QA.W]W007.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.0687 through 96.2339



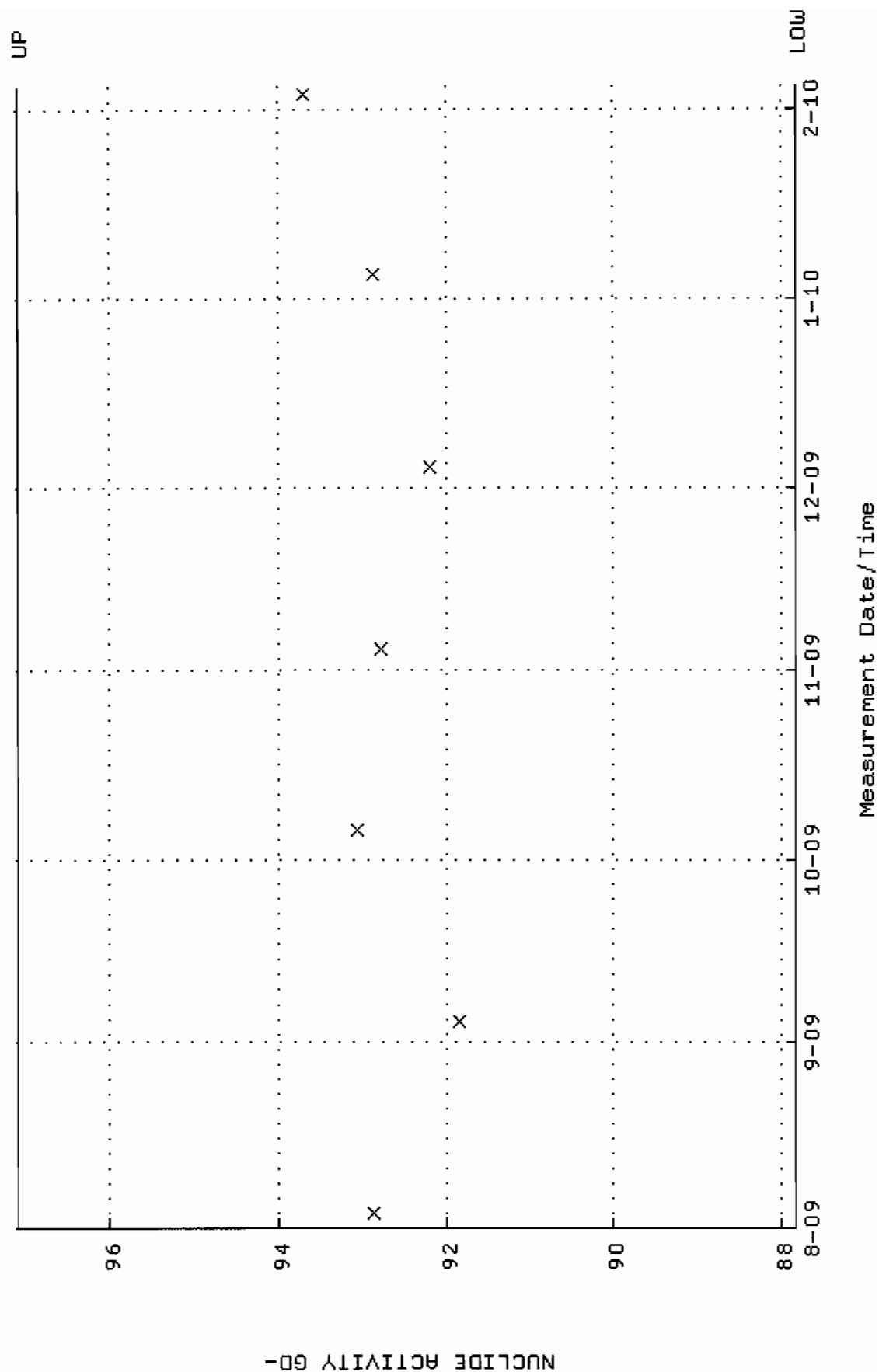
QA filename : DKA100:[ENV_ALPHA,QA,B]B007.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:32 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W008.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.309318 through 0.329318



QA filename : DKA100:[ENV_ALPHA.QA.W]W008.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.8346 through 97.0804

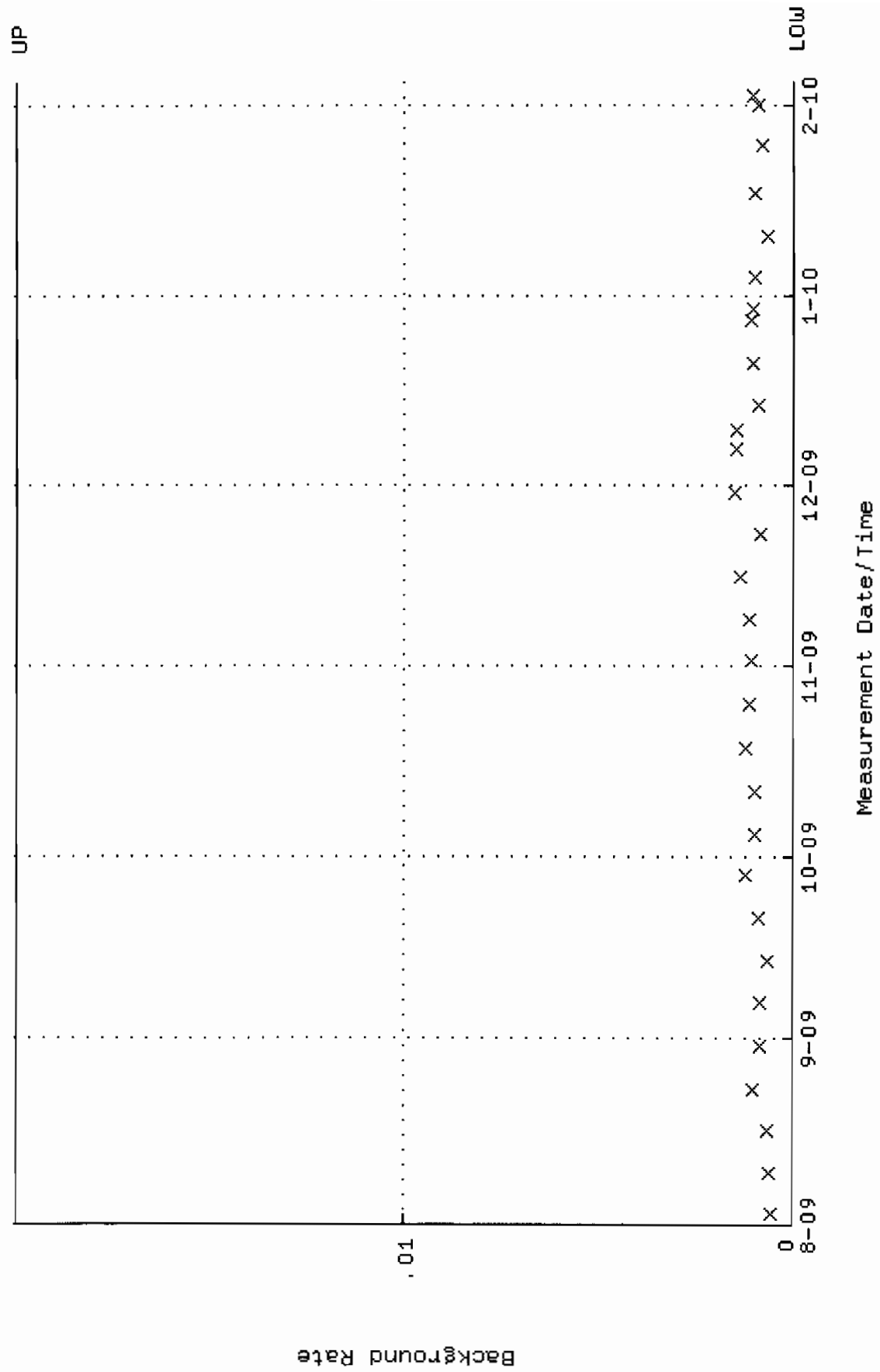


QA filename : DKA100:[ENV_ALPHA.QA.B]B008.QAF;1

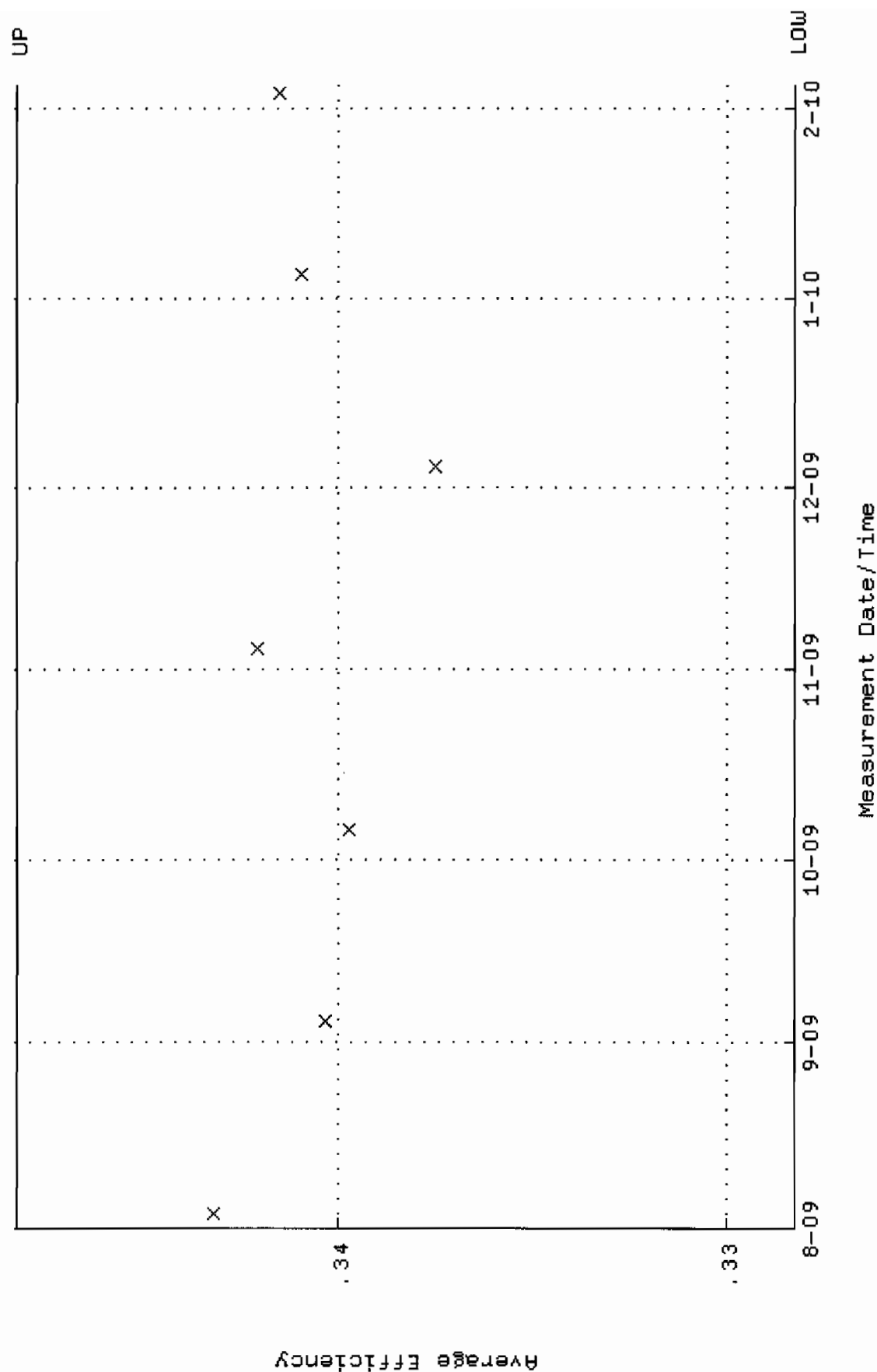
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:32 through 4-FEB-2010 12:00:00

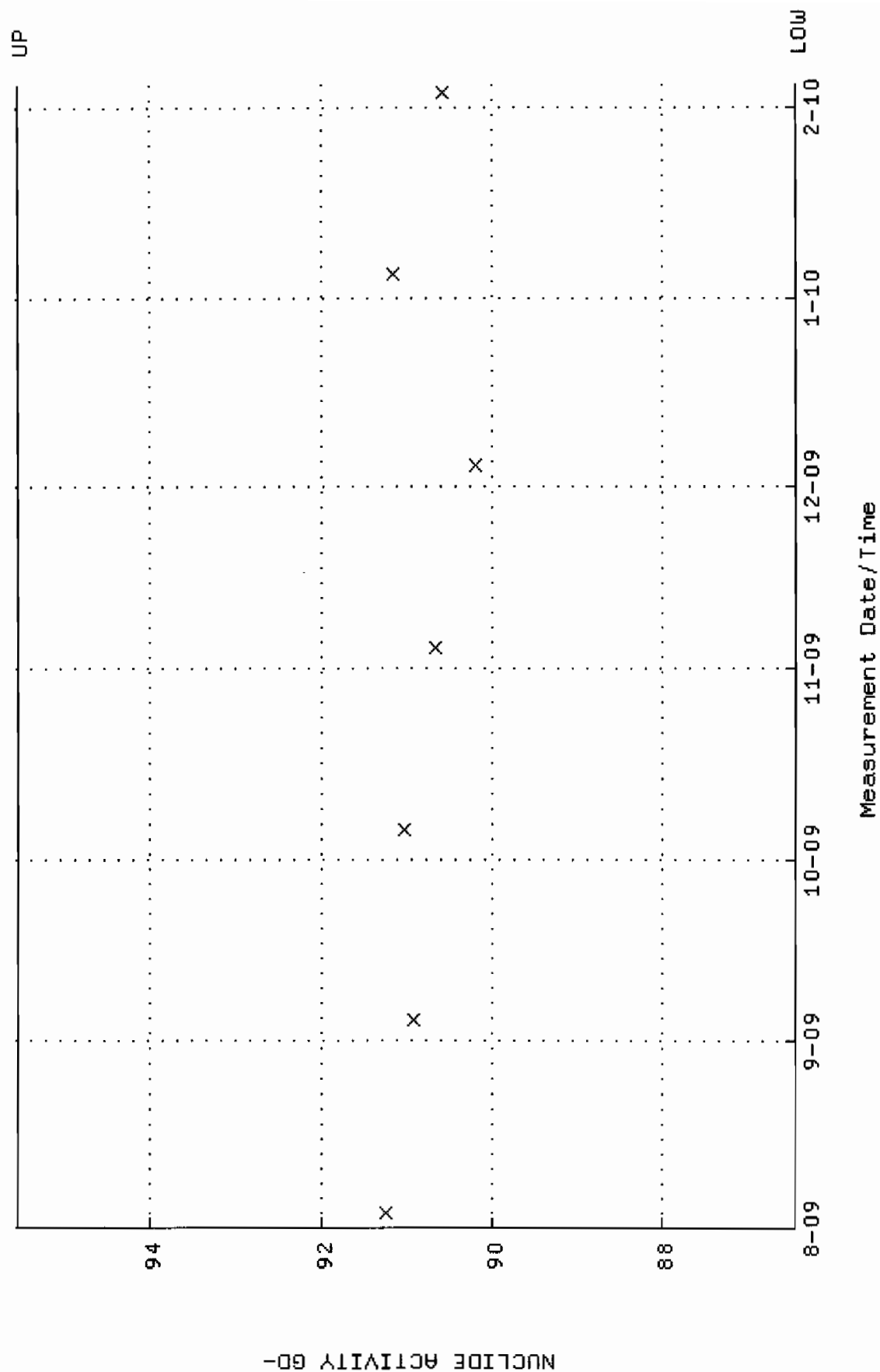
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



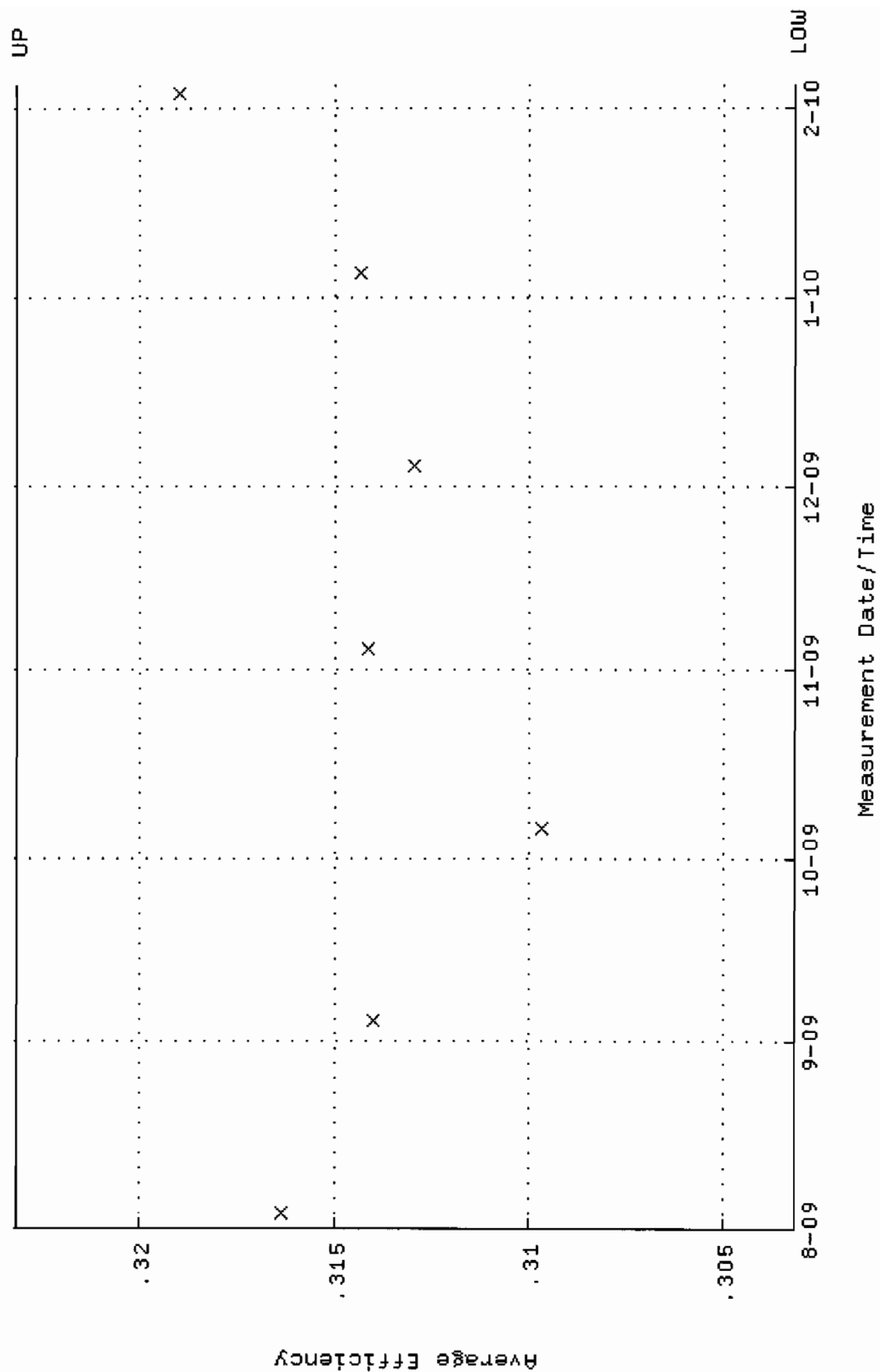
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.328261 through 0.348261



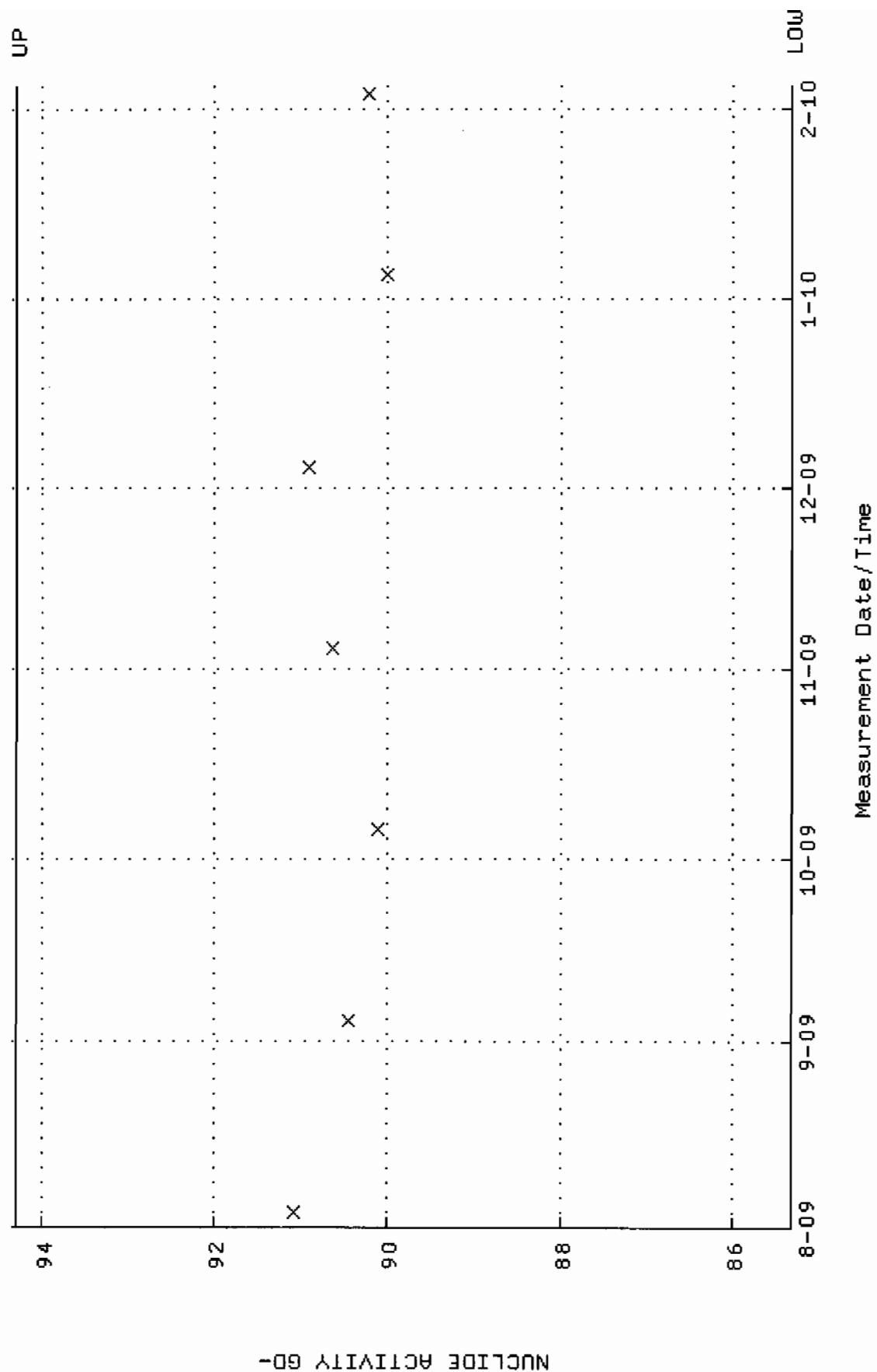
QA filename : DKA100:[ENV_ALPHA.QA.W]W009.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.4475 through 95.5473



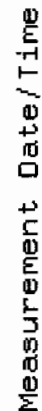
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.303169 through 0.323169



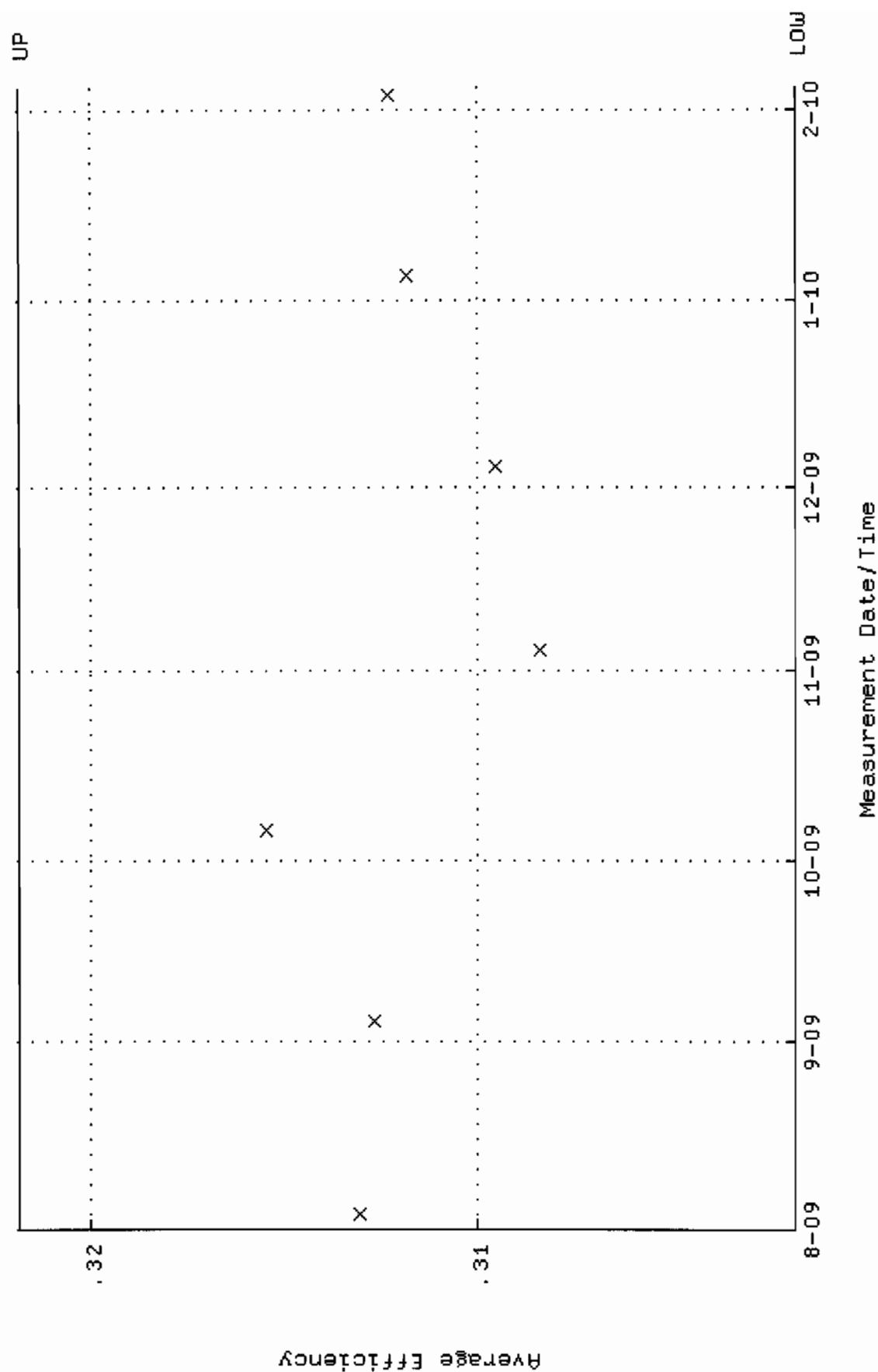
QA filename : DKA100:[ENV_ALPHA.QA.W]W010.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 85.3273 through 94.3091



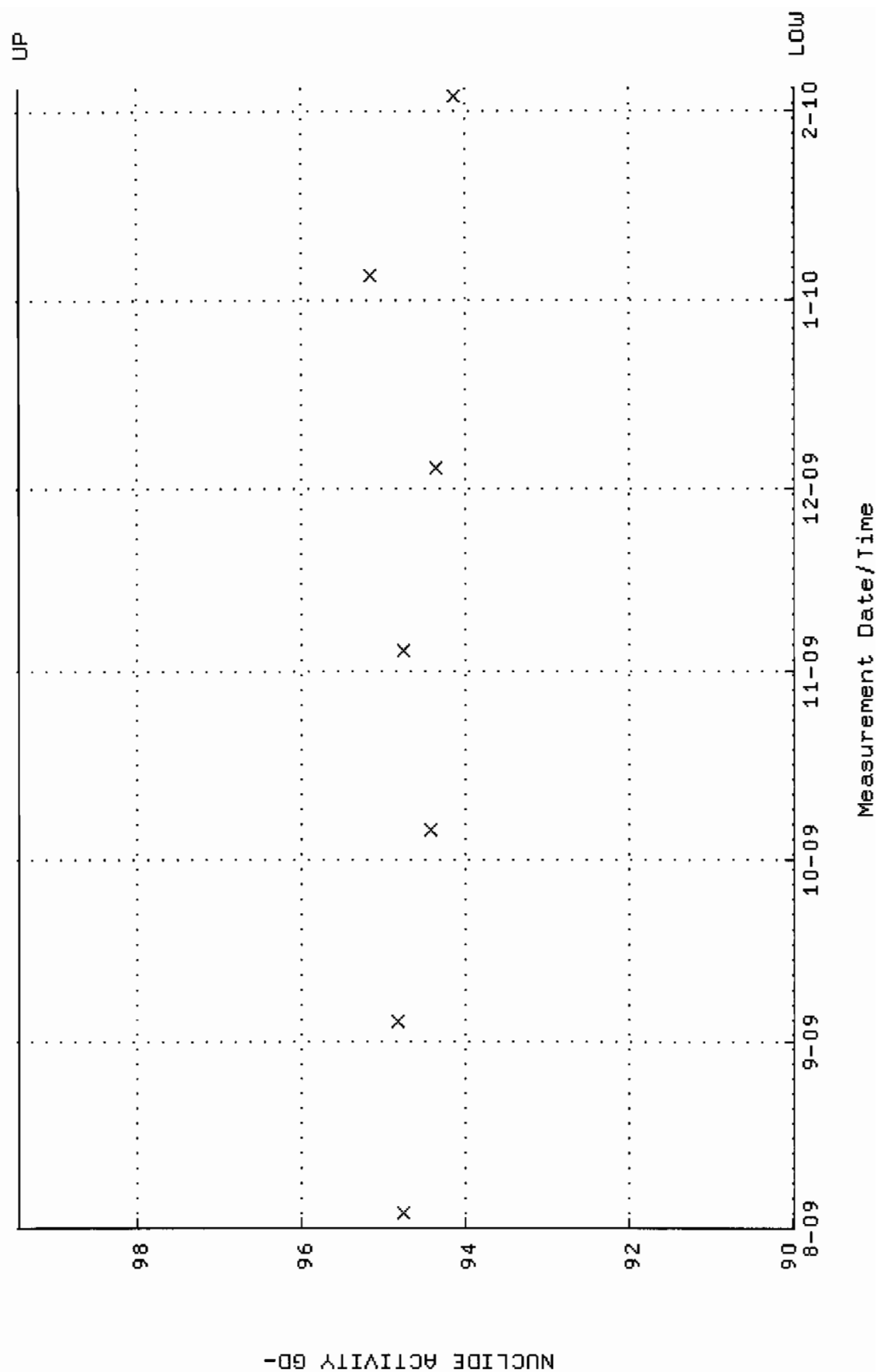
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



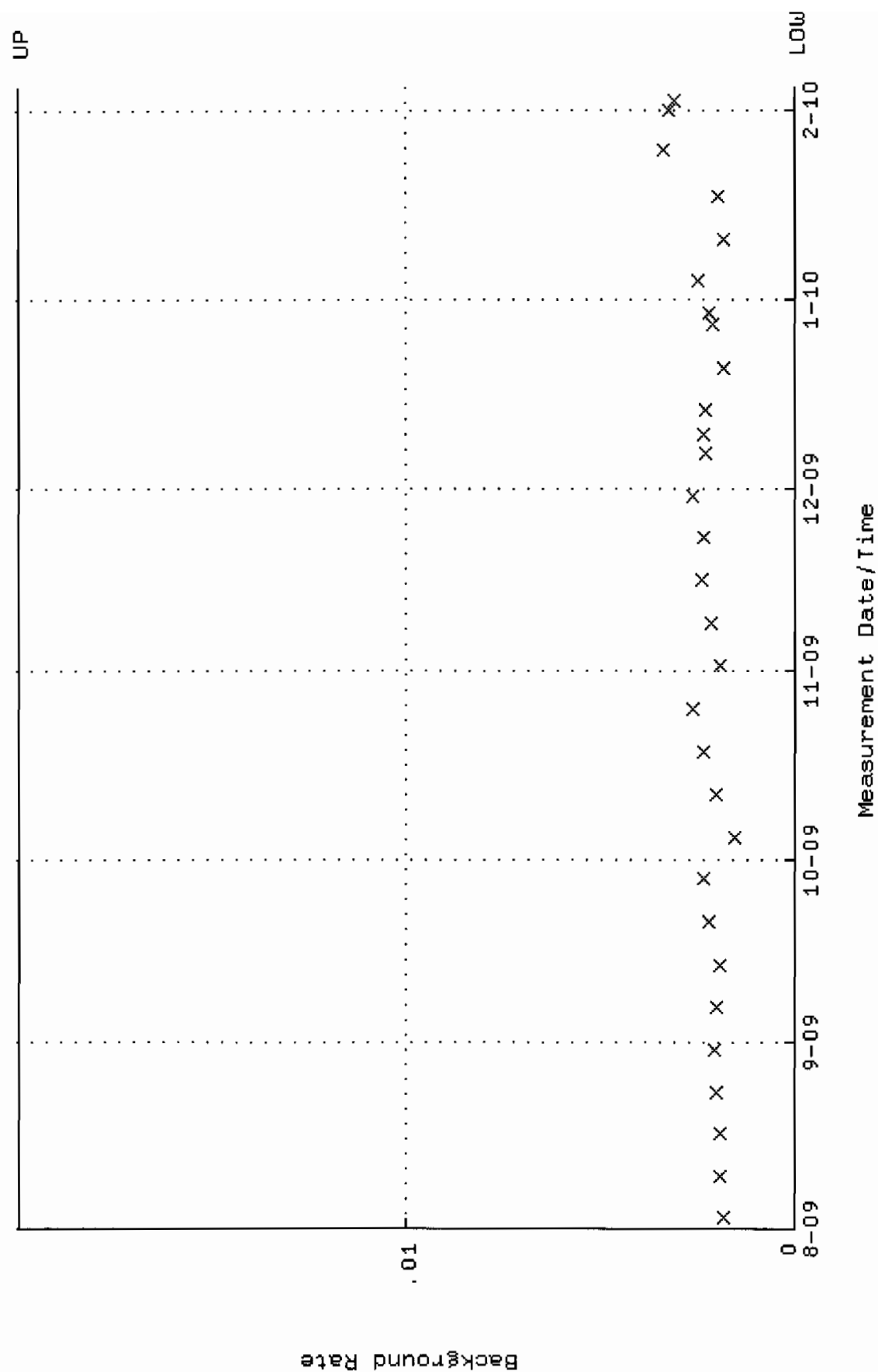
QA filename : DKA100:[ENV_ALPHA.QA.W]W014.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.301834 through 0.321834



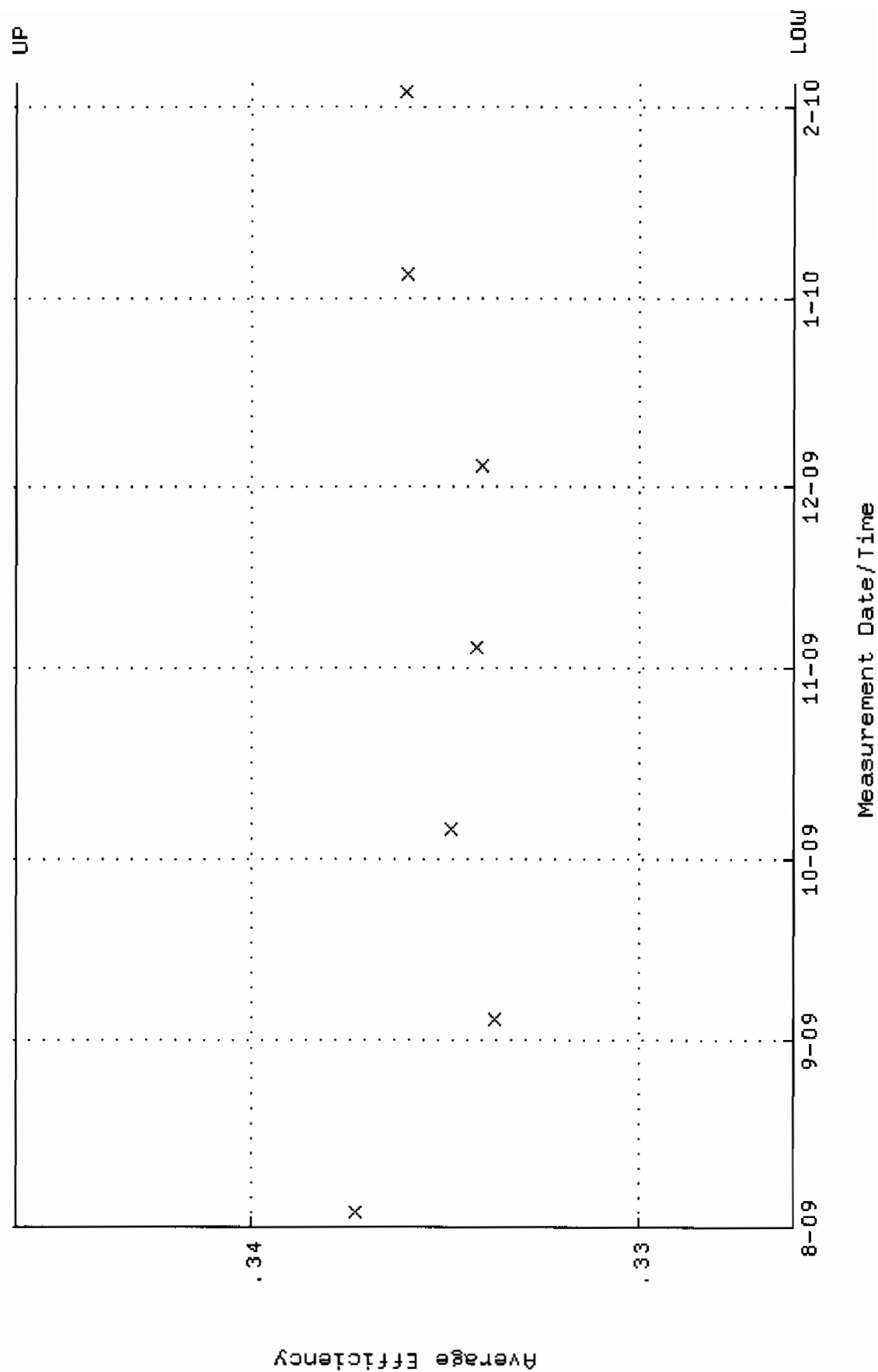
QA filename : DKA100:[ENV_ALPHA.QA.W]w014.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 89.9790 through 99.4504



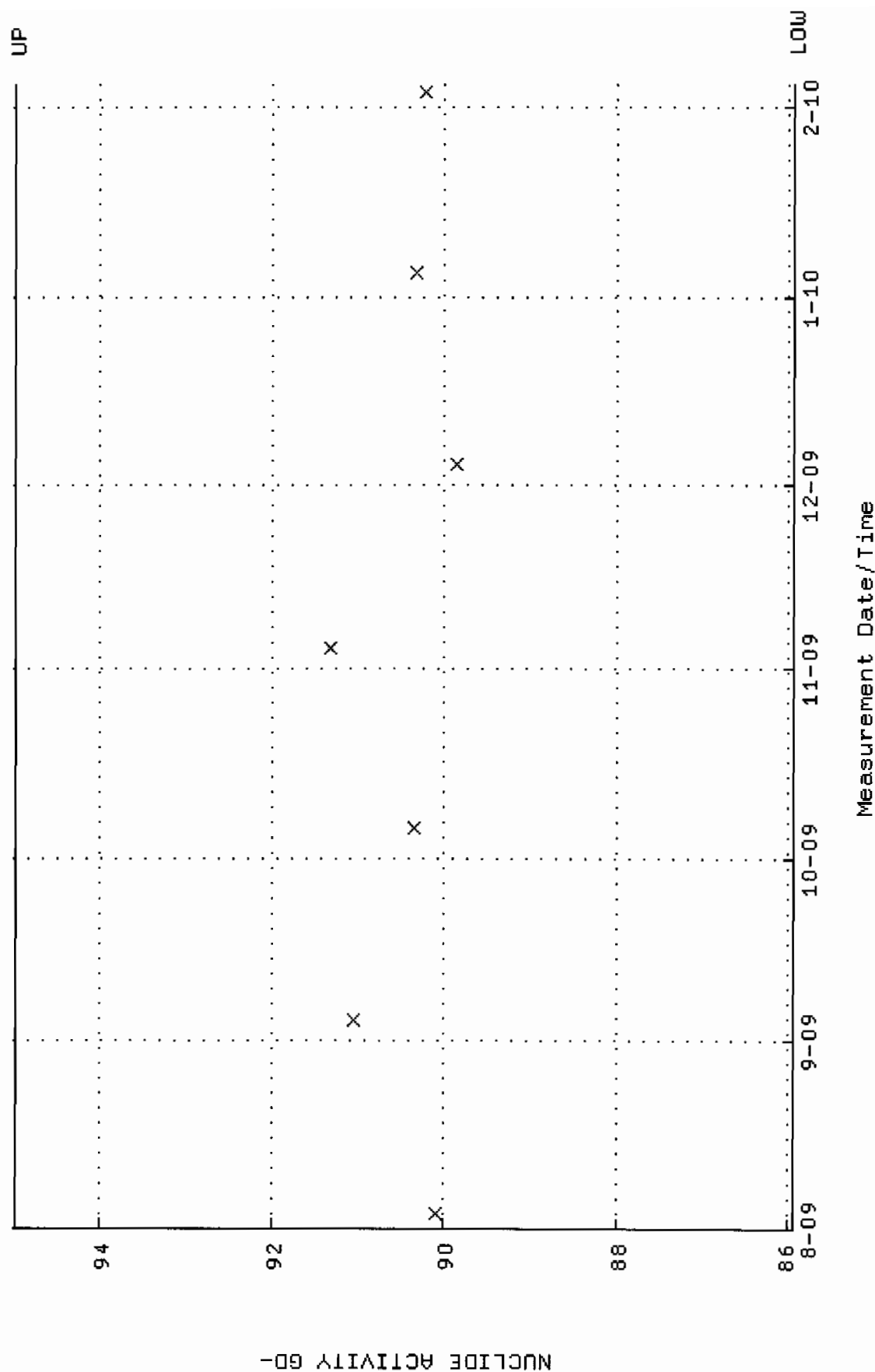
QA filename : DKA100:[ENV_ALPHA.QA.B]B014.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.326058 through 0.346058



QA filename : DKA100:[ENV_ALPHA.QA.W]W016.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 85.9280 through 94.9730

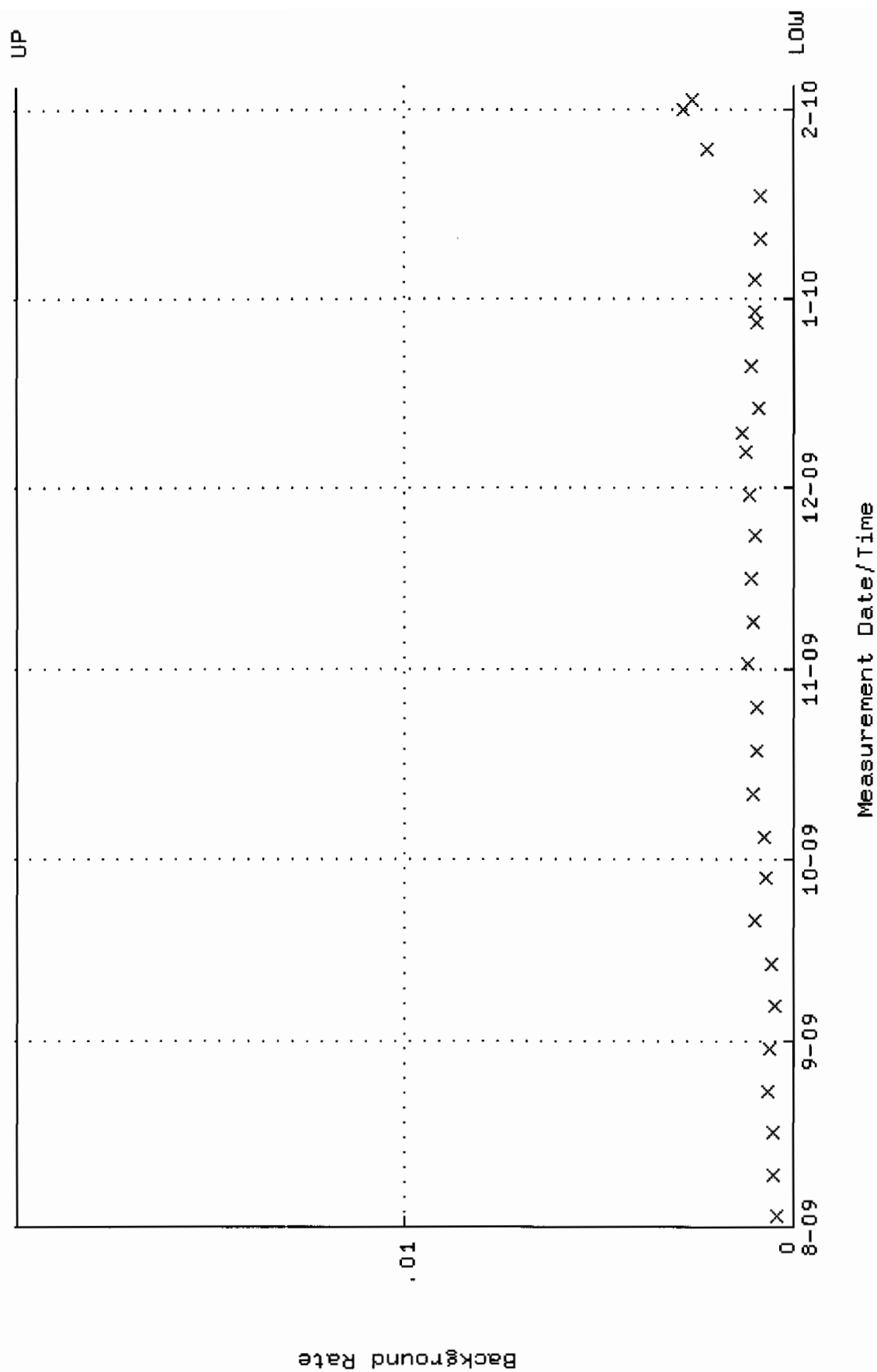


QA filename : DKA100:[ENV_ALPHA.QA.B]B016.QAF;2

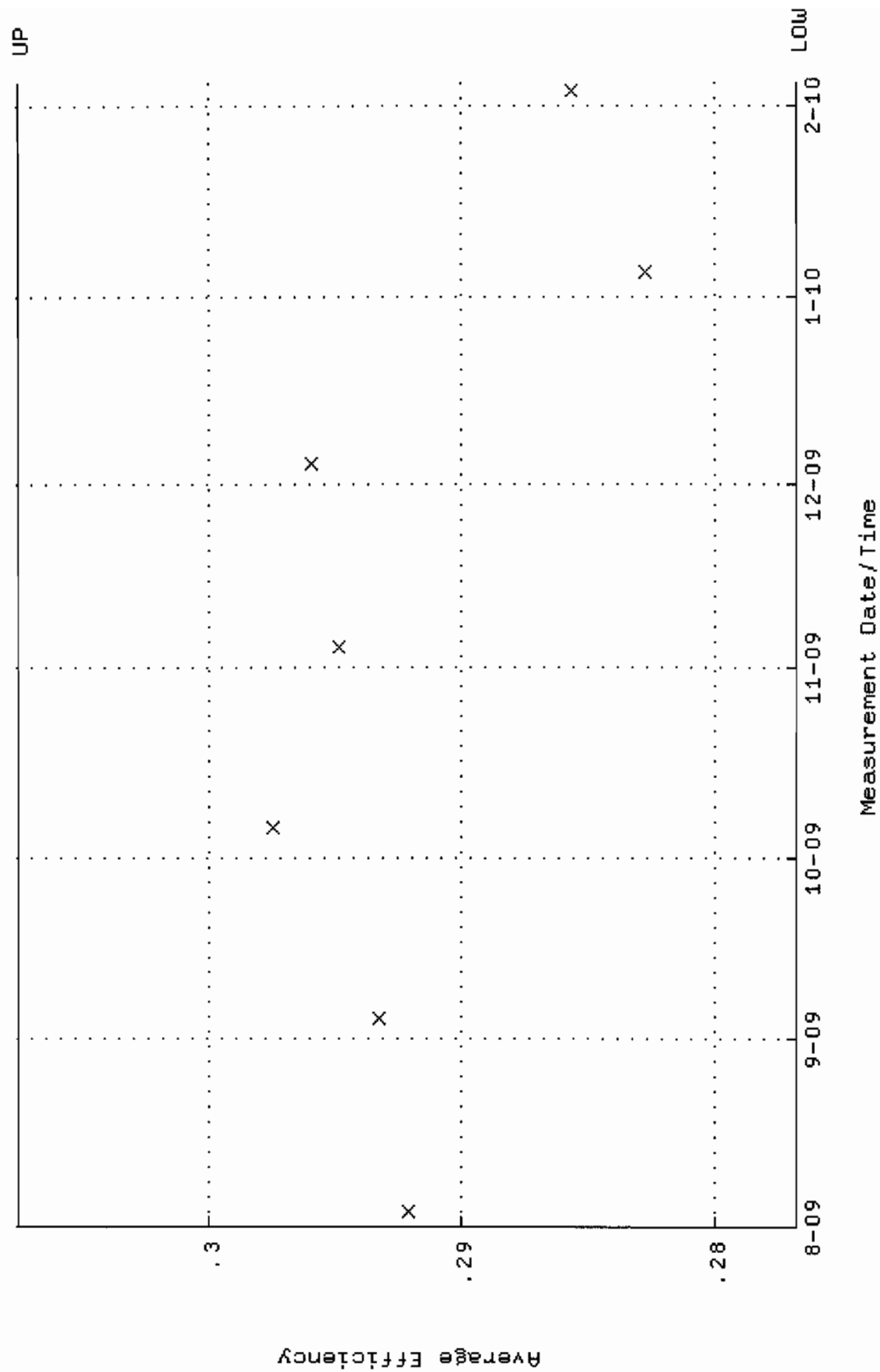
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:33 through 4-FEB-2010 12:00:00

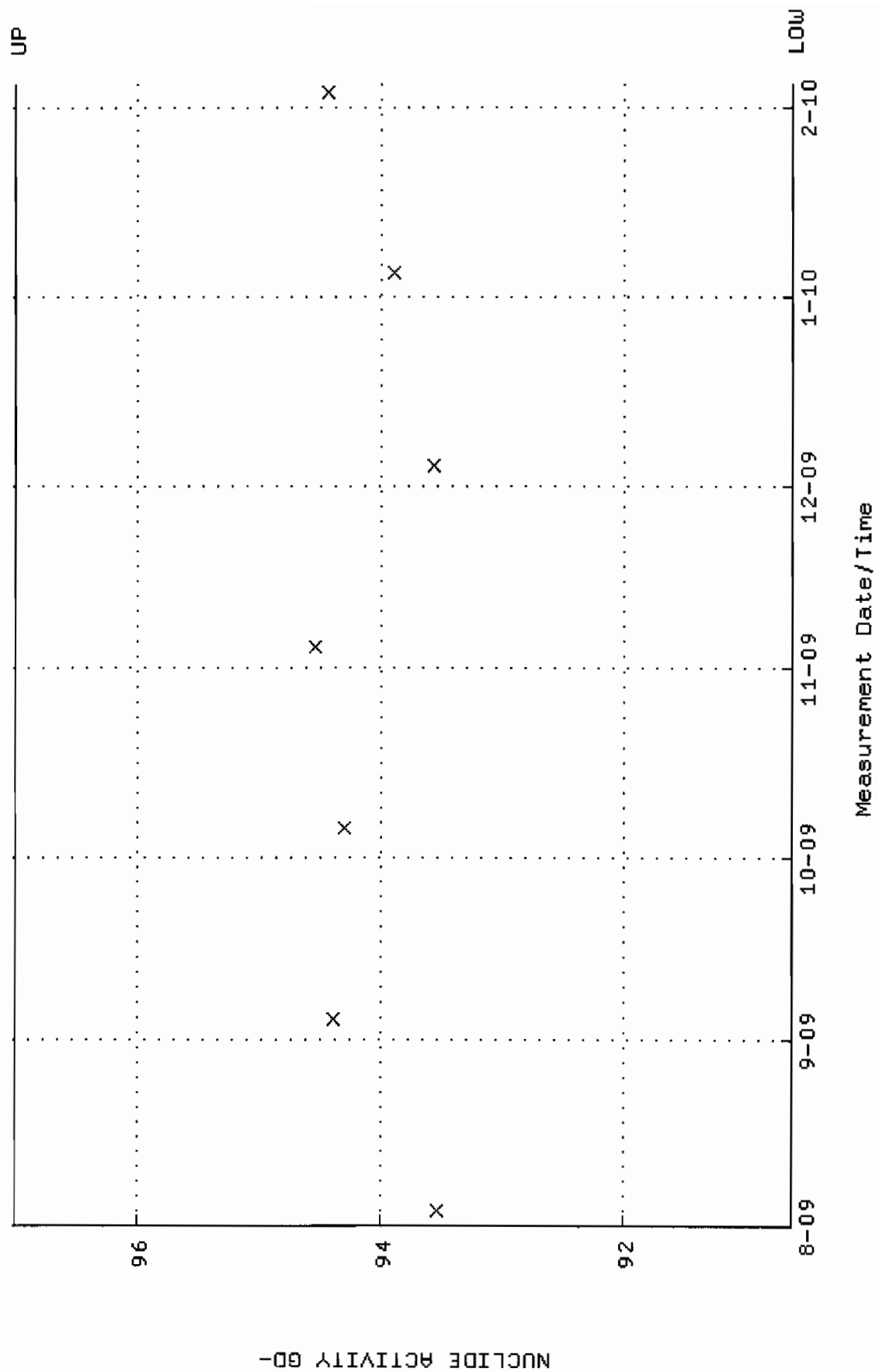
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



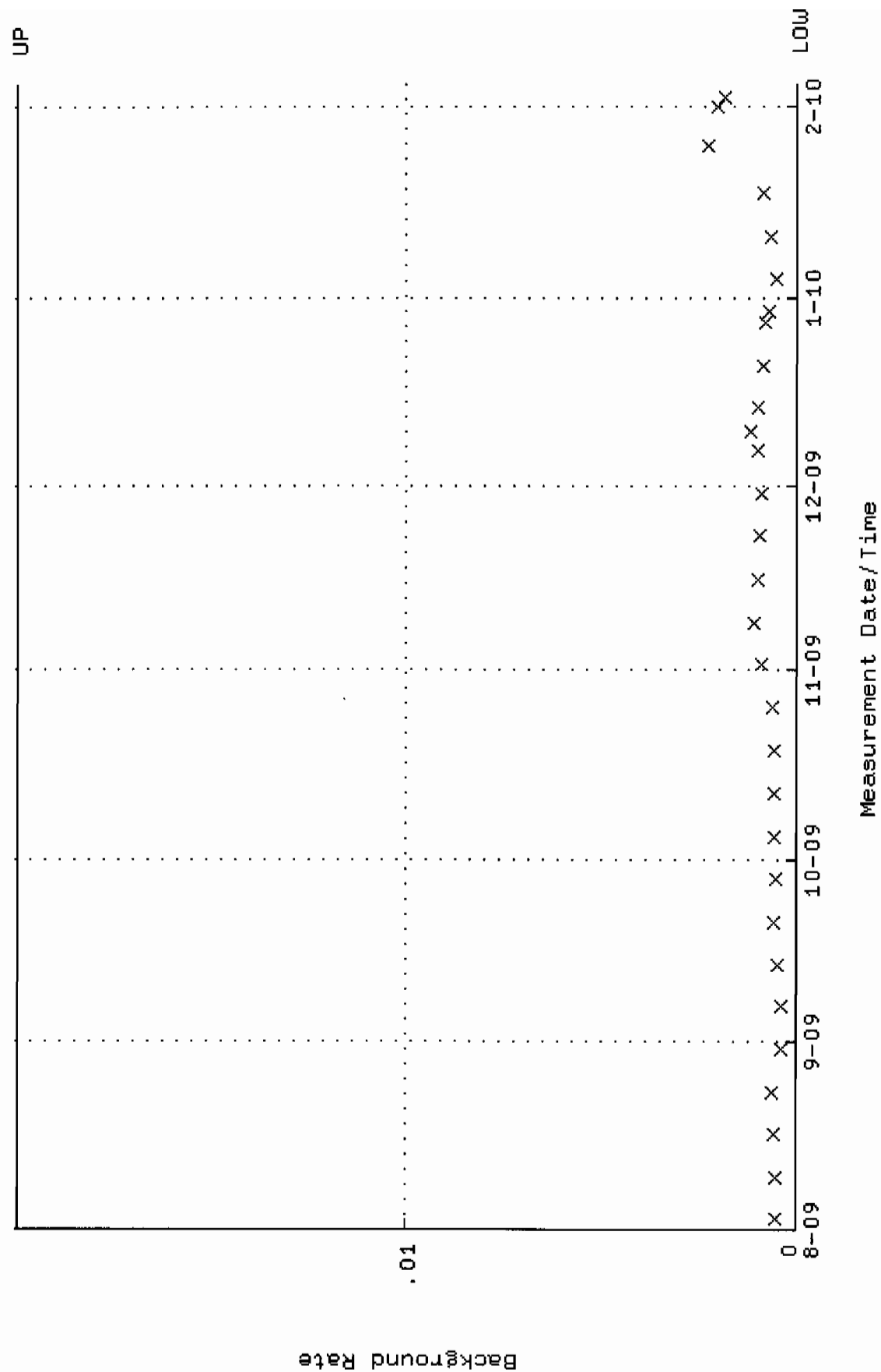
QA filename : DKA100:[ENV_ALPHA.QA.W]W017.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.276771 through 0.307557



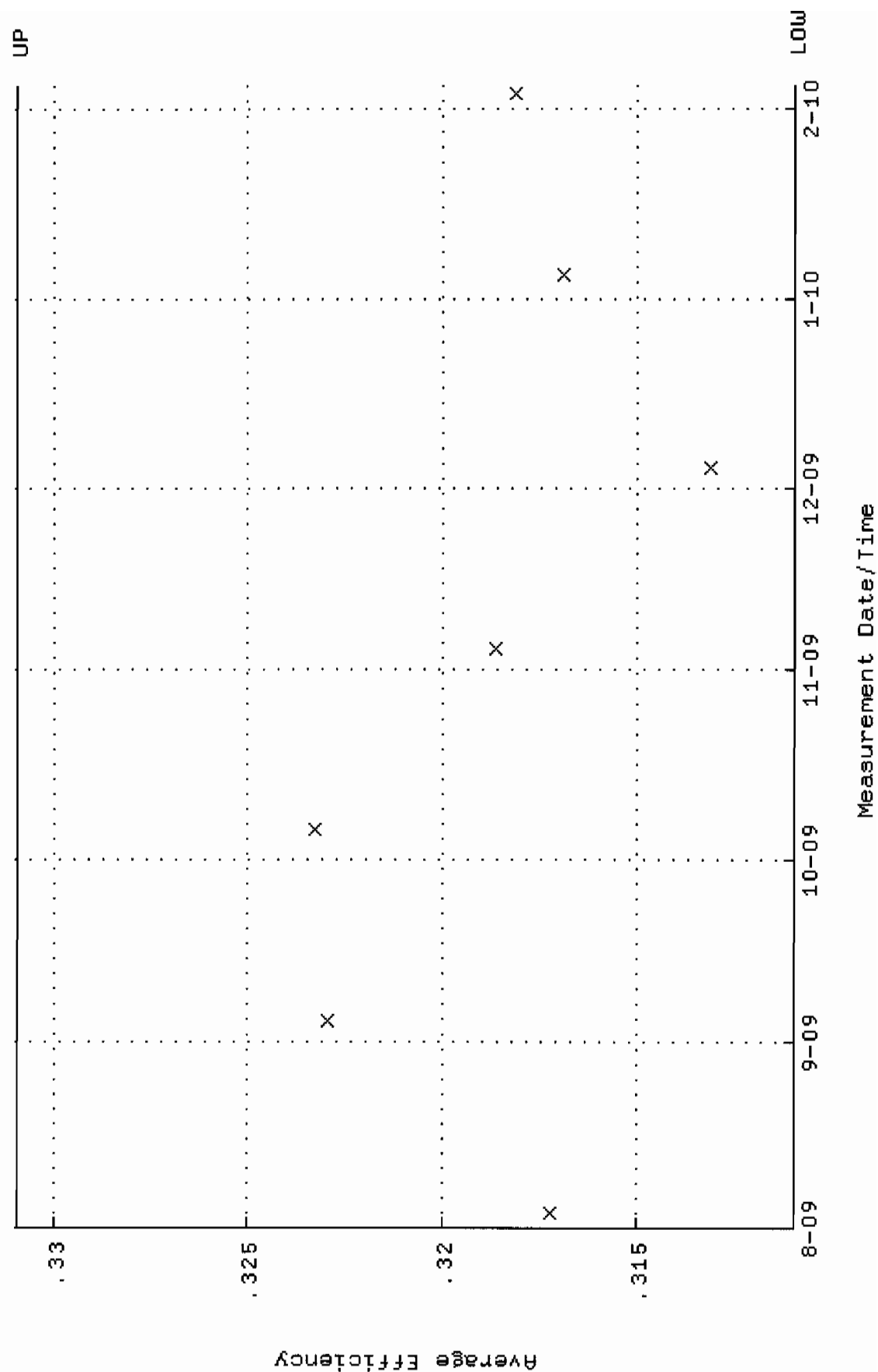
QA filename : DKA100:[ENV_ALPHA.QA.W]w017.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 90.6063 through 97.0149



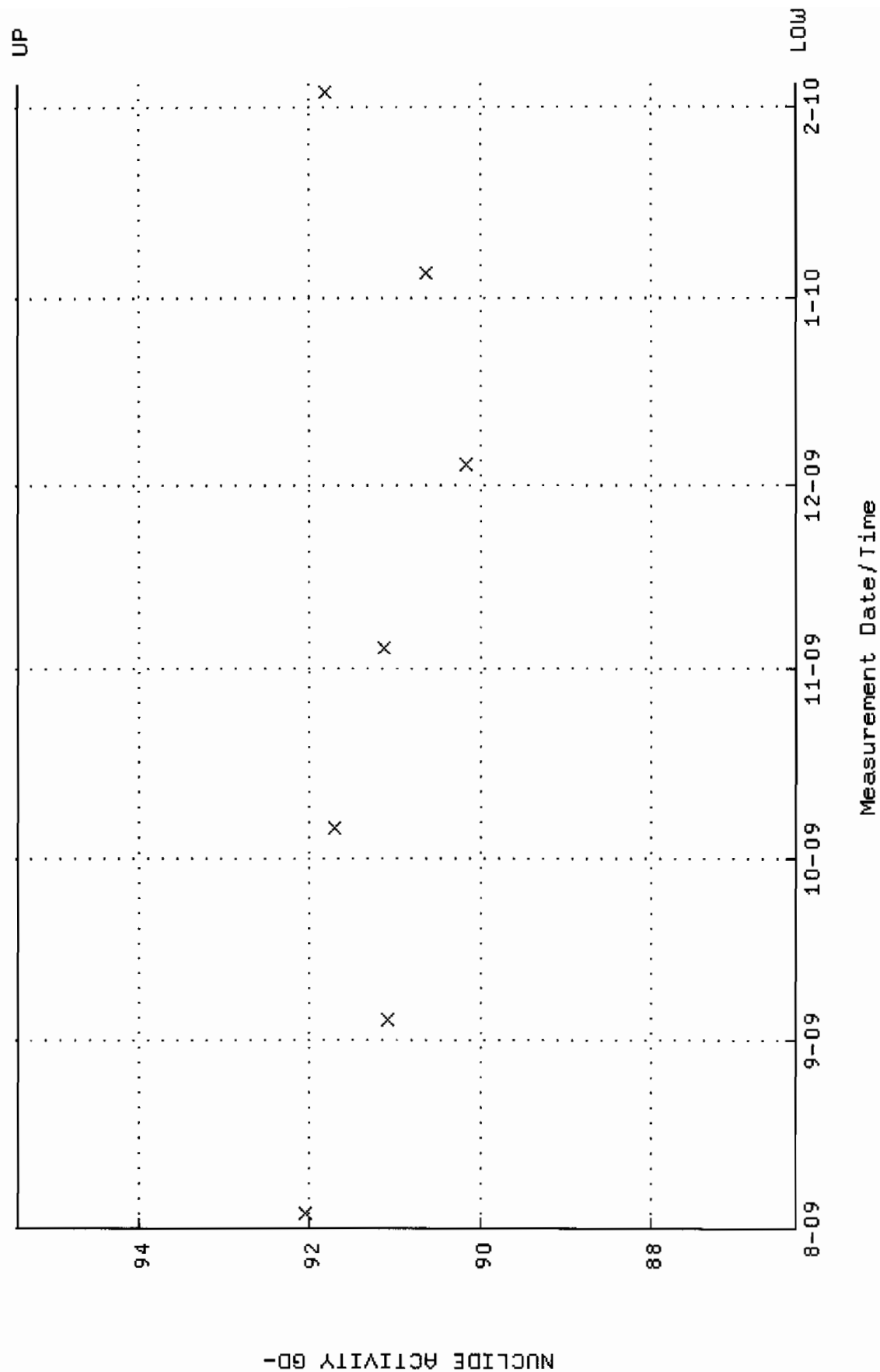
Lower/Upper Lmts: 0.00000E+00 through 2.00000E-02



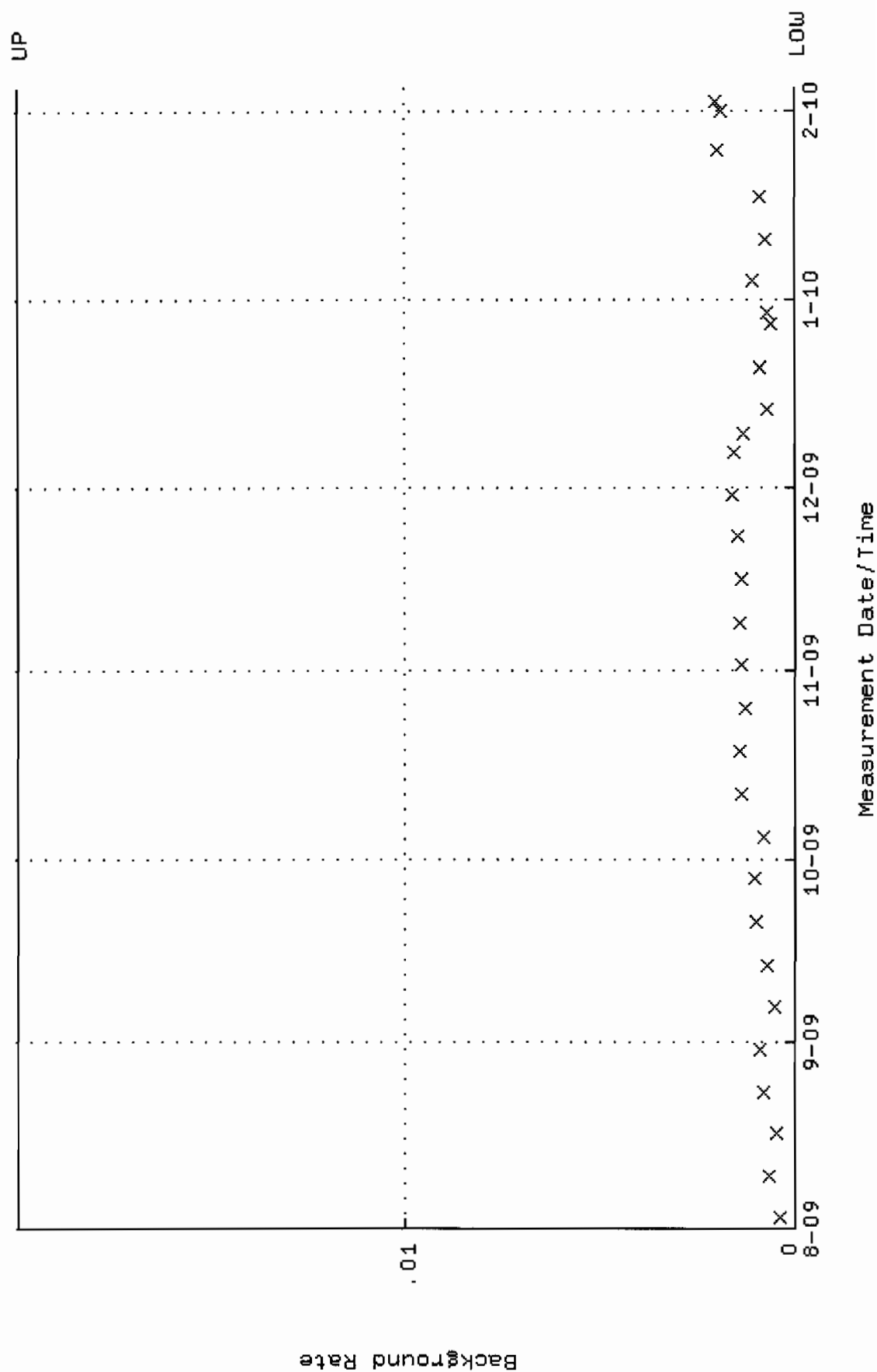
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.310950 through 0.330950



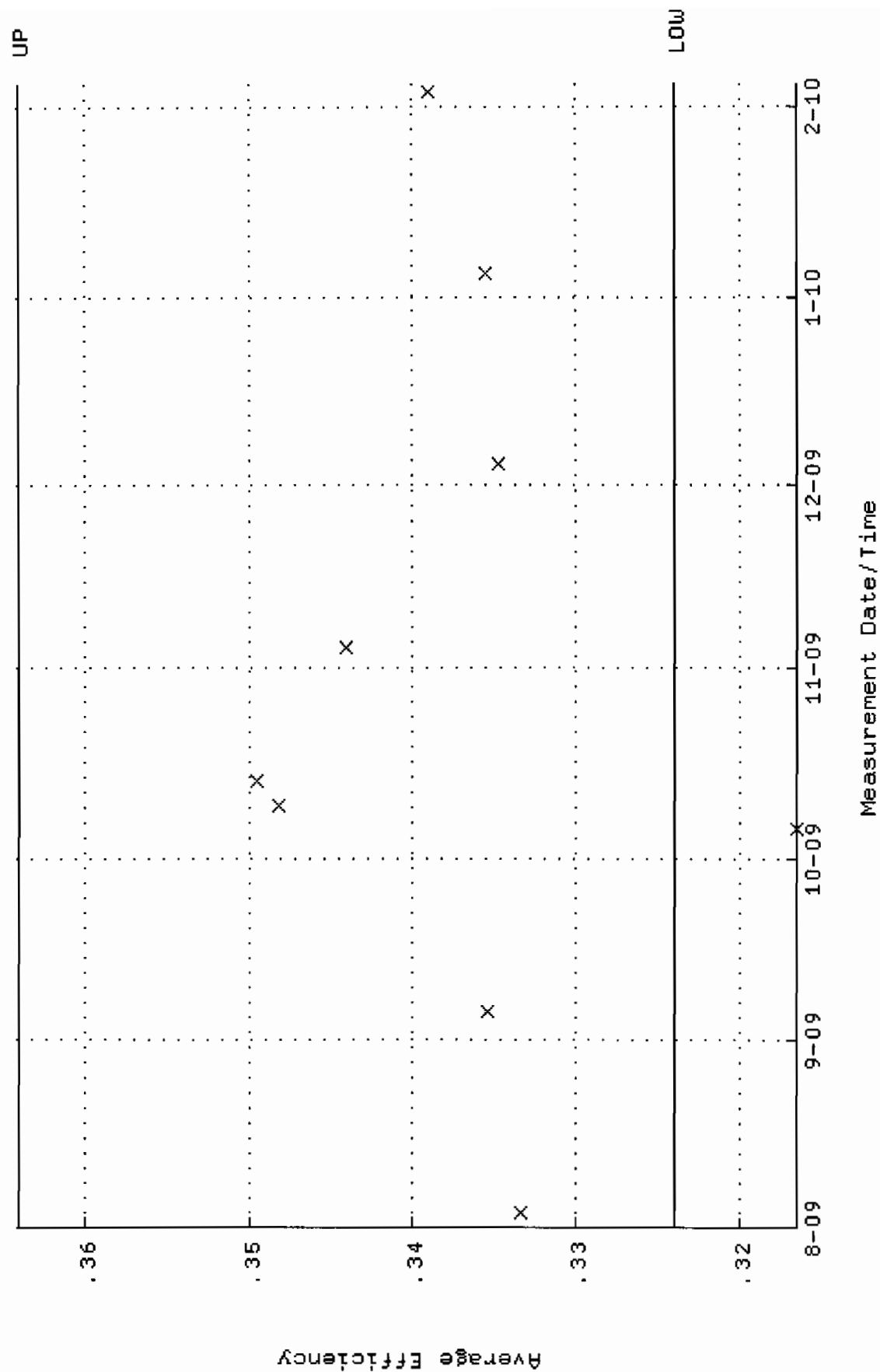
QA filename : DKA100:[ENV_ALPHA.QA.W]W018.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.3167 through 95.4027



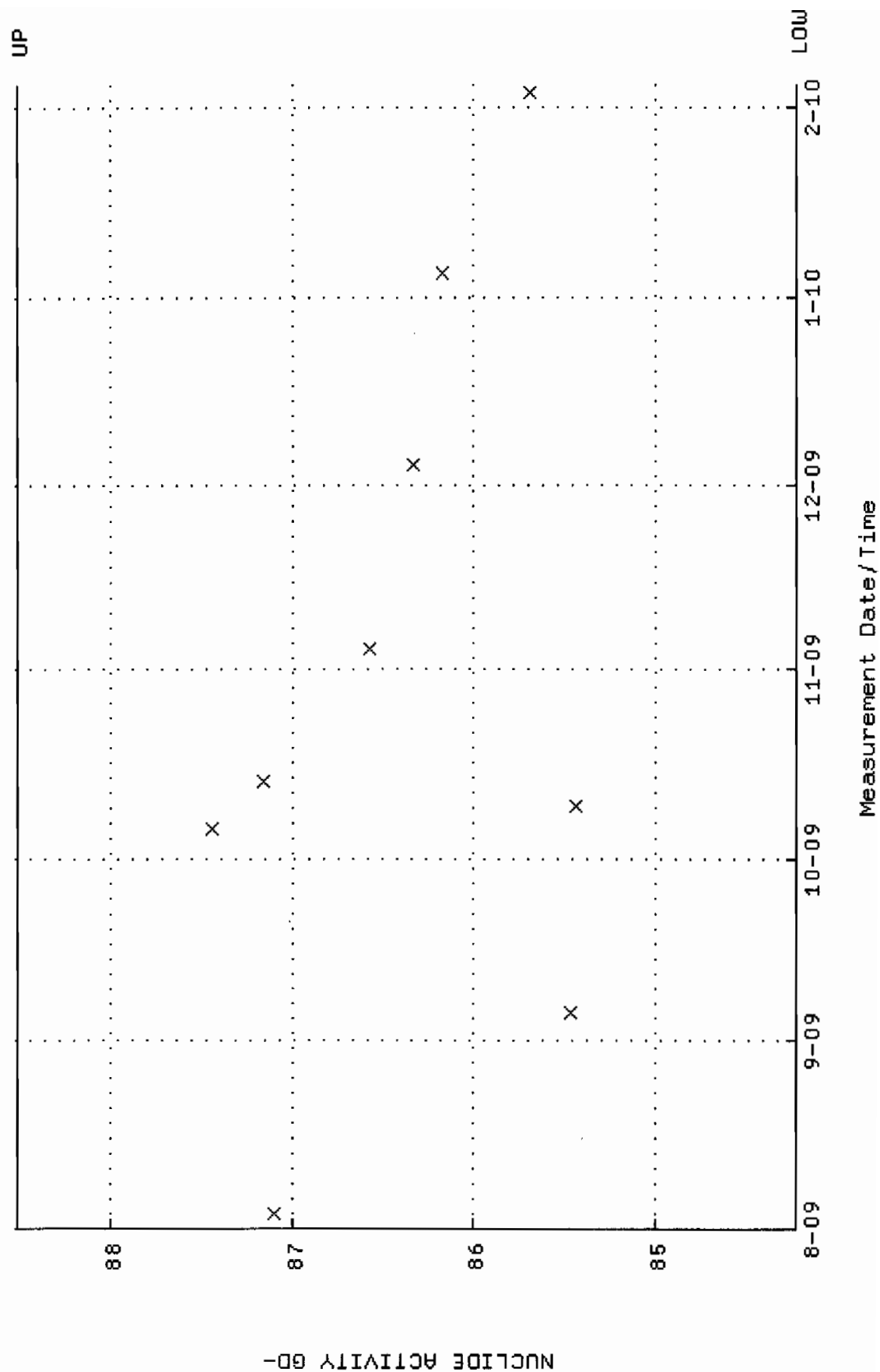
QA filename : DKA100:[ENV_ALPHA.QA.B]B018.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:33 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



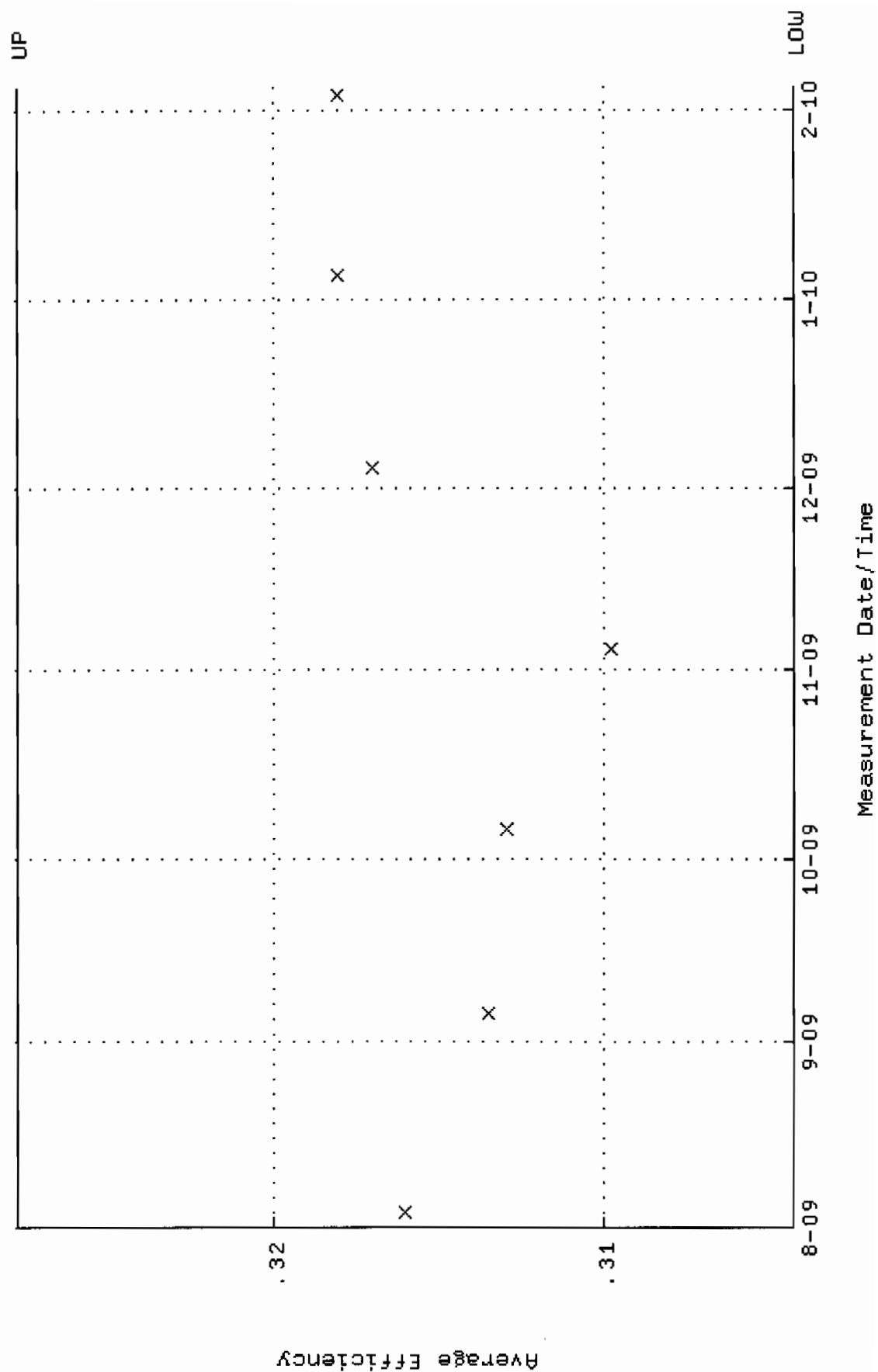
QA filename : DKA100:[ENV_ALPHA.QA.W]W031.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.324029 through 0.364065



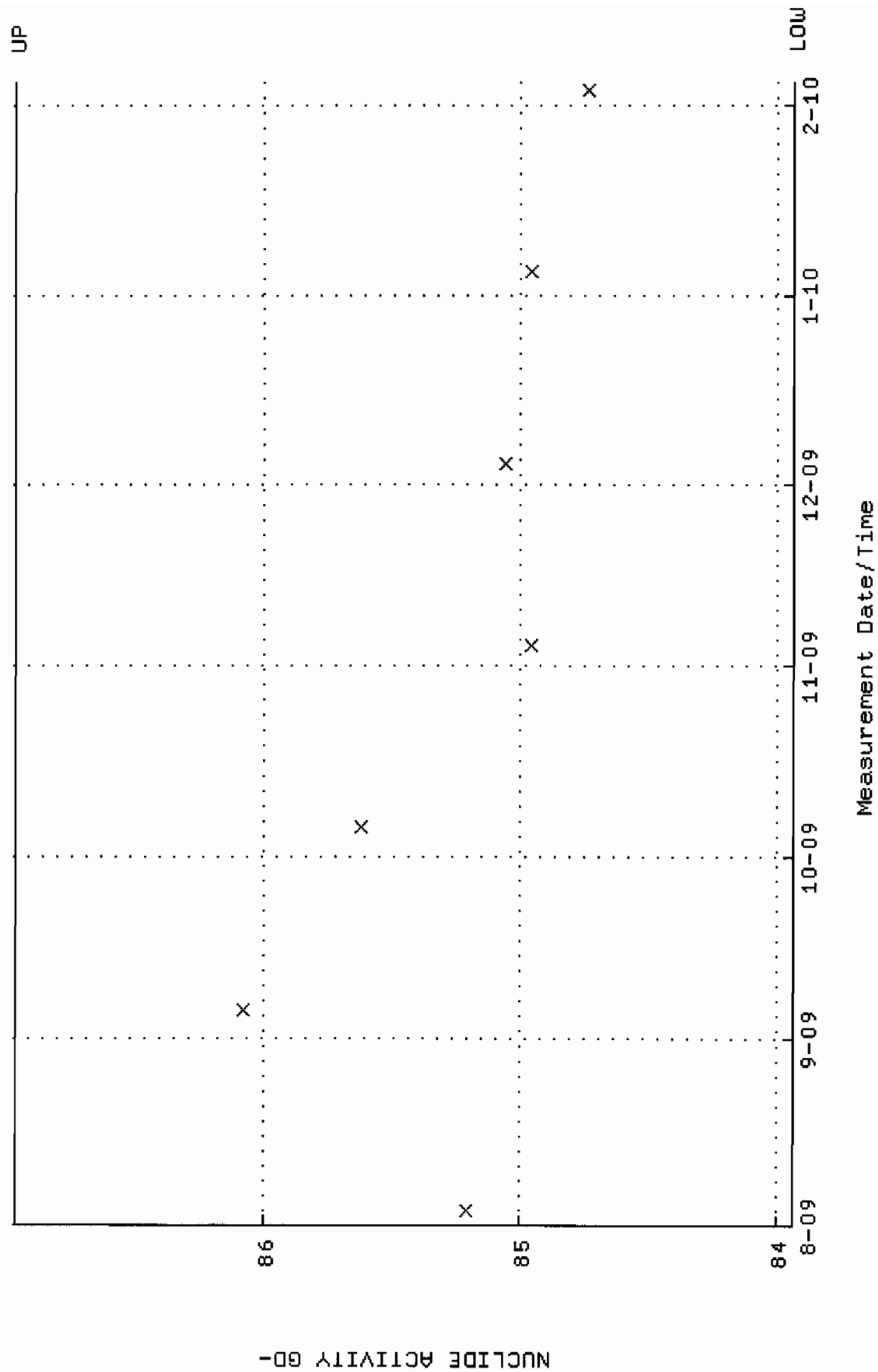
QA filename : DKA100:[ENV_ALPHA.QA.W]w031.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.2165 through 88.5165



QA filename : DKA100:[ENV_ALPHA.QA.W]W033.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.304222 through 0.327748



QA filename : DKA100:[ENV_ALPHA.QA.W]W033.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 83.9373 through 86.9661

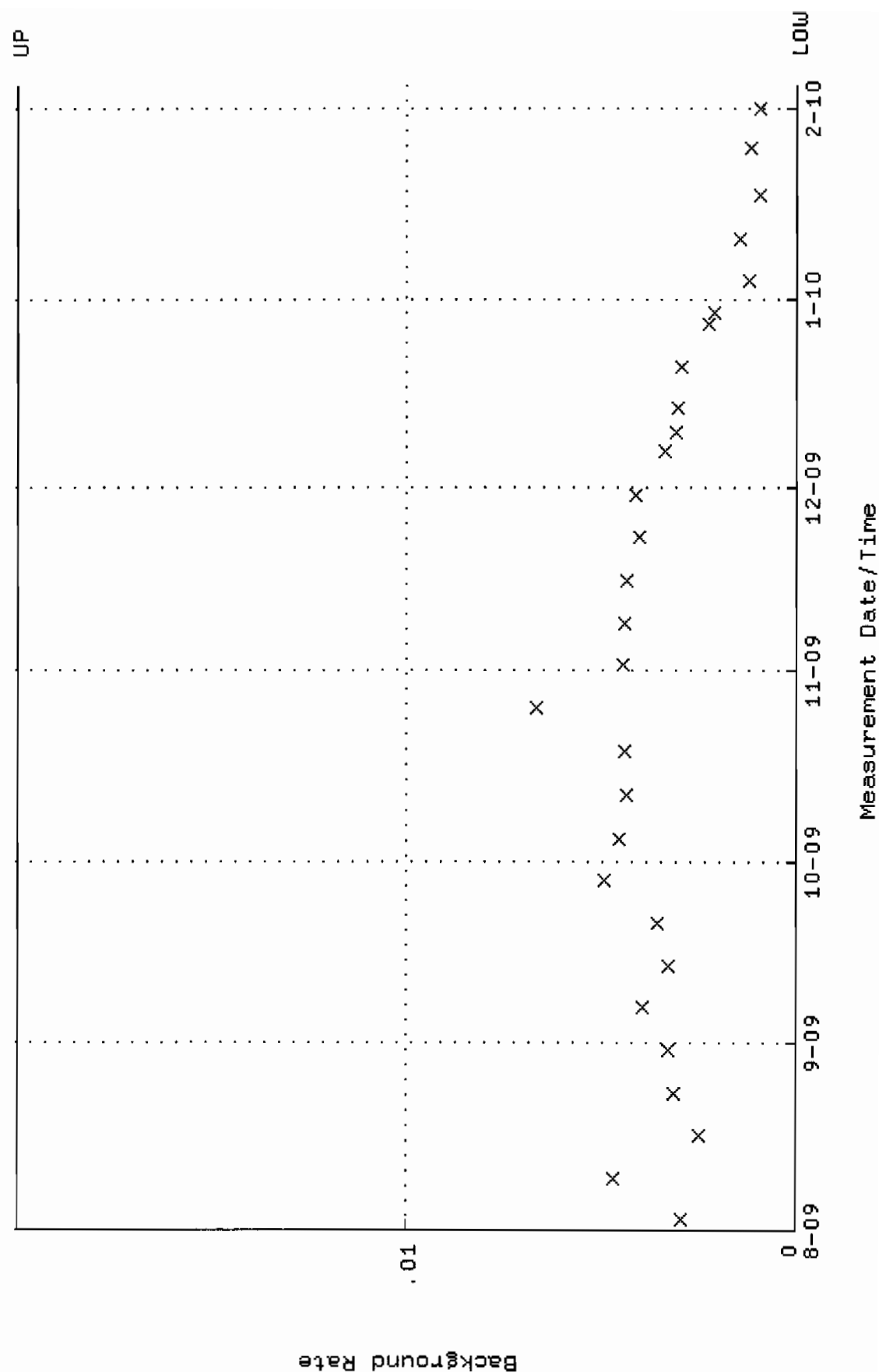


QA filename : DKA100:[ENV_ALPHA.QA.B]B033.QAF;1

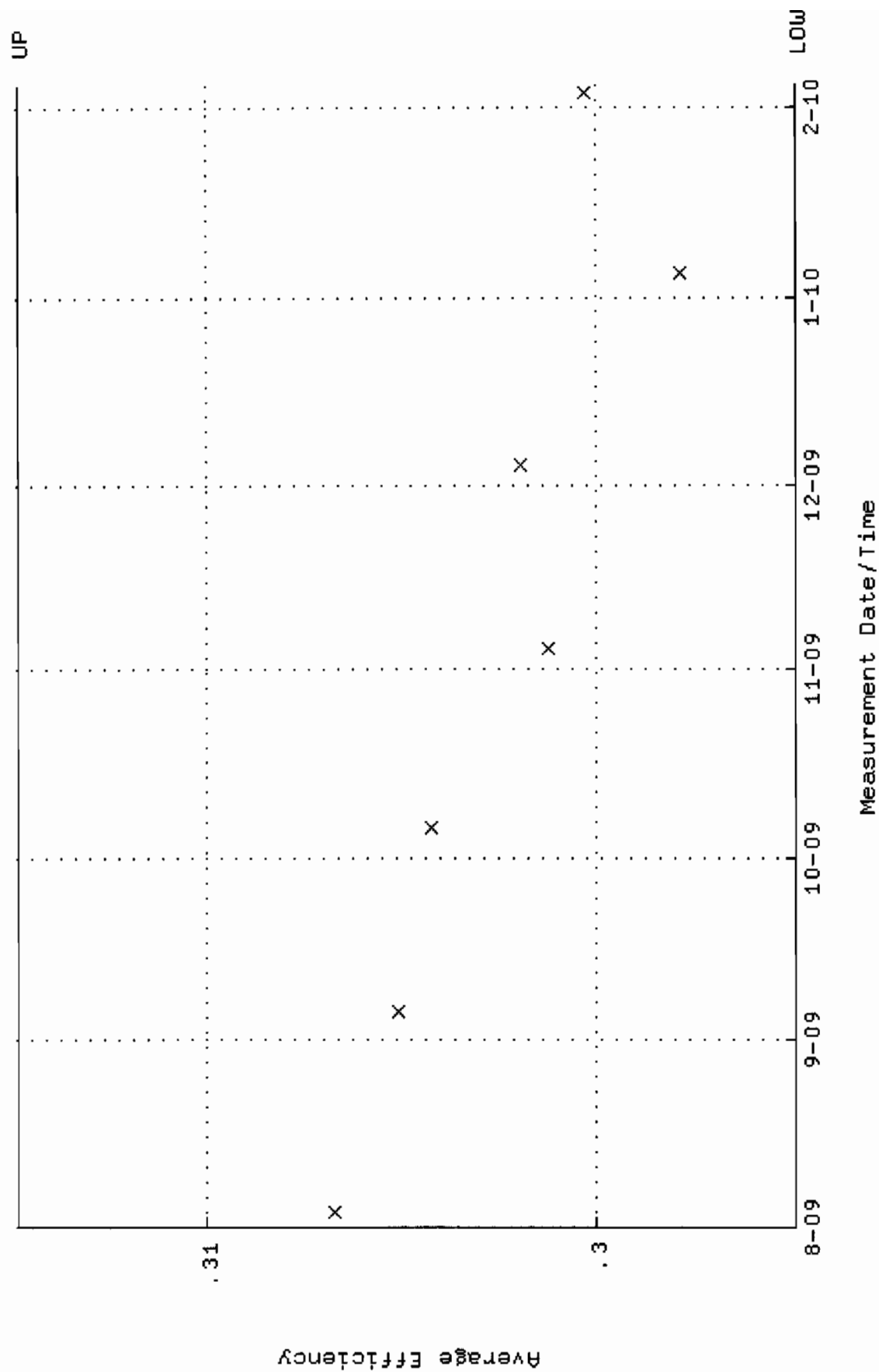
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:35 through 4-FEB-2010 12:00:00

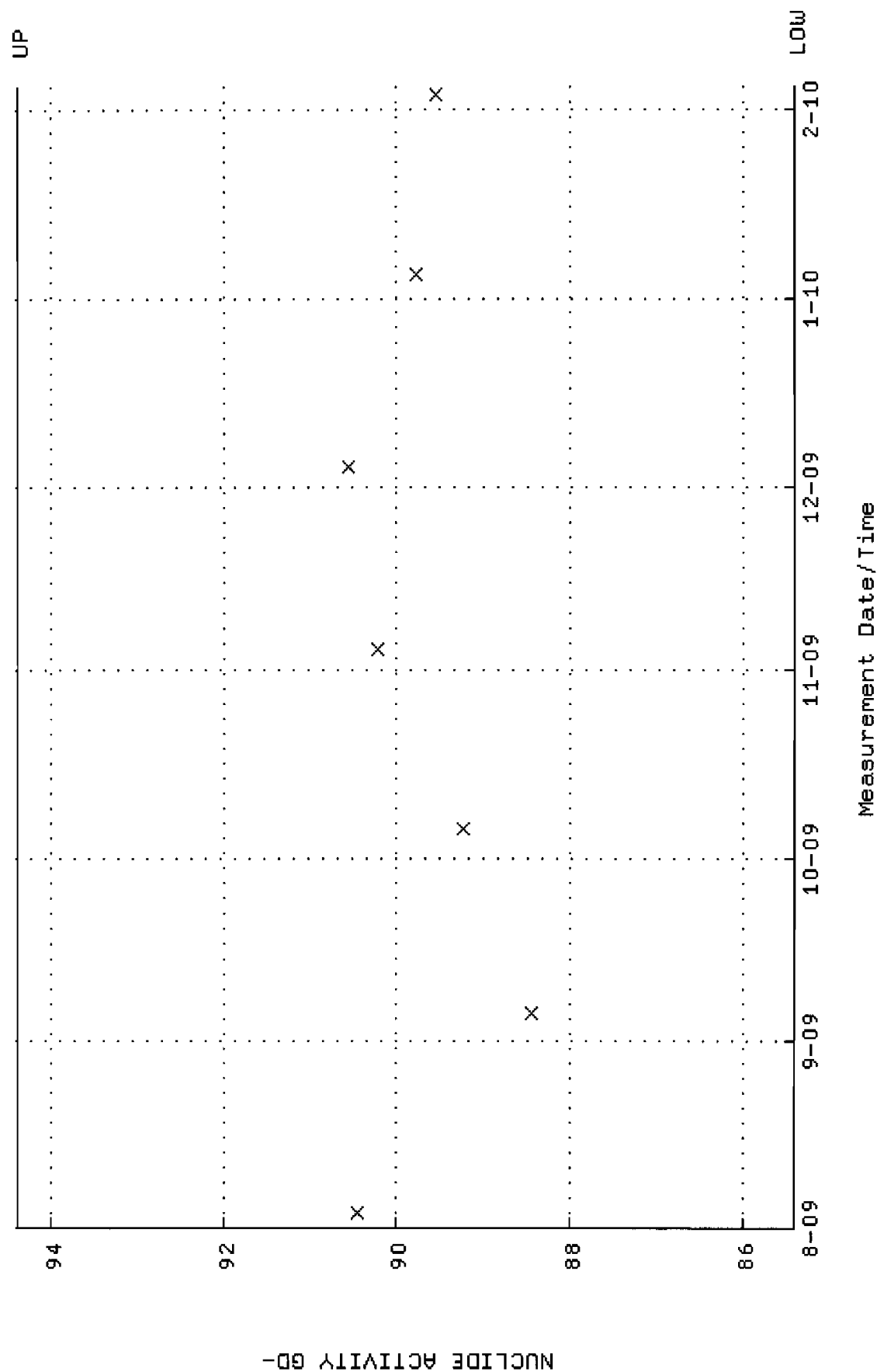
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.294859 through 0.314859



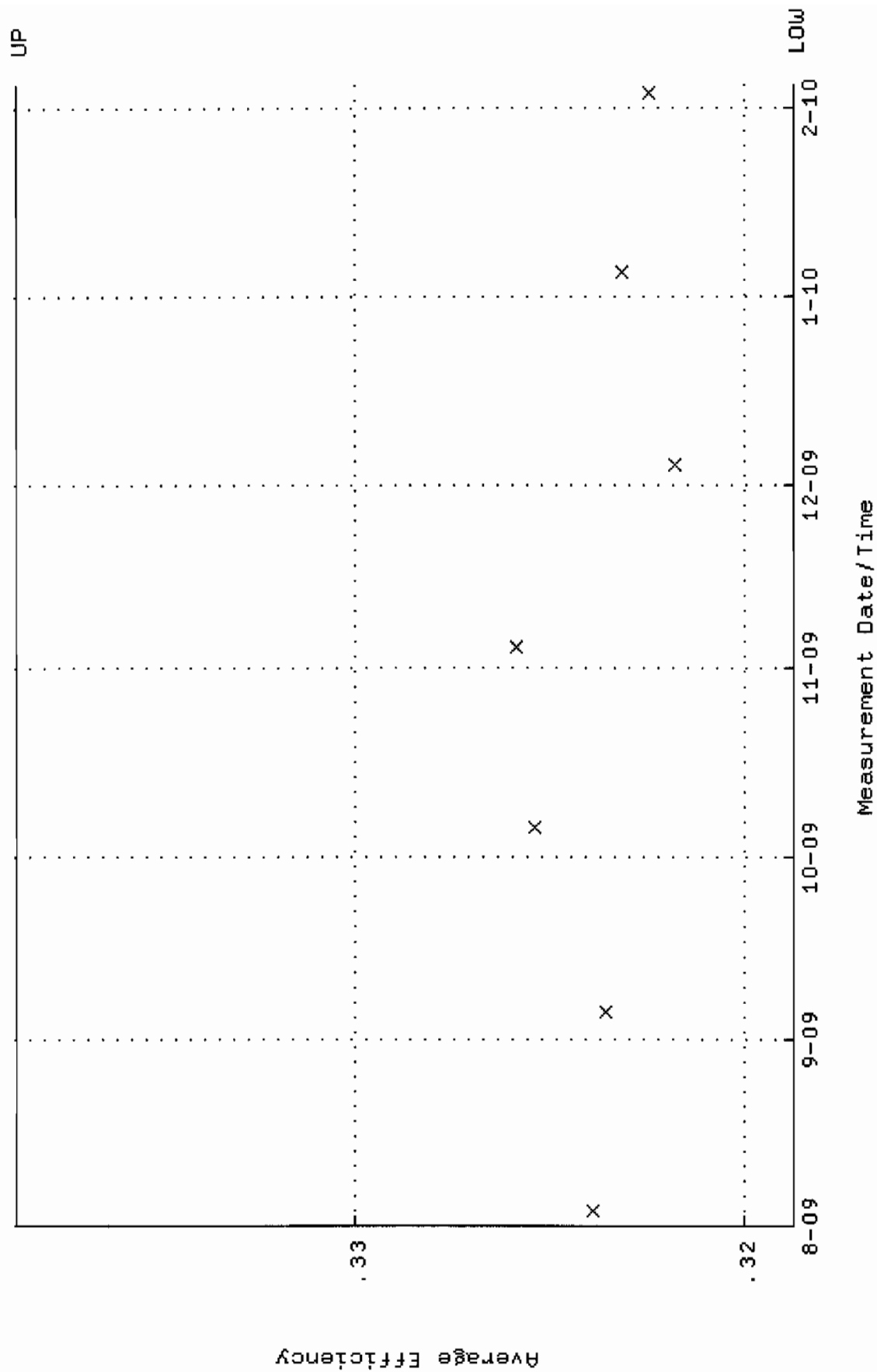
QA filename : DKA100:[ENV_ALPHA.QA.W]W035.QAF;3
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 85.3984 through 94.3878



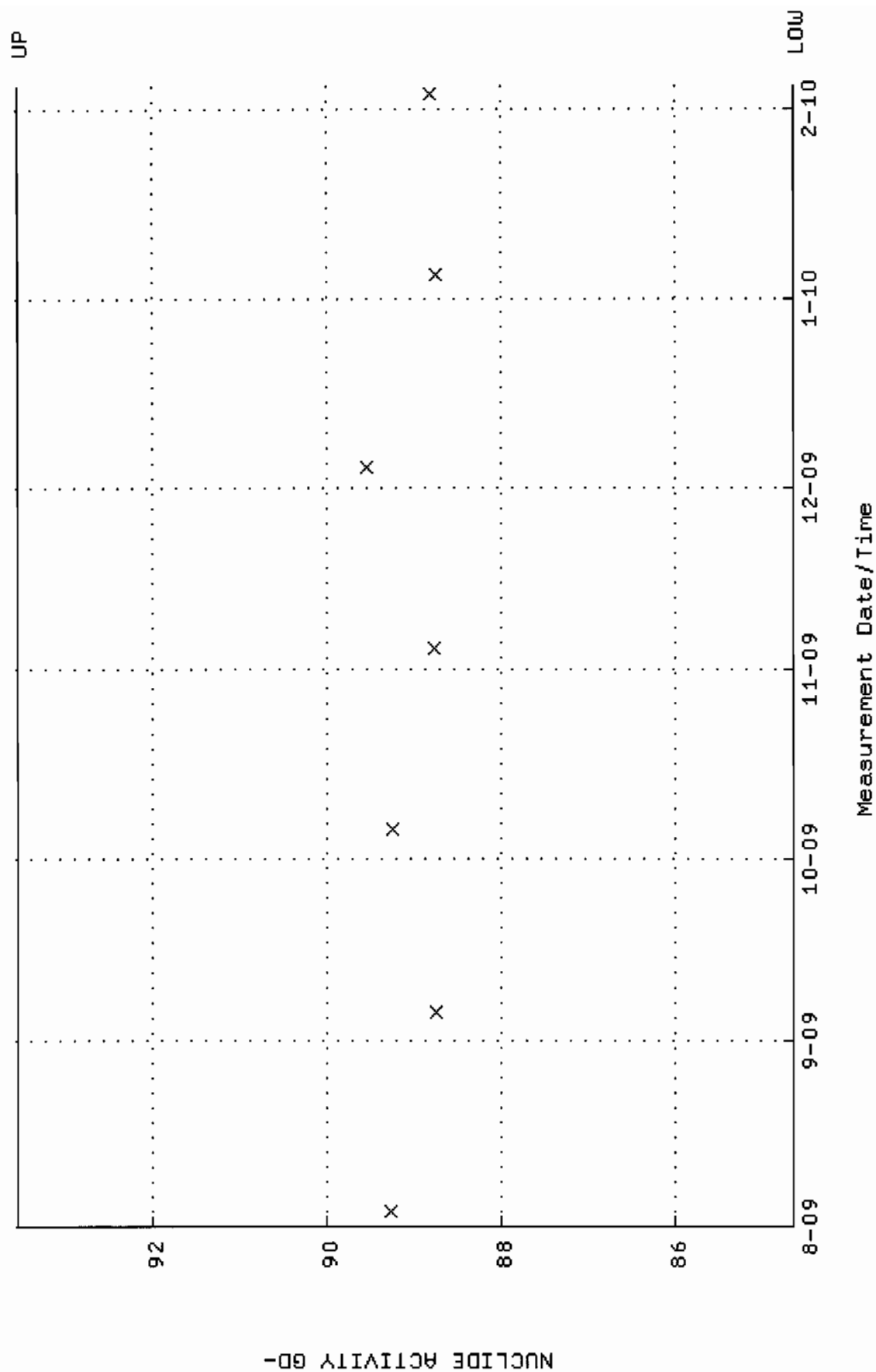
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



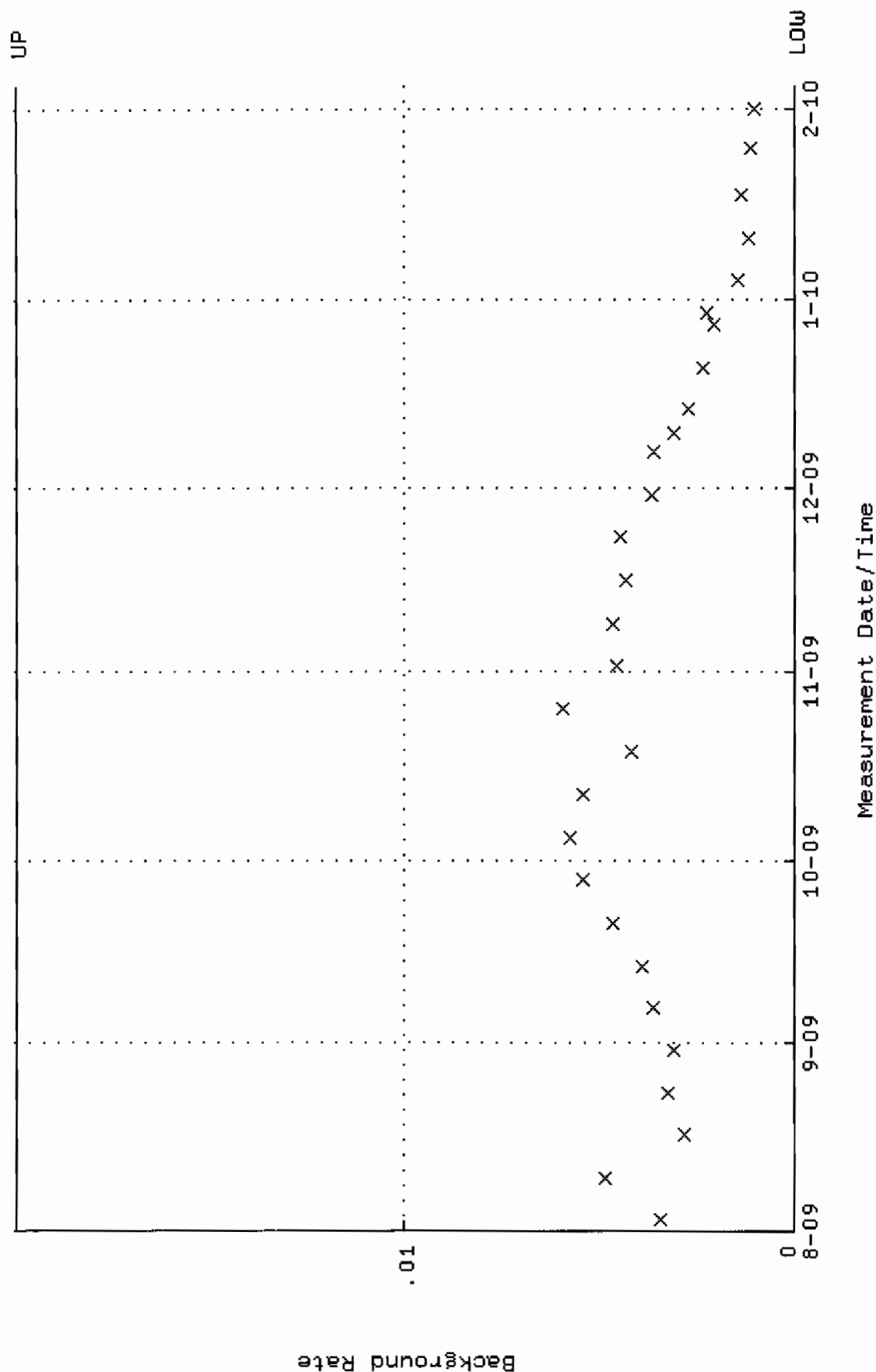
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.318717 through 0.338717



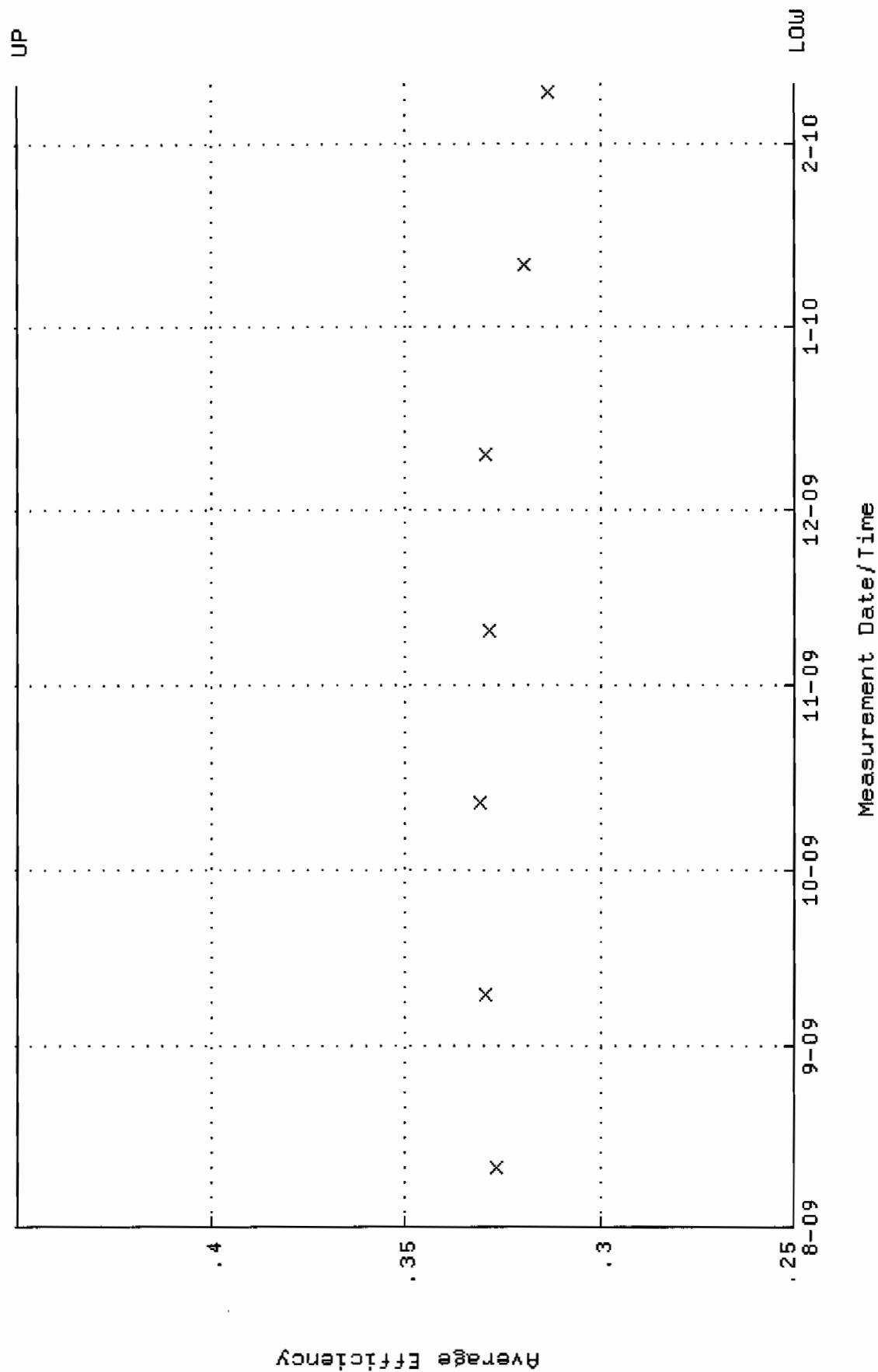
QA filename : DKA100:[ENV_ALPHA.QA.W]W036.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 3-AUG-2009 10:53:41 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.6422 through 93.5518



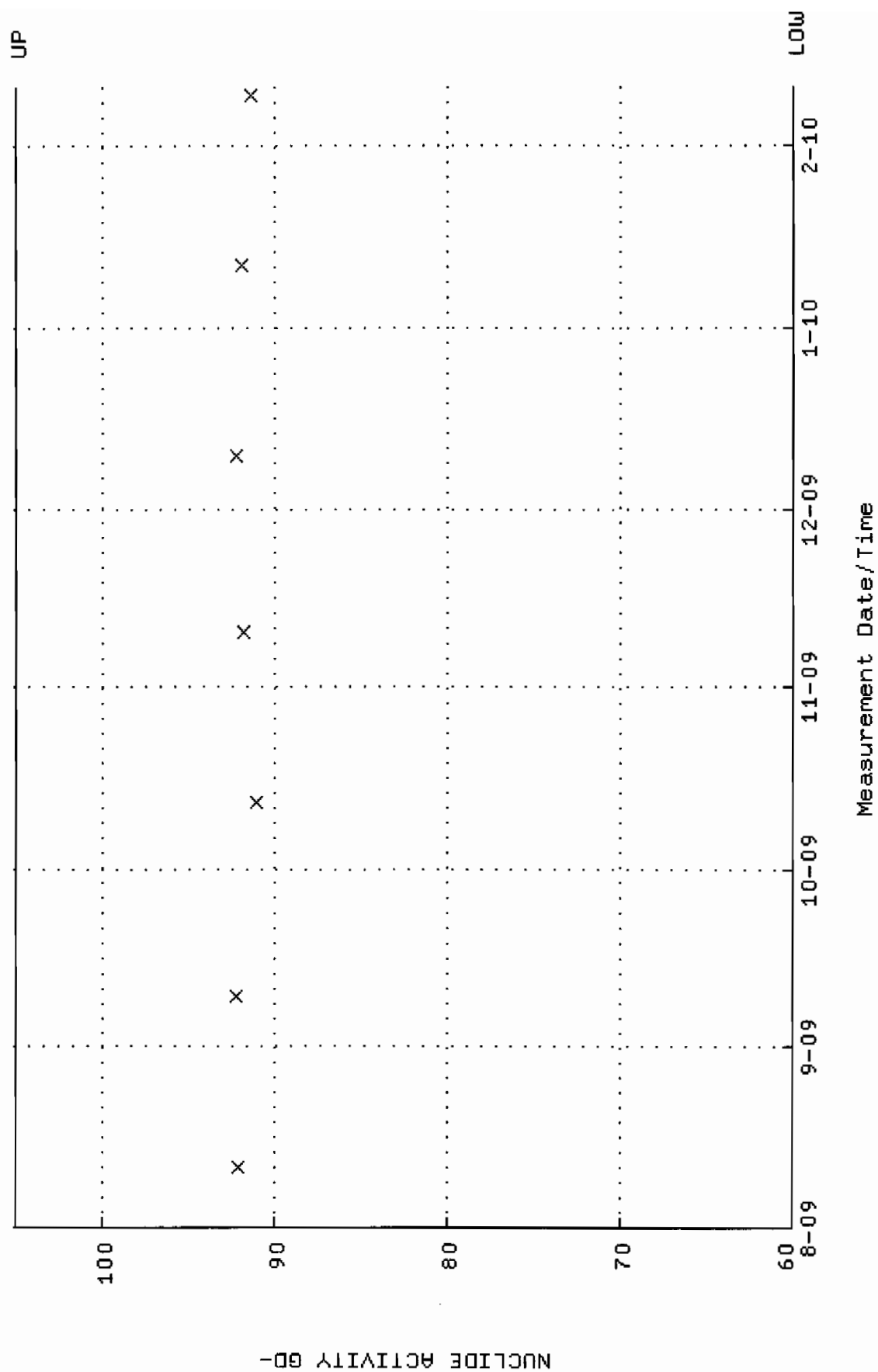
QA filename : DKA100:[ENV_ALPHA.QA.B]B036.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:35 through 4-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



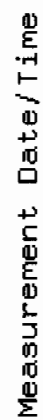
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.250000 through 0.450000



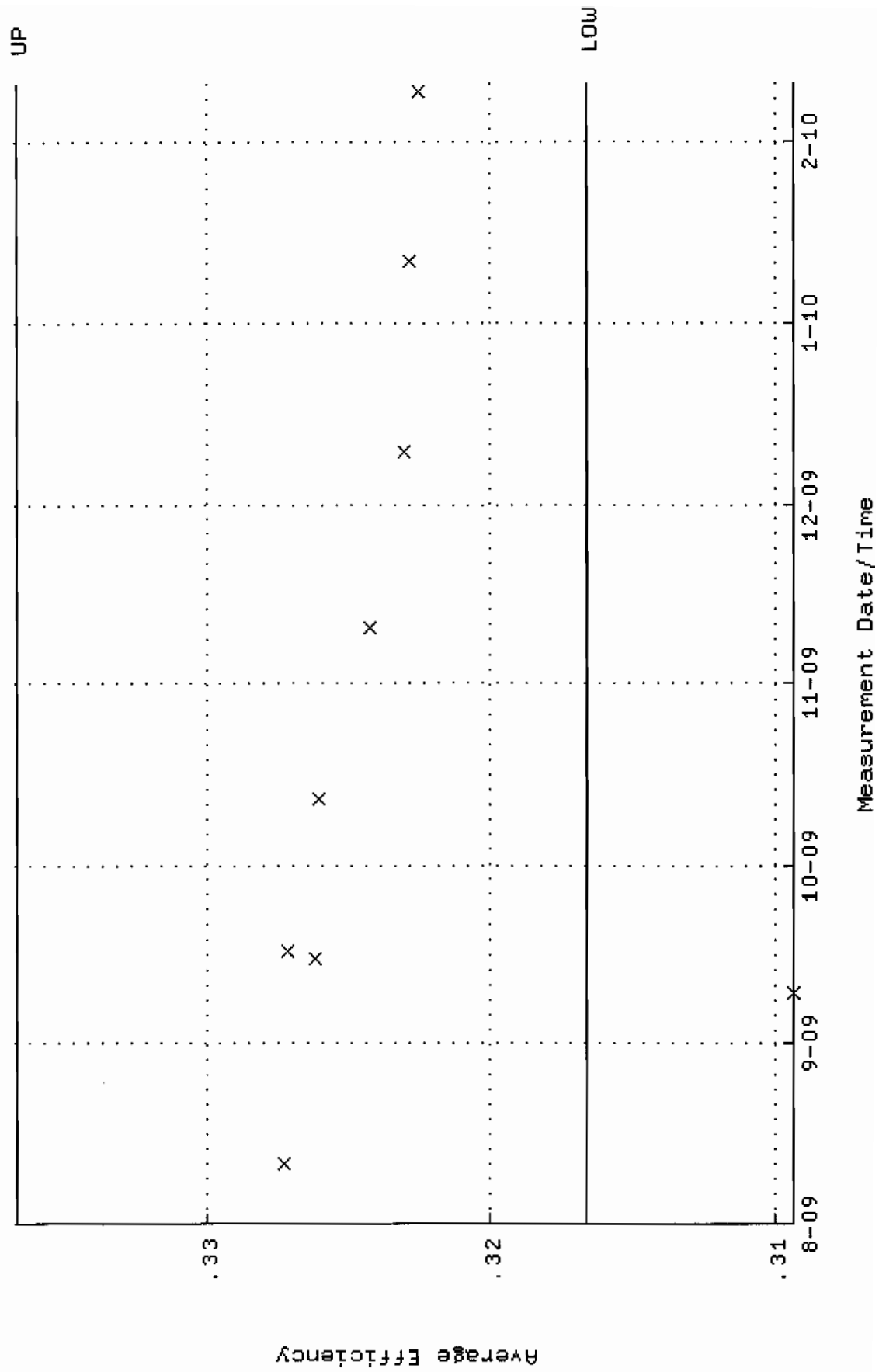
QA filename : DKA100:[ENV_ALPHA.QA.W]W077.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



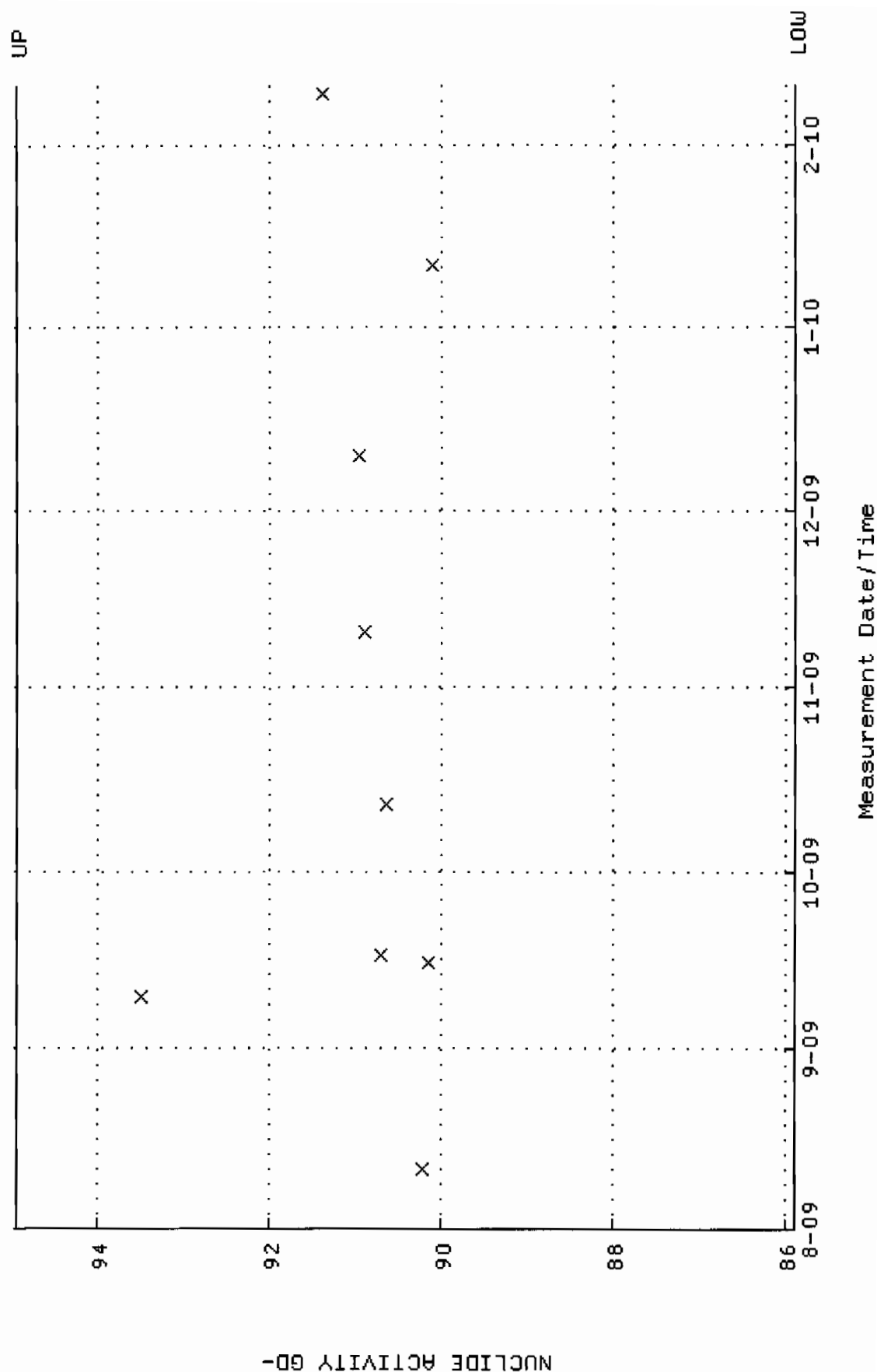
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



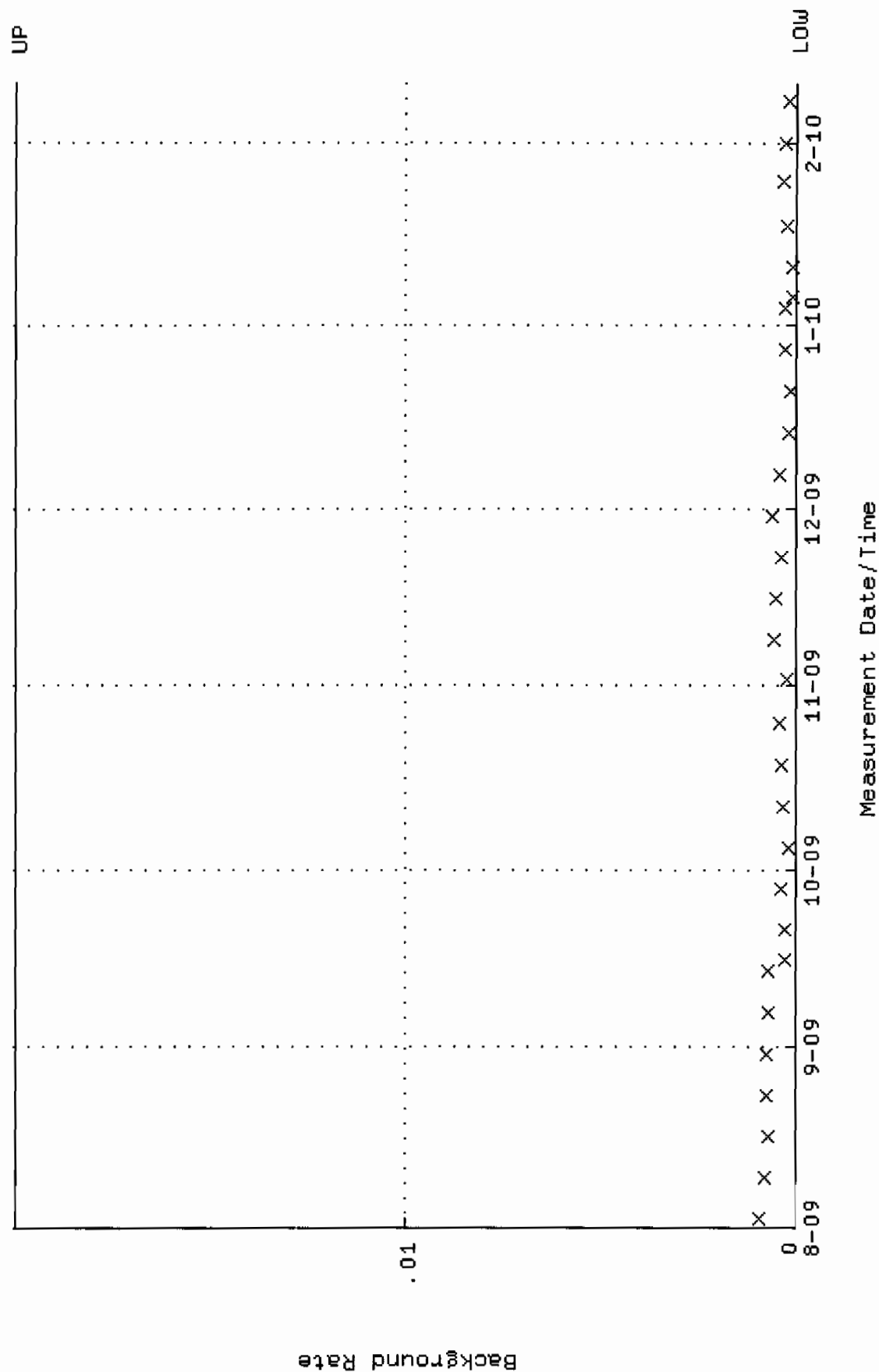
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.316654 through 0.336654



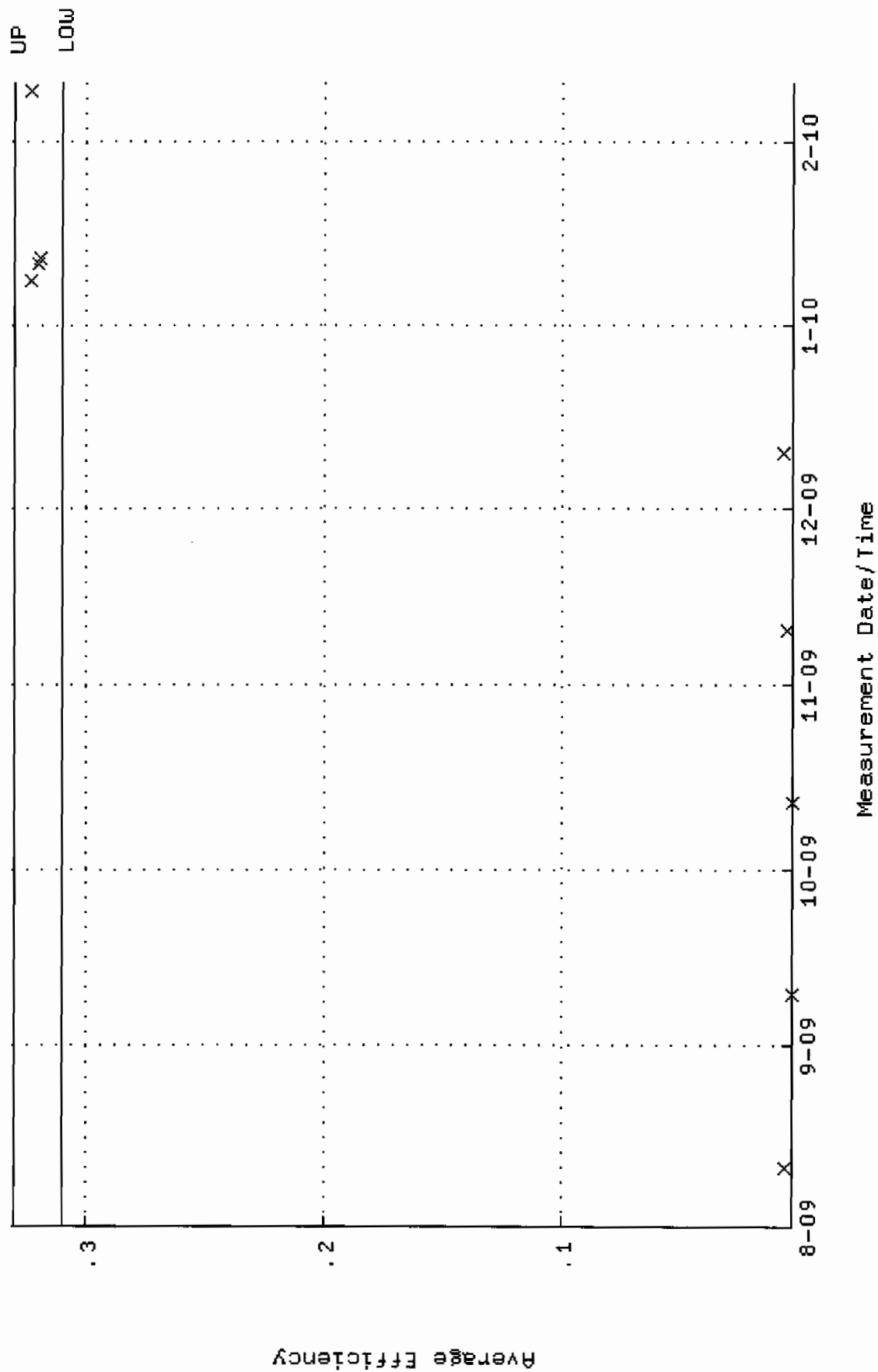
QA filename : DKA100:[ENV_ALPHA.QA.W]W079.QAF;4
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 85.8913 through 94.9325



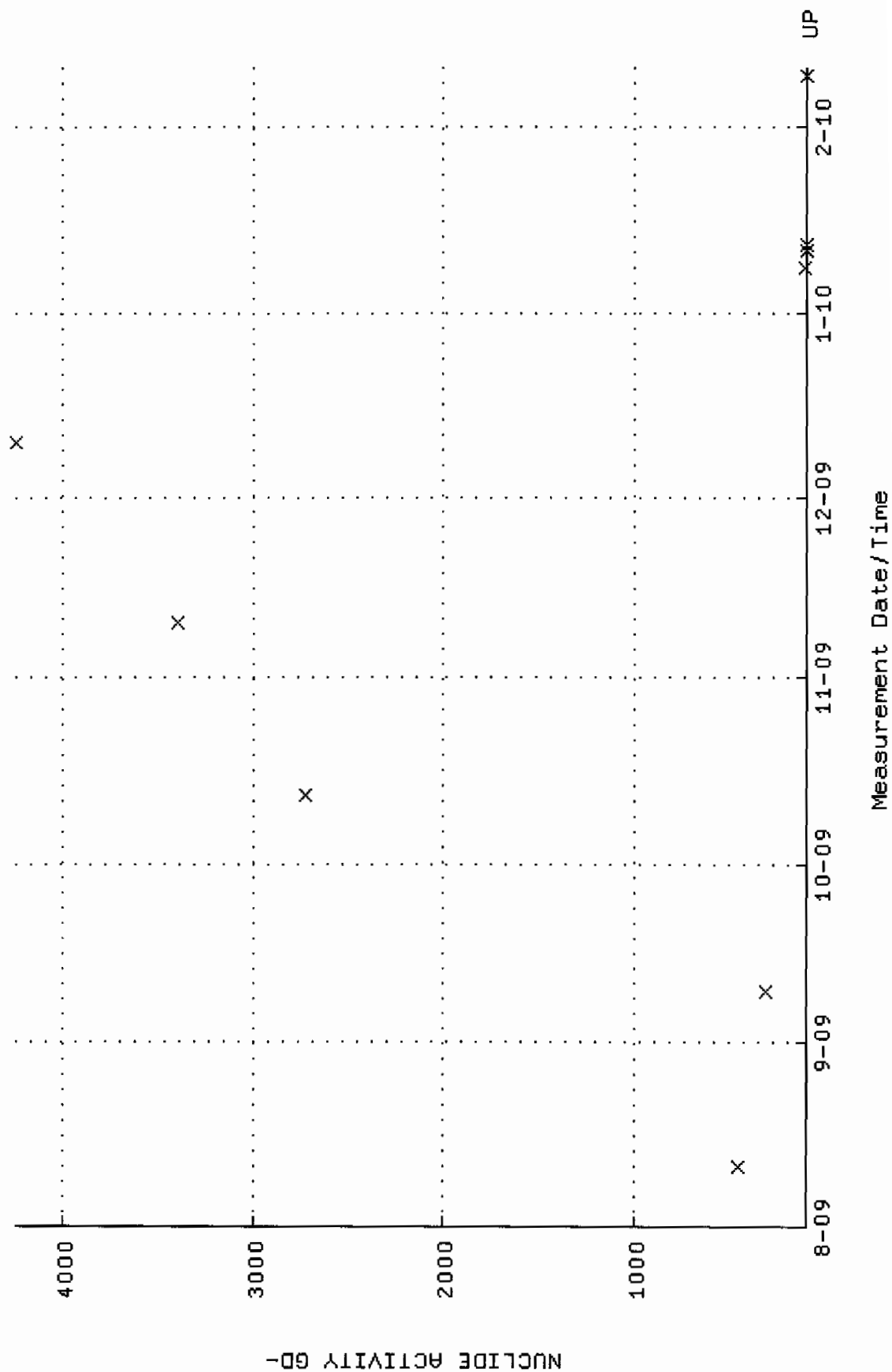
QA filename : DKA100:[ENV_ALPHA.QA.B]B079.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:40 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



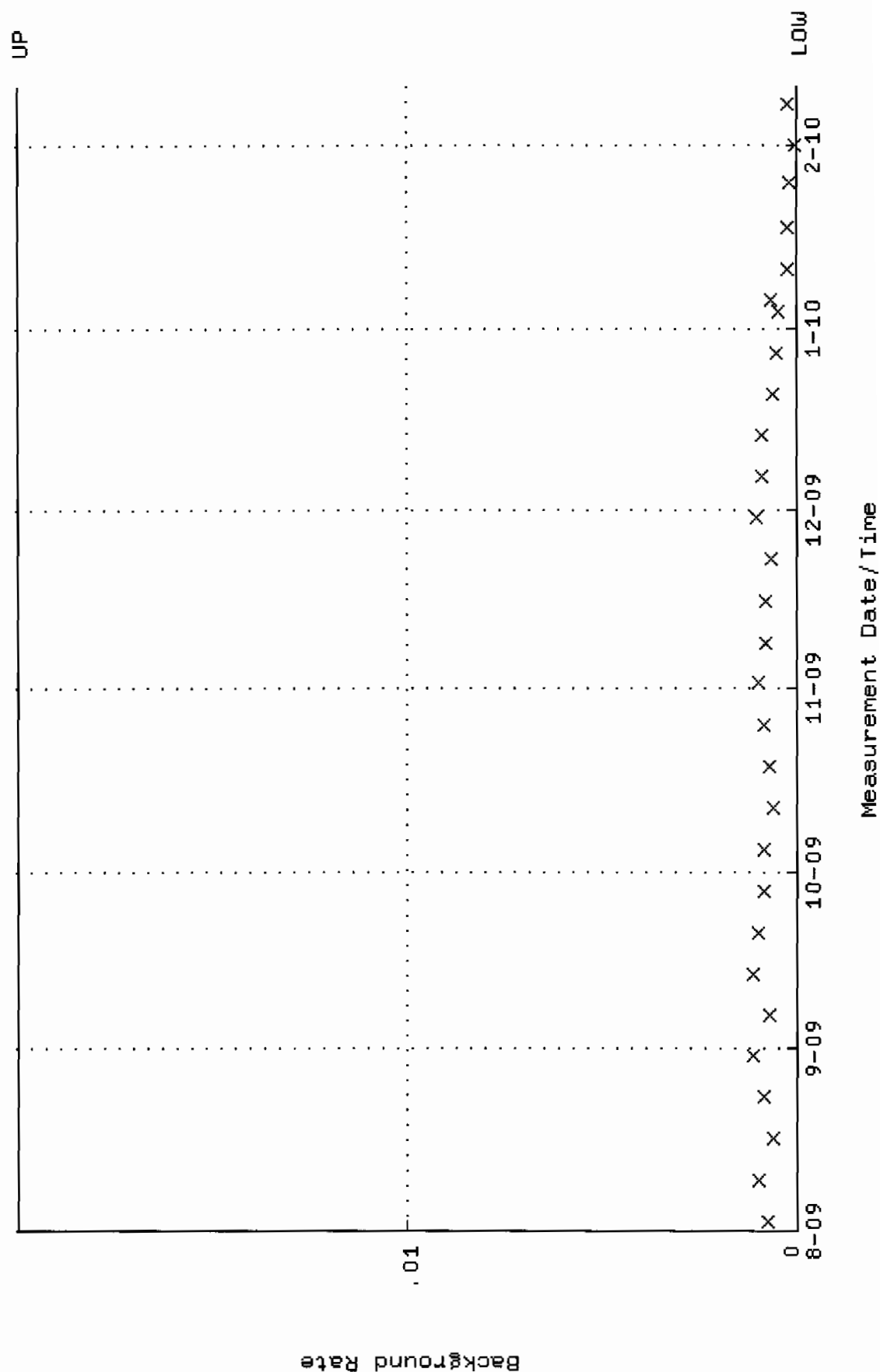
QA filename : DKA100:[ENV_ALPHA.QA.W]W081.QAF;5
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.310202 through 0.330202



QA filename : DKA100:[ENV_ALPHA.QA.w]w081.QAF;5
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 89.2016 through 98.5912



QA filename : DKA100:[ENV_ALPHA.QA.B]B081.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:40 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

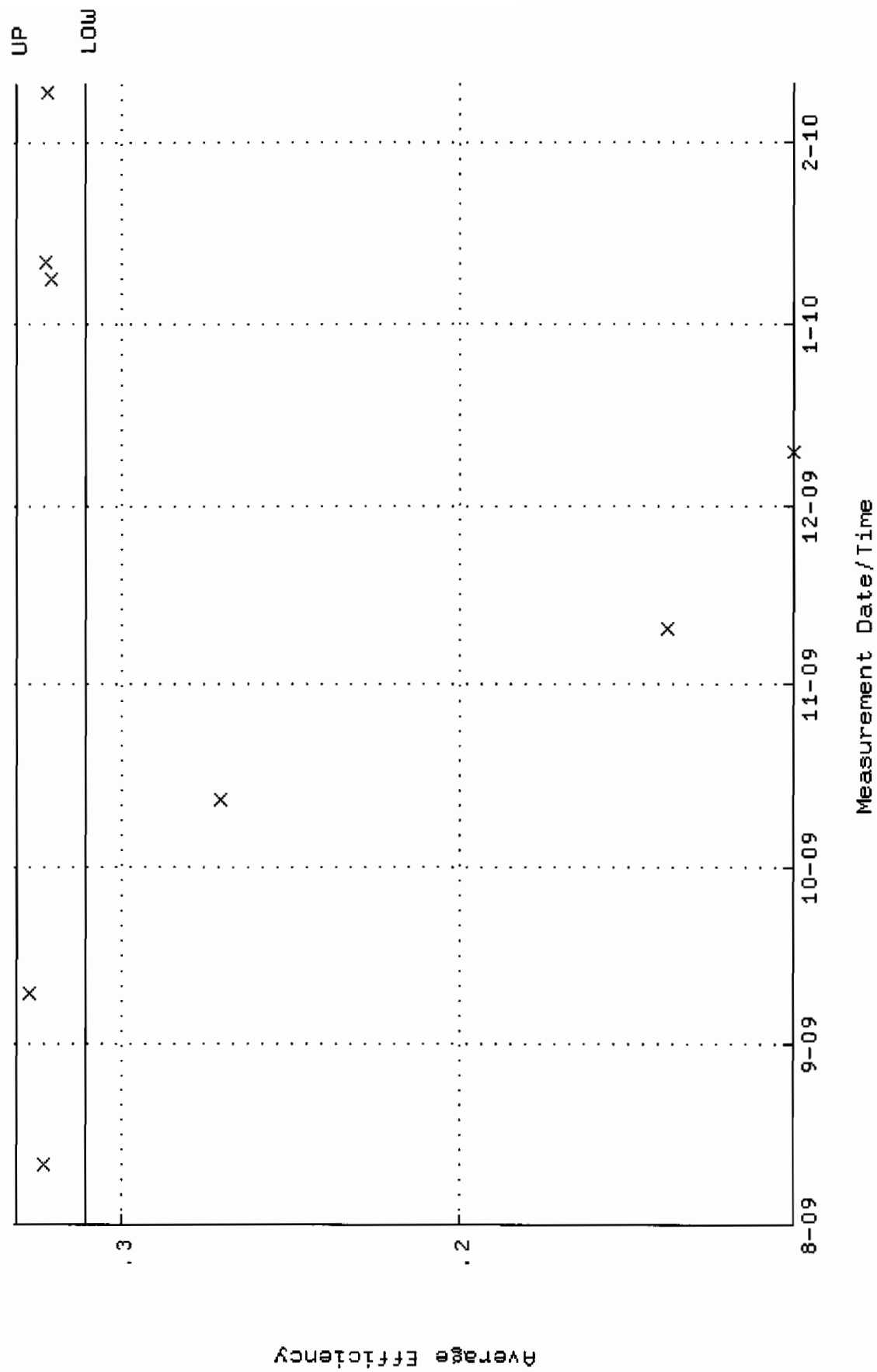


QA filename : DKA100:[ENV_ALPHA.QA.W]W082.QAF;5

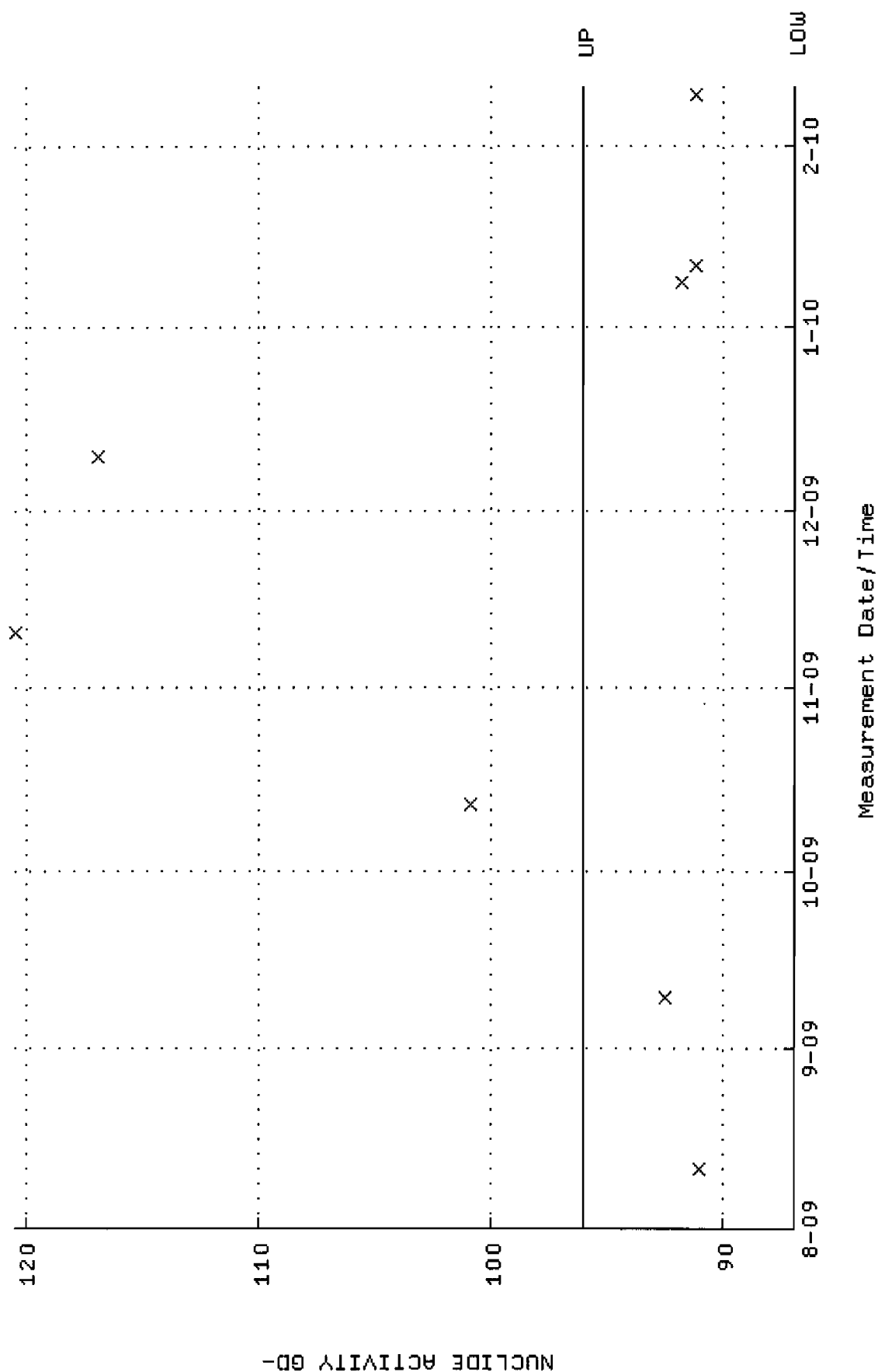
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00

Lower/Upper Lmts: 0.311357 through 0.331357



QA filename : OKA100:[ENV_ALPHA.QA.W]W082.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:12 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.9094 through 96.0578

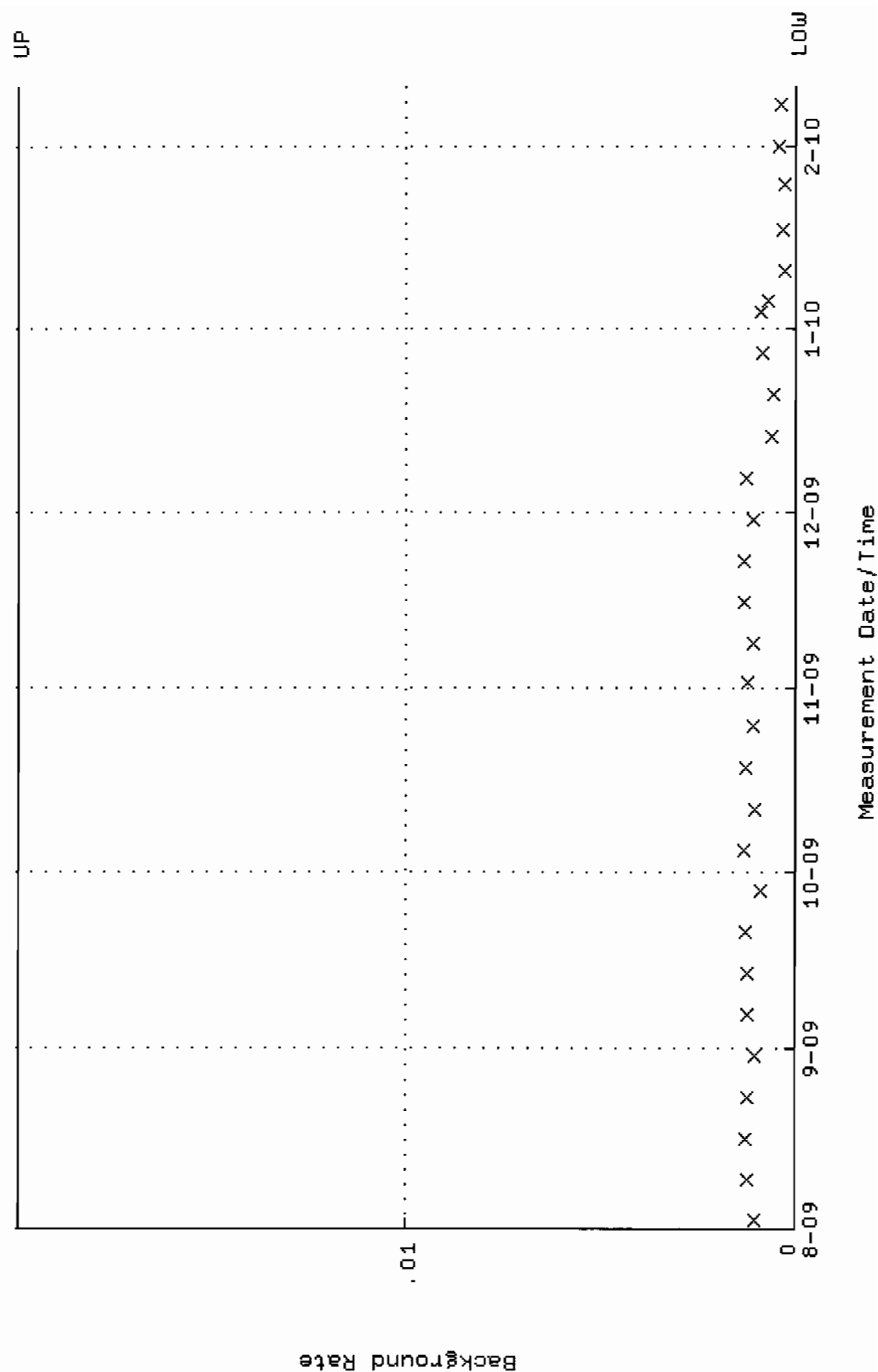


QA filename : DKA100:[ENV_ALPHA.QA.B]B082.QAF;2

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:40 through 10-FEB-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

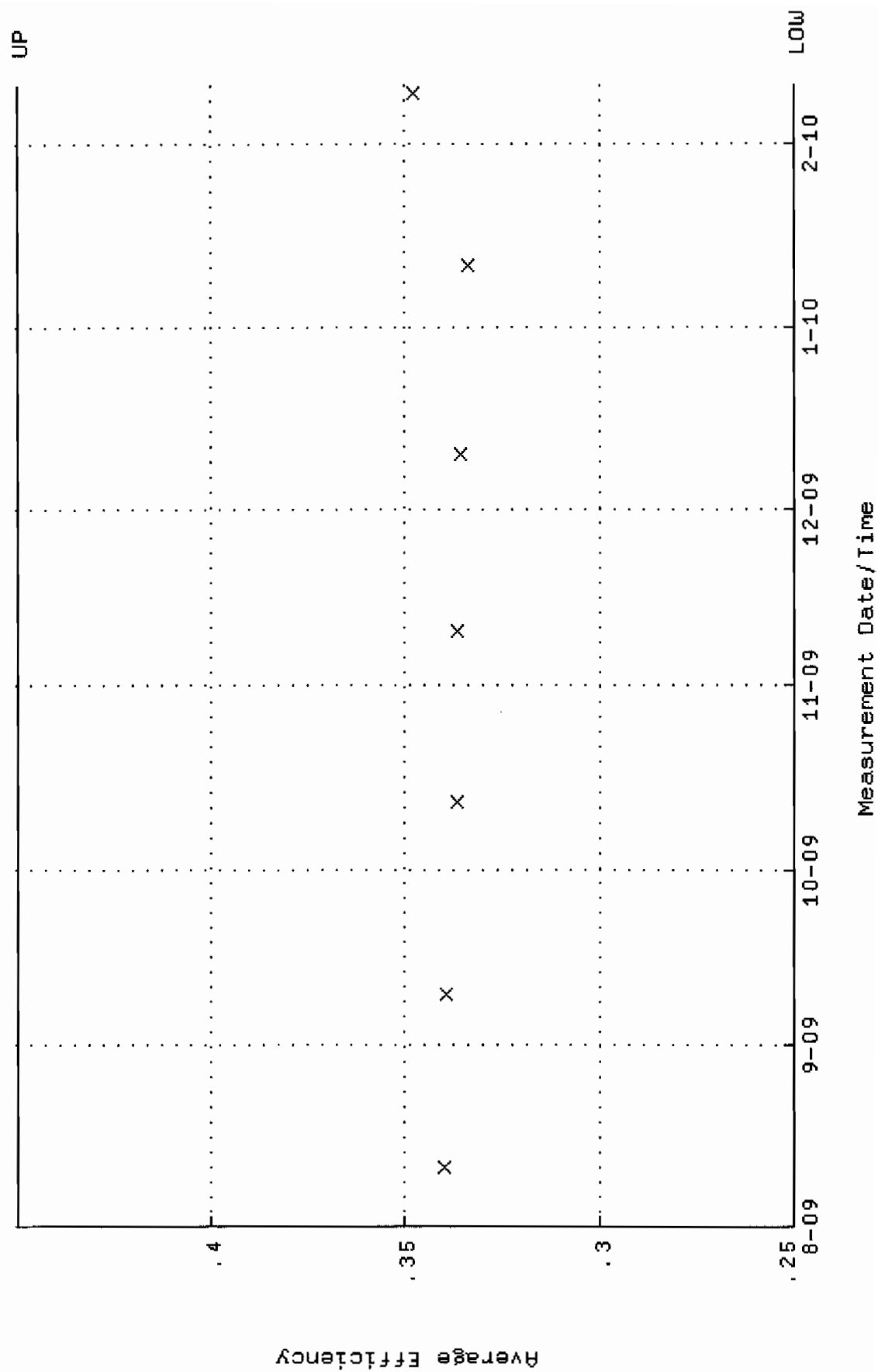


QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5

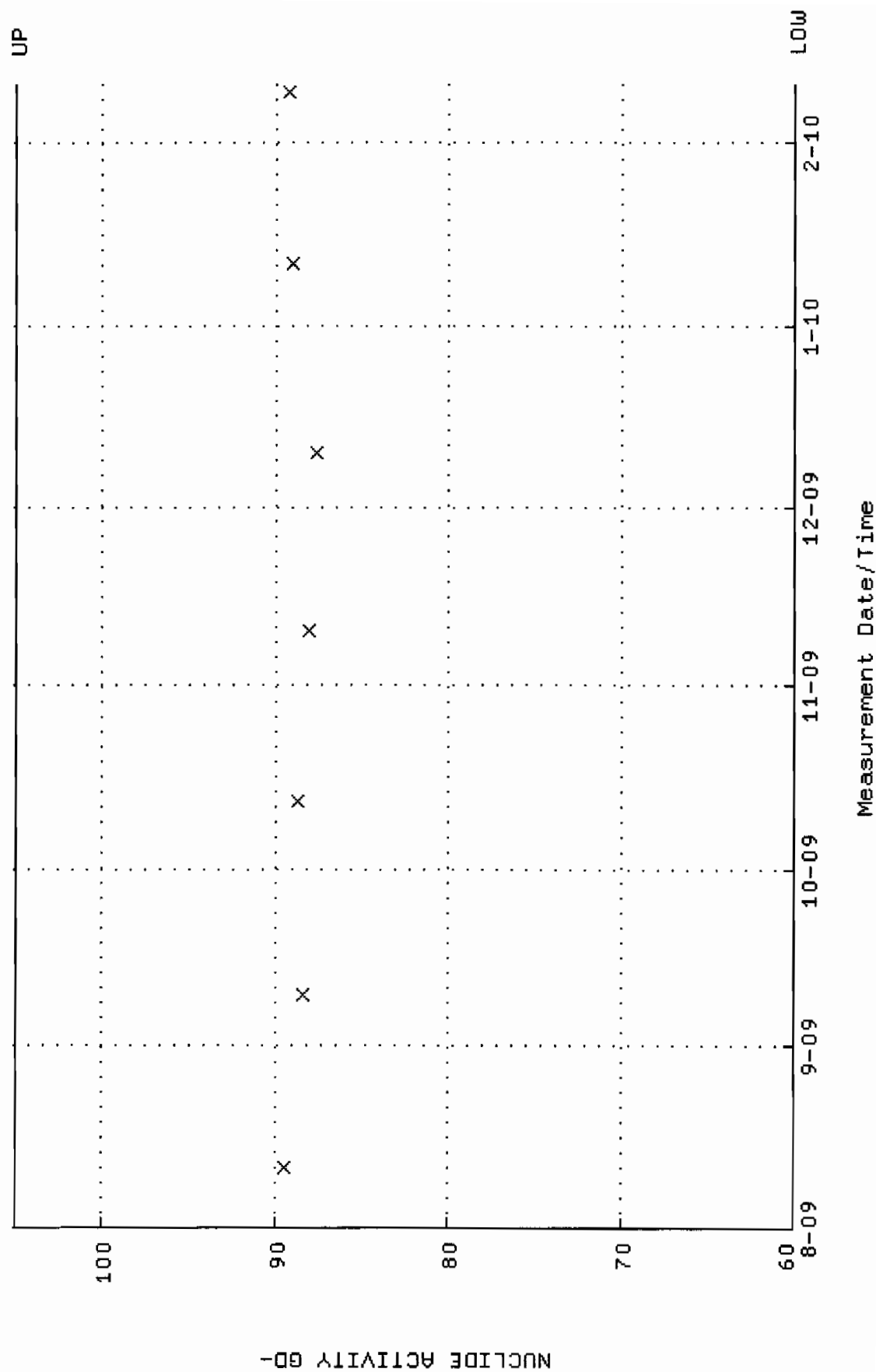
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00

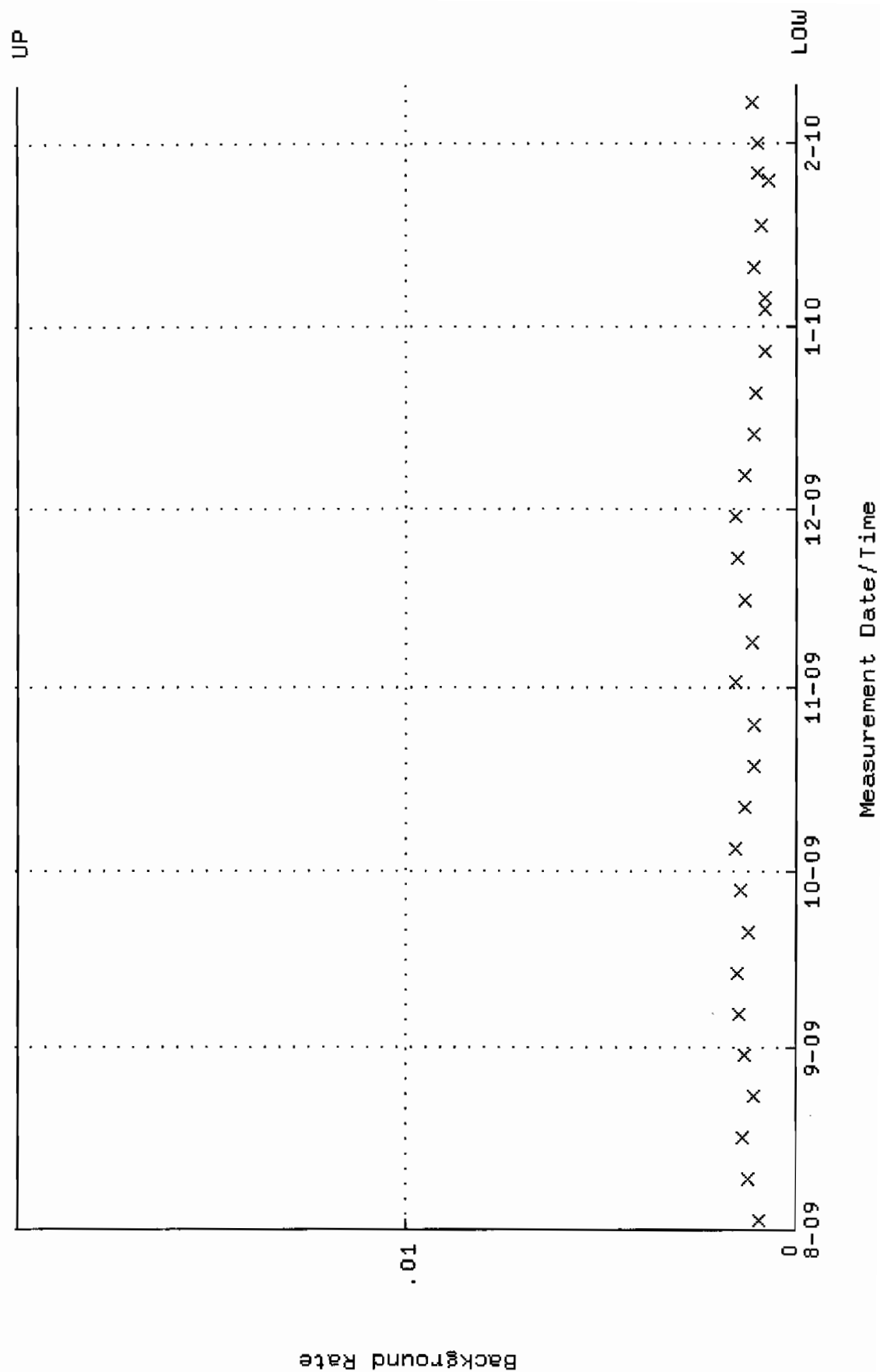
Lower/Upper Lmts: 0.250000 through 0.450000



QA filename : DKA100:[ENV_ALPHA.QA.W]W083.QAF;5
 Parameter Name : NLACTIVITY-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 105.0000



| | |
|------------------|--|
| QA filename | : DKA100:[ENV_ALPHA.QA.B]B083.QAF;3 |
| Parameter Name | : BACKRATE (Background Rate) |
| Start/End Dates | : 2-AUG-2009 17:38:41 through 10-FEB-2010 17:38:41 |
| Lower/Upper Lmts | : 0.000000E+00 through 2.000000E-02 |

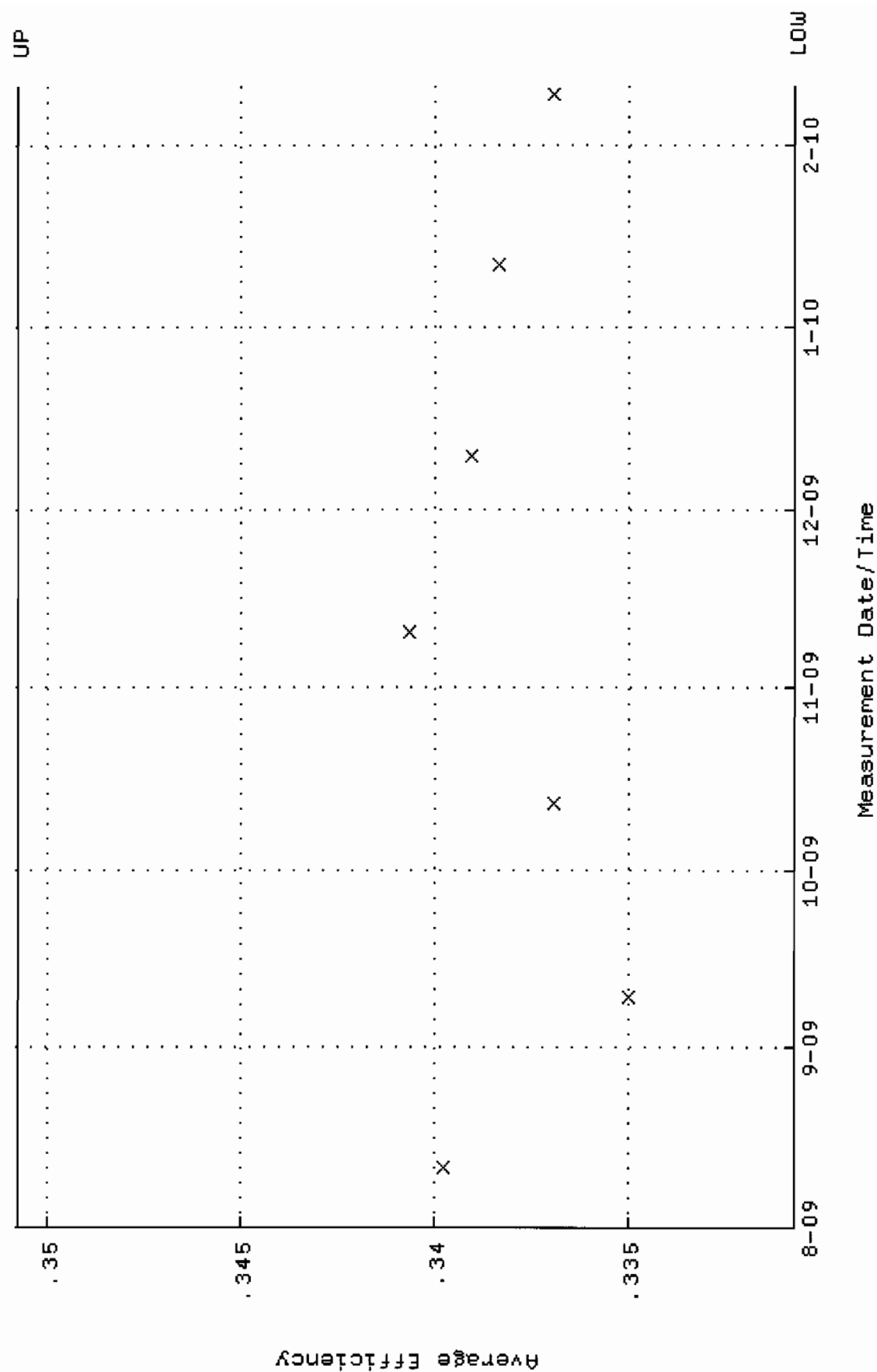


QA filename : DKA100:[ENV_ALPHA.QA.W]W084.QAF;5

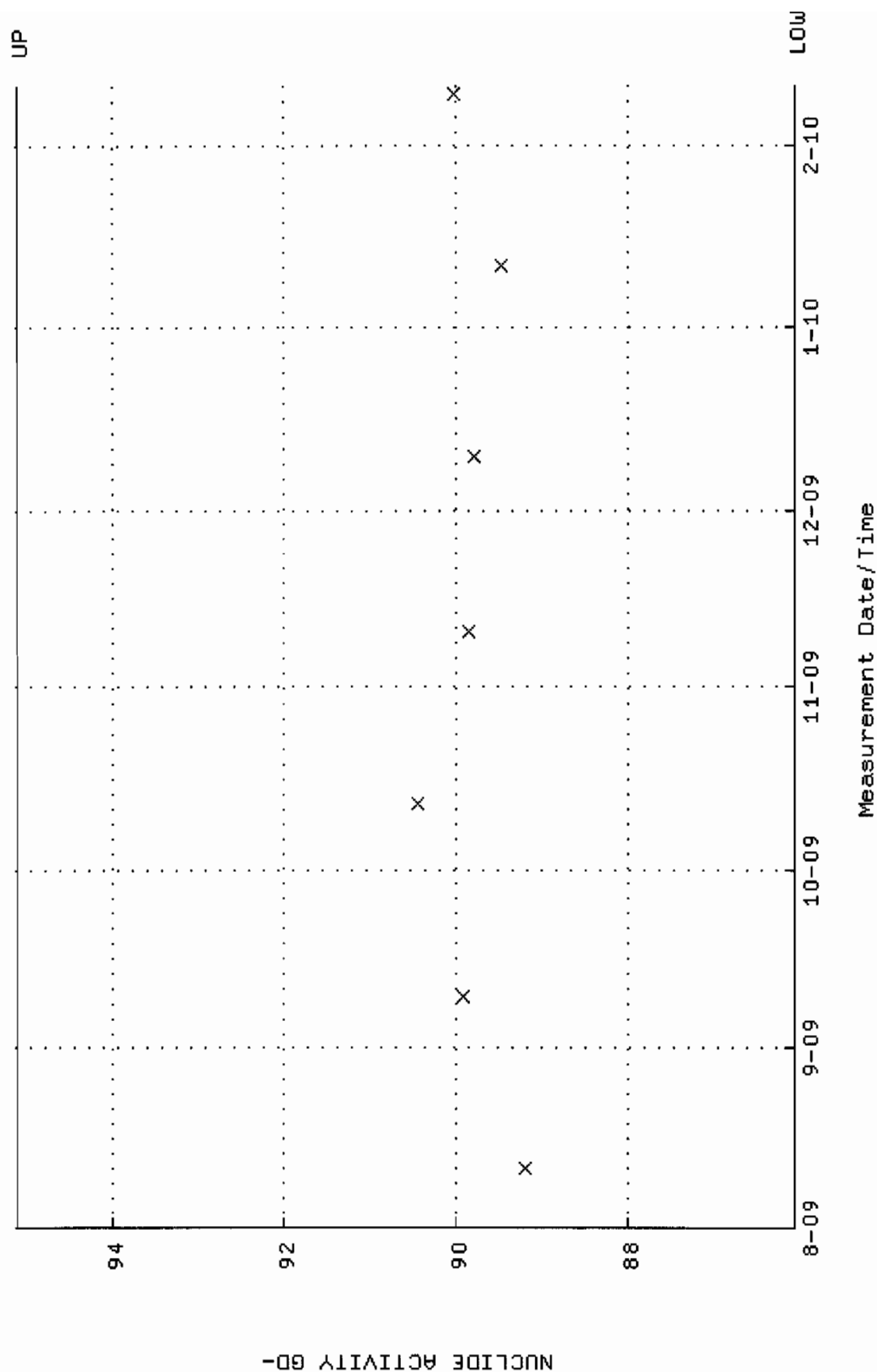
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00

Lower/Upper Lmts: 0.330740 through 0.350740



QA filename : DKA100:[ENV_ALPHA,QA,W]W084.QAF;5
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.0569 through 95.1155

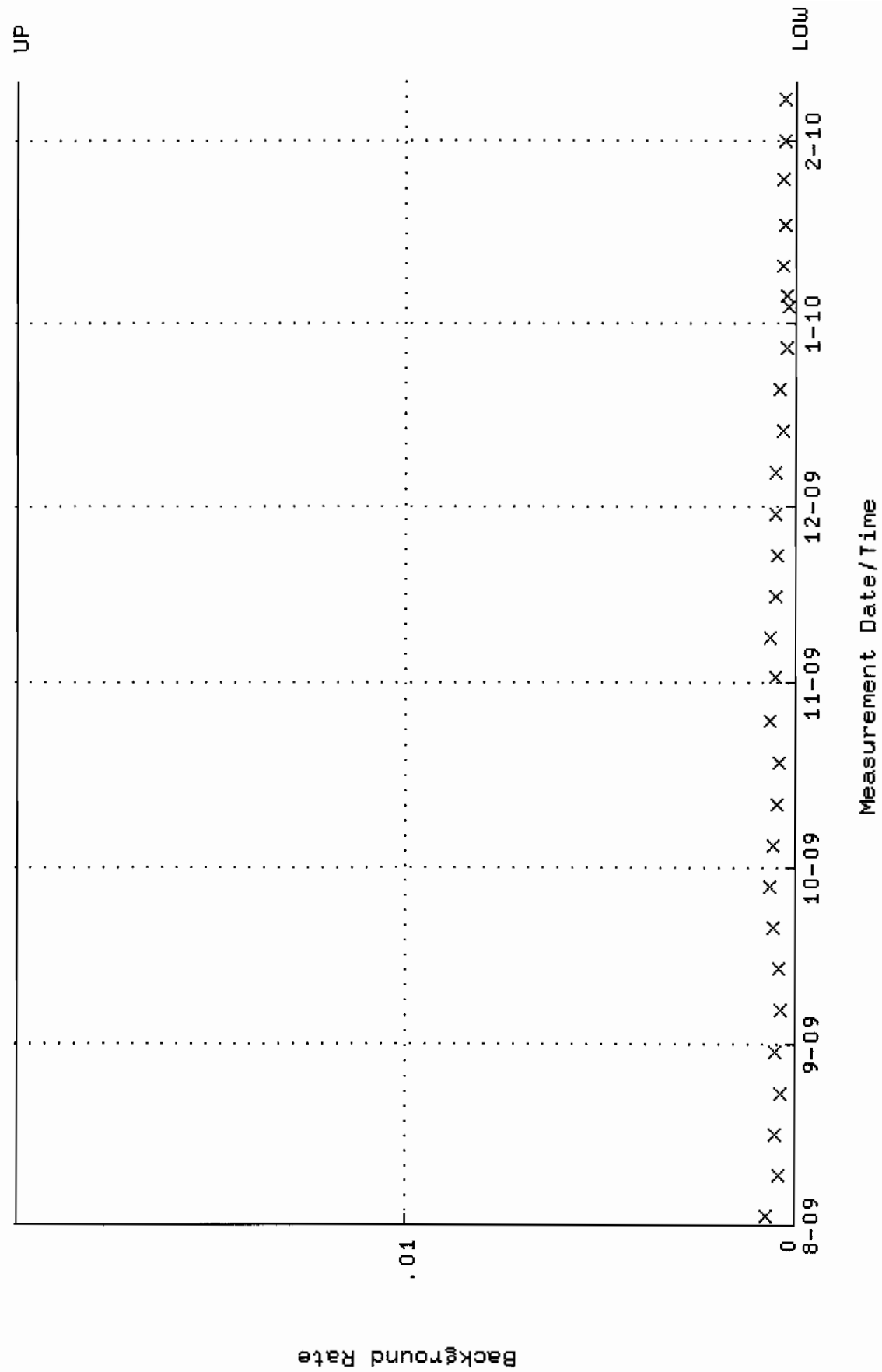


QA filename : DKA100:[ENV_ALPHA.QA.B]B084.QAF;2

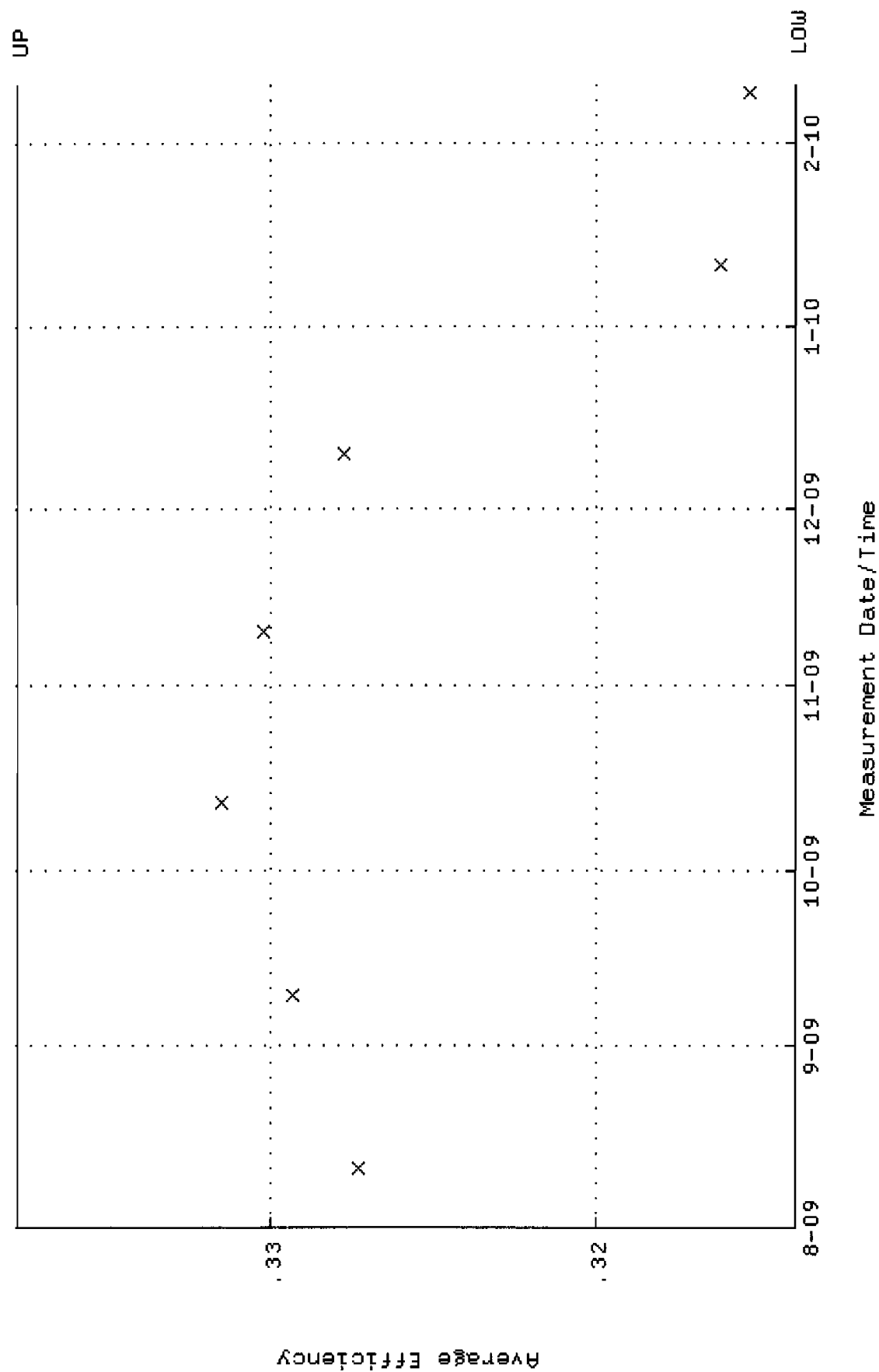
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00

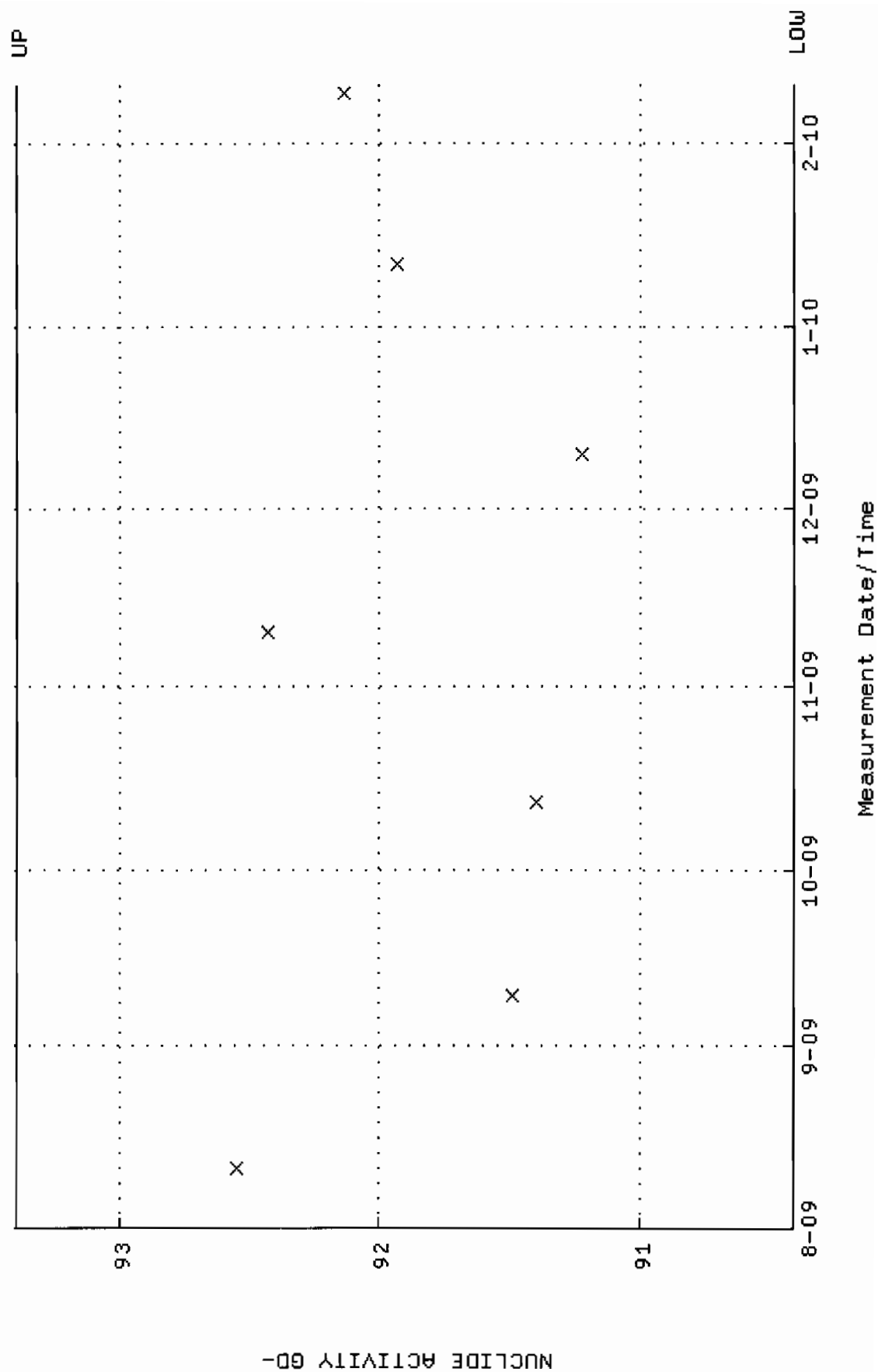
Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



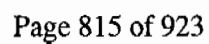
QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.313884 through 0.337714



QA filename : DKA100:[ENV_ALPHA.QA.W]W085.QAF;6
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 90.4059 through 93.3969



Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02

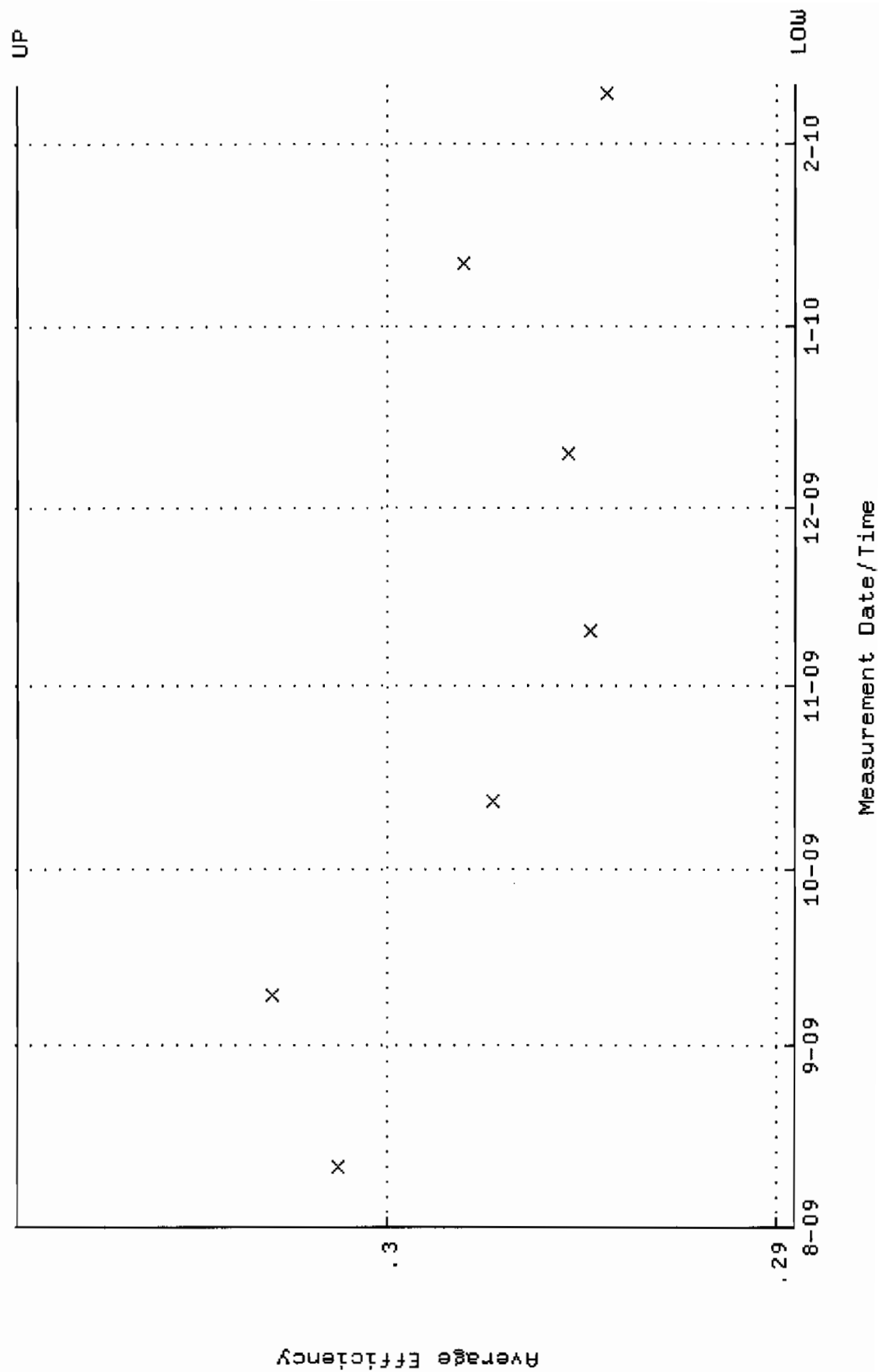


QA filename : DKA100:[ENV_ALPHA.QA.W]W086.QAF;4

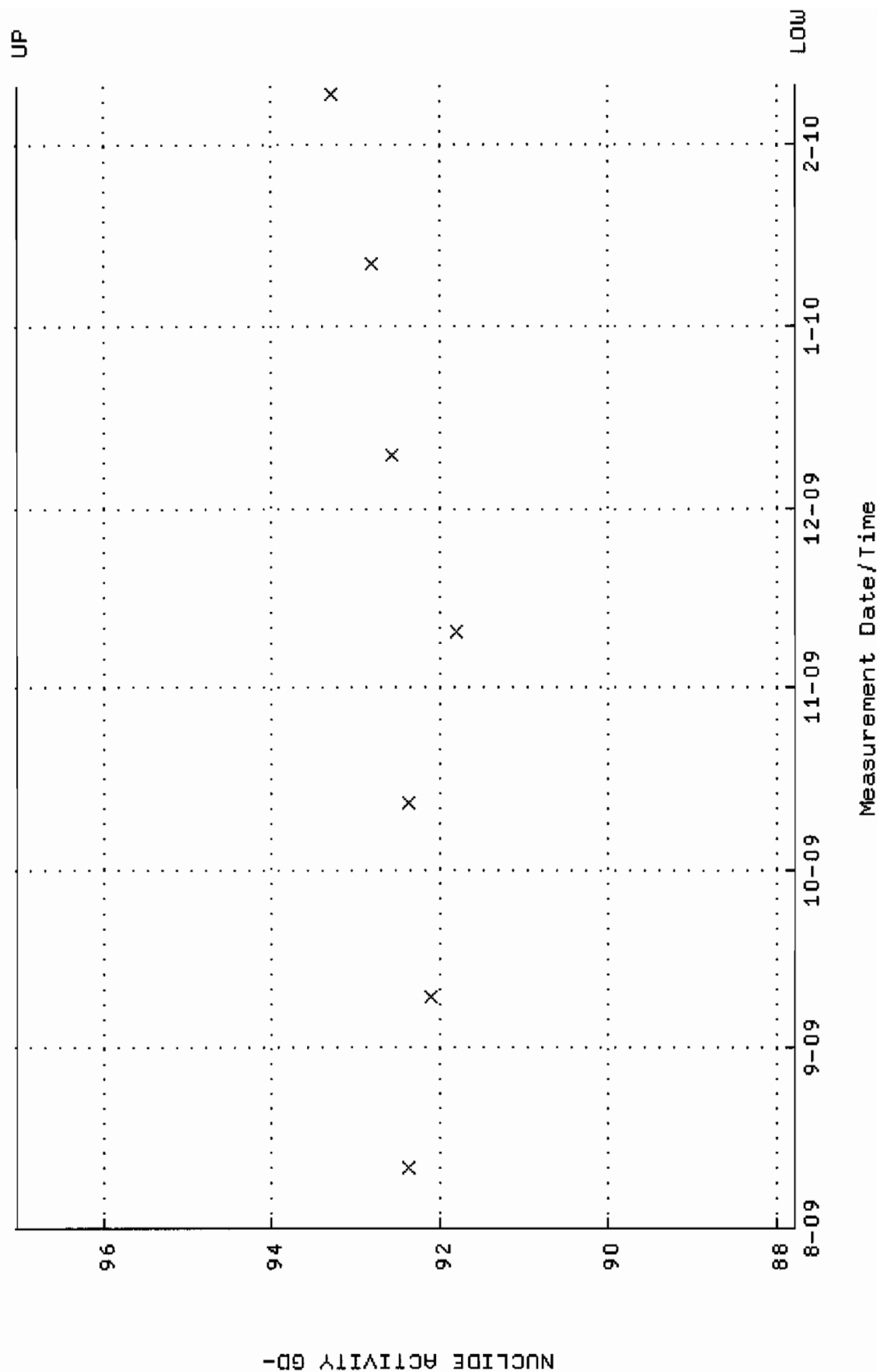
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00

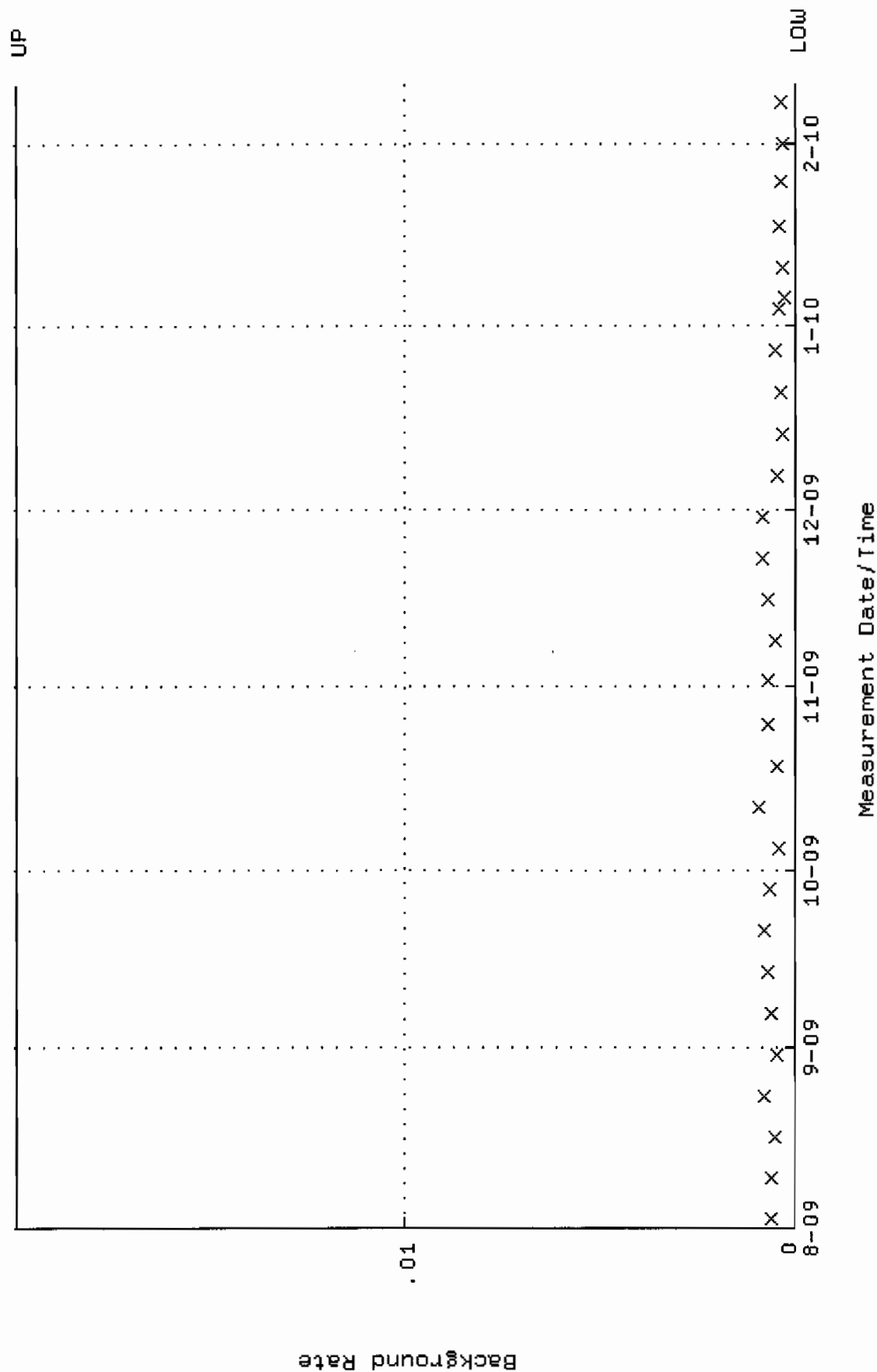
Lower/Upper Lmts: 0.289508 through 0.309508



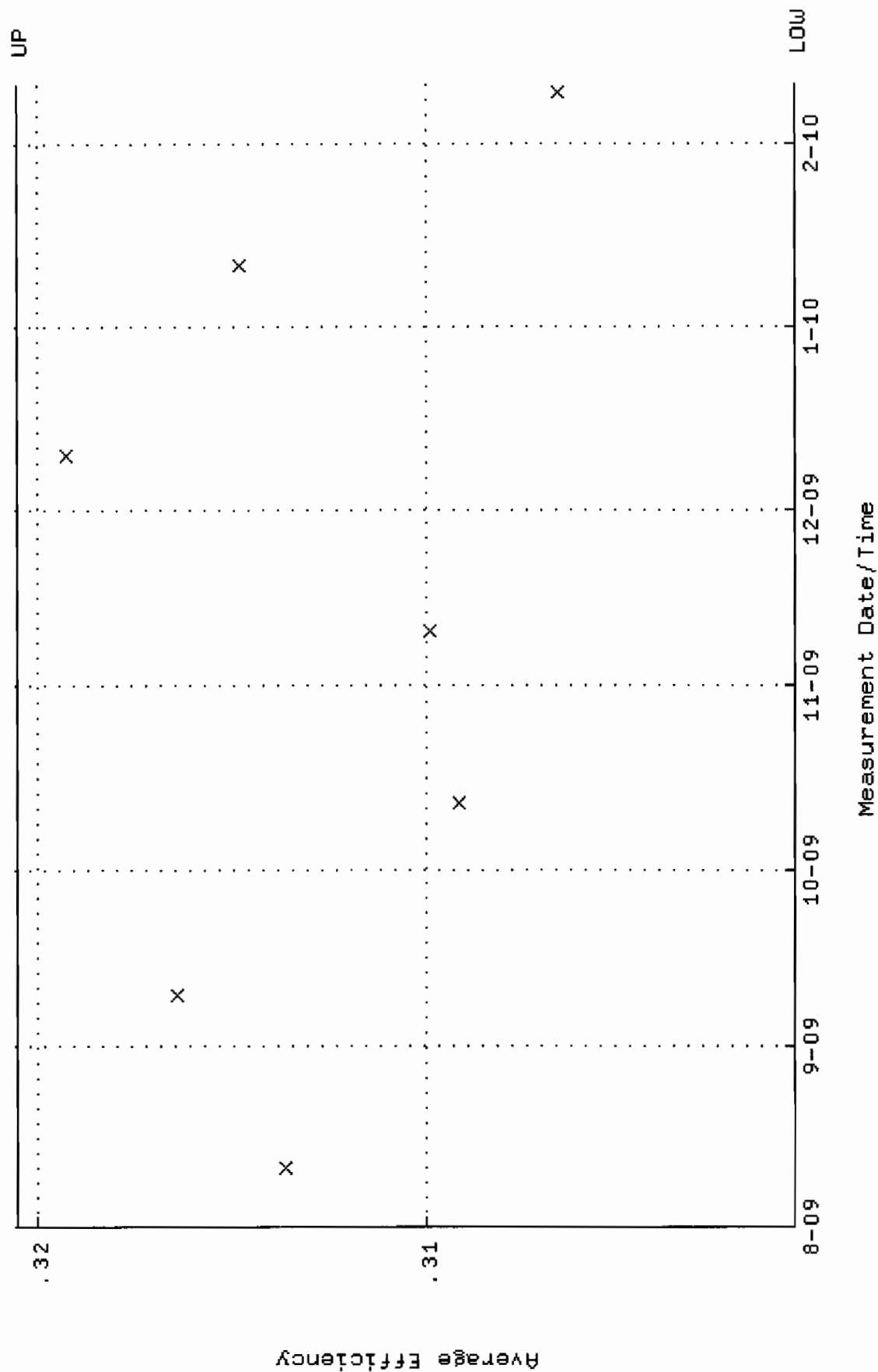
QA filename : DKA100:[ENV_ALPHA.QA.W]w086.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.7898 through 97.0308



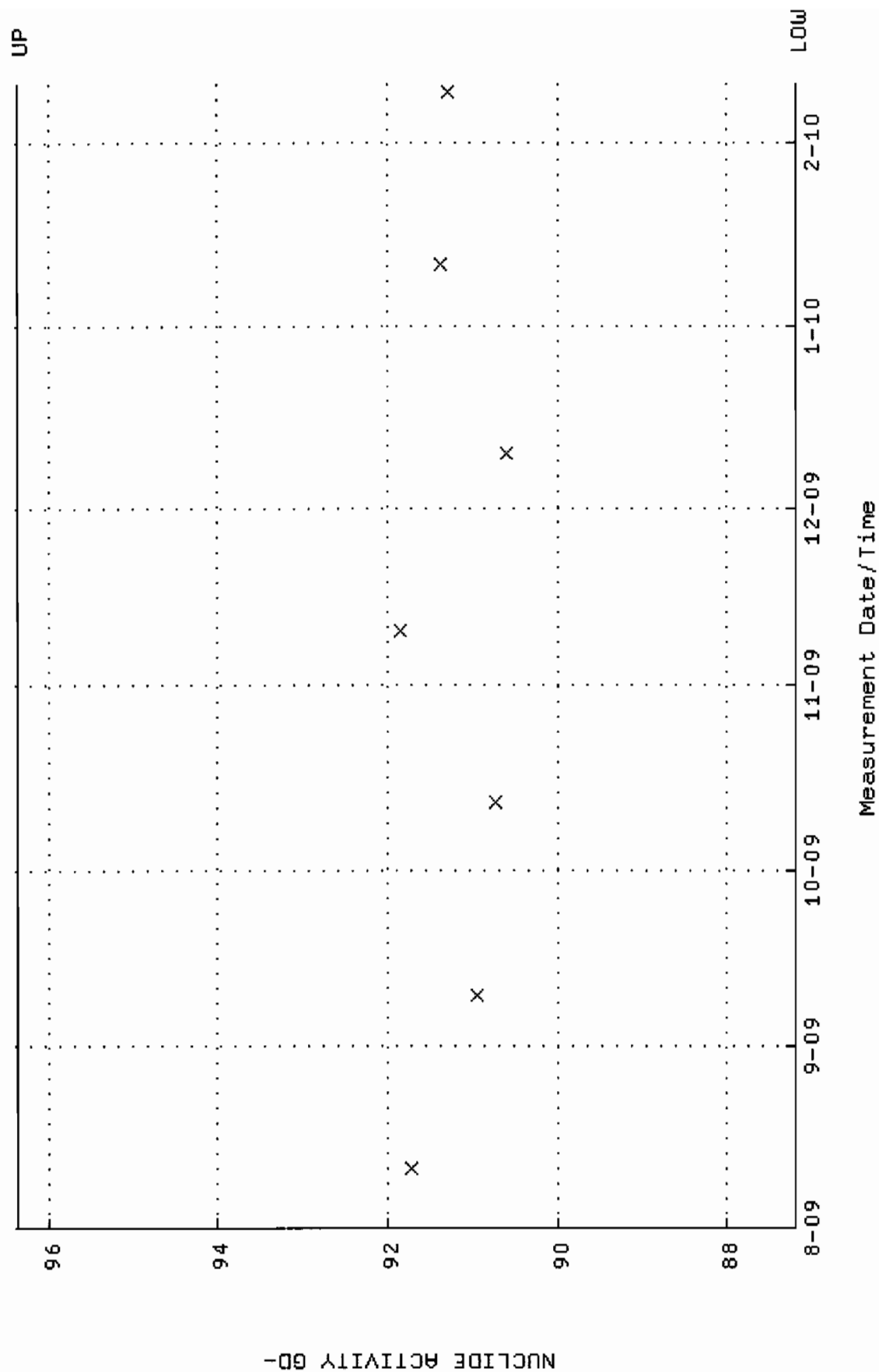
QA filename : DKA100:[ENV_ALPHA.QA.B]B086.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:41 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 2.000000E-02



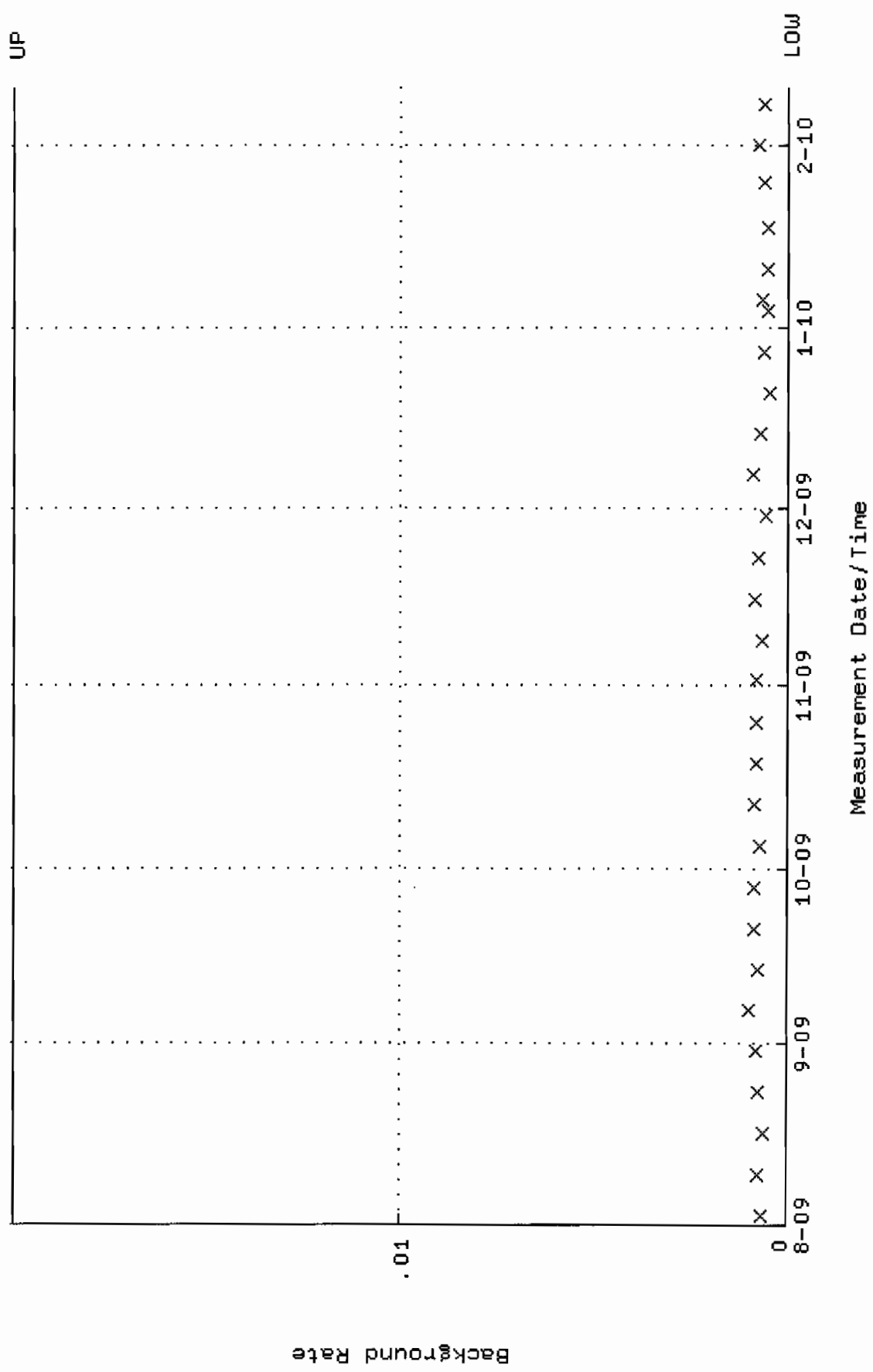
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.300530 through 0.320530



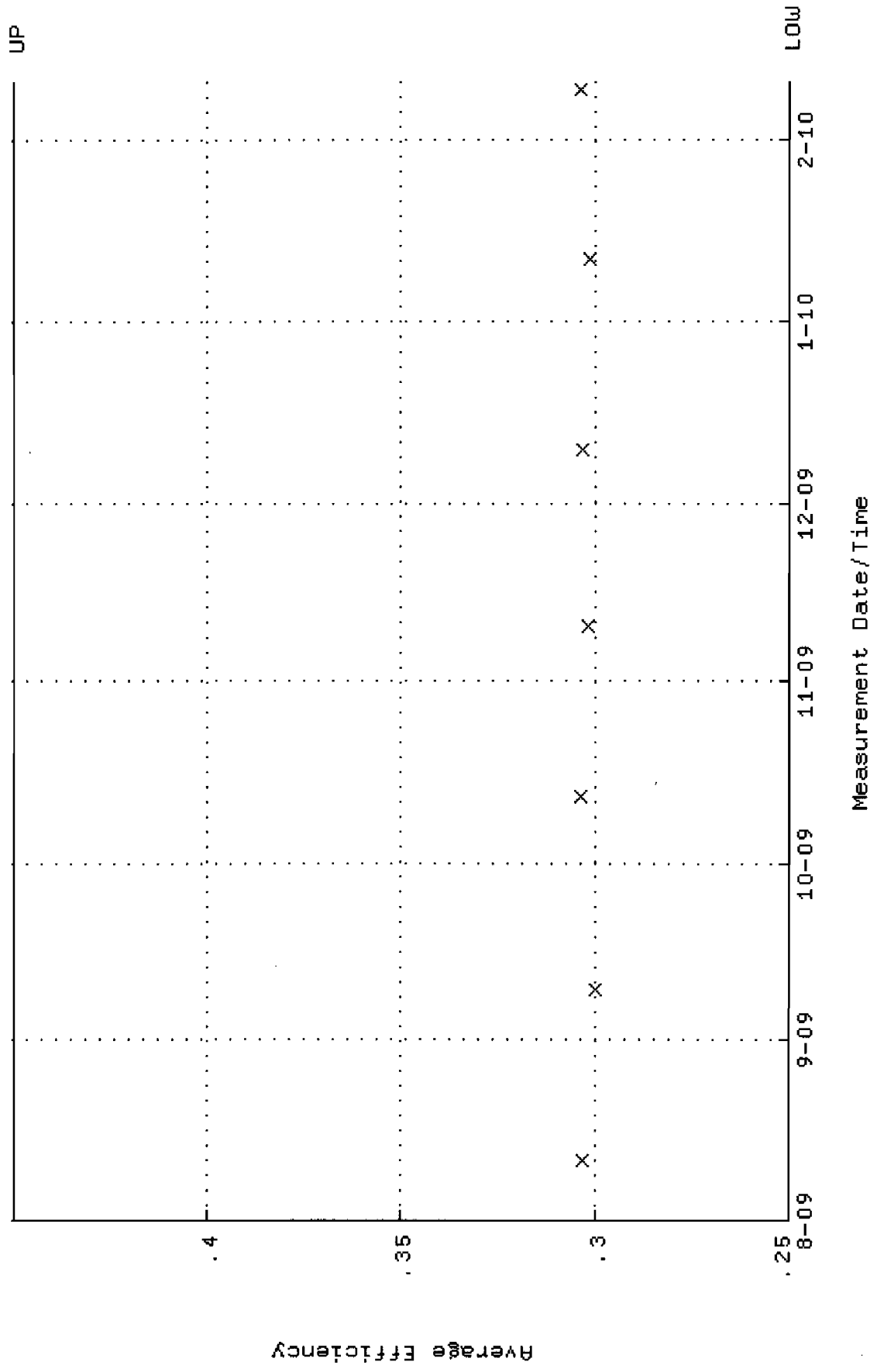
QA filename : DKA100:[ENV_ALPHA.QA.W]W087.QAF;4
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:14 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 87.1845 through 96.3619



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

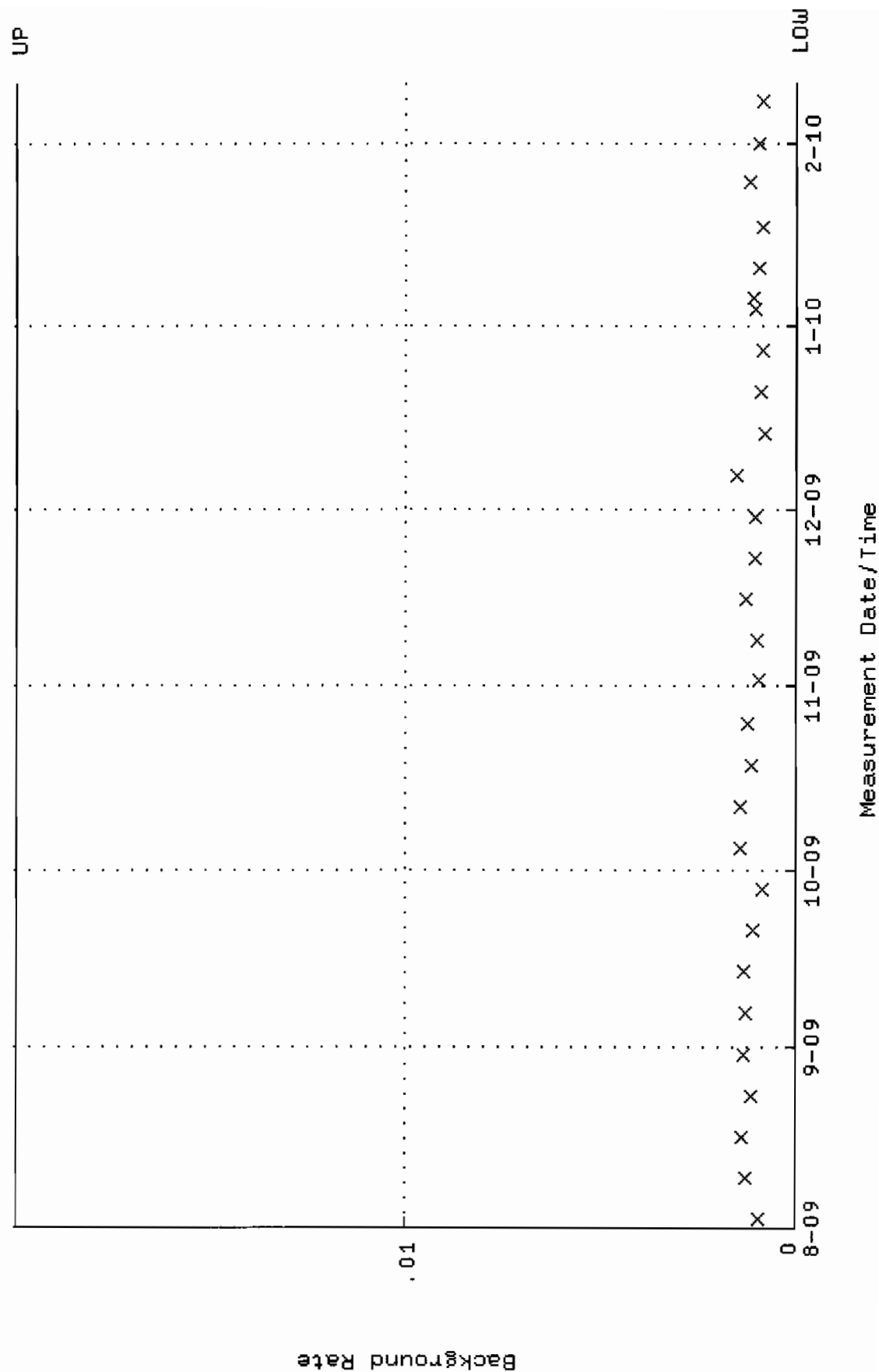


QA filename : DKA100:[ENV-ALPHA.QA.B]B088.QAF;1

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

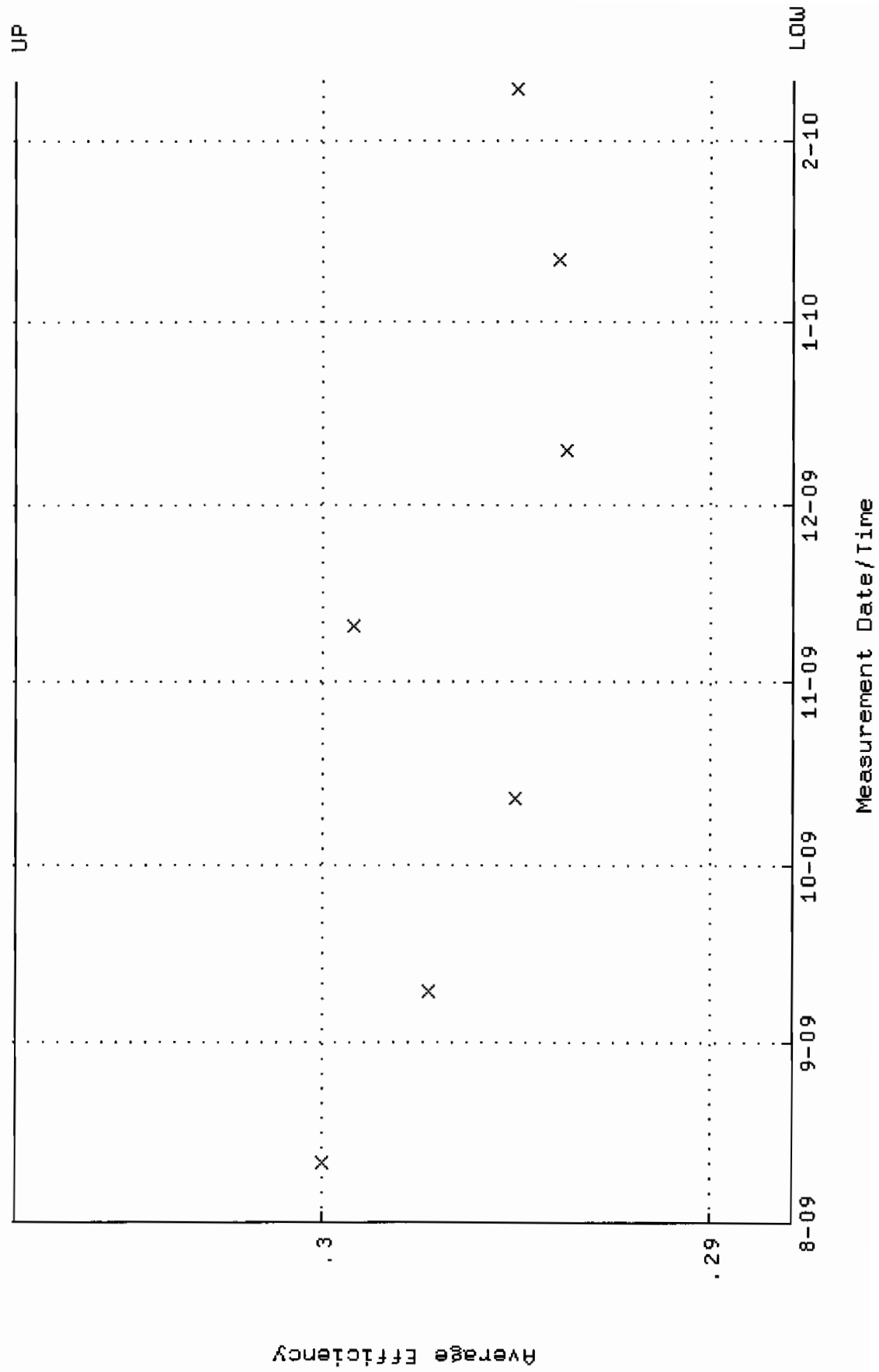


QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1

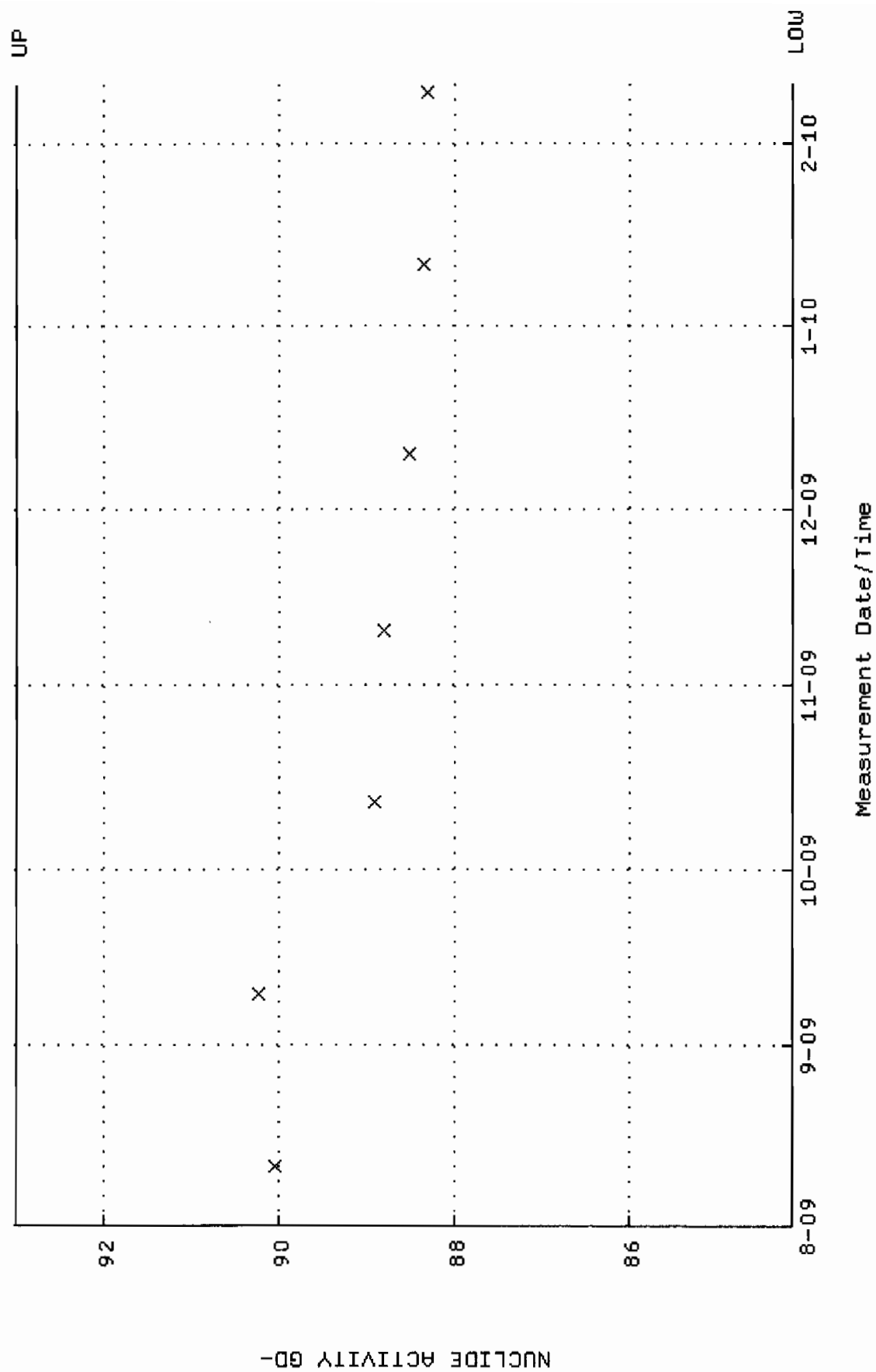
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00

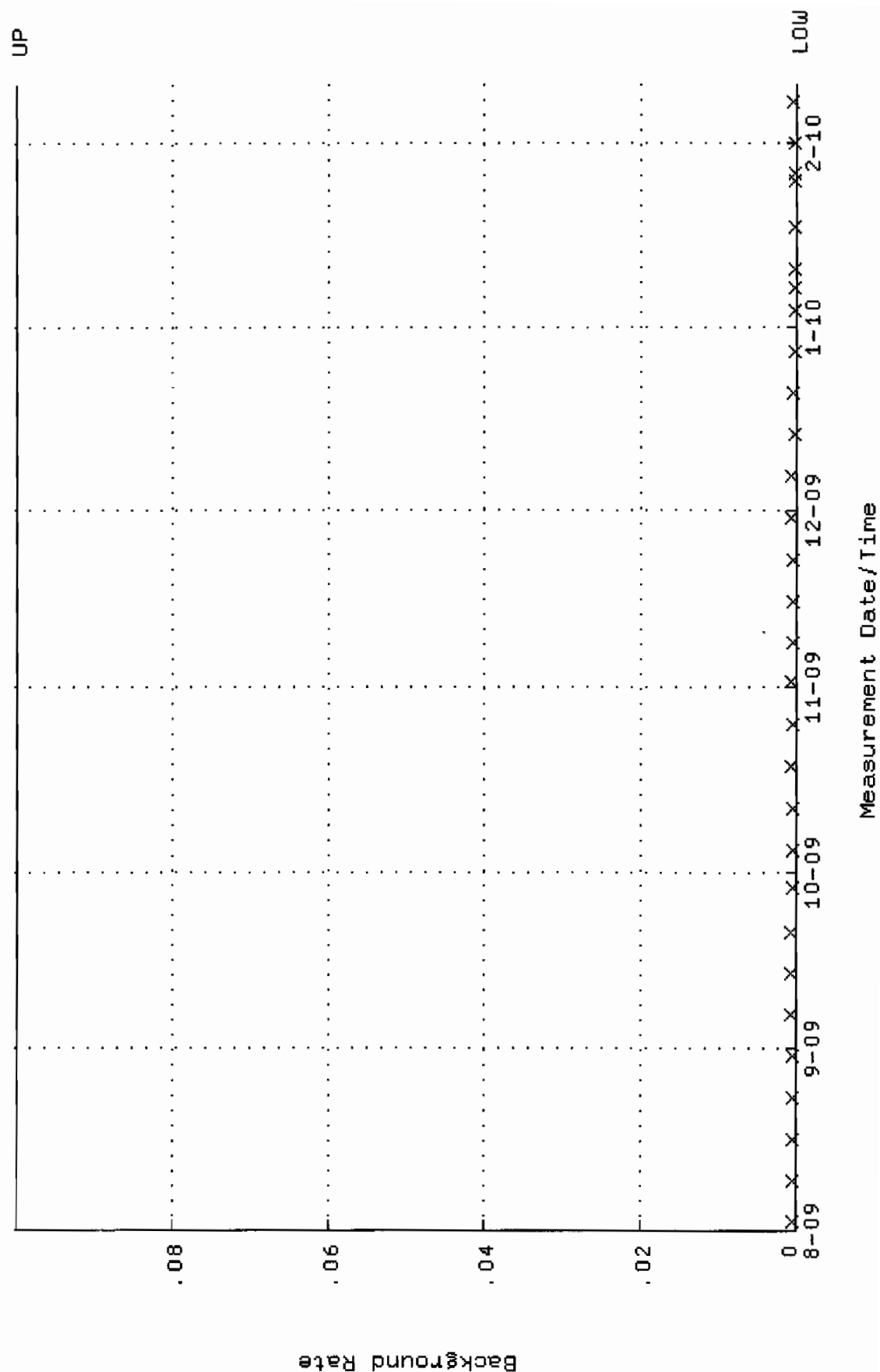
Lower/Upper Lmts: 0.287888 through 0.307888



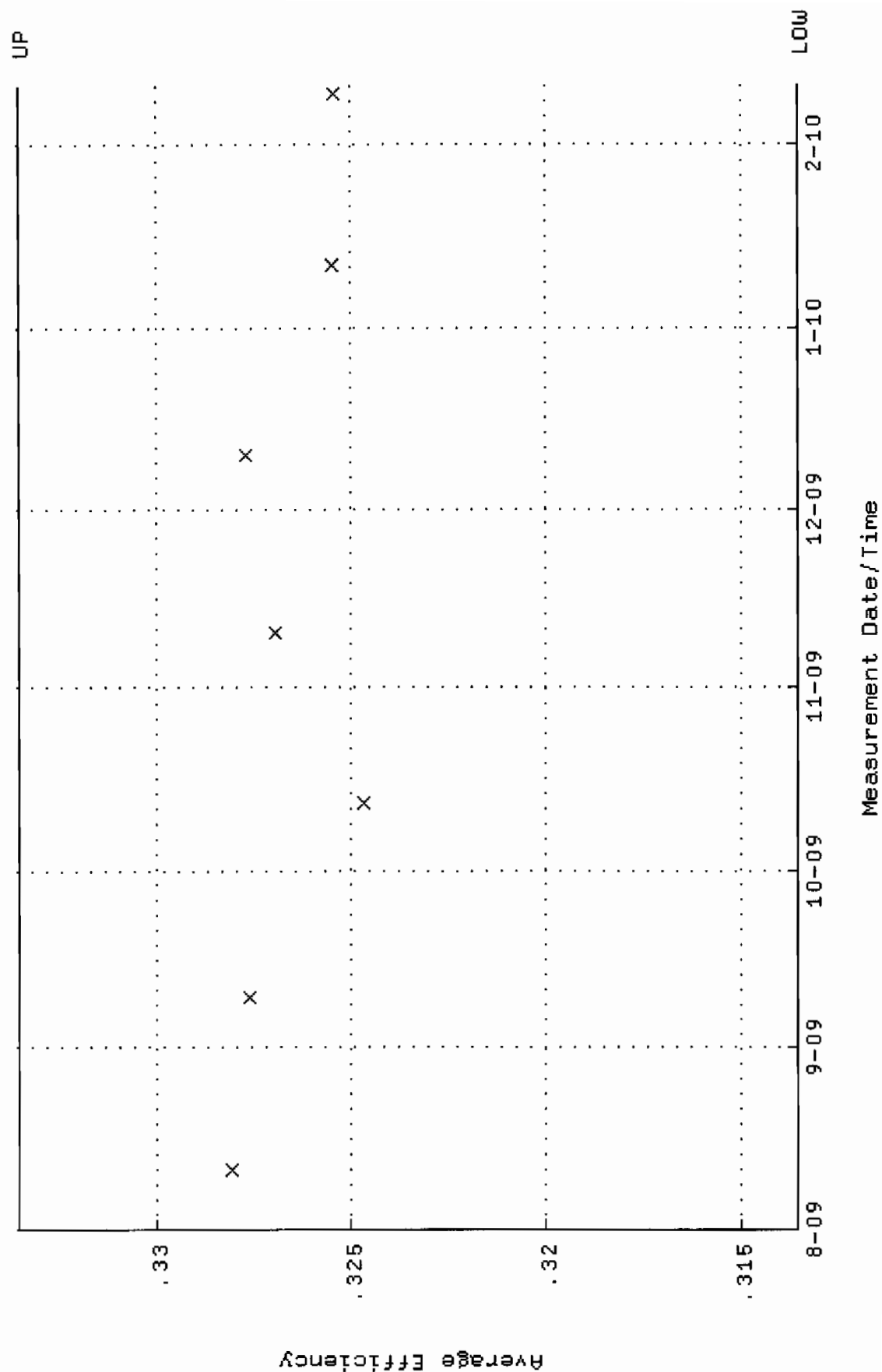
QA filename : DKA100:[ENV_ALPHA.QA.W]W089.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.1413 through 92.9983



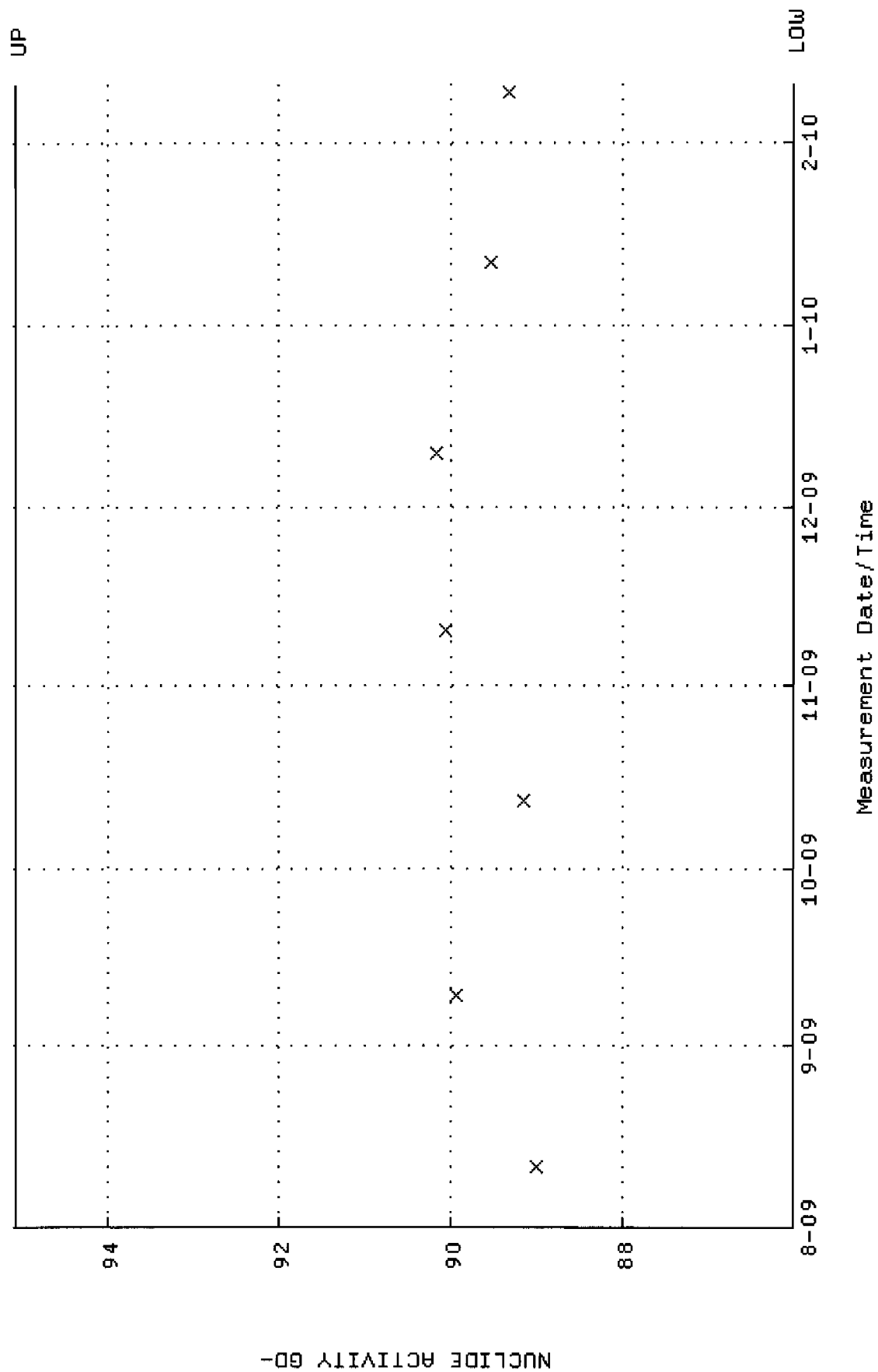
QA filename : DKA100:[ENV_ALPHA.QA.B]B089.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:42 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



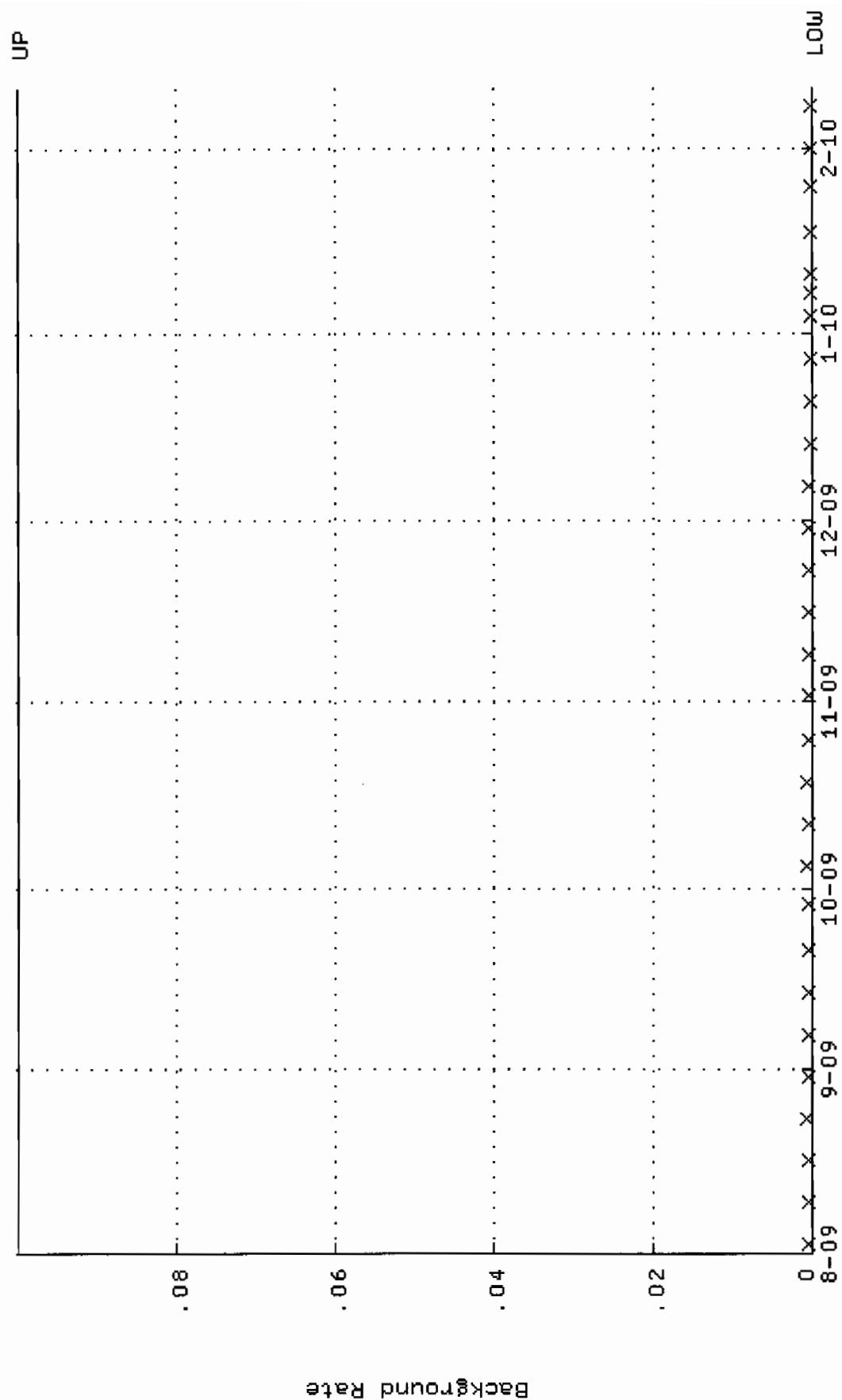
QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:15 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.313529 through 0.333529



QA filename : DKA100:[ENV_ALPHA.QA.W]W090.QAF;3
 Parameter Name : NLACTIVITY-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

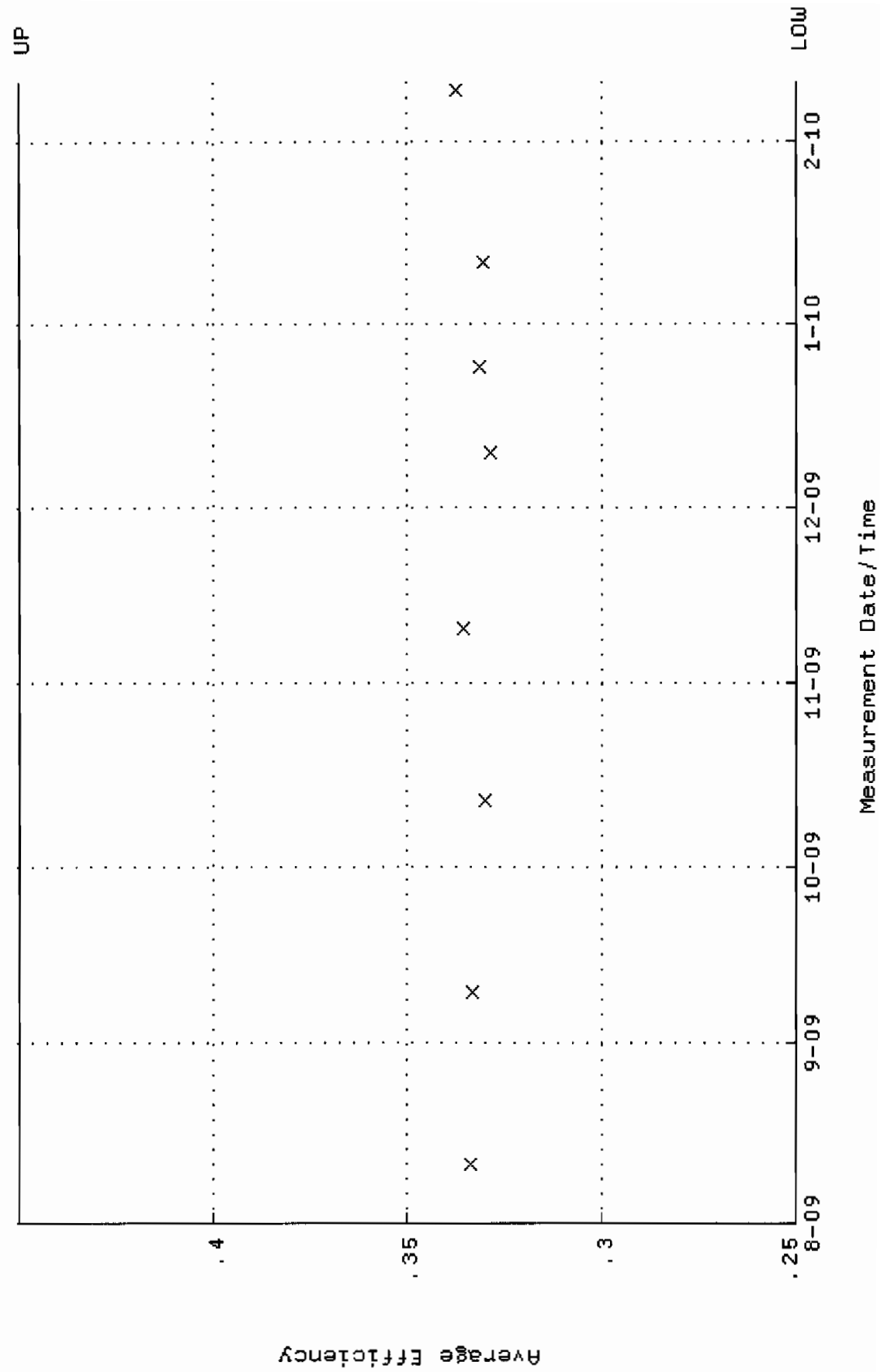


QA filename : DKA100:[ENV_ALPHA.QA.W]W101.QAF;2

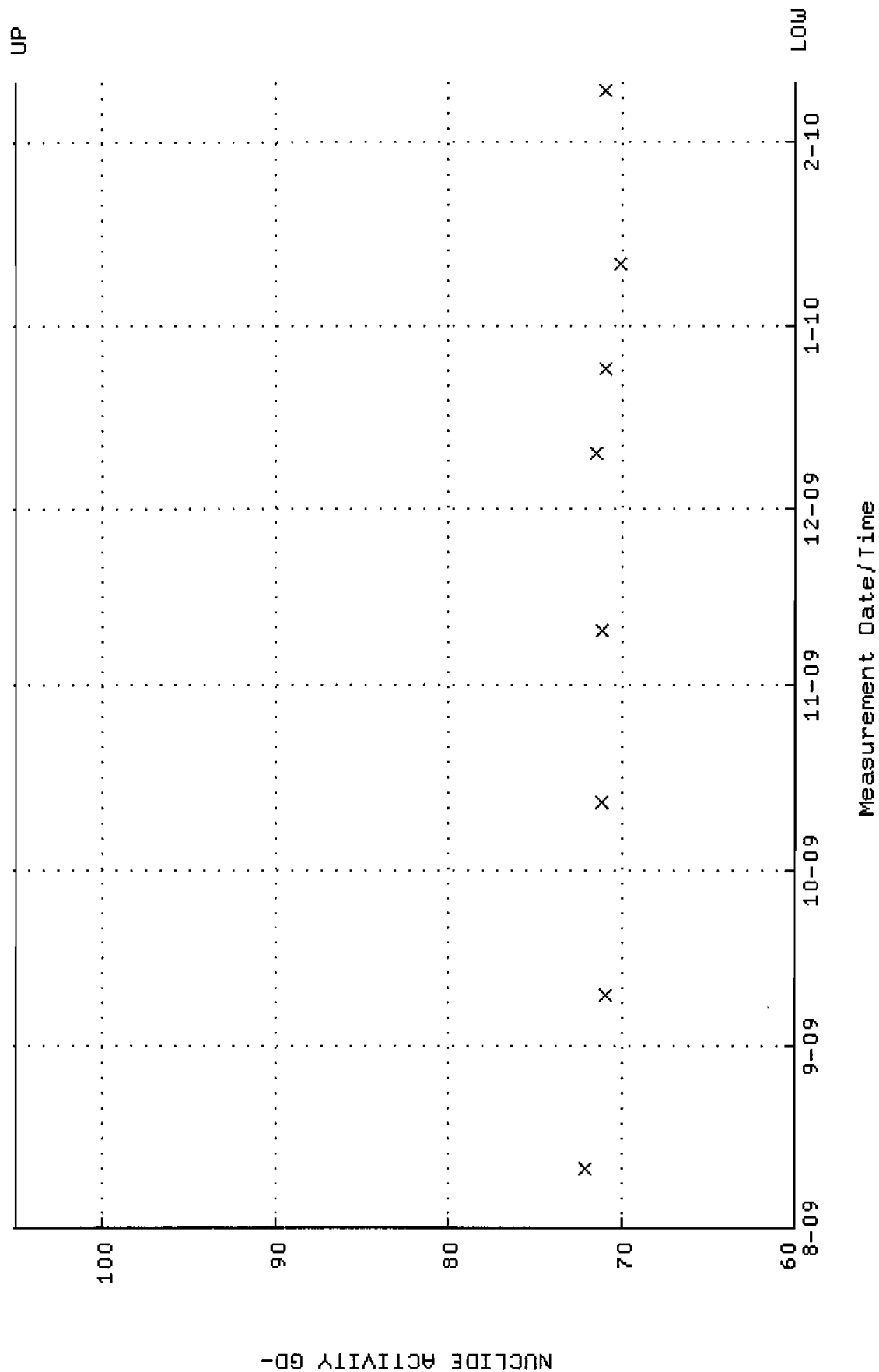
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 11-AUG-2009 07:20:17 through 10-FEB-2010 12:00:00

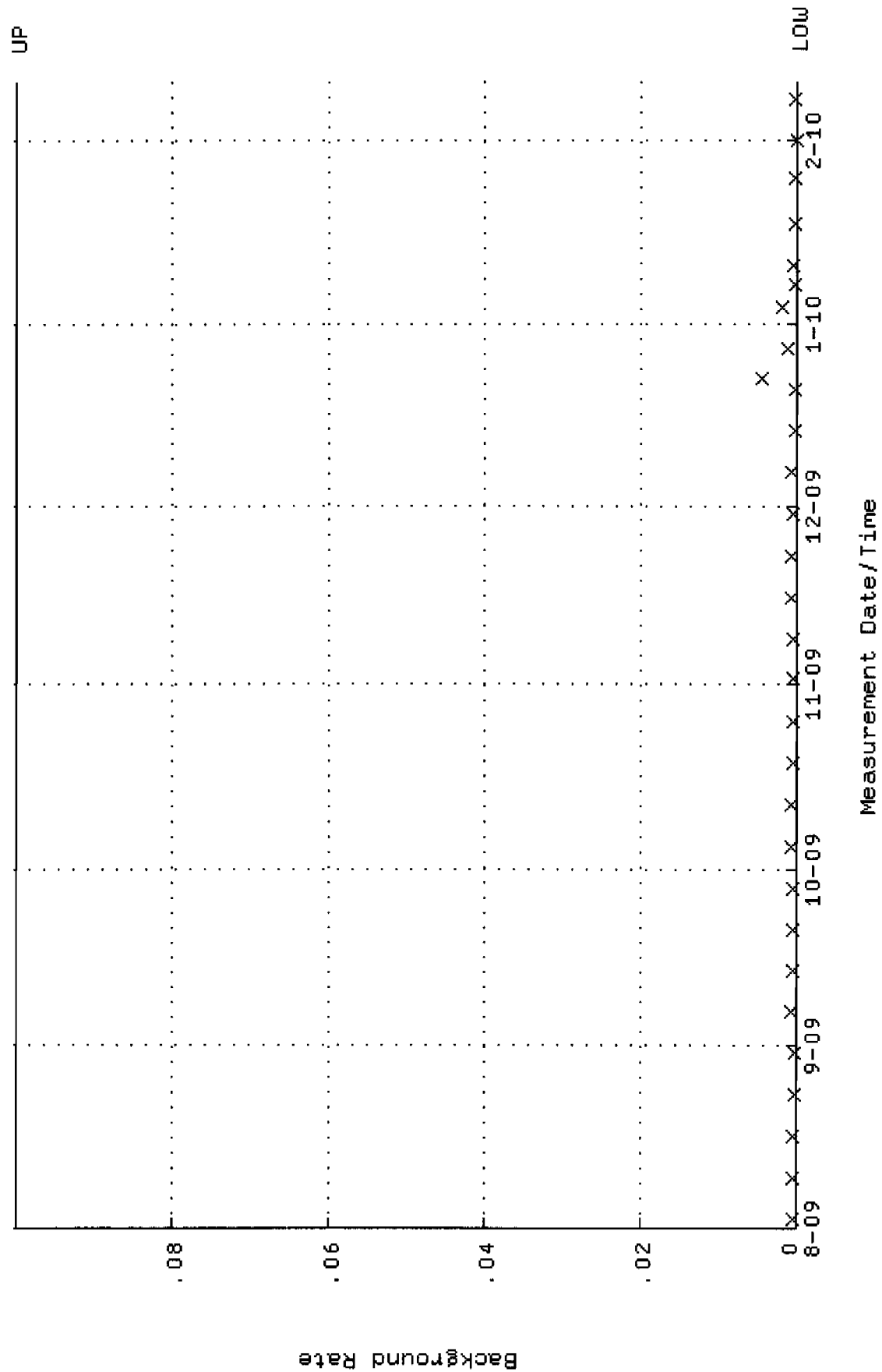
Lower/Upper Lmts: 0.250000 through 0.450000



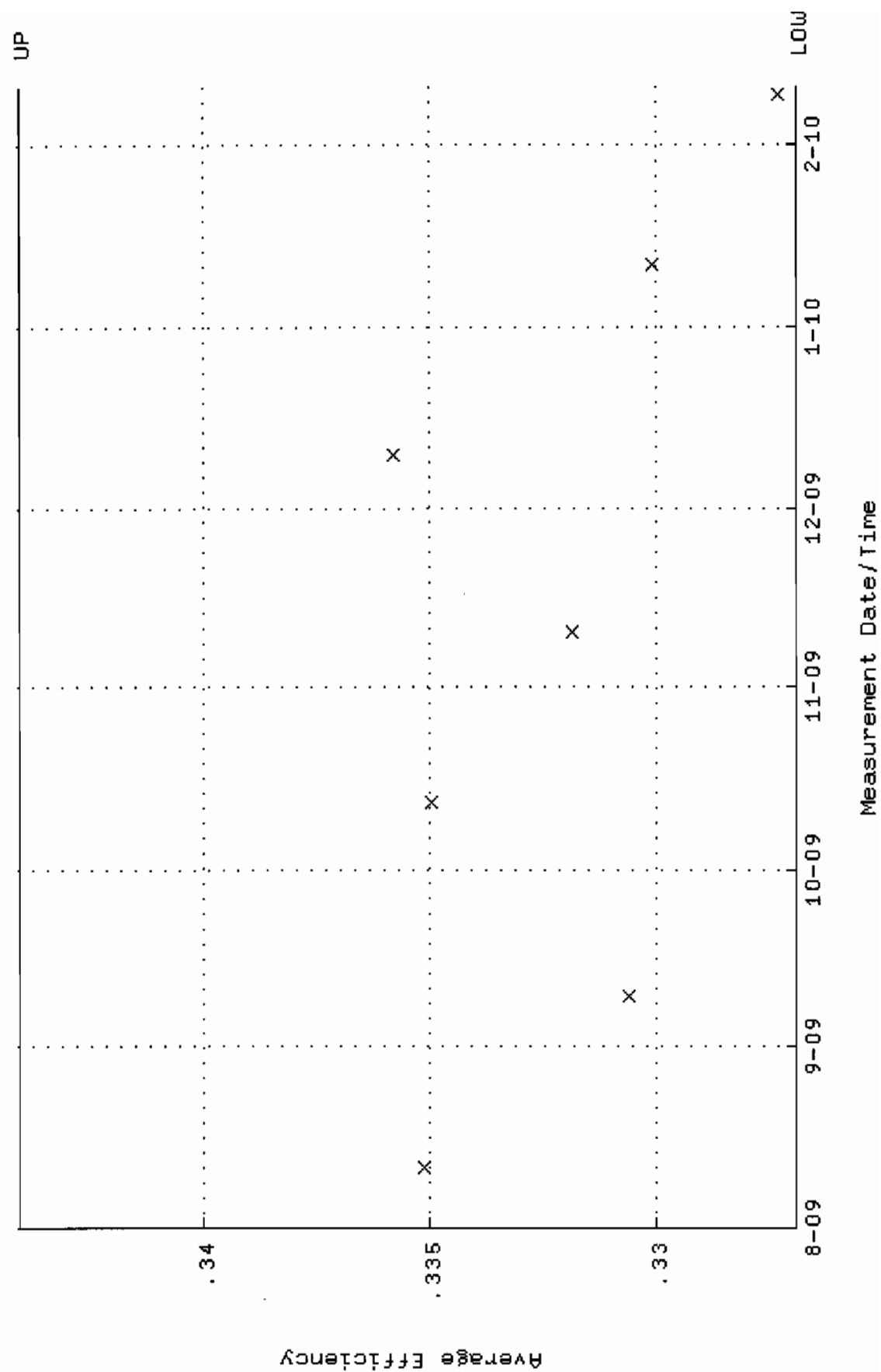
QA filename : DKA100:[ENV_ALPHA.QA.W]w101.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:17 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 60.0000 through 105.000



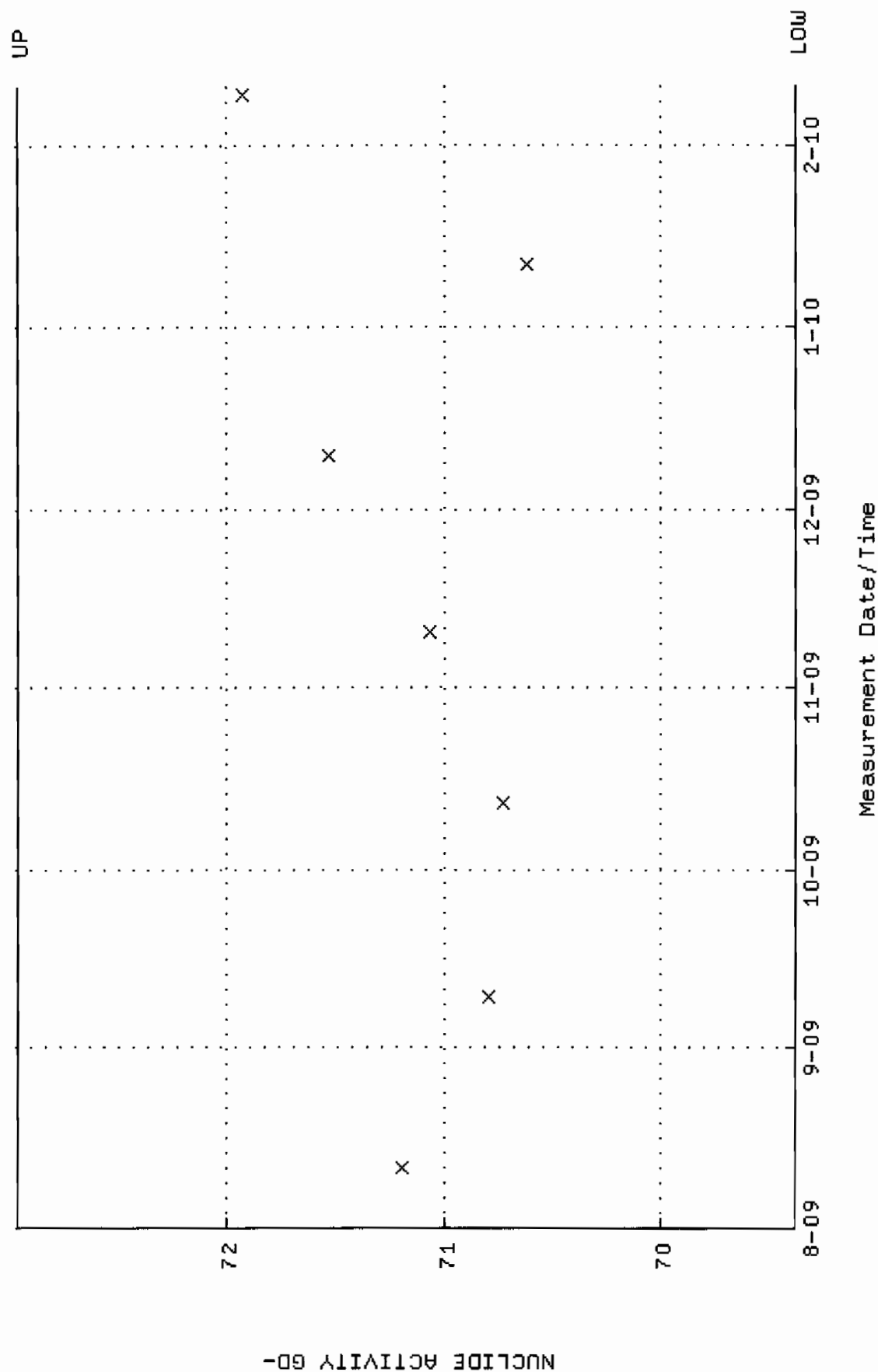
QA filename : DKA100:[ENV_ALPHA.QA.B]B101.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:43 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



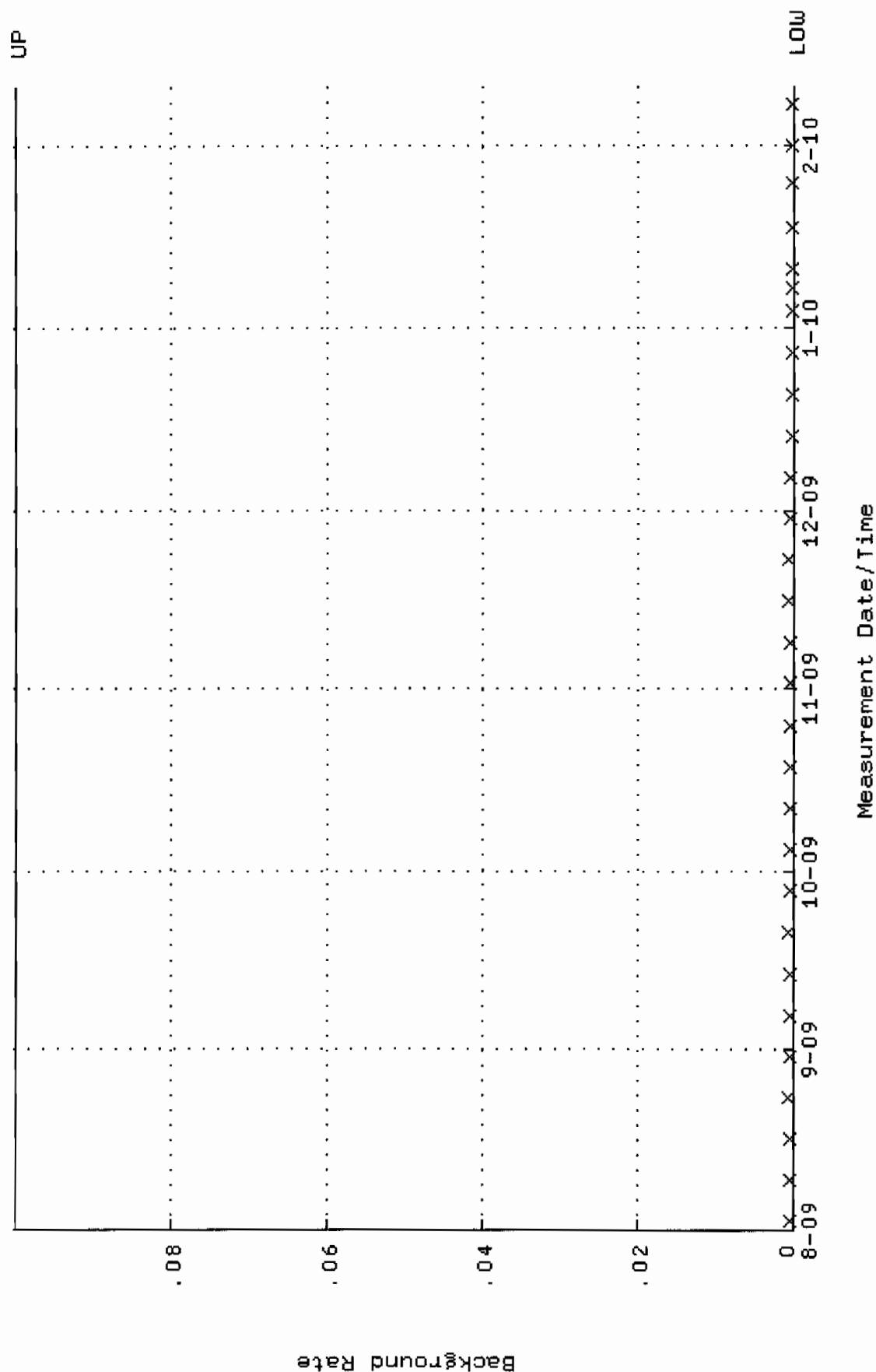
QA filename : DKA100:[ENV_ALPHA.QA.W]W102.QAF;3
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:17 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.326915 through 0.344021



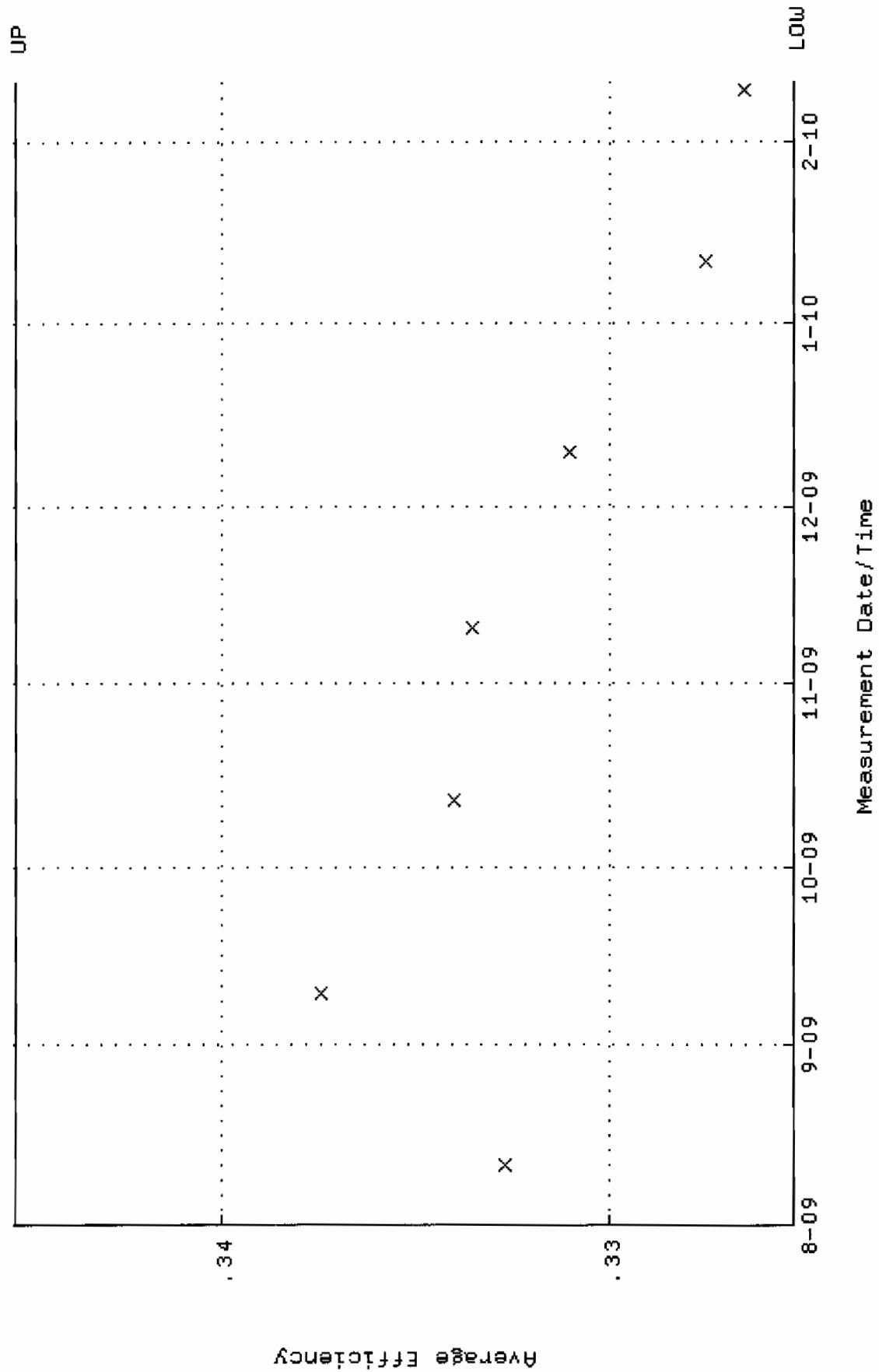
QA filename : DKA100:[ENV_ALPHA.QA.W]W102.QAF;3
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:17 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 69.3731 through 72.9663



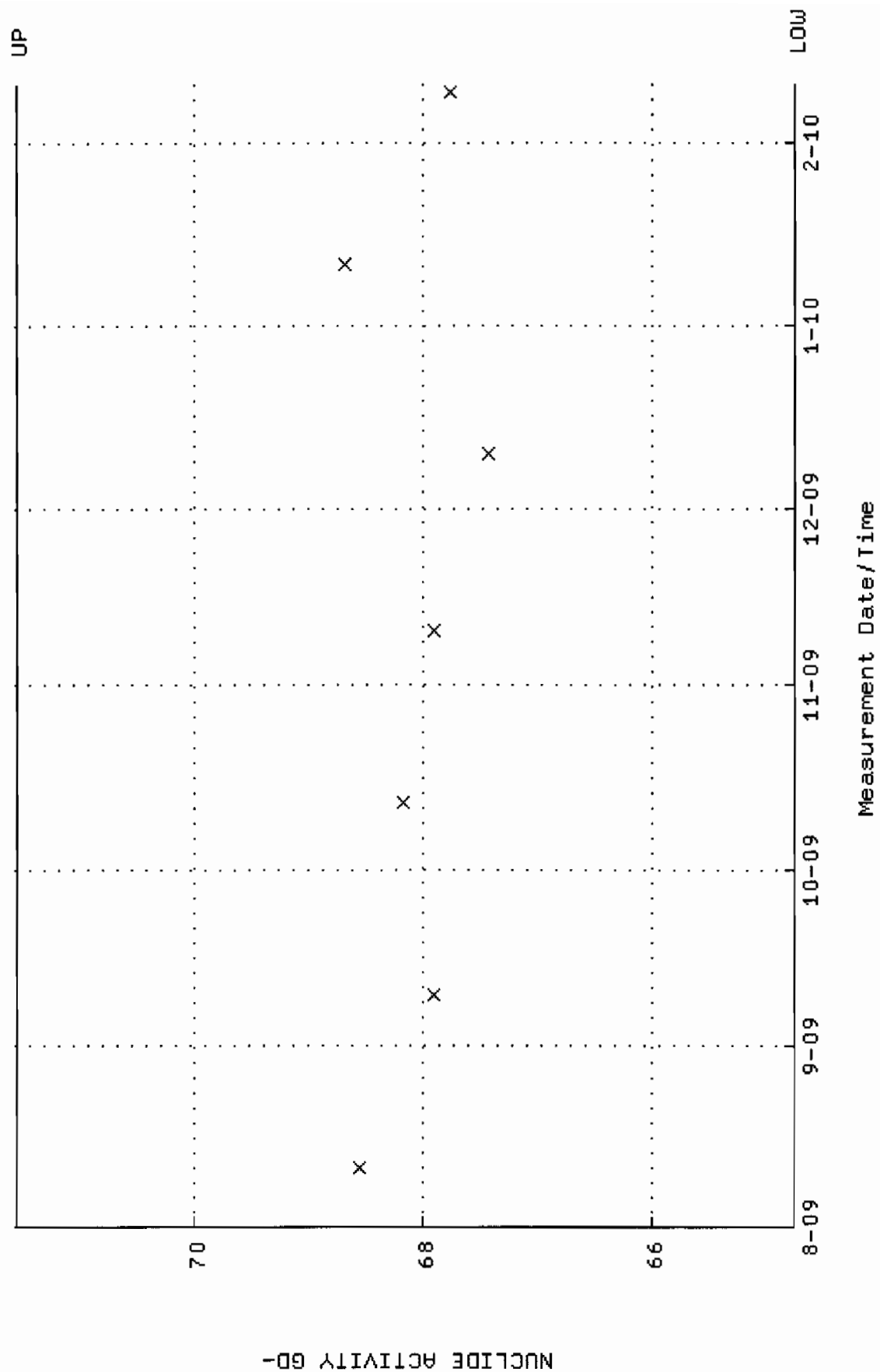
QA filename : DKA100:[ENV_ALPHA.QA.B]B102.QAF;2
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:38:43 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]U103.QAF;2
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 11-AUG-2009 07:20:17 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.325314 through 0.345314



QA filename : DKA100:[ENV_ALPHA.QA.W]w103.QAF;2
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 11-AUG-2009 07:20:17 through 10-FEB-2010 12:00:00
 Lower/Upper Lmts: 64.7479 through 71.5635

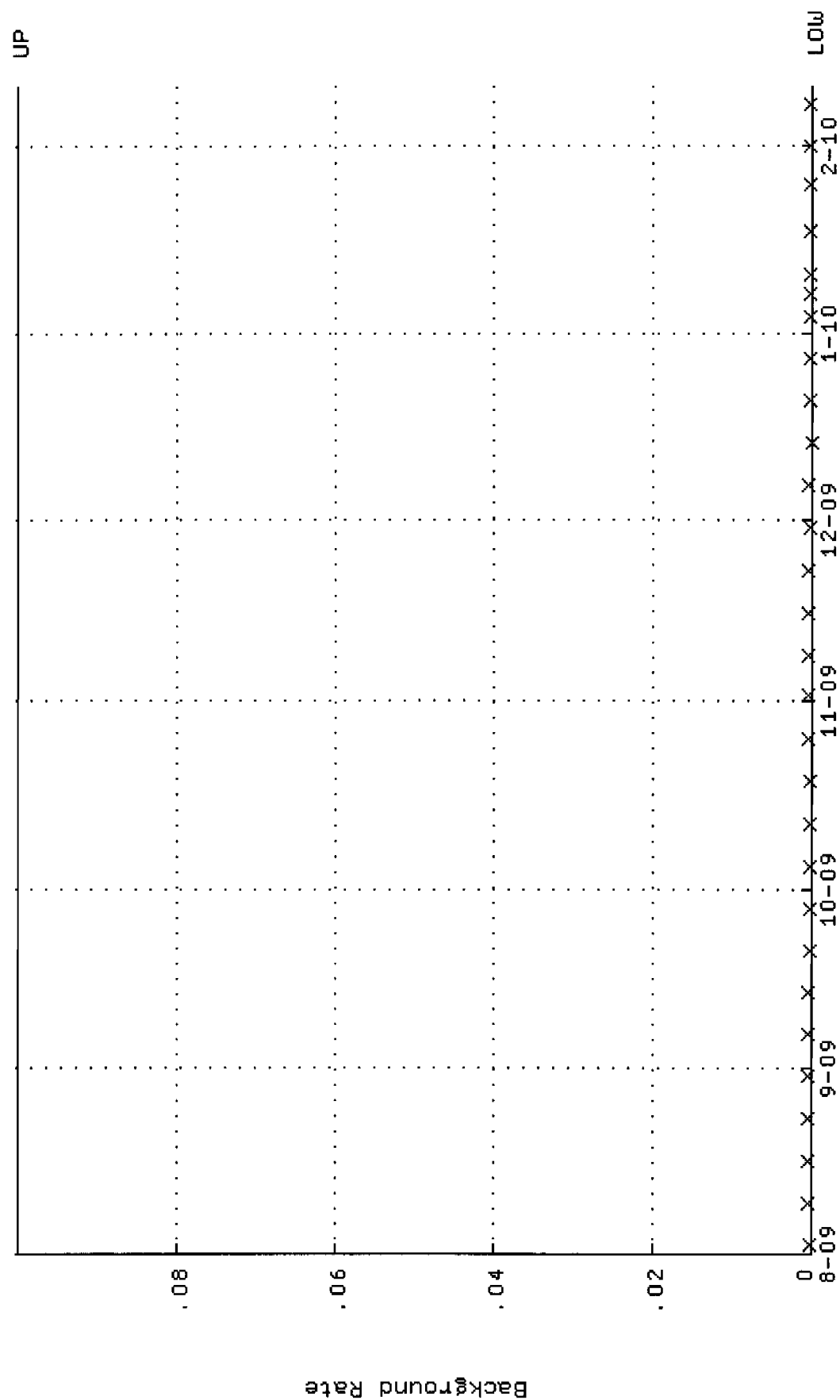


QA filename : DKA100:[ENV_ALPHA.QA.B]B103.QAF;2

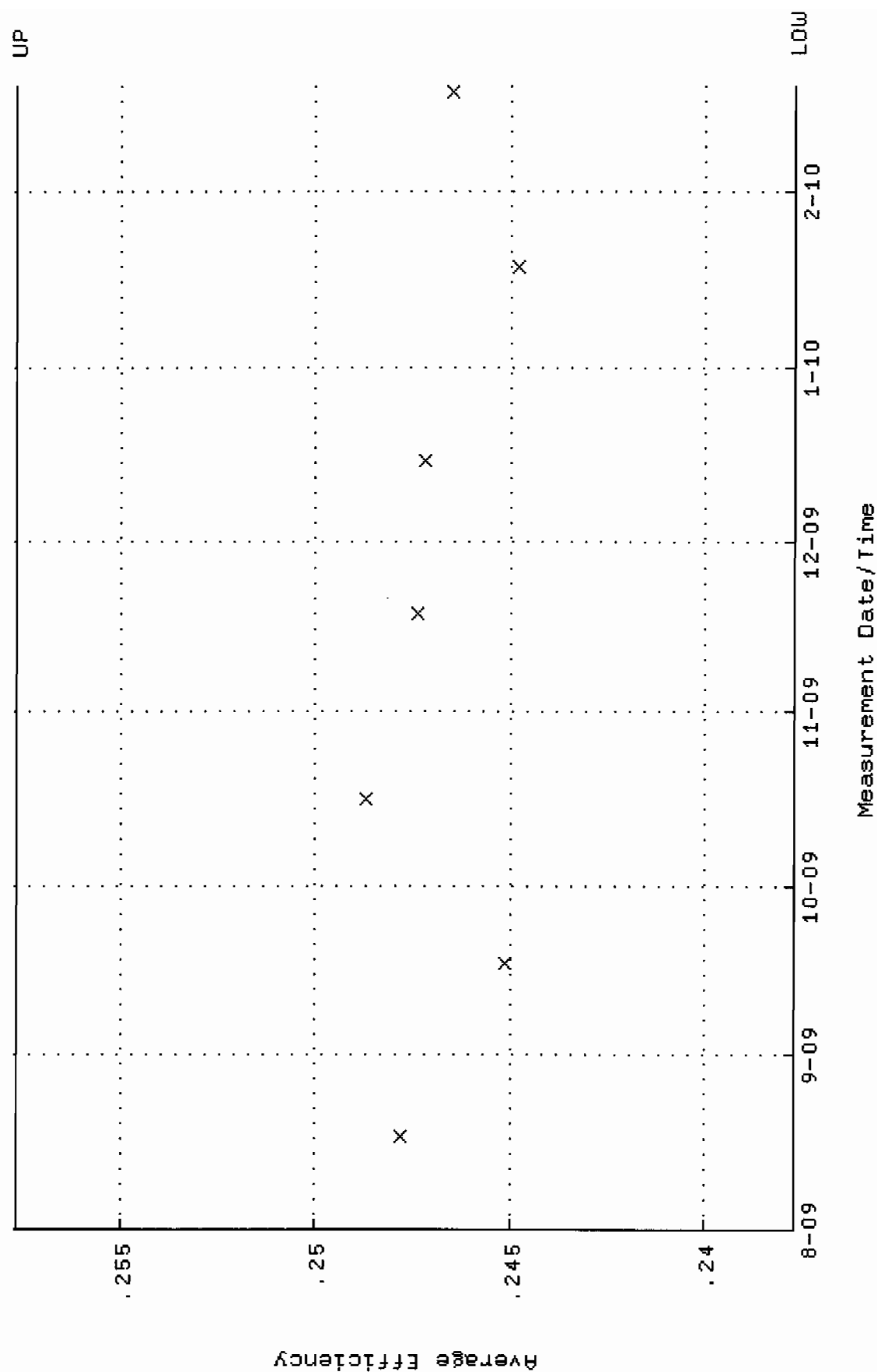
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:38:43 through 10-FEB-2010 12:00:00

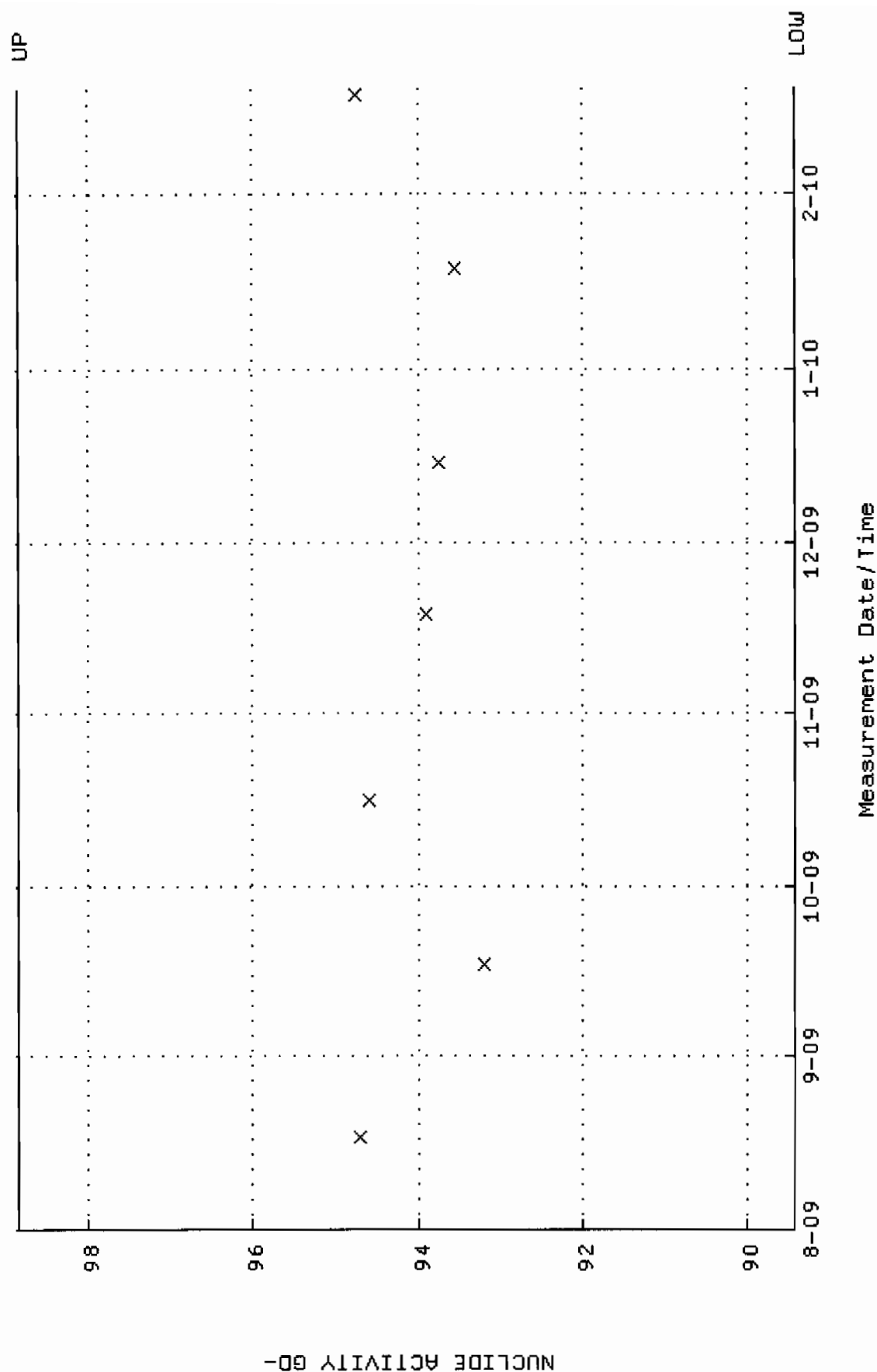
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 17-AUG-2009 09:41:25 through 19-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.237686 through 0.257686



QA filename : DKA100:[ENV_ALPHA.QA.W]W121.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-AUG-2009 09:41:25 through 19-FEB-2010 12:00:00
 Lower/Upper Lmts: 89.4263 through 98.8395

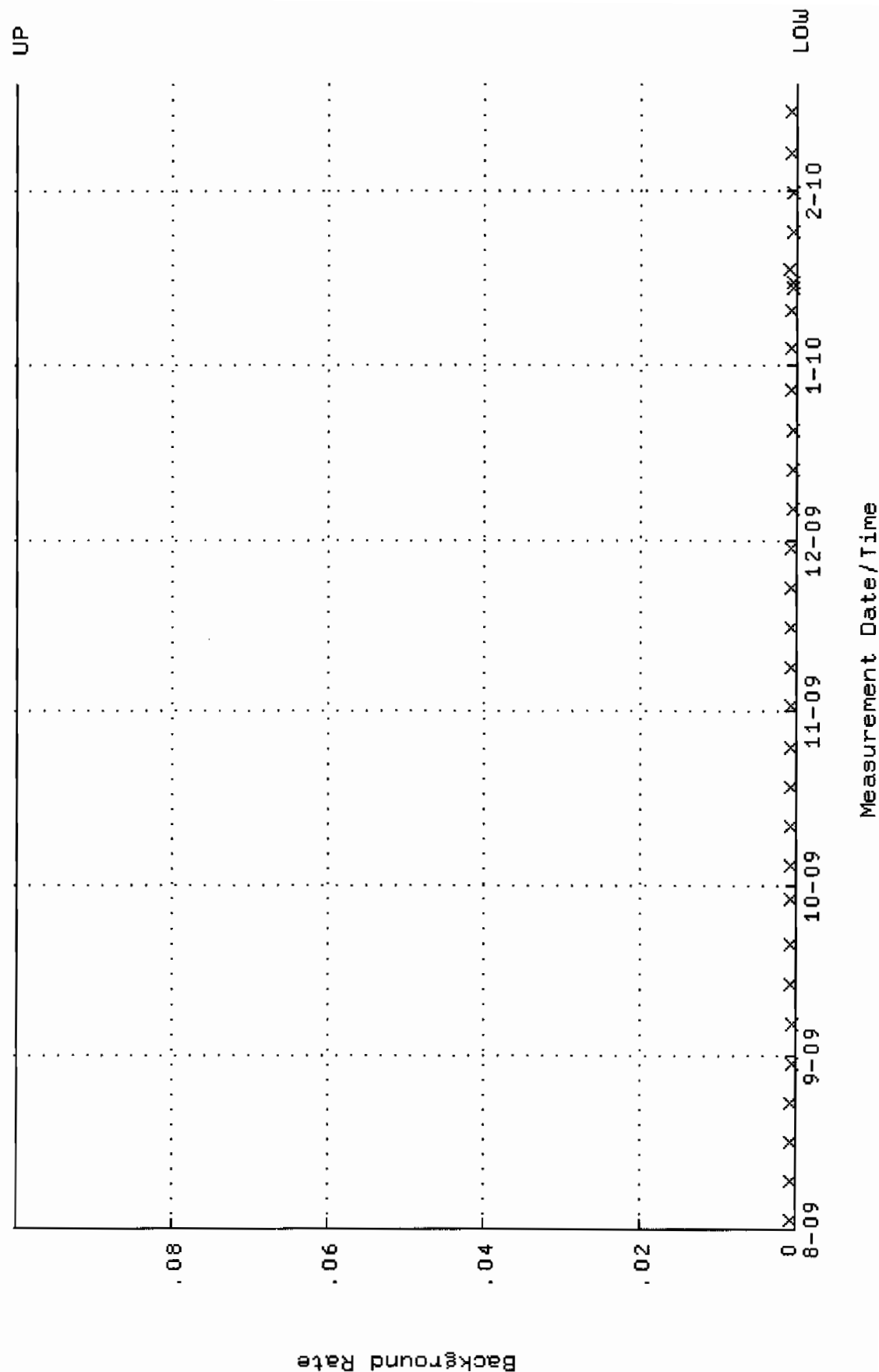


QA filename : DKA100:[ENV_ALPHA.QA.B]B121.QAF;1

Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:12:33 through 19-FEB-2010 12:00:00

Lower/Upper Lmts: 0.000000E+00 through 0.100000

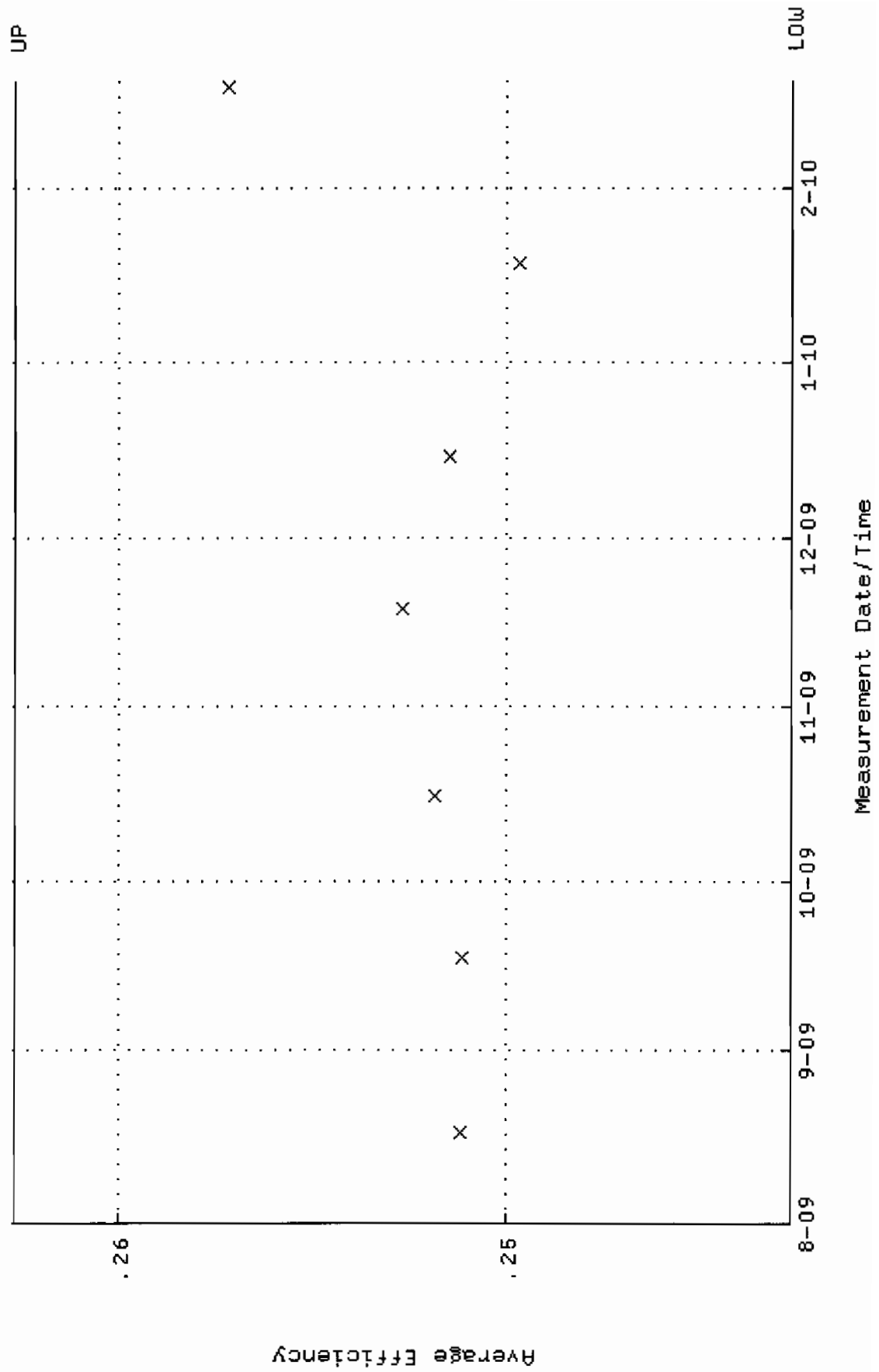


QA filename : DKA100:[ENV_ALPHA.QA.W]W122.QAF;1

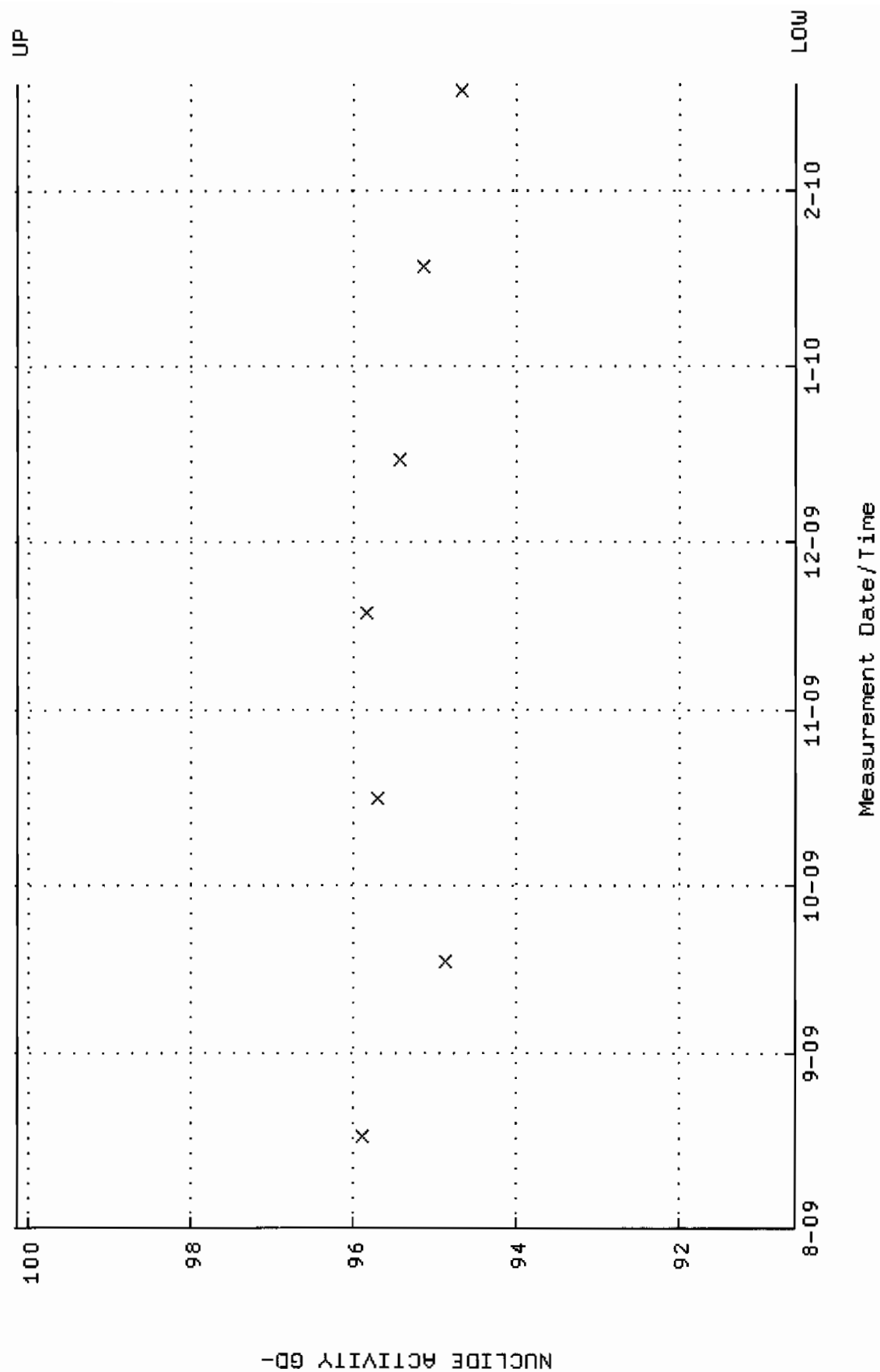
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-AUG-2009 09:41:30 through 19-FEB-2010 12:00:00

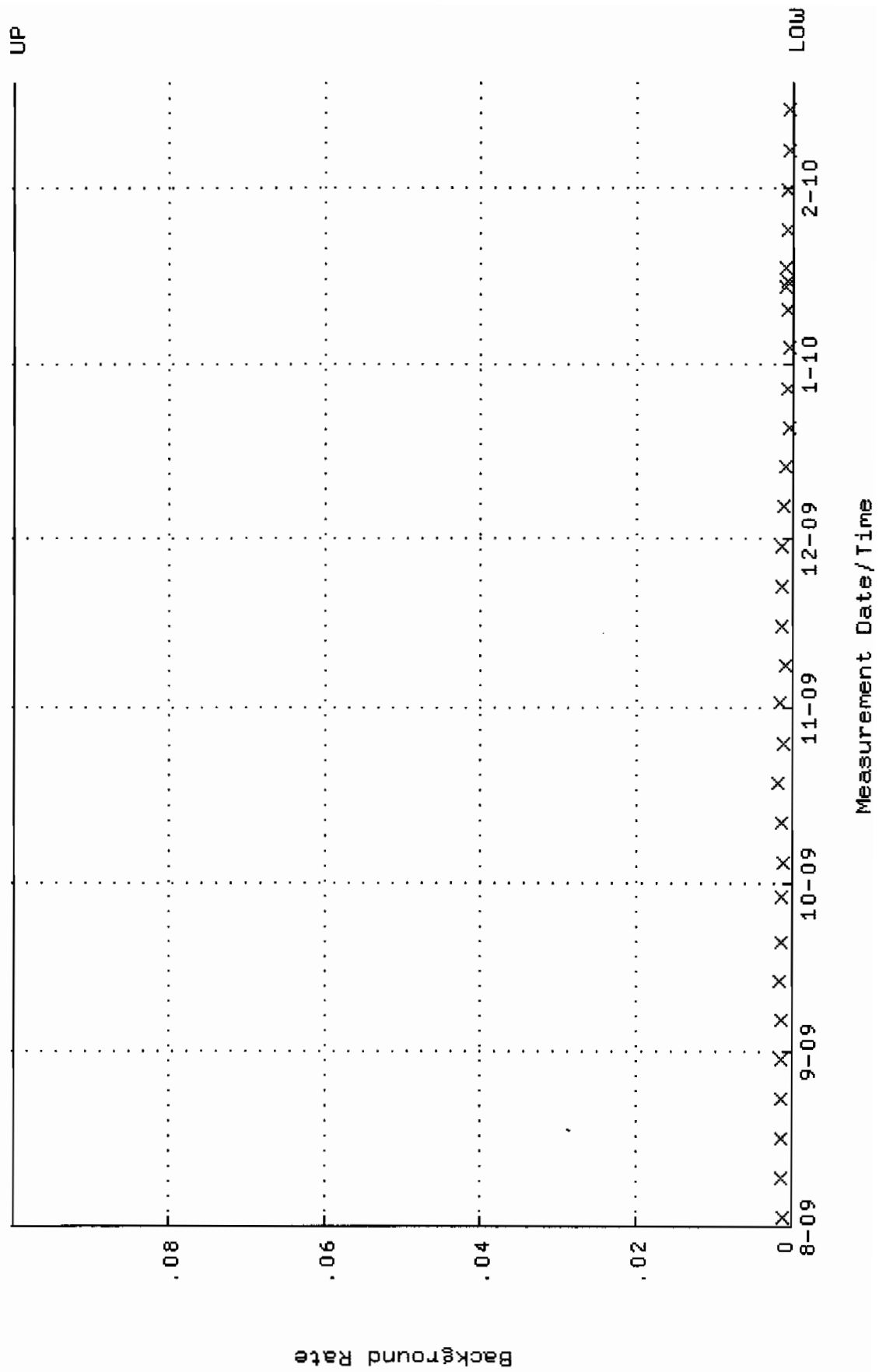
Lower/Upper Lmts: 0.242659 through 0.262659



QA filename : DKA100:[ENV_ALPHA.QA.W]w122.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-AUG-2009 09:41:30 through 19-FEB-2010 12:00:00
 Lower/Upper Lmts: 90.5949 through 100.131



Lower/Upper Lmts: 0.000000E+00 through 0.100000

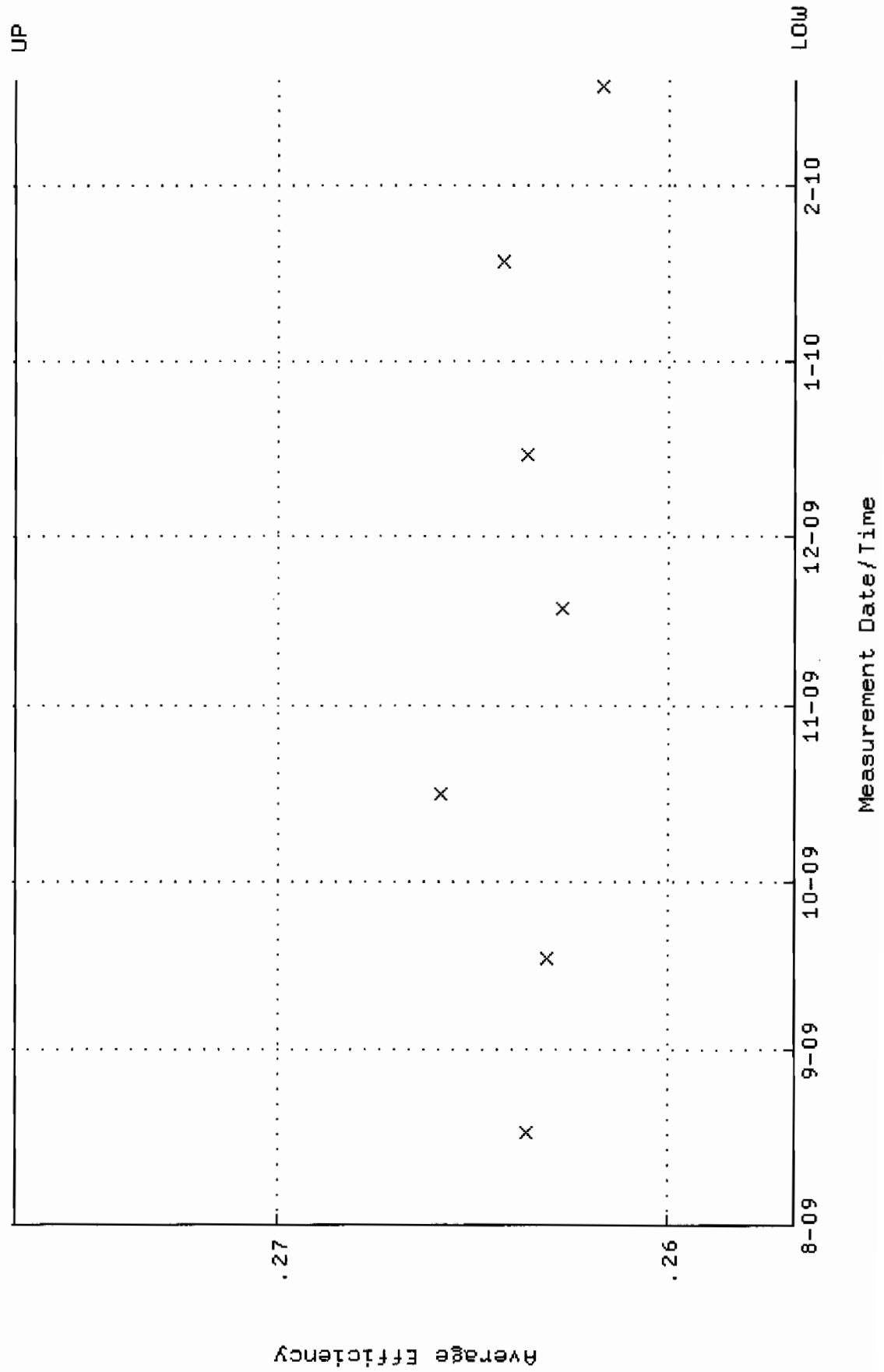


QA filename : DKA100:[ENV_ALPHA.QA.W]w129.QAF;1

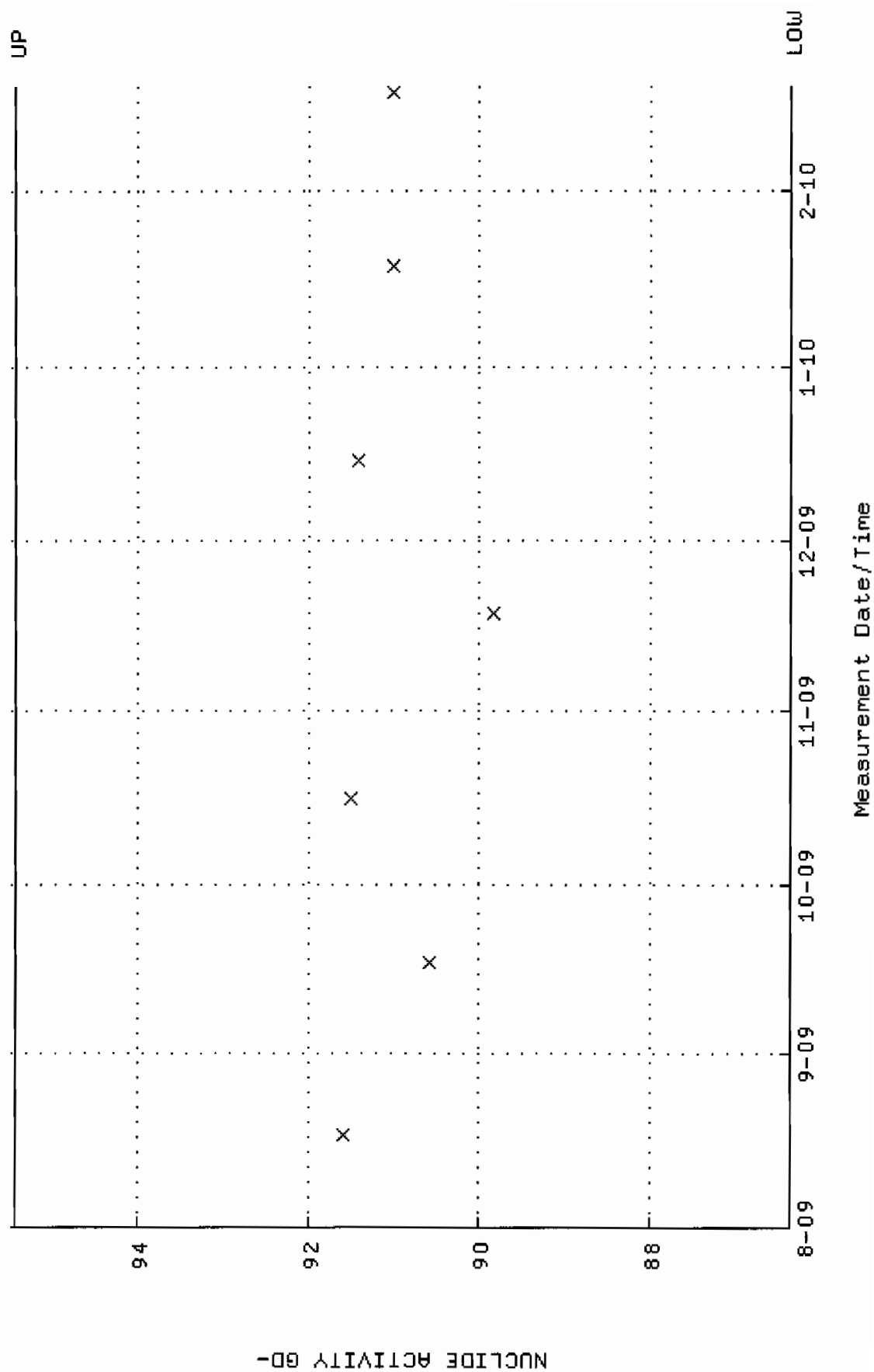
Parameter Name : AVRGEFF (Average Efficiency)

Start/End Dates : 17-AUG-2009 09:42:03 through 19-FEB-2010 12:00:00

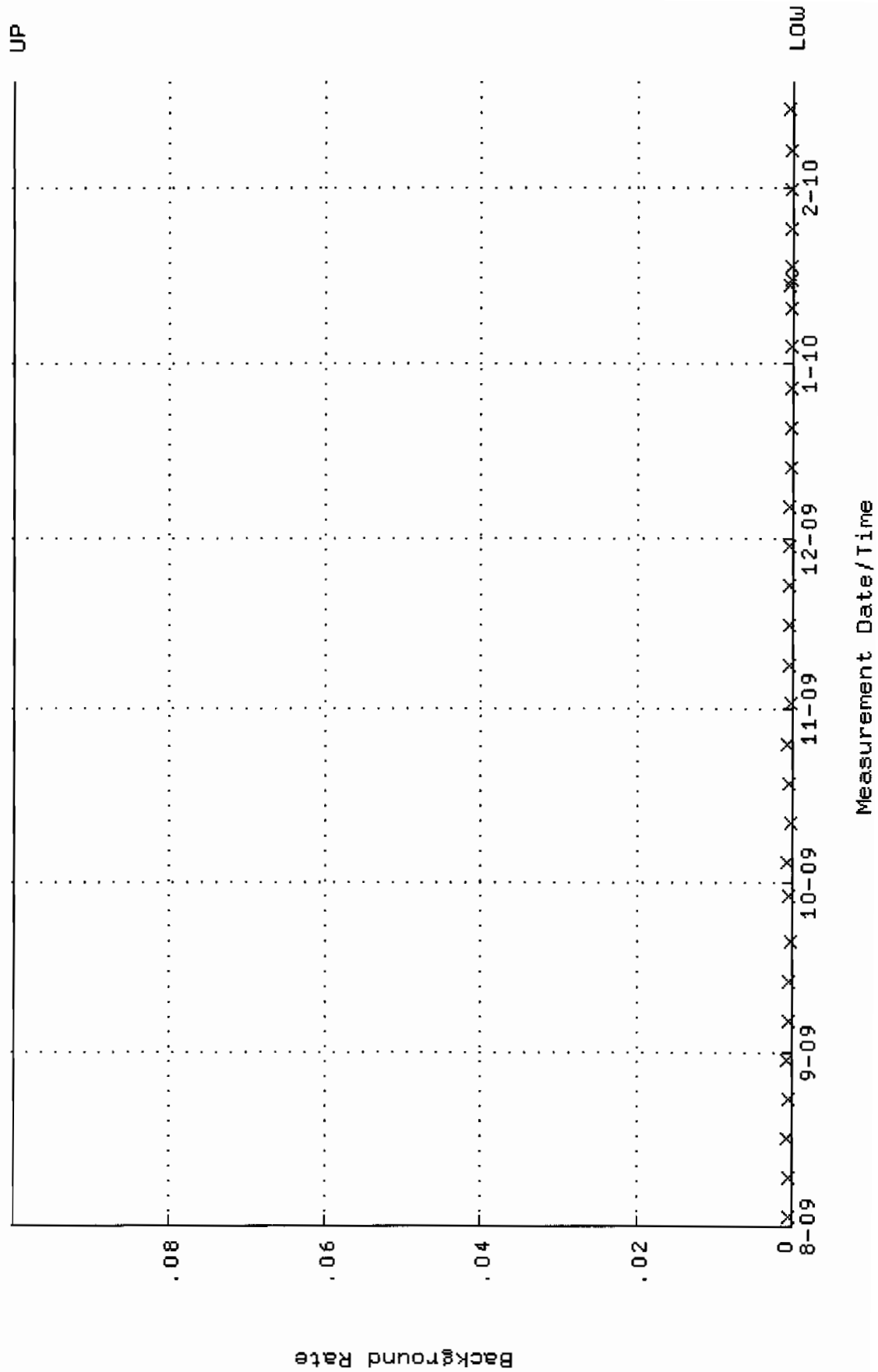
Lower/Upper Lmts: 0.256741 through 0.276741



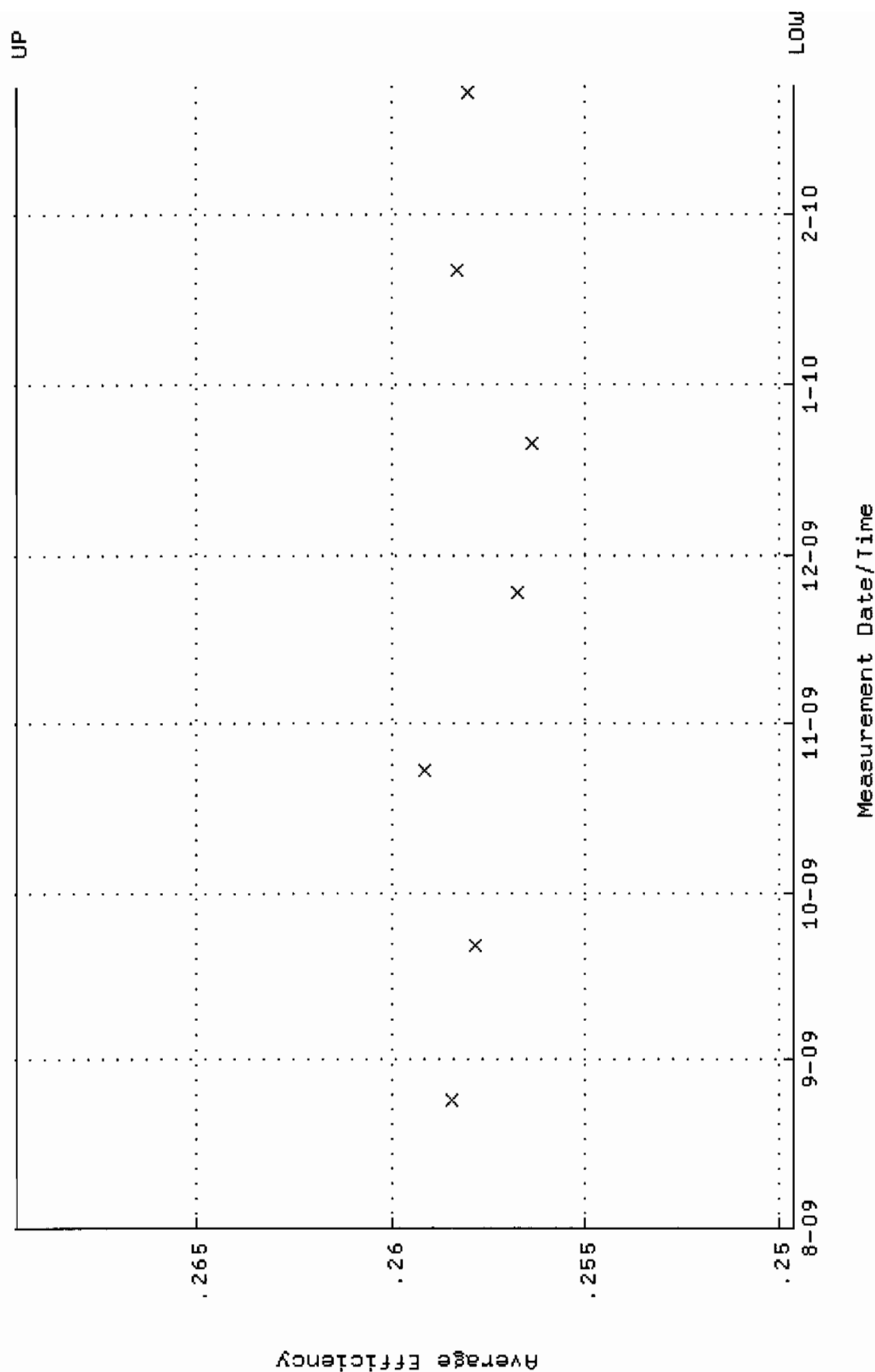
QA filename : DKA100:[ENV_ALPHA.QA.W]W129.QAF;1
 Parameter Name : NLAIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 17-AUG-2009 09:42:03 through 19-FEB-2010 12:00:00
 Lower/Upper Lmts: 86.3646 through 95.4556



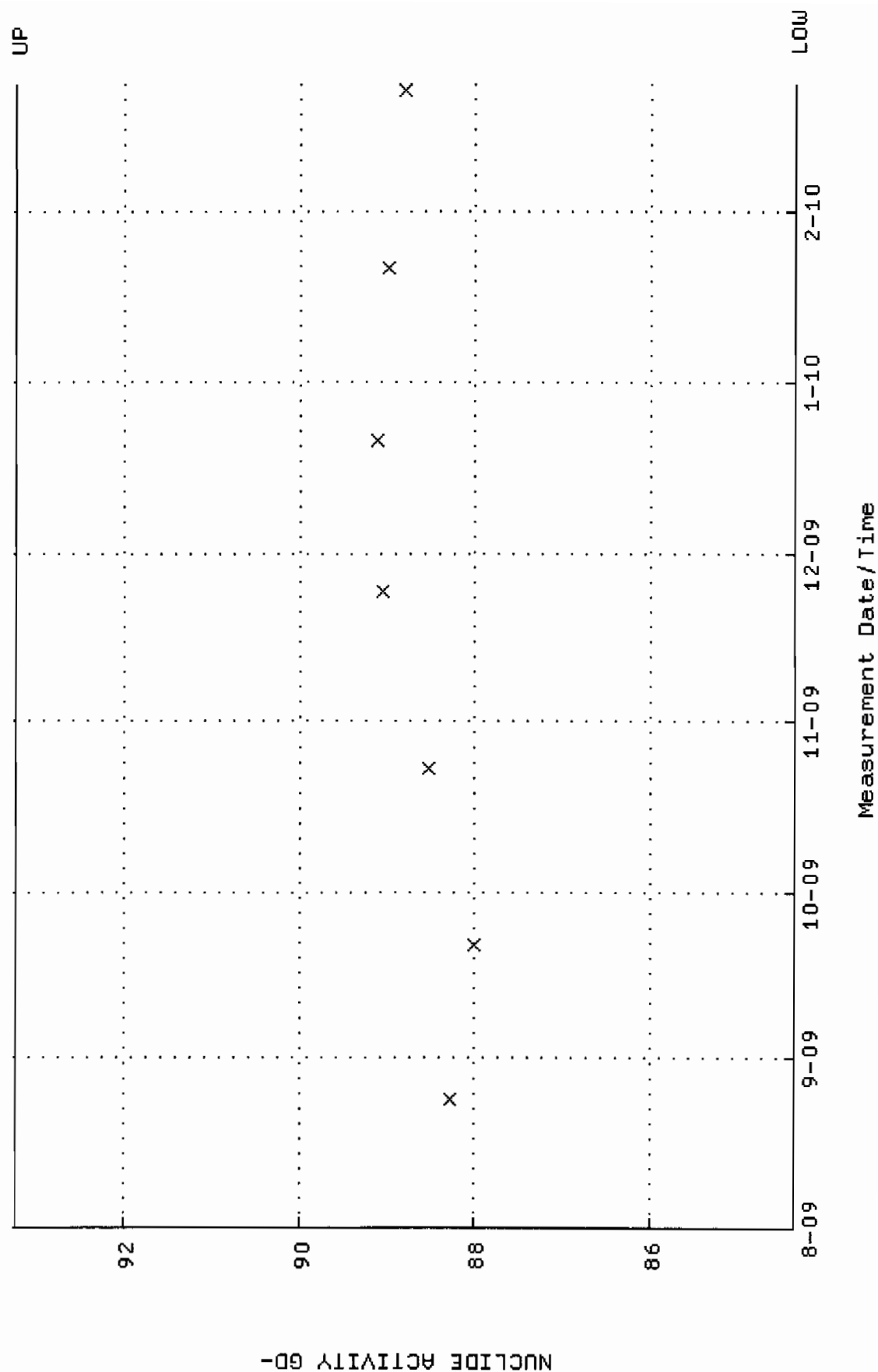
QA filename : DKA100:[ENV_ALPHA.QA.B]B129.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 2-AUG-2009 17:13:09 through 19-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W185.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 24-AUG-2009 08:42:07 through 23-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.249628 through 0.269628



QA filename : DKA100:[ENV_ALPHA.QA.W]W185.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 24-AUG-2009 08:42:07 through 23-FEB-2010 12:00:00
 Lower/Upper Lmts: 84.3502 through 93.2292

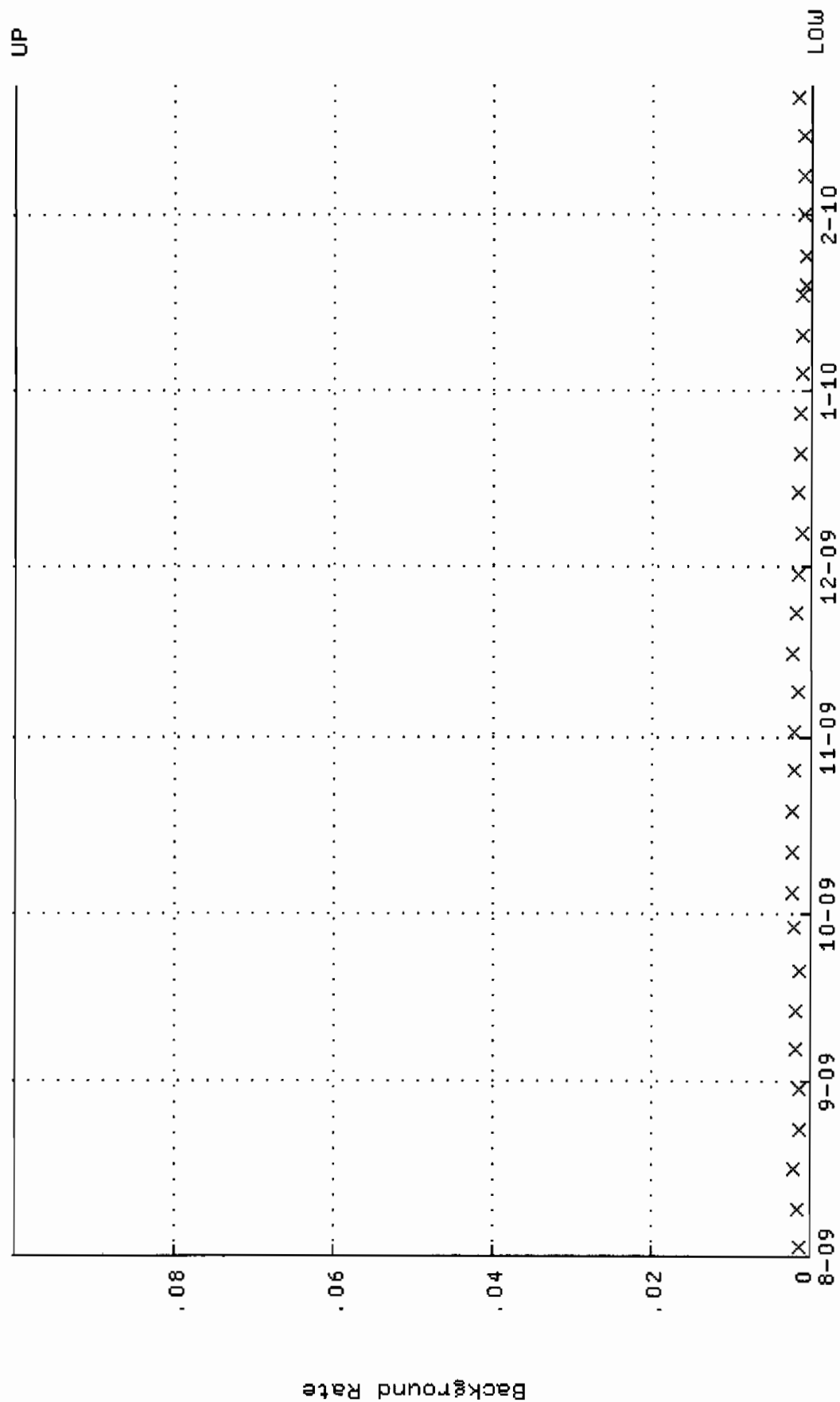


QA filename : DKA100:[ENV_ALPHA.QA.B]B185.QAF;1

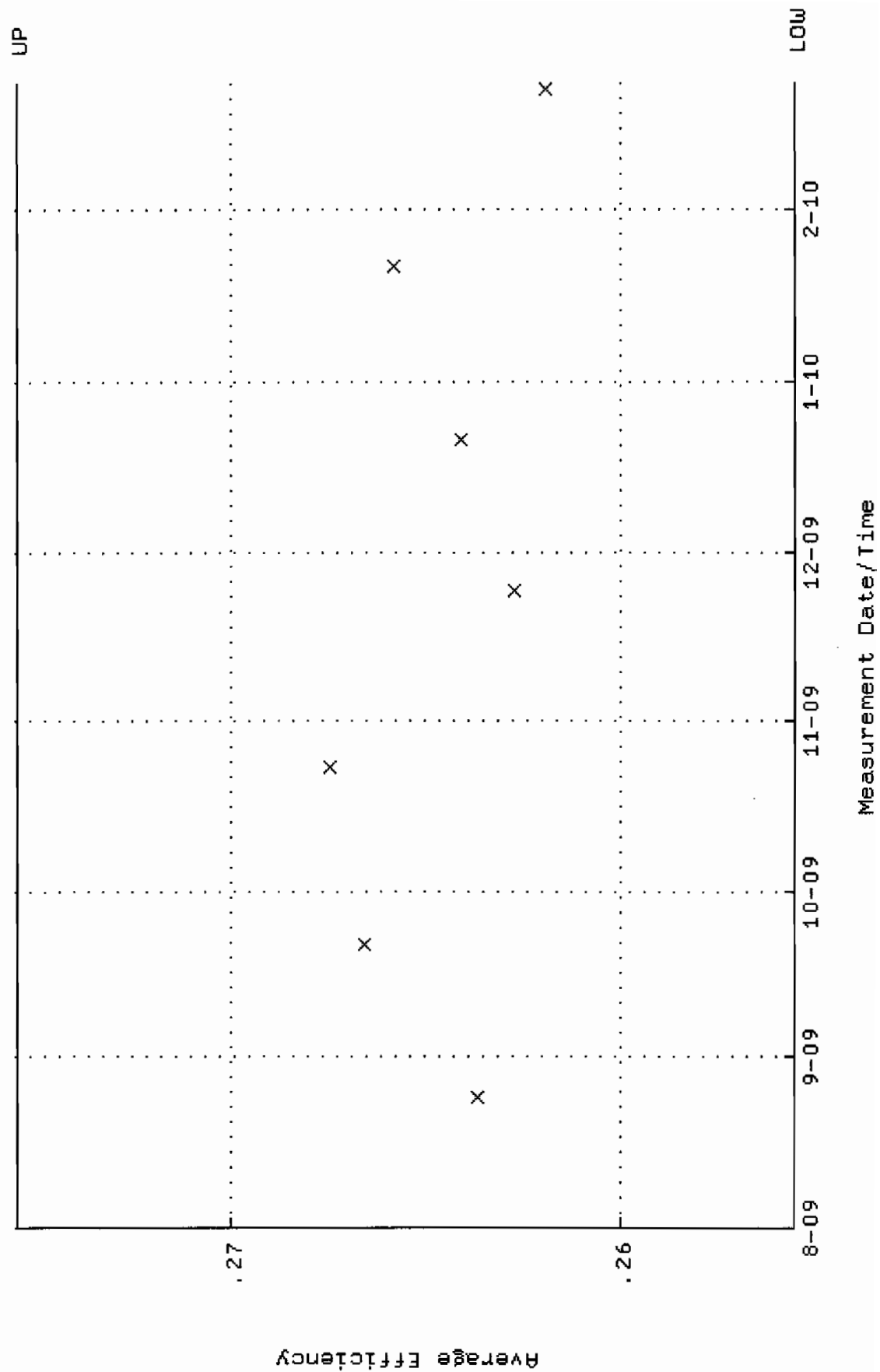
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:23:26 through 23-FEB-2010 12:00:00

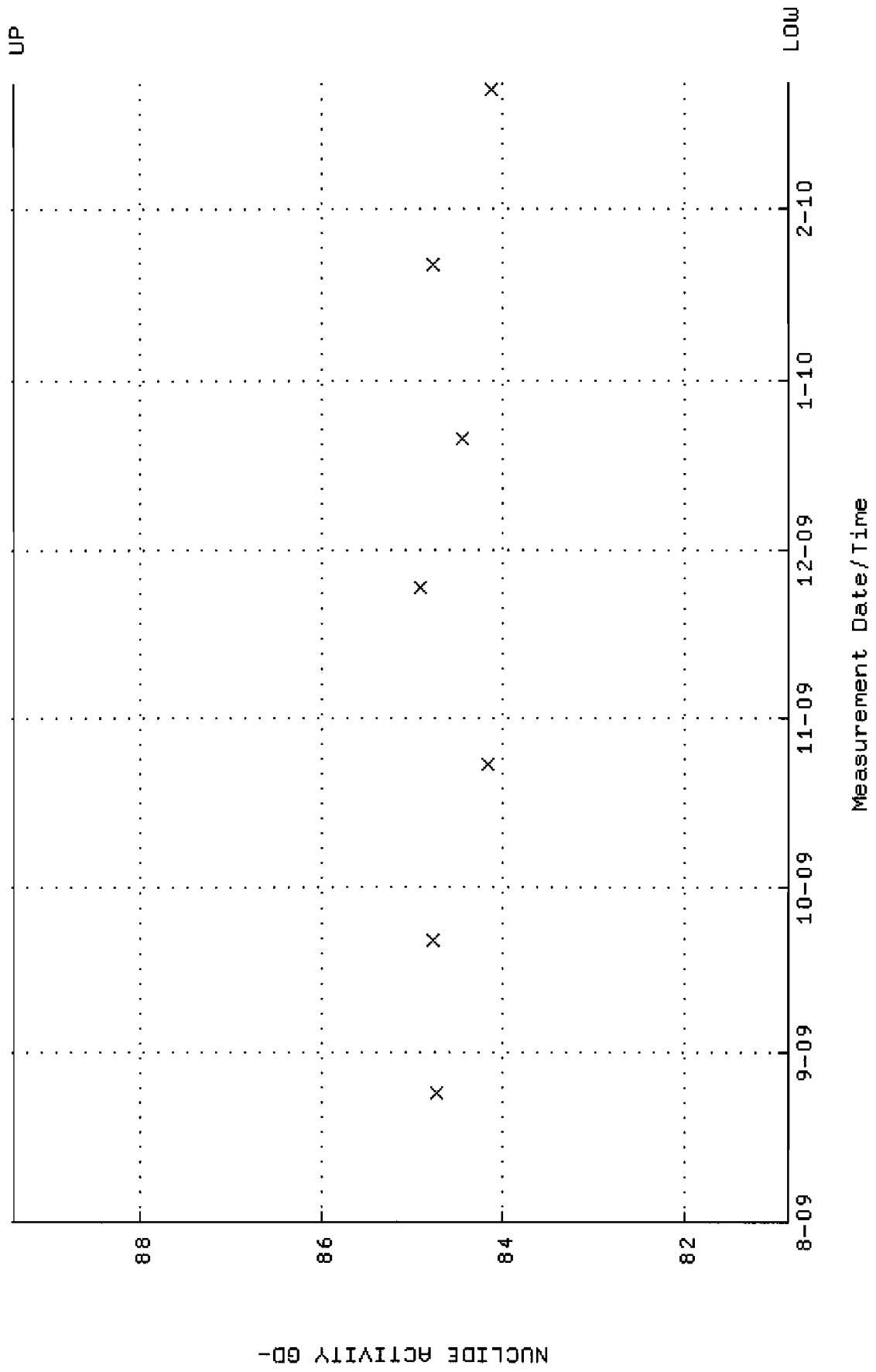
Lower/Upper Lmts: 0.000000E+00 through 0.100000



QA filename : DKA100:[ENV_ALPHA.QA.W]W202.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 24-AUG-2009 08:43:39 through 23-FEB-2010 12:00:00
 Lower/Upper Lmts: 0.255511 through 0.275511



QA filename : DKA100:[ENV_ALPHA.QA.W]W202.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 24-AUG-2009 08:43:39 through 23-FEB-2010 12:00:00
 Lower/Upper Lmts: 80.8649 through 89.3769

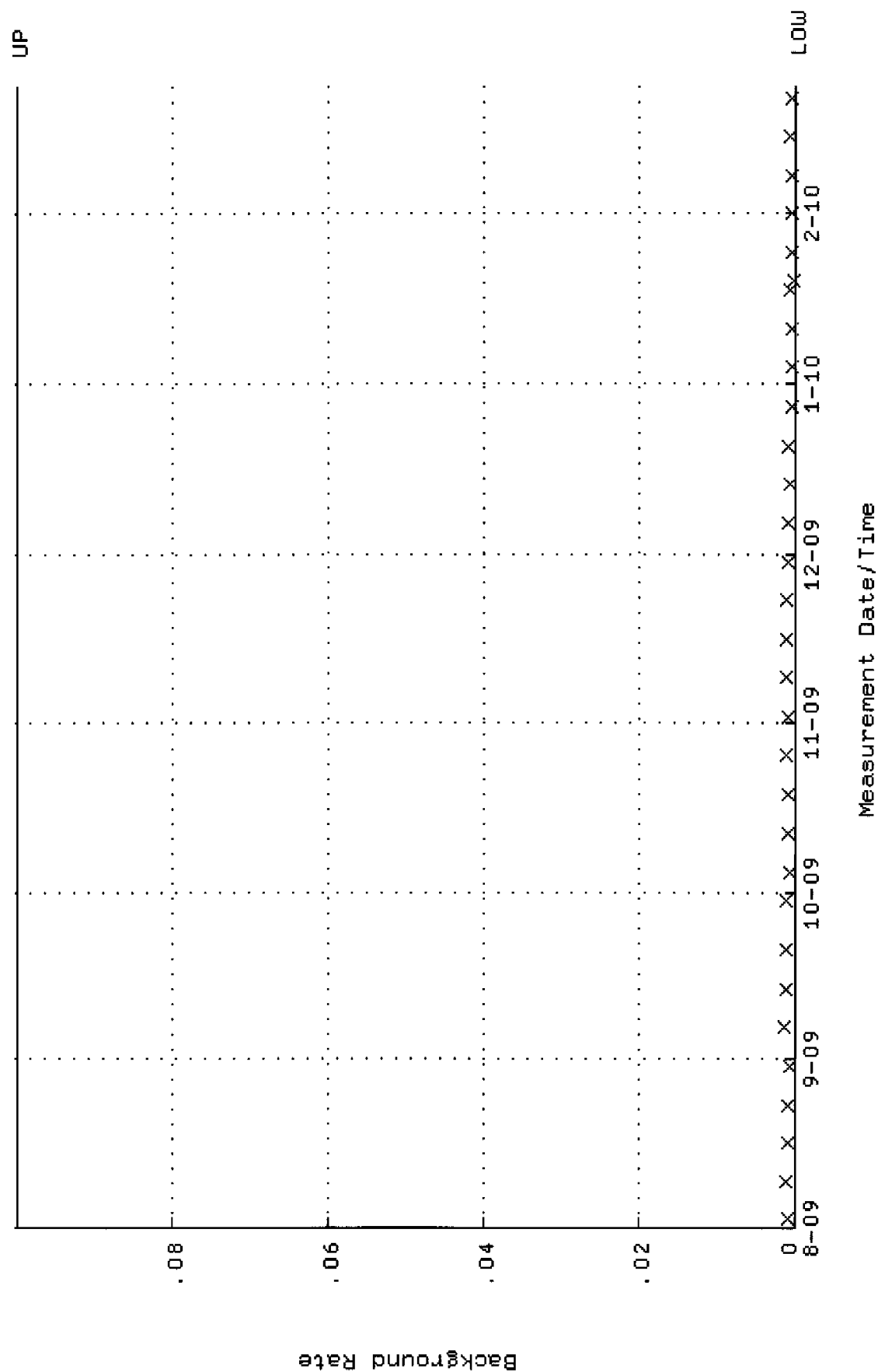


QA filename : DKA100:[ENV_ALPHA.QA.B]B202.QAF;1

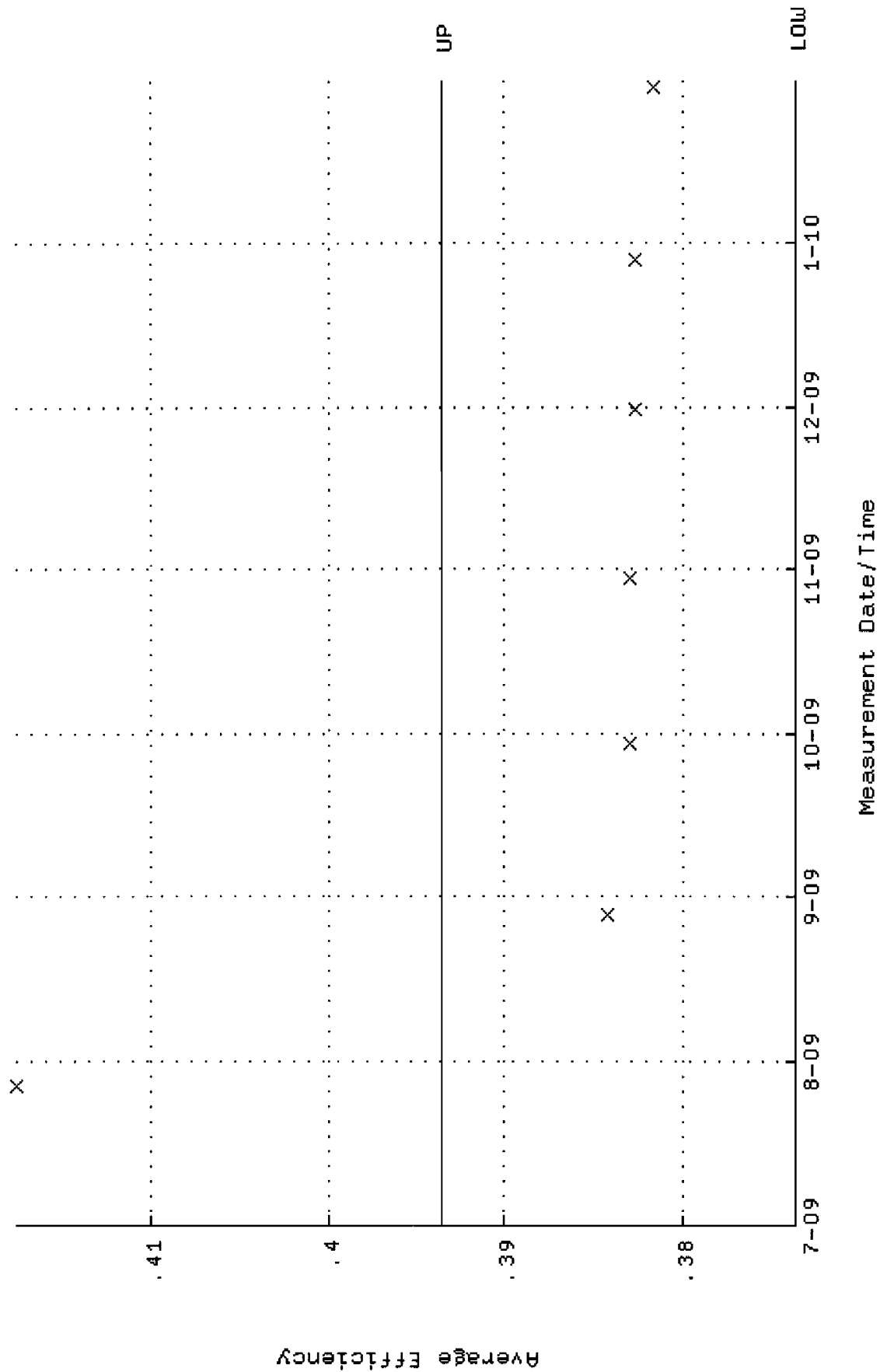
Parameter Name : BACKRATE (Background Rate)

Start/End Dates : 2-AUG-2009 17:24:39 through 23-FEB-2010 12:00:00

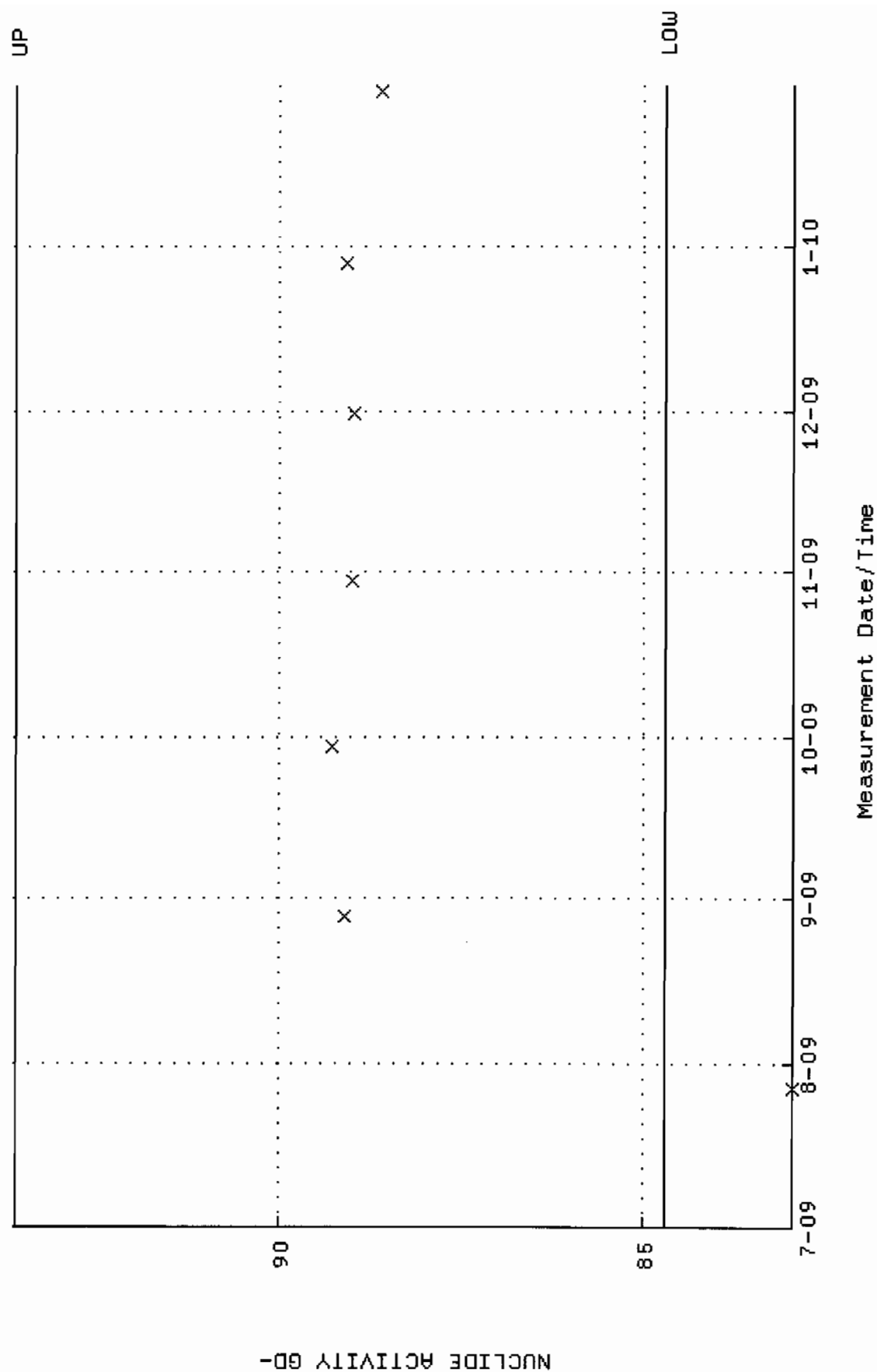
Lower/Upper Lmts: 0.000000E+00 through 0.100000



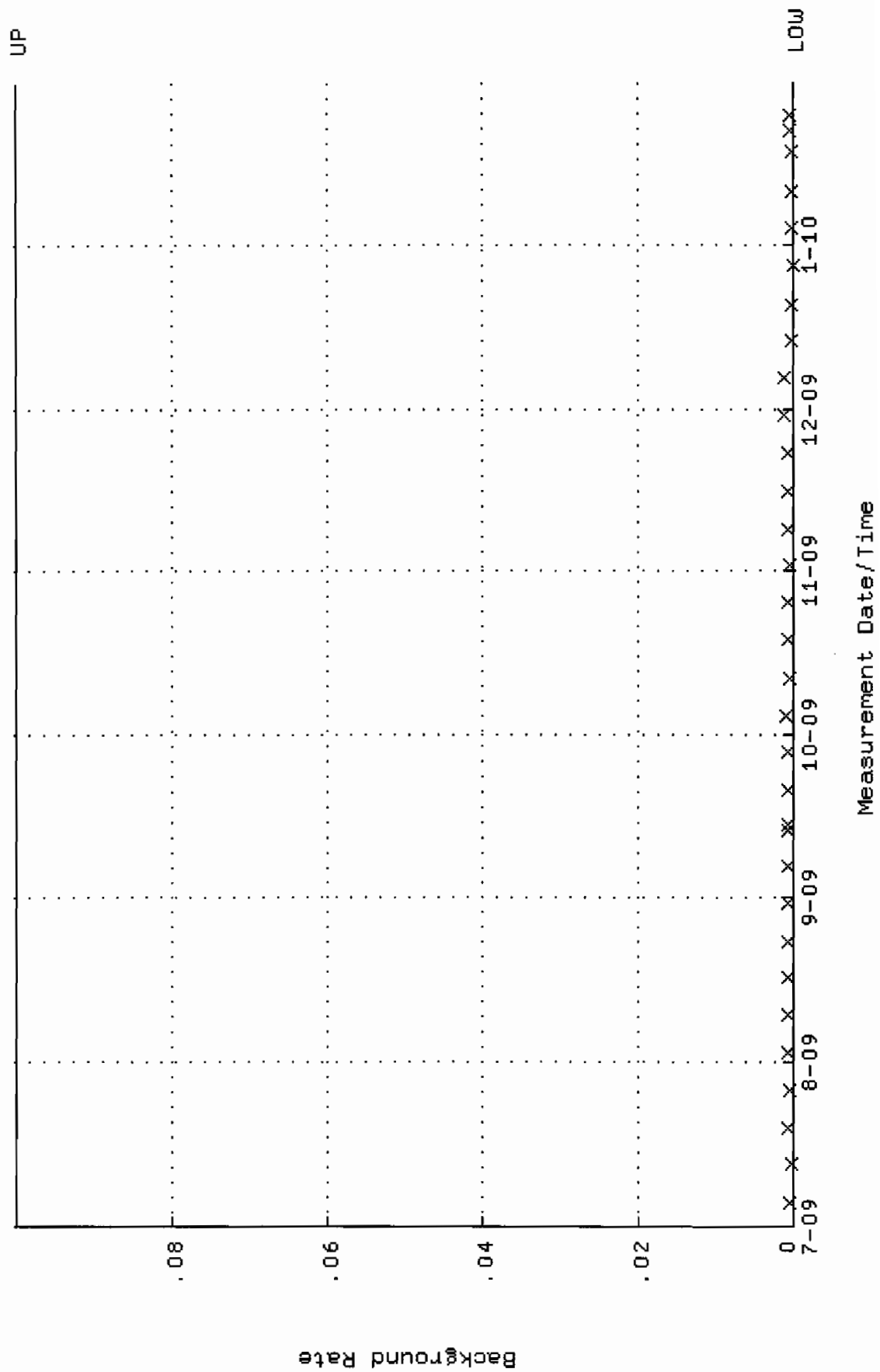
QA filename : DKA100:[ENV_ALPHA.QA.W]W253.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 27-JUL-2009 11:51:49 through 30-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.373633 through 0.393633



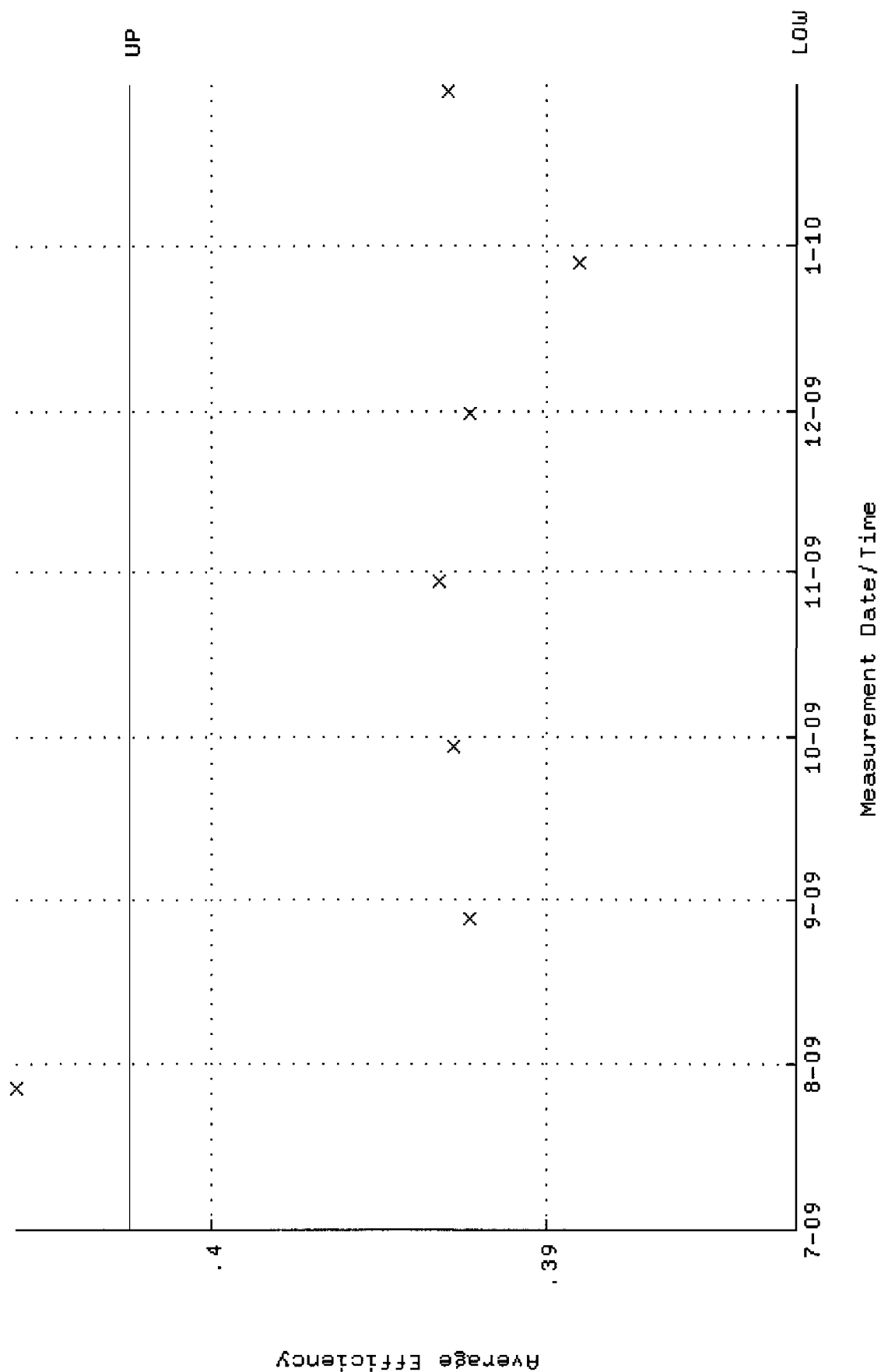
QA filename : DKA100:[ENV_ALPHA.QA.W]W253.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 27-JUL-2009 11:51:49 through 30-JAN-2010 12:00:00
 Lower/Upper Lmts: 84.7115 through 93.6285



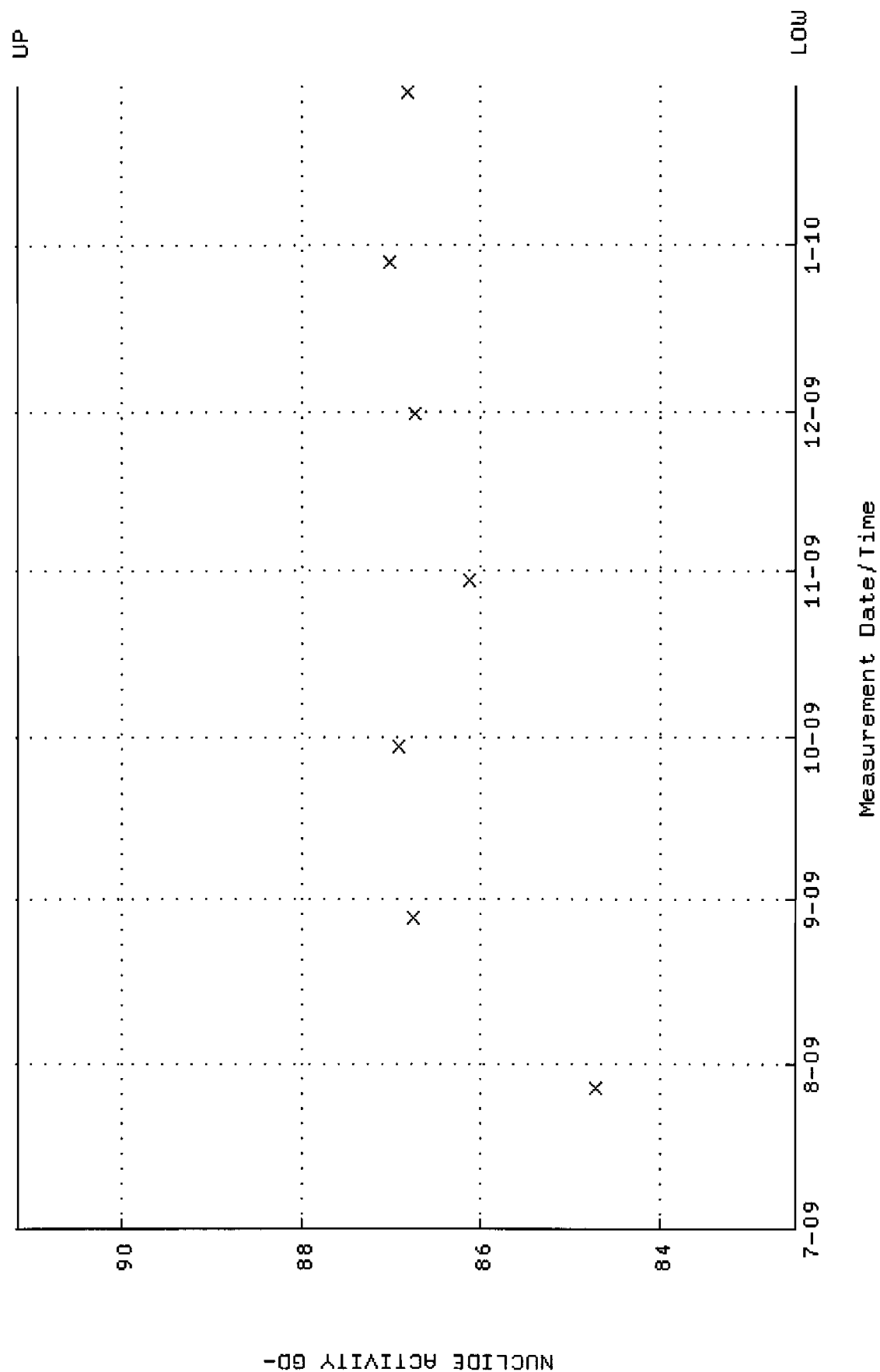
QA filename : DKA100:[ENV_ALPHA.QA.B]B253.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:06:46 through 30-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



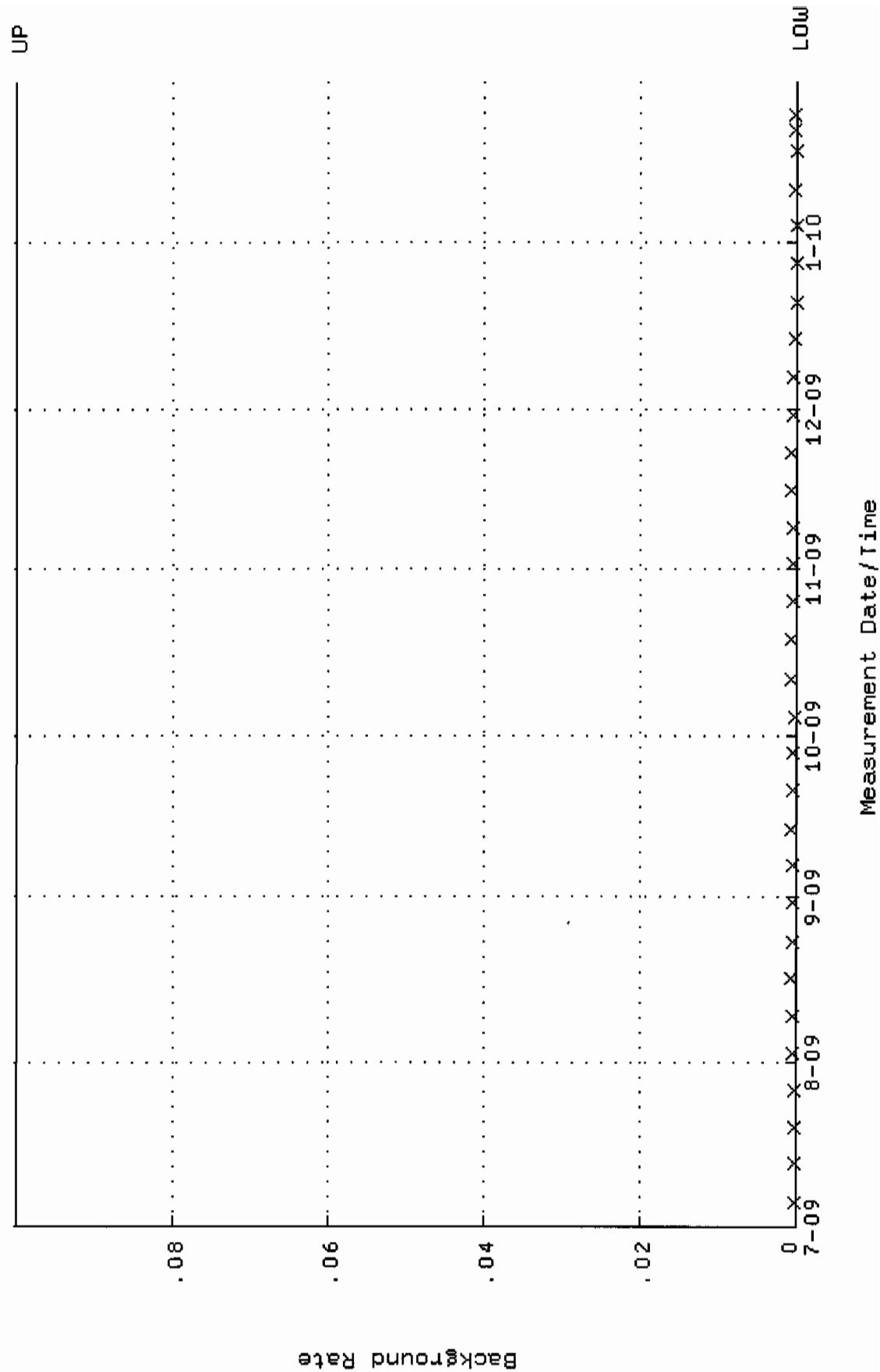
QA filename : DKA100:[ENV_ALPHA.QA.W]w254.QAF;1
 Parameter Name : AVRGEFF (Average Efficiency)
 Start/End Dates : 27-JUL-2009 11:51:54 through 30-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.382510 through 0.402510



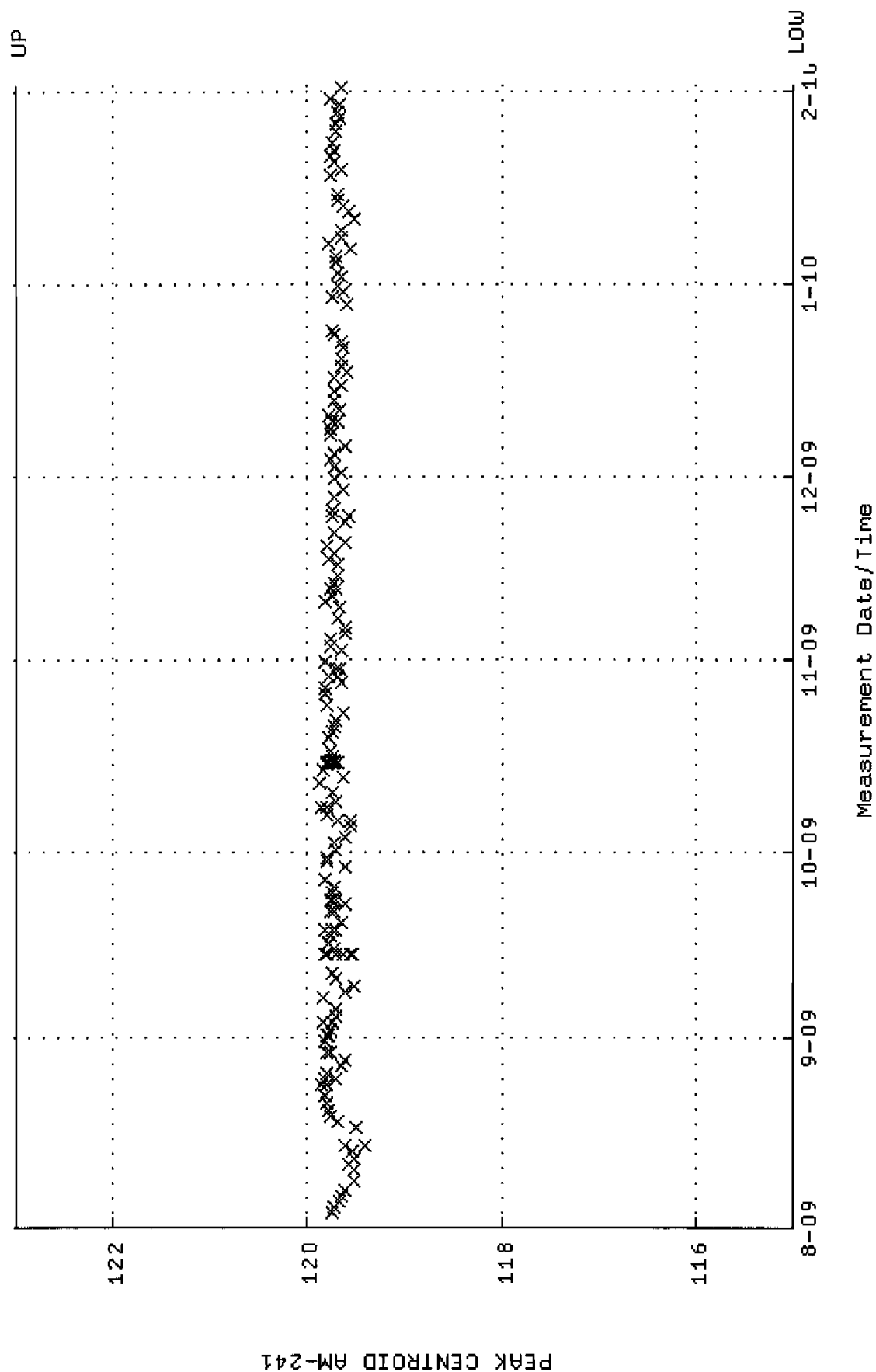
QA filename : DKA100:[ENV_ALPHA.QA.W]w254.QAF;1
 Parameter Name : NLACTIVITY-GD148 (NUCLIDE ACTIVITY GD-148)
 Start/End Dates : 27-JUL-2009 11:51:54 through 30-JAN-2010 12:00:00
 Lower/Upper Lmts: 82.4795 through 91.1615



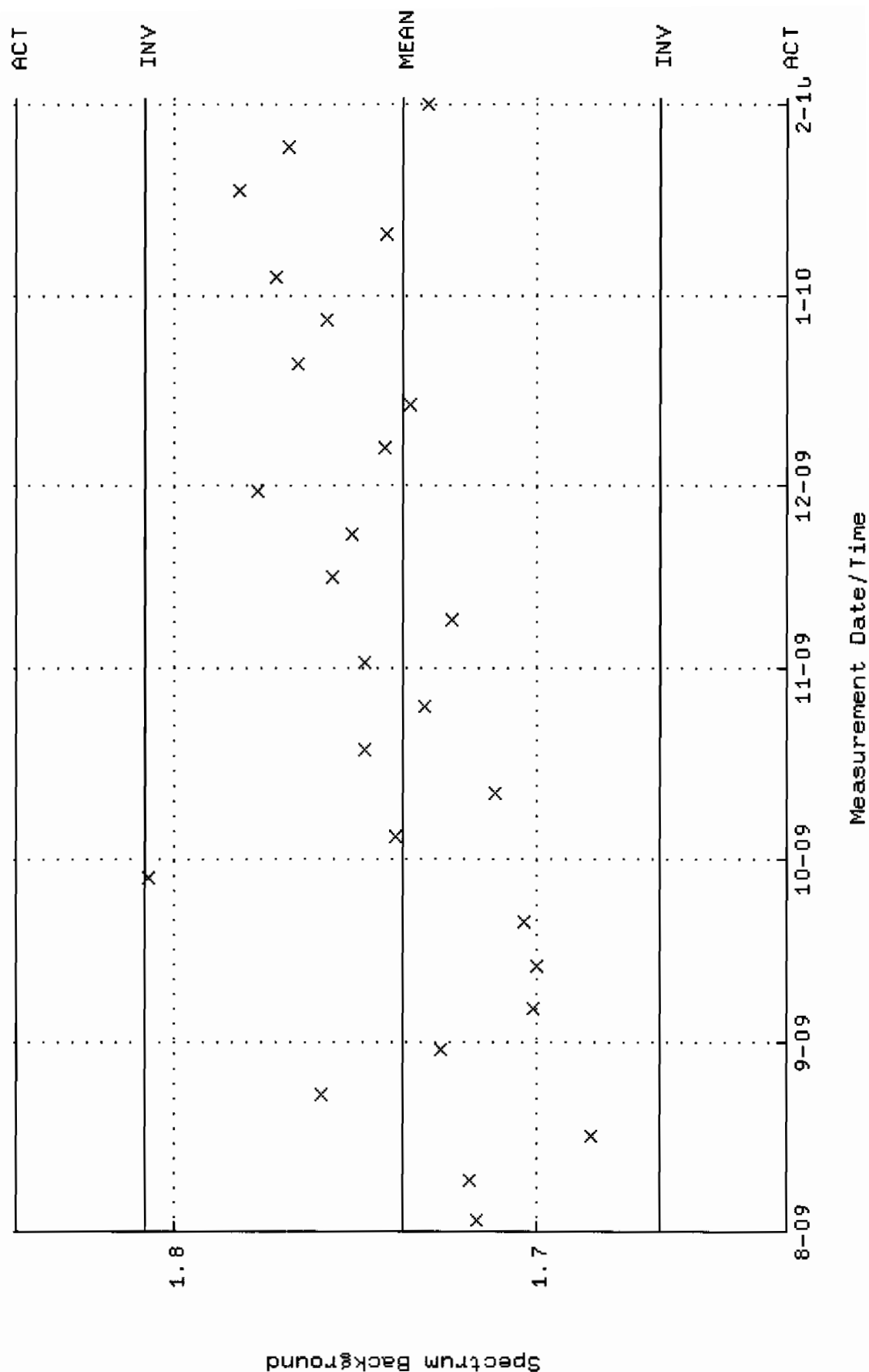
QA filename : DKA100:[ENV_ALPHA.QA.B]B254.QAF;1
 Parameter Name : BACKRATE (Background Rate)
 Start/End Dates : 5-JUL-2009 15:06:51 through 30-JAN-2010 12:00:00
 Lower/Upper Lmts: 0.000000E+00 through 0.100000



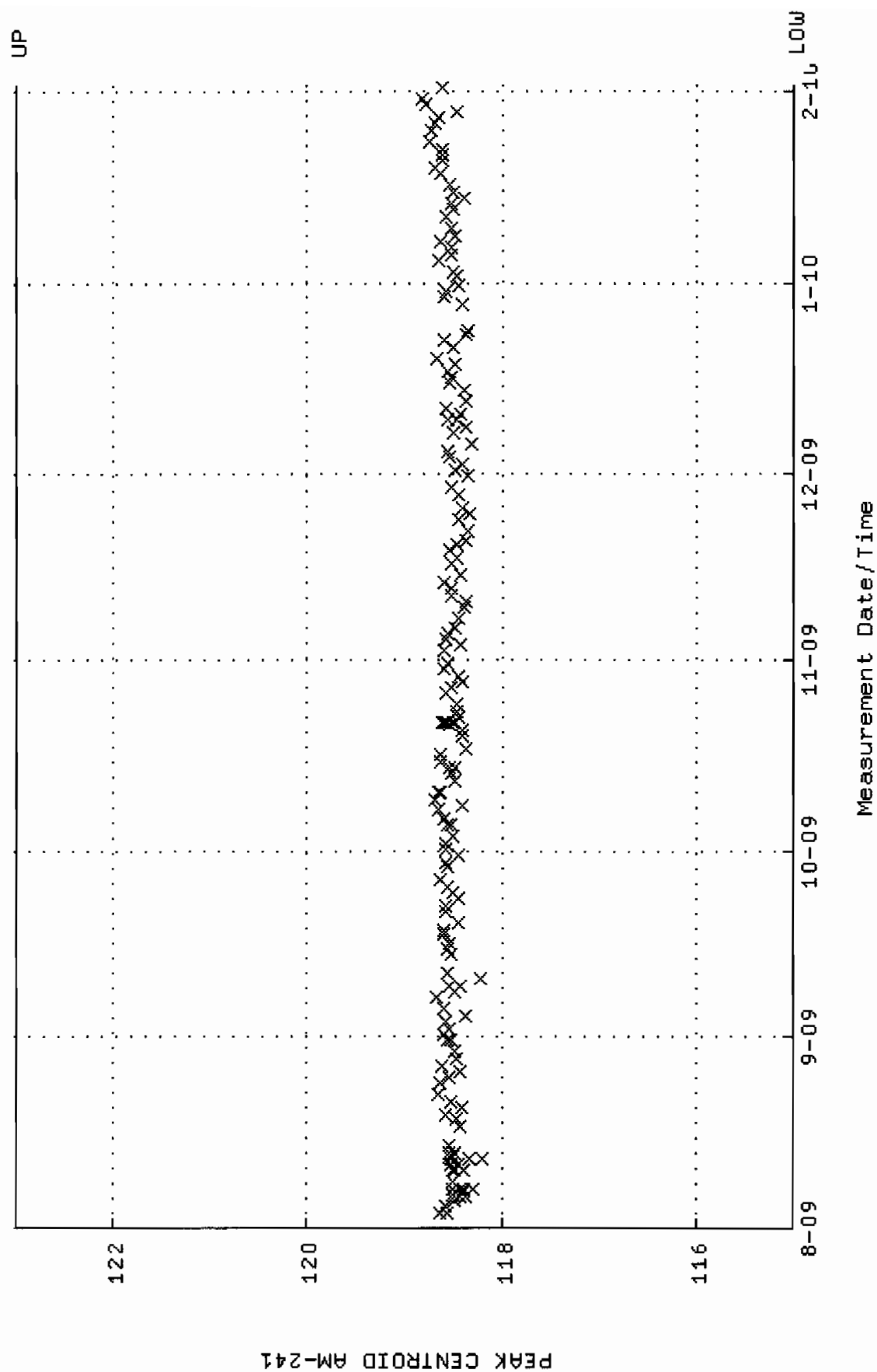
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM01-500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:08:48 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



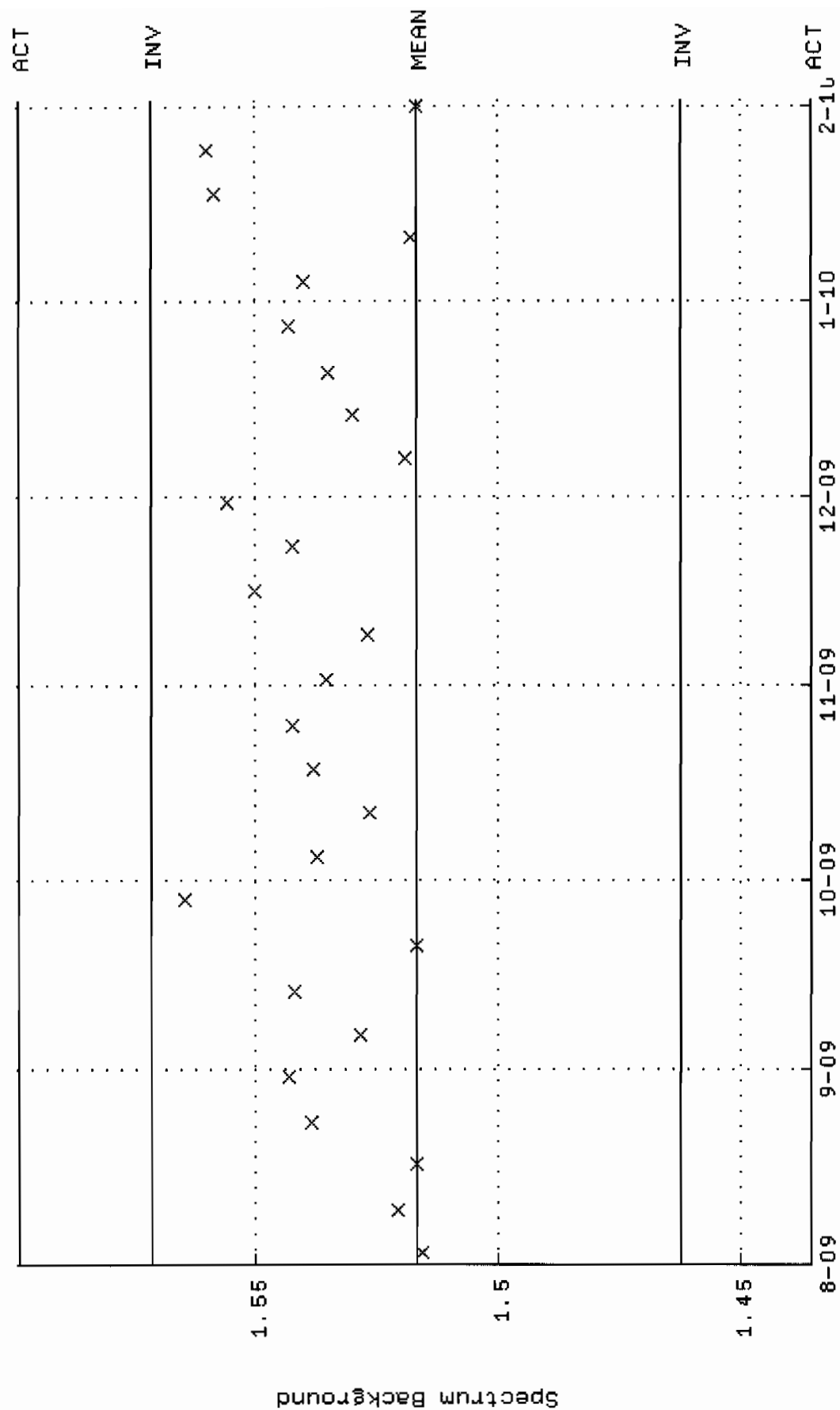
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM01.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:21:01 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.73723 +- 3.552524E-02 (2.04 %)



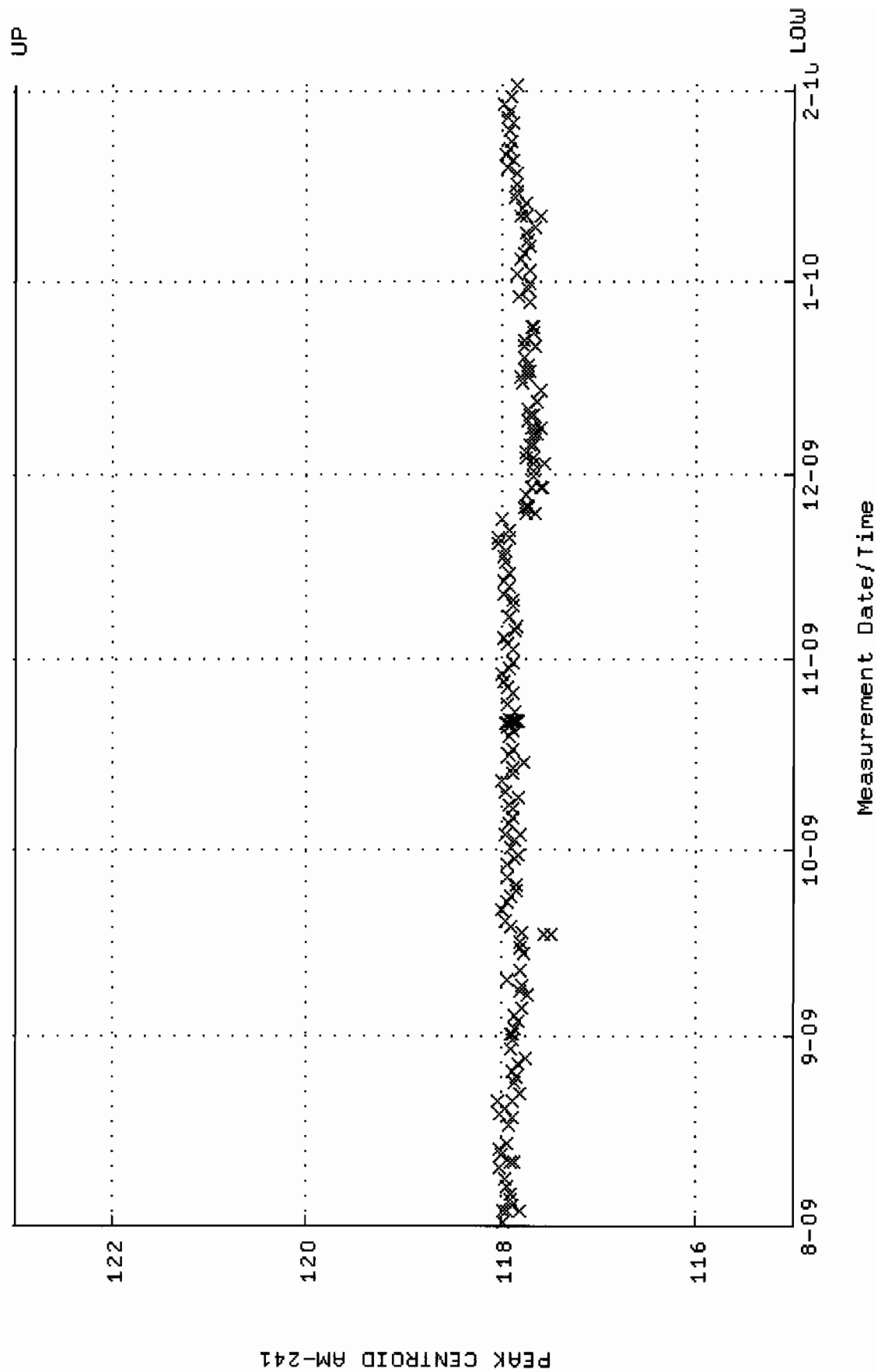
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM07_JAR.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:13:52 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



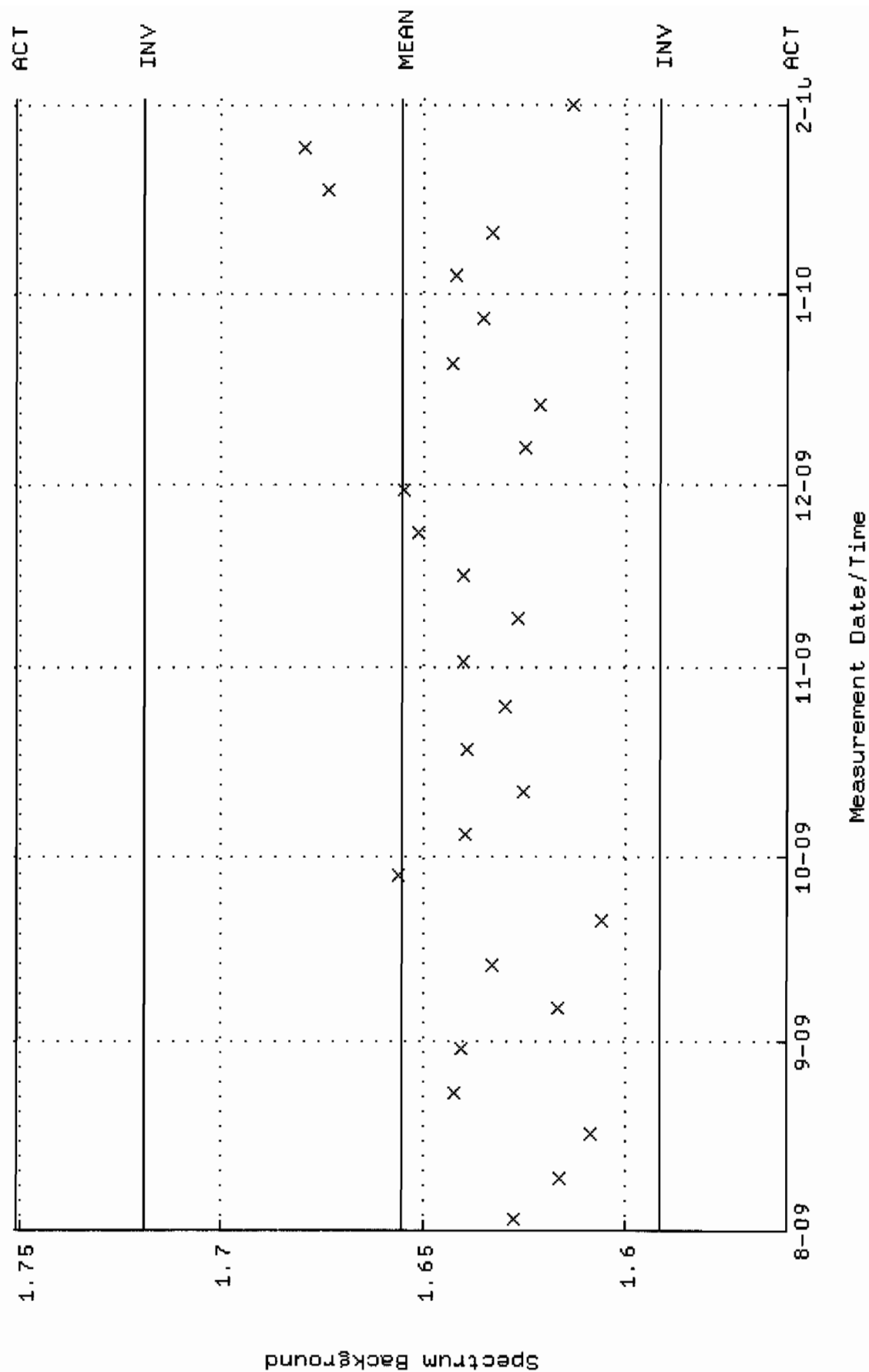
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM07.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:23:26 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.51715 +- 2.726376E-02 (1.80 %)



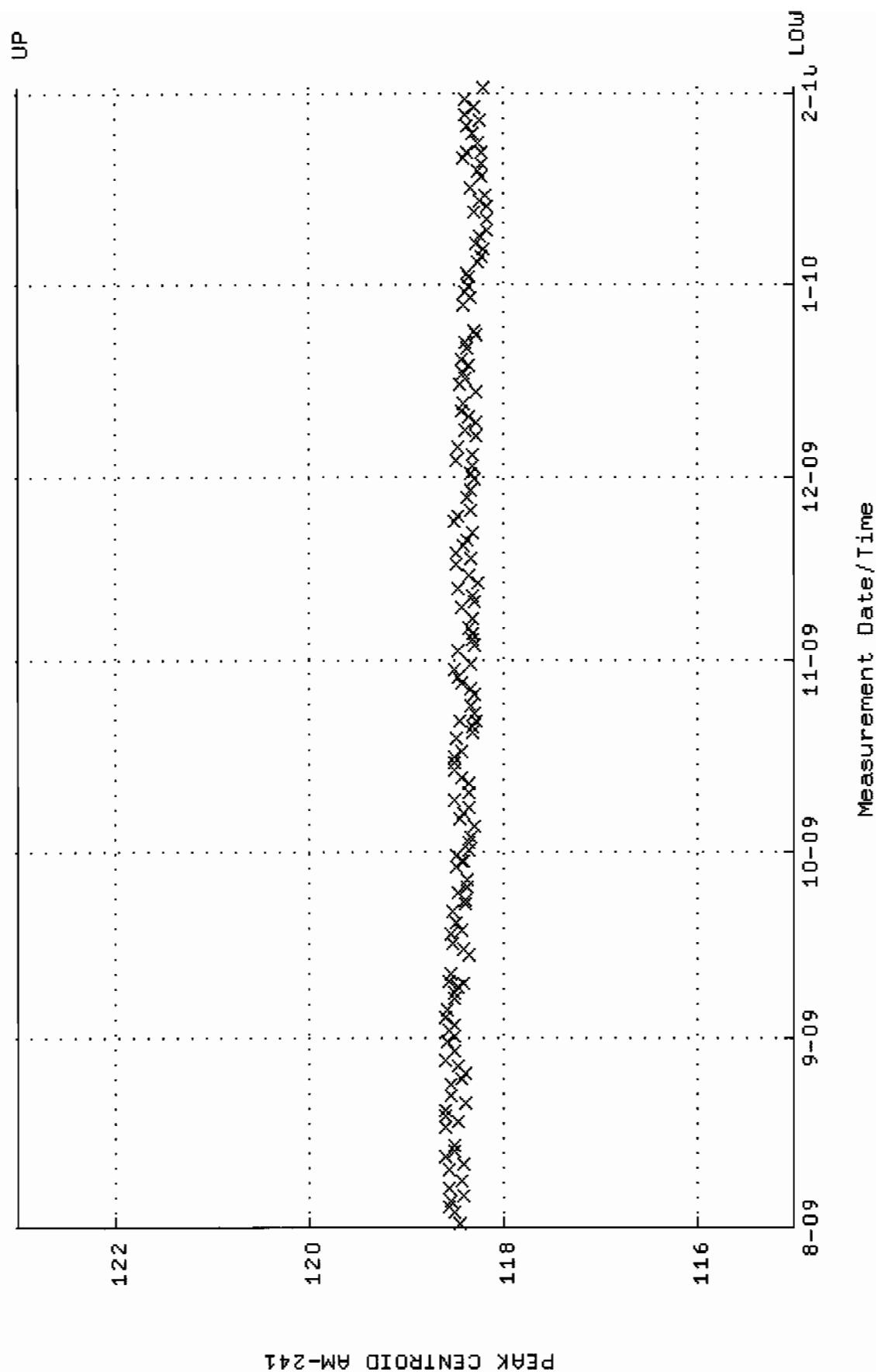
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM11_JAR.QAF;1
Parameter Name : PSCENTROD-241 (PEAK CENTROID AM-241)
Start/End Dates : 1-AUG-2009 13:27:21 through 1-FEB-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



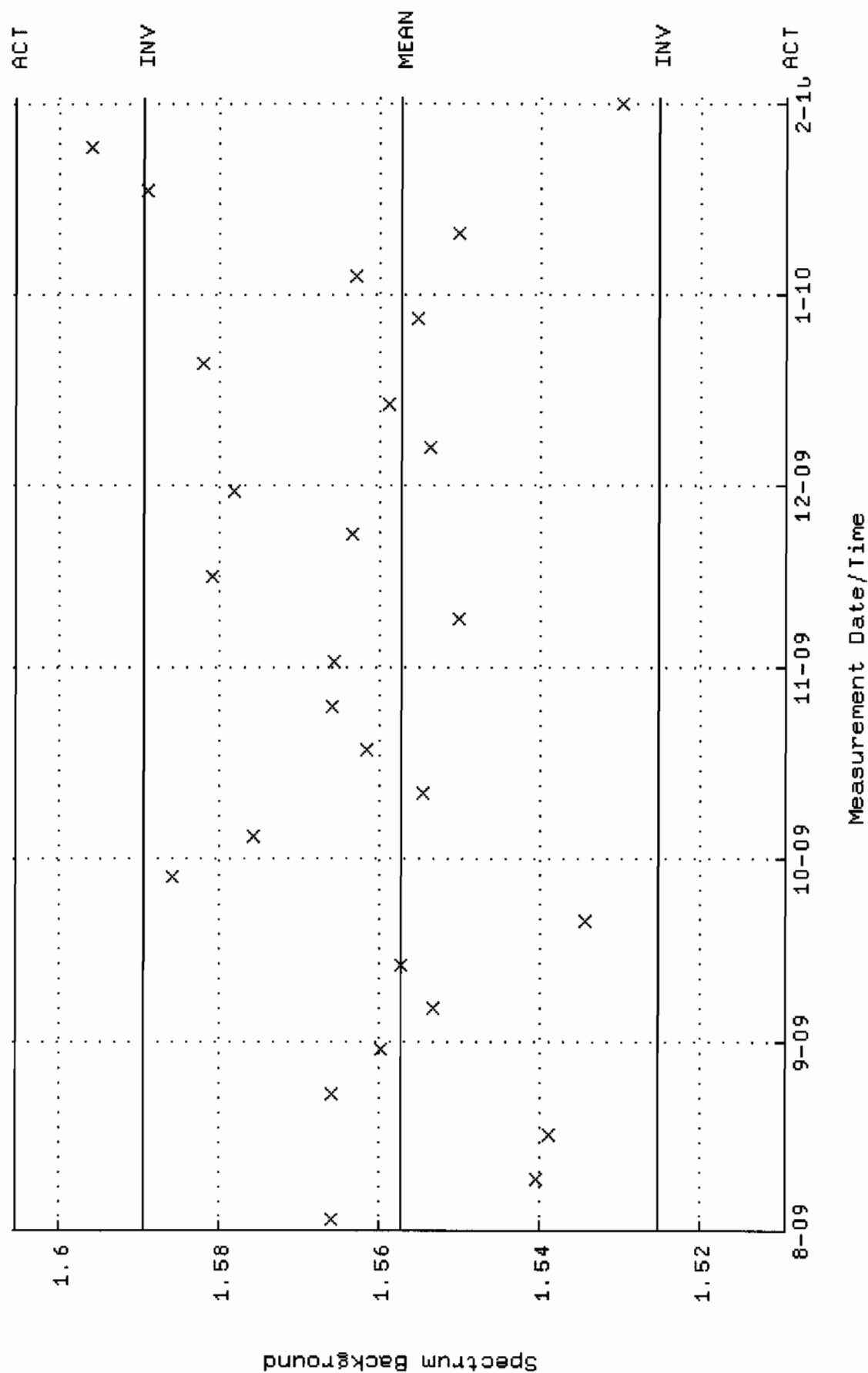
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM11.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:23:55 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.65552 +- 3.175806E-02 (1.92 %)



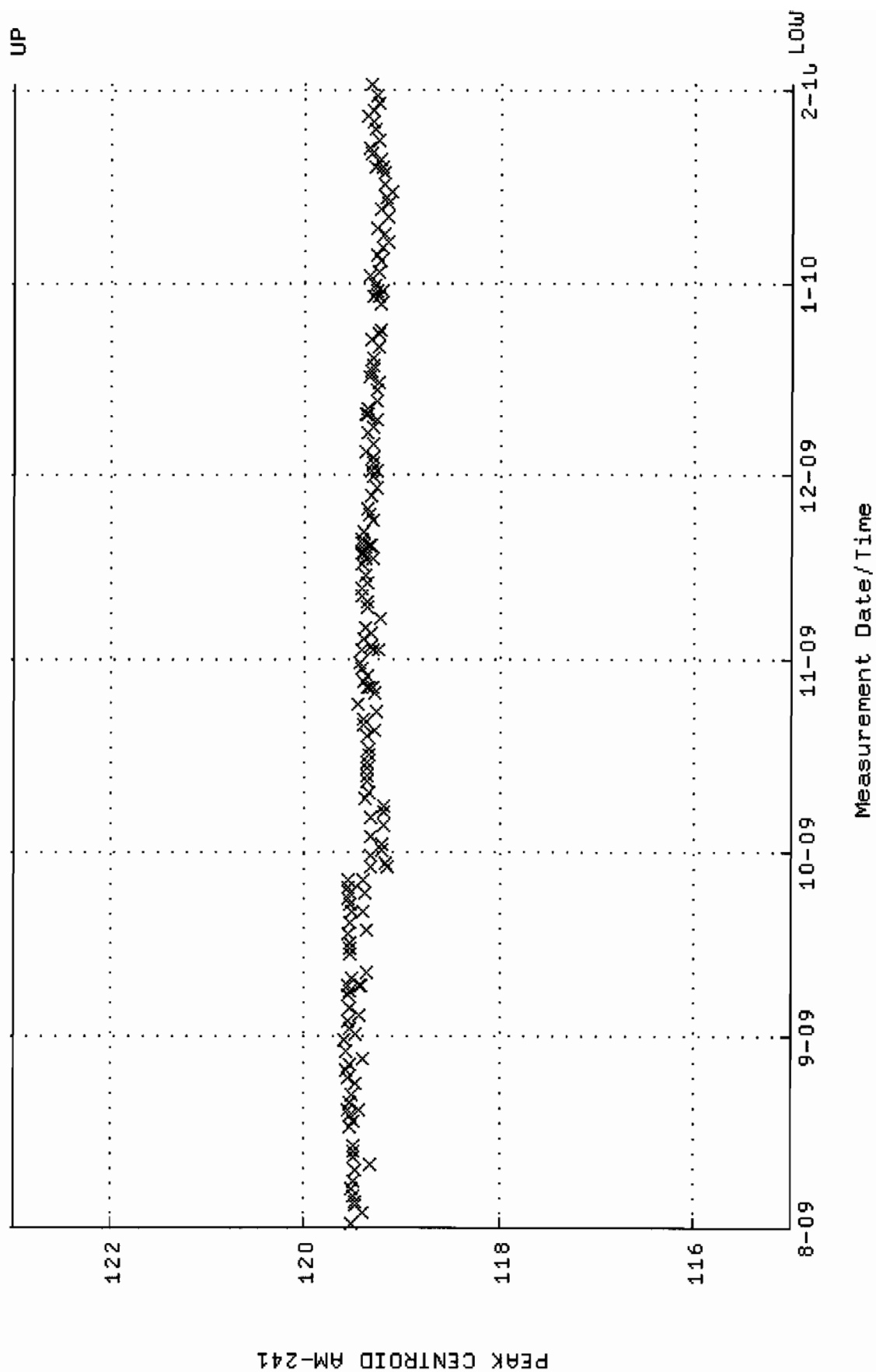
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM12_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 1-AUG-2009 13:58:23 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



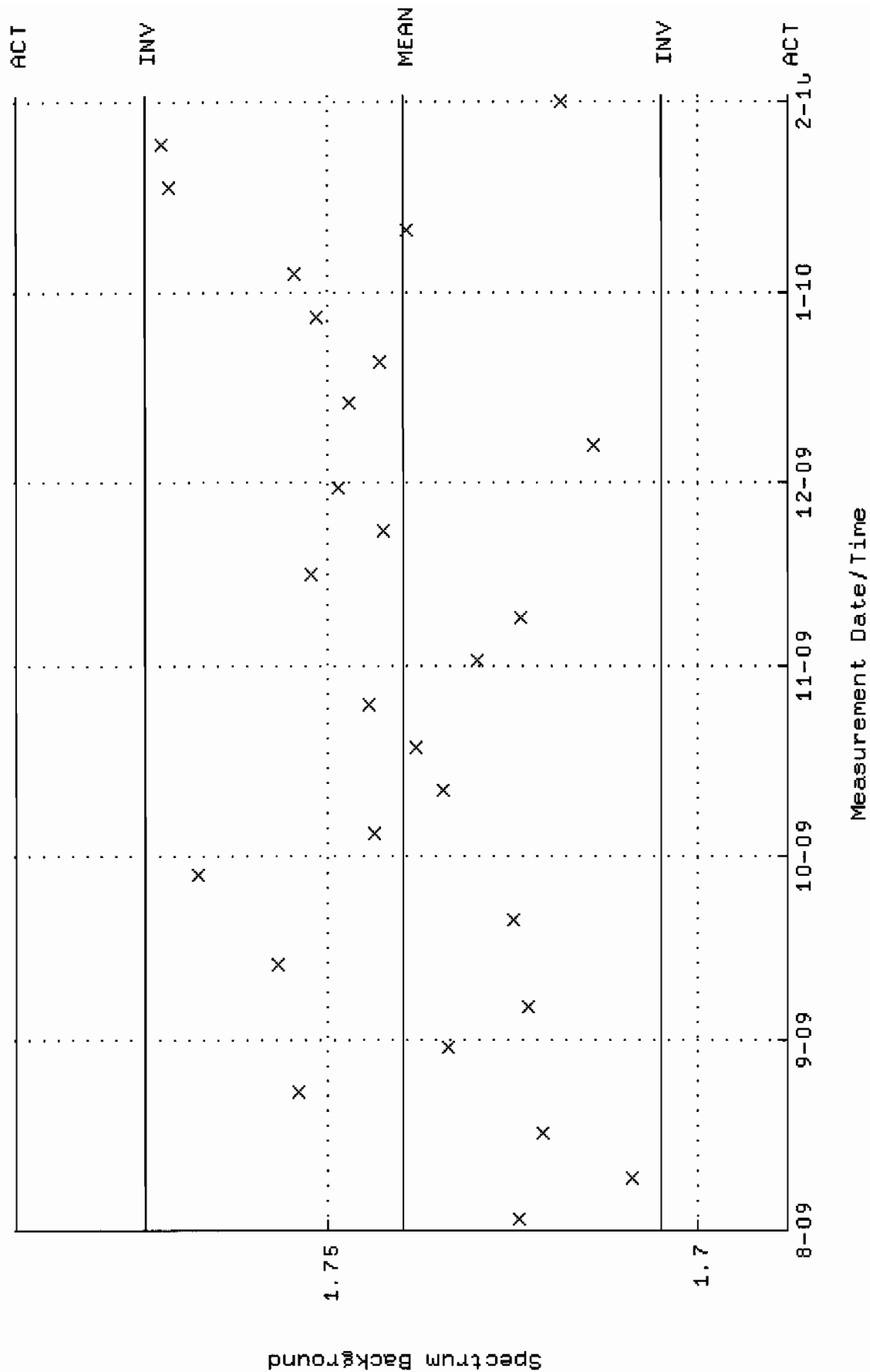
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM12.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:24:08 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.55746 +- 1.601675E-02 (1.03 %)



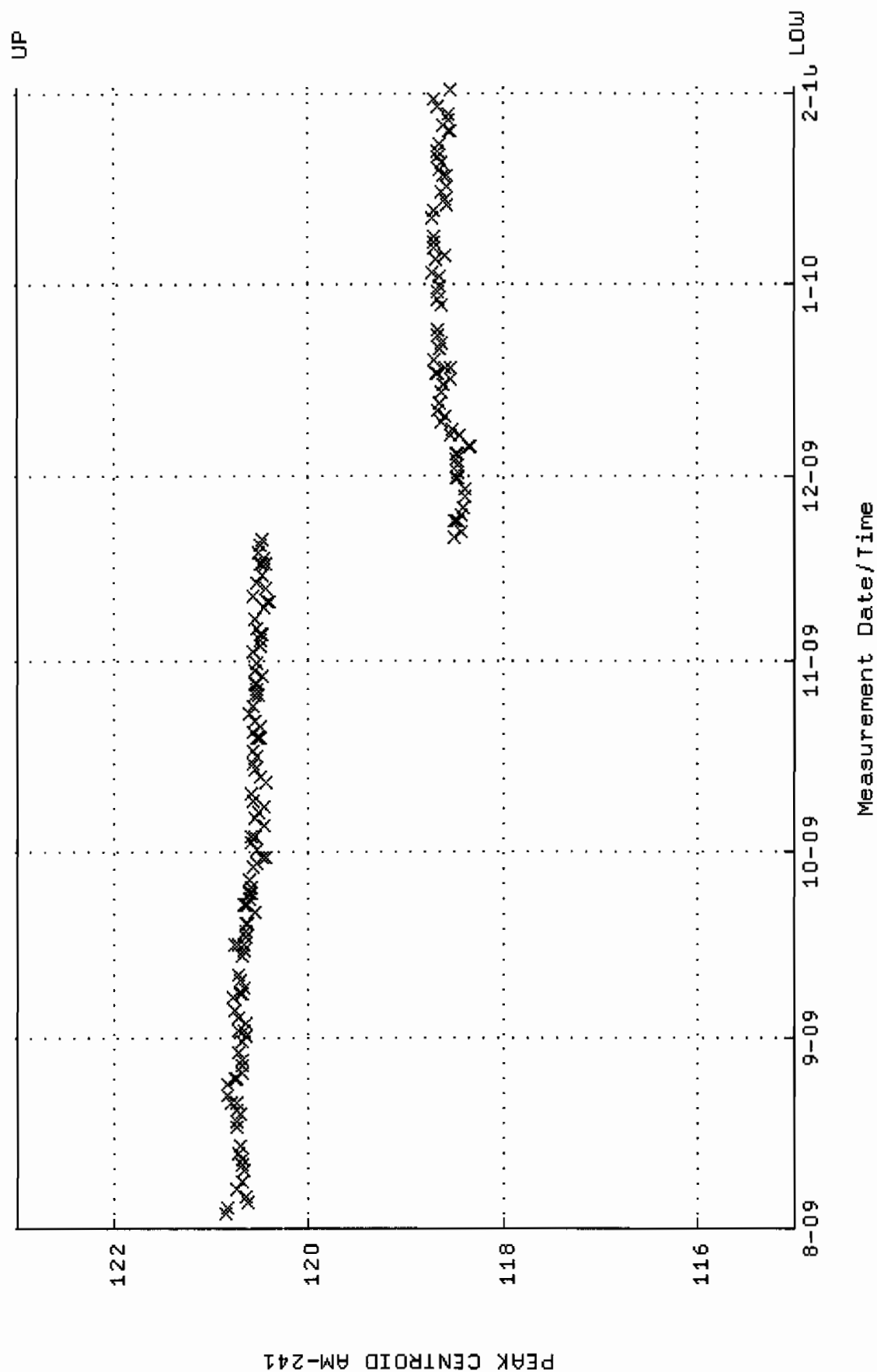
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM16_CAN.QAF;1
Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
Start/End Dates : 1-AUG-2009 13:27:30 through 1-FEB-2010 12:00:00
Lower/Upper Lmts: 115.000 through 123.000



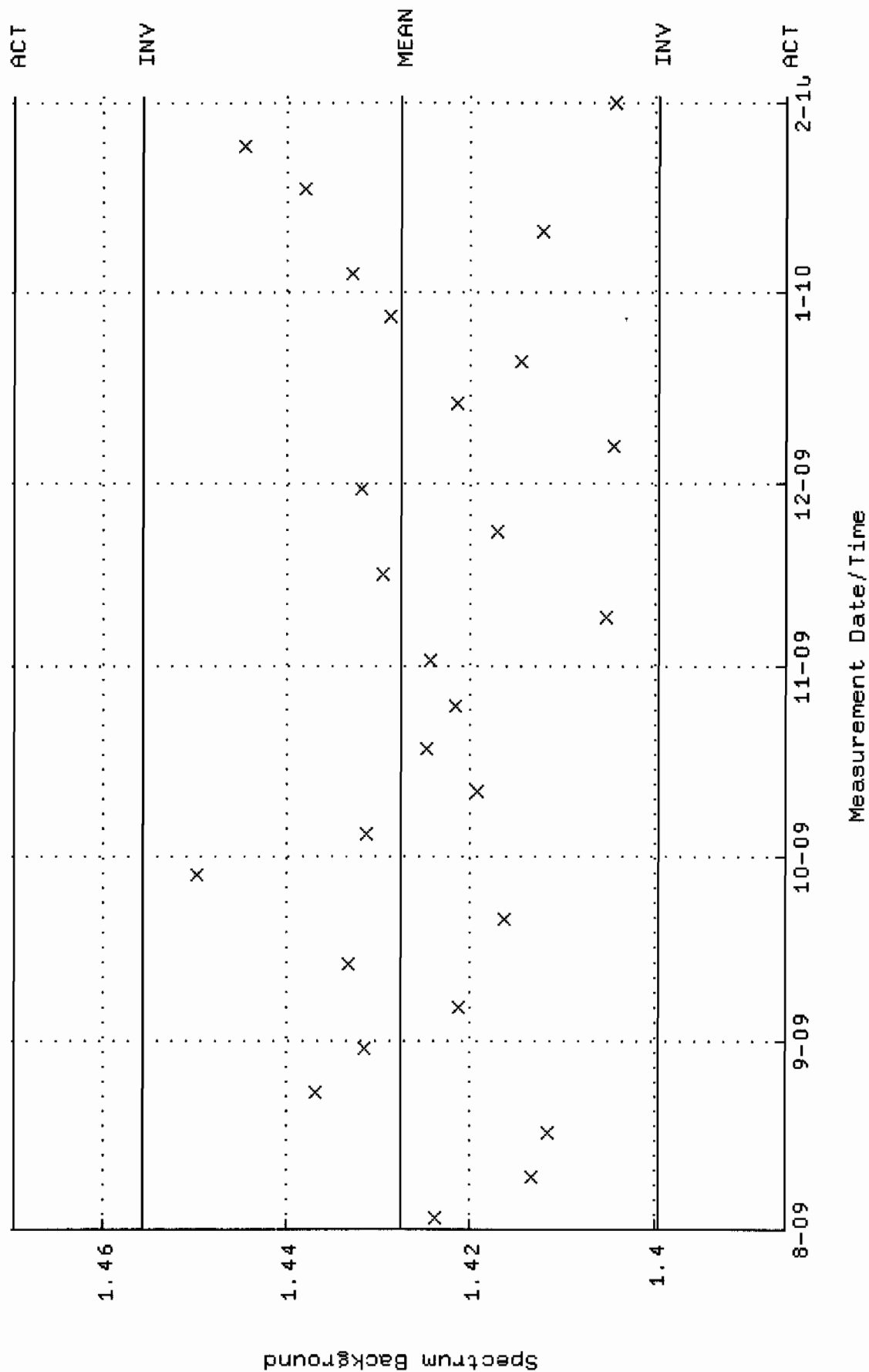
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM16.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:24:58 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.73980 +- 1.729897E-02 (0.99 %)



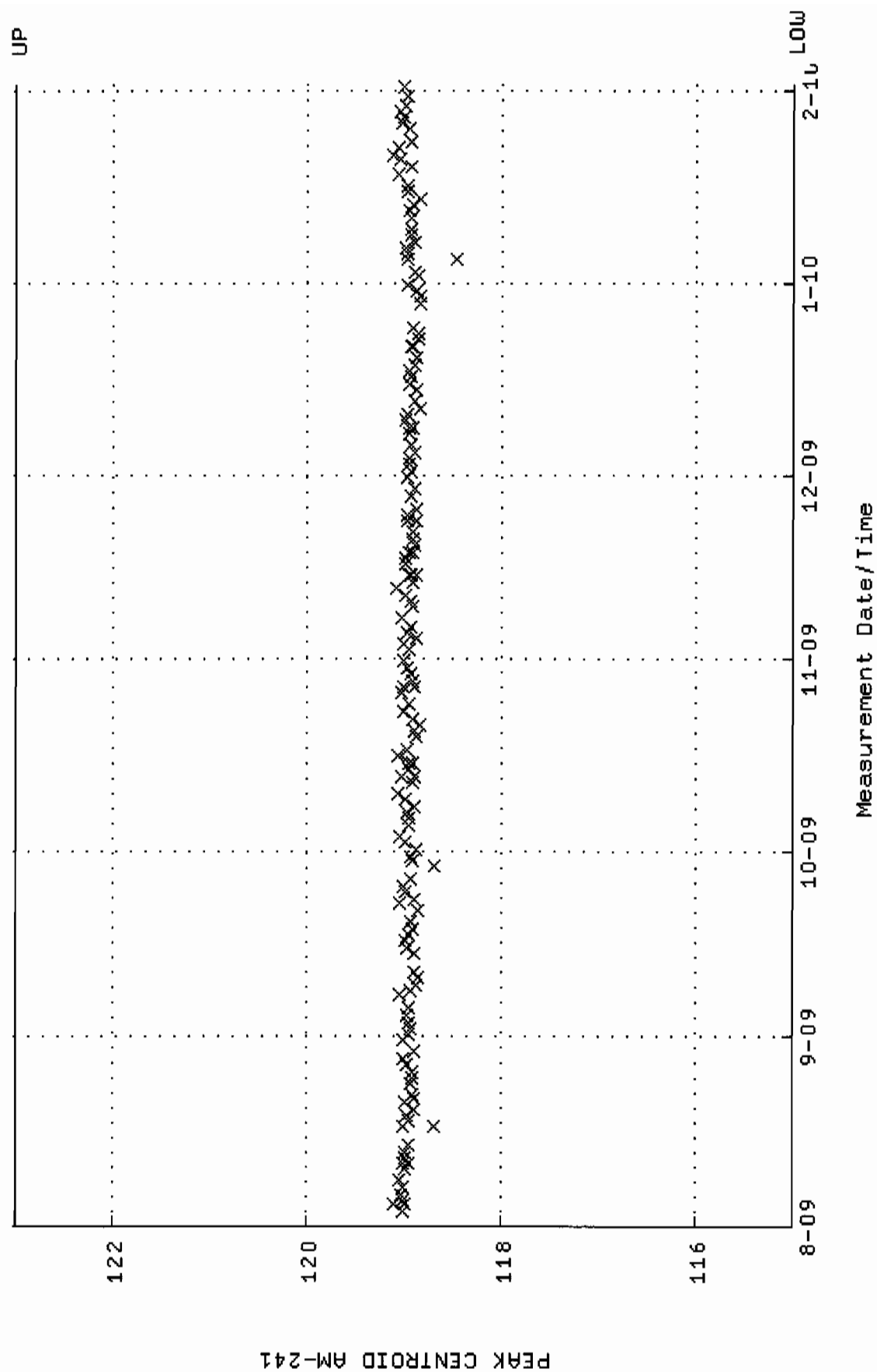
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM17_CAN.QAF;1
 Parameter Name : PSCENTRO-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:55:06 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



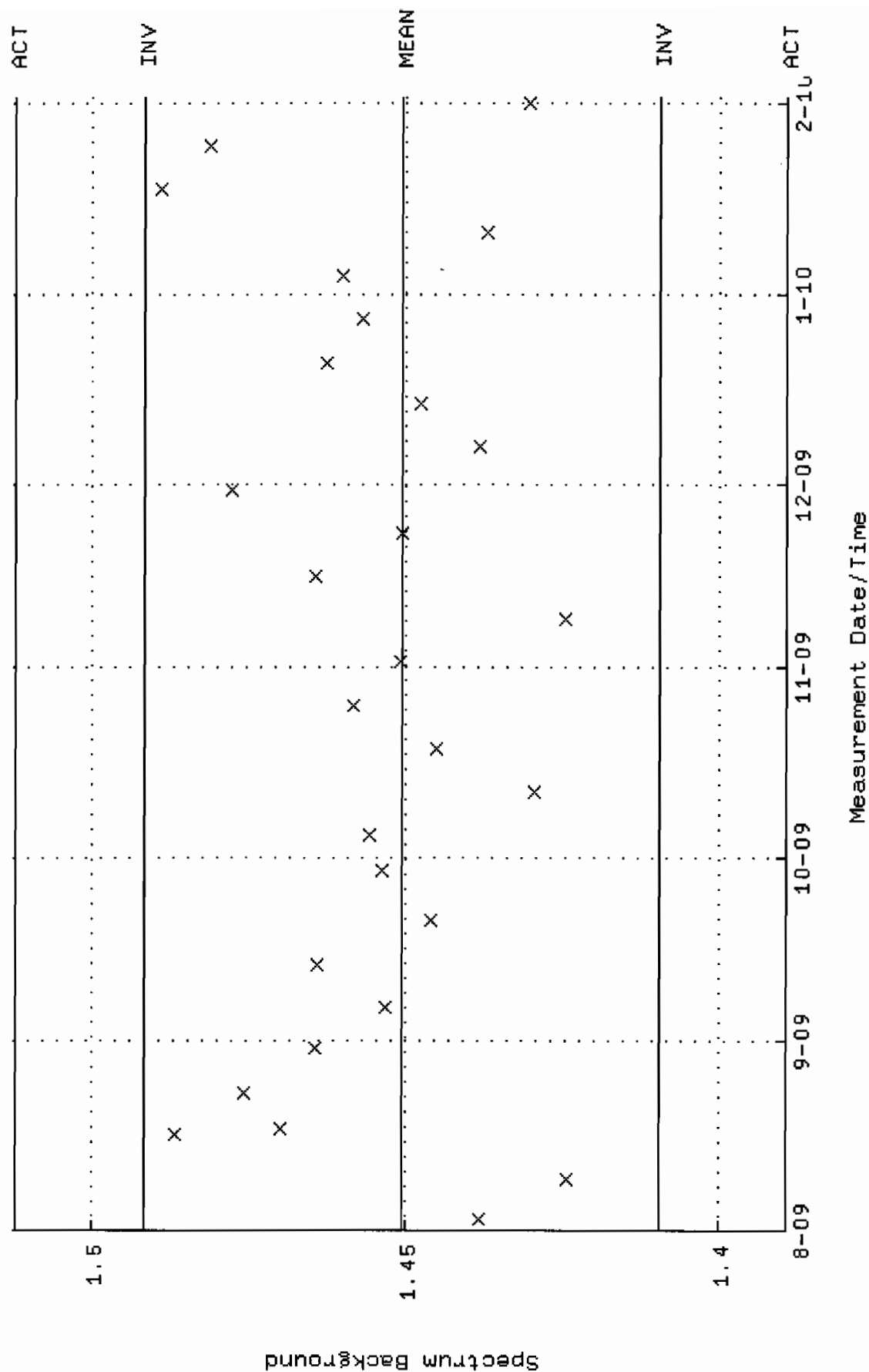
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM17.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:25:10 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.42766 +- 1.396974E-02 (0.98 %)



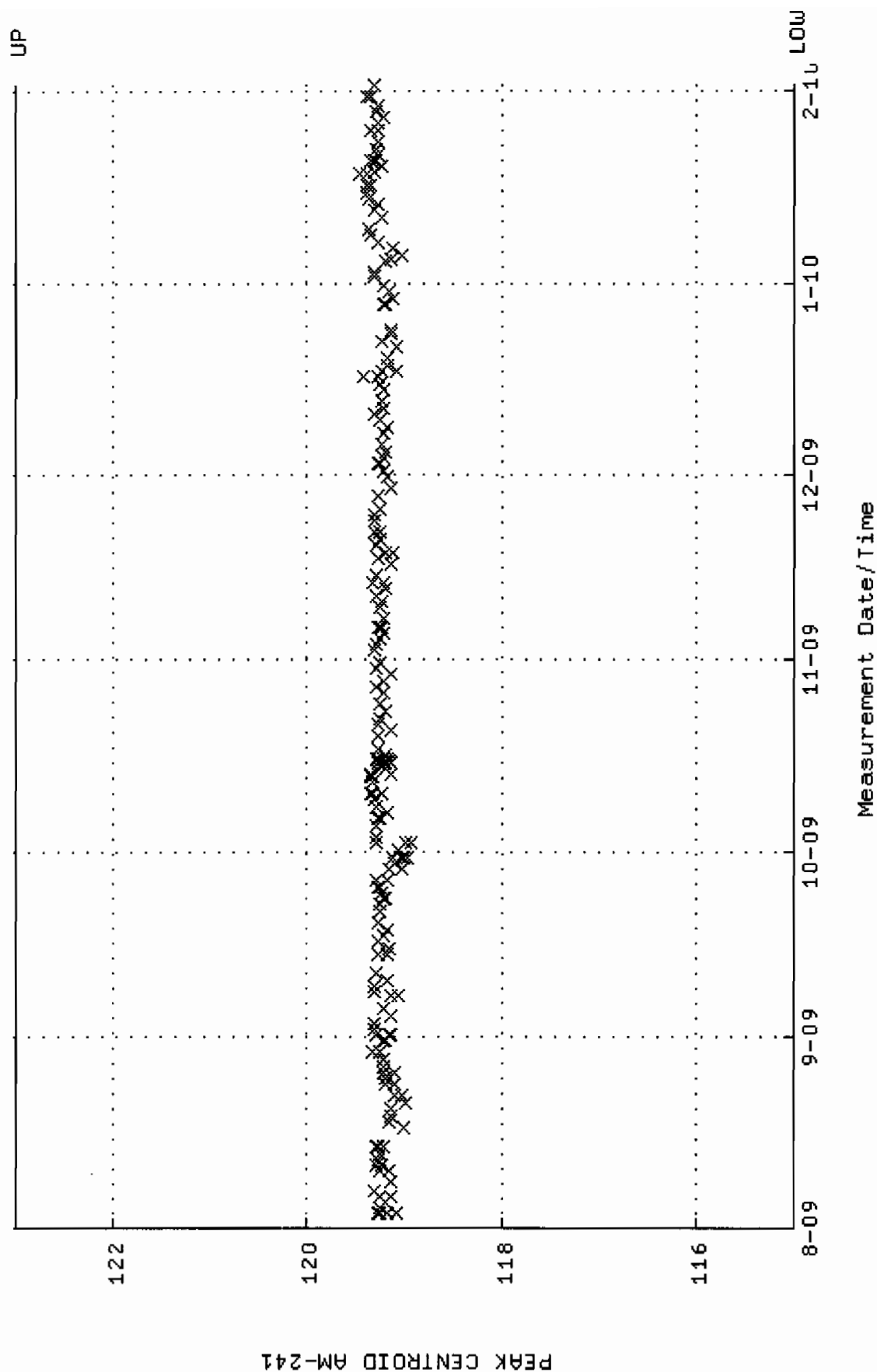
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM19_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 10:08:04 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



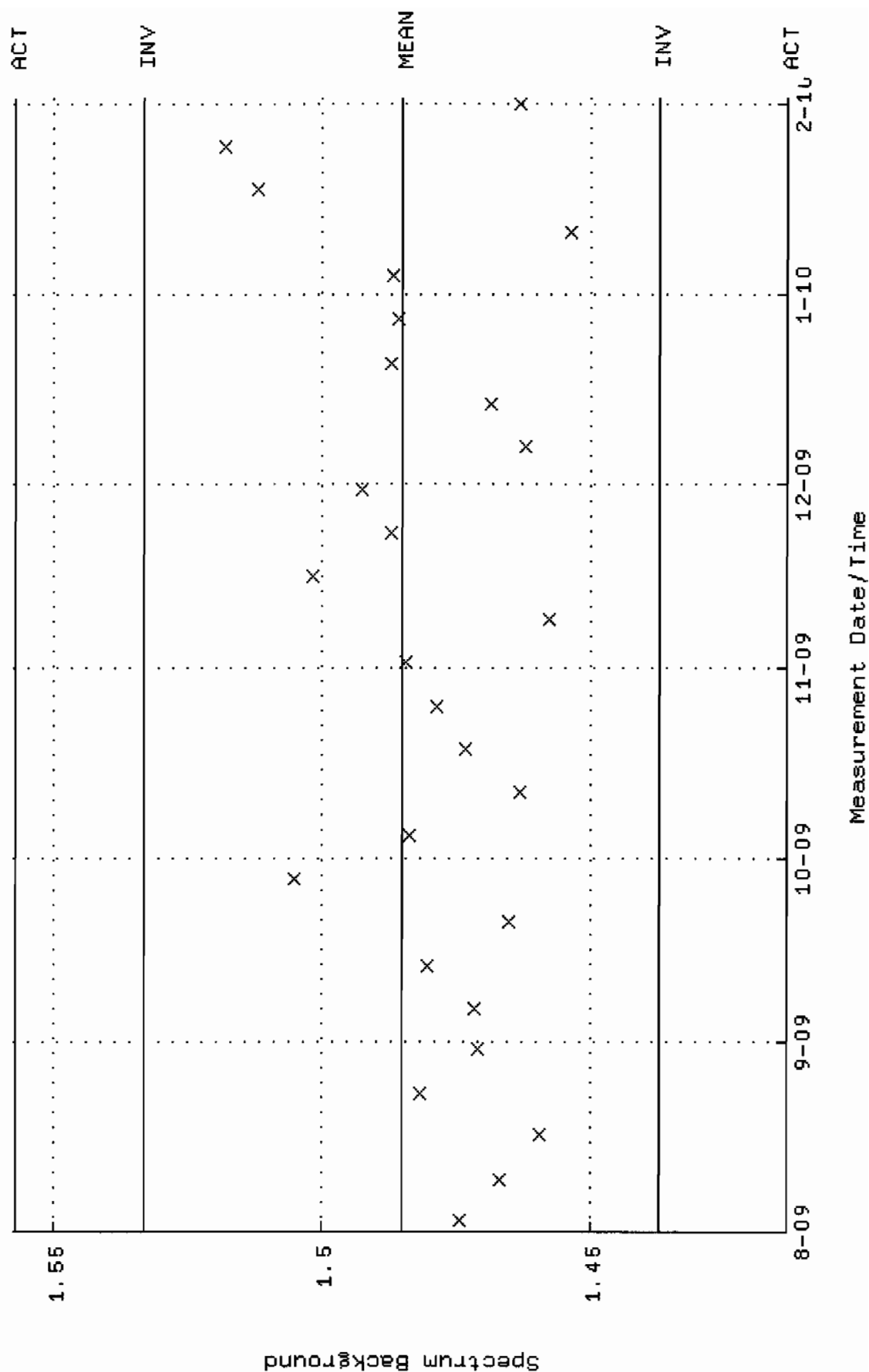
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM19.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:25:41 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.45067 +- 2.046038E-02 (1.41 %)



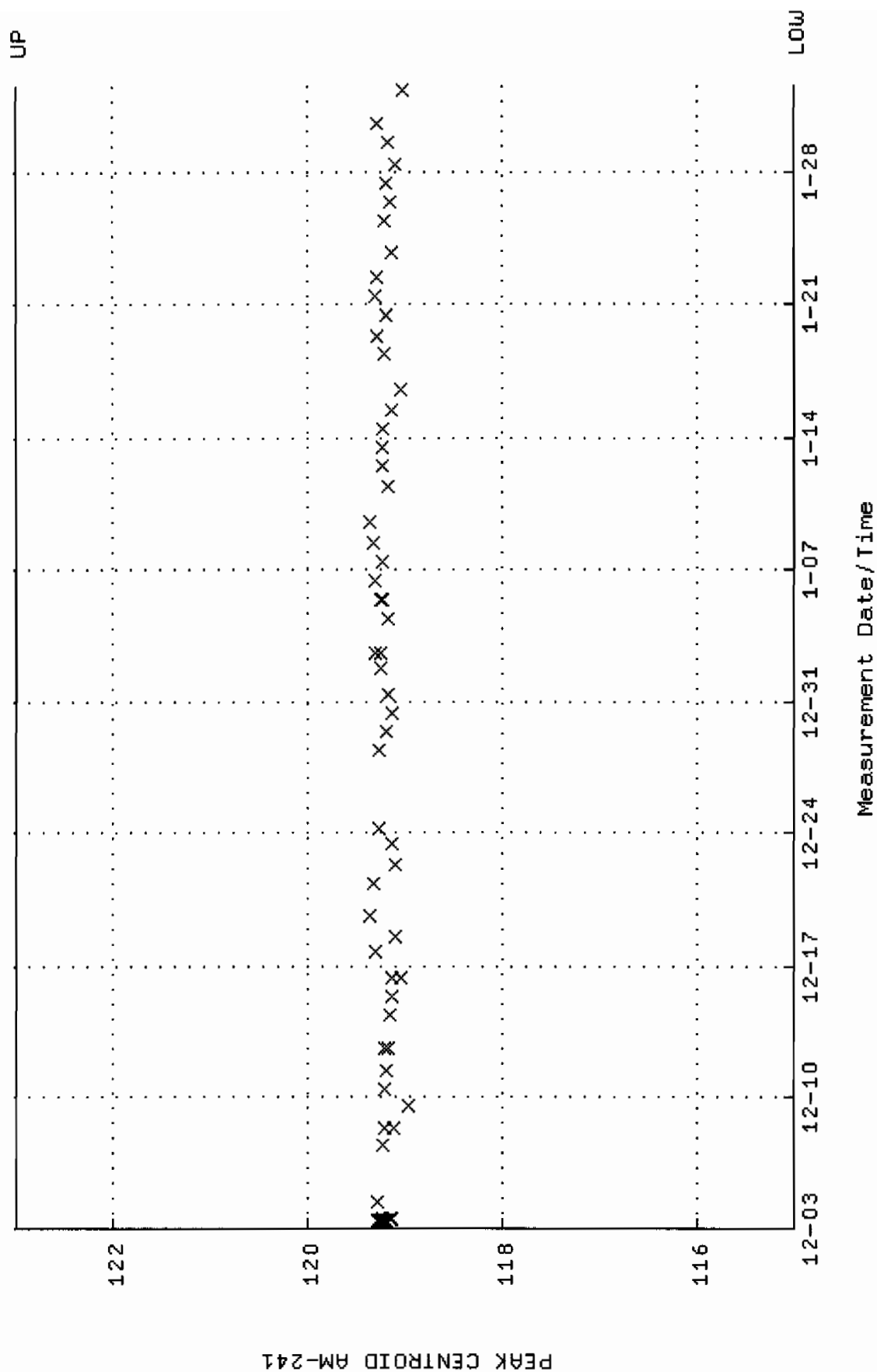
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM20_500MLMB.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 09:19:21 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



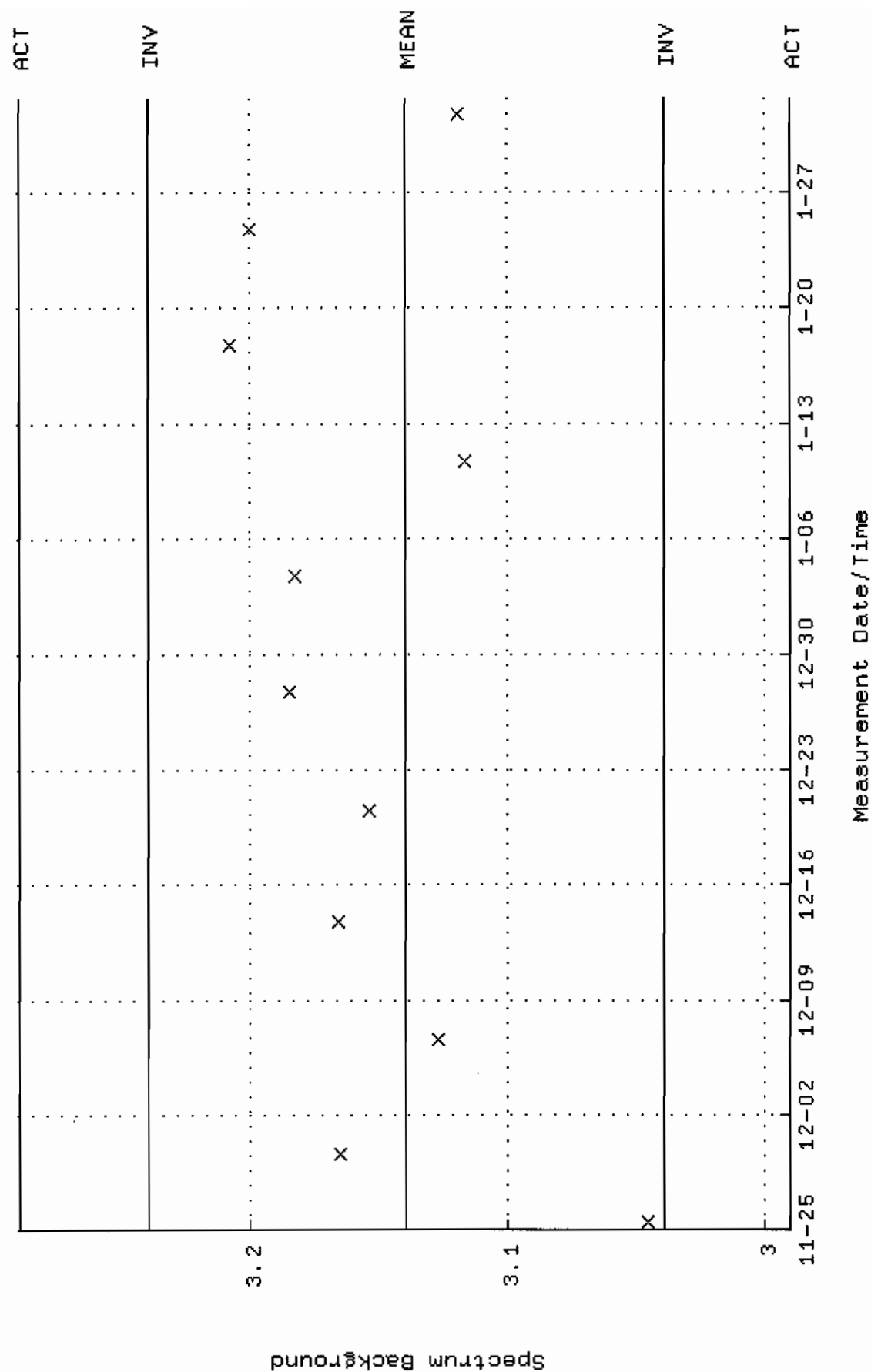
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC_GAM20.QAF;1
 Parameter Name : BACKRATE (Spectrum Background Rate)
 Start/End Dates : 2-AUG-2009 16:25:55 through 1-FEB-2010 12:00:00
 Mean +- Std Dev : 1.48527 +- 2.388665E-02 (1.61 %)



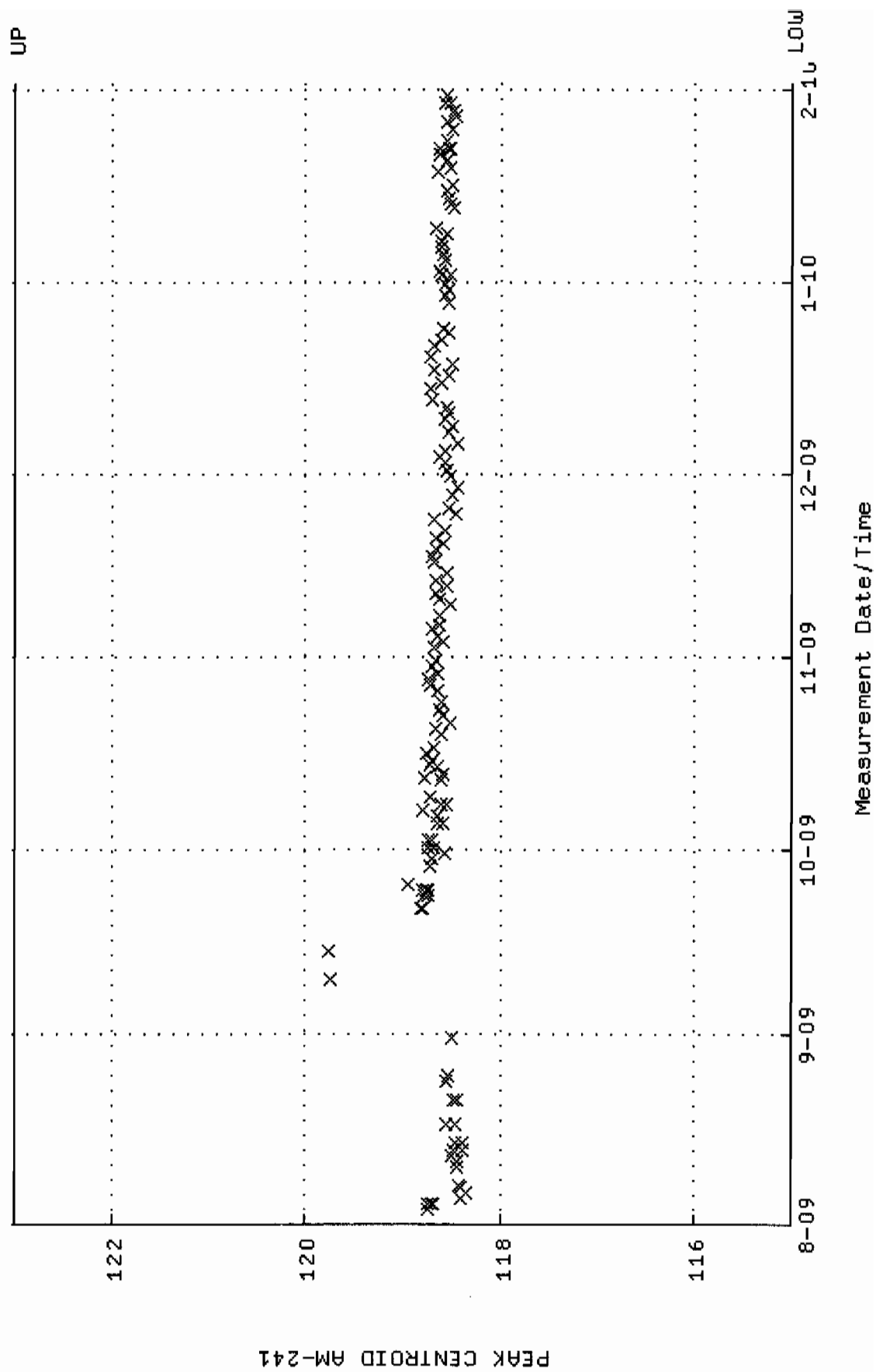
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC_GAM22_CAN.QAF;1
 Parameter Name : PSCENTRD-241 (PEAK CENTROID AM-241)
 Start/End Dates : 3-DEC-2009 09:11:39 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000



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 %)



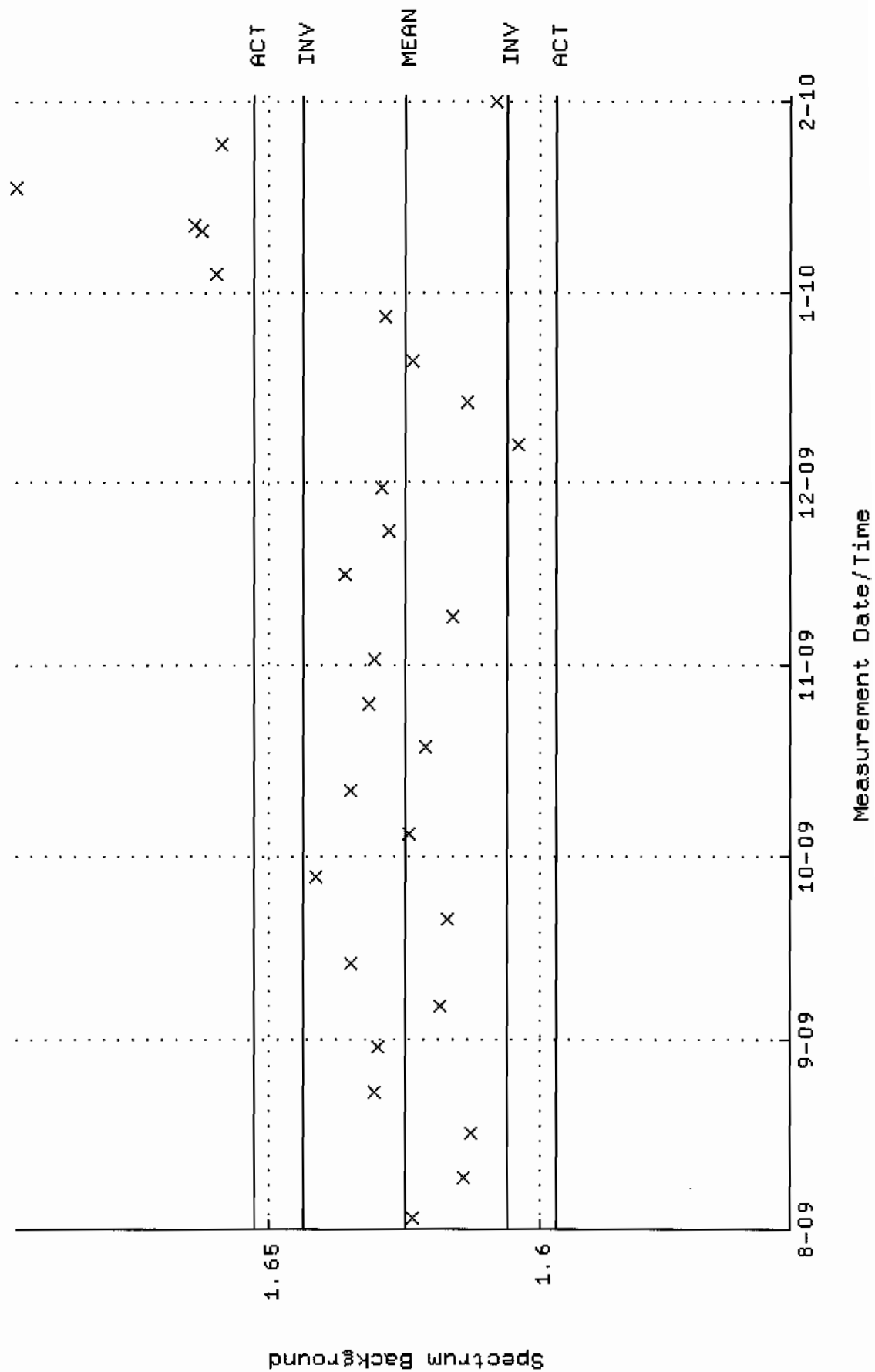
QA filename : DKA100:[CANBERRA.GAMMA.SCUSR.QA]QCC-GAM25_2LMB.QAF;1
 Parameter Name : PSCENTRD-59 (PEAK CENTROID AM-241)
 Start/End Dates : 3-AUG-2009 10:11:17 through 1-FEB-2010 12:00:00
 Lower/Upper Lmts: 115.000 through 123.000

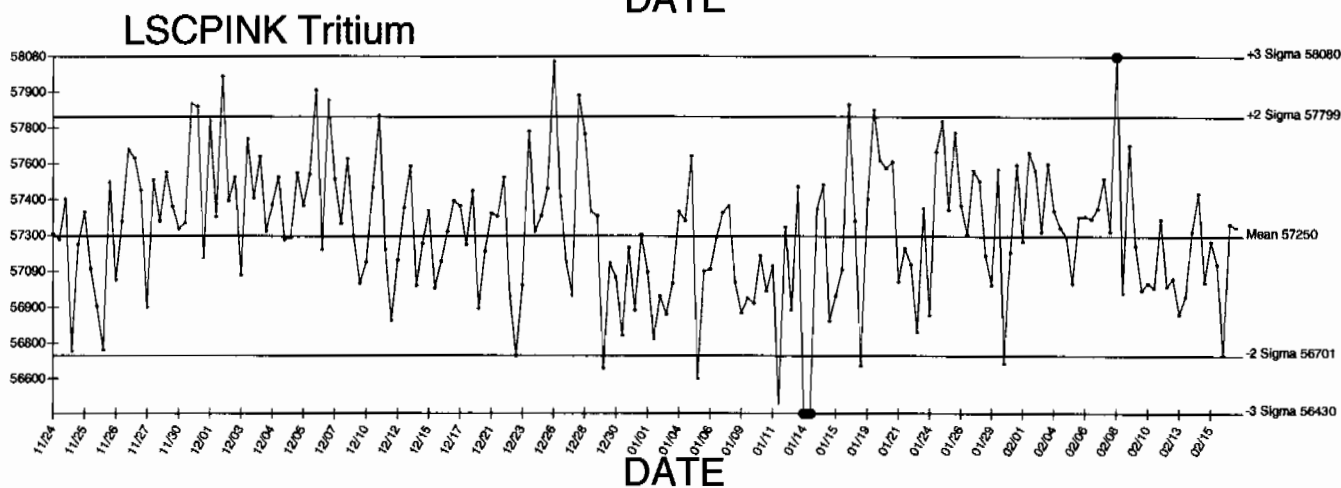
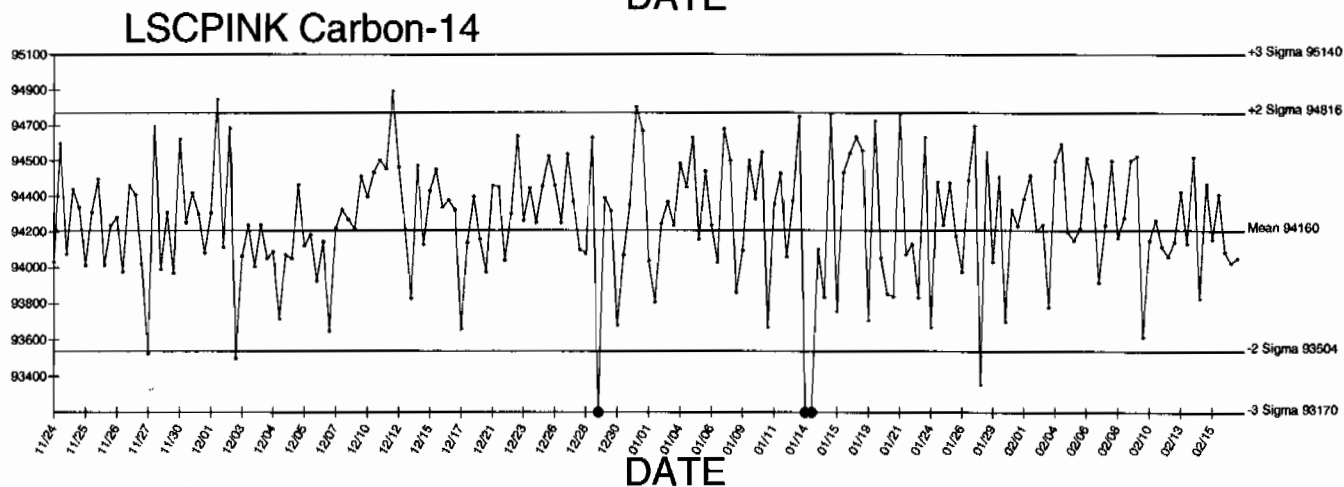
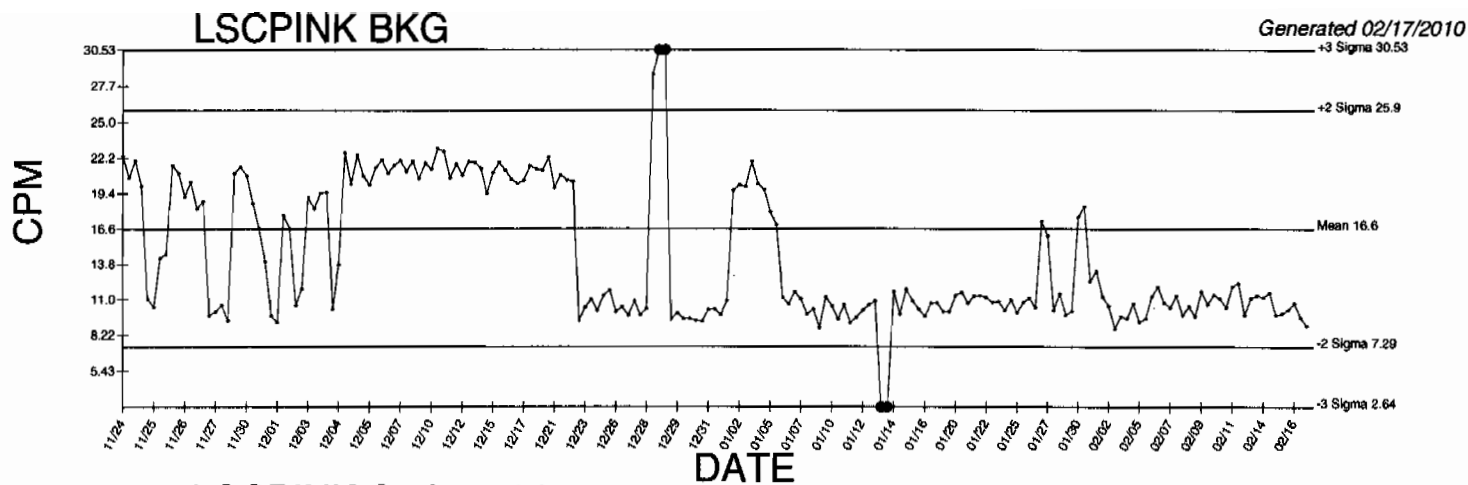



```

QA filename
Parameter Name
Start/End Dates
Mean +- Std Dev
: DKA100:[CANBERRA.GAMMA.SCUSR.QA]LBC-GAM25.QAF;1
: BACKRATE (Spectrum Background Rate)
: 2-AUG-2009 16:26:41 through 1-FEB-2010 12:00:00
: 1.62502 +- 9.37041E-03 (0.58 %)

```

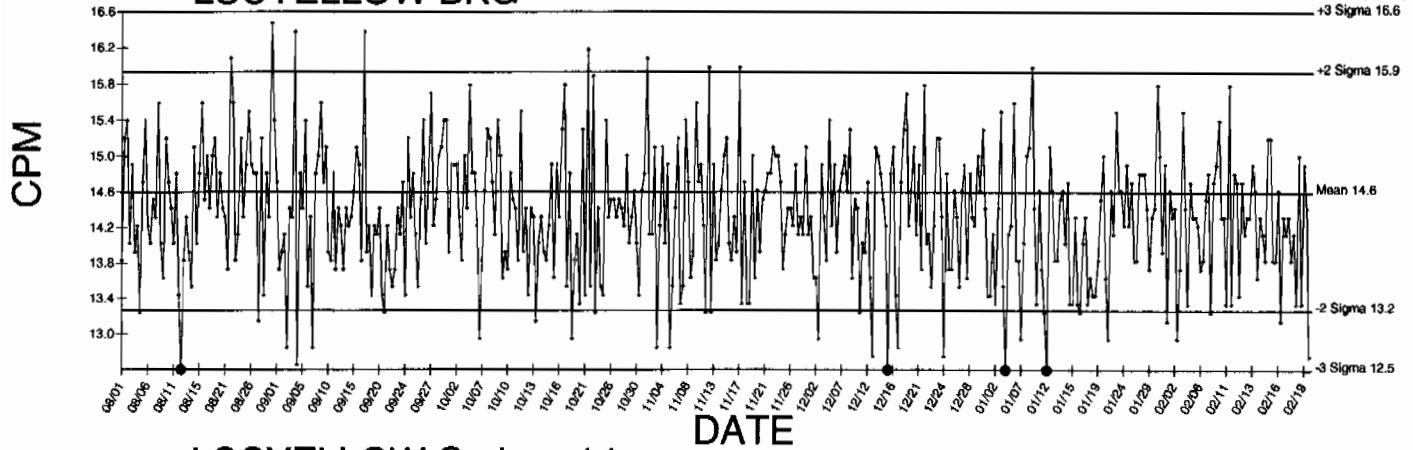




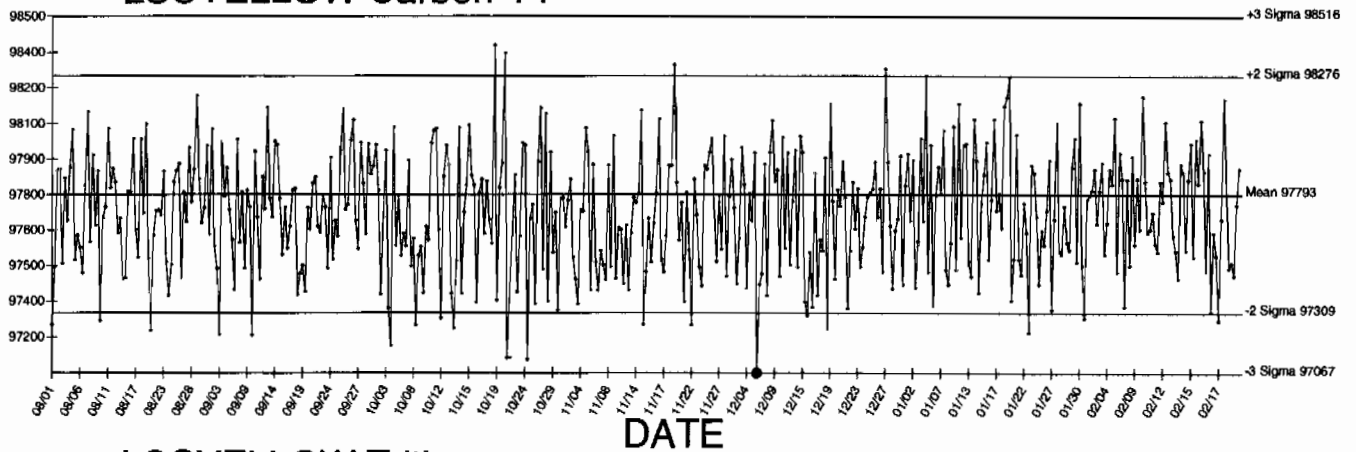
● Denotes Outlier

LSCYELLOW BKG

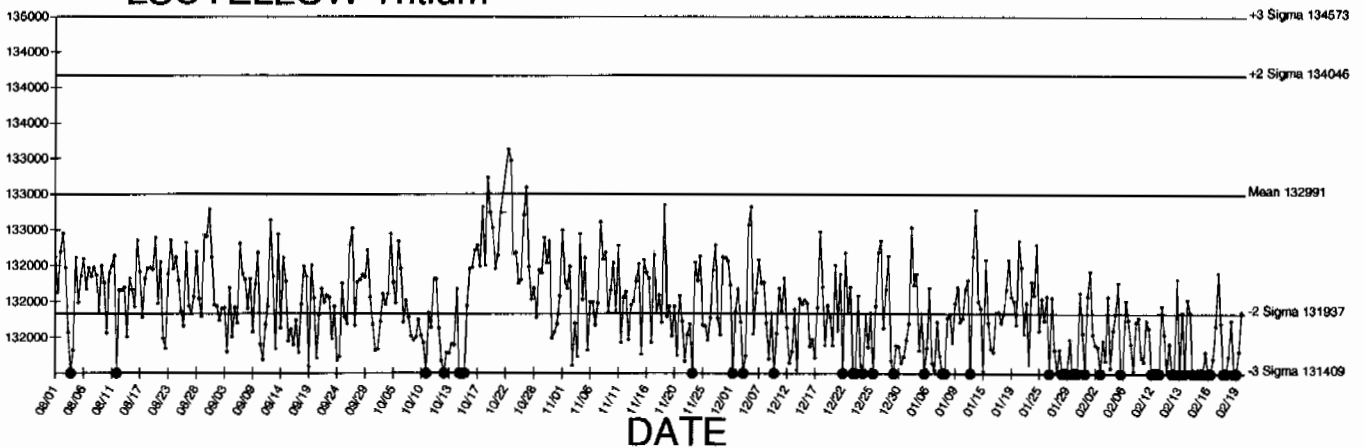
Generated 02/19/2010



LSCYELLOW Carbon-14



LSCYELLOW Tritium



● Denotes Outlier

STANDARDS DATA

0134



CALIBRATION
No. 0146

Description Radionuclide: TRITIUM (HYDROGEN-3) Product code: TRY-64
Chemical form: water Batch: 111

Measurement Reference time: 1200 GMT on 1 March 1996
Radioactive concentration of tritium: 488.0 kilobecquerels per gram of water
which is equivalent to: 13.19 microcuries per gram of water
or: 2.93×10^7 disintegrations per minute per gram of water

Method of Measurement

This reference material was calibrated by direct comparison with a standard of tritium-labelled water obtained from the National Institute of Standards and Technology, USA.

Accuracy The OVERALL UNCERTAINTY of the result quoted above is estimated to be less than $\pm 2.5\%$

This estimate of uncertainty was calculated in accordance with the recommendations of the International Commission on Radiation Units and Measurements (ICRU Report 12). The limits of uncertainty were taken as the arithmetic sum of the uncertainty due to random variations, calculated at the 99.7% confidence level, and the estimated systematic uncertainties.

Purity No radioactive impurities were detected. (Impurities with total activity greater than 0.001% of the activity of the tritium would have been detected).

Physical Data Half-life of tritium: 12.43 ± 0.11 years
Maximum beta energy of tritium: 18.6 keV

Remarks: The S.I. unit of radioactivity is the becquerel.

1 becquerel (Bq) = 1 nuclear transformation per second, therefore
1 curie (Ci) = 3.7×10^{10} becquerels exactly.

Useful conversion factors are:

1 microcurie (μCi) = 3.7×10^4 Bq = 37 kilobecquerels (kBq)

1 kilobecquerel (kBq) = 27.027 nanocuries (nCi)

This product meets the quality assurance requirements of NRC Regulatory Guide 4.15 for achieving implicit NIST (NBS) traceability as defined in NCRP58 (1985).

**Approved
signature**

W. F. Case

2C-5-023-061a

Standard Traceability Log Rad

| Source Material Info | | A Solution Material Info | |
|----------------------|----------------|--------------------------|----------------|
| Parent Code: | 0134 | Isotope: | Tritium |
| Prepared By: | Angela Johnson | Prepared By: | Angela Johnson |
| Carrier Conc: | DI WATER | Prep Date: | 02/21/2001 |
| Reference Date: | 03/01/1996 | Verification Date: | 09/10/2008 |
| Ampoule Mass (g): | 5 g | Expiration Date: | 03/27/2010 |
| Uncertainty: | +/- 2.5 % | Primary Code: | 0134-A |
| LogBook No: | RC S 023 061 | Dilution(mL): | 100 mL |
| | | Mass of Parent(g): | 3.3659 g |
| | | Density(g/mL): | 1.0004 |
| | | Balance ID: | 38080204 |

Calculations Converting parent activity to dpm/mL|dpm/g

| |
|---|
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$ |
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (kBq/g)}) * (\text{conversion dpm to kBq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$ |
| $(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (100 \text{ mL}) = 985535.5200 \text{ dpm/mL}$ |
| $(3.3659 \text{ g}) * (488 \text{ kBq/g}) * (60000 \text{ dpm/kBq}) / (1.0004 \text{ g/mL}) / (100 \text{ mL}) = 985180.3116 \text{ dpm/g}$ |

Secondary Standards

| Prep Date | Preparer | Mass Primary | Dilution (mL) | Code | Conc dpm/mL | Verification Date | Expiration Date |
|------------|-------------|--------------|---------------|--------|------------------|-------------------|-----------------|
| 07/20/2004 | Amanda Fehr | 5.86 | 1000 | 0134-H | 5773.1566 dpm/mL | 07/25/2006 | 07/25/2007 |
| 12/20/2005 | Amanda Fehr | 5.5451 | 1000 | 0134-I | 5462.92 dpm/mL | 12/20/2006 | 12/20/2007 |
| 07/11/2007 | Daniel Roy | 5.5863 | 1000 | 0134-J | 5503.5128 dpm/ml | 07/29/2008 | 07/29/2009 |
| 03/25/2009 | Mary Aders | 5.4917 | 1000 | 0134-K | 5410.3147 dpm/ml | 03/27/2009 | 03/27/2010 |

GEL Laboratories LLC
Version 1.0 9/18/2000

Verification for H-3 Standard 0134-K

| M. Aders | Isotope | Detector CPM | BKG CPM | NET CPM | Detector Eff Mass. Used (mL) | Standard Source DPM/mL |
|----------|-----------|--------------|---------|-----------|------------------------------|------------------------|
| 4/9/2009 | 0134-K N1 | 1097.2000 | 54.0000 | 1043.2000 | 0.380548 | 2741.3089 |
| | 0134-K N2 | 1073.2000 | 54.0000 | 1019.2000 | 0.380548 | 2678.242955 |
| | 0134-K N3 | 1085.2000 | 54.0000 | 1031.2000 | 0.380548 | 2709.776428 |
| | | | | | | 2709.776428 |

Mean Value (Counting) = 2709.776428
 Stdev = 31.53347278

Certificate Value = 2581.86 dpm/mL
 Lower Limit = 2846.709482 dpm/mL
 Upper Limit = 2772.843373 dpm/mL
 Rule 1 Pass/Fail Fail
 Two sigma = 63.06694556 dpm/mL
 10 % of Mean = 270.9778428 dpm/mL
 Rule 2 (Pass/Fail) Pass
 *exception taken due to full recovery of standard

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for H-3 source 0134-K by transferring 0.1 mL portions of the standard into glass liquid scintillation vials. Ten mL of Ecocint Ultra liquid scintillation cocktail was added to each vial and the vials were shaken to mix. A Blank vial was prepared in a similar fashion using 1 mL of DI water and 10 mL of Ecocint Ultra liquid scintillation cocktail. The standard verification vials and Background source were dark adapted for two hours and counted on Silver for H-3 source standard verification. The H-3 efficiency calibration which was used for verification calculations was performed on 4/9/09 using 0020-A (H-3). Calibration data is recorded in this logbook under H-3 0020. Each verification source calculation was performed as follows:

$$\text{Source dpm/g} = (A - B)/(C)(D)$$

where:

- A = Ver. source cpm,
- B = BKG cpm,
- C = System efficiency, (cpm/dpm), and
- D = mass used for standard verification.

Reference RAD SOP M-001

Henry Diggle 4/12/09
 Amanda L. Dehn 4/19/09

1032

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analytixinc.com

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

74047-278

5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytix maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

Calibration date: October 1, 2006 12:00 EST

| ISOTOPE | GAMMA-RAY ENERGY | HALF-LIFE | GAMMA-RAYS PER SECOND | TOTAL UNCERTAINTY % |
|---------|---------------------|-----------|--------------------------|---------------------------|
| Am-241 | 59.5 | 432 y | 3339 | 3.0 |
| Cd-109 | 88 | 462.6 d | 4815 | 3.3 |
| Co-57 | 122 | 271.79 d | 2409 | 3.0 |
| Ce-139 | 166 | 137.6 d | 3408 | 2.8 |
| Hg-203 | 279 | 46.61 d | 7522 | 2.7 |
| Sn-113 | 392 | 115.1 d | 4728 | 2.6 |
| Cs-137 | 662 | 30.07 y | 2973 | 3.0 |
| Y-88 | 898 | 106.6 d | 11600 | 2.6 |
| Co-60 | 1173 | 5.2714 y | 5780 | 2.7 |
| Co-60 | 1332 | 5.2714 y | 5783 | 2.6 |
| Y-88 | 1836 | 106.6 d | 12260 | 2.6 |

5.31725 grams 4M HCl solution.

P O NUMBER 2734RD, Item 1

SOURCE PREPARED BY:

M. Dimitrova
M. Dimitrova, Radiochemist

Q A APPROVED:

W.M. [Signature] 11-28-06

This standard will expire one year after the calibration date.

1380 Seaboard Industrial Blvd.
 Atlanta, Georgia 30318

Tel 404-352-8677

Fax 404-352-2837

www.analytiscinc.com

ANALYSIS OF UNCERTAINTY FOR MIXED GAMMA STANDARDS BATCH 127

CALIBRATION DATE: October 1, 2006 12:00 EST

| Isotope | Energy (keV) | Calibration Method ¹ | Statistics ² | Calibration ² | Peak Fitting ² | Geometry ² | Impurities ² | Weighing | Combined Standard Uncertainty | Relative Expanded Uncertainty (k=2) |
|---------|--------------|---------------------------------|-------------------------|--------------------------|---------------------------|-----------------------|-------------------------|----------|-------------------------------|-------------------------------------|
| Cd-109 | 88 | HPGe | 0.16 | 1.1 | 0.88 | 0.8 | 0 | 0.2 | 1.64 | 3.3 |
| Co-57 | 122 | HPGe | 0.23 | 1.1 | 0.71 | 0.7 | 0 | 0.2 | 1.52 | 3.0 |
| Ce-139 | 166 | HPGe | 0.17 | 1.0 | 0.58 | 0.7 | 0 | 0.2 | 1.38 | 2.8 |
| Hg-203 | 279 | HPGe | 0.11 | 1.1 | 0.34 | 0.7 | 0 | 0.2 | 1.37 | 2.7 |
| Sn-113 | 392 | HPGe | 0.21 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.30 | 2.6 |
| Cs-137 | 662 | HPGe | 0.36 | 1.1 | 0.60 | 0.7 | 0 | 0.2 | 1.49 | 3.0 |
| Y-88 | 898 | HPGe | 0.19 | 1.0 | 0.33 | 0.7 | 0 | 0.2 | 1.29 | 2.6 |
| Co-60 | 1173 | HPGe | 0.31 | .97 | 0.45 | 0.7 | 0 | 0.2 | 1.33 | 2.7 |
| Co-60 | 1332 | HPGe | 0.33 | .93 | 0.48 | 0.7 | 0 | 0.2 | 1.32 | 2.6 |
| Y-88 | 1836 | HPGe | 0.24 | 1.0 | 0.35 | 0.7 | 0 | 0.2 | 1.31 | 2.6 |

Optional Additional Isotopes

| | | | | | | | | | | |
|--------|------|-------|------|-----|---|-----|------|-----|------|-----|
| Pb-210 | 46.5 | 4π LS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Am-241 | 59.5 | 4π LS | 0.33 | 1.1 | 0 | 0.9 | 0.30 | 0.2 | 1.50 | 3.0 |
| Sr-85 | 514 | IC | 0.30 | 1.1 | 0 | 0.7 | 0.17 | 0.2 | 1.36 | 2.7 |
| Cs-134 | 605 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Cs-134 | 796 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Mn-54 | 835 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |
| Zn-65 | 1116 | IC | 0.30 | 1.0 | 0 | 0.8 | 0.17 | 0.2 | 1.34 | 2.7 |

Calibration Methods:

4π LS (4 pi Liquid Scintillation Counting)

HPGe (High Purity Germanium Gamma Ray Spectrometer)

IC (Gamma Ray Ionization Chamber)

²As Percent (%) from counting data

No interfering gamma emitting impurities were detected during calibration. Depending on the resolution and energy dispersion (keV/channel) of the measuring system, the following spectral conflicts may occur: (1) between the 88 keV gamma-ray and the X-rays emitted in the decay of Hg-203, (2) between the 1333 keV gamma-ray and the 1325 keV single escape peak from the 1836 keV gamma-ray.

Standard Traceability Log Rad

| Source Material Info | | 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 - Var. Jar-1 |
|----------------|--------|--------------------|
| Mixed Gamma N1 | 2534 | pCi/L |
| Mixed Gamma N2 | 2510 | pCi/L |
| Mixed Gamma N3 | 2413 | pCi/L |

Mean Value (Counting) = 2485.67
Stdev = 64.065
100.00
Rule 3 (Pass/Fail)

Certificate Value = 2485.68018
Lower Limit = 2357.536524
Upper Limit = 2613.796809
Rule 1 (Pass/Fail) Pass
Two sigma = 128.1301422
10 % of Mean = 248.56666667
Rule 2 (Pass/Fail) Pass

M. Stamps
12/2/09
independent
12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Cs-137

| Isotope | Result | pCi/L - Ver. Jar. 1 |
|----------------|--------|---------------------|
| Mixed Gamma N1 | 854.2 | pCi/L |
| Mixed Gamma N2 | 907.6 | pCi/L |
| Mixed Gamma N3 | 898.9 | pCi/L |

Mean Value (Counting) =
Stdev =

886.90
28.651
95.01
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

Handwritten:
12/2/2009
M. Stamps
12/2/2009

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

Verification for Mixed Gamma Standard 1032-A

M. Stamps
12/2/2009

Co-60 (1332.5)

| Isotope | Result | pCi/L - VER-Tab-5 |
|----------------|--------|-------------------|
| Mixed Gamma N1 | 1572 | pCi/L - VER-Tab-2 |
| Mixed Gamma N2 | 1495 | pCi/L - VER-Tab-3 |
| Mixed Gamma N3 | 1501 | |

Mean Value (Counting) =
Stdev =

1522.67
42.829
98.50
Rule 3 (Pass/Fail)

Certificate Value =
Lower Limit =
Upper Limit =
Rule 1 (Pass/Fail)
Two sigma =
10 % of Mean =
Rule 2 (Pass/Fail)

1545.8378
1437.008431
1608.324902
Pass
85.65823564
152.26666667
Pass

pCi/L
pCi/L
pCi/L

M. Stamps issued 12/2/09

Verification Rules

- Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements
- Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.
- Rule 3 = The determined mean value shall be within 5% of the certificate value.

0244-A Characterization

| Sample # | Uranium-233/234 Result (pCi/g) | Uranium-238 Result (pCi/g) | Thorium-230 Result (pCi/g) |
|------------------|-----------------------------------|-------------------------------|-------------------------------|
| 0244-A 1 | 6.59 | 6.12 | 25.3 |
| 0244-A 2 | 6.36 | 6.07 | 28.5 |
| 0244-A 3 | 5.78 | 5.53 | 26.5 |
| 0244-A 4 | 6.48 | 5.97 | 25.5 |
| 0244-A 5 | 5.65 | 5.59 | 26.2 |
| 0244-A 6 | 6.96 | 5.78 | 27.0 |
| 0244-A 7 | 5.95 | 5.75 | 24.2 |
| 0244-A 8 | 5.29 | 5.67 | 27.2 |
| 0244-A 9 | 5.51 | 6.05 | 24.3 |
| 0244-A 10 | 6.37 | 5.57 | 25.6 |
| 0244-A 11 | 6.50 | 5.80 | 25.8 |
| 0244-A 12 | 6.13 | 5.42 | 22.4 |
| 0244-A 13 | 5.49 | 5.24 | 24.7 |
| 0244-A 14 | 6.19 | 5.21 | 26.9 |
| 0244-A 15 | 6.50 | 6.27 | 27.6 |
| 0244-A 16 | 6.50 | 5.24 | 24.9 |
| 0244-A 17 | 6.25 | 6.05 | 24.7 |
| 0244-A 18 | 6.14 | 6.00 | 25.4 |
| 0244-A 19 | 6.19 | 6.14 | 26.4 |
| 0244-A 20 | 5.67 | 5.61 | 23.2 |
| Mean Value | 6.13 | 5.75 | 25.62 |
| 1 sigma | 0.439 | 0.325 | 1.493 |
| 2 sigma | 0.878 | 0.650 | 2.986 |
| 75% Limit | 4.60 | 4.31 | 19.22 |
| 125% Limit | 7.66 | 7.19 | 32.03 |
| Expected Result | 6.2 +/- 4.0 | 6.0 +/- 4.0 | 24.5 +/- 0.6 |
| Achieved Results | 6.13 +/- 0.439 | 5.75 +/- 0.325 | 25.62 +/- 1.493 |

REFERENCE DATE 4/14/2000 *fit c held 12/1/04*

angela d. johnson 12/13/04

TRM

Invoice:

5 boxes of TRM-1
 10 " " TRM-2 and 3
 5 " each of NRM-1 through 6
 7 " baghouse dirt

use 1/4 gm x 10 samples with together
 for TRM-2

Table 7. Recommended Concentrations of Tailings Reference Materials (pCi/g)

| | TRM-1 | TRM-2 | TRM-3 | TRM-4 |
|--------|----------|------------|------------|------------|
| U-238 | 99 ± 6 | 6.0 ± 4.0 | 19.6 ± 1.4 | 44.9 ± 1.6 |
| U-234 | 105 ± 6 | 6.2 ± 4.0 | 19.6 ± 1.9 | 44.6 ± 1.2 |
| Th-230 | 471 ± 11 | 24.5 ± 0.6 | 58.5 ± 2.1 | 44.0 ± 1.6 |
| Ra-225 | 489 ± 17 | 25.4 ± 0.9 | 60.3 ± 2.3 | 42.9 ± 1.2 |
| Pb-210 | 525 ± 24 | 22.1 ± 1.2 | 56.0 ± 2.1 | 38.9 ± 2.0 |

9911627-01-202

SF 2001-COC (10-97)

Internal Lab
Batch No.

SARWR No. N/A

ANALYSIS REQUEST AND CHAIN OF CUSTODY
Press F1 for Instructions for each page
RAWR No. N/A

Press F1 for instructions for each field.

AR/COC-

Page 1 of 1

602945

| | | | | | |
|--|--|---|--|---------------------------------------|--|
| Dept. No./Mail Stop: 7132 / 1042 | | Date Samples Shipped: 11-16-99 SMO USE | | Contract No.: AJ-2480A | |
| Project/Task Manager: PAM PUISSANT | | Carrier/Vehicle No.: 506799 | | Case No.: 10204 13 | |
| Project Name: | | | | SMO Authorization: [Signature] | |
| Record Center Code: N/A | | Lab Contact: EDIE KENT | | Bill to: Sandia National Laboratories | |
| Logbook Ref. No.: N/A | | Lab Destination: G.E.L. | | Supplier Services, Dept. | |
| Service Order No.: | | SMO Contact/Phone: Doug Salim / 844-3110 | | P.O. Box 5800 MS 0154 | |
| Send Report to SMO: Suz Jensen/844-3184 | | | | | |

| Location | | Tech Area | VI | | Reference LOV (available at SMO) | | | |
|-----------------------|--|----------------|----------|---------------------|----------------------------------|--------|--------------------------|--|
| Building | N/A | Room | N/A | | Container | | Preservative | |
| Sample No. - Fraction | ER Sample ID or Sample Location Detail | Beginning Date | End Date | Date/Time Collected | Type | Volume | Sample Collection Method | |
| 050484 - 001 | PEM-1 | N/A | N/A | 11/15/99 1100 | P | 1 L | G SA | |
| 050485 - 001 | TRM-2 | N/A | N/A | 11/15/99 1100 | G | 1 L | G SA | |
| 050486 - 001 | -NRM-2 N.B.H.R.D. | N/A | N/A | 11/15/99 1100 | G | 1 L | G SA | |
| - | | | | | | | | |
| - | | | | | | | | |
| - | | | | | | | | |
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| - | | | | | | | | |
| - | | | | | | | | |

| | | | |
|--|--------------------|--|--|
| RMMA <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ref. No. | | Special Instructions/Q/Q EDD <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Raw data package <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>These samples are characterized by being sent to be held as back up</i> | |
| Sample Disposal <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by lab | | | |
| Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush Required Report Date | | Sample Tracking Init: Company/Organization/Phone Weston / 757 / 845-0887 | |
| Name | Signature | | |
| Douglas E. Perry | <i>[Signature]</i> | | |
| Sample Team Members | | | |
| 1. Relinquished by | Date | Time | |
| 1. Relinquished by | Date | Time | |
| 2. Relinquished by | Date | Time | |
| 2. Relinquished by | Date | Time | |
| 3. Relinquished by | Date | Time | |
| 3. Relinquished by | Date | Time | |

Please list as separate

Original To Accompany Samples,
(Laboratory Copy (White))

1st Copy To Accompany Samples,
Return to SMO (Blue)

2nd Copy SMO Suspense Copy (Yellow)

3rd Copy Field Copy (Pink)

0244-B Characterization

| Sample # | Plutonium-239 Result (pCi/g) | Plutonium-238 Result (pCi/g) | Americium-241 Result (pCi/g) |
|------------------|---------------------------------|---------------------------------|---------------------------------|
| 0244-B 1 | 39.9 | 7.88 | 38.4 |
| 0244-B 2 | 44.1 | 7.97 | 40.6 |
| 0244-B 3 | 45.8 | 6.56 | 31.8 |
| 0244-B 4 | 43.6 | 7.69 | 31.5 |
| 0244-B 5 | 43 | 7.9 | 40.2 |
| 0244-B 6 | 43.5 | 7.84 | 29.4 |
| 0244-B 7 | 41.3 | 7.67 | 36 |
| 0244-B 8 | 44.3 | 6.95 | 33.2 |
| 0244-B 9 | 42.7 | 7.2 | 29.2 |
| 0244-B 10 | 44.9 | 7.69 | 30 |
| 0244-B 11 | 41.4 | 7.22 | 30.2 |
| 0244-B 12 | 41.3 | 7.74 | 36 |
| 0244-B 13 | 39.2 | 6.65 | 33.8 |
| 0244-B 14 | 39.6 | 7.78 | 31.1 |
| 0244-B 15 | 45.3 | 8.41 | 37.3 |
| 0244-B 16 | 38.1 | 6.74 | 33.6 |
| 0244-B 17 | 48.5 | 8.51 | 30.5 |
| 0244-B 18 | 36.5 | 7.23 | 38.6 |
| 0244-B 19 | 35.3 | 6.98 | 30.9 |
| 0244-B 20 | 37.4 | 8.55 | 31.3 |
| Mean Value | 41.79 | 7.56 | 33.68 |
| 1 sigma | 3.418 | 0.596 | 3.724 |
| 2 sigma | 6.835 | 1.193 | 7.448 |
| 75% Limit | 30.75 | 6.02 | 24.38 |
| 125% Limit | 51.25 | 10.04 | 40.63 |
| Expected Result | 41.0 +/- 3.0 | 8.03 +/- 0.37 | 32.5 +/- 1.1 |
| Achieved Results | 41.79 +/- 3.418 | 7.56 +/- .596 | 33.68 +/- 3.724 |

REFERENCE DATA 4/14/2000

Amanda L. Lehy 4/30/04
lett & chad 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.

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
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Anna W. 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.

Handwritten: Mary G. Aders 5/15/09
Taheri 07509

1375



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
JAN 27 2005

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 | 50 | 0.81 |
| | HNO ₃ | 3.2 | 0.19 |
| | ²⁴² Pu ⁺⁶ | 8 × 10 ⁻⁷ | 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 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 , $u(y) = |\partial y / \partial x_i| \cdot u(x_i)$, 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:
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies less than 3.1 MeV,
 $0.03 \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 3.1 and 4.4 MeV, and
 $0.003 \text{ s}^{-1}\cdot\text{g}^{-1}$ 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:
 $5 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 19 and 39 keV,
 $7 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 49 and 92 keV,
 $2 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 106 and 507 keV,
 $1 \times 10^{-5} \text{ s}^{-1}\cdot\text{g}^{-1}$ for energies between 515 and 1456 keV, and
 $5 \times 10^{-6} \text{ s}^{-1}\cdot\text{g}^{-1}$ 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 $u(y)/y = |\partial y / \partial x_i| \cdot u(x_i)/y = |\partial y / \partial x_i| \cdot (x_i / y) \cdot u(x_i)/x_i$. The numerical values of $u(x_i)/x_i$, $|\partial y / \partial x_i| \cdot (x_i / y)$, and $u(y)/y$, 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 λt 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: | 1375 | Isotope: | Plutonium-242 |
| Prepared By: | Mary Aders | Prepared By: | Ashley Drochter |
| Carrier Conc: | 0.5M HNO3 | Prep Date: | 01/08/2010 |
| Reference Date: | 06/07/1994 | Verification Date: | 01/08/2010 |
| Ampoule Mass (g): | 5.5 g | Expiration Date: | 01/08/2011 |
| Uncertainty: | +/- .72 % | Primary Code: | 1375-A |
| LogBook No: | RC-S-051-094 | Dilution(mL): | 250 mL |
| | | Mass of Parent(g): | 5.3542 g |
| | | Density(g/mL): | 1.0148 |
| | | Balance ID: | 38080204 |

Calculations Converting parent activity to dpm/mL/dpm/g

| |
|---|
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / (\text{Dilution Vol}) = \text{Parent Activity (dpm/mL)}$ |
| $(\text{Mass of parent(g)}) * (\text{Parm Activity (Bq/g)}) * (\text{conversion dpm to Bq}) / \text{Density (g/mL)} / (\text{Dilution Vol}) = \text{Parent Activity (dpm/g)}$ |
| $(5.3542 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (250 \text{ mL}) = 33.8086 \text{ dpm/mL}$ |
| $(5.3542 \text{ g}) * (26.31 \text{ Bq/g}) * (60 \text{ dpm/Bq}) / (1.0148 \text{ g/mL}) / (250 \text{ mL}) = 33.3155 \text{ dpm/g}$ |

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 1375-A

| | | | |
|-------------------------|---------|--------------------|-------------|
| A.Drochter 1/9/2010 | Isotope | Value | Uncertainty |
| | 1375-A | 1.530 | 0.2410 |
| | 1375-A | 1.630 | 0.2630 |
| | 1375-A | 1.580 | 0.2480 |
| Mean Value (Counting) = | 1.580 | 103.75 | Pass |
| Stdev = | 0.05 | Rule 3 (Pass/Fail) | |
| Target = | 1.52 | | |
| Lower Limit = | 1.48 | | |
| Upper Limit = | 1.68 | | |
| Rule 1 Pass/Fail | Pass | | |
| Two sigma = | 0.1 | | |
| 10 % of Mean = | 0.158 | | |
| 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 1375-A using 0.1 mL for each source. Each standard was combined with 0.1 mL of Pu 239 standard 0338-BB and 50 micrograms of neodymium carrier in a disposable centrifuge tube containing 4 mL of 2 M HCl and 6 mL of DI water. Four drops of 25% Hydrazine dihydrochloride were added to each centrifuge tube and swirled. 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 signature 1/12/10
Handwritten signature 1/12/10



Eckert & Ziegler
Analytics

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318
Tel 404-352-8677
Fax 404-352-2837
www.analyticsinc.com

CERTIFICATE OF CALIBRATION
Standard Radionuclide Source

78747-278

1283

U-232 5 mL Liquid in Flame Sealed Vial

Customer: GEL Laboratories, LLC
P.O. No.: 7319 RD, Item 1

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.18, Revision 1.

| | |
|---|----------------------------|
| Isotope: | U-232 |
| Activity (Bq): | 3.754 E3 |
| Half-Life: | 68.9 years |
| Calibration Date: | December 9, 2008 12:00 EST |
| Relative Expanded Uncertainty (k=2): | 5.0% |

Comments:

Impurities: U-233 <0.3%, Am-241 <0.15%
5.20453 grams 1M HNO₃ solution.

Source Prepared By: WMS

W. Mao, Radiochemist

QA Approved: DM Montgomery

D. M. Montgomery, QA Manager

Date: 12-11-08

Standard Traceability Log Rad

| Source Material Info | | 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
Date: 12/10/09

| Serial # | Value | Uncertainty |
|-----------|-------|-------------|
| 1283-H N1 | 2.020 | pCi/L 0.238 |
| 1283-H N2 | 2.000 | pCi/L 0.234 |
| 1283-H N3 | 2.060 | pCi/L 0.242 |

| | | | | |
|-------------------------|-------------|-------|--------------------|------|
| Mean Value (Counting) = | 2.027 | pCi/L | 99.66904 | Pass |
| Stdev = | 0.030550505 | pCi/L | Rule 3 (Pass/Fail) | |
| Target = | 2.033 | pCi/L | | |
| Lower Limit = | 1.965565657 | pCi/L | | |
| Upper Limit = | 2.087767676 | pCi/L | | |
| Rule 1 Pass/Fail | Pass | | | |
| Two sigma = | 0.061101009 | | | |
| 10 % of Mean = | 0.202666667 | | | |
| Rule 2 (Pass/Fail) | Pass | | | |

Rule 1 = The certificate value (NOT including any uncertainty) shall lie within the 95% confidence interval determined from the mean and two sigma standard deviation of the three measurements

Rule 2 = The two sigma value used for the 95% confidence interval shall not exceed 10% of the mean value of the three verification measurements.

Rule 3 = The determined mean value shall be within 10% of the certificate value.

The analyst prepared three standard verification sources for standard 1283-H using 0.1 mL for each source. Each standard was combined with 0.1 mL of U-238 standard 1163-G and was diluted to 10 mL with DI water. 50 micrograms of neodymium carrier and 1ml of Titanium Chloride were added. The solution was allowed to sit for 30 seconds. One mL of 49% HF was then added to precipitate neodymium (and uranium) fluoride. After 30 minutes, each sample was filtered following routine procedures for alpha spectroscopy source preparation. Each source was counted using routine alpha spec procedures. DPM values for U-238 were calculated by comparison to U-232 certified values.

A. Drochter
12/14/09

RUNLOGS

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID:950643

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 246312001 | SAMPLE | JXD2 | 1080 | 19-FEB-10 15:53 | DONE | | |
| 246328001 | SAMPLE | JXD2 | 1081 | 19-FEB-10 15:53 | DONE | | |
| 246328002 | SAMPLE | JXD2 | 1082 | 19-FEB-10 15:53 | DONE | | |
| 246328003 | SAMPLE | JXD2 | 1083 | 19-FEB-10 15:53 | DONE | | |
| 246328004 | SAMPLE | JXD2 | 1084 | 19-FEB-10 15:53 | DONE | | |
| 246328005 | SAMPLE | JXD2 | 1085 | 19-FEB-10 15:53 | DONE | | |
| 246328006 | SAMPLE | JXD2 | 1086 | 19-FEB-10 15:53 | DONE | | |
| 246328007 | SAMPLE | JXD2 | 1087 | 19-FEB-10 15:53 | DONE | | |
| 246328008 | SAMPLE | JXD2 | 1088 | 19-FEB-10 15:53 | DONE | | |
| 246328009 | SAMPLE | JXD2 | 1089 | 19-FEB-10 15:53 | DONE | | |
| 246341001 | SAMPLE | JXD2 | 1090 | 19-FEB-10 15:53 | DONE | | |
| 246341002 | SAMPLE | JXD2 | 1091 | 19-FEB-10 15:53 | DUSE | | |
| 246341003 | SAMPLE | JXD2 | 1092 | 19-FEB-10 15:53 | DONE | | |
| 246341004 | SAMPLE | JXD2 | 1093 | 19-FEB-10 15:53 | DONE | | |
| 246341005 | SAMPLE | JXD2 | 1094 | 19-FEB-10 15:53 | DONE | | |
| 246341006 | SAMPLE | JXD2 | 1095 | 19-FEB-10 15:53 | DONE | | |
| 246341007 | SAMPLE | JXD2 | 1097 | 19-FEB-10 15:53 | DONE | | |
| 246341008 | SAMPLE | JXD2 | 1099 | 19-FEB-10 15:53 | DONE | | |
| 246341009 | SAMPLE | JXD2 | 1100 | 19-FEB-10 15:53 | DONE | | |
| 1202037247 | MB | JXD2 | 1101 | 19-FEB-10 15:53 | DONE | | |
| 1202037248 | DUP | JXD2 | 1102 | 19-FEB-10 15:53 | DONE | | |
| 1202037249 | LCS | JXD2 | 1103 | 19-FEB-10 15:53 | DONE | | |
| 246341002 | SAMPLE | JXD2 | 1231 | 20-FEB-10 13:37 | DONE | | |

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID:950644

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 1202037252 | LCS | JXD2 | 1202 | 20-FEB-10 13:39 | DONE | | |
| 1202037250 | MB | JXD2 | 1253 | 20-FEB-10 13:40 | DONE | | |
| 1202037251 | DUP | JXD2 | 1254 | 20-FEB-10 13:40 | DONE | | |
| 246312001 | SAMPLE | JXD2 | 1013 | 20-FEB-10 14:31 | DONE | | |
| 246328001 | SAMPLE | JXD2 | 1014 | 20-FEB-10 14:31 | DONE | | |
| 246328002 | SAMPLE | JXD2 | 1016 | 20-FEB-10 14:31 | DONE | | |
| 246328003 | SAMPLE | JXD2 | 1017 | 20-FEB-10 14:31 | DONE | | |
| 246328004 | SAMPLE | JXD2 | 1018 | 20-FEB-10 14:31 | DONE | | |
| 246328005 | SAMPLE | JXD2 | 1031 | 20-FEB-10 14:31 | DONE | | |
| 246328006 | SAMPLE | JXD2 | 1033 | 20-FEB-10 14:31 | DONE | | |
| 246328007 | SAMPLE | JXD2 | 1035 | 20-FEB-10 14:31 | DONE | | |
| 246328008 | SAMPLE | JXD2 | 1036 | 20-FEB-10 14:31 | DONE | | |
| 246328009 | SAMPLE | JXD2 | 1077 | 20-FEB-10 14:31 | DONE | | |
| 246341001 | SAMPLE | JXD2 | 1079 | 20-FEB-10 14:31 | DONE | | |
| 246341002 | SAMPLE | JXD2 | 1080 | 20-FEB-10 14:31 | DONE | | |
| 246341003 | SAMPLE | JXD2 | 1081 | 20-FEB-10 14:31 | DONE | | |
| 246341004 | SAMPLE | JXD2 | 1082 | 20-FEB-10 14:31 | DONE | | |
| 246341005 | SAMPLE | JXD2 | 1107 | 20-FEB-10 14:31 | DONE | | |
| 246341006 | SAMPLE | JXD2 | 1108 | 20-FEB-10 14:31 | DONE | | |
| 246341007 | SAMPLE | JXD2 | 1109 | 20-FEB-10 14:31 | DONE | | |
| 246341008 | SAMPLE | JXD2 | 1111 | 20-FEB-10 14:31 | DONE | | |
| 246341009 | SAMPLE | JXD2 | 1112 | 20-FEB-10 14:31 | DONE | | |

Instrument Run Log

Instrument Type: ALPHA SPECTROMETER

Batch ID:950645

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 246341003 | SAMPLE | JXD2 | 1119 | 20-FEB-10 10:57 | DONE | | |
| 246341004 | SAMPLE | JXD2 | 1120 | 20-FEB-10 10:57 | DONE | | |
| 1202037254 | DUP | JXD2 | 1123 | 20-FEB-10 10:57 | DUSE | | |
| 246341009 | SAMPLE | JXD2 | 1128 | 20-FEB-10 10:58 | DONE | | |
| 1202037253 | MB | JXD2 | 1129 | 20-FEB-10 10:58 | DONE | | |
| 246341005 | SAMPLE | JXD2 | 1130 | 20-FEB-10 10:58 | DONE | | |
| 246341006 | SAMPLE | JXD2 | 1142 | 20-FEB-10 10:58 | DONE | | |
| 246341007 | SAMPLE | JXD2 | 1144 | 20-FEB-10 10:58 | DONE | | |
| 246341008 | SAMPLE | JXD2 | 1145 | 20-FEB-10 10:58 | DONE | | |
| 1202037255 | LCS | JXD2 | 1185 | 20-FEB-10 11:06 | DONE | | |
| 246312001 | SAMPLE | JXD2 | 1001 | 20-FEB-10 11:14 | DONE | | |
| 246328001 | SAMPLE | JXD2 | 1002 | 20-FEB-10 11:14 | DONE | | |
| 246328002 | SAMPLE | JXD2 | 1003 | 20-FEB-10 11:14 | DONE | | |
| 246328003 | SAMPLE | JXD2 | 1004 | 20-FEB-10 11:14 | DONE | | |
| 246328004 | SAMPLE | JXD2 | 1005 | 20-FEB-10 11:14 | DONE | | |
| 246328005 | SAMPLE | JXD2 | 1006 | 20-FEB-10 11:14 | DONE | | |
| 246328006 | SAMPLE | JXD2 | 1007 | 20-FEB-10 11:43 | DONE | | |
| 246328007 | SAMPLE | JXD2 | 1008 | 20-FEB-10 11:43 | DONE | | |
| 246328008 | SAMPLE | JXD2 | 1009 | 20-FEB-10 11:43 | DONE | | |
| 246328009 | SAMPLE | JXD2 | 1010 | 20-FEB-10 11:43 | DONE | | |
| 246341001 | SAMPLE | JXD2 | 1011 | 20-FEB-10 11:43 | DUSE | | |
| 246341001 | SAMPLE | JXD2 | 1121 | 22-FEB-10 12:41 | DONE | | |
| 1202037254 | DUP | JXD2 | 1122 | 22-FEB-10 12:41 | DONE | | |

Instrument Run Log

Instrument Type: GAMMA SPECTROMETER

Batch ID: 950786

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 246312001 | SAMPLE | MXR1 | GAM15 | 18-FEB-10 10:53 | DONE | CAN | 03-FEB-10 00:00 |
| 246328001 | SAMPLE | MXR1 | GAM22 | 18-FEB-10 10:54 | DONE | CAN | 02-DEC-09 00:00 |
| 246328002 | SAMPLE | MXR1 | GAM11 | 18-FEB-10 11:05 | DONE | CAN | 18-NOV-09 00:00 |
| 246328003 | SAMPLE | MXR1 | GAM16 | 18-FEB-10 11:06 | DONE | CAN | 16-NOV-09 00:00 |
| 246328004 | SAMPLE | MXR1 | GAM12 | 18-FEB-10 11:08 | DONE | CAN | 10-FEB-09 00:00 |
| 246328005 | SAMPLE | MXR1 | GAM20 | 18-FEB-10 11:08 | DONE | CAN | 26-AUG-09 00:00 |
| 246328006 | SAMPLE | MXR1 | GAM25 | 18-FEB-10 11:16 | DONE | CAN | 07-OCT-09 00:00 |
| 246328007 | SAMPLE | MXR1 | GAM19 | 18-FEB-10 11:16 | DONE | CAN | 12-MAR-09 00:00 |
| 246328008 | SAMPLE | MXR1 | GAM01 | 18-FEB-10 11:47 | DONE | CAN | 12-JAN-10 00:00 |
| 246328009 | SAMPLE | MXR1 | GAM07 | 18-FEB-10 11:48 | DONE | CAN | 20-JUL-09 00:00 |
| 246341001 | SAMPLE | MXR1 | GAM15 | 18-FEB-10 12:56 | DONE | CAN | 03-FEB-10 00:00 |
| 246341002 | SAMPLE | MXR1 | GAM22 | 18-FEB-10 12:57 | DONE | CAN | 02-DEC-09 00:00 |
| 246341003 | SAMPLE | MXR1 | GAM10 | 18-FEB-10 13:09 | DONE | CAN | 16-MAR-09 00:00 |
| 246341004 | SAMPLE | MXR1 | GAM11 | 18-FEB-10 13:10 | DONE | CAN | 18-NOV-09 00:00 |
| 246341005 | SAMPLE | MXR1 | GAM16 | 18-FEB-10 13:10 | DONE | CAN | 16-NOV-09 00:00 |
| 246341006 | SAMPLE | MXR1 | GAM12 | 18-FEB-10 13:12 | DONE | CAN | 10-FEB-09 00:00 |
| 246341007 | SAMPLE | MXR1 | GAM20 | 18-FEB-10 13:12 | DONE | CAN | 26-AUG-09 00:00 |
| 246341008 | SAMPLE | MXR1 | GAM21 | 18-FEB-10 13:24 | DONE | CAN | 28-JUL-09 00:00 |
| 246341009 | SAMPLE | MXR1 | GAM14 | 18-FEB-10 13:49 | DONE | CAN | 06-MAR-09 00:00 |
| 1202037546 | MB | MXR1 | GAM01 | 18-FEB-10 13:52 | DONE | CAN | 12-JAN-10 00:00 |
| 1202037547 | DUP | MXR1 | GAM07 | 18-FEB-10 13:52 | DONE | CAN | 20-JUL-09 00:00 |
| 1202037548 | LCS | MXR1 | GAM17 | 18-FEB-10 14:48 | DONE | CAN | 06-JAN-10 00:00 |

Instrument Run Log

Instrument Type: LSC

Batch ID: 951367

| Sample ID | Sample Type | Analyst | Instrument | Run Date | Status | Geometry | Calibration Date |
|------------|-------------|---------|------------|-----------------|--------|----------|------------------|
| 246328001 | SAMPLE | KXK2 | LSCPINK | 16-FEB-10 22:15 | DONE | | |
| 246328002 | SAMPLE | KXK2 | LSCPINK | 16-FEB-10 23:52 | DONE | | |
| 246328003 | SAMPLE | KXK2 | LSCPINK | 17-FEB-10 02:45 | DONE | | |
| 246328004 | SAMPLE | KXK2 | LSCPINK | 17-FEB-10 04:23 | DONE | | |
| 246328005 | SAMPLE | KXK2 | LSCPINK | 17-FEB-10 06:00 | DONE | | |
| 246328007 | SAMPLE | KXK2 | LSCPINK | 17-FEB-10 09:16 | DONE | | |
| 246328008 | SAMPLE | KXK2 | LSCPINK | 17-FEB-10 10:53 | DONE | | |
| 246328009 | SAMPLE | KXK2 | LSCPINK | 17-FEB-10 12:31 | DONE | | |
| 1202038817 | MB | KXK2 | LSCPINK | 17-FEB-10 14:08 | DONE | | |
| 1202038818 | DUP | KXK2 | LSCPINK | 17-FEB-10 15:46 | DONE | | |
| 1202038819 | LCS | KXK2 | LSCPINK | 17-FEB-10 17:23 | DONE | | |
| 246328006 | SAMPLE | KXK2 | LSCYELLOW | 19-FEB-10 22:03 | DONE | | |