**RESL CUSTOMER EXPORT CONTROL AGREEMENT**

It is the Radiological and Environmental Sciences Laboratory's (RESL) policy to conduct business in accordance with all applicable U.S. export control laws and regulations. It is also RESL's policy that its Customers comply with U.S. export control laws and regulations. Therefore, Customer agrees to the following:

1. Because products, technical data, and technical assistance (i.e., services) provided to Customer by RESL may be subject to U.S. export control laws and regulations, (i) transactions with certain persons and companies and (ii) the export or reexport of certain types and levels of products, technical data, and services are prohibited or restricted.

2. Customer acknowledges that it is responsible for its own compliance with U.S. export control laws and regulations. Customer further agrees that it assumes the responsibility to obtain all necessary U.S. export licenses or other U.S. governmental authorizations, as well as all liability for the failure to do so.

3. Customer acknowledges that export control requirements may change and that the export or reexport of RESL products, technical data, and services without an export license or other appropriate governmental authorization may result in criminal and/or civil liability.

4. The obligations and requirements described herein shall survive the expiration or termination of any agreement or contract between RESL and Customer.

# MaSU52 Participating Laboratories

| Lab Code | Lab Name | Matrix Code |
|---|---|---|
| AFOH01 | USAFSAM/OEA | MaU |
| ERCL01 | Washington State Public Health Laboratories | MaU |
| HCAL01 | Lawrence Livermore National Laboratory | MaU |
| IDGR01 | Oak Ridge National Laboratory-Internal Dosimetry Group | MaU |
| IEMA01 | Illinois Emergency Management Agency Radiochemistry Laboratory | MaU |
| LANL01 | Los Alamos National Laboratory | MaU |
| ODHL01 | Ohio Department of Health Laboratory | MaU |
| TELE01 | Teledyne Brown Engineering - Environmental Services | MaU |
| WIPP01 | WIPP Laboratories | MaU |
| WSHL01 | Wisconsin State Laboratory of Hygiene | MaU |

# Laboratories Not Reporting

| Lab Code | Lab Name | Matrix Code |
|---|---|---|

# Study Reference Values

*MAPEP-25-MaSU52: Radiological urine standard*
*Radiological Reference Date: 02/01/2025*

## Mass

| Analyte | Reference Value | Reference Uncertainty | Units |
|---|---|---|---|
| Plutonium-239 | 17.4 | 0.3 | (pg/L) |
| Plutonium-240 | 0.366 | 0.005 | (pg/L) |
| Plutonium-242 | | | (pg/L) |
| Uranium-235 | 63.6 | 1.3 | (ng/L) |
| Uranium-238 | 8800 | 300 | (ng/L) |
| Uranium-Total | 8800 | 300 | (ng/L) |

## Radiological

| Analyte | Reference Value | Reference Uncertainty | Units |
|---|---|---|---|
| Americium-241 | 0.0490 | 0.0007 | (Bq/L) |
| Cesium-137 | 0.608 | 0.014 | (Bq/L) |
| Cobalt-60 | 0.0765 | 0.0014 | (Bq/L) |
| Neptunium-237 | | | (Bq/L) |
| Plutonium-238 | 0.0572 | 0.0009 | (Bq/L) |
| Plutonium-239/240 | 0.0435 | 0.0006 | (Bq/L) |
| Plutonium-241 | | | (Bq/L) |
| Potassium-40 | | | (Bq/L) |
| Radium-226 | 0.164 | 0.004 | (Bq/L) |
| Strontium-90 | 0.254 | 0.004 | (Bq/L) |
| Uranium-234 | 0.105 | 0.003 | (Bq/L) |
| Uranium-238 | 0.109 | 0.003 | (Bq/L) |

# Sample Statistical Summary

*MAPEP-25-MaSU52: Radiological urine standard*
*Radiological Reference Date: 02/01/2025*

## Mass

| Analyte | T(1) | A(2) | Grand(3) Mean | Standard Deviation | Reference Value | Reference Uncertainty | Acceptance Range | Units |
|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | 1 | 1 | | | 17.4 | 0.3 | 12.2 - 22.6 | (pg/L) |
| Plutonium-240 | 1 | 1 | | | 0.366 | 0.005 | 0.256 - 0.476 | (pg/L) |
| Plutonium-242 | 1 | 1 | | | | | | (pg/L) |
| Uranium-235 | 2 | 2 | | | 63.6 | 1.3 | 44.5 - 82.7 | (ng/L) |
| Uranium-238 | 2 | 2 | | | 8800 | 300 | 6160 - 11440 | (ng/L) |
| Uranium-Total | 1 | 1 | | | 8800 | 300 | 6160 - 11440 | (ng/L) |

## Radiological

| Analyte | T(1) | A(2) | Grand(3) Mean | Standard Deviation | Reference Value | Reference Uncertainty | Acceptance Range | Units |
|---|---|---|---|---|---|---|---|---|
| Americium-241 | 6 | 5 | | | 0.0490 | 0.0007 | 0.0343 - 0.0637 | (Bq/L) |
| Cesium-134 | 8 | 8 | | | | | False Positive Test | (Bq/L) |
| Cesium-137 | 9 | 9 | 0.562 | 0.065 | 0.608 | 0.014 | 0.426 - 0.790 | (Bq/L) |
| Cobalt-57 | 8 | 8 | | | | | False Positive Test | (Bq/L) |
| Cobalt-60 | 8 | 8 | 0.1519 | 0.2223 | 0.0765 | 0.0014 | Sensitivity Evaluation | (Bq/L) |
| Curium-244 | 3 | 3 | | | | | False Positive Test | (Bq/L) |
| Manganese-54 | 8 | 7 | | | | | False Positive Test | (Bq/L) |
| Neptunium-237 | 1 | 1 | | | | | | (Bq/L) |
| Nickel-63 | 1 | 1 | | | | | False Positive Test | (Bq/L) |
| Plutonium-238 | 5 | 5 | | | 0.0572 | 0.0009 | 0.0400 - 0.0744 | (Bq/L) |
| Plutonium-239/240 | 5 | 5 | | | 0.0435 | 0.0006 | 0.0305 - 0.0566 | (Bq/L) |
| Plutonium-241 | 1 | 1 | | | | | | (Bq/L) |
| Potassium-40 | 7 | | | | | | | (Bq/L) |
| Radium-226 | 1 | 1 | | | 0.164 | 0.004 | 0.115 - 0.213 | (Bq/L) |
| Strontium-90 | 3 | 3 | | | 0.254 | 0.004 | 0.178 - 0.330 | (Bq/L) |
| Uranium-234 | 5 | 5 | | | 0.105 | 0.003 | 0.074 - 0.137 | (Bq/L) |
| Uranium-238 | 6 | 6 | 0.113 | 0.011 | 0.109 | 0.003 | 0.076 - 0.142 | (Bq/L) |
| Zinc-65 | 8 | 7 | | | | | False Positive Test | (Bq/L) |

**Note:** (1) T = Total number of laboratories reporting analyte.
(2) A = Number of laboratories with 'Acceptable' performance.
(3) Mean excludes values indicated as "Not Acceptable".

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

# Flag Summary Report

*MAPEP-25-MaSU52: Radiological urine standard*
*Radiological Reference Date: 02/01/2025*

## Mass

| Analyte | A | W | RW | N |
|---|---|---|---|---|
| Uranium-235 | 2 | | | |
| Uranium-238 | 2 | | | |
| Uranium-Total | 1 | | | |
| Plutonium-239 | 1 | | | |
| Plutonium-240 | 1 | | | |
| Plutonium-242 | 1 | | | |

## Radiological

| Analyte | A | W | RW | N |
|---|---|---|---|---|
| Americium-241 | 5 | | | 1 |
| Cesium-134 | 8 | | | |
| Cesium-137 | 8 | 1 | | |
| Cobalt-57 | 8 | | | |
| Cobalt-60 | 8 | | | |
| Curium-244 | 3 | | | |
| Manganese-54 | 7 | | | 1 |
| Neptunium-237 | 1 | | | |
| Nickel-63 | 1 | | | |
| Plutonium-238 | 5 | | | |
| Plutonium-239/240 | 5 | | | |
| Radium-226 | 1 | | | |
| Strontium-90 | 3 | | | |
| Uranium-234 | 5 | | | |
| Uranium-238 | 5 | 1 | | |
| Zinc-65 | 7 | | | 1 |
| Plutonium-241 | 1 | | | |

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*
(AFOH01) USAFSAM/OEA
2510 Fifth Street, Area B
Wright-Patterson AFB, OH 45433-7913

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | 0.0500 | 0.0490 | A | | 2.0 | 0.0343 - 0.0637 | 0.0026 | A | (Bq/L) |
| Cesium-134 | -0.1 | | A | | | False Positive Test | 0.1 | | (Bq/L) |
| Cesium-137 | 0.54 | 0.608 | A | | -11.2 | 0.426 - 0.790 | 0.07 | A | (Bq/L) |
| Cobalt-57 | -0.04 | | A | | | False Positive Test | 0.04 | | (Bq/L) |
| Cobalt-60 | 0.02 | 0.0765 | A | (17) | | Sensitivity Evaluation | 0.03 | | (Bq/L) |
| Curium-244 | 0.00001 | | A | | | False Positive Test | 0.00001 | | (Bq/L) |
| Manganese-54 | 0.03 | | A | | | False Positive Test | 0.03 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | 0.0538 | 0.0572 | A | | -5.9 | 0.0400 - 0.0744 | 0.0024 | A | (Bq/L) |
| Plutonium-239/240 | 0.0432 | 0.0435 | A | | -0.7 | 0.0305 - 0.0566 | 0.0021 | | (Bq/L) |
| Potassium-40 | 49.8 | | | | | | 1.9 | A | (Bq/L) |
| Radium-226 | 0.182 | 0.164 | A | | 11.0 | 0.115 - 0.213 | 0.020 | A | (Bq/L) |
| Strontium-90 | 0.24 | 0.254 | A | | -5.5 | 0.178 - 0.330 | 0.02 | A | (Bq/L) |
| Uranium-234 | 0.1001 | 0.105 | A | | -4.7 | 0.074 - 0.137 | 0.0038 | | (Bq/L) |
| Uranium-238 | 0.1050 | 0.109 | A | | -3.7 | 0.076 - 0.142 | 0.0040 | | (Bq/L) |
| Zinc-65 | -0.2 | | A | | | False Positive Test | 0.1 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*

(ERCL01) Washington State Public Health Laboratories
1610 N.E. 150th Street
Shoreline, WA 98155-9701

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | NR | 0.0490 | | | | 0.0343 - 0.0637 | | | (Bq/L) |
| Cesium-134 | -0.148 | | A | | | False Positive Test | 0.077 | | (Bq/L) |
| Cesium-137 | 0.581 | 0.608 | A | | -4.4 | 0.426 - 0.790 | 0.096 | W | (Bq/L) |
| Cobalt-57 | 0.004 | | A | | | False Positive Test | 0.077 | | (Bq/L) |
| Cobalt-60 | 0.089 | 0.0765 | A | (17) | | Sensitivity Evaluation | 0.074 | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | 0.092 | | A | | | False Positive Test | 0.079 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | NR | 0.0572 | | | | 0.0400 - 0.0744 | | | (Bq/L) |
| Plutonium-239/240 | NR | 0.0435 | | | | 0.0305 - 0.0566 | | | (Bq/L) |
| Potassium-40 | 1.1 | | | | | | 2.1 | N | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | NR | 0.105 | | | | 0.074 - 0.137 | | | (Bq/L) |
| Uranium-238 | NR | 0.109 | | | | 0.076 - 0.142 | | | (Bq/L) |
| Zinc-65 | -0.05 | | A | | | False Positive Test | 0.16 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations


*Laboratory Results For MAPEP Series 52*
(HCAL01) Lawrence Livermore National Laboratory
Analytical Services and Instrumentation Analytical Lab
Livermore, CA 94550

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | 5.84e-02 | 0.0490 | A | | 19.2 | 0.0343 - 0.0637 | 2.94e-03 | A | (Bq/L) |
| Cesium-134 | 9.18e-01 | | A | | | False Positive Test | 4.61e-01 | | (Bq/L) |
| Cesium-137 | 6.53e-01 | 0.608 | A | | 7.4 | 0.426 - 0.790 | 3.09e-01 | N | (Bq/L) |
| Cobalt-57 | 8.86e-01 | | A | | | False Positive Test | 4.45e-01 | | (Bq/L) |
| Cobalt-60 | 6.97e-01 | 0.0765 | A | (17) | | Sensitivity Evaluation | 3.51e-01 | | (Bq/L) |
| Curium-244 | 1.12e-05 | | A | | | False Positive Test | 1.12e-05 | | (Bq/L) |
| Manganese-54 | 8.97e-01 | | A | | | False Positive Test | 4.50e-01 | | (Bq/L) |
| Nickel-63 | 6.96e-01 | | A | | | False Positive Test | 3.50e-01 | | (Bq/L) |
| Plutonium-238 | 5.52e-02 | 0.0572 | A | | -3.5 | 0.0400 - 0.0744 | 3.35e-03 | A | (Bq/L) |
| Plutonium-239/240 | 3.98e-02 | 0.0435 | A | | -8.5 | 0.0305 - 0.0566 | 2.46e-03 | | (Bq/L) |
| Potassium-40 | 5.64e01 | | | | | | 3.48 | A | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | NR | 0.105 | | | | 0.074 - 0.137 | | | (Bq/L) |
| Uranium-238 | NR | 0.109 | | | | 0.076 - 0.142 | | | (Bq/L) |
| Zinc-65 | 1.86 | | A | | | False Positive Test | 9.30e-01 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*
(IDGR01) Oak Ridge National Laboratory-Internal Dosimetry Group
Bethel Valley Road
Oak Ridge, TN 37831-6107

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | 61.9 | 63.6 | A | | -2.7 | 44.5 - 82.7 | 3.2 | | (ng/L) |
| Uranium-238 | 8510.2 | 8800 | A | | -3.3 | 6160 - 11440 | 450.2 | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | 0.048 | 0.0490 | A | | -2.0 | 0.0343 - 0.0637 | 0.003 | A | (Bq/L) |
| Cesium-134 | NR | | | | | False Positive Test | | | (Bq/L) |
| Cesium-137 | NR | 0.608 | | | | 0.426 - 0.790 | | | (Bq/L) |
| Cobalt-57 | NR | | | | | False Positive Test | | | (Bq/L) |
| Cobalt-60 | NR | 0.0765 | | | | Sensitivity Evaluation | | | (Bq/L) |
| Curium-244 | -0.00003 | | A | | | False Positive Test | 0.00010 | | (Bq/L) |
| Manganese-54 | NR | | | | | False Positive Test | | | (Bq/L) |
| Neptunium-237 | -0.00002 | | A | | | | 0.00020 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | 0.056 | 0.0572 | A | | -2.1 | 0.0400 - 0.0744 | 0.004 | A | (Bq/L) |
| Plutonium-239/240 | 0.041 | 0.0435 | A | | -5.7 | 0.0305 - 0.0566 | 0.003 | | (Bq/L) |
| Plutonium-241 | 0.061 | | A | | | | 0.097 | | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | 0.22 | 0.254 | A | | -13.4 | 0.178 - 0.330 | 0.05 | W | (Bq/L) |
| Uranium-234 | 0.104 | 0.105 | A | | -1.0 | 0.074 - 0.137 | 0.006 | | (Bq/L) |
| Uranium-238 | 0.109 | 0.109 | A | | 0.0 | 0.076 - 0.142 | 0.006 | | (Bq/L) |
| Zinc-65 | NR | | | | | False Positive Test | | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*

(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory

1301 Knotts St.

Springfield, IL 62703

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | 0.0278 | 0.0490 | N | | -43.3 | 0.0343 - 0.0637 | 0.034 | N | (Bq/L) |
| Cesium-134 | 0.0173 | | A | | | False Positive Test | 0.015 | | (Bq/L) |
| Cesium-137 | 0.593 | 0.608 | A | | -2.5 | 0.426 - 0.790 | 0.026 | A | (Bq/L) |
| Cobalt-57 | 0.0303 | | A | | | False Positive Test | 0.012 | | (Bq/L) |
| Cobalt-60 | 0.067 | 0.0765 | A | | | Sensitivity Evaluation | 0.019 | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | -0.0617 | | N | (29) | | False Positive Test | 0.016 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | NR | 0.0572 | | | | 0.0400 - 0.0744 | | | (Bq/L) |
| Plutonium-239/240 | NR | 0.0435 | | | | 0.0305 - 0.0566 | | | (Bq/L) |
| Potassium-40 | -4.34 | | | (29) | | | 0.821 | N | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | NR | 0.105 | | | | 0.074 - 0.137 | | | (Bq/L) |
| Uranium-238 | NR | 0.109 | | | | 0.076 - 0.142 | | | (Bq/L) |
| Zinc-65 | -0.203 | | N | (29) | | False Positive Test | 0.048 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated

(17) = NOT DETECTED - reported a statistically zero result

(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*

(LANL01) Los Alamos National Laboratory
P. O. Box 1663
Los Alamos, NM 87545

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | 1.768E+01 | 17.4 | A | | 1.6 | 12.2 - 22.6 | 3.0E-01 | | (pg/L) |
| Plutonium-240 | 3.74E-01 | 0.366 | A | | 2.2 | 0.256 - 0.476 | 2.7E-02 | | (pg/L) |
| Plutonium-242 | 5.59E-03 | | A | (6) | | | 1.7E-04 | | (pg/L) |
| Uranium-235 | 6.147E+01 | 63.6 | A | | -3.3 | 44.5 - 82.7 | 7.0E-01 | | (ng/L) |
| Uranium-238 | 8.54E+03 | 8800 | A | | -3.0 | 6160 - 11440 | 1.6E+02 | | (ng/L) |
| Uranium-Total | 8.60E+03 | 8800 | A | | -2.3 | 6160 - 11440 | 1.6E+02 | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | 5.20E-02 | 0.0490 | A | | 6.1 | 0.0343 - 0.0637 | 4.8E-03 | A | (Bq/L) |
| Cesium-134 | NR | | | | | False Positive Test | | | (Bq/L) |
| Cesium-137 | 5.92E-01 | 0.608 | A | | -2.6 | 0.426 - 0.790 | 6.0E-02 | A | (Bq/L) |
| Cobalt-57 | NR | | | | | False Positive Test | | | (Bq/L) |
| Cobalt-60 | NR | 0.0765 | | | | Sensitivity Evaluation | | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | NR | | | | | False Positive Test | | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | 5.91E-02 | 0.0572 | A | | 3.3 | 0.0400 - 0.0744 | 2.7E-03 | A | (Bq/L) |
| Plutonium-239/240 | 4.18E-02 | 0.0435 | A | | -3.9 | 0.0305 - 0.0566 | 2.3E-03 | | (Bq/L) |
| Potassium-40 | NR | | | | | | | | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | 1.051E-01 | 0.105 | A | | 0.1 | 0.074 - 0.137 | 1.1E-03 | | (Bq/L) |
| Uranium-238 | 1.062E-01 | 0.109 | A | | -2.6 | 0.076 - 0.142 | 2.0E-03 | | (Bq/L) |
| Zinc-65 | NR | | | | | False Positive Test | | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*
(ODHL01) Ohio Department of Health Laboratory
8995 E Main Street
Reynoldsburg, OH 43068

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | NR | 0.0490 | | | | 0.0343 - 0.0637 | | | (Bq/L) |
| Cesium-134 | -0.0166 | | A | | | False Positive Test | 0.0485 | | (Bq/L) |
| Cesium-137 | 0.611 | 0.608 | A | | 0.5 | 0.426 - 0.790 | 0.0812 | A | (Bq/L) |
| Cobalt-57 | 0.0528 | | A | | | False Positive Test | 0.05 | | (Bq/L) |
| Cobalt-60 | 0.115 | 0.0765 | A | | | Sensitivity Evaluation | 0.0379 | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | -0.0642 | | A | | | False Positive Test | 0.06 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | NR | 0.0572 | | | | 0.0400 - 0.0744 | | | (Bq/L) |
| Plutonium-239/240 | NR | 0.0435 | | | | 0.0305 - 0.0566 | | | (Bq/L) |
| Potassium-40 | -0.155 | | | | | | 3.78 | N | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | NR | 0.105 | | | | 0.074 - 0.137 | | | (Bq/L) |
| Uranium-238 | NR | 0.109 | | | | 0.076 - 0.142 | | | (Bq/L) |
| Zinc-65 | 0.0453 | | A | | | False Positive Test | 0.155 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

**There are trace levels from the Pu/Am decay products that are currently below normal alpha spectroscopy limits of detection.**

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**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated
(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*

(TELE01) Teledyne Brown Engineering - Environmental Services

2508 Quality Lane

Knoxville, TN 37931-6819

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | NR | 0.0490 | | | | 0.0343 - 0.0637 | | | (Bq/L) |
| Cesium-134 | -0.0104 | | A | | | False Positive Test | 0.0976 | | (Bq/L) |
| Cesium-137 | 0.497 | 0.608 | A | | -18.3 | 0.426 - 0.790 | 0.148 | W | (Bq/L) |
| Cobalt-57 | 0.0472 | | A | | | False Positive Test | 0.0663 | | (Bq/L) |
| Cobalt-60 | 0.104 | 0.0765 | A | (17) | | Sensitivity Evaluation | 0.100 | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | 0.0365 | | A | | | False Positive Test | 0.091 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | NR | 0.0572 | | | | 0.0400 - 0.0744 | | | (Bq/L) |
| Plutonium-239/240 | NR | 0.0435 | | | | 0.0305 - 0.0566 | | | (Bq/L) |
| Potassium-40 | 52.8 | | | | | | 3.38 | A | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | 0.0963 | 0.105 | A | | -8.3 | 0.074 - 0.137 | 0.0254 | | (Bq/L) |
| Uranium-238 | 0.108 | 0.109 | A | | -0.9 | 0.076 - 0.142 | 0.0269 | | (Bq/L) |
| Zinc-65 | -0.278 | | A | | | False Positive Test | 0.226 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

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**The uncertainty flags are for information only (See MAPEP Handbook for more details).**

**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

(6) = Not Evaluated

(17) = NOT DETECTED - reported a statistically zero result

(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*
(WIPP01) WIPP Laboratories
1400 University Drive
Carlsbad, NM 88220

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | 5.11E-02 | 0.0490 | A | | 4.3 | 0.0343 - 0.0637 | 3.55E-03 | A | (Bq/L) |
| Cesium-134 | 3.03e-02 | | A | | | False Positive Test | 4.88E-02 | | (Bq/L) |
| Cesium-137 | 4.34E-01 | 0.608 | W | | -28.6 | 0.426 - 0.790 | 8.42E-02 | W | (Bq/L) |
| Cobalt-57 | -1.23E-02 | | A | | | False Positive Test | 2.42E-02 | | (Bq/L) |
| Cobalt-60 | 4.92E-02 | 0.0765 | A | (17) | | Sensitivity Evaluation | 6.07E-02 | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | 3.10E-02 | | A | | | False Positive Test | 6.40E-02 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | 6.10E-02 | 0.0572 | A | | 6.6 | 0.0400 - 0.0744 | 4.62E-03 | A | (Bq/L) |
| Plutonium-239/240 | 4.40E-02 | 0.0435 | A | | 1.1 | 0.0305 - 0.0566 | 3.44E-03 | | (Bq/L) |
| Potassium-40 | NR | | | | | | | | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | 2.16E-01 | 0.254 | A | | -15.0 | 0.178 - 0.330 | 1.29E-02 | A | (Bq/L) |
| Uranium-234 | 1.07E-01 | 0.105 | A | | 1.9 | 0.074 - 0.137 | 1.35E-02 | | (Bq/L) |
| Uranium-238 | 1.17E-01 | 0.109 | A | | 7.3 | 0.076 - 0.142 | 1.47E-02 | | (Bq/L) |
| Zinc-65 | 2.28E-02 | | A | | | False Positive Test | 1.36e-01 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

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**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

Notes:

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(17) = NOT DETECTED - reported a statistically zero result
(29) = Statistically significant negative value at 3 standard deviations

MAPEP Mixed Analyte Performance Evaluation Program

Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

*Laboratory Results For MAPEP Series 52*

(WSHL01) Wisconsin State Laboratory of Hygiene

2601 Agriculture Drive

Madison, WI 53718

## Mass

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Plutonium-239 | NR | 17.4 | | | | 12.2 - 22.6 | | | (pg/L) |
| Plutonium-240 | NR | 0.366 | | | | 0.256 - 0.476 | | | (pg/L) |
| Uranium-235 | NR | 63.6 | | | | 44.5 - 82.7 | | | (ng/L) |
| Uranium-238 | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |
| Uranium-Total | NR | 8800 | | | | 6160 - 11440 | | | (ng/L) |

## Radiological

| Analyte | Result | Ref Value | Flag | Notes | Bias (%) | Acceptance Range | Unc Value | Unc Flag | Units |
|---|---|---|---|---|---|---|---|---|---|
| Americium-241 | NR | 0.0490 | | | | 0.0343 - 0.0637 | | | (Bq/L) |
| Cesium-134 | -0.0649 | | A | | | False Positive Test | 0.0439 | | (Bq/L) |
| Cesium-137 | 0.554 | 0.608 | A | | -8.9 | 0.426 - 0.790 | 0.0406 | A | (Bq/L) |
| Cobalt-57 | -0.0213 | | A | | | False Positive Test | 0.0392 | | (Bq/L) |
| Cobalt-60 | 0.074 | 0.0765 | A | (17) | | Sensitivity Evaluation | 0.0425 | | (Bq/L) |
| Curium-244 | NR | | | | | False Positive Test | | | (Bq/L) |
| Manganese-54 | -0.005 | | A | | | False Positive Test | 0.0335 | | (Bq/L) |
| Nickel-63 | NR | | | | | False Positive Test | | | (Bq/L) |
| Plutonium-238 | NR | 0.0572 | | | | 0.0400 - 0.0744 | | | (Bq/L) |
| Plutonium-239/240 | NR | 0.0435 | | | | 0.0305 - 0.0566 | | | (Bq/L) |
| Potassium-40 | 2.20 | | | | | | 5.080 | N | (Bq/L) |
| Radium-226 | NR | 0.164 | | | | 0.115 - 0.213 | | | (Bq/L) |
| Strontium-90 | NR | 0.254 | | | | 0.178 - 0.330 | | | (Bq/L) |
| Uranium-234 | NR | 0.105 | | | | 0.074 - 0.137 | | | (Bq/L) |
| Uranium-238 | 0.134 | 0.109 | W | | 22.9 | 0.076 - 0.142 | 0.0069 | | (Bq/L) |
| Zinc-65 | 0.00775 | | A | | | False Positive Test | 0.121 | | (Bq/L) |

*Radiological Reference Date: February 1, 2025*

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**RESL has measured a K-40 value in the background urine of 52 +/- 3 Bq/L.**

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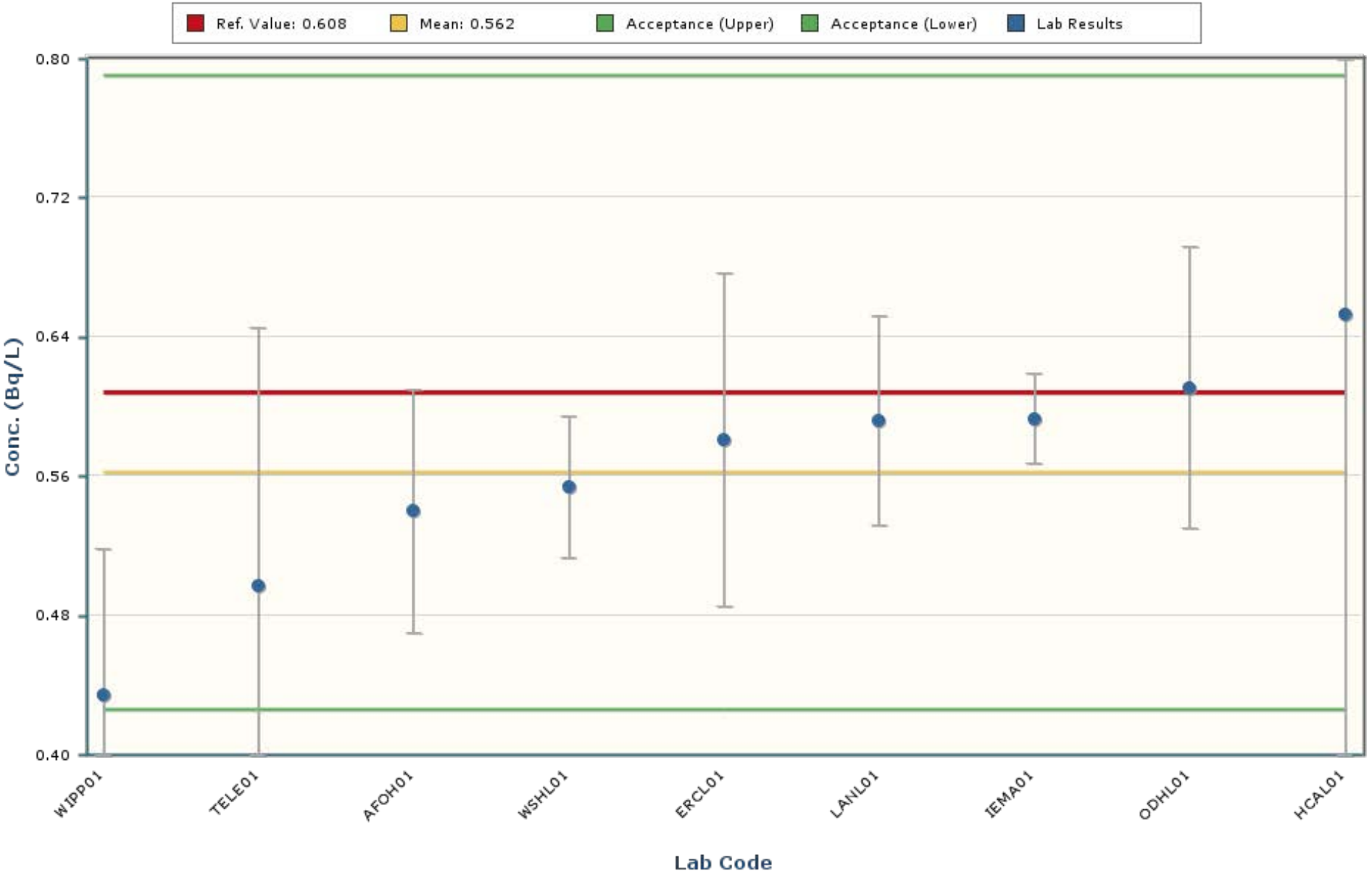
(29) = Statistically significant negative value at 3 standard deviations

# Cesium-137

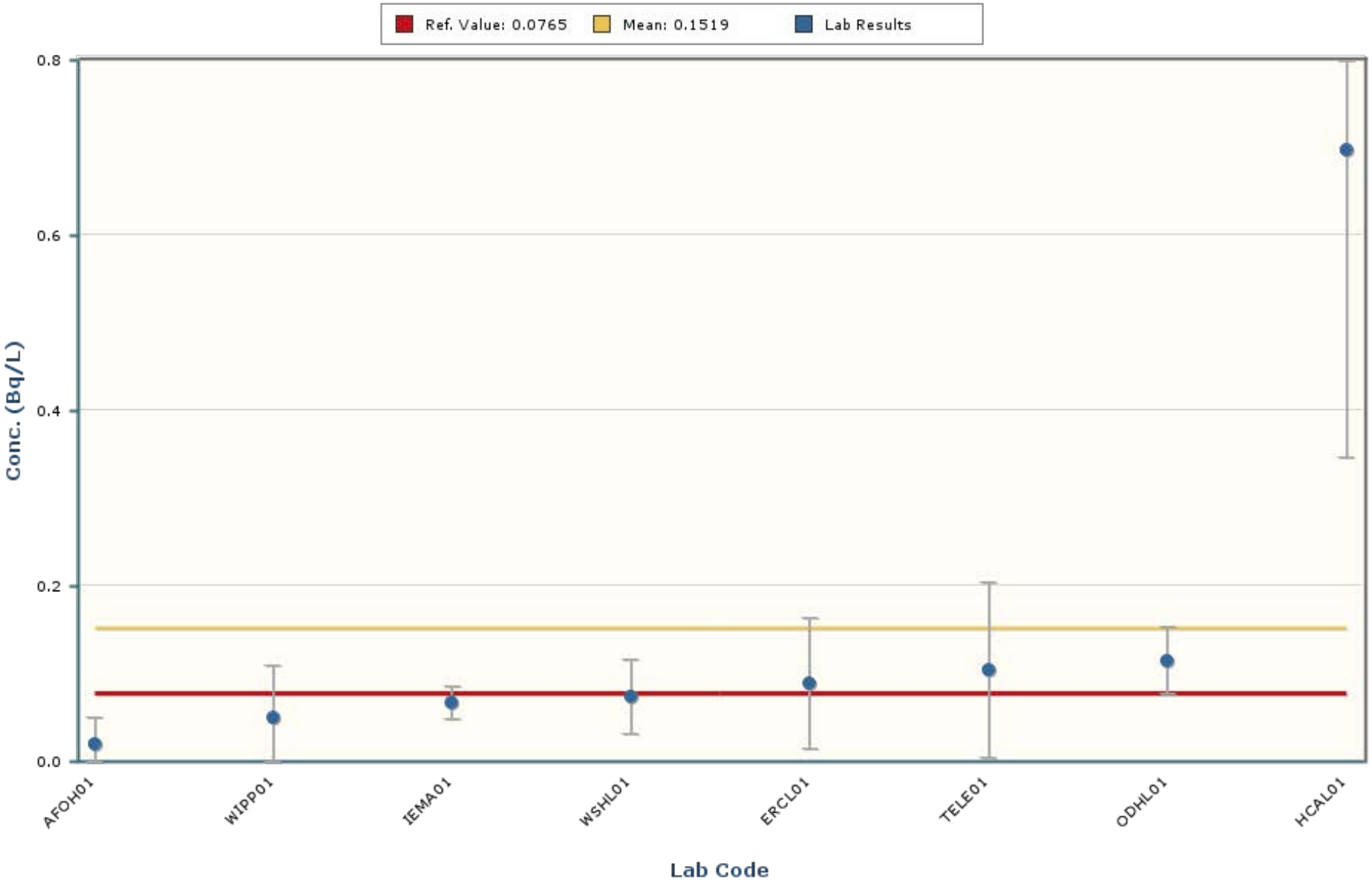
## MAPEP-25-MaSU52




Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 0.235 and 0.888 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

# Cobalt-60

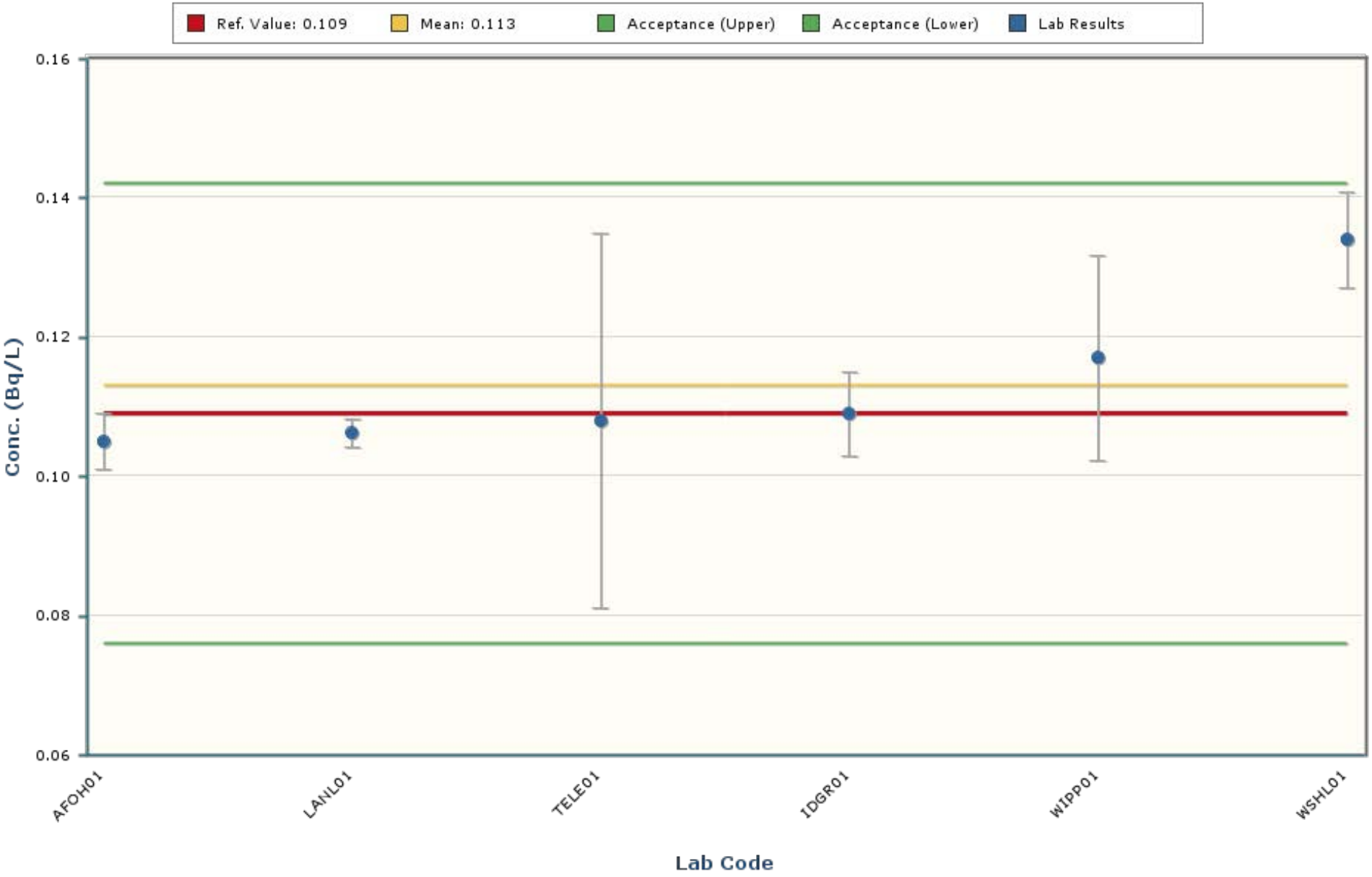
## MAPEP-25-MaSU52




Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between -0.9597 and 1.2635 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

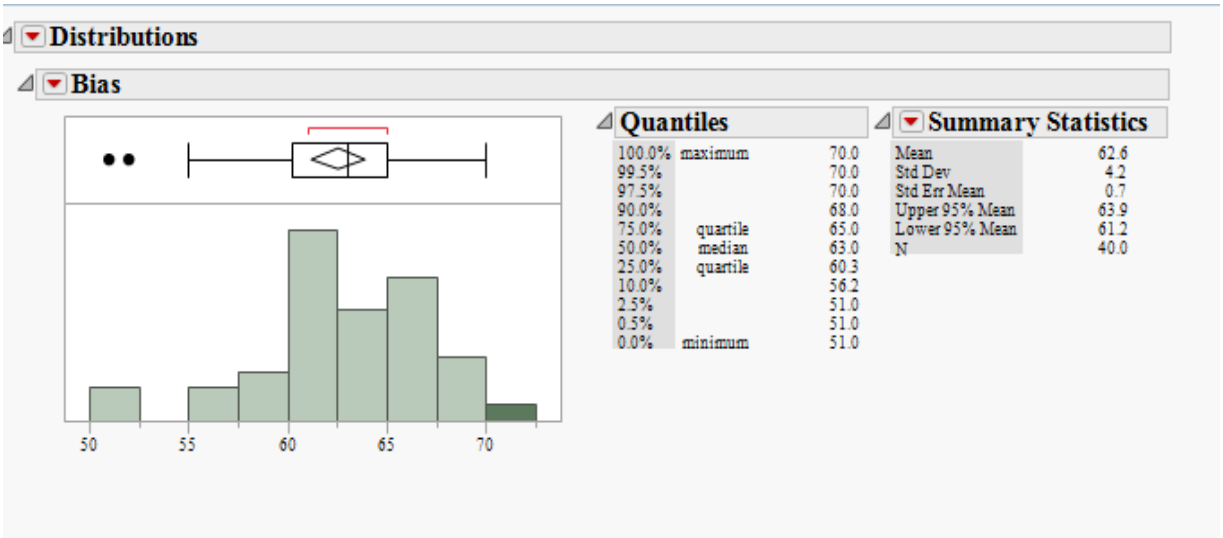
# Uranium-238

## MAPEP-25-MaSU52




Notes:
The chart mean excludes values outside of a bias range of ± 30%.
The chart shows only data points with values between 0.058 and 0.168 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at ± one standard deviation.

The intent of the distribution graphs contained within this report is to graphically demonstrate to users how % Bias data within the current MAPEP Series appears when examined by matrix, by analyte, by method of sample preparation or by method of detection. Biases greater than +/- 100% have been screened from the data. The box plot of the bias data points and the mean visually illustrate the breadth of the distribution and where potential outliers in the distribution might lie. The statistics for the distribution plot are provided adjacent to the Bias plot. In some cases, N becomes very small and thus developed statistics may not accurately reflect estimates of the population if N were a significantly larger value.

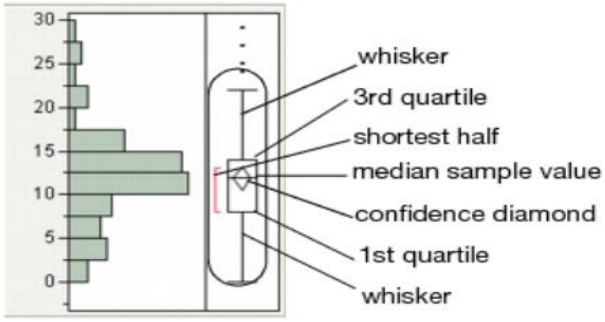



**Outlier Box Plot**

The BLACK small vertical line inside the small rectangle at the top of the data distribution graph is the median of the population of the bias shown for that analyte in the matrix. The confidence diamond contains the mean and the upper and lower 95% of the mean. If you drew a line through the middle of the diamond, you would have the mean. The top and bottom points of the diamond represent the upper and lower 95% of the mean. The ends of the box represent the 25th and 75th quantiles, also expressed as 1st and 3rd quartile. The difference between the 1st and 3rd quartiles is called the interquartile range. Each box has lines that extend from each end, sometimes called whiskers. The whiskers extend from the ends of the box to the outermost data point that falls within the distances computed as follows:

3rd quartile + 1.5*(interquartile range)

1st quartile - 1.5*(interquartile range)



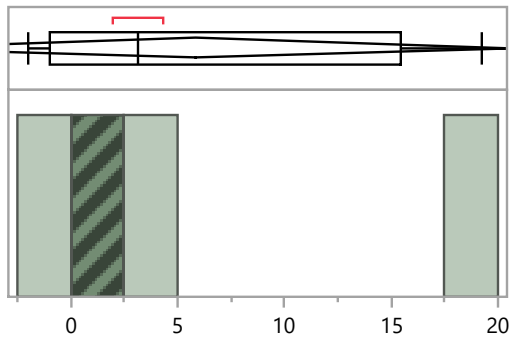

If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

***Ref. "SAS Institute Inc. 2016. JMP® 13 Basic Analysis. Cary, NC: SAS Institute Inc."***

## MaU52 Distribution by Detection Method

### Distributions Analyte_Detection=Americium-241 Alpha Spectrometry

#### Bias

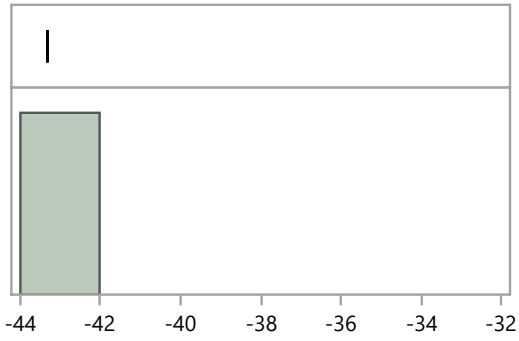



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 19.2 |
| 99.5% | | 19.2 |
| 97.5% | | 19.2 |
| 90.0% | | 19.2 |
| 75.0% | quartile | 15.5 |
| 50.0% | median | 3.2 |
| 25.0% | quartile | -1.0 |
| 10.0% | | -2.0 |
| 2.5% | | -2.0 |
| 0.5% | | -2.0 |
| 0.0% | minimum | -2.0 |

| Summary Statistics | |
|---|---|
| Mean | 5.9 |
| Std Dev | 9.3 |
| Std Err Mean | 4.6 |
| Upper 95% Mean | 20.6 |
| Lower 95% Mean | -8.9 |
| N | 4.0 |

### Distributions Analyte_Detection=Americium-241 Gamma Spectrometry

#### Bias

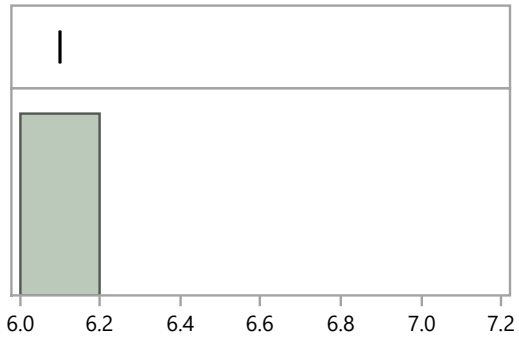



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -43.3 |
| 99.5% | | -43.3 |
| 97.5% | | -43.3 |
| 90.0% | | -43.3 |
| 75.0% | quartile | -43.3 |
| 50.0% | median | -43.3 |
| 25.0% | quartile | -43.3 |
| 10.0% | | -43.3 |
| 2.5% | | -43.3 |
| 0.5% | | -43.3 |
| 0.0% | minimum | -43.3 |

| Summary Statistics | |
|---|---|
| Mean | -43.3 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Detection=Americium-241 Inductively Coupled Plasma Mass Spectrometry

#### Bias



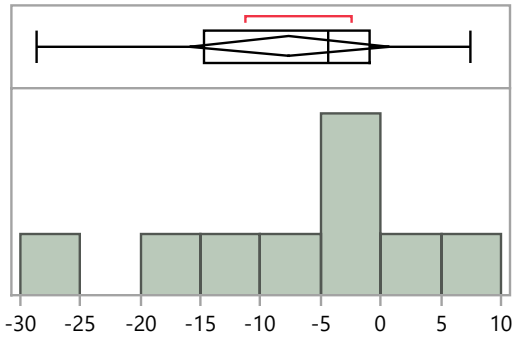

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 6.1 |
| 99.5% | | 6.1 |
| 97.5% | | 6.1 |
| 90.0% | | 6.1 |
| 75.0% | quartile | 6.1 |
| 50.0% | median | 6.1 |
| 25.0% | quartile | 6.1 |
| 10.0% | | 6.1 |
| 2.5% | | 6.1 |
| 0.5% | | 6.1 |
| 0.0% | minimum | 6.1 |

| Summary Statistics | |
|---|---|
| Mean | 6.1 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

## MaU52 Distribution by Detection Method

### Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

#### Bias

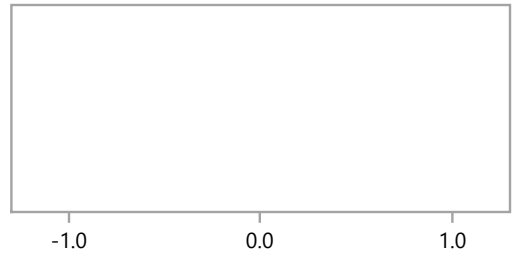



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 7.4 |
| 99.5% | | 7.4 |
| 97.5% | | 7.4 |
| 90.0% | | 7.4 |
| 75.0% | quartile | -1.0 |
| 50.0% | median | -4.4 |
| 25.0% | quartile | -14.8 |
| 10.0% | | -28.6 |
| 2.5% | | -28.6 |
| 0.5% | | -28.6 |
| 0.0% | minimum | -28.6 |

| Summary Statistics | |
|---|---|
| Mean | -7.6 |
| Std Dev | 10.7 |
| Std Err Mean | 3.6 |
| Upper 95% Mean | 0.6 |
| Lower 95% Mean | -15.9 |
| N | 9.0 |

### Distributions Analyte_Detection=Neptunium-237 Alpha Spectrometry

#### Bias

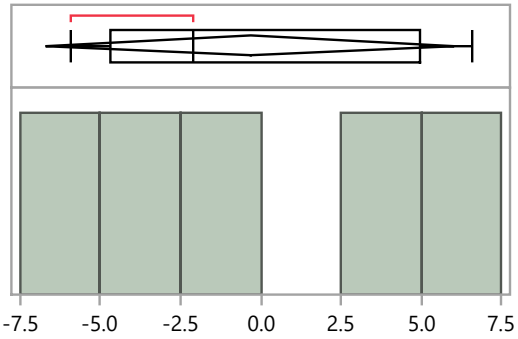



| Quantiles | |
|---|---|

| Summary Statistics | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

### Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

#### Bias



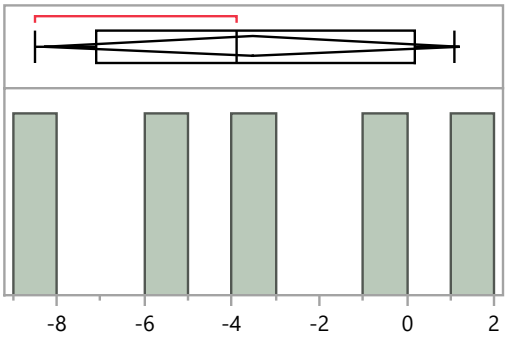

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 6.6 |
| 99.5% | | 6.6 |
| 97.5% | | 6.6 |
| 90.0% | | 6.6 |
| 75.0% | quartile | 5.0 |
| 50.0% | median | -2.1 |
| 25.0% | quartile | -4.7 |
| 10.0% | | -5.9 |
| 2.5% | | -5.9 |
| 0.5% | | -5.9 |
| 0.0% | minimum | -5.9 |

| Summary Statistics | |
|---|---|
| Mean | -0.3 |
| Std Dev | 5.1 |
| Std Err Mean | 2.3 |
| Upper 95% Mean | 6.1 |
| Lower 95% Mean | -6.7 |
| N | 5.0 |

## MaU52 Distribution by Detection Method

### Distributions Analyte_Detection=Plutonium-239/240 Alpha Spectrometry

#### Bias

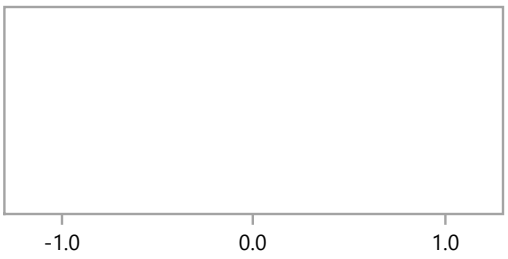



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 1.1 |
| 99.5% | | 1.1 |
| 97.5% | | 1.1 |
| 90.0% | | 1.1 |
| 75.0% | quartile | 0.2 |
| 50.0% | median | -3.9 |
| 25.0% | quartile | -7.1 |
| 10.0% | | -8.5 |
| 2.5% | | -8.5 |
| 0.5% | | -8.5 |
| 0.0% | minimum | -8.5 |

| Summary Statistics | |
|---|---|
| Mean | -3.5 |
| Std Dev | 3.8 |
| Std Err Mean | 1.7 |
| Upper 95% Mean | 1.2 |
| Lower 95% Mean | -8.3 |
| N | 5.0 |

### Distributions Analyte_Detection=Plutonium-241 Gas Flow Proportional Counter

#### Bias

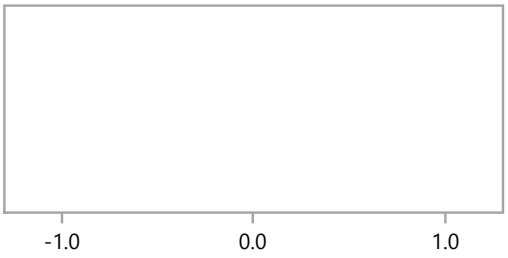



| Quantiles |
|---|

| Summary Statistics | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

### Distributions Analyte_Detection=Potassium-40 Gamma Spectrometry

#### Bias



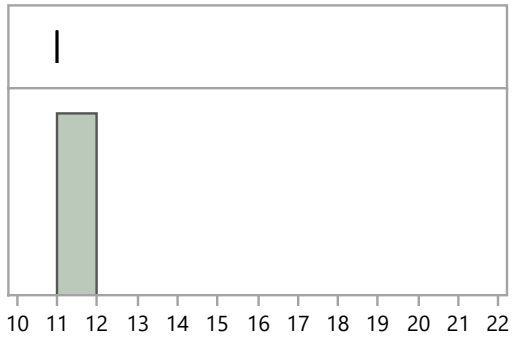

| Quantiles |
|---|

| Summary Statistics | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

## MaU52 Distribution by Detection Method

### Distributions Analyte_Detection=Radium-226 Alpha Spectrometry

#### Bias

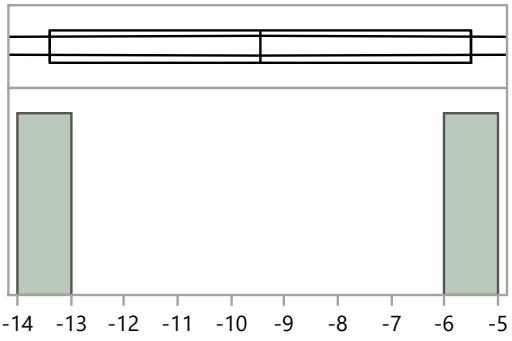



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 11.0 |
| 99.5% | | 11.0 |
| 97.5% | | 11.0 |
| 90.0% | | 11.0 |
| 75.0% | quartile | 11.0 |
| 50.0% | median | 11.0 |
| 25.0% | quartile | 11.0 |
| 10.0% | | 11.0 |
| 2.5% | | 11.0 |
| 0.5% | | 11.0 |
| 0.0% | minimum | 11.0 |

| Summary Statistics | |
|---|---|
| Mean | 11.0 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Detection=Strontium-90 Gas Flow Proportional Counter

#### Bias

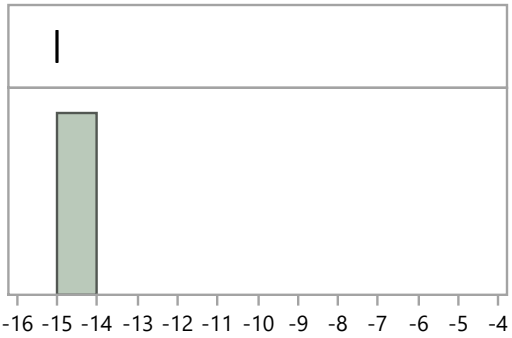



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -5.5 |
| 99.5% | | -5.5 |
| 97.5% | | -5.5 |
| 90.0% | | -5.5 |
| 75.0% | quartile | -5.5 |
| 50.0% | median | -9.5 |
| 25.0% | quartile | -13.4 |
| 10.0% | | -13.4 |
| 2.5% | | -13.4 |
| 0.5% | | -13.4 |
| 0.0% | minimum | -13.4 |

| Summary Statistics | |
|---|---|
| Mean | -9.5 |
| Std Dev | 5.6 |
| Std Err Mean | 4.0 |
| Upper 95% Mean | 40.7 |
| Lower 95% Mean | -59.6 |
| N | 2.0 |

### Distributions Analyte_Detection=Strontium-90 Gross Alpha/Beta - 2 pi gas flow proportional counter

#### Bias



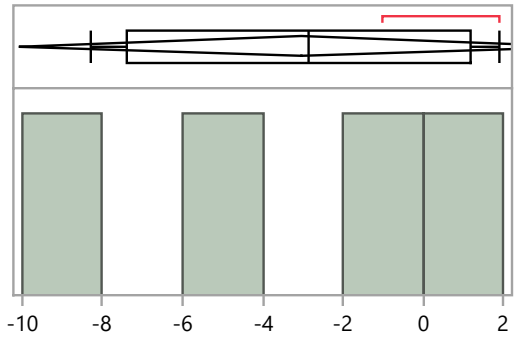

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -15.0 |
| 99.5% | | -15.0 |
| 97.5% | | -15.0 |
| 90.0% | | -15.0 |
| 75.0% | quartile | -15.0 |
| 50.0% | median | -15.0 |
| 25.0% | quartile | -15.0 |
| 10.0% | | -15.0 |
| 2.5% | | -15.0 |
| 0.5% | | -15.0 |
| 0.0% | minimum | -15.0 |

| Summary Statistics | |
|---|---|
| Mean | -15.0 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

## MaU52 Distribution by Detection Method

### Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

#### Bias

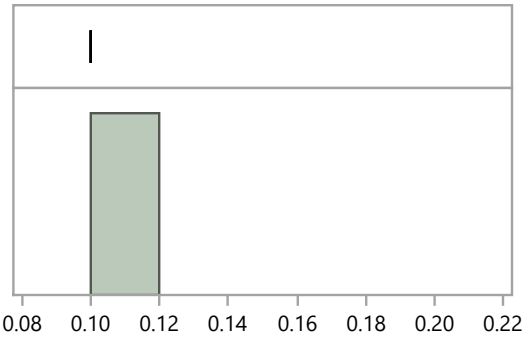



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 1.9 |
| 99.5% | | 1.9 |
| 97.5% | | 1.9 |
| 90.0% | | 1.9 |
| 75.0% | quartile | 1.2 |
| 50.0% | median | -2.9 |
| 25.0% | quartile | -7.4 |
| 10.0% | | -8.3 |
| 2.5% | | -8.3 |
| 0.5% | | -8.3 |
| 0.0% | minimum | -8.3 |

| Summary Statistics | |
|---|---|
| Mean | -3.0 |
| Std Dev | 4.4 |
| Std Err Mean | 2.2 |
| Upper 95% Mean | 4.0 |
| Lower 95% Mean | -10.1 |
| N | 4.0 |

### Distributions Analyte_Detection=Uranium-234 Inductively Coupled Plasma Mass Spectrometry

#### Bias

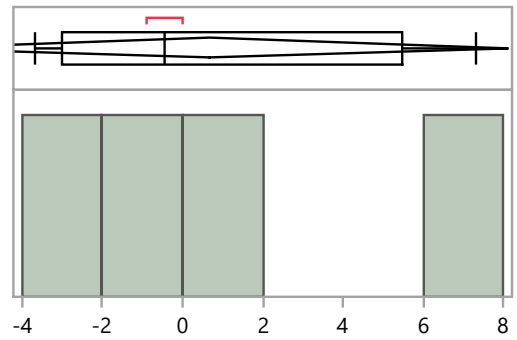



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 0.1 |
| 99.5% | | 0.1 |
| 97.5% | | 0.1 |
| 90.0% | | 0.1 |
| 75.0% | quartile | 0.1 |
| 50.0% | median | 0.1 |
| 25.0% | quartile | 0.1 |
| 10.0% | | 0.1 |
| 2.5% | | 0.1 |
| 0.5% | | 0.1 |
| 0.0% | minimum | 0.1 |

| Summary Statistics | |
|---|---|
| Mean | 0.1 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

#### Bias



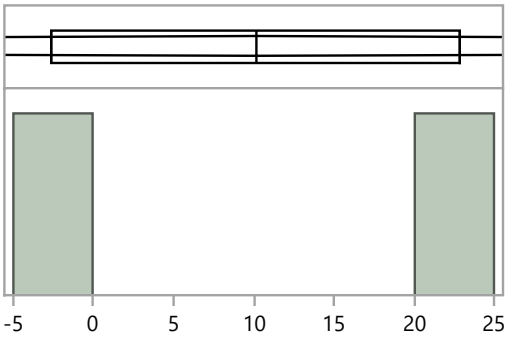

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 7.3 |
| 99.5% | | 7.3 |
| 97.5% | | 7.3 |
| 90.0% | | 7.3 |
| 75.0% | quartile | 5.5 |
| 50.0% | median | -0.5 |
| 25.0% | quartile | -3.0 |
| 10.0% | | -3.7 |
| 2.5% | | -3.7 |
| 0.5% | | -3.7 |
| 0.0% | minimum | -3.7 |

| Summary Statistics | |
|---|---|
| Mean | 0.7 |
| Std Dev | 4.7 |
| Std Err Mean | 2.3 |
| Upper 95% Mean | 8.1 |
| Lower 95% Mean | -6.8 |
| N | 4.0 |

## MaU52 Distribution by Detection Method

### Distributions Analyte_Detection=Uranium-238 Inductively Coupled Plasma Mass Spectrometry

#### Bias



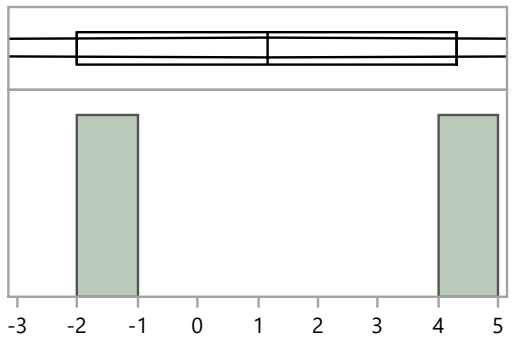

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 22.9 |
| 99.5% | | 22.9 |
| 97.5% | | 22.9 |
| 90.0% | | 22.9 |
| 75.0% | quartile | 22.9 |
| 50.0% | median | 10.2 |
| 25.0% | quartile | -2.6 |
| 10.0% | | -2.6 |
| 2.5% | | -2.6 |
| 0.5% | | -2.6 |
| 0.0% | minimum | -2.6 |

| Summary Statistics | |
|---|---|
| Mean | 10.2 |
| Std Dev | 18.0 |
| Std Err Mean | 12.8 |
| Upper 95% Mean | 172.2 |
| Lower 95% Mean | -151.9 |
| N | 2.0 |

# MaU52 Distribution by Preparation Method

## Distributions Analyte_Method=Americium-241 Coprecipitation, acidified

### Bias

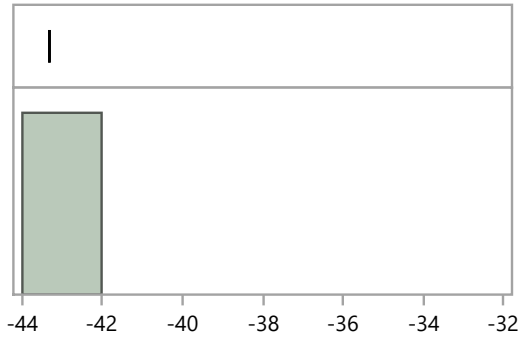



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 4.3 |
| 99.5% | | 4.3 |
| 97.5% | | 4.3 |
| 90.0% | | 4.3 |
| 75.0% | quartile | 4.3 |
| 50.0% | median | 1.2 |
| 25.0% | quartile | -2.0 |
| 10.0% | | -2.0 |
| 2.5% | | -2.0 |
| 0.5% | | -2.0 |
| 0.0% | minimum | -2.0 |

| Summary Statistics | |
|---|---|
| Mean | 1.2 |
| Std Dev | 4.5 |
| Std Err Mean | 3.2 |
| Upper 95% Mean | 41.2 |
| Lower 95% Mean | -38.9 |
| N | 2.0 |

## Distributions Analyte_Method=Americium-241 No preparation - analyzed as received

### Bias

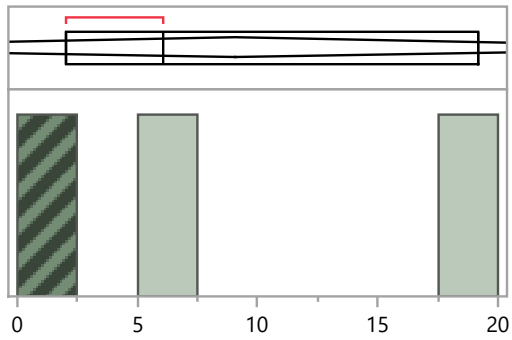



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -43.3 |
| 99.5% | | -43.3 |
| 97.5% | | -43.3 |
| 90.0% | | -43.3 |
| 75.0% | quartile | -43.3 |
| 50.0% | median | -43.3 |
| 25.0% | quartile | -43.3 |
| 10.0% | | -43.3 |
| 2.5% | | -43.3 |
| 0.5% | | -43.3 |
| 0.0% | minimum | -43.3 |

| Summary Statistics | |
|---|---|
| Mean | -43.3 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

## Distributions Analyte_Method=Americium-241 Other

### Bias



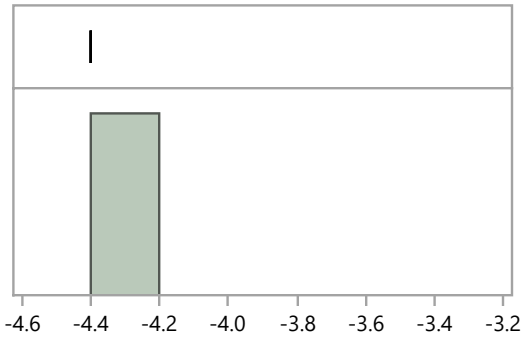

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 19.2 |
| 99.5% | | 19.2 |
| 97.5% | | 19.2 |
| 90.0% | | 19.2 |
| 75.0% | quartile | 19.2 |
| 50.0% | median | 6.1 |
| 25.0% | quartile | 2.0 |
| 10.0% | | 2.0 |
| 2.5% | | 2.0 |
| 0.5% | | 2.0 |
| 0.0% | minimum | 2.0 |

| Summary Statistics | |
|---|---|
| Mean | 9.1 |
| Std Dev | 9.0 |
| Std Err Mean | 5.2 |
| Upper 95% Mean | 31.4 |
| Lower 95% Mean | -13.2 |
| N | 3.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Cesium-137 EPA 901.1, Gamma Emitting, 600/4-80-032

#### Bias

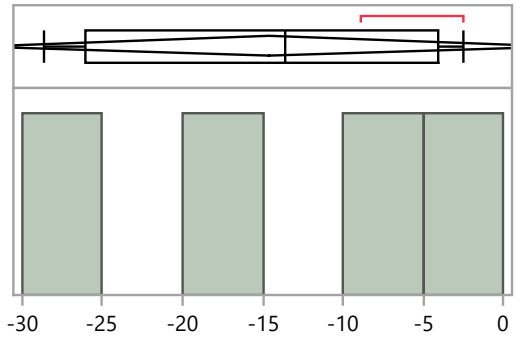



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -4.4 |
| 99.5% | | -4.4 |
| 97.5% | | -4.4 |
| 90.0% | | -4.4 |
| 75.0% | quartile | -4.4 |
| 50.0% | median | -4.4 |
| 25.0% | quartile | -4.4 |
| 10.0% | | -4.4 |
| 2.5% | | -4.4 |
| 0.5% | | -4.4 |
| 0.0% | minimum | -4.4 |

| Summary Statistics | |
|---|---|
| Mean | -4.4 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Method=Cesium-137 No preparation - analyzed as received

#### Bias

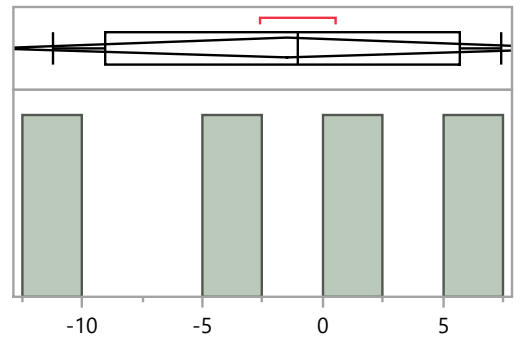



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -2.5 |
| 99.5% | | -2.5 |
| 97.5% | | -2.5 |
| 90.0% | | -2.5 |
| 75.0% | quartile | -4.1 |
| 50.0% | median | -13.6 |
| 25.0% | quartile | -26.0 |
| 10.0% | | -28.6 |
| 2.5% | | -28.6 |
| 0.5% | | -28.6 |
| 0.0% | minimum | -28.6 |

| Summary Statistics | |
|---|---|
| Mean | -14.6 |
| Std Dev | 11.4 |
| Std Err Mean | 5.7 |
| Upper 95% Mean | 3.5 |
| Lower 95% Mean | -32.7 |
| N | 4.0 |

### Distributions Analyte_Method=Cesium-137 Other

#### Bias



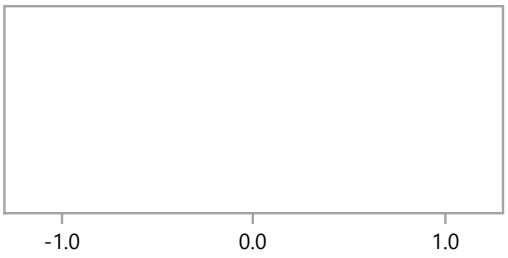

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 7.4 |
| 99.5% | | 7.4 |
| 97.5% | | 7.4 |
| 90.0% | | 7.4 |
| 75.0% | quartile | 5.7 |
| 50.0% | median | -1.1 |
| 25.0% | quartile | -9.1 |
| 10.0% | | -11.2 |
| 2.5% | | -11.2 |
| 0.5% | | -11.2 |
| 0.0% | minimum | -11.2 |

| Summary Statistics | |
|---|---|
| Mean | -1.5 |
| Std Dev | 7.7 |
| Std Err Mean | 3.9 |
| Upper 95% Mean | 10.8 |
| Lower 95% Mean | -13.7 |
| N | 4.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Neptunium-237 Coprecipitation, acidified

#### Bias



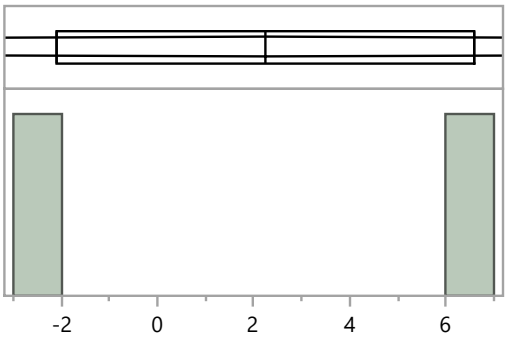

**Quantiles**

**Summary Statistics**

| | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

### Distributions Analyte_Method=Plutonium-238 Coprecipitation, acidified

#### Bias




**Quantiles**

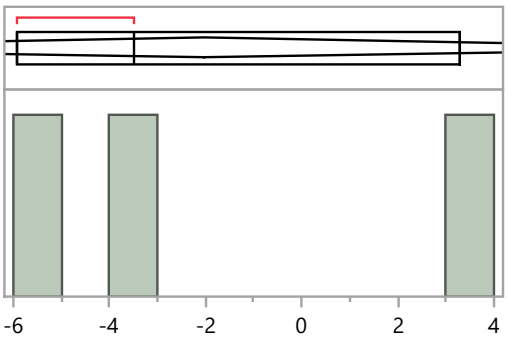
| | | |
|---|---|---|
| 100.0% | maximum | 6.6 |
| 99.5% | | 6.6 |
| 97.5% | | 6.6 |
| 90.0% | | 6.6 |
| 75.0% | quartile | 6.6 |
| 50.0% | median | 2.3 |
| 25.0% | quartile | -2.1 |
| 10.0% | | -2.1 |
| 2.5% | | -2.1 |
| 0.5% | | -2.1 |
| 0.0% | minimum | -2.1 |

**Summary Statistics**

| | |
|---|---|
| Mean | 2.3 |
| Std Dev | 6.2 |
| Std Err Mean | 4.4 |
| Upper 95% Mean | 57.5 |
| Lower 95% Mean | -53.0 |
| N | 2.0 |

### Distributions Analyte_Method=Plutonium-238 Other

#### Bias




**Quantiles**

| | | |
|---|---|---|
| 100.0% | maximum | 3.3 |
| 99.5% | | 3.3 |
| 97.5% | | 3.3 |
| 90.0% | | 3.3 |
| 75.0% | quartile | 3.3 |
| 50.0% | median | -3.5 |
| 25.0% | quartile | -5.9 |
| 10.0% | | -5.9 |
| 2.5% | | -5.9 |
| 0.5% | | -5.9 |
| 0.0% | minimum | -5.9 |

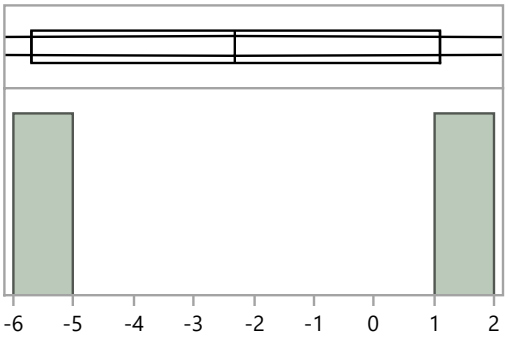
**Summary Statistics**

| | |
|---|---|
| Mean | -2.0 |
| Std Dev | 4.8 |
| Std Err Mean | 2.8 |
| Upper 95% Mean | 9.8 |
| Lower 95% Mean | -13.9 |
| N | 3.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Plutonium-239/240 Coprecipitation, acidified

#### Bias

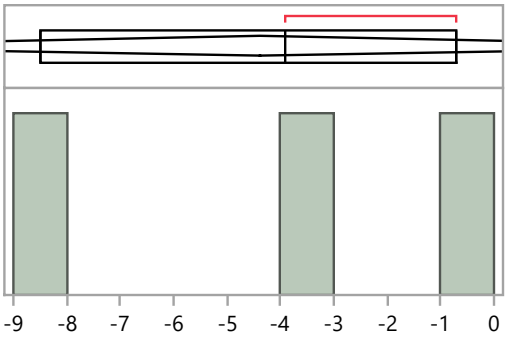



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 1.1 |
| 99.5% | | 1.1 |
| 97.5% | | 1.1 |
| 90.0% | | 1.1 |
| 75.0% | quartile | 1.1 |
| 50.0% | median | -2.3 |
| 25.0% | quartile | -5.7 |
| 10.0% | | -5.7 |
| 2.5% | | -5.7 |
| 0.5% | | -5.7 |
| 0.0% | minimum | -5.7 |

| Summary Statistics | |
|---|---|
| Mean | -2.3 |
| Std Dev | 4.8 |
| Std Err Mean | 3.4 |
| Upper 95% Mean | 40.9 |
| Lower 95% Mean | -45.5 |
| N | 2.0 |

### Distributions Analyte_Method=Plutonium-239/240 Other

#### Bias

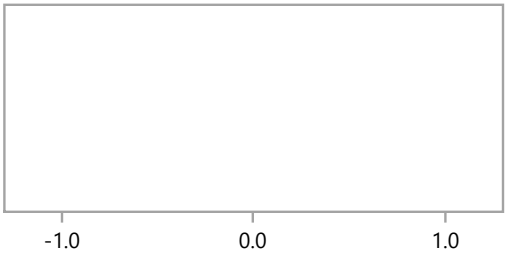



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -0.7 |
| 99.5% | | -0.7 |
| 97.5% | | -0.7 |
| 90.0% | | -0.7 |
| 75.0% | quartile | -0.7 |
| 50.0% | median | -3.9 |
| 25.0% | quartile | -8.5 |
| 10.0% | | -8.5 |
| 2.5% | | -8.5 |
| 0.5% | | -8.5 |
| 0.0% | minimum | -8.5 |

| Summary Statistics | |
|---|---|
| Mean | -4.4 |
| Std Dev | 3.9 |
| Std Err Mean | 2.3 |
| Upper 95% Mean | 5.4 |
| Lower 95% Mean | -14.1 |
| N | 3.0 |

### Distributions Analyte_Method=Plutonium-241 Coprecipitation, acidified

#### Bias



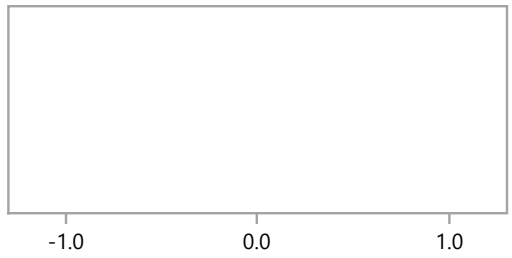

| Quantiles |
|---|

| Summary Statistics | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Potassium-40 EPA 901.1, Gamma Emitting, 600/4-80-032

#### Bias



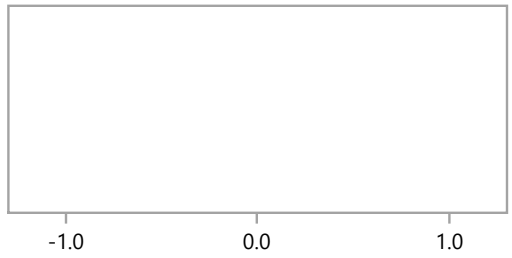

**Quantiles**

**Summary Statistics**

| | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

### Distributions Analyte_Method=Potassium-40 No preparation - analyzed as received

#### Bias



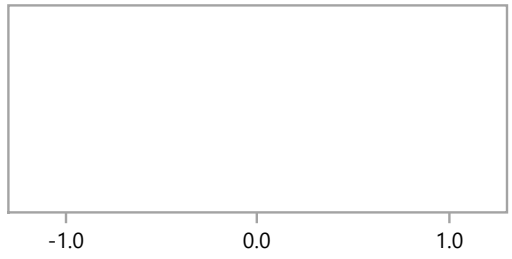

**Quantiles**

**Summary Statistics**

| | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

### Distributions Analyte_Method=Potassium-40 Other

#### Bias




**Quantiles**

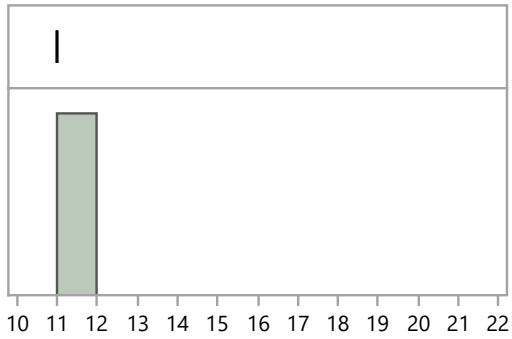
**Summary Statistics**

| | |
|---|---|
| Mean | . |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 0.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Radium-226 Other

#### Bias

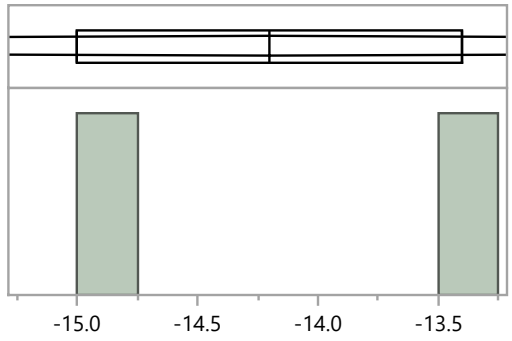



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 11.0 |
| 99.5% | | 11.0 |
| 97.5% | | 11.0 |
| 90.0% | | 11.0 |
| 75.0% | quartile | 11.0 |
| 50.0% | median | 11.0 |
| 25.0% | quartile | 11.0 |
| 10.0% | | 11.0 |
| 2.5% | | 11.0 |
| 0.5% | | 11.0 |
| 0.0% | minimum | 11.0 |

| Summary Statistics | |
|---|---|
| Mean | 11.0 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Method=Strontium-90 Coprecipitation, acidified

#### Bias

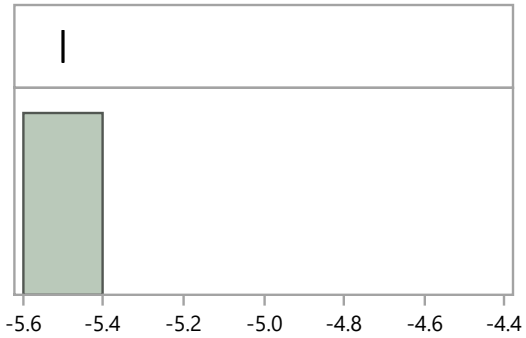



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -13.4 |
| 99.5% | | -13.4 |
| 97.5% | | -13.4 |
| 90.0% | | -13.4 |
| 75.0% | quartile | -13.4 |
| 50.0% | median | -14.2 |
| 25.0% | quartile | -15.0 |
| 10.0% | | -15.0 |
| 2.5% | | -15.0 |
| 0.5% | | -15.0 |
| 0.0% | minimum | -15.0 |

| Summary Statistics | |
|---|---|
| Mean | -14.2 |
| Std Dev | 1.1 |
| Std Err Mean | 0.8 |
| Upper 95% Mean | -4.0 |
| Lower 95% Mean | -24.4 |
| N | 2.0 |

### Distributions Analyte_Method=Strontium-90 Other

#### Bias



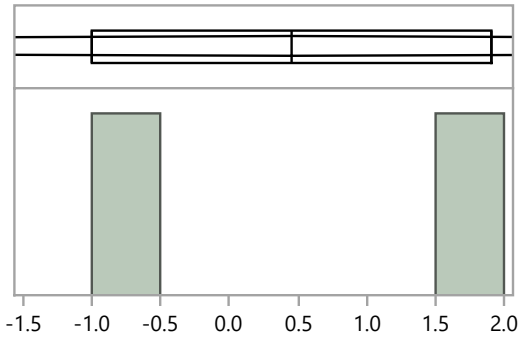

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -5.5 |
| 99.5% | | -5.5 |
| 97.5% | | -5.5 |
| 90.0% | | -5.5 |
| 75.0% | quartile | -5.5 |
| 50.0% | median | -5.5 |
| 25.0% | quartile | -5.5 |
| 10.0% | | -5.5 |
| 2.5% | | -5.5 |
| 0.5% | | -5.5 |
| 0.0% | minimum | -5.5 |

| Summary Statistics | |
|---|---|
| Mean | -5.5 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Uranium-234 Coprecipitation, acidified

#### Bias

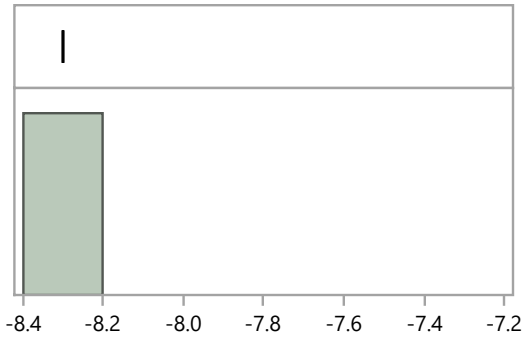



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 1.9 |
| 99.5% | | 1.9 |
| 97.5% | | 1.9 |
| 90.0% | | 1.9 |
| 75.0% | quartile | 1.9 |
| 50.0% | median | 0.5 |
| 25.0% | quartile | -1.0 |
| 10.0% | | -1.0 |
| 2.5% | | -1.0 |
| 0.5% | | -1.0 |
| 0.0% | minimum | -1.0 |

| Summary Statistics | |
|---|---|
| Mean | 0.5 |
| Std Dev | 2.1 |
| Std Err Mean | 1.5 |
| Upper 95% Mean | 18.9 |
| Lower 95% Mean | -18.0 |
| N | 2.0 |

### Distributions Analyte_Method=Uranium-234 EPA 908, Uranium-Radiochemical Method, 600/4/80-032

#### Bias

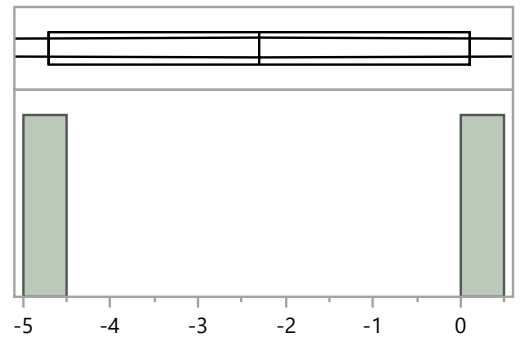



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -8.3 |
| 99.5% | | -8.3 |
| 97.5% | | -8.3 |
| 90.0% | | -8.3 |
| 75.0% | quartile | -8.3 |
| 50.0% | median | -8.3 |
| 25.0% | quartile | -8.3 |
| 10.0% | | -8.3 |
| 2.5% | | -8.3 |
| 0.5% | | -8.3 |
| 0.0% | minimum | -8.3 |

| Summary Statistics | |
|---|---|
| Mean | -8.3 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Method=Uranium-234 Other

#### Bias



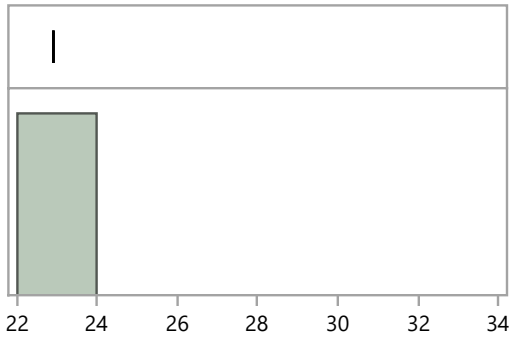

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 0.1 |
| 99.5% | | 0.1 |
| 97.5% | | 0.1 |
| 90.0% | | 0.1 |
| 75.0% | quartile | 0.1 |
| 50.0% | median | -2.3 |
| 25.0% | quartile | -4.7 |
| 10.0% | | -4.7 |
| 2.5% | | -4.7 |
| 0.5% | | -4.7 |
| 0.0% | minimum | -4.7 |

| Summary Statistics | |
|---|---|
| Mean | -2.3 |
| Std Dev | 3.4 |
| Std Err Mean | 2.4 |
| Upper 95% Mean | 28.2 |
| Lower 95% Mean | -32.8 |
| N | 2.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid

#### Bias

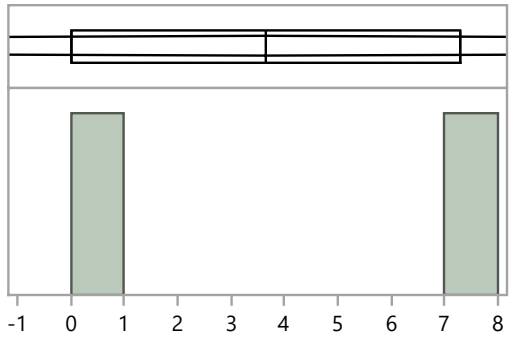



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 22.9 |
| 99.5% | | 22.9 |
| 97.5% | | 22.9 |
| 90.0% | | 22.9 |
| 75.0% | quartile | 22.9 |
| 50.0% | median | 22.9 |
| 25.0% | quartile | 22.9 |
| 10.0% | | 22.9 |
| 2.5% | | 22.9 |
| 0.5% | | 22.9 |
| 0.0% | minimum | 22.9 |

| Summary Statistics | |
|---|---|
| Mean | 22.9 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

### Distributions Analyte_Method=Uranium-238 Coprecipitation, acidified

#### Bias

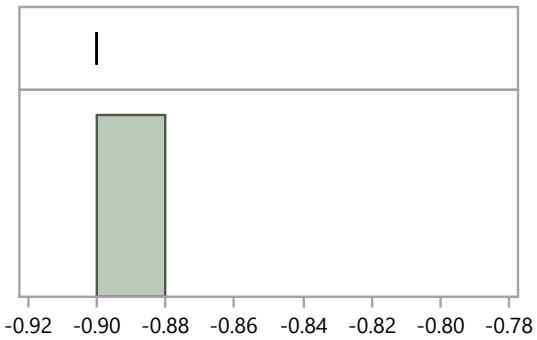



| Quantiles | | |
|---|---|---|
| 100.0% | maximum | 7.3 |
| 99.5% | | 7.3 |
| 97.5% | | 7.3 |
| 90.0% | | 7.3 |
| 75.0% | quartile | 7.3 |
| 50.0% | median | 3.7 |
| 25.0% | quartile | 0.0 |
| 10.0% | | 0.0 |
| 2.5% | | 0.0 |
| 0.5% | | 0.0 |
| 0.0% | minimum | 0.0 |

| Summary Statistics | |
|---|---|
| Mean | 3.7 |
| Std Dev | 5.2 |
| Std Err Mean | 3.7 |
| Upper 95% Mean | 50.0 |
| Lower 95% Mean | -42.7 |
| N | 2.0 |

### Distributions Analyte_Method=Uranium-238 EPA 908, Uranium-Radiochemical Method, 600/4/80-032

#### Bias



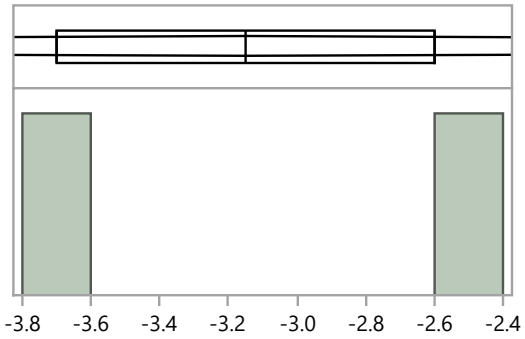

| Quantiles | | |
|---|---|---|
| 100.0% | maximum | -0.9 |
| 99.5% | | -0.9 |
| 97.5% | | -0.9 |
| 90.0% | | -0.9 |
| 75.0% | quartile | -0.9 |
| 50.0% | median | -0.9 |
| 25.0% | quartile | -0.9 |
| 10.0% | | -0.9 |
| 2.5% | | -0.9 |
| 0.5% | | -0.9 |
| 0.0% | minimum | -0.9 |

| Summary Statistics | |
|---|---|
| Mean | -0.9 |
| Std Dev | . |
| Std Err Mean | . |
| Upper 95% Mean | . |
| Lower 95% Mean | . |
| N | 1.0 |

## MaU52 Distribution by Preparation Method

### Distributions Analyte_Method=Uranium-238 Other

#### Bias




**Quantiles**

| | | |
|---|---|---|
| 100.0% | maximum | -2.6 |
| 99.5% | | -2.6 |
| 97.5% | | -2.6 |
| 90.0% | | -2.6 |
| 75.0% | quartile | -2.6 |
| 50.0% | median | -3.2 |
| 25.0% | quartile | -3.7 |
| 10.0% | | -3.7 |
| 2.5% | | -3.7 |
| 0.5% | | -3.7 |
| 0.0% | minimum | -3.7 |

**Summary Statistics**

| | |
|---|---|
| Mean | -3.2 |
| Std Dev | 0.8 |
| Std Err Mean | 0.6 |
| Upper 95% Mean | 3.8 |
| Lower 95% Mean | -10.1 |
| N | 2.0 |