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XrM50 Participating Laboratories

| Lab Code | Lab Name | Matrix Code |
|-----------------|---|--------------------|
| CDHS01 | California Department of Public Health | XrM |
| ERCL01 | Washington State Public Health Laboratories | XrM |
| FDHE01 | Florida Dept of Health Environmental Laboratory | XrM |
| FDOH01 | Florida Dept. of Health, Mobile Environmental Radiological Lab | XrM |
| HCAL01 | Lawrence Livermore National Laboratory | XrM |
| HECR01 | SC Dept. Health and Environmental Control Radiological Laboratory | XrM |
| IEMA01 | Illinois Emergency Management Agency Radiochemistry Laboratory | XrM |
| MNDH01 | Minnesota Department of Health, Public Health Lab. Division | XrM |
| NJDH01 | New Jersey Dept. of Health, ECLS | XrM |
| NSPH01 | Nevada State Public Health Laboratory | XrM |
| ODHL01 | Ohio Department of Health Laboratory | XrM |
| SEML01 | SRS Environmental Monitoring Laboratory | XrM |
| SMER01 | State of Michigan EGLE Radiological Lab | XrM |
| STRL01 | South Texas Project Radiological Laboratory | XrM |
| TELE02 | Microbac Laboratories Inc. - Northbrook | XrM |
| WIPH01 | WI, DPH, Radiation Protection Section | XrM |
| WIPP01 | WIPP Laboratories | XrM |
| WSHL01 | Wisconsin State Laboratory of Hygiene | XrM |

Laboratories Not Reporting

| Lab Code | Lab Name | Matrix Code |
|-----------------|---|--------------------|
| ARSL01 | ARS | XrM |
| GENE01 | GEL Laboratories, LLC | XrM |
| SRPD01 | Sandia National Laboratories, Radiation Protection Sample Diagnostics | XrM |

Study Reference Values

MAPEP-24-XrM50

Radiological Reference Date: 04/01/2024

| Analyte | Ref Value | Ref Unc |
|--------------|-----------|-----------------------|
| Radiological | | Units: (Bq/sample) |
| Iodine-131 | 157 | 2 |

The XrM50 is milk powder spiked with Iodine-131.

Sample Statistical Summary

MAPEP-24-XrM50

Radiological Reference Date: 04/01/2024

| Analyte | T(1) | Grand(2) Mean | Std Dev | Ref Value | Ref Unc |
|--------------|------|------------------|--------------------|--------------|------------|
| Radiological | | | Units: (Bq/sample) | | |
| Iodine-131 | 18 | 157 | 22 | 157 | 2 |

Note: (1) T = Total number of laboratories reporting analyte.
(2) Mean excludes values outside of a bias range of +/- 30%.

The XrM50 is milk powder spiked with Iodine-131.



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

Laboratory Results For MAPEP-24-XrM50
 (CDHS01) California Department of Public Health
 Drinking Water & Radiation Lab.
 Richmond, CA 94804-6403

| Radiological | | | | |
|----------------|---------|---------------------|------------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 158 +/- 4.77 Bq/sample | 0.6 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|-----------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 158 +/- 2 Bq/sample | 0.6 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50

(FDHE01) Florida Dept of Health Environmental Laboratory
 2100 All Childrens Way
 Orlando, FL 32818-5271

| Radiological | | | | |
|----------------|---------|---------------------|--------------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 191.33 +/- 2.7 Bq/sample | 21.9 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
 2100 All Childrens Way
 Orlando, FL 32818-5271

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|---------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 187.41 +/- 2.02 Bq/sample | 19.4 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (HCAL01) Lawrence Livermore National Laboratory
 Analytical Services and Instrumentation Analytical Lab
 Livermore, CA 94550

| Radiological | | | | |
|----------------|---------|---------------------|-------------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 168.7 +/- 3.8 Bq/sample | 7.5 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50

(HECR01) SC Dept. Health and Environmental Control Radiological Laboratory
 8231 Parklane Road
 Columbia, SC 29223

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|---------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 149.3 +/- 8.863 Bq/sample | -4.9 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50

(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory

1301 Knotts St.

Springfield, IL 62703

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|--------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 157.0 +/- 1.46 Bq/sample | 0.0 |
| MAPEP-24-XrM50 | K-40 | | 49.6 +/- 1.31 Bq/sample | |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50

(MNDH01) Minnesota Department of Health, Public Health Lab. Division

601 Robert St. N.

St. Paul, MN 55155

| Radiological | | | | |
|----------------|---------|---------------------|-----------------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 66.360 +/- 0.3889 Bq/sample | -57.7 |
| MAPEP-24-XrM50 | K-40 | | 58.301 +/- 1.302 Bq/sample | |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (NJDH01) New Jersey Dept. of Health, ECLS
 3 Schwarzkopf Drive
 Ewing, NJ 08628

| Radiological | | | | |
|----------------|---------|---------------------|-----------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 157 +/- 3.5 Bq/sample | 0.0 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (NSPH01) Nevada State Public Health Laboratory
 1664 North Virginia Street, MS 328
 Reno, NV 89557

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|---------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 140.69 +/- 4.90 Bq/sample | -10.4 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

| Radiological | | | | |
|----------------|---------|---------------------|-----------------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 0.0196 +/- 0.0307 Bq/sample | -100.0 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|-----------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 176 +/- 12 Bq/sample | 12.1 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (SMER01) State of Michigan EGLE Radiological Lab
 815 Filley St.
 Lansing, MI 48906

| Radiological | | | | |
|----------------|---------|---------------------|-----------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 122 +/- 4 Bq/sample | -22.3 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (STRLO1) South Texas Project Radiological Laboratory
 12090 FM 521
 Wadsworth, Texas 77483

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|-------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 183.0 +/- 4.3 Bq/sample | 16.6 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (TELE02) Microbac Laboratories Inc. - Northbrook
 700 Landwehr Road
 Northbrook, IL 60062-

| Radiological | | | | |
|----------------|---------|---------------------|-----------------------|----------|
| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 208 +/- 5 Bq/sample | 32.5 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (WIPH01) WI, DPH, Radiation Protection Section
 1 West Wilson Street
 Madison, WI 53703

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|-----------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 143.604 +/- 6.049 Bq/sample | -8.5 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|-------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 1.13E+002 +/- 5.92E+000 | -28.0 |

Radiological Reference Date: April 1, 2024



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

Laboratory Results For MAPEP-24-XrM50
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

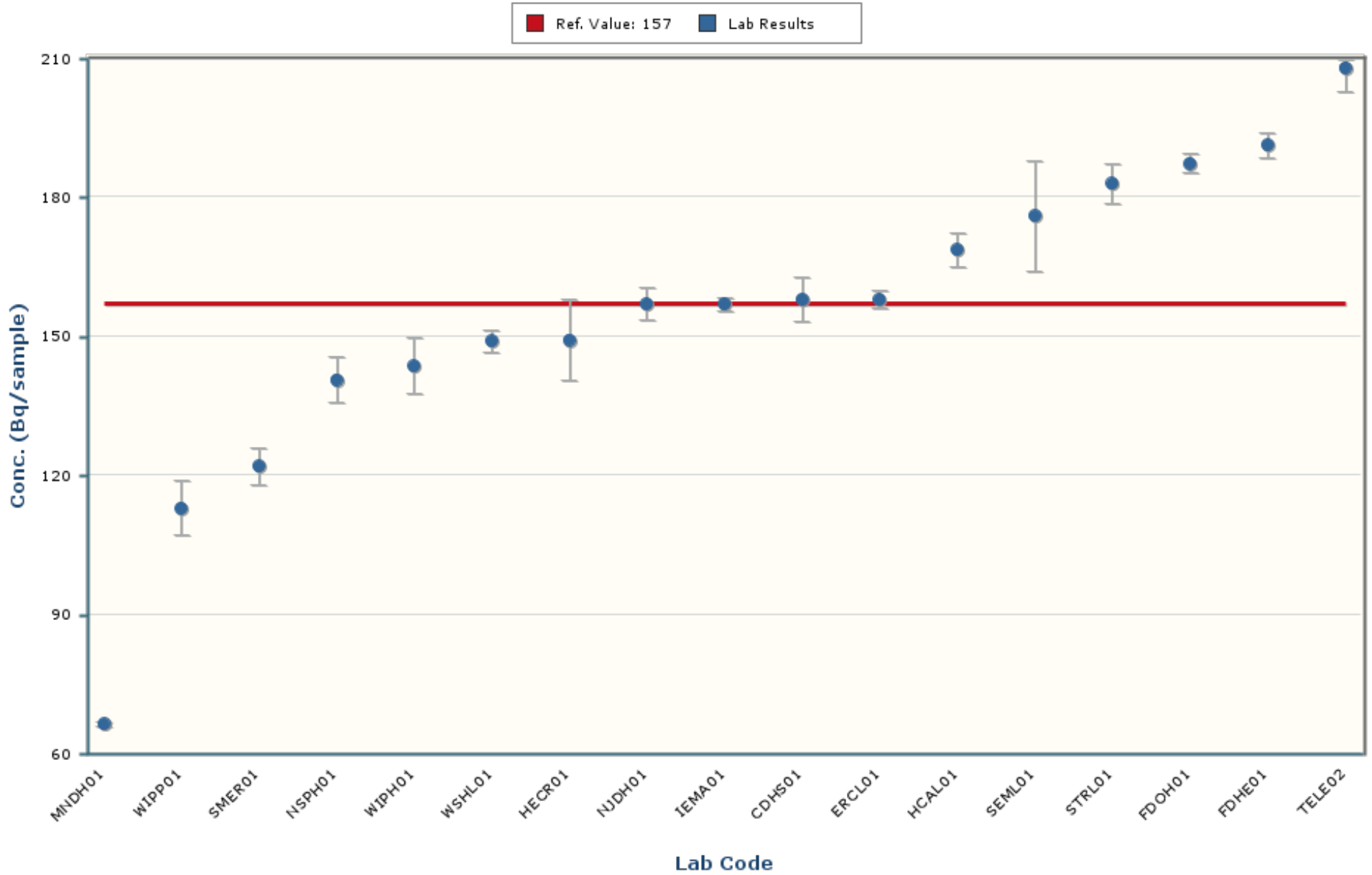
Radiological

| Sample ID | Nuclide | Known Activity | Experimental Activity | Bias (%) |
|----------------|---------|---------------------|------------------------|----------|
| MAPEP-24-XrM50 | I-131 | 157 +/- 2 Bq/sample | 149 +/- 2.26 Bq/sample | -5.1 |

Radiological Reference Date: April 1, 2024

Iodine-131

MAPEP-24-XrM50



Notes:

The error bars encompassing each result are plotted at \pm one standard deviation.