

## 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.

## RdF50 Participating Laboratories

<b>Lab Code</b>	<b>Lab Name</b>	<b>Matrix Code</b>
ADEM01	Alabama Department of Environmental Management	RdF
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	RdF
AFOH01	USAFSAM/OEA	RdF
AMEC99	Jacobs Clean Energy Limited - Analytical Services	RdF
ANLB01	Argonne National Laboratory	RdF
ARGO01	Idaho National Laboratory	RdF
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	RdF
ARSL01	ARS	RdF
ASUK99	AWE (Aldermaston)	RdF
CDHS01	California Department of Public Health	RdF
CESL01	Lawrence Livermore National Laboratory - EMRL	RdF
CMRC01	Carlsbad Environmental Monitoring and Research Center	RdF
COPS99	Health Canada Radiation Protection Bureau	RdF
DEHS01	Department of Environmental Health & Safety	RdF
ERCL01	Washington State Public Health Laboratories	RdF
ERHD99	National Monitoring Section, Radiation Protection Bureau, Health Canada	RdF
FDHE01	Florida Dept of Health Environmental Laboratory	RdF
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	RdF
FNAL01	Fermi National Accelerator Laboratory (FermiLab)	RdF
GENE01	GEL Laboratories, LLC	RdF
GPCL01	Georgia Power Company Environmental Laboratory	RdF
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	RdF
HPAC99	UKHSA, RCE Glasgow	RdF
HPAL01	Los Alamos National Laboratory	RdF
IAEA99	International Atomic Energy Agency	RdF
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	RdF
ISUE01	ISU Environmental Monitoring Laboratory	RdF
JLNN01	Jefferson Laboratory	RdF
JNRC99	Energy and Mineral Regulatory Commission	RdF
KINE99	Kinectrics Inc	RdF
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	RdF
MART01	Fluor-BWXT Portsmouth LLC, Analytical Laboratory	RdF
MART03	Radioactive Material Analysis Laboratory	RdF
MDPH01	MDPH-Radiation Control Program	RdF
MNDH01	Minnesota Department of Health, Public Health Lab. Division	RdF
NARL01	National Analytical Radiation Environmental Laboratory	RdF
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	RdF
NJDH01	New Jersey Dept. of Health, ECLS	RdF
NOCS99	National Oceanography Centre, Southampton	RdF
ODHL01	Ohio Department of Health Laboratory	RdF
RPSC01	Radiation Protection Service	RdF
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	RdF
SEML01	SRS Environmental Monitoring Laboratory	RdF
SMER01	State of Michigan EGLE Radiological Lab	RdF

SOUT01	Southwest Research Institute	RdF
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	RdF
STRL01	South Texas Project Radiological Laboratory	RdF
TDHL01	Texas Department of State Health Services Laboratory	RdF
TELE02	Microbac Laboratories Inc. - Northbrook	RdF
TMAO01	EBERLINE Analytical Corporation	RdF
WIPH01	WI, DPH, Radiation Protection Section	RdF
WIPP01	WIPP Laboratories	RdF
WSHL01	Wisconsin State Laboratory of Hygiene	RdF
WVDP01	WVDP Environmental Laboratory	RdF
YPGA01	US Army Yuma Proving Ground / Material Analysis Lab	RdF

## Laboratories Not Reporting

<b>Lab Code</b>	<b>Lab Name</b>	<b>Matrix Code</b>
AGQL99	Labs & Technological Services AGQ	RdF
IAEA20	IAEA Marine Environment Laboratories, Radiometrics Laboratory	RdF
ISUP01	ISU - Department of Physics/Health Physics/EAL	RdF
MSDH01	Mississippi State Dept of Health	RdF

## Study Reference Values

MAPEP-24-RdF50

Radiological Reference Date: 02/01/2024

Analyte	Ref Value	Ref Unc
Inorganic	Units: (ug/sample)	
Uranium-235	0.0743	0.0019
Uranium-238	10.4	0.3
Uranium-Total	10.5	0.4

Analyte	Ref Value	Ref Unc
Radiological	Units: (Bq/sample)	
Americium-241	0.0897	0.0018
Cesium-137	1.48	0.03
Cobalt-57	0.819	0.018
Cobalt-60	1.64	0.04
Manganese-54	0.555	0.013
Plutonium-238	0.114	0.002
Plutonium-239/240	0.0936	0.0018
Strontium-90	1.56	0.04
Uranium-234	0.125	0.004
Uranium-238	0.130	0.004
Zinc-65	0.332	0.007

## Sample Statistical Summary

MAPEP-24-RdF50

Radiological Reference Date: 02/01/2024

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (ug/sample)
Inorganic							
Uranium-235	6	6	0.0754	0.0036	0.0743	0.0019	0.0520 - 0.0966
Uranium-238	6	6	10.6	0.7	10.4	0.3	7.3 - 13.5
Uranium-Total	5	5			10.5	0.4	7.4 - 13.7

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (Bq/sample)
Radiological							
Americium-241	33	26	0.0803	0.0081	0.0897	0.0018	0.0628 - 0.1166
Cesium-134	42	41					False Positive Test
Cesium-137	52	48	1.45	0.13	1.48	0.03	1.04 - 1.92
Cobalt-57	51	48	0.758	0.076	0.819	0.018	0.573 - 1.065
Cobalt-60	52	51	1.57	0.18	1.64	0.04	1.15 - 2.13
Manganese-54	51	48	0.542	0.060	0.555	0.013	0.389 - 0.722
Plutonium-238	25	23	0.110	0.009	0.114	0.002	0.080 - 0.148
Plutonium-239/240	25	22	0.0882	0.0073	0.0936	0.0018	0.0655 - 0.1217
Strontium-90	24	19	1.47	0.14	1.56	0.04	1.09 - 2.03
Uranium-234	24	23	0.125	0.011	0.125	0.004	0.088 - 0.163
Uranium-238	25	24	0.128	0.010	0.130	0.004	0.091 - 0.169
Zinc-65	51	47	0.336	0.110	0.332	0.007	Sensitivity Evaluation

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

### Results Flags:

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning.....20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

### Uncertainty Flags:

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

## Flag Summary Report

MAPEP-24-RdF50

### Inorganic

Analyte	A	W	RW	N
Uranium-Total	5			
Uranium-235	6			
Uranium-238	6			

### Radiological

Analyte	A	W	RW	N
Americium-241	22	4		7
Cesium-134	41			6
Cesium-137	48			4
Cobalt-57	44	4		3
Cobalt-60	47	4		1
Manganese-54	44	4		3
Plutonium-238	22	1		2
Plutonium-239/240	21	1		3
Strontium-90	18	1		5
Uranium-234	22	1		1
Uranium-238	24			1
Zinc-65	47			4



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

Laboratory Results For MAPEP-24-RdF50  
 (ADEM01) Alabama Department of Environmental Management  
 1350 Coliseum Blvd.  
 Montgomery, AL 36110

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	2.02	1.48	N		36.5	1.04 - 1.92	0.0934	A
Cobalt-57	1.1	0.819	N		34.3	0.573 - 1.065	0.0379	A
Cobalt-60	2.12	1.64	W		29.3	1.15 - 2.13	0.0698	A
Manganese-54	0.768	0.555	N		38.4	0.389 - 0.722	0.0543	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.613	0.332	A			Sensitivity Evaluation	0.0956	

Radiological Reference Date: February 1, 2024

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- NR = Not Reported

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

Laboratory Results For MAPEP-24-RdF50  
 (ADFC99) Abu Dhabi Quality and Conformity Council-Central Testing Lab  
 Radiation Lab  
 Abu Dhabi, Abu Dhabi 853

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR					False Positive Test		
Cesium-137	1.46	1.48	A		-1.4	1.04 - 1.92	0.08	A
Cobalt-57	0.79	0.819	A		-3.5	0.573 - 1.065	0.04	A
Cobalt-60	1.52	1.64	A		-7.3	1.15 - 2.13	0.06	A
Manganese-54	0.54	0.555	A		-2.7	0.389 - 0.722	0.04	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	1.55	1.56	A		-0.6	1.09 - 2.03	0.14	A
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.34	0.332	A			Sensitivity Evaluation	0.04	

Radiological Reference Date: February 1, 2024

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

Laboratory Results For MAPEP-24-RdF50  
 (AFOH01) USAFSAM/OEA  
 2510 Fifth Street, Area B  
 Wright-Patterson AFB, OH 45433-7913

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0772	0.0897	A		-13.9	0.0628 - 0.1166	0.0043	A
Cesium-134	-0.038		A			False Positive Test	0.026	
Cesium-137	1.408	1.48	A		-4.9	1.04 - 1.92	0.042	A
Cobalt-57	0.722	0.819	A		-11.8	0.573 - 1.065	0.024	A
Cobalt-60	1.563	1.64	A		-4.7	1.15 - 2.13	0.058	A
Manganese-54	0.517	0.555	A		-6.8	0.389 - 0.722	0.029	A
Plutonium-238	0.0988	0.114	A		-13.3	0.080 - 0.148	0.0057	A
Plutonium-239/240	0.0851	0.0936	A		-9.1	0.0655 - 0.1217	0.0051	A
Strontium-90	1.399	1.56	A		-10.3	1.09 - 2.03	0.054	A
Uranium-234	0.1300	0.125	A		4.0	0.088 - 0.163	0.0071	A
Uranium-238	0.1241	0.130	A		-4.5	0.091 - 0.169	0.0068	A
Zinc-65	0.256	0.332	N	(4)		Sensitivity Evaluation	0.020	

Radiological Reference Date: February 1, 2024

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

Laboratory Results For MAPEP-24-RdF50  
 (AMEC99) Jacobs Clean Energy Limited - Analytical Services  
 612 Faraday Street  
 Birchwood Park, Warrington WA3 6GN

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0817	0.0897	A		-8.9	0.0628 - 0.1166	0.0049	A
Cesium-134	0.070		N	(1)		False Positive Test	0.023	
Cesium-137	1.669	1.48	A		12.8	1.04 - 1.92	0.066	A
Cobalt-57	0.99	0.819	W		20.9	0.573 - 1.065	0.17	W
Cobalt-60	1.822	1.64	A		11.1	1.15 - 2.13	0.069	A
Manganese-54	0.704	0.555	W		26.8	0.389 - 0.722	0.057	A
Plutonium-238	0.1097	0.114	A		-3.8	0.080 - 0.148	0.0054	A
Plutonium-239/240	0.0949	0.0936	A		1.4	0.0655 - 0.1217	0.0050	A
Strontium-90	3.27	1.56	N		109.6	1.09 - 2.03	0.51	W
Uranium-234	0.1196	0.125	A		-4.3	0.088 - 0.163	0.0053	A
Uranium-238	0.1159	0.130	A		-10.8	0.091 - 0.169	0.0052	A
Zinc-65	0.358	0.332	A			Sensitivity Evaluation	0.088	

Radiological Reference Date: February 1, 2024

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

Laboratory Results For MAPEP-24-RdF50  
 (ANLB01) Argonne National Laboratory  
 9700 S. Cass Ave  
 Argonne, IL 60439

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0712	0.0897	W		-20.6	0.0628 - 0.1166	0.005	A
Cesium-134	0.017		A			False Positive Test	0.029	
Cesium-137	1.524	1.48	A		3.0	1.04 - 1.92	0.042	A
Cobalt-57	0.706	0.819	A		-13.8	0.573 - 1.065	0.035	A
Cobalt-60	1.619	1.64	A		-1.3	1.15 - 2.13	0.062	A
Manganese-54	0.582	0.555	A		4.9	0.389 - 0.722	0.039	A
Plutonium-238	0.112	0.114	A		-1.8	0.080 - 0.148	0.010	A
Plutonium-239/240	0.090	0.0936	A		-3.8	0.0655 - 0.1217	0.009	A
Strontium-90	1.467	1.56	A		-6.0	1.09 - 2.03	0.046	A
Uranium-234	0.121	0.125	A		-3.2	0.088 - 0.163	0.009	A
Uranium-238	0.121	0.130	A		-6.9	0.091 - 0.169	0.009	A
Zinc-65	0.361	0.332	A			Sensitivity Evaluation	0.081	

Radiological Reference Date: February 1, 2024

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

Laboratory Results For MAPEP-24-RdF50  
 (ARGO01) Idaho National Laboratory  
 INL, Materials and Fuels Complex  
 Idaho Falls, ID 83415

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	0.148		A			False Positive Test	0.15	
Cesium-137	1.25	1.48	A		-15.5	1.04 - 1.92	0.050	A
Cobalt-57	0.610	0.819	W		-25.5	0.573 - 1.065	0.024	A
Cobalt-60	1.41	1.64	A		-14.0	1.15 - 2.13	0.056	A
Manganese-54	0.526	0.555	A		-5.2	0.389 - 0.722	0.042	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.264	0.332	A			Sensitivity Evaluation	0.074	

Radiological Reference Date: February 1, 2024

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

Laboratory Results For MAPEP-24-RdF50

(ARPL01) Analytical Support Operations - Radiochemical Processing Lab

PO Box 999

Richland, WA 99354

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897	N	(28)		0.0628 - 0.1166		
Cesium-134	0.006		A			False Positive Test	0.014	
Cesium-137	1.45	1.48	A		-2.0	1.04 - 1.92	0.02	N
Cobalt-57	0.77	0.819	A		-6.0	0.573 - 1.065	0.02	A
Cobalt-60	1.61	1.64	A		-1.8	1.15 - 2.13	0.03	N
Manganese-54	0.55	0.555	A		-0.9	0.389 - 0.722	0.02	A
Plutonium-238	NR	0.114	N	(28)		0.080 - 0.148		
Plutonium-239/240	NR	0.0936	N	(28)		0.0655 - 0.1217		
Strontium-90	0.039	1.56	N		-97.5	1.09 - 2.03	0.004	A
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.33	0.332	A			Sensitivity Evaluation	0.01	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(ARSL01) ARS

2609 North River Road

Port Allen, LA 70767

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.064	0.0897	W		-28.7	0.0628 - 0.1166	0.007	A
Cesium-134	-0.023		A			False Positive Test	0.023	
Cesium-137	1.493	1.48	A		0.9	1.04 - 1.92	0.048	A
Cobalt-57	0.82	0.819	A		0.1	0.573 - 1.065	0.039	A
Cobalt-60	1.677	1.64	A		2.3	1.15 - 2.13	0.048	A
Manganese-54	0.633	0.555	A		14.1	0.389 - 0.722	0.035	A
Plutonium-238	0.101	0.114	A		-11.4	0.080 - 0.148	0.008	A
Plutonium-239/240	0.084	0.0936	A		-10.3	0.0655 - 0.1217	0.007	A
Strontium-90	1.516	1.56	A		-2.8	1.09 - 2.03	0.127	A
Uranium-234	0.12	0.125	A		-4.0	0.088 - 0.163	0.01	A
Uranium-238	0.13	0.130	A		0.0	0.091 - 0.169	0.011	A
Zinc-65	0.492	0.332	A			Sensitivity Evaluation	0.068	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-24-RdF50

(ASUK99) AWE (Aldermaston)

A38.1 AWE

Reading, Berkshire RG7 4PR

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR					False Positive Test		
Cesium-137	NR	1.48				1.04 - 1.92		
Cobalt-57	NR	0.819				0.573 - 1.065		
Cobalt-60	NR	1.64				1.15 - 2.13		
Manganese-54	NR	0.555				0.389 - 0.722		
Plutonium-238	0.1046	0.114	A		-8.2	0.080 - 0.148	0.015	A
Plutonium-239/240	0.0895	0.0936	A		-4.4	0.0655 - 0.1217	0.013	A
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	0.1178	0.125	A		-5.8	0.088 - 0.163	0.020	W
Uranium-238	0.1208	0.130	A		-7.1	0.091 - 0.169	0.020	W
Zinc-65	NR	0.332				Sensitivity Evaluation		

Radiological Reference Date: February 1, 2024

**Results Flags:**

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- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
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- (11) = False Positive Test, Result Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-24-RdF50  
 (CDHS01) California Department of Public Health  
 Drinking Water & Radiation Lab.  
 Richmond, CA 94804-6403

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0809	0.0897	A		-9.8	0.0628 - 0.1166	0.00453	A
Cesium-134	0.00884		A			False Positive Test	0.0326	
Cesium-137	1.42	1.48	A		-4.1	1.04 - 1.92	0.0417	A
Cobalt-57	0.742	0.819	A		-9.4	0.573 - 1.065	0.0184	A
Cobalt-60	1.48	1.64	A		-9.8	1.15 - 2.13	0.0318	A
Manganese-54	0.549	0.555	A		-1.1	0.389 - 0.722	0.0258	A
Plutonium-238	0.107	0.114	A		-6.1	0.080 - 0.148	0.00560	A
Plutonium-239/240	0.0920	0.0936	A		-1.7	0.0655 - 0.1217	0.00519	A
Strontium-90	1.53	1.56	A		-1.9	1.09 - 2.03	0.0531	A
Uranium-234	0.113	0.125	A		-9.6	0.088 - 0.163	0.00625	A
Uranium-238	0.115	0.130	A		-11.5	0.091 - 0.169	0.00640	A
Zinc-65	0.267	0.332	A			Sensitivity Evaluation	0.0355	

Radiological Reference Date: February 1, 2024

**Results Flags:**

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- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

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- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (CESL01) Lawrence Livermore National Laboratory - EMRL  
 7000 East Avenue  
 Livermore, CA 94551

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-9.19E-02		A			False Positive Test	9.19E-02	
Cesium-137	1.45E+00	1.48	A		-2.0	1.04 - 1.92	6.62E-02	A
Cobalt-57	8.04E-01	0.819	A		-1.8	0.573 - 1.065	3.27E-02	A
Cobalt-60	1.62E+00	1.64	A		-1.2	1.15 - 2.13	5.06E-02	A
Manganese-54	5.33E-01	0.555	A		-4.0	0.389 - 0.722	4.37E-02	A
Plutonium-238	1.08E-01	0.114	A		-5.3	0.080 - 0.148	2.78E-03	A
Plutonium-239/240	8.73E-02	0.0936	A		-6.7	0.0655 - 0.1217	2.38E-03	A
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	2.77E-01	0.332	A			Sensitivity Evaluation	6.11E-02	

Radiological Reference Date: February 1, 2024

**Results Flags:**

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- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

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

Laboratory Results For MAPEP-24-RdF50  
 (CMRC01) Carlsbad Environmental Monitoring and Research Center  
 1400 University Dr.  
 Carlsbad, NM 88220

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	9.25E-02	0.0897	A		3.1	0.0628 - 0.1166	5.94E-03	A
Cesium-134	NR					False Positive Test		
Cesium-137	1.46E+00	1.48	A		-1.4	1.04 - 1.92	3.01E-02	A
Cobalt-57	NR	0.819				0.573 - 1.065		
Cobalt-60	1.54E+00	1.64	A		-6.1	1.15 - 2.13	3.38E-02	A
Manganese-54	NR	0.555				0.389 - 0.722		
Plutonium-238	9.69E-02	0.114	A		-15.0	0.080 - 0.148	4.01E-03	A
Plutonium-239/240	7.76E-02	0.0936	A		-17.1	0.0655 - 0.1217	3.31E-03	A
Strontium-90	5.47E-01	1.56	N		-64.9	1.09 - 2.03	5.40E-04	N
Uranium-234	1.44E-01	0.125	A		15.2	0.088 - 0.163	6.18E-03	A
Uranium-238	1.46E-01	0.130	A		12.3	0.091 - 0.169	6.25E-03	A
Zinc-65	NR	0.332				Sensitivity Evaluation		

Radiological Reference Date: February 1, 2024

**Results Flags:**

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- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

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

Laboratory Results For MAPEP-24-RdF50  
 (COPS99) Health Canada Radiation Protection Bureau  
 775 Brookfield Road  
 Ottawa, Ontario K1A 1C1

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	0.020		A			False Positive Test	0.007	
Cesium-137	1.36	1.48	A		-8.1	1.04 - 1.92	0.08	A
Cobalt-57	0.74	0.819	A		-9.6	0.573 - 1.065	0.06	A
Cobalt-60	1.47	1.64	A		-10.4	1.15 - 2.13	0.04	A
Manganese-54	0.50	0.555	A		-9.9	0.389 - 0.722	0.03	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.32	0.332	A			Sensitivity Evaluation	0.03	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

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- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-24-RdF50  
 (DEHS01) Department of Environmental Health & Safety  
 North Carolina State Univ.  
 Raleigh, NC 27695-8007

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	1.303	1.48	A		-12.0	1.04 - 1.92	0.084	A
Cobalt-57	0.686	0.819	A		-16.2	0.573 - 1.065	0.043	A
Cobalt-60	1.387	1.64	A		-15.4	1.15 - 2.13	0.0846	A
Manganese-54	0.486	0.555	A		-12.4	0.389 - 0.722	0.036	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.318	0.332	A			Sensitivity Evaluation	0.0306	

Radiological Reference Date: February 1, 2024

**Results Flags:**

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- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

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- (11) = False Positive Test, Result Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-24-RdF50  
 (ERCL01) Washington State Public Health Laboratories  
 1610 N.E. 150th Street  
 Shoreline, WA 98155-9701

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0767	0.0743	A		3.2	0.0520 - 0.0966	0.0040	A
Uranium-238	11.6	10.4	A		11.5	7.3 - 13.5	0.6	A
Uranium-Total	11.7	10.5	A		11.4	7.4 - 13.7	0.6	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0821	0.0897	A		-8.5	0.0628 - 0.1166	0.0092	A
Cesium-134	-0.020		A			False Positive Test	0.012	
Cesium-137	1.51	1.48	A		2.0	1.04 - 1.92	0.04	A
Cobalt-57	0.777	0.819	A		-5.1	0.573 - 1.065	0.023	A
Cobalt-60	1.72	1.64	A		4.9	1.15 - 2.13	0.04	A
Manganese-54	0.559	0.555	A		0.7	0.389 - 0.722	0.042	A
Plutonium-238	0.113	0.114	A		-0.9	0.080 - 0.148	0.005	A
Plutonium-239/240	0.0955	0.0936	A		2.0	0.0655 - 0.1217	0.0045	A
Strontium-90	1.51	1.56	A		-3.2	1.09 - 2.03	0.08	A
Uranium-234	0.136	0.125	A		8.8	0.088 - 0.163	0.007	A
Uranium-238	0.140	0.130	A		7.7	0.091 - 0.169	0.007	A
Zinc-65	0.414	0.332	A			Sensitivity Evaluation	0.072	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

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- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-24-RdF50

(ERHD99) National Monitoring Section, Radiation Protection Bureau, Health Canada  
 775 Brookfield Road AL6302D1  
 Ottawa, Ontario K1A 1C1

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0712	0.0743	A		-4.2	0.0520 - 0.0966	0.005	A
Uranium-238	9.891	10.4	A		-4.9	7.3 - 13.5	0.09	N
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0754	0.0897	A		-15.9	0.0628 - 0.1166	0.0023	A
Cesium-134	0.028		A			False Positive Test	0.056	
Cesium-137	1.502	1.48	A		1.5	1.04 - 1.92	0.080	A
Cobalt-57	0.815	0.819	A		-0.5	0.573 - 1.065	0.041	A
Cobalt-60	1.635	1.64	A		-0.3	1.15 - 2.13	0.073	A
Manganese-54	0.577	0.555	A		4.0	0.389 - 0.722	0.035	A
Plutonium-238	0.0906	0.114	W		-20.5	0.080 - 0.148	0.0026	A
Plutonium-239/240	0.0721	0.0936	W		-23.0	0.0655 - 0.1217	0.0023	A
Strontium-90	1.36	1.56	A		-12.8	1.09 - 2.03	0.03	A
Uranium-234	0.113	0.125	A		-9.6	0.088 - 0.163	0.004	A
Uranium-238	0.113	0.130	A		-13.1	0.091 - 0.169	0.004	A
Zinc-65	0.365	0.332	A			Sensitivity Evaluation	0.018	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (FDHE01) Florida Dept of Health Environmental Laboratory  
 2100 All Childrens Way  
 Orlando, FL 32818-5271

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.076	0.0897	A		-15.3	0.0628 - 0.1166	0.009	A
Cesium-134	-0.0055		A			False Positive Test	0.305	
Cesium-137	1.424	1.48	A		-3.8	1.04 - 1.92	0.037	A
Cobalt-57	0.758	0.819	A		-7.4	0.573 - 1.065	0.017	A
Cobalt-60	1.56	1.64	A		-4.9	1.15 - 2.13	0.035	A
Manganese-54	0.547	0.555	A		-1.4	0.389 - 0.722	0.021	A
Plutonium-238	0.127	0.114	A		11.4	0.080 - 0.148	0.04	N
Plutonium-239/240	0.0865	0.0936	A		-7.6	0.0655 - 0.1217	0.04	N
Strontium-90	1.5	1.56	A		-3.8	1.09 - 2.03	0.1	A
Uranium-234	0.123	0.125	A		-1.6	0.088 - 0.163	0.05	N
Uranium-238	0.125	0.130	A		-3.8	0.091 - 0.169	0.05	N
Zinc-65	0.354	0.332	A			Sensitivity Evaluation	0.031	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

**Laboratory Results For MAPEP-24-RdF50**

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

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0750	0.0897	A		-16.4	0.0628 - 0.1166	0.01	A
Cesium-134	0.018			A		False Positive Test	0.027	
Cesium-137	1.47	1.48	A		-0.7	1.04 - 1.92	0.03	A
Cobalt-57	0.775	0.819	A		-5.4	0.573 - 1.065	0.04	A
Cobalt-60	1.555	1.64	A		-5.2	1.15 - 2.13	0.03	N
Manganese-54	0.571	0.555	A		2.9	0.389 - 0.722	0.04	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	0.113	0.130	A		-13.1	0.091 - 0.169	0.05	N
Zinc-65	0.386	0.332	A			Sensitivity Evaluation	0.04	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (FNAL01) Fermi National Accelerator Laboratory (FermiLab)  
 PO Box 500, MS325  
 Batavia, IL 60510

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-0.01		A			False Positive Test	0.01	
Cesium-137	1.55	1.48	A		4.7	1.04 - 1.92	0.16	A
Cobalt-57	0.83	0.819	A		1.3	0.573 - 1.065	0.07	A
Cobalt-60	1.65	1.64	A		0.6	1.15 - 2.13	0.12	A
Manganese-54	0.64	0.555	A		15.3	0.389 - 0.722	0.07	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.42	0.332	A			Sensitivity Evaluation	0.06	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (GENE01) GEL Laboratories, LLC  
 2040 Savage Road  
 Charleston, SC 29407

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0739	0.0743	A		-0.5	0.0520 - 0.0966	0.00533	A
Uranium-238	10.1	10.4	A		-2.9	7.3 - 13.5	0.708	A
Uranium-Total	10.1739	10.5	A		-3.1	7.4 - 13.7	0.708	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0911	0.0897	A		1.6	0.0628 - 0.1166	0.00439	A
Cesium-134	-0.0036		A			False Positive Test	0.0263	
Cesium-137	1.51	1.48	A		2.0	1.04 - 1.92	0.0977	A
Cobalt-57	0.801	0.819	A		-2.2	0.573 - 1.065	0.0511	A
Cobalt-60	1.62	1.64	A		-1.2	1.15 - 2.13	0.117	A
Manganese-54	0.575	0.555	A		3.6	0.389 - 0.722	0.0684	A
Plutonium-238	0.123	0.114	A		7.9	0.080 - 0.148	0.00555	A
Plutonium-239/240	0.0976	0.0936	A		4.3	0.0655 - 0.1217	0.00453	A
Strontium-90	1.69	1.56	A		8.3	1.09 - 2.03	0.225	A
Uranium-234	0.134	0.125	A		7.2	0.088 - 0.163	0.00689	A
Uranium-238	0.136	0.130	A		4.6	0.091 - 0.169	0.00697	A
Zinc-65	0.394	0.332	A			Sensitivity Evaluation	0.117	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (GPCL01) Georgia Power Company Environmental Laboratory 2480  
 Maner Road  
 Atlanta, GA 30339

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-0.0376		A			False Positive Test	0.1661	
Cesium-137	1.4601	1.48	A		-1.3	1.04 - 1.92	0.2017	A
Cobalt-57	0.7957	0.819	A		-2.8	0.573 - 1.065	0.1473	W
Cobalt-60	1.5998	1.64	A		-2.5	1.15 - 2.13	0.1766	A
Manganese-54	0.5682	0.555	A		2.4	0.389 - 0.722	0.1442	W
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.1761	0.332	A	(17)		Sensitivity Evaluation	0.3537	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

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

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-0.1199		A			False Positive Test	0.3162	
Cesium-137	0.9914	1.48	N		-33.0	1.04 - 1.92	0.3884	N
Cobalt-57	0.8181	0.819	A		-0.1	0.573 - 1.065	0.2776	N
Cobalt-60	1.775	1.64	A		8.2	1.15 - 2.13	0.2984	W
Manganese-54	0.6233	0.555	A		12.3	0.389 - 0.722	0.4542	N
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.7284	0.332	A	(17)		Sensitivity Evaluation	1.106	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (HPAC99) UKHSA, RCE Glasgow  
 155 Hardgate Road  
 Glasgow, Scotland G51 4LS

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.138	0.0897	N		53.8	0.0628 - 0.1166	.024	W
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	1.95	1.48	N		31.8	1.04 - 1.92	.27	A
Cobalt-57	1.14	0.819	N		39.2	0.573 - 1.065	.16	A
Cobalt-60	2.07	1.64	W		26.2	1.15 - 2.13	.28	A
Manganese-54	.66	0.555	A		18.9	0.389 - 0.722	.1	W
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	.451	0.332	A			Sensitivity Evaluation	.074	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (HPAL01) Los Alamos National Laboratory  
 Josh Chandler, z338219 MS G761  
 Los Alamos, NM 87545-1663

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.13	0.0897	N		44.9	0.0628 - 0.1166	0.04	N
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	1.69	1.48	A		14.2	1.04 - 1.92	0.13	A
Cobalt-57	0.80	0.819	A		-2.3	0.573 - 1.065	0.05	A
Cobalt-60	1.83	1.64	A		11.6	1.15 - 2.13	0.12	A
Manganese-54	0.78	0.555	N		40.5	0.389 - 0.722	0.11	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	NR	0.332	N	(18)		Sensitivity Evaluation		

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (IAEA99) International Atomic Energy Agency  
 Agency's Laboratories Seibersdorf  
 Seibersdorf, Austria A-2444

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.099	0.0897	A		10.4	0.0628 - 0.1166	0.012	A
Cesium-134	0.029		A			False Positive Test	0.034	
Cesium-137	1.44	1.48	A		-2.7	1.04 - 1.92	0.06	A
Cobalt-57	0.795	0.819	A		-2.9	0.573 - 1.065	0.035	A
Cobalt-60	1.58	1.64	A		-3.7	1.15 - 2.13	0.06	A
Manganese-54	0.532	0.555	A		-4.1	0.389 - 0.722	0.040	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.340	0.332	A			Sensitivity Evaluation	0.037	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory

1301 Knotts St.

Springfield, IL 62703

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0865	0.0897	A		-3.6	0.0628 - 0.1166	0.0035	A
Cesium-134	0.01		A			False Positive Test	0.03	
Cesium-137	1.48	1.48	A		0.0	1.04 - 1.92	0.06	A
Cobalt-57	0.78	0.819	A		-4.8	0.573 - 1.065	0.03	A
Cobalt-60	1.60	1.64	A		-2.4	1.15 - 2.13	0.05	A
Manganese-54	0.52	0.555	A		-6.3	0.389 - 0.722	0.05	A
Plutonium-238	0.1196	0.114	A		4.9	0.080 - 0.148	0.0047	A
Plutonium-239/240	0.0946	0.0936	A		1.1	0.0655 - 0.1217	0.0039	A
Strontium-90	1.443	1.56	A		-7.5	1.09 - 2.03	0.053	A
Uranium-234	0.1317	0.125	A		5.4	0.088 - 0.163	0.0049	A
Uranium-238	0.1329	0.130	A		2.2	0.091 - 0.169	0.0049	A
Zinc-65	0.43	0.332	A			Sensitivity Evaluation	0.10	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (ISUE01) ISU Environmental Monitoring Laboratory  
 785 5th 8th Ave Rm B107  
 Pocatello, Idaho 83209

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	.02		A			False Positive Test	.02	
Cesium-137	1.52	1.48	A		2.7	1.04 - 1.92	.048	A
Cobalt-57	.78	0.819	A		-4.8	0.573 - 1.065	.03	A
Cobalt-60	1.62	1.64	A		-1.2	1.15 - 2.13	.04	A
Manganese-54	0.57	0.555	A		2.7	0.389 - 0.722	.03	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.27	0.332	A			Sensitivity Evaluation	0.05	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(JLNN01) Jefferson Laboratory

111 Hadron Drive

Newport News, VA 23606

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0871	0.0897	A		-2.9	0.0628 - 0.1166	0.0116	A
Cesium-134	0.01583		A			False Positive Test	0.00731	
Cesium-137	1.28	1.48	A		-13.5	1.04 - 1.92	0.02427	N
Cobalt-57	0.6565	0.819	A		-19.8	0.573 - 1.065	0.0202	A
Cobalt-60	1.395	1.64	A		-14.9	1.15 - 2.13	0.0522	A
Manganese-54	.5205	0.555	A		-6.2	0.389 - 0.722	0.0317	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.276	0.332	A			Sensitivity Evaluation	0.0476	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (JNRC99) Energy and Mineral Regulatory Commission  
 Radiological laboratories directorate  
 Amman, Amman 11821

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.070	0.0897	W		-22.0	0.0628 - 0.1166	0.006	A
Cesium-134	NR					False Positive Test		
Cesium-137	1.20	1.48	A		-18.9	1.04 - 1.92	0.06	A
Cobalt-57	0.66	0.819	A		-19.4	0.573 - 1.065	0.05	A
Cobalt-60	1.32	1.64	A		-19.5	1.15 - 2.13	0.04	A
Manganese-54	0.42	0.555	W		-24.3	0.389 - 0.722	0.03	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.26	0.332	N	(4)		Sensitivity Evaluation	0.02	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(KINE99) Kinectrics Inc  
800 Kipling Ave  
Toronto, Ontario M8Z5G5

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0784	0.0897	A		-12.6	0.0628 - 0.1166	0.0102	A
Cesium-134	0.083		A			False Positive Test	0.285	
Cesium-137	1.57	1.48	A		6.1	1.04 - 1.92	0.110	A
Cobalt-57	0.805	0.819	A		-1.7	0.573 - 1.065	0.041	A
Cobalt-60	1.62	1.64	A		-1.2	1.15 - 2.13	0.145	A
Manganese-54	0.609	0.555	A		9.7	0.389 - 0.722	0.060	A
Plutonium-238	0.109	0.114	A		-4.4	0.080 - 0.148	0.015	A
Plutonium-239/240	0.0764	0.0936	A		-18.4	0.0655 - 0.1217	0.008	A
Strontium-90	1.39	1.56	A		-10.9	1.09 - 2.03	0.30	W
Uranium-234	0.113	0.125	A		-9.6	0.088 - 0.163	0.0170	W
Uranium-238	0.114	0.130	A		-12.3	0.091 - 0.169	0.0170	A
Zinc-65	0.384	0.332	A			Sensitivity Evaluation	0.082	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory

INL/Battelle Energy Alliance, LLC

Idaho Falls, ID 83415-7111

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	0.02		A			False Positive Test	0.02	
Cesium-137	1.29	1.48	A		-12.8	1.04 - 1.92	0.06	A
Cobalt-57	0.6	0.819	W		-26.7	0.573 - 1.065	0.02	A
Cobalt-60	1.33	1.64	A		-18.9	1.15 - 2.13	0.04	A
Manganese-54	0.51	0.555	A		-8.1	0.389 - 0.722	0.04	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.31	0.332	A			Sensitivity Evaluation	0.06	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (MART01) Fluor-BWXT Portsmouth LLC, Analytical Laboratory  
 COC, Bldg. X-705, Rm 106  
 Piketon, OH 45661

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.08282	0.0897	A		-7.7	0.0628 - 0.1166	0.006551	A
Cesium-134	NR					False Positive Test		
Cesium-137	NR	1.48				1.04 - 1.92		
Cobalt-57	NR	0.819				0.573 - 1.065		
Cobalt-60	NR	1.64				1.15 - 2.13		
Manganese-54	NR	0.555				0.389 - 0.722		
Plutonium-238	0.1062	0.114	A		-6.8	0.080 - 0.148	0.006895	A
Plutonium-239/240	0.0924	0.0936	A		-1.3	0.0655 - 0.1217	0.006298	A
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	0.1261	0.125	A		0.9	0.088 - 0.163	0.01001	A
Uranium-238	0.1285	0.130	A		-1.2	0.091 - 0.169	0.01012	A
Zinc-65	NR	0.332				Sensitivity Evaluation		

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (MART03) Radioactive Material Analysis Laboratory  
 ORNL  
 Oak Ridge, TN 37830

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.073	0.0897	A		-18.6	0.0628 - 0.1166	0.005	A
Cesium-134	0.054		A			False Positive Test	0.054	
Cesium-137	1.493	1.48	A		0.9	1.04 - 1.92	0.043	A
Cobalt-57	0.787	0.819	A		-3.9	0.573 - 1.065	0.020	A
Cobalt-60	1.587	1.64	A		-3.2	1.15 - 2.13	0.038	A
Manganese-54	0.516	0.555	A		-7.0	0.389 - 0.722	0.028	A
Plutonium-238	0.118	0.114	A		3.5	0.080 - 0.148	0.006	A
Plutonium-239/240	0.099	0.0936	A		5.8	0.0655 - 0.1217	0.005	A
Strontium-90	1.518	1.56	A		-2.7	1.09 - 2.03	0.049	A
Uranium-234	0.131	0.125	A		4.8	0.088 - 0.163	0.007	A
Uranium-238	0.134	0.130	A		3.1	0.091 - 0.169	0.007	A
Zinc-65	0.314	0.332	A			Sensitivity Evaluation	0.050	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (MDPH01) MDPH-Radiation Control Program  
 MERL-Room 0066  
 Jamaica Plain, MA 02130-3597

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR					False Positive Test		
Cesium-137	1.47	1.48	A		-0.7	1.04 - 1.92	0.07	A
Cobalt-57	0.79	0.819	A		-3.5	0.573 - 1.065	0.04	A
Cobalt-60	1.56	1.64	A		-4.9	1.15 - 2.13	0.08	A
Manganese-54	0.57	0.555	A		2.7	0.389 - 0.722	0.06	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.37	0.332	A			Sensitivity Evaluation	0.06	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(MNDH01) Minnesota Department of Health, Public Health Lab. Division  
601 Robert St. N.  
St. Paul, MN 55155

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.11837	0.0897	N		32.0	0.0628 - 0.1166	0.03384	W
Cesium-134	-0.004126		A			False Positive Test	0.002511	
Cesium-137	1.4976	1.48	A		1.2	1.04 - 1.92	0.02320	N
Cobalt-57	0.77799	0.819	A		-5.0	0.573 - 1.065	0.05934	A
Cobalt-60	1.3436	1.64	A		-18.1	1.15 - 2.13	0.01808	N
Manganese-54	0.52909	0.555	A		-4.7	0.389 - 0.722	0.01452	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.31210	0.332	A			Sensitivity Evaluation	0.03145	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (NARL01) National Analytical Radiation Environmental Laboratory  
 540 S. Morris Ave.  
 Montgomery, AL 36115-2601

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0822	0.0897	A		-8.4	0.0628 - 0.1166	0.00736	A
Cesium-134	0.00485		A			False Positive Test	0.0122	
Cesium-137	1.55	1.48	A		4.7	1.04 - 1.92	0.0882	A
Cobalt-57	0.761	0.819	A		-7.1	0.573 - 1.065	0.0432	A
Cobalt-60	1.48	1.64	A		-9.8	1.15 - 2.13	0.0810	A
Manganese-54	0.574	0.555	A		3.4	0.389 - 0.722	0.0366	A
Plutonium-238	0.109	0.114	A		-4.4	0.080 - 0.148	0.00908	A
Plutonium-239/240	0.0822	0.0936	A		-12.2	0.0655 - 0.1217	0.00761	A
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	0.123	0.125	A		-1.6	0.088 - 0.163	0.00863	A
Uranium-238	0.127	0.130	A		-2.3	0.091 - 0.169	0.00885	A
Zinc-65	0.406	0.332	A			Sensitivity Evaluation	0.0372	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory  
 Lynchburg Technology Center  
 Lynchburg, VA 24504-5447

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.068	0.0897	W		-24.2	0.0628 - 0.1166	0.006	A
Cesium-134	-0.141		A			False Positive Test	0.071	
Cesium-137	1.69	1.48	A		14.2	1.04 - 1.92	0.099	A
Cobalt-57	0.880	0.819	A		7.4	0.573 - 1.065	0.058	A
Cobalt-60	1.743	1.64	A		6.3	1.15 - 2.13	0.16	A
Manganese-54	0.535	0.555	A		-3.6	0.389 - 0.722	0.081	W
Plutonium-238	0.115	0.114	A		0.9	0.080 - 0.148	0.007	A
Plutonium-239/240	0.064	0.0936	N		-31.6	0.0655 - 0.1217	0.006	A
Strontium-90	1.51	1.56	A		-3.2	1.09 - 2.03	0.112	A
Uranium-234	0.131	0.125	A		4.8	0.088 - 0.163	0.008	A
Uranium-238	0.134	0.130	A		3.1	0.091 - 0.169	0.008	A
Zinc-65	0.419	0.332	A	(17)		Sensitivity Evaluation	0.226	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (NJDH01) New Jersey Dept. of Health, ECLS  
 3 Schwarzkopf Drive  
 Ewing, NJ 08628

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-0.128		A			False Positive Test	0.07	
Cesium-137	1.29	1.48	A		-12.8	1.04 - 1.92	0.123	A
Cobalt-57	0.705	0.819	A		-13.9	0.573 - 1.065	0.09	A
Cobalt-60	1.44	1.64	A		-12.2	1.15 - 2.13	0.14	A
Manganese-54	0.396	0.555	W		-28.6	0.389 - 0.722	0.07	W
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.15	0.332	A	(17)		Sensitivity Evaluation	0.11	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (NOCS99) National Oceanography Centre, Southampton  
 GAU-Radioanalytical  
 Southampton, Hampshire SO14 3ZH

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.080	0.0743	A		7.7	0.0520 - 0.0966	0.005	A
Uranium-238	11	10.4	A		5.8	7.3 - 13.5	1	A
Uranium-Total	11	10.5	A		4.8	7.4 - 13.7	1	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.090	0.0897	A		0.3	0.0628 - 0.1166	0.007	A
Cesium-134	0.06		A			False Positive Test	0.6	
Cesium-137	1.26	1.48	A		-14.9	1.04 - 1.92	0.04	A
Cobalt-57	0.67	0.819	A		-18.2	0.573 - 1.065	0.03	A
Cobalt-60	1.35	1.64	A		-17.7	1.15 - 2.13	0.04	A
Manganese-54	0.47	0.555	A		-15.3	0.389 - 0.722	0.02	A
Plutonium-238	0.108	0.114	A		-5.3	0.080 - 0.148	0.007	A
Plutonium-239/240	0.088	0.0936	A		-6.0	0.0655 - 0.1217	0.006	A
Strontium-90	1.4	1.56	A		-10.3	1.09 - 2.03	0.1	A
Uranium-234	0.120	0.125	A		-4.0	0.088 - 0.163	0.005	A
Uranium-238	0.120	0.130	A		-7.7	0.091 - 0.169	0.005	A
Zinc-65	0.30	0.332	A			Sensitivity Evaluation	0.03	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (ODHL01) Ohio Department of Health Laboratory  
 8995 E Main Street  
 Reynoldsburg, OH 43068

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	0.0113		A			False Positive Test	0.00401	
Cesium-137	1.33	1.48	A		-10.1	1.04 - 1.92	0.0834	A
Cobalt-57	0.756	0.819	A		-7.7	0.573 - 1.065	0.0555	A
Cobalt-60	1.44	1.64	A		-12.2	1.15 - 2.13	0.0464	A
Manganese-54	0.497	0.555	A		-10.5	0.389 - 0.722	0.035	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.314	0.332	A			Sensitivity Evaluation	0.0367	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (RPSC01) Radiation Protection Service  
 O. Ministry of Labour, Immigration, Training & Skills Development  
 Mississauga, Ontario L4V 1W8

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-0.060		A			False Positive Test	0.058	
Cesium-137	1.40	1.48	A		-5.4	1.04 - 1.92	0.067	A
Cobalt-57	0.80	0.819	A		-2.3	0.573 - 1.065	0.044	A
Cobalt-60	1.61	1.64	A		-1.8	1.15 - 2.13	0.063	A
Manganese-54	0.51	0.555	A		-8.1	0.389 - 0.722	0.042	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.33	0.332	A			Sensitivity Evaluation	0.074	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (SANC99) RadioAnalysis, South Africa Nuclear Energy Corp.  
 Sample Receipt Gate 1  
 Pretoria, Gauteng 0001

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.087	0.0897	A		-3.0	0.0628 - 0.1166	0.012	A
Cesium-134	0.024			A		False Positive Test	0.024	
Cesium-137	1.735	1.48	A		17.2	1.04 - 1.92	0.106	A
Cobalt-57	0.921	0.819	A		12.5	0.573 - 1.065	0.068	A
Cobalt-60	1.749	1.64	A		6.6	1.15 - 2.13	0.107	A
Manganese-54	0.618	0.555	A		11.4	0.389 - 0.722	0.041	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.384	0.332	A			Sensitivity Evaluation	0.026	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (SEML01) SRS Environmental Monitoring Laboratory  
 Bldg 735-B  
 Aiken, SC 29808

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0779	0.0897	A		-13.2	0.0628 - 0.1166	0.0038	A
Cesium-134	-0.06		A			False Positive Test	0.31	
Cesium-137	1.48	1.48	A		0.0	1.04 - 1.92	0.17	A
Cobalt-57	0.75	0.819	A		-8.4	0.573 - 1.065	0.10	A
Cobalt-60	1.58	1.64	A		-3.7	1.15 - 2.13	0.15	A
Manganese-54	0.54	0.555	A		-2.7	0.389 - 0.722	0.11	W
Plutonium-238	0.0999	0.114	A		-12.4	0.080 - 0.148	0.0057	A
Plutonium-239/240	0.0790	0.0936	A		-15.6	0.0655 - 0.1217	0.0046	A
Strontium-90	1.222	1.56	W		-21.7	1.09 - 2.03	0.068	A
Uranium-234	0.1304	0.125	A		4.3	0.088 - 0.163	0.0061	A
Uranium-238	0.1378	0.130	A		6.0	0.091 - 0.169	0.0064	A
Zinc-65	0.24	0.332	A	(17)		Sensitivity Evaluation	0.28	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (SMER01) State of Michigan EGLE Radiological Lab  
 815 Filley St.  
 Lansing, MI 48906

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.084	0.0897	A		-6.4	0.0628 - 0.1166	0.03	N
Cesium-134	-0.011		A			False Positive Test	0.04	
Cesium-137	1.31	1.48	A		-11.5	1.04 - 1.92	0.13	A
Cobalt-57	0.70	0.819	A		-14.5	0.573 - 1.065	0.08	A
Cobalt-60	1.27	1.64	W		-22.6	1.15 - 2.13	0.08	A
Manganese-54	0.48	0.555	A		-13.5	0.389 - 0.722	0.08	W
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.26	0.332	A	(17)		Sensitivity Evaluation	0.1	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (SOUT01) Southwest Research Institute  
 6220 Culebra Rd.  
 San Antonio, TX 78238-5166

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0786	0.0743	A		5.8	0.0520 - 0.0966	0.0129	W
Uranium-238	11.0	10.4	A		5.8	7.3 - 13.5	1.76	W
Uranium-Total	11.1	10.5	A		5.7	7.4 - 13.7	1.78	W

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897	N	(28)		0.0628 - 0.1166		
Cesium-134	NR		N	(11)		False Positive Test		
Cesium-137	NR	1.48	N	(28)		1.04 - 1.92		
Cobalt-57	NR	0.819	N	(28)		0.573 - 1.065		
Cobalt-60	NR	1.64	N	(28)		1.15 - 2.13		
Manganese-54	NR	0.555	N	(28)		0.389 - 0.722		
Plutonium-238	NR	0.114	N	(28)		0.080 - 0.148		
Plutonium-239/240	NR	0.0936	N	(28)		0.0655 - 0.1217		
Strontium-90	NR	1.56	N	(28)		1.09 - 2.03		
Uranium-234	NR	0.125	N	(28)		0.088 - 0.163		
Uranium-238	NR	0.130	N	(28)		0.091 - 0.169		
Zinc-65	NR	0.332	N	(18)		Sensitivity Evaluation		

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics

PO Box 5800, MS1103

Albuquerque, NM 87185-1103

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-4.94E-02		A			False Positive Test	3.23E-02	
Cesium-137	1.38E+00	1.48	A		-6.8	1.04 - 1.92	9.12E-02	A
Cobalt-57	7.61E-01	0.819	A		-7.1	0.573 - 1.065	7.85E-02	A
Cobalt-60	1.37E+00	1.64	A		-16.5	1.15 - 2.13	7.34E-02	A
Manganese-54	5.18E-01	0.555	A		-6.7	0.389 - 0.722	4.42E-02	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	3.36E-01	0.332	A			Sensitivity Evaluation	9.24E-02	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (STRL01) South Texas Project Radiological Laboratory  
 12090 FM 521  
 Wadsworth, Texas 77483

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR					False Positive Test		
Cesium-137	1.266	1.48	A		-14.5	1.04 - 1.92	0.036	A
Cobalt-57	0.6560	0.819	A		-19.9	0.573 - 1.065	0.015	A
Cobalt-60	1.352	1.64	A		-17.6	1.15 - 2.13	0.026	N
Manganese-54	0.4800	0.555	A		-13.5	0.389 - 0.722	0.026	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.3068	0.332	A			Sensitivity Evaluation	0.043	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (TDHL01) Texas Department of State Health Services Laboratory  
 1100 W 49th Street  
 Austin, TX 78756

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0749	0.0897	A		-16.5	0.0628 - 0.1166	0.0088	A
Cesium-134	-0.011			A		False Positive Test	0.072	
Cesium-137	1.466	1.48	A		-0.9	1.04 - 1.92	0.055	A
Cobalt-57	0.711	0.819	A		-13.2	0.573 - 1.065	0.026	A
Cobalt-60	1.536	1.64	A		-6.3	1.15 - 2.13	0.041	A
Manganese-54	0.572	0.555	A		3.1	0.389 - 0.722	0.031	A
Plutonium-238	0.116	0.114	A		1.8	0.080 - 0.148	0.013	A
Plutonium-239/240	0.092	0.0936	A		-1.7	0.0655 - 0.1217	0.011	A
Strontium-90	1.481	1.56	A		-5.1	1.09 - 2.03	0.036	A
Uranium-234	0.0912	0.125	W		-27.0	0.088 - 0.163	0.0094	A
Uranium-238	0.135	0.130	A		3.8	0.091 - 0.169	0.013	A
Zinc-65	0.289	0.332	A			Sensitivity Evaluation	0.048	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (TELE02) Microbac Laboratories Inc. - Northbrook  
 700 Landwehr Road  
 Northbrook, IL 60062-

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	0.03		A			False Positive Test	0.03	
Cesium-137	1.30	1.48	A		-12.2	1.04 - 1.92	0.07	A
Cobalt-57	0.58	0.819	W		-29.2	0.573 - 1.065	0.03	A
Cobalt-60	1.30	1.64	W		-20.7	1.15 - 2.13	0.06	A
Manganese-54	0.51	0.555	A		-8.1	0.389 - 0.722	0.05	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56	N	(28)		1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.27	0.332	A			Sensitivity Evaluation	0.07	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (TMAO01) EBERLINE Analytical Corporation  
 601 A SCARBORO RD  
 OAK RIDGE, TN 37830-

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	.002		A			False Positive Test	.101	
Cesium-137	1.681	1.48	A		13.6	1.04 - 1.92	.288	W
Cobalt-57	.775	0.819	A		-5.4	0.573 - 1.065	.155	W
Cobalt-60	1.809	1.64	A		10.3	1.15 - 2.13	.281	W
Manganese-54	.3997	0.555	W		-28.0	0.389 - 0.722	.257	N
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	1.800	1.56	A		15.4	1.09 - 2.03	.061	A
Uranium-234	.139	0.125	A		11.2	0.088 - 0.163	.029	W
Uranium-238	.135	0.130	A		3.8	0.091 - 0.169	.029	W
Zinc-65	.008	0.332	A	(17)		Sensitivity Evaluation	.497	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (WIPH01) WI, DPH, Radiation Protection Section  
 1 West Wilson Street  
 Madison, WI 53703

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.16	0.0897	N		78.4	0.0628 - 0.1166	0.073	N
Cesium-134	0.020		A			False Positive Test	0.009	
Cesium-137	1.306	1.48	A		-11.8	1.04 - 1.92	0.084	A
Cobalt-57	0.666	0.819	A		-18.7	0.573 - 1.065	0.059	A
Cobalt-60	1.369	1.64	A		-16.5	1.15 - 2.13	0.044	A
Manganese-54	0.519	0.555	A		-6.5	0.389 - 0.722	0.042	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.207	0.332	A			Sensitivity Evaluation	0.057	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	6.13E-002	0.0897	N		-31.7	0.0628 - 0.1166	4.45E-	A
Cesium-134	-5.75E-003		A			False Positive Test	1.06E-	
Cesium-137	1.50E+000	1.48	A		1.4	1.04 - 1.92	3.32E-	A
Cobalt-57	7.56E-001	0.819	A		-7.7	0.573 - 1.065	2.07E-	A
Cobalt-60	1.50E+000	1.64	A		-8.5	1.15 - 2.13	4.53E-	A
Manganese-54	5.38E-001	0.555	A		-3.1	0.389 - 0.722	1.99E-	A
Plutonium-238	1.06E-001	0.114	A		-7.0	0.080 - 0.148	8.36E-	A
Plutonium-239/240	8.84E-002	0.0936	A		-5.6	0.0655 - 0.1217	7.03E-	A
Strontium-90	1.34E+000	1.56	A		-14.1	1.09 - 2.03	8.54E-	A
Uranium-234	1.31E-001	0.125	A		4.8	0.088 - 0.163	9.67E-	A
Uranium-238	1.38E-001	0.130	A		6.2	0.091 - 0.169	1.02E-	A
Zinc-65	2.74E-001	0.332	A			Sensitivity Evaluation	3.16E-	

Radiological Reference Date: February 1, 2024

Results Flags:

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (WSHL01) Wisconsin State Laboratory of Hygiene  
 2601 Agriculture Drive  
 Madison, WI 53718

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0804	0.0897	A		-10.4	0.0628 - 0.1166	0.0115	A
Cesium-134	-0.0172		A			False Positive Test	0.00843	
Cesium-137	1.53	1.48	A		3.4	1.04 - 1.92	0.0551	A
Cobalt-57	0.797	0.819	A		-2.7	0.573 - 1.065	0.0239	A
Cobalt-60	1.62	1.64	A		-1.2	1.15 - 2.13	0.0923	A
Manganese-54	0.56	0.555	A		0.9	0.389 - 0.722	0.0319	A
Plutonium-238	0.1232	0.114	A		8.1	0.080 - 0.148	0.0098	A
Plutonium-239/240	0.0967	0.0936	A		3.3	0.0655 - 0.1217	0.0079	A
Strontium-90	1.25	1.56	A		-19.9	1.09 - 2.03	0.04	A
Uranium-234	0.1310	0.125	A		4.8	0.088 - 0.163	0.0101	A
Uranium-238	0.1385	0.130	A		6.5	0.091 - 0.169	0.0095	A
Zinc-65	0.325	0.332	A			Sensitivity Evaluation	0.0402	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100



**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (WVDP01) WVDP Environmental Laboratory  
 10282 Rock Springs Road  
 West Valley, NY 14171

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0743				0.0520 - 0.0966		
Uranium-238	NR	10.4				7.3 - 13.5		
Uranium-Total	NR	10.5				7.4 - 13.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	-0.00926		A			False Positive Test	0.0332	
Cesium-137	1.34	1.48	A		-9.5	1.04 - 1.92	0.0649	A
Cobalt-57	0.747	0.819	A		-8.8	0.573 - 1.065	0.0427	A
Cobalt-60	1.49	1.64	A		-9.1	1.15 - 2.13	0.0530	A
Manganese-54	0.580	0.555	A		4.5	0.389 - 0.722	0.0396	A
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	0.347	0.332	A			Sensitivity Evaluation	0.058	

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte



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

Laboratory Results For MAPEP-24-RdF50  
 (YPGA01) US Army Yuma Proving Ground / Material Analysis Lab  
 301 C. Street  
 Yuma, AZ 85365

Inorganic							Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.072	0.0743	A		-3.1	0.0520 - 0.0966	0.005	A
Uranium-238	9.89	10.4	A		-4.9	7.3 - 13.5	0.5	A
Uranium-Total	9.96	10.5	A		-5.1	7.4 - 13.7	0.46	A

Radiological							Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.0897				0.0628 - 0.1166		
Cesium-134	NR					False Positive Test		
Cesium-137	NR	1.48				1.04 - 1.92		
Cobalt-57	NR	0.819				0.573 - 1.065		
Cobalt-60	NR	1.64				1.15 - 2.13		
Manganese-54	NR	0.555				0.389 - 0.722		
Plutonium-238	NR	0.114				0.080 - 0.148		
Plutonium-239/240	NR	0.0936				0.0655 - 0.1217		
Strontium-90	NR	1.56				1.09 - 2.03		
Uranium-234	NR	0.125				0.088 - 0.163		
Uranium-238	NR	0.130				0.091 - 0.169		
Zinc-65	NR	0.332				Sensitivity Evaluation		

Radiological Reference Date: February 1, 2024

**Results Flags:**

- A = Result acceptable.....|Bias| ≤ 20%
- W = Result acceptable with warning..... 20% < |Bias| ≤ 30%
- N = Result not acceptable.....|Bias| > 30%
- RW = Report Warning
- NR = Not Reported

**Uncertainty Flags:**

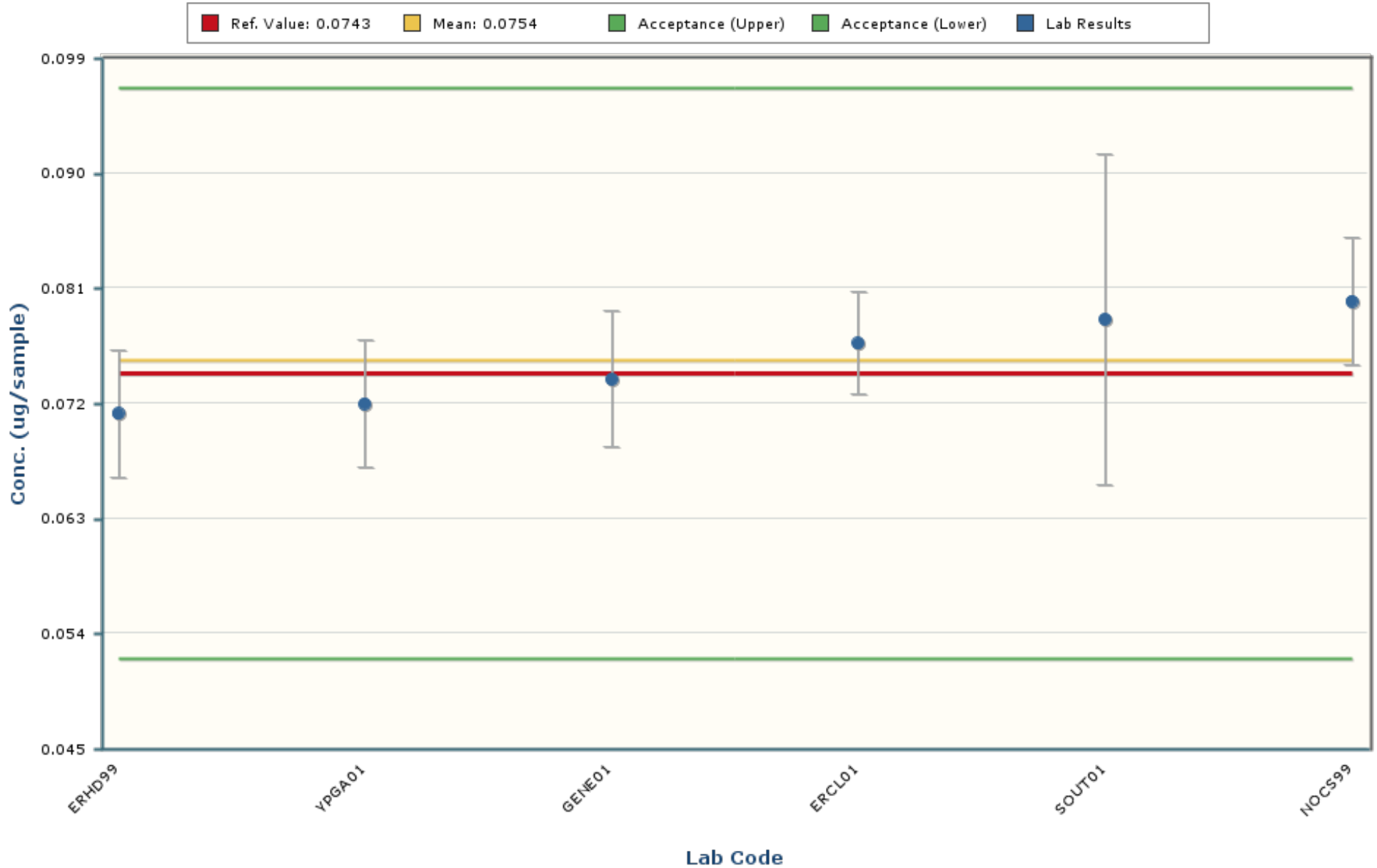
- NOT ACCEPTABLE.....RP < 2%
  - ACCEPTABLE.....2% ≤ RP ≤ 15%
  - ACCEPTABLE WITH WARNING.....15% < RP ≤ 30%
  - NOT ACCEPTABLE.....RP > 30%
- Relative Precision (RP) = (Reported Uncertainty / Reported Result) x 100

**Notes:**

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte

# Uranium-235

## MAPEP-24-RdF50



### Notes:

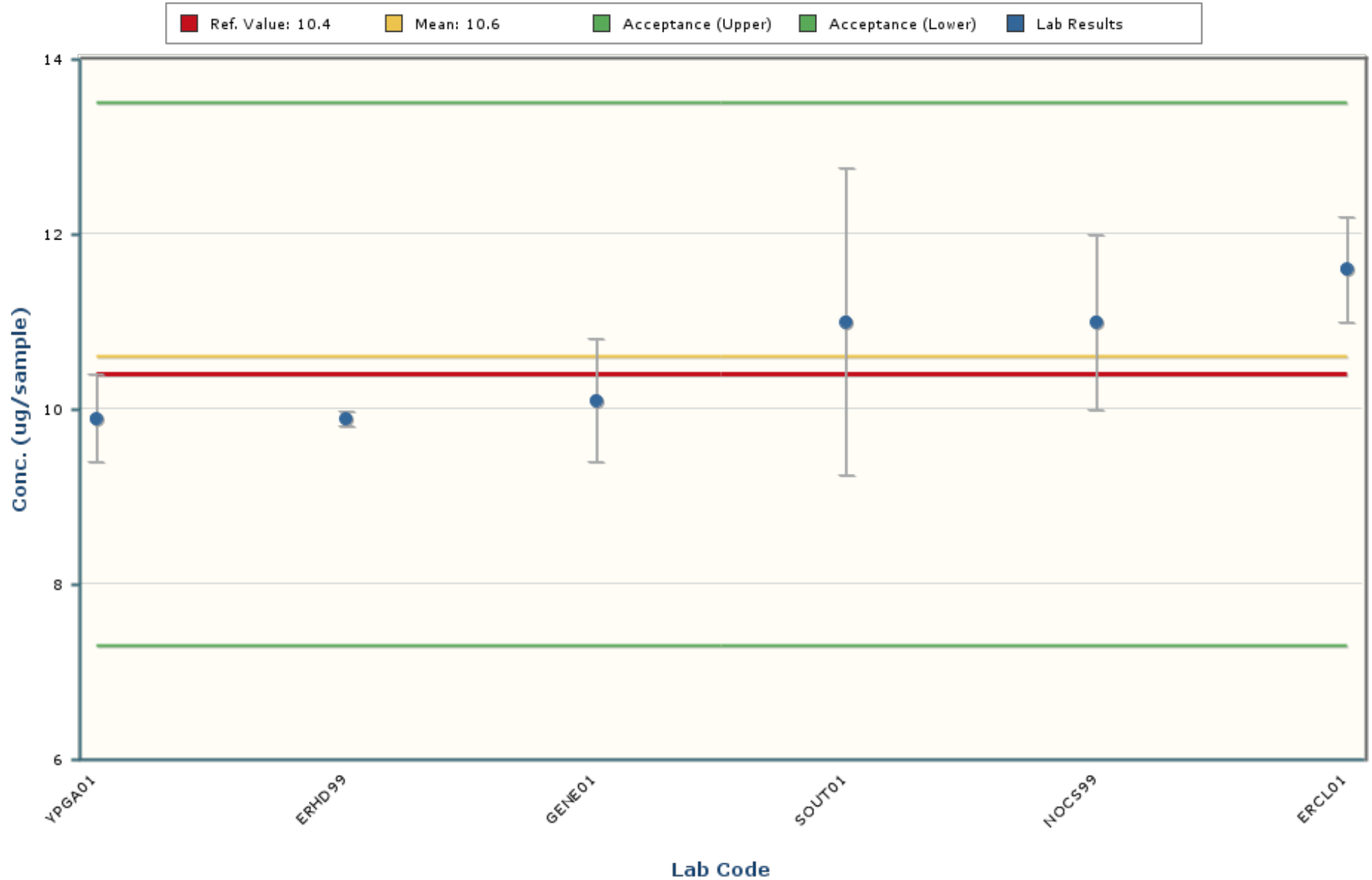
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.0574 and 0.0934 ( $\pm 5$  Standard Deviations).

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

# Uranium-238

## MAPEP-24-RdF50



### Notes:

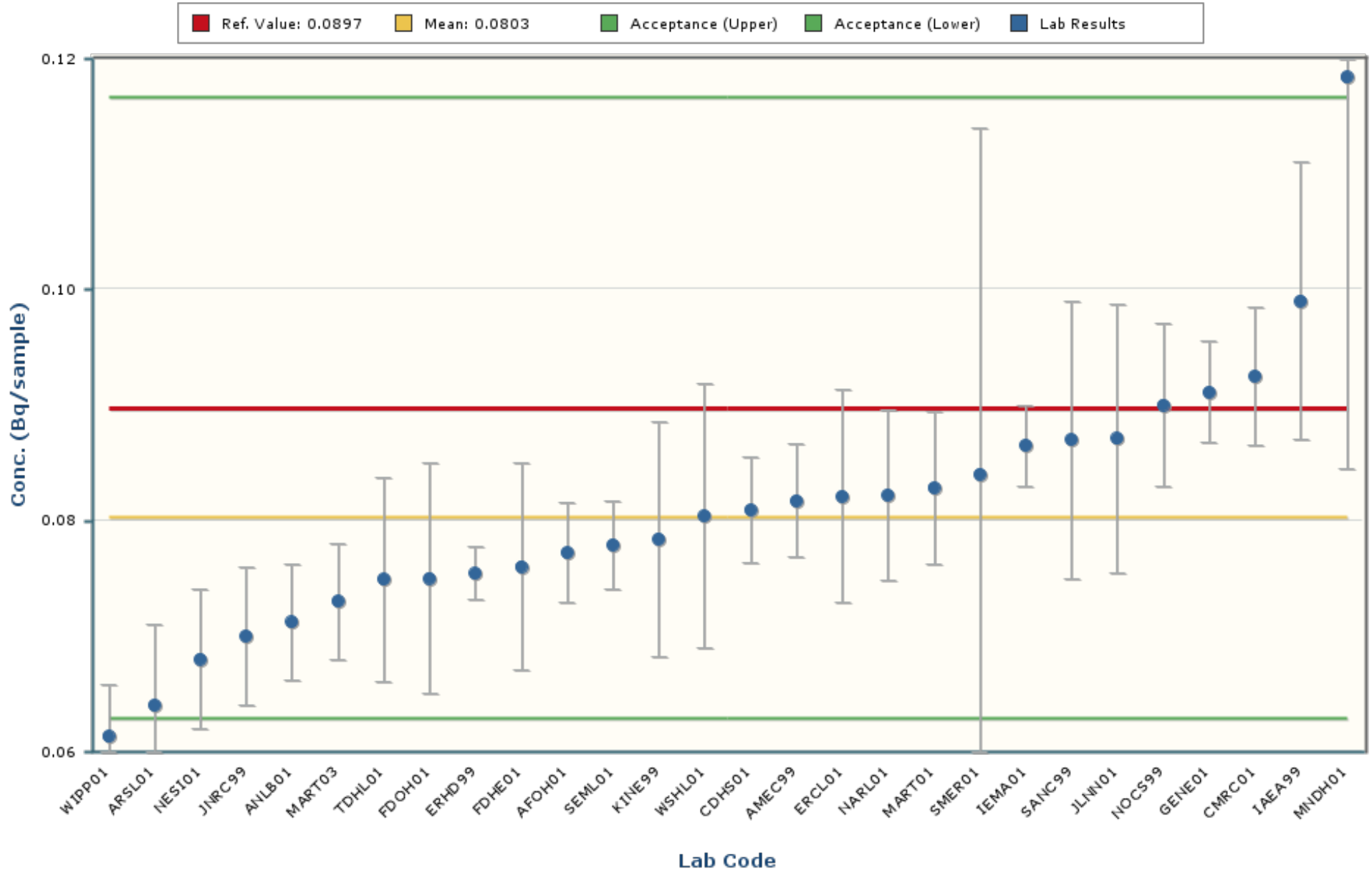
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 7.0 and 14.2 ( $\pm 5$  Standard Deviations).

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

# Americium-241

## MAPEP-24-RdF50



### Notes:

The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

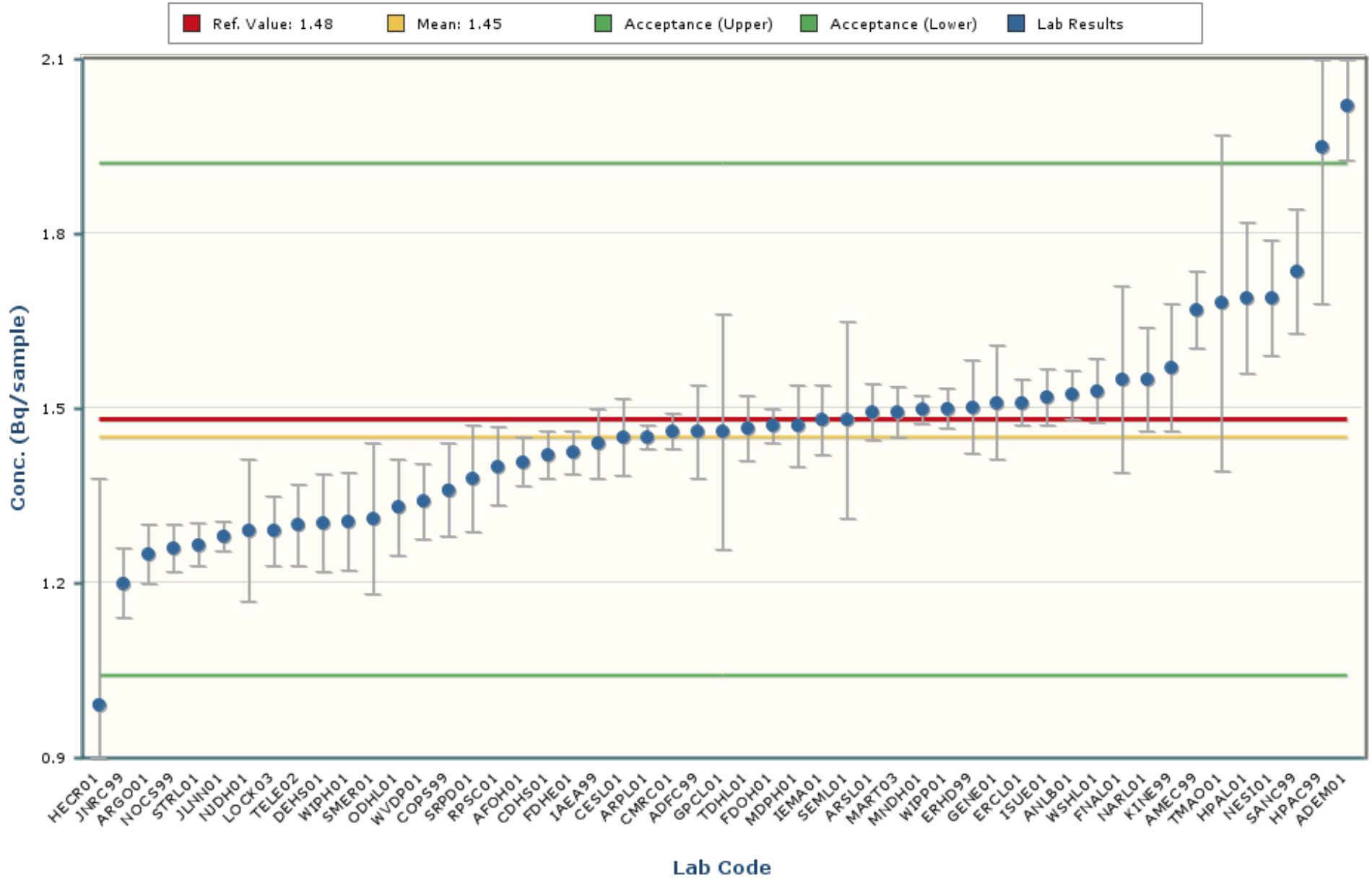
The chart shows only data points with values between 0.0397 and 0.1209 ( $\pm 5$  Standard Deviations).

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



# Cesium-137

## MAPEP-24-RdF50



### Notes:

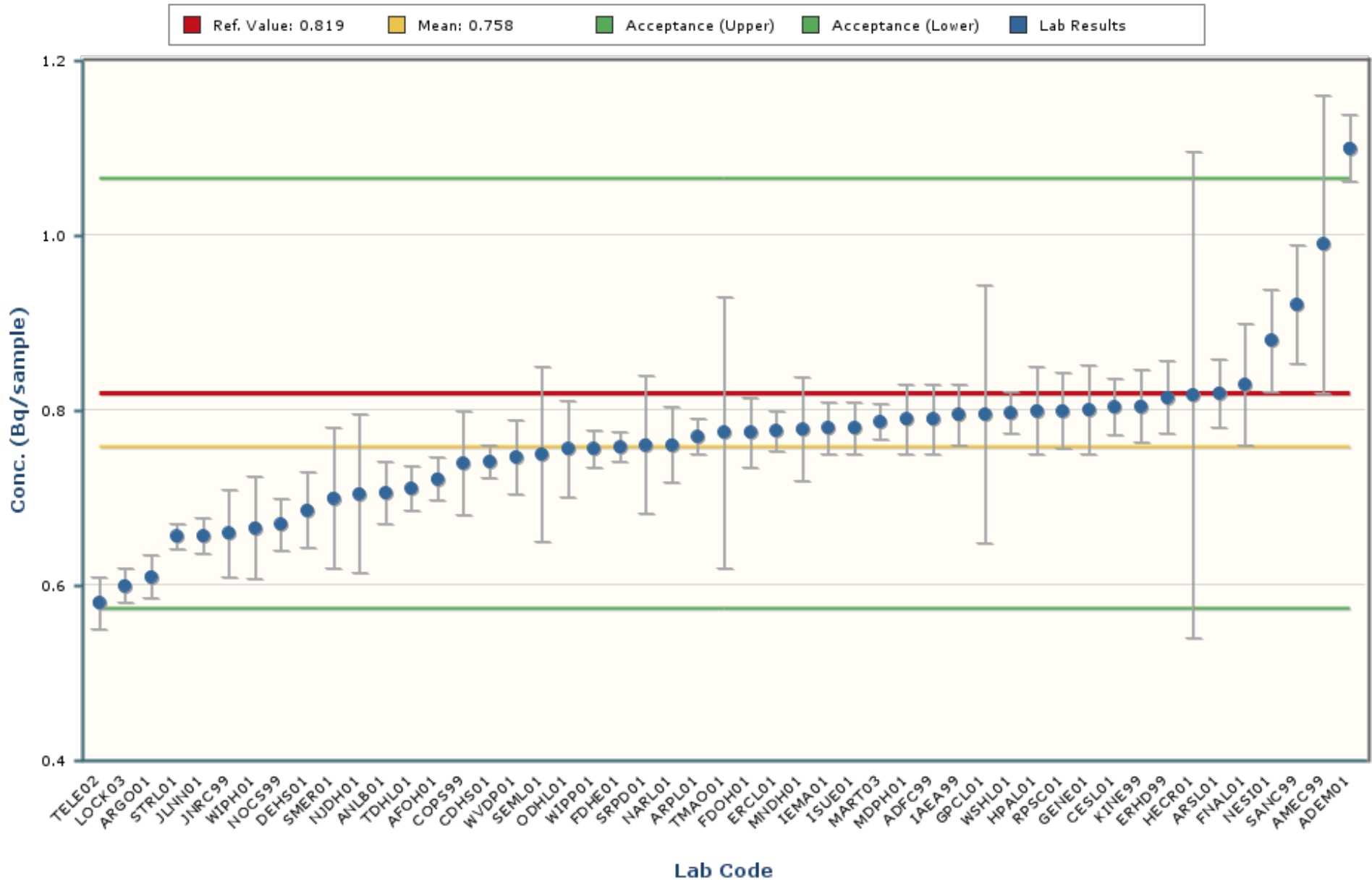
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.81 and 2.08 ( $\pm 5$  Standard Deviations).

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

# Cobalt-57

## MAPEP-24-RdF50



### Notes:

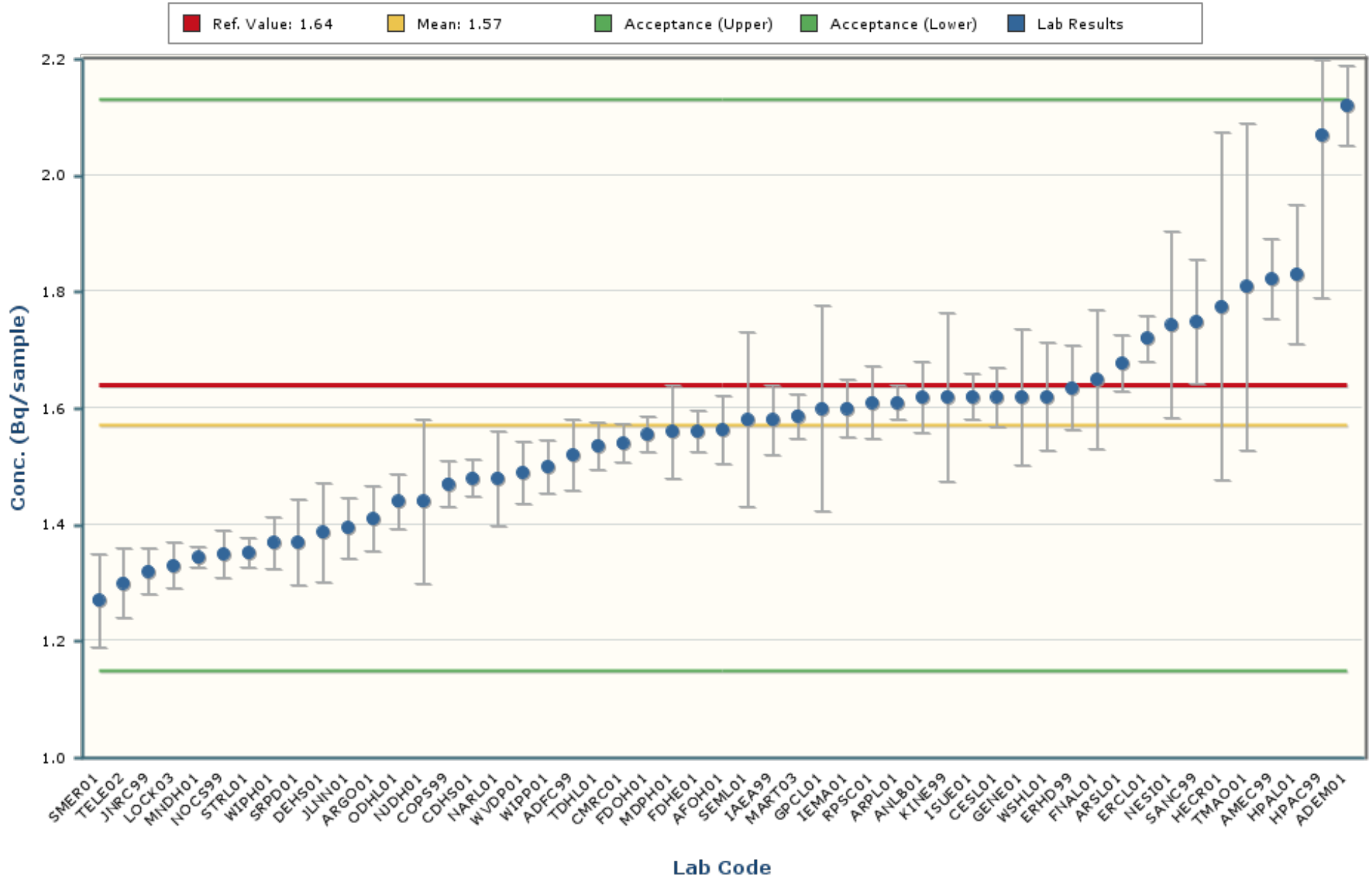
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.376 and 1.140 ( $\pm 5$  Standard Deviations).

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

# Cobalt-60

## MAPEP-24-RdF50



### Notes:

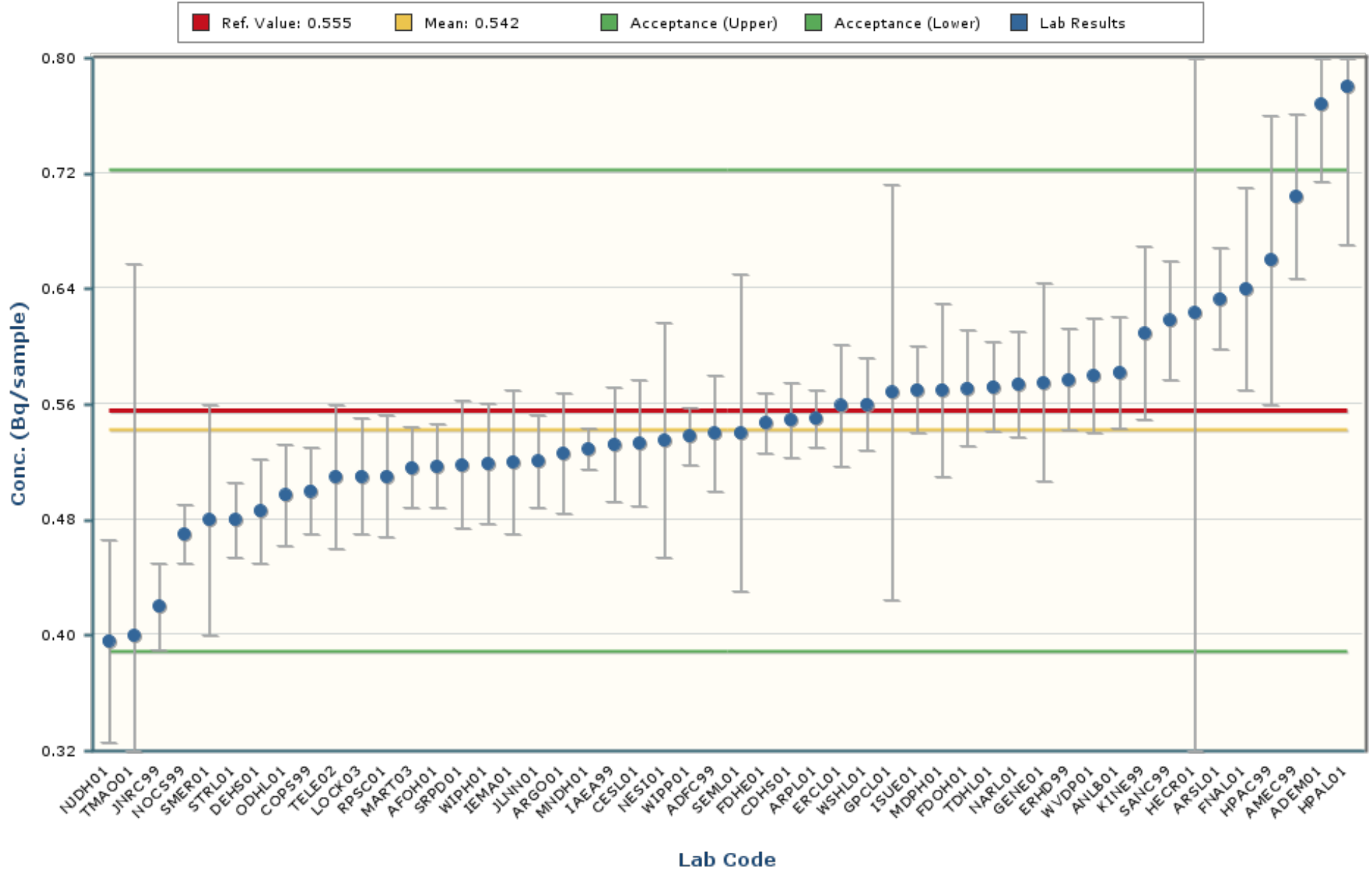
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.67 and 2.46 ( $\pm 5$  Standard Deviations).

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

# Manganese-54

## MAPEP-24-RdF50



### Notes:

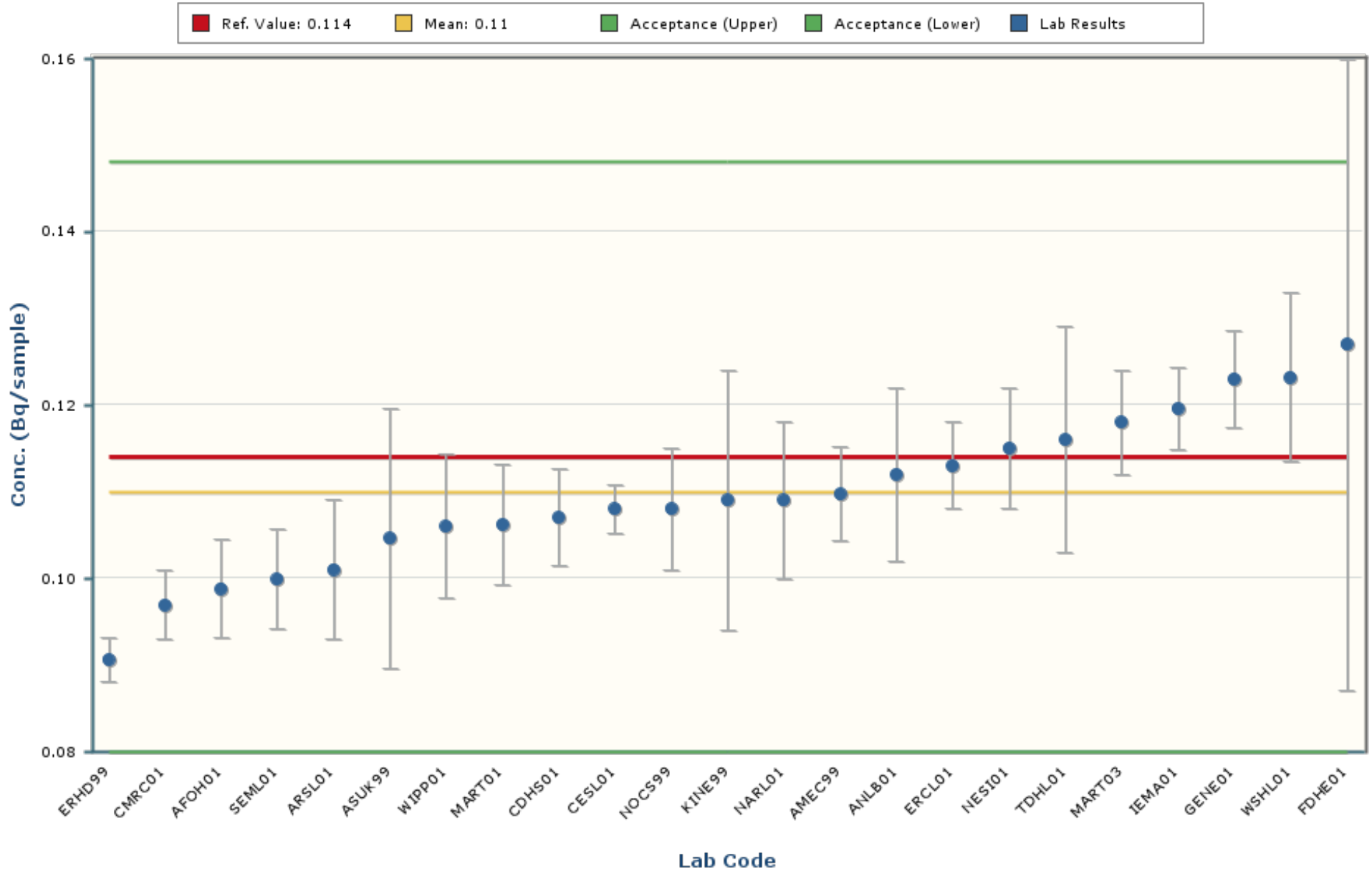
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.242 and 0.843 ( $\pm 5$  Standard Deviations).

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

# Plutonium-238

## MAPEP-24-RdF50



### Notes:

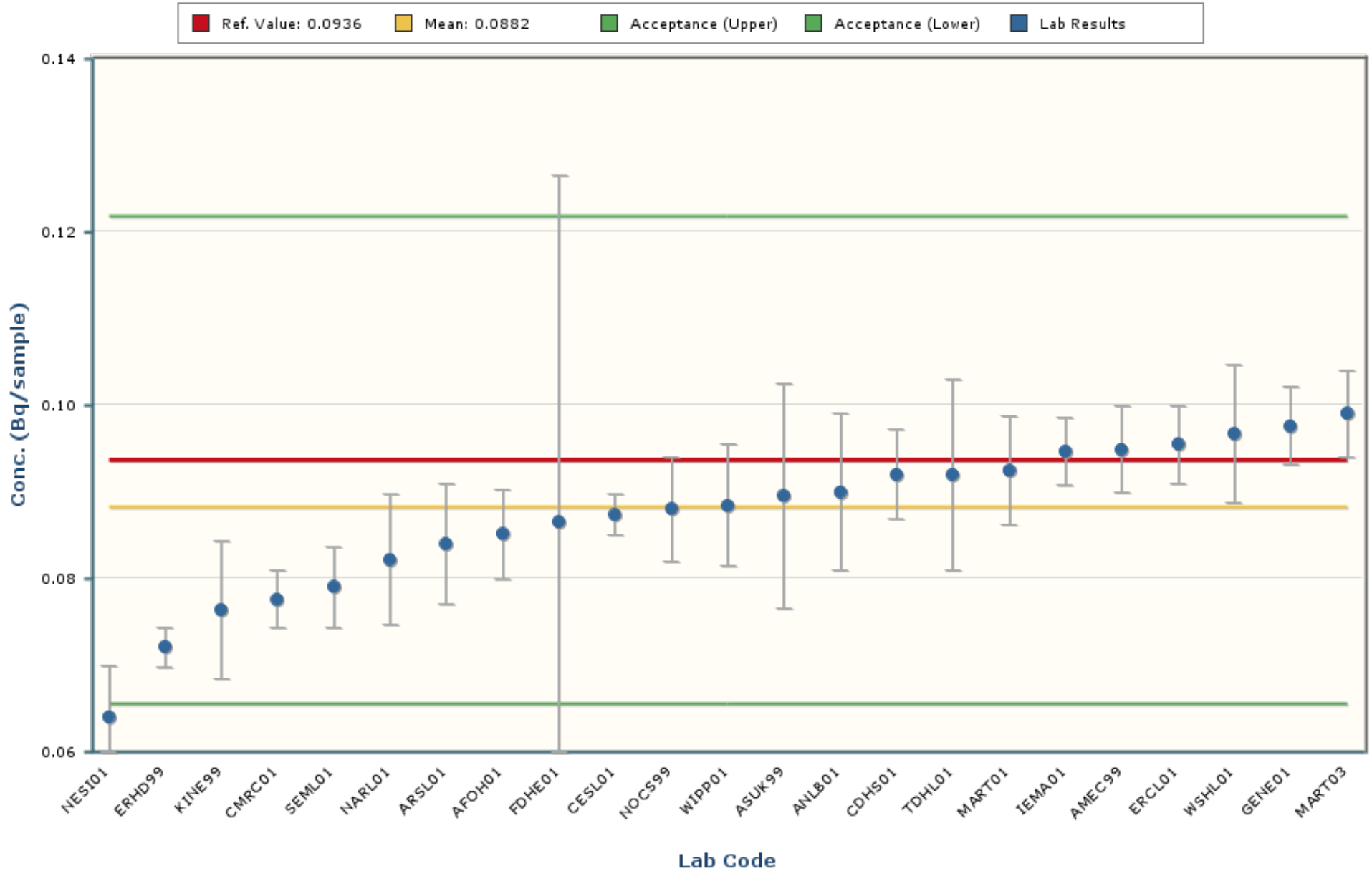
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.064 and 0.155 ( $\pm 5$  Standard Deviations).

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

# Plutonium-239/240

## MAPEP-24-RdF50



### Notes:

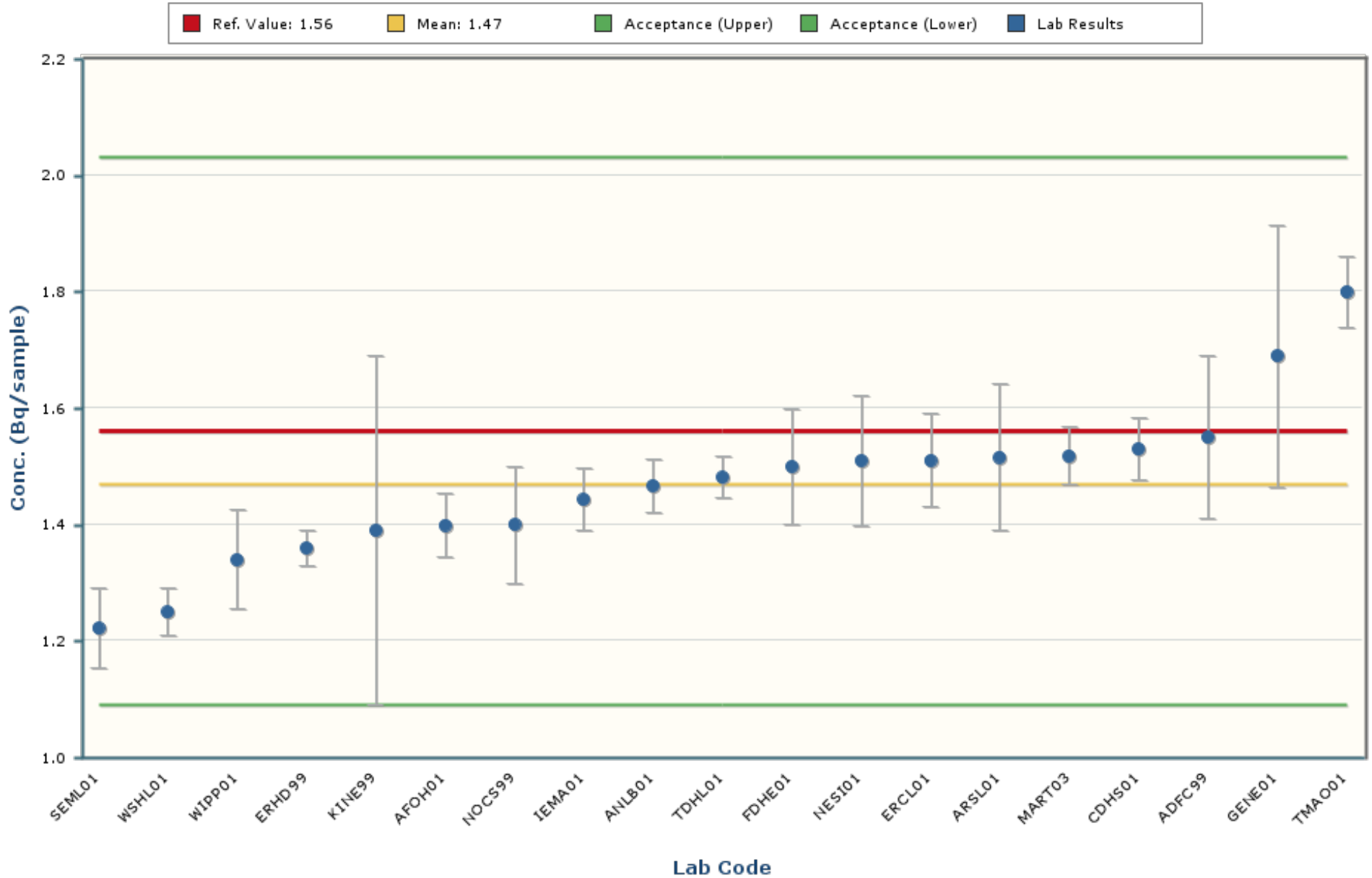
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.0515 and 0.1249 ( $\pm 5$  Standard Deviations).

The error bars encompassing each result are plotted at  $\pm 1$  standard deviation.

# Strontium-90

## MAPEP-24-RdF50



### Notes:

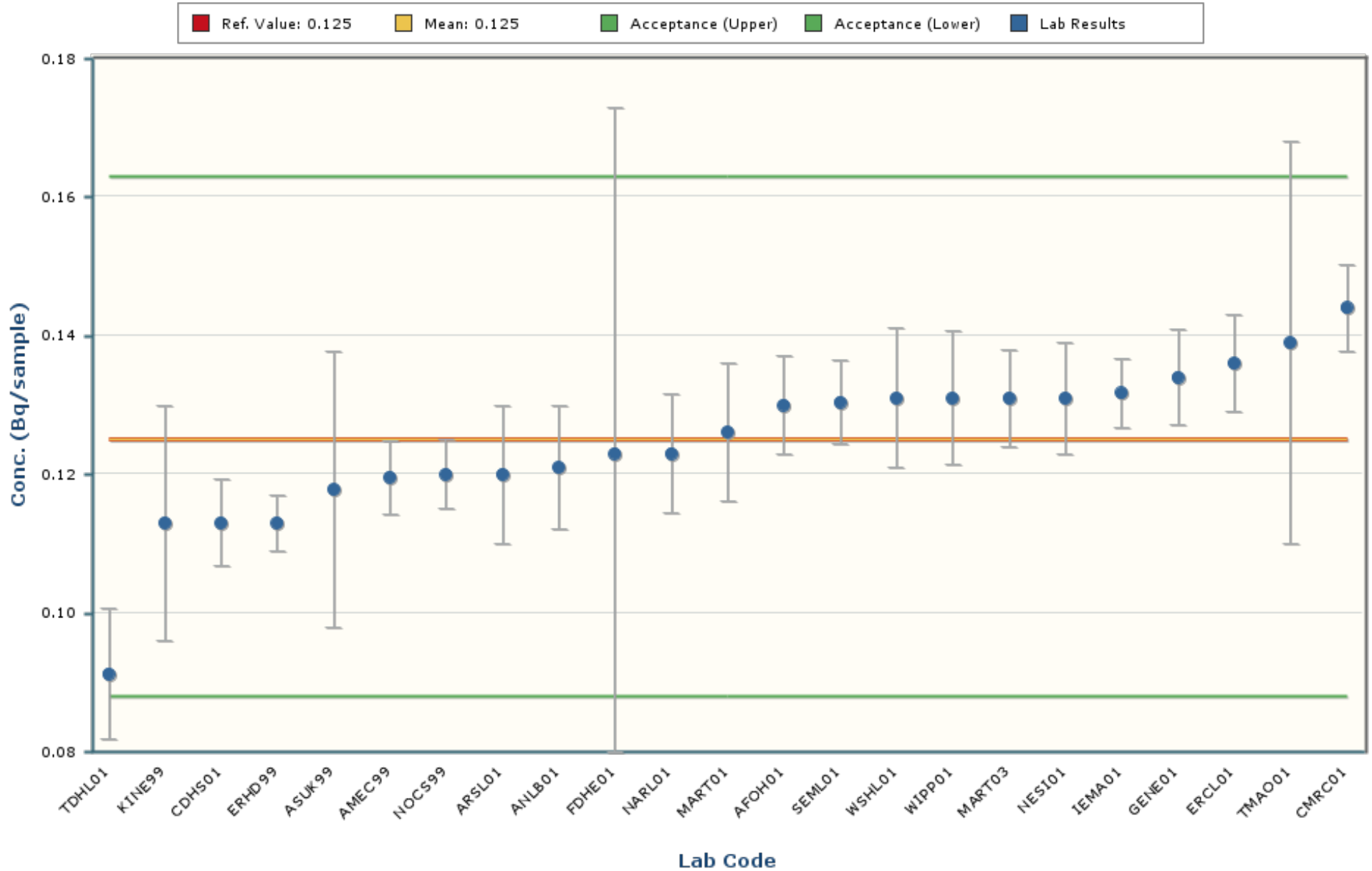
The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.79 and 2.15 ( $\pm 5$  Standard Deviations).

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

# Uranium-234

## MAPEP-24-RdF50



### Notes:

The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

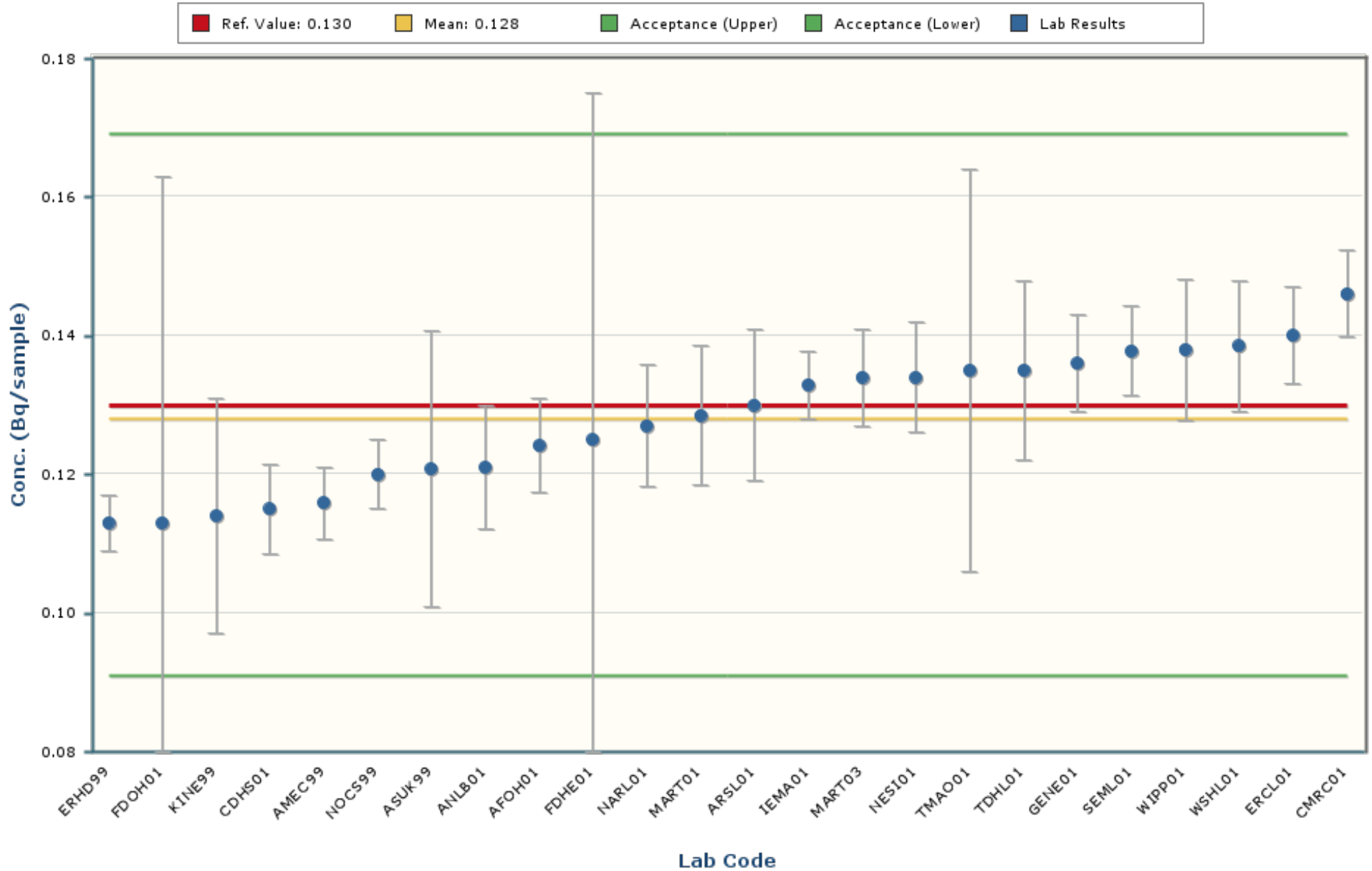
The chart shows only data points with values between 0.069 and 0.180 ( $\pm 5$  Standard Deviations).

The error bars encompassing each result are plotted at  $\pm 1$  standard deviation.



# Uranium-238

## MAPEP-24-RdF50



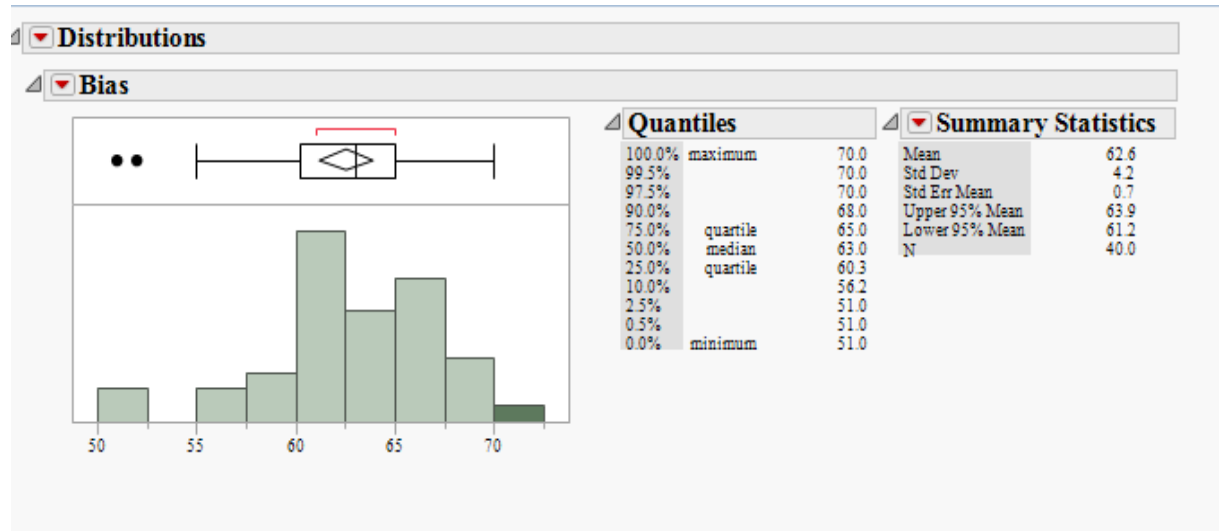
### Notes:

The chart mean excludes values outside of a bias range of  $\pm 30\%$ .

The chart shows only data points with values between 0.079 and 0.177 ( $\pm 5$  Standard Deviations).

The error bars encompassing each result are plotted at  $\pm$  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.

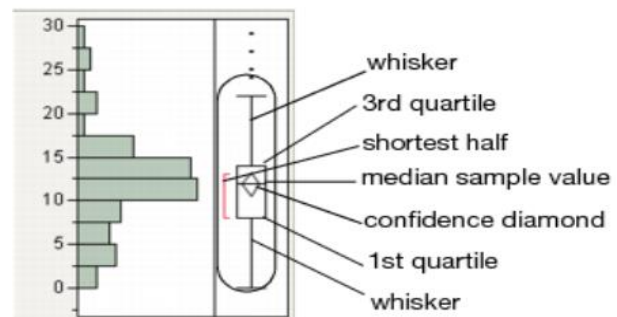


### Outlier Box Plot

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 1<sup>st</sup> and 3<sup>rd</sup> quartile. The difference between the 1<sup>st</sup> and 3<sup>rd</sup> 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)

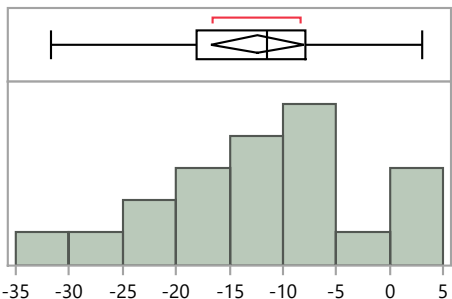


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Americium-241 Alpha Spectrometry**

**Bias**

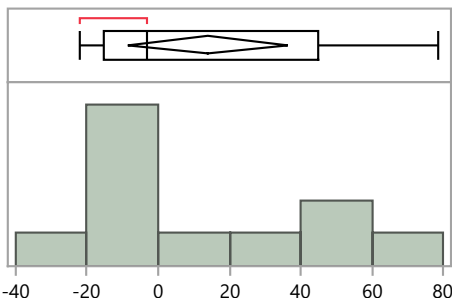


Quantiles		
100.0%	maximum	3.1
99.5%		3.1
97.5%		3.1
90.0%		1.5
75.0%	quartile	-7.9
50.0%	median	-11.5
25.0%	quartile	-18.1
10.0%		-28.3
2.5%		-31.7
0.5%		-31.7
0.0%	minimum	-31.7

Summary Statistics	
Mean	-12.4
Std Dev	9.4
Std Err Mean	2.1
Upper 95% Mean	-8.0
Lower 95% Mean	-16.8
N	20.0

**Distributions Analyte\_Detection=Americium-241 Gamma Spectrometry**

**Bias**

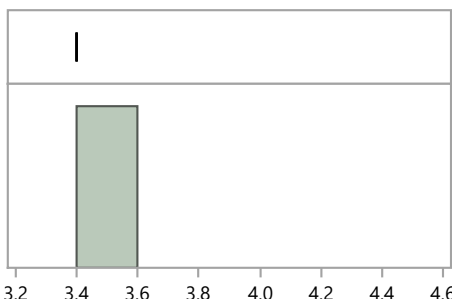


Quantiles		
100.0%	maximum	78.4
99.5%		78.4
97.5%		78.4
90.0%		73.5
75.0%	quartile	44.9
50.0%	median	-2.9
25.0%	quartile	-15.3
10.0%		-20.9
2.5%		-22.0
0.5%		-22.0
0.0%	minimum	-22.0

Summary Statistics	
Mean	14.0
Std Dev	33.3
Std Err Mean	10.0
Upper 95% Mean	36.3
Lower 95% Mean	-8.4
N	11.0

**Distributions Analyte\_Detection=Cesium-137 Alpha Spectrometry**

**Bias**



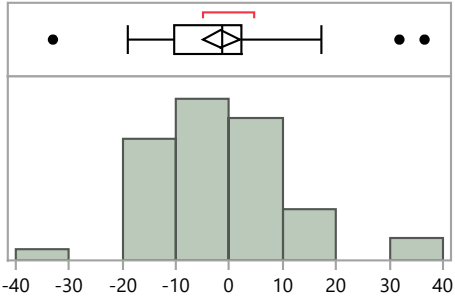
Quantiles		
100.0%	maximum	3.4
99.5%		3.4
97.5%		3.4
90.0%		3.4
75.0%	quartile	3.4
50.0%	median	3.4
25.0%	quartile	3.4
10.0%		3.4
2.5%		3.4
0.5%		3.4
0.0%	minimum	3.4

Summary Statistics	
Mean	3.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Cesium-137 Gamma Spectrometry**

**Bias**



**Quantiles**

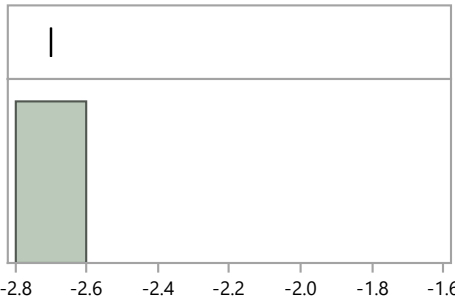
100.0%	maximum	36.5
99.5%		36.5
97.5%		35.2
90.0%		14.1
75.0%	quartile	2.2
50.0%	median	-1.4
25.0%	quartile	-10.5
10.0%		-14.4
2.5%		-29.1
0.5%		-33.0
0.0%	minimum	-33.0

**Summary Statistics**

Mean	-1.6
Std Dev	11.9
Std Err Mean	1.7
Upper 95% Mean	1.8
Lower 95% Mean	-4.9
N	50.0

**Distributions Analyte\_Detection=Cobalt-57 Alpha Spectrometry**

**Bias**



**Quantiles**

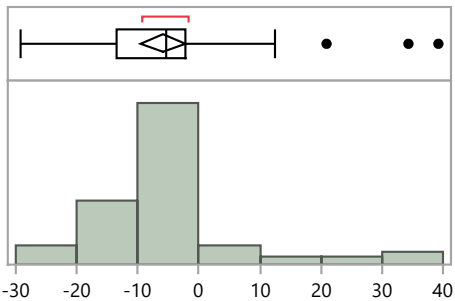
100.0%	maximum	-2.7
99.5%		-2.7
97.5%		-2.7
90.0%		-2.7
75.0%	quartile	-2.7
50.0%	median	-2.7
25.0%	quartile	-2.7
10.0%		-2.7
2.5%		-2.7
0.5%		-2.7
0.0%	minimum	-2.7

**Summary Statistics**

Mean	-2.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Detection=Cobalt-57 Gamma Spectrometry**

**Bias**



**Quantiles**

100.0%	maximum	39.2
99.5%		39.2
97.5%		38.0
90.0%		7.4
75.0%	quartile	-2.3
50.0%	median	-5.4
25.0%	quartile	-13.5
10.0%		-19.8
2.5%		-28.6
0.5%		-29.2
0.0%	minimum	-29.2

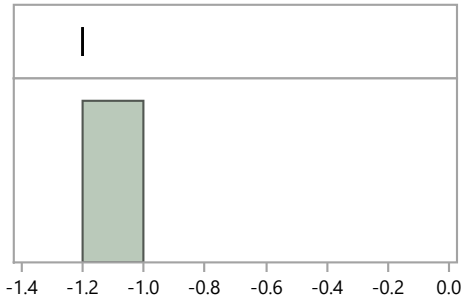
**Summary Statistics**

Mean	-5.8
Std Dev	12.8
Std Err Mean	1.8
Upper 95% Mean	-2.1
Lower 95% Mean	-9.4
N	49.0

**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Cobalt-60 Alpha Spectrometry**

**Bias**



**Quantiles**

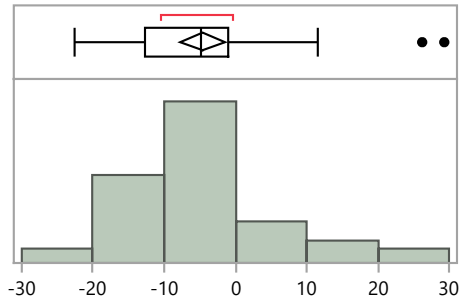
100.0%	maximum	-1.2
99.5%		-1.2
97.5%		-1.2
90.0%		-1.2
75.0%	quartile	-1.2
50.0%	median	-1.2
25.0%	quartile	-1.2
10.0%		-1.2
2.5%		-1.2
0.5%		-1.2
0.0%	minimum	-1.2

**Summary Statistics**

Mean	-1.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Detection=Cobalt-60 Gamma Spectrometry**

**Bias**



**Quantiles**

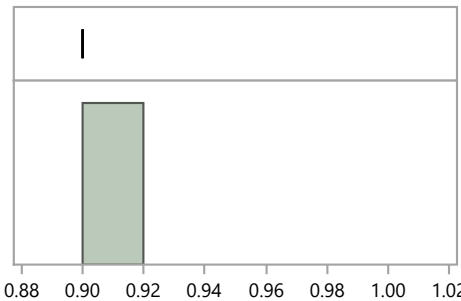
100.0%	maximum	29.3
99.5%		29.3
97.5%		28.4
90.0%		10.1
75.0%	quartile	-1.0
50.0%	median	-4.8
25.0%	quartile	-12.7
10.0%		-18.1
2.5%		-22.1
0.5%		-22.6
0.0%	minimum	-22.6

**Summary Statistics**

Mean	-4.6
Std Dev	11.0
Std Err Mean	1.5
Upper 95% Mean	-1.5
Lower 95% Mean	-7.8
N	50.0

**Distributions Analyte\_Detection=Manganese-54 Alpha Spectrometry**

**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

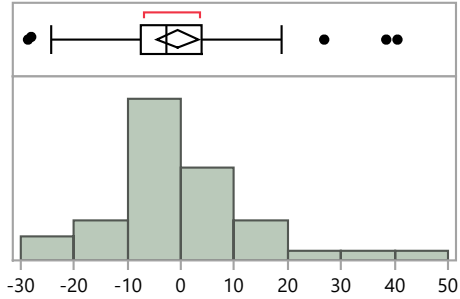
**Summary Statistics**

Mean	0.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Manganese-54 Gamma Spectrometry**

**Bias**



**Quantiles**

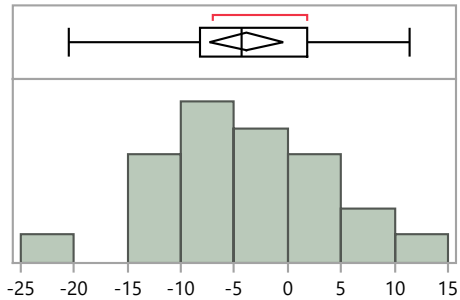
100.0%	maximum	40.5
99.5%		40.5
97.5%		40.0
90.0%		15.3
75.0%	quartile	3.8
50.0%	median	-2.7
25.0%	quartile	-7.6
10.0%		-13.5
2.5%		-28.5
0.5%		-28.6
0.0%	minimum	-28.6

**Summary Statistics**

Mean	-0.6
Std Dev	13.6
Std Err Mean	1.9
Upper 95% Mean	3.3
Lower 95% Mean	-4.5
N	49.0

**Distributions Analyte\_Detection=Plutonium-238 Alpha Spectrometry**

**Bias**



**Quantiles**

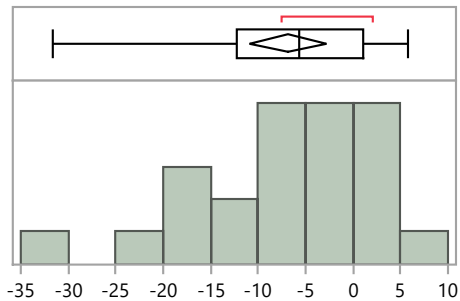
100.0%	maximum	11.4
99.5%		11.4
97.5%		11.4
90.0%		8.0
75.0%	quartile	1.8
50.0%	median	-4.4
25.0%	quartile	-8.2
10.0%		-14.3
2.5%		-20.5
0.5%		-20.5
0.0%	minimum	-20.5

**Summary Statistics**

Mean	-3.8
Std Dev	7.9
Std Err Mean	1.7
Upper 95% Mean	-0.4
Lower 95% Mean	-7.3
N	23.0

**Distributions Analyte\_Detection=Plutonium-239/240 Alpha Spectrometry**

**Bias**



**Quantiles**

100.0%	maximum	5.8
99.5%		5.8
97.5%		5.8
90.0%		3.9
75.0%	quartile	1.1
50.0%	median	-5.6
25.0%	quartile	-12.2
10.0%		-21.2
2.5%		-31.6
0.5%		-31.6
0.0%	minimum	-31.6

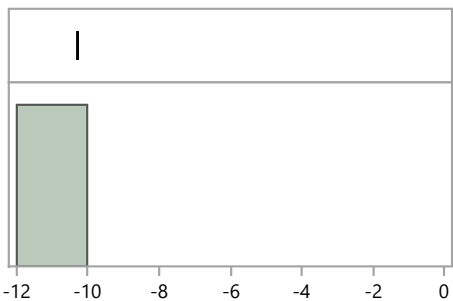
**Summary Statistics**

Mean	-6.9
Std Dev	9.4
Std Err Mean	2.0
Upper 95% Mean	-2.8
Lower 95% Mean	-10.9
N	23.0

**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Strontium-90 Alpha Spectrometry**

**Bias**



**Quantiles**

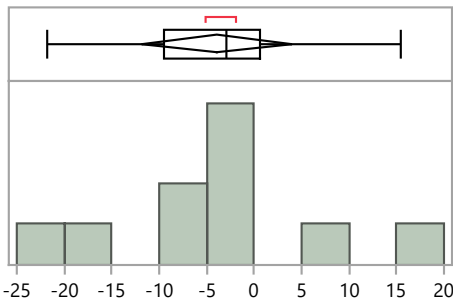
100.0%	maximum	-10.3
99.5%		-10.3
97.5%		-10.3
90.0%		-10.3
75.0%	quartile	-10.3
50.0%	median	-10.3
25.0%	quartile	-10.3
10.0%		-10.3
2.5%		-10.3
0.5%		-10.3
0.0%	minimum	-10.3

**Summary Statistics**

Mean	-10.3
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**

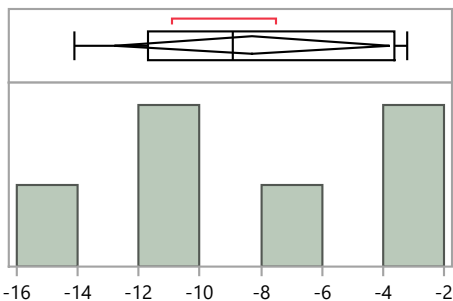
100.0%	maximum	15.4
99.5%		15.4
97.5%		15.4
90.0%		14.7
75.0%	quartile	0.7
50.0%	median	-3.0
25.0%	quartile	-9.5
10.0%		-21.5
2.5%		-21.7
0.5%		-21.7
0.0%	minimum	-21.7

**Summary Statistics**

Mean	-4.0
Std Dev	11.1
Std Err Mean	3.5
Upper 95% Mean	4.0
Lower 95% Mean	-11.9
N	10.0

**Distributions Analyte\_Detection=Strontium-90 Gross Alpha/Beta - 2 pi gas flow proportional counter**

**Bias**



**Quantiles**

100.0%	maximum	-3.2
99.5%		-3.2
97.5%		-3.2
90.0%		-3.2
75.0%	quartile	-3.7
50.0%	median	-8.9
25.0%	quartile	-11.7
10.0%		-14.1
2.5%		-14.1
0.5%		-14.1
0.0%	minimum	-14.1

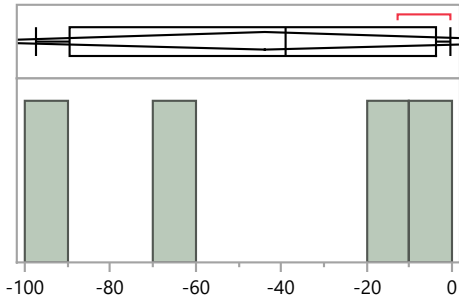
**Summary Statistics**

Mean	-8.3
Std Dev	4.3
Std Err Mean	1.7
Upper 95% Mean	-3.8
Lower 95% Mean	-12.8
N	6.0

**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Strontium-90 Liquid Scintillation Counter**

**Bias**



**Quantiles**

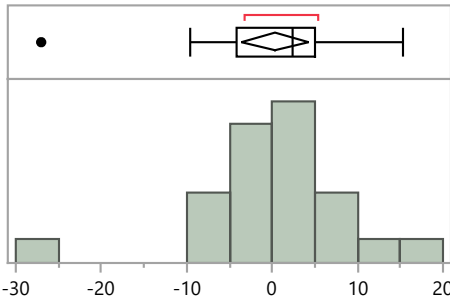
100.0%	maximum	-0.6
99.5%		-0.6
97.5%		-0.6
90.0%		-0.6
75.0%	quartile	-3.7
50.0%	median	-38.9
25.0%	quartile	-89.4
10.0%		-97.5
2.5%		-97.5
0.5%		-97.5
0.0%	minimum	-97.5

**Summary Statistics**

Mean	-44.0
Std Dev	45.3
Std Err Mean	22.6
Upper 95% Mean	28.1
Lower 95% Mean	-116.0
N	4.0

**Distributions Analyte\_Detection=Uranium-234 Alpha Spectrometry**

**Bias**



**Quantiles**

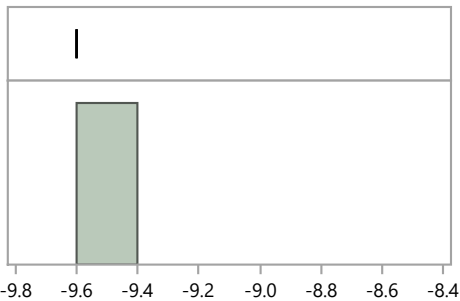
100.0%	maximum	15.2
99.5%		15.2
97.5%		15.2
90.0%		10.5
75.0%	quartile	5.0
50.0%	median	2.5
25.0%	quartile	-4.1
10.0%		-9.6
2.5%		-27.0
0.5%		-27.0
0.0%	minimum	-27.0

**Summary Statistics**

Mean	0.3
Std Dev	8.9
Std Err Mean	1.9
Upper 95% Mean	4.2
Lower 95% Mean	-3.7
N	22.0

**Distributions Analyte\_Detection=Uranium-234 Inductively Coupled Plasma Mass Spectrometry**

**Bias**



**Quantiles**

100.0%	maximum	-9.6
99.5%		-9.6
97.5%		-9.6
90.0%		-9.6
75.0%	quartile	-9.6
50.0%	median	-9.6
25.0%	quartile	-9.6
10.0%		-9.6
2.5%		-9.6
0.5%		-9.6
0.0%	minimum	-9.6

**Summary Statistics**

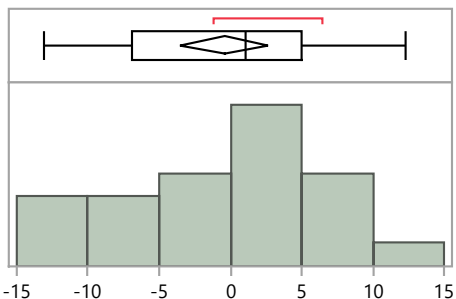
Mean	-9.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0



**RdF50 Distribution by Detection Method**

**Distributions Analyte\_Detection=Uranium-238 Alpha Spectrometry**

**Bias**



**Quantiles**

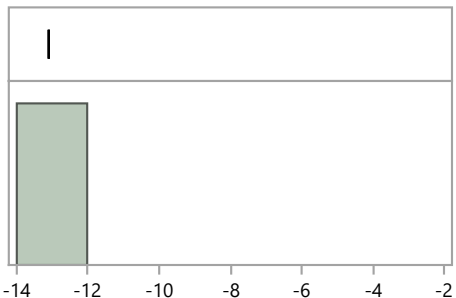
100.0%	maximum	12.3
99.5%		12.3
97.5%		12.3
90.0%		7.3
75.0%	quartile	5.0
50.0%	median	1.1
25.0%	quartile	-7.0
10.0%		-11.3
2.5%		-13.1
0.5%		-13.1
0.0%	minimum	-13.1

**Summary Statistics**

Mean	-0.4
Std Dev	7.0
Std Err Mean	1.5
Upper 95% Mean	2.6
Lower 95% Mean	-3.5
N	22.0

**Distributions Analyte\_Detection=Uranium-238 Gamma Spectrometry**

**Bias**



**Quantiles**

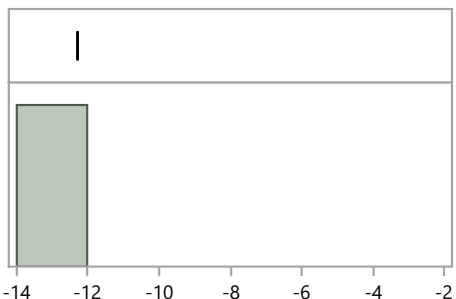
100.0%	maximum	-13.1
99.5%		-13.1
97.5%		-13.1
90.0%		-13.1
75.0%	quartile	-13.1
50.0%	median	-13.1
25.0%	quartile	-13.1
10.0%		-13.1
2.5%		-13.1
0.5%		-13.1
0.0%	minimum	-13.1

**Summary Statistics**

Mean	-13.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Detection=Uranium-238 Inductively Coupled Plasma Mass Spectrometry**

**Bias**



**Quantiles**

100.0%	maximum	-12.3
99.5%		-12.3
97.5%		-12.3
90.0%		-12.3
75.0%	quartile	-12.3
50.0%	median	-12.3
25.0%	quartile	-12.3
10.0%		-12.3
2.5%		-12.3
0.5%		-12.3
0.0%	minimum	-12.3

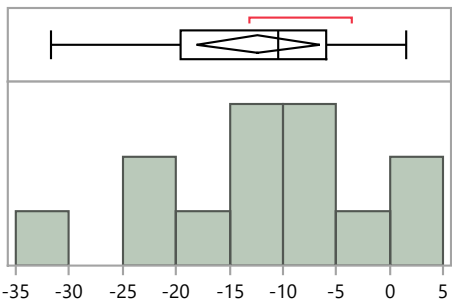
**Summary Statistics**

Mean	-12.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Americium-241 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

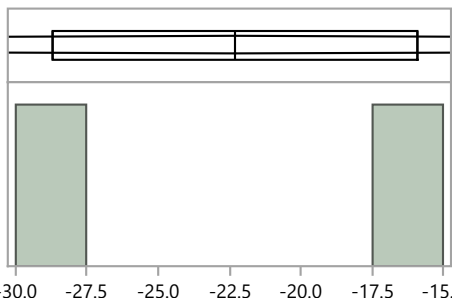
100.0%	maximum	1.6
99.5%		1.6
97.5%		1.6
90.0%		1.1
75.0%	quartile	-6.0
50.0%	median	-10.4
25.0%	quartile	-19.6
10.0%		-28.7
2.5%		-31.7
0.5%		-31.7
0.0%	minimum	-31.7

**Summary Statistics**

Mean	-12.3
Std Dev	9.5
Std Err Mean	2.6
Upper 95% Mean	-6.6
Lower 95% Mean	-18.1
N	13.0

**Distributions Analyte\_Method=Americium-241 Acid leaching without hydrofluoric acid**

**Bias**



**Quantiles**

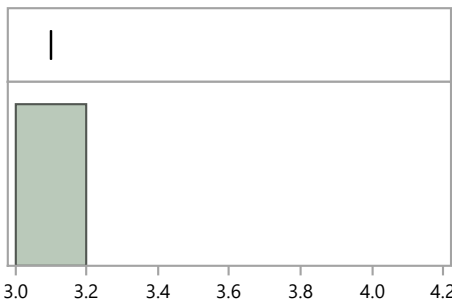
100.0%	maximum	-15.9
99.5%		-15.9
97.5%		-15.9
90.0%		-15.9
75.0%	quartile	-15.9
50.0%	median	-22.3
25.0%	quartile	-28.7
10.0%		-28.7
2.5%		-28.7
0.5%		-28.7
0.0%	minimum	-28.7

**Summary Statistics**

Mean	-22.3
Std Dev	9.1
Std Err Mean	6.4
Upper 95% Mean	59.0
Lower 95% Mean	-103.6
N	2.0

**Distributions Analyte\_Method=Americium-241 Coprecipitation, acidified**

**Bias**



**Quantiles**

100.0%	maximum	3.1
99.5%		3.1
97.5%		3.1
90.0%		3.1
75.0%	quartile	3.1
50.0%	median	3.1
25.0%	quartile	3.1
10.0%		3.1
2.5%		3.1
0.5%		3.1
0.0%	minimum	3.1

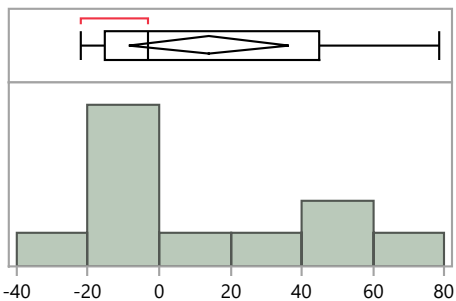
**Summary Statistics**

Mean	3.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Americium-241 No preparation - analyzed as received**

**Bias**



**Quantiles**

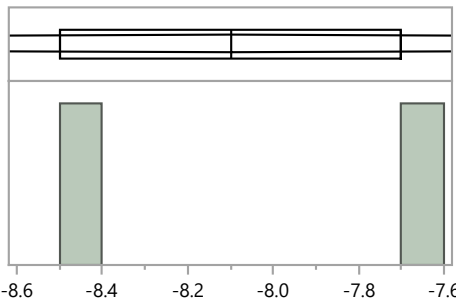
100.0%	maximum	78.4
99.5%		78.4
97.5%		78.4
90.0%		73.5
75.0%	quartile	44.9
50.0%	median	-2.9
25.0%	quartile	-15.3
10.0%		-20.9
2.5%		-22.0
0.5%		-22.0
0.0%	minimum	-22.0

**Summary Statistics**

Mean	14.0
Std Dev	33.3
Std Err Mean	10.0
Upper 95% Mean	36.3
Lower 95% Mean	-8.4
N	11.0

**Distributions Analyte\_Method=Americium-241 Other**

**Bias**



**Quantiles**

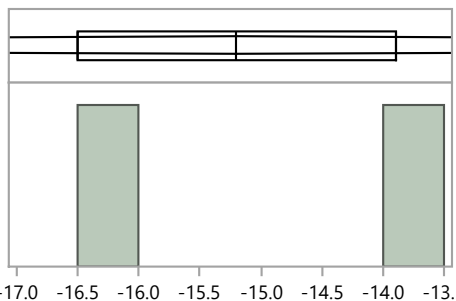
100.0%	maximum	-7.7
99.5%		-7.7
97.5%		-7.7
90.0%		-7.7
75.0%	quartile	-7.7
50.0%	median	-8.1
25.0%	quartile	-8.5
10.0%		-8.5
2.5%		-8.5
0.5%		-8.5
0.0%	minimum	-8.5

**Summary Statistics**

Mean	-8.1
Std Dev	0.6
Std Err Mean	0.4
Upper 95% Mean	-3.0
Lower 95% Mean	-13.2
N	2.0

**Distributions Analyte\_Method=Americium-241 Total dissolution by fusion**

**Bias**



**Quantiles**

100.0%	maximum	-13.9
99.5%		-13.9
97.5%		-13.9
90.0%		-13.9
75.0%	quartile	-13.9
50.0%	median	-15.2
25.0%	quartile	-16.5
10.0%		-16.5
2.5%		-16.5
0.5%		-16.5
0.0%	minimum	-16.5

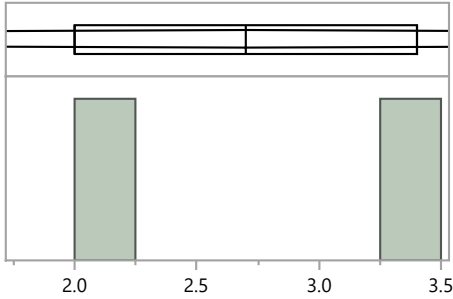
**Summary Statistics**

Mean	-15.2
Std Dev	1.8
Std Err Mean	1.3
Upper 95% Mean	1.3
Lower 95% Mean	-31.7
N	2.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Cesium-137 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

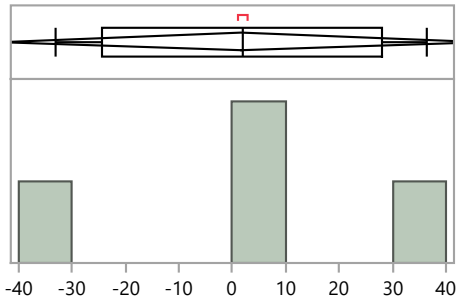
100.0%	maximum	3.4
99.5%		3.4
97.5%		3.4
90.0%		3.4
75.0%	quartile	3.4
50.0%	median	2.7
25.0%	quartile	2.0
10.0%		2.0
2.5%		2.0
0.5%		2.0
0.0%	minimum	2.0

**Summary Statistics**

Mean	2.7
Std Dev	1.0
Std Err Mean	0.7
Upper 95% Mean	11.6
Lower 95% Mean	-6.2
N	2.0

**Distributions Analyte\_Method=Cesium-137 EPA 901.1, Gamma Emitting, 600/4-80-032**

**Bias**



**Quantiles**

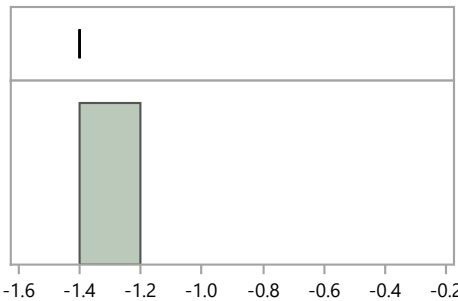
100.0%	maximum	36.5
99.5%		36.5
97.5%		36.5
90.0%		36.5
75.0%	quartile	28.1
50.0%	median	1.8
25.0%	quartile	-24.5
10.0%		-33.0
2.5%		-33.0
0.5%		-33.0
0.0%	minimum	-33.0

**Summary Statistics**

Mean	1.8
Std Dev	28.4
Std Err Mean	14.2
Upper 95% Mean	46.9
Lower 95% Mean	-43.4
N	4.0

**Distributions Analyte\_Method=Cesium-137 Evaporation, acidified**

**Bias**



**Quantiles**

100.0%	maximum	-1.4
99.5%		-1.4
97.5%		-1.4
90.0%		-1.4
75.0%	quartile	-1.4
50.0%	median	-1.4
25.0%	quartile	-1.4
10.0%		-1.4
2.5%		-1.4
0.5%		-1.4
0.0%	minimum	-1.4

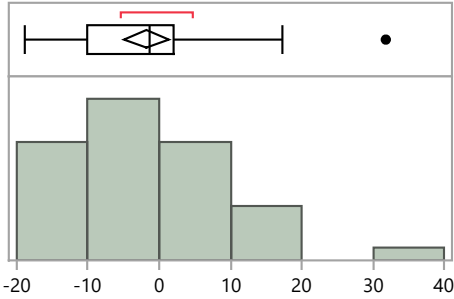
**Summary Statistics**

Mean	-1.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Cesium-137 No preparation - analyzed as received**

**Bias**



**Quantiles**

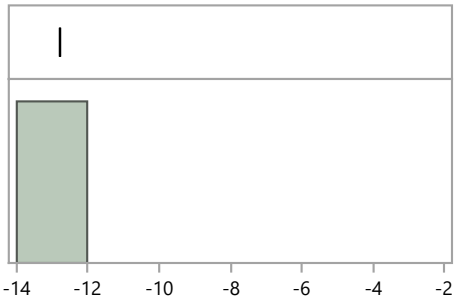
100.0%	maximum	31.8
99.5%		31.8
97.5%		30.3
90.0%		14.0
75.0%	quartile	2.0
50.0%	median	-1.4
25.0%	quartile	-10.1
10.0%		-14.1
2.5%		-18.6
0.5%		-18.9
0.0%	minimum	-18.9

**Summary Statistics**

Mean	-1.7
Std Dev	10.2
Std Err Mean	1.6
Upper 95% Mean	1.5
Lower 95% Mean	-4.8
N	43.0

**Distributions Analyte\_Method=Cesium-137 Other**

**Bias**



**Quantiles**

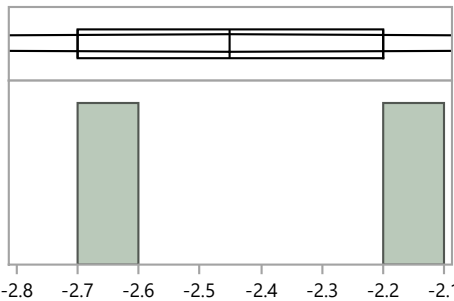
100.0%	maximum	-12.8
99.5%		-12.8
97.5%		-12.8
90.0%		-12.8
75.0%	quartile	-12.8
50.0%	median	-12.8
25.0%	quartile	-12.8
10.0%		-12.8
2.5%		-12.8
0.5%		-12.8
0.0%	minimum	-12.8

**Summary Statistics**

Mean	-12.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Method=Cobalt-57 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

100.0%	maximum	-2.2
99.5%		-2.2
97.5%		-2.2
90.0%		-2.2
75.0%	quartile	-2.2
50.0%	median	-2.5
25.0%	quartile	-2.7
10.0%		-2.7
2.5%		-2.7
0.5%		-2.7
0.0%	minimum	-2.7

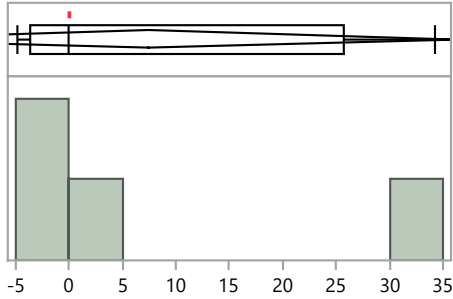
**Summary Statistics**

Mean	-2.5
Std Dev	0.4
Std Err Mean	0.3
Upper 95% Mean	0.7
Lower 95% Mean	-5.6
N	2.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Cobalt-57 EPA 901.1, Gamma Emitting, 600/4-80-032**

**Bias**



**Quantiles**

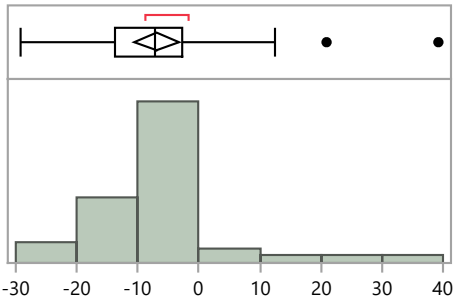
100.0%	maximum	34.3
99.5%		34.3
97.5%		34.3
90.0%		34.3
75.0%	quartile	25.8
50.0%	median	0.0
25.0%	quartile	-3.6
10.0%		-4.8
2.5%		-4.8
0.5%		-4.8
0.0%	minimum	-4.8

**Summary Statistics**

Mean	7.4
Std Dev	18.1
Std Err Mean	9.0
Upper 95% Mean	36.2
Lower 95% Mean	-21.4
N	4.0

**Distributions Analyte\_Method=Cobalt-57 No preparation - analyzed as received**

**Bias**



**Quantiles**

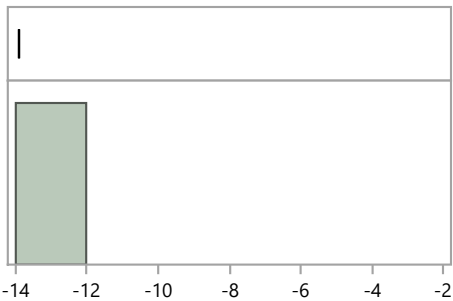
100.0%	maximum	39.2
99.5%		39.2
97.5%		37.4
90.0%		5.0
75.0%	quartile	-2.8
50.0%	median	-7.1
25.0%	quartile	-13.8
10.0%		-19.9
2.5%		-29.0
0.5%		-29.2
0.0%	minimum	-29.2

**Summary Statistics**

Mean	-6.9
Std Dev	12.0
Std Err Mean	1.8
Upper 95% Mean	-3.2
Lower 95% Mean	-10.6
N	43.0

**Distributions Analyte\_Method=Cobalt-57 Other**

**Bias**



**Quantiles**

100.0%	maximum	-13.9
99.5%		-13.9
97.5%		-13.9
90.0%		-13.9
75.0%	quartile	-13.9
50.0%	median	-13.9
25.0%	quartile	-13.9
10.0%		-13.9
2.5%		-13.9
0.5%		-13.9
0.0%	minimum	-13.9

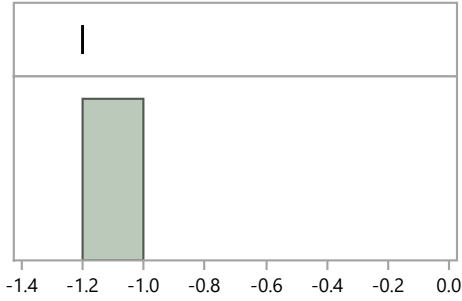
**Summary Statistics**

Mean	-13.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Cobalt-60 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

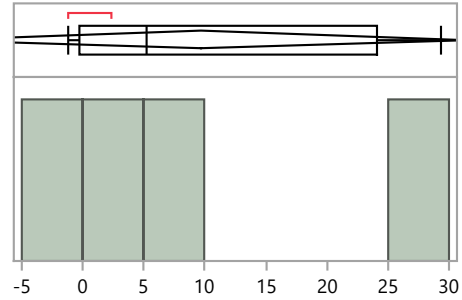
100.0%	maximum	-1.2
99.5%		-1.2
97.5%		-1.2
90.0%		-1.2
75.0%	quartile	-1.2
50.0%	median	-1.2
25.0%	quartile	-1.2
10.0%		-1.2
2.5%		-1.2
0.5%		-1.2
0.0%	minimum	-1.2

**Summary Statistics**

Mean	-1.2
Std Dev	0.0
Std Err Mean	0.0
Upper 95% Mean	-1.2
Lower 95% Mean	-1.2
N	2.0

**Distributions Analyte\_Method=Cobalt-60 EPA 901.1, Gamma Emitting, 600/4-80-032**

**Bias**



**Quantiles**

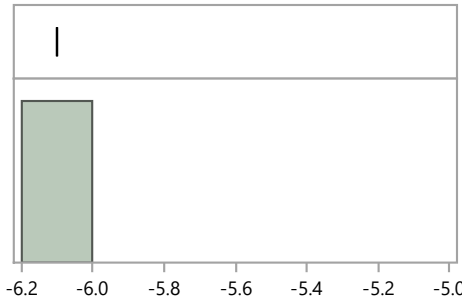
100.0%	maximum	29.3
99.5%		29.3
97.5%		29.3
90.0%		29.3
75.0%	quartile	24.0
50.0%	median	5.3
25.0%	quartile	-0.3
10.0%		-1.2
2.5%		-1.2
0.5%		-1.2
0.0%	minimum	-1.2

**Summary Statistics**

Mean	9.7
Std Dev	13.7
Std Err Mean	6.8
Upper 95% Mean	31.4
Lower 95% Mean	-12.1
N	4.0

**Distributions Analyte\_Method=Cobalt-60 Evaporation, acidified**

**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

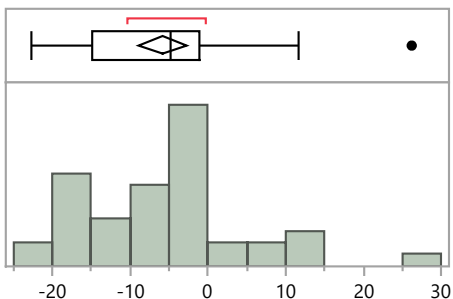
**Summary Statistics**

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

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Cobalt-60 No preparation - analyzed as received**

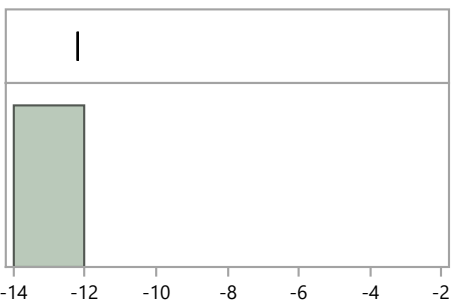
**Bias**



Quantiles			Summary Statistics	
100.0%	maximum	26.2	Mean	-5.8
99.5%		26.2	Std Dev	10.2
97.5%		24.7	Std Err Mean	1.6
90.0%		8.8	Upper 95% Mean	-2.7
75.0%	quartile	-1.2	Lower 95% Mean	-9.0
50.0%	median	-4.9	N	43.0
25.0%	quartile	-14.9		
10.0%		-18.6		
2.5%		-22.4		
0.5%		-22.6		
0.0%	minimum	-22.6		

**Distributions Analyte\_Method=Cobalt-60 Other**

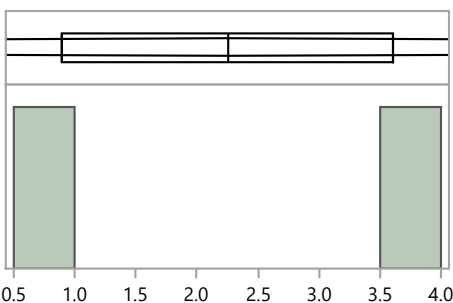
**Bias**



Quantiles			Summary Statistics	
100.0%	maximum	-12.2	Mean	-12.2
99.5%		-12.2	Std Dev	.
97.5%		-12.2	Std Err Mean	.
90.0%		-12.2	Upper 95% Mean	.
75.0%	quartile	-12.2	Lower 95% Mean	.
50.0%	median	-12.2	N	1.0
25.0%	quartile	-12.2		
10.0%		-12.2		
2.5%		-12.2		
0.5%		-12.2		
0.0%	minimum	-12.2		

**Distributions Analyte\_Method=Manganese-54 Acid dissolution with hydrofluoric acid**

**Bias**



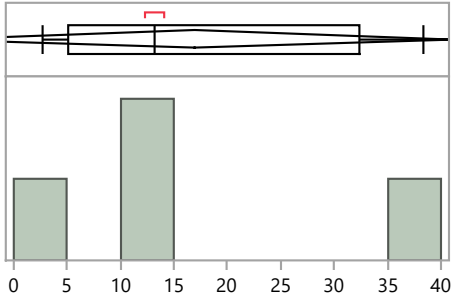
Quantiles			Summary Statistics	
100.0%	maximum	3.6	Mean	2.3
99.5%		3.6	Std Dev	1.9
97.5%		3.6	Std Err Mean	1.4
90.0%		3.6	Upper 95% Mean	19.4
75.0%	quartile	3.6	Lower 95% Mean	-14.9
50.0%	median	2.3	N	2.0
25.0%	quartile	0.9		
10.0%		0.9		
2.5%		0.9		
0.5%		0.9		
0.0%	minimum	0.9		



**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Manganese-54 EPA 901.1, Gamma Emitting, 600/4-80-032**

**Bias**



**Quantiles**

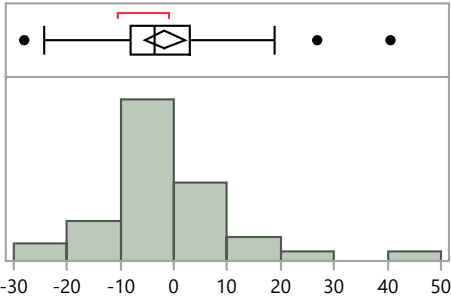
100.0%	maximum	38.4
99.5%		38.4
97.5%		38.4
90.0%		38.4
75.0%	quartile	32.3
50.0%	median	13.2
25.0%	quartile	5.1
10.0%		2.7
2.5%		2.7
0.5%		2.7
0.0%	minimum	2.7

**Summary Statistics**

Mean	16.9
Std Dev	15.2
Std Err Mean	7.6
Upper 95% Mean	41.1
Lower 95% Mean	-7.3
N	4.0

**Distributions Analyte\_Method=Manganese-54 No preparation - analyzed as received**

**Bias**



**Quantiles**

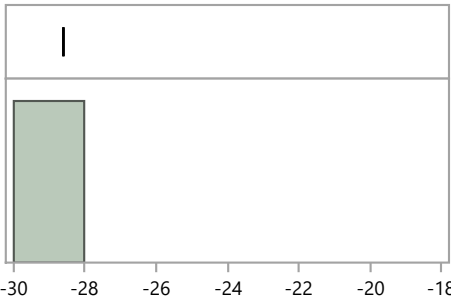
100.0%	maximum	40.5
99.5%		40.5
97.5%		39.1
90.0%		13.7
75.0%	quartile	3.1
50.0%	median	-3.6
25.0%	quartile	-8.1
10.0%		-13.5
2.5%		-27.6
0.5%		-28.0
0.0%	minimum	-28.0

**Summary Statistics**

Mean	-1.7
Std Dev	12.0
Std Err Mean	1.8
Upper 95% Mean	2.0
Lower 95% Mean	-5.4
N	43.0

**Distributions Analyte\_Method=Manganese-54 Other**

**Bias**



**Quantiles**

100.0%	maximum	-28.6
99.5%		-28.6
97.5%		-28.6
90.0%		-28.6
75.0%	quartile	-28.6
50.0%	median	-28.6
25.0%	quartile	-28.6
10.0%		-28.6
2.5%		-28.6
0.5%		-28.6
0.0%	minimum	-28.6

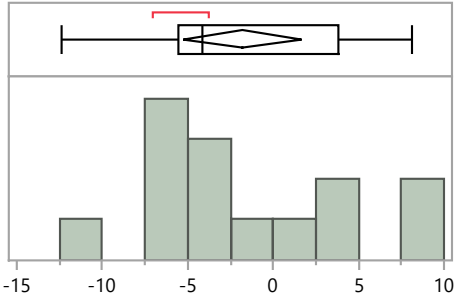
**Summary Statistics**

Mean	-28.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Plutonium-238 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

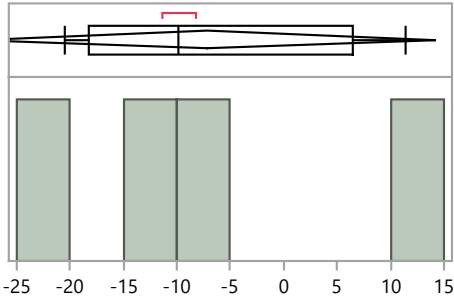
100.0%	maximum	8.1
99.5%		8.1
97.5%		8.1
90.0%		8.0
75.0%	quartile	3.9
50.0%	median	-4.1
25.0%	quartile	-5.5
10.0%		-9.7
2.5%		-12.4
0.5%		-12.4
0.0%	minimum	-12.4

**Summary Statistics**

Mean	-1.8
Std Dev	6.0
Std Err Mean	1.6
Upper 95% Mean	1.7
Lower 95% Mean	-5.3
N	14.0

**Distributions Analyte\_Method=Plutonium-238 Acid leaching without hydrofluoric acid**

**Bias**



**Quantiles**

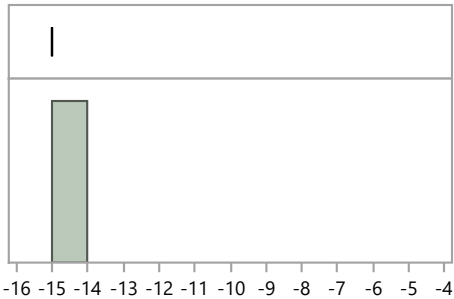
100.0%	maximum	11.4
99.5%		11.4
97.5%		11.4
90.0%		11.4
75.0%	quartile	6.5
50.0%	median	-9.8
25.0%	quartile	-18.2
10.0%		-20.5
2.5%		-20.5
0.5%		-20.5
0.0%	minimum	-20.5

**Summary Statistics**

Mean	-7.2
Std Dev	13.4
Std Err Mean	6.7
Upper 95% Mean	14.2
Lower 95% Mean	-28.6
N	4.0

**Distributions Analyte\_Method=Plutonium-238 Coprecipitation, acidified**

**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

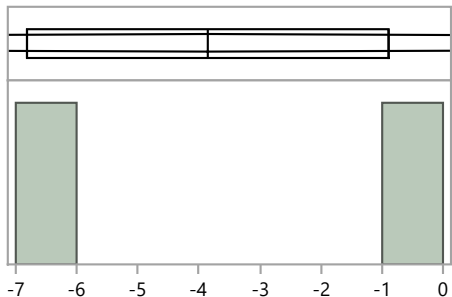
**Summary Statistics**

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

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Plutonium-238 Other**

**Bias**



**Quantiles**

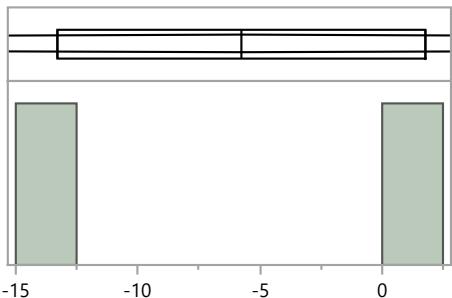
100.0%	maximum	-0.9
99.5%		-0.9
97.5%		-0.9
90.0%		-0.9
75.0%	quartile	-0.9
50.0%	median	-3.9
25.0%	quartile	-6.8
10.0%		-6.8
2.5%		-6.8
0.5%		-6.8
0.0%	minimum	-6.8

**Summary Statistics**

Mean	-3.9
Std Dev	4.2
Std Err Mean	3.0
Upper 95% Mean	33.6
Lower 95% Mean	-41.3
N	2.0

**Distributions Analyte\_Method=Plutonium-238 Total dissolution by fusion**

**Bias**



**Quantiles**

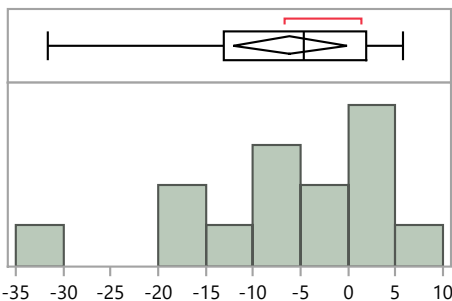
100.0%	maximum	1.8
99.5%		1.8
97.5%		1.8
90.0%		1.8
75.0%	quartile	1.8
50.0%	median	-5.8
25.0%	quartile	-13.3
10.0%		-13.3
2.5%		-13.3
0.5%		-13.3
0.0%	minimum	-13.3

**Summary Statistics**

Mean	-5.8
Std Dev	10.7
Std Err Mean	7.6
Upper 95% Mean	90.2
Lower 95% Mean	-101.7
N	2.0

**Distributions Analyte\_Method=Plutonium-239/240 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

100.0%	maximum	5.8
99.5%		5.8
97.5%		5.8
90.0%		5.1
75.0%	quartile	1.9
50.0%	median	-4.7
25.0%	quartile	-13.1
10.0%		-25.0
2.5%		-31.6
0.5%		-31.6
0.0%	minimum	-31.6

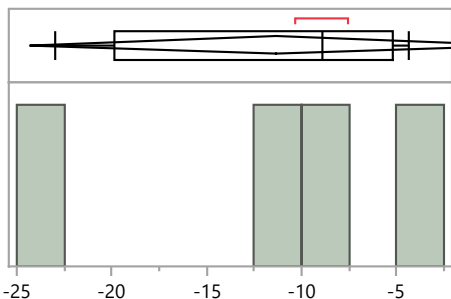
**Summary Statistics**

Mean	-6.1
Std Dev	10.4
Std Err Mean	2.8
Upper 95% Mean	-0.1
Lower 95% Mean	-12.1
N	14.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Plutonium-239/240 Acid leaching without hydrofluoric acid**

**Bias**



**Quantiles**

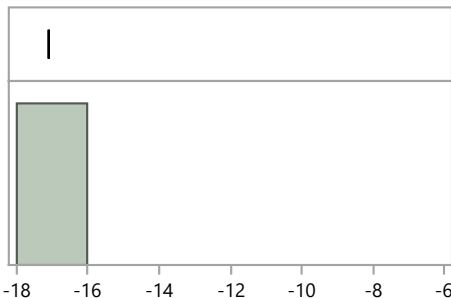
100.0%	maximum	-4.4
99.5%		-4.4
97.5%		-4.4
90.0%		-4.4
75.0%	quartile	-5.2
50.0%	median	-9.0
25.0%	quartile	-19.8
10.0%		-23.0
2.5%		-23.0
0.5%		-23.0
0.0%	minimum	-23.0

**Summary Statistics**

Mean	-11.3
Std Dev	8.1
Std Err Mean	4.1
Upper 95% Mean	1.6
Lower 95% Mean	-24.3
N	4.0

**Distributions Analyte\_Method=Plutonium-239/240 Coprecipitation, acidified**

**Bias**



**Quantiles**

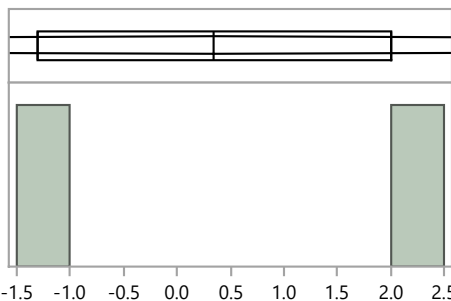
100.0%	maximum	-17.1
99.5%		-17.1
97.5%		-17.1
90.0%		-17.1
75.0%	quartile	-17.1
50.0%	median	-17.1
25.0%	quartile	-17.1
10.0%		-17.1
2.5%		-17.1
0.5%		-17.1
0.0%	minimum	-17.1

**Summary Statistics**

Mean	-17.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Method=Plutonium-239/240 Other**

**Bias**



**Quantiles**

100.0%	maximum	2.0
99.5%		2.0
97.5%		2.0
90.0%		2.0
75.0%	quartile	2.0
50.0%	median	0.4
25.0%	quartile	-1.3
10.0%		-1.3
2.5%		-1.3
0.5%		-1.3
0.0%	minimum	-1.3

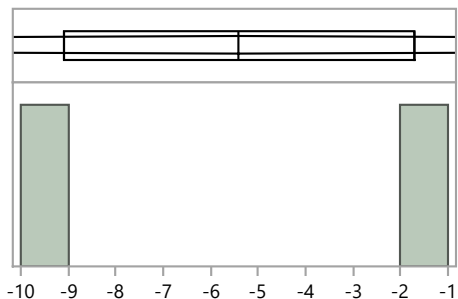
**Summary Statistics**

Mean	0.4
Std Dev	2.3
Std Err Mean	1.7
Upper 95% Mean	21.3
Lower 95% Mean	-20.6
N	2.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Plutonium-239/240 Total dissolution by fusion**

**Bias**



**Quantiles**

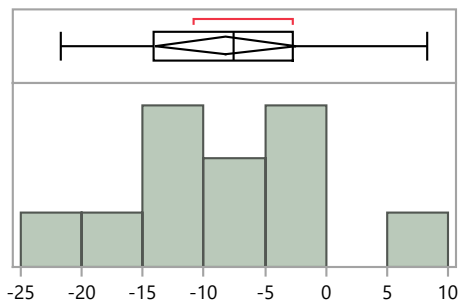
100.0%	maximum	-1.7
99.5%		-1.7
97.5%		-1.7
90.0%		-1.7
75.0%	quartile	-1.7
50.0%	median	-5.4
25.0%	quartile	-9.1
10.0%		-9.1
2.5%		-9.1
0.5%		-9.1
0.0%	minimum	-9.1

**Summary Statistics**

Mean	-5.4
Std Dev	5.2
Std Err Mean	3.7
Upper 95% Mean	41.6
Lower 95% Mean	-52.4
N	2.0

**Distributions Analyte\_Method=Strontium-90 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

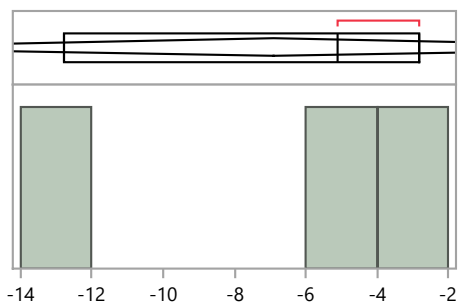
100.0%	maximum	8.3
99.5%		8.3
97.5%		8.3
90.0%		6.3
75.0%	quartile	-2.7
50.0%	median	-7.5
25.0%	quartile	-14.1
10.0%		-21.3
2.5%		-21.7
0.5%		-21.7
0.0%	minimum	-21.7

**Summary Statistics**

Mean	-8.2
Std Dev	8.6
Std Err Mean	2.6
Upper 95% Mean	-2.4
Lower 95% Mean	-13.9
N	11.0

**Distributions Analyte\_Method=Strontium-90 Acid leaching without hydrofluoric acid**

**Bias**



**Quantiles**

100.0%	maximum	-2.8
99.5%		-2.8
97.5%		-2.8
90.0%		-2.8
75.0%	quartile	-2.8
50.0%	median	-5.1
25.0%	quartile	-12.8
10.0%		-12.8
2.5%		-12.8
0.5%		-12.8
0.0%	minimum	-12.8

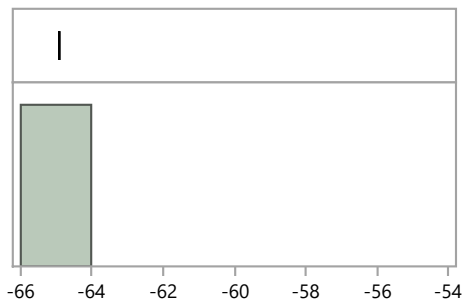
**Summary Statistics**

Mean	-6.9
Std Dev	5.2
Std Err Mean	3.0
Upper 95% Mean	6.1
Lower 95% Mean	-19.9
N	3.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Strontium-90 Coprecipitation, acidified**

**Bias**



**Quantiles**

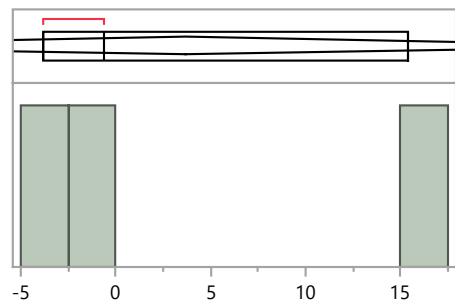
100.0%	maximum	-64.9
99.5%		-64.9
97.5%		-64.9
90.0%		-64.9
75.0%	quartile	-64.9
50.0%	median	-64.9
25.0%	quartile	-64.9
10.0%		-64.9
2.5%		-64.9
0.5%		-64.9
0.0%	minimum	-64.9

**Summary Statistics**

Mean	-64.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Method=Strontium-90 EPA 905, Radioactive Strontium, 600/4-80-032**

**Bias**



**Quantiles**

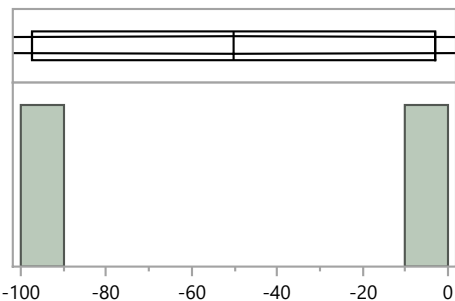
100.0%	maximum	15.4
99.5%		15.4
97.5%		15.4
90.0%		15.4
75.0%	quartile	15.4
50.0%	median	-0.6
25.0%	quartile	-3.8
10.0%		-3.8
2.5%		-3.8
0.5%		-3.8
0.0%	minimum	-3.8

**Summary Statistics**

Mean	3.7
Std Dev	10.3
Std Err Mean	5.9
Upper 95% Mean	29.2
Lower 95% Mean	-21.9
N	3.0

**Distributions Analyte\_Method=Strontium-90 Other**

**Bias**



**Quantiles**

100.0%	maximum	-3.2
99.5%		-3.2
97.5%		-3.2
90.0%		-3.2
75.0%	quartile	-3.2
50.0%	median	-50.4
25.0%	quartile	-97.5
10.0%		-97.5
2.5%		-97.5
0.5%		-97.5
0.0%	minimum	-97.5

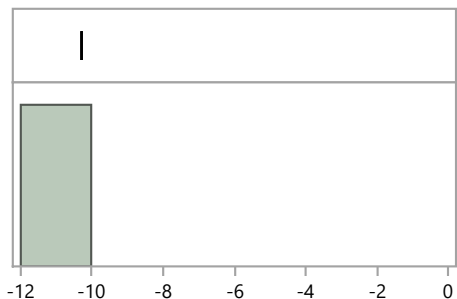
**Summary Statistics**

Mean	-50.4
Std Dev	66.7
Std Err Mean	47.1
Upper 95% Mean	548.7
Lower 95% Mean	-649.4
N	2.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Strontium-90 Total dissolution by fusion**

**Bias**



**Quantiles**

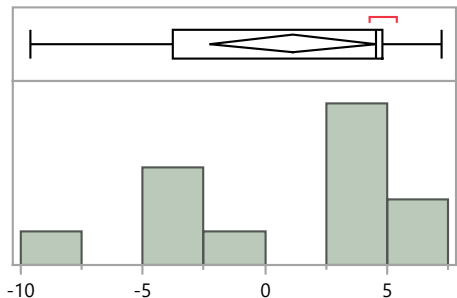
100.0%	maximum	-10.3
99.5%		-10.3
97.5%		-10.3
90.0%		-10.3
75.0%	quartile	-10.3
50.0%	median	-10.3
25.0%	quartile	-10.3
10.0%		-10.3
2.5%		-10.3
0.5%		-10.3
0.0%	minimum	-10.3

**Summary Statistics**

Mean	-10.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Method=Uranium-234 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

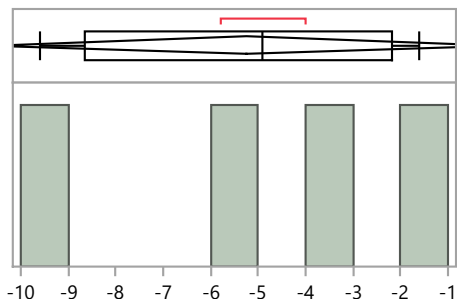
100.0%	maximum	7.2
99.5%		7.2
97.5%		7.2
90.0%		6.7
75.0%	quartile	4.8
50.0%	median	4.6
25.0%	quartile	-3.8
10.0%		-8.0
2.5%		-9.6
0.5%		-9.6
0.0%	minimum	-9.6

**Summary Statistics**

Mean	1.1
Std Dev	5.4
Std Err Mean	1.5
Upper 95% Mean	4.5
Lower 95% Mean	-2.3
N	12.0

**Distributions Analyte\_Method=Uranium-234 Acid leaching without hydrofluoric acid**

**Bias**



**Quantiles**

100.0%	maximum	-1.6
99.5%		-1.6
97.5%		-1.6
90.0%		-1.6
75.0%	quartile	-2.2
50.0%	median	-4.9
25.0%	quartile	-8.7
10.0%		-9.6
2.5%		-9.6
0.5%		-9.6
0.0%	minimum	-9.6

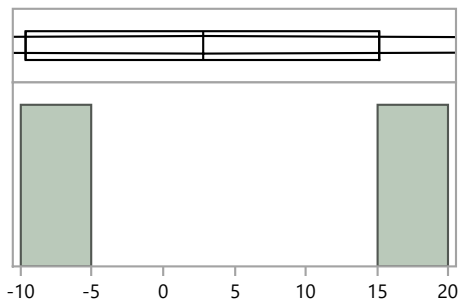
**Summary Statistics**

Mean	-5.3
Std Dev	3.4
Std Err Mean	1.7
Upper 95% Mean	0.1
Lower 95% Mean	-10.6
N	4.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Uranium-234 Coprecipitation, acidified**

**Bias**



**Quantiles**

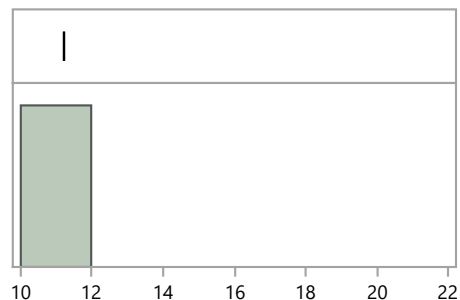
100.0%	maximum	15.2
99.5%		15.2
97.5%		15.2
90.0%		15.2
75.0%	quartile	15.2
50.0%	median	2.8
25.0%	quartile	-9.6
10.0%		-9.6
2.5%		-9.6
0.5%		-9.6
0.0%	minimum	-9.6

**Summary Statistics**

Mean	2.8
Std Dev	17.5
Std Err Mean	12.4
Upper 95% Mean	160.4
Lower 95% Mean	-154.8
N	2.0

**Distributions Analyte\_Method=Uranium-234 EPA 908, Uranium-Radiochemical Method, 600/4/80-032**

**Bias**



**Quantiles**

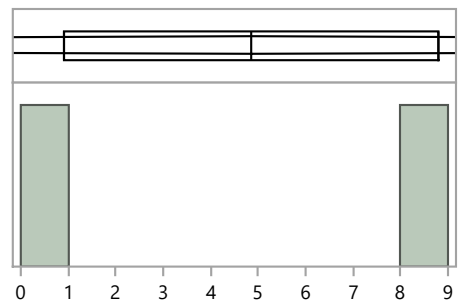
100.0%	maximum	11.2
99.5%		11.2
97.5%		11.2
90.0%		11.2
75.0%	quartile	11.2
50.0%	median	11.2
25.0%	quartile	11.2
10.0%		11.2
2.5%		11.2
0.5%		11.2
0.0%	minimum	11.2

**Summary Statistics**

Mean	11.2
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	8.8
99.5%		8.8
97.5%		8.8
90.0%		8.8
75.0%	quartile	8.8
50.0%	median	4.9
25.0%	quartile	0.9
10.0%		0.9
2.5%		0.9
0.5%		0.9
0.0%	minimum	0.9

**Summary Statistics**

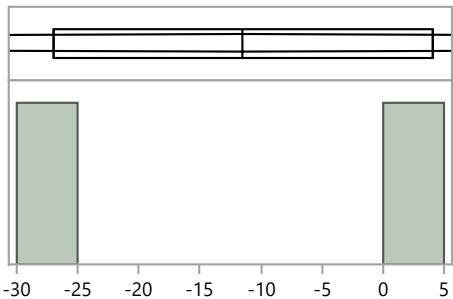
Mean	4.9
Std Dev	5.6
Std Err Mean	4.0
Upper 95% Mean	55.0
Lower 95% Mean	-45.3
N	2.0



**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Uranium-234 Total dissolution by fusion**

**Bias**



**Quantiles**

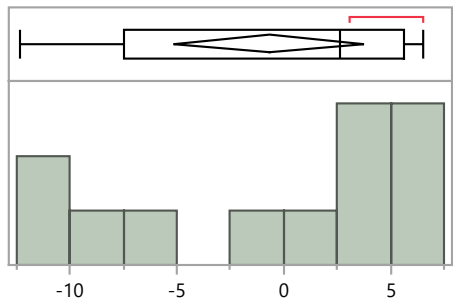
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	-11.5
25.0%	quartile	-27.0
10.0%		-27.0
2.5%		-27.0
0.5%		-27.0
0.0%	minimum	-27.0

**Summary Statistics**

Mean	-11.5
Std Dev	21.9
Std Err Mean	15.5
Upper 95% Mean	185.4
Lower 95% Mean	-208.4
N	2.0

**Distributions Analyte\_Method=Uranium-238 Acid dissolution with hydrofluoric acid**

**Bias**



**Quantiles**

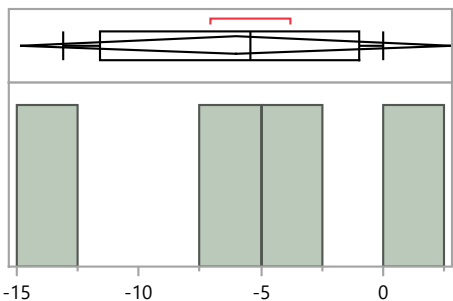
100.0%	maximum	6.5
99.5%		6.5
97.5%		6.5
90.0%		6.4
75.0%	quartile	5.7
50.0%	median	2.7
25.0%	quartile	-7.5
10.0%		-11.9
2.5%		-12.3
0.5%		-12.3
0.0%	minimum	-12.3

**Summary Statistics**

Mean	-0.7
Std Dev	7.0
Std Err Mean	2.0
Upper 95% Mean	3.7
Lower 95% Mean	-5.1
N	12.0

**Distributions Analyte\_Method=Uranium-238 Acid leaching without hydrofluoric acid**

**Bias**



**Quantiles**

100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	-1.0
50.0%	median	-5.5
25.0%	quartile	-11.6
10.0%		-13.1
2.5%		-13.1
0.5%		-13.1
0.0%	minimum	-13.1

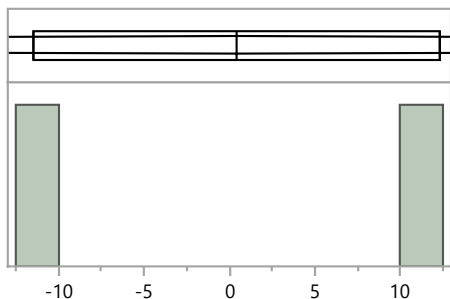
**Summary Statistics**

Mean	-6.0
Std Dev	5.6
Std Err Mean	2.8
Upper 95% Mean	2.8
Lower 95% Mean	-14.8
N	4.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Uranium-238 Coprecipitation, acidified**

**Bias**



**Quantiles**

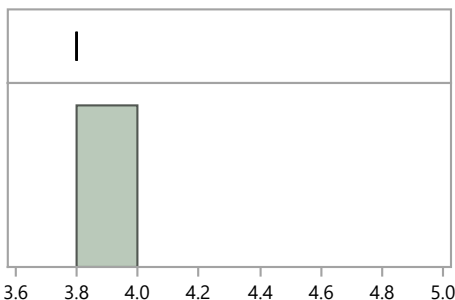
100.0%	maximum	12.3
99.5%		12.3
97.5%		12.3
90.0%		12.3
75.0%	quartile	12.3
50.0%	median	0.4
25.0%	quartile	-11.5
10.0%		-11.5
2.5%		-11.5
0.5%		-11.5
0.0%	minimum	-11.5

**Summary Statistics**

Mean	0.4
Std Dev	16.8
Std Err Mean	11.9
Upper 95% Mean	151.6
Lower 95% Mean	-150.8
N	2.0

**Distributions Analyte\_Method=Uranium-238 EPA 908, Uranium-Radiochemical Method, 600/4/80-032**

**Bias**



**Quantiles**

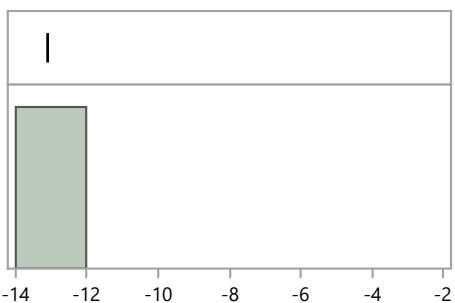
100.0%	maximum	3.8
99.5%		3.8
97.5%		3.8
90.0%		3.8
75.0%	quartile	3.8
50.0%	median	3.8
25.0%	quartile	3.8
10.0%		3.8
2.5%		3.8
0.5%		3.8
0.0%	minimum	3.8

**Summary Statistics**

Mean	3.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**Distributions Analyte\_Method=Uranium-238 No preparation - analyzed as received**

**Bias**



**Quantiles**

100.0%	maximum	-13.1
99.5%		-13.1
97.5%		-13.1
90.0%		-13.1
75.0%	quartile	-13.1
50.0%	median	-13.1
25.0%	quartile	-13.1
10.0%		-13.1
2.5%		-13.1
0.5%		-13.1
0.0%	minimum	-13.1

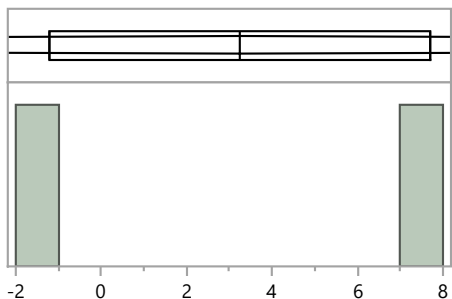
**Summary Statistics**

Mean	-13.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

**RdF50 Distribution by Preparation Method**

**Distributions Analyte\_Method=Uranium-238 Other**

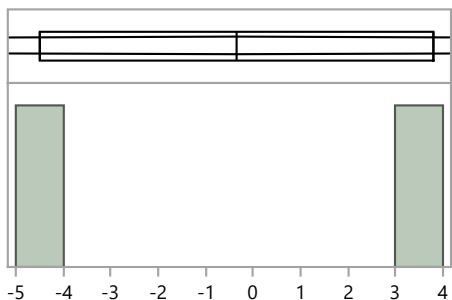
**Bias**



Quantiles			Summary Statistics	
100.0%	maximum	7.7	Mean	3.3
99.5%		7.7	Std Dev	6.3
97.5%		7.7	Std Err Mean	4.5
90.0%		7.7	Upper 95% Mean	59.8
75.0%	quartile	7.7	Lower 95% Mean	-53.3
50.0%	median	3.3	N	2.0
25.0%	quartile	-1.2		
10.0%		-1.2		
2.5%		-1.2		
0.5%		-1.2		
0.0%	minimum	-1.2		

**Distributions Analyte\_Method=Uranium-238 Total dissolution by fusion**

**Bias**



Quantiles			Summary Statistics	
100.0%	maximum	3.8	Mean	-0.4
99.5%		3.8	Std Dev	5.9
97.5%		3.8	Std Err Mean	4.2
90.0%		3.8	Upper 95% Mean	52.4
75.0%	quartile	3.8	Lower 95% Mean	-53.1
50.0%	median	-0.4	N	2.0
25.0%	quartile	-4.5		
10.0%		-4.5		
2.5%		-4.5		
0.5%		-4.5		
0.0%	minimum	-4.5		