

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.

RdV41 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	RdV
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	RdV
ANTE01	ALS Environmental - Fort Collins, CO	RdV
ARSL01	ARS Aleut Analytical, LLC	RdV
COPS99	Health Canada Radiation Protection Bureau	RdV
CSSL99	Chemistry Support Services	RdV
DEHS01	Department of Environmental Health & Safety	RdV
DINL99	Departamento Ingeniería Nuclear y Mecánica de Fluidos	RdV
DLEA01	DLE Associates	RdV
ERCL01	Washington State Public Health Laboratories	RdV
FDHE01	Florida Dept of Health Environmental Laboratory	RdV
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	RdV
FMEC99	Foods and Water Laboratories Center	RdV
GENE01	GEL Laboratories, LLC	RdV
GPCL01	Georgia Power Company Environmental Laboratory	RdV
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	RdV
HPAC99	PHE, CRCE Glasgow	RdV
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	RdV
ISUE01	ISU Environmental Monitoring Laboratory	RdV
ISUP01	ISU - Department of Physics/Health Physics/EAL	RdV
JAEC99	Research Laboratories and Information Directorate	RdV
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	RdV
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	RdV
MSDH01	Mississippi State Dept of Health	RdV
NARL01	National Analytical Radiation Environmental Laboratory	RdV
NARL02	USEPA - NAREL - MERL	RdV
NJDH01	New Jersey Dept. of Health, PHEL, ECLS	RdV
NOCS99	National Oceanography Centre, Southampton	RdV
NRLL99	Environmental Radioactivity - National Centre for Radiation Science	RdV
ODHL01	Ohio Department of Health Laboratory	RdV
ORIS01	ORISE/IEAV	RdV
OTLI01	Pace Analytical National Center for Testing & Innovation	RdV
RAVR99	Radiactividad Ambiental y Vigilancia Radiologica	RdV
SANC99	RadioAnalysis, South Africa Nuclear Energy Corp.	RdV
SEML01	SRS Environmental Monitoring Laboratory	RdV
SOUT01	Southwest Research Institute	RdV
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	RdV
TDHL01	Texas Department of State Health Services Laboratory	RdV
TELE01	Teledyne Brown Engineering - Environmental Services	RdV
TELE02	ATI Environmental, Inc., Midwest Lab	RdV
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	RdV
UNTE01	UniTech-235	RdV
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	RdV
WIPH01	WI, DPH, Radiation Protection Section	RdV

WIPP01	WIPP Laboratories	RdV
WSHL01	Wisconsin State Laboratory of Hygiene	RdV
WSTP99	Cavendish Nuclear Limited	RdV

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
ASUK99	AWE (Aldermaston)	RdV
IAEA99	International Atomic Energy Agency	RdV
LDRA99	Laboratori de Radiologia Ambiental-Universitat de Barcelona	RdV
RPSC01	Radiation Protection Service	RdV

Study Reference Values

MAPEP-19-RdV41

Radiological Reference Date: 08/01/2019

Analyte	Ref Value	Ref Unc
Inorganic	Units: (ug/sample)	
Uranium-235	0.0391	0.0009
Uranium-238	5.38	0.14
Uranium-238 (Lg Veg)	5.68	0.14
Uranium-Total	5.42	0.14
Uranium-Total (Lg Veg)	5.73	0.15

Analyte	Ref Value	Ref Unc
Radiological	Units: (Bq/sample)	
Americium-241	0.090	0.002
Cesium-137	3.28	0.05
Cobalt-57	4.57	0.09
Cobalt-60	5.30	0.11
Manganese-54	4.49	0.09
Plutonium-238	0.081	0.002
Strontium-90	1.00	0.02
Uranium-234	0.0647	0.0014
Uranium-234 (Lg Veg)	0.0677	0.0017
Uranium-238	0.0670	0.0017
Uranium-238 (Lg Veg)	0.0707	0.0018
Zinc-65	2.85	0.06

Sample Statistical Summary

MAPEP-19-RdV41

Radiological Reference Date: 08/01/2019

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Inorganic							Units: (ug/sample)
Uranium-235	3	3			0.0391	0.0009	0.0274 - 0.0508
Uranium-238	4	3			5.38	0.14	3.77 - 6.99
Uranium-Total	6	6			5.42	0.14	3.79 - 7.05

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/sample)
Americium-241	27	20	0.084	0.012	0.090	0.002	0.063 - 0.117
Cesium-134	42	39					False Positive Test
Cesium-137	47	44	3.38	0.28	3.28	0.05	2.30 - 4.26
Cobalt-57	47	43	4.56	0.56	4.57	0.09	3.20 - 5.94
Cobalt-60	47	43	5.25	0.46	5.30	0.11	3.71 - 6.89
Manganese-54	46	44	4.53	0.35	4.49	0.09	3.14 - 5.84
Plutonium-238	20	18	0.080	0.010	0.081	0.002	0.057 - 0.105
Plutonium-239/240	20	17					False Positive Test
Strontium-90	20	16	0.94	0.10	1.00	0.02	0.70 - 1.30
Uranium-234	20	17	0.0674	0.0062	0.0647	0.0014	0.0453 - 0.0841
Uranium-238	22	17	0.0692	0.0066	0.0670	0.0017	0.0469 - 0.0871
Zinc-65	46	42	2.81	0.32	2.85	0.06	2.00 - 3.71

- 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, from large vegetation sample size and values indicated as "Not Acceptable".
 - (4) Uranium Reference values shown for small vegetation sample size only.

Result Flags:

- A = Result acceptable Bias $\leq 20\%$
- W = Result acceptable with warning $20\% < \text{Bias} < 30\%$
- N = Result not acceptable Bias $> 30\%$
- RW = Report Warning
- NR = Not Reported

Uncertainty Flags:

- NOT ACCEPTABLE.....RP $< 2\%$
- ACCEPTABLE..... $2\% \leq \text{RP} \leq 15\%$
- ACCEPTABLE WITH WARNING..... $15\% < \text{RP} \leq 30\%$
- NOT ACCEPTABLE.....RP $> 30\%$
- RP = Relative Precision

Flag Summary Report

MAPEP-19-RdV41

Inorganic

Analyte	A	W	RW	N
Uranium-Total	3	3		
Uranium-235	3			
Uranium-238	2	1		1

Radiological

Analyte	A	W	RW	N
Americium-241	17	3		7
Cesium-134	39			3
Cesium-137	43	1		3
Cobalt-57	36	7		4
Cobalt-60	42	1		4
Manganese-54	43	1		2
Plutonium-238	16	2		2
Plutonium-239/240	17			3
Strontium-90	14	2		4
Uranium-234	16	1		3
Uranium-238	16	1		5
Zinc-65	39	3		4



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

Laboratory Results For MAPEP-19-RdV41
 (ADEM01) Alabama Department of Environmental Management
 1350 Coliseum Blvd.
 Montgomery, Alabama 36110

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	NR					False Positive Test		
Cesium-137	4.26	3.28	W		29.9	2.30 - 4.26	0.16	A
Cobalt-57	6.22	4.57	N		36.1	3.20 - 5.94	0.16	A
Cobalt-60	6.87	5.30	W		29.6	3.71 - 6.89	0.16	A
Manganese-54	5.64	4.49	W		25.6	3.14 - 5.84	0.18	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.37	2.85	A		18.2	2.00 - 3.71	0.21	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (ADFC99) Abu Dhabi Quality and Conformity Council-Central Testing Lab
 Radiation Lab
 Abu Dhabi, - -

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.01		A			False Positive Test	0.04	
Cesium-137	3.31	3.28	A		0.9	2.30 - 4.26	0.12	A
Cobalt-57	4.55	4.57	A		-0.4	3.20 - 5.94	0.12	A
Cobalt-60	5.13	5.30	A		-3.2	3.71 - 6.89	0.20	A
Manganese-54	4.37	4.49	A		-2.7	3.14 - 5.84	0.16	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.91	2.85	A		2.1	2.00 - 3.71	0.19	A

Radiological Reference Date: August 1, 2019

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Uncertainty Flags:

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

Laboratory Results For MAPEP-19-RdV41
 (ANTE01) ALS Environmental - Fort Collins, CO
 225 Commerce Drive
 Fort Collins, CO 80524-1416

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.079	0.090	A		-12.2	0.063 - 0.117	0.007	A
Cesium-134	0.230		A			False Positive Test	0.230	
Cesium-137	2.99	3.28	A		-8.8	2.30 - 4.26	0.20	A
Cobalt-57	4.05	4.57	A		-11.4	3.20 - 5.94	0.25	A
Cobalt-60	4.57	5.30	A		-13.8	3.71 - 6.89	0.28	A
Manganese-54	4.22	4.49	A		-6.0	3.14 - 5.84	0.28	A
Plutonium-238	0.077	0.081	A		-4.9	0.057 - 0.105	0.007	A
Plutonium-239/240	0.002		A			False Positive Test	0.001	
Strontium-90	0.990	1.00	A		-1.0	0.70 - 1.30	0.120	A
Uranium-234	0.066	0.0647	A		2.0	0.0453 - 0.0841	0.006	A
Uranium-238	0.066	0.0670	A		-1.5	0.0469 - 0.0871	0.006	A
Zinc-65	2.77	2.85	A		-2.8	2.00 - 3.71	0.25	A

Radiological Reference Date: August 1, 2019

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Uncertainty Flags:

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

Laboratory Results For MAPEP-19-RdV41

(ARSL01) ARS Aleut Analytical, LLC

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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	-.283		A			False Positive Test	2.085	
Cesium-137	36.644	3.28	N		1017.2	2.30 - 4.26	1.042	A
Cobalt-57	51.159	4.57	N		1019.5	3.20 - 5.94	2.023	A
Cobalt-60	54.125	5.30	N		921.2	3.71 - 6.89	1.374	A
Manganese-54	47.517	4.49	N		958.3	3.14 - 5.84	1.854	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	32.723	2.85	N		1048.2	2.00 - 3.71	1.661	A

Radiological Reference Date: August 1, 2019

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

Laboratory Results For MAPEP-19-RdV41
 (COPS99) Health Canada Radiation Protection Bureau
 2720 Riverside drive
 Ottawa, Ontario K1A0K9

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-3.2	0.090	N		-3655.6	0.063 - 0.117	0.7	N
Cesium-134	-0.063		A			False Positive Test	0.1	
Cesium-137	3.38	3.28	A		3.0	2.30 - 4.26	0.14	A
Cobalt-57	4.54	4.57	A		-0.7	3.20 - 5.94	0.22	A
Cobalt-60	5.32	5.30	A		0.4	3.71 - 6.89	0.15	A
Manganese-54	4.58	4.49	A		2.0	3.14 - 5.84	0.19	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.94	2.85	A		3.2	2.00 - 3.71	0.13	A

Radiological Reference Date: August 1, 2019

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

Laboratory Results For MAPEP-19-RdV41

(CSSL99) Chemistry Support Services

Dounreay Site Restoration Limited

Dounreay, Caithness KW14 7TZ

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.069956	0.090	W		-22.3	0.063 - 0.117	0.00204	A
Cesium-134	0.135		N	(1)		False Positive Test	0.0128	
Cesium-137	3.63	3.28	A		10.7	2.30 - 4.26	0.345	A
Cobalt-57	4.62	4.57	A		1.1	3.20 - 5.94	0.439	A
Cobalt-60	5.43	5.30	A		2.5	3.71 - 6.89	0.517	A
Manganese-54	4.86	4.49	A		8.2	3.14 - 5.84	0.462	A
Plutonium-238	0.07001	0.081	A		-13.6	0.057 - 0.105	0.00216	A
Plutonium-239/240	0.0001619		N	(1)		False Positive Test	0.000004	
Strontium-90	1.05	1.00	A		5.0	0.70 - 1.30	0.133	A
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.80	2.85	A		-1.8	2.00 - 3.71	0.266	A

Radiological Reference Date: August 1, 2019

Result Flags:

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NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.3		A			False Positive Test	0.2	
Cesium-137	3.49	3.28	A		6.4	2.30 - 4.26	0.09	A
Cobalt-57	4.73	4.57	A		3.5	3.20 - 5.94	0.05	N
Cobalt-60	4.26	5.30	A		-19.6	3.71 - 6.89	0.09	A
Manganese-54	3.65	4.49	A		-18.7	3.14 - 5.84	0.08	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.92	2.85	N		37.5	2.00 - 3.71	0.11	A

Radiological Reference Date: August 1, 2019

Result Flags:

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- 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (DINL99) Departamento Ingeniería Nuclear y Mecánica de Fluidos
 Escuela de Ingeniería de Bilbao
 Bilbao, Vizcaya 48013

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.00090	0.090	N		-99.0	0.063 - 0.117	0.00090	N
Cesium-134	0.29		A			False Positive Test	0.29	
Cesium-137	3.60	3.28	A		9.8	2.30 - 4.26	0.19	A
Cobalt-57	4.38	4.57	A		-4.2	3.20 - 5.94	0.23	A
Cobalt-60	5.36	5.30	A		1.1	3.71 - 6.89	0.28	A
Manganese-54	4.55	4.49	A		1.3	3.14 - 5.84	0.25	A
Plutonium-238	0.060	0.081	W		-25.9	0.057 - 0.105	0.0039	A
Plutonium-239/240	0.0015		A			False Positive Test	0.0015	
Strontium-90	0.90	1.00	A		-10.0	0.70 - 1.30	0.05	A
Uranium-234	0.139	0.0647	N		114.8	0.0453 - 0.0841	0.0076	A
Uranium-238	0.122	0.0670	N		82.1	0.0469 - 0.0871	.0069	A
Zinc-65	2.91	2.85	A		2.1	2.00 - 3.71	0.18	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41

(DLEA01) DLE Associates
730 Alfred Nobel Drive
Hercules, CA 94547

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.076		A			False Positive Test	0.079	
Cesium-137	3.13	3.28	A		-4.6	2.30 - 4.26	0.08	A
Cobalt-57	4.03	4.57	A		-11.8	3.20 - 5.94	0.30	A
Cobalt-60	4.88	5.30	A		-7.9	3.71 - 6.89	0.67	A
Manganese-54	4.68	4.49	A		4.2	3.14 - 5.84	0.08	N
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.29	2.85	A		-19.6	2.00 - 3.71	0.13	A

Radiological Reference Date: August 1, 2019

Result Flags:

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RW = Report Warning

NR = Not Reported

Uncertainty Flags:

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ACCEPTABLE WITH WARNING.....15% < RP <= 30%

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RP = Relative Precision

Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0374	0.0391	A		-4.3	0.0274 - 0.0508	0.0019	A
Uranium-238	6.79	5.38	W		26.2	3.77 - 6.99	0.35	A
Uranium-Total	6.83	5.42	W		26.0	3.79 - 7.05	0.35	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0846	0.090	A		-6.0	0.063 - 0.117	0.0083	A
Cesium-134	-0.116		A			False Positive Test	0.058	
Cesium-137	2.93	3.28	A		-10.7	2.30 - 4.26	0.07	A
Cobalt-57	3.60	4.57	W		-21.2	3.20 - 5.94	0.05	N
Cobalt-60	5.01	5.30	A		-5.5	3.71 - 6.89	0.05	N
Manganese-54	3.81	4.49	A		-15.1	3.14 - 5.84	0.07	N
Plutonium-238	0.0682	0.081	A		-15.8	0.057 - 0.105	0.0058	A
Plutonium-239/240	0.0001		A			False Positive Test	0.0018	
Strontium-90	0.792	1.00	W		-20.8	0.70 - 1.30	0.079	A
Uranium-234	0.0662	0.0647	A		2.3	0.0453 - 0.0841	0.0071	A
Uranium-238	0.0666	0.0670	A		-0.6	0.0469 - 0.0871	0.0069	A
Zinc-65	2.41	2.85	A		-15.4	2.00 - 3.71	0.12	A

Radiological Reference Date: August 1, 2019

Result 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%

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RP = Relative Precision

Notes:

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



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

Laboratory Results For MAPEP-19-RdV41
 (FDHE01) Florida Dept of Health Environmental Laboratory
 PO Box 680069
 Orlando, FL 32868-0069

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.133	0.090	N		47.8	0.063 - 0.117	0.349	N
Cesium-134	0.054		A			False Positive Test	0.085	
Cesium-137	3.578	3.28	A		9.1	2.30 - 4.26	0.196	A
Cobalt-57	5.588	4.57	W		22.3	3.20 - 5.94	0.154	A
Cobalt-60	5.555	5.30	A		4.8	3.71 - 6.89	0.152	A
Manganese-54	5.010	4.49	A		11.6	3.14 - 5.84	0.188	A
Plutonium-238	0.08456	0.081	A		4.4	0.057 - 0.105	0.00514	A
Plutonium-239/240	0.00072		A			False Positive Test	0.0006	
Strontium-90	1.015	1.00	A		1.5	0.70 - 1.30	0.064	A
Uranium-234	0.0611	0.0647	A		-5.6	0.0453 - 0.0841	0.0037	A
Uranium-238	0.0605	0.0670	A		-9.7	0.0469 - 0.0871	0.0037	A
Zinc-65	3.360	2.85	A		17.9	2.00 - 3.71	0.138	A

Radiological Reference Date: August 1, 2019

Result 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:

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Notes:

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

Laboratory Results For MAPEP-19-RdV41

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab

PO Box 680069

Orlando, FL 32868-0069

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.101	0.090	A		12.2	0.063 - 0.117	0.04	N
Cesium-134	0.096			A		False Positive Test	0.137	
Cesium-137	3.539	3.28	A		7.9	2.30 - 4.26	0.12	A
Cobalt-57	5.119	4.57	A		12.0	3.20 - 5.94	0.148	A
Cobalt-60	5.31	5.30	A		0.2	3.71 - 6.89	0.127	A
Manganese-54	5.011	4.49	A		11.6	3.14 - 5.84	0.171	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	0.162	0.0707	N		129.1	0.0495 - 0.0919	0.812	N
Zinc-65	2.999	2.85	A		5.2	2.00 - 3.71	0.191	A

Radiological Reference Date: August 1, 2019

Result 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%

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Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (FMEC99) Foods and Water Laboratories Center
 Ministry of Regional Municipalities and Water Resources
 Muscat, seeb 111

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	NR					False Positive Test		
Cesium-137	8.20	3.28	N		150.0	2.30 - 4.26	0.28	A
Cobalt-57	12.07	4.57	N		164.1	3.20 - 5.94	0.18	N
Cobalt-60	9.58	5.30	N		80.8	3.71 - 6.89	0.46	A
Manganese-54	NR	4.49				3.14 - 5.84		
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	5.30	0.0670	N		7810.4	0.0469 - 0.0871	0.48	A
Zinc-65	NR	2.85				2.00 - 3.71		

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (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	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0958	0.090	A		6.4	0.063 - 0.117	5.88E-3	A
Cesium-134	0.0190		A			False Positive Test	0.0323	
Cesium-137	3.34	3.28	A		1.8	2.30 - 4.26	0.168	A
Cobalt-57	4.50	4.57	A		-1.5	3.20 - 5.94	0.196	A
Cobalt-60	5.34	5.30	A		0.8	3.71 - 6.89	0.273	A
Manganese-54	4.57	4.49	A		1.8	3.14 - 5.84	0.232	A
Plutonium-238	0.0882	0.081	A		8.9	0.057 - 0.105	6.71E-3	A
Plutonium-239/240	1.27E-3		A			False Positive Test	1.70E-3	
Strontium-90	0.847	1.00	A		-15.3	0.70 - 1.30	0.0403	A
Uranium-234	0.0656	0.0647	A		1.4	0.0453 - 0.0841	5.47E-3	A
Uranium-238	0.0660	0.0670	A		-1.5	0.0469 - 0.0871	5.27E-3	A
Zinc-65	2.89	2.85	A		1.4	2.00 - 3.71	0.219	A

Radiological Reference Date: August 1, 2019

Result 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%

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Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	NR					False Positive Test		
Cesium-137	3.35	3.28	A		2.1	2.30 - 4.26	0.36	A
Cobalt-57	4.70	4.57	A		2.8	3.20 - 5.94	0.45	A
Cobalt-60	5.17	5.30	A		-2.5	3.71 - 6.89	0.44	A
Manganese-54	4.68	4.49	A		4.2	3.14 - 5.84	0.47	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.98	2.85	A		4.6	2.00 - 3.71	0.59	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

Laboratory Results For MAPEP-19-RdV41

(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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.1949		A			False Positive Test	0.3536	
Cesium-137	3.012	3.28	A		-8.2	2.30 - 4.26	0.3892	A
Cobalt-57	3.881	4.57	A		-15.1	3.20 - 5.94	0.3544	A
Cobalt-60	4.638	5.30	A		-12.5	3.71 - 6.89	0.3717	A
Manganese-54	4.359	4.49	A		-2.9	3.14 - 5.84	0.5149	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.210	2.85	W		-22.5	2.00 - 3.71	0.5853	W

Radiological Reference Date: August 1, 2019

Result Flags:

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Uncertainty Flags:

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

Laboratory Results For MAPEP-19-RdV41

(HPAC99) PHE, CRCE Glasgow

155 Hardgate Road

Glasgow, Scotland G514LS

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.076	0.090	A		-15.6	0.063 - 0.117	0.009	A
Cesium-134	-0.241			A		False Positive Test	0.2	
Cesium-137	3.53	3.28	A		7.6	2.30 - 4.26	0.25	A
Cobalt-57	5.62	4.57	W		23.0	3.20 - 5.94	0.41	A
Cobalt-60	5.57	5.30	A		5.1	3.71 - 6.89	0.35	A
Manganese-54	4.58	4.49	A		2.0	3.14 - 5.84	0.31	A
Plutonium-238	0.084	0.081	A		3.7	0.057 - 0.105	0.004	A
Plutonium-239/240	0.0008			A		False Positive Test	0.0004	
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.79	2.85	A		-2.1	2.00 - 3.71	0.27	A

Radiological Reference Date: August 1, 2019

Result Flags:

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Uncertainty Flags:

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Notes:

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

Laboratory Results For MAPEP-19-RdV41

(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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0795	0.090	A		-11.7	0.063 - 0.117	0.0051	A
Cesium-134	-0.239		N	(29)		False Positive Test	0.066	
Cesium-137	3.677	3.28	A		12.1	2.30 - 4.26	0.096	A
Cobalt-57	5.177	4.57	A		13.3	3.20 - 5.94	0.092	N
Cobalt-60	5.917	5.30	A		11.6	3.71 - 6.89	0.083	N
Manganese-54	4.98	4.49	A		10.9	3.14 - 5.84	0.11	A
Plutonium-238	0.0789	0.081	A		-2.6	0.057 - 0.105	0.0047	A
Plutonium-239/240	0.00110		A			False Positive Test	0.00050	
Strontium-90	0.932	1.00	A		-6.8	0.70 - 1.30	0.060	A
Uranium-234	0.0632	0.0647	A		-2.3	0.0453 - 0.0841	0.0037	A
Uranium-238	0.0623	0.0670	A		-7.0	0.0469 - 0.0871	0.0037	A
Zinc-65	3.23	2.85	A		13.3	2.00 - 3.71	0.20	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	.05		A			False Positive Test	.02	
Cesium-137	3.2	3.28	A		-2.4	2.30 - 4.26	0.2	A
Cobalt-57	4.2	4.57	A		-8.1	3.20 - 5.94	0.3	A
Cobalt-60	5.0	5.30	A		-5.7	3.71 - 6.89	1.6	N
Manganese-54	4.3	4.49	A		-4.2	3.14 - 5.84	0.24	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.7	2.85	A		-5.3	2.00 - 3.71	0.2	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (ISUP01) ISU - Department of Physics/Health Physics/EAL
 785 S. 8th Ave, Rm 120
 Pocatello, ID 83209-8106

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	-0.01		A			False Positive Test	0.02	
Cesium-137	3.33	3.28	A		1.5	2.30 - 4.26	0.26	A
Cobalt-57	4.27	4.57	A		-6.6	3.20 - 5.94	0.31	A
Cobalt-60	5.11	5.30	A		-3.6	3.71 - 6.89	0.31	A
Manganese-54	4.37	4.49	A		-2.7	3.14 - 5.84	0.32	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.59	2.85	A		-9.1	2.00 - 3.71	0.23	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (JAEC99) Research Laboratories and Information Directorate
 Jordan Atomic Energy Commission
 Amman, Jordan 70 (11934)

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	29.840	5.68	N		425.4	3.98 - 7.38	2.984	A
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	NR					False Positive Test		
Cesium-137	36.75	3.28	N		1020.4	2.30 - 4.26	2.57	A
Cobalt-57	52.72	4.57	N		1053.6	3.20 - 5.94	2.33	A
Cobalt-60	56.21	5.30	N		960.6	3.71 - 6.89	3.31	A
Manganese-54	49.92	4.49	N		1011.8	3.14 - 5.84	3.29	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	0.04	0.0647	N		-38.2	0.0453 - 0.0841	0.078	N
Uranium-238	0.035	0.0670	N		-47.8	0.0469 - 0.0871	0.0060	W
Zinc-65	31.71	2.85	N		1012.6	2.00 - 3.71	2.55	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (LAWR01) LAWRENCE BERKELEY NATIONAL LABORATORY
 1 CYCLOTRON RD.
 BERKELEY, CA 94720

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	-0.01387		A			False Positive Test	.1387	
Cesium-137	3.488	3.28	A		6.3	2.30 - 4.26	.08252	A
Cobalt-57	4.801	4.57	A		5.1	3.20 - 5.94	.09901	A
Cobalt-60	5.420	5.30	A		2.3	3.71 - 6.89	.1455	A
Manganese-54	4.569	4.49	A		1.8	3.14 - 5.84	.1179	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.030	2.85	A		6.3	2.00 - 3.71	.1456	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.02		A			False Positive Test	0.11	
Cesium-137	3.02	3.28	A		-7.9	2.30 - 4.26	0.27	A
Cobalt-57	4.26	4.57	A		-6.8	3.20 - 5.94	0.32	A
Cobalt-60	4.99	5.30	A		-5.8	3.71 - 6.89	0.40	A
Manganese-54	4.18	4.49	A		-6.9	3.14 - 5.84	0.35	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.71	2.85	A		-4.9	2.00 - 3.71	0.33	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (MSDH01) Mississippi State Dept of Health
 Radiological Environmental Laboratory
 Jackson, MS 39216

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-1.14	0.090	N		-1366.7	0.063 - 0.117	2.84	N
Cesium-134	0.196		A			False Positive Test	0.659	
Cesium-137	3.63	3.28	A		10.7	2.30 - 4.26	0.69	W
Cobalt-57	5.83	4.57	W		27.6	3.20 - 5.94	0.59	A
Cobalt-60	5.17	5.30	A		-2.5	3.71 - 6.89	0.65	A
Manganese-54	4.73	4.49	A		5.3	3.14 - 5.84	0.79	W
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	6.43	2.85	N		125.6	2.00 - 3.71	1.38	W

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0729	0.090	A		-19.0	0.063 - 0.117	0.00672	A
Cesium-134	-0.0333		A			False Positive Test	0.0483	
Cesium-137	3.18	3.28	A		-3.0	2.30 - 4.26	0.199	A
Cobalt-57	4.59	4.57	A		0.4	3.20 - 5.94	0.260	A
Cobalt-60	4.80	5.30	A		-9.4	3.71 - 6.89	0.270	A
Manganese-54	4.36	4.49	A		-2.9	3.14 - 5.84	0.257	A
Plutonium-238	0.0715	0.081	A		-11.7	0.057 - 0.105	0.00446	A
Plutonium-239/240	0.000220		A			False Positive Test	0.000582	
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	0.0663	0.0647	A		2.5	0.0453 - 0.0841	0.00652	A
Uranium-238	0.0762	0.0670	A		13.7	0.0469 - 0.0871	0.00709	A
Zinc-65	2.78	2.85	A		-2.5	2.00 - 3.71	0.210	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41

(NARL02) USEPA - NAREL - MERL

540 S Morris Ave

Montgomery, AL 36115

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.0444		A			False Positive Test	0.0718	
Cesium-137	3.23	3.28	A		-1.5	2.30 - 4.26	0.204	A
Cobalt-57	4.73	4.57	A		3.5	3.20 - 5.94	0.155	A
Cobalt-60	5.13	5.30	A		-3.2	3.71 - 6.89	0.194	A
Manganese-54	4.29	4.49	A		-4.5	3.14 - 5.84	0.252	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.18	2.85	A		11.6	2.00 - 3.71	0.291	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (NJDH01) New Jersey Dept. of Health, PHEL, ECLS
 3 Schwarzkopf Drive
 West Trenton, NJ 08628

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	-0.18	0.090	N		-300.0	0.063 - 0.117	0.13	N
Cesium-134	-0.255		N	(29)		False Positive Test	0.061	
Cesium-137	3.16	3.28	A		-3.7	2.30 - 4.26	0.16	A
Cobalt-57	4.47	4.57	A		-2.2	3.20 - 5.94	0.17	A
Cobalt-60	4.98	5.30	A		-6.0	3.71 - 6.89	0.23	A
Manganese-54	3.97	4.49	A		-11.6	3.14 - 5.84	0.16	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.54	2.85	A		-10.9	2.00 - 3.71	0.15	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (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	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.107	0.090	A		18.9	0.063 - 0.117	0.008	A
Cesium-134	0.2		A			False Positive Test	1	
Cesium-137	3.4	3.28	A		3.7	2.30 - 4.26	0.1	A
Cobalt-57	3.9	4.57	A		-14.7	3.20 - 5.94	0.1	A
Cobalt-60	5.3	5.30	A		0.0	3.71 - 6.89	0.2	A
Manganese-54	4.7	4.49	A		4.7	3.14 - 5.84	0.2	A
Plutonium-238	0.074	0.081	A		-8.6	0.057 - 0.105	0.004	A
Plutonium-239/240	0.002		A			False Positive Test	0.002	
Strontium-90	NR	1.00	N	(28)		0.70 - 1.30		
Uranium-234	0.061	0.0647	A		-5.7	0.0453 - 0.0841	0.004	A
Uranium-238	0.062	0.0670	A		-7.5	0.0469 - 0.0871	0.004	A
Zinc-65	3.1	2.85	A		8.8	2.00 - 3.71	0.2	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (NRL99) Environmental Radioactivity - National Centre for Radiation Science
 PO Box 29181
 Christchurch, Christchurch 8540

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.064	0.090	W		-28.9	0.063 - 0.117	0.017	W
Cesium-134	NR					False Positive Test		
Cesium-137	3.10	3.28	A		-5.5	2.30 - 4.26	0.19	A
Cobalt-57	4.31	4.57	A		-5.7	3.20 - 5.94	0.28	A
Cobalt-60	4.92	5.30	A		-7.2	3.71 - 6.89	0.32	A
Manganese-54	4.26	4.49	A		-5.1	3.14 - 5.84	0.27	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	0.0676	0.0647	A		4.5	0.0453 - 0.0841	0.0053	A
Uranium-238	0.0665	0.0670	A		-0.7	0.0469 - 0.0871	0.0052	A
Zinc-65	2.51	2.85	A		-11.9	2.00 - 3.71	0.18	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.0212		A			False Positive Test	0.0247	
Cesium-137	3.54	3.28	A		7.9	2.30 - 4.26	0.237	A
Cobalt-57	4.34	4.57	A		-5.0	3.20 - 5.94	0.318	A
Cobalt-60	5.3	5.30	A		0.0	3.71 - 6.89	0.178	A
Manganese-54	4.64	4.49	A		3.3	3.14 - 5.84	0.304	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.11	2.85	A		9.1	2.00 - 3.71	0.231	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

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RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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Notes:

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

Laboratory Results For MAPEP-19-RdV41

(ORIS01) ORISE/IEAV

PO Box 117

Oak Ridge, TN 37831-0117

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.042	0.0391	A		7.4	0.0274 - 0.0508	0.001	A
Uranium-238	5.89	5.38	A		9.5	3.77 - 6.99	0.29	A
Uranium-Total	5.93	5.42	A		9.4	3.79 - 7.05	0.29	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.083	0.090	A		-7.8	0.063 - 0.117	0.005	A
Cesium-134	0.017		A			False Positive Test	0.052	
Cesium-137	3.087	3.28	A		-5.9	2.30 - 4.26	0.082	A
Cobalt-57	3.971	4.57	A		-13.1	3.20 - 5.94	0.059	N
Cobalt-60	4.72	5.30	A		-10.9	3.71 - 6.89	0.11	A
Manganese-54	4.28	4.49	A		-4.7	3.14 - 5.84	0.10	A
Plutonium-238	0.082	0.081	A		1.2	0.057 - 0.105	0.005	A
Plutonium-239/240	0.0008		A			False Positive Test	0.0003	
Strontium-90	0.990	1.00	A		-1.0	0.70 - 1.30	0.023	A
Uranium-234	0.071	0.0647	A		9.7	0.0453 - 0.0841	0.004	A
Uranium-238	0.073	0.0670	A		9.0	0.0469 - 0.0871	0.004	A
Zinc-65	2.68	2.85	A		-6.0	2.00 - 3.71	0.12	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

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RP = Relative Precision

Notes:

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(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (OTLI01) Pace Analytical National Center for Testing & Innovation
 12065 Lebanon Road
 Mt. Juliet, TN 37122

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	5.14	5.42	A		-5.2	3.79 - 7.05	0.1	N

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.067	0.090	W		-25.6	0.063 - 0.117	0.015	W
Cesium-134	-.03		A			False Positive Test	.12	
Cesium-137	3.59	3.28	A		9.5	2.30 - 4.26	0.62	W
Cobalt-57	4.63	4.57	A		1.3	3.20 - 5.94	1.09	W
Cobalt-60	6.26	5.30	A		18.1	3.71 - 6.89	1	W
Manganese-54	4.61	4.49	A		2.7	3.14 - 5.84	0.78	W
Plutonium-238	.052	0.081	N		-35.8	0.057 - 0.105	.009	W
Plutonium-239/240	-.004		N	(29)		False Positive Test	.001	
Strontium-90	1.11	1.00	A		11.0	0.70 - 1.30	0.08	A
Uranium-234	0.061	0.0647	A		-5.7	0.0453 - 0.0841	0.022	N
Uranium-238	0.076	0.0670	A		13.4	0.0469 - 0.0871	0.023	N
Zinc-65	2.72	2.85	A		-4.6	2.00 - 3.71	0.76	W

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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RW = Report Warning

NR = Not Reported

Uncertainty Flags:

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Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (RAVR99) Radiactividad Ambiental y Vigilancia Radiologica
 CIEMAT (Ed 70 P2 D11)
 Madrid, Madrid 28040

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	3.8	5.42	W		-29.9	3.79 - 7.05	0.3	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0809	0.090	A		-10.1	0.063 - 0.117	0.0030	A
Cesium-134	-0.072		A			False Positive Test	0.062	
Cesium-137	3.08	3.28	A		-6.1	2.30 - 4.26	0.49	W
Cobalt-57	3.39	4.57	W		-25.8	3.20 - 5.94	0.58	W
Cobalt-60	4.89	5.30	A		-7.7	3.71 - 6.89	0.40	A
Manganese-54	4.24	4.49	A		-5.6	3.14 - 5.84	0.60	A
Plutonium-238	0.0376	0.081	N		-53.6	0.057 - 0.105	0.0015	A
Plutonium-239/240	0.00024		A			False Positive Test	0.00010	
Strontium-90	1.105	1.00	A		10.5	0.70 - 1.30	0.045	A
Uranium-234	0.082	0.0647	W		26.7	0.0453 - 0.0841	0.010	A
Uranium-238	0.084	0.0670	W		25.4	0.0469 - 0.0871	0.010	A
Zinc-65	2.69	2.85	A		-5.6	2.00 - 3.71	0.33	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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RW = Report Warning

NR = Not Reported

Uncertainty Flags:

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Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	4.12	5.73	W		-28.1	4.01 - 7.45	0.42	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0921	0.090	A		2.3	0.063 - 0.117	0.0126	A
Cesium-134	0.029		A			False Positive Test	0.029	
Cesium-137	2.89	3.28	A		-11.9	2.30 - 4.26	0.18	A
Cobalt-57	4.20	4.57	A		-8.1	3.20 - 5.94	0.30	A
Cobalt-60	4.71	5.30	A		-11.1	3.71 - 6.89	0.14	A
Manganese-54	3.99	4.49	A		-11.1	3.14 - 5.84	0.21	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	0.943	1.00	A		-5.7	0.70 - 1.30	0.191	W
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.48	2.85	A		-13.0	2.00 - 3.71	0.11	A

Radiological Reference Date: August 1, 2019

Result 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%

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NOT ACCEPTABLE.....RP > 30%

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Notes:

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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0819	0.090	A		-9.0	0.063 - 0.117	0.0055	A
Cesium-134	0.059		A			False Positive Test	0.043	
Cesium-137	3.33	3.28	A		1.5	2.30 - 4.26	0.12	A
Cobalt-57	4.33	4.57	A		-5.3	3.20 - 5.94	0.13	A
Cobalt-60	5.09	5.30	A		-4.0	3.71 - 6.89	0.15	A
Manganese-54	4.49	4.49	A		0.0	3.14 - 5.84	0.16	A
Plutonium-238	0.0771	0.081	A		-4.8	0.057 - 0.105	0.0060	A
Plutonium-239/240	0.00229		N	(1)		False Positive Test	0.00047	
Strontium-90	0.981	1.00	A		-1.9	0.70 - 1.30	0.059	A
Uranium-234	0.0755	0.0647	A		16.7	0.0453 - 0.0841	0.0057	A
Uranium-238	0.0733	0.0670	A		9.4	0.0469 - 0.0871	0.0054	A
Zinc-65	2.75	2.85	A		-3.5	2.00 - 3.71	0.12	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

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Uncertainty Flags:

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Notes:

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(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (SOUT01) Southwest Research Institute
 6220 Culebra Rd.
 San Antonio, TX 78228-0510

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	0.0390	0.0391	A		-0.3	0.0274 - 0.0508	0.00291	A
Uranium-238	5.36	5.38	A		-0.4	3.77 - 6.99	0.362	A
Uranium-Total	5.41	5.42	A		-0.2	3.79 - 7.05	0.365	A

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.124	0.090	N		37.8	0.063 - 0.117	0.0145	A
Cesium-134	-0.0630		A			False Positive Test	0.0385	
Cesium-137	3.78	3.28	A		15.2	2.30 - 4.26	0.148	A
Cobalt-57	5.04	4.57	A		10.3	3.20 - 5.94	0.133	A
Cobalt-60	5.52	5.30	A		4.2	3.71 - 6.89	0.128	A
Manganese-54	4.78	4.49	A		6.5	3.14 - 5.84	0.199	A
Plutonium-238	0.0922	0.081	A		13.8	0.057 - 0.105	0.0114	A
Plutonium-239/240	0.00615		A			False Positive Test	0.00292	
Strontium-90	0.767	1.00	W		-23.3	0.70 - 1.30	0.0904	A
Uranium-234	0.0619	0.0647	A		-4.3	0.0453 - 0.0841	0.00837	A
Uranium-238	0.0663	0.0670	A		-1.0	0.0469 - 0.0871	0.00870	A
Zinc-65	3.27	2.85	A		14.7	2.00 - 3.71	0.177	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

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Uncertainty Flags:

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Notes:

(1) = False Positive

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

Laboratory Results For MAPEP-19-RdV41

(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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	-0.267		A			False Positive Test	0.146	
Cesium-137	3.40	3.28	A		3.7	2.30 - 4.26	0.190	A
Cobalt-57	4.50	4.57	A		-1.5	3.20 - 5.94	0.159	A
Cobalt-60	5.29	5.30	A		-0.2	3.71 - 6.89	0.234	A
Manganese-54	4.40	4.49	A		-2.0	3.14 - 5.84	0.212	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.40	2.85	A		-15.8	2.00 - 3.71	0.297	A

Radiological Reference Date: August 1, 2019

Result Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

RW = Report Warning

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Uncertainty Flags:

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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.074	0.090	A		-17.8	0.063 - 0.117	0.023	N
Cesium-134	-0.10			A		False Positive Test	0.22	
Cesium-137	3.48	3.28	A		6.1	2.30 - 4.26	0.14	A
Cobalt-57	5.49	4.57	W		20.1	3.20 - 5.94	0.16	A
Cobalt-60	5.76	5.30	A		8.7	3.71 - 6.89	0.14	A
Manganese-54	5.02	4.49	A		11.8	3.14 - 5.84	0.18	A
Plutonium-238	0.089	0.081	A		9.9	0.057 - 0.105	0.013	A
Plutonium-239/240	0.0008			A		False Positive Test	0.0013	
Strontium-90	0.899	1.00	A		-10.1	0.70 - 1.30	0.026	A
Uranium-234	0.071	0.0677	A		4.9	0.0474 - 0.0880	0.011	W
Uranium-238	0.071	0.0707	A		0.4	0.0495 - 0.0919	0.011	W
Zinc-65	2.86	2.85	A		0.4	2.00 - 3.71	0.19	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (TELE01) Teledyne Brown Engineering - Environmental Services
 2508 Quality Lane
 Knoxville, TN 37931-6819

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	.0197		A			False Positive Test	.113	
Cesium-137	3.21	3.28	A		-2.1	2.30 - 4.26	.254	A
Cobalt-57	4.62	4.57	A		1.1	3.20 - 5.94	.185	A
Cobalt-60	4.88	5.30	A		-7.9	3.71 - 6.89	.203	A
Manganese-54	4.54	4.49	A		1.1	3.14 - 5.84	.255	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	.889	1.00	A		-11.1	0.70 - 1.30	.0428	A
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.78	2.85	A		-2.5	2.00 - 3.71	.431	W

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (TELE02) ATI Environmental, Inc., Midwest Lab
 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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.02		A			False Positive Test	0.02	
Cesium-137	3.38	3.28	A		3.0	2.30 - 4.26	0.32	A
Cobalt-57	4.99	4.57	A		9.2	3.20 - 5.94	0.51	A
Cobalt-60	5.29	5.30	A		-0.2	3.71 - 6.89	0.39	A
Manganese-54	4.73	4.49	A		5.3	3.14 - 5.84	0.45	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.10	2.85	A		8.8	2.00 - 3.71	0.31	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
 601 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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	-0.001		A			False Positive Test	.615	
Cesium-137	3.86	3.28	A		17.7	2.30 - 4.26	1.09	W
Cobalt-57	4.754	4.57	A		4.0	3.20 - 5.94	.555	A
Cobalt-60	5.81	5.30	A		9.6	3.71 - 6.89	.891	W
Manganese-54	4.71	4.49	A		4.9	3.14 - 5.84	1.32	W
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	.1012	0.0647	N		56.4	0.0453 - 0.0841	.022	W
Uranium-238	.1016	0.0670	N		51.6	0.0469 - 0.0871	.022	W
Zinc-65	2.16	2.85	W		-24.2	2.00 - 3.71	1.88	N

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41

(UNTE01) UniTech-235

178 Aldo Drive

Barnwell, SC 29812

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.090				0.063 - 0.117		
Cesium-134	0.2		A			False Positive Test	0.7	
Cesium-137	3.75	3.28	A		14.3	2.30 - 4.26	0.62	W
Cobalt-57	4.98	4.57	A		9.0	3.20 - 5.94	0.54	A
Cobalt-60	5.8	5.30	A		9.4	3.71 - 6.89	0.65	A
Manganese-54	4.69	4.49	A		4.5	3.14 - 5.84	0.7	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.59	2.85	W		26.0	2.00 - 3.71	0.93	W

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
 1638 Roseytown Road
 Greensburg, PA 15601

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.0888	0.090	A		-1.3	0.063 - 0.117	0.0157	W
Cesium-134	0.00001		A			False Positive Test	0.0594	
Cesium-137	3.3159	3.28	A		1.1	2.30 - 4.26	0.403	A
Cobalt-57	3.3725	4.57	W		-26.2	3.20 - 5.94	0.4122	A
Cobalt-60	3.583	5.30	N		-32.4	3.71 - 6.89	0.4348	A
Manganese-54	4.4892	4.49	A		0.0	3.14 - 5.84	0.5462	A
Plutonium-238	0.0796	0.081	A		-1.7	0.057 - 0.105	0.0139	W
Plutonium-239/240	0.0037		A			False Positive Test	0.0016	
Strontium-90	0.8514	1.00	A		-14.9	0.70 - 1.30	0.1376	W
Uranium-234	0.077	0.0647	A		19.0	0.0453 - 0.0841	0.0122	W
Uranium-238	0.064	0.0670	A		-4.5	0.0469 - 0.0871	0.0104	W
Zinc-65	2.4319	2.85	A		-14.7	2.00 - 3.71	0.4269	W

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (WIPH01) WI, DPH, Radiation Protection Section
 1 West Wilson Street
 Madison, WI 53701

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.048	0.090	N		-46.7	0.063 - 0.117	.211	N
Cesium-134	.043		A			False Positive Test	.048	
Cesium-137	3.104	3.28	A		-5.4	2.30 - 4.26	.011	N
Cobalt-57	4.544	4.57	A		-0.6	3.20 - 5.94	.243	A
Cobalt-60	5.001	5.30	A		-5.6	3.71 - 6.89	.122	A
Manganese-54	4.322	4.49	A		-3.7	3.14 - 5.84	.151	A
Plutonium-238	NR	0.081				0.057 - 0.105		
Plutonium-239/240	NR					False Positive Test		
Strontium-90	NR	1.00				0.70 - 1.30		
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	2.549	2.85	A		-10.6	2.00 - 3.71	.199	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41

(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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.0863	0.090	A		-4.1	0.063 - 0.117	.00725	A
Cesium-134	-.0114		A			False Positive Test	.0466	
Cesium-137	3.39	3.28	A		3.4	2.30 - 4.26	.158	A
Cobalt-57	4.63	4.57	A		1.3	3.20 - 5.94	.163	A
Cobalt-60	5.41	5.30	A		2.1	3.71 - 6.89	.197	A
Manganese-54	4.58	4.49	A		2.0	3.14 - 5.84	.170	A
Plutonium-238	.0830	0.081	A		2.5	0.057 - 0.105	.00697	A
Plutonium-239/240	.000462		A			False Positive Test	.000752	
Strontium-90	.346	1.00	N		-65.4	0.70 - 1.30	.0350	A
Uranium-234	.0637	0.0647	A		-1.5	0.0453 - 0.0841	.00820	A
Uranium-238	.0675	0.0670	A		0.7	0.0469 - 0.0871	.00858	A
Zinc-65	2.72	2.85	A		-4.6	2.00 - 3.71	.237	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (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	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.09	0.090	A		0.0	0.063 - 0.117	0.0089	A
Cesium-134	-0.01			A		False Positive Test	0.0372	
Cesium-137	3.299	3.28	A		0.6	2.30 - 4.26	0.107	A
Cobalt-57	4.508	4.57	A		-1.4	3.20 - 5.94	0.147	A
Cobalt-60	5.379	5.30	A		1.5	3.71 - 6.89	0.414	A
Manganese-54	4.461	4.49	A		-0.6	3.14 - 5.84	0.2	A
Plutonium-238	0.1033	0.081	W		27.5	0.057 - 0.105	0.0186	W
Plutonium-239/240	0.0124			A		False Positive Test	0.0056	
Strontium-90	0.3497156	1.00	N		-65.0	0.70 - 1.30	0.26	N
Uranium-234	0.0695	0.0647	A		7.4	0.0453 - 0.0841	0.00885	A
Uranium-238	0.07689	0.0670	A		14.8	0.0469 - 0.0871	0.00758	A
Zinc-65	2.83	2.85	A		-0.7	2.00 - 3.71	0.22	A

Radiological Reference Date: August 1, 2019

Result 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%

RP = Relative Precision

Notes:

(1) = False Positive

(28) = Not Reporting Previously Reported Analyte

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



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

Laboratory Results For MAPEP-19-RdV41
 (WSTP99) Cavendish Nuclear Limited
 Greeson Court
 Cumbria, UK CA24 3HZ

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.0391				0.0274 - 0.0508		
Uranium-238	NR	5.38				3.77 - 6.99		
Uranium-Total	NR	5.42				3.79 - 7.05		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.099	0.090	A		10.0	0.063 - 0.117	0.011	A
Cesium-134	-0.003		A			False Positive Test	0.03	
Cesium-137	3.69	3.28	A		12.5	2.30 - 4.26	0.17	A
Cobalt-57	5.46	4.57	A		19.5	3.20 - 5.94	0.29	A
Cobalt-60	5.60	5.30	A		5.7	3.71 - 6.89	0.14	A
Manganese-54	4.87	4.49	A		8.5	3.14 - 5.84	0.26	A
Plutonium-238	0.078	0.081	A		-3.7	0.057 - 0.105	0.005	A
Plutonium-239/240	0.0006		A			False Positive Test	0.0003	
Strontium-90	1.41	1.00	N		41.0	0.70 - 1.30	0.08	A
Uranium-234	NR	0.0647				0.0453 - 0.0841		
Uranium-238	NR	0.0670				0.0469 - 0.0871		
Zinc-65	3.04	2.85	A		6.7	2.00 - 3.71	0.11	A

Radiological Reference Date: August 1, 2019

Result 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%

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag

ACCEPTABLE WITH WARNING.....15% < RP <= 30%

NOT ACCEPTABLE.....RP > 30%

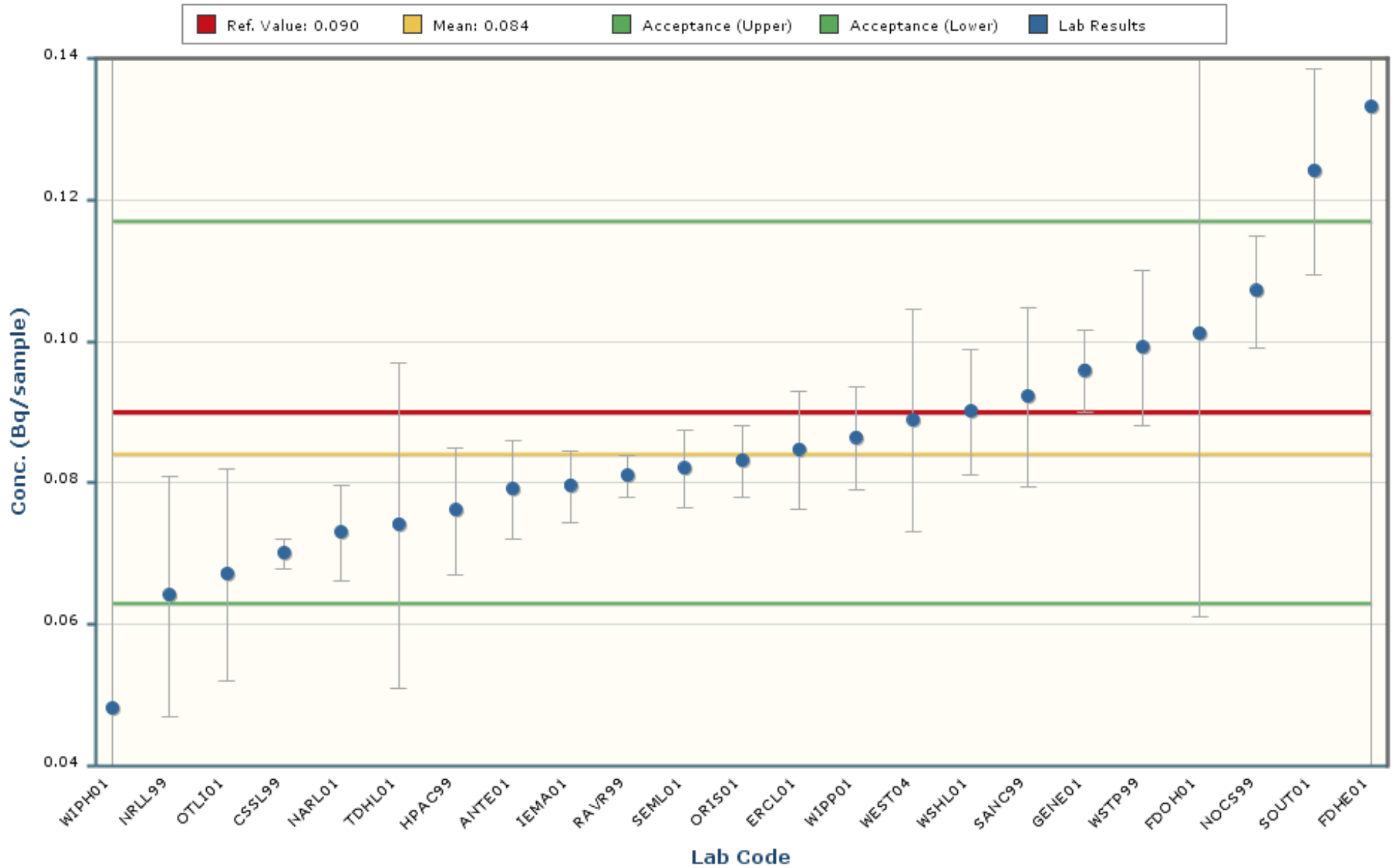
RP = Relative Precision

Notes:

- (1) = False Positive
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations

Americium-241

MAPEP-19-RdV41



Notes:

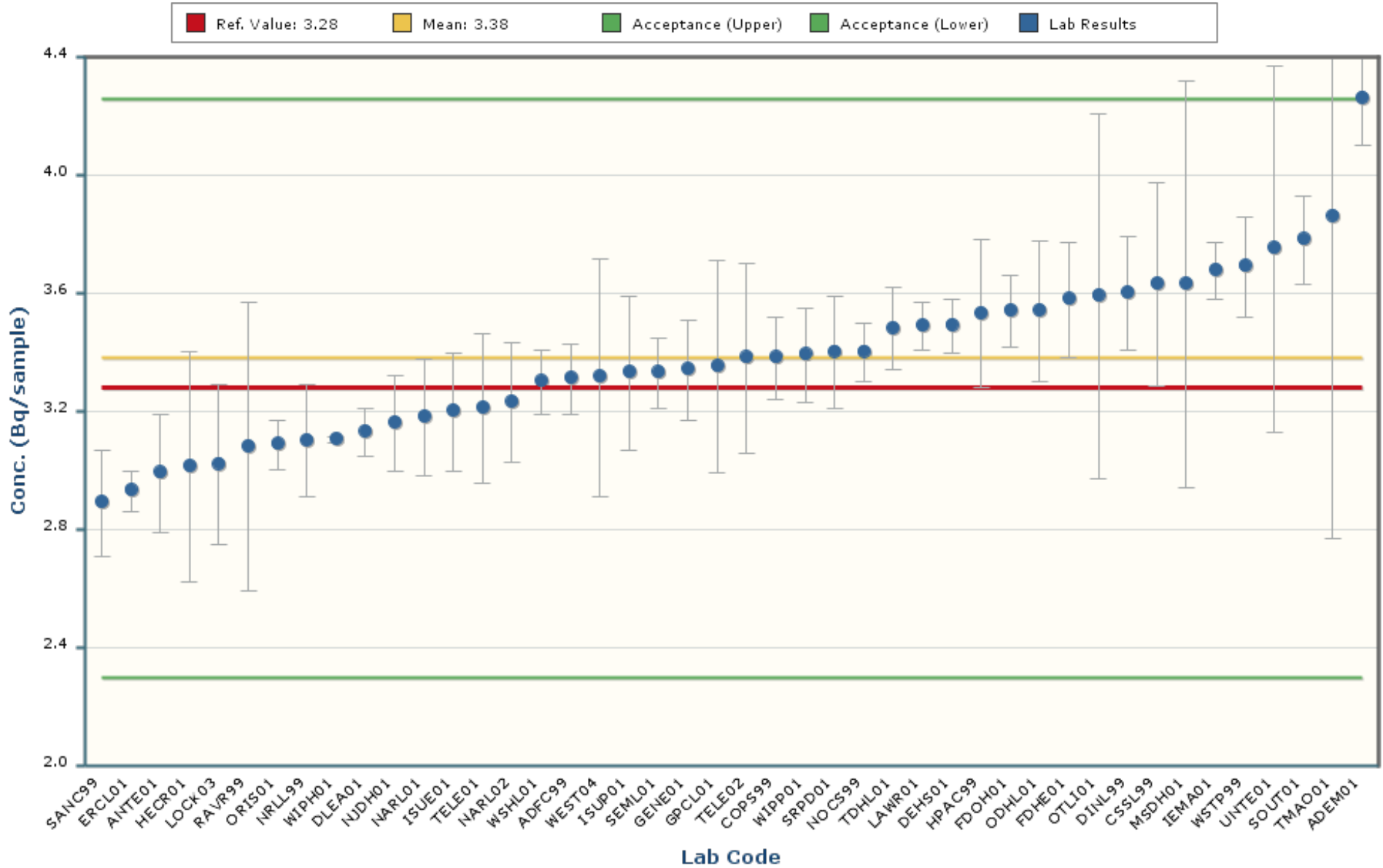
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.026 and 0.141 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Cesium-137

MAPEP-19-RdV41



Notes:

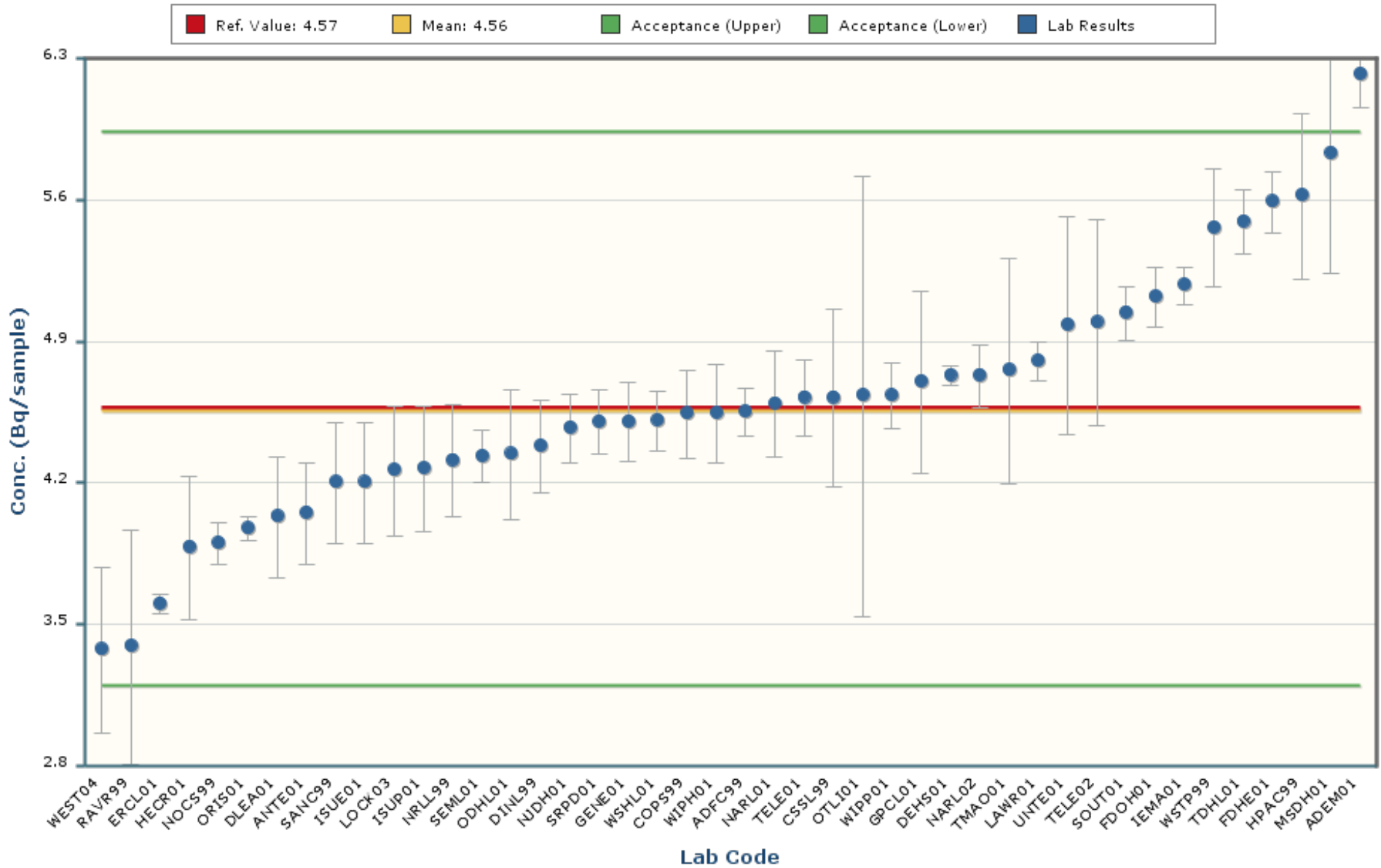
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.99 and 4.76 (± 5 Standard Deviations).

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

Cobalt-57

MAPEP-19-RdV41



Notes:

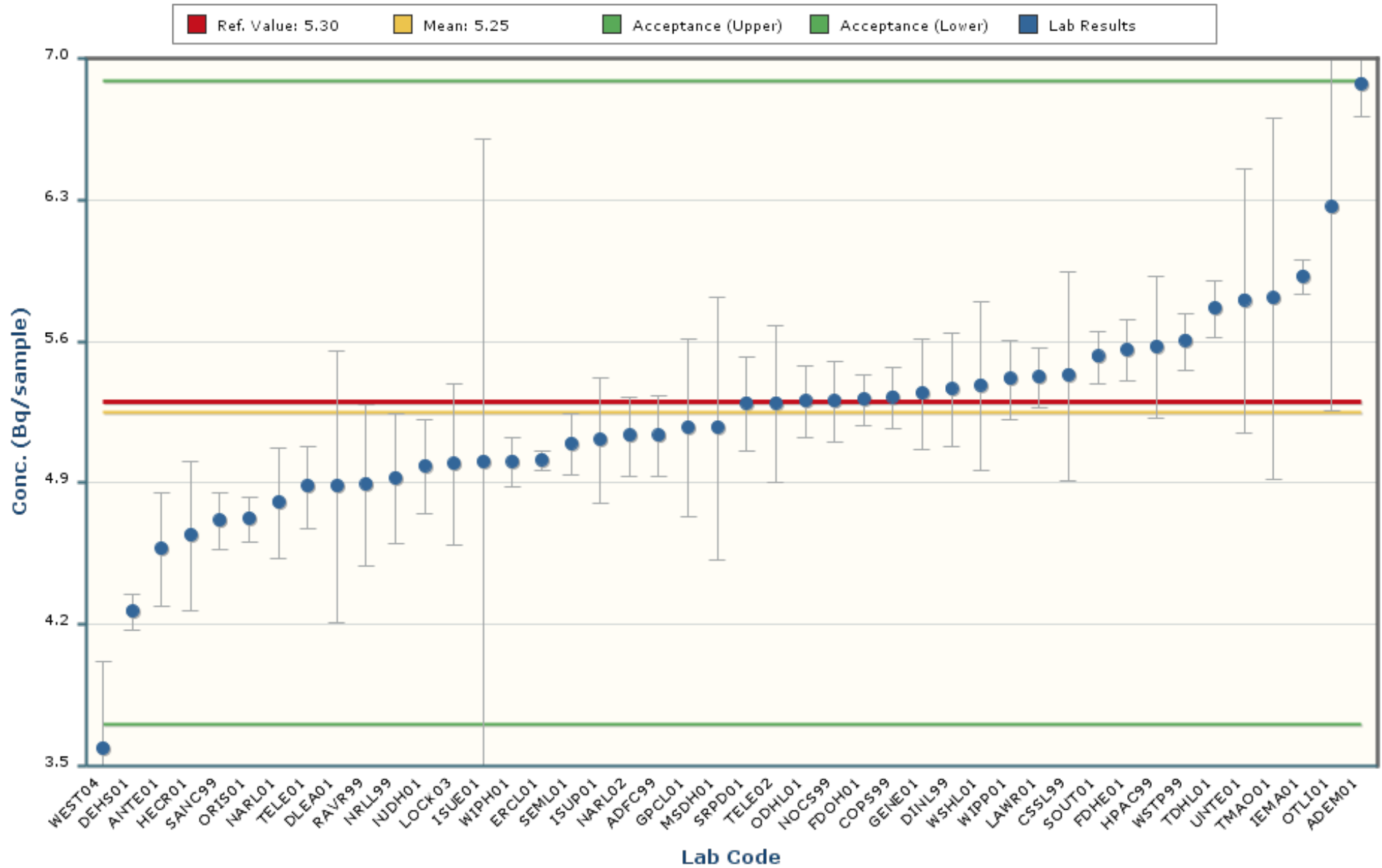
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.77 and 7.35 (± 5 Standard Deviations).

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

Cobalt-60

MAPEP-19-RdV41



Notes:

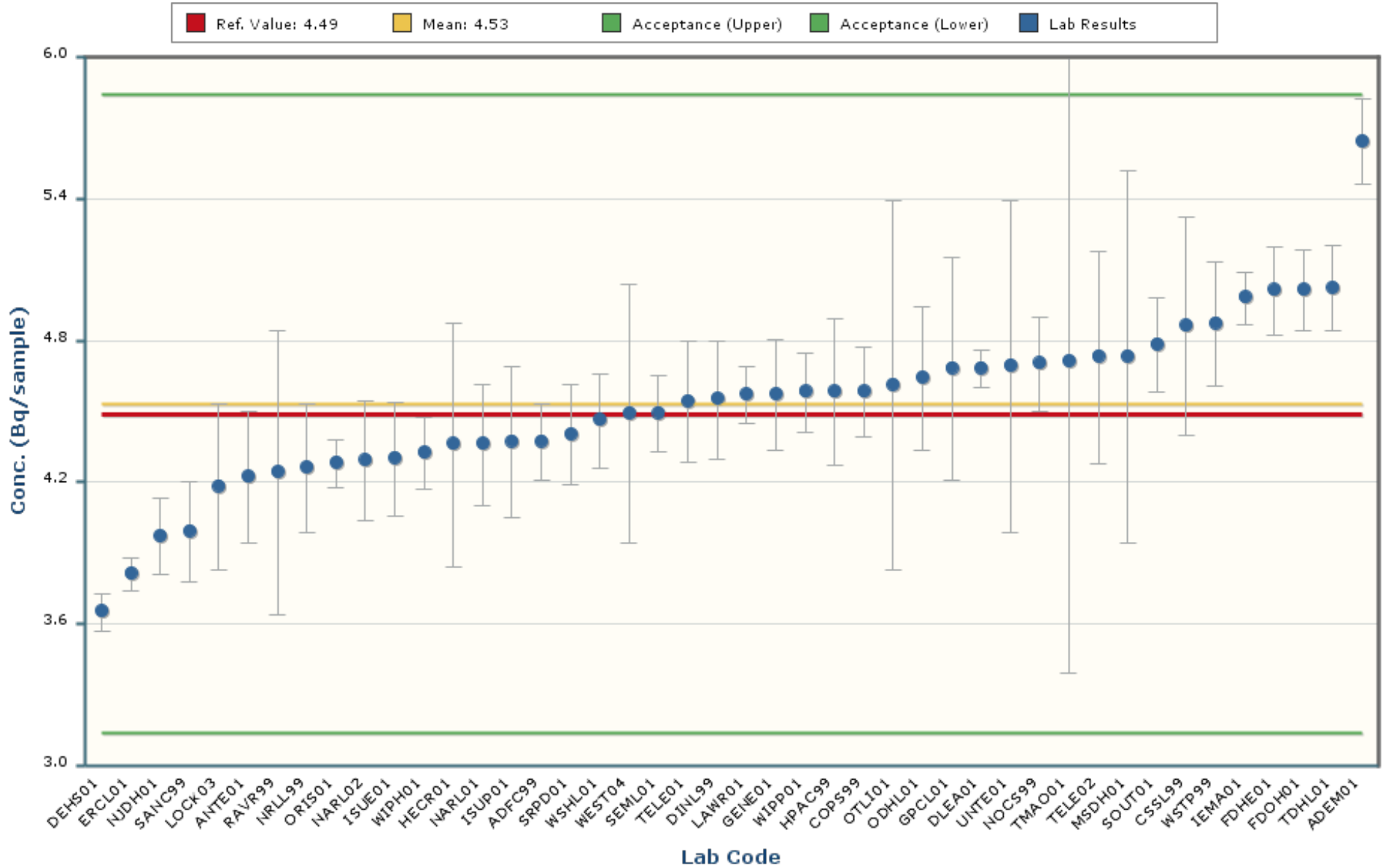
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.94 and 7.57 (± 5 Standard Deviations).

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

Manganese-54

MAPEP-19-RdV41



Notes:

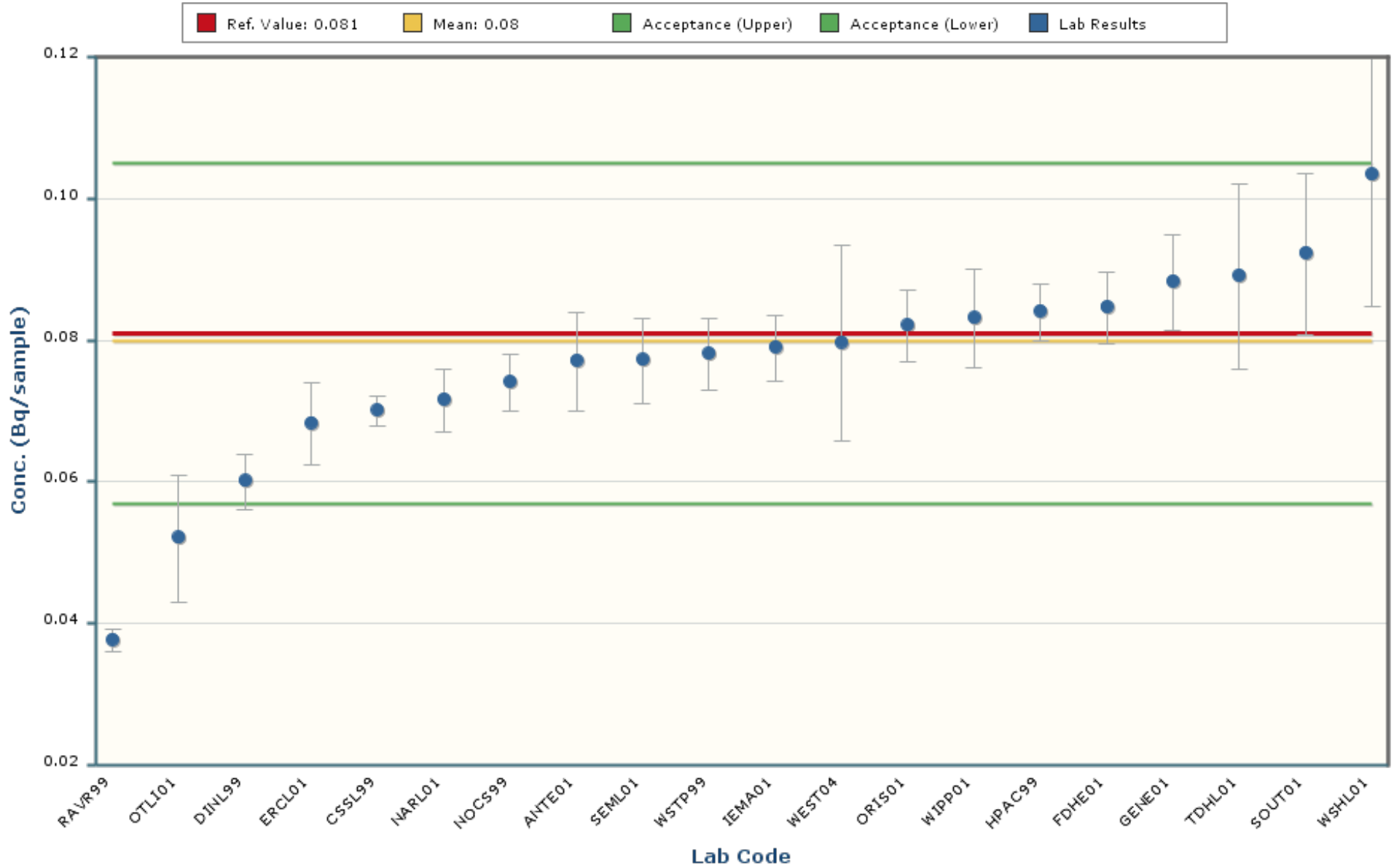
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.77 and 6.28 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Plutonium-238

MAPEP-19-RdV41



Notes:

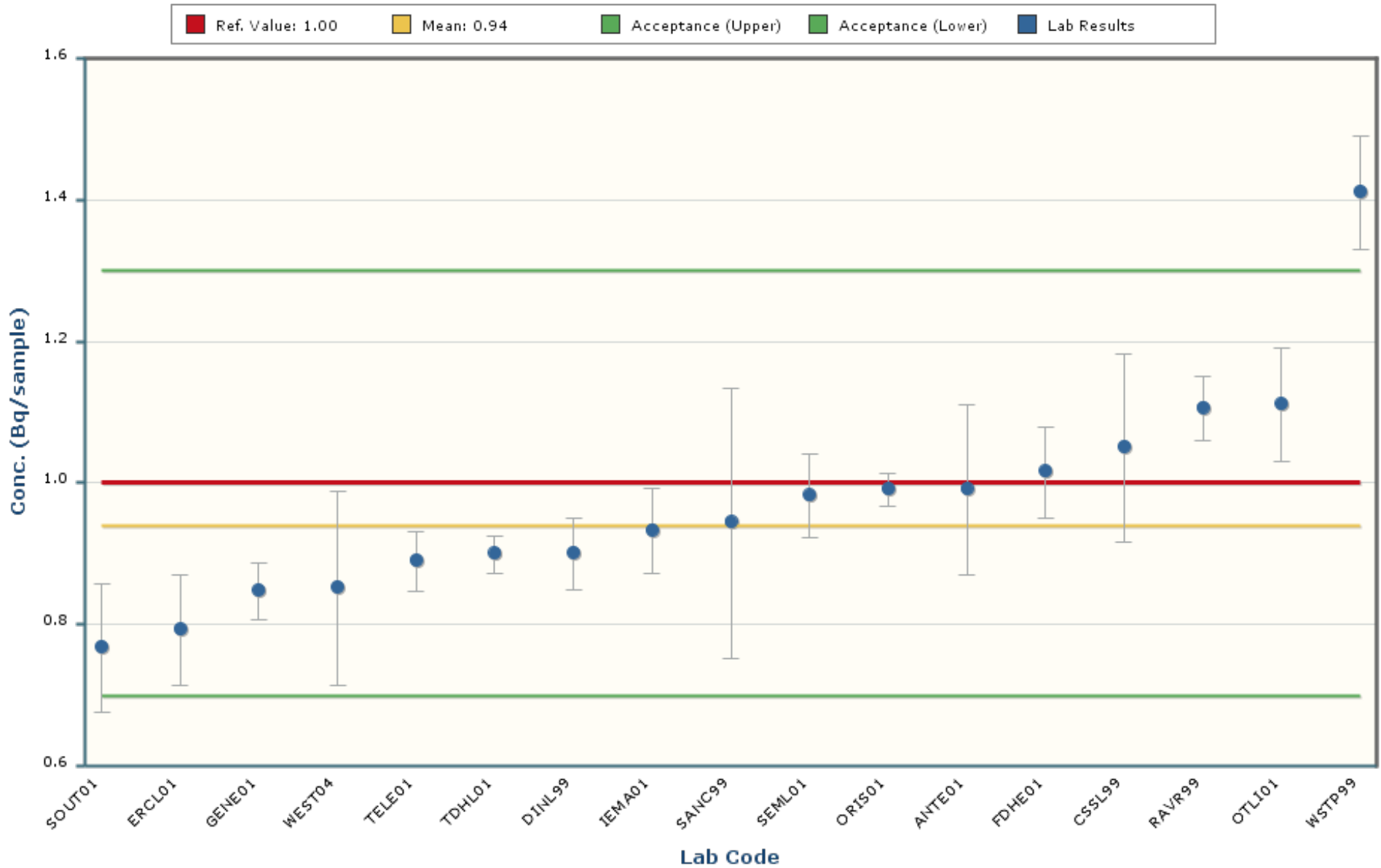
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.031 and 0.129 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Strontium-90

MAPEP-19-RdV41



Notes:

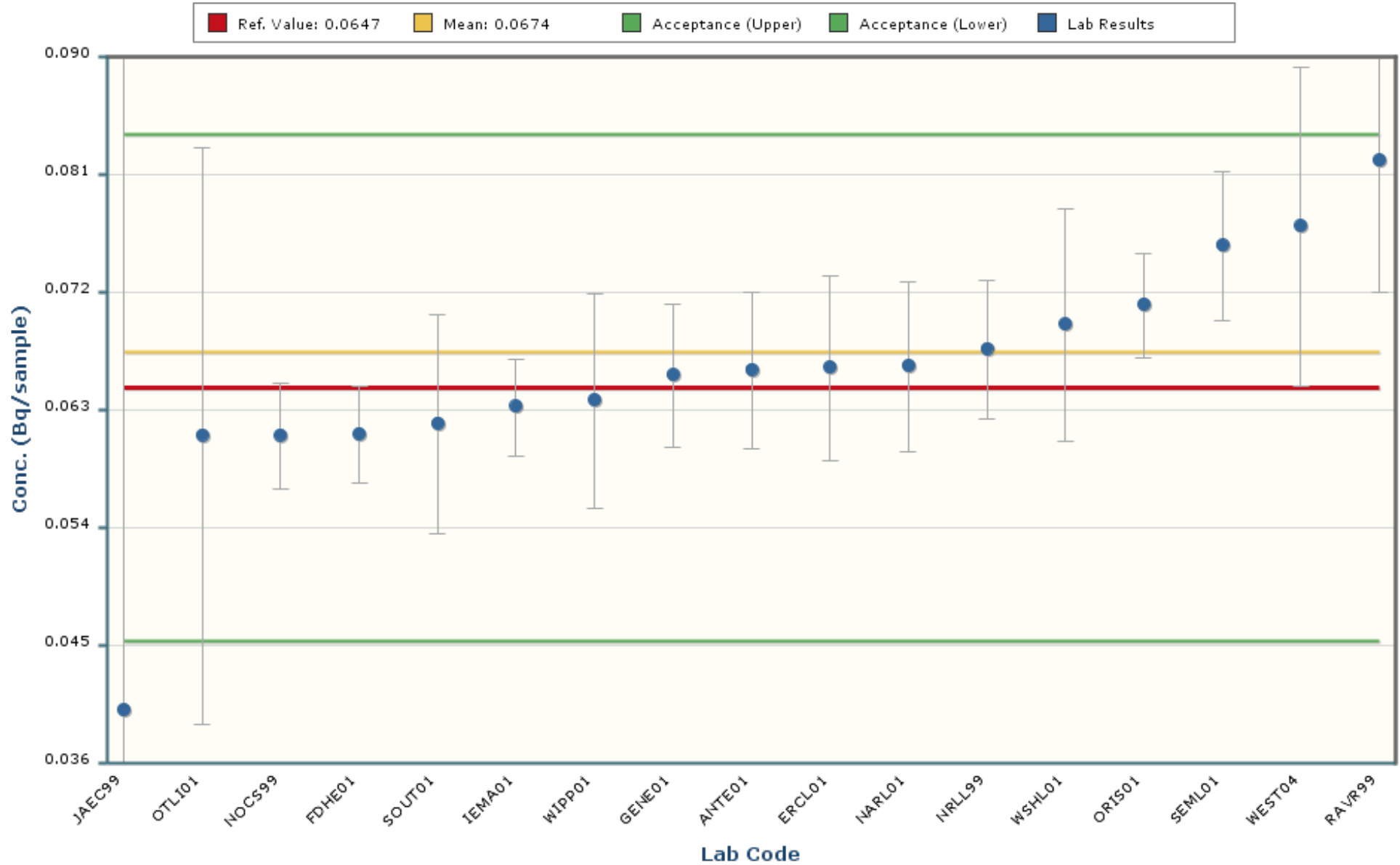
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.43 and 1.45 (± 5 Standard Deviations).

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

Uranium-234

MAPEP-19-RdV41



Notes:

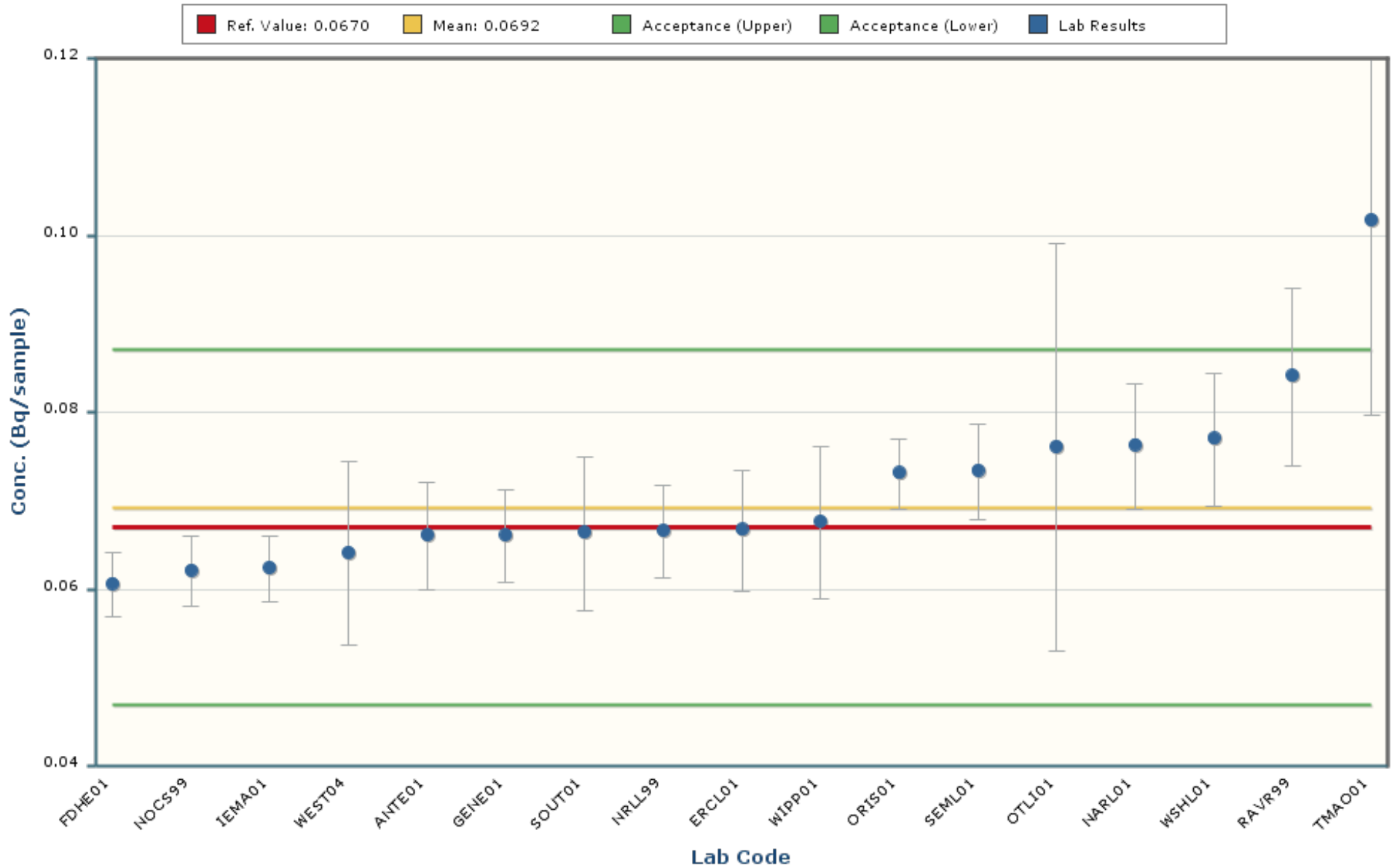
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.0363 and 0.0985 (± 5 Standard Deviations).

The error bars encompassing each result are plotted at ± 1 standard deviation.

Uranium-238

MAPEP-19-RdV41



Notes:

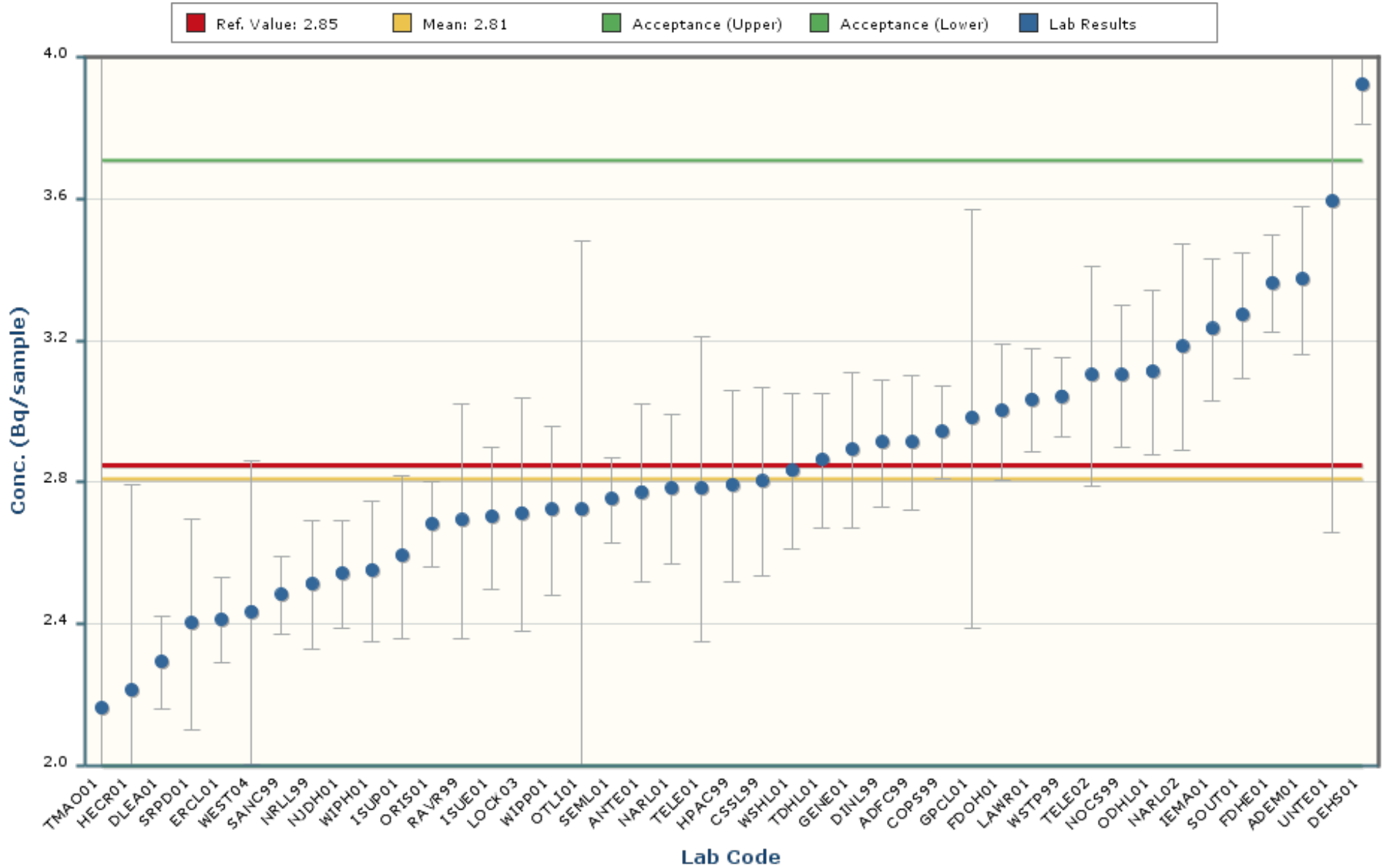
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.0362 and 0.1022 (± 5 Standard Deviations).

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

Zinc-65

MAPEP-19-RdV41



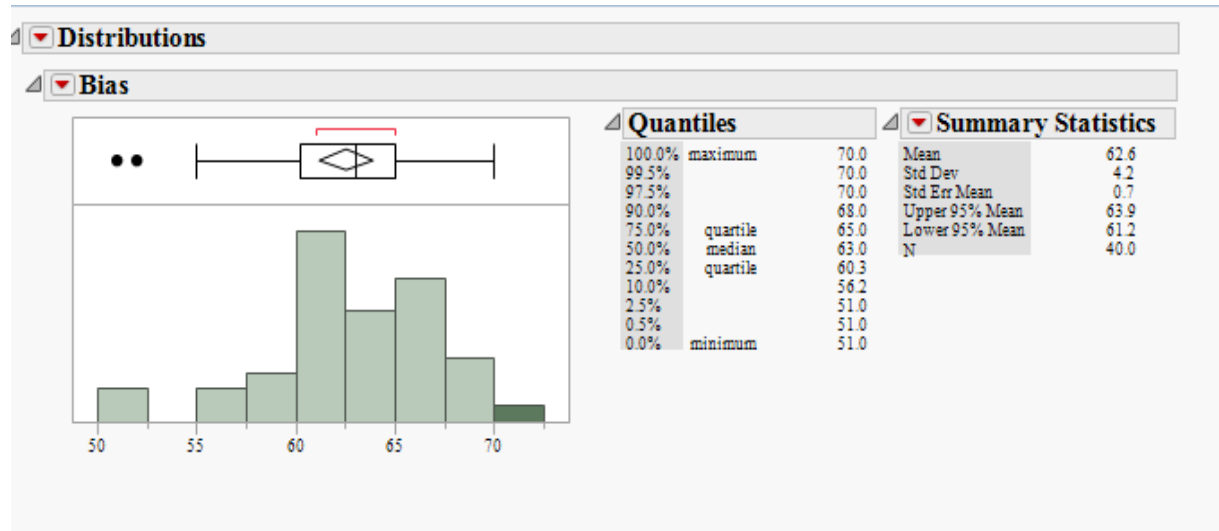
Notes:

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

The chart shows only data points with values between 1.21 and 4.42 (± 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.

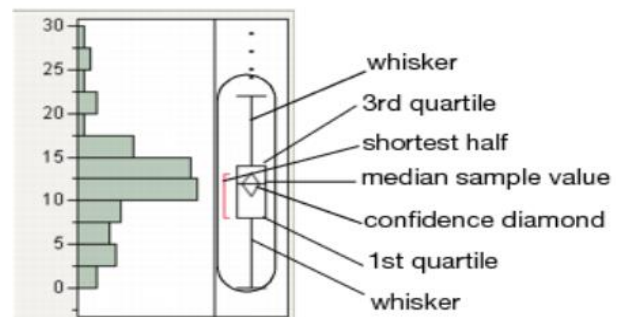


Outlier Box Plot

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 1st and 3rd quartile. The difference between the 1st and 3rd quartiles is called the interquartile range. Each box has lines that extend from each end, sometimes called whiskers. The whiskers extend from the ends of the box to the outermost data point that falls within the distances computed as follows:

3rd quartile + 1.5*(interquartile range)

1st quartile - 1.5*(interquartile range)



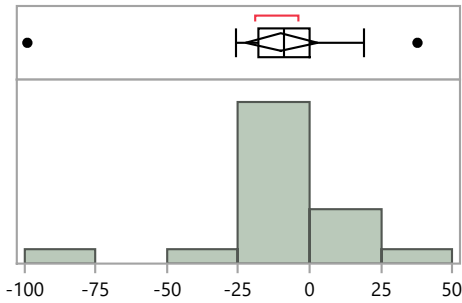
If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

RdV41 Distribution by Detection Method

RdV Distribution by Detection Method

Distributions Analyte_Detection=Americium-241 Alpha Spectrometry

Bias



Quantiles

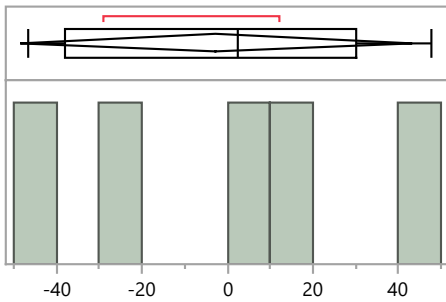
100.0%	maximum	37.8
99.5%		37.8
97.5%		37.8
90.0%		18.9
75.0%	quartile	0.0
50.0%	median	-9.0
25.0%	quartile	-17.8
10.0%		-25.6
2.5%		-99.0
0.5%		-99.0
0.0%	minimum	-99.0

Summary Statistics

Mean	-9.9
Std Dev	26.4
Std Err Mean	6.0
Upper 95% Mean	2.8
Lower 95% Mean	-22.6
N	19.0

Distributions Analyte_Detection=Americium-241 Gamma Spectrometry

Bias



Quantiles

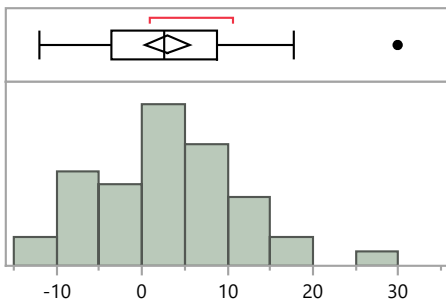
100.0%	maximum	47.8
99.5%		47.8
97.5%		47.8
90.0%		47.8
75.0%	quartile	30.0
50.0%	median	2.3
25.0%	quartile	-37.8
10.0%		-46.7
2.5%		-46.7
0.5%		-46.7
0.0%	minimum	-46.7

Summary Statistics

Mean	-2.7
Std Dev	36.8
Std Err Mean	16.5
Upper 95% Mean	43.0
Lower 95% Mean	-48.4
N	5.0

Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	29.9
99.5%		29.9
97.5%		28.4
90.0%		13.4
75.0%	quartile	8.8
50.0%	median	2.6
25.0%	quartile	-3.5
10.0%		-8.1
2.5%		-11.8
0.5%		-11.9
0.0%	minimum	-11.9

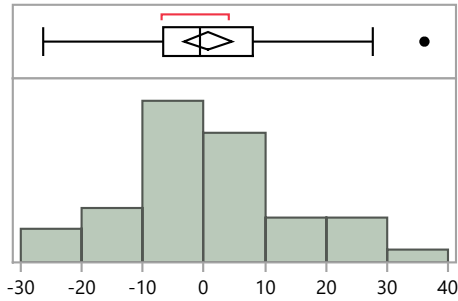
Summary Statistics

Mean	3.0
Std Dev	8.4
Std Err Mean	1.3
Upper 95% Mean	5.6
Lower 95% Mean	0.4
N	44.0

RdV Distribution by Detection Method

Distributions Analyte_Detection=Cobalt-57 Gamma Spectrometry

Bias



Quantiles

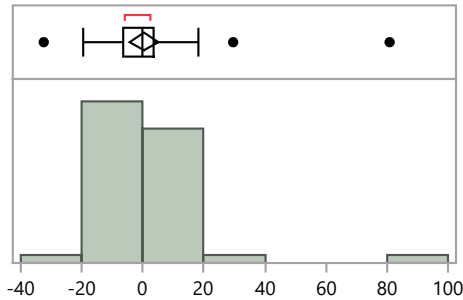
100.0%	maximum	36.1
99.5%		36.1
97.5%		35.0
90.0%		21.2
75.0%	quartile	8.0
50.0%	median	-0.5
25.0%	quartile	-6.8
10.0%		-14.9
2.5%		-26.2
0.5%		-26.2
0.0%	minimum	-26.2

Summary Statistics

Mean	0.7
Std Dev	13.3
Std Err Mean	2.0
Upper 95% Mean	4.7
Lower 95% Mean	-3.4
N	44.0

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry

Bias



Quantiles

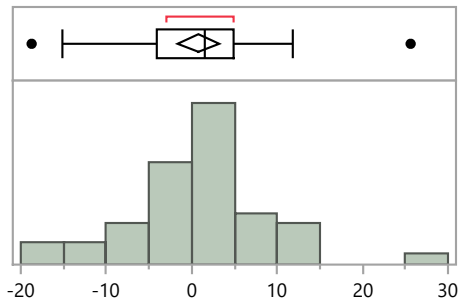
100.0%	maximum	80.8
99.5%		80.8
97.5%		73.1
90.0%		10.4
75.0%	quartile	3.4
50.0%	median	-0.2
25.0%	quartile	-6.6
10.0%		-11.7
2.5%		-30.5
0.5%		-32.4
0.0%	minimum	-32.4

Summary Statistics

Mean	0.2
Std Dev	15.7
Std Err Mean	2.3
Upper 95% Mean	4.9
Lower 95% Mean	-4.5
N	45.0

Distributions Analyte_Detection=Manganese-54 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	25.6
99.5%		25.6
97.5%		23.9
90.0%		11.3
75.0%	quartile	4.9
50.0%	median	1.6
25.0%	quartile	-4.1
10.0%		-9.0
2.5%		-18.3
0.5%		-18.7
0.0%	minimum	-18.7

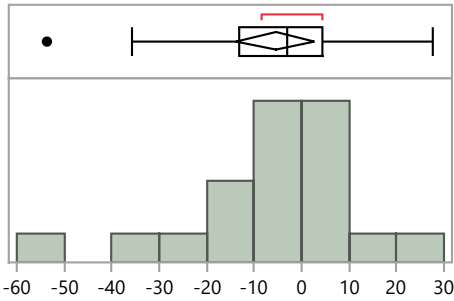
Summary Statistics

Mean	0.8
Std Dev	7.8
Std Err Mean	1.2
Upper 95% Mean	3.2
Lower 95% Mean	-1.6
N	44.0

RdV Distribution by Detection Method

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



Quantiles

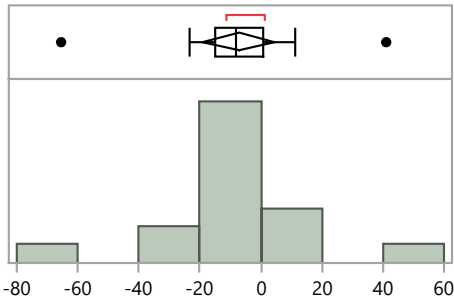
100.0%	maximum	27.5
99.5%		27.5
97.5%		27.5
90.0%		13.4
75.0%	quartile	4.2
50.0%	median	-3.2
25.0%	quartile	-13.1
10.0%		-34.8
2.5%		-53.6
0.5%		-53.6
0.0%	minimum	-53.6

Summary Statistics

Mean	-5.5
Std Dev	17.9
Std Err Mean	4.0
Upper 95% Mean	2.8
Lower 95% Mean	-13.9
N	20.0

Distributions Analyte_Detection=Strontium-90 Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

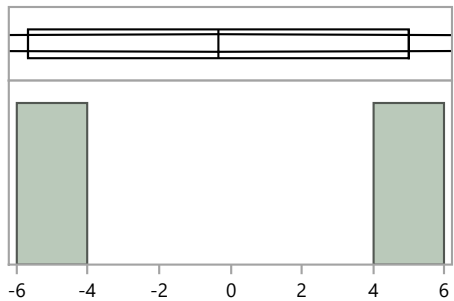
100.0%	maximum	41.0
99.5%		41.0
97.5%		41.0
90.0%		20.0
75.0%	quartile	0.9
50.0%	median	-8.4
25.0%	quartile	-15.2
10.0%		-35.9
2.5%		-65.4
0.5%		-65.4
0.0%	minimum	-65.4

Summary Statistics

Mean	-7.4
Std Dev	21.8
Std Err Mean	5.5
Upper 95% Mean	4.3
Lower 95% Mean	-19.0
N	16.0

Distributions Analyte_Detection=Strontium-90 Beta Counting - liquid scintillation counter

Bias



Quantiles

100.0%	maximum	5.0
99.5%		5.0
97.5%		5.0
90.0%		5.0
75.0%	quartile	5.0
50.0%	median	-0.4
25.0%	quartile	-5.7
10.0%		-5.7
2.5%		-5.7
0.5%		-5.7
0.0%	minimum	-5.7

Summary Statistics

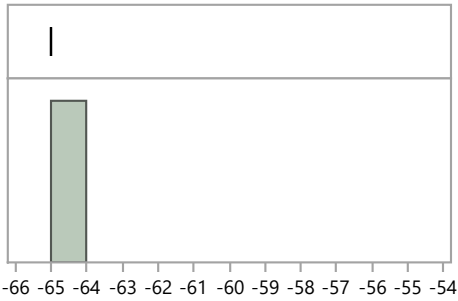
Mean	-0.4
Std Dev	7.6
Std Err Mean	5.3
Upper 95% Mean	67.6
Lower 95% Mean	-68.3
N	2.0

RdV41 Distribution by Detection Method

RdV Distribution by Detection Method

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

Bias



Quantiles

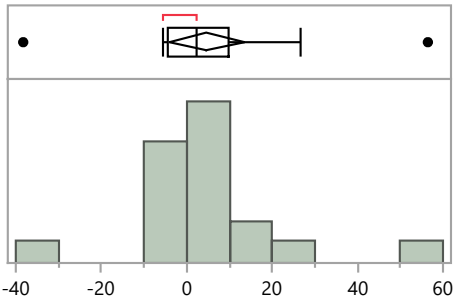
100.0%	maximum	-65.0
99.5%		-65.0
97.5%		-65.0
90.0%		-65.0
75.0%	quartile	-65.0
50.0%	median	-65.0
25.0%	quartile	-65.0
10.0%		-65.0
2.5%		-65.0
0.5%		-65.0
0.0%	minimum	-65.0

Summary Statistics

Mean	-65.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias



Quantiles

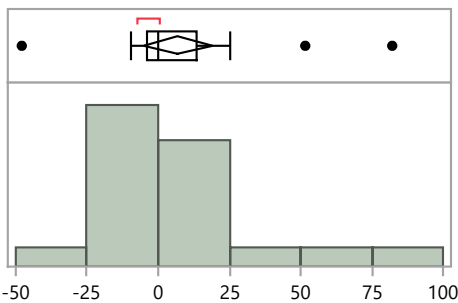
100.0%	maximum	56.4
99.5%		56.4
97.5%		56.4
90.0%		26.7
75.0%	quartile	9.7
50.0%	median	2.3
25.0%	quartile	-4.3
10.0%		-5.7
2.5%		-38.2
0.5%		-38.2
0.0%	minimum	-38.2

Summary Statistics

Mean	4.7
Std Dev	18.1
Std Err Mean	4.2
Upper 95% Mean	13.5
Lower 95% Mean	-4.0
N	19.0

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias



Quantiles

100.0%	maximum	82.1
99.5%		82.1
97.5%		82.1
90.0%		49.0
75.0%	quartile	13.6
50.0%	median	-0.1
25.0%	quartile	-3.8
10.0%		-9.5
2.5%		-47.8
0.5%		-47.8
0.0%	minimum	-47.8

Summary Statistics

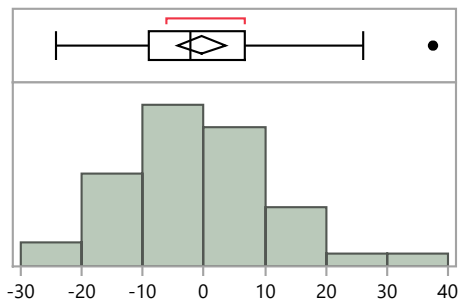
Mean	6.9
Std Dev	25.5
Std Err Mean	5.7
Upper 95% Mean	18.9
Lower 95% Mean	-5.0
N	20.0

RdV41 Distribution by Detection Method

RdV Distribution by Detection Method

Distributions Analyte_Detection=Zinc-65 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	37.5
99.5%		37.5
97.5%		36.3
90.0%		16.6
75.0%	quartile	6.7
50.0%	median	-2.1
25.0%	quartile	-9.1
10.0%		-15.6
2.5%		-24.0
0.5%		-24.2
0.0%	minimum	-24.2

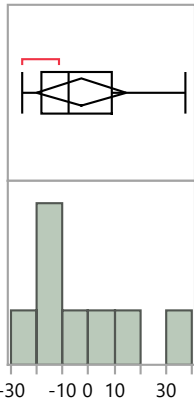
Summary Statistics

Mean	-0.4
Std Dev	12.6
Std Err Mean	1.9
Upper 95% Mean	3.5
Lower 95% Mean	-4.3
N	43.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

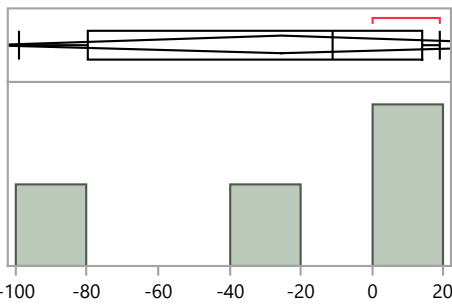
Bias



Quantiles			Summary Statistics	
100.0%	maximum	37.8	Mean	-2.7
99.5%		37.8	Std Dev	20.4
97.5%		37.8	Std Err Mean	7.2
90.0%		37.8	Upper 95% Mean	14.4
75.0%	quartile	9.1	Lower 95% Mean	-19.8
50.0%	median	-7.9	N	8.0
25.0%	quartile	-18.2		
10.0%		-25.6		
2.5%		-25.6		
0.5%		-25.6		
0.0%	minimum	-25.6		

Distributions Analyte_Method=Americium-241 Acid leaching without hydrofluoric acid

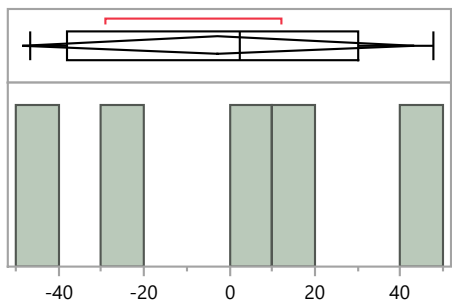
Bias



Quantiles			Summary Statistics	
100.0%	maximum	18.9	Mean	-25.6
99.5%		18.9	Std Dev	51.7
97.5%		18.9	Std Err Mean	25.9
90.0%		18.9	Upper 95% Mean	56.7
75.0%	quartile	14.2	Lower 95% Mean	-107.9
50.0%	median	-11.2	N	4.0
25.0%	quartile	-79.8		
10.0%		-99.0		
2.5%		-99.0		
0.5%		-99.0		
0.0%	minimum	-99.0		

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

Bias



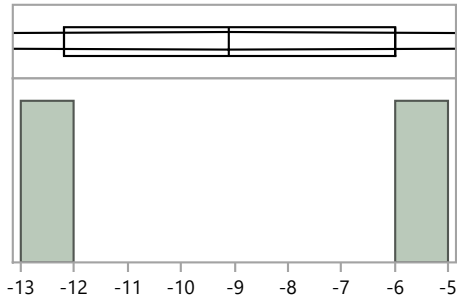
Quantiles			Summary Statistics	
100.0%	maximum	47.8	Mean	-2.7
99.5%		47.8	Std Dev	36.8
97.5%		47.8	Std Err Mean	16.5
90.0%		47.8	Upper 95% Mean	43.0
75.0%	quartile	30.0	Lower 95% Mean	-48.4
50.0%	median	2.3	N	5.0
25.0%	quartile	-37.8		
10.0%		-46.7		
2.5%		-46.7		
0.5%		-46.7		
0.0%	minimum	-46.7		

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Other

Bias



Quantiles

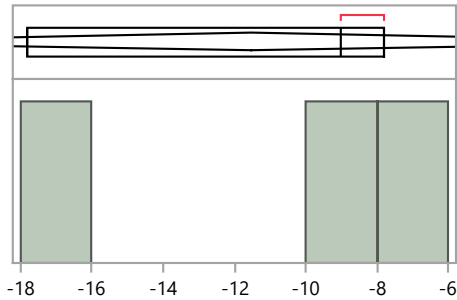
100.0%	maximum	-6.0
99.5%		-6.0
97.5%		-6.0
90.0%		-6.0
75.0%	quartile	-6.0
50.0%	median	-9.1
25.0%	quartile	-12.2
10.0%		-12.2
2.5%		-12.2
0.5%		-12.2
0.0%	minimum	-12.2

Summary Statistics

Mean	-9.1
Std Dev	4.4
Std Err Mean	3.1
Upper 95% Mean	30.3
Lower 95% Mean	-48.5
N	2.0

Distributions Analyte_Method=Americium-241 Total dissolution by fusion

Bias



Quantiles

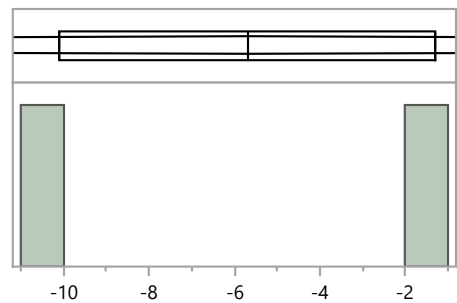
100.0%	maximum	-7.8
99.5%		-7.8
97.5%		-7.8
90.0%		-7.8
75.0%	quartile	-7.8
50.0%	median	-9.0
25.0%	quartile	-17.8
10.0%		-17.8
2.5%		-17.8
0.5%		-17.8
0.0%	minimum	-17.8

Summary Statistics

Mean	-11.5
Std Dev	5.5
Std Err Mean	3.2
Upper 95% Mean	2.0
Lower 95% Mean	-25.1
N	3.0

Distributions Analyte_Method=Americium-241 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	-1.3
99.5%		-1.3
97.5%		-1.3
90.0%		-1.3
75.0%	quartile	-1.3
50.0%	median	-5.7
25.0%	quartile	-10.1
10.0%		-10.1
2.5%		-10.1
0.5%		-10.1
0.0%	minimum	-10.1

Summary Statistics

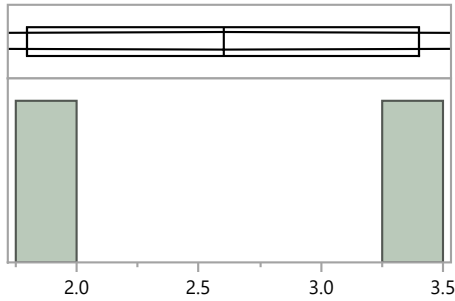
Mean	-5.7
Std Dev	6.2
Std Err Mean	4.4
Upper 95% Mean	50.2
Lower 95% Mean	-61.6
N	2.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Cesium-137 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

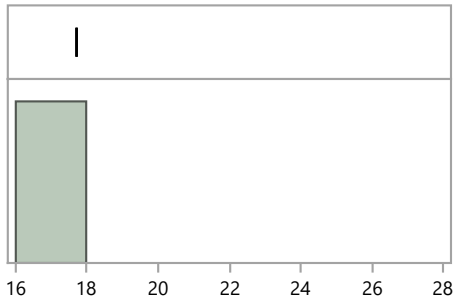
100.0%	maximum	3.4
99.5%		3.4
97.5%		3.4
90.0%		3.4
75.0%	quartile	3.4
50.0%	median	2.6
25.0%	quartile	1.8
10.0%		1.8
2.5%		1.8
0.5%		1.8
0.0%	minimum	1.8

Summary Statistics

Mean	2.6
Std Dev	1.1
Std Err Mean	0.8
Upper 95% Mean	12.8
Lower 95% Mean	-7.6
N	2.0

Distributions Analyte_Method=Cesium-137 EPA 901, Radioactive Cesium, 600/4-80-032

Bias



Quantiles

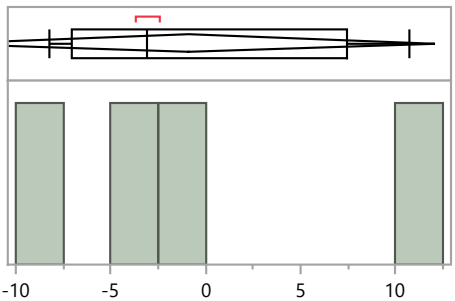
100.0%	maximum	17.7
99.5%		17.7
97.5%		17.7
90.0%		17.7
75.0%	quartile	17.7
50.0%	median	17.7
25.0%	quartile	17.7
10.0%		17.7
2.5%		17.7
0.5%		17.7
0.0%	minimum	17.7

Summary Statistics

Mean	17.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

100.0%	maximum	10.7
99.5%		10.7
97.5%		10.7
90.0%		10.7
75.0%	quartile	7.4
50.0%	median	-3.1
25.0%	quartile	-7.1
10.0%		-8.2
2.5%		-8.2
0.5%		-8.2
0.0%	minimum	-8.2

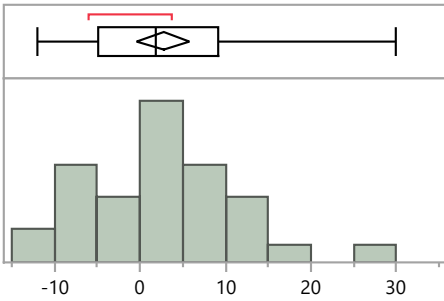
Summary Statistics

Mean	-0.9
Std Dev	8.1
Std Err Mean	4.1
Upper 95% Mean	12.0
Lower 95% Mean	-13.8
N	4.0

RdV Distribution by Prep Method

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

Bias



Quantiles

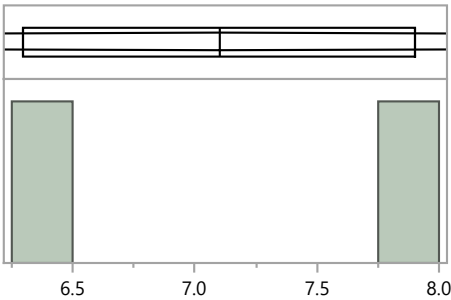
100.0%	maximum	29.9
99.5%		29.9
97.5%		29.9
90.0%		13.4
75.0%	quartile	9.2
50.0%	median	1.8
25.0%	quartile	-4.8
10.0%		-8.4
2.5%		-11.9
0.5%		-11.9
0.0%	minimum	-11.9

Summary Statistics

Mean	2.7
Std Dev	8.8
Std Err Mean	1.5
Upper 95% Mean	5.8
Lower 95% Mean	-0.3
N	34.0

Distributions Analyte_Method=Cesium-137 Other

Bias



Quantiles

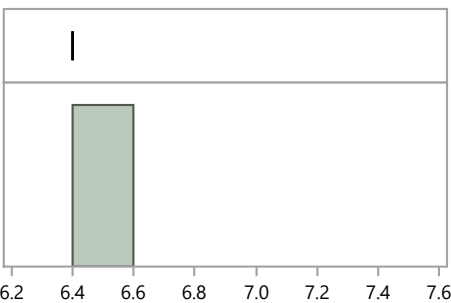
100.0%	maximum	7.9
99.5%		7.9
97.5%		7.9
90.0%		7.9
75.0%	quartile	7.9
50.0%	median	7.1
25.0%	quartile	6.3
10.0%		6.3
2.5%		6.3
0.5%		6.3
0.0%	minimum	6.3

Summary Statistics

Mean	7.1
Std Dev	1.1
Std Err Mean	0.8
Upper 95% Mean	17.3
Lower 95% Mean	-3.1
N	2.0

Distributions Analyte_Method=Cesium-137 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	6.4
99.5%		6.4
97.5%		6.4
90.0%		6.4
75.0%	quartile	6.4
50.0%	median	6.4
25.0%	quartile	6.4
10.0%		6.4
2.5%		6.4
0.5%		6.4
0.0%	minimum	6.4

Summary Statistics

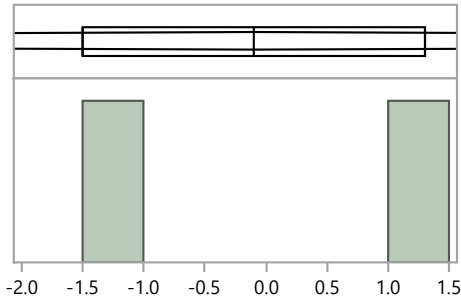
Mean	6.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Cobalt-57 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

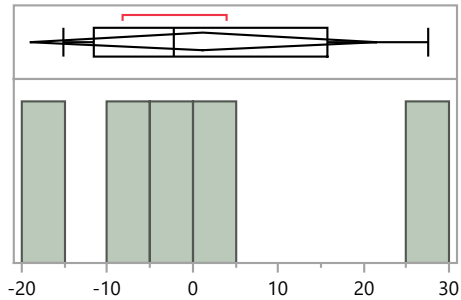
100.0%	maximum	1.3
99.5%		1.3
97.5%		1.3
90.0%		1.3
75.0%	quartile	1.3
50.0%	median	-0.1
25.0%	quartile	-1.5
10.0%		-1.5
2.5%		-1.5
0.5%		-1.5
0.0%	minimum	-1.5

Summary Statistics

Mean	-0.1
Std Dev	2.0
Std Err Mean	1.4
Upper 95% Mean	17.7
Lower 95% Mean	-17.9
N	2.0

Distributions Analyte_Method=Cobalt-57 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

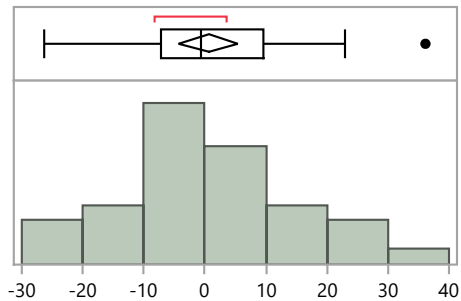
100.0%	maximum	27.6
99.5%		27.6
97.5%		27.6
90.0%		27.6
75.0%	quartile	15.8
50.0%	median	-2.2
25.0%	quartile	-11.6
10.0%		-15.1
2.5%		-15.1
0.5%		-15.1
0.0%	minimum	-15.1

Summary Statistics

Mean	1.2
Std Dev	16.3
Std Err Mean	7.3
Upper 95% Mean	21.5
Lower 95% Mean	-19.1
N	5.0

Distributions Analyte_Method=Cobalt-57 No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	36.1
99.5%		36.1
97.5%		36.1
90.0%		21.2
75.0%	quartile	9.5
50.0%	median	-0.5
25.0%	quartile	-7.1
10.0%		-18.0
2.5%		-26.2
0.5%		-26.2
0.0%	minimum	-26.2

Summary Statistics

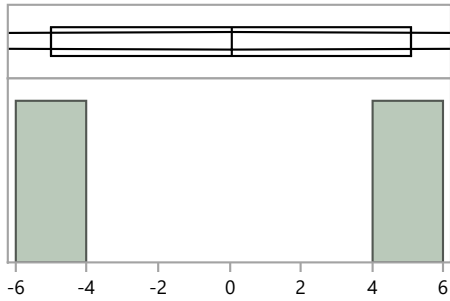
Mean	0.6
Std Dev	13.9
Std Err Mean	2.4
Upper 95% Mean	5.4
Lower 95% Mean	-4.3
N	34.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Cobalt-57 Other

Bias



Quantiles

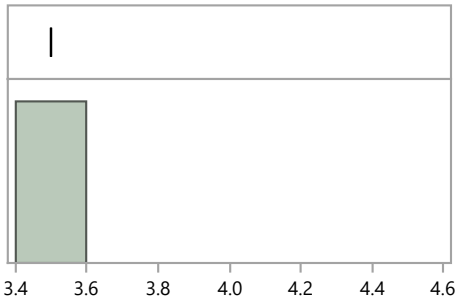
100.0%	maximum	5.1
99.5%		5.1
97.5%		5.1
90.0%		5.1
75.0%	quartile	5.1
50.0%	median	0.0
25.0%	quartile	-5.0
10.0%		-5.0
2.5%		-5.0
0.5%		-5.0
0.0%	minimum	-5.0

Summary Statistics

Mean	0.0
Std Dev	7.1
Std Err Mean	5.1
Upper 95% Mean	64.2
Lower 95% Mean	-64.1
N	2.0

Distributions Analyte_Method=Cobalt-57 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

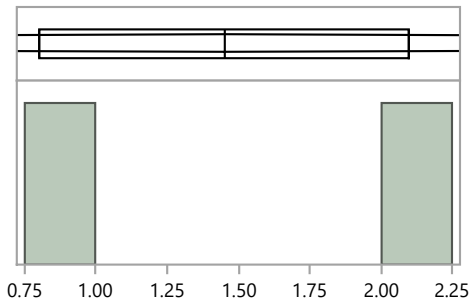
100.0%	maximum	3.5
99.5%		3.5
97.5%		3.5
90.0%		3.5
75.0%	quartile	3.5
50.0%	median	3.5
25.0%	quartile	3.5
10.0%		3.5
2.5%		3.5
0.5%		3.5
0.0%	minimum	3.5

Summary Statistics

Mean	3.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cobalt-60 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	2.1
50.0%	median	1.5
25.0%	quartile	0.8
10.0%		0.8
2.5%		0.8
0.5%		0.8
0.0%	minimum	0.8

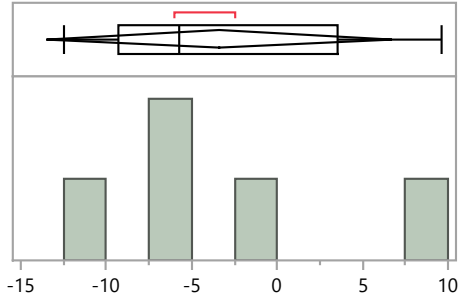
Summary Statistics

Mean	1.5
Std Dev	0.9
Std Err Mean	0.7
Upper 95% Mean	9.7
Lower 95% Mean	-6.8
N	2.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Cobalt-60 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

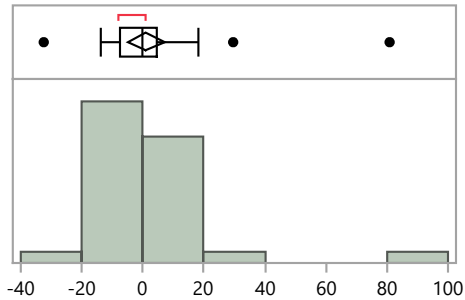
100.0%	maximum	9.6
99.5%		9.6
97.5%		9.6
90.0%		9.6
75.0%	quartile	3.6
50.0%	median	-5.7
25.0%	quartile	-9.3
10.0%		-12.5
2.5%		-12.5
0.5%		-12.5
0.0%	minimum	-12.5

Summary Statistics

Mean	-3.4
Std Dev	8.1
Std Err Mean	3.6
Upper 95% Mean	6.7
Lower 95% Mean	-13.5
N	5.0

Distributions Analyte_Method=Cobalt-60 No preparation - analyzed as received

Bias



Quantiles

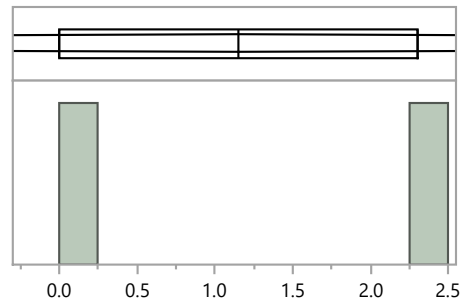
100.0%	maximum	80.8
99.5%		80.8
97.5%		80.8
90.0%		14.2
75.0%	quartile	4.8
50.0%	median	-0.2
25.0%	quartile	-7.2
10.0%		-11.0
2.5%		-32.4
0.5%		-32.4
0.0%	minimum	-32.4

Summary Statistics

Mean	1.2
Std Dev	17.2
Std Err Mean	2.9
Upper 95% Mean	7.1
Lower 95% Mean	-4.7
N	35.0

Distributions Analyte_Method=Cobalt-60 Other

Bias



Quantiles

100.0%	maximum	2.3
99.5%		2.3
97.5%		2.3
90.0%		2.3
75.0%	quartile	2.3
50.0%	median	1.2
25.0%	quartile	0.0
10.0%		0.0
2.5%		0.0
0.5%		0.0
0.0%	minimum	0.0

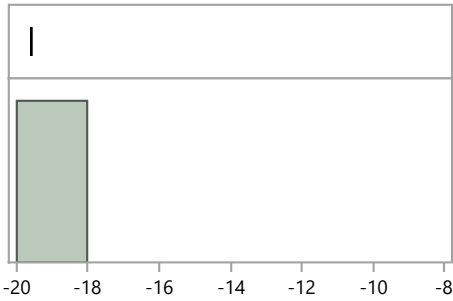
Summary Statistics

Mean	1.2
Std Dev	1.6
Std Err Mean	1.2
Upper 95% Mean	15.8
Lower 95% Mean	-13.5
N	2.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Cobalt-60 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

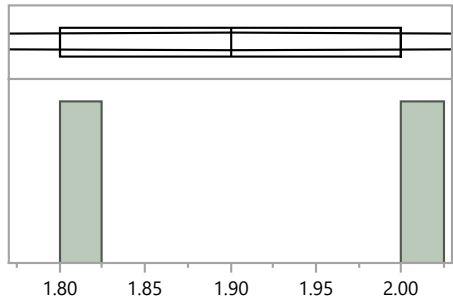
100.0%	maximum	-19.6
99.5%		-19.6
97.5%		-19.6
90.0%		-19.6
75.0%	quartile	-19.6
50.0%	median	-19.6
25.0%	quartile	-19.6
10.0%		-19.6
2.5%		-19.6
0.5%		-19.6
0.0%	minimum	-19.6

Summary Statistics

Mean	-19.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Manganese-54 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

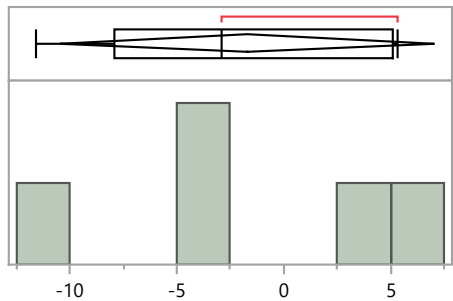
100.0%	maximum	2.0
99.5%		2.0
97.5%		2.0
90.0%		2.0
75.0%	quartile	2.0
50.0%	median	1.9
25.0%	quartile	1.8
10.0%		1.8
2.5%		1.8
0.5%		1.8
0.0%	minimum	1.8

Summary Statistics

Mean	1.9
Std Dev	0.1
Std Err Mean	0.1
Upper 95% Mean	3.2
Lower 95% Mean	0.6
N	2.0

Distributions Analyte_Method=Manganese-54 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

100.0%	maximum	5.3
99.5%		5.3
97.5%		5.3
90.0%		5.3
75.0%	quartile	5.1
50.0%	median	-2.9
25.0%	quartile	-7.9
10.0%		-11.6
2.5%		-11.6
0.5%		-11.6
0.0%	minimum	-11.6

Summary Statistics

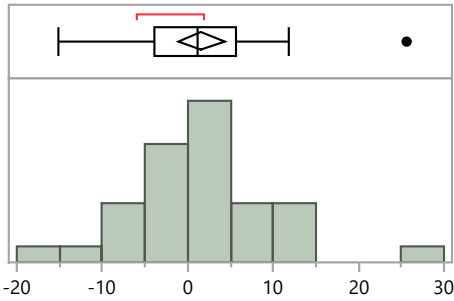
Mean	-1.7
Std Dev	7.0
Std Err Mean	3.1
Upper 95% Mean	7.0
Lower 95% Mean	-10.4
N	5.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Manganese-54 No preparation - analyzed as received

Bias



Quantiles

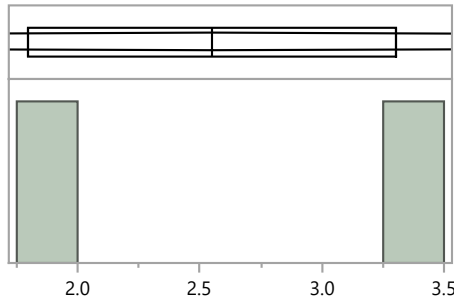
100.0%	maximum	25.6
99.5%		25.6
97.5%		25.6
90.0%		11.6
75.0%	quartile	5.6
50.0%	median	1.2
25.0%	quartile	-3.9
10.0%		-6.5
2.5%		-15.1
0.5%		-15.1
0.0%	minimum	-15.1

Summary Statistics

Mean	1.6
Std Dev	7.7
Std Err Mean	1.3
Upper 95% Mean	4.3
Lower 95% Mean	-1.1
N	34.0

Distributions Analyte_Method=Manganese-54 Other

Bias



Quantiles

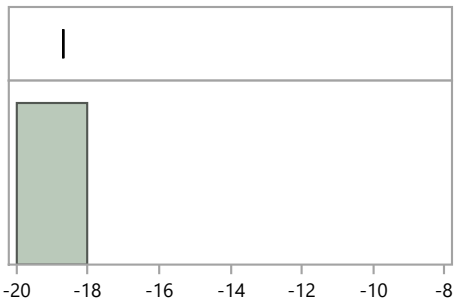
100.0%	maximum	3.3
99.5%		3.3
97.5%		3.3
90.0%		3.3
75.0%	quartile	3.3
50.0%	median	2.6
25.0%	quartile	1.8
10.0%		1.8
2.5%		1.8
0.5%		1.8
0.0%	minimum	1.8

Summary Statistics

Mean	2.6
Std Dev	1.1
Std Err Mean	0.7
Upper 95% Mean	12.1
Lower 95% Mean	-7.0
N	2.0

Distributions Analyte_Method=Manganese-54 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	-18.7
99.5%		-18.7
97.5%		-18.7
90.0%		-18.7
75.0%	quartile	-18.7
50.0%	median	-18.7
25.0%	quartile	-18.7
10.0%		-18.7
2.5%		-18.7
0.5%		-18.7
0.0%	minimum	-18.7

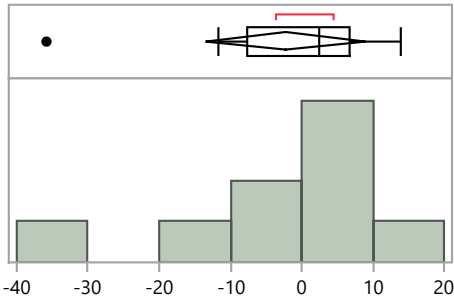
Summary Statistics

Mean	-18.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

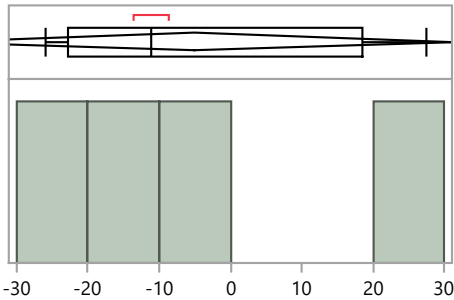
100.0%	maximum	13.8
99.5%		13.8
97.5%		13.8
90.0%		13.8
75.0%	quartile	6.7
50.0%	median	2.5
25.0%	quartile	-7.7
10.0%		-35.8
2.5%		-35.8
0.5%		-35.8
0.0%	minimum	-35.8

Summary Statistics

Mean	-2.3
Std Dev	14.6
Std Err Mean	4.9
Upper 95% Mean	8.9
Lower 95% Mean	-13.5
N	9.0

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

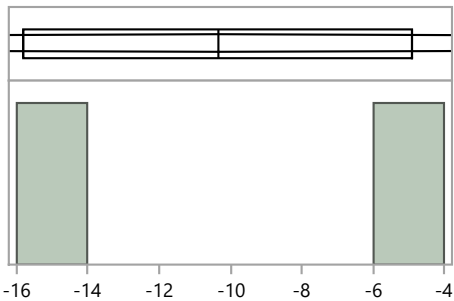
100.0%	maximum	27.5
99.5%		27.5
97.5%		27.5
90.0%		27.5
75.0%	quartile	18.5
50.0%	median	-11.1
25.0%	quartile	-22.8
10.0%		-25.9
2.5%		-25.9
0.5%		-25.9
0.0%	minimum	-25.9

Summary Statistics

Mean	-5.2
Std Dev	22.9
Std Err Mean	11.5
Upper 95% Mean	31.4
Lower 95% Mean	-41.7
N	4.0

Distributions Analyte_Method=Plutonium-238 Other

Bias



Quantiles

100.0%	maximum	-4.9
99.5%		-4.9
97.5%		-4.9
90.0%		-4.9
75.0%	quartile	-4.9
50.0%	median	-10.4
25.0%	quartile	-15.8
10.0%		-15.8
2.5%		-15.8
0.5%		-15.8
0.0%	minimum	-15.8

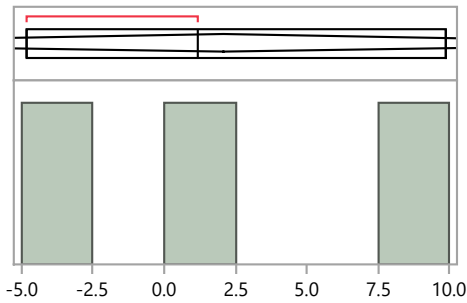
Summary Statistics

Mean	-10.4
Std Dev	7.7
Std Err Mean	5.5
Upper 95% Mean	58.9
Lower 95% Mean	-79.6
N	2.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias



Quantiles

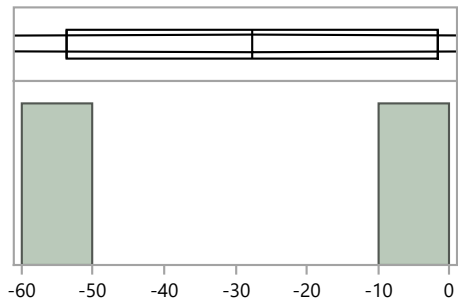
100.0%	maximum	9.9
99.5%		9.9
97.5%		9.9
90.0%		9.9
75.0%	quartile	9.9
50.0%	median	1.2
25.0%	quartile	-4.8
10.0%		-4.8
2.5%		-4.8
0.5%		-4.8
0.0%	minimum	-4.8

Summary Statistics

Mean	2.1
Std Dev	7.4
Std Err Mean	4.3
Upper 95% Mean	20.5
Lower 95% Mean	-16.3
N	3.0

Distributions Analyte_Method=Plutonium-238 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

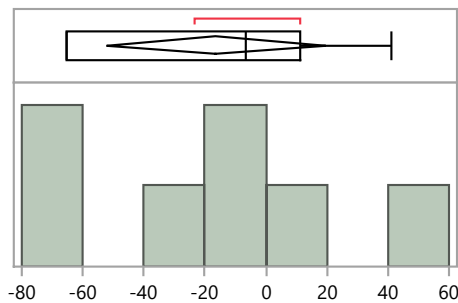
100.0%	maximum	-1.7
99.5%		-1.7
97.5%		-1.7
90.0%		-1.7
75.0%	quartile	-1.7
50.0%	median	-27.7
25.0%	quartile	-53.6
10.0%		-53.6
2.5%		-53.6
0.5%		-53.6
0.0%	minimum	-53.6

Summary Statistics

Mean	-27.7
Std Dev	36.7
Std Err Mean	26.0
Upper 95% Mean	302.1
Lower 95% Mean	-357.4
N	2.0

Distributions Analyte_Method=Strontium-90 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

100.0%	maximum	41.0
99.5%		41.0
97.5%		41.0
90.0%		41.0
75.0%	quartile	11.0
50.0%	median	-6.8
25.0%	quartile	-65.0
10.0%		-65.4
2.5%		-65.4
0.5%		-65.4
0.0%	minimum	-65.4

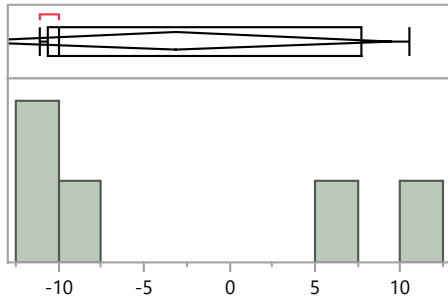
Summary Statistics

Mean	-16.3
Std Dev	38.9
Std Err Mean	14.7
Upper 95% Mean	19.6
Lower 95% Mean	-52.3
N	7.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Acid leaching without hydrofluoric acid

Bias



Quantiles

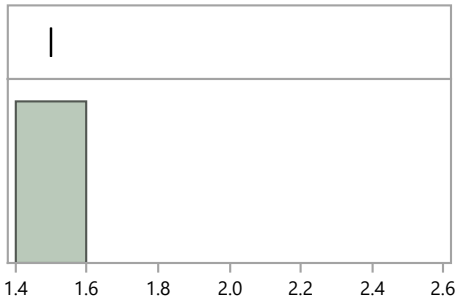
100.0%	maximum	10.5
99.5%		10.5
97.5%		10.5
90.0%		10.5
75.0%	quartile	7.8
50.0%	median	-10.0
25.0%	quartile	-10.6
10.0%		-11.1
2.5%		-11.1
0.5%		-11.1
0.0%	minimum	-11.1

Summary Statistics

Mean	-3.1
Std Dev	10.1
Std Err Mean	4.5
Upper 95% Mean	9.4
Lower 95% Mean	-15.7
N	5.0

Distributions Analyte_Method=Strontium-90 EPA 905, Radioactive Strontium, 600/4-80-032

Bias



Quantiles

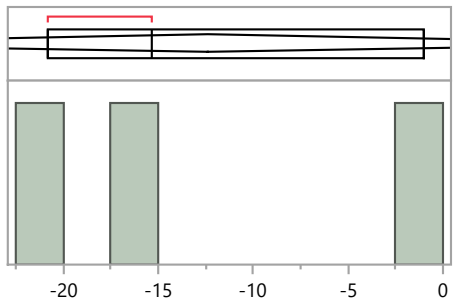
100.0%	maximum	1.5
99.5%		1.5
97.5%		1.5
90.0%		1.5
75.0%	quartile	1.5
50.0%	median	1.5
25.0%	quartile	1.5
10.0%		1.5
2.5%		1.5
0.5%		1.5
0.0%	minimum	1.5

Summary Statistics

Mean	1.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Strontium-90 Other

Bias



Quantiles

100.0%	maximum	-1.0
99.5%		-1.0
97.5%		-1.0
90.0%		-1.0
75.0%	quartile	-1.0
50.0%	median	-15.3
25.0%	quartile	-20.8
10.0%		-20.8
2.5%		-20.8
0.5%		-20.8
0.0%	minimum	-20.8

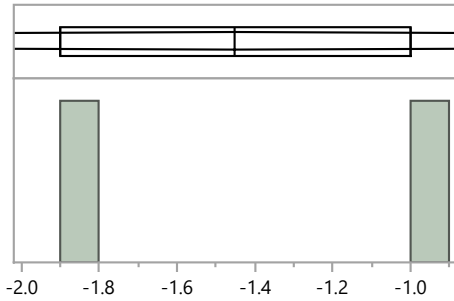
Summary Statistics

Mean	-12.4
Std Dev	10.2
Std Err Mean	5.9
Upper 95% Mean	13.0
Lower 95% Mean	-37.8
N	3.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Total dissolution by fusion

Bias



Quantiles

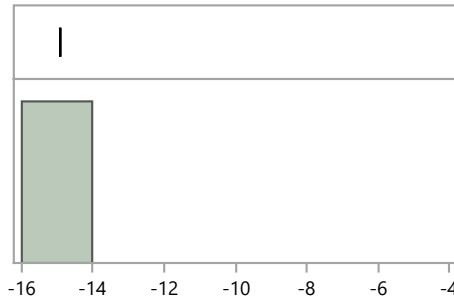
100.0%	maximum	-1.0
99.5%		-1.0
97.5%		-1.0
90.0%		-1.0
75.0%	quartile	-1.0
50.0%	median	-1.5
25.0%	quartile	-1.9
10.0%		-1.9
2.5%		-1.9
0.5%		-1.9
0.0%	minimum	-1.9

Summary Statistics

Mean	-1.5
Std Dev	0.6
Std Err Mean	0.5
Upper 95% Mean	4.3
Lower 95% Mean	-7.2
N	2.0

Distributions Analyte_Method=Strontium-90 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

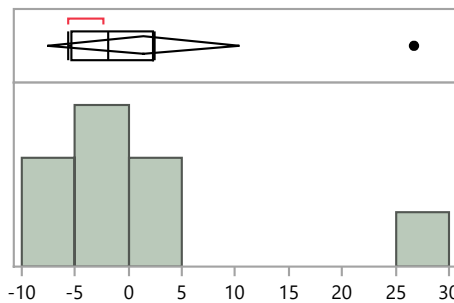
100.0%	maximum	-14.9
99.5%		-14.9
97.5%		-14.9
90.0%		-14.9
75.0%	quartile	-14.9
50.0%	median	-14.9
25.0%	quartile	-14.9
10.0%		-14.9
2.5%		-14.9
0.5%		-14.9
0.0%	minimum	-14.9

Summary Statistics

Mean	-14.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

100.0%	maximum	26.7
99.5%		26.7
97.5%		26.7
90.0%		26.7
75.0%	quartile	2.2
50.0%	median	-1.9
25.0%	quartile	-5.3
10.0%		-5.7
2.5%		-5.7
0.5%		-5.7
0.0%	minimum	-5.7

Summary Statistics

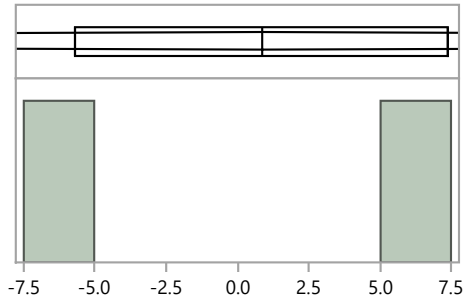
Mean	1.4
Std Dev	10.7
Std Err Mean	3.8
Upper 95% Mean	10.3
Lower 95% Mean	-7.5
N	8.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Acid leaching without hydrofluoric acid

Bias



Quantiles

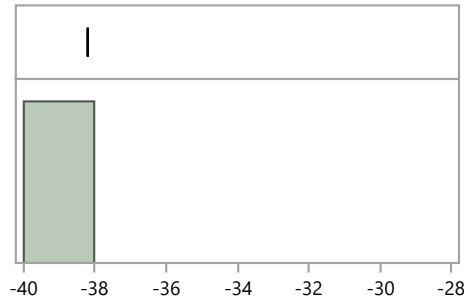
100.0%	maximum	7.4
99.5%		7.4
97.5%		7.4
90.0%		7.4
75.0%	quartile	7.4
50.0%	median	0.9
25.0%	quartile	-5.7
10.0%		-5.7
2.5%		-5.7
0.5%		-5.7
0.0%	minimum	-5.7

Summary Statistics

Mean	0.9
Std Dev	9.3
Std Err Mean	6.6
Upper 95% Mean	84.1
Lower 95% Mean	-82.4
N	2.0

Distributions Analyte_Method=Uranium-234 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

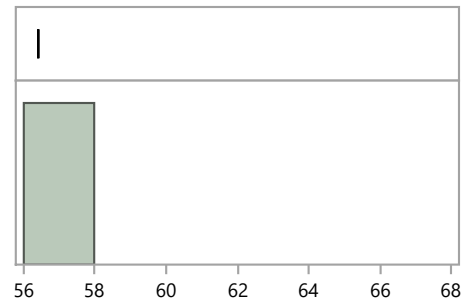
100.0%	maximum	-38.2
99.5%		-38.2
97.5%		-38.2
90.0%		-38.2
75.0%	quartile	-38.2
50.0%	median	-38.2
25.0%	quartile	-38.2
10.0%		-38.2
2.5%		-38.2
0.5%		-38.2
0.0%	minimum	-38.2

Summary Statistics

Mean	-38.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

100.0%	maximum	56.4
99.5%		56.4
97.5%		56.4
90.0%		56.4
75.0%	quartile	56.4
50.0%	median	56.4
25.0%	quartile	56.4
10.0%		56.4
2.5%		56.4
0.5%		56.4
0.0%	minimum	56.4

Summary Statistics

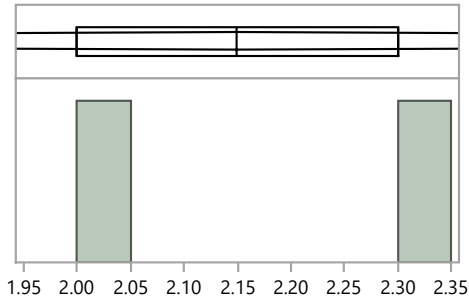
Mean	56.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Other

Bias



Quantiles

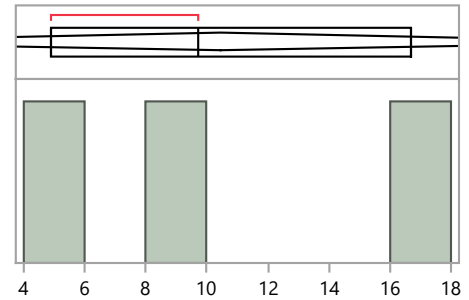
100.0%	maximum	2.3
99.5%		2.3
97.5%		2.3
90.0%		2.3
75.0%	quartile	2.3
50.0%	median	2.2
25.0%	quartile	2.0
10.0%		2.0
2.5%		2.0
0.5%		2.0
0.0%	minimum	2.0

Summary Statistics

Mean	2.2
Std Dev	0.2
Std Err Mean	0.1
Upper 95% Mean	4.1
Lower 95% Mean	0.2
N	2.0

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion

Bias



Quantiles

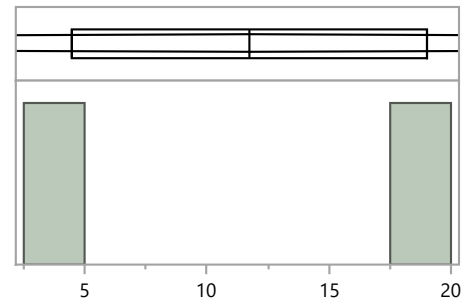
100.0%	maximum	16.7
99.5%		16.7
97.5%		16.7
90.0%		16.7
75.0%	quartile	16.7
50.0%	median	9.7
25.0%	quartile	4.9
10.0%		4.9
2.5%		4.9
0.5%		4.9
0.0%	minimum	4.9

Summary Statistics

Mean	10.4
Std Dev	5.9
Std Err Mean	3.4
Upper 95% Mean	25.2
Lower 95% Mean	-4.3
N	3.0

Distributions Analyte_Method=Uranium-234 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	19.0
99.5%		19.0
97.5%		19.0
90.0%		19.0
75.0%	quartile	19.0
50.0%	median	11.8
25.0%	quartile	4.5
10.0%		4.5
2.5%		4.5
0.5%		4.5
0.0%	minimum	4.5

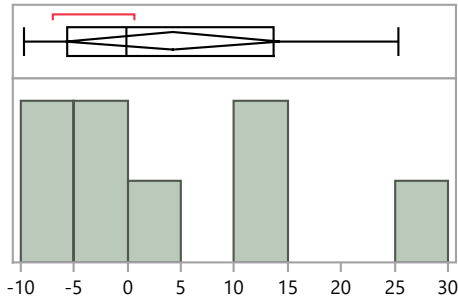
Summary Statistics

Mean	11.8
Std Dev	10.3
Std Err Mean	7.3
Upper 95% Mean	103.9
Lower 95% Mean	-80.4
N	2.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

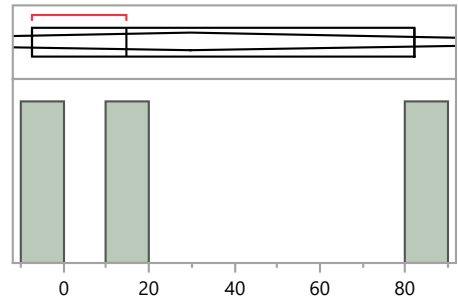
100.0%	maximum	25.4
99.5%		25.4
97.5%		25.4
90.0%		25.4
75.0%	quartile	13.6
50.0%	median	-0.2
25.0%	quartile	-5.6
10.0%		-9.7
2.5%		-9.7
0.5%		-9.7
0.0%	minimum	-9.7

Summary Statistics

Mean	4.3
Std Dev	12.0
Std Err Mean	4.3
Upper 95% Mean	14.3
Lower 95% Mean	-5.8
N	8.0

Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

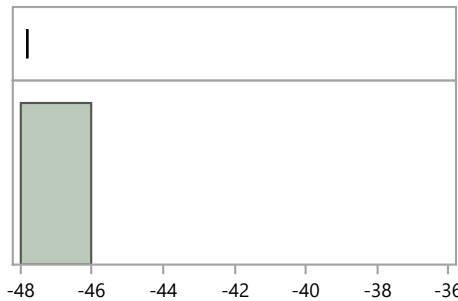
100.0%	maximum	82.1
99.5%		82.1
97.5%		82.1
90.0%		82.1
75.0%	quartile	82.1
50.0%	median	14.8
25.0%	quartile	-7.5
10.0%		-7.5
2.5%		-7.5
0.5%		-7.5
0.0%	minimum	-7.5

Summary Statistics

Mean	29.8
Std Dev	46.6
Std Err Mean	26.9
Upper 95% Mean	145.7
Lower 95% Mean	-86.1
N	3.0

Distributions Analyte_Method=Uranium-238 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

100.0%	maximum	-47.8
99.5%		-47.8
97.5%		-47.8
90.0%		-47.8
75.0%	quartile	-47.8
50.0%	median	-47.8
25.0%	quartile	-47.8
10.0%		-47.8
2.5%		-47.8
0.5%		-47.8
0.0%	minimum	-47.8

Summary Statistics

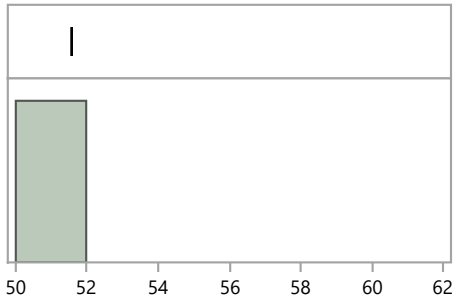
Mean	-47.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

RdV41 Distribution by Preparation Method

RdV Distribution by Prep Method

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

Bias



Quantiles

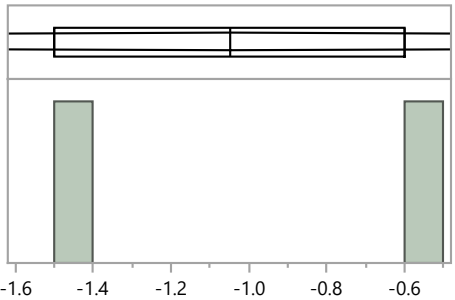
100.0%	maximum	51.6
99.5%		51.6
97.5%		51.6
90.0%		51.6
75.0%	quartile	51.6
50.0%	median	51.6
25.0%	quartile	51.6
10.0%		51.6
2.5%		51.6
0.5%		51.6
0.0%	minimum	51.6

Summary Statistics

Mean	51.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Other

Bias



Quantiles

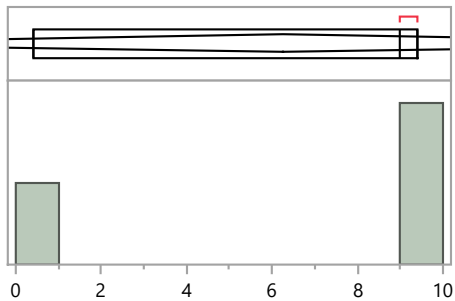
100.0%	maximum	-0.6
99.5%		-0.6
97.5%		-0.6
90.0%		-0.6
75.0%	quartile	-0.6
50.0%	median	-1.1
25.0%	quartile	-1.5
10.0%		-1.5
2.5%		-1.5
0.5%		-1.5
0.0%	minimum	-1.5

Summary Statistics

Mean	-1.1
Std Dev	0.6
Std Err Mean	0.5
Upper 95% Mean	4.7
Lower 95% Mean	-6.8
N	2.0

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	9.4
99.5%		9.4
97.5%		9.4
90.0%		9.4
75.0%	quartile	9.4
50.0%	median	9.0
25.0%	quartile	0.4
10.0%		0.4
2.5%		0.4
0.5%		0.4
0.0%	minimum	0.4

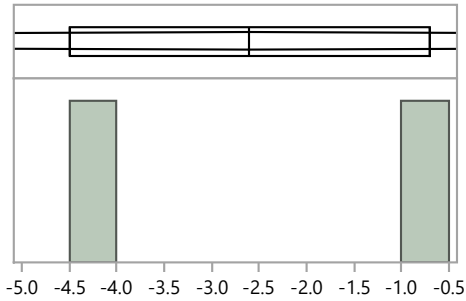
Summary Statistics

Mean	6.3
Std Dev	5.1
Std Err Mean	2.9
Upper 95% Mean	18.9
Lower 95% Mean	-6.4
N	3.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

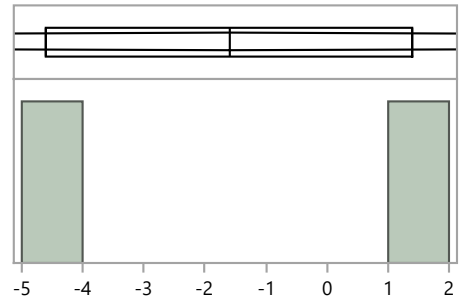
100.0%	maximum	-0.7
99.5%		-0.7
97.5%		-0.7
90.0%		-0.7
75.0%	quartile	-0.7
50.0%	median	-2.6
25.0%	quartile	-4.5
10.0%		-4.5
2.5%		-4.5
0.5%		-4.5
0.0%	minimum	-4.5

Summary Statistics

Mean	-2.6
Std Dev	2.7
Std Err Mean	1.9
Upper 95% Mean	21.5
Lower 95% Mean	-26.7
N	2.0

Distributions Analyte_Method=Zinc-65 Acid dissolution by strong Aqua Regia, hydrofluoric acid, etc.

Bias



Quantiles

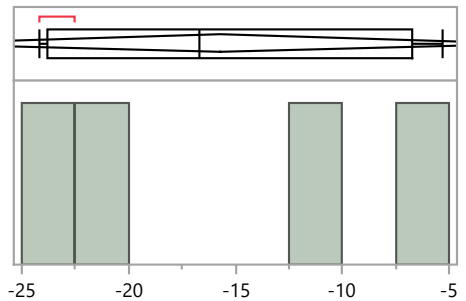
100.0%	maximum	1.4
99.5%		1.4
97.5%		1.4
90.0%		1.4
75.0%	quartile	1.4
50.0%	median	-1.6
25.0%	quartile	-4.6
10.0%		-4.6
2.5%		-4.6
0.5%		-4.6
0.0%	minimum	-4.6

Summary Statistics

Mean	-1.6
Std Dev	4.2
Std Err Mean	3.0
Upper 95% Mean	36.5
Lower 95% Mean	-39.7
N	2.0

Distributions Analyte_Method=Zinc-65 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

100.0%	maximum	-5.3
99.5%		-5.3
97.5%		-5.3
90.0%		-5.3
75.0%	quartile	-6.7
50.0%	median	-16.7
25.0%	quartile	-23.8
10.0%		-24.2
2.5%		-24.2
0.5%		-24.2
0.0%	minimum	-24.2

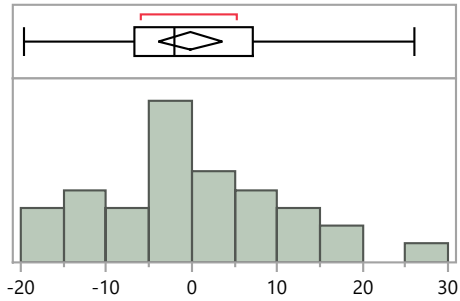
Summary Statistics

Mean	-15.7
Std Dev	9.1
Std Err Mean	4.6
Upper 95% Mean	-1.2
Lower 95% Mean	-30.2
N	4.0

RdV Distribution by Prep Method

Distributions Analyte_Method=Zinc-65 No preparation - analyzed as received

Bias



Quantiles

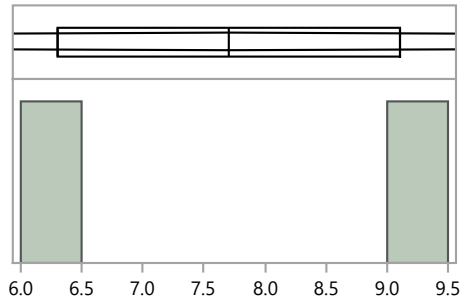
100.0%	maximum	26.0
99.5%		26.0
97.5%		26.0
90.0%		16.3
75.0%	quartile	7.2
50.0%	median	-2.0
25.0%	quartile	-6.8
10.0%		-15.1
2.5%		-19.6
0.5%		-19.6
0.0%	minimum	-19.6

Summary Statistics

Mean	-0.1
Std Dev	10.8
Std Err Mean	1.9
Upper 95% Mean	3.7
Lower 95% Mean	-3.9
N	34.0

Distributions Analyte_Method=Zinc-65 Other

Bias



Quantiles

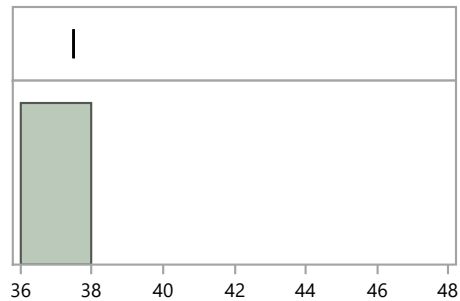
100.0%	maximum	9.1
99.5%		9.1
97.5%		9.1
90.0%		9.1
75.0%	quartile	9.1
50.0%	median	7.7
25.0%	quartile	6.3
10.0%		6.3
2.5%		6.3
0.5%		6.3
0.0%	minimum	6.3

Summary Statistics

Mean	7.7
Std Dev	2.0
Std Err Mean	1.4
Upper 95% Mean	25.5
Lower 95% Mean	-10.1
N	2.0

Distributions Analyte_Method=Zinc-65 Wet ash - Acid digestion - the use of oxidizers to destroy organics

Bias



Quantiles

100.0%	maximum	37.5
99.5%		37.5
97.5%		37.5
90.0%		37.5
75.0%	quartile	37.5
50.0%	median	37.5
25.0%	quartile	37.5
10.0%		37.5
2.5%		37.5
0.5%		37.5
0.0%	minimum	37.5

Summary Statistics

Mean	37.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0