

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.

MaW43 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ADEM01	Alabama Department of Environmental Management	MaW
ADFC99	Abu Dhabi Quality and Conformity Council-Central Testing Lab	MaW
AFOH01	USAFSAM/OEA	MaW
ANLB01	Argonne National Laboratory	MaW
ANTE01	ALS Environmental - Fort Collins, CO	MaW
AREV01	Framatome - CMC	MaW
ARGO01	Idaho National Laboratory	MaW
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	MaW
ARSA01	ARS Aleut Analytical, LLC (Luckey)	MaW
ARSL01	ARS Aleut Analytical, LLC	MaW
AY1201	Consolidated Nuclear Security, LLC, ACO Laboratory	MaW
BRLL01	Brooks Applied Labs, LLC	MaW
BY1201	Consolidated Nuclear Security, LLC, ACO, Production Laboratory	MaW
CDHS01	California Department of Public Health	MaW
CESL01	Lawrence Livermore National Laboratory - EMRL	MaW
CMRC01	Carlsbad Environmental Monitoring and Research Center	MaW
CORE02	TestAmerica Denver	MaW
DEHS01	Department of Environmental Health & Safety	MaW
DLEA01	DLE Associates	MaW
EFGS01	Eurofins Frontier Global Sciences, LLC.	MaW
ELIW01	Energy Laboratories, Inc.	MaW
EMAX01	EMAX Laboratories, Inc	MaW
ERAD01	Lawrence Livermore National Laboratory ERAD	MaW
ERCL01	Washington State Public Health Laboratories	MaW
ERHD99	Radiation Protection Bureau Health Canada RSD NMS	MaW
ESDE01	Region 5 EQC Tritium Lab	MaW
ETTP01	MCLinc	MaW
EULC01	EnergySolutions, LLC	MaW
FDHE01	Florida Dept of Health Environmental Laboratory	MaW
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	MaW
FERM01	Fernald Project	MaW
FNAL01	Fermi National Accelerator Laboratory (FermiLab)	MaW
GENE01	GEL Laboratories, LLC	MaW
GPCL01	Georgia Power Company Environmental Laboratory	MaW
HCAL01	Lawrence Livermore National Laboratory	MaW
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	MaW
HPAC99	PHE, CRCE Glasgow	MaW
IAEA20	IAEA Radiometrics Laboratory	MaW
IAEA99	International Atomic Energy Agency	MaW
IEMA01	Illinois Emergency Management Agency Radiochemistry Laboratory	MaW
ISUE01	ISU Environmental Monitoring Laboratory	MaW
ISUP01	ISU - Department of Physics/Health Physics/EAL	MaW
JAEC99	Research Laboratories and Information Directorate	MaW
JLNN01	Jefferson Laboratory	MaW

LANL01	Los Alamos National Laboratory	MaW
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	MaW
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	MaW
LZCA01	ACZ Laboratories, Inc	MaW
MALA99	Alypz Sdn. Bhd.	MaW
MART01	Fluor B&W Ports Analytical Laboratory	MaW
MART03	Radioactive Material Analysis Laboratory	MaW
MDPH01	MDPH-Radiation Control Program	MaW
MNDH01	Minnesota Department of Health, Public Health Lab. Division	MaW
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	MaW
NJDH01	New Jersey Dept. of Health, PHEL, ECLS	MaW
ODHL01	Ohio Department of Health Laboratory	MaW
ORIS01	ORISE/IEAV	MaW
OTLI01	Pace Analytical National Center for Testing & Innovation	MaW
QUAN02	Eurofins TestAmerica Knoxville	MaW
RJLG01	RJ Lee Group - Columbia Basin Analytical Laboratories (CBAL)	MaW
RPSC01	Radiation Protection Service	MaW
SAVA01	SAVANNAH RIVER NUCLEAR SOLUTIONS (SRNS)	MaW
SEML01	SRS Environmental Monitoring Laboratory	MaW
SLAC01	SLAC DOE National Accelerator Laboratory	MaW
SOUT01	Southwest Research Institute	MaW
SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics	MaW
TDHL01	Texas Department of State Health Services Laboratory	MaW
TELE01	Teledyne Brown Engineering - Environmental Services	MaW
TELE02	ATI Environmental, Inc., Midwest Lab	MaW
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	MaW
TNUT01	St. Louis USACE FUSRAP Laboratory	MaW
UNTE01	UniTech-235	MaW
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	MaW
WIPH01	WI, DPH, Radiation Protection Section	MaW
WIPP01	WIPP Laboratories	MaW
WSHL01	Wisconsin State Laboratory of Hygiene	MaW
WSTP99	Cavendish Nuclear Limited	MaW
WVDP01	WVDP Environmental Laboratory	MaW
YPGA01	US Army Yuma Proving Ground / Material Analysis Lab	MaW

Laboratories Not Reporting

Lab Code	Lab Name	Matrix Code
MSDH01	Mississippi State Dept of Health	MaW
NARL01	National Analytical Radiation Environmental Laboratory	MaW
NARL02	USEPA - NAREL - MERL	MaW

Study Reference Values

MAPEP-20-MaW43

Radiological Reference Date: 08/01/2020

Analyte	Ref Value	Ref Unc
Inorganic	Units: (mg/L)	
Antimony	13.5	0.3
Arsenic	3.71	0.07
Barium	0.690	0.014
Beryllium	2.24	0.04
Cadmium	0.306	0.006
Chromium	1.77	0.04
Cobalt	18.0	0.4
Copper	19.1	0.4
Lead	1.88	0.04
Nickel	15.2	0.3
Selenium	0.490	0.010
Technetium-99	1.48E-5	3E-7
Thallium	4.45	0.09
Uranium-235	7.6E-4	2E-5
Uranium-238	0.105	0.004
Uranium-Total	0.105	0.004
Vanadium	11.6	0.2
Zinc	18.5	0.4

Analyte	Ref Value	Ref Unc
Radiological	Units: (Bq/L)	
Americium-241	0.922	0.017
Cesium-134	15.2	0.3
Cesium-137	14.3	0.3
Cobalt-60	12.2	0.3
Hydrogen-3	360	8
Iron-55	32.9	0.8
Plutonium-238	0.704	0.013
Plutonium-239/240	0.0089	0.0019
Radium-226	1.25	0.03
Strontium-90	11.6	0.3
Technetium-99	9.4	0.2
Uranium-234	1.26	0.04
Uranium-238	1.3	0.04
Zinc-65	16.9	0.4

Sample Statistical Summary

MAPEP-20-MaW43

Radiological Reference Date: 08/01/2020

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (mg/L)
Inorganic							
Antimony	25	25	13.4	0.8	13.5	0.3	9.5 - 17.6
Arsenic	26	26	3.63	0.23	3.71	0.07	2.60 - 4.82
Barium	24	24	0.738	0.029	0.690	0.014	0.483 - 0.897
Beryllium	26	25	2.25	0.11	2.24	0.04	1.57 - 2.91
Cadmium	26	26	0.297	0.016	0.306	0.006	0.214 - 0.398
Chromium	26	25	1.75	0.11	1.77	0.04	1.24 - 2.30
Cobalt	25	25	17.5	1.2	18.0	0.4	12.6 - 23.4
Copper	26	25	18.7	1.0	19.1	0.4	13.4 - 24.8
Lead	26	26	1.84	0.13	1.88	0.04	1.32 - 2.44
Mercury	19	17					False Positive Test
Nickel	26	25	14.9	0.7	15.2	0.3	10.6 - 19.8
Selenium	25	24	0.470	0.042	0.490	0.010	0.343 - 0.637
Technetium-99	3	3			1.48E-5	3E-7	1.04E-5 - 1.92E-5
Thallium	26	25	4.46	0.34	4.45	0.09	3.12 - 5.79
Uranium-235	16	13	7.59E-4	4.80E-5	7.6E-4	2E-5	5.32E-4 - 9.88E-4
Uranium-238	18	16	0.109	0.010	0.105	0.004	0.074 - 0.137
Uranium-Total	24	22	0.109	0.009	0.105	0.004	0.074 - 0.137
Vanadium	24	24	11.4	0.7	11.6	0.2	8.1 - 15.1
Zinc	26	26	17.9	0.9	18.5	0.4	13.0 - 24.1

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
							Units: (Bq/L)
Radiological							
Americium-241	39	35	0.890	0.082	0.922	0.017	0.645 - 1.199
Cesium-134	62	59	14.1	1.0	15.2	0.3	10.6 - 19.8
Cesium-137	62	61	14.8	1.0	14.3	0.3	10.0 - 18.6
Cobalt-57	51	50					False Positive Test
Cobalt-60	62	61	12.3	0.7	12.2	0.3	8.5 - 15.9
Hydrogen-3	42	37	360	22	360	8	252 - 468
Iron-55	8	6	30.1	2.4	32.9	0.8	23.0 - 42.8
Manganese-54	52	51					False Positive Test
Nickel-63	11	9					False Positive Test
Plutonium-238	33	29	0.688	0.058	0.704	0.013	0.493 - 0.915
Plutonium-239/240	32	27	0.0098	0.0081	0.0089	0.0019	Sensitivity Evaluation
Potassium-40	53	44					False Positive Test
Radium-226	22	18	1.22	0.15	1.25	0.03	0.88 - 1.63
Strontium-90	32	27	10.7	0.7	11.6	0.3	8.1 - 15.1
Technetium-99	19	17	8.6	1.0	9.4	0.2	6.6 - 12.2
Uranium-234	36	34	1.25	0.07	1.26	0.04	0.88 - 1.64
Uranium-238	37	35	1.3	0.1	1.3	0.04	0.9 - 1.7
Zinc-65	62	60	17.4	1.2	16.9	0.4	11.8 - 22.0

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

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%
 ACCEPTABLE.....2%<=RP<=15%

Flag Summary Report

MAPEP-20-MaW43

Inorganic				
Analyte	A	W	RW	N
Antimony	25			
Arsenic	26			
Barium	24			
Beryllium	25			1
Cadmium	26			
Chromium	25			1
Cobalt	24	1		
Copper	25			1
Lead	26			
Mercury	17			2
Nickel	25			1
Selenium	22	2		1
Thallium	25			1
Uranium-Total	20	2		2
Uranium-235	13			3
Uranium-238	14	2		2
Vanadium	24			
Zinc	26			
Technetium-99	3			
Radiological				
Analyte	A	W	RW	N
Americium-241	35			3
Cesium-134	59			
Cesium-137	59	2		
Cobalt-57	50			9
Cobalt-60	61			
Hydrogen-3	37			5
Iron-55	6			2
Manganese-54	51			8
Nickel-63	9			3
Plutonium-238	28	1		4
Plutonium-239/240	27			5
Potassium-40	44			14
Radium-226	16	2		4
Strontium-90	27			5
Technetium-99	15	2		2
Uranium-234	33	1		2
Uranium-238	35			2
Zinc-65	59	1		1

ACCEPTABLE WITH WARNING..... $15\% < RP \leq 30\%$

NOT ACCEPTABLE..... $RP > 30\%$

RP = Relative Precision



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

Laboratory Results For MAPEP-20-MaW43

(ADEM01) Alabama Department of Environmental Management
1350 Coliseum Blvd.
Montgomery, Alabama 36110

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	16.3	15.2	A		7.2	10.6 - 19.8	1	A
Cesium-137	16.5	14.3	A		15.4	10.0 - 18.6	1	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	14.5	12.2	A		18.9	8.5 - 15.9	1	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	22.5	16.9	N		33.1	11.8 - 22.0	1	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(ADFC99) Abu Dhabi Quality and Conformity Council-Central Testing Lab

Radiation Lab

Abu Dhabi, - -

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.96	0.922	A		4.1	0.645 - 1.199	0.12	A
Cesium-134	14.06	15.2	A		-7.5	10.6 - 19.8	0.42	A
Cesium-137	13.35	14.3	A		-6.6	10.0 - 18.6	0.29	A
Cobalt-57	0.01		A			False Positive Test	0.01	
Cobalt-60	11.78	12.2	A		-3.4	8.5 - 15.9	0.39	A
Hydrogen-3	470.89	360	N		30.8	252 - 468	29.32	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.01		A			False Positive Test	0.01	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.910	0.704	W		29.3	0.493 - 0.915	0.092	A
Plutonium-239/240	0.01	0.0089	A	(17)		Sensitivity Evaluation	0.01	
Potassium-40	0.1		A			False Positive Test	0.1	
Radium-226	1.90	1.25	N		52.0	0.88 - 1.63	0.30	W

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.11	11.6	A		-12.8	8.1 - 15.1	0.38	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.204	1.26	A		-4.4	0.88 - 1.64	0.122	A
Uranium-238	1.446	1.3	A		11.2	0.9 - 1.7	0.144	A
Zinc-65	15.54	16.9	A		-8.0	11.8 - 22.0	0.48	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(AFOH01) USAFSAM/OEA

2510 Fifth Street, Area B

Wright-Patterson AFB, OH 45433-7913

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.838	0.922	A		-9.1	0.645 - 1.199	0.044	A
Cesium-134	13.91	15.2	A		-8.5	10.6 - 19.8	0.44	A
Cesium-137	14.10	14.3	A		-1.4	10.0 - 18.6	0.44	A
Cobalt-57	-0.039		A			False Positive Test	0.067	
Cobalt-60	11.41	12.2	A		-6.5	8.5 - 15.9	0.30	A
Hydrogen-3	369	360	A		2.5	252 - 468	28	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.016		A			False Positive Test	0.065	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.651	0.704	A		-7.5	0.493 - 0.915	0.036	A
Plutonium-239/240	0.0066	0.0089	A			Sensitivity Evaluation	0.0014	
Potassium-40	-0.42		A			False Positive Test	0.44	
Radium-226	1.256	1.25	A		0.5	0.88 - 1.63	0.079	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.29	11.6	A		-11.3	8.1 - 15.1	0.37	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.270	1.26	A		0.8	0.88 - 1.64	0.071	A
Uranium-238	1.331	1.3	A		2.4	0.9 - 1.7	0.074	A
Zinc-65	15.92	16.9	A		-5.8	11.8 - 22.0	0.36	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(ANLB01) Argonne National Laboratory

9700 S. Cass Ave

Argonne, IL 60439

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.77	0.922	A		-16.5	0.645 - 1.199	0.08	A
Cesium-134	14.75	15.2	A		-3.0	10.6 - 19.8	0.76	A
Cesium-137	15.46	14.3	A		8.1	10.0 - 18.6	0.87	A
Cobalt-57	-0.10		A			False Positive Test	0.34	
Cobalt-60	13.34	12.2	A		9.3	8.5 - 15.9	0.64	A
Hydrogen-3	370.9	360	A		3.0	252 - 468	4.89	N
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.02		A			False Positive Test	0.22	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.684	0.704	A		-2.8	0.493 - 0.915	0.061	A
Plutonium-239/240	0.059	0.0089	N	(4)		Sensitivity Evaluation	0.011	
Potassium-40	NR			(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.06	11.6	A		-4.7	8.1 - 15.1	0.318	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.29	1.26	A		2.4	0.88 - 1.64	0.102	A
Uranium-238	1.32	1.3	A		1.5	0.9 - 1.7	0.104	A
Zinc-65	17.44	16.9	A		3.2	11.8 - 22.0	0.86	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (ANTE01) ALS Environmental - Fort Collins, CO
 225 Commerce Drive
 Fort Collins, CO 80524-1416

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.4	13.5	A		-0.7	9.5 - 17.6	0.939861	A
Arsenic	3.56	3.71	A		-4.0	2.60 - 4.82	0.251540	A
Barium	0.761	0.690	A		10.3	0.483 - 0.897	0.052434	A
Beryllium	2.41	2.24	A		7.6	1.57 - 2.91	0.254978	A
Cadmium	0.301	0.306	A		-1.6	0.214 - 0.398	0.019913	A
Chromium	1.75	1.77	A		-1.1	1.24 - 2.30	0.275243	W
Cobalt	19.2	18.0	A		6.7	12.6 - 23.4	5.562912	W
Copper	20.2	19.1	A		5.8	13.4 - 24.8	4.068718	W
Lead	1.8	1.88	A		-4.3	1.32 - 2.44	0.108781	A
Mercury	0.0002		A			False Positive Test	0.0002	
Nickel	16.3	15.2	A		7.2	10.6 - 19.8	3.639382	W
Selenium	0.447	0.490	A		-8.8	0.343 - 0.637	0.037502	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.69	4.45	A		5.4	3.12 - 5.79	0.331834	A
Uranium-235	0.00069	7.6E-4	A		-9.2	5.32E-4 - 9.88E-4	5.95840	A
Uranium-238	0.928	0.105	N		783.8	0.074 - 0.137	0.801361	N
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	11.8	11.6	A		1.7	8.1 - 15.1	0.689024	A
Zinc	20	18.5	A		8.1	13.0 - 24.1	3.587408	W

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.784	0.922	A		-15.0	0.645 - 1.199	0.064	A
Cesium-134	14.4	15.2	A		-5.3	10.6 - 19.8	0.9	A
Cesium-137	15.3	14.3	A		7.0	10.0 - 18.6	0.9	A
Cobalt-57	0.131		A			False Positive Test	0.131	
Cobalt-60	12.6	12.2	A		3.3	8.5 - 15.9	0.7	A
Hydrogen-3	248	360	N		-31.1	252 - 468	19	A
Iron-55	26.6	32.9	A		-19.1	23.0 - 42.8	3.0	A
Manganese-54	0.224		A			False Positive Test	0.224	
Nickel-63	0.535		A			False Positive Test	0.535	
Plutonium-238	0.687	0.704	A		-2.4	0.493 - 0.915	0.058	A
Plutonium-239/240	0.006	0.0089	A	(17)		Sensitivity Evaluation	0.006	
Potassium-40	4.00		A			False Positive Test	4.00	
Radium-226	1.1	1.25	A		-12.0	0.88 - 1.63	0.15	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.0	11.6	A		-13.8	8.1 - 15.1	1.2	A
Technetium-99	7.48	9.4	W		-20.4	6.6 - 12.2	0.62	A
Uranium-234	1.22	1.26	A		-3.2	0.88 - 1.64	0.10	A
Uranium-238	1.28	1.3	A		-1.5	0.9 - 1.7	0.10	A
Zinc-65	17.7	16.9	A		4.7	11.8 - 22.0	1.1	A

Radiological Reference Date: August 1, 2020

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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- (6) = Not Evaluated
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(AREV01) Framatome - CMC

1724 Mount Athos Road

Lynchburg, VA 24504

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.81	13.5	A		-5.1	9.5 - 17.6	1.28	A
Arsenic	3.5	3.71	A		-5.7	2.60 - 4.82	.35	A
Barium	0.73	0.690	A		5.8	0.483 - 0.897	.07	A
Beryllium	2.27	2.24	A		1.3	1.57 - 2.91	.23	A
Cadmium	0.26	0.306	A		-15.0	0.214 - 0.398	0.03	A
Chromium	1.61	1.77	A		-9.0	1.24 - 2.30	0.16	A
Cobalt	14.34	18.0	W		-20.3	12.6 - 23.4	1.43	A
Copper	17.76	19.1	A		-7.0	13.4 - 24.8	1.78	A
Lead	1.75	1.88	A		-6.9	1.32 - 2.44	0.18	A
Mercury	0.005		A			False Positive Test	0.005	
Nickel	14.72	15.2	A		-3.2	10.6 - 19.8	1.47	A
Selenium	0.46	0.490	A		-6.1	0.343 - 0.637	0.05	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.44	4.45	A		-0.2	3.12 - 5.79	0.44	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	17.82	18.5	A		-3.7	13.0 - 24.1	1.78	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.07	0.922	A		16.1	0.645 - 1.199	0.10	A
Cesium-134	12.84	15.2	A		-15.5	10.6 - 19.8	0.25	N
Cesium-137	14.21	14.3	A		-0.6	10.0 - 18.6	0.51	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	11.99	12.2	A		-1.7	8.5 - 15.9	0.30	A
Hydrogen-3	379	360	A		5.3	252 - 468	30	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	2.61		N	(1)		False Positive Test	0.34	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.80	16.9	A		5.3	11.8 - 22.0	0.82	A

Radiological Reference Date: August 1, 2020

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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- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(ARGO01) Idaho National Laboratory

INL, Materials and Fuels Complex

Idaho Falls, ID 83415

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.5	13.5	A		-7.4	9.5 - 17.6	0.4	A
Arsenic	3.84	3.71	A		3.5	2.60 - 4.82	0.78	W
Barium	0.732	0.690	A		6.1	0.483 - 0.897	0.037	A
Beryllium	2.32	2.24	A		3.6	1.57 - 2.91	0.12	A
Cadmium	0.313	0.306	A		2.3	0.214 - 0.398	0.016	A
Chromium	1.75	1.77	A		-1.1	1.24 - 2.30	0.09	A
Cobalt	18.4	18.0	A		2.2	12.6 - 23.4	0.9	A
Copper	19.9	19.1	A		4.2	13.4 - 24.8	1.0	A
Lead	1.85	1.88	A		-1.6	1.32 - 2.44	0.09	A
Mercury	0.000244		A			False Positive Test	0.000244	
Nickel	15.4	15.2	A		1.3	10.6 - 19.8	0.8	A
Selenium	0.508	0.490	A		3.7	0.343 - 0.637	0.099	W
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.42	4.45	A		-0.7	3.12 - 5.79	0.22	A
Uranium-235	0.000851	7.6E-4	A		12.0	5.32E-4 - 9.88E-4	0.000043	A
Uranium-238	0.112	0.105	A		6.7	0.074 - 0.137	0.006	A
Uranium-Total	0.113	0.105	A		7.6	0.074 - 0.137	0.006	A
Vanadium	12.0	11.6	A		3.4	8.1 - 15.1	2.1	W
Zinc	17.2	18.5	A		-7.0	13.0 - 24.1	0.9	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	14.8	15.2	A		-2.6	10.6 - 19.8	0.7	A
Cesium-137	14.9	14.3	A		4.2	10.0 - 18.6	0.6	A
Cobalt-57	0.343		A			False Positive Test	0.343	
Cobalt-60	11.6	12.2	A		-4.9	8.5 - 15.9	0.4	A
Hydrogen-3	340	360	A		-5.6	252 - 468	12	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.530		A			False Positive Test	0.530	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.819	0.704	A		16.3	0.493 - 0.915	0.05	A
Plutonium-239/240	0.822	0.0089	N	(4)		Sensitivity Evaluation	0.07	
Potassium-40	5.07		A			False Positive Test	5.07	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	18.0	11.6	N		55.2	8.1 - 15.1	0.6	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.30	1.26	A		3.2	0.88 - 1.64	0.07	A
Uranium-238	1.28	1.3	A		-1.5	0.9 - 1.7	0.07	A
Zinc-65	15.8	16.9	A		-6.5	11.8 - 22.0	1.1	A

Radiological Reference Date: August 1, 2020

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-20-MaW43

(ARPL01) Analytical Support Operations - Radiochemical Processing Lab

PO Box 999

Richland, WA 99354

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.849	0.922	A		-7.9	0.645 - 1.199	0.031	A
Cesium-134	14.19	15.2	A		-6.6	10.6 - 19.8	0.87	A
Cesium-137	14.66	14.3	A		2.5	10.0 - 18.6	0.64	A
Cobalt-57	0.92			(6)		False Positive Test	.046	
Cobalt-60	11.81	12.2	A		-3.2	8.5 - 15.9	0.46	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.85			(6)		False Positive Test	.0425	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.675	0.704	A		-4.1	0.493 - 0.915	0.027	A
Plutonium-239/240	0.015	0.0089	A			Sensitivity Evaluation	0.004	
Potassium-40	13			(6)		False Positive Test	0.65	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.312	1.26	A		4.1	0.88 - 1.64	0.068	A
Uranium-238	1.392	1.3	A		7.1	0.9 - 1.7	0.070	A
Zinc-65	17.06	16.9	A		0.9	11.8 - 22.0	0.81	A

Radiological Reference Date: August 1, 2020

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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- (4) = Sensitivity Evaluation
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- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (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-20-MaW43
 (ARSA01) ARS Aleut Analytical, LLC (Luckey)
 21200 Luckey Rd.
 Luckey, OH 43443

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.0	13.5	A		-3.7	9.5 - 17.6	2.0	W
Arsenic	3.67	3.71	A		-1.1	2.60 - 4.82	0.3	A
Barium	0.693	0.690	A		0.4	0.483 - 0.897	0.06	A
Beryllium	2.01	2.24	A		-10.3	1.57 - 2.91	0.2	A
Cadmium	0.281	0.306	A		-8.2	0.214 - 0.398	0.04	A
Chromium	3.22	1.77	N		81.9	1.24 - 2.30	0.01	N
Cobalt	NR	18.0				12.6 - 23.4		
Copper	10.4	19.1	N		-45.6	13.4 - 24.8	1.0	A
Lead	1.76	1.88	A		-6.4	1.32 - 2.44	0.2	A
Mercury	NR					False Positive Test		
Nickel	9.62	15.2	N		-36.7	10.6 - 19.8	0.1	N
Selenium	0.372	0.490	W		-24.1	0.343 - 0.637	0.03	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	2.75	4.45	N		-38.2	3.12 - 5.79	0.04	N
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.105	0.105	A		0.0	0.074 - 0.137	0.01	A
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	18.1	18.5	A		-2.2	13.0 - 24.1	0.2	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	0.535	1.25	N		-57.2	0.88 - 1.63	0.200	N

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.308	1.26	A		3.8	0.88 - 1.64	0.248	W
Uranium-238	1.226	1.3	A		-5.7	0.9 - 1.7	0.236	W
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(ARSL01) ARS Aleut Analytical, LLC

2609 North River Road

Port Allen, LA 70767

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.8	13.5	A		-5.2	9.5 - 17.6	1.802	A
Arsenic	3.6	3.71	A		-3.0	2.60 - 4.82	.797	W
Barium	.741	0.690	A		7.4	0.483 - 0.897	.106	A
Beryllium	2.17	2.24	A		-3.1	1.57 - 2.91	.283	A
Cadmium	.291	0.306	A		-4.9	0.214 - 0.398	.038	A
Chromium	1.81	1.77	A		2.3	1.24 - 2.30	.222	A
Cobalt	17.9	18.0	A		-0.6	12.6 - 23.4	2.696	W
Copper	19.3	19.1	A		1.0	13.4 - 24.8	2.523	A
Lead	1.85	1.88	A		-1.6	1.32 - 2.44	.257	A
Mercury	-.028		N	(29)		False Positive Test	.005	
Nickel	15.4	15.2	A		1.3	10.6 - 19.8	2.296	A
Selenium	.477	0.490	A		-2.7	0.343 - 0.637	.065	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.47	4.45	A		0.4	3.12 - 5.79	.621	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	.106	0.105	A		1.0	0.074 - 0.137	.011	A
Vanadium	11.7	11.6	A		0.9	8.1 - 15.1	1.782	W
Zinc	18.0	18.5	A		-2.7	13.0 - 24.1	2.363	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.787	0.922	A		-14.6	0.645 - 1.199	.052	A
Cesium-134	13.519	15.2	A		-11.1	10.6 - 19.8	.457	A
Cesium-137	14.579	14.3	A		2.0	10.0 - 18.6	.339	A
Cobalt-57	-.002		A			False Positive Test	.058	
Cobalt-60	11.547	12.2	A		-5.4	8.5 - 15.9	.314	A
Hydrogen-3	396.964	360	A		10.3	252 - 468	22.244	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-.044		A			False Positive Test	.062	
Nickel-63	NR					False Positive Test		
Plutonium-238	.297	0.704	N		-57.8	0.493 - 0.915	.025	A
Plutonium-239/240	.011	0.0089	A	(17)		Sensitivity Evaluation	.005	
Potassium-40	-.672		A			False Positive Test	.747	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.442	11.6	A		-10.0	8.1 - 15.1	.800	A
Technetium-99	8.990	9.4	A		-4.4	6.6 - 12.2	1.088	A
Uranium-234	1.316	1.26	A		4.4	0.88 - 1.64	.086	A
Uranium-238	1.379	1.3	A		6.1	0.9 - 1.7	.090	A
Zinc-65	17.606	16.9	A		4.2	11.8 - 22.0	.682	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(AY1201) Consolidated Nuclear Security, LLC, ACO Laboratory

Y12, NSC, Bldg. 9995, Rm 142

Oak Ridge, TN 37831-8189

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.1	13.5	A		-3.0	9.5 - 17.6	0.692	A
Arsenic	3.71	3.71	A		0.0	2.60 - 4.82	0.209	A
Barium	0.722	0.690	A		4.6	0.483 - 0.897	0.029	A
Beryllium	2.21	2.24	A		-1.3	1.57 - 2.91	0.138	A
Cadmium	0.307	0.306	A		0.3	0.214 - 0.398	0.019	A
Chromium	1.73	1.77	A		-2.3	1.24 - 2.30	0.054	A
Cobalt	17.3	18.0	A		-3.9	12.6 - 23.4	0.865	A
Copper	18.8	19.1	A		-1.6	13.4 - 24.8	0.775	A
Lead	1.85	1.88	A		-1.6	1.32 - 2.44	0.121	A
Mercury	NR					False Positive Test		
Nickel	14.8	15.2	A		-2.6	10.6 - 19.8	0.731	A
Selenium	0.496	0.490	A		1.2	0.343 - 0.637	0.0805	W
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.48	4.45	A		0.7	3.12 - 5.79	0.306	A
Uranium-235	0.00075	7.6E-4	A		-1.3	5.32E-4 - 9.88E-4	0.000075	A
Uranium-238	0.105	0.105	A		0.0	0.074 - 0.137	0.0105	A
Uranium-Total	0.106	0.105	A		1.0	0.074 - 0.137	0.011	A
Vanadium	11.4	11.6	A		-1.7	8.1 - 15.1	0.433	A
Zinc	18.1	18.5	A		-2.2	13.0 - 24.1	1.13	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.792	0.922	A		-14.1	0.645 - 1.199	0.076	A
Cesium-134	NR	15.2		(6)		10.6 - 19.8		
Cesium-137	14.7	14.3	A		2.8	10.0 - 18.6	1.2	A
Cobalt-57	-0.046		A			False Positive Test	0.10	
Cobalt-60	12.9	12.2	A		5.7	8.5 - 15.9	1.3	A
Hydrogen-3	334	360	A		-7.2	252 - 468	20	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.085		A			False Positive Test	0.22	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.640	0.704	A		-9.1	0.493 - 0.915	0.074	A
Plutonium-239/240	0.00649	0.0089	A	(17)		Sensitivity Evaluation	0.0063	
Potassium-40	2.22		A			False Positive Test	5.2	
Radium-226	0.921	1.25	W		-26.3	0.88 - 1.63	0.23	W

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.6	11.6	A		-8.6	8.1 - 15.1	0.63	A
Technetium-99	7.77	9.4	A		-17.3	6.6 - 12.2	0.78	A
Uranium-234	1.27	1.26	A		0.8	0.88 - 1.64	0.11	A
Uranium-238	1.30	1.3	A		0.0	0.9 - 1.7	0.11	A
Zinc-65	18.6	16.9	A		10.1	11.8 - 22.0	3.4	W

Radiological Reference Date: August 1, 2020

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-20-MaW43

(BRL01) Brooks Applied Labs, LLC

18804 North Creek Parkway

Bothell, WA 98011

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.3	13.5	A		-8.9	9.5 - 17.6	0.8	A
Arsenic	3.17	3.71	A		-14.6	2.60 - 4.82	0.14	A
Barium	0.672	0.690	A		-2.6	0.483 - 0.897	0.071	A
Beryllium	2.14	2.24	A		-4.5	1.57 - 2.91	0.11	A
Cadmium	0.274	0.306	A		-10.5	0.214 - 0.398	0.022	A
Chromium	1.54	1.77	A		-13.0	1.24 - 2.30	0.14	A
Cobalt	15.5	18.0	A		-13.9	12.6 - 23.4	0.9	A
Copper	16.8	19.1	A		-12.0	13.4 - 24.8	1.2	A
Lead	1.62	1.88	A		-13.8	1.32 - 2.44	0.10	A
Mercury	0.0000021		N	(1)		False Positive Test	0.000000	
Nickel	13.3	15.2	A		-12.5	10.6 - 19.8	0.5	A
Selenium	0.424	0.490	A		-13.5	0.343 - 0.637	0.015	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	3.78	4.45	A		-15.1	3.12 - 5.79	0.22	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.0936	0.105	A		-10.9	0.074 - 0.137	0.0232	W
Vanadium	10.05	11.6	A		-13.4	8.1 - 15.1	0.60	A
Zinc	15.8	18.5	A		-14.6	13.0 - 24.1	0.7	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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-20-MaW43

(BY1201) Consolidated Nuclear Security, LLC, ACO, Production Laboratory
Y12, NSC, Bldg. 9995, Rm 142
Oak Ridge, TN 37831-8189

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.814	0.922	A		-11.7	0.645 - 1.199	0.062	A
Cesium-134	NR	15.2		(6)		10.6 - 19.8		
Cesium-137	17.17	14.3	W		20.1	10.0 - 18.6	0.356	A
Cobalt-57	-0.02		A			False Positive Test	0.057	
Cobalt-60	13.37	12.2	A		9.6	8.5 - 15.9	0.30	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.24		A			False Positive Test	0.20	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.629	0.704	A		-10.7	0.493 - 0.915	0.063	A
Plutonium-239/240	0.0111	0.0089	A	(17)		Sensitivity Evaluation	0.0075	
Potassium-40	-0.13		A			False Positive Test	1.06	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	9.64	11.6	A		-16.9	8.1 - 15.1	0.463	A
Technetium-99	8.73	9.4	A		-7.1	6.6 - 12.2	0.2401	A
Uranium-234	1.22	1.26	A		-3.2	0.88 - 1.64	0.058	A
Uranium-238	1.33	1.3	A		2.3	0.9 - 1.7	0.061	A
Zinc-65	20.17	16.9	A		19.3	11.8 - 22.0	0.744	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43
 (CDHS01) California Department of Public Health
 Drinking Water & Radiation Lab.
 Richmond, CA 94804-6403

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.4	13.5	A		-0.7	9.5 - 17.6	0.16	N
Arsenic	3.58	3.71	A		-3.5	2.60 - 4.82	0.04	N
Barium	0.76	0.690	A		10.1	0.483 - 0.897	0.01	N
Beryllium	2.15	2.24	A		-4.0	1.57 - 2.91	0.02	N
Cadmium	0.315	0.306	A		2.9	0.214 - 0.398	0.004	N
Chromium	1.88	1.77	A		6.2	1.24 - 2.30	0.025	N
Cobalt	18.40	18.0	A		2.2	12.6 - 23.4	0.22	N
Copper	19.4	19.1	A		1.6	13.4 - 24.8	0.37	N
Lead	1.76	1.88	A		-6.4	1.32 - 2.44	0.02	N
Mercury	NR					False Positive Test		
Nickel	15.4	15.2	A		1.3	10.6 - 19.8	0.18	N
Selenium	0.500	0.490	A		2.0	0.343 - 0.637	0.011	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.53	4.45	A		1.8	3.12 - 5.79	0.06	N
Uranium-235	0.00007	7.6E-4	N		-90.8	5.32E-4 - 9.88E-4	0.00001	A
Uranium-238	0.096	0.105	A		-8.6	0.074 - 0.137	0.001	N
Uranium-Total	0.096	0.105	A		-8.6	0.074 - 0.137	0.00001	N
Vanadium	12.6	11.6	A		8.6	8.1 - 15.1	0.167	N
Zinc	18.8	18.5	A		1.6	13.0 - 24.1	0.289	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.895	0.922	A		-2.9	0.645 - 1.199	0.0263	A
Cesium-134	15.5	15.2	A		2.0	10.6 - 19.8	0.338	A
Cesium-137	15.2	14.3	A		6.3	10.0 - 18.6	0.347	A
Cobalt-57	0.00577		A			False Positive Test	0.0518	
Cobalt-60	12.4	12.2	A		1.6	8.5 - 15.9	0.192	N
Hydrogen-3	372	360	A		3.3	252 - 468	5.53	N
Iron-55	28.5	32.9	A		-13.4	23.0 - 42.8	0.930	A
Manganese-54	0.0276		A			False Positive Test	0.0749	
Nickel-63	0.0183		A			False Positive Test	0.688	
Plutonium-238	0.671	0.704	A		-4.7	0.493 - 0.915	0.0286	A
Plutonium-239/240	0.0100	0.0089	A	(17)		Sensitivity Evaluation	0.00542	
Potassium-40	0.644		A			False Positive Test	0.807	
Radium-226	1.14	1.25	A		-8.8	0.88 - 1.63	0.0909	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.0	11.6	A		-5.2	8.1 - 15.1	0.595	A
Technetium-99	9.90	9.4	A		5.3	6.6 - 12.2	0.481	A
Uranium-234	1.23	1.26	A		-2.4	0.88 - 1.64	0.0585	A
Uranium-238	1.21	1.3	A		-6.9	0.9 - 1.7	0.0583	A
Zinc-65	16.3	16.9	A		-3.6	11.8 - 22.0	0.405	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

(CESL01) Lawrence Livermore National Laboratory - EMRL

7000 East Avenue

Livermore, CA 94551

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	1.33e+01	15.2	A		-12.5	10.6 - 19.8	1.53e+00	A
Cesium-137	1.47E+01	14.3	A		2.8	10.0 - 18.6	2.78	W
Cobalt-57	-5.90E-02		A			False Positive Test	1.45	
Cobalt-60	1.18E+01	12.2	A		-3.3	8.5 - 15.9	1.95	W
Hydrogen-3	3.52e+02	360	A		-2.2	252 - 468	4.56e+00	N
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-6.30e-01		A			False Positive Test	3.87e+00	
Nickel-63	NR					False Positive Test		
Plutonium-238	6.68E-01	0.704	A		-5.1	0.493 - 0.915	1.48E-02	A
Plutonium-239/240	7.41E-03	0.0089	A	(17)		Sensitivity Evaluation	3.80E-03	
Potassium-40	1.77e+00		A			False Positive Test	3.88e+01	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	1.46e+01	16.9	A		-13.6	11.8 - 22.0	4.78e+00	N

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(CMRC01) Carlsbad Environmental Monitoring and Research Center
1400 University Dr.
Carlsbad, NM 88220

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	7.74E-01	0.922	A		-16.1	0.645 - 1.199	5.18E-02	A
Cesium-134	1.27E+01	15.2	A		-16.4	10.6 - 19.8	4.39E-01	A
Cesium-137	1.54E+01	14.3	A		7.7	10.0 - 18.6	3.27E-01	A
Cobalt-57	5.03E-01			A		False Positive Test	5.01E-01	
Cobalt-60	1.19E+01	12.2	A		-2.5	8.5 - 15.9	4.43E-01	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	9.06E-02			A		False Positive Test	1.47E-01	
Nickel-63	NR					False Positive Test		
Plutonium-238	6.88E-01	0.704	A		-2.3	0.493 - 0.915	4.54E-02	A
Plutonium-239/240	7.40E-03	0.0089	A			Sensitivity Evaluation	1.37E-03	
Potassium-40	9.73E-01			A		False Positive Test	5.61	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.21E+00	1.26	A		-4.0	0.88 - 1.64	8.37E-02	A
Uranium-238	1.22E+00	1.3	A		-6.2	0.9 - 1.7	8.41E-02	A
Zinc-65	1.82E+01	16.9	A		7.7	11.8 - 22.0	1.22	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(CORE02) TestAmerica Denver

4955 Yarrow St

Arvada, CO 80002

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	15.0	13.5	A		11.1	9.5 - 17.6	1.0750	A
Arsenic	3.82	3.71	A		3.0	2.60 - 4.82	0.3947	A
Barium	0.787	0.690	A		14.1	0.483 - 0.897	0.0853	A
Beryllium	2.40	2.24	A		7.1	1.57 - 2.91	0.1360	A
Cadmium	0.323	0.306	A		5.6	0.214 - 0.398	0.0118	A
Chromium	1.90	1.77	A		7.3	1.24 - 2.30	0.12350	A
Cobalt	19.7	18.0	A		9.4	12.6 - 23.4	0.7552	A
Copper	19.3	19.1	A		1.0	13.4 - 24.8	1.4797	A
Lead	2.07	1.88	A		10.1	1.32 - 2.44	0.1622	A
Mercury	0.0000167		A			False Positive Test	0.0259	
Nickel	15.9	15.2	A		4.6	10.6 - 19.8	0.7420	A
Selenium	0.483	0.490	A		-1.4	0.343 - 0.637	0.0290	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	5.18	4.45	A		16.4	3.12 - 5.79	0.014895	N
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.130	0.105	W		23.8	0.074 - 0.137	0.0034	A
Vanadium	12.3	11.6	A		6.0	8.1 - 15.1	0.5125	A
Zinc	19.5	18.5	A		5.4	13.0 - 24.1	0.6500	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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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- (17) = NOT DETECTED - reported a statistically zero result
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- (28) = Not Reporting Previously Reported Analyte
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(DEHS01) Department of Environmental Health & Safety

North Carolina State Univ.

Raleigh, NC 27695-8007

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	12.2	15.2	A		-19.7	10.6 - 19.8	0.6	A
Cesium-137	14.5	14.3	A		1.4	10.0 - 18.6	0.7	A
Cobalt-57	0.2			A		False Positive Test	0.4	
Cobalt-60	13.0	12.2	A		6.6	8.5 - 15.9	0.4	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.2			A		False Positive Test	0.3	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	-9.1			A		False Positive Test	4.2	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	16.2	16.9	A		-4.1	11.8 - 22.0	1.2	A

Radiological Reference Date: August 1, 2020

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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- (6) = Not Evaluated
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(DLEA01) DLE Associates

730 Alfred Nobel Drive

Hercules, CA 94547

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.065	0.105	N		-38.1	0.074 - 0.137	0.008	A
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	12.69	15.2	A		-16.5	10.6 - 19.8	0.86	A
Cesium-137	12.77	14.3	A		-10.7	10.0 - 18.6	0.96	A
Cobalt-57	0.09			A		False Positive Test	0.32	
Cobalt-60	12.43	12.2	A		1.9	8.5 - 15.9	0.71	A
Hydrogen-3	365	360	A		1.4	252 - 468	8	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.30			A		False Positive Test	0.92	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	16			A		False Positive Test	51	
Radium-226	1.38	1.25	A		10.4	0.88 - 1.63	0.16	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.04	11.6	A		-4.8	8.1 - 15.1	1.04	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.42	16.9	A		3.1	11.8 - 22.0	1.04	A

Radiological Reference Date: August 1, 2020

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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- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
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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-20-MaW43
 (EFGS01) Eurofins Frontier Global Sciences, LLC.
 5755 8th St. E
 Tacoma, WA 98424

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	0.0000014		A			False Positive Test	0.000000	
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(ELIW01) Energy Laboratories, Inc.

2393 Salt Creek HWY

Casper, Wy 82601

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	1.3	1.25	A		4.0	0.88 - 1.63	0.15	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.2	1.26	A		-4.8	0.88 - 1.64	0.1	A
Uranium-238	1.3	1.3	A		0.0	0.9 - 1.7	0.1	A
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
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- (17) = NOT DETECTED - reported a statistically zero result
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(EMAX01) EMAX Laboratories, Inc

1835 W. 205th St.

Torrance, CA 90501

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.5	13.5	A		0.0	9.5 - 17.6	0.0081	N
Arsenic	3.59	3.71	A		-3.2	2.60 - 4.82	0.0455	N
Barium	0.765	0.690	A		10.9	0.483 - 0.897	0.008	N
Beryllium	2.22	2.24	A		-0.9	1.57 - 2.91	0.0012	N
Cadmium	0.296	0.306	A		-3.3	0.214 - 0.398	0.00249	N
Chromium	1.74	1.77	A		-1.7	1.24 - 2.30	0.0016	N
Cobalt	17.3	18.0	A		-3.9	12.6 - 23.4	0.0034	N
Copper	18.7	19.1	A		-2.1	13.4 - 24.8	0.0585	N
Lead	1.75	1.88	A		-6.9	1.32 - 2.44	0.0100	N
Mercury	0.0000560		A			False Positive Test	0.000141	
Nickel	15.1	15.2	A		-0.7	10.6 - 19.8	0.0155	N
Selenium	0.491	0.490	A		0.2	0.343 - 0.637	0.0043	N
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.72	4.45	A		6.1	3.12 - 5.79	0.0106	N
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	0.107	0.105	A		1.9	0.074 - 0.137	0.000435	N
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	11.6	11.6	A		0.0	8.1 - 15.1	0.104	N
Zinc	18.4	18.5	A		-0.5	13.0 - 24.1	0.040	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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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- (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-20-MaW43

(ERAD01) Lawrence Livermore National Laboratory ERAD

7000 East Ave., L-231

Livermore, CA 94551

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	0.0007609	7.6E-4	A		0.1	5.32E-4 - 9.88E-4	0.000008	N
Uranium-238	0.10474	0.105	A		-0.2	0.074 - 0.137	0.00098	N
Uranium-Total	0.1055	0.105	A		0.5	0.074 - 0.137	0.0010	N
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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-20-MaW43
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.3	13.5	A		-8.9	9.5 - 17.6	0.7	A
Arsenic	3.36	3.71	A		-9.4	2.60 - 4.82	0.18	A
Barium	0.717	0.690	A		3.9	0.483 - 0.897	0.040	A
Beryllium	1.55	2.24	N		-30.8	1.57 - 2.91	0.09	A
Cadmium	0.294	0.306	A		-3.9	0.214 - 0.398	0.015	A
Chromium	1.81	1.77	A		2.3	1.24 - 2.30	0.16	A
Cobalt	15.9	18.0	A		-11.7	12.6 - 23.4	1.0	A
Copper	18.2	19.1	A		-4.7	13.4 - 24.8	1.0	A
Lead	1.72	1.88	A		-8.5	1.32 - 2.44	0.06	A
Mercury	NR					False Positive Test		
Nickel	14.0	15.2	A		-7.9	10.6 - 19.8	0.8	A
Selenium	0.519	0.490	A		5.9	0.343 - 0.637	0.034	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.28	4.45	A		-3.8	3.12 - 5.79	0.16	A
Uranium-235	0.000675	7.6E-4	A		-11.2	5.32E-4 - 9.88E-4	0.000036	A
Uranium-238	0.0947	0.105	A		-9.8	0.074 - 0.137	0.0036	A
Uranium-Total	0.0953	0.105	A		-9.2	0.074 - 0.137	0.0036	A
Vanadium	9.80	11.6	A		-15.5	8.1 - 15.1	0.66	A
Zinc	17.4	18.5	A		-5.9	13.0 - 24.1	1.0	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.903	0.922	A		-2.1	0.645 - 1.199	0.043	A
Cesium-134	13.5	15.2	A		-11.2	10.6 - 19.8	0.2	N
Cesium-137	14.5	14.3	A		1.4	10.0 - 18.6	0.3	A
Cobalt-57	0.044		A			False Positive Test	0.074	
Cobalt-60	12.6	12.2	A		3.3	8.5 - 15.9	0.2	N
Hydrogen-3	368	360	A		2.2	252 - 468	11	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.048		A			False Positive Test	0.089	
Nickel-63	1.81		N	(1)		False Positive Test	0.36	
Plutonium-238	0.651	0.704	A		-7.5	0.493 - 0.915	0.026	A
Plutonium-239/240	-0.0011	0.0089	A	(17)		Sensitivity Evaluation	0.0030	
Potassium-40	6.3		N	(1)		False Positive Test	1.6	
Radium-226	1.30	1.25	A		4.0	0.88 - 1.63	0.10	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.5	11.6	A		-0.9	8.1 - 15.1	0.6	A
Technetium-99	7.8	9.4	A		-17.0	6.6 - 12.2	1.1	A
Uranium-234	1.34	1.26	A		6.3	0.88 - 1.64	0.06	A
Uranium-238	1.38	1.3	A		6.2	0.9 - 1.7	0.06	A
Zinc-65	15.8	16.9	A		-6.5	11.8 - 22.0	0.5	A

Radiological Reference Date: August 1, 2020

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-20-MaW43

(ERHD99) Radiation Protection Bureau Health Canada RSD NMS

775 Brookfield Road AL6302D1

Ottawa, Ontario K1A 1C1

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.97	13.5	A		-3.9	9.5 - 17.6	0.12	N
Arsenic	3.77	3.71	A		1.6	2.60 - 4.82	0.02	N
Barium	0.76	0.690	A		10.1	0.483 - 0.897	0.01	N
Beryllium	2.29	2.24	A		2.2	1.57 - 2.91	0.03	N
Cadmium	0.31	0.306	A		1.3	0.214 - 0.398	0.02	A
Chromium	1.76	1.77	A		-0.6	1.24 - 2.30	0.02	N
Cobalt	17.34	18.0	A		-3.7	12.6 - 23.4	0.22	N
Copper	19.63	19.1	A		2.8	13.4 - 24.8	.25	N
Lead	1.89	1.88	A		0.5	1.32 - 2.44	0.02	N
Mercury	NR					False Positive Test		
Nickel	15.07	15.2	A		-0.9	10.6 - 19.8	.12	N
Selenium	0.488	0.490	A		-0.4	0.343 - 0.637	0.02	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.51	4.45	A		1.3	3.12 - 5.79	0.06	N
Uranium-235	0.0008	7.6E-4	A		5.3	5.32E-4 - 9.88E-4	0.00005	A
Uranium-238	0.109	0.105	A		3.8	0.074 - 0.137	0.001	N
Uranium-Total	0.11	0.105	A		4.8	0.074 - 0.137	0.001	N
Vanadium	11.31	11.6	A		-2.5	8.1 - 15.1	0.1	N
Zinc	18.52	18.5	A		0.1	13.0 - 24.1	0.19	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.911	0.922	A		-1.2	0.645 - 1.199	0.023	A
Cesium-134	15.96	15.2	A		5.0	10.6 - 19.8	0.61	A
Cesium-137	14.53	14.3	A		1.6	10.0 - 18.6	0.56	A
Cobalt-57	0.11		A			False Positive Test	0.18	
Cobalt-60	12.08	12.2	A		-1.0	8.5 - 15.9	0.50	A
Hydrogen-3	378.66	360	A		5.2	252 - 468	5.07	N
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.36		A			False Positive Test	0.47	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.682	0.704	A		-3.1	0.493 - 0.915	0.019	A
Plutonium-239/240	0.0071	0.0089	A			Sensitivity Evaluation	0.0014	
Potassium-40	0.56		A			False Positive Test	1.2	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.39	11.6	A		-1.8	8.1 - 15.1	0.52	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.271	1.26	A		0.9	0.88 - 1.64	0.031	A
Uranium-238	1.265	1.3	A		-2.7	0.9 - 1.7	0.030	A
Zinc-65	16.65	16.9	A		-1.5	11.8 - 22.0	0.64	A

Radiological Reference Date: August 1, 2020

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-20-MaW43

(ESDE01) Region 5 EQC Tritium Lab

206 Beaufort NE

Aiken, SC 29801

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	368	360	A		2.2	252 - 468	10	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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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- (4) = Sensitivity Evaluation
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(ETTP01) MCLinc

161 Mitchell Road

Oak Ridge, Tennessee 37830

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.90	13.5	A		3.0	9.5 - 17.6	0.69	A
Arsenic	3.735	3.71	A		0.7	2.60 - 4.82	0.183	A
Barium	0.714	0.690	A		3.5	0.483 - 0.897	0.019	A
Beryllium	2.286	2.24	A		2.1	1.57 - 2.91	0.162	A
Cadmium	0.2982	0.306	A		-2.5	0.214 - 0.398	0.008	A
Chromium	1.805	1.77	A		2.0	1.24 - 2.30	0.182	A
Cobalt	17.50	18.0	A		-2.8	12.6 - 23.4	1.45	A
Copper	17.18	19.1	A		-10.1	13.4 - 24.8	1.36	A
Lead	2.00	1.88	A		6.4	1.32 - 2.44	0.125	A
Mercury	0.0012		A			False Positive Test	0.0006	
Nickel	14.60	15.2	A		-3.9	10.6 - 19.8	0.292	A
Selenium	0.6617	0.490	N		35.0	0.343 - 0.637	0.086	A
Technetium-99	0.0000154	1.48E-5	A		4.1	1.04E-5 - 1.92E-5	0.000000	N
Thallium	4.750	4.45	A		6.7	3.12 - 5.79	0.487	A
Uranium-235	0.0010	7.6E-4	N		31.6	5.32E-4 - 9.88E-4	0.00005	A
Uranium-238	0.130	0.105	W		23.8	0.074 - 0.137	0.006	A
Uranium-Total	0.131	0.105	W		24.8	0.074 - 0.137	0.006	A
Vanadium	10.61	11.6	A		-8.5	8.1 - 15.1	0.61	A
Zinc	18.44	18.5	A		-0.3	13.0 - 24.1	0.904	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	7.69	9.4	A		-18.2	6.6 - 12.2	0.068	N
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(EULC01) EnergySolutions, LLC

I-80, Exit 49

Clive, UT 84029

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.023	0.922	A		11.0	0.645 - 1.199	.262	W
Cesium-134	12.839	15.2	A		-15.5	10.6 - 19.8	.739	A
Cesium-137	13.483	14.3	A		-5.7	10.0 - 18.6	1.652	A
Cobalt-57	-.231		A			False Positive Test	.19	
Cobalt-60	10.456	12.2	A		-14.3	8.5 - 15.9	.64	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	.065		A			False Positive Test	.05	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	1.956		A			False Positive Test	1.24	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	15.096	16.9	A		-10.7	11.8 - 22.0	1.368	A

Radiological Reference Date: August 1, 2020

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-20-MaW43

(FDHE01) Florida Dept of Health Environmental Laboratory

PO Box 680069

Orlando, FL 32868-0069

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.864	0.922	A		-6.3	0.645 - 1.199	0.492	N
Cesium-134	13.549	15.2	A		-10.9	10.6 - 19.8	0.252	N
Cesium-137	14.268	14.3	A		-0.2	10.0 - 18.6	0.364	A
Cobalt-57	-0.015		A			False Positive Test	0.204	
Cobalt-60	11.612	12.2	A		-4.8	8.5 - 15.9	0.254	A
Hydrogen-3	381.57	360	A		6.0	252 - 468	6.59	N
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.010		A			False Positive Test	0.297	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.665	0.704	A		-5.5	0.493 - 0.915	0.028	A
Plutonium-239/240	0.0056	0.0089	A	(17)		Sensitivity Evaluation	0.0021	
Potassium-40	0.684		A			False Positive Test	1.366	
Radium-226	1.204	1.25	A		-3.7	0.88 - 1.63	0.051	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.468	11.6	A		-1.1	8.1 - 15.1	0.624	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.113	1.26	A		-11.7	0.88 - 1.64	0.059	A
Uranium-238	1.163	1.3	A		-10.5	0.9 - 1.7	0.060	A
Zinc-65	17.212	16.9	A		1.8	11.8 - 22.0	0.531	A

Radiological Reference Date: August 1, 2020

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-20-MaW43

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

PO Box 680069

Orlando, FL 32868-0069

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.921	0.922	A		-0.1	0.645 - 1.199	0.092	A
Cesium-134	13.519	15.2	A		-11.1	10.6 - 19.8	0.206	N
Cesium-137	13.641	14.3	A		-4.6	10.0 - 18.6	0.306	A
Cobalt-57	0.025			A		False Positive Test	0.24	
Cobalt-60	11.402	12.2	A		-6.5	8.5 - 15.9	0.212	N
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.1			A		False Positive Test	0.328	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	0.074			A		False Positive Test	2.275	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	1.113	1.3	A		-14.4	0.9 - 1.7	1.479	N
Zinc-65	16.325	16.9	A		-3.4	11.8 - 22.0	0.501	A

Radiological Reference Date: August 1, 2020

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision

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

Laboratory Results For MAPEP-20-MaW43

(FERM01) Fernald Project
10995 Hamilton-Cleves Highway
Harrison, OH 45030-9728

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.1097	0.105	A		4.5	0.074 - 0.137	0.011	A
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

(FNAL01) Fermi National Accelerator Laboratory (FermiLab)

PO Box 500, MS325

Batavia, IL 60510

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	385	360	A		6.9	252 - 468	17	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
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- (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-20-MaW43

(GENE01) GEL Laboratories, LLC

2040 Savage Road

Charleston, SC 29407

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.2	13.5	A		-2.2	9.5 - 17.6	2.64	W
Arsenic	3.74	3.71	A		0.8	2.60 - 4.82	0.748	W
Barium	0.757	0.690	A		9.7	0.483 - 0.897	0.151	W
Beryllium	2.07	2.24	A		-7.6	1.57 - 2.91	0.414	W
Cadmium	0.280	0.306	A		-8.5	0.214 - 0.398	0.0560	W
Chromium	1.79	1.77	A		1.1	1.24 - 2.30	0.358	W
Cobalt	15.8	18.0	A		-12.2	12.6 - 23.4	3.16	W
Copper	18	19.1	A		-5.8	13.4 - 24.8	3.61	W
Lead	1.78	1.88	A		-5.3	1.32 - 2.44	0.356	W
Mercury	-0.000017		A			False Positive Test	0.000022	
Nickel	14.6	15.2	A		-3.9	10.6 - 19.8	2.93	W
Selenium	0.497	0.490	A		1.4	0.343 - 0.637	0.1	W
Technetium-99	1.47E-05	1.48E-5	A		-0.7	1.04E-5 - 1.92E-5	1.24E-07	N
Thallium	4.23	4.45	A		-4.9	3.12 - 5.79	0.846	W
Uranium-235	0.00077	7.6E-4	A		1.3	5.32E-4 - 9.88E-4	0.000155	W
Uranium-238	0.106	0.105	A		1.0	0.074 - 0.137	0.0213	W
Uranium-Total	0.107	0.105	A		1.9	0.074 - 0.137	0.0215	W
Vanadium	11.1	11.6	A		-4.3	8.1 - 15.1	2.22	W
Zinc	17.4	18.5	A		-5.9	13.0 - 24.1	3.49	W

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.942	0.922	A		2.2	0.645 - 1.199	0.0534	A
Cesium-134	13.9	15.2	A		-8.6	10.6 - 19.8	0.678	A
Cesium-137	15.1	14.3	A		5.6	10.0 - 18.6	0.685	A
Cobalt-57	-0.0072		A			False Positive Test	0.0366	
Cobalt-60	12.9	12.2	A		5.7	8.5 - 15.9	0.66	A
Hydrogen-3	330	360	A		-8.3	252 - 468	37.6	A
Iron-55	29.2	32.9	A		-11.2	23.0 - 42.8	3.04	A
Manganese-54	-0.0032		A			False Positive Test	0.0586	
Nickel-63	-0.928		A			False Positive Test	0.644	
Plutonium-238	0.643	0.704	A		-8.7	0.493 - 0.915	0.0438	A
Plutonium-239/240	0.0014	0.0089	A	(17)		Sensitivity Evaluation	0.00704	
Potassium-40	-0.763		A			False Positive Test	0.843	
Radium-226	1.02	1.25	A		-18.4	0.88 - 1.63	0.137	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	9.97	11.6	A		-14.1	8.1 - 15.1	0.803	A
Technetium-99	8.72	9.4	A		-7.2	6.6 - 12.2	0.598	A
Uranium-234	1.27	1.26	A		0.8	0.88 - 1.64	0.0782	A
Uranium-238	1.31	1.3	A		0.8	0.9 - 1.7	0.0794	A
Zinc-65	18.9	16.9	A		11.8	11.8 - 22.0	0.921	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(GPCL01) Georgia Power Company Environmental Laboratory
2480 Maner Road
Atlanta, GA 30339

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	15.47	15.2	A		1.8	10.6 - 19.8	1.13	A
Cesium-137	15.56	14.3	A		8.8	10.0 - 18.6	1.28	A
Cobalt-57	0.05			A		False Positive Test	0.33	
Cobalt-60	12.36	12.2	A		1.3	8.5 - 15.9	0.96	A
Hydrogen-3	356.31	360	A		-1.0	252 - 468	8.42	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.01			A		False Positive Test	0.35	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	0.45			A		False Positive Test	2.27	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6	N	(28)		8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	18.33	16.9	A		8.5	11.8 - 22.0	1.76	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (HCAL01) Lawrence Livermore National Laboratory
 Analytical Services and Instrumentation Analytical Lab
 Livermore, CA 94550

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	355	360	A		-1.4	252 - 468	19	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

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

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	14.40	15.2	A		-5.3	10.6 - 19.8	0.6504	A
Cesium-137	15.52	14.3	A		8.5	10.0 - 18.6	1.365	A
Cobalt-57	-0.07754			A		False Positive Test	0.2583	
Cobalt-60	12.58	12.2	A		3.1	8.5 - 15.9	0.7673	A
Hydrogen-3	356	360	A		-1.1	252 - 468	10.1	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.1416			A		False Positive Test	0.2150	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	-0.1517			A		False Positive Test	1.082	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	18.10	16.9	A		7.1	11.8 - 22.0	1.669	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
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- (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-20-MaW43

(HPAC99) PHE, CRCE Glasgow

155 Hardgate Road

Glasgow, Scotland G514LS

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	3.56	3.71	A		-4.0	2.60 - 4.82	0.27	A
Barium	NR	0.690				0.483 - 0.897		
Beryllium	2.16	2.24	A		-3.6	1.57 - 2.91	0.18	A
Cadmium	0.284	0.306	A		-7.2	0.214 - 0.398	0.017	A
Chromium	1.64	1.77	A		-7.3	1.24 - 2.30	0.11	A
Cobalt	17.1	18.0	A		-5.0	12.6 - 23.4	1.1	A
Copper	17.9	19.1	A		-6.3	13.4 - 24.8	1.1	A
Lead	1.79	1.88	A		-4.8	1.32 - 2.44	0.13	A
Mercury	NR					False Positive Test		
Nickel	14.23	15.2	A		-6.4	10.6 - 19.8	0.78	A
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	0.000015	1.48E-5	A		1.4	1.04E-5 - 1.92E-5	0.000001	A
Thallium	4.4	4.45	A		-1.1	3.12 - 5.79	0.66	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.1005	0.105	A		-4.3	0.074 - 0.137	0.0096	A
Vanadium	10.79	11.6	A		-7.0	8.1 - 15.1	0.54	A
Zinc	17.3	18.5	A		-6.5	13.0 - 24.1	1.3	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.992	0.922	A		7.6	0.645 - 1.199	0.072	A
Cesium-134	14.92	15.2	A		-1.8	10.6 - 19.8	0.7	A
Cesium-137	14.74	14.3	A		3.1	10.0 - 18.6	0.73	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	12.45	12.2	A		2.0	8.5 - 15.9	0.6	A
Hydrogen-3	397	360	A		10.3	252 - 468	15	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	0.676	0.704	A		-4.0	0.493 - 0.915	0.046	A
Plutonium-239/240	0.042	0.0089	N	(4)		Sensitivity Evaluation	0.009	
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	9.97	11.6	A		-14.1	8.1 - 15.1	0.69	A
Technetium-99	10.5	9.4	A		11.7	6.6 - 12.2	0.8	A
Uranium-234	1.258	1.26	A		-0.2	0.88 - 1.64	0.063	A
Uranium-238	1.256	1.3	A		-3.4	0.9 - 1.7	0.063	A
Zinc-65	17.3	16.9	A		2.4	11.8 - 22.0	0.88	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(IAEA20) IAEA Radiometrics Laboratory

4a, Quai Antoine 1er

Monaco, Monaco 98000

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.91	0.922	A		-1.3	0.645 - 1.199	0.10	A
Cesium-134	15.12	15.2	A		-0.5	10.6 - 19.8	0.58	A
Cesium-137	14.97	14.3	A		4.7	10.0 - 18.6	0.62	A
Cobalt-57	NR			(11)		False Positive Test		
Cobalt-60	12.72	12.2	A		4.3	8.5 - 15.9	0.49	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR			(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR			(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	16.77	16.9	A		-0.8	11.8 - 22.0	0.73	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (IAEA99) International Atomic Energy Agency
 Agency's Laboratories Seibersdorf
 Seibersdorf, Austria A-2444

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922		(28)		0.645 - 1.199		
Cesium-134	NR	15.2		(28)		10.6 - 19.8		
Cesium-137	NR	14.3		(28)		10.0 - 18.6		
Cobalt-57	NR			(11)		False Positive Test		
Cobalt-60	NR	12.2		(28)		8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR			(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR			(11)		False Positive Test		
Radium-226	1.32	1.25	A		5.6	0.88 - 1.63	0.08	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.26	1.26	A		0.0	0.88 - 1.64	0.03	A
Uranium-238	1.27	1.3	A		-2.3	0.9 - 1.7	0.03	A
Zinc-65	NR	16.9		(28)		11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(IEMA01) Illinois Emergency Management Agency Radiochemistry Laboratory

1301 Knotts St.

Springfield, IL 62703

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.841	0.922	A		-8.8	0.645 - 1.199	0.038	A
Cesium-134	15.05	15.2	A		-1.0	10.6 - 19.8	0.16	N
Cesium-137	14.75	14.3	A		3.1	10.0 - 18.6	0.26	N
Cobalt-57	0.012			A		False Positive Test	0.048	
Cobalt-60	12.55	12.2	A		2.9	8.5 - 15.9	0.17	N
Hydrogen-3	350.7	360	A		-2.6	252 - 468	4.4	N
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.077			A		False Positive Test	0.080	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.711	0.704	A		1.0	0.493 - 0.915	0.031	A
Plutonium-239/240	0.0127	0.0089	A			Sensitivity Evaluation	0.0032	
Potassium-40	0.40			A		False Positive Test	0.50	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.71	11.6	A		-7.7	8.1 - 15.1	0.28	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.174	1.26	A		-6.8	0.88 - 1.64	0.047	A
Uranium-238	1.232	1.3	A		-5.2	0.9 - 1.7	0.049	A
Zinc-65	16.65	16.9	A		-1.5	11.8 - 22.0	0.39	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (ISUE01) ISU Environmental Monitoring Laboratory
 785 5th 8th Ave Rm B107
 Pocatello, Idaho 83209

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	15.1	15.2	A		-0.7	10.6 - 19.8	0.24	N
Cesium-137	15.3	14.3	A		7.0	10.0 - 18.6	0.37	A
Cobalt-57	-0.68		A			False Positive Test	0.34	
Cobalt-60	12.5	12.2	A		2.5	8.5 - 15.9	0.24	N
Hydrogen-3	390.9	360	A		8.6	252 - 468	6.3	N
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.03		A			False Positive Test	0.07	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	4.4		N	(1)		False Positive Test	0.05	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.7	16.9	A		4.7	11.8 - 22.0	0.52	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(ISUP01) ISU - Department of Physics/Health Physics/EAL

785 S. 8th Ave, Rm 120

Pocatello, ID 83209-8106

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.5	15.2	A		-11.2	10.6 - 19.8	.7	A
Cesium-137	14.7	14.3	A		2.8	10.0 - 18.6	.89	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	11.8	12.2	A		-3.3	8.5 - 15.9	.68	A
Hydrogen-3	NR	360	N	(28)		252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-1		A			False Positive Test	.15	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	1.53		A			False Positive Test	1.23	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	16.8	16.9	A		-0.6	11.8 - 22.0	1.34	A

Radiological Reference Date: August 1, 2020

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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- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(JAEC99) Research Laboratories and Information Directorate
 Jordan Atomic Energy Commission
 Amman, Jordan 70 (11934)

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.42	13.5	A		-0.6	9.5 - 17.6	1.31	A
Arsenic	3.15	3.71	A		-15.1	2.60 - 4.82	0.32	A
Barium	NR	0.690				0.483 - 0.897		
Beryllium	2.17	2.24	A		-3.1	1.57 - 2.91	0.41	W
Cadmium	0.29	0.306	A		-5.2	0.214 - 0.398	0.03	A
Chromium	1.97	1.77	A		11.3	1.24 - 2.30	0.19	A
Cobalt	18.96	18.0	A		5.3	12.6 - 23.4	1.90	A
Copper	18.86	19.1	A		-1.3	13.4 - 24.8	1.89	A
Lead	2.12	1.88	A		12.8	1.32 - 2.44	0.21	A
Mercury	NR					False Positive Test		
Nickel	15.17	15.2	A		-0.2	10.6 - 19.8	1.52	A
Selenium	0.36	0.490	W		-26.5	0.343 - 0.637	0.04	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	5.07	4.45	A		13.9	3.12 - 5.79	0.51	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	0.13	0.105	W		23.8	0.074 - 0.137	0.01	A
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	12.23	11.6	A		5.4	8.1 - 15.1	1.49	A
Zinc	15.85	18.5	A		-14.3	13.0 - 24.1	1.59	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	15.03	15.2	A		-1.1	10.6 - 19.8	0.54	A
Cesium-137	15.11	14.3	A		5.7	10.0 - 18.6	1.11	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	12.33	12.2	A		1.1	8.5 - 15.9	0.82	A
Hydrogen-3	330.2	360	A		-8.3	252 - 468	37.5	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	0.463	0.704	N		-34.2	0.493 - 0.915	0.045	A
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	16.017	11.6	N		38.1	8.1 - 15.1	0.515	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.005	1.26	W		-20.2	0.88 - 1.64	0.0455	A
Uranium-238	1.1	1.3	A		-15.4	0.9 - 1.7	0.0486	A
Zinc-65	18.21	16.9	A		7.8	11.8 - 22.0	1.5	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(JLNN01) Jefferson Laboratory

111 Hadron Drive

Newport News, VA 23606

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.973	0.922	A		5.5	0.645 - 1.199	0.160	W
Cesium-134	14.270	15.2	A		-6.1	10.6 - 19.8	0.336	A
Cesium-137	14.685	14.3	A		2.7	10.0 - 18.6	0.581	A
Cobalt-57	0.084			A		False Positive Test	0.086	
Cobalt-60	12.010	12.2	A		-1.6	8.5 - 15.9	0.353	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.131			A		False Positive Test	0.136	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	3.295			A		False Positive Test	1.457	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.480	16.9	A		3.4	11.8 - 22.0	0.867	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (LANL01) Los Alamos National Laboratory
 Mail Stop J514
 Los Alamos, NM 87545

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.8	15.2	A		-9.2	10.6 - 19.8	0.6	A
Cesium-137	13.4	14.3	A		-6.3	10.0 - 18.6	0.6	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	12.6	12.2	A		3.3	8.5 - 15.9	0.5	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	19.6	16.9	A		16.0	11.8 - 22.0	1.2	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(LAWR01) LAWRENCE BERKELEY NATIONAL LABORATORY
1 CYCLOTRON RD.
BERKELEY, CA 94720

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	14.14	15.2	A		-7.0	10.6 - 19.8	.833	A
Cesium-137	14.71	14.3	A		2.9	10.0 - 18.6	.8751	A
Cobalt-57	-0.09465			A		False Positive Test	0.9465	
Cobalt-60	12.04	12.2	A		-1.3	8.5 - 15.9	.7562	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.08807			A		False Positive Test	.249	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	2.848			A		False Positive Test	4.054	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	18.60	16.9	A		10.1	11.8 - 22.0	1.275	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

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

INL/Battelle Energy Alliance, LLC

Idaho Falls, ID 83415-7111

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.33	15.2	A		-12.3	10.6 - 19.8	0.7	A
Cesium-137	14.53	14.3	A		1.6	10.0 - 18.6	0.77	A
Cobalt-57	0.07			A		False Positive Test	0.05	
Cobalt-60	11.63	12.2	A		-4.7	8.5 - 15.9	0.60	A
Hydrogen-3	380.06	360	A		5.6	252 - 468	21.41	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.02			A		False Positive Test	0.06	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	0.24			A		False Positive Test	0.44	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.03	16.9	A		0.8	11.8 - 22.0	0.97	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

(LZCA01) ACZ Laboratories, Inc
2273 Downhill Drive
Steamboat Springs, CO 80487

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	1.29	1.25	A		3.2	0.88 - 1.63	.08	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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-20-MaW43

(MALA99) Alypz Sdn. Bhd.

No. 14, JLN USJ 1/1

Subang Jaya, Selangor 47600

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	16.37	15.2	A		7.7	10.6 - 19.8	0.30	N
Cesium-137	18.29	14.3	W		27.9	10.0 - 18.6	0.44	A
Cobalt-57	0.04		A			False Positive Test	0.05	
Cobalt-60	13.73	12.2	A		12.5	8.5 - 15.9	0.30	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.06		A			False Positive Test	0.16	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	1.15		A			False Positive Test	1.15	
Radium-226	2.52	1.25	N		101.6	0.88 - 1.63	0.15	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	20.35	16.9	W		20.4	11.8 - 22.0	0.61	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43
 (MART01) Fluor B&W Ports Analytical Laboratory
 Lab COC, Bldg. X-710, Rm 222
 Piketon, OH 45661-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.6	13.5	A		-6.7	9.5 - 17.6	0.50	A
Arsenic	3.42	3.71	A		-7.8	2.60 - 4.82	0.156	A
Barium	0.720	0.690	A		4.3	0.483 - 0.897	0.042	A
Beryllium	2.15	2.24	A		-4.0	1.57 - 2.91	0.072	A
Cadmium	0.278	0.306	A		-9.2	0.214 - 0.398	0.013	A
Chromium	1.58	1.77	A		-10.7	1.24 - 2.30	0.089	A
Cobalt	16.5	18.0	A		-8.3	12.6 - 23.4	0.870	A
Copper	18.1	19.1	A		-5.2	13.4 - 24.8	0.818	A
Lead	1.82	1.88	A		-3.2	1.32 - 2.44	0.127	A
Mercury	0.000800		A			False Positive Test	0.0008	
Nickel	14.1	15.2	A		-7.2	10.6 - 19.8	0.856	A
Selenium	0.441	0.490	A		-10.0	0.343 - 0.637	0.026	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.06	4.45	A		-8.8	3.12 - 5.79	0.251	A
Uranium-235	0.000757	7.6E-4	A		-0.4	5.32E-4 - 9.88E-4	0.0003	N
Uranium-238	0.104	0.105	A		-1.0	0.074 - 0.137	0.013	A
Uranium-Total	0.105	0.105	A		0.0	0.074 - 0.137	0.007	A
Vanadium	10.8	11.6	A		-6.9	8.1 - 15.1	0.515	A
Zinc	17.2	18.5	A		-7.0	13.0 - 24.1	0.760	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.017	0.922	A		10.3	0.645 - 1.199	0.06908	A
Cesium-134	13.39	15.2	A		-11.9	10.6 - 19.8	0.2931	A
Cesium-137	14.24	14.3	A		-0.4	10.0 - 18.6	0.4570	A
Cobalt-57	-0.05303		A			False Positive Test	0.05944	
Cobalt-60	12.21	12.2	A		0.1	8.5 - 15.9	0.3212	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.01230		A			False Positive Test	0.1212	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.7045	0.704	A		0.1	0.493 - 0.915	0.05988	A
Plutonium-239/240	0.0007797	0.0089	A	(17)		Sensitivity Evaluation	0.006535	
Potassium-40	1.456		A			False Positive Test	3.904	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	9.32	9.4	A		-0.9	6.6 - 12.2	0.24	A
Uranium-234	1.160	1.26	A		-7.9	0.88 - 1.64	0.08660	A
Uranium-238	1.095	1.3	A		-15.8	0.9 - 1.7	0.08338	A
Zinc-65	18.42	16.9	A		9.0	11.8 - 22.0	0.9218	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37830

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.2	13.5	A		-2.2	9.5 - 17.6	1.3	A
Arsenic	4.05	3.71	A		9.2	2.60 - 4.82	0.41	A
Barium	0.778	0.690	A		12.8	0.483 - 0.897	0.078	A
Beryllium	2.32	2.24	A		3.6	1.57 - 2.91	0.23	A
Cadmium	0.313	0.306	A		2.3	0.214 - 0.398	0.031	A
Chromium	1.94	1.77	A		9.6	1.24 - 2.30	0.19	A
Cobalt	18.1	18.0	A		0.6	12.6 - 23.4	1.8	A
Copper	20.0	19.1	A		4.7	13.4 - 24.8	2.0	A
Lead	2.08	1.88	A		10.6	1.32 - 2.44	0.21	A
Mercury	0.00011		A			False Positive Test	0.00011	
Nickel	14.4	15.2	A		-5.3	10.6 - 19.8	1.4	A
Selenium	0.485	0.490	A		-1.0	0.343 - 0.637	0.049	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.92	4.45	A		10.6	3.12 - 5.79	0.49	A
Uranium-235	0.000776	7.6E-4	A		2.1	5.32E-4 - 9.88E-4	0.000077	A
Uranium-238	0.1080	0.105	A		2.9	0.074 - 0.137	0.0108	A
Uranium-Total	0.1088	0.105	A		3.6	0.074 - 0.137	0.0109	A
Vanadium	11.6	11.6	A		0.0	8.1 - 15.1	1.2	A
Zinc	18.1	18.5	A		-2.2	13.0 - 24.1	1.8	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.933	0.922	A		1.2	0.645 - 1.199	0.050	A
Cesium-134	13.39	15.2	A		-11.9	10.6 - 19.8	0.20	N
Cesium-137	14.71	14.3	A		2.9	10.0 - 18.6	0.35	A
Cobalt-57	0.007		A			False Positive Test	0.093	
Cobalt-60	12.17	12.2	A		-0.2	8.5 - 15.9	0.23	N
Hydrogen-3	370	360	A		2.8	252 - 468	11	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.03		A			False Positive Test	0.18	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.653	0.704	A		-7.2	0.493 - 0.915	0.043	A
Plutonium-239/240	0.011	0.0089	A	(17)		Sensitivity Evaluation	0.005	
Potassium-40	1.68		A			False Positive Test	0.98	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.22	11.6	A		-11.9	8.1 - 15.1	0.51	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.361	1.26	A		8.0	0.88 - 1.64	0.075	A
Uranium-238	1.323	1.3	A		1.8	0.9 - 1.7	0.073	A
Zinc-65	17.12	16.9	A		1.3	11.8 - 22.0	0.53	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (MDPH01) MDPH-Radiation Control Program
 MERL-Room 002
 Jamaica Plain, MA 02130-3597

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.88	0.922	A		-4.6	0.645 - 1.199	0.07	A
Cesium-134	13.47	15.2	A		-11.4	10.6 - 19.8	0.35	A
Cesium-137	15.10	14.3	A		5.6	10.0 - 18.6	0.41	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	12.32	12.2	A		1.0	8.5 - 15.9	0.47	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.91	16.9	A		6.0	11.8 - 22.0	0.53	A

Radiological Reference Date: August 1, 2020

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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- (6) = Not Evaluated
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- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (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-20-MaW43

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

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.0542	0.922	A		14.3	0.645 - 1.199	0.2761	W
Cesium-134	13.830	15.2	A		-9.0	10.6 - 19.8	0.2842	A
Cesium-137	15.211	14.3	A		6.4	10.0 - 18.6	0.3434	A
Cobalt-57	0.0091737			A		False Positive Test	0.1176	
Cobalt-60	12.329	12.2	A		1.1	8.5 - 15.9	0.2586	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.093423			A		False Positive Test	0.1912	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR		N	(11)		False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	18.822	16.9	A		11.4	11.8 - 22.0	0.7146	A

Radiological Reference Date: August 1, 2020

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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- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory

Lynchburg Technology Center

Lynchburg, VA 24504-5447

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	12.07	13.5	A		-10.6	9.5 - 17.6	0.444	A
Arsenic	3.67	3.71	A		-1.1	2.60 - 4.82	0.116	A
Barium	0.707	0.690	A		2.5	0.483 - 0.897	0.021	A
Beryllium	2.37	2.24	A		5.8	1.57 - 2.91	0.078	A
Cadmium	0.284	0.306	A		-7.2	0.214 - 0.398	0.011	A
Chromium	1.63	1.77	A		-7.9	1.24 - 2.30	0.050	A
Cobalt	16.68	18.0	A		-7.3	12.6 - 23.4	0.497	A
Copper	17.2	19.1	A		-9.9	13.4 - 24.8	0.535	A
Lead	1.73	1.88	A		-8.0	1.32 - 2.44	0.055	A
Mercury	-0.00003		A			False Positive Test	0.0005	
Nickel	14.3	15.2	A		-5.9	10.6 - 19.8	0.429	A
Selenium	0.487	0.490	A		-0.6	0.343 - 0.637	0.013	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	3.960	4.45	A		-11.0	3.12 - 5.79	0.142	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	10.7	11.6	A		-7.8	8.1 - 15.1	0.332	A
Zinc	16.8	18.5	A		-9.2	13.0 - 24.1	0.678	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922	N	(28)		0.645 - 1.199		
Cesium-134	13.4	15.2	A		-11.8	10.6 - 19.8	0.45	A
Cesium-137	15.3	14.3	A		7.0	10.0 - 18.6	0.546	A
Cobalt-57	-0.100		A			False Positive Test	0.084	
Cobalt-60	12.1	12.2	A		-0.8	8.5 - 15.9	0.367	A
Hydrogen-3	334	360	A		-7.2	252 - 468	10.17	A
Iron-55	NR	32.9	N	(28)		23.0 - 42.8		
Manganese-54	-0.080		A			False Positive Test	0.179	
Nickel-63	NR		N	(11)		False Positive Test		
Plutonium-238	0.675	0.704	A		-4.1	0.493 - 0.915	0.031	A
Plutonium-239/240	0.006	0.0089	A	(17)		Sensitivity Evaluation	0.003	
Potassium-40	5.07		N	(1)		False Positive Test	1.23	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.1	11.6	A		-4.3	8.1 - 15.1	0.797	A
Technetium-99	9.31	9.4	A		-1.0	6.6 - 12.2	0.276	A
Uranium-234	1.247	1.26	A		-1.0	0.88 - 1.64	0.049	A
Uranium-238	1.253	1.3	A		-3.6	0.9 - 1.7	0.049	A
Zinc-65	18.0	16.9	A		6.5	11.8 - 22.0	0.620	A

Radiological Reference Date: August 1, 2020

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-20-MaW43
 (NJDH01) New Jersey Dept. of Health, PHEL, ECLS
 3 Schwarzkopf Drive
 West Trenton, NJ 08628

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.50	15.2	A		-11.2	10.6 - 19.8	0.58	A
Cesium-137	13.90	14.3	A		-2.8	10.0 - 18.6	0.62	A
Cobalt-57	0.08			A		False Positive Test	0.13	
Cobalt-60	12.50	12.2	A		2.5	8.5 - 15.9	0.53	A
Hydrogen-3	376.5	360	A		4.6	252 - 468	8.2	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.001			A		False Positive Test	0.21	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	20.1		N	(1)		False Positive Test	1.5	
Radium-226	1.33	1.25	A		6.4	0.88 - 1.63	0.15	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.32	11.6	A		-11.0	8.1 - 15.1	0.39	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	15.30	16.9	A		-9.5	11.8 - 22.0	0.66	A

Radiological Reference Date: August 1, 2020

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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- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	15.1	15.2	A		-0.7	10.6 - 19.8	0.481	A
Cesium-137	14.4	14.3	A		0.7	10.0 - 18.6	0.885	A
Cobalt-57	0.323			A		False Positive Test	0.411	
Cobalt-60	12.1	12.2	A		-0.8	8.5 - 15.9	0.368	A
Hydrogen-3	323.3	360	A		-10.2	252 - 468	7.71	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.0517			A		False Positive Test	0.0975	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	-0.088			A		False Positive Test	0.590	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	16.4	16.9	A		-3.0	11.8 - 22.0	0.800	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

(ORIS01) ORISE/IEAV

PO Box 117

Oak Ridge, TN 37831-0117

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.61	13.5	A		0.8	9.5 - 17.6	0.61	A
Arsenic	3.71	3.71	A		0.0	2.60 - 4.82	0.12	A
Barium	0.701	0.690	A		1.6	0.483 - 0.897	0.027	A
Beryllium	2.276	2.24	A		1.6	1.57 - 2.91	0.090	A
Cadmium	0.305	0.306	A		-0.3	0.214 - 0.398	0.014	A
Chromium	1.650	1.77	A		-6.8	1.24 - 2.30	0.066	A
Cobalt	18.72	18.0	A		4.0	12.6 - 23.4	0.72	A
Copper	19.77	19.1	A		3.5	13.4 - 24.8	0.88	A
Lead	1.938	1.88	A		3.1	1.32 - 2.44	0.063	A
Mercury	NR					False Positive Test		
Nickel	15.87	15.2	A		4.4	10.6 - 19.8	0.62	A
Selenium	0.476	0.490	A		-2.9	0.343 - 0.637	0.020	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.32	4.45	A		-2.9	3.12 - 5.79	0.14	A
Uranium-235	0.00077	7.6E-4	A		1.3	5.32E-4 - 9.88E-4	0.00003	A
Uranium-238	0.110	0.105	A		4.8	0.074 - 0.137	0.003	A
Uranium-Total	0.111	0.105	A		5.7	0.074 - 0.137	0.004	A
Vanadium	11.47	11.6	A		-1.1	8.1 - 15.1	0.46	A
Zinc	17.96	18.5	A		-2.9	13.0 - 24.1	0.83	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.848	0.922	A		-8.0	0.645 - 1.199	0.056	A
Cesium-134	15.51	15.2	A		2.0	10.6 - 19.8	0.54	A
Cesium-137	15.43	14.3	A		7.9	10.0 - 18.6	0.58	A
Cobalt-57	0.022		A			False Positive Test	0.052	
Cobalt-60	12.39	12.2	A		1.6	8.5 - 15.9	0.36	A
Hydrogen-3	363	360	A		0.8	252 - 468	15	A
Iron-55	31.8	32.9	A		-3.3	23.0 - 42.8	1.5	A
Manganese-54	-0.005		A			False Positive Test	0.094	
Nickel-63	0.60		A			False Positive Test	0.31	
Plutonium-238	0.686	0.704	A		-2.6	0.493 - 0.915	0.047	A
Plutonium-239/240	0.010	0.0089	A	(17)		Sensitivity Evaluation	0.004	
Potassium-40	-0.2		A			False Positive Test	1.0	
Radium-226	1.201	1.25	A		-3.9	0.88 - 1.63	0.063	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	10.97	11.6	A		-5.4	8.1 - 15.1	0.33	A
Technetium-99	9.25	9.4	A		-1.6	6.6 - 12.2	0.57	A
Uranium-234	1.349	1.26	A		7.1	0.88 - 1.64	0.082	A
Uranium-238	1.328	1.3	A		2.2	0.9 - 1.7	0.081	A
Zinc-65	17.16	16.9	A		1.5	11.8 - 22.0	0.56	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(OTLI01) Pace Analytical National Center for Testing & Innovation

12065 Lebanon Road

Mt. Juliet, TN 37122

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	15	13.5	A		11.1	9.5 - 17.6	0.2	N
Arsenic	3.51	3.71	A		-5.4	2.60 - 4.82	.002	N
Barium	0.74	0.690	A		7.2	0.483 - 0.897	0.02	A
Beryllium	2.32	2.24	A		3.6	1.57 - 2.91	.002	N
Cadmium	.317	0.306	A		3.6	0.214 - 0.398	.001	N
Chromium	1.72	1.77	A		-2.8	1.24 - 2.30	.002	N
Cobalt	18.1	18.0	A		0.6	12.6 - 23.4	0.1	N
Copper	19.1	19.1	A		0.0	13.4 - 24.8	0.25	N
Lead	1.67	1.88	A		-11.2	1.32 - 2.44	.002	N
Mercury	0.0002		A			False Positive Test	.0002	
Nickel	15.4	15.2	A		1.3	10.6 - 19.8	0.1	N
Selenium	0.486	0.490	A		-0.8	0.343 - 0.637	0.002	N
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	3.94	4.45	A		-11.5	3.12 - 5.79	0.002	N
Uranium-235	0.699	7.6E-4	N		91873.7	5.32E-4 - 9.88E-4	.005	N
Uranium-238	105	0.105	N		99900.0	0.074 - 0.137	1	N
Uranium-Total	104	0.105	N		98947.6	0.074 - 0.137	5	A
Vanadium	11.4	11.6	A		-1.7	8.1 - 15.1	0.25	A
Zinc	18.4	18.5	A		-0.5	13.0 - 24.1	1.25	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.806	0.922	A		-12.6	0.645 - 1.199	0.068	A
Cesium-134	15.2	15.2	A		0.0	10.6 - 19.8	1.06	A
Cesium-137	15.6	14.3	A		9.1	10.0 - 18.6	1.21	A
Cobalt-57	-0.04		A			False Positive Test	0.17	
Cobalt-60	13.0	12.2	A		6.6	8.5 - 15.9	0.90	A
Hydrogen-3	391	360	A		8.6	252 - 468	14.1	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.1		A			False Positive Test	0.35	
Nickel-63	0.3		A			False Positive Test	2.3	
Plutonium-238	0.709	0.704	A		0.7	0.493 - 0.915	0.046	A
Plutonium-239/240	0.019	0.0089	A	(17)		Sensitivity Evaluation	0.008	
Potassium-40	-0.46		A			False Positive Test	2.45	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	7.5	11.6	N		-35.3	8.1 - 15.1	0.14	N
Technetium-99	6.94	9.4	W		-26.2	6.6 - 12.2	0.28	A
Uranium-234	1.23	1.26	A		-2.4	0.88 - 1.64	0.102	A
Uranium-238	1.45	1.3	A		11.5	0.9 - 1.7	0.109	A
Zinc-65	18.7	16.9	A		10.7	11.8 - 22.0	1.83	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
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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-20-MaW43
 (QUAN02) Eurofins TestAmerica Knoxville
 5815 Middlebrook Pike
 Knoxville, TN 37921-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	14.6	13.5	A		8.1	9.5 - 17.6	0.48667	A
Arsenic	3.74	3.71	A		0.8	2.60 - 4.82	0.13090	A
Barium	0.767	0.690	A		11.2	0.483 - 0.897	0.02557	A
Beryllium	2.4	2.24	A		7.1	1.57 - 2.91	0.0800	A
Cadmium	0.319	0.306	A		4.2	0.214 - 0.398	0.01063	A
Chromium	1.85	1.77	A		4.5	1.24 - 2.30	0.06167	A
Cobalt	18.7	18.0	A		3.9	12.6 - 23.4	0.62333	A
Copper	19.7	19.1	A		3.1	13.4 - 24.8	0.65667	A
Lead	1.98	1.88	A		5.3	1.32 - 2.44	0.0660	A
Mercury	0.00004		A			False Positive Test	0.00002	
Nickel	15.7	15.2	A		3.3	10.6 - 19.8	0.52333	A
Selenium	0.496	0.490	A		1.2	0.343 - 0.637	0.01653	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.78	4.45	A		7.4	3.12 - 5.79	0.15933	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	12.1	11.6	A		4.3	8.1 - 15.1	0.40333	A
Zinc	18.7	18.5	A		1.1	13.0 - 24.1	0.81033	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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-20-MaW43

(RJLG01) RJ Lee Group - Columbia Basin Analytical Laboratories (CBAL)

2710 North 20th Avenue

Pasco, WA 99301

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.7	13.5	A		1.5	9.5 - 17.6	0.019	N
Arsenic	3.44	3.71	A		-7.3	2.60 - 4.82	0.015	N
Barium	0.712	0.690	A		3.2	0.483 - 0.897	0.031	A
Beryllium	2.20	2.24	A		-1.8	1.57 - 2.91	0.036	N
Cadmium	0.284	0.306	A		-7.2	0.214 - 0.398	0.013	A
Chromium	1.72	1.77	A		-2.8	1.24 - 2.30	0.020	N
Cobalt	17.6	18.0	A		-2.2	12.6 - 23.4	0.029	N
Copper	17.7	19.1	A		-7.3	13.4 - 24.8	0.022	N
Lead	1.86	1.88	A		-1.1	1.32 - 2.44	0.017	N
Mercury	0.0003		A			False Positive Test	0.001	
Nickel	15.1	15.2	A		-0.7	10.6 - 19.8	0.024	N
Selenium	0.477	0.490	A		-2.7	0.343 - 0.637	0.018	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.27	4.45	A		-4.0	3.12 - 5.79	0.013	N
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.110	0.105	A		4.8	0.074 - 0.137	0.018	W
Vanadium	11.4	11.6	A		-1.7	8.1 - 15.1	0.032	N
Zinc	18.2	18.5	A		-1.6	13.0 - 24.1	0.012	N

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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-20-MaW43

(RPSC01) Radiation Protection Service

Ontario Ministry of Labour, Training And Skills Development

Toronto, Ontario M9P 3T1

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	15.9	15.2	A		4.6	10.6 - 19.8	0.99	A
Cesium-137	16.9	14.3	A		18.2	10.0 - 18.6	2.08	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	13.5	12.2	A		10.7	8.5 - 15.9	0.82	A
Hydrogen-3	369.18	360	A		2.6	252 - 468	11.7	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	3.72		N	(1)		False Positive Test	1.11	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	18.3	16.9	A		8.3	11.8 - 22.0	1.78	A

Radiological Reference Date: August 1, 2020

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

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

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-20-MaW43

(SAVA01) SAVANNAH RIVER NUCLEAR SOLUTIONS (SRNS)

SRNL (non-purchased material receipt)

AIKEN, SC 29808-0000

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	14.0	13.5	A		3.7	9.5 - 17.6	1.4	A
Arsenic	4.18	3.71	A		12.7	2.60 - 4.82	.42	A
Barium	0.765	0.690	A		10.9	0.483 - 0.897	0.077	A
Beryllium	2.27	2.24	A		1.3	1.57 - 2.91	0.23	A
Cadmium	0.307	0.306	A		0.3	0.214 - 0.398	0.031	A
Chromium	1.81	1.77	A		2.3	1.24 - 2.30	0.18	A
Cobalt	17.7	18.0	A		-1.7	12.6 - 23.4	1.8	A
Copper	18.5	19.1	A		-3.1	13.4 - 24.8	1.9	A
Lead	1.86	1.88	A		-1.1	1.32 - 2.44	0.19	A
Mercury	0.001		A			False Positive Test	0.001	
Nickel	15.1	15.2	A		-0.7	10.6 - 19.8	1.5	A
Selenium	0.538	0.490	A		9.8	0.343 - 0.637	0.054	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.48	4.45	A		0.7	3.12 - 5.79	0.45	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	0.112	0.105	A		6.7	0.074 - 0.137	0.011	A
Vanadium	11.8	11.6	A		1.7	8.1 - 15.1	1.2	A
Zinc	18.8	18.5	A		1.6	13.0 - 24.1	1.9	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	14.48	15.2	A		-4.7	10.6 - 19.8	0.45	A
Cesium-137	14.01	14.3	A		-2.0	10.0 - 18.6	0.51	A
Cobalt-57	0.32		A			False Positive Test	0.73	
Cobalt-60	12.21	12.2	A		0.1	8.5 - 15.9	0.50	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.49		A			False Positive Test	0.47	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	20.55		A			False Positive Test	10.95	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.20	16.9	A		1.8	11.8 - 22.0	1.31	A

Radiological Reference Date: August 1, 2020

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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- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	14.6	13.5	A		8.1	9.5 - 17.6	1.76	A
Arsenic	3.72	3.71	A		0.3	2.60 - 4.82	0.37	A
Barium	0.744	0.690	A		7.8	0.483 - 0.897	0.07	A
Beryllium	2.2	2.24	A		-1.8	1.57 - 2.91	0.18	A
Cadmium	0.304	0.306	A		-0.7	0.214 - 0.398	0.03	A
Chromium	1.79	1.77	A		1.1	1.24 - 2.30	0.18	A
Cobalt	17.7	18.0	A		-1.7	12.6 - 23.4	1.6	A
Copper	19.3	19.1	A		1.0	13.4 - 24.8	1.93	A
Lead	1.91	1.88	A		1.6	1.32 - 2.44	0.19	A
Mercury	0.0002		A			False Positive Test	0.0002	
Nickel	14.9	15.2	A		-2.0	10.6 - 19.8	1.49	A
Selenium	0.45	0.490	A		-8.2	0.343 - 0.637	0.05	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.64	4.45	A		4.3	3.12 - 5.79	0.46	A
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	11.4	11.6	A		-1.7	8.1 - 15.1	1.02	A
Zinc	17.5	18.5	A		-5.4	13.0 - 24.1	1.75	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.81	0.922	A		-12.1	0.645 - 1.199	0.12	A
Cesium-134	15.69	15.2	A		3.2	10.6 - 19.8	1.03	A
Cesium-137	14.86	14.3	A		3.9	10.0 - 18.6	0.54	A
Cobalt-57	-0.003		A			False Positive Test	0.04	
Cobalt-60	12.37	12.2	A		1.4	8.5 - 15.9	0.52	A
Hydrogen-3	305	360	A		-15.3	252 - 468	21	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.07		A			False Positive Test	0.18	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.65	0.704	A		-7.7	0.493 - 0.915	0.10	W
Plutonium-239/240	0.01	0.0089	A	(17)		Sensitivity Evaluation	0.01	
Potassium-40	-0.31		A			False Positive Test	0.44	
Radium-226	1.301	1.25	A		4.1	0.88 - 1.63	0.046	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.18	11.6	A		-3.6	8.1 - 15.1	0.67	A
Technetium-99	9.52	9.4	A		1.3	6.6 - 12.2	0.52	A
Uranium-234	1.31	1.26	A		4.0	0.88 - 1.64	0.18	A
Uranium-238	1.37	1.3	A		5.4	0.9 - 1.7	0.18	A
Zinc-65	18.8	16.9	A		11.2	11.8 - 22.0	0.66	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (SLAC01) SLAC DOE National Accelerator Laboratory
 2575 Sand Hill Road
 Menlo Park, CA 94025

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.5	15.2	A		-11.2	10.6 - 19.8	1.3	A
Cesium-137	14.7	14.3	A		2.8	10.0 - 18.6	1.5	A
Cobalt-57	0.5		A			False Positive Test	0.5	
Cobalt-60	11.6	12.2	A		-4.9	8.5 - 15.9	1.2	A
Hydrogen-3	348	360	A		-3.3	252 - 468	35	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.4		A			False Positive Test	0.4	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	5		A			False Positive Test	5	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	16.4	16.9	A		-3.0	11.8 - 22.0	1.6	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(SOUT01) Southwest Research Institute

6220 Culebra Rd.

San Antonio, TX 78228-0510

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	13.4	13.5	A		-0.7	9.5 - 17.6	0.905	A
Arsenic	3.65	3.71	A		-1.6	2.60 - 4.82	0.247	A
Barium	0.756	0.690	A		9.6	0.483 - 0.897	0.0511	A
Beryllium	2.47	2.24	A		10.3	1.57 - 2.91	0.167	A
Cadmium	0.293	0.306	A		-4.2	0.214 - 0.398	0.0199	A
Chromium	1.67	1.77	A		-5.7	1.24 - 2.30	0.113	A
Cobalt	17.3	18.0	A		-3.9	12.6 - 23.4	1.17	A
Copper	19.0	19.1	A		-0.5	13.4 - 24.8	1.28	A
Lead	1.73	1.88	A		-8.0	1.32 - 2.44	0.117	A
Mercury	0.0000038		A			False Positive Test	0.00005	
Nickel	14.7	15.2	A		-3.3	10.6 - 19.8	0.992	A
Selenium	0.428	0.490	A		-12.7	0.343 - 0.637	0.0315	A
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	4.21	4.45	A		-5.4	3.12 - 5.79	0.287	A
Uranium-235	0.000810	7.6E-4	A		6.6	5.32E-4 - 9.88E-4	0.000060	A
Uranium-238	0.115	0.105	A		9.5	0.074 - 0.137	0.00777	A
Uranium-Total	0.116	0.105	A		10.5	0.074 - 0.137	0.00783	A
Vanadium	11.6	11.6	A		0.0	8.1 - 15.1	0.783	A
Zinc	17.7	18.5	A		-4.3	13.0 - 24.1	1.19	A

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.941	0.922	A		2.1	0.645 - 1.199	0.0804	A
Cesium-134	14.0	15.2	A		-7.9	10.6 - 19.8	0.630	A
Cesium-137	15.1	14.3	A		5.6	10.0 - 18.6	0.678	A
Cobalt-57	-0.114		A			False Positive Test	0.103	
Cobalt-60	12.8	12.2	A		4.9	8.5 - 15.9	0.600	A
Hydrogen-3	345	360	A		-4.2	252 - 468	21.2	A
Iron-55	32.3	32.9	A		-1.8	23.0 - 42.8	2.71	A
Manganese-54	0.257		A			False Positive Test	0.267	
Nickel-63	0.280		A			False Positive Test	0.124	
Plutonium-238	0.659	0.704	A		-6.4	0.493 - 0.915	0.0500	A
Plutonium-239/240	0.0118	0.0089	A			Sensitivity Evaluation	0.00393	
Potassium-40	2.88		A			False Positive Test	1.46	
Radium-226	0.837	1.25	N		-33.0	0.88 - 1.63	0.0581	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.4	11.6	A		-1.7	8.1 - 15.1	0.696	A
Technetium-99	7.78	9.4	A		-17.2	6.6 - 12.2	0.456	A
Uranium-234	1.25	1.26	A		-0.8	0.88 - 1.64	0.0878	A
Uranium-238	1.36	1.3	A		4.6	0.9 - 1.7	0.0944	A
Zinc-65	17.3	16.9	A		2.4	11.8 - 22.0	1.01	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics

PO Box 5800, MS1103

Albuquerque, NM 87185-1103

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	15.0	15.2	A		-1.3	10.6 - 19.8	0.697	A
Cesium-137	14.4	14.3	A		0.7	10.0 - 18.6	0.516	A
Cobalt-57	-0.0810			A		False Positive Test	0.114	
Cobalt-60	12.2	12.2	A		0.0	8.5 - 15.9	0.452	A
Hydrogen-3	NR	360	N	(28)		252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.296			A		False Positive Test	0.155	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	3.81		N	(1)		False Positive Test	0.928	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	19.3	16.9	A		14.2	11.8 - 22.0	0.652	A

Radiological Reference Date: August 1, 2020

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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- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
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- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(TDHL01) Texas Department of State Health Services Laboratory
1100 W 49th Street
Austin, TX 78756

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.862	0.922	A		-6.5	0.645 - 1.199	0.081	A
Cesium-134	12.96	15.2	A		-14.7	10.6 - 19.8	0.24	N
Cesium-137	13.48	14.3	A		-5.7	10.0 - 18.6	0.42	A
Cobalt-57	-0.08		A			False Positive Test	0.11	
Cobalt-60	10.85	12.2	A		-11.1	8.5 - 15.9	0.22	A
Hydrogen-3	368	360	A		2.2	252 - 468	14	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.168		A			False Positive Test	0.097	
Nickel-63	NR					False Positive Test		
Plutonium-238	0.707	0.704	A		0.4	0.493 - 0.915	0.076	A
Plutonium-239/240	0.043	0.0089	A			Sensitivity Evaluation	0.013	
Potassium-40	-1.16		A			False Positive Test	0.56	
Radium-226	0.963	1.25	W		-23.0	0.88 - 1.63	0.031	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	9.76	11.6	A		-15.9	8.1 - 15.1	0.21	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.23	1.26	A		-2.4	0.88 - 1.64	0.11	A
Uranium-238	1.26	1.3	A		-3.1	0.9 - 1.7	0.11	A
Zinc-65	15.68	16.9	A		-7.2	11.8 - 22.0	0.49	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
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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-20-MaW43

(TELE01) Teledyne Brown Engineering - Environmental Services

2508 Quality Lane

Knoxville, TN 37931-6819

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	0.175		A			False Positive Test	0.359	
Plutonium-238	NR	0.704	N	(28)		0.493 - 0.915		
Plutonium-239/240	NR	0.0089	N	(18)		Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	8.8	9.4	A		-6.4	6.6 - 12.2	1.5	W
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
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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-20-MaW43
 (TELE02) ATI Environmental, Inc., Midwest Lab
 700 Landwehr Road
 Northbrook, IL 60062-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.9	15.2	A		-8.6	10.6 - 19.8	0.3	A
Cesium-137	15.4	14.3	A		7.7	10.0 - 18.6	0.4	A
Cobalt-57	0.10		A			False Positive Test	0.16	
Cobalt-60	12.5	12.2	A		2.5	8.5 - 15.9	0.3	A
Hydrogen-3	NR	360	N	(28)		252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.07		A			False Positive Test	0.17	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	1.06		A			False Positive Test	1.65	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26	N	(28)		0.88 - 1.64		
Uranium-238	NR	1.3	N	(28)		0.9 - 1.7		
Zinc-65	18.3	16.9	A		8.3	11.8 - 22.0	0.6	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY

601 SCARBORO RD

OAK RIDGE, TN 37830-

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.955	0.922	A		3.6	0.645 - 1.199	.16	W
Cesium-134	12.51	15.2	A		-17.7	10.6 - 19.8	1.259	A
Cesium-137	13.037	14.3	A		-8.8	10.0 - 18.6	1.872	A
Cobalt-57	.001		A			False Positive Test	.357	
Cobalt-60	11.786	12.2	A		-3.4	8.5 - 15.9	1.242	A
Hydrogen-3	343.544	360	A		-4.6	252 - 468	14.713	A
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	.002		A			False Positive Test	.841	
Nickel-63	.008		A			False Positive Test	.253	
Plutonium-238	.695	0.704	A		-1.3	0.493 - 0.915	.117	W
Plutonium-239/240	.001	0.0089	A	(17)		Sensitivity Evaluation	.062	
Potassium-40	.029		A			False Positive Test	4.736	
Radium-226	1.178	1.25	A		-5.8	0.88 - 1.63	.174	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	12.553	11.6	A		8.2	8.1 - 15.1	.258	A
Technetium-99	5.519	9.4	N		-41.3	6.6 - 12.2	.161	A
Uranium-234	1.28	1.26	A		1.6	0.88 - 1.64	.146	A
Uranium-238	1.369	1.3	A		5.3	0.9 - 1.7	.154	A
Zinc-65	17.369	16.9	A		2.8	11.8 - 22.0	3.506	W

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (TNUT01) St. Louis USACE FUSRAP Laboratory
 112 James S McDonnell Blvd
 HAZELWOOD, MO 63042

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.884	0.922	A		-4.1	0.645 - 1.199	0.101	A
Cesium-134	12.270	15.2	A		-19.3	10.6 - 19.8	0.220	N
Cesium-137	14.864	14.3	A		3.9	10.0 - 18.6	0.437	A
Cobalt-57	0.067			A		False Positive Test	0.134	
Cobalt-60	12.090	12.2	A		-0.9	8.5 - 15.9	0.254	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.017			A		False Positive Test	0.059	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	1.311			A		False Positive Test	0.542	
Radium-226	1.369	1.25	A		9.5	0.88 - 1.63	0.072	A

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.363	1.26	A		8.2	0.88 - 1.64	0.106	A
Uranium-238	1.355	1.3	A		4.2	0.9 - 1.7	0.105	A
Zinc-65	18.037	16.9	A		6.7	11.8 - 22.0	0.687	A

Radiological Reference Date: August 1, 2020

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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- (6) = Not Evaluated
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(UNTE01) UniTech-235

178 Aldo Drive

Barnwell, SC 29812

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.0	15.2	A		-14.5	10.6 - 19.8	1.0	A
Cesium-137	14.8	14.3	A		3.5	10.0 - 18.6	1.5	A
Cobalt-57	NR		N	(11)		False Positive Test		
Cobalt-60	13.4	12.2	A		9.8	8.5 - 15.9	1.1	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR		N	(11)		False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	21.2		N	(1)		False Positive Test	5.9	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.5	16.9	A		3.6	11.8 - 22.0	3.0	W

Radiological Reference Date: August 1, 2020

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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- (18) = Sensitivity Evaluation, Value Not Reported
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43
 (WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
 1638 Roseytown Road
 Greensburg, PA 15601

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.807	0.922	A		-12.5	0.645 - 1.199	0.135	W
Cesium-134	14.219	15.2	A		-6.5	10.6 - 19.8	1.586	A
Cesium-137	13.596	14.3	A		-4.9	10.0 - 18.6	1.521	A
Cobalt-57	-0.019		A			False Positive Test	0.183	
Cobalt-60	12.262	12.2	A		0.5	8.5 - 15.9	1.335	A
Hydrogen-3	343.77	360	A		-4.5	252 - 468	46.842	A
Iron-55	43.245	32.9	N		31.4	23.0 - 42.8	7.131	W
Manganese-54	0.070		A			False Positive Test	0.233	
Nickel-63	0.0939		A			False Positive Test	0.0622	
Plutonium-238	0.640	0.704	A		-9.1	0.493 - 0.915	0.102	W
Plutonium-239/240	0.0147	0.0089	A	(17)		Sensitivity Evaluation	0.0050	
Potassium-40	0.658		A			False Positive Test	2.095	
Radium-226	1.458	1.25	A		16.6	0.88 - 1.63	0.222	W

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	9.461	11.6	A		-18.4	8.1 - 15.1	1.513	W
Technetium-99	8.547	9.4	A		-9.1	6.6 - 12.2	1.240	A
Uranium-234	1.214	1.26	A		-3.7	0.88 - 1.64	0.176	A
Uranium-238	1.251	1.3	A		-3.8	0.9 - 1.7	0.181	A
Zinc-65	17.637	16.9	A		4.4	11.8 - 22.0	2.023	A

Radiological Reference Date: August 1, 2020

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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- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
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- (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-20-MaW43
 (WIPH01) WI, DPH, Radiation Protection Section
 1 West Wilson Street
 Madison, WI 53701

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.35	0.922	N		-62.0	0.645 - 1.199	0.571	N
Cesium-134	14.391	15.2	A		-5.3	10.6 - 19.8	0.262	N
Cesium-137	15.933	14.3	A		11.4	10.0 - 18.6	0.474	A
Cobalt-57	0.088		A			False Positive Test	0.113	
Cobalt-60	12.973	12.2	A		6.3	8.5 - 15.9	0.273	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.104		A			False Positive Test	0.161	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	-1.154		A			False Positive Test	0.981	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	18.094	16.9	A		7.1	11.8 - 22.0	0.747	A

Radiological Reference Date: August 1, 2020

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

Laboratory Results For MAPEP-20-MaW43

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	.844	0.922	A		-8.5	0.645 - 1.199	.0488	A
Cesium-134	12.3	15.2	A		-19.1	10.6 - 19.8	.220	N
Cesium-137	13	14.3	A		-9.1	10.0 - 18.6	.241	N
Cobalt-57	-.0126		A			False Positive Test	.0420	
Cobalt-60	10.6	12.2	A		-13.1	8.5 - 15.9	.243	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	.0287		A			False Positive Test	.0646	
Nickel-63	NR					False Positive Test		
Plutonium-238	.763	0.704	A		8.4	0.493 - 0.915	.0493	A
Plutonium-239/240	.0105	0.0089	A	(17)		Sensitivity Evaluation	.00594	
Potassium-40	-.804		A			False Positive Test	.894	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.1	11.6	A		-4.3	8.1 - 15.1	.462	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	1.30	1.26	A		3.2	0.88 - 1.64	.131	A
Uranium-238	1.35	1.3	A		3.8	0.9 - 1.7	.135	A
Zinc-65	15.1	16.9	A		-10.7	11.8 - 22.0	.431	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922	N	(28)		0.645 - 1.199		
Cesium-134	15.1	15.2	A		-0.7	10.6 - 19.8	0.325	A
Cesium-137	15.4	14.3	A		7.7	10.0 - 18.6	0.466	A
Cobalt-57	-0.0616		A			False Positive Test	0.0685	
Cobalt-60	12.2	12.2	A		0.0	8.5 - 15.9	0.687	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	-0.0258		A			False Positive Test	0.0671	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704	N	(28)		0.493 - 0.915		
Plutonium-239/240	NR	0.0089	N	(18)		Sensitivity Evaluation		
Potassium-40	-0.0634		A			False Positive Test	0.559	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.33	11.6	A		-2.3	8.1 - 15.1	2.19	W
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26	N	(28)		0.88 - 1.64		
Uranium-238	NR	1.3	N	(28)		0.9 - 1.7		
Zinc-65	17.4	16.9	A		3.0	11.8 - 22.0	1.34	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43

(WSTP99) Cavendish Nuclear Limited

Greson Court

Cumbria, UK CA24 3HZ

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	0.000708	7.6E-4	A		-6.8	5.32E-4 - 9.88E-4	0.000099	A
Uranium-238	0.098	0.105	A		-6.7	0.074 - 0.137	0.014	A
Uranium-Total	0.1136	0.105	A		8.2	0.074 - 0.137	0.0072	A
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.90	0.922	A		-2.4	0.645 - 1.199	0.11	A
Cesium-134	14.79	15.2	A		-2.7	10.6 - 19.8	0.63	A
Cesium-137	14.60	14.3	A		2.1	10.0 - 18.6	0.89	A
Cobalt-57	-0.07		A			False Positive Test	0.18	
Cobalt-60	11.77	12.2	A		-3.5	8.5 - 15.9	0.40	A
Hydrogen-3	331.3	360	A		-8.0	252 - 468	8.5	A
Iron-55	32.40	32.9	A		-1.5	23.0 - 42.8	1.45	A
Manganese-54	-0.04		A			False Positive Test	0.21	
Nickel-63	0.351		N	(1)		False Positive Test	0.015	
Plutonium-238	0.646	0.704	A		-8.2	0.493 - 0.915	0.058	A
Plutonium-239/240	0.0089	0.0089	A	(17)		Sensitivity Evaluation	0.0049	
Potassium-40	-1.0		A			False Positive Test	3.4	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	18.99	11.6	N		63.7	8.1 - 15.1	0.98	A
Technetium-99	0.817	9.4	N		-91.3	6.6 - 12.2	0.043	A
Uranium-234	1.215	1.26	A		-3.6	0.88 - 1.64	0.061	A
Uranium-238	1.22	1.3	A		-6.2	0.9 - 1.7	0.17	A
Zinc-65	16.04	16.9	A		-5.1	11.8 - 22.0	0.68	A

Radiological Reference Date: August 1, 2020

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
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (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-20-MaW43
 (WVDP01) WVDP Environmental Laboratory
 10282 Rock Springs Road
 West Valley, NY 14171

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	NR	7.6E-4				5.32E-4 - 9.88E-4		
Uranium-238	NR	0.105				0.074 - 0.137		
Uranium-Total	NR	0.105				0.074 - 0.137		
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	13.5	15.2	A		-11.2	10.6 - 19.8	0.281	A
Cesium-137	14.2	14.3	A		-0.7	10.0 - 18.6	0.428	A
Cobalt-57	0.0124			A		False Positive Test	0.0454	
Cobalt-60	12.2	12.2	A		0.0	8.5 - 15.9	0.382	A
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	0.121			A		False Positive Test	0.0952	
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	-0.836			A		False Positive Test	0.972	
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	11.4	11.6	A		-1.7	8.1 - 15.1	0.309	A
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	17.6	16.9	A		4.1	11.8 - 22.0	0.742	A

Radiological Reference Date: August 1, 2020

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision

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- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
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Department of Energy RESL - 1955 Fremont Ave, MS4149 - Idaho Falls, ID 83415

Laboratory Results For MAPEP-20-MaW43

(YPGA01) US Army Yuma Proving Ground / Material Analysis Lab

301 C. Street

Yuma, AZ 85365

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	13.5				9.5 - 17.6		
Arsenic	NR	3.71				2.60 - 4.82		
Barium	NR	0.690				0.483 - 0.897		
Beryllium	NR	2.24				1.57 - 2.91		
Cadmium	NR	0.306				0.214 - 0.398		
Chromium	NR	1.77				1.24 - 2.30		
Cobalt	NR	18.0				12.6 - 23.4		
Copper	NR	19.1				13.4 - 24.8		
Lead	NR	1.88				1.32 - 2.44		
Mercury	NR					False Positive Test		
Nickel	NR	15.2				10.6 - 19.8		
Selenium	NR	0.490				0.343 - 0.637		
Technetium-99	NR	1.48E-5				1.04E-5 - 1.92E-5		
Thallium	NR	4.45				3.12 - 5.79		
Uranium-235	0.00075	7.6E-4	A		-1.3	5.32E-4 - 9.88E-4	0.00007	A
Uranium-238	0.1066	0.105	A		1.5	0.074 - 0.137	0.007	A
Uranium-Total	0.107	0.105	A		1.9	0.074 - 0.137	0.007	A
Vanadium	NR	11.6				8.1 - 15.1		
Zinc	NR	18.5				13.0 - 24.1		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	0.922				0.645 - 1.199		
Cesium-134	NR	15.2				10.6 - 19.8		
Cesium-137	NR	14.3				10.0 - 18.6		
Cobalt-57	NR					False Positive Test		
Cobalt-60	NR	12.2				8.5 - 15.9		
Hydrogen-3	NR	360				252 - 468		
Iron-55	NR	32.9				23.0 - 42.8		
Manganese-54	NR					False Positive Test		
Nickel-63	NR					False Positive Test		
Plutonium-238	NR	0.704				0.493 - 0.915		
Plutonium-239/240	NR	0.0089				Sensitivity Evaluation		
Potassium-40	NR					False Positive Test		
Radium-226	NR	1.25				0.88 - 1.63		

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Strontium-90	NR	11.6				8.1 - 15.1		
Technetium-99	NR	9.4				6.6 - 12.2		
Uranium-234	NR	1.26				0.88 - 1.64		
Uranium-238	NR	1.3				0.9 - 1.7		
Zinc-65	NR	16.9				11.8 - 22.0		

Radiological Reference Date: August 1, 2020

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

ACCEPTABLE.....2%<=RP<=15%

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

NOT ACCEPTABLE.....RP>30%

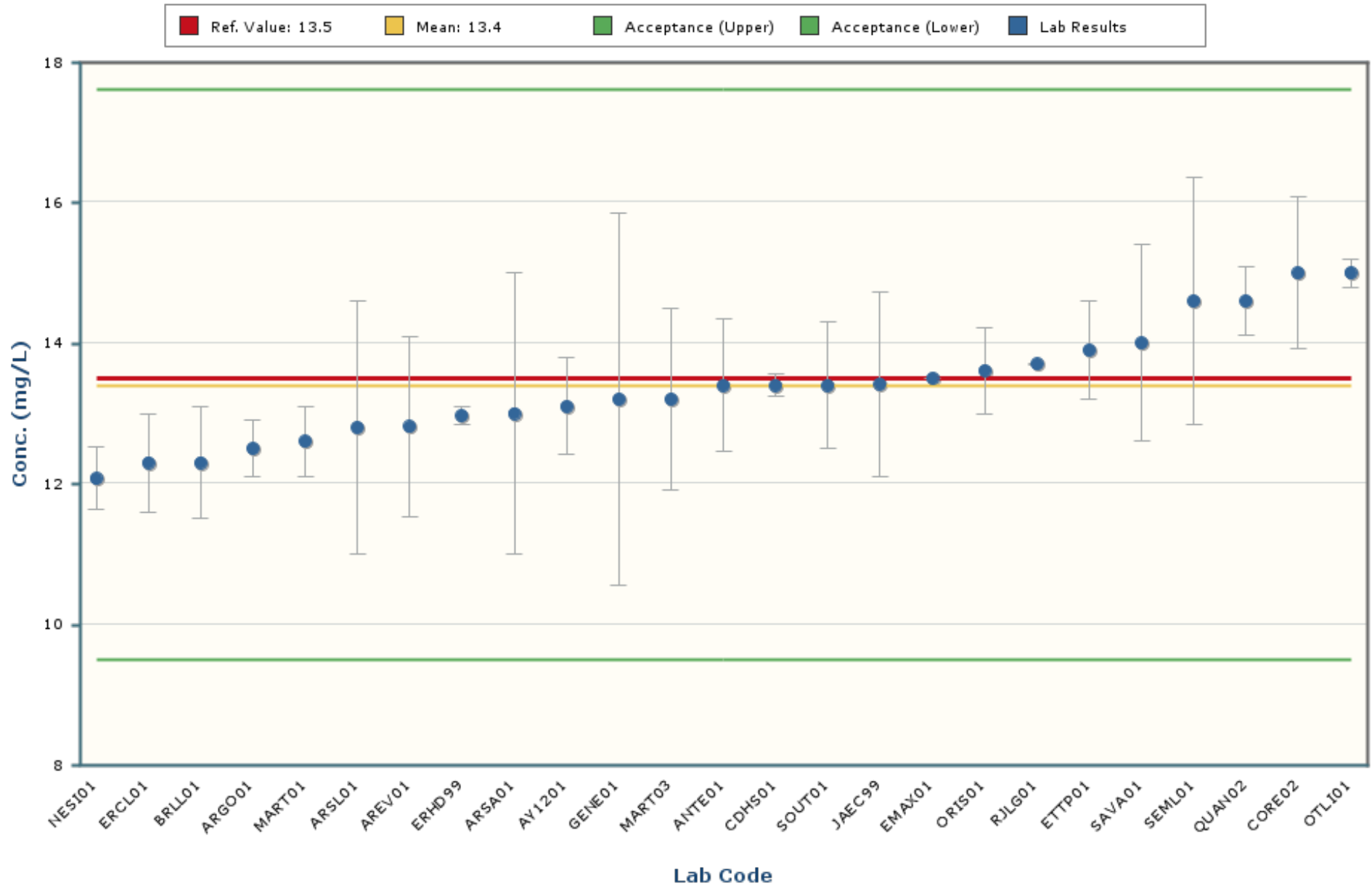
RP = Relative Precision

Notes:

- (1) = False Positive
- (4) = Sensitivity Evaluation
- (6) = Not Evaluated
- (11) = False Positive Test, Result Not Reported
- (17) = NOT DETECTED - reported a statistically zero result
- (18) = Sensitivity Evaluation, Value Not Reported
- (28) = Not Reporting Previously Reported Analyte
- (29) = Statistically significant negative value at 3 standard deviations

Antimony

MAPEP-20-MaW43



Notes:

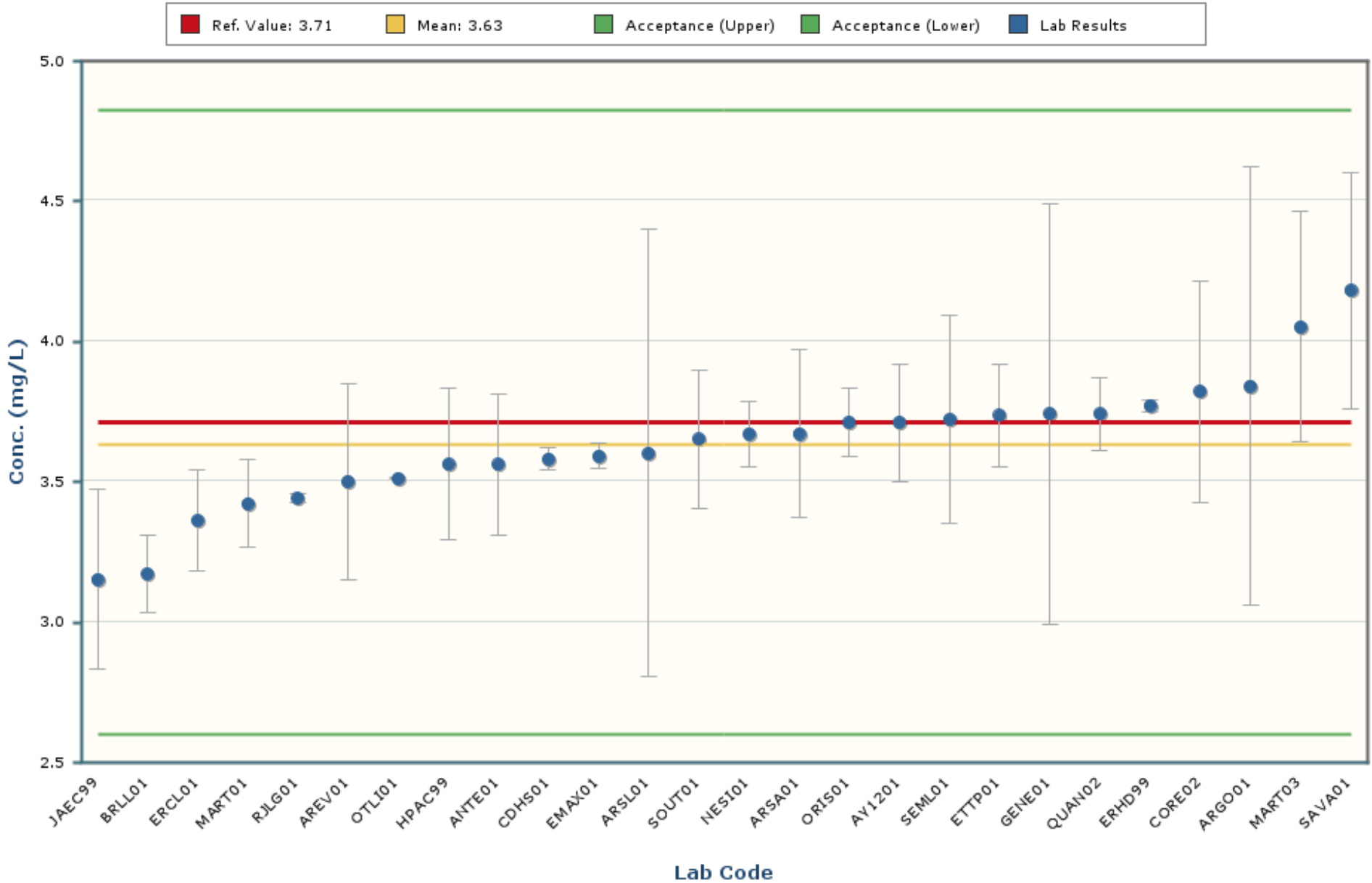
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 9.3 and 17.4 (± 5 Standard Deviations).

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

Arsenic

MAPEP-20-MaW43



Notes:

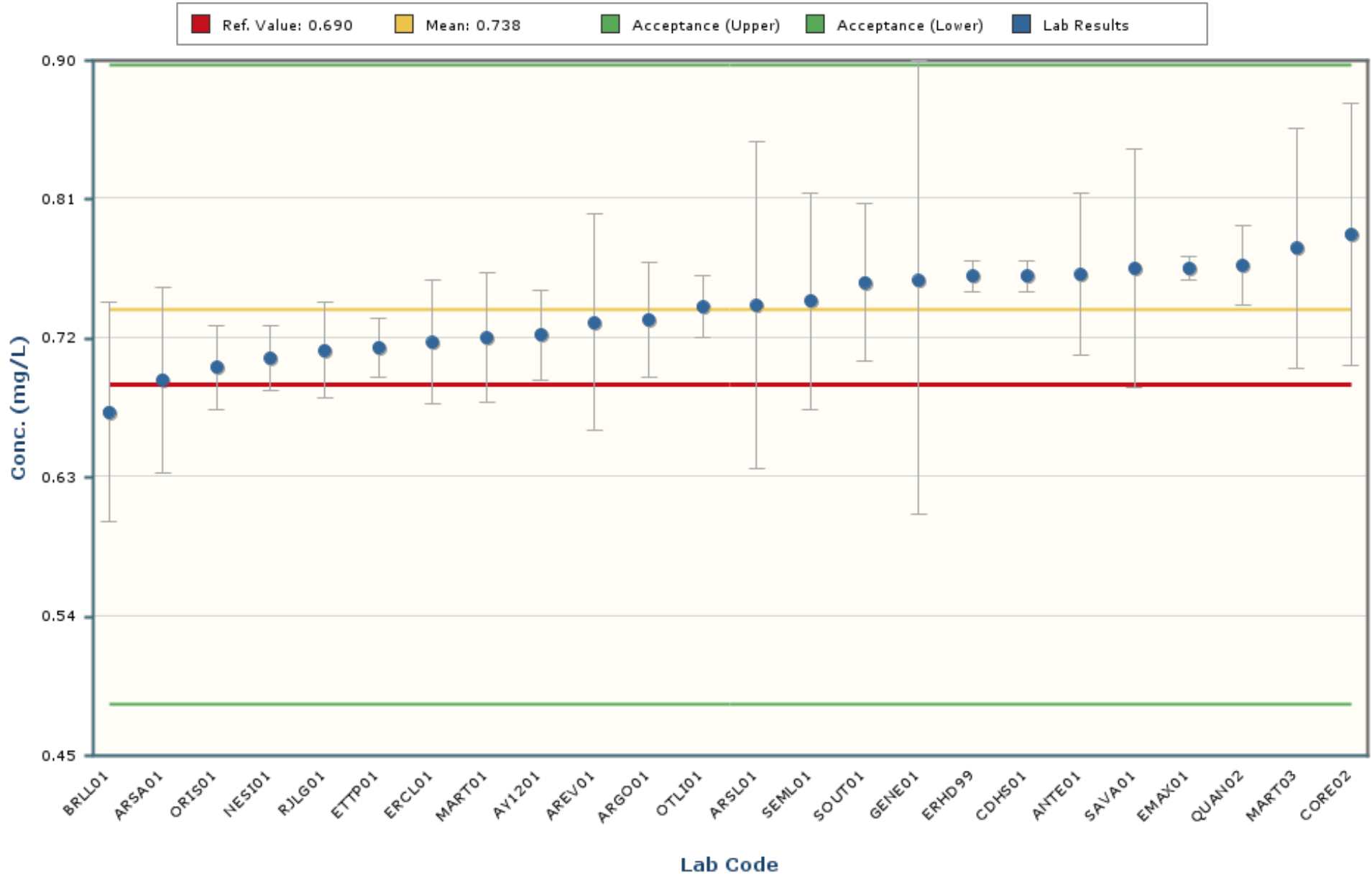
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.50 and 4.76 (± 5 Standard Deviations).

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

Barium

MAPEP-20-MaW43



Notes:

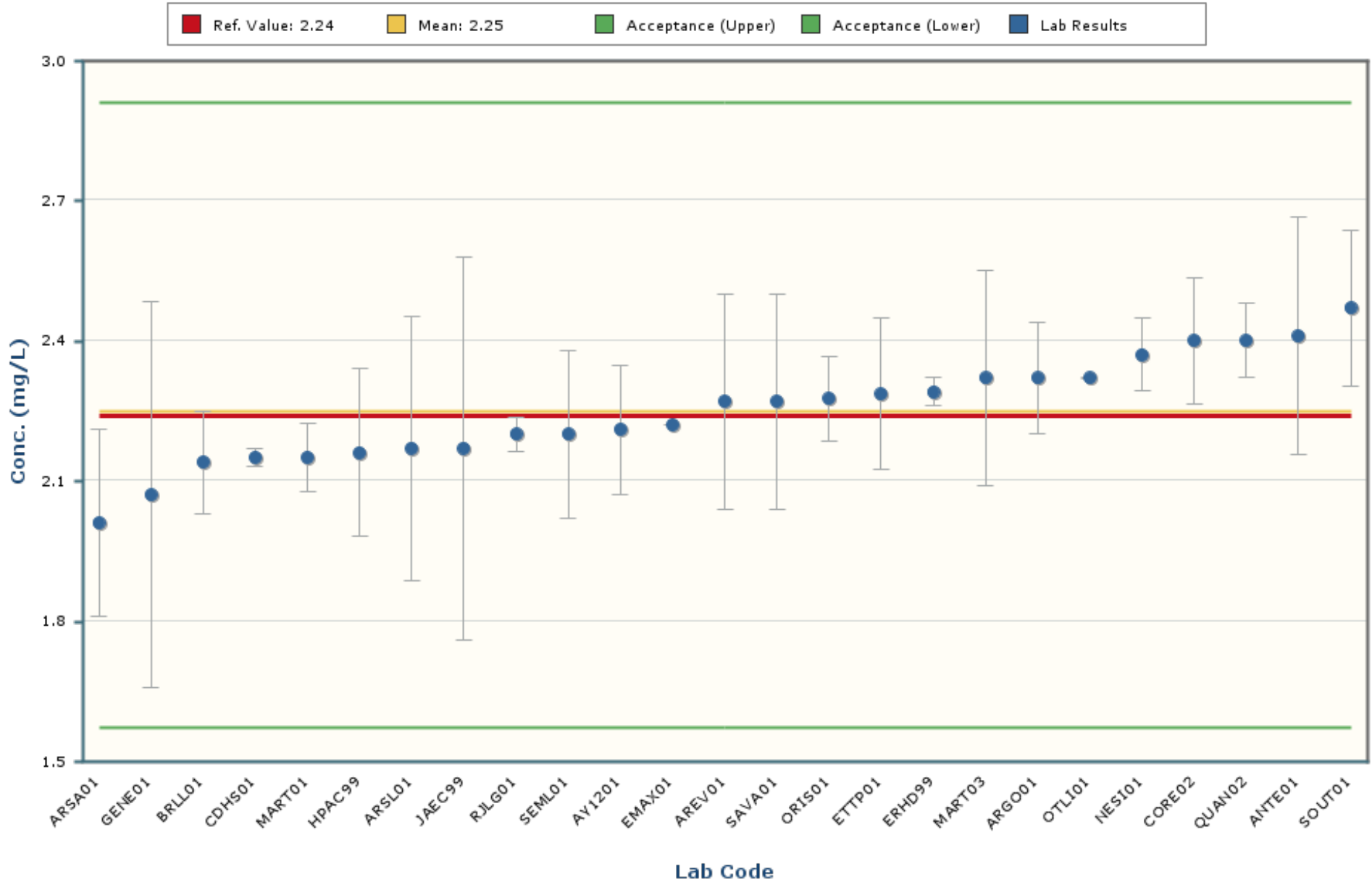
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.592 and 0.884 (± 5 Standard Deviations).

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

Beryllium

MAPEP-20-MaW43



Notes:

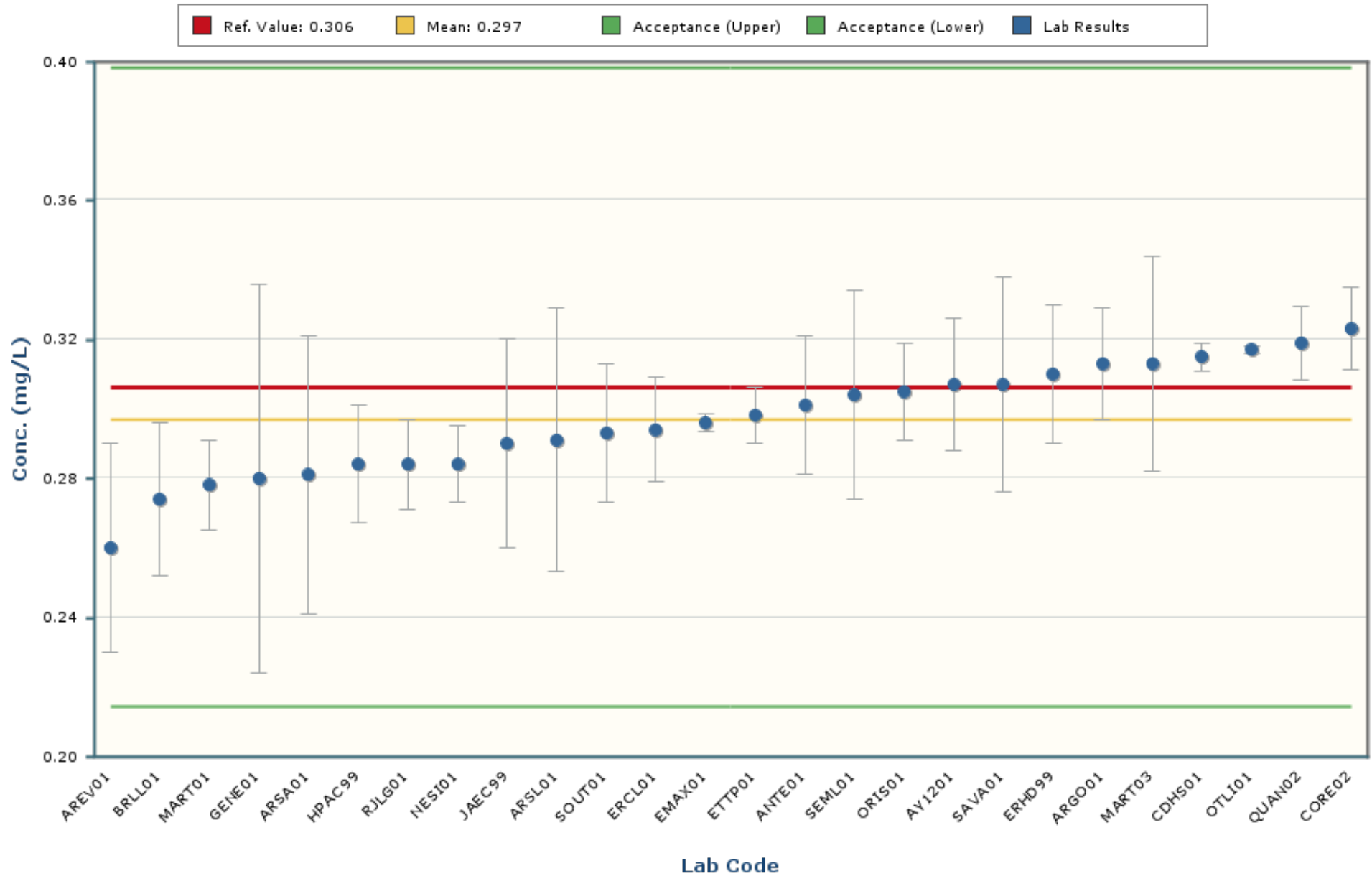
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.69 and 2.81 (± 5 Standard Deviations).

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

Cadmium

MAPEP-20-MaW43



Notes:

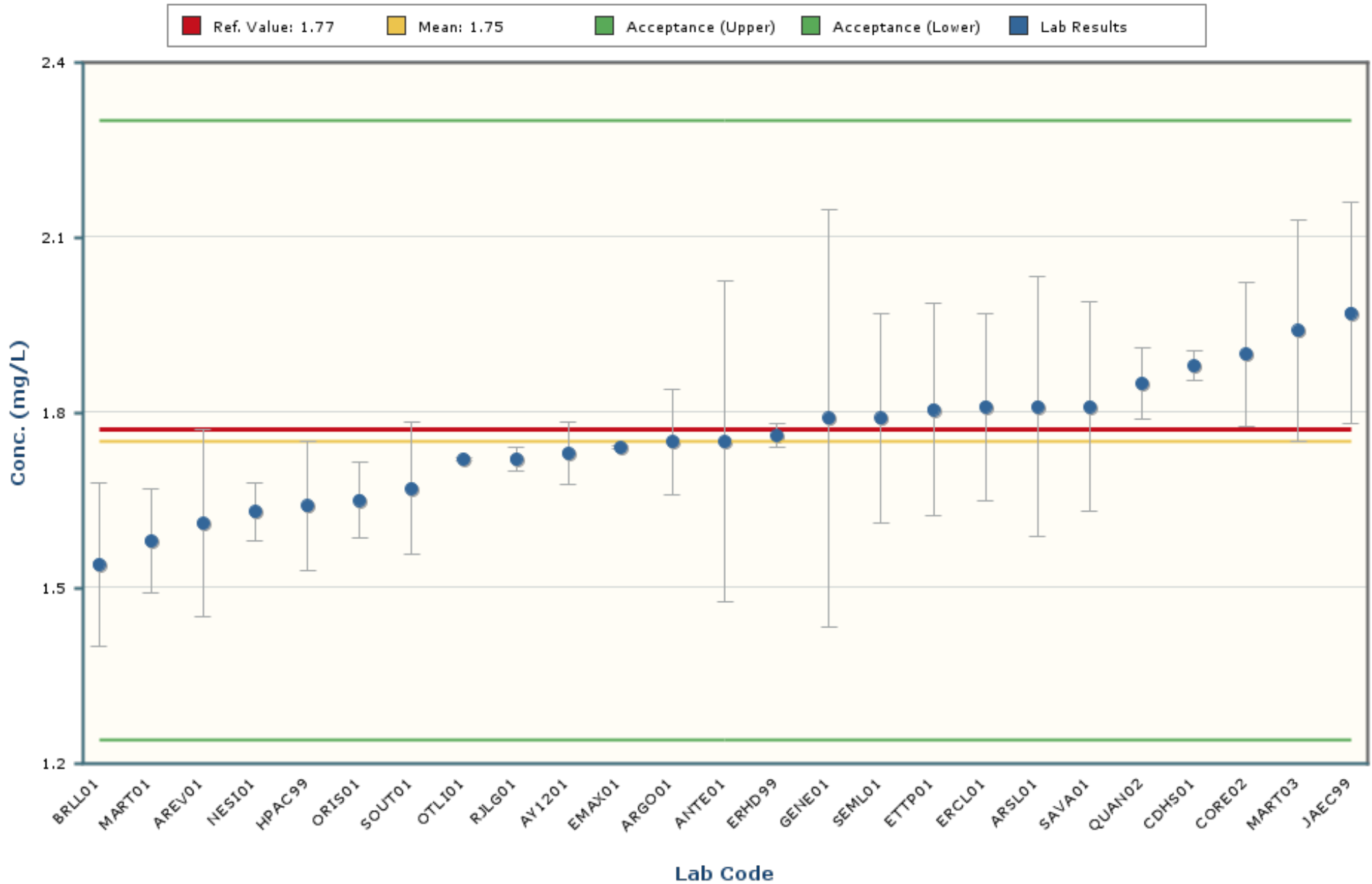
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.217 and 0.376 (± 5 Standard Deviations).

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

Chromium

MAPEP-20-MaW43



Notes:

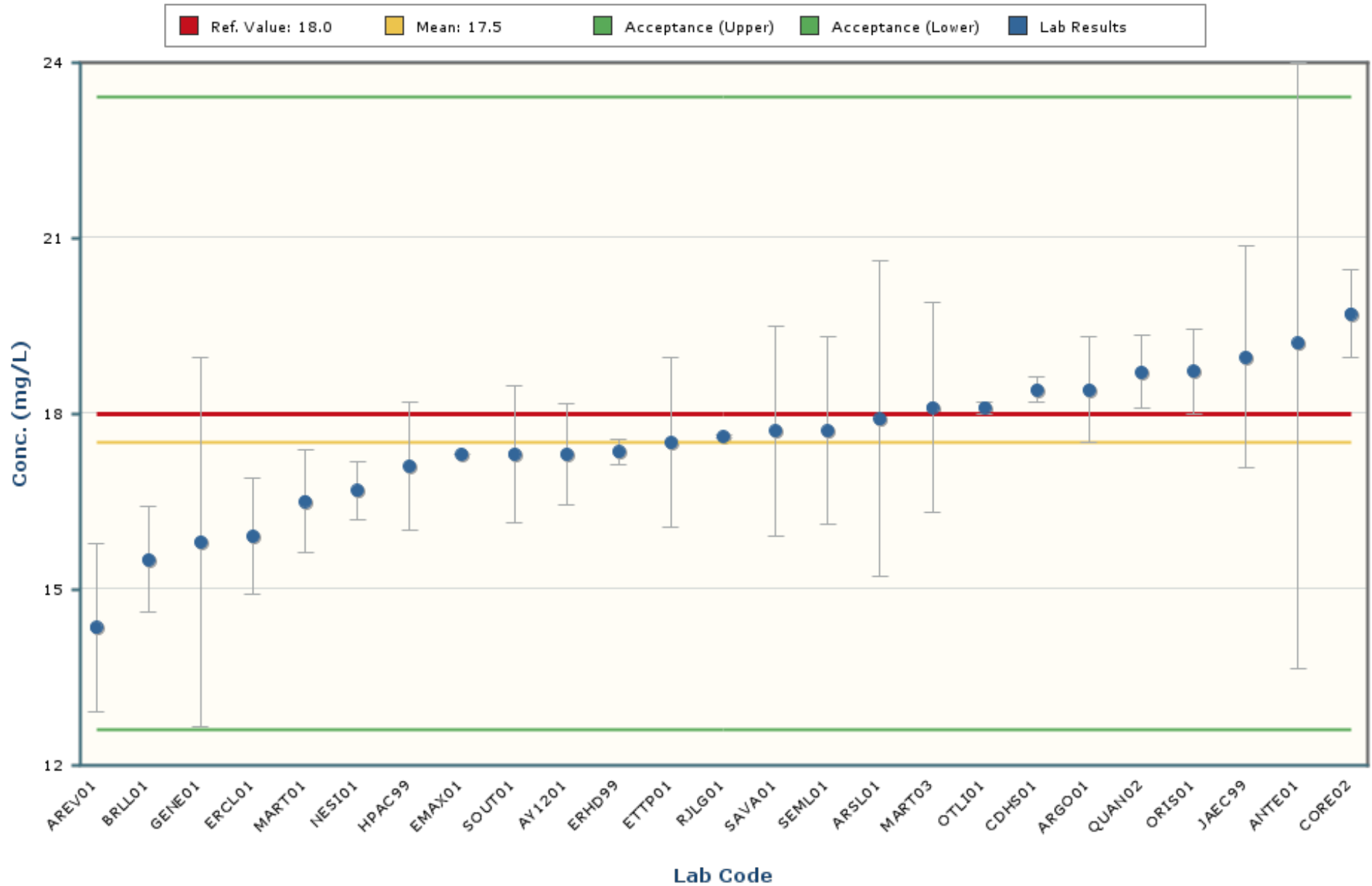
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.21 and 2.30 (± 5 Standard Deviations).

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

Cobalt

MAPEP-20-MaW43



Notes:

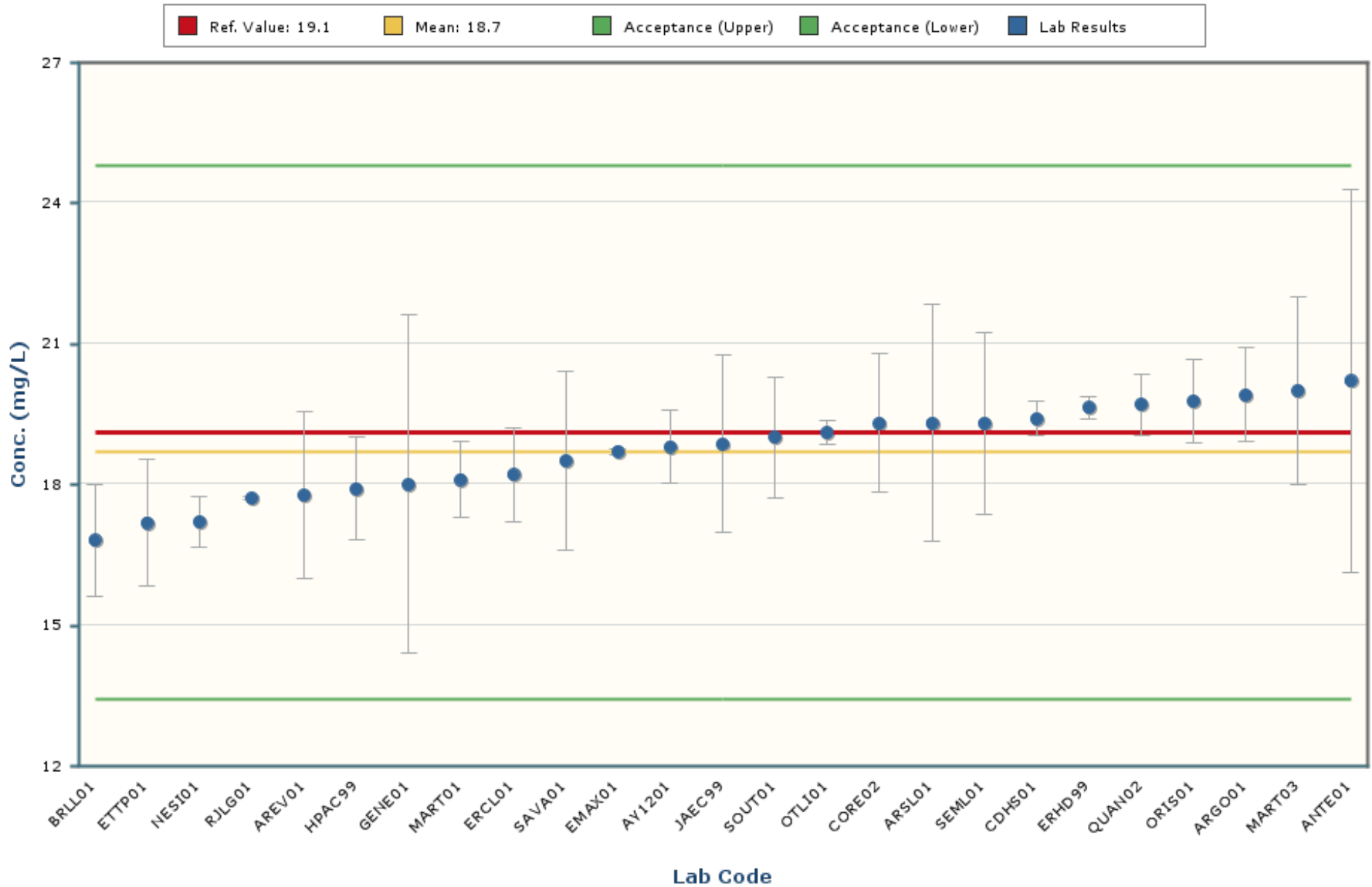
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 11.3 and 23.7 (± 5 Standard Deviations).

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

Copper

MAPEP-20-MaW43



Notes:

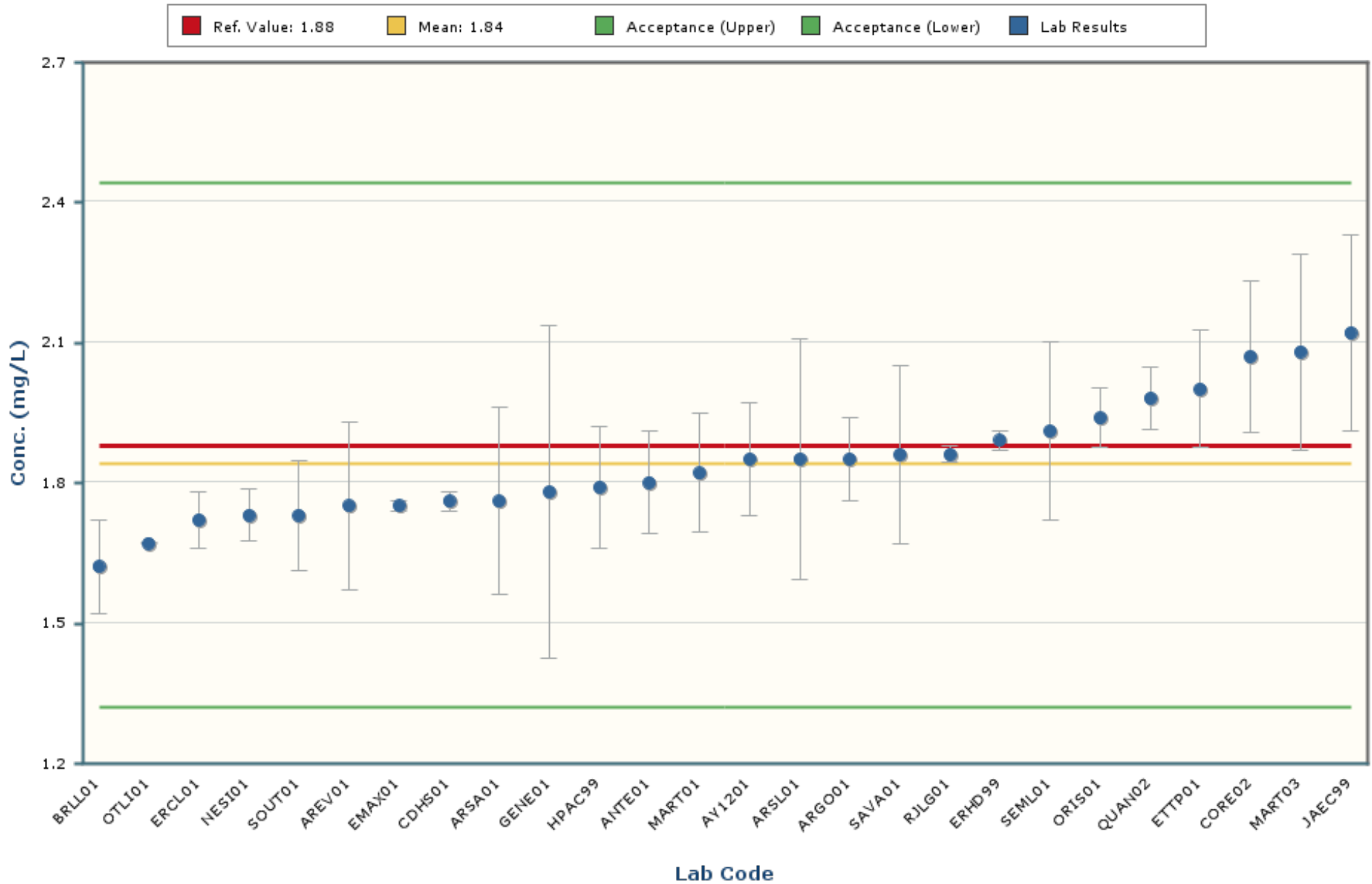
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 13.9 and 23.5 (± 5 Standard Deviations).

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

Lead

MAPEP-20-MaW43



Notes:

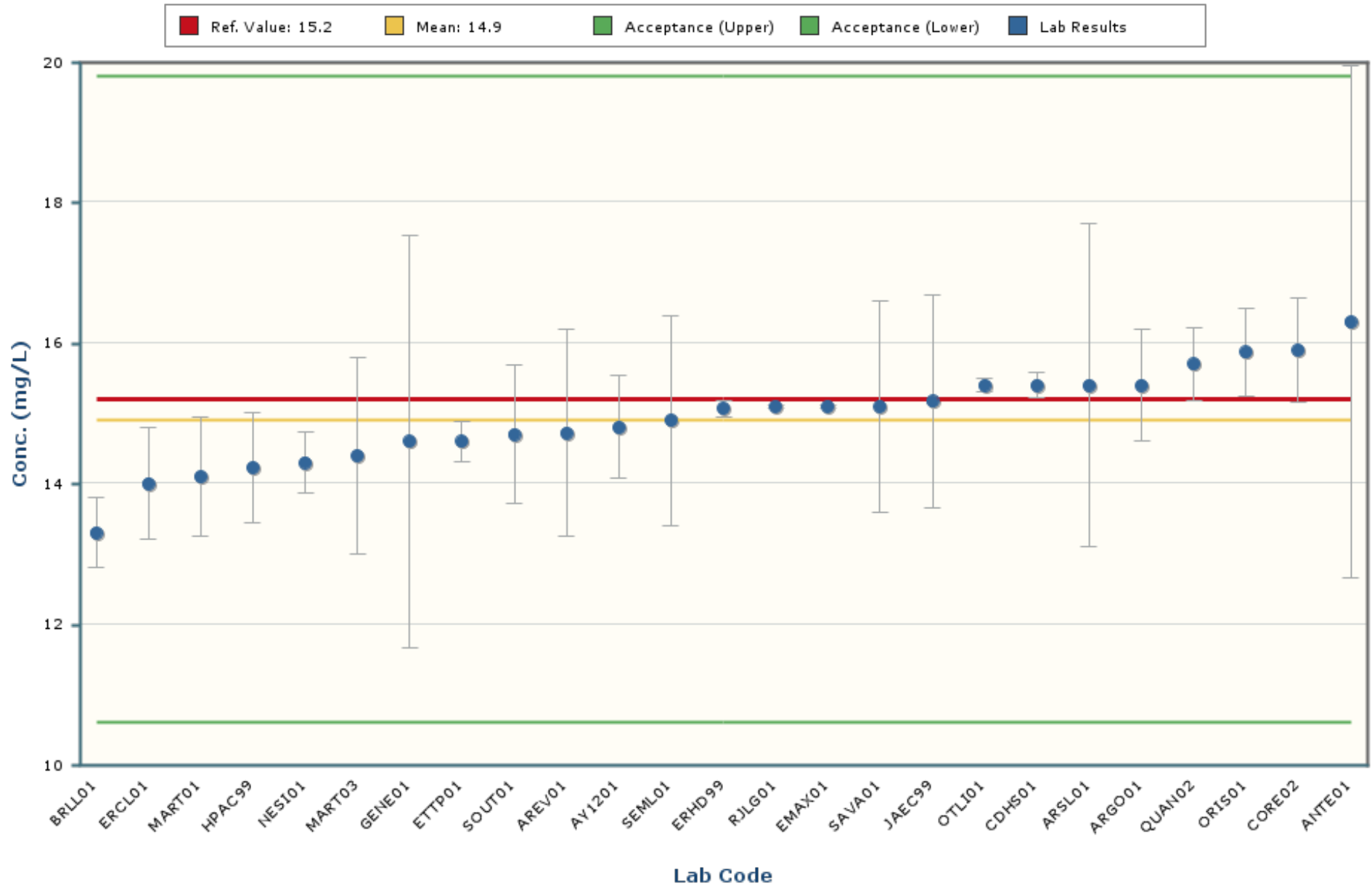
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 1.21 and 2.48 (± 5 Standard Deviations).

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

Nickel

MAPEP-20-MaW43



Notes:

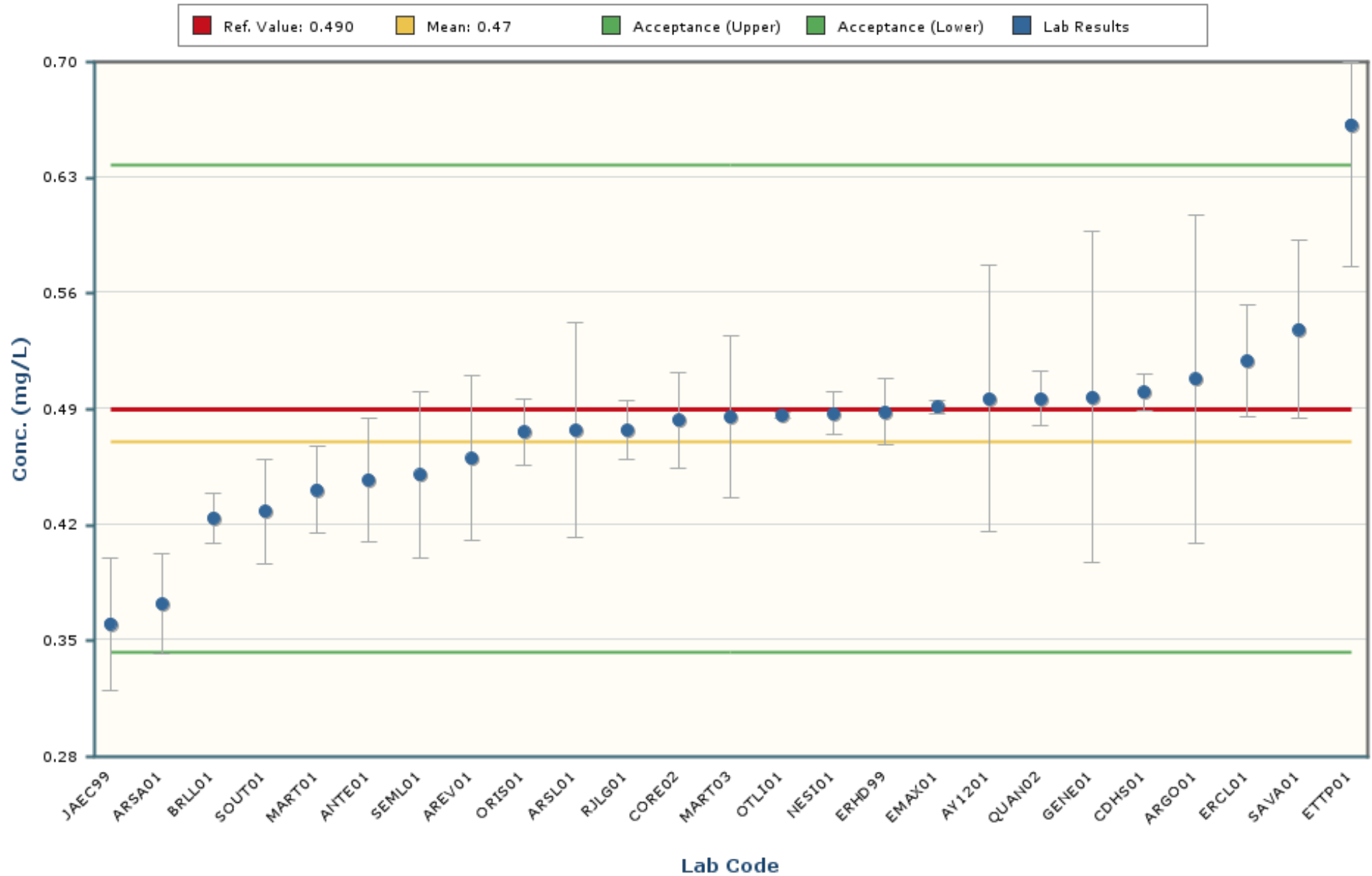
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 11.5 and 18.3 (± 5 Standard Deviations).

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

Selenium

MAPEP-20-MaW43



Notes:

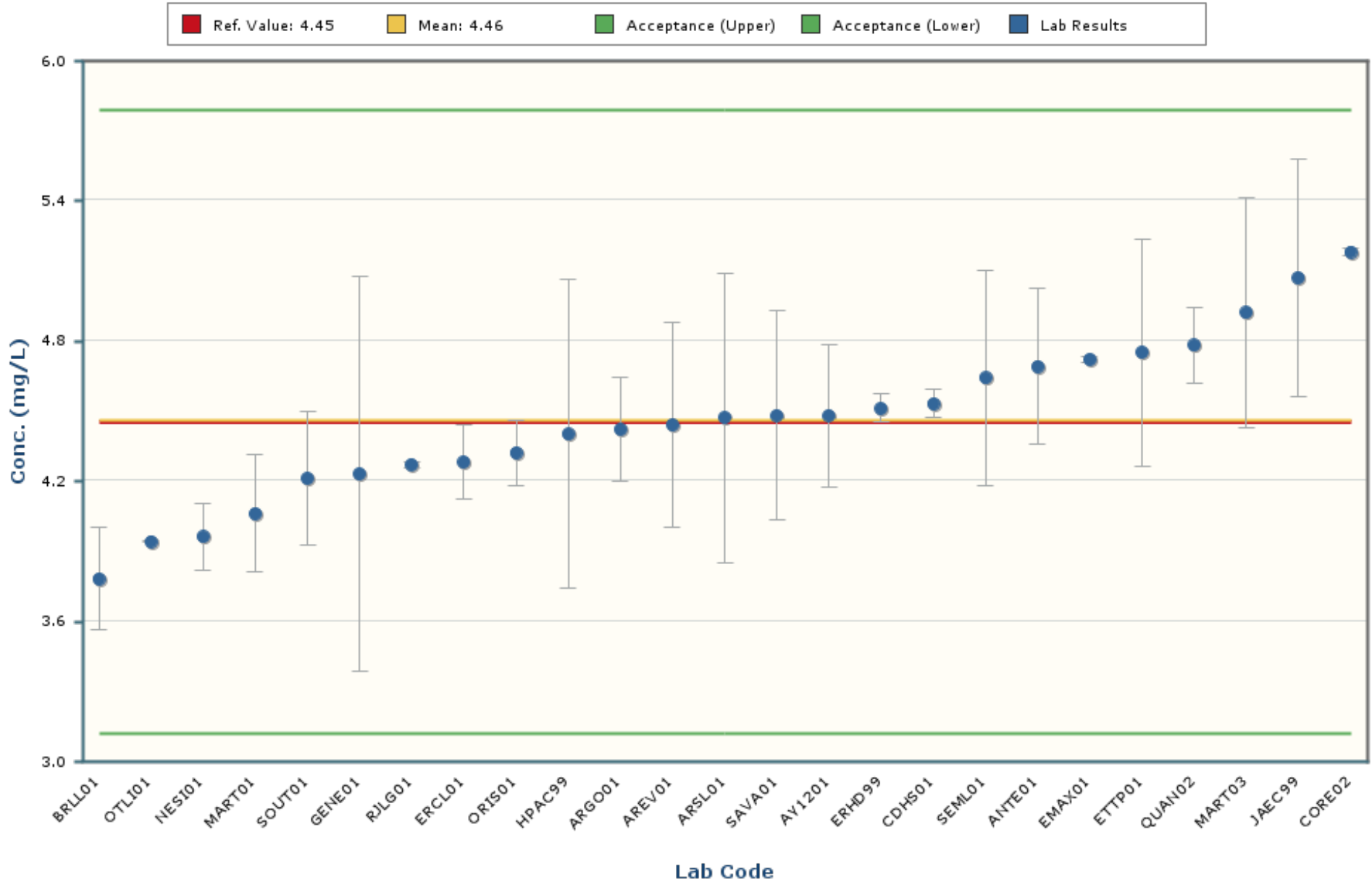
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.260 and 0.681 (± 5 Standard Deviations).

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

Thallium

MAPEP-20-MaW43



Notes:

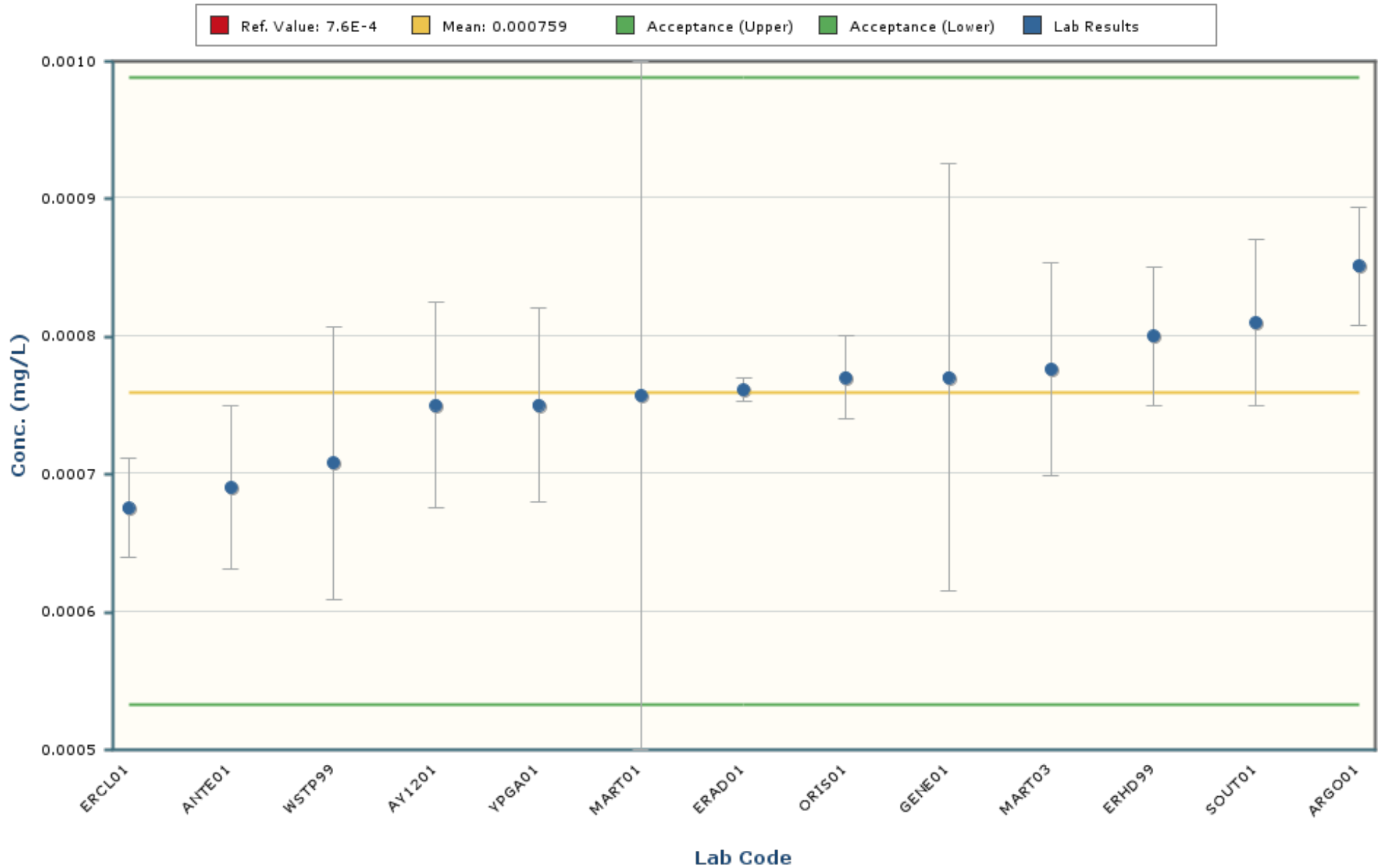
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 2.75 and 6.17 (± 5 Standard Deviations).

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

Uranium-235

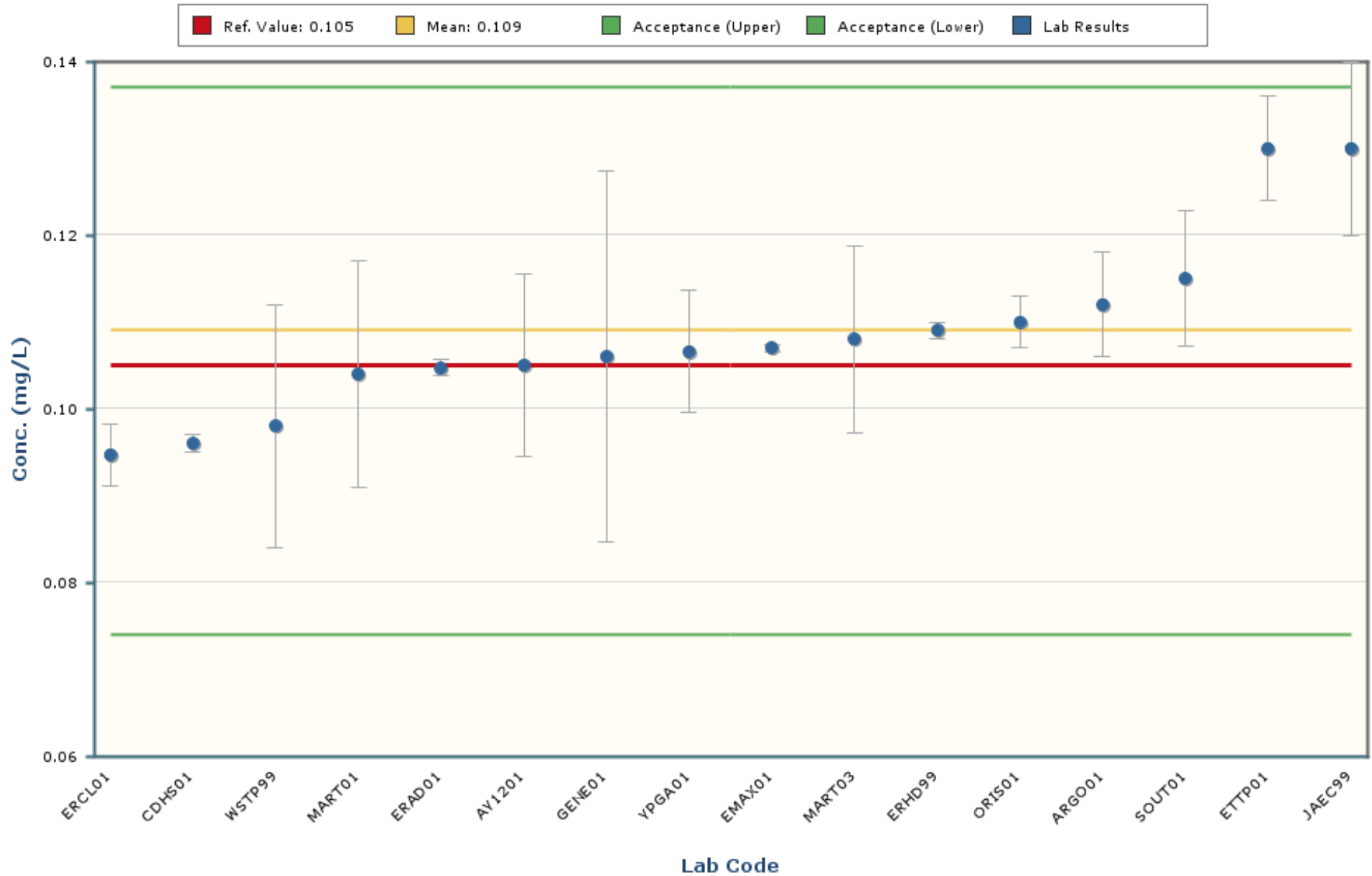
MAPEP-20-MaW43



Notes:
The chart mean excludes values outside of a bias range of $\pm 30\%$.
The chart shows only data points with values between 0.000518 and 0.001000 (± 5 Standard Deviations).
The error bars encompassing each result are plotted at \pm one standard deviation.

Uranium-238

MAPEP-20-MaW43



Notes:

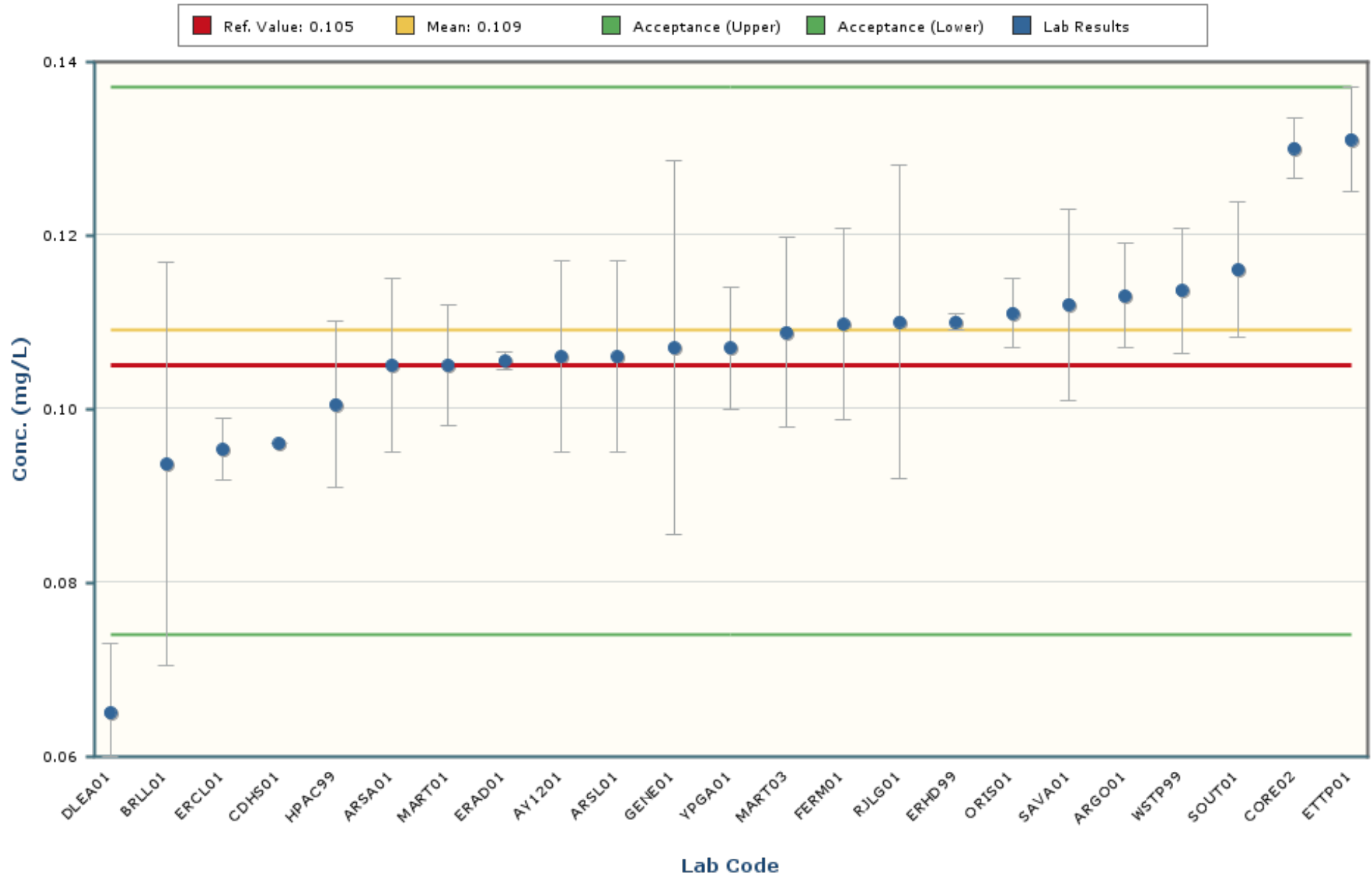
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.059 and 0.158 (± 5 Standard Deviations).

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

Uranium-Total

MAPEP-20-MaW43



Notes:

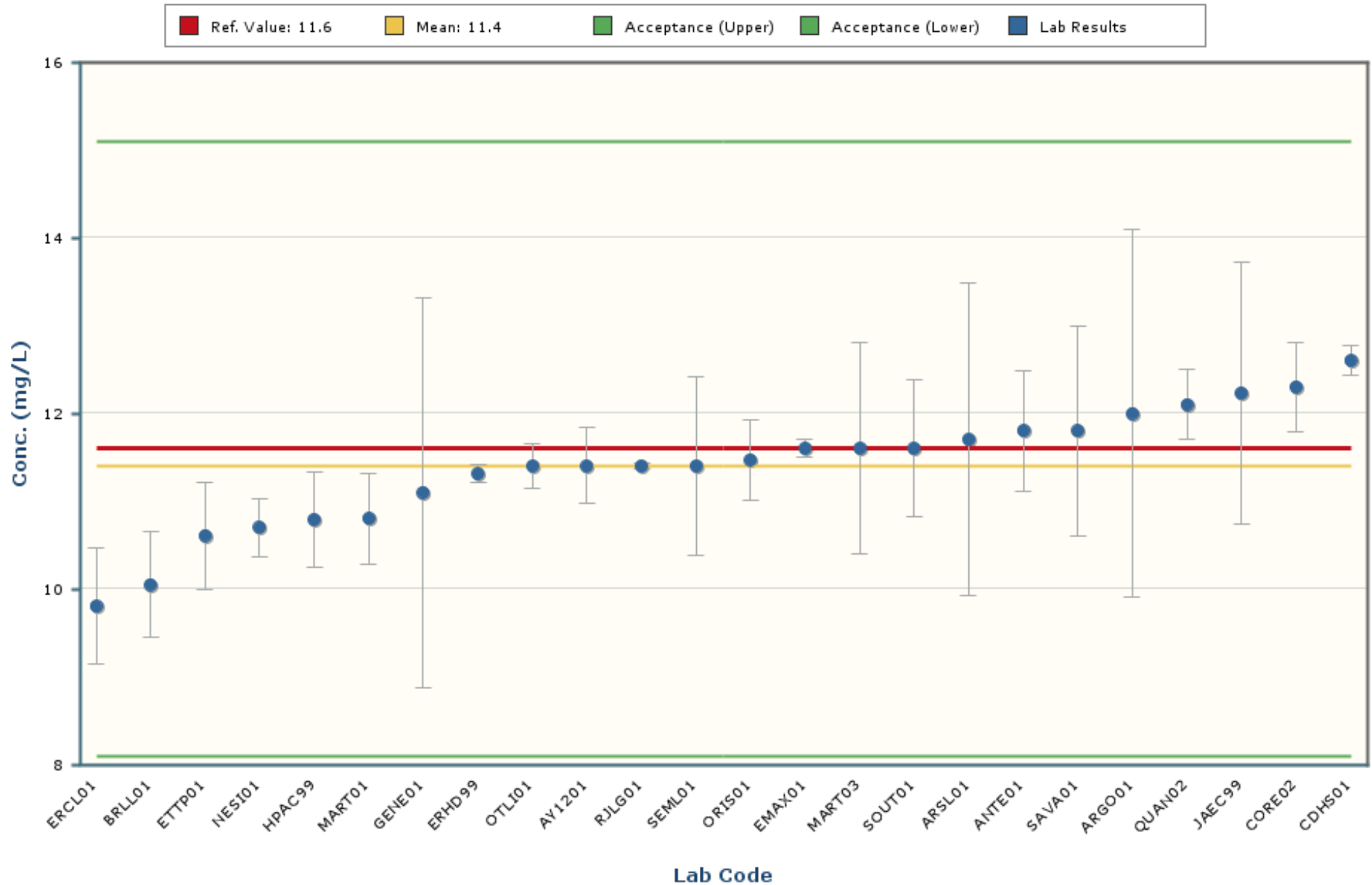
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.063 and 0.155 (± 5 Standard Deviations).

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

Vanadium

MAPEP-20-MaW43



Notes:

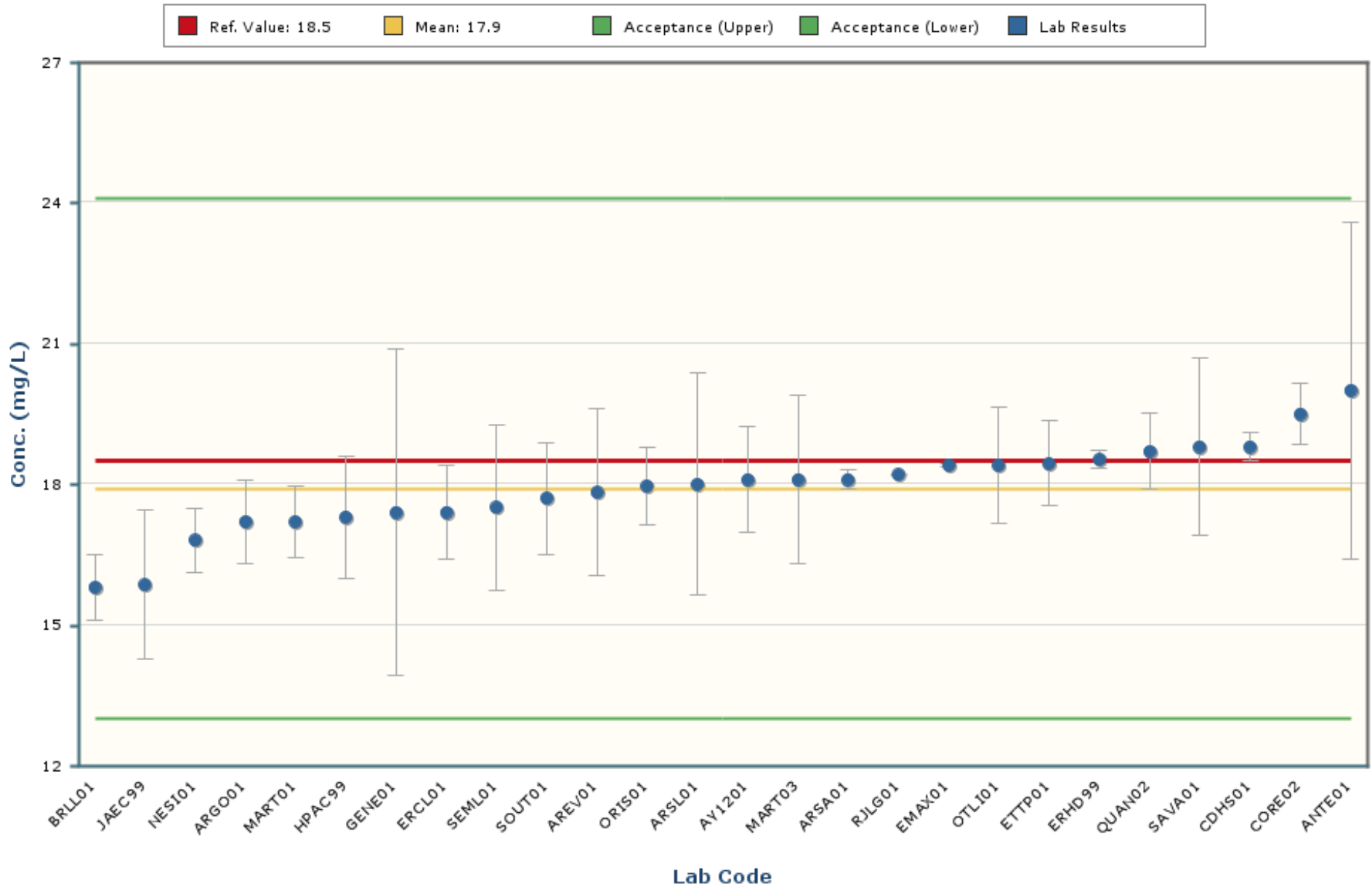
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 8.0 and 14.8 (± 5 Standard Deviations).

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

Zinc

MAPEP-20-MaW43



Notes:

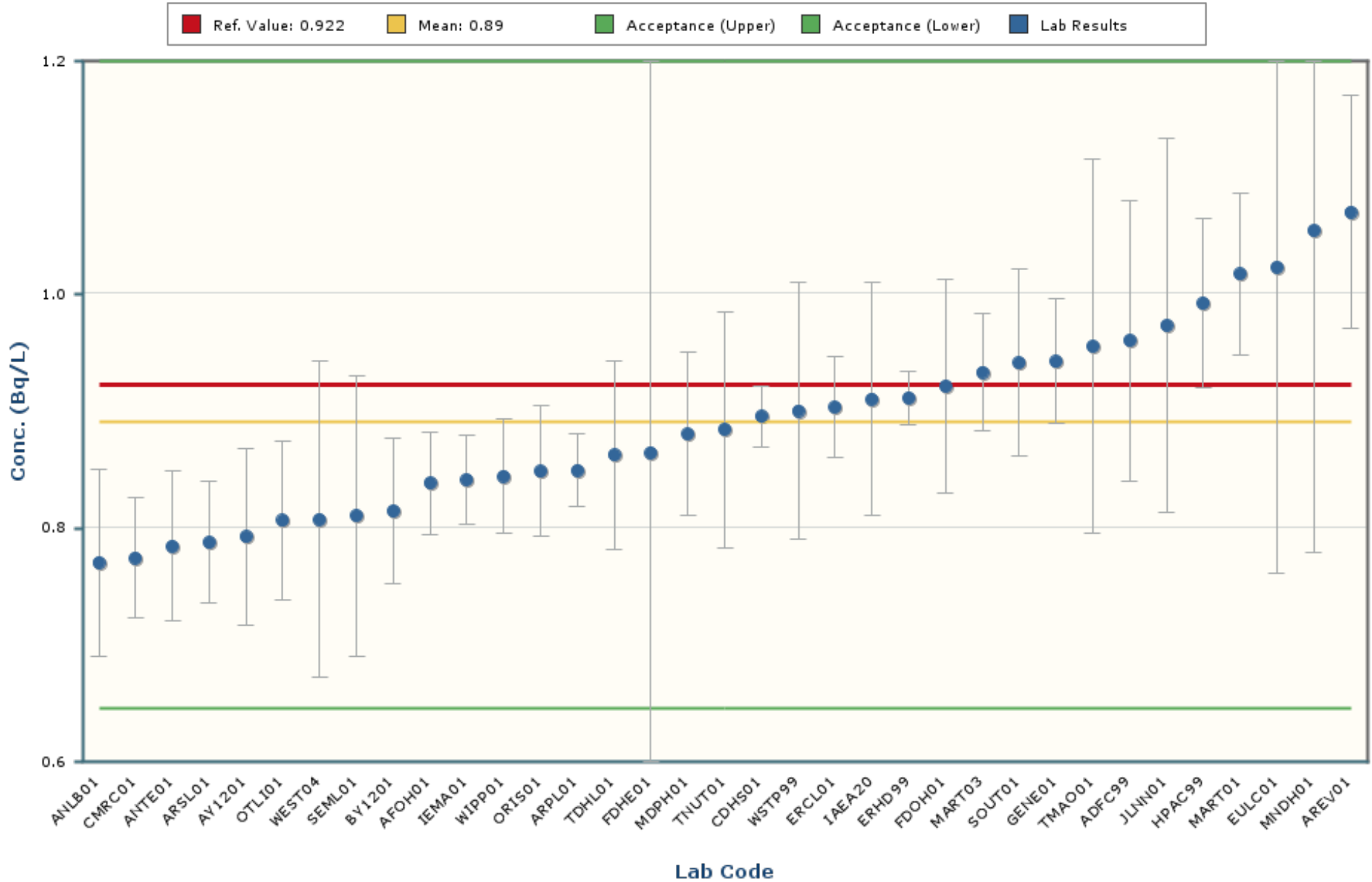
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 13.2 and 22.7 (± 5 Standard Deviations).

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

Americium-241

MAPEP-20-MaW43



Notes:

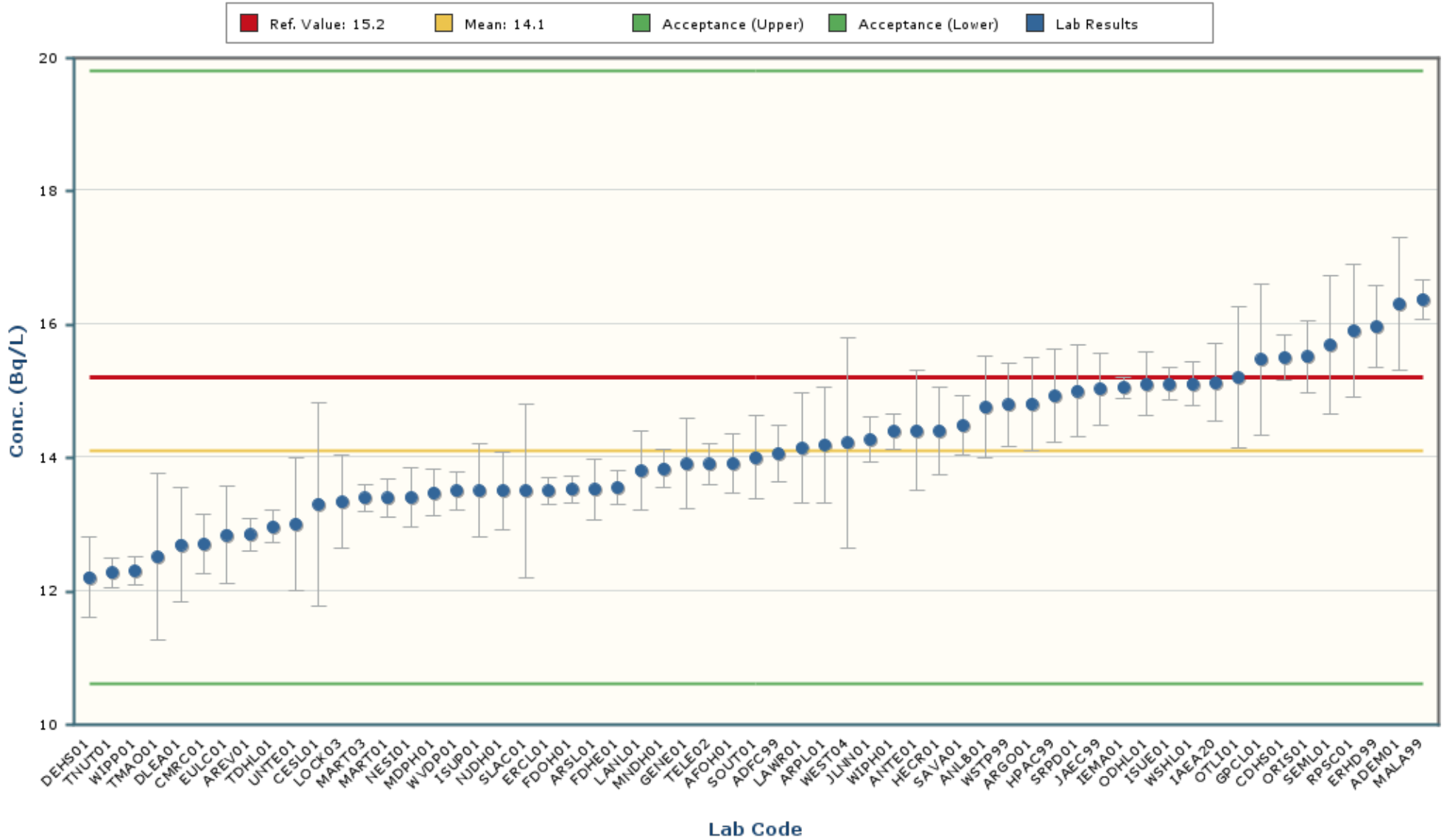
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.482 and 1.298 (± 5 Standard Deviations).

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

Cesium-134

MAPEP-20-MaW43



Notes:

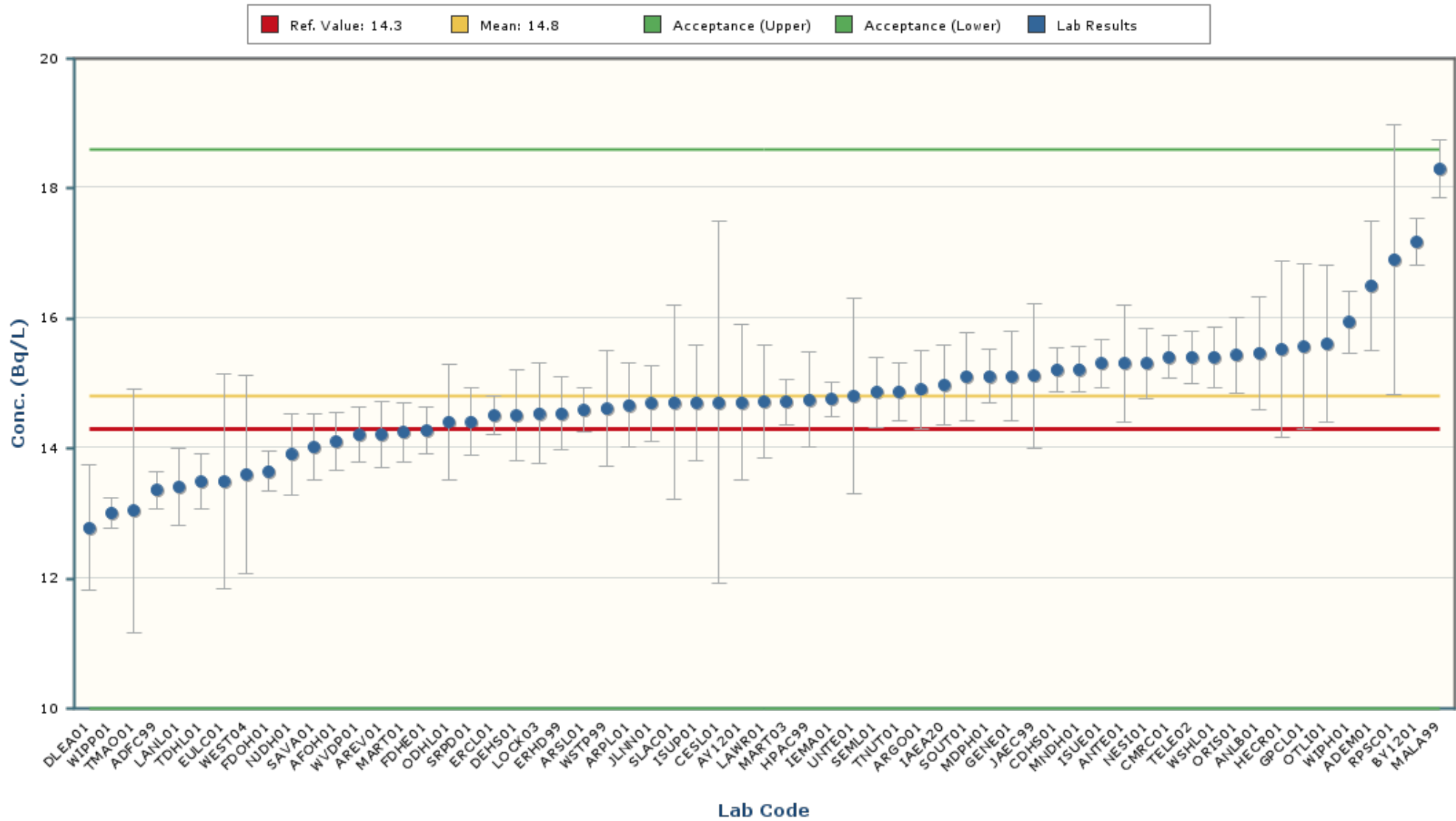
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 8.9 and 19.4 (± 5 Standard Deviations).

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

Cesium-137

MAPEP-20-MaW43



Notes:

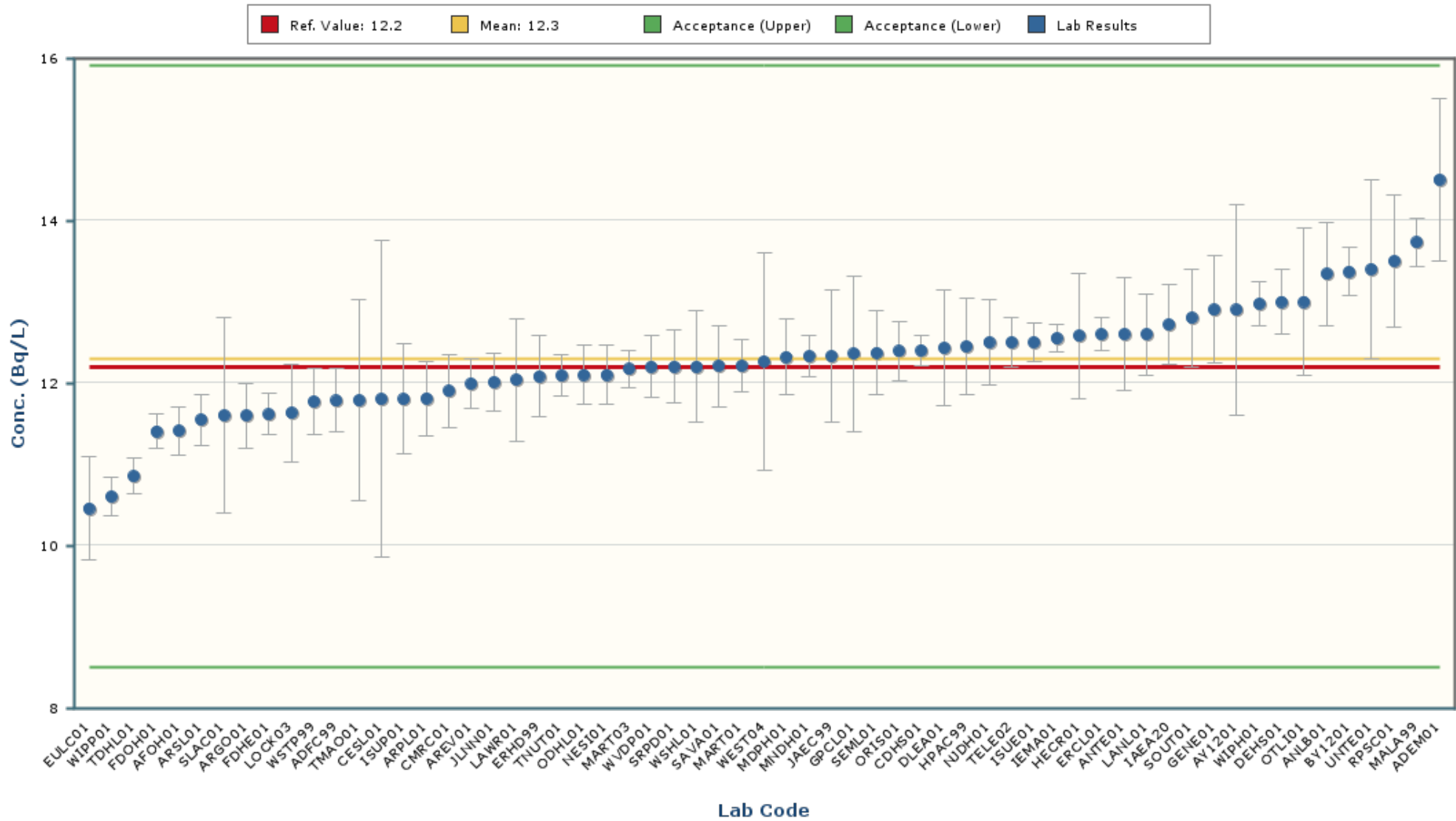
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 9.9 and 19.6 (± 5 Standard Deviations).

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

Cobalt-60

MAPEP-20-MaW43



Notes:

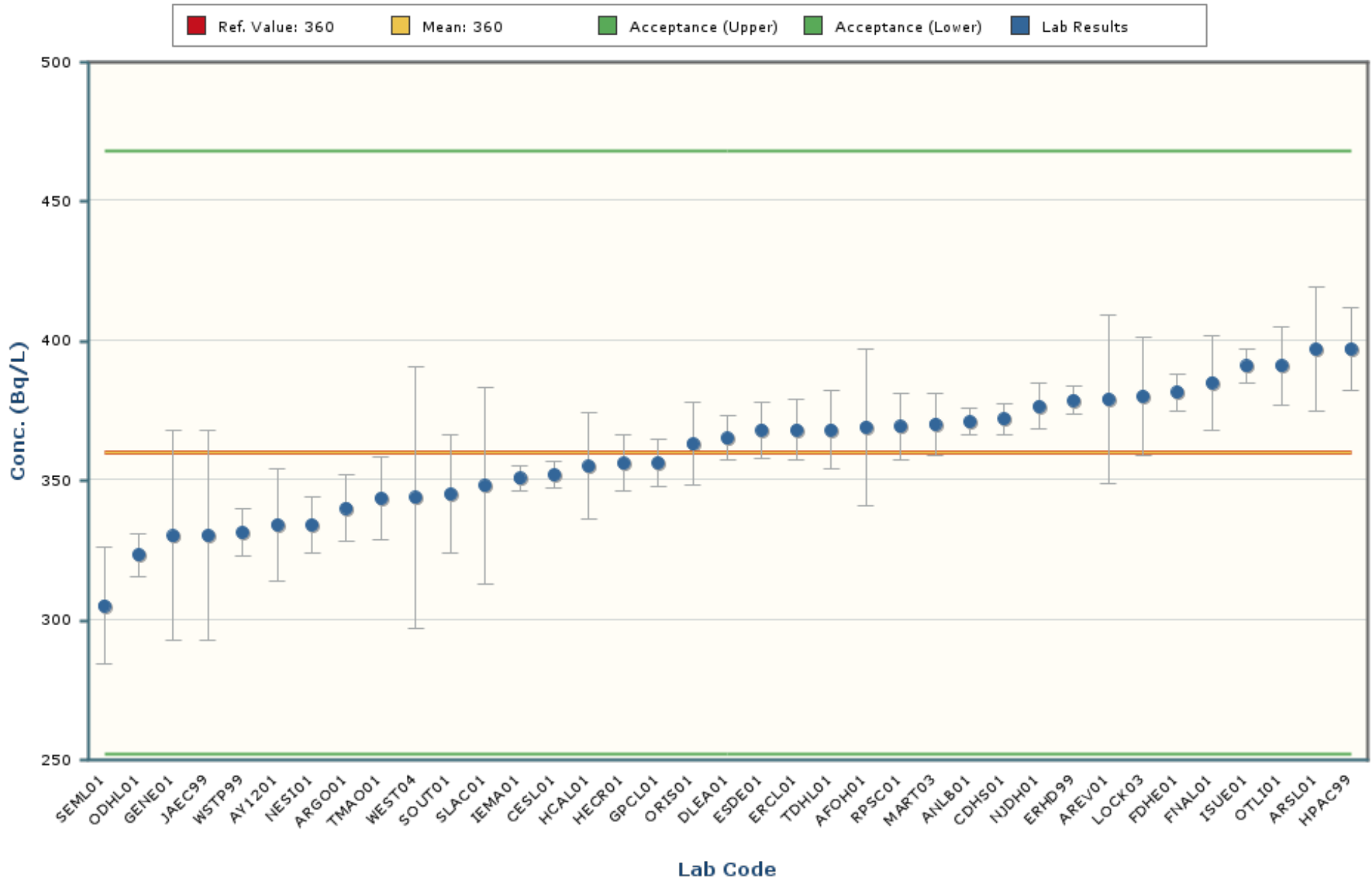
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 8.8 and 15.8 (± 5 Standard Deviations).

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

Hydrogen-3

MAPEP-20-MaW43



Notes:

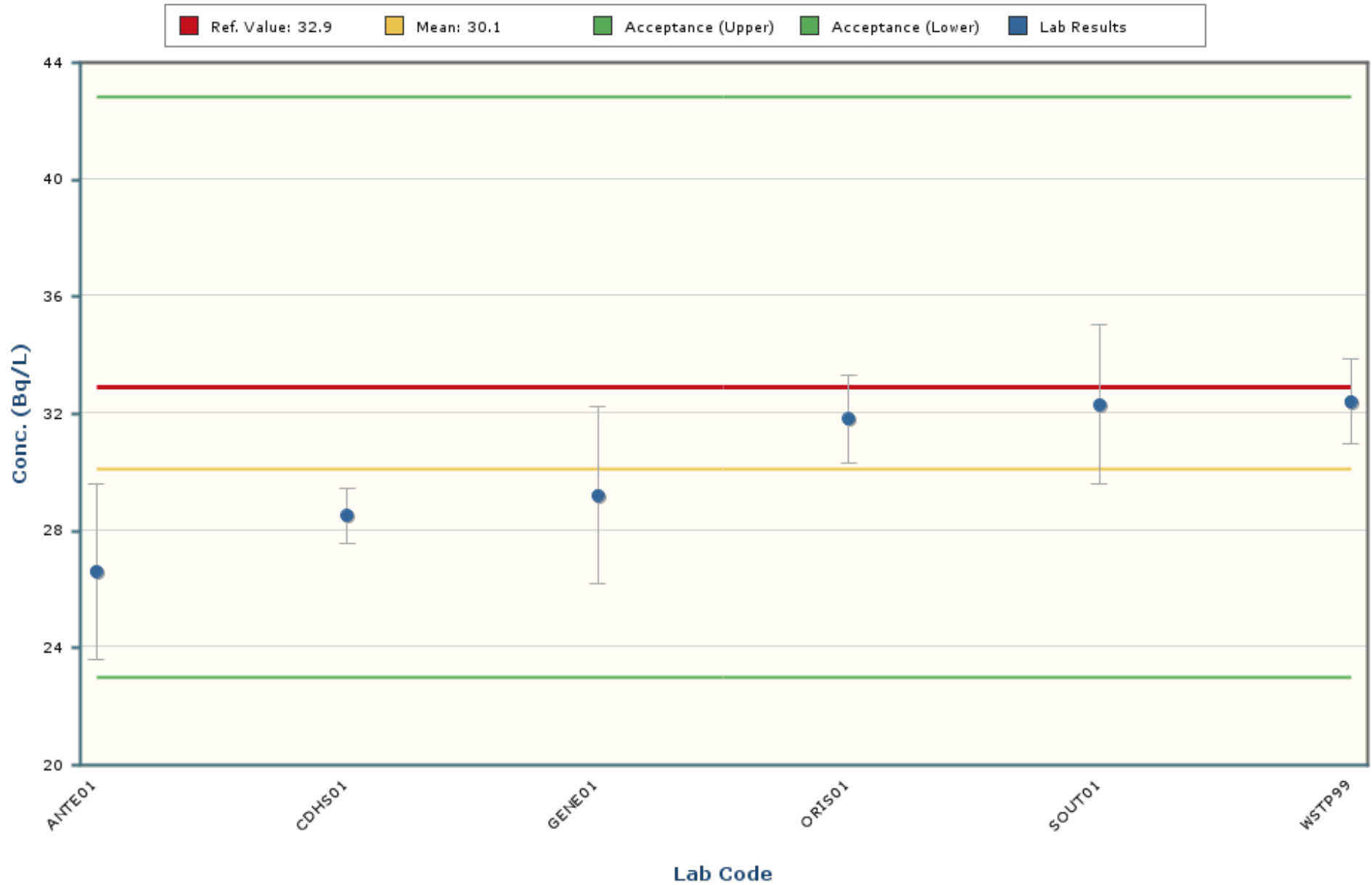
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 249 and 471 (± 5 Standard Deviations).

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

Iron-55

MAPEP-20-MaW43



Notes:

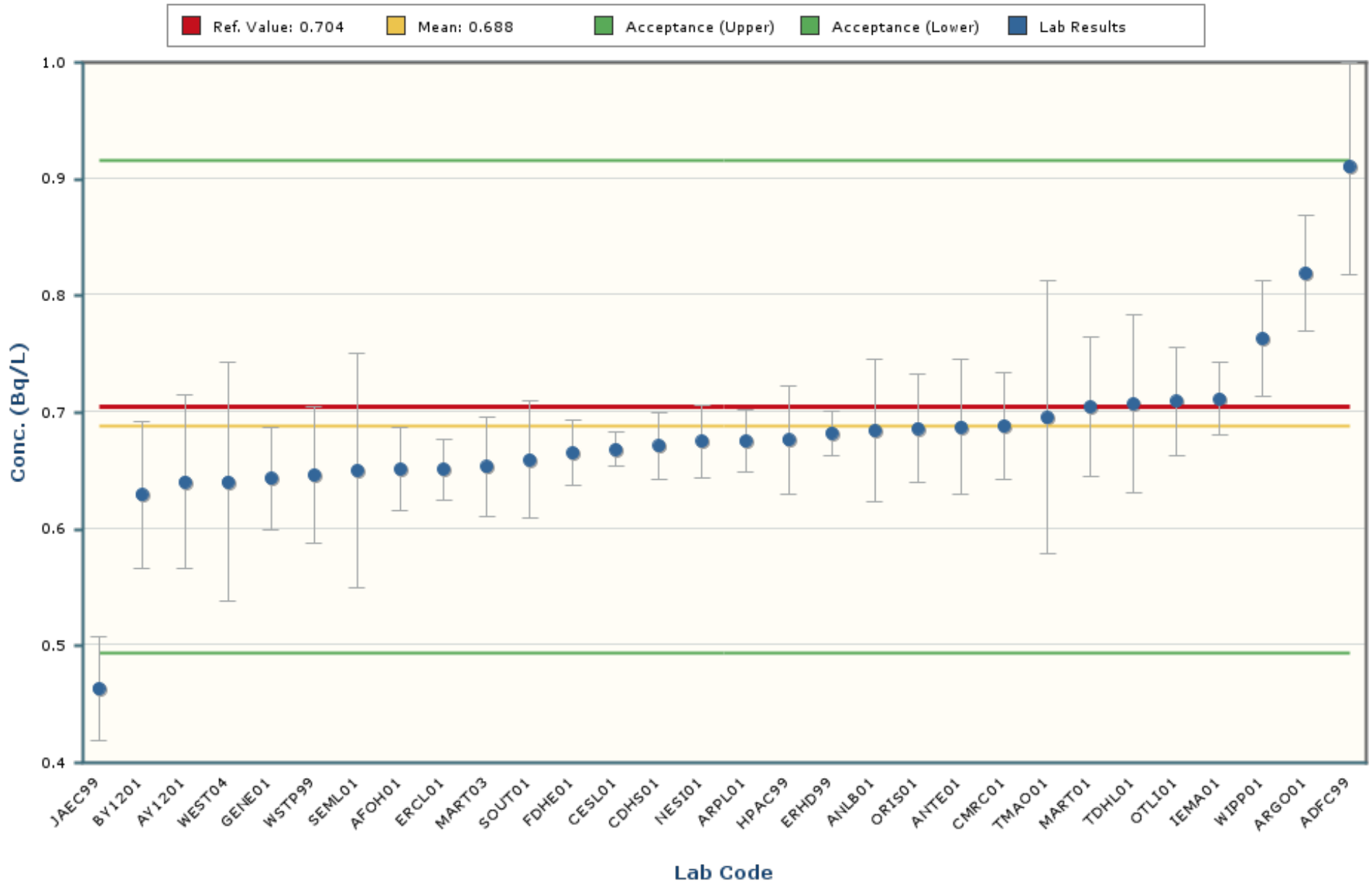
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 18.2 and 42.1 (± 5 Standard Deviations).

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

Plutonium-238

MAPEP-20-MaW43



Notes:

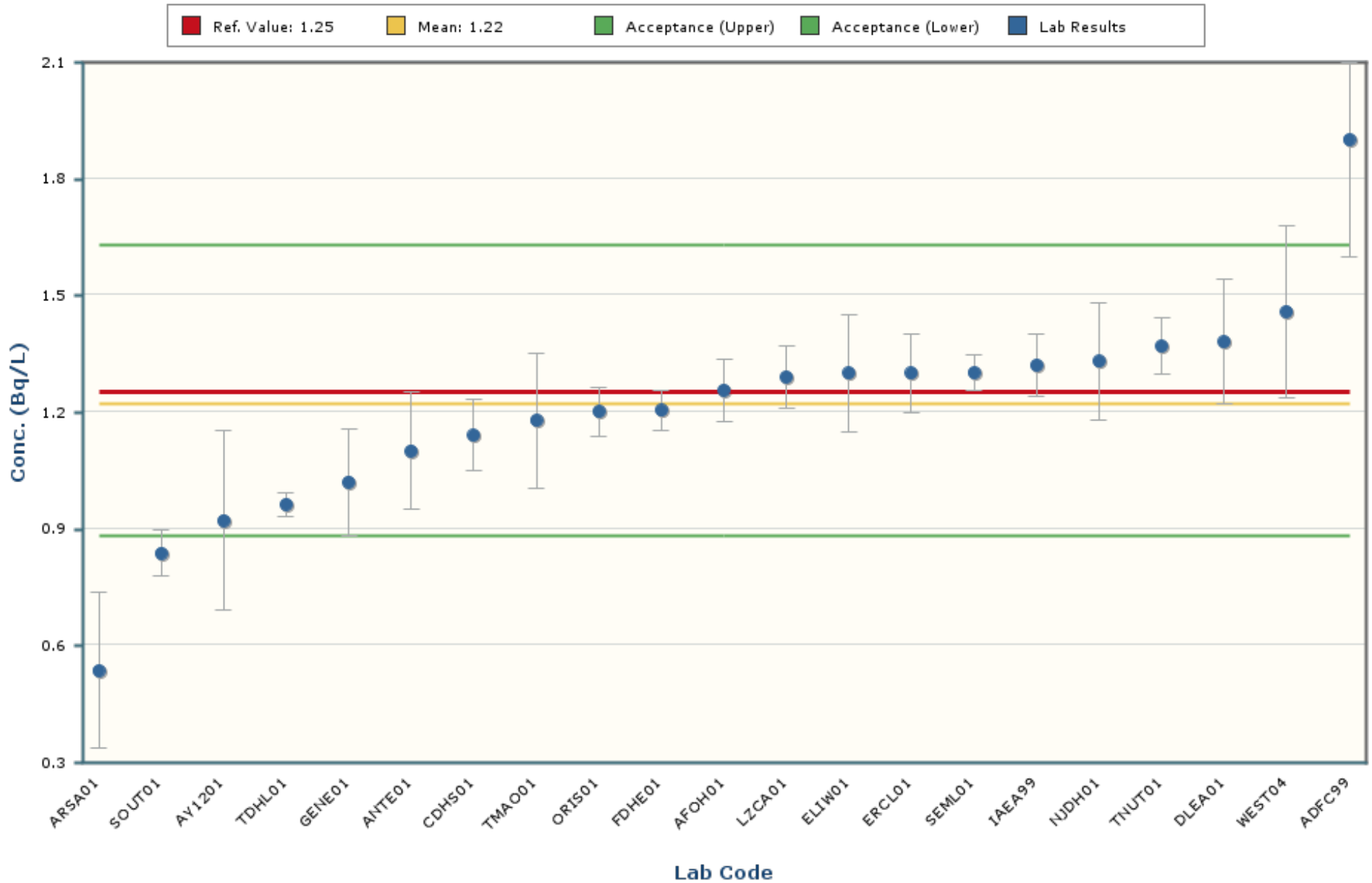
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.398 and 0.977 (± 5 Standard Deviations).

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

Radium-226

MAPEP-20-MaW43



Notes:

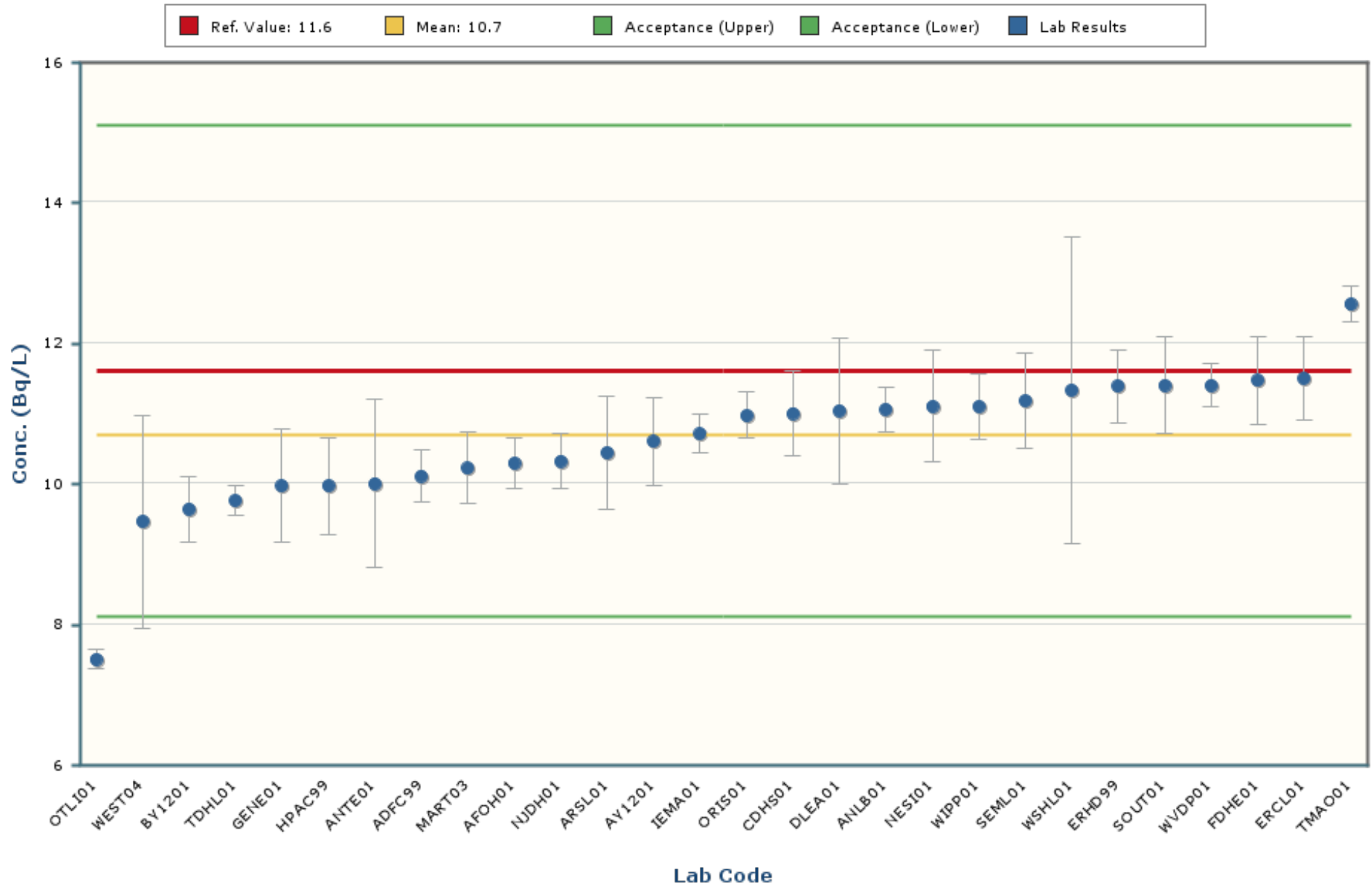
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.49 and 1.96 (± 5 Standard Deviations).

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

Strontium-90

MAPEP-20-MaW43



Notes:

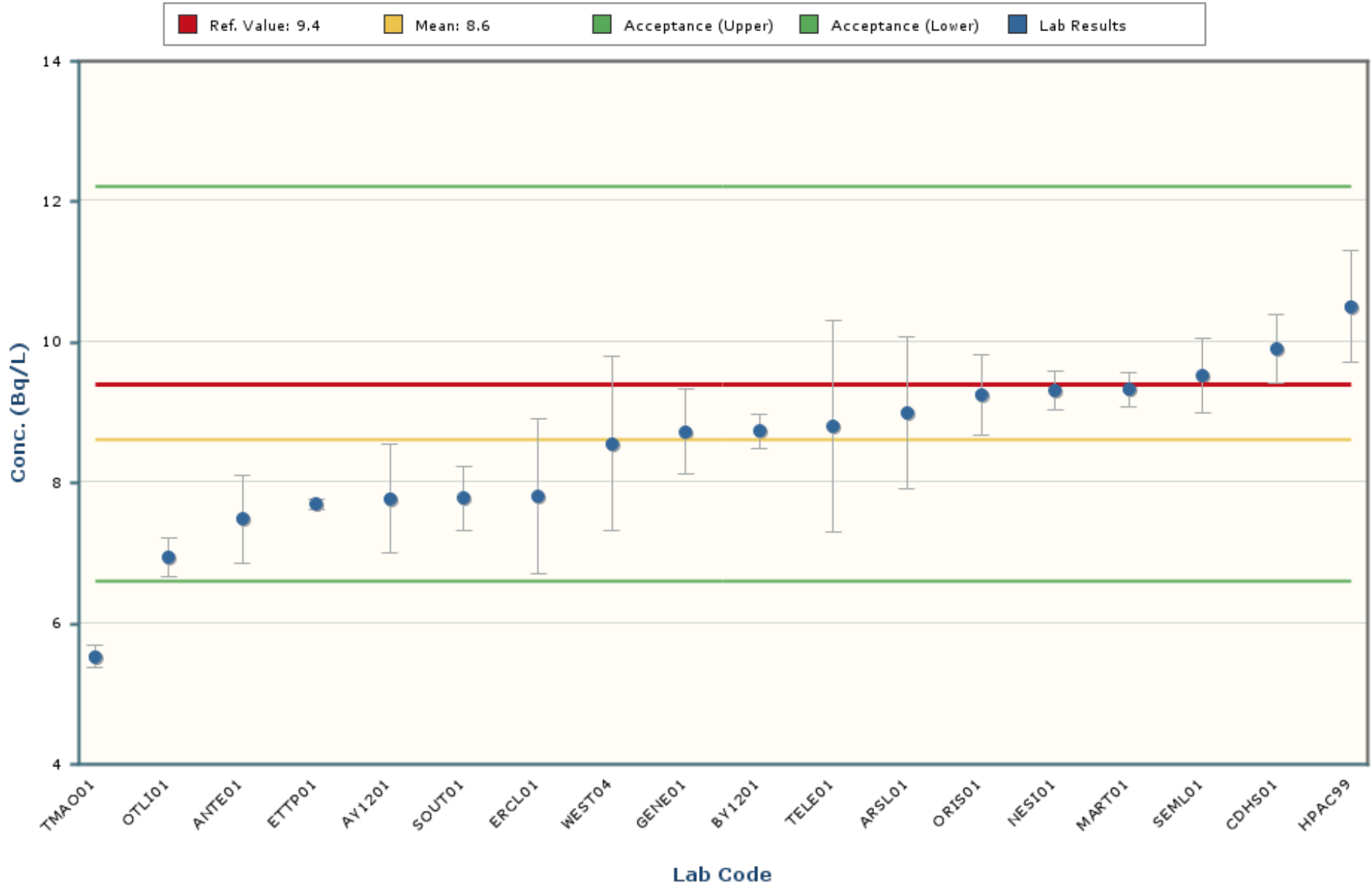
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 7.1 and 14.3 (± 5 Standard Deviations).

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

Technetium-99

MAPEP-20-MaW43



Notes:

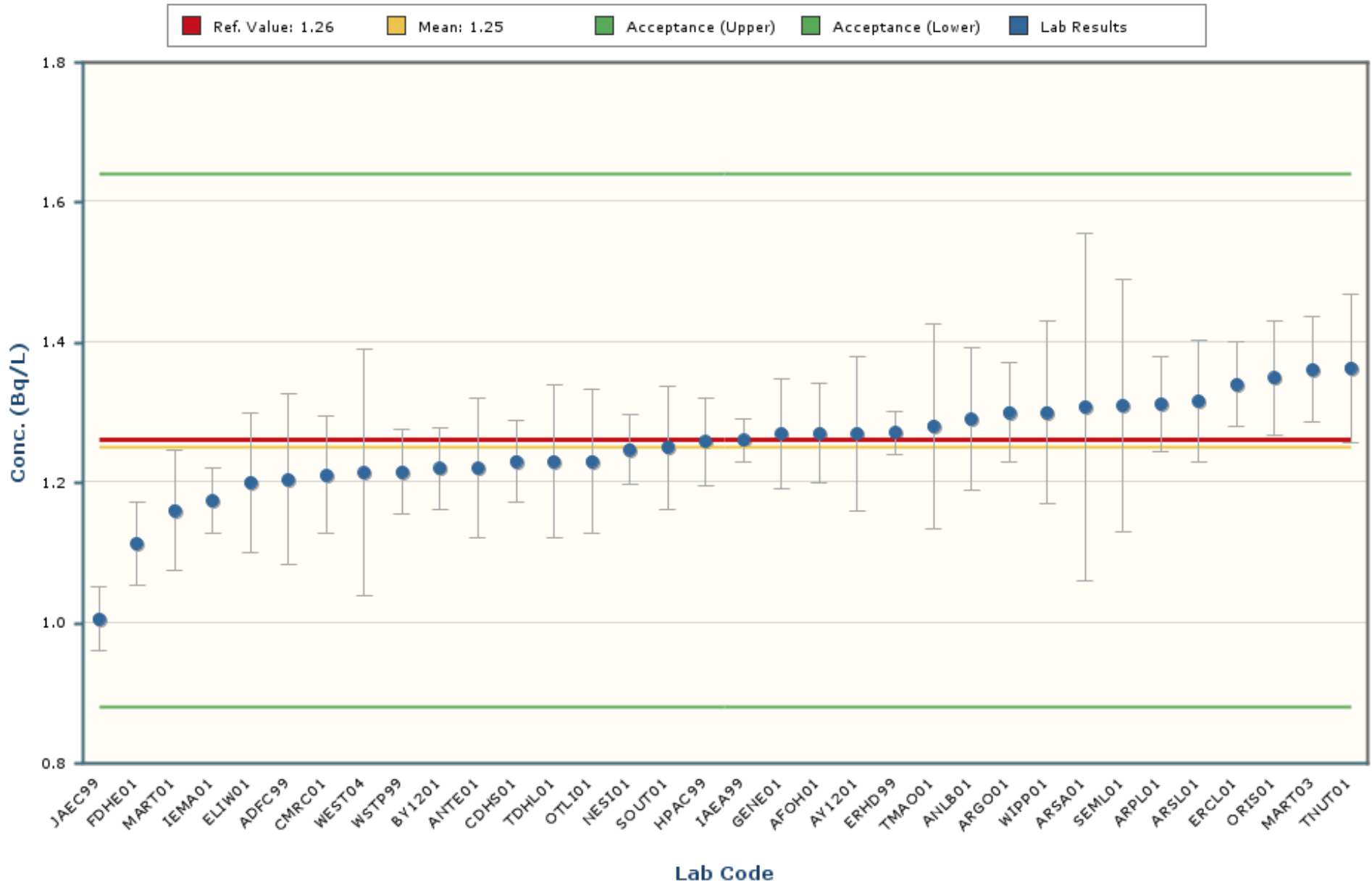
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 3.9 and 13.4 (± 5 Standard Deviations).

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

Uranium-234

MAPEP-20-MaW43



Notes:

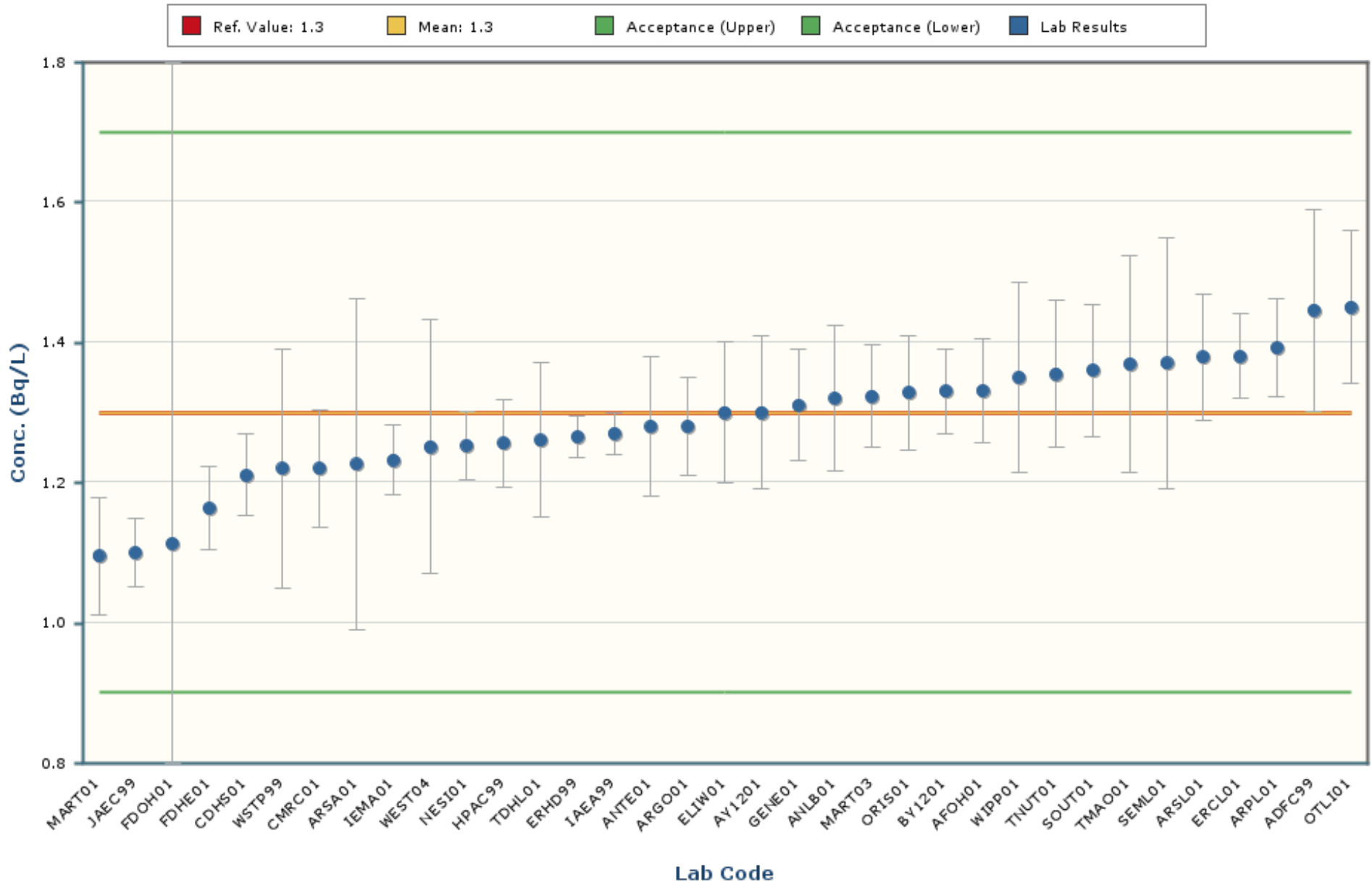
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.89 and 1.61 (± 5 Standard Deviations).

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

Uranium-238

MAPEP-20-MaW43



Notes:

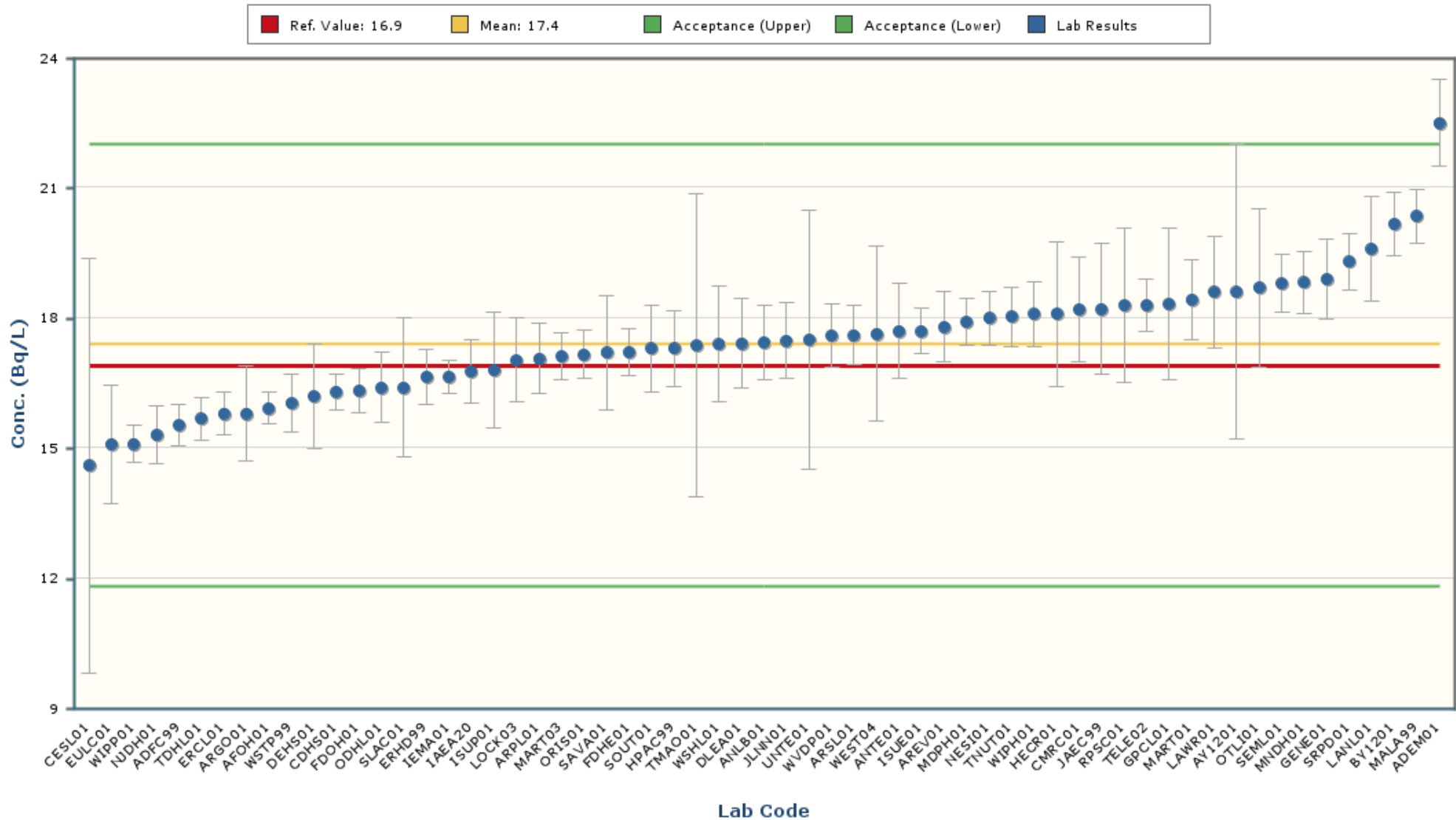
The chart mean excludes values outside of a bias range of $\pm 30\%$.

The chart shows only data points with values between 0.9 and 1.7 (± 5 Standard Deviations).

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

Zinc-65

MAPEP-20-MaW43



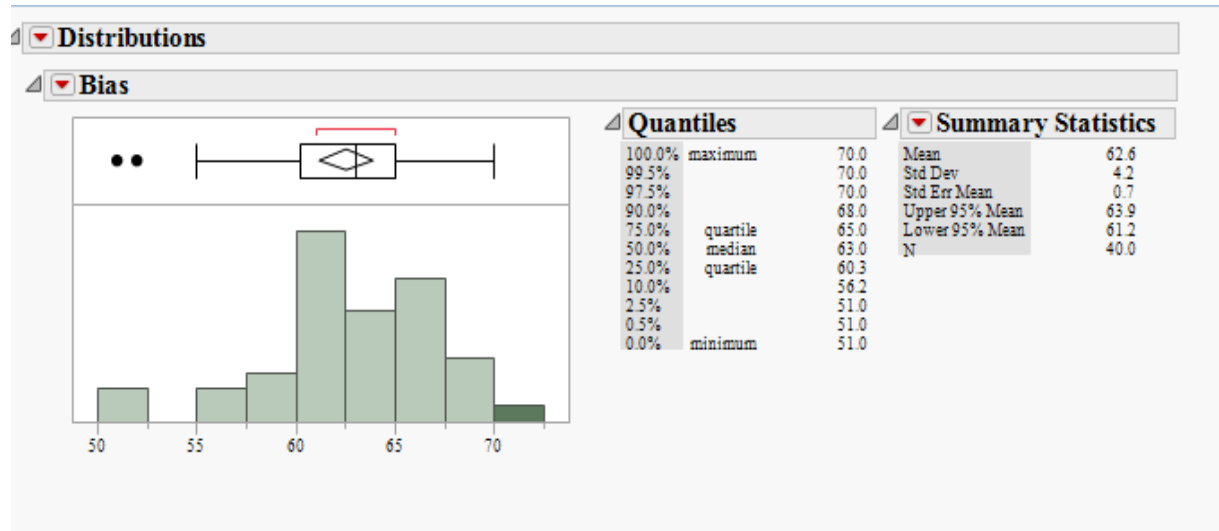
Notes:

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

The chart shows only data points with values between 11.2 and 23.5 (± 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.

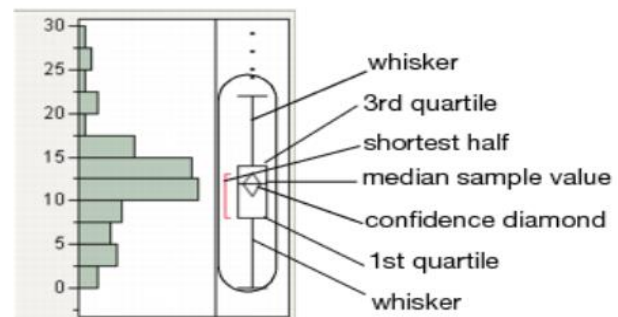


Outlier Box Plot

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)

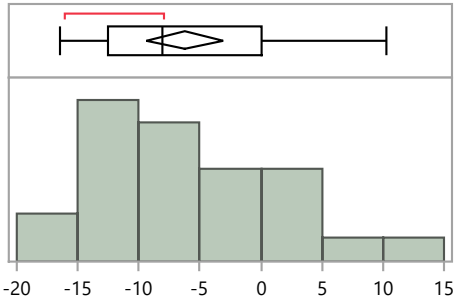


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

MaW Distribution by Detection Method

Distributions Analyte_Detection=Americium-241 Alpha Spectrometry

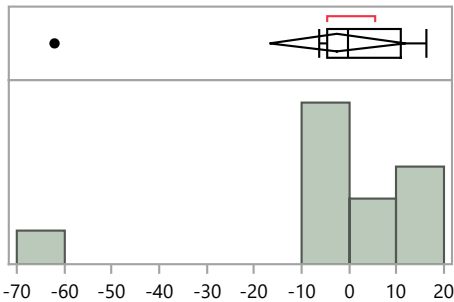
Bias



Quantiles			Summary Statistics	
100.0%	maximum	10.3	Mean	-6.2
99.5%		10.3	Std Dev	7.7
97.5%		10.3	Std Err Mean	1.5
90.0%		5.2	Upper 95% Mean	-3.1
75.0%	quartile	0.0	Lower 95% Mean	-9.4
50.0%	median	-8.0	N	25.0
25.0%	quartile	-12.6		
10.0%		-15.4		
2.5%		-16.5		
0.5%		-16.5		
0.0%	minimum	-16.5		

Distributions Analyte_Detection=Americium-241 Gamma Spectrometry

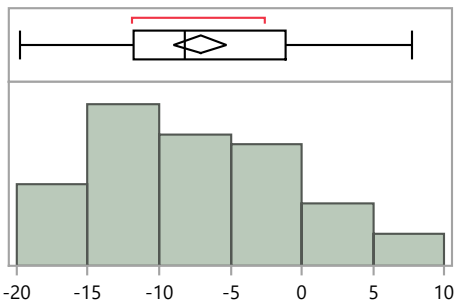
Bias



Quantiles			Summary Statistics	
100.0%	maximum	16.1	Mean	-2.5
99.5%		16.1	Std Dev	21.2
97.5%		16.1	Std Err Mean	6.4
90.0%		15.7	Upper 95% Mean	11.7
75.0%	quartile	11.0	Lower 95% Mean	-16.7
50.0%	median	-0.1	N	11.0
25.0%	quartile	-4.6		
10.0%		-50.9		
2.5%		-62.0		
0.5%		-62.0		
0.0%	minimum	-62.0		

Distributions Analyte_Detection=Cesium-134 Gamma Spectrometry

Bias

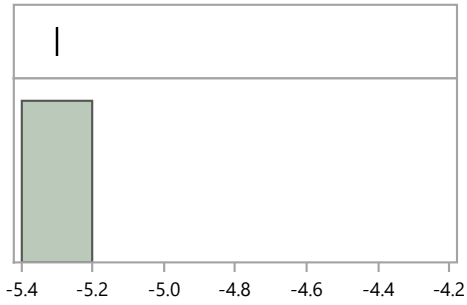


Quantiles			Summary Statistics	
100.0%	maximum	7.7	Mean	-7.1
99.5%		7.7	Std Dev	7.0
97.5%		7.5	Std Err Mean	0.9
90.0%		2.1	Upper 95% Mean	-5.3
75.0%	quartile	-1.1	Lower 95% Mean	-9.0
50.0%	median	-8.2	N	58.0
25.0%	quartile	-11.8		
10.0%		-16.4		
2.5%		-19.5		
0.5%		-19.7		
0.0%	minimum	-19.7		

MaW Distribution by Detection Method

Distributions Analyte_Detection=Cesium-134 Liquid Scintillation Counter

Bias



Quantiles

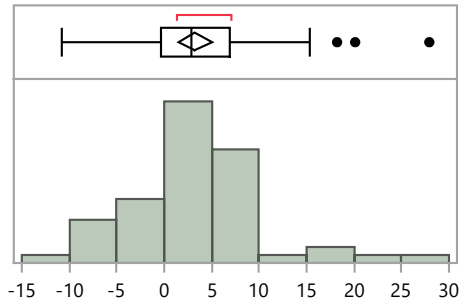
100.0%	maximum	-5.3
99.5%		-5.3
97.5%		-5.3
90.0%		-5.3
75.0%	quartile	-5.3
50.0%	median	-5.3
25.0%	quartile	-5.3
10.0%		-5.3
2.5%		-5.3
0.5%		-5.3
0.0%	minimum	-5.3

Summary Statistics

Mean	-5.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Cesium-137 Gamma Spectrometry

Bias



Quantiles

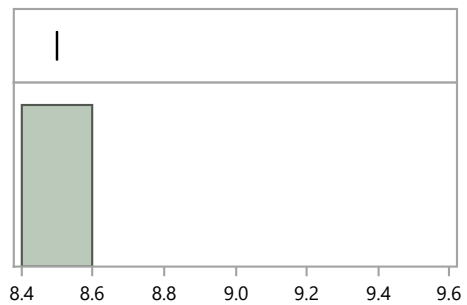
100.0%	maximum	27.9
99.5%		27.9
97.5%		23.8
90.0%		9.1
75.0%	quartile	6.9
50.0%	median	2.9
25.0%	quartile	-0.4
10.0%		-5.7
2.5%		-9.9
0.5%		-10.7
0.0%	minimum	-10.7

Summary Statistics

Mean	3.3
Std Dev	6.8
Std Err Mean	0.9
Upper 95% Mean	5.0
Lower 95% Mean	1.5
N	60.0

Distributions Analyte_Detection=Cesium-137 Liquid Scintillation Counter

Bias



Quantiles

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

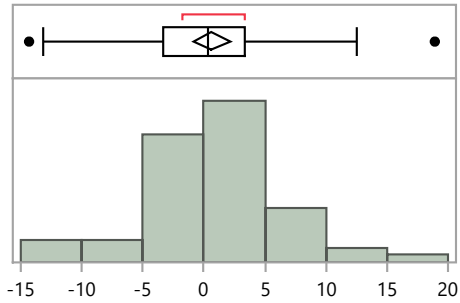
Summary Statistics

Mean	8.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Cobalt-60 Gamma Spectrometry

Bias



Quantiles

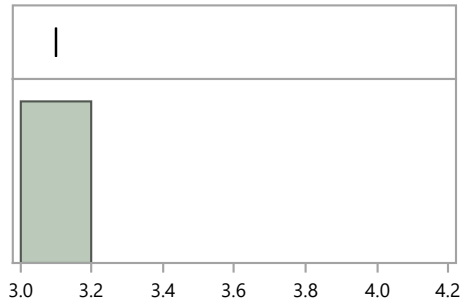
100.0%	maximum	18.9
99.5%		18.9
97.5%		15.5
90.0%		9.0
75.0%	quartile	3.3
50.0%	median	0.3
25.0%	quartile	-3.3
10.0%		-5.4
2.5%		-13.7
0.5%		-14.3
0.0%	minimum	-14.3

Summary Statistics

Mean	0.6
Std Dev	5.8
Std Err Mean	0.7
Upper 95% Mean	2.1
Lower 95% Mean	-0.9
N	60.0

Distributions Analyte_Detection=Cobalt-60 Liquid Scintillation Counter

Bias



Quantiles

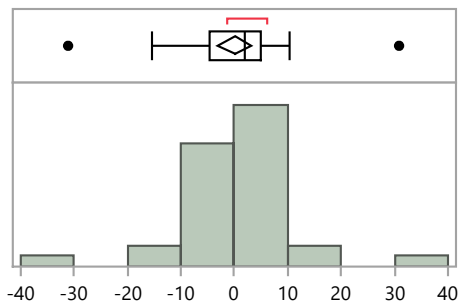
100.0%	maximum	3.1
99.5%		3.1
97.5%		3.1
90.0%		3.1
75.0%	quartile	3.1
50.0%	median	3.1
25.0%	quartile	3.1
10.0%		3.1
2.5%		3.1
0.5%		3.1
0.0%	minimum	3.1

Summary Statistics

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

Distributions Analyte_Detection=Hydrogen-3 Liquid Scintillation Counter

Bias



Quantiles

100.0%	maximum	30.8
99.5%		30.8
97.5%		30.8
90.0%		9.1
75.0%	quartile	5.1
50.0%	median	1.8
25.0%	quartile	-4.6
10.0%		-8.9
2.5%		-31.1
0.5%		-31.1
0.0%	minimum	-31.1

Summary Statistics

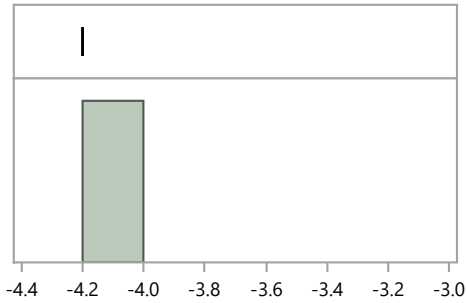
Mean	0.1
Std Dev	9.4
Std Err Mean	1.6
Upper 95% Mean	3.3
Lower 95% Mean	-3.1
N	36.0

MaW43 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Hydrogen-3 Other

Bias



Quantiles

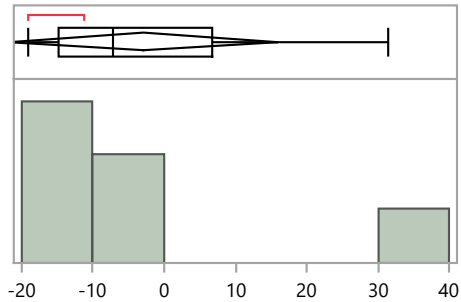
100.0%	maximum	-4.2
99.5%		-4.2
97.5%		-4.2
90.0%		-4.2
75.0%	quartile	-4.2
50.0%	median	-4.2
25.0%	quartile	-4.2
10.0%		-4.2
2.5%		-4.2
0.5%		-4.2
0.0%	minimum	-4.2

Summary Statistics

Mean	-4.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Iron-55 Liquid Scintillation Counter

Bias



Quantiles

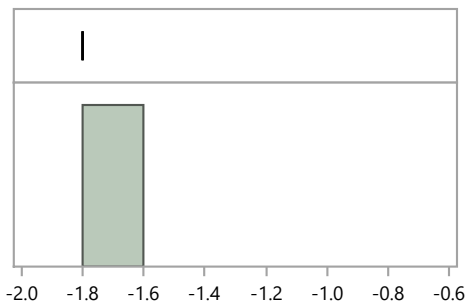
100.0%	maximum	31.4
99.5%		31.4
97.5%		31.4
90.0%		31.4
75.0%	quartile	6.7
50.0%	median	-7.3
25.0%	quartile	-14.8
10.0%		-19.1
2.5%		-19.1
0.5%		-19.1
0.0%	minimum	-19.1

Summary Statistics

Mean	-2.9
Std Dev	18.0
Std Err Mean	7.3
Upper 95% Mean	16.0
Lower 95% Mean	-21.7
N	6.0

Distributions Analyte_Detection=Iron-55 Other

Bias



Quantiles

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

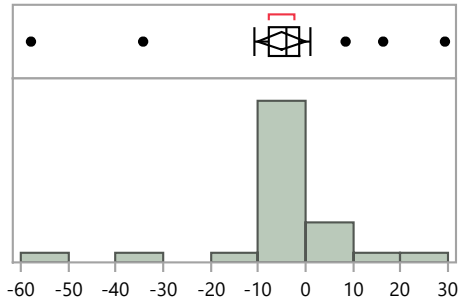
Summary Statistics

Mean	-1.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Plutonium-238 Alpha Spectrometry

Bias



Quantiles

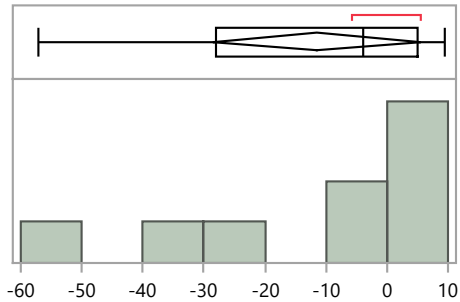
100.0%	maximum	29.3
99.5%		29.3
97.5%		29.3
90.0%		6.9
75.0%	quartile	-1.3
50.0%	median	-4.1
25.0%	quartile	-7.7
10.0%		-10.4
2.5%		-57.8
0.5%		-57.8
0.0%	minimum	-57.8

Summary Statistics

Mean	-5.2
Std Dev	13.8
Std Err Mean	2.5
Upper 95% Mean	-0.1
Lower 95% Mean	-10.2
N	31.0

Distributions Analyte_Detection=Radium-226 Alpha Spectrometry

Bias



Quantiles

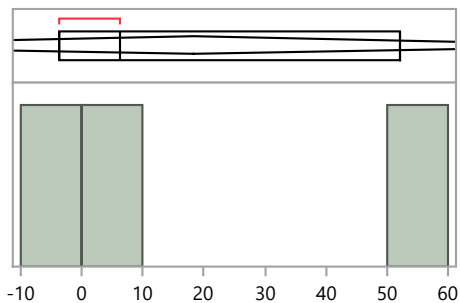
100.0%	maximum	9.5
99.5%		9.5
97.5%		9.5
90.0%		9.5
75.0%	quartile	4.9
50.0%	median	-3.9
25.0%	quartile	-28.0
10.0%		-57.2
2.5%		-57.2
0.5%		-57.2
0.0%	minimum	-57.2

Summary Statistics

Mean	-11.5
Std Dev	22.1
Std Err Mean	7.4
Upper 95% Mean	5.5
Lower 95% Mean	-28.4
N	9.0

Distributions Analyte_Detection=Radium-226 Gamma Spectrometry

Bias



Quantiles

100.0%	maximum	52.0
99.5%		52.0
97.5%		52.0
90.0%		52.0
75.0%	quartile	52.0
50.0%	median	6.4
25.0%	quartile	-3.7
10.0%		-3.7
2.5%		-3.7
0.5%		-3.7
0.0%	minimum	-3.7

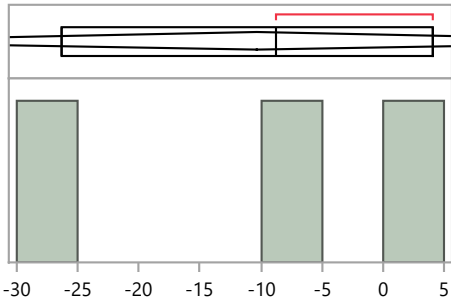
Summary Statistics

Mean	18.2
Std Dev	29.7
Std Err Mean	17.1
Upper 95% Mean	92.0
Lower 95% Mean	-55.5
N	3.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Radium-226 Gas Flow Proportional Counter

Bias



Quantiles

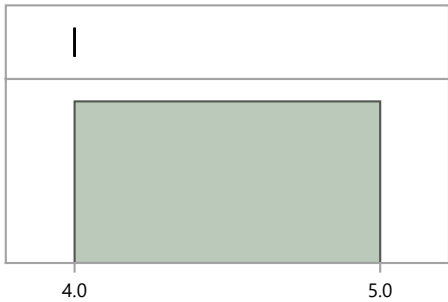
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	-8.8
25.0%	quartile	-26.3
10.0%		-26.3
2.5%		-26.3
0.5%		-26.3
0.0%	minimum	-26.3

Summary Statistics

Mean	-10.4
Std Dev	15.2
Std Err Mean	8.8
Upper 95% Mean	27.4
Lower 95% Mean	-48.2
N	3.0

Distributions Analyte_Detection=Radium-226 Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias



Quantiles

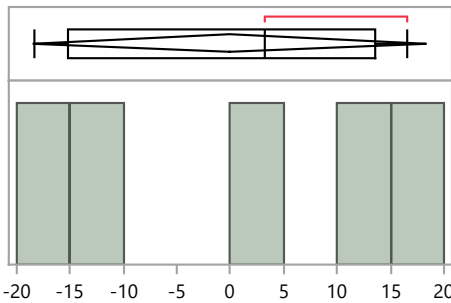
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	4.0
25.0%	quartile	4.0
10.0%		4.0
2.5%		4.0
0.5%		4.0
0.0%	minimum	4.0

Summary Statistics

Mean	4.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Radium-226 Other

Bias



Quantiles

100.0%	maximum	16.6
99.5%		16.6
97.5%		16.6
90.0%		16.6
75.0%	quartile	13.5
50.0%	median	3.2
25.0%	quartile	-15.2
10.0%		-18.4
2.5%		-18.4
0.5%		-18.4
0.0%	minimum	-18.4

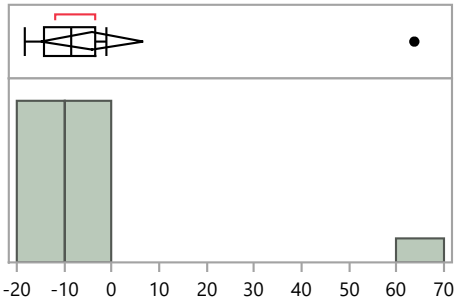
Summary Statistics

Mean	-0.0
Std Dev	14.8
Std Err Mean	6.6
Upper 95% Mean	18.3
Lower 95% Mean	-18.4
N	5.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Gas Flow Proportional Counter

Bias



Quantiles

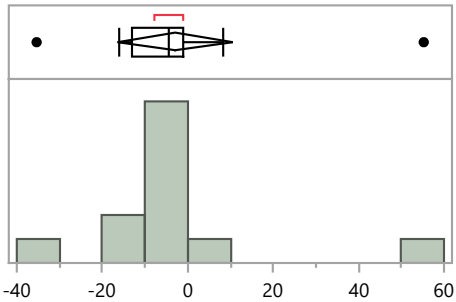
100.0%	maximum	63.7
99.5%		63.7
97.5%		63.7
90.0%		24.8
75.0%	quartile	-3.6
50.0%	median	-8.6
25.0%	quartile	-14.1
10.0%		-17.5
2.5%		-18.4
0.5%		-18.4
0.0%	minimum	-18.4

Summary Statistics

Mean	-4.2
Std Dev	19.6
Std Err Mean	5.1
Upper 95% Mean	6.6
Lower 95% Mean	-15.1
N	15.0

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

Bias



Quantiles

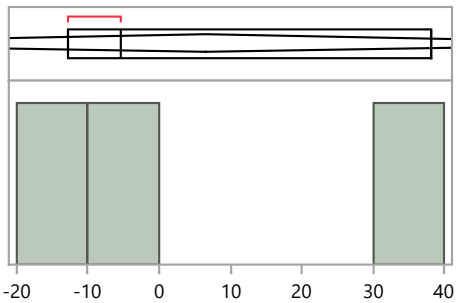
100.0%	maximum	55.2
99.5%		55.2
97.5%		55.2
90.0%		41.1
75.0%	quartile	-1.1
50.0%	median	-4.6
25.0%	quartile	-12.9
10.0%		-29.5
2.5%		-35.3
0.5%		-35.3
0.0%	minimum	-35.3

Summary Statistics

Mean	-2.8
Std Dev	21.2
Std Err Mean	6.1
Upper 95% Mean	10.7
Lower 95% Mean	-16.2
N	12.0

Distributions Analyte_Detection=Strontium-90 Liquid Scintillation Counter

Bias



Quantiles

100.0%	maximum	38.1
99.5%		38.1
97.5%		38.1
90.0%		38.1
75.0%	quartile	38.1
50.0%	median	-5.4
25.0%	quartile	-12.8
10.0%		-12.8
2.5%		-12.8
0.5%		-12.8
0.0%	minimum	-12.8

Summary Statistics

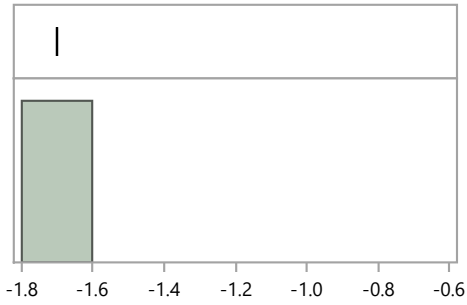
Mean	6.6
Std Dev	27.5
Std Err Mean	15.9
Upper 95% Mean	74.9
Lower 95% Mean	-61.7
N	3.0

MaW43 Distribution by Detection Method

MaW Distribution by Detection Method

Distributions Analyte_Detection=Strontium-90 Other

Bias



Quantiles

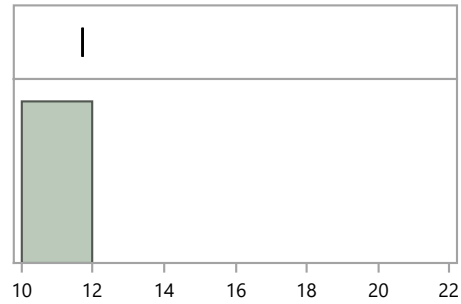
100.0%	maximum	-1.7
99.5%		-1.7
97.5%		-1.7
90.0%		-1.7
75.0%	quartile	-1.7
50.0%	median	-1.7
25.0%	quartile	-1.7
10.0%		-1.7
2.5%		-1.7
0.5%		-1.7
0.0%	minimum	-1.7

Summary Statistics

Mean	-1.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Technetium-99 Gas Flow Proportional Counter

Bias



Quantiles

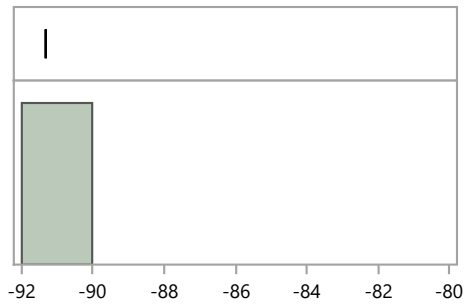
100.0%	maximum	11.7
99.5%		11.7
97.5%		11.7
90.0%		11.7
75.0%	quartile	11.7
50.0%	median	11.7
25.0%	quartile	11.7
10.0%		11.7
2.5%		11.7
0.5%		11.7
0.0%	minimum	11.7

Summary Statistics

Mean	11.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Technetium-99 Inductively Coupled Plasma Mass Spectrometry

Bias



Quantiles

100.0%	maximum	-91.3
99.5%		-91.3
97.5%		-91.3
90.0%		-91.3
75.0%	quartile	-91.3
50.0%	median	-91.3
25.0%	quartile	-91.3
10.0%		-91.3
2.5%		-91.3
0.5%		-91.3
0.0%	minimum	-91.3

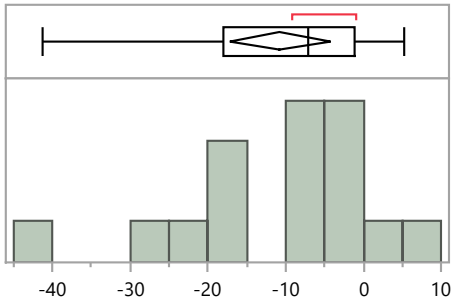
Summary Statistics

Mean	-91.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Technetium-99 Liquid Scintillation Counter

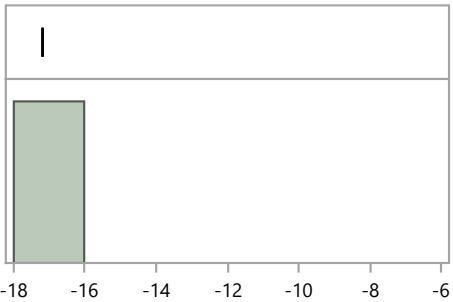
Bias



Quantiles		Summary Statistics		
100.0%	maximum	5.3	Mean	-10.7
99.5%		5.3	Std Dev	12.0
97.5%		5.3	Std Err Mean	3.0
90.0%		2.5	Upper 95% Mean	-4.3
75.0%	quartile	-1.2	Lower 95% Mean	-17.1
50.0%	median	-7.2	N	16.0
25.0%	quartile	-18.0		
10.0%		-30.7		
2.5%		-41.3		
0.5%		-41.3		
0.0%	minimum	-41.3		

Distributions Analyte_Detection=Technetium-99 Other

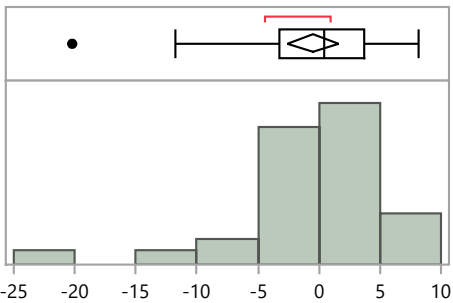
Bias



Quantiles		Summary Statistics		
100.0%	maximum	-17.2	Mean	-17.2
99.5%		-17.2	Std Dev	.
97.5%		-17.2	Std Err Mean	.
90.0%		-17.2	Upper 95% Mean	.
75.0%	quartile	-17.2	Lower 95% Mean	.
50.0%	median	-17.2	N	1.0
25.0%	quartile	-17.2		
10.0%		-17.2		
2.5%		-17.2		
0.5%		-17.2		
0.0%	minimum	-17.2		

Distributions Analyte_Detection=Uranium-234 Alpha Spectrometry

Bias

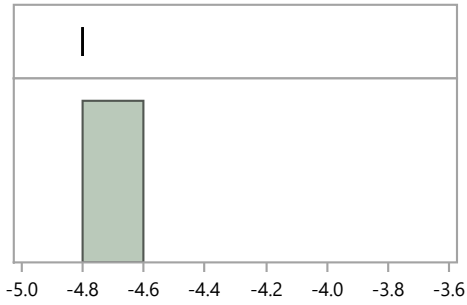


Quantiles		Summary Statistics		
100.0%	maximum	8.2	Mean	-0.5
99.5%		8.2	Std Dev	5.8
97.5%		8.2	Std Err Mean	1.0
90.0%		6.9	Upper 95% Mean	1.6
75.0%	quartile	3.7	Lower 95% Mean	-2.6
50.0%	median	0.4	N	32.0
25.0%	quartile	-3.2		
10.0%		-7.6		
2.5%		-20.2		
0.5%		-20.2		
0.0%	minimum	-20.2		

MaW Distribution by Detection Method

Distributions Analyte_Detection=Uranium-234 Gas Flow Proportional Counter

Bias



Quantiles

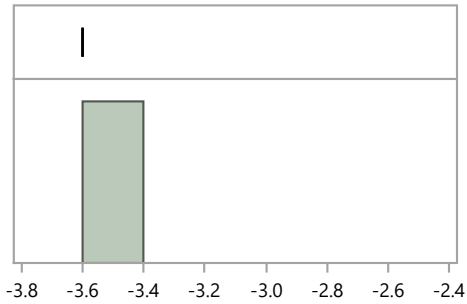
100.0%	maximum	-4.8
99.5%		-4.8
97.5%		-4.8
90.0%		-4.8
75.0%	quartile	-4.8
50.0%	median	-4.8
25.0%	quartile	-4.8
10.0%		-4.8
2.5%		-4.8
0.5%		-4.8
0.0%	minimum	-4.8

Summary Statistics

Mean	-4.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-234 Inductively Coupled Plasma Mass Spectrometry

Bias



Quantiles

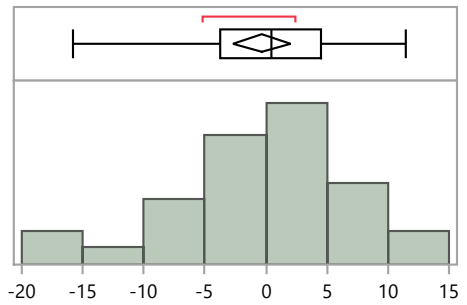
100.0%	maximum	-3.6
99.5%		-3.6
97.5%		-3.6
90.0%		-3.6
75.0%	quartile	-3.6
50.0%	median	-3.6
25.0%	quartile	-3.6
10.0%		-3.6
2.5%		-3.6
0.5%		-3.6
0.0%	minimum	-3.6

Summary Statistics

Mean	-3.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-238 Alpha Spectrometry

Bias



Quantiles

100.0%	maximum	11.5
99.5%		11.5
97.5%		11.5
90.0%		6.8
75.0%	quartile	4.5
50.0%	median	0.4
25.0%	quartile	-3.8
10.0%		-9.4
2.5%		-15.8
0.5%		-15.8
0.0%	minimum	-15.8

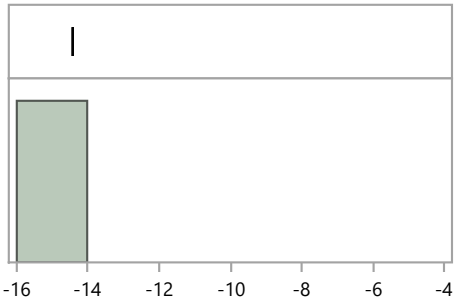
Summary Statistics

Mean	-0.4
Std Dev	6.5
Std Err Mean	1.2
Upper 95% Mean	2.0
Lower 95% Mean	-2.7
N	32.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Uranium-238 Gamma Spectrometry

Bias



Quantiles

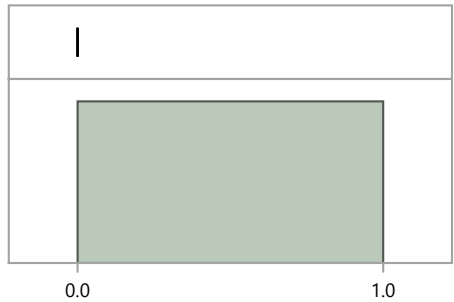
100.0%	maximum	-14.4
99.5%		-14.4
97.5%		-14.4
90.0%		-14.4
75.0%	quartile	-14.4
50.0%	median	-14.4
25.0%	quartile	-14.4
10.0%		-14.4
2.5%		-14.4
0.5%		-14.4
0.0%	minimum	-14.4

Summary Statistics

Mean	-14.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-238 Gas Flow Proportional Counter

Bias



Quantiles

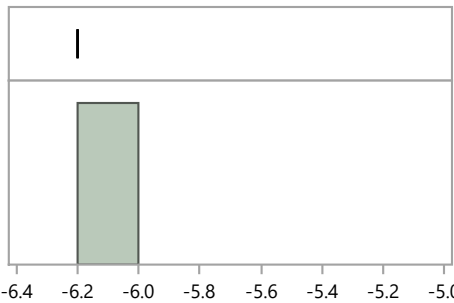
100.0%	maximum	0.0
99.5%		0.0
97.5%		0.0
90.0%		0.0
75.0%	quartile	0.0
50.0%	median	0.0
25.0%	quartile	0.0
10.0%		0.0
2.5%		0.0
0.5%		0.0
0.0%	minimum	0.0

Summary Statistics

Mean	0.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Detection=Uranium-238 Inductively Coupled Plasma Mass Spectrometry

Bias



Quantiles

100.0%	maximum	-6.2
99.5%		-6.2
97.5%		-6.2
90.0%		-6.2
75.0%	quartile	-6.2
50.0%	median	-6.2
25.0%	quartile	-6.2
10.0%		-6.2
2.5%		-6.2
0.5%		-6.2
0.0%	minimum	-6.2

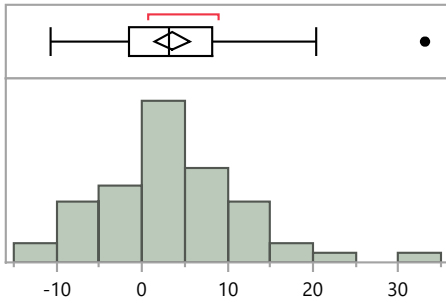
Summary Statistics

Mean	-6.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Detection Method

Distributions Analyte_Detection=Zinc-65 Gamma Spectrometry

Bias

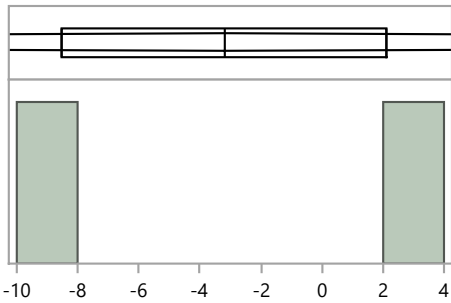


Quantiles		Summary Statistics		
100.0%	maximum	33.1	Mean	3.6
99.5%		33.1	Std Dev	8.0
97.5%		26.8	Std Err Mean	1.0
90.0%		11.8	Upper 95% Mean	5.7
75.0%	quartile	8.3	Lower 95% Mean	1.5
50.0%	median	3.2	N	59.0
25.0%	quartile	-1.5		
10.0%		-6.5		
2.5%		-10.7		
0.5%		-10.7		
0.0%	minimum	-10.7		

MaW Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Acid dissolution with hydrofluoric acid

Bias



Quantiles

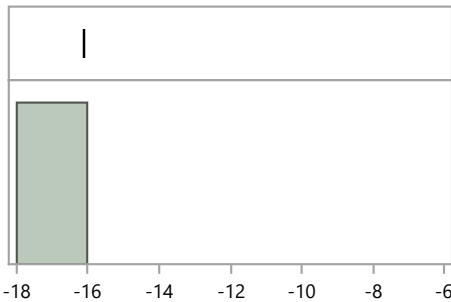
100.0%	maximum	2.1
99.5%		2.1
97.5%		2.1
90.0%		2.1
75.0%	quartile	2.1
50.0%	median	-3.2
25.0%	quartile	-8.5
10.0%		-8.5
2.5%		-8.5
0.5%		-8.5
0.0%	minimum	-8.5

Summary Statistics

Mean	-3.2
Std Dev	7.5
Std Err Mean	5.3
Upper 95% Mean	64.1
Lower 95% Mean	-70.5
N	2.0

Distributions Analyte_Method=Americium-241 Acid leaching without hydrofluoric acid

Bias



Quantiles

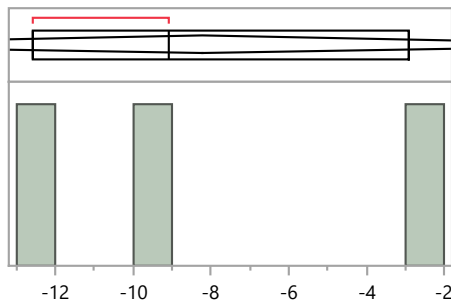
100.0%	maximum	-16.1
99.5%		-16.1
97.5%		-16.1
90.0%		-16.1
75.0%	quartile	-16.1
50.0%	median	-16.1
25.0%	quartile	-16.1
10.0%		-16.1
2.5%		-16.1
0.5%		-16.1
0.0%	minimum	-16.1

Summary Statistics

Mean	-16.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Americium-241 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	-2.9
99.5%		-2.9
97.5%		-2.9
90.0%		-2.9
75.0%	quartile	-2.9
50.0%	median	-9.1
25.0%	quartile	-12.6
10.0%		-12.6
2.5%		-12.6
0.5%		-12.6
0.0%	minimum	-12.6

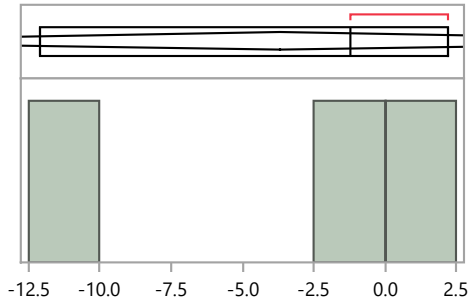
Summary Statistics

Mean	-8.2
Std Dev	4.9
Std Err Mean	2.8
Upper 95% Mean	4.0
Lower 95% Mean	-20.4
N	3.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Coprecipitation, straight

Bias



Quantiles

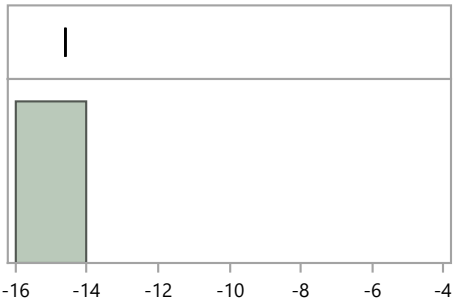
100.0%	maximum	2.2
99.5%		2.2
97.5%		2.2
90.0%		2.2
75.0%	quartile	2.2
50.0%	median	-1.2
25.0%	quartile	-12.1
10.0%		-12.1
2.5%		-12.1
0.5%		-12.1
0.0%	minimum	-12.1

Summary Statistics

Mean	-3.7
Std Dev	7.5
Std Err Mean	4.3
Upper 95% Mean	14.9
Lower 95% Mean	-22.3
N	3.0

Distributions Analyte_Method=Americium-241 Evaporation, acidified

Bias



Quantiles

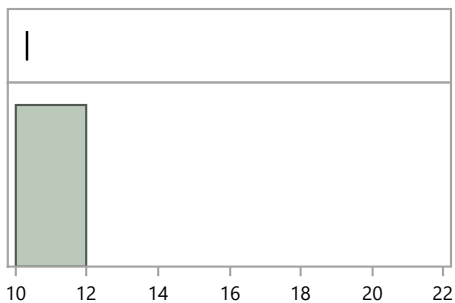
100.0%	maximum	-14.6
99.5%		-14.6
97.5%		-14.6
90.0%		-14.6
75.0%	quartile	-14.6
50.0%	median	-14.6
25.0%	quartile	-14.6
10.0%		-14.6
2.5%		-14.6
0.5%		-14.6
0.0%	minimum	-14.6

Summary Statistics

Mean	-14.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Americium-241 Evaporation, straight

Bias



Quantiles

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

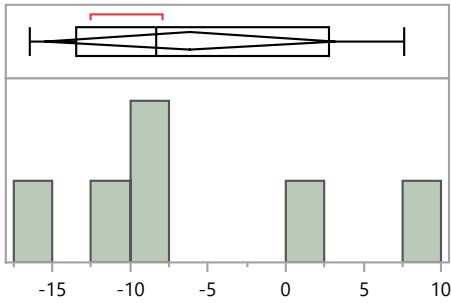
Summary Statistics

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

MaW Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

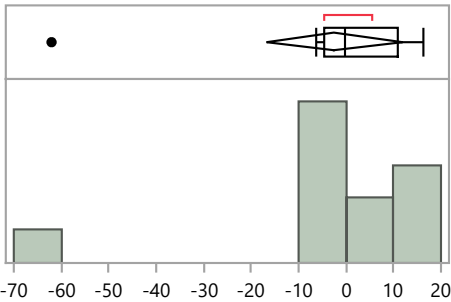
100.0%	maximum	7.6
99.5%		7.6
97.5%		7.6
90.0%		7.6
75.0%	quartile	2.8
50.0%	median	-8.4
25.0%	quartile	-13.5
10.0%		-16.5
2.5%		-16.5
0.5%		-16.5
0.0%	minimum	-16.5

Summary Statistics

Mean	-6.2
Std Dev	9.0
Std Err Mean	3.7
Upper 95% Mean	3.2
Lower 95% Mean	-15.5
N	6.0

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

Bias



Quantiles

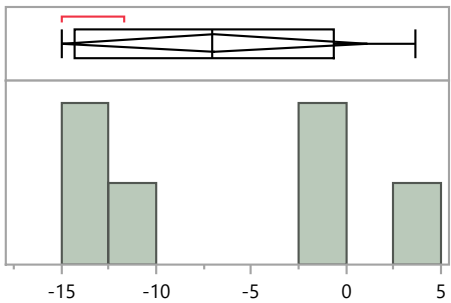
100.0%	maximum	16.1
99.5%		16.1
97.5%		16.1
90.0%		15.7
75.0%	quartile	11.0
50.0%	median	-0.1
25.0%	quartile	-4.6
10.0%		-50.9
2.5%		-62.0
0.5%		-62.0
0.0%	minimum	-62.0

Summary Statistics

Mean	-2.5
Std Dev	21.2
Std Err Mean	6.4
Upper 95% Mean	11.7
Lower 95% Mean	-16.7
N	11.0

Distributions Analyte_Method=Americium-241 Other

Bias



Quantiles

100.0%	maximum	3.6
99.5%		3.6
97.5%		3.6
90.0%		3.6
75.0%	quartile	-0.7
50.0%	median	-7.1
25.0%	quartile	-14.3
10.0%		-15.0
2.5%		-15.0
0.5%		-15.0
0.0%	minimum	-15.0

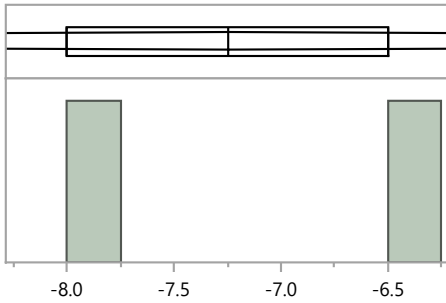
Summary Statistics

Mean	-7.0
Std Dev	7.7
Std Err Mean	3.1
Upper 95% Mean	1.1
Lower 95% Mean	-15.0
N	6.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Americium-241 Total dissolution by fusion

Bias



Quantiles

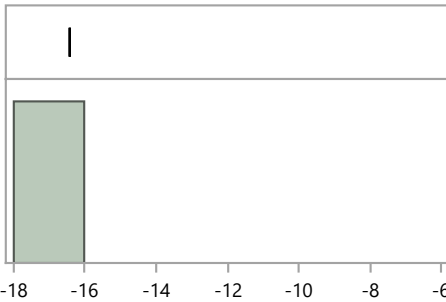
100.0%	maximum	-6.5
99.5%		-6.5
97.5%		-6.5
90.0%		-6.5
75.0%	quartile	-6.5
50.0%	median	-7.3
25.0%	quartile	-8.0
10.0%		-8.0
2.5%		-8.0
0.5%		-8.0
0.0%	minimum	-8.0

Summary Statistics

Mean	-7.3
Std Dev	1.1
Std Err Mean	0.8
Upper 95% Mean	2.3
Lower 95% Mean	-16.8
N	2.0

Distributions Analyte_Method=Cesium-134 Acid leaching without hydrofluoric acid

Bias



Quantiles

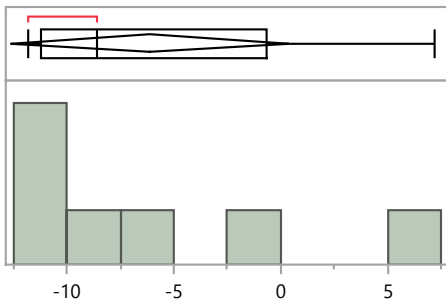
100.0%	maximum	-16.4
99.5%		-16.4
97.5%		-16.4
90.0%		-16.4
75.0%	quartile	-16.4
50.0%	median	-16.4
25.0%	quartile	-16.4
10.0%		-16.4
2.5%		-16.4
0.5%		-16.4
0.0%	minimum	-16.4

Summary Statistics

Mean	-16.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cesium-134 EPA 901.1, Gamma Emitting, 600/4-80-032

Bias



Quantiles

100.0%	maximum	7.2
99.5%		7.2
97.5%		7.2
90.0%		7.2
75.0%	quartile	-0.7
50.0%	median	-8.6
25.0%	quartile	-11.2
10.0%		-11.8
2.5%		-11.8
0.5%		-11.8
0.0%	minimum	-11.8

Summary Statistics

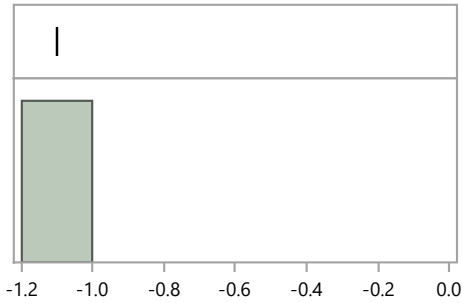
Mean	-6.1
Std Dev	7.0
Std Err Mean	2.7
Upper 95% Mean	0.4
Lower 95% Mean	-12.6
N	7.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Cesium-134 Evaporation, acidified

Bias



Quantiles

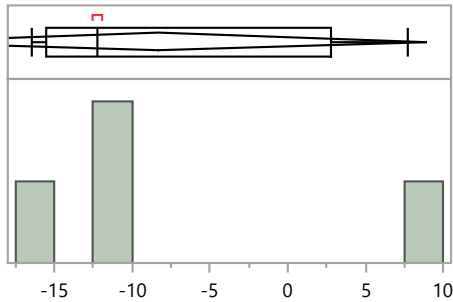
100.0%	maximum	-1.1
99.5%		-1.1
97.5%		-1.1
90.0%		-1.1
75.0%	quartile	-1.1
50.0%	median	-1.1
25.0%	quartile	-1.1
10.0%		-1.1
2.5%		-1.1
0.5%		-1.1
0.0%	minimum	-1.1

Summary Statistics

Mean	-1.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cesium-134 Evaporation, straight

Bias



Quantiles

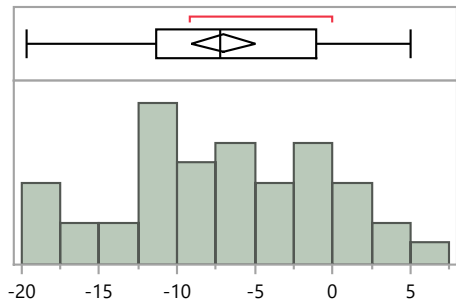
100.0%	maximum	7.7
99.5%		7.7
97.5%		7.7
90.0%		7.7
75.0%	quartile	2.8
50.0%	median	-12.2
25.0%	quartile	-15.5
10.0%		-16.5
2.5%		-16.5
0.5%		-16.5
0.0%	minimum	-16.5

Summary Statistics

Mean	-8.3
Std Dev	10.9
Std Err Mean	5.4
Upper 95% Mean	9.0
Lower 95% Mean	-25.6
N	4.0

Distributions Analyte_Method=Cesium-134 No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	5.0
99.5%		5.0
97.5%		5.0
90.0%		2.0
75.0%	quartile	-1.1
50.0%	median	-7.3
25.0%	quartile	-11.4
10.0%		-16.6
2.5%		-19.7
0.5%		-19.7
0.0%	minimum	-19.7

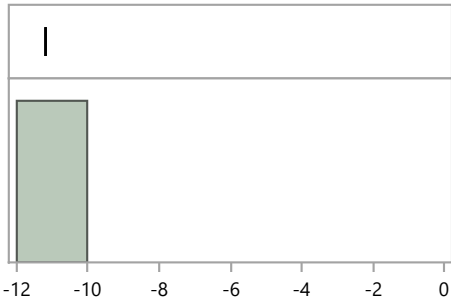
Summary Statistics

Mean	-7.0
Std Dev	6.7
Std Err Mean	1.0
Upper 95% Mean	-5.0
Lower 95% Mean	-9.1
N	44.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Cesium-134 Other

Bias



Quantiles

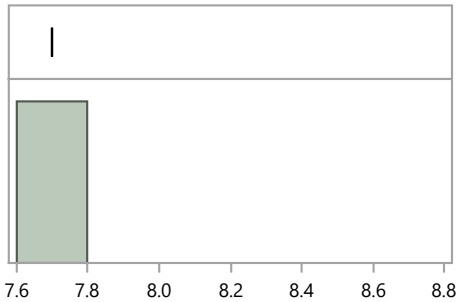
100.0%	maximum	-11.2
99.5%		-11.2
97.5%		-11.2
90.0%		-11.2
75.0%	quartile	-11.2
50.0%	median	-11.2
25.0%	quartile	-11.2
10.0%		-11.2
2.5%		-11.2
0.5%		-11.2
0.0%	minimum	-11.2

Summary Statistics

Mean	-11.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cesium-137 Acid leaching without hydrofluoric acid

Bias



Quantiles

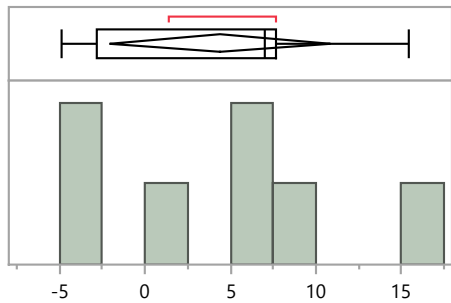
100.0%	maximum	7.7
99.5%		7.7
97.5%		7.7
90.0%		7.7
75.0%	quartile	7.7
50.0%	median	7.7
25.0%	quartile	7.7
10.0%		7.7
2.5%		7.7
0.5%		7.7
0.0%	minimum	7.7

Summary Statistics

Mean	7.7
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	15.4
99.5%		15.4
97.5%		15.4
90.0%		15.4
75.0%	quartile	7.7
50.0%	median	7.0
25.0%	quartile	-2.8
10.0%		-4.9
2.5%		-4.9
0.5%		-4.9
0.0%	minimum	-4.9

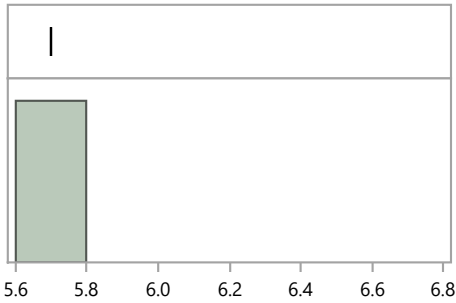
Summary Statistics

Mean	4.4
Std Dev	7.0
Std Err Mean	2.6
Upper 95% Mean	10.9
Lower 95% Mean	-2.1
N	7.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Cesium-137 Evaporation, acidified

Bias



Quantiles

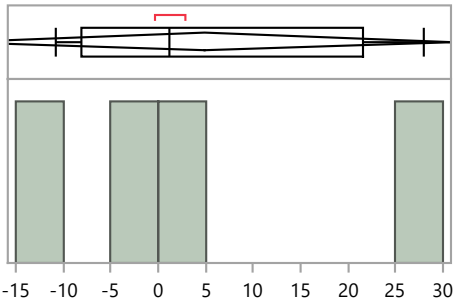
100.0%	maximum	5.7
99.5%		5.7
97.5%		5.7
90.0%		5.7
75.0%	quartile	5.7
50.0%	median	5.7
25.0%	quartile	5.7
10.0%		5.7
2.5%		5.7
0.5%		5.7
0.0%	minimum	5.7

Summary Statistics

Mean	5.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cesium-137 Evaporation, straight

Bias



Quantiles

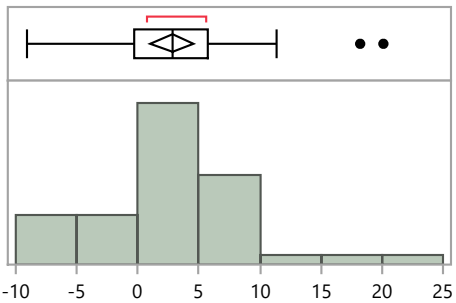
100.0%	maximum	27.9
99.5%		27.9
97.5%		27.9
90.0%		27.9
75.0%	quartile	21.6
50.0%	median	1.2
25.0%	quartile	-8.1
10.0%		-10.7
2.5%		-10.7
0.5%		-10.7
0.0%	minimum	-10.7

Summary Statistics

Mean	4.9
Std Dev	16.4
Std Err Mean	8.2
Upper 95% Mean	31.0
Lower 95% Mean	-21.2
N	4.0

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

Bias



Quantiles

100.0%	maximum	20.1
99.5%		20.1
97.5%		19.8
90.0%		8.9
75.0%	quartile	5.8
50.0%	median	2.9
25.0%	quartile	-0.3
10.0%		-5.9
2.5%		-9.0
0.5%		-9.1
0.0%	minimum	-9.1

Summary Statistics

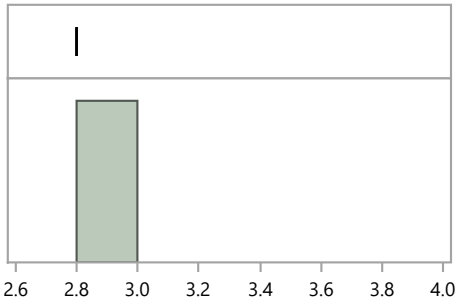
Mean	2.8
Std Dev	5.9
Std Err Mean	0.9
Upper 95% Mean	4.6
Lower 95% Mean	1.1
N	46.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Cesium-137 Other

Bias



Quantiles

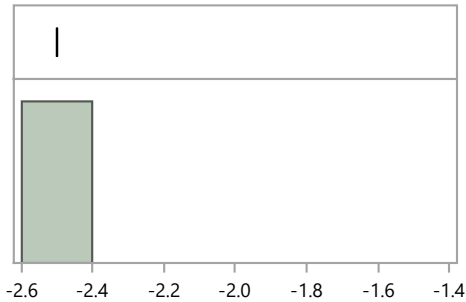
100.0%	maximum	2.8
99.5%		2.8
97.5%		2.8
90.0%		2.8
75.0%	quartile	2.8
50.0%	median	2.8
25.0%	quartile	2.8
10.0%		2.8
2.5%		2.8
0.5%		2.8
0.0%	minimum	2.8

Summary Statistics

Mean	2.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Cobalt-60 Acid leaching without hydrofluoric acid

Bias



Quantiles

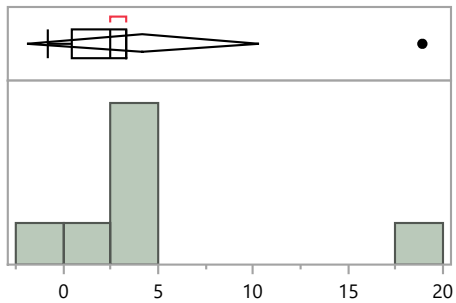
100.0%	maximum	-2.5
99.5%		-2.5
97.5%		-2.5
90.0%		-2.5
75.0%	quartile	-2.5
50.0%	median	-2.5
25.0%	quartile	-2.5
10.0%		-2.5
2.5%		-2.5
0.5%		-2.5
0.0%	minimum	-2.5

Summary Statistics

Mean	-2.5
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

100.0%	maximum	18.9
99.5%		18.9
97.5%		18.9
90.0%		18.9
75.0%	quartile	3.3
50.0%	median	2.5
25.0%	quartile	0.5
10.0%		-0.8
2.5%		-0.8
0.5%		-0.8
0.0%	minimum	-0.8

Summary Statistics

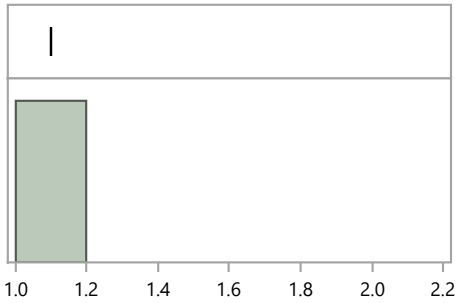
Mean	4.2
Std Dev	6.6
Std Err Mean	2.5
Upper 95% Mean	10.3
Lower 95% Mean	-1.9
N	7.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Cobalt-60 Evaporation, acidified

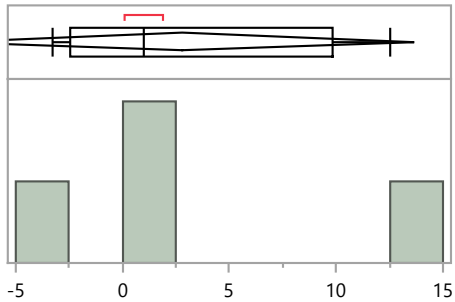
Bias



Quantiles			Summary Statistics	
100.0%	maximum	1.1	Mean	1.1
99.5%		1.1	Std Dev	.
97.5%		1.1	Std Err Mean	.
90.0%		1.1	Upper 95% Mean	.
75.0%	quartile	1.1	Lower 95% Mean	.
50.0%	median	1.1	N	1.0
25.0%	quartile	1.1		
10.0%		1.1		
2.5%		1.1		
0.5%		1.1		
0.0%	minimum	1.1		

Distributions Analyte_Method=Cobalt-60 Evaporation, straight

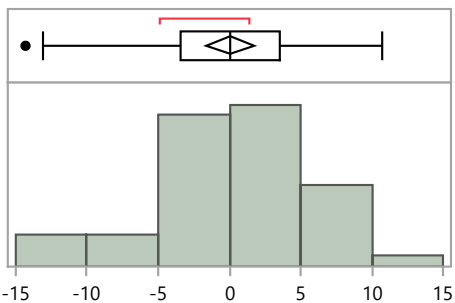
Bias



Quantiles			Summary Statistics	
100.0%	maximum	12.5	Mean	2.8
99.5%		12.5	Std Dev	6.8
97.5%		12.5	Std Err Mean	3.4
90.0%		12.5	Upper 95% Mean	13.6
75.0%	quartile	9.9	Lower 95% Mean	-8.0
50.0%	median	1.0	N	4.0
25.0%	quartile	-2.5		
10.0%		-3.3		
2.5%		-3.3		
0.5%		-3.3		
0.0%	minimum	-3.3		

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

Bias

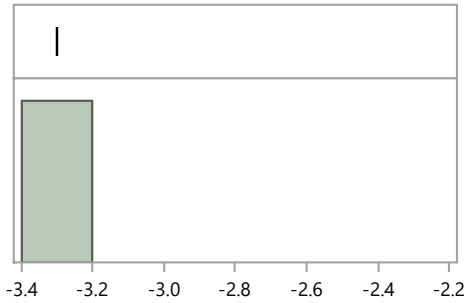


Quantiles			Summary Statistics	
100.0%	maximum	10.7	Mean	0.0
99.5%		10.7	Std Dev	5.6
97.5%		10.5	Std Err Mean	0.8
90.0%		7.4	Upper 95% Mean	1.7
75.0%	quartile	3.6	Lower 95% Mean	-1.6
50.0%	median	0.0	N	46.0
25.0%	quartile	-3.4		
10.0%		-6.5		
2.5%		-14.1		
0.5%		-14.3		
0.0%	minimum	-14.3		

MaW Distribution by Prep Method

Distributions Analyte_Method=Cobalt-60 Other

Bias



Quantiles

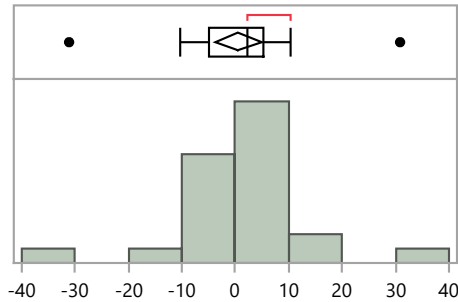
100.0%	maximum	-3.3
99.5%		-3.3
97.5%		-3.3
90.0%		-3.3
75.0%	quartile	-3.3
50.0%	median	-3.3
25.0%	quartile	-3.3
10.0%		-3.3
2.5%		-3.3
0.5%		-3.3
0.0%	minimum	-3.3

Summary Statistics

Mean	-3.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Hydrogen-3 Distillation

Bias



Quantiles

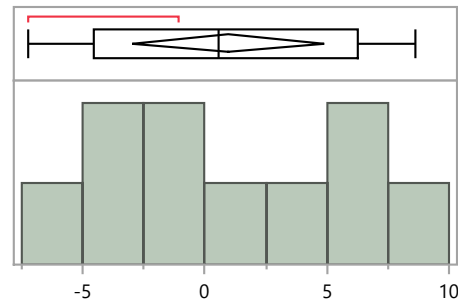
100.0%	maximum	30.8
99.5%		30.8
97.5%		30.8
90.0%		10.3
75.0%	quartile	5.3
50.0%	median	2.2
25.0%	quartile	-4.9
10.0%		-9.1
2.5%		-31.1
0.5%		-31.1
0.0%	minimum	-31.1

Summary Statistics

Mean	0.6
Std Dev	10.6
Std Err Mean	2.1
Upper 95% Mean	4.9
Lower 95% Mean	-3.8
N	25.0

Distributions Analyte_Method=Hydrogen-3 EPA 906, Tritium, 600/4/80-032

Bias



Quantiles

100.0%	maximum	8.6
99.5%		8.6
97.5%		8.6
90.0%		8.4
75.0%	quartile	6.2
50.0%	median	0.6
25.0%	quartile	-4.5
10.0%		-6.9
2.5%		-7.2
0.5%		-7.2
0.0%	minimum	-7.2

Summary Statistics

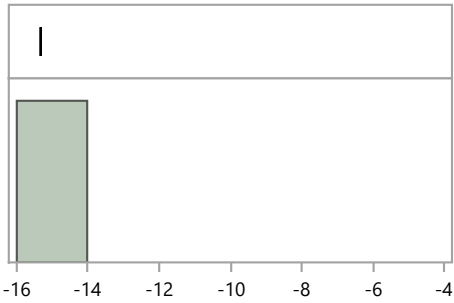
Mean	1.0
Std Dev	5.5
Std Err Mean	1.7
Upper 95% Mean	4.9
Lower 95% Mean	-3.0
N	10.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Hydrogen-3 Evaporation, acidified

Bias



Quantiles

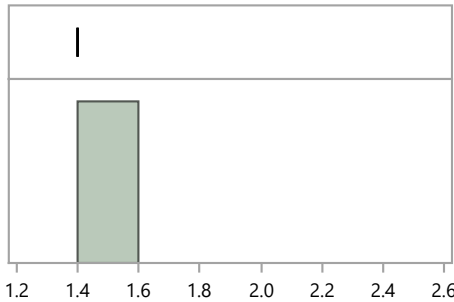
100.0%	maximum	-15.3
99.5%		-15.3
97.5%		-15.3
90.0%		-15.3
75.0%	quartile	-15.3
50.0%	median	-15.3
25.0%	quartile	-15.3
10.0%		-15.3
2.5%		-15.3
0.5%		-15.3
0.0%	minimum	-15.3

Summary Statistics

Mean	-15.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Hydrogen-3 Evaporation, straight

Bias



Quantiles

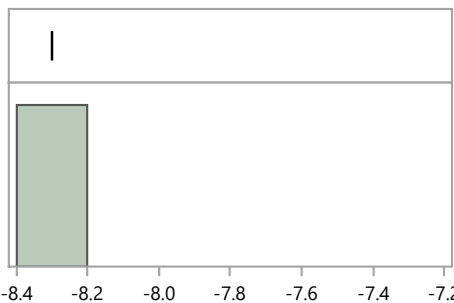
100.0%	maximum	1.4
99.5%		1.4
97.5%		1.4
90.0%		1.4
75.0%	quartile	1.4
50.0%	median	1.4
25.0%	quartile	1.4
10.0%		1.4
2.5%		1.4
0.5%		1.4
0.0%	minimum	1.4

Summary Statistics

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

Distributions Analyte_Method=Hydrogen-3 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

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

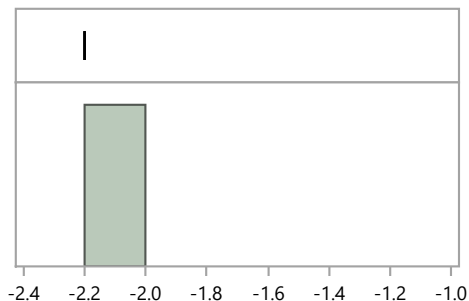
Summary Statistics

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

MaW Distribution by Prep Method

Distributions Analyte_Method=Hydrogen-3 Other

Bias



Quantiles

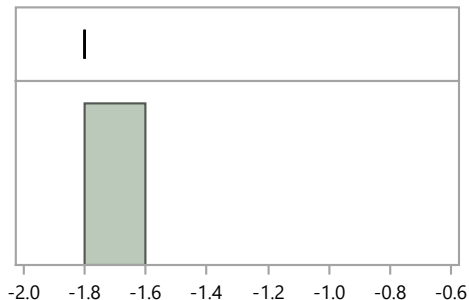
100.0%	maximum	-2.2
99.5%		-2.2
97.5%		-2.2
90.0%		-2.2
75.0%	quartile	-2.2
50.0%	median	-2.2
25.0%	quartile	-2.2
10.0%		-2.2
2.5%		-2.2
0.5%		-2.2
0.0%	minimum	-2.2

Summary Statistics

Mean	-2.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 Acid dissolution with hydrofluoric acid

Bias



Quantiles

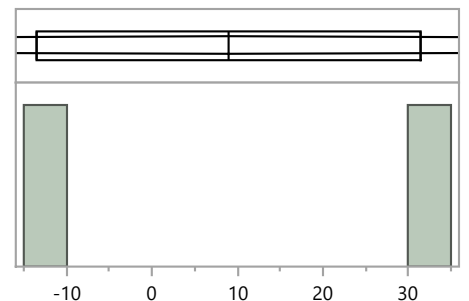
100.0%	maximum	-1.8
99.5%		-1.8
97.5%		-1.8
90.0%		-1.8
75.0%	quartile	-1.8
50.0%	median	-1.8
25.0%	quartile	-1.8
10.0%		-1.8
2.5%		-1.8
0.5%		-1.8
0.0%	minimum	-1.8

Summary Statistics

Mean	-1.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	31.4
99.5%		31.4
97.5%		31.4
90.0%		31.4
75.0%	quartile	31.4
50.0%	median	9.0
25.0%	quartile	-13.4
10.0%		-13.4
2.5%		-13.4
0.5%		-13.4
0.0%	minimum	-13.4

Summary Statistics

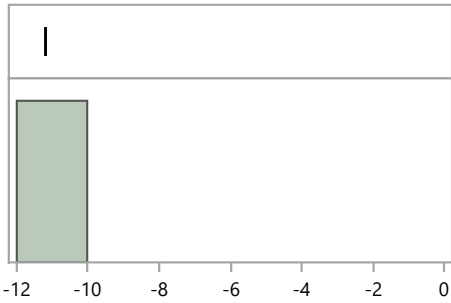
Mean	9.0
Std Dev	31.7
Std Err Mean	22.4
Upper 95% Mean	293.6
Lower 95% Mean	-275.6
N	2.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Iron-55 Coprecipitation, straight

Bias



Quantiles

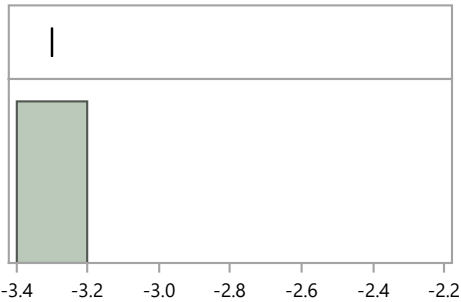
100.0%	maximum	-11.2
99.5%		-11.2
97.5%		-11.2
90.0%		-11.2
75.0%	quartile	-11.2
50.0%	median	-11.2
25.0%	quartile	-11.2
10.0%		-11.2
2.5%		-11.2
0.5%		-11.2
0.0%	minimum	-11.2

Summary Statistics

Mean	-11.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

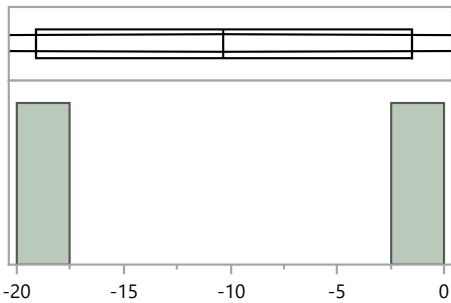
100.0%	maximum	-3.3
99.5%		-3.3
97.5%		-3.3
90.0%		-3.3
75.0%	quartile	-3.3
50.0%	median	-3.3
25.0%	quartile	-3.3
10.0%		-3.3
2.5%		-3.3
0.5%		-3.3
0.0%	minimum	-3.3

Summary Statistics

Mean	-3.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Iron-55 Other

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	-10.3
25.0%	quartile	-19.1
10.0%		-19.1
2.5%		-19.1
0.5%		-19.1
0.0%	minimum	-19.1

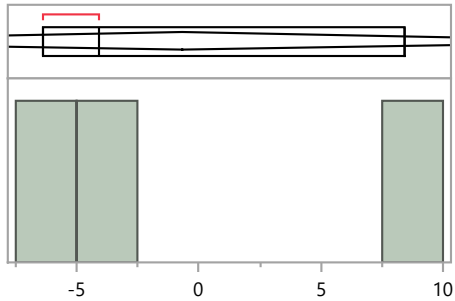
Summary Statistics

Mean	-10.3
Std Dev	12.4
Std Err Mean	8.8
Upper 95% Mean	101.5
Lower 95% Mean	-122.1
N	2.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

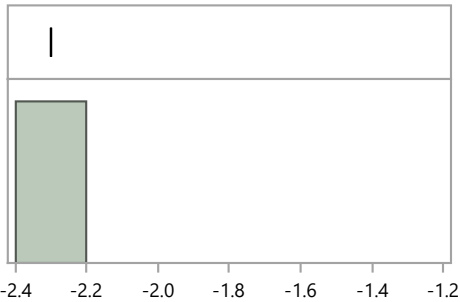
100.0%	maximum	8.4
99.5%		8.4
97.5%		8.4
90.0%		8.4
75.0%	quartile	8.4
50.0%	median	-4.1
25.0%	quartile	-6.4
10.0%		-6.4
2.5%		-6.4
0.5%		-6.4
0.0%	minimum	-6.4

Summary Statistics

Mean	-0.7
Std Dev	8.0
Std Err Mean	4.6
Upper 95% Mean	19.1
Lower 95% Mean	-20.5
N	3.0

Distributions Analyte_Method=Plutonium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

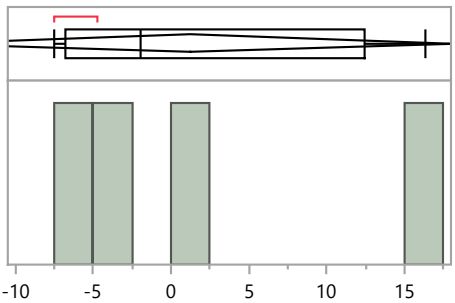
100.0%	maximum	-2.3
99.5%		-2.3
97.5%		-2.3
90.0%		-2.3
75.0%	quartile	-2.3
50.0%	median	-2.3
25.0%	quartile	-2.3
10.0%		-2.3
2.5%		-2.3
0.5%		-2.3
0.0%	minimum	-2.3

Summary Statistics

Mean	-2.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	16.3
99.5%		16.3
97.5%		16.3
90.0%		16.3
75.0%	quartile	12.4
50.0%	median	-2.0
25.0%	quartile	-6.8
10.0%		-7.5
2.5%		-7.5
0.5%		-7.5
0.0%	minimum	-7.5

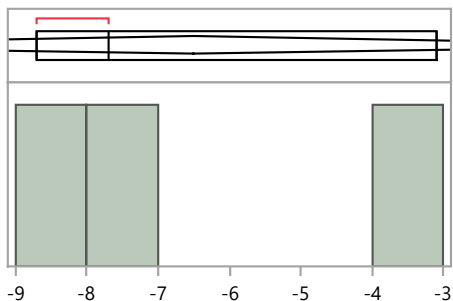
Summary Statistics

Mean	1.2
Std Dev	10.6
Std Err Mean	5.3
Upper 95% Mean	18.1
Lower 95% Mean	-15.7
N	4.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Coprecipitation, straight

Bias



Quantiles

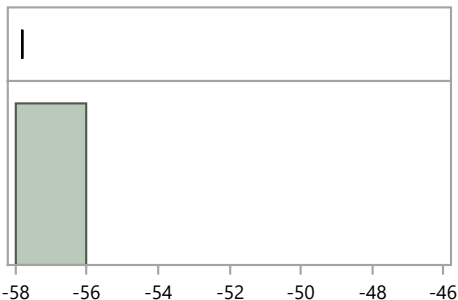
100.0%	maximum	-3.1
99.5%		-3.1
97.5%		-3.1
90.0%		-3.1
75.0%	quartile	-3.1
50.0%	median	-7.7
25.0%	quartile	-8.7
10.0%		-8.7
2.5%		-8.7
0.5%		-8.7
0.0%	minimum	-8.7

Summary Statistics

Mean	-6.5
Std Dev	3.0
Std Err Mean	1.7
Upper 95% Mean	0.9
Lower 95% Mean	-13.9
N	3.0

Distributions Analyte_Method=Plutonium-238 Evaporation, acidified

Bias



Quantiles

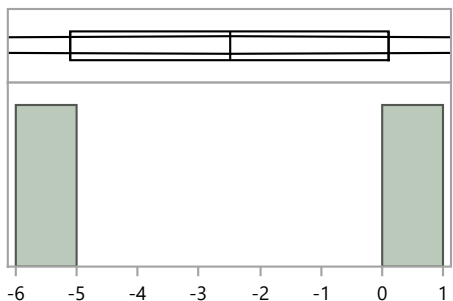
100.0%	maximum	-57.8
99.5%		-57.8
97.5%		-57.8
90.0%		-57.8
75.0%	quartile	-57.8
50.0%	median	-57.8
25.0%	quartile	-57.8
10.0%		-57.8
2.5%		-57.8
0.5%		-57.8
0.0%	minimum	-57.8

Summary Statistics

Mean	-57.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Plutonium-238 Evaporation, straight

Bias



Quantiles

100.0%	maximum	0.1
99.5%		0.1
97.5%		0.1
90.0%		0.1
75.0%	quartile	0.1
50.0%	median	-2.5
25.0%	quartile	-5.1
10.0%		-5.1
2.5%		-5.1
0.5%		-5.1
0.0%	minimum	-5.1

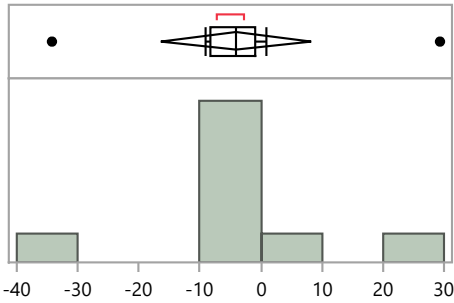
Summary Statistics

Mean	-2.5
Std Dev	3.7
Std Err Mean	2.6
Upper 95% Mean	30.5
Lower 95% Mean	-35.5
N	2.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Plutonium-238 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

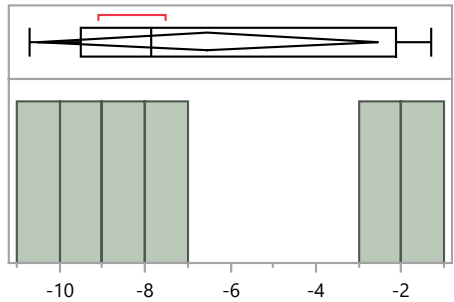
100.0%	maximum	29.3
99.5%		29.3
97.5%		29.3
90.0%		29.3
75.0%	quartile	-0.9
50.0%	median	-4.1
25.0%	quartile	-8.2
10.0%		-34.2
2.5%		-34.2
0.5%		-34.2
0.0%	minimum	-34.2

Summary Statistics

Mean	-4.1
Std Dev	16.1
Std Err Mean	5.4
Upper 95% Mean	8.3
Lower 95% Mean	-16.5
N	9.0

Distributions Analyte_Method=Plutonium-238 Other

Bias



Quantiles

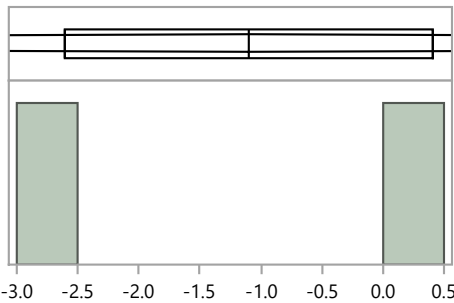
100.0%	maximum	-1.3
99.5%		-1.3
97.5%		-1.3
90.0%		-1.3
75.0%	quartile	-2.1
50.0%	median	-7.9
25.0%	quartile	-9.5
10.0%		-10.7
2.5%		-10.7
0.5%		-10.7
0.0%	minimum	-10.7

Summary Statistics

Mean	-6.5
Std Dev	3.8
Std Err Mean	1.6
Upper 95% Mean	-2.5
Lower 95% Mean	-10.5
N	6.0

Distributions Analyte_Method=Plutonium-238 Total dissolution by fusion

Bias



Quantiles

100.0%	maximum	0.4
99.5%		0.4
97.5%		0.4
90.0%		0.4
75.0%	quartile	0.4
50.0%	median	-1.1
25.0%	quartile	-2.6
10.0%		-2.6
2.5%		-2.6
0.5%		-2.6
0.0%	minimum	-2.6

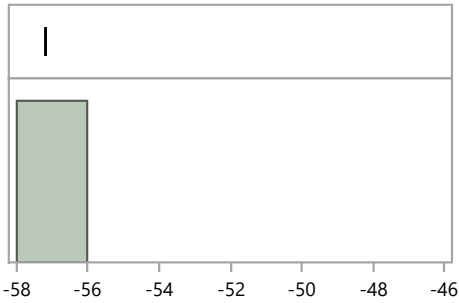
Summary Statistics

Mean	-1.1
Std Dev	2.1
Std Err Mean	1.5
Upper 95% Mean	18.0
Lower 95% Mean	-20.2
N	2.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Radium-226 Acid dissolution with hydrofluoric acid

Bias



Quantiles

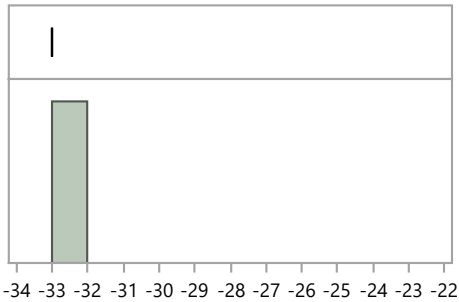
100.0%	maximum	-57.2
99.5%		-57.2
97.5%		-57.2
90.0%		-57.2
75.0%	quartile	-57.2
50.0%	median	-57.2
25.0%	quartile	-57.2
10.0%		-57.2
2.5%		-57.2
0.5%		-57.2
0.0%	minimum	-57.2

Summary Statistics

Mean	-57.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Radium-226 Acid leaching without hydrofluoric acid

Bias



Quantiles

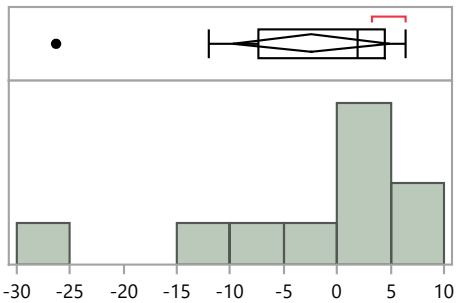
100.0%	maximum	-33.0
99.5%		-33.0
97.5%		-33.0
90.0%		-33.0
75.0%	quartile	-33.0
50.0%	median	-33.0
25.0%	quartile	-33.0
10.0%		-33.0
2.5%		-33.0
0.5%		-33.0
0.0%	minimum	-33.0

Summary Statistics

Mean	-33.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Radium-226 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	6.4
99.5%		6.4
97.5%		6.4
90.0%		6.3
75.0%	quartile	4.4
50.0%	median	1.9
25.0%	quartile	-7.4
10.0%		-24.9
2.5%		-26.3
0.5%		-26.3
0.0%	minimum	-26.3

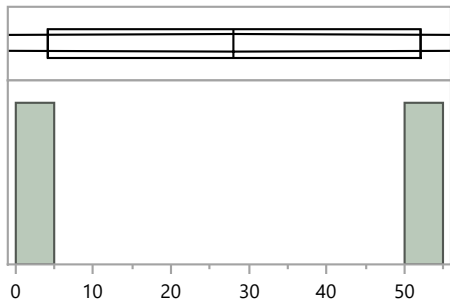
Summary Statistics

Mean	-2.4
Std Dev	10.2
Std Err Mean	3.2
Upper 95% Mean	4.9
Lower 95% Mean	-9.7
N	10.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Radium-226 Coprecipitation, straight

Bias



Quantiles

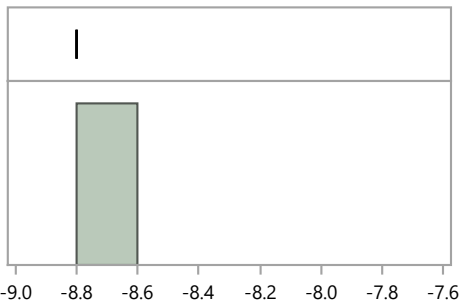
100.0%	maximum	52.0
99.5%		52.0
97.5%		52.0
90.0%		52.0
75.0%	quartile	52.0
50.0%	median	28.1
25.0%	quartile	4.1
10.0%		4.1
2.5%		4.1
0.5%		4.1
0.0%	minimum	4.1

Summary Statistics

Mean	28.1
Std Dev	33.9
Std Err Mean	24.0
Upper 95% Mean	332.4
Lower 95% Mean	-276.3
N	2.0

Distributions Analyte_Method=Radium-226 No preparation - analyzed as received

Bias



Quantiles

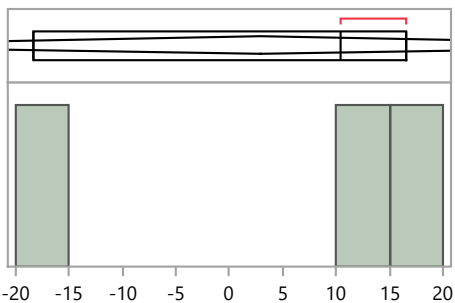
100.0%	maximum	-8.8
99.5%		-8.8
97.5%		-8.8
90.0%		-8.8
75.0%	quartile	-8.8
50.0%	median	-8.8
25.0%	quartile	-8.8
10.0%		-8.8
2.5%		-8.8
0.5%		-8.8
0.0%	minimum	-8.8

Summary Statistics

Mean	-8.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Radium-226 Other

Bias



Quantiles

100.0%	maximum	16.6
99.5%		16.6
97.5%		16.6
90.0%		16.6
75.0%	quartile	16.6
50.0%	median	10.4
25.0%	quartile	-18.4
10.0%		-18.4
2.5%		-18.4
0.5%		-18.4
0.0%	minimum	-18.4

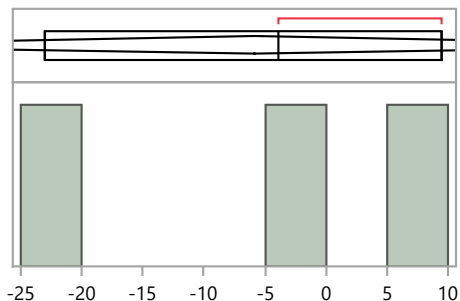
Summary Statistics

Mean	2.9
Std Dev	18.7
Std Err Mean	10.8
Upper 95% Mean	49.3
Lower 95% Mean	-43.5
N	3.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Radium-226 Total dissolution by fusion

Bias



Quantiles

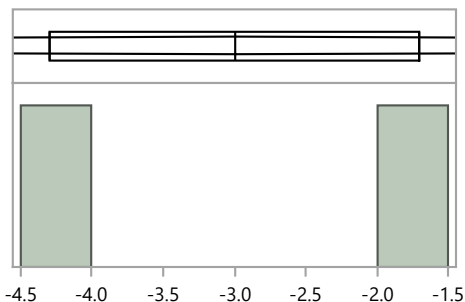
100.0%	maximum	9.5
99.5%		9.5
97.5%		9.5
90.0%		9.5
75.0%	quartile	9.5
50.0%	median	-3.9
25.0%	quartile	-23.0
10.0%		-23.0
2.5%		-23.0
0.5%		-23.0
0.0%	minimum	-23.0

Summary Statistics

Mean	-5.8
Std Dev	16.3
Std Err Mean	9.4
Upper 95% Mean	34.8
Lower 95% Mean	-46.4
N	3.0

Distributions Analyte_Method=Strontium-90 Acid dissolution with hydrofluoric acid

Bias



Quantiles

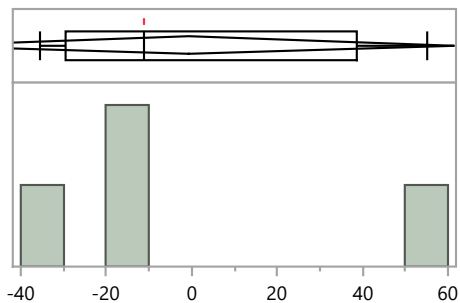
100.0%	maximum	-1.7
99.5%		-1.7
97.5%		-1.7
90.0%		-1.7
75.0%	quartile	-1.7
50.0%	median	-3.0
25.0%	quartile	-4.3
10.0%		-4.3
2.5%		-4.3
0.5%		-4.3
0.0%	minimum	-4.3

Summary Statistics

Mean	-3.0
Std Dev	1.8
Std Err Mean	1.3
Upper 95% Mean	13.5
Lower 95% Mean	-19.5
N	2.0

Distributions Analyte_Method=Strontium-90 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	55.2
99.5%		55.2
97.5%		55.2
90.0%		55.2
75.0%	quartile	38.7
50.0%	median	-11.2
25.0%	quartile	-29.3
10.0%		-35.3
2.5%		-35.3
0.5%		-35.3
0.0%	minimum	-35.3

Summary Statistics

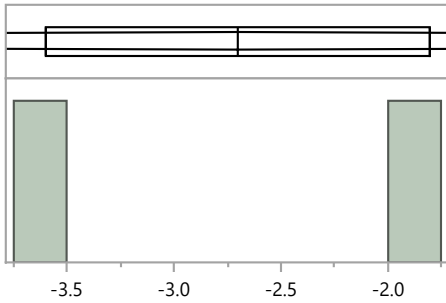
Mean	-0.6
Std Dev	38.9
Std Err Mean	19.5
Upper 95% Mean	61.3
Lower 95% Mean	-62.5
N	4.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Coprecipitation, straight

Bias



Quantiles

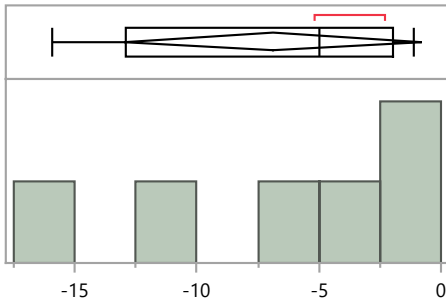
100.0%	maximum	-1.8
99.5%		-1.8
97.5%		-1.8
90.0%		-1.8
75.0%	quartile	-1.8
50.0%	median	-2.7
25.0%	quartile	-3.6
10.0%		-3.6
2.5%		-3.6
0.5%		-3.6
0.0%	minimum	-3.6

Summary Statistics

Mean	-2.7
Std Dev	1.3
Std Err Mean	0.9
Upper 95% Mean	8.7
Lower 95% Mean	-14.1
N	2.0

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

Bias



Quantiles

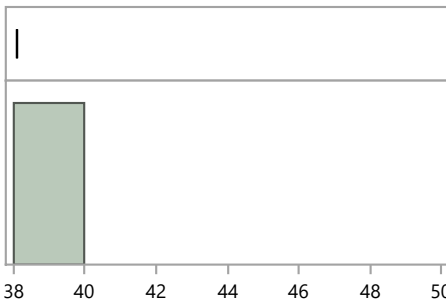
100.0%	maximum	-1.1
99.5%		-1.1
97.5%		-1.1
90.0%		-1.1
75.0%	quartile	-2.0
50.0%	median	-5.0
25.0%	quartile	-12.9
10.0%		-15.9
2.5%		-15.9
0.5%		-15.9
0.0%	minimum	-15.9

Summary Statistics

Mean	-6.9
Std Dev	5.8
Std Err Mean	2.4
Upper 95% Mean	-0.8
Lower 95% Mean	-13.0
N	6.0

Distributions Analyte_Method=Strontium-90 EPA 907, Actinide Elements, 600/4/80-032

Bias



Quantiles

100.0%	maximum	38.1
99.5%		38.1
97.5%		38.1
90.0%		38.1
75.0%	quartile	38.1
50.0%	median	38.1
25.0%	quartile	38.1
10.0%		38.1
2.5%		38.1
0.5%		38.1
0.0%	minimum	38.1

Summary Statistics

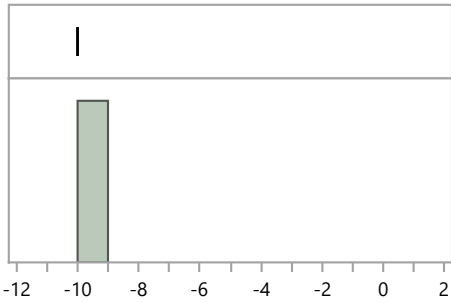
Mean	38.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Evaporation, acidified

Bias



Quantiles

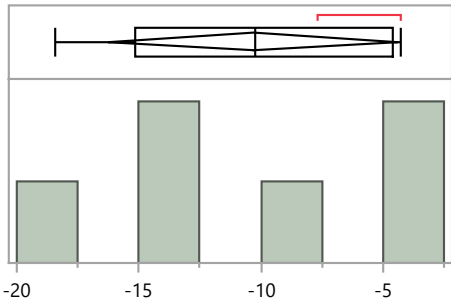
100.0%	maximum	-10.0
99.5%		-10.0
97.5%		-10.0
90.0%		-10.0
75.0%	quartile	-10.0
50.0%	median	-10.0
25.0%	quartile	-10.0
10.0%		-10.0
2.5%		-10.0
0.5%		-10.0
0.0%	minimum	-10.0

Summary Statistics

Mean	-10.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Strontium-90 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

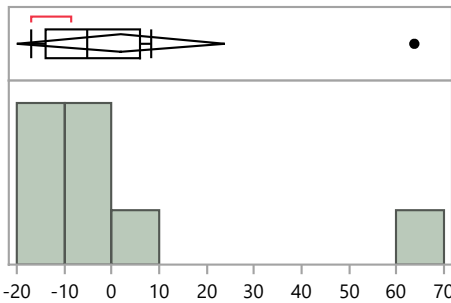
100.0%	maximum	-4.3
99.5%		-4.3
97.5%		-4.3
90.0%		-4.3
75.0%	quartile	-4.6
50.0%	median	-10.3
25.0%	quartile	-15.2
10.0%		-18.4
2.5%		-18.4
0.5%		-18.4
0.0%	minimum	-18.4

Summary Statistics

Mean	-10.3
Std Dev	5.7
Std Err Mean	2.3
Upper 95% Mean	-4.4
Lower 95% Mean	-16.3
N	6.0

Distributions Analyte_Method=Strontium-90 Other

Bias



Quantiles

100.0%	maximum	63.7
99.5%		63.7
97.5%		63.7
90.0%		63.7
75.0%	quartile	5.9
50.0%	median	-5.2
25.0%	quartile	-14.0
10.0%		-16.9
2.5%		-16.9
0.5%		-16.9
0.0%	minimum	-16.9

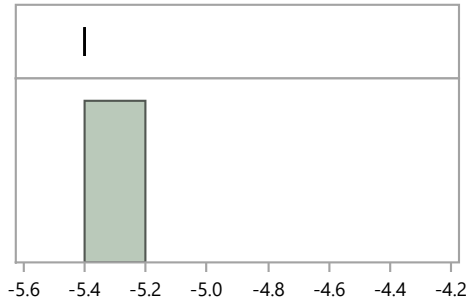
Summary Statistics

Mean	2.0
Std Dev	26.3
Std Err Mean	9.3
Upper 95% Mean	24.0
Lower 95% Mean	-20.0
N	8.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Strontium-90 Total dissolution by fusion

Bias



Quantiles

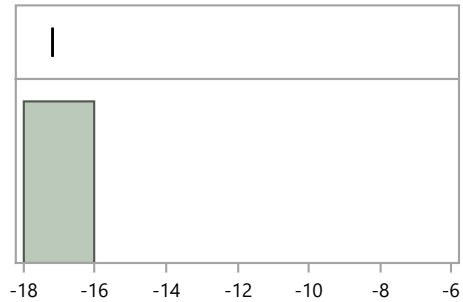
100.0%	maximum	-5.4
99.5%		-5.4
97.5%		-5.4
90.0%		-5.4
75.0%	quartile	-5.4
50.0%	median	-5.4
25.0%	quartile	-5.4
10.0%		-5.4
2.5%		-5.4
0.5%		-5.4
0.0%	minimum	-5.4

Summary Statistics

Mean	-5.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Technetium-99 Acid leaching without hydrofluoric acid

Bias



Quantiles

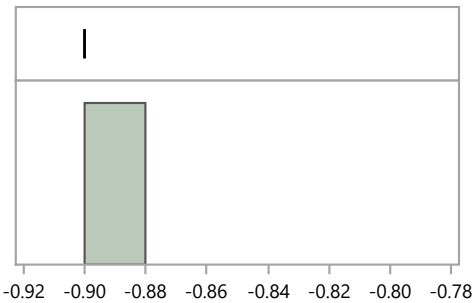
100.0%	maximum	-17.2
99.5%		-17.2
97.5%		-17.2
90.0%		-17.2
75.0%	quartile	-17.2
50.0%	median	-17.2
25.0%	quartile	-17.2
10.0%		-17.2
2.5%		-17.2
0.5%		-17.2
0.0%	minimum	-17.2

Summary Statistics

Mean	-17.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Technetium-99 Evaporation, straight

Bias



Quantiles

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

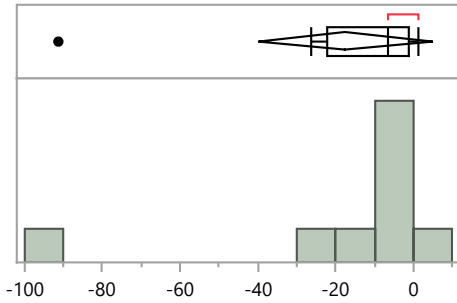
Summary Statistics

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

MaW Distribution by Prep Method

Distributions Analyte_Method=Technetium-99 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

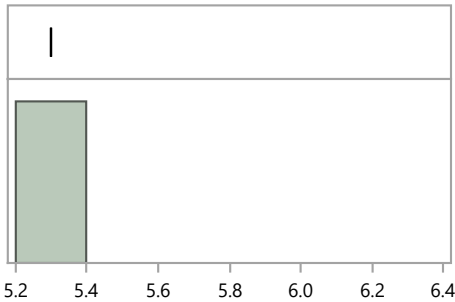
100.0%	maximum	1.3
99.5%		1.3
97.5%		1.3
90.0%		1.3
75.0%	quartile	-1.3
50.0%	median	-6.4
25.0%	quartile	-22.2
10.0%		-91.3
2.5%		-91.3
0.5%		-91.3
0.0%	minimum	-91.3

Summary Statistics

Mean	-17.4
Std Dev	29.1
Std Err Mean	9.7
Upper 95% Mean	4.9
Lower 95% Mean	-39.8
N	9.0

Distributions Analyte_Method=Technetium-99 No preparation - analyzed as received

Bias



Quantiles

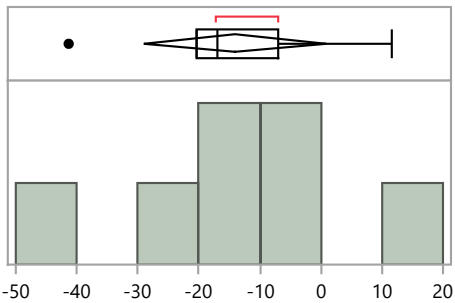
100.0%	maximum	5.3
99.5%		5.3
97.5%		5.3
90.0%		5.3
75.0%	quartile	5.3
50.0%	median	5.3
25.0%	quartile	5.3
10.0%		5.3
2.5%		5.3
0.5%		5.3
0.0%	minimum	5.3

Summary Statistics

Mean	5.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Technetium-99 Other

Bias



Quantiles

100.0%	maximum	11.7
99.5%		11.7
97.5%		11.7
90.0%		11.7
75.0%	quartile	-7.1
50.0%	median	-17.0
25.0%	quartile	-20.4
10.0%		-41.3
2.5%		-41.3
0.5%		-41.3
0.0%	minimum	-41.3

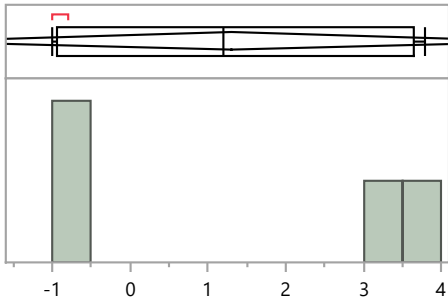
Summary Statistics

Mean	-14.1
Std Dev	16.1
Std Err Mean	6.1
Upper 95% Mean	0.8
Lower 95% Mean	-29.0
N	7.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Acid dissolution with hydrofluoric acid

Bias



Quantiles

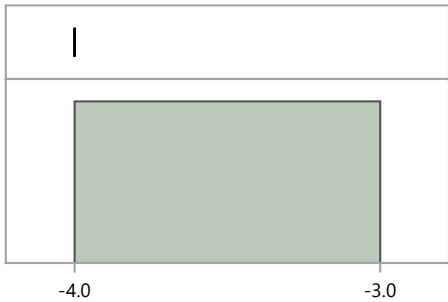
100.0%	maximum	3.8
99.5%		3.8
97.5%		3.8
90.0%		3.8
75.0%	quartile	3.7
50.0%	median	1.2
25.0%	quartile	-1.0
10.0%		-1.0
2.5%		-1.0
0.5%		-1.0
0.0%	minimum	-1.0

Summary Statistics

Mean	1.3
Std Dev	2.6
Std Err Mean	1.3
Upper 95% Mean	5.4
Lower 95% Mean	-2.8
N	4.0

Distributions Analyte_Method=Uranium-234 Acid leaching without hydrofluoric acid

Bias



Quantiles

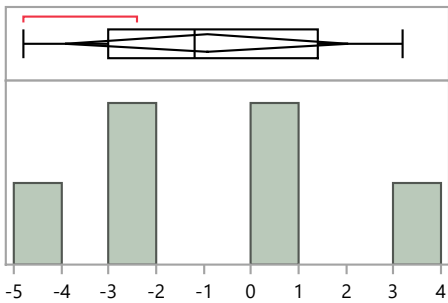
100.0%	maximum	-4.0
99.5%		-4.0
97.5%		-4.0
90.0%		-4.0
75.0%	quartile	-4.0
50.0%	median	-4.0
25.0%	quartile	-4.0
10.0%		-4.0
2.5%		-4.0
0.5%		-4.0
0.0%	minimum	-4.0

Summary Statistics

Mean	-4.0
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Coprecipitation, acidified

Bias



Quantiles

100.0%	maximum	3.2
99.5%		3.2
97.5%		3.2
90.0%		3.2
75.0%	quartile	1.4
50.0%	median	-1.2
25.0%	quartile	-3.0
10.0%		-4.8
2.5%		-4.8
0.5%		-4.8
0.0%	minimum	-4.8

Summary Statistics

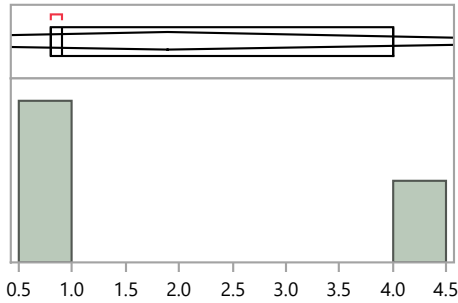
Mean	-0.9
Std Dev	2.8
Std Err Mean	1.2
Upper 95% Mean	2.0
Lower 95% Mean	-3.9
N	6.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Coprecipitation, straight

Bias



Quantiles

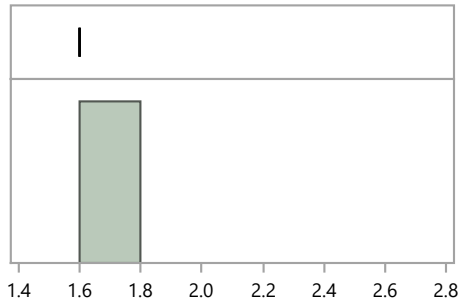
100.0%	maximum	4.0
99.5%		4.0
97.5%		4.0
90.0%		4.0
75.0%	quartile	4.0
50.0%	median	0.9
25.0%	quartile	0.8
10.0%		0.8
2.5%		0.8
0.5%		0.8
0.0%	minimum	0.8

Summary Statistics

Mean	1.9
Std Dev	1.8
Std Err Mean	1.1
Upper 95% Mean	6.4
Lower 95% Mean	-2.6
N	3.0

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

Bias



Quantiles

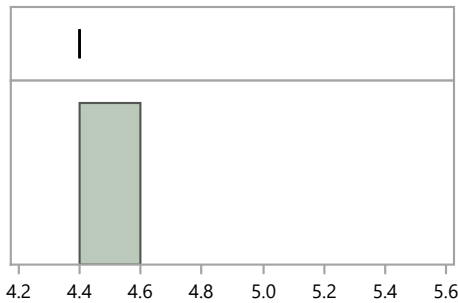
100.0%	maximum	1.6
99.5%		1.6
97.5%		1.6
90.0%		1.6
75.0%	quartile	1.6
50.0%	median	1.6
25.0%	quartile	1.6
10.0%		1.6
2.5%		1.6
0.5%		1.6
0.0%	minimum	1.6

Summary Statistics

Mean	1.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Evaporation, acidified

Bias



Quantiles

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

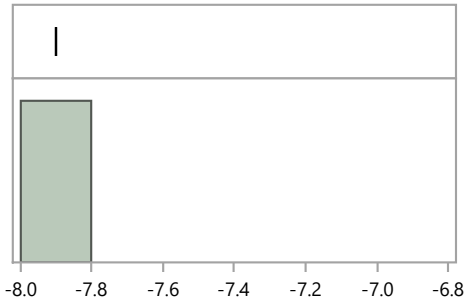
Summary Statistics

Mean	4.4
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Evaporation, straight

Bias



Quantiles

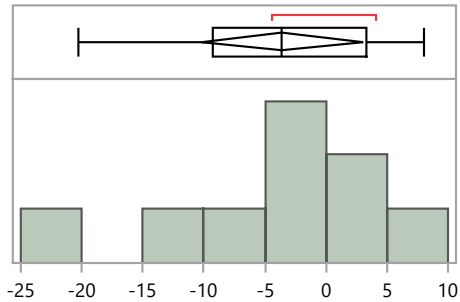
100.0%	maximum	-7.9
99.5%		-7.9
97.5%		-7.9
90.0%		-7.9
75.0%	quartile	-7.9
50.0%	median	-7.9
25.0%	quartile	-7.9
10.0%		-7.9
2.5%		-7.9
0.5%		-7.9
0.0%	minimum	-7.9

Summary Statistics

Mean	-7.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-234 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

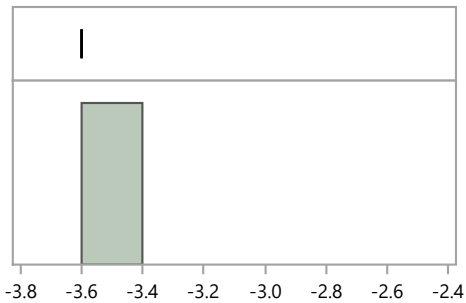
100.0%	maximum	8.0
99.5%		8.0
97.5%		8.0
90.0%		8.0
75.0%	quartile	3.3
50.0%	median	-3.7
25.0%	quartile	-9.3
10.0%		-20.2
2.5%		-20.2
0.5%		-20.2
0.0%	minimum	-20.2

Summary Statistics

Mean	-3.6
Std Dev	8.6
Std Err Mean	2.9
Upper 95% Mean	3.0
Lower 95% Mean	-10.2
N	9.0

Distributions Analyte_Method=Uranium-234 No preparation - analyzed as received

Bias



Quantiles

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

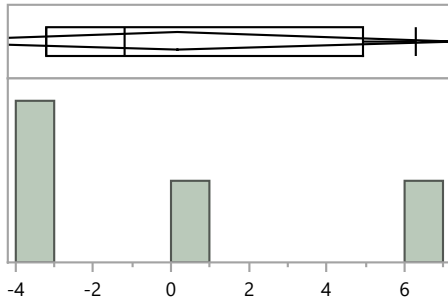
Summary Statistics

Mean	-3.6
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-234 Other

Bias



Quantiles

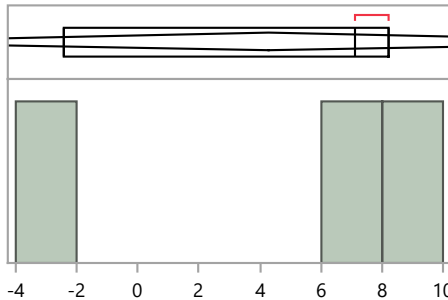
100.0%	maximum	6.3
99.5%		6.3
97.5%		6.3
90.0%		6.3
75.0%	quartile	4.9
50.0%	median	-1.2
25.0%	quartile	-3.2
10.0%		-3.2
2.5%		-3.2
0.5%		-3.2
0.0%	minimum	-3.2

Summary Statistics

Mean	0.2
Std Dev	4.5
Std Err Mean	2.2
Upper 95% Mean	7.3
Lower 95% Mean	-7.0
N	4.0

Distributions Analyte_Method=Uranium-234 Total dissolution by fusion

Bias



Quantiles

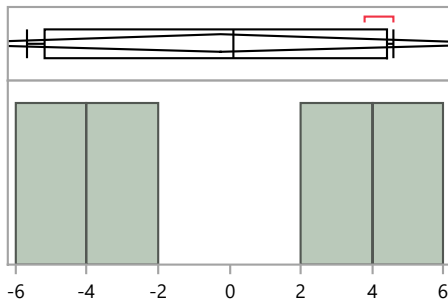
100.0%	maximum	8.2
99.5%		8.2
97.5%		8.2
90.0%		8.2
75.0%	quartile	8.2
50.0%	median	7.1
25.0%	quartile	-2.4
10.0%		-2.4
2.5%		-2.4
0.5%		-2.4
0.0%	minimum	-2.4

Summary Statistics

Mean	4.3
Std Dev	5.8
Std Err Mean	3.4
Upper 95% Mean	18.8
Lower 95% Mean	-10.2
N	3.0

Distributions Analyte_Method=Uranium-238 Acid dissolution with hydrofluoric acid

Bias



Quantiles

100.0%	maximum	4.6
99.5%		4.6
97.5%		4.6
90.0%		4.6
75.0%	quartile	4.4
50.0%	median	0.1
25.0%	quartile	-5.2
10.0%		-5.7
2.5%		-5.7
0.5%		-5.7
0.0%	minimum	-5.7

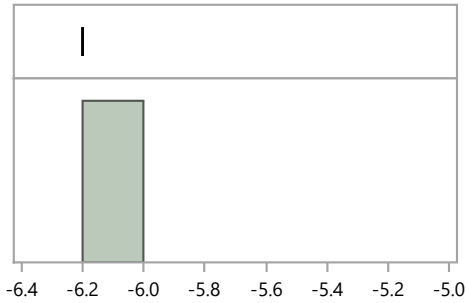
Summary Statistics

Mean	-0.2
Std Dev	5.2
Std Err Mean	2.6
Upper 95% Mean	8.0
Lower 95% Mean	-8.5
N	4.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Acid leaching without hydrofluoric acid

Bias



Quantiles

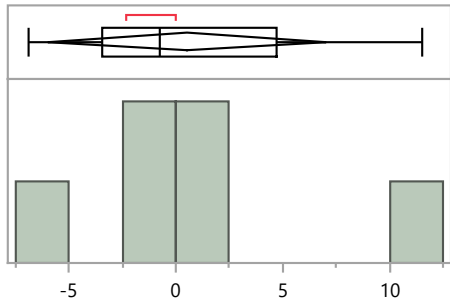
100.0%	maximum	-6.2
99.5%		-6.2
97.5%		-6.2
90.0%		-6.2
75.0%	quartile	-6.2
50.0%	median	-6.2
25.0%	quartile	-6.2
10.0%		-6.2
2.5%		-6.2
0.5%		-6.2
0.0%	minimum	-6.2

Summary Statistics

Mean	-6.2
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Coprecipitation, acidified

Bias



Quantiles

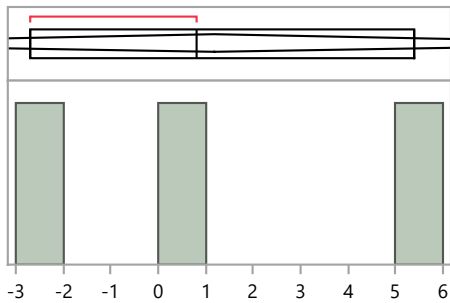
100.0%	maximum	11.5
99.5%		11.5
97.5%		11.5
90.0%		11.5
75.0%	quartile	4.7
50.0%	median	-0.8
25.0%	quartile	-3.5
10.0%		-6.9
2.5%		-6.9
0.5%		-6.9
0.0%	minimum	-6.9

Summary Statistics

Mean	0.5
Std Dev	6.2
Std Err Mean	2.5
Upper 95% Mean	7.0
Lower 95% Mean	-6.0
N	6.0

Distributions Analyte_Method=Uranium-238 Coprecipitation, straight

Bias



Quantiles

100.0%	maximum	5.4
99.5%		5.4
97.5%		5.4
90.0%		5.4
75.0%	quartile	5.4
50.0%	median	0.8
25.0%	quartile	-2.7
10.0%		-2.7
2.5%		-2.7
0.5%		-2.7
0.0%	minimum	-2.7

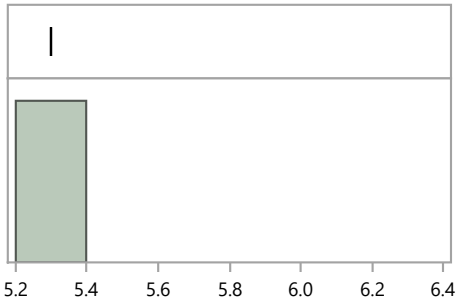
Summary Statistics

Mean	1.2
Std Dev	4.1
Std Err Mean	2.3
Upper 95% Mean	11.3
Lower 95% Mean	-8.9
N	3.0

MaW Distribution by Prep Method

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

Bias



Quantiles

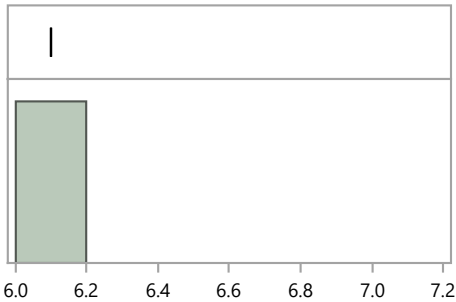
100.0%	maximum	5.3
99.5%		5.3
97.5%		5.3
90.0%		5.3
75.0%	quartile	5.3
50.0%	median	5.3
25.0%	quartile	5.3
10.0%		5.3
2.5%		5.3
0.5%		5.3
0.0%	minimum	5.3

Summary Statistics

Mean	5.3
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Uranium-238 Evaporation, acidified

Bias



Quantiles

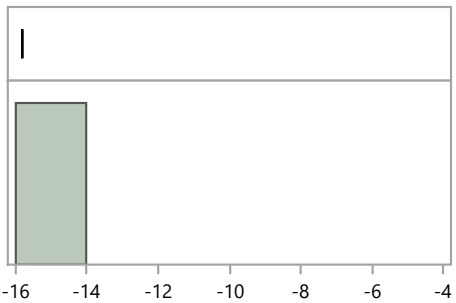
100.0%	maximum	6.1
99.5%		6.1
97.5%		6.1
90.0%		6.1
75.0%	quartile	6.1
50.0%	median	6.1
25.0%	quartile	6.1
10.0%		6.1
2.5%		6.1
0.5%		6.1
0.0%	minimum	6.1

Summary Statistics

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

Distributions Analyte_Method=Uranium-238 Evaporation, straight

Bias



Quantiles

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

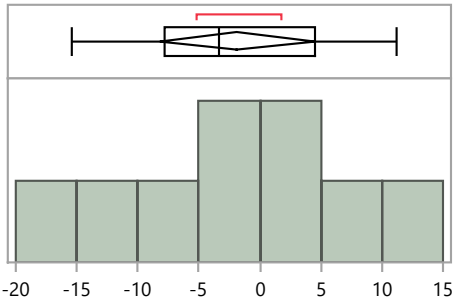
Summary Statistics

Mean	-15.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Ion Exchange Chromatography / Ion Chromatography

Bias



Quantiles

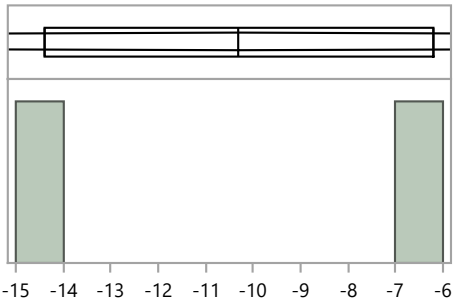
100.0%	maximum	11.2
99.5%		11.2
97.5%		11.2
90.0%		11.2
75.0%	quartile	4.5
50.0%	median	-3.4
25.0%	quartile	-7.9
10.0%		-15.4
2.5%		-15.4
0.5%		-15.4
0.0%	minimum	-15.4

Summary Statistics

Mean	-1.9
Std Dev	8.3
Std Err Mean	2.8
Upper 95% Mean	4.5
Lower 95% Mean	-8.2
N	9.0

Distributions Analyte_Method=Uranium-238 No preparation - analyzed as received

Bias



Quantiles

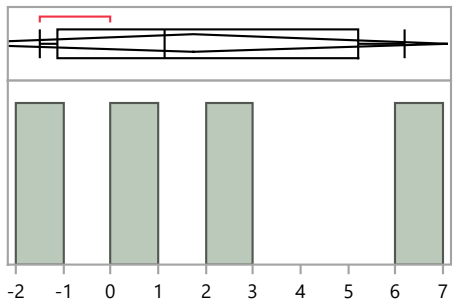
100.0%	maximum	-6.2
99.5%		-6.2
97.5%		-6.2
90.0%		-6.2
75.0%	quartile	-6.2
50.0%	median	-10.3
25.0%	quartile	-14.4
10.0%		-14.4
2.5%		-14.4
0.5%		-14.4
0.0%	minimum	-14.4

Summary Statistics

Mean	-10.3
Std Dev	5.8
Std Err Mean	4.1
Upper 95% Mean	41.8
Lower 95% Mean	-62.4
N	2.0

Distributions Analyte_Method=Uranium-238 Other

Bias



Quantiles

100.0%	maximum	6.2
99.5%		6.2
97.5%		6.2
90.0%		6.2
75.0%	quartile	5.2
50.0%	median	1.2
25.0%	quartile	-1.1
10.0%		-1.5
2.5%		-1.5
0.5%		-1.5
0.0%	minimum	-1.5

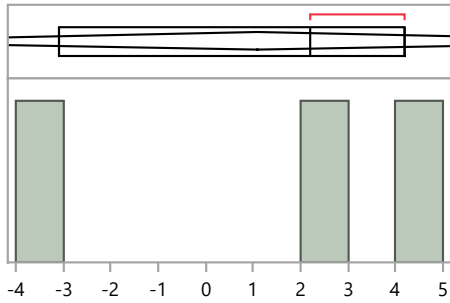
Summary Statistics

Mean	1.8
Std Dev	3.4
Std Err Mean	1.7
Upper 95% Mean	7.1
Lower 95% Mean	-3.6
N	4.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Uranium-238 Total dissolution by fusion

Bias



Quantiles

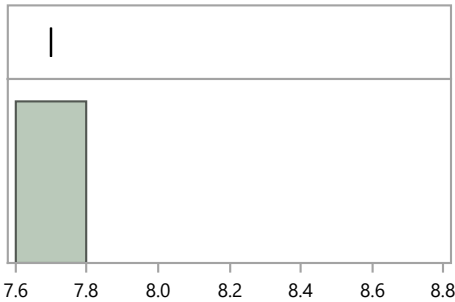
100.0%	maximum	4.2
99.5%		4.2
97.5%		4.2
90.0%		4.2
75.0%	quartile	4.2
50.0%	median	2.2
25.0%	quartile	-3.1
10.0%		-3.1
2.5%		-3.1
0.5%		-3.1
0.0%	minimum	-3.1

Summary Statistics

Mean	1.1
Std Dev	3.8
Std Err Mean	2.2
Upper 95% Mean	10.5
Lower 95% Mean	-8.3
N	3.0

Distributions Analyte_Method=Zinc-65 Acid leaching without hydrofluoric acid

Bias



Quantiles

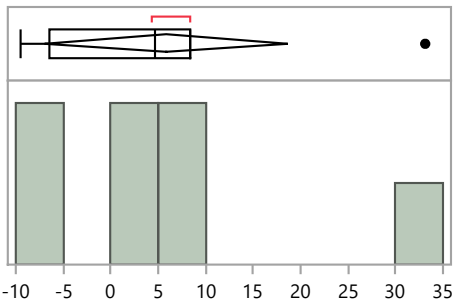
100.0%	maximum	7.7
99.5%		7.7
97.5%		7.7
90.0%		7.7
75.0%	quartile	7.7
50.0%	median	7.7
25.0%	quartile	7.7
10.0%		7.7
2.5%		7.7
0.5%		7.7
0.0%	minimum	7.7

Summary Statistics

Mean	7.7
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

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

Bias



Quantiles

100.0%	maximum	33.1
99.5%		33.1
97.5%		33.1
90.0%		33.1
75.0%	quartile	8.3
50.0%	median	4.7
25.0%	quartile	-6.5
10.0%		-9.5
2.5%		-9.5
0.5%		-9.5
0.0%	minimum	-9.5

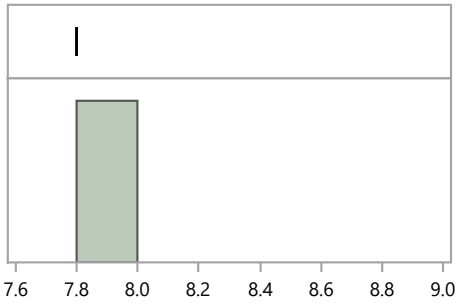
Summary Statistics

Mean	5.9
Std Dev	13.8
Std Err Mean	5.2
Upper 95% Mean	18.6
Lower 95% Mean	-6.9
N	7.0

MaW Distribution by Prep Method

Distributions Analyte_Method=Zinc-65 Evaporation, acidified

Bias



Quantiles

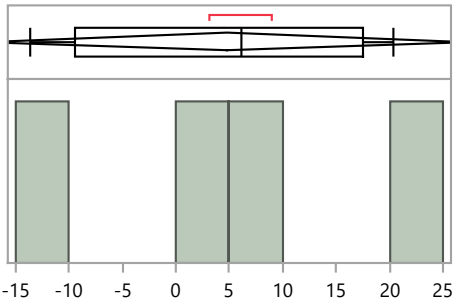
100.0%	maximum	7.8
99.5%		7.8
97.5%		7.8
90.0%		7.8
75.0%	quartile	7.8
50.0%	median	7.8
25.0%	quartile	7.8
10.0%		7.8
2.5%		7.8
0.5%		7.8
0.0%	minimum	7.8

Summary Statistics

Mean	7.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1.0

Distributions Analyte_Method=Zinc-65 Evaporation, straight

Bias



Quantiles

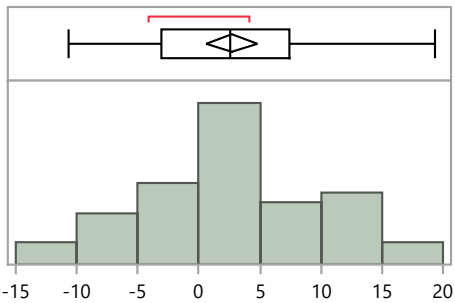
100.0%	maximum	20.4
99.5%		20.4
97.5%		20.4
90.0%		20.4
75.0%	quartile	17.6
50.0%	median	6.1
25.0%	quartile	-9.4
10.0%		-13.6
2.5%		-13.6
0.5%		-13.6
0.0%	minimum	-13.6

Summary Statistics

Mean	4.7
Std Dev	14.2
Std Err Mean	7.1
Upper 95% Mean	27.3
Lower 95% Mean	-17.8
N	4.0

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

Bias



Quantiles

100.0%	maximum	19.3
99.5%		19.3
97.5%		18.7
90.0%		11.5
75.0%	quartile	7.4
50.0%	median	2.6
25.0%	quartile	-3.0
10.0%		-6.7
2.5%		-10.7
0.5%		-10.7
0.0%	minimum	-10.7

Summary Statistics

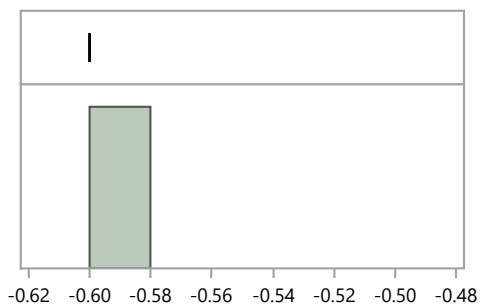
Mean	2.7
Std Dev	6.9
Std Err Mean	1.0
Upper 95% Mean	4.7
Lower 95% Mean	0.6
N	46.0

MaW43 Distribution by Preparation Method

MaW Distribution by Prep Method

Distributions Analyte_Method=Zinc-65 Other

Bias



Quantiles			Summary Statistics	
100.0%	maximum	-0.6	Mean	-0.6
99.5%		-0.6	Std Dev	.
97.5%		-0.6	Std Err Mean	.
90.0%		-0.6	Upper 95% Mean	.
75.0%	quartile	-0.6	Lower 95% Mean	.
50.0%	median	-0.6	N	1.0
25.0%	quartile	-0.6		
10.0%		-0.6		
2.5%		-0.6		
0.5%		-0.6		
0.0%	minimum	-0.6		