MAPEP-09-RdF20 Receiving Laboratories

	Lab Code	Lab Name
1	AALI01	Xenco Laboratories-Atlanta
2	AFOH01	USAFSAM/OEHHL
3	ANTE01	ALS Laboratory Group, Environmental Division
4	ARSL01	American Radiation Services Inc.
5	ASHL01	CH2M Hill Applied Science Laboratory
6	AY1201	B&W Y-12, Analytical Chemistry Organization Laboratory
7	BNEL01	Northeast Laboratory Services, Inc.
8	CDHS01	California Department of Public Health
9	CDPH01	Colorado Dept. of Public Health and Environment
10	CESL01	Lawrence Livermore National Laboratory - EMRL
11	CHMH01	222-S Laboratory
12	CMRC01	Carlsbad Environmental Monitoring and Research Center
13	CORE02	TestAmerica Denver
14	DAFI01	Davis & Floyd, Inc.
15	ENES01	Energy Northwest Environmental Services
16	ERCL01	Washington State Public Health Laboratories
17	ERHD99	Radiation Protection Bureau ERHD NMS
18	ERLG01	Environmental Radiation Laboratory
19	ERPD99	Ministry Of Health,Radiation Protection Department Lab
20	ETTP01	ETTP
21	EULC01	EnergySolutions, LLC
22	FDHE01	Florida Dept of Health Environmental Laboratory
23	FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab
24	FMEC99	Foods and Water Laboratories Center
25	FNAL01	Fermi National Accelerator Laboratory (FermiLab)
26	FSCL01	Lawrence Livermore Laboratory
27	GENE01	GEL Laboratories, LLC
28	GPCL01	Georgia Power Company Environmental Laboratory
29	GPLP01	GPL Laboratories, LLLP
30	HECR01	SC Dept. Health and Environmental Control Radiological Laboratory
31	HERR01	Washington Closure Hanford
32	IAEA99	International Atomic Energy Agency
33	ISUP01	ISU - Department of Physics/Health Physics/EAL
34	JAEC99	Radiation Measurements Laboratory
35	JCAL99	Chemical Analysis Laboratory
36	JLNN01	Jefferson Laboratory
37	KDHE01	Kansas Dept. of Health & Environment
38	LANL01	Los Alamos National Laboratory
39	LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY
40	LAWR02	Lawrence Livermore National Laboratory
41	LDRA99	Laboratori de Radiologia Ambiental-Universitat de Barcelona
42	LECR99	Lancaster Environment Centre
43	LOCK01	ICP Analytical Services Laboratories
44	LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory
45	MART01	USEC, Inc.
46	MART02	United States Enrichment Corporation
47	MART03	Radioactive Material Analysis Laboratory
48	MDPH01	MDPH-Radiation Control Program
49	MKME01	PIKA International
50	NARL01	National Air and Radiation Environmental Laboratory
51	NESI01	B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory
52	NJDH01	New Jersey Dept. of Health & Senior Services, PHEL, ECLS
53	NMLA01	Assaigai Analytical Laboratories, Inc.
54	NRLL99	National Radiation Laboratory
55	NTSI01	Nuclear Technology Services, Inc.
56	OBGL01	Life Science Laboratories, Inc.

57	ODHL01	Ohio Department of Health Laboratory
58	ORIS01	ORISE/IEAV
59	OTLI01	Outreach Technologies, Inc.
60	PBRF01	NASA Plum Brook Reactor Facility Lab
61	PESL01	Environmental Science Lab PNNL/ESL
62	QUAN01	TestAmerica St. Louis
63	QUAN02	TestAmerica Knoxville
64	QUAN03	TestAmerica
65	RMCL99	Royal Scientific Society - Radiation Measurements Lab
66	RPSC01	Radiation Protection Service
67	RSAL01	RSA Laboratories, Inc.
68	RSIR99	Instituto de Radioprotecao e Dosimetria - IRD/CNEN
69	SAVA01	SAVANNAH RIVER NATIONAL LABORATORY/SRNS
70	SCAL01	GPL Laboratories Alabama, LLC
71	SEML01	SRS Environmental Monitoring Laboratory
72	SLAC01	SLAC DOE National Accelerator Laboratory
73	SLDL01	Scientific Laboratory Division
74	SNRC99	Soreq NRC
75	SOUT01	Southwest Research Institute
76	SRPD01	Sandia National Laboratories, Radiation Protection Sample Diagnostics
77	TDHL01	Texas Department of State Health Services Laboratory
78	TELE01	TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES
79	TELE02	Environmental, Inc., Midwest Lab
80	TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY
81	TMAR01	Eberline Analytical Corp. Richmond CA Lab
82	TNUT01	FUSRAP
83	UQNP99	Qatar University- Nuclear Physics Lab
84	USED99	National Center for Energy, Science and Nuclear Techniques
85	WEST01	Lionville Laboratory
86	WEST03	Waste Sampling and Characterization Facility
87	WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH
88	WIPH01	WI, DPH, Radiation Protection Section
89	WIPP01	WIPP Laboratories
90	WSHL01	Wisconsin State Laboratory of Hygiene
91	YAEC01	AREVA NP Environmental Laboratory
92	YPGA01	US Army Yuma Proving Ground / Material Analysis Lab

6 laboratories did not report data for this matrix

MAPEP Mixed Analyte Performance Evaluation Program

Setup and Process Data

MAPEP-09-MaS20

Analyte	Ref. Value	Total Ref.	Uncertainty	F.P.	S.E.
Inorganic					
Uranium-235	0.091		0.002		
Uranium-238	12.5		0.4		
Uranium-Total	12.6		0.4		
Antimony	74.2	74.2	0.7		
Arsenic	92	100	1		
Barium	912	1450	17		
Beryllium	40.0	41.0	0.4		
Cadmium	11.99	12.09	0.12		
Chromium	83	123	1		
Cobalt	134	140	1		
Copper	178.7	181.6	1.7		
Lead	85.3	88.1	1.2		
Mercury	0.1856		0.0030		
Nickel	255	261	5		
Selenium	0.1			✓	
Silver	12.12	12.12	0.12		
Thallium	347	347	4		
Vanadium	162.7	210.3	1.6		
Zinc	422	423	5		
Technetium-99	0.000273		0.000005		
Organic					
Aldrin	74.79	95.39	13.3		
alpha-BHC	62.31	82.0	1.72		
4,4'-DDD	49.40	61.44	3.07		
4,4'-DDE	239.03	320	5.13		
Endrin	113.18	96.78	4.84		
Heptachlor	238.34	314.93	15.75		
Hexachlorobutadiene	3237	4443	235		
Hexachloroethane	3752	5211	464		
1,2,4-Trichlorobenzene	4173	5511	303		
Acenaphthene	6682	8144	155		
Anthracene	8392	9581	249		
Benzo(a)anthracene	5217	5495	110		
Benzo(b)fluoranthene	11355	10141	233		
4-Chloro-3-methylphenol	3712	5096	153		
2-Chloronaphthalene	8785	10513	273		
Chrysene	8657	9346	243		
Dibenzo(a,h)anthracene	5495	5247	147		
Di-n-butylphthalate	4177	4757	224		
2,4-Dichlorophenol	6622	8243	404		
Diethylphthalate	8227	9217	618		
2,4-Dimethylphenol	262	8444	355		
Dimethylphthalate	8418	9498	342		
2,4-Dinitrotoluene	7327	9112	164		
2,6-Dinitrotoluene	2371	2900	58		
Di-n-octylphthalate	4773	5115	205		
Bis(2-ethylhexyl)phthalate	8827	8945	295		
Fluoranthene	5784	7144	186		
Fluorene	3528	4120	74		
Hexachlorobenzene	1706	2101	46		
Hexachlorocyclopentadiene	882	2453	196		

2-Methylphenol	2110	2500	85		
Pyrene	3607	3850	69		
2,4,5-Trichlorophenol	9071	10491	650		
2,4,6-Trichlorophenol	6058	8143	146		
Radiological					
Cobalt-57				✓	
Nickel-63	514.9		10.3		
Potassium-40	570		17		
Uranium-234/233	149		4		
Uranium-238	155		5		
Americium-241	38.3		0.6		
Cesium-134	467		7		
Cesium-137	605		9		
Cobalt-60	4.113		0.108		✓
Iron-55	983		20		
Manganese-54	307		6		
Plutonium-238	25.3		0.4		
Plutonium-239/240	0.29		0.04		✓
Strontium-90	257		3		
Technetium-99	171		3		
Zinc-65	242		5		

MAPEP Mixed Analyte Performance Evaluation Program

Sample Statistical Summary

MAPEP-09-MaS20

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Inorganic							Units: (mg/kg)
Aluminum	4						
Antimony	26	20	66.6	4.7	74.2	0.7	51.9 - 96.5
Arsenic	27	26	91	6	92	1	64 - 120
Barium	28	28	862	92	912	17	638 - 1186
Beryllium	27	27	38.0	2.5	40.0	0.4	28.0 - 52.0
Cadmium	29	27	11.22	1.03	11.99	0.12	8.39 - 15.59
Calcium	4						
Chromium	28	26	76	6	83	1	58 - 108
Cobalt	29	29	127	8	134	1	94 - 174
Copper	29	29	173.8	9.9	178.7	1.7	125.1 - 232.3
Iron	4						
Lead	29	29	83.6	6.9	85.3	1.2	59.7 - 110.9
Magnesium	4						
Manganese	4						
Mercury	24	22	0.1837	0.0155	0.1856	0.0030	0.1299 - 0.2413
Molybdenum	3						
Nickel	29	29	232	17	255	5	179 - 332
Potassium	4						
Selenium	24	12			<0.1		False Positive Test
Silver	28	25	11.56	1.05	12.12	0.12	8.48 - 15.76
Sodium	4						
Technetium-99	2	2			2.73E-4	5.00E-6	1.91E-4 - 3.55E-4
Thallium	27	25	321	22	347	4	243 - 451
Uranium-235	15	14	0.081	0.009	0.091	0.002	0.064 - 0.118
Uranium-238	15	14	11.4	1.1	12.5	0.4	8.8 - 16.3
Uranium-Total	20	20	11.1	1.1	12.6	0.4	8.8 - 16.4
Vanadium	28	28	146.1	9.2	162.7	1.6	113.9 - 211.5
Zinc	29	29	390	33	422	5	295 - 549

Analyte	T(1)	A(2)	Calc(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Organic							Units: (ug/kg)
4,4'-DDD	13	12	52.54	17.09	52.54	3.07	5.25 - 103.80
4,4'-DDE	13	13	293.49	57.80	293.49	5.13	120.08 - 466.90
4,4'-DDT	12	12					
Aldrin	13	12	92.78	20.63	92.78	13.3	30.89 - 154.68
alpha-BHC	13	13	76.75	18.56	76.75	1.72	21.08 - 132.43
beta-BHC	12	12					
delta-BHC	12	12					
Dieldrin	12	12					
Endosulfan I	12	12					
Endosulfan II	12	11					
Endosulfan sulfate	12	12					
Endrin	12	12	90.82	20.20	90.82	4.84	30.21 - 151.42
Endrin Aldehyde	12	12					
Endrin Ketone	12	10					
gamma-BHC (Lindane)	12	12					
Heptachlor	13	13	260.57	55.36	260.57	15.75	94.49 - 426.65
Heptachlor epoxide	12	12					
Methoxychlor	12	12					
1,2,4-Trichlorobenzene	17	17	3120	787	3120	303	760 - 5480

1,2-Dichlorobenzene	16	16					
1,3-Dichlorobenzene	15	15					
1,3-Dinitrobenzene	7	7					
1,4-Dichlorobenzene	16	16					
2,4,5-Trichlorophenol	17	17	7682	1980	7682	650	1743 - 13620
2,4,6-Trichlorophenol	17	17	5577	1314	5577	146	1636 - 9518
2,4-Dichlorophenol	17	17	5300	1320	5300	404	1341 - 9259
2,4-Dimethylphenol	16	14				355	
2,4-Dinitrophenol	16	16					
2,4-Dinitrotoluene	17	17	7065	1723	7065	164	1896 - 12233
2,6-Dichlorophenol	10	10					
2,6-Dinitrotoluene	17	17	2280	516	2280	58	732 - 3828
2-Chloronaphthalene	17	17	7427	1670	7427	273	2417 - 12436
2-Chlorophenol	16	16					
2-Methylnaphthalene	16	16					
2-Methylphenol	17	17	1977	642	1977	85	198 - 3903
2-Nitrophenol	16	16					
3-Methyl & 4-Methylphenol	16	16					
4,6-Dinitro-2-methylphenol	16	16					
4-Bromophenyl-phenylether	15	15					
4-Chloro-3-methylphenol	17	17	3547	811	3547	153	1113 - 5982
4-Chlorophenyl-phenylether	15	15					
4-Nitrophenol	16	16					
Acenaphthene	17	17	5673	1182	5673	155	2127 - 9220
Acenaphthylene	16	16					
Anthracene	17	17	6210	1374	6210	249	2089 - 10332
Benzo(a)anthracene	17	17	4507	879	4507	110	1869 - 7145
Benzo(a)pyrene	16	16					
Benzo(b)fluoranthene	17	16	8116	1730	8116	233	2924 - 13307
Benzo(g,h,i)perylene	16	16					
Benzo(k)fluoranthene	16	15					
bis(2-chloroethoxy)methane	15	15					
bis(2-chloroethyl)ether	15	15					
bis(2-chloroisopropyl)ether	15	15					
Bis(2-ethylhexyl)phthalate	17	17	8115	1812	8115	295	2679 - 13550
Butylbenzylphthalate	16	16					
Chrysene	17	17	7766	1638	7766	243	2852 - 12681
Di-n-butylphthalate	17	17	3913	955	3913	224	1049 - 6778
Di-n-octylphthalate	17	17	4378	1185	4378	205	822 - 7934
Dibenzo(a,h)anthracene	17	17	4249	920	4249	147	1490 - 7008
Dibenzofuran	16	16					
Diethylphthalate	17	17	7616	1806	7616	618	2200 - 13033
Dimethylphthalate	17	17	7671	1572	7671	342	2954 - 12388
Fluoranthene	17	17	5726	1121	5726	186	2364 - 9088
Fluorene	17	17	3143	649	3143	74	1195 - 5091
Hexachlorobenzene	17	17	1678	352	1678	46	623 - 2733
Hexachlorobutadiene	17	17	2414	651	2414	235	461 - 4367
Hexachlorocyclopentadiene	16	11	522	244	522	196	52 - 1256
Hexachloroethane	17	17	1953	623	1953	464	195 - 3823
Indeno(1,2,3-c,d)pyrene	16	12					
Isophorone	16	16					
Naphthalene	16	15					
Nitrobenzene	16	16					
Pentachlorophenol	16	16					
Phenanthrene	16	15					
Phenol	16	16					
Pyrene	17	17	3263	676	3263	69	1235 - 5290

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/kg)
Americium-241	59	50	37.1	5.0	38.3	0.6	26.8 - 49.8
Antimony-125	5						
Cesium-134	73	72	440	46	467	7	327 - 607
Cesium-137	74	74	626	56	605	9	424 - 787
Cobalt-57	50	46					False Positive Test
Cobalt-58	1						
Cobalt-60	65	62	4.246	1.894	4.113	0.108	Sensitivity Evalutation
Iron-55	6	6	972	136	983	20	688 - 1278
Manganese-54	73	71	323	29	307	6	215 - 399
Nickel-63	13	11	498.6	40.6	514.9	10.3	360.4 - 669.4
Plutonium-238	34	29	25.7	2.4	25.3	0.4	17.7 - 32.9
Plutonium-239/240	34	27	0.47	0.74	0.29	0.04	Sensitivity Evalutation
Potassium-40	66	64	614	54	570	17	399 - 741
Strontium-90	32	27	245	33	257	3	180 - 334
Technetium-99	22	19	169	24	171	3	120 - 222
Uranium-234/233	37	35	143	11	149	4	104 - 194
Uranium-235	7						
Uranium-238	44	43	148	13	155	5	109 - 202
Zinc-65	73	69	256	22	242	5	169 - 315

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"
(3) Mean for organics in soil is the biweight mean of all the data per NELAC FOPT Table.

Flag Summary Report

MAPEP-09-MaS20

Inorganic				
Analyte	**A**	**W**	**RW**	**N**
Antimony	19	1		6
Arsenic	26			1
Barium	26	2		
Beryllium	27			
Cadmium	26	1		2
Chromium	25	1		2
Cobalt	29			
Copper	28	1		
Lead	29			
Mercury	22			2
Nickel	28	1		
Selenium	12			12
Silver	23	2		3
Thallium	25			2
Uranium-Total	16	4		
Uranium-235	12	2		1
Uranium-238	12	2		1
Vanadium	26	2		
Zinc	27	2		
Technetium-99	2			

Organic				
Analyte	**A**	**W**	**RW**	**N**
Phenol	16			
2-Chlorophenol	16			
1,3-Dichlorobenzene	15			
1,4-Dichlorobenzene	16			
1,2-Dichlorobenzene	16			
Hexachloroethane	17			
Nitrobenzene	16			
Isophorone	16			
2-Nitrophenol	16			
2,4-Dimethylphenol	14			2
2,4-Dichlorophenol	17			
1,2,4-Trichlorobenzene	17			
Naphthalene	15			1
Hexachlorobutadiene	17			
4-Chloro-3-methylphenol	17			
2-Methylnaphthalene	16			
2-Methylphenol	17			
Hexachlorocyclopentadiene	11			5
3-Methyl & 4-Methylphenol	16			
2,4,6-Trichlorophenol	17			
2,6-Dichlorophenol	10			
2-Chloronaphthalene	17			
Dimethylphthalate	17			
Acenaphthylene	16			
2,6-Dinitrotoluene	17			
Acenaphthene	17			
2,4-Dinitrotoluene	17			
2,4-Dinitrophenol	16			
Dibenzofuran	16			
4-Nitrophenol	16			
Fluorene	17			
Diethylphthalate	17			
4,6-Dinitro-2-methylphenol	16			
2,4,5-Trichlorophenol	17			
Hexachlorobenzene	17			
Pentachlorophenol	16			
Phenanthrene	15			1
Anthracene	17			
1,3-Dinitrobenzene	7			

Di-n-butylphthalate	17			
Fluoranthene	17			
Pyrene	17			
Butylbenzylphthalate	16			
Benzo(a)anthracene	17			
Chrysene	17			
Bis(2-ethylhexyl)phthalate	17			
Di-n-octylphthalate	17			
Benzo(b)fluoranthene	16			1
Benzo(k)fluoranthene	15			1
Benzo(a)pyrene	16			
Indeno(1,2,3-c,d)pyrene	12			4
Dibenzo(a,h)anthracene	17			
Benzo(g,h,i)perylene	16			
alpha-BHC	13			
beta-BHC	12			
gamma-BHC (Lindane)	12			
delta-BHC	12			
Heptachlor	13			
Aldrin	12			1
Heptachlor epoxide	12			
Endosulfan I	12			
4,4'-DDE	13			
Dieldrin	12			
Endrin	12			
4,4'-DDD	12			1
Endosulfan II	11			1
4,4'-DDT	12			
Endrin Aldehyde	12			
Endosulfan sulfate	12			
Endrin Ketone	10			2
Methoxychlor	12			
4-Bromophenyl-phenylether	15			
bis(2-chloroethoxy)methane	15			
bis(2-chloroethyl)ether	15			
4-Chlorophenyl-phenylether	15			
bis(2-chloroisopropyl)ether	15			

Radiological				
Analyte	**A**	**W**	**RW**	**N**
Americium-241	42	8		9
Cesium-134	66	6		1
Cesium-137	69	5		
Cobalt-57	46		22	4
Cobalt-60	62			3
Iron-55	6			
Manganese-54	65	6		2
Nickel-63	11			2
Plutonium-238	28	1		5
Plutonium-239/240	27			7
Potassium-40	59	5		2
Strontium-90	24	3		5
Technetium-99	17	2		3
Uranium-234/233	34	1		2
Uranium-238	40	3		1
Zinc-65	65	4		4

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(AALI01) Xenco Laboratories-Atlanta
6017 Financial Drive
Norcross, GA 30071

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ADEM01) Alabama Department of Environmental Management
Montgomery Laboratory
Montgomery, AL 36110

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

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H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
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(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(AFOH01) USAFSAM/OEHHL
2350 Gillingham Dr
Brooks City-Base, TX 78235-5103

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	13.32	38.3	N		-65.2	26.8 - 49.8	1.49	
Cesium-134	422.73	467	A		-9.5	327 - 607	3.76	L
Cesium-137	648.43	605	A		7.2	424 - 787	10.13	L
Cobalt-57	0.09		A				0.70	
Cobalt-60	4.63	4.113	A				0.37	
Iron-55	NR	983				688 - 1278		
Manganese-54	336.70	307	A		9.7	215 - 399	5.27	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	18.13	25.3	W		-28.3	17.7 - 32.9	1.85	
Plutonium-239/240	1.36	0.29	A				0.42	
Potassium-40	647.50	570	A		13.6	399 - 741	16.15	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	120.34	149	A		-19.2	104 - 194	4.77	
Uranium-235	7.12						0.93	
Uranium-238	120.99	155	W		-21.9	109 - 202	4.77	
Zinc-65	271.30	242	A		12.1	169 - 315	6.74	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

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Other Flags:

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MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ANTE01) ALS Laboratory Group, Environmental Division
225 Commerce Drive
Fort Collins, CO 80524-1416

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	40.3	74.2	N		-45.7	51.9 - 96.5		
Arsenic	82.4	92	A		-10.4	64 - 120		
Barium	750	912	A		-17.8	638 - 1186		
Beryllium	34.3	40.0	A		-14.3	28.0 - 52.0		
Cadmium	10.8	11.99	A		-9.9	8.39 - 15.59		
Chromium	65.2	83	W		-21.4	58 - 108		
Cobalt	114	134	A		-14.9	94 - 174		
Copper	162	178.7	A		-9.3	125.1 - 232.3		
Lead	72.8	85.3	A		-14.7	59.7 - 110.9		
Mercury	0.186	0.1856	A		0.2	0.1299 - 0.2413		
Nickel	214	255	A		-16.1	179 - 332		
Selenium	<0.49	<0.1	A					
Silver	10.5	12.12	A		-13.4	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	199	347	N		-42.7	243 - 451		
Uranium-235	9.75	0.091	N		10614.3	0.064 - 0.118		
Uranium-238	0.074	12.5	N		-99.4	8.8 - 16.3		
Uranium-Total	9.82	12.6	W		-22.1	8.8 - 16.4		
Vanadium	123	162.7	W		-24.4	113.9 - 211.5		
Zinc	332	422	W		-21.3	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	<1.63	52.54	N	(2)		5.25 - 103.80		
4,4'-DDE	291	293.49	A		-0.05	120.08 - 466.90		
4,4'-DDT	<1.63		A					
Aldrin	106	92.78	A		0.78	30.89 - 154.68		
alpha-BHC	93.2	76.75	A		1.05	21.08 - 132.43		
beta-BHC	<1.63		A					
delta-BHC	<1.63		A					
Dieldrin	<1.63		A					
Endosulfan I	<1.63		A					
Endosulfan II	<1.63		A					
Endosulfan sulfate	<1.63		A					
Endrin	106	90.82	A		0.65	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<1.63		A					
Endrin Ketone	6.32		N	(1)				
gamma-BHC (Lindane)	<1.63		A					
Heptachlor	264	260.57	A		0.07	94.49 - 426.65		
Heptachlor epoxide	<1.63		A					
Methoxychlor	<4.90		A					
1,2,4-Trichlorobenzene	2540	3120	A		-0.56	760 - 5480		
1,2-Dichlorobenzene	<330		A					
1,3-Dichlorobenzene	<330		A					
1,3-Dinitrobenzene	<330		A					
1,4-Dichlorobenzene	<330		A					
2,4,5-Trichlorophenol	7300	7682	A		-0.16	1743 - 13620		
2,4,6-Trichlorophenol	5060	5577	A		-0.37	1636 - 9518		
2,4-Dichlorophenol	4610	5300	A		-0.43	1341 - 9259		
2,4-Dimethylphenol	<330		A					
2,4-Dinitrophenol	<660		A					
2,4-Dinitrotoluene	6500	7065	A		-0.32	1896 - 12233		
2,6-Dinitrotoluene	1980	2280	A		-0.56	732 - 3828		
2-Chloronaphthalene	6440	7427	A		-0.50	2417 - 12436		
2-Chlorophenol	<330		A					
2-Methylnaphthalene	<330		A					
2-Methylphenol	1630	1977	A		-0.51	198 - 3903		
2-Nitrophenol	<330		A					
3-Methyl & 4-Methylphenol	<330		A					
4,6-Dinitro-2-methylphenol	<660		A					
4-Bromophenyl-phenylether	<330		A					
4-Chloro-3-methylphenol	3210	3547	A		-0.40	1113 - 5982		
4-Chlorophenyl-phenylether	<330		A					
4-Nitrophenol	<660		A					
Acenaphthene	4820	5673	A		-0.62	2127 - 9220		
Acenaphthylene	<330		A					
Anthracene	5890	6210	A		-0.17	2089 - 10332		
Benzo(a)anthracene	4010	4507	A		-0.49	1869 - 7145		
Benzo(a)pyrene	<330		A					
Benzo(b)fluoranthene	7070	8116	A		-0.44	2924 - 13307		
Benzo(g,h,i)perylene	<330		A					
Benzo(k)fluoranthene	<330		A					
bis(2-chloroethoxy)methane	<330		A					
bis(2-chloroethyl)ether	<330		A					
bis(2-chloroisopropyl)ether	<330		A					
Bis(2-ethylhexyl)phthalate	7220	8115	A		-0.46	2679 - 13550		
Butylbenzylphthalate	<330		A					
Chrysene	6840	7766	A		-0.51	2852 - 12681		
Di-n-butylphthalate	3440	3913	A		-0.47	1049 - 6778		
Di-n-octylphthalate	4240	4378	A		-0.11	822 - 7934		
Dibenzo(a,h)anthracene	3780	4249	A		-0.41	1490 - 7008		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzofuran	<330		A					
Diethylphthalate	6980	7616	A		-0.33	2200 - 13033		
Dimethylphthalate	6900	7671	A		-0.45	2954 - 12388		
Fluoranthene	5560	5726	A		-0.15	2364 - 9088		
Fluorene	2800	3143	A		-0.48	1195 - 5091		
Hexachlorobenzene	1590	1678	A		-0.25	623 - 2733		
Hexachlorobutadiene	1990	2414	A		-0.50	461 - 4367		
Hexachlorocyclopentadiene	347	522	A		-0.72	52 - 1256		
Hexachloroethane	1320	1953	A		-1.02	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<330		A					
Isophorone	<330		A					
Naphthalene	<330		A					
Nitrobenzene	<330		A					
Pentachlorophenol	<660		A					
Phenanthrene	<330		A					
Phenol	<330		A					
Pyrene	2810	3263	A		-0.61	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.267	38.3	A		-10.5	26.8 - 49.8	2.87	
Cesium-134	412.500	467	A		-11.7	327 - 607	24.0	
Cesium-137	606.000	605	A		0.2	424 - 787	35.5	
Cobalt-57	0.520		A				0.450	
Cobalt-60	4.255	4.113	A				0.480	
Iron-55	1033.33	983	A		5.1	688 - 1278	120	
Manganese-54	319.000	307	A		3.9	215 - 399	19.0	
Nickel-63	472.0	514.9	A		-8.3	360.4 - 669.4	69.0	
Plutonium-238	25.23	25.3	A		-0.3	17.7 - 32.9	2.17	
Plutonium-239/240	0.46	0.29	A				0.14	
Potassium-40	592.500	570	A		3.9	399 - 741	37.5	
Strontium-90	248	257	A		-3.5	180 - 334	29	
Technetium-99	190.67	171	A		11.5	120 - 222	16.00	
Uranium-234/233	142.00	149	A		-4.7	104 - 194	11.33	
Uranium-238	145.67	155	A		-6.0	109 - 202	11.33	
Zinc-65	264.500	242	A		9.3	169 - 315	16.0	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

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Notes:

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(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ARSL01) American Radiation Services Inc.
2609 North River Road
Port Allen, LA 70767

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32.232	38.3	A		-15.8	26.8 - 49.8	5.879	
Cesium-134	367.060	467	W		-21.4	327 - 607	27.314	
Cesium-137	572.335	605	A		-5.4	424 - 787	29.094	
Cobalt-57	-0.184		A				2.141	
Cobalt-60	1.896	4.113	A	(17)			4.160	
Iron-55	NR	983				688 - 1278		
Manganese-54	303.420	307	A		-1.2	215 - 399	23.812	
Nickel-63	524.270	514.9	A		1.8	360.4 - 669.4	130.34	H
Plutonium-238	22.853	25.3	A		-9.7	17.7 - 32.9	4.797	H
Plutonium-239/240	0.471	0.29	A	(17)			0.730	
Potassium-40	NR	570				399 - 741		
Strontium-90	160.546	257	N		-37.5	180 - 334	16.280	
Technetium-99	166.947	171	A		-2.4	120 - 222	45.437	H
Uranium-234/233	148.111	149	A		-0.6	104 - 194	18.709	
Uranium-238	145.023	155	A		-6.4	109 - 202	18.335	
Zinc-65	254.270	242	A		5.1	169 - 315	26.971	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ASHL01) CH2M Hill Applied Science Laboratory
2300 NW Walnut Blvd
Corvallis, OR 97330

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	66.9	74.2	A		-9.8	51.9 - 96.5	2.1	
Arsenic	87.4	92	A		-5.0	64 - 120	2.9	
Barium	796	912	A		-12.7	638 - 1186	57	
Beryllium	37.7	40.0	A		-5.8	28.0 - 52.0	1.4	
Cadmium	10.9	11.99	A		-9.1	8.39 - 15.59	0.4	
Chromium	75.6	83	A		-8.9	58 - 108	2.8	
Cobalt	116	134	A		-13.4	94 - 174	4	
Copper	169	178.7	A		-5.4	125.1 - 232.3	11	
Lead	77.7	85.3	A		-8.9	59.7 - 110.9	2.2	L
Mercury	0.18	0.1856	A		-3.0	0.1299 - 0.2413	0.01	
Nickel	210	255	A		-17.6	179 - 332	7	
Selenium	3.64	<0.1	N	(1)			0.13	
Silver	11.9	12.12	A		-1.8	8.48 - 15.76	0.6	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	300	347	A		-13.5	243 - 451	8	L
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	146	162.7	A		-10.3	113.9 - 211.5	6	
Zinc	374	422	A		-11.4	295 - 549	13	

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	56.9	52.54	A		0.26	5.25 - 103.80	7.4	
4,4'-DDE	337	293.49	A		0.91	120.08 - 466.90	49	
4,4'-DDT	<23.7		A				3.6	
Aldrin	94.6	92.78	A		0.11	30.89 - 154.68	13.0	
alpha-BHC	82.3	76.75	A		0.35	21.08 - 132.43	11.3	
beta-BHC	<23.7		A				3.1	
delta-BHC	<23.7		A				3.3	
Dieldrin	<23.7		A				3.1	
Endosulfan I	<23.7		A				3.0	
Endosulfan II	<23.7		A				3.1	
Endosulfan sulfate	<23.7		A				2.9	
Endrin	93.4	90.82	A		0.11	30.21 - 151.42	11.7	

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<23.7		A				4.0	
Endrin Ketone	<23.7		A				3.5	
gamma-BHC (Lindane)	<23.7		A				3.0	
Heptachlor	305	260.57	A		0.88	94.49 - 426.65	45	
Heptachlor epoxide	<23.7		A				3.0	
Methoxychlor	<23.7		A				3.2	
1,2,4-Trichlorobenzene	2330	3120	A		-0.77	760 - 5480	99	
1,2-Dichlorobenzene	<342		A				24	
1,3-Dichlorobenzene	<342		A				24	
1,4-Dichlorobenzene	<342		A				24	
2,4,5-Trichlorophenol	5760	7682	A		-0.82	1743 - 13620	458	
2,4,6-Trichlorophenol	3830	5577	A		-1.23	1636 - 9518	337	
2,4-Dichlorophenol	3470	5300	A		-1.13	1341 - 9259	142	
2,4-Dimethylphenol	<342		A				12	
2,4-Dinitrophenol	<856		A				55	
2,4-Dinitrotoluene	4780	7065	A		-1.28	1896 - 12233	307	
2,6-Dinitrotoluene	1500	2280	A		-1.47	732 - 3828	93	
2-Chloronaphthalene	5400	7427	A		-1.03	2417 - 12436	345	
2-Chlorophenol	<342		A				22	
2-Methylnaphthalene	<342		A				43	
2-Methylphenol	1270	1977	A		-1.05	198 - 3903	102	
2-Nitrophenol	<342		A				19	
3-Methyl & 4-Methylphenol	<342		A				29	
4,6-Dinitro-2-methylphenol	<856		A				47	
4-Bromophenyl-phenylether	<342		A				29	
4-Chloro-3-methylphenol	2160	3547	A		-1.65	1113 - 5982	83	
4-Chlorophenyl-phenylether	<342		A				31	
4-Nitrophenol	<342		A				22	
Acenaphthene	3870	5673	A		-1.31	2127 - 9220	260	
Acenaphthylene	<342		A				28	
Anthracene	4460	6210	A		-0.95	2089 - 10332	526	
Benzo(a)anthracene	3210	4507	A		-1.28	1869 - 7145	363	
Benzo(a)pyrene	<342		A				43	
Benzo(b)fluoranthene	6460	8116	A		-0.69	2924 - 13307	885	
Benzo(g,h,i)perylene	<342		A				38	
Benzo(k)fluoranthene	<342		A				43	
bis(2-chloroethoxy)methane	<342		A				20	
bis(2-chloroethyl)ether	<342		A				24	
bis(2-chloroisopropyl)ether	<342		A				35	
Bis(2-ethylhexyl)phthalate	6700	8115	A		-0.72	2679 - 13550	683	
Butylbenzylphthalate	<342		A				28	
Chrysene	5950	7766	A		-1.00	2852 - 12681	684	
Di-n-butylphthalate	2480	3913	A		-1.42	1049 - 6778	224	
Di-n-octylphthalate	2940	4378	A		-1.11	822 - 7934	347	
Dibenzo(a,h)anthracene	2410	4249	A		-1.60	1490 - 7008	282	
Dibenzofuran	<342		A				29	

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Diethylphthalate	5290	7616	A		-1.20	2200 - 13033	381	
Dimethylphthalate	5440	7671	A		-1.30	2954 - 12388	415	
Fluoranthene	3950	5726	A		-1.57	2364 - 9088	486	
Fluorene	1970	3143	A		-1.64	1195 - 5091	144	
Hexachlorobenzene	970	1678	A		-1.98	623 - 2733	61	
Hexachlorobutadiene	1640	2414	A		-0.91	461 - 4367	79	
Hexachlorocyclopentadiene	391	522	A		-0.54	52 - 1256	46	
Hexachloroethane	1580	1953	A		-0.60	195 - 3823	107	
Indeno(1,2,3-c,d)pyrene	635		N	(1)			74	
Isophorone	<342		A				14	
Naphthalene	<342		A				18	
Nitrobenzene	<342		A				16	
Pentachlorophenol	<1720		A				91	
Phenanthrene	4500		N	(1)			518	
Phenol	<342		A				24	
Pyrene	2080	3263	A		-1.59	1235 - 5290	161	

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(AY1201) B&W Y-12, Analytical Chemistry Organization Laboratory
Y12, NSC, Bldg. 9995, Rm 142
Oak Ridge, TN 37831-8189

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	68.7	74.2	A		-7.4	51.9 - 96.5		
Arsenic	90.9	92	A		-1.2	64 - 120		
Barium	833	912	A		-8.7	638 - 1186		
Beryllium	39.7	40.0	A		-0.8	28.0 - 52.0		
Cadmium	10.6	11.99	A		-11.6	8.39 - 15.59		
Chromium	79.8	83	A		-3.9	58 - 108		
Cobalt	130	134	A		-3.0	94 - 174		
Copper	187	178.7	A		4.6	125.1 - 232.3		
Lead	80.7	85.3	A		-5.4	59.7 - 110.9		
Mercury	0.175	0.1856	A		-5.7	0.1299 - 0.2413		
Nickel	228	255	A		-10.6	179 - 332		
Selenium	<9.8	<0.1	A	(7)				
Silver	11.6	12.12	A		-4.3	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	323	347	A		-6.9	243 - 451		
Uranium-235	0.073	0.091	A		-19.8	0.064 - 0.118		
Uranium-238	10.18	12.5	A		-18.6	8.8 - 16.3		
Uranium-Total	10.3	12.6	A		-18.3	8.8 - 16.4	0.5	
Vanadium	158	162.7	A		-2.9	113.9 - 211.5		
Zinc	400	422	A		-5.2	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	57.2	52.54	A		0.28	5.25 - 103.80		
4,4'-DDE	325	293.49	A		0.66	120.08 - 466.90		
4,4'-DDT	<7.86		A					
Aldrin	95.6	92.78	A		0.17	30.89 - 154.68		
alpha-BHC	70.2	76.75	A		-0.42	21.08 - 132.43		
beta-BHC	<3.93		A					
delta-BHC	<3.93		A					
Dieldrin	<7.86		A					
Endosulfan I	<3.93		A					
Endosulfan II	<7.86		A					
Endosulfan sulfate	<7.86		A					
Endrin	105	90.82	A		0.61	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<7.86		A					
Endrin Ketone	<7.86		A					
gamma-BHC (Lindane)	<3.93		A					
Heptachlor	276	260.57	A		0.30	94.49 - 426.65		
Heptachlor epoxide	<3.93		A					
Methoxychlor	<39.3		A					
1,2,4-Trichlorobenzene	3600	3120	A		0.47	760 - 5480		
1,2-Dichlorobenzene	<330		A					
1,3-Dichlorobenzene	<330		A					
1,3-Dinitrobenzene	<330		A					
1,4-Dichlorobenzene	<330		A					
2,4,5-Trichlorophenol	6550	7682	A		-0.49	1743 - 13620		
2,4,6-Trichlorophenol	5450	5577	A		-0.09	1636 - 9518		
2,4-Dichlorophenol	5000	5300	A		-0.19	1341 - 9259		
2,4-Dimethylphenol	<330		A					
2,4-Dinitrophenol	<670		A					
2,4-Dinitrotoluene	6520	7065	A		-0.31	1896 - 12233		
2,6-Dichlorophenol	<330		A					
2,6-Dinitrotoluene	2070	2280	A		-0.39	732 - 3828		
2-Chloronaphthalene	6060	7427	A		-0.70	2417 - 12436		
2-Chlorophenol	<330		A					
2-Methylnaphthalene	<330		A					
2-Methylphenol	2120	1977	A		0.21	198 - 3903		
2-Nitrophenol	<330		A					
3-Methyl & 4-Methylphenol	<670		A					
4,6-Dinitro-2-methylphenol	<670		A					
4-Bromophenyl-phenylether	<330		A					
4-Chloro-3-methylphenol	3380	3547	A		-0.20	1113 - 5982		
4-Chlorophenyl-phenylether	<330		A					
4-Nitrophenol	<670		A					
Acenaphthene	5910	5673	A		0.17	2127 - 9220		
Acenaphthylene	<330		A					
Anthracene	6510	6210	A		0.16	2089 - 10332		
Benzo(a)anthracene	4600	4507	A		0.09	1869 - 7145		
Benzo(a)pyrene	<330		A					
Benzo(b)fluoranthene	6320	8116	A		-0.75	2924 - 13307		
Benzo(g,h,i)perylene	<330		A					
Benzo(k)fluoranthene	<330		A					
bis(2-chloroethoxy)methane	<330		A					
bis(2-chloroethyl)ether	<330		A					
bis(2-chloroisopropyl)ether	<330		A					
Bis(2-ethylhexyl)phthalate	7500	8115	A		-0.31	2679 - 13550		
Butylbenzylphthalate	<330		A					
Chrysene	8100	7766	A		0.18	2852 - 12681		
Di-n-butylphthalate	4440	3913	A		0.52	1049 - 6778		
Di-n-octylphthalate	5090	4378	A		0.55	822 - 7934		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzo(a,h)anthracene	3990	4249	A		-0.23	1490 - 7008		
Dibenzofuran	<330		A					
Diethylphthalate	7350	7616	A		-0.14	2200 - 13033		
Dimethylphthalate	7220	7671	A		-0.26	2954 - 12388		
Fluoranthene	6080	5726	A		0.31	2364 - 9088		
Fluorene	3050	3143	A		-0.13	1195 - 5091		
Hexachlorobenzene	1650	1678	A		-0.08	623 - 2733		
Hexachlorobutadiene	2720	2414	A		0.36	461 - 4367		
Hexachlorocyclopentadiene	385	522	A		-0.56	52 - 1256		
Hexachloroethane	2660	1953	A		1.13	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<330		A					
Isophorone	<330		A					
Naphthalene	<330		A					
Nitrobenzene	<330		A					
Pentachlorophenol	<330		A					
Phenanthrene	<330		A					
Phenol	<330		A					
Pyrene	3390	3263	A		0.17	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.9	38.3	A		-3.7	26.8 - 49.8	6.2	
Cesium-134	361	467	W		-22.7	327 - 607	16	
Cesium-137	576	605	A		-4.8	424 - 787	59	
Cobalt-57	0.022		A				0.8	
Cobalt-60	5.06	4.113	A				1.1	
Iron-55	NR	983				688 - 1278		
Manganese-54	300	307	A		-2.3	215 - 399	20	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	26.5	25.3	A		4.7	17.7 - 32.9	4.1	
Plutonium-239/240	-2.70	0.29	A	(17)			2.5	
Potassium-40	593	570	A		4.0	399 - 741	37	
Strontium-90	207	257	A		-19.5	180 - 334	18	
Technetium-99	159	171	A		-7.0	120 - 222	19	
Uranium-234/233	138	149	A		-7.4	104 - 194	18	
Uranium-238	136	155	A		-12.3	109 - 202	15	
Zinc-65	237	242	A		-2.1	169 - 315	12	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(BNEL01) Northeast Laboratory Services, Inc.
PO Box 788
Waterville, ME 04903-0788

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	123	74.2	N		65.8	51.9 - 96.5		
Arsenic	83.4	92	A		-9.3	64 - 120		
Barium	881	912	A		-3.4	638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	6.05	11.99	N		-49.5	8.39 - 15.59		
Chromium	68.5	83	A		-17.5	58 - 108		
Cobalt	122	134	A		-9.0	94 - 174		
Copper	165	178.7	A		-7.7	125.1 - 232.3		
Lead	89.6	85.3	A		5.0	59.7 - 110.9		
Mercury	0.198	0.1856	A		6.7	0.1299 - 0.2413		
Nickel	249	255	A		-2.4	179 - 332		
Selenium	0.335	<0.1	N	(1)				
Silver	17.4	12.12	N		43.6	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	300	347	A		-13.5	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	129	162.7	W		-20.7	113.9 - 211.5		
Zinc	369	422	A		-12.6	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	2190	3120	A		-0.90	760 - 5480		
2,4,5-Trichlorophenol	4530	7682	A		-1.35	1743 - 13620		
2,4,6-Trichlorophenol	3850	5577	A		-1.22	1636 - 9518		
2,4-Dichlorophenol	3450	5300	A		-1.15	1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	5250	7065	A		-1.02	1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	1370	2280	A		-1.71	732 - 3828		
2-Chloronaphthalene	4410	7427	A		-1.53	2417 - 12436		
2-Methylphenol	1350	1977	A		-0.93	198 - 3903		
4-Chloro-3-methylphenol	2100	3547	A		-1.72	1113 - 5982		
Acenaphthene	3360	5673	A		-1.68	2127 - 9220		
Anthracene	3670	6210	A		-1.38	2089 - 10332		
Benzo(a)anthracene	2930	4507	A		-1.56	1869 - 7145		
Benzo(b)fluoranthene	4200	8116	A		-1.63	2924 - 13307		
Bis(2-ethylhexyl)phthalate	4570	8115	A		-1.81	2679 - 13550		
Chrysene	4500	7766	A		-1.79	2852 - 12681		
Di-n-butylphthalate	2340	3913	A		-1.56	1049 - 6778		
Di-n-octylphthalate	2650	4378	A		-1.34	822 - 7934		
Dibenzo(a,h)anthracene	3040	4249	A		-1.05	1490 - 7008		
Diethylphthalate	4230	7616	A		-1.74	2200 - 13033		
Dimethylphthalate	4270	7671	A		-1.98	2954 - 12388		
Fluoranthene	3280	5726	A		-2.16	2364 - 9088		
Fluorene	2050	3143	A		-1.52	1195 - 5091		
Hexachlorobenzene	1210	1678	A		-1.31	623 - 2733		
Hexachlorobutadiene	1830	2414	A		-0.68	461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	1580	1953	A		-0.60	195 - 3823		
Pyrene	2100	3263	A		-1.56	1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(CDHS01) California Department of Public Health
Sanitation & Radiation Lab.
Richmond, CA 94804-6403

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.8	38.3	A		-9.1	26.8 - 49.8	1.39	
Cesium-134	432	467	A		-7.5	327 - 607	2.58	L
Cesium-137	595	605	A		-1.7	424 - 787	5.15	L
Cobalt-57	0.33		A				0.32	
Cobalt-60	4.97	4.113	N	(4)			0.1	
Iron-55	NR	983				688 - 1278		
Manganese-54	311	307	A		1.3	215 - 399	2.49	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	27.2	25.3	A		7.5	17.7 - 32.9	1.23	
Plutonium-239/240	0.667	0.29	A	(17)			0.223	
Potassium-40	591	570	A		3.7	399 - 741	7.75	L
Strontium-90	246	257	A		-4.3	180 - 334	11.5	
Technetium-99	181.4	171	A		6.1	120 - 222	14.1	
Uranium-234/233	100.7	149	N		-32.4	104 - 194	2.879	L
Uranium-238	146	155	A		-5.8	109 - 202	3.74	L
Zinc-65	249	242	A		2.9	169 - 315	2.13	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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H = Uncertainty potentially too high (for information purposes only)
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RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(CESL01) Lawrence Livermore National Laboratory - EMRL
7000 East Avenue
Livermore, CA 94551

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	4.09E+02	467	A		-12.4	327 - 607	9.63	L
Cesium-137	5.82E+02	605	A		-3.8	424 - 787	1.93	
Cobalt-57	NR		RW	(11)				
Cobalt-60	3.52E+00	4.113	A				4.97E-	
Iron-55	NR	983				688 - 1278		
Manganese-54	3.00E+02	307	A		-2.3	215 - 399	1.20	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	2.69E+01	25.3	A		6.3	17.7 - 32.9	5.28	
Plutonium-239/240	7.55E-02	0.29	A	(17)			1.91E-	
Potassium-40	5.11E+02	570	A		-10.4	399 - 741	2.25	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	2.39E+02	242	A		-1.2	169 - 315	2.86	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(CHMH01) 222-S Laboratory
P.O. Box 250, MS T6-10
Richland, WA 99352

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	42.6	74.2	N		-42.6	51.9 - 96.5		
Arsenic	91.2	92	A		-0.9	64 - 120		
Barium	702	912	W		-23.0	638 - 1186		
Beryllium	38.6	40.0	A		-3.5	28.0 - 52.0		
Cadmium	13.3	11.99	A		10.9	8.39 - 15.59		
Chromium	83.8	83	A		1.0	58 - 108		
Cobalt	123	134	A		-8.2	94 - 174		
Copper	171	178.7	A		-4.3	125.1 - 232.3		
Lead	74.4	85.3	A		-12.8	59.7 - 110.9		
Mercury	0.197	0.1856	A		6.1	0.1299 - 0.2413		
Nickel	234	255	A		-8.2	179 - 332		
Selenium	<49.8	<0.1	A	(7)				
Silver	11.0	12.12	A		-9.2	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	366	347	A		5.5	243 - 451		
Uranium-235	0.0756	0.091	A		-16.9	0.064 - 0.118		
Uranium-238	10.6	12.5	A		-15.2	8.8 - 16.3		
Uranium-Total	10.7	12.6	A		-15.1	8.8 - 16.4		
Vanadium	158	162.7	A		-2.9	113.9 - 211.5		
Zinc	390	422	A		-7.6	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	3580	3120	A		0.45	760 - 5480		
1,2-Dichlorobenzene	<135		A					
1,4-Dichlorobenzene	<152		A					
2,4,5-Trichlorophenol	7670	7682	A		-0.01	1743 - 13620		
2,4,6-Trichlorophenol	5460	5577	A		-0.08	1636 - 9518		
2,4-Dichlorophenol	5370	5300	A		0.04	1341 - 9259		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,4-Dimethylphenol	<38.3		A					
2,4-Dinitrophenol	<55.4		A					
2,4-Dinitrotoluene	7880	7065	A		0.46	1896 - 12233		
2,6-Dinitrotoluene	2530	2280	A		0.47	732 - 3828		
2-Chloronaphthalene	7200	7427	A		-0.12	2417 - 12436		
2-Chlorophenol	<89.5		A					
2-Methylnaphthalene	<74.5		A					
2-Methylphenol	1230	1977	A		-1.11	198 - 3903		
2-Nitrophenol	<72.2		A					
3-Methyl & 4-Methylphenol	<69.1		A					
4,6-Dinitro-2-methylphenol	<42.4		A					
4-Bromophenyl-phenylether	<44.5		A					
4-Chloro-3-methylphenol	3530	3547	A		-0.02	1113 - 5982		
4-Chlorophenyl-phenylether	<64.6		A					
4-Nitrophenol	<70.8		A					
Acenaphthene	6260	5673	A		0.43	2127 - 9220		
Acenaphthylene	<61.6		A					
Anthracene	6130	6210	A		-0.04	2089 - 10332		
Benzo(a)anthracene	4680	4507	A		0.17	1869 - 7145		
Benzo(a)pyrene	<55.4		A					
Benzo(b)fluoranthene	7770	8116	A		-0.14	2924 - 13307		
Benzo(g,h,i)perylene	<55.3		A					
Benzo(k)fluoranthene	<52.6		A					
bis(2-chloroethoxy)methane	<92.8		A					
bis(2-chloroethyl)ether	<101		A					
bis(2-chloroisopropyl)ether	<101		A					
Bis(2-ethylhexyl)phthalate	8060	8115	A		-0.03	2679 - 13550		
Butylbenzylphthalate	<67.3		A					
Chrysene	7410	7766	A		-0.20	2852 - 12681		
Di-n-butylphthalate	4770	3913	A		0.85	1049 - 6778		
Di-n-octylphthalate	4710	4378	A		0.26	822 - 7934		
Dibenzo(a,h)anthracene	4890	4249	A		0.56	1490 - 7008		
Dibenzofuran	<62.6		A					
Diethylphthalate	7490	7616	A		-0.07	2200 - 13033		
Dimethylphthalate	7620	7671	A		-0.03	2954 - 12388		
Fluoranthene	6710	5726	A		0.87	2364 - 9088		
Fluorene	3840	3143	A		0.97	1195 - 5091		
Hexachlorobenzene	2030	1678	A		0.99	623 - 2733		
Hexachlorobutadiene	2970	2414	A		0.65	461 - 4367		
Hexachlorocyclopentadiene	<19.1	522	N	(2)		52 - 1256		
Hexachloroethane	2550	1953	A		0.96	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<68.6		A					
Isophorone	<71.6		A					
Naphthalene	<84.2		A					
Nitrobenzene	<86.9		A					
Pentachlorophenol	<50.4		A					

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Phenanthrene	<47.2		A					
Phenol	<79.9		A					
Pyrene	3530	3263	A		0.36	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	33.4	38.3	A		-12.8	26.8 - 49.8	5.1	
Cesium-134	416	467	A		-10.9	327 - 607	14.1	
Cesium-137	597	605	A		-1.3	424 - 787	31.5	
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	310	307	A		1.0	215 - 399	17.5	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	571	570	A		0.2	399 - 741	89.2	
Strontium-90	26.4	257	N		-89.7	180 - 334	0.768	L
Technetium-99	141	171	A		-17.5	120 - 222	9.74	
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	244	242	A		0.8	169 - 315	18.8	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation

(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(CMRC01) Carlsbad Environmental Monitoring and Research Center
1400 University Dr.
Carlsbad, NM 88220

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32.1	38.3	A		-16.2	26.8 - 49.8	3.27	
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	26.8	25.3	A		5.9	17.7 - 32.9	2.79	
Plutonium-239/240	0.17	0.29	A	(17)			0.09	
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	152	149	A		2.0	104 - 194	28.0	
Uranium-238	156	155	A		0.6	109 - 202	28.7	
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(CORE02) TestAmerica Denver
4955 Yarrow St
Arvada, CO 80002

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Aluminum	18000							
Antimony	65	74.2	A		-12.4	51.9 - 96.5		
Arsenic	90	92	A		-2.2	64 - 120		
Barium	860	912	A		-5.7	638 - 1186		
Beryllium	39	40.0	A		-2.5	28.0 - 52.0		
Cadmium	10	11.99	A		-16.6	8.39 - 15.59		
Calcium	33000							
Chromium	80	83	A		-3.6	58 - 108		
Cobalt	130	134	A		-3.0	94 - 174		
Copper	150	178.7	A		-16.1	125.1 - 232.3		
Iron	21000							
Lead	83	85.3	A		-2.7	59.7 - 110.9		
Magnesium	8900							
Manganese	380							
Mercury	0.17	0.1856	A		-8.4	0.1299 - 0.2413		
Molybdenum	0.71							
Nickel	240	255	A		-5.9	179 - 332		
Potassium	2700							
Selenium	1.0	<0.1	N	(1)				
Silver	11	12.12	A		-9.2	8.48 - 15.76		
Sodium	350							
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	340	347	A		-2.0	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	140	162.7	A		-14.0	113.9 - 211.5		
Zinc	380	422	A		-10.0	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	48	52.54	A		-0.27	5.25 - 103.80		
4,4'-DDE	260	293.49	A		-0.70	120.08 - 466.90		
4,4'-DDT	<1.7		A					
Aldrin	70	92.78	A		-1.34	30.89 - 154.68		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
alpha-BHC	65	76.75	A		-0.75	21.08 - 132.43		
beta-BHC	<1.7		A					
delta-BHC	<1.7		A					
Dieldrin	<1.7		A					
Endosulfan I	<1.7		A					
Endosulfan II	<1.7		A					
Endosulfan sulfate	<1.7		A					
Endrin	78	90.82	A		-0.55	30.21 - 151.42		
Endrin Aldehyde	<1.7		A					
Endrin Ketone	4.6		N	(1)				
gamma-BHC (Lindane)	<1.7		A					
Heptachlor	260	260.57	A		-0.01	94.49 - 426.65		
Heptachlor epoxide	<6.7		A					
Methoxychlor	<3.3		A					
1,2,4-Trichlorobenzene	3100	3120	A		-0.02	760 - 5480		
1,2-Dichlorobenzene	<330		A					
1,3-Dichlorobenzene	<330		A					
1,3-Dinitrobenzene	<330		A					
1,4-Dichlorobenzene	<330		A					
2,4,5-Trichlorophenol	7500	7682	A		-0.08	1743 - 13620		
2,4,6-Trichlorophenol	6100	5577	A		0.37	1636 - 9518		
2,4-Dichlorophenol	5700	5300	A		0.25	1341 - 9259		
2,4-Dimethylphenol	<330		A					
2,4-Dinitrophenol	<1600		A					
2,4-Dinitrotoluene	7800	7065	A		0.41	1896 - 12233		
2,6-Dichlorophenol	<330		A					
2,6-Dinitrotoluene	2300	2280	A		0.04	732 - 3828		
2-Chloronaphthalene	7300	7427	A		-0.06	2417 - 12436		
2-Chlorophenol	<330		A					
2-Methylnaphthalene	<330		A					
2-Methylphenol	2100	1977	A		0.18	198 - 3903		
2-Nitrophenol	<330		A					
3-Methyl & 4-Methylphenol	<330		A					
4,6-Dinitro-2-methylphenol	<1600		A					
4-Bromophenyl-phenylether	<330		A					
4-Chloro-3-methylphenol	3600	3547	A		0.06	1113 - 5982		
4-Chlorophenyl-phenylether	<330		A					
4-Nitrophenol	<1600		A					
Acenaphthene	6400	5673	A		0.53	2127 - 9220		
Acenaphthylene	<330		A					
Anthracene	6200	6210	A		-0.01	2089 - 10332		
Benzo(a)anthracene	4900	4507	A		0.39	1869 - 7145		
Benzo(a)pyrene	<330		A					
Benzo(b)fluoranthene	7100	8116	A		-0.42	2924 - 13307		
Benzo(g,h,i)perylene	<330		A					
Benzo(k)fluoranthene	<330		A					

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
bis(2-chloroethoxy)methane	<330		A					
bis(2-chloroethyl)ether	<330		A					
bis(2-chloroisopropyl)ether	<330		A					
Bis(2-ethylhexyl)phthalate	7400	8115	A		-0.36	2679 - 13550		
Butylbenzylphthalate	<330		A					
Chrysene	8200	7766	A		0.24	2852 - 12681		
Di-n-butylphthalate	4500	3913	A		0.58	1049 - 6778		
Di-n-octylphthalate	4200	4378	A		-0.14	822 - 7934		
Dibenzo(a,h)anthracene	4200	4249	A		-0.04	1490 - 7008		
Dibenzofuran	<330		A					
Diethylphthalate	8400	7616	A		0.40	2200 - 13033		
Dimethylphthalate	8000	7671	A		0.19	2954 - 12388		
Fluoranthene	6300	5726	A		0.51	2364 - 9088		
Fluorene	3400	3143	A		0.36	1195 - 5091		
Hexachlorobenzene	1800	1678	A		0.34	623 - 2733		
Hexachlorobutadiene	2200	2414	A		-0.25	461 - 4367		
Hexachlorocyclopentadiene	620	522	A		0.40	52 - 1256		
Hexachloroethane	2000	1953	A		0.08	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<330		A					
Isophorone	<330		A					
Naphthalene	<330		A					
Nitrobenzene	<330		A					
Pentachlorophenol	<1600		A					
Phenanthrene	<330		A					
Phenol	<330		A					
Pyrene	3200	3263	A		-0.08	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		

Radiological								Units: (Bq/kg)
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(DAFI01) Davis & Floyd, Inc.
PO Drawer 428
Greenwood, SC 29648

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	57.5	74.2	W		-22.5	51.9 - 96.5		
Arsenic	84.6	92	A		-8.0	64 - 120		
Barium	788	912	A		-13.6	638 - 1186		
Beryllium	37.2	40.0	A		-7.0	28.0 - 52.0		
Cadmium	10.1	11.99	A		-15.8	8.39 - 15.59		
Chromium	78.4	83	A		-5.5	58 - 108		
Cobalt	135	134	A		0.7	94 - 174		
Copper	189	178.7	A		5.8	125.1 - 232.3		
Lead	82.0	85.3	A		-3.9	59.7 - 110.9		
Mercury	0.183	0.1856	A		-1.4	0.1299 - 0.2413		
Nickel	241	255	A		-5.5	179 - 332		
Selenium	<0.50	<0.1	A					
Silver	12.2	12.12	A		0.7	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	315	347	A		-9.2	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	153	162.7	A		-6.0	113.9 - 211.5		
Zinc	392	422	A		-7.1	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	31.0	52.54	A		-1.30	5.25 - 103.80		
4,4'-DDE	206	293.49	A		-1.83	120.08 - 466.90		
4,4'-DDT	<1.67		A					
Aldrin	81.3	92.78	A		-0.68	30.89 - 154.68		
alpha-BHC	71.2	76.75	A		-0.35	21.08 - 132.43		
beta-BHC	<1.67		A					
delta-BHC	<1.67		A					
Dieldrin	<1.67		A					
Endosulfan I	<1.67		A					
Endosulfan II	<1.67		A					
Endosulfan sulfate	<1.67		A					
Endrin	49.7	90.82	A		-1.76	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<1.67		A					
Endrin Ketone	<1.67		A					
gamma-BHC (Lindane)	<1.67		A					
Heptachlor	261	260.57	A		0.01	94.49 - 426.65		
Heptachlor epoxide	<1.67		A					
Methoxychlor	<16.7		A					
1,2,4-Trichlorobenzene	3550	3120	A		0.42	760 - 5480		
1,2-Dichlorobenzene	<333		A					
1,3-Dichlorobenzene	<333		A					
1,3-Dinitrobenzene	<333		A					
1,4-Dichlorobenzene	<333		A					
2,4,5-Trichlorophenol	7250	7682	A		-0.19	1743 - 13620		
2,4,6-Trichlorophenol	5440	5577	A		-0.10	1636 - 9518		
2,4-Dichlorophenol	5240	5300	A		-0.04	1341 - 9259		
2,4-Dimethylphenol	<333		A					
2,4-Dinitrophenol	<833		A					
2,4-Dinitrotoluene	6730	7065	A		-0.19	1896 - 12233		
2,6-Dichlorophenol	<333		A					
2,6-Dinitrotoluene	2330	2280	A		0.09	732 - 3828		
2-Chloronaphthalene	7940	7427	A		0.26	2417 - 12436		
2-Chlorophenol	<333		A					
2-Methylnaphthalene	<333		A					
2-Methylphenol	2200	1977	A		0.33	198 - 3903		
2-Nitrophenol	<333		A					
3-Methyl & 4-Methylphenol	<333		A					
4,6-Dinitro-2-methylphenol	<833		A					
4-Bromophenyl-phenylether	<333		A					
4-Chloro-3-methylphenol	3610	3547	A		0.08	1113 - 5982		
4-Chlorophenyl-phenylether	<333		A					
4-Nitrophenol	<833		A					
Acenaphthene	6010	5673	A		0.24	2127 - 9220		
Acenaphthylene	<333		A					
Anthracene	6820	6210	A		0.33	2089 - 10332		
Benzo(a)anthracene	4570	4507	A		0.06	1869 - 7145		
Benzo(a)pyrene	<333		A					
Benzo(b)fluoranthene	8680	8116	A		0.24	2924 - 13307		
Benzo(g,h,i)perylene	<333		A					
Benzo(k)fluoranthene	<333		A					
bis(2-chloroethoxy)methane	<333		A					
bis(2-chloroethyl)ether	<333		A					
bis(2-chloroisopropyl)ether	<333		A					
Bis(2-ethylhexyl)phthalate	8630	8115	A		0.26	2679 - 13550		
Butylbenzylphthalate	<333		A					
Chrysene	7920	7766	A		0.08	2852 - 12681		
Di-n-butylphthalate	4160	3913	A		0.24	1049 - 6778		
Di-n-octylphthalate	4490	4378	A		0.09	822 - 7934		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzo(a,h)anthracene	4490	4249	A		0.21	1490 - 7008		
Dibenzofuran	<333		A					
Diethylphthalate	7960	7616	A		0.18	2200 - 13033		
Dimethylphthalate	8700	7671	A		0.60	2954 - 12388		
Fluoranthene	6470	5726	A		0.66	2364 - 9088		
Fluorene	3170	3143	A		0.04	1195 - 5091		
Hexachlorobenzene	1800	1678	A		0.34	623 - 2733		
Hexachlorobutadiene	2980	2414	A		0.66	461 - 4367		
Hexachlorocyclopentadiene	572	522	A		0.20	52 - 1256		
Hexachloroethane	2920	1953	A		1.55	195 - 3823		
Indeno(1,2,3-c,d)pyrene	866		N	(1)				
Isophorone	<333		A					
Naphthalene	<333		A					
Nitrobenzene	<333		A					
Pentachlorophenol	<833		A					
Phenanthrene	<333		A					
Phenol	<333		A					
Pyrene	3320	3263	A		0.08	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(DPHE01) Colorado Dept. of Public Health & Env. / Laboratory Services Div.
8100 Lowry Blvd
Denver, CO 80230

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	7.5	74.2	N		-89.9	51.9 - 96.5		
Arsenic	93.9	92	A		2.1	64 - 120		
Barium	942	912	A		3.3	638 - 1186		
Beryllium	32.4	40.0	A		-19.0	28.0 - 52.0		
Cadmium	12.4	11.99	A		3.4	8.39 - 15.59		
Chromium	83.4	83	A		0.5	58 - 108		
Cobalt	134.4	134	A		0.3	94 - 174		
Copper	180.6	178.7	A		1.1	125.1 - 232.3		
Lead	79	85.3	A		-7.4	59.7 - 110.9		
Mercury	0.175	0.1856	A		-5.7	0.1299 - 0.2413		
Nickel	255.7	255	A		0.3	179 - 332		
Selenium	0.34	<0.1	N	(1)				
Silver	11.2	12.12	A		-7.6	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	285	347	A		-17.9	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	9.5	12.6	W		-24.6	8.8 - 16.4		
Vanadium	162.4	162.7	A		-0.2	113.9 - 211.5		
Zinc	443	422	A		5.0	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	47	38.3	W		22.7	26.8 - 49.8	6	
Cesium-134	359	467	W		-23.1	327 - 607	13	
Cesium-137	599	605	A		-1.0	424 - 787	21	
Cobalt-57	4		A				3	
Cobalt-60	4	4.113	A				1	
Iron-55	NR	983				688 - 1278		
Manganese-54	316	307	A		2.9	215 - 399	11	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	29	25.3	A		14.6	17.7 - 32.9	3	
Plutonium-239/240	1	0.29	A	(17)			1	
Potassium-40	609	570	A		6.8	399 - 741	30	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	167	149	A		12.1	104 - 194	18	
Uranium-238	165	155	A		6.5	109 - 202	18	
Zinc-65	247	242	A		2.1	169 - 315	11	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ERCL01) Washington State Public Health Laboratories
1610 N.E. 150 th Srteet
Shoreline, WA 98155-9701

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	9.40	38.3	N		-75.5	26.8 - 49.8	0.65	
Cesium-134	434	467	A		-7.1	327 - 607	16	
Cesium-137	688	605	A		13.7	424 - 787	23	
Cobalt-57	0.66		A				0.34	
Cobalt-60	4.78	4.113	A				0.28	
Iron-55	NR	983				688 - 1278		
Manganese-54	364	307	A		18.6	215 - 399	16	
Nickel-63	555	514.9	A		7.8	360.4 - 669.4	30	
Plutonium-238	24.2	25.3	A		-4.3	17.7 - 32.9	0.9	
Plutonium-239/240	-0.17	0.29	A	(17)			0.08	
Potassium-40	703	570	W		23.3	399 - 741	14	L
Strontium-90	272	257	A		5.8	180 - 334	5	L
Technetium-99	112	171	N		-34.5	120 - 222	17	
Uranium-234/233	147	149	A		-1.3	104 - 194	4	L
Uranium-238	153	155	A		-1.3	109 - 202	4	L
Zinc-65	290	242	A		19.8	169 - 315	7	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ERHD99) Radiation Protection Bureau ERHD NMS
775 Brookfield Road AL6302D1
Ottawa, Ontario K1A 1C1

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	72.71	74.2	A	(5)	-2.0	51.9 - 96.5	2.38	
Arsenic	NR	92				64 - 120		
Barium	1391.4	1450	A	(5)	-4.0	1015 - 1885	31.0	L
Beryllium	47.48	41.0	A	(5)	15.8	28.7 - 53.3	0.78	L
Cadmium	14.30	12.09	A	(5)	18.3	8.46 - 15.72	0.40	L
Chromium	76.68	123	N	(5)	-37.7	86 - 160	2.10	L
Cobalt	158.52	140	A	(5)	13.2	98 - 182	3.10	L
Copper	225.31	181.6	W	(5)	24.1	127.1 - 236.1	3.40	L
Lead	93.83	88.1	A	(5)	6.5	61.7 - 114.5	1.02	L
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	301.34	261	A	(5)	15.5	183 - 339	1.17	L
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	188.98	347	N	(5)	-45.5	243 - 451	9.01	
Uranium-235	0.093	0.091	A		2.2	0.064 - 0.118	0.003	
Uranium-238	12.86	12.5	A		2.9	8.8 - 16.3	0.44	
Uranium-Total	12.96	12.6	A		2.9	8.8 - 16.4	0.44	
Vanadium	240.17	210.3	A	(5)	14.2	147.2 - 273.4	1.63	L
Zinc	427.64	423	A	(5)	1.1	296 - 550	15.50	

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	28.66	38.3	W		-25.2	26.8 - 49.8	1.20	
Cesium-134	440.9	467	A		-5.6	327 - 607	6.26	L
Cesium-137	605.9	605	A		0.1	424 - 787	19.0	
Cobalt-57	0.59		A				0.37	
Cobalt-60	5.07	4.113	A				0.33	
Iron-55	NR	983				688 - 1278		
Manganese-54	318.9	307	A		3.9	215 - 399	9.45	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	255.9	242	A		5.7	169 - 315	7.89	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ERLG01) Environmental Radiation Laboratory
Georgia Institute of Tech.
Atlanta, GA 30332

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	43	38.3	A		12.3	26.8 - 49.8	1.8	
Cesium-134	470	467	A		0.6	327 - 607	16	
Cesium-137	600	605	A		-0.8	424 - 787	45	
Cobalt-57	.01		A				1	
Cobalt-60	3.8	4.113	A				1	
Iron-55	NR	983				688 - 1278		
Manganese-54	310	307	A		1.0	215 - 399	40	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	160	257	N		-37.7	180 - 334	3	L
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	160	155	A		3.2	109 - 202	30	
Zinc-65	240	242	A		-0.8	169 - 315	60	H

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ERPD99) Ministry Of Health,Radiation Protection Department Lab
Al-Awqaf Complex-Tower#12
Sharq, Kuwait 656

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	440.393	467	A		-5.7	327 - 607	40.462	
Cesium-137	713.622	605	A		18.0	424 - 787	35.041	
Cobalt-57	14.708		N	(1)			4.804	
Cobalt-60	4.728	4.113	A				0.514	
Iron-55	NR	983				688 - 1278		
Manganese-54	298.024	307	A		-2.9	215 - 399	27.957	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	689.232	570	W		20.9	399 - 741	60.041	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	211.656	242	A		-12.5	169 - 315	20.881	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ETTP01) ETTP
Bldg K1006
Oak Ridge, TN 37830

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	66.0	74.2	A		-11.1	51.9 - 96.5		
Arsenic	86.3	92	A		-6.2	64 - 120		
Barium	872.6	912	A		-4.3	638 - 1186		
Beryllium	38.7	40.0	A		-3.3	28.0 - 52.0		
Cadmium	10.5	11.99	A		-12.4	8.39 - 15.59		
Chromium	77.7	83	A		-6.4	58 - 108		
Cobalt	131.4	134	A		-1.9	94 - 174		
Copper	165.1	178.7	A		-7.6	125.1 - 232.3		
Lead	95.2	85.3	A		11.6	59.7 - 110.9		
Mercury	0.191	0.1856	A		2.9	0.1299 - 0.2413		
Nickel	234.5	255	A		-8.0	179 - 332		
Selenium	0.85	<0.1	N	(1)				
Silver	9.9	12.12	A		-18.3	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	357.2	347	A		2.9	243 - 451		
Uranium-235	0.0827	0.091	A		-9.1	0.064 - 0.118		
Uranium-238	11.25	12.5	A		-10.0	8.8 - 16.3		
Uranium-Total	11.4	12.6	A		-9.5	8.8 - 16.4		
Vanadium	148.2	162.7	A		-8.9	113.9 - 211.5		
Zinc	433.9	422	A		2.8	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	90.3	38.3	N		135.8	26.8 - 49.8	50	H
Cesium-134	382.6	467	A		-18.1	327 - 607	13.8	
Cesium-137	642.5	605	A		6.2	424 - 787	32.3	
Cobalt-57	9.6		A				5	
Cobalt-60	17	4.113	A	(17)			10	
Iron-55	NR	983				688 - 1278		
Manganese-54	330.6	307	A		7.7	215 - 399	20.8	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	145	171	A		-15.2	120 - 222	9	
Uranium-234/233	NR	149				104 - 194		
Uranium-235	17.5						10	H
Uranium-238	NR	155				109 - 202		
Zinc-65	257.3	242	A		6.3	169 - 315	32.6	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(EULC01) EnergySolutions, LLC
I-80, Exit 46
Clive, UT 84029

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	49.95	38.3	N		30.4	26.8 - 49.8	17.87	H
Cesium-134	514.3	467	A		10.1	327 - 607	38.11	
Cesium-137	673.4	605	A		11.3	424 - 787	38.85	
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	388.5	307	W		26.5	215 - 399	28.38	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	666	570	A		16.8	399 - 741	113.96	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	271.95	242	A		12.4	169 - 315	43.66	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(FDHE01) Florida Dept of Health Environmental Laboratory
PO Box 680069
Orlando, FL 32868-0069

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	42.33	38.3	A		10.5	26.8 - 49.8	1.44	
Cesium-134	452.51	467	A		-3.1	327 - 607	5.94	L
Cesium-137	660.6	605	A		9.2	424 - 787	14.8	L
Cobalt-57	0.05		A				0.55	
Cobalt-60	4.48	4.113	A				0.15	
Iron-55	NR	983				688 - 1278		
Manganese-54	347.54	307	A		13.2	215 - 399	7.13	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	652.74	570	A		14.5	399 - 741	18.68	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	163.1	155	A		5.2	109 - 202	4.37	L
Zinc-65	278.17	242	A		14.9	169 - 315	6.49	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
PO Box 680069
Orlando, FL 32868-0069

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	44.31	38.3	A		15.7	26.8 - 49.8	1.25	L
Cesium-134	443.3	467	A		-5.1	327 - 607	2.33	L
Cesium-137	640.74	605	A		5.9	424 - 787	1.64	L
Cobalt-57	0.60		A				.38	
Cobalt-60	3.85	4.113	A				0.49	
Iron-55	NR	983				688 - 1278		
Manganese-54	339.36	307	A		10.5	215 - 399	1.53	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	672.6	570	A		18.0	399 - 741	8.13	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	146.12	155	A		-5.7	109 - 202	5.62	
Zinc-65	275.35	242	A		13.8	169 - 315	2.69	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(FMEC99) Foods and Water Laboratories Center
Ministry of Regional Municpalities and Water Resources
Muscat, B.O.Box. 3094 111

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	0.088	0.091	A		-3.3	0.064 - 0.118	0.008	
Uranium-238	11.9	12.5	A		-4.8	8.8 - 16.3	1.3	
Uranium-Total	11.99	12.6	A		-4.8	8.8 - 16.4	1.30	
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	23.46	38.3	N		-38.7	26.8 - 49.8	1.42	
Cesium-134	411.46	467	A		-11.9	327 - 607	1.92	L
Cesium-137	551.6	605	A		-8.8	424 - 787	2.59	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	3.09	4.113	A				0.39	
Iron-55	NR	983				688 - 1278		
Manganese-54	289.4	307	A		-5.7	215 - 399	1.31	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	742.1	570	N		30.2	399 - 741	11.43	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-235	7.01						0.62	
Uranium-238	147.8	155	A		-4.6	109 - 202	17.15	
Zinc-65	233.85	242	A		-3.4	169 - 315	4.43	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(FSCL01) Lawrence Livermore Laboratory
7000 East Ave.
Livermore, CA 94551

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	76.86	74.2	A	(5)	3.6	51.9 - 96.5	1.06	L
Arsenic	92.11	100	A	(5)	-7.9	70 - 130	1.57	L
Barium	1466.28	1450	A	(5)	1.1	1015 - 1885	121.99	
Beryllium	38.12	41.0	A	(5)	-7.0	28.7 - 53.3	0.77	L
Cadmium	12.15	12.09	A	(5)	0.5	8.46 - 15.72	0.06	L
Chromium	120.86	123	A	(5)	-1.7	86 - 160	1.88	L
Cobalt	139.38	140	A	(5)	-0.4	98 - 182	1.32	L
Copper	183.31	181.6	A	(5)	0.9	127.1 - 236.1	2.14	L
Lead	93.18	88.1	A	(5)	5.8	61.7 - 114.5	4.92	
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	254.36	261	A	(5)	-2.5	183 - 339	1.94	L
Selenium	0.63	<0.1	N	(1)			0.02	
Silver	12.35	12.12	A	(5)	1.9	8.48 - 15.76	0.32	L
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	348.55	347	A	(5)	0.4	243 - 451	5.15	L
Uranium-235	0.08	0.091	A		-12.1	0.064 - 0.118	0.002	L
Uranium-238	12.10	12.5	A		-3.2	8.8 - 16.3	0.32	L
Uranium-Total	12.19	12.6	A		-3.3	8.8 - 16.4	0.33	L
Vanadium	213.51	210.3	A	(5)	1.5	147.2 - 273.4	3.89	L
Zinc	427.66	423	A	(5)	1.1	296 - 550	2.82	L

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	42.3	38.3	A		10.4	26.8 - 49.8	6.8	
Cesium-134	472	467	A		1.1	327 - 607	20.2	
Cesium-137	645.3	605	A		6.7	424 - 787	27.9	
Cobalt-57	NR		RW	(11)				
Cobalt-60	4.1	4.113	A				0.3	
Iron-55	NR	983				688 - 1278		
Manganese-54	330.1	307	A		7.5	215 - 399	14.4	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	742.4	570	N		30.2	399 - 741	33.8	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	149	149	A		0.0	104 - 194	5	
Uranium-238	153	155	A		-1.3	109 - 202	6	
Zinc-65	267.8	242	A		10.7	169 - 315	11.8	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(GENE01) GEL Laboratories, LLC
2040 Savage Road
Charleston, SC 29407

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	61.8	74.2	A		-16.7	51.9 - 96.5		
Arsenic	87.1	92	A		-5.3	64 - 120		
Barium	847	912	A		-7.1	638 - 1186		
Beryllium	36.1	40.0	A		-9.8	28.0 - 52.0		
Cadmium	10.2	11.99	A		-14.9	8.39 - 15.59		
Chromium	69.8	83	A		-15.9	58 - 108		
Cobalt	115	134	A		-14.2	94 - 174		
Copper	174	178.7	A		-2.6	125.1 - 232.3		
Lead	76.3	85.3	A		-10.6	59.7 - 110.9		
Mercury	0.199	0.1856	A		7.2	0.1299 - 0.2413		
Nickel	209	255	A		-18.0	179 - 332		
Selenium	<1	<0.1	A					
Silver	11.4	12.12	A		-5.9	8.48 - 15.76		
Technetium-99	0.000276	0.000273	A		1.1	0.000191 - 0.000355	0.0001	H
Thallium	285	347	A		-17.9	243 - 451		
Uranium-235	0.0663	0.091	W		-27.1	0.064 - 0.118		
Uranium-238	9.09	12.5	W		-27.3	8.8 - 16.3		
Uranium-Total	9	12.6	W		-28.6	8.8 - 16.4		
Vanadium	142	162.7	A		-12.7	113.9 - 211.5		
Zinc	360	422	A		-14.7	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	37.8	52.54	A		-0.89	5.25 - 103.80		
4,4'-DDE	198	293.49	A		-1.99	120.08 - 466.90		
4,4'-DDT	<1.33		A					
Aldrin	56.6	92.78	A		-2.13	30.89 - 154.68		
alpha-BHC	56.0	76.75	A		-1.33	21.08 - 132.43		
beta-BHC	<0.666		A					
delta-BHC	<0.666		A					
Dieldrin	<1.33		A					
Endosulfan I	<0.666		A					
Endosulfan II	<1.33		A					
Endosulfan sulfate	<1.33		A					
Endrin	63.0	90.82	A		-1.19	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<1.33		A					
Endrin Ketone	<50		A					
gamma-BHC (Lindane)	<0.666		A					
Heptachlor	178	260.57	A		-1.63	94.49 - 426.65		
Heptachlor epoxide	<50		A					
Methoxychlor	<6.66		A					
1,2,4-Trichlorobenzene	2120	3120	A		-0.97	760 - 5480		
1,2-Dichlorobenzene	<333		A					
1,3-Dichlorobenzene	<333		A					
1,3-Dinitrobenzene	<333		A					
1,4-Dichlorobenzene	<333		A					
2,4,5-Trichlorophenol	8100	7682	A		0.18	1743 - 13620		
2,4,6-Trichlorophenol	5860	5577	A		0.20	1636 - 9518		
2,4-Dichlorophenol	6300	5300	A		0.62	1341 - 9259		
2,4-Dimethylphenol	106		N					
2,4-Dinitrophenol	<333		A					
2,4-Dinitrotoluene	7820	7065	A		0.42	1896 - 12233		
2,6-Dichlorophenol	<333		A					
2,6-Dinitrotoluene	2150	2280	A		-0.24	732 - 3828		
2-Chloronaphthalene	7580	7427	A		0.08	2417 - 12436		
2-Chlorophenol	<333		A					
2-Methylnaphthalene	<33.3		A					
2-Methylphenol	2410	1977	A		0.64	198 - 3903		
2-Nitrophenol	<333		A					
3-Methyl & 4-Methylphenol	<333		A					
4,6-Dinitro-2-methylphenol	<333		A					
4-Bromophenyl-phenylether	<333		A					
4-Chloro-3-methylphenol	3360	3547	A		-0.22	1113 - 5982		
4-Chlorophenyl-phenylether	<333		A					
4-Nitrophenol	<333		A					
Acenaphthene	5970	5673	A		0.22	2127 - 9220		
Acenaphthylene	<33.3		A					
Anthracene	6800	6210	A		0.32	2089 - 10332		
Benzo(a)anthracene	3890	4507	A		-0.61	1869 - 7145		
Benzo(a)pyrene	<33.3		A					
Benzo(b)fluoranthene	8860	8116	A		0.31	2924 - 13307		
Benzo(g,h,i)perylene	<33.3		A					
Benzo(k)fluoranthene	<33.3		A					
bis(2-chloroethoxy)methane	<333		A					
bis(2-chloroethyl)ether	<333		A					
bis(2-chloroisopropyl)ether	<333		A					
Bis(2-ethylhexyl)phthalate	8120	8115	A		0.00	2679 - 13550		
Butylbenzylphthalate	<333		A					
Chrysene	8050	7766	A		0.16	2852 - 12681		
Di-n-butylphthalate	3240	3913	A		-0.67	1049 - 6778		
Di-n-octylphthalate	3600	4378	A		-0.60	822 - 7934		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzo(a,h)anthracene	3980	4249	A		-0.24	1490 - 7008		
Dibenzofuran	<333		A					
Diethylphthalate	7670	7616	A		0.03	2200 - 13033		
Dimethylphthalate	7990	7671	A		0.19	2954 - 12388		
Fluoranthene	6030	5726	A		0.27	2364 - 9088		
Fluorene	2680	3143	A		-0.65	1195 - 5091		
Hexachlorobenzene	1450	1678	A		-0.64	623 - 2733		
Hexachlorobutadiene	1420	2414	A		-1.16	461 - 4367		
Hexachlorocyclopentadiene	704	522	A		0.74	52 - 1256		
Hexachloroethane	598	1953	A		-2.17	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<33.3		A					
Isophorone	<333		A					
Naphthalene	<333		A					
Nitrobenzene	<333		A					
Pentachlorophenol	<333		A					
Phenanthrene	<33.3		A					
Phenol	<333		A					
Pyrene	2780	3263	A		-0.65	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.87	38.3	A		1.5	26.8 - 49.8	3.08	
Cesium-134	467.7	467	A		0.2	327 - 607	8.2	L
Cesium-137	612.7	605	A		1.3	424 - 787	9.1	L
Cobalt-57	-0.3		A				0.2	
Cobalt-60	3.6	4.113	A				0.3	
Iron-55	844.7	983	A		-14.1	688 - 1278	80.7	
Manganese-54	322.3	307	A		5.0	215 - 399	5.9	L
Nickel-63	550.3	514.9	A		6.9	360.4 - 669.4	38.4	
Plutonium-238	28.9	25.3	A		14.2	17.7 - 32.9	2.42	
Plutonium-239/240	0.34	0.29	A	(17)			0.49	
Potassium-40	608.7	570	A		6.8	399 - 741	11.6	L
Strontium-90	262.3	257	A		2.1	180 - 334	7.8	L
Technetium-99	101.5	171	N		-40.6	120 - 222	41.4	H
Uranium-234/233	144.33	149	A		-3.1	104 - 194	5.98	
Uranium-238	147.33	155	A		-4.9	109 - 202	6.07	
Zinc-65	261	242	A		7.9	169 - 315	4.36	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(GPCL01) Georgia Power Company Environmental Laboratory
5131 Maner Road
Smyrna, GA 30080

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	482.5	467	A		3.3	327 - 607	17.0	
Cesium-137	552.0	605	A		-8.8	424 - 787	18.5	
Cobalt-57	NR		RW	(11)				
Cobalt-60	3.9	4.113	A				1.1	
Iron-55	NR	983				688 - 1278		
Manganese-54	291.9	307	A		-4.9	215 - 399	12.5	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	570.3	570	A		0.1	399 - 741	36	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	237.1	242	A		-2.0	169 - 315	12	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(GPLP01) GPL Laboratories, LLLP
7210A Corporate Court
Frederick, MD 21703

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Aluminum	14700							
Antimony	68.1	74.2	A		-8.2	51.9 - 96.5		
Arsenic	85.3	92	A		-7.3	64 - 120		
Barium	818	912	A		-10.3	638 - 1186		
Beryllium	35.9	40.0	A		-10.3	28.0 - 52.0		
Cadmium	10.3	11.99	A		-14.1	8.39 - 15.59		
Calcium	28800							
Chromium	73.1	83	A		-11.9	58 - 108		
Cobalt	112	134	A		-16.4	94 - 174		
Copper	167	178.7	A		-6.5	125.1 - 232.3		
Iron	20300							
Lead	76.2	85.3	A		-10.7	59.7 - 110.9		
Magnesium	8290							
Manganese	375							
Mercury	0.18	0.1856	A		-3.0	0.1299 - 0.2413		
Molybdenum	0.33							
Nickel	212	255	A		-16.9	179 - 332		
Potassium	2470							
Selenium	<1.9	<0.1	A					
Silver	10.8	12.12	A		-10.9	8.48 - 15.76		
Sodium	317							
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	334	347	A		-3.7	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	10.4	12.6	A		-17.5	8.8 - 16.4		
Vanadium	143	162.7	A		-12.1	113.9 - 211.5		
Zinc	341	422	A		-19.2	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	3370	3120	A		0.24	760 - 5480		
1,2-Dichlorobenzene	<330		A					
1,3-Dichlorobenzene	<330		A					
1,4-Dichlorobenzene	<330		A					
2,4,5-Trichlorophenol	8310	7682	A		0.27	1743 - 13620		
2,4,6-Trichlorophenol	5950	5577	A		0.26	1636 - 9518		
2,4-Dichlorophenol	5640	5300	A		0.21	1341 - 9259		
2,4-Dimethylphenol	<330		A					
2,4-Dinitrophenol	<670		A					
2,4-Dinitrotoluene	6640	7065	A		-0.24	1896 - 12233		
2,6-Dichlorophenol	<330		A					
2,6-Dinitrotoluene	2320	2280	A		0.08	732 - 3828		
2-Chloronaphthalene	8610	7427	A		0.60	2417 - 12436		
2-Chlorophenol	<330		A					
2-Methylnaphthalene	<330		A					
2-Methylphenol	2120	1977	A		0.21	198 - 3903		
2-Nitrophenol	<330		A					
3-Methyl & 4-Methylphenol	<670		A					
4,6-Dinitro-2-methylphenol	<670		A					
4-Bromophenyl-phenylether	<330		A					
4-Chloro-3-methylphenol	3460	3547	A		-0.10	1113 - 5982		
4-Chlorophenyl-phenylether	<330		A					
4-Nitrophenol	<670		A					
Acenaphthene	6190	5673	A		0.38	2127 - 9220		
Acenaphthylene	<330		A					
Anthracene	7740	6210	A		0.83	2089 - 10332		
Benzo(a)anthracene	5760	4507	A		1.24	1869 - 7145		
Benzo(a)pyrene	<330		A					
Benzo(b)fluoranthene	<330	8116	N	(2)		2924 - 13307		
Benzo(g,h,i)perylene	<330		A					
Benzo(k)fluoranthene	14800		N	(1)				
bis(2-chloroethoxy)methane	<330		A					
bis(2-chloroethyl)ether	<330		A					
bis(2-chloroisopropyl)ether	<330		A					
Bis(2-ethylhexyl)phthalate	8840	8115	A		0.37	2679 - 13550		
Butylbenzylphthalate	<330		A					
Chrysene	10000	7766	A		1.22	2852 - 12681		
Di-n-butylphthalate	3930	3913	A		0.02	1049 - 6778		
Di-n-octylphthalate	5330	4378	A		0.74	822 - 7934		
Dibenzo(a,h)anthracene	4710	4249	A		0.40	1490 - 7008		
Dibenzofuran	<330		A					
Diethylphthalate	7330	7616	A		-0.15	2200 - 13033		
Dimethylphthalate	8160	7671	A		0.29	2954 - 12388		
Fluoranthene	4680	5726	A		-0.93	2364 - 9088		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Fluorene	2980	3143	A		-0.23	1195 - 5091		
Hexachlorobenzene	2150	1678	A		1.32	623 - 2733		
Hexachlorobutadiene	2420	2414	A		0.01	461 - 4367		
Hexachlorocyclopentadiene	<330	522	N	(2)		52 - 1256		
Hexachloroethane	1540	1953	A		-0.66	195 - 3823		
Indeno(1,2,3-c,d)pyrene	841		N	(1)				
Isophorone	<330		A					
Naphthalene	<330		A					
Nitrobenzene	<330		A					
Pentachlorophenol	<670		A					
Phenanthrene	<330		A					
Phenol	<330		A					
Pyrene	3810	3263	A		0.73	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%

L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(HECR01) SC Dept. Health and Environmental Control Radiological Laboratory
2600 Bull St.
Columbia, SC 29201

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	432.1	467	A		-7.5	327 - 607	14.4	
Cesium-137	639.4	605	A		5.7	424 - 787	51.8	
Cobalt-57	0.125		A				0.564	
Cobalt-60	3.655	4.113	A				0.465	
Iron-55	NR	983				688 - 1278		
Manganese-54	337.4	307	A		9.9	215 - 399	28.8	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	657.4	570	A		15.3	399 - 741	42.4	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	273.8	242	A		13.1	169 - 315	17.9	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(HERR01) Washington Closure Hanford
Radiological Counting Facility
Richland, WA 99352

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.9	38.3	A		1.6	26.8 - 49.8	2.64	
Cesium-134	377	467	A		-19.3	327 - 607	9.29	L
Cesium-137	618	605	A		2.1	424 - 787	30.3	
Cobalt-57	0.0540		N	(1)			0.0044	
Cobalt-60	5.14	4.113	A				0.818	
Iron-55	NR	983				688 - 1278		
Manganese-54	322	307	A		4.9	215 - 399	14.8	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	568	570	A		-0.4	399 - 741	35.6	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	155	155	A		0.0	109 - 202	12.8	
Zinc-65	266	242	A		9.9	169 - 315	12.6	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(IAEA99) International Atomic Energy Agency
Agency's Laboratories Seibersdorf
Seibersdorf, Austria A-2444

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	59.1	38.3	N		54.3	26.8 - 49.8	1.6	L
Cesium-134	526	467	A		12.6	327 - 607	8.0	L
Cesium-137	700	605	A		15.7	424 - 787	13	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	4.21	4.113	A				0.24	
Iron-55	NR	983				688 - 1278		
Manganese-54	353	307	A		15.0	215 - 399	5.0	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	614	570	A		7.7	399 - 741	18	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	274	242	A		13.2	169 - 315	5.4	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ISUP01) ISU - Department of Physics/Health Physics/EAL
785 S. 8th Ave, Rm 120
Pocatello, ID 83209-8106

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	424.51	467	A		-9.1	327 - 607	2.00	L
Cesium-137	639.95	605	A		5.8	424 - 787	7.55	L
Cobalt-57	0.01		A				0.14	
Cobalt-60	5.03	4.113	N	(4)			0.08	
Iron-55	NR	983				688 - 1278		
Manganese-54	335.48	307	A		9.3	215 - 399	3.68	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	647.90	570	A		13.7	399 - 741	9.58	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	275.06	242	A		13.7	169 - 315	3.11	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(JCAL99) Chemical Analysis Laboratory
Ahmed Tarawneh Street, Royal Scientific Society
AL-Jaubaiha, AL-Jubaiha 11941

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	10.4	11.99	A		-13.3	8.39 - 15.59	1.6	
Chromium	92.6	83	A		11.6	58 - 108	13.9	
Cobalt	139	134	A		3.7	94 - 174	21	
Copper	157	178.7	A		-12.1	125.1 - 232.3	24	
Lead	76.3	85.3	A		-10.6	59.7 - 110.9	11.4	
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	256	255	A		0.4	179 - 332	38	
Selenium	NR	<0.1						
Silver	15.0	12.12	W		23.8	8.48 - 15.76	2.2	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	368	422	A		-12.8	295 - 549	55	

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(JLNN01) Jefferson Laboratory
12050 Jefferson Ave
Newport News, VA 23606

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.85	38.3	A		6.7	26.8 - 49.8	2.8	
Cesium-134	423.6	467	A		-9.3	327 - 607	5.4	L
Cesium-137	587.5	605	A		-2.9	424 - 787	11.7	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	0.957	4.113	A	(17)			1.4	
Iron-55	NR	983				688 - 1278		
Manganese-54	300.0	307	A		-2.3	215 - 399	7.0	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	246.6	242	A		1.9	169 - 315	8.5	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(KDHE01) Kansas Dept. of Health & Environment
Forbes Bldg. 740
Topeka, KS 66620

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.1	38.3	A		-3.1	26.8 - 49.8	2.3	
Cesium-134	464.1	467	A		-0.6	327 - 607	7.9	L
Cesium-137	635.3	605	A		5.0	424 - 787	27.1	
Cobalt-57	NR		RW	(11)				
Cobalt-60	4.85	4.113	A				0.32	
Iron-55	NR	983				688 - 1278		
Manganese-54	348.3	307	A		13.5	215 - 399	12.7	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	642.8	570	A		12.8	399 - 741	31.4	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	274.2	242	A		13.3	169 - 315	9.9	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(LANL01) Los Alamos National Laboratory
Mail Stop J514
Los Alamos, NM 87545

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.4	38.3	A		5.5	26.8 - 49.8	2.7	
Cesium-134	452	467	A		-3.2	327 - 607	22	
Cesium-137	677	605	A		11.9	424 - 787	34	
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	352	307	A		14.7	215 - 399	18	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	289	242	A		19.4	169 - 315	22	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(LAWR01) LAWRENCE BERKELEY NATIONAL LABORATORY
1 CYCLOTRON RD.
BERKELEY, CA 94720

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	470	467	A		0.6	327 - 607	14.6	
Cesium-137	645	605	A		6.6	424 - 787	20.2	
Cobalt-57	NR		RW	(11)				
Cobalt-60	3.14	4.113	A				.55	
Iron-55	NR	983				688 - 1278		
Manganese-54	339	307	A		10.4	215 - 399	10.7	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	662	570	A		16.1	399 - 741	26.9	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	262	242	A		8.3	169 - 315	9.5	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(LAWR02) Lawrence Livermore National Laboratory
7000 East Avenue
Livermore, CA 94551

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32.9	38.3	A		-14.1	26.8 - 49.8	1.7	
Cesium-134	403	467	A		-13.7	327 - 607	12.2	
Cesium-137	586	605	A		-3.1	424 - 787	17.8	
Cobalt-57	NR		RW	(11)				
Cobalt-60	4.1	4.113	A				0.2	
Iron-55	NR	983				688 - 1278		
Manganese-54	299	307	A		-2.6	215 - 399	9.1	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	557	570	A		-2.3	399 - 741	18	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	236	242	A		-2.5	169 - 315	7.3	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(LDRA99) Laboratori de Radiologia Ambiental-Universitat de Barcelona
Facultat de Quimica
Barcelona, 08028

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38	38.3	A		-0.8	26.8 - 49.8	3	
Cesium-134	410	467	A		-12.2	327 - 607	30	
Cesium-137	630	605	A		4.1	424 - 787	50	
Cobalt-57	NR							
Cobalt-60	3.6	4.113	A				0.4	
Iron-55	NR	983				688 - 1278		
Manganese-54	325	307	A		5.9	215 - 399	24	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	600	570	A		5.3	399 - 741	50	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	263	242	A		8.7	169 - 315	20	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(LOCK01) ICP Analytical Services Laboratories
CH2M-WG Idaho, LLC
Idaho Falls, ID 83415-5210

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	0.000248	0.000273	A		-9.2	0.000191 - 0.000355	0.0000	H
Thallium	NR	347				243 - 451		
Uranium-235	0.0728	0.091	A		-20.0	0.064 - 0.118	0.0146	H
Uranium-238	9.92	12.5	W		-20.6	8.8 - 16.3	1.98	
Uranium-Total	10.0	12.6	W		-20.6	8.8 - 16.4	2.0	
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	76.1	38.3	N		98.7	26.8 - 49.8	8.1	
Cesium-134	410	467	A		-12.2	327 - 607	16	
Cesium-137	623	605	A		3.0	424 - 787	23	
Cobalt-57	-0.433		A				0.791	
Cobalt-60	2.56	4.113	A				0.61	
Iron-55	NR	983				688 - 1278		
Manganese-54	331	307	A		7.8	215 - 399	13	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	293	25.3	N		1058.1	17.7 - 32.9	16	
Plutonium-239/240	112	0.29	N	(4)			9	
Potassium-40	643	570	A		12.8	399 - 741	33	
Strontium-90	141.9	257	N		-44.8	180 - 334	2.5	L
Technetium-99	NR	171				120 - 222		
Uranium-234/233	146	149	A		-2.0	104 - 194	11	
Uranium-235	4.12						1.63	H
Uranium-238	128	155	A		-17.4	109 - 202	10	
Zinc-65	273	242	A		12.8	169 - 315	12	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(LOCK03) Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory
INL/Battelle Energy Alliance, LLC
Scoville, ID 83415-7111

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Antimony-125	1.8						2.4	H
Cesium-134	480	467	A		2.8	327 - 607	34	
Cesium-137	656	605	A		8.4	424 - 787	47	
Cobalt-57	0.1		A				0.7	
Cobalt-60	3.6	4.113	A				0.6	
Iron-55	NR	983				688 - 1278		
Manganese-54	335	307	A		9.1	215 - 399	24	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	26.0	25.3	A		2.8	17.7 - 32.9	3.2	
Plutonium-239/240	4.53	0.29	N	(4)			0.77	
Potassium-40	612	570	A		7.4	399 - 741	49	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	341	242	N		40.9	169 - 315	20	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(MART01) USEC, Inc.
Lab COC, Bldg. X-710, Rm 222
Piketon, OH 45661-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	107	92	A		16.3	64 - 120		
Barium	917	912	A		0.5	638 - 1186		
Beryllium	41.8	40.0	A		4.5	28.0 - 52.0		
Cadmium	8.15	11.99	N		-32.0	8.39 - 15.59		
Chromium	78.6	83	A		-5.3	58 - 108		
Cobalt	132	134	A		-1.5	94 - 174		
Copper	185	178.7	A		3.5	125.1 - 232.3		
Lead	89.1	85.3	A		4.5	59.7 - 110.9		
Mercury	0.163	0.1856	A		-12.2	0.1299 - 0.2413		
Nickel	243	255	A		-4.7	179 - 332		
Selenium	NR	<0.1						
Silver	10.6	12.12	A		-12.5	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	295	347	A		-15.0	243 - 451		
Uranium-235	0.0664	0.091	W		-27.0	0.064 - 0.118		
Uranium-238	10.1	12.5	A		-19.2	8.8 - 16.3		
Uranium-Total	10.2	12.6	A		-19.0	8.8 - 16.4		
Vanadium	152	162.7	A		-6.6	113.9 - 211.5		
Zinc	409	422	A		-3.1	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	49.7	52.54	A		-0.17	5.25 - 103.80		
4,4'-DDE	298	293.49	A		0.09	120.08 - 466.90		
4,4'-DDT	<5.0		A					
Aldrin	109	92.78	A		0.96	30.89 - 154.68		
alpha-BHC	66.0	76.75	A		-0.69	21.08 - 132.43		
beta-BHC	<5.0		A					
delta-BHC	<5.0		A					
Dieldrin	<5.0		A					
Endosulfan I	<5.0		A					
Endosulfan II	<5.0		A					
Endosulfan sulfate	<5.0		A					
Endrin	80.1	90.82	A		-0.46	30.21 - 151.42		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<5.0		A					
Endrin Ketone	<5.0		A					
gamma-BHC (Lindane)	<5.0		A					
Heptachlor	165	260.57	A		-1.88	94.49 - 426.65		
Heptachlor epoxide	<5.0		A					
Methoxychlor	<5.0		A					
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.49	38.3	A		-4.7	26.8 - 49.8	2.95	
Cesium-134	390	467	A		-16.5	327 - 607	57.2	
Cesium-137	602.7	605	A		-0.4	424 - 787	39.8	
Cobalt-57	1.11		A				0.64	
Cobalt-60	1.94	4.113	A	(17)			0.93	
Iron-55	NR	983				688 - 1278		
Manganese-54	315.5	307	A		2.8	215 - 399	17.1	

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	25.42	25.3	A		0.5	17.7 - 32.9	2.316	
Plutonium-239/240	0.1479	0.29	A	(17)			0.148	
Potassium-40	598.7	570	A		5.0	399 - 741	23.1	
Strontium-90	217	257	A		-15.6	180 - 334	12.5	
Technetium-99	162.8	171	A		-4.8	120 - 222	5.587	
Uranium-234/233	127.1	149	A		-14.7	104 - 194	8.80	
Uranium-238	133.9	155	A		-13.6	109 - 202	9.31	
Zinc-65	254.9	242	A		5.3	169 - 315	7.0	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(MART02) United States Enrichment Corporation
PO Box 1410
Paducah, KY 42002

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	61.3	74.2	A		-17.4	51.9 - 96.5		
Arsenic	90.2	92	A		-2.0	64 - 120		
Barium	1050	912	A		15.1	638 - 1186		
Beryllium	40.4	40.0	A		1.0	28.0 - 52.0		
Cadmium	13.3	11.99	A		10.9	8.39 - 15.59		
Chromium	71.9	83	A		-13.4	58 - 108		
Cobalt	132	134	A		-1.5	94 - 174		
Copper	175	178.7	A		-2.1	125.1 - 232.3		
Lead	97.8	85.3	A		14.7	59.7 - 110.9		
Mercury	0.18	0.1856	A		-3.0	0.1299 - 0.2413		
Nickel	189	255	W		-25.9	179 - 332		
Selenium	<0.97	<0.1	A					
Silver	10.9	12.12	A		-10.1	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	339	347	A		-2.3	243 - 451		
Uranium-235	0.084	0.091	A		-7.7	0.064 - 0.118		
Uranium-238	11.7	12.5	A		-6.4	8.8 - 16.3		
Uranium-Total	11.8	12.6	A		-6.3	8.8 - 16.4		
Vanadium	143	162.7	A		-12.1	113.9 - 211.5		
Zinc	315	422	W		-25.4	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	4100	3120	A		0.95	760 - 5480		
1,2-Dichlorobenzene	<170		A					
1,3-Dichlorobenzene	<170		A					
1,4-Dichlorobenzene	<170		A					
2,4,5-Trichlorophenol	9200	7682	A		0.65	1743 - 13620		
2,4,6-Trichlorophenol	6400	5577	A		0.58	1636 - 9518		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,4-Dichlorophenol	6300	5300	A		0.62	1341 - 9259		
2,4-Dimethylphenol	<170		A					
2,4-Dinitrophenol	<170		A					
2,4-Dinitrotoluene	8600	7065	A		0.86	1896 - 12233		
2,6-Dichlorophenol	<170		A					
2,6-Dinitrotoluene	2700	2280	A		0.79	732 - 3828		
2-Chloronaphthalene	9200	7427	A		0.90	2417 - 12436		
2-Chlorophenol	<170		A					
2-Methylnaphthalene	<170		A					
2-Methylphenol	2300	1977	A		0.48	198 - 3903		
2-Nitrophenol	<170		A					
3-Methyl & 4-Methylphenol	<170		A					
4,6-Dinitro-2-methylphenol	<170		A					
4-Chloro-3-methylphenol	4200	3547	A		0.78	1113 - 5982		
4-Nitrophenol	<170		A					
Acenaphthene	6400	5673	A		0.53	2127 - 9220		
Acenaphthylene	<170		A					
Anthracene	7500	6210	A		0.70	2089 - 10332		
Benzo(a)anthracene	5300	4507	A		0.78	1869 - 7145		
Benzo(a)pyrene	<170		A					
Benzo(b)fluoranthene	9100	8116	A		0.41	2924 - 13307		
Benzo(g,h,i)perylene	<170		A					
Benzo(k)fluoranthene	<170		A					
Bis(2-ethylhexyl)phthalate	9700	8115	A		0.81	2679 - 13550		
Butylbenzylphthalate	<170		A					
Chrysene	8500	7766	A		0.40	2852 - 12681		
Di-n-butylphthalate	4800	3913	A		0.88	1049 - 6778		
Di-n-octylphthalate	5700	4378	A		1.02	822 - 7934		
Dibenzo(a,h)anthracene	4400	4249	A		0.13	1490 - 7008		
Dibenzofuran	<170		A					
Diethylphthalate	8600	7616	A		0.51	2200 - 13033		
Dimethylphthalate	8700	7671	A		0.60	2954 - 12388		
Fluoranthene	6600	5726	A		0.77	2364 - 9088		
Fluorene	3800	3143	A		0.92	1195 - 5091		
Hexachlorobenzene	1900	1678	A		0.62	623 - 2733		
Hexachlorobutadiene	3000	2414	A		0.69	461 - 4367		
Hexachlorocyclopentadiene	250	522	A		-1.11	52 - 1256		
Hexachloroethane	2700	1953	A		1.20	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<170		A					
Isophorone	<170		A					
Naphthalene	<170		A					
Nitrobenzene	<170		A					
Pentachlorophenol	<170		A					
Phenanthrene	<170		A					
Phenol	<170		A					
Pyrene	3400	3263	A		0.18	1235 - 5290		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	29.8	38.3	W		-22.2	26.8 - 49.8	4.42	
Cesium-134	453	467	A		-3.0	327 - 607	5.59	L
Cesium-137	671	605	A		10.9	424 - 787	10.1	L
Cobalt-57	0.457		A				2.04	
Cobalt-60	5.4	4.113	A				1.75	
Iron-55	NR	983				688 - 1278		
Manganese-54	345	307	A		12.4	215 - 399	8.34	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	23.9	25.3	A		-5.5	17.7 - 32.9	3.89	
Plutonium-239/240	0.358	0.29	A	(17)			0.717	
Potassium-40	635	570	A		11.4	399 - 741	38.1	
Strontium-90	236	257	A		-8.2	180 - 334	17.1	
Technetium-99	178	171	A		4.1	120 - 222	11.3	
Uranium-234/233	141	149	A		-5.4	104 - 194	9.67	
Uranium-238	133	155	A		-14.2	109 - 202	9.4	
Zinc-65	269	242	A		11.2	169 - 315	11.6	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result

(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(MART03) Radioactive Material Analysis Laboratory
ORNL
Oak Ridge, TN 37831-6223

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	71.20	74.2	A		-4.0	51.9 - 96.5	7.12	
Arsenic	86.90	92	A		-5.5	64 - 120	8.69	
Barium	979.0	912	A		7.3	638 - 1186	97.9	
Beryllium	35.67	40.0	A		-10.8	28.0 - 52.0	3.57	
Cadmium	10.77	11.99	A		-10.2	8.39 - 15.59	1.08	
Chromium	82.63	83	A		-0.4	58 - 108	8.26	
Cobalt	126.3	134	A		-5.7	94 - 174	12.6	
Copper	171.0	178.7	A		-4.3	125.1 - 232.3	17.1	
Lead	87.67	85.3	A		2.8	59.7 - 110.9	8.77	
Mercury	0.248	0.1856	N		33.6	0.1299 - 0.2413	0.0248	
Nickel	238.3	255	A		-6.5	179 - 332	23.8	
Selenium	1.49	<0.1	N	(1)			0.30	
Silver	12.00	12.12	A		-1.0	8.48 - 15.76	1.20	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	326.7	347	A		-5.9	243 - 451	32.7	
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	150.7	162.7	A		-7.4	113.9 - 211.5	15.1	
Zinc	394.0	422	A		-6.6	295 - 549	39.4	

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32	38.3	A		-16.4	26.8 - 49.8	11	H
Cesium-134	438	467	A		-6.2	327 - 607	15	
Cesium-137	673	605	A		11.2	424 - 787	23	
Cobalt-57	0.244		A				1.3	
Cobalt-60	5.26	4.113	A				1.03	
Iron-55	NR	983				688 - 1278		
Manganese-54	352	307	A		14.7	215 - 399	10	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	28	25.3	A		10.7	17.7 - 32.9	3	
Plutonium-239/240	0.65	0.29	A	(17)			1.03	
Potassium-40	684	570	A		20.0	399 - 741	48	
Strontium-90	229	257	A		-10.9	180 - 334	18	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	270	149	N		81.2	104 - 194	16	
Uranium-238	240	155	N		54.8	109 - 202	15	
Zinc-65	286	242	A		18.2	169 - 315	18	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(MDPH01) MDPH-Radiation Control Program
MERL-Room 002
Jamaica Plain, MA 02130-3597

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	25.9	38.3	N		-32.4	26.8 - 49.8	2.22	
Cesium-134	394.4	467	A		-15.5	327 - 607	4.23	L
Cesium-137	553.4	605	A		-8.5	424 - 787	10.8	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	4.77	4.113	A				0.30	
Iron-55	NR	983				688 - 1278		
Manganese-54	286.9	307	A		-6.5	215 - 399	6.03	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	678.8	570	A		19.1	399 - 741	25.0	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	226.8	242	A		-6.3	169 - 315	5.65	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(MKME01) PIKA International
5025 Arnold Ave
McClellan, CA 95652

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	46.8	38.3	W		22.2	26.8 - 49.8	5.97	
Cesium-134	509	467	A		9.0	327 - 607	13.47	L
Cesium-137	777	605	W		28.4	424 - 787	40.5	
Cobalt-57	NR		RW	(11)				
Cobalt-60	6.46	4.113	A				0.98	
Iron-55	NR	983				688 - 1278		
Manganese-54	404	307	N		31.6	215 - 399	19.89	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	739.	570	W		29.6	399 - 741	56.1	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	326.	242	N		34.7	169 - 315	18.99	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(NARL01) National Air and Radiation Environmental Laboratory
540 S. Morris Ave.
Montgomery, AL 36115-2601

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Aluminum	19350							
Antimony	39.98	74.2	N		-46.1	51.9 - 96.5		
Arsenic	85.25	92	A		-7.3	64 - 120		
Barium	909.3	912	A		-0.3	638 - 1186		
Beryllium	35.9	40.0	A		-10.3	28.0 - 52.0		
Cadmium	11.15	11.99	A		-7.0	8.39 - 15.59		
Calcium	33325							
Chromium	82.45	83	A		-0.7	58 - 108		
Cobalt	131.1	134	A		-2.2	94 - 174		
Copper	173.5	178.7	A		-2.9	125.1 - 232.3		
Iron	23415							
Lead	85.7	85.3	A		0.5	59.7 - 110.9		
Magnesium	8625							
Manganese	433.75							
Mercury	0.186	0.1856	A		0.2	0.1299 - 0.2413		
Nickel	249.8	255	A		-2.0	179 - 332		
Potassium	2394							
Selenium	0.48	<0.1	N	(1)				
Silver	11.54	12.12	A		-4.8	8.48 - 15.76		
Sodium	209.6							
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	312.5	347	A		-9.9	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	155.9	162.7	A		-4.2	113.9 - 211.5		
Zinc	415.25	422	A		-1.6	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	41.6	52.54	A		-0.66	5.25 - 103.80		
4,4'-DDE	302	293.49	A		0.18	120.08 - 466.90		
Aldrin	157	92.78	N		3.78	30.89 - 154.68		
alpha-BHC	84.1	76.75	A		0.47	21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Heptachlor	260	260.57	A		-0.01	94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	42.8	38.3	A		11.7	26.8 - 49.8	4.70	
Cesium-134	415	467	A		-11.1	327 - 607	24.0	
Cesium-137	639	605	A		5.6	424 - 787	36.5	
Cobalt-57	0.410		A				0.30	
Cobalt-60	4.59	4.113	A				0.30	
Iron-55	NR	983				688 - 1278		
Manganese-54	334	307	A		8.8	215 - 399	19.0	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	24.6	25.3	A		-2.8	17.7 - 32.9	2.35	
Plutonium-239/240	1.19	0.29	A	(17)			0.520	
Potassium-40	629	570	A		10.4	399 - 741	36.5	
Strontium-90	278	257	A		8.2	180 - 334	32.5	

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Technetium-99	NR	171				120 - 222		
Uranium-234/233	143	149	A		-4.0	104 - 194	8.30	
Uranium-235	8.65						1.45	
Uranium-238	141	155	A		-9.0	109 - 202	8.25	
Zinc-65	265	242	A		9.5	169 - 315	15.5	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
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NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(NESI01) B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory
Lynchburg Technology Center
Lynchburg, VA 24504-5447

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	76.54	74.2	A		3.2	51.9 - 96.5	2.8	
Arsenic	99.23	92	A		7.9	64 - 120	3.9	
Barium	973.7	912	A		6.8	638 - 1186	235	H
Beryllium	42.47	40.0	A		6.2	28.0 - 52.0	0.8	L
Cadmium	12.70	11.99	A		5.9	8.39 - 15.59	0.3	L
Chromium	80.30	83	A		-3.3	58 - 108	1.4	L
Cobalt	133.7	134	A		-0.2	94 - 174	1.9	L
Copper	182.4	178.7	A		2.1	125.1 - 232.3	3.7	L
Lead	95.03	85.3	A		11.4	59.7 - 110.9	11.3	
Mercury	0.174	0.1856	A		-6.3	0.1299 - 0.2413	0.002	L
Nickel	249.6	255	A		-2.1	179 - 332	3.4	L
Selenium	1.530	<0.1	N	(1)			0.52	
Silver	12.89	12.12	A		6.4	8.48 - 15.76	0.45	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	342.0	347	A		-1.4	243 - 451	7.1	L
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	153.5	162.7	A		-5.7	113.9 - 211.5	2.1	L
Zinc	410.9	422	A		-2.6	295 - 549	10.1	L

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.48	38.3	A		0.5	26.8 - 49.8	2.24	
Cesium-134	474	467	A		1.5	327 - 607	25.7	
Cesium-137	625	605	A		3.3	424 - 787	32.6	
Cobalt-57	0.22		A				0.85	
Cobalt-60	2.96	4.113	A				0.64	
Iron-55	1073	983	A		9.2	688 - 1278	101	
Manganese-54	329	307	A		7.2	215 - 399	17.2	
Nickel-63	518	514.9	A		0.6	360.4 - 669.4	71.0	
Plutonium-238	35.7	25.3	N		41.1	17.7 - 32.9	2.47	
Plutonium-239/240	2.67	0.29	N	(4)			0.66	
Potassium-40	590	570	A		3.5	399 - 741	31.2	
Strontium-90	217	257	A		-15.6	180 - 334	8.88	
Technetium-99	205	171	A		19.9	120 - 222	14.4	
Uranium-234/233	142.1	149	A		-4.6	104 - 194	6.35	
Uranium-238	149	155	A		-3.9	109 - 202	6.62	
Zinc-65	259	242	A		7.0	169 - 315	12.7	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(NJDH01) New Jersey Dept. of Health & Senior Services, PHEL, ECLS
Market and Warren Streets
Trenton, NJ 08625-0361

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.1	38.3	A		-11.0	26.8 - 49.8	3.1	
Cesium-134	485	467	A		3.9	327 - 607	17	
Cesium-137	601	605	A		-0.7	424 - 787	11	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	3.99	4.113	A				0.58	
Iron-55	NR	983				688 - 1278		
Manganese-54	313.4	307	A		2.1	215 - 399	5.2	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	569	570	A		-0.2	399 - 741	37	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	136	155	A		-12.3	109 - 202	11	
Zinc-65	243.5	242	A		0.6	169 - 315	3.9	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(NMLA01) Assaigai Analytical Laboratories, Inc.
4301 Masthead NE Ste. A
Albuquerque, NM 87109

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Aluminum	17200							
Antimony	68.0	74.2	A		-8.4	51.9 - 96.5		
Arsenic	102	92	A		10.9	64 - 120		
Barium	898	912	A		-1.5	638 - 1186		
Beryllium	38.1	40.0	A		-4.8	28.0 - 52.0		
Cadmium	12.0	11.99	A		0.1	8.39 - 15.59		
Calcium	38200							
Chromium	74.0	83	A		-10.8	58 - 108		
Cobalt	140	134	A		4.5	94 - 174		
Copper	173	178.7	A		-3.2	125.1 - 232.3		
Iron	24100							
Lead	78.3	85.3	A		-8.2	59.7 - 110.9		
Magnesium	9890							
Manganese	432							
Mercury	0.1640	0.1856	A		-11.6	0.1299 - 0.2413		
Molybdenum	6.75							
Nickel	251	255	A		-1.6	179 - 332		
Potassium	2990							
Selenium	< 5.0	<0.1	A	(7)				
Silver	11.4	12.12	A		-5.9	8.48 - 15.76		
Sodium	352							
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	303	347	A		-12.7	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	151	162.7	A		-7.2	113.9 - 211.5		
Zinc	422	422	A		0.0	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	33.1	52.54	A		-1.17	5.25 - 103.80		
4,4'-DDE	184	293.49	A		-2.29	120.08 - 466.90		
4,4'-DDT	< 10.		A					
Aldrin	47.3	92.78	A		-2.68	30.89 - 154.68		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
alpha-BHC	45.1	76.75	A		-2.02	21.08 - 132.43		
beta-BHC	< 10.0		A					
delta-BHC	< 5.0		A					
Dieldrin	< 10.0		A					
Endosulfan I	< 10.0		A					
Endosulfan II	5.0		N	(1)				
Endosulfan sulfate	< 5.0		A					
Endrin	48.7	90.82	A		-1.80	30.21 - 151.42		
Endrin Aldehyde	< 5.0		A					
Endrin Ketone	< 50.0		A					
gamma-BHC (Lindane)	< 5.0		A					
Heptachlor	188	260.57	A		-1.43	94.49 - 426.65		
Heptachlor epoxide	< 10.0		A					
Methoxychlor	< 10.0		A					
1,2,4-Trichlorobenzene	3943	3120	A		0.80	760 - 5480		
1,2-Dichlorobenzene	< 30.0		A					
1,3-Dichlorobenzene	< 30.0		A					
1,4-Dichlorobenzene	< 30.0		A					
2,4,5-Trichlorophenol	8762	7682	A		0.46	1743 - 13620		
2,4,6-Trichlorophenol	6444	5577	A		0.61	1636 - 9518		
2,4-Dichlorophenol	6089	5300	A		0.49	1341 - 9259		
2,4-Dimethylphenol	74.9		N					
2,4-Dinitrophenol	< 670		A					
2,4-Dinitrotoluene	9033	7065	A		1.11	1896 - 12233		
2,6-Dinitrotoluene	2960	2280	A		1.28	732 - 3828		
2-Chloronaphthalene	9750	7427	A		1.18	2417 - 12436		
2-Chlorophenol	< 30.0		A					
2-Methylnaphthalene	< 30.0		A					
2-Methylphenol	2525	1977	A		0.81	198 - 3903		
2-Nitrophenol	< 300		A					
3-Methyl & 4-Methylphenol	< 100		A					
4,6-Dinitro-2-methylphenol	< 300		A					
4-Bromophenyl-phenylether	< 30.0		A					
4-Chloro-3-methylphenol	3949	3547	A		0.48	1113 - 5982		
4-Chlorophenyl-phenylether	< 30.0		A					
4-Nitrophenol	< 600		A					
Acenaphthene	7218	5673	A		1.12	2127 - 9220		
Acenaphthylene	< 30.0		A					
Anthracene	8109	6210	A		1.03	2089 - 10332		
Benzo(a)anthracene	5933	4507	A		1.41	1869 - 7145		
Benzo(a)pyrene	< 30.0		A					
Benzo(b)fluoranthene	10778	8116	A		1.11	2924 - 13307		
Benzo(g,h,i)perylene	< 300		A					
Benzo(k)fluoranthene	< 30.0		A					
bis(2-chloroethoxy)methane	< 30.0		A					
bis(2-chloroethyl)ether	< 30.0		A					

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
bis(2-chloroisopropyl)ether	< 100		A					
Bis(2-ethylhexyl)phthalate	9556	8115	A		0.74	2679 - 13550		
Butylbenzylphthalate	< 30.0		A					
Chrysene	9951	7766	A		1.20	2852 - 12681		
Di-n-butylphthalate	4433	3913	A		0.51	1049 - 6778		
Di-n-octylphthalate	5136	4378	A		0.59	822 - 7934		
Dibenzo(a,h)anthracene	5917	4249	A		1.45	1490 - 7008		
Dibenzofuran	< 30.0		A					
Diethylphthalate	9650	7616	A		1.05	2200 - 13033		
Dimethylphthalate	9813	7671	A		1.25	2954 - 12388		
Fluoranthene	7870	5726	A		1.89	2364 - 9088		
Fluorene	3875	3143	A		1.02	1195 - 5091		
Hexachlorobenzene	2056	1678	A		1.06	623 - 2733		
Hexachlorobutadiene	3024	2414	A		0.72	461 - 4367		
Hexachlorocyclopentadiene	< 1500	522	A			52 - 1256		
Hexachloroethane	2044	1953	A		0.15	195 - 3823		
Indeno(1,2,3-c,d)pyrene	< 300		A					
Isophorone	< 30.0		A					
Naphthalene	41.3		N	(1)				
Nitrobenzene	< 30.0		A					
Pentachlorophenol	< 1300		A					
Phenanthrene	< 30.0		A					
Phenol	< 300		A					
Pyrene	3542	3263	A		0.38	1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(NRLL99) National Radiation Laboratory
PO Box 25099
Christchurch, Christchurch 8144

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	35.5	38.3	A		-7.3	26.8 - 49.8	1.5	
Antimony-125	-2.6						2.5	L
Cesium-134	445	467	A		-4.7	327 - 607	14	
Cesium-137	600	605	A		-0.8	424 - 787	21	
Cobalt-57	-0.11		A				0.33	
Cobalt-60	3.8	4.113	A				0.3	
Iron-55	NR	983				688 - 1278		
Manganese-54	307	307	A		0.0	215 - 399	12	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	586	570	A		2.8	399 - 741	34	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	240	242	A		-0.8	169 - 315	11	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
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Notes:

(1) = False Positive
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(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(NTSI01) Nuclear Technology Services, Inc.
635 Hembree Parkway
Roswell, GA 30076

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	410.7	467	A		-12.1	327 - 607	44.6	
Cesium-137	587.6	605	A		-2.9	424 - 787	63.5	
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	304.3	307	A		-0.9	215 - 399	33.1	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	38.6	25.3	N		52.6	17.7 - 32.9	2.66	
Plutonium-239/240	NR	0.29	N	(18)				
Potassium-40	569.5	570	A		-0.1	399 - 741	65.7	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	150	149	A		0.7	104 - 194	9.3	
Uranium-238	155	155	A		0.0	109 - 202	9.5	
Zinc-65	233	242	A		-3.7	169 - 315	25.7	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(OBGL01) Life Science Laboratories, Inc.
5000 Brittonfield Pkwy, Ste. 200
East Syracuse, NY 13057

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	67.0	74.2	A		-9.7	51.9 - 96.5		
Arsenic	95.3	92	A		3.6	64 - 120		
Barium	850	912	A		-6.8	638 - 1186		
Beryllium	40.1	40.0	A		0.3	28.0 - 52.0		
Cadmium	11.2	11.99	A		-6.6	8.39 - 15.59		
Chromium	77.3	83	A		-6.9	58 - 108		
Cobalt	128	134	A		-4.5	94 - 174		
Copper	189	178.7	A		5.8	125.1 - 232.3		
Lead	87.3	85.3	A		2.3	59.7 - 110.9		
Mercury	0.208	0.1856	A		12.1	0.1299 - 0.2413		
Nickel	244	255	A		-4.3	179 - 332		
Selenium	<1.00	<0.1	A					
Silver	12.0	12.12	A		-1.0	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	330	347	A		-4.9	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	149	162.7	A		-8.4	113.9 - 211.5		
Zinc	393	422	A		-6.9	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	3100	3120	A		-0.02	760 - 5480		
1,2-Dichlorobenzene	<330		A					
1,3-Dichlorobenzene	<330		A					
1,4-Dichlorobenzene	<330		A					
2,4,5-Trichlorophenol	7400	7682	A		-0.12	1743 - 13620		
2,4,6-Trichlorophenol	5800	5577	A		0.16	1636 - 9518		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,4-Dichlorophenol	4500	5300	A		-0.50	1341 - 9259		
2,4-Dimethylphenol	<330		A					
2,4-Dinitrophenol	<1700		A					
2,4-Dinitrotoluene	7300	7065	A		0.13	1896 - 12233		
2,6-Dinitrotoluene	2200	2280	A		-0.15	732 - 3828		
2-Chloronaphthalene	7100	7427	A		-0.17	2417 - 12436		
2-Chlorophenol	<330		A					
2-Methylnaphthalene	<330		A					
2-Methylphenol	2400	1977	A		0.63	198 - 3903		
2-Nitrophenol	<330		A					
3-Methyl & 4-Methylphenol	<330		A					
4,6-Dinitro-2-methylphenol	<1700		A					
4-Bromophenyl-phenylether	<330		A					
4-Chloro-3-methylphenol	3400	3547	A		-0.18	1113 - 5982		
4-Chlorophenyl-phenylether	<330		A					
4-Nitrophenol	<1700		A					
Acenaphthene	4800	5673	A		-0.63	2127 - 9220		
Acenaphthylene	<330		A					
Anthracene	5000	6210	A		-0.66	2089 - 10332		
Benzo(a)anthracene	4600	4507	A		0.09	1869 - 7145		
Benzo(a)pyrene	<330		A					
Benzo(b)fluoranthene	7700	8116	A		-0.17	2924 - 13307		
Benzo(g,h,i)perylene	<330		A					
Benzo(k)fluoranthene	<330		A					
bis(2-chloroethoxy)methane	<330		A					
bis(2-chloroethyl)ether	<330		A					
bis(2-chloroisopropyl)ether	<330		A					
Bis(2-ethylhexyl)phthalate	8200	8115	A		0.04	2679 - 13550		
Butylbenzylphthalate	<330		A					
Chrysene	7100	7766	A		-0.37	2852 - 12681		
Di-n-butylphthalate	3600	3913	A		-0.31	1049 - 6778		
Di-n-octylphthalate	4400	4378	A		0.02	822 - 7934		
Dibenzo(a,h)anthracene	3500	4249	A		-0.65	1490 - 7008		
Dibenzofuran	<330		A					
Diethylphthalate	7000	7616	A		-0.32	2200 - 13033		
Dimethylphthalate	7100	7671	A		-0.33	2954 - 12388		
Fluoranthene	4600	5726	A		-1.00	2364 - 9088		
Fluorene	3600	3143	A		0.64	1195 - 5091		
Hexachlorobenzene	1500	1678	A		-0.50	623 - 2733		
Hexachlorobutadiene	2700	2414	A		0.34	461 - 4367		
Hexachlorocyclopentadiene	<330	522	N	(2)		52 - 1256		
Hexachloroethane	2300	1953	A		0.56	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<330		A					
Isophorone	<330		A					
Naphthalene	<330		A					
Nitrobenzene	<330		A					

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Pentachlorophenol	<1700		A					
Phenanthrene	<330		A					
Phenol	<330		A					
Pyrene	3600	3263	A		0.45	1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ODHL01) Ohio Department of Health Laboratory
8995 E Main Street
Reynoldsburg, OH 43068

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	483	467	A		3.4	327 - 607	9.4	L
Cesium-137	675	605	A		11.6	424 - 787	30	
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	338	307	A		10.1	215 - 399	12	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	597	570	A		4.7	399 - 741	18	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	257	242	A		6.2	169 - 315	6.9	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(ORIS01) ORISE/IEAV
PO Box 117
Oak Ridge, TN 37831-0117

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.8	38.3	A		-3.9	26.8 - 49.8	2.0	
Cesium-134	449	467	A		-3.9	327 - 607	21	
Cesium-137	616	605	A		1.8	424 - 787	29	
Cobalt-57	0.6		A				1.4	
Cobalt-60	4.3	4.113	A				1.0	
Iron-55	NR	983				688 - 1278		
Manganese-54	296	307	A		-3.6	215 - 399	14	
Nickel-63	469	514.9	A		-8.9	360.4 - 669.4	28	
Plutonium-238	25.2	25.3	A		-0.4	17.7 - 32.9	1.7	
Plutonium-239/240	0.25	0.29	A	(17)			0.19	
Potassium-40	534	570	A		-6.3	399 - 741	34	
Strontium-90	264	257	A		2.7	180 - 334	11	
Technetium-99	195	171	A		14.0	120 - 222	13	
Uranium-234/233	138.8	149	A		-6.8	104 - 194	4.0	L
Uranium-238	140.5	155	A		-9.4	109 - 202	4.0	L
Zinc-65	230	242	A		-5.0	169 - 315	11	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(OTLI01) Outreach Technologies, Inc.
311 N. Aspen
Broken Arrow, OK 74012-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	65.5	74.2	A		-11.7	51.9 - 96.5		
Arsenic	84.2	92	A		-8.5	64 - 120		
Barium	797	912	A		-12.6	638 - 1186		
Beryllium	36.5	40.0	A		-8.8	28.0 - 52.0		
Cadmium	9.47	11.99	W		-21.0	8.39 - 15.59		
Chromium	68.1	83	A		-18.0	58 - 108		
Cobalt	119	134	A		-11.2	94 - 174		
Copper	174	178.7	A		-2.6	125.1 - 232.3		
Lead	86.1	85.3	A		0.9	59.7 - 110.9		
Mercury	0.152	0.1856	A		-18.1	0.1299 - 0.2413		
Nickel	212	255	A		-16.9	179 - 332		
Selenium	1	<0.1	N	(1)				
Silver	48.8	12.12	N		302.6	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	312	347	A		-10.1	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	141	162.7	A		-13.3	113.9 - 211.5		
Zinc	444	422	A		5.2	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	21.8	38.3	N		-43.1	26.8 - 49.8	3.43	
Cesium-134	506	467	A		8.4	327 - 607	19	
Cesium-137	710	605	A		17.4	424 - 787	21.1	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	499	4.113	N	(4)			0.731	
Iron-55	NR	983				688 - 1278		
Manganese-54	383	307	W		24.8	215 - 399	15.0	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	39.4	25.3	N		55.7	17.7 - 32.9	4.7	
Plutonium-239/240	NR	0.29	N	(18)				
Potassium-40	650	570	A		14.0	399 - 741	42.3	
Strontium-90	232	257	A		-9.7	180 - 334	23.6	
Technetium-99	200	171	A		17.0	120 - 222	34	
Uranium-234/233	106	149	W		-28.9	104 - 194	15.1	
Uranium-238	120	155	W		-22.6	109 - 202	15.8	
Zinc-65	280	242	A		15.7	169 - 315	15.1	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(PBRF01) NASA Plum Brook Reactor Facility Lab
6100 Columbus Ave
Sandusky, OH 44870

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.7	38.3	A		1.0	26.8 - 49.8	1.02	L
Cesium-134	NR	467				327 - 607		
Cesium-137	660.2	605	A		9.1	424 - 787	7.87	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(PESL01) Environmental Science Lab PNNL/ESL
RPL 946/BRM # 11821
Richland, WA 99352

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	327.0	467	W		-30.0	327 - 607	15.0	
Cesium-137	585.0	605	A		-3.3	424 - 787	8.79	L
Cobalt-57	NR							
Cobalt-60	3.43	4.113	A				1.03	
Iron-55	NR	983				688 - 1278		
Manganese-54	178.0	307	N		-42.0	215 - 399	3.43	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	683.0	570	A		19.8	399 - 741	18.7	L
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	107.0	242	N		-55.8	169 - 315	3.87	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
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Notes:

(1) = False Positive
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(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(QUAN01) TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045-

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	61.4	74.2	A		-17.3	51.9 - 96.5		
Arsenic	101	92	A		9.8	64 - 120		
Barium	1070	912	A		17.3	638 - 1186		
Beryllium	35.2	40.0	A		-12.0	28.0 - 52.0		
Cadmium	12.4	11.99	A		3.4	8.39 - 15.59		
Chromium	71.2	83	A		-14.2	58 - 108		
Cobalt	121	134	A		-9.7	94 - 174		
Copper	175	178.7	A		-2.1	125.1 - 232.3		
Lead	92.0	85.3	A		7.9	59.7 - 110.9		
Mercury	0.200	0.1856	A		7.8	0.1299 - 0.2413		
Nickel	219	255	A		-14.1	179 - 332		
Selenium	0.300	<0.1	N	(1)				
Silver	12.5	12.12	A		3.1	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	350	347	A		0.9	243 - 451		
Uranium-235	0.082	0.091	A		-9.9	0.064 - 0.118		
Uranium-238	12.3	12.5	A		-1.6	8.8 - 16.3		
Uranium-Total	10.8	12.6	A		-14.3	8.8 - 16.4		
Vanadium	142	162.7	A		-12.7	113.9 - 211.5		
Zinc	401	422	A		-5.0	295 - 549		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	64.6	52.54	A		0.73	5.25 - 103.80		
4,4'-DDE	349	293.49	A		1.16	120.08 - 466.90		
4,4'-DDT	< 1.7		A					
Aldrin	103	92.78	A		0.60	30.89 - 154.68		
alpha-BHC	89.1	76.75	A		0.79	21.08 - 132.43		
beta-BHC	< 1.7		A					
delta-BHC	< 1.7		A					
Dieldrin	< 1.7		A					
Endosulfan I	< 1.7		A					
Endosulfan II	< 1.7		A					
Endosulfan sulfate	< 1.7		A					
Endrin	113	90.82	A		0.95	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	< 1.7		A					
Endrin Ketone	< 5.0		A					
gamma-BHC (Lindane)	< 1.7		A					
Heptachlor	314	260.57	A		1.05	94.49 - 426.65		
Heptachlor epoxide	< 1.7		A					
Methoxychlor	< 3.3		A					
1,2,4-Trichlorobenzene	2970	3120	A		-0.15	760 - 5480		
1,2-Dichlorobenzene	< 330		A					
1,3-Dichlorobenzene	< 330		A					
1,3-Dinitrobenzene	< 330		A					
1,4-Dichlorobenzene	< 330		A					
2,4,5-Trichlorophenol	6260	7682	A		-0.61	1743 - 13620		
2,4,6-Trichlorophenol	4520	5577	A		-0.75	1636 - 9518		
2,4-Dichlorophenol	4180	5300	A		-0.69	1341 - 9259		
2,4-Dimethylphenol	< 330		A					
2,4-Dinitrophenol	< 1600		A					
2,4-Dinitrotoluene	6440	7065	A		-0.35	1896 - 12233		
2,6-Dichlorophenol	< 330		A					
2,6-Dinitrotoluene	2110	2280	A		-0.32	732 - 3828		
2-Chloronaphthalene	6840	7427	A		-0.30	2417 - 12436		
2-Chlorophenol	< 330		A					
2-Methylnaphthalene	< 330		A					
2-Methylphenol	1770	1977	A		-0.31	198 - 3903		
2-Nitrophenol	< 330		A					
3-Methyl & 4-Methylphenol	< 660		A					
4,6-Dinitro-2-methylphenol	< 1600		A					
4-Bromophenyl-phenylether	< 330		A					
4-Chloro-3-methylphenol	2730	3547	A		-0.97	1113 - 5982		
4-Chlorophenyl-phenylether	< 330		A					
4-Nitrophenol	< 1600		A					
Acenaphthene	4880	5673	A		-0.58	2127 - 9220		
Acenaphthylene	< 330		A					
Anthracene	5320	6210	A		-0.48	2089 - 10332		
Benzo(a)anthracene	4110	4507	A		-0.39	1869 - 7145		
Benzo(a)pyrene	< 330		A					
Benzo(b)fluoranthene	10100	8116	A		0.83	2924 - 13307		
Benzo(g,h,i)perylene	< 330		A					
Benzo(k)fluoranthene	< 330		A					
bis(2-chloroethoxy)methane	< 330		A					
bis(2-chloroethyl)ether	< 330		A					
bis(2-chloroisopropyl)ether	< 330		A					
Bis(2-ethylhexyl)phthalate	4800	8115	A		-1.69	2679 - 13550		
Butylbenzylphthalate	< 330		A					
Chrysene	7520	7766	A		-0.14	2852 - 12681		
Di-n-butylphthalate	2870	3913	A		-1.03	1049 - 6778		
Di-n-octylphthalate	3300	4378	A		-0.84	822 - 7934		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzo(a,h)anthracene	4210	4249	A		-0.03	1490 - 7008		
Dibenzofuran	< 330		A					
Diethylphthalate	6300	7616	A		-0.68	2200 - 13033		
Dimethylphthalate	6100	7671	A		-0.92	2954 - 12388		
Fluoranthene	4660	5726	A		-0.94	2364 - 9088		
Fluorene	2880	3143	A		-0.37	1195 - 5091		
Hexachlorobenzene	1600	1678	A		-0.22	623 - 2733		
Hexachlorobutadiene	2370	2414	A		-0.05	461 - 4367		
Hexachlorocyclopentadiene	715	522	A		0.79	52 - 1256		
Hexachloroethane	1760	1953	A		-0.31	195 - 3823		
Indeno(1,2,3-c,d)pyrene	< 330		A					
Isophorone	< 330		A					
Naphthalene	< 330		A					
Nitrobenzene	< 330		A					
Pentachlorophenol	< 1600		A					
Phenanthrene	< 330		A					
Phenol	< 330		A					
Pyrene	3080	3263	A		-0.25	1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32.58	38.3	A		-14.9	26.8 - 49.8	2.766	
Cesium-134	407.8	467	A		-12.7	327 - 607	12.49	
Cesium-137	585.8	605	A		-3.2	424 - 787	17.84	
Cobalt-57	0.2301		A				0.5868	
Cobalt-60	4.55	4.113	A				0.648	
Iron-55	1153	983	A		17.3	688 - 1278	70.05	
Manganese-54	302.8	307	A		-1.4	215 - 399	9.54	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	26.89	25.3	A		6.3	17.7 - 32.9	2.39	
Plutonium-239/240	0.9355	0.29	A	(17)			0.4302	
Potassium-40	558.3	570	A		-2.1	399 - 741	22.11	
Strontium-90	292.9	257	A		14.0	180 - 334	16.42	
Technetium-99	143.8	171	A		-15.9	120 - 222	8.083	
Uranium-234/233	132.1	149	A		-11.3	104 - 194	7.503	
Uranium-238	139.6	155	A		-9.9	109 - 202	7.822	
Zinc-65	244.9	242	A		1.2	169 - 315	8.574	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(QUAN02) TestAmerica Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	66.3	74.2	A		-10.6	51.9 - 96.5		
Arsenic	87.7	92	A		-4.7	64 - 120		
Barium	861	912	A		-5.6	638 - 1186		
Beryllium	38.0	40.0	A		-5.0	28.0 - 52.0		
Cadmium	11.1	11.99	A		-7.4	8.39 - 15.59		
Chromium	76.0	83	A		-8.4	58 - 108		
Cobalt	124	134	A		-7.5	94 - 174		
Copper	172	178.7	A		-3.7	125.1 - 232.3		
Lead	82.9	85.3	A		-2.8	59.7 - 110.9		
Mercury	0.0316	0.1856	N		-83.0	0.1299 - 0.2413		
Nickel	231	255	A		-9.4	179 - 332		
Selenium	<1.56	<0.1	A					
Silver	10.9	12.12	A		-10.1	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	317	347	A		-8.6	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	144	162.7	A		-11.5	113.9 - 211.5		
Zinc	387	422	A		-8.3	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	62.7	52.54	A		0.61	5.25 - 103.80		
4,4'-DDE	328	293.49	A		0.72	120.08 - 466.90		
4,4'-DDT	<17.6		A					
Aldrin	89.2	92.78	A		-0.21	30.89 - 154.68		
alpha-BHC	84.6	76.75	A		0.50	21.08 - 132.43		
beta-BHC	<17.6		A					
delta-BHC	<17.6		A					
Dieldrin	<17.6		A					
Endosulfan I	<17.6		A					
Endosulfan II	<17.6		A					
Endosulfan sulfate	<17.6		A					
Endrin	95.1	90.82	A		0.18	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<17.6		A					
Endrin Ketone	<17.6		A					
gamma-BHC (Lindane)	<17.6		A					
Heptachlor	299	260.57	A		0.76	94.49 - 426.65		
Heptachlor epoxide	<17.6		A					
Methoxychlor	<34.2		A					
1,2,4-Trichlorobenzene	2920	3120	A		-0.19	760 - 5480		
1,2-Dichlorobenzene	<342		A					
1,3-Dichlorobenzene	<342		A					
1,4-Dichlorobenzene	<342		A					
2,4,5-Trichlorophenol	7450	7682	A		-0.10	1743 - 13620		
2,4,6-Trichlorophenol	5330	5577	A		-0.17	1636 - 9518		
2,4-Dichlorophenol	5260	5300	A		-0.03	1341 - 9259		
2,4-Dimethylphenol	<342		A					
2,4-Dinitrophenol	<1660		A					
2,4-Dinitrotoluene	6730	7065	A		-0.19	1896 - 12233		
2,6-Dichlorophenol	<342		A					
2,6-Dinitrotoluene	2140	2280	A		-0.26	732 - 3828		
2-Chloronaphthalene	7210	7427	A		-0.11	2417 - 12436		
2-Chlorophenol	<342		A					
2-Methylnaphthalene	<342		A					
2-Methylphenol	2570	1977	A		0.88	198 - 3903		
2-Nitrophenol	<342		A					
3-Methyl & 4-Methylphenol	<342		A					
4,6-Dinitro-2-methylphenol	<1660		A					
4-Bromophenyl-phenylether	<342		A					
4-Chloro-3-methylphenol	3520	3547	A		-0.03	1113 - 5982		
4-Chlorophenyl-phenylether	<342		A					
4-Nitrophenol	<1660		A					
Acenaphthene	5640	5673	A		-0.02	2127 - 9220		
Acenaphthylene	<342		A					
Anthracene	6120	6210	A		-0.05	2089 - 10332		
Benzo(a)anthracene	4270	4507	A		-0.24	1869 - 7145		
Benzo(a)pyrene	<342		A					
Benzo(b)fluoranthene	8110	8116	A		0.00	2924 - 13307		
Benzo(g,h,i)perylene	<342		A					
Benzo(k)fluoranthene	<342		A					
bis(2-chloroethoxy)methane	<342		A					
bis(2-chloroethyl)ether	<342		A					
bis(2-chloroisopropyl)ether	<342		A					
Bis(2-ethylhexyl)phthalate	7740	8115	A		-0.19	2679 - 13550		
Butylbenzylphthalate	<342		A					
Chrysene	6580	7766	A		-0.65	2852 - 12681		
Di-n-butylphthalate	4030	3913	A		0.12	1049 - 6778		
Di-n-octylphthalate	4390	4378	A		0.01	822 - 7934		
Dibenzo(a,h)anthracene	4500	4249	A		0.22	1490 - 7008		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzofuran	<342		A					
Diethylphthalate	7570	7616	A		-0.02	2200 - 13033		
Dimethylphthalate	7590	7671	A		-0.05	2954 - 12388		
Fluoranthene	5140	5726	A		-0.52	2364 - 9088		
Fluorene	3150	3143	A		0.01	1195 - 5091		
Hexachlorobenzene	1510	1678	A		-0.47	623 - 2733		
Hexachlorobutadiene	2230	2414	A		-0.22	461 - 4367		
Hexachlorocyclopentadiene	949	522	A		1.75	52 - 1256		
Hexachloroethane	2020	1953	A		0.11	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<342		A					
Isophorone	<342		A					
Naphthalene	<342		A					
Nitrobenzene	<342		A					
Pentachlorophenol	<1660		A					
Phenanthrene	<342		A					
Phenol	<342		A					
Pyrene	3380	3263	A		0.16	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
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H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(QUAN03) TestAmerica
2800 GEORGE WASHINGTON WAY
RICHLAND, WA 99354-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	32.7	38.3	A		-14.6	26.8 - 49.8	4.05	
Antimony-125	.429						2.11	H
Cesium-134	530	467	A		13.5	327 - 607	35	
Cesium-137	737	605	W		21.8	424 - 787	46.2	
Cobalt-57	.87		A				3.77	
Cobalt-60	4.28	4.113	A				.611	
Iron-55	NR	983				688 - 1278		
Manganese-54	385	307	W		25.4	215 - 399	25.7	
Nickel-63	528	514.9	A		2.5	360.4 - 669.4	72.7	
Plutonium-238	26.7	25.3	A		5.5	17.7 - 32.9	2.05	
Plutonium-239/240	.491	0.29	A				.127	
Potassium-40	677	570	A		18.8	399 - 741	43.2	
Strontium-90	269	257	A		4.7	180 - 334	20.3	
Technetium-99	135	171	W		-21.1	120 - 222	8.29	
Uranium-234/233	149	149	A		0.0	104 - 194	11.5	
Uranium-235	5.49						.546	
Uranium-238	148	155	A		-4.5	109 - 202	11.4	
Zinc-65	305	242	W		26.0	169 - 315	19	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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H = Uncertainty potentially too high (for information purposes only)
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RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
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(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(RMCL99) Royal Scientific Society - Radiation Measurements Lab
Ahmad Al-Tarawneh Str.
Al-Jubaiha, Amman 11941

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	52.7	92	N		-42.7	64 - 120	5.0	
Barium	721.1	912	W		-20.9	638 - 1186	13.0	L
Beryllium	41.2	40.0	A		3.0	28.0 - 52.0	3	
Cadmium	11.7	11.99	A		-2.4	8.39 - 15.59	2.0	
Chromium	32.9	83	N		-60.4	58 - 108	11.0	H
Cobalt	135.5	134	A		1.1	94 - 174	11	
Copper	178.8	178.7	A		0.1	125.1 - 232.3	8	
Lead	89.2	85.3	A		4.6	59.7 - 110.9	2.0	L
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	249.4	255	A		-2.2	179 - 332	9.0	
Selenium	NR	<0.1						
Silver	52.9	12.12	N		336.5	8.48 - 15.76	5.0	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	11.3	12.6	A		-10.3	8.8 - 16.4	1.0	
Vanadium	130.6	162.7	A		-19.7	113.9 - 211.5	7.0	
Zinc	355.2	422	A		-15.8	295 - 549	12.0	

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.0	38.3	A		-11.2	26.8 - 49.8	2.4	
Cesium-134	464.2	467	A		-0.6	327 - 607	18.9	
Cesium-137	627.3	605	A		3.7	424 - 787	35.1	
Cobalt-57	0.66		N	(1)			0.15	
Cobalt-60	4.87	4.113	A				.31	
Iron-55	NR	983				688 - 1278		
Manganese-54	317.2	307	A		3.3	215 - 399	14.6	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	594.8	570	A		4.4	399 - 741	47.6	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-235	8.89						.78	
Uranium-238	192.9	155	W		24.5	109 - 202	17.9	
Zinc-65	255.6	242	A		5.6	169 - 315	14.4	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(RPSC01) Radiation Protection Service
Ontario Ministry of Labour
Weston, Ontario M9P 3T1

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	481	467	A		3.0	327 - 607	38	
Cesium-137	596	605	A		-1.5	424 - 787	48	
Cobalt-57	-.25		A				.45	
Cobalt-60	4.5	4.113	A				0.6	
Iron-55	NR	983				688 - 1278		
Manganese-54	300	307	A		-2.3	215 - 399	24	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	547	570	A		-4.0	399 - 741	44	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	233	242	A		-3.7	169 - 315	19	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(RSAL01) RSA Laboratories, Inc.
PO Box 61
Hebron, CT 06248

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	46.61	38.3	W		21.7	26.8 - 49.8	3.90	
Cesium-134	498.50	467	A		6.7	327 - 607	14.18	L
Cesium-137	713.52	605	A		17.9	424 - 787	20.34	L
Cobalt-57	0.11		A				0.19	
Cobalt-60	5.20	4.113	A				1.14	
Iron-55	NR	983				688 - 1278		
Manganese-54	319.82	307	A		4.2	215 - 399	9.39	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	643.85	570	A		13.0	399 - 741	24.46	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	263.07	242	A		8.7	169 - 315	8.96	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(RSIR99) Instituto de Radioprotecao e Dosimetria - IRD/CNEN
Avenida Salvador Allende S/no.
RJ, Rio de Janeiro 22780-160

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	72.8	74.2	A	(5)	-1.9	51.9 - 96.5	2.2	
Arsenic	95.7	100	A	(5)	-4.3	70 - 130	3.2	
Barium	1496	1450	A	(5)	3.2	1015 - 1885	46	
Beryllium	36.8	41.0	A	(5)	-10.2	28.7 - 53.3	1.3	
Cadmium	11.90	12.09	A	(5)	-1.6	8.46 - 15.72	0.36	
Chromium	NR	83				58 - 108		
Cobalt	133.7	140	A	(5)	-4.5	98 - 182	4.4	
Copper	178.2	181.6	A	(5)	-1.9	127.1 - 236.1	5.6	
Lead	94.1	88.1	A	(5)	6.8	61.7 - 114.5	2.9	
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	241.4	261	A	(5)	-7.5	183 - 339	7.4	
Selenium	NR	<0.1						
Silver	15.18	12.12	W	(5)	25.2	8.48 - 15.76	0.48	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	334	347	A	(5)	-3.7	243 - 451	10	L
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	13.41	12.6	A		6.4	8.8 - 16.4	0.41	
Vanadium	205.9	210.3	A	(5)	-2.1	147.2 - 273.4	6.8	
Zinc	422	423	A	(5)	-0.2	296 - 550	13	

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	29.2	38.3	W		-23.8	26.8 - 49.8	1.7	
Cesium-134	376	467	A		-19.5	327 - 607	16	
Cesium-137	543	605	A		-10.2	424 - 787	24	
Cobalt-57	-0.50		A				0.70	
Cobalt-60	3.77	4.113	A				0.32	
Iron-55	NR	983				688 - 1278		
Manganese-54	277	307	A		-9.8	215 - 399	12	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	61.2	25.3	N		141.9	17.7 - 32.9	6.4	
Plutonium-239/240	1.89	0.29	N	(4)			0.19	
Potassium-40	517	570	A		-9.3	399 - 741	27	
Strontium-90	334	257	W		30.0	180 - 334	29	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	127	149	A		-14.8	104 - 194	11	
Uranium-238	139	155	A		-10.3	109 - 202	11	
Zinc-65	219	242	A		-9.5	169 - 315	10	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SCAL01) GPL Laboratories Alabama, LLC
1000 Monticello Court
Montgomery, AL 36117-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	35.9011	38.3	A		-6.3	26.8 - 49.8	6.8413	
Cesium-134	432.9	467	A		-7.3	327 - 607	70.3	
Cesium-137	691.9	605	A		14.4	424 - 787	121.36	
Cobalt-57	0.5920		A				0.9990	
Cobalt-60	3.8110	4.113	A				1.1100	
Iron-55	NR	983				688 - 1278		
Manganese-54	358.9000	307	A		16.9	215 - 399	48.100	
Nickel-63	421.8000	514.9	A		-18.1	360.4 - 669.4	114.70	H
Plutonium-238	24.9713	25.3	A		-1.3	17.7 - 32.9	4.5473	
Plutonium-239/240	1.0519	0.29	A	(17)			0.9487	
Potassium-40	680.8000	570	A		19.4	399 - 741	85.100	
Strontium-90	234.9500	257	A		-8.6	180 - 334	19.980	
Technetium-99	92.5000	171	N		-45.9	120 - 222	159.10	H
Uranium-234/233	148.7030	149	A		-0.2	104 - 194	13.305	
Uranium-238	163.0960	155	A		5.2	109 - 202	14.219	
Zinc-65	277.5000	242	A		14.7	169 - 315	33.300	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SEML01) SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	39.1	38.3	A		2.1	26.8 - 49.8	3.1	
Cesium-134	415.6	467	A		-11.0	327 - 607	9.1	L
Cesium-137	588.3	605	A		-2.8	424 - 787	18	
Cobalt-57	0.56		A				0.77	
Cobalt-60	4.53	4.113	A				0.51	
Iron-55	NR	983				688 - 1278		
Manganese-54	308.0	307	A		0.3	215 - 399	10	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	24.8	25.3	A		-2.0	17.7 - 32.9	2.0	
Plutonium-239/240	0.3	0.29	A	(17)			0.15	
Potassium-40	563.3	570	A		-1.2	399 - 741	45	
Strontium-90	281.8	257	A		9.7	180 - 334	12	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	145	149	A		-2.7	104 - 194	12	
Uranium-238	149	155	A		-3.9	109 - 202	13	
Zinc-65	246.8	242	A		2.0	169 - 315	8.1	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SLAC01) SLAC DOE National Accelerator Laboratory
2575 Sand Hill Road
Menlo Park, CA 94025

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40	38.3	A		4.4	26.8 - 49.8	6	
Antimony-125	5.7						11.5	H
Cesium-134	503	467	A		7.7	327 - 607	75	
Cesium-137	674	605	A		11.4	424 - 787	101	
Cobalt-57	1.5		A				3.7	
Cobalt-60	5.1	4.113	A	(17)			2	
Iron-55	NR	983				688 - 1278		
Manganese-54	347	307	A		13.0	215 - 399	52	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	607	570	A		6.5	399 - 741	91	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	266	242	A		9.9	169 - 315	40	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SLDL01) Scientific Laboratory Division
700 Camino de Salud NE
Albuquerque, NM 87196-4700

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	33.7	38.3	A		-12.0	26.8 - 49.8	2.1	
Cesium-134	422.5	467	A		-9.5	327 - 607	45.0	
Cesium-137	611.2	605	A		1.0	424 - 787	65.0	
Cobalt-57	1.0		A				2.0	
Cobalt-60	4.4	4.113	A				0.74	
Iron-55	NR	983				688 - 1278		
Manganese-54	321.2	307	A		4.6	215 - 399	34.0	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	22.3	25.3	A		-11.9	17.7 - 32.9	1.9	
Plutonium-239/240	1.0	0.29	A	(17)			1.8	
Potassium-40	607.9	570	A		6.6	399 - 741	69.2	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	130.3	149	A		-12.6	104 - 194	3.9	L
Uranium-238	132.5	155	A		-14.5	109 - 202	4.0	
Zinc-65	257.9	242	A		6.6	169 - 315	27.2	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
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QL = Quantitation Limit
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Notes:

(1) = False Positive
(2) = False Negative
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(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SNRC99) Soreq NRC
Radioactivity Measurement Section
Yavne, Israel 81800

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	36.88	38.3	A		-3.7	26.8 - 49.8	11.09	H
Antimony-125	2.73						2.73	H
Cesium-134	425.13	467	A		-9.0	327 - 607	14.44	
Cesium-137	563.25	605	A		-6.9	424 - 787	25.04	
Cobalt-57	0.8		A				0.8	
Cobalt-58	0.9						0.9	H
Cobalt-60	3.28	4.113	A				0.56	
Iron-55	NR	983				688 - 1278		
Manganese-54	290.12	307	A		-5.5	215 - 399	13.0	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	548.7	570	A		-3.7	399 - 741	25.26	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	228.42	242	A		-5.6	169 - 315	9.97	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SOUT01) Southwest Research Institute
6220 Culebra Rd.
San Antonio, TX 78228-0510

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	74.5	74.2	A		0.4	51.9 - 96.5	3.87	
Arsenic	90.8	92	A		-1.3	64 - 120	4.72	
Barium	770	912	A		-15.6	638 - 1186	40.0	
Beryllium	38.2	40.0	A		-4.5	28.0 - 52.0	1.99	
Cadmium	11.4	11.99	A		-4.9	8.39 - 15.59	0.593	
Chromium	70.9	83	A		-14.6	58 - 108	3.69	
Cobalt	128	134	A		-4.5	94 - 174	6.66	
Copper	183	178.7	A		2.4	125.1 - 232.3	9.52	
Lead	77.3	85.3	A		-9.4	59.7 - 110.9	4.02	
Mercury	0.191	0.1856	A		2.9	0.1299 - 0.2413	0.010	
Nickel	228	255	A		-10.6	179 - 332	11.9	
Selenium	0.373	<0.1	N	(1)			0.0194	
Silver	12.2	12.12	A		0.7	8.48 - 15.76	0.634	
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	326	347	A		-6.1	243 - 451	17.0	
Uranium-235	0.0886	0.091	A		-2.6	0.064 - 0.118	0.0089	
Uranium-238	12.3	12.5	A		-1.6	8.8 - 16.3	1.23	
Uranium-Total	12.4	12.6	A		-1.6	8.8 - 16.4	1.24	
Vanadium	144	162.7	A		-11.5	113.9 - 211.5	7.49	
Zinc	380	422	A		-10.0	295 - 549	19.8	

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	71.7	52.54	A		1.16	5.25 - 103.80		
4,4'-DDE	310	293.49	A		0.35	120.08 - 466.90		
4,4'-DDT	<16.5		A					
Aldrin	100	92.78	A		0.43	30.89 - 154.68		
alpha-BHC	82.9	76.75	A		0.39	21.08 - 132.43		
beta-BHC	<8.26		A					
delta-BHC	<8.26		A					
Dieldrin	<16.5		A					
Endosulfan I	<8.26		A					
Endosulfan II	<16.5		A					
Endosulfan sulfate	<16.5		A					
Endrin	136	90.82	A		1.93	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<16.5		A					
Endrin Ketone	<16.5		A					
gamma-BHC (Lindane)	<8.26		A					
Heptachlor	240	260.57	A		-0.41	94.49 - 426.65		
Heptachlor epoxide	<8.26		A					
Methoxychlor	<82.6		A					
1,2,4-Trichlorobenzene	2820	3120	A		-0.29	760 - 5480		
1,2-Dichlorobenzene	<328		A					
1,3-Dichlorobenzene	<328		A					
1,4-Dichlorobenzene	<328		A					
2,4,5-Trichlorophenol	9730	7682	A		0.88	1743 - 13620		
2,4,6-Trichlorophenol	6060	5577	A		0.34	1636 - 9518		
2,4-Dichlorophenol	5620	5300	A		0.20	1341 - 9259		
2,4-Dimethylphenol	<328		A					
2,4-Dinitrophenol	<328		A					
2,4-Dinitrotoluene	2330	7065	A		-2.66	1896 - 12233		
2,6-Dinitrotoluene	2330	2280	A		0.09	732 - 3828		
2-Chloronaphthalene	7720	7427	A		0.15	2417 - 12436		
2-Chlorophenol	<328		A					
2-Methylnaphthalene	<328		A					
2-Methylphenol	1000	1977	A		-1.45	198 - 3903		
2-Nitrophenol	<328		A					
3-Methyl & 4-Methylphenol	<328		A					
4,6-Dinitro-2-methylphenol	<328		A					
4-Bromophenyl-phenylether	<328		A					
4-Chloro-3-methylphenol	3550	3547	A		0.00	1113 - 5982		
4-Chlorophenyl-phenylether	<328		A					
4-Nitrophenol	<328		A					
Acenaphthene	5080	5673	A		-0.43	2127 - 9220		
Acenaphthylene	<328		A					
Anthracene	5260	6210	A		-0.52	2089 - 10332		
Benzo(a)anthracene	4280	4507	A		-0.23	1869 - 7145		
Benzo(a)pyrene	<328		A					
Benzo(b)fluoranthene	8700	8116	A		0.24	2924 - 13307		
Benzo(g,h,i)perylene	<328		A					
Benzo(k)fluoranthene	<328		A					
bis(2-chloroethoxy)methane	<328		A					
bis(2-chloroethyl)ether	<328		A					
bis(2-chloroisopropyl)ether	<328		A					
Bis(2-ethylhexyl)phthalate	8480	8115	A		0.19	2679 - 13550		
Butylbenzylphthalate	<328		A					
Chrysene	7720	7766	A		-0.03	2852 - 12681		
Di-n-butylphthalate	4040	3913	A		0.13	1049 - 6778		
Di-n-octylphthalate	4480	4378	A		0.08	822 - 7934		
Dibenzo(a,h)anthracene	4580	4249	A		0.29	1490 - 7008		
Dibenzofuran	<328		A					

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Diethylphthalate	7630	7616	A		0.01	2200 - 13033		
Dimethylphthalate	7470	7671	A		-0.12	2954 - 12388		
Fluoranthene	5990	5726	A		0.23	2364 - 9088		
Fluorene	3080	3143	A		-0.09	1195 - 5091		
Hexachlorobenzene	1640	1678	A		-0.11	623 - 2733		
Hexachlorobutadiene	2040	2414	A		-0.44	461 - 4367		
Hexachlorocyclopentadiene	<328	522	N	(2)		52 - 1256		
Hexachloroethane	1490	1953	A		-0.74	195 - 3823		
Indeno(1,2,3-c,d)pyrene	1010		N	(1)				
Isophorone	<328		A					
Naphthalene	<328		A					
Nitrobenzene	<328		A					
Pentachlorophenol	<328		A					
Phenanthrene	<328		A					
Phenol	<328		A					
Pyrene	3210	3263	A		-0.07	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	38.7	38.3	A		1.0	26.8 - 49.8	4.20	
Cesium-134	527	467	A		12.8	327 - 607	25.6	
Cesium-137	736	605	W		21.7	424 - 787	60.2	
Cobalt-57	0.699		A				0.734	
Cobalt-60	6.21	4.113	A				0.727	
Iron-55	807	983	A		-17.9	688 - 1278	55.6	
Manganese-54	381	307	W		24.1	215 - 399	31.6	
Nickel-63	794	514.9	N		54.2	360.4 - 669.4	53.9	
Plutonium-238	23.9	25.3	A		-5.5	17.7 - 32.9	2.52	
Plutonium-239/240	0.723	0.29	A				0.235	
Potassium-40	718	570	W		26.0	399 - 741	54.5	
Strontium-90	225	257	A		-12.5	180 - 334	16.7	
Technetium-99	190	171	A		11.1	120 - 222	13.2	
Uranium-234/233	149	149	A		0.0	104 - 194	13.5	
Uranium-238	150	155	A		-3.2	109 - 202	13.6	
Zinc-65	303	242	W		25.2	169 - 315	22.3	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(SRPD01) Sandia National Laboratories, Radiation Protection Sample Diagnostics
PO Box 5800, MS1103
Albuquerque, NM 87185-1103

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	0.089	0.091	A		-2.2	0.064 - 0.118	0.008	
Uranium-238	11.933	12.5	A		-4.5	8.8 - 16.3	0.971	
Uranium-Total	12.022	12.6	A		-4.6	8.8 - 16.4	0.979	
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	429	467	A		-8.1	327 - 607	55	
Cesium-137	592	605	A		-2.1	424 - 787	74	
Cobalt-57	-0.3		A				2.9	
Cobalt-60	3.4	4.113	A	(17)			1.2	
Iron-55	NR	983				688 - 1278		
Manganese-54	321	307	A		4.6	215 - 399	40	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	621	570	A		8.9	399 - 741	95	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	250	242	A		3.3	169 - 315	32	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(TDHL01) Texas Department of State Health Services Laboratory
1100 W 49th Street
Austin, TX 78756

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.1	38.3	A		-3.1	26.8 - 49.8	4.8	
Cesium-134	403	467	A		-13.7	327 - 607	7	L
Cesium-137	529	605	A		-12.6	424 - 787	12	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	280	307	A		-8.8	215 - 399	7	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	28.9	25.3	A		14.2	17.7 - 32.9	4.9	
Plutonium-239/240	NR	0.29	N	(18)				
Potassium-40	540	570	A		-5.3	399 - 741	28	
Strontium-90	215	257	A		-16.3	180 - 334	13	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	147	149	A		-1.3	104 - 194	17	
Uranium-238	164	155	A		5.8	109 - 202	19	
Zinc-65	212	242	A		-12.4	169 - 315	9	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
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Notes:

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(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(TELE01) TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES
2508 Quality Lane
Knoxville, TN 37931-6819

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	27.17	38.3	W		-29.1	26.8 - 49.8	5.71	H
Cesium-134	433	467	A		-7.3	327 - 607	7.03	L
Cesium-137	649	605	A		7.3	424 - 787	4.13	L
Cobalt-57	-0.120		A				0.809	
Cobalt-60	3.91	4.113	A				0.743	
Iron-55	NR	983				688 - 1278		
Manganese-54	339	307	A		10.4	215 - 399	3.38	L
Nickel-63	241	514.9	N		-53.2	360.4 - 669.4	14.5	
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	644	570	A		13.0	399 - 741	16.2	L
Strontium-90	245	257	A		-4.7	180 - 334	5.05	L
Technetium-99	133	171	W		-22.2	120 - 222	16.0	
Uranium-234/233	158.7	149	A		6.5	104 - 194	11.1	
Uranium-238	164.8	155	A		6.3	109 - 202	11.5	
Zinc-65	272	242	A		12.4	169 - 315	4.66	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(TELE02) Environmental, Inc., Midwest Lab
700 Landwehr Road
Northbrook, IL 60062-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	49.7	38.3	W		29.8	26.8 - 49.8	4.8	
Cesium-134	458.6	467	A		-1.8	327 - 607	7.4	L
Cesium-137	652.3	605	A		7.8	424 - 787	3.5	L
Cobalt-57	0.1		A				1.0	
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	346.4	307	A		12.8	215 - 399	3.1	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	28.6	25.3	A		13.0	17.7 - 32.9	2.2	
Plutonium-239/240	0.5	0.29	A	(17)			0.4	
Potassium-40	636.4	570	A		11.6	399 - 741	9.5	L
Strontium-90	180.6	257	W		-29.7	180 - 334	12.1	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	152.2	149	A		2.1	104 - 194	4.3	L
Uranium-238	154.9	155	A		-0.1	109 - 202	4.4	L
Zinc-65	268.3	242	A		10.9	169 - 315	4.0	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
601 SCARBORO RD
OAK RIDGE, TN 37830-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	40.4	38.3	A		5.5	26.8 - 49.8	9.22	H
Cesium-134	477.3	467	A		2.2	327 - 607	20.5	
Cesium-137	601	605	A		-0.7	424 - 787	49.6	
Cobalt-57	0.621		A				1.646	
Cobalt-60	4.25	4.113	A	(17)			1.474	
Iron-55	NR	983				688 - 1278		
Manganese-54	293.6	307	A		-4.4	215 - 399	22.2	
Nickel-63	499.5	514.9	A		-3.0	360.4 - 669.4	73.5	
Plutonium-238	25.97	25.3	A		2.6	17.7 - 32.9	7.68	H
Plutonium-239/240	0.166	0.29	A	(17)			0.828	
Potassium-40	544.8	570	A		-4.4	399 - 741	48.9	
Strontium-90	280	257	A		8.9	180 - 334	19.5	
Technetium-99	187.1	171	A		9.4	120 - 222	25.3	
Uranium-234/233	149.8	149	A		0.5	104 - 194	22.4	
Uranium-238	151.5	155	A		-2.3	109 - 202	22.6	
Zinc-65	298.4	242	W		23.3	169 - 315	24.4	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(TMAR01) Eberline Analytical Corp. Richmond CA Lab
2030 Wright Ave
Richmond, CA 94804-3849

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.30	38.3	A		-2.6	26.8 - 49.8	2.11	
Cesium-134	514.0	467	A		10.1	327 - 607	23.7	
Cesium-137	642.0	605	A		6.1	424 - 787	25.9	
Cobalt-57	5.0		A				5.0	
Cobalt-60	4.35	4.113	A				0.50	
Iron-55	NR	983				688 - 1278		
Manganese-54	333.0	307	A		8.5	215 - 399	15.6	
Nickel-63	475	514.9	A		-7.7	360.4 - 669.4	46	
Plutonium-238	27.60	25.3	A		9.1	17.7 - 32.9	2.84	
Plutonium-239/240	0.80	0.29	A	(17)			0.80	
Potassium-40	604.0	570	A		6.0	399 - 741	87.2	
Strontium-90	242.0	257	A		-5.8	180 - 334	14.5	
Technetium-99	188	171	A		9.9	120 - 222	14	
Uranium-234/233	145.0	149	A		-2.7	104 - 194	6.5	
Uranium-238	149.0	155	A		-3.9	109 - 202	6.6	
Zinc-65	288.0	242	A		19.0	169 - 315	17.6	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(TNUT01) FUSRAP
8945 LATTY AVE
BERKELEY, MO 63134-

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	37.33	38.3	A		-2.5	26.8 - 49.8	3.696	
Cesium-134	403.8	467	A		-13.5	327 - 607	5.21	L
Cesium-137	628.8	605	A		3.9	424 - 787	13.253	L
Cobalt-57	0.189		A				0.529	
Cobalt-60	3.681	4.113	A				0.786	
Iron-55	NR	983				688 - 1278		
Manganese-54	333.475	307	A		8.6	215 - 399	6.705	L
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	639.85	570	A		12.3	399 - 741	20.863	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	149.54	149	A		0.4	104 - 194	45.87	H
Uranium-238	150.62	155	A		-2.8	109 - 202	46.05	H
Zinc-65	265.6	242	A		9.8	169 - 315	6.913	L

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(UQNP99) Qatar University- Nuclear Physics Lab
Physics Department
Doha, QA 2713

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	450.1	467	A		-3.6	327 - 607	19.9	
Cesium-137	618.5	605	A		2.2	424 - 787	26.15	
Cobalt-57	3.983		N	(1)			0.2	
Cobalt-60	3.32	4.113	A				0.723	
Iron-55	NR	983				688 - 1278		
Manganese-54	310.4	307	A		1.1	215 - 399	14.2	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	235.3	242	A		-2.8	169 - 315	14.35	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(USED99) National Center for Energy, Science and Nuclear Techniques
CNESTEN BP 1382
RABAT, RABAT RP 10001

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	288.53	467	N		-38.2	327 - 607	30.29	
Cesium-137	431.06	605	W		-28.8	424 - 787	49.67	
Cobalt-57	-3.12		A				1.06	
Cobalt-60	3.09	4.113	A				0.65	
Iron-55	NR	983				688 - 1278		
Manganese-54	223.9	307	W		-27.1	215 - 399	24.9	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	544.80	570	A		-4.4	399 - 741	76.08	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	144.98	149	A		-2.7	104 - 194	6.54	
Uranium-238	149.89	155	A		-3.3	109 - 202	6.72	
Zinc-65	190.9	242	W		-21.1	169 - 315	21.9	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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QL = Quantitation Limit
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NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(WEST01) Lionville Laboratory
264 Welsh Pool Road
Exton, PA 19341-1313

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	38.9	74.2	N		-47.6	51.9 - 96.5		
Arsenic	89.4	92	A		-2.8	64 - 120		
Barium	831	912	A		-8.9	638 - 1186		
Beryllium	38.0	40.0	A		-5.0	28.0 - 52.0		
Cadmium	11.4	11.99	A		-4.9	8.39 - 15.59		
Chromium	73.8	83	A		-11.1	58 - 108		
Cobalt	120	134	A		-10.4	94 - 174		
Copper	165	178.7	A		-7.7	125.1 - 232.3		
Lead	78.5	85.3	A		-8.0	59.7 - 110.9		
Mercury	0.216	0.1856	A		16.4	0.1299 - 0.2413		
Nickel	226	255	A		-11.4	179 - 332		
Selenium	<0.740	<0.1	A					
Silver	11.9	12.12	A		-1.8	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	297	347	A		-14.4	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	144	162.7	A		-11.5	113.9 - 211.5		
Zinc	390	422	A		-7.6	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	77.5	52.54	A		1.51	5.25 - 103.80		
4,4'-DDE	386	293.49	A		1.93	120.08 - 466.90		
4,4'-DDT	<3.3		A					
Aldrin	113	92.78	A		1.19	30.89 - 154.68		
alpha-BHC	98.2	76.75	A		1.37	21.08 - 132.43		
beta-BHC	<3.3		A					
delta-BHC	<3.3		A					
Dieldrin	<3.3		A					
Endosulfan I	<3.3		A					
Endosulfan II	<3.3		A					
Endosulfan sulfate	<3.3		A					
Endrin	117	90.82	A		1.12	30.21 - 151.42		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Endrin Aldehyde	<3.3		A					
Endrin Ketone	<3.3		A					
gamma-BHC (Lindane)	<3.3		A					
Heptachlor	374	260.57	A		2.24	94.49 - 426.65		
Heptachlor epoxide	<3.3		A					
Methoxychlor	<3.3		A					
1,2,4-Trichlorobenzene	2670	3120	A		-0.44	760 - 5480		
1,2-Dichlorobenzene	<311		A					
1,3-Dichlorobenzene	<311		A					
1,4-Dichlorobenzene	<311		A					
2,4,5-Trichlorophenol	8110	7682	A		0.18	1743 - 13620		
2,4,6-Trichlorophenol	5380	5577	A		-0.14	1636 - 9518		
2,4-Dichlorophenol	5630	5300	A		0.20	1341 - 9259		
2,4-Dimethylphenol	<622		A					
2,4-Dinitrophenol	<622		A					
2,4-Dinitrotoluene	6850	7065	A		-0.12	1896 - 12233		
2,6-Dichlorophenol	<311		A					
2,6-Dinitrotoluene	2220	2280	A		-0.11	732 - 3828		
2-Chloronaphthalene	7430	7427	A		0.00	2417 - 12436		
2-Chlorophenol	<311		A					
2-Methylnaphthalene	<207		A					
2-Methylphenol	2310	1977	A		0.49	198 - 3903		
2-Nitrophenol	<622		A					
3-Methyl & 4-Methylphenol	<622		A					
4,6-Dinitro-2-methylphenol	<622		A					
4-Bromophenyl-phenylether	<311		A					
4-Chloro-3-methylphenol	3600	3547	A		0.06	1113 - 5982		
4-Chlorophenyl-phenylether	<311		A					
4-Nitrophenol	<622		A					
Acenaphthene	5530	5673	A		-0.10	2127 - 9220		
Acenaphthylene	<207		A					
Anthracene	6460	6210	A		0.14	2089 - 10332		
Benzo(a)anthracene	4130	4507	A		-0.37	1869 - 7145		
Benzo(a)pyrene	<207		A					
Benzo(b)fluoranthene	7940	8116	A		-0.07	2924 - 13307		
Benzo(g,h,i)perylene	<207		A					
Benzo(k)fluoranthene	<207		A					
bis(2-chloroethoxy)methane	<311		A					
bis(2-chloroethyl)ether	<311		A					
bis(2-chloroisopropyl)ether	<311		A					
Bis(2-ethylhexyl)phthalate	8320	8115	A		0.11	2679 - 13550		
Butylbenzylphthalate	<311		A					
Chrysene	7520	7766	A		-0.14	2852 - 12681		
Di-n-butylphthalate	3740	3913	A		-0.17	1049 - 6778		
Di-n-octylphthalate	4290	4378	A		-0.07	822 - 7934		
Dibenzo(a,h)anthracene	3980	4249	A		-0.24	1490 - 7008		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Dibenzofuran	<311		A					
Diethylphthalate	7720	7616	A		0.05	2200 - 13033		
Dimethylphthalate	7670	7671	A		0.00	2954 - 12388		
Fluoranthene	5650	5726	A		-0.07	2364 - 9088		
Fluorene	2870	3143	A		-0.38	1195 - 5091		
Hexachlorobenzene	1520	1678	A		-0.44	623 - 2733		
Hexachlorobutadiene	2150	2414	A		-0.31	461 - 4367		
Hexachlorocyclopentadiene	401	522	A		-0.50	52 - 1256		
Hexachloroethane	1670	1953	A		-0.45	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<207		A					
Isophorone	<311		A					
Naphthalene	<207		A					
Nitrobenzene	<311		A					
Pentachlorophenol	<622		A					
Phenanthrene	<207		A					
Phenol	<311		A					
Pyrene	2820	3263	A		-0.59	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(WEST03) Waste Sampling and Characterization Facility
PO Box 1000, S3-30
Richland, WA 99352

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	66.0	74.2	A		-11.1	51.9 - 96.5		
Arsenic	93.6	92	A		1.7	64 - 120		
Barium	840	912	A		-7.9	638 - 1186		
Beryllium	41.2	40.0	A		3.0	28.0 - 52.0		
Cadmium	11.3	11.99	A		-5.8	8.39 - 15.59		
Chromium	73.6	83	A		-11.3	58 - 108		
Cobalt	122	134	A		-9.0	94 - 174		
Copper	185	178.7	A		3.5	125.1 - 232.3		
Lead	84.7	85.3	A		-0.7	59.7 - 110.9		
Mercury	0.174	0.1856	A		-6.3	0.1299 - 0.2413		
Nickel	220	255	A		-13.7	179 - 332		
Selenium	<4.5	<0.1	A	(7)				
Silver	10.5	12.12	A		-13.4	8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	334	347	A		-3.7	243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	11.2	12.6	A		-11.1	8.8 - 16.4		
Vanadium	148	162.7	A		-9.0	113.9 - 211.5		
Zinc	428	422	A		1.4	295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	4310	3120	A		1.16	760 - 5480		
1,2-Dichlorobenzene	<240		A					
1,3-Dichlorobenzene	<260		A					
1,3-Dinitrobenzene	<140		A					
1,4-Dichlorobenzene	<240		A					
2,4,5-Trichlorophenol	9800	7682	A		0.91	1743 - 13620		

Organic								Units: (ug/kg)
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,4,6-Trichlorophenol	6720	5577	A		0.81	1636 - 9518		
2,4-Dichlorophenol	6820	5300	A		0.94	1341 - 9259		
2,4-Dimethylphenol	<220		A					
2,4-Dinitrophenol	<600		A					
2,4-Dinitrotoluene	8870	7065	A		1.01	1896 - 12233		
2,6-Dichlorophenol	<200		A					
2,6-Dinitrotoluene	2660	2280	A		0.71	732 - 3828		
2-Chloronaphthalene	9930	7427	A		1.27	2417 - 12436		
2-Chlorophenol	<140		A					
2-Methylnaphthalene	<140		A					
2-Methylphenol	1800	1977	A		-0.26	198 - 3903		
2-Nitrophenol	<140		A					
3-Methyl & 4-Methylphenol	<140		A					
4,6-Dinitro-2-methylphenol	<220		A					
4-Bromophenyl-phenylether	<140		A					
4-Chloro-3-methylphenol	4110	3547	A		0.67	1113 - 5982		
4-Chlorophenyl-phenylether	<140		A					
4-Nitrophenol	<200		A					
Acenaphthene	7060	5673	A		1.01	2127 - 9220		
Acenaphthylene	<140		A					
Anthracene	6840	6210	A		0.34	2089 - 10332		
Benzo(a)anthracene	5400	4507	A		0.88	1869 - 7145		
Benzo(a)pyrene	<200		A					
Benzo(b)fluoranthene	9410	8116	A		0.54	2924 - 13307		
Benzo(g,h,i)perylene	<220		A					
Benzo(k)fluoranthene	<170		A					
bis(2-chloroethoxy)methane	<140		A					
bis(2-chloroethyl)ether	<140		A					
bis(2-chloroisopropyl)ether	<140		A					
Bis(2-ethylhexyl)phthalate	9370	8115	A		0.64	2679 - 13550		
Butylbenzylphthalate	<140		A					
Chrysene	9170	7766	A		0.77	2852 - 12681		
Di-n-butylphthalate	4880	3913	A		0.96	1049 - 6778		
Di-n-octylphthalate	4710	4378	A		0.26	822 - 7934		
Dibenzo(a,h)anthracene	5190	4249	A		0.82	1490 - 7008		
Dibenzofuran	<140		A					
Diethylphthalate	8890	7616	A		0.66	2200 - 13033		
Dimethylphthalate	9200	7671	A		0.89	2954 - 12388		
Fluoranthene	7260	5726	A		1.36	2364 - 9088		
Fluorene	3840	3143	A		0.97	1195 - 5091		
Hexachlorobenzene	1940	1678	A		0.73	623 - 2733		
Hexachlorobutadiene	3240	2414	A		0.97	461 - 4367		
Hexachlorocyclopentadiene	<160	522	N	(2)		52 - 1256		
Hexachloroethane	2200	1953	A		0.40	195 - 3823		
Indeno(1,2,3-c,d)pyrene	<240		A					
Isophorone	<140		A					

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Naphthalene	<140		A					
Nitrobenzene	<140		A					
Pentachlorophenol	<200		A					
Phenanthrene	<140		A					
Phenol	<140		A					
Pyrene	3500	3263	A		0.32	1235 - 5290		

Radiological — Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	33.6	38.3	A		-12.3	26.8 - 49.8	5.1	
Cesium-134	370	467	W		-20.8	327 - 607	32	
Cesium-137	601	605	A		-0.7	424 - 787	54	
Cobalt-57	0.17		A				0.32	
Cobalt-60	3.90	4.113	A				0.63	
Iron-55	NR	983				688 - 1278		
Manganese-54	326	307	A		6.2	215 - 399	27	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	26.5	25.3	A		4.7	17.7 - 32.9	4.0	
Plutonium-239/240	1.20	0.29	A	(17)			2.9	
Potassium-40	665	570	A		16.7	399 - 741	46	
Strontium-90	568	257	N		121.0	180 - 334	40	
Technetium-99	143	171	A		-16.4	120 - 222	15	
Uranium-234/233	135	149	A		-9.4	104 - 194	18	
Uranium-238	136	155	A		-12.3	109 - 202	18	
Zinc-65	276	242	A		14.1	169 - 315	19	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
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Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
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RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
1638 Roseytown Road
Greensburg, PA 15601

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	34.20	38.3	A		-10.7	26.8 - 49.8	5.062	
Cesium-134	355.2	467	W		-23.9	327 - 607	17.22	
Cesium-137	562.1	605	A		-7.1	424 - 787	38.43	
Cobalt-57	0.2539		A				0.5669	
Cobalt-60	3.517	4.113	A				0.5650	
Iron-55	923.2	983	A		-6.1	688 - 1278	169.4	
Manganese-54	294.9	307	A		-3.9	215 - 399	31.87	
Nickel-63	471.8	514.9	A		-8.4	360.4 - 669.4	61.56	
Plutonium-238	21.92	25.3	A		-13.4	17.7 - 32.9	3.870	
Plutonium-239/240	0.8775	0.29	A	(17)			0.6065	
Potassium-40	553.4	570	A		-2.9	399 - 741	37.59	
Strontium-90	214.5	257	A		-16.5	180 - 334	35.71	
Technetium-99	164.1	171	A		-4.0	120 - 222	21.46	
Uranium-234/233	148.3	149	A		-0.5	104 - 194	21.96	
Uranium-238	154.0	155	A		-0.6	109 - 202	22.74	
Zinc-65	231.6	242	A		-4.3	169 - 315	16.65	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(WIPH01) WI, DPH, Radiation Protection Section
PO Box 2659
Madison, WI 53701-2659

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	454	467	A		-2.8	327 - 607	7	L
Cesium-137	624	605	A		3.1	424 - 787	17	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	313	307	A		2.0	215 - 399	10	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	549	570	A		-3.7	399 - 741	40	
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	250	242	A		3.3	169 - 315	11	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(WIPP01) WIPP Laboratories
1400 University Drive
Carlsbad, NM 88220

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	3.66E+01	38.3	A		-4.4	26.8 - 49.8	2.50	
Cesium-134	4.80E+02	467	A		2.8	327 - 607	2.63	
Cesium-137	5.69E+02	605	A		-6.0	424 - 787	5.10	
Cobalt-57	-1.83E+00		A				1.53	
Cobalt-60	3.38E+00	4.113	A				6.15E-	
Iron-55	NR	983				688 - 1278		
Manganese-54	3.03E+02	307	A		-1.3	215 - 399	2.73	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	2.78E+01	25.3	A		9.9	17.7 - 32.9	1.47	
Plutonium-239/240	3.46E-01	0.29	A	(17)			1.49E-	
Potassium-40	5.49E+02	570	A		-3.7	399 - 741	5.18	
Strontium-90	2.35E+02	257	A		-8.6	180 - 334	1.36	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	1.46E+02	149	A		-2.0	104 - 194	4.71	
Uranium-238	1.49E+02	155	A		-3.9	109 - 202	4.80	
Zinc-65	2.35E+02	242	A		-2.9	169 - 315	2.13	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(WSHL01) Wisconsin State Laboratory of Hygiene
2601 Agriculture Drive
Madison, WI 53718

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	31.9	38.3	A		-16.7	26.8 - 49.8	2.1	
Cesium-134	406	467	A		-13.1	327 - 607	5.3	L
Cesium-137	630	605	A		4.1	424 - 787	15.2	L
Cobalt-57	NR		RW	(11)				
Cobalt-60	3.53	4.113	A				0.36	
Iron-55	NR	983				688 - 1278		
Manganese-54	330	307	A		7.5	215 - 399	13.8	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	593	570	A		4.0	399 - 741	46.1	
Strontium-90	203	257	W		-21.0	180 - 334	46	H
Technetium-99	NR	171				120 - 222		
Uranium-234/233	135.2	149	A		-9.3	104 - 194	6.9	
Uranium-238	137.3	155	A		-11.4	109 - 202	6.9	
Zinc-65	262	242	A		8.3	169 - 315	18.1	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(YAEC01) AREVA NP Environmental Laboratory
29 Research Drive
Westboro, MA 01581

Inorganic

Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-Total	NR	12.6				8.8 - 16.4		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	521	467	A		11.6	327 - 607	26	
Cesium-137	750	605	W		24.0	424 - 787	38	
Cobalt-57	0.33		A				0.51	
Cobalt-60	3.97	4.113	A				0.47	
Iron-55	NR	983				688 - 1278		
Manganese-54	387	307	W		26.1	215 - 399	20	
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	714	570	W		25.3	399 - 741	37	
Strontium-90	250	257	A		-2.7	180 - 334	18	
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	317	242	N		31.0	169 - 315	16	

Radiological Reference Date: January 1, 2009

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
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L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Notes:

(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

MAPEP Mixed Analyte Performance Evaluation Program

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

Laboratory Results For MAPEP-09-MaS20
(YPGA01) US Army Yuma Proving Ground / Material Analysis Lab
301 C. Street
Yuma, AZ 85365

Inorganic — Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Thallium	NR	347				243 - 451		
Uranium-235	0.0913	0.091	A		0.3	0.064 - 0.118	0.0037	
Uranium-238	12.31	12.5	A		-1.5	8.8 - 16.3	0.50	
Uranium-Total	12.4	12.6	A		-1.6	8.8 - 16.4	0.5	
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		

Organic — Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
2,4-Dimethylphenol	NR							
2,4-Dinitrotoluene	NR	7065				1896 - 12233		

Organic

Units: (ug/kg)

Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
2,6-Dinitrotoluene	NR	2280				732 - 3828		
2-Chloronaphthalene	NR	7427				2417 - 12436		
2-Methylphenol	NR	1977				198 - 3903		
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Chrysene	NR	7766				2852 - 12681		
Di-n-butylphthalate	NR	3913				1049 - 6778		
Di-n-octylphthalate	NR	4378				822 - 7934		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Diethylphthalate	NR	7616				2200 - 13033		
Dimethylphthalate	NR	7671				2954 - 12388		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
Hexachloroethane	NR	1953				195 - 3823		
Pyrene	NR	3263				1235 - 5290		

Radiological

Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	NR	38.3				26.8 - 49.8		
Cesium-134	NR	467				327 - 607		
Cesium-137	NR	605				424 - 787		
Cobalt-57	NR							
Cobalt-60	NR	4.113						
Iron-55	NR	983				688 - 1278		
Manganese-54	NR	307				215 - 399		
Nickel-63	NR	514.9				360.4 - 669.4		
Plutonium-238	NR	25.3				17.7 - 32.9		
Plutonium-239/240	NR	0.29						
Potassium-40	NR	570				399 - 741		
Strontium-90	NR	257				180 - 334		
Technetium-99	NR	171				120 - 222		
Uranium-234/233	NR	149				104 - 194		
Uranium-238	NR	155				109 - 202		
Zinc-65	NR	242				169 - 315		

Radiological Reference Date: January 1, 2009

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

Organic Flags:
Criteria based on FoPT Tables July 1, 2007

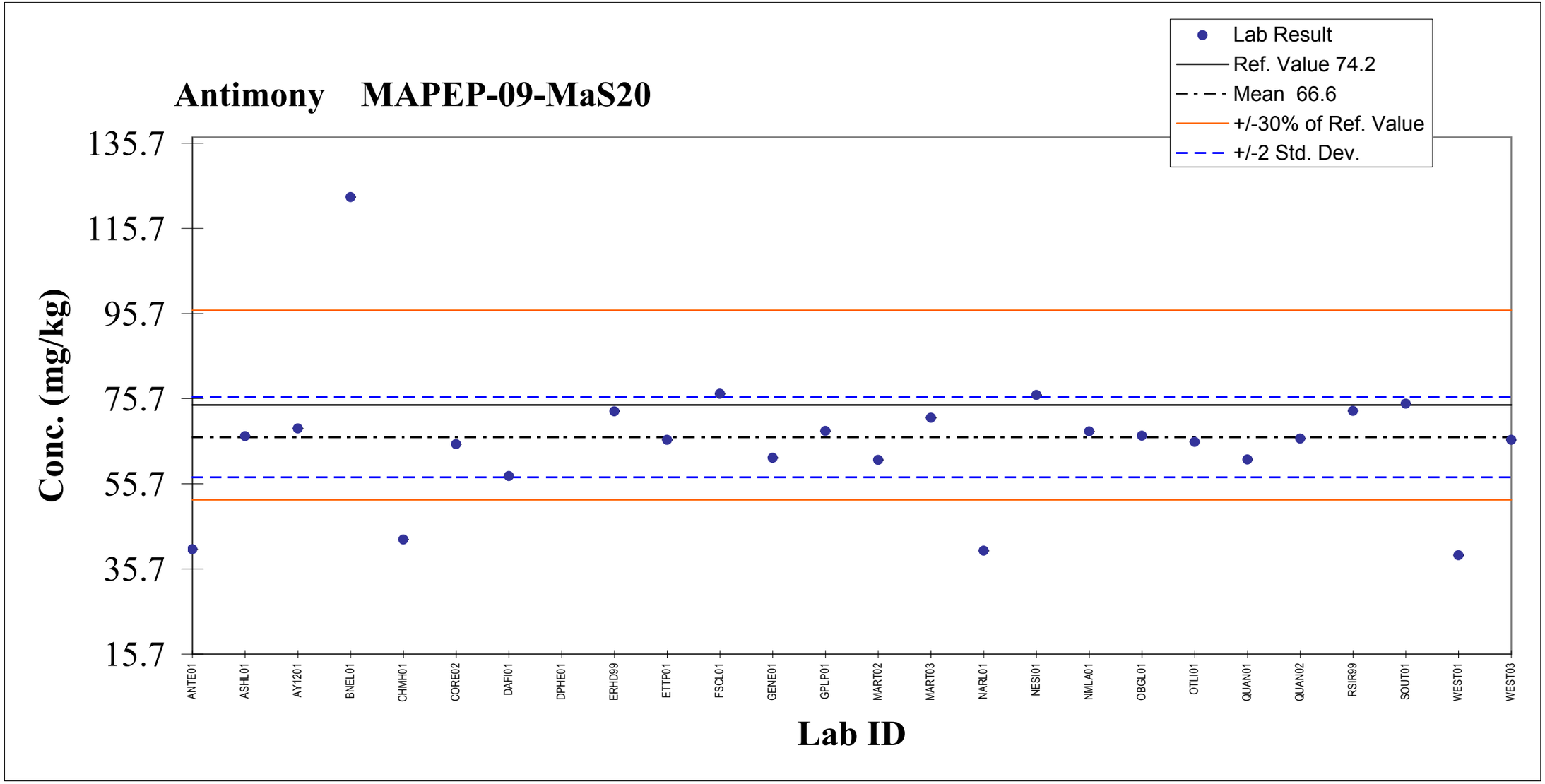
A = Result acceptable Z-score <=3.0
N = Result not acceptable Z-score > 3.0

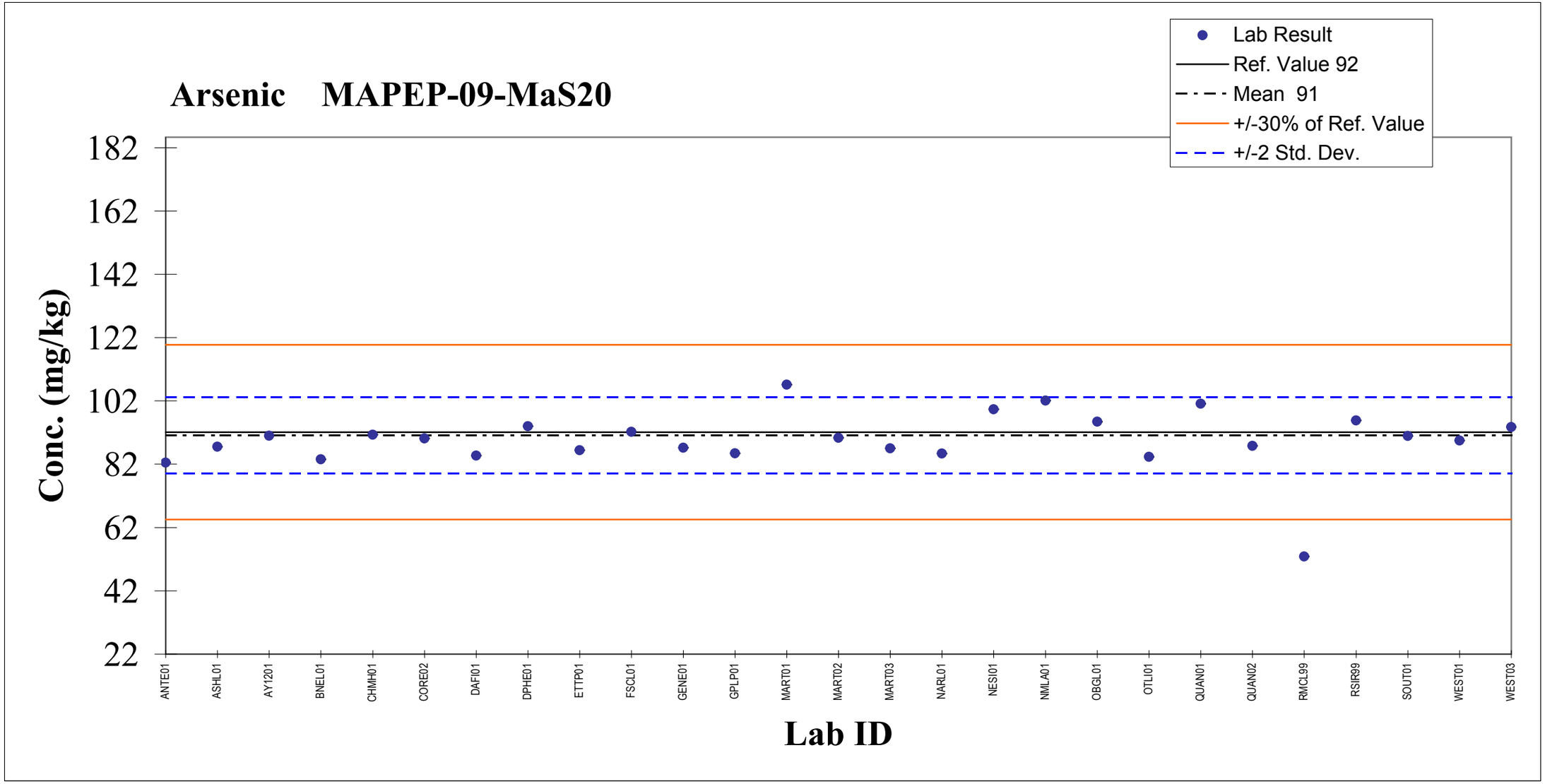
Other Flags:

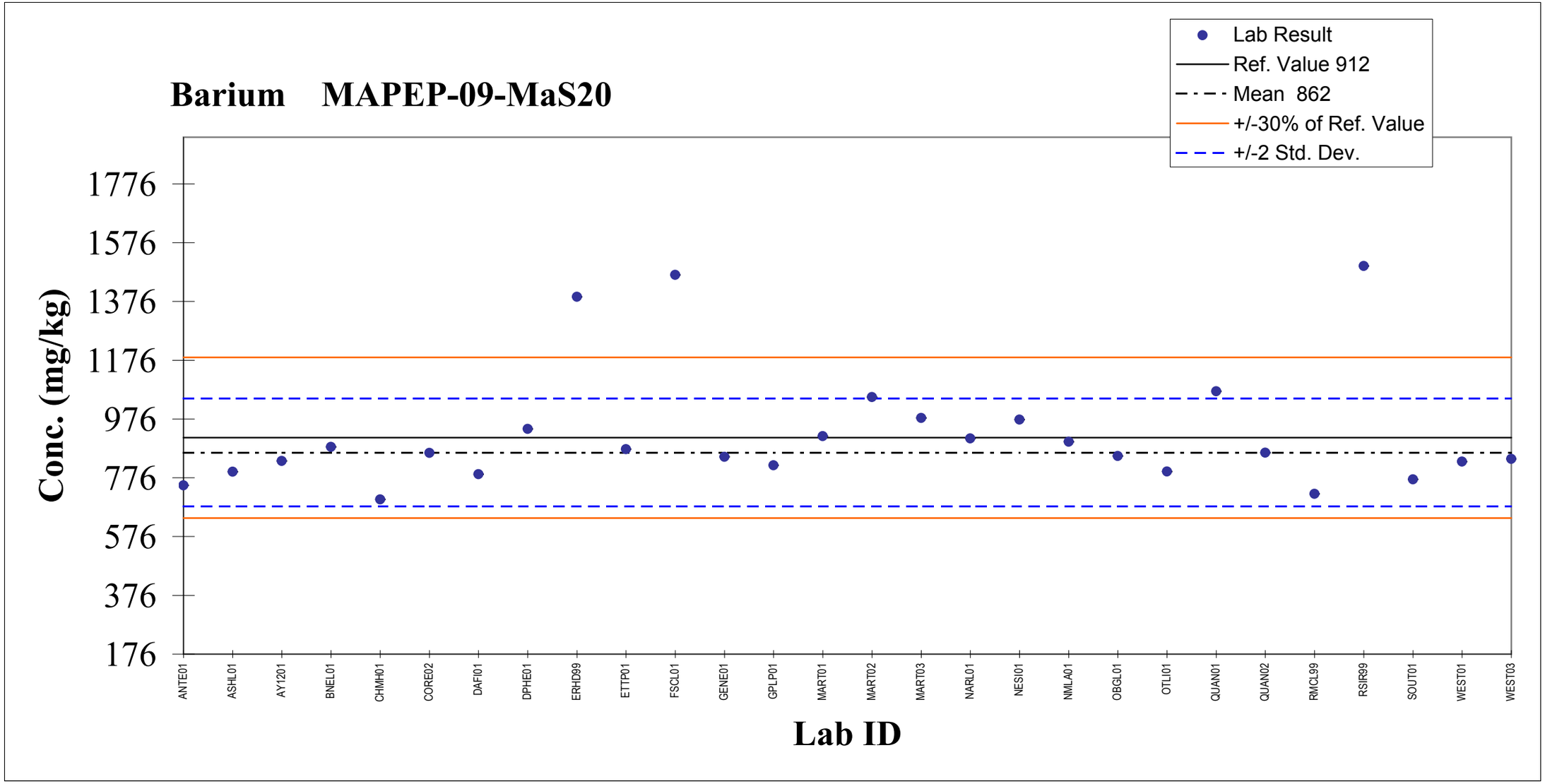
A = Result acceptable Bias <=20%
W = Result accepatble with warning 20% < Bias < 30%
N = Result not acceptable Bias > 30%
L = Uncertainty potentially too low (for information purposes only)
H = Uncertainty potentially too high (for information purposes only)
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

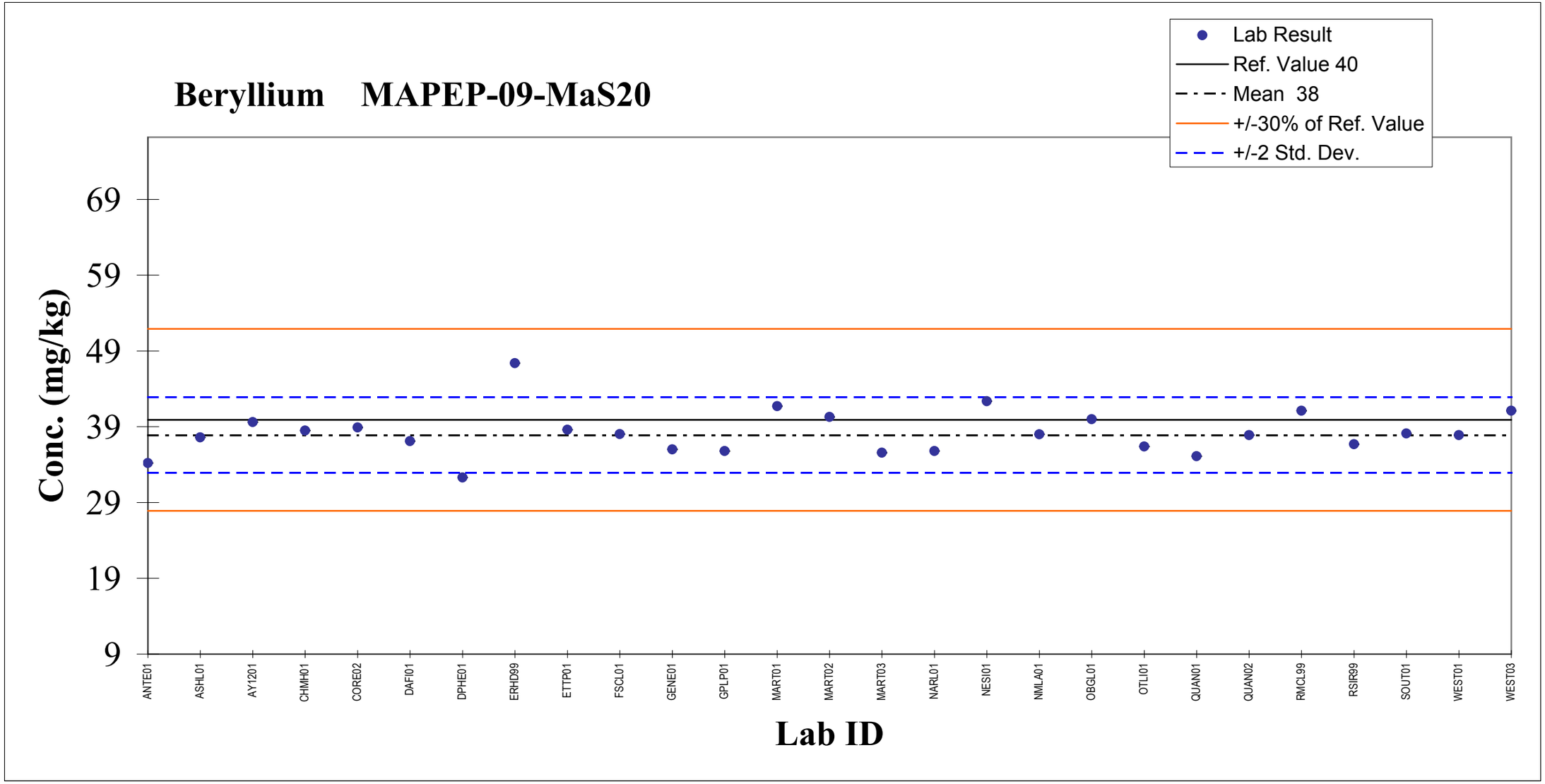
Notes:

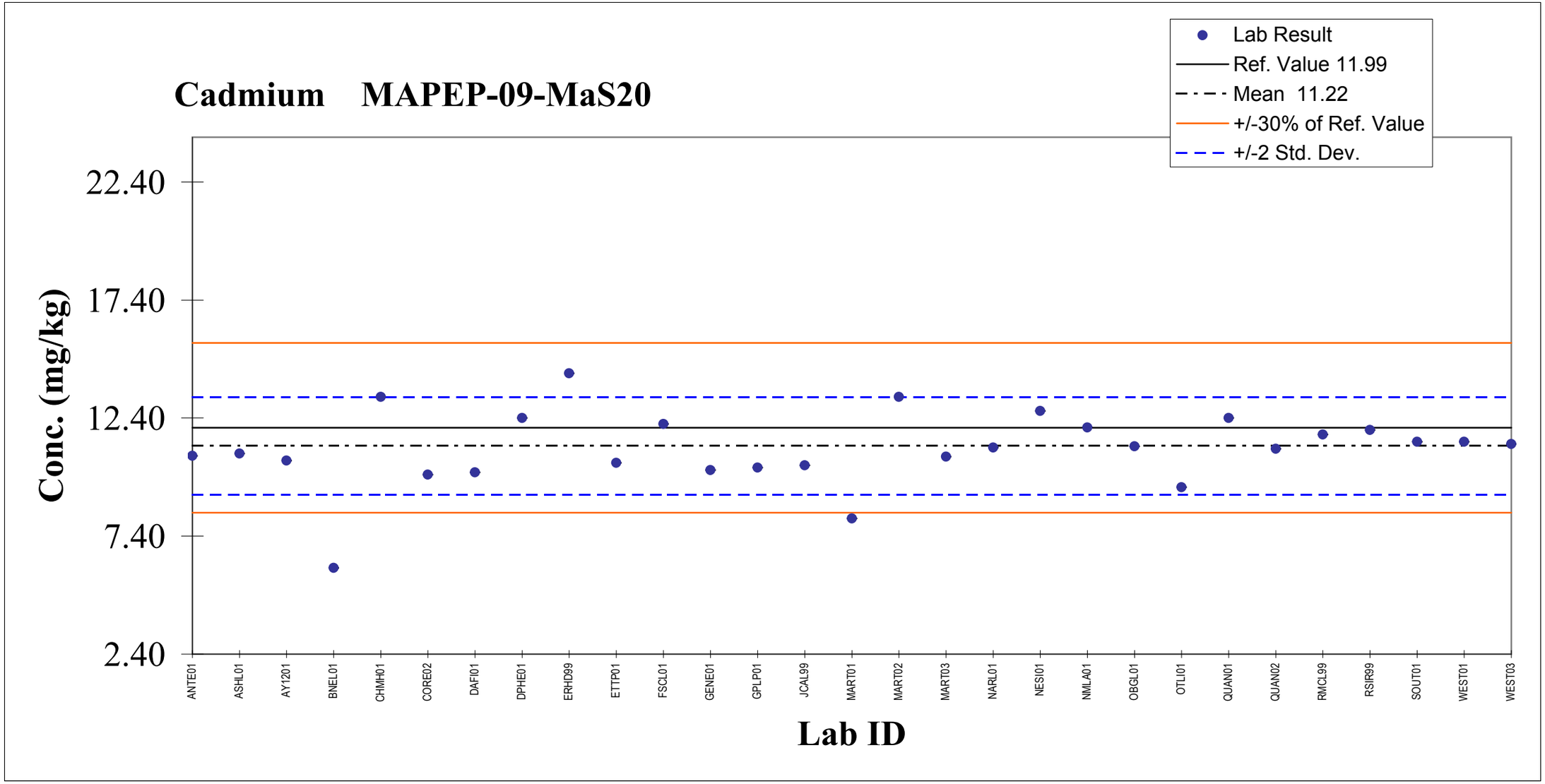
(1) = False Positive
(2) = False Negative
(4) = Sensitivity Evaluation
(5) = Total Metal
(7) = DL > CLP limit
(11) = False Positive Test, Result Not Reported
(17) = NOT DETECTED - reported a statistically zero result
(18) = Sensitivity Evaluation, Value Not Reported

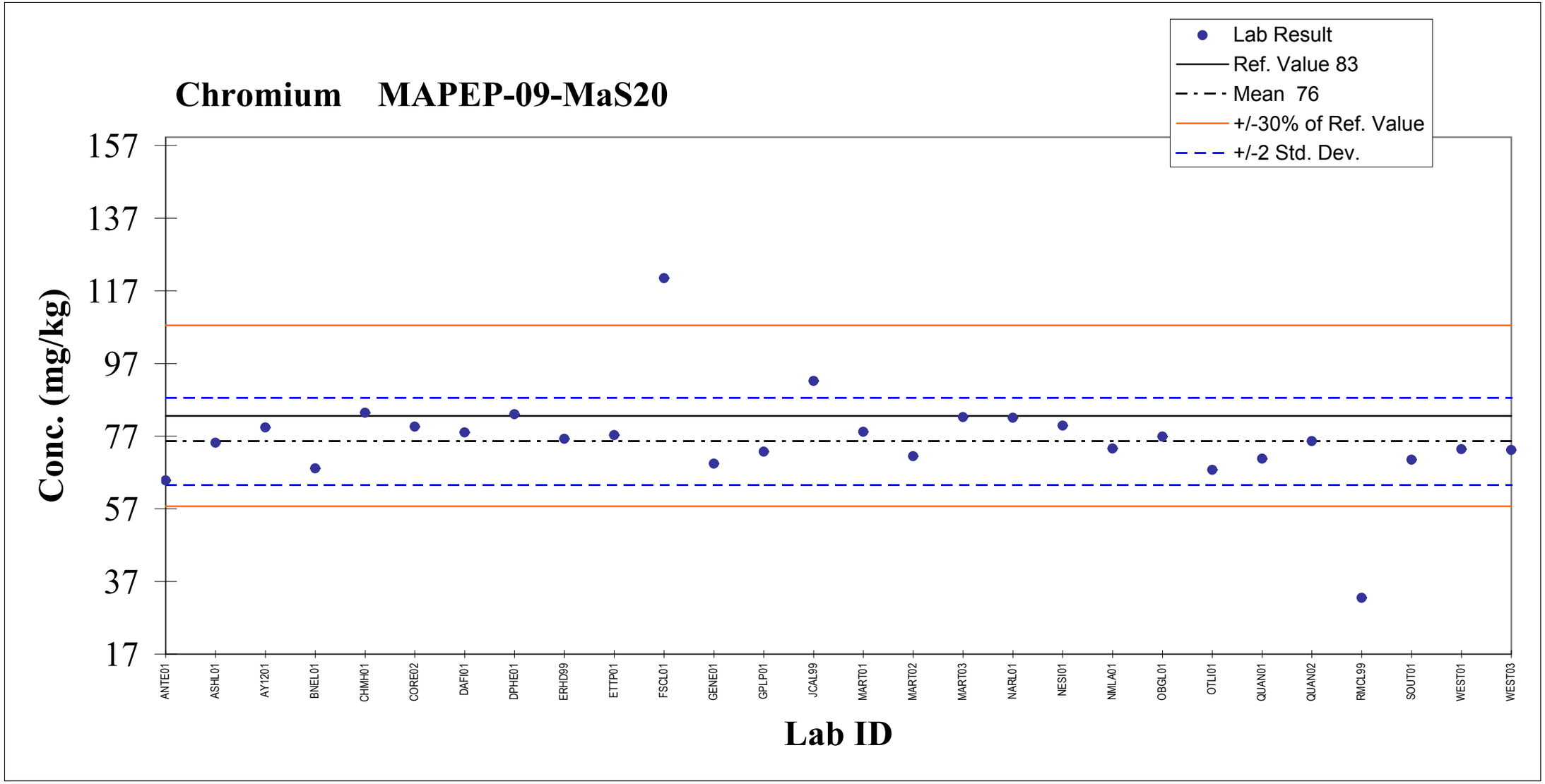

Antimony MAPEP-09-MaS20
Lab Result
Ref. Value 74.2
Mean 66.6
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
135.7
115.7
95.7
75.7
55.7
35.7
15.7
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RSIR99
SOUT01
WEST01
WEST03
Lab ID

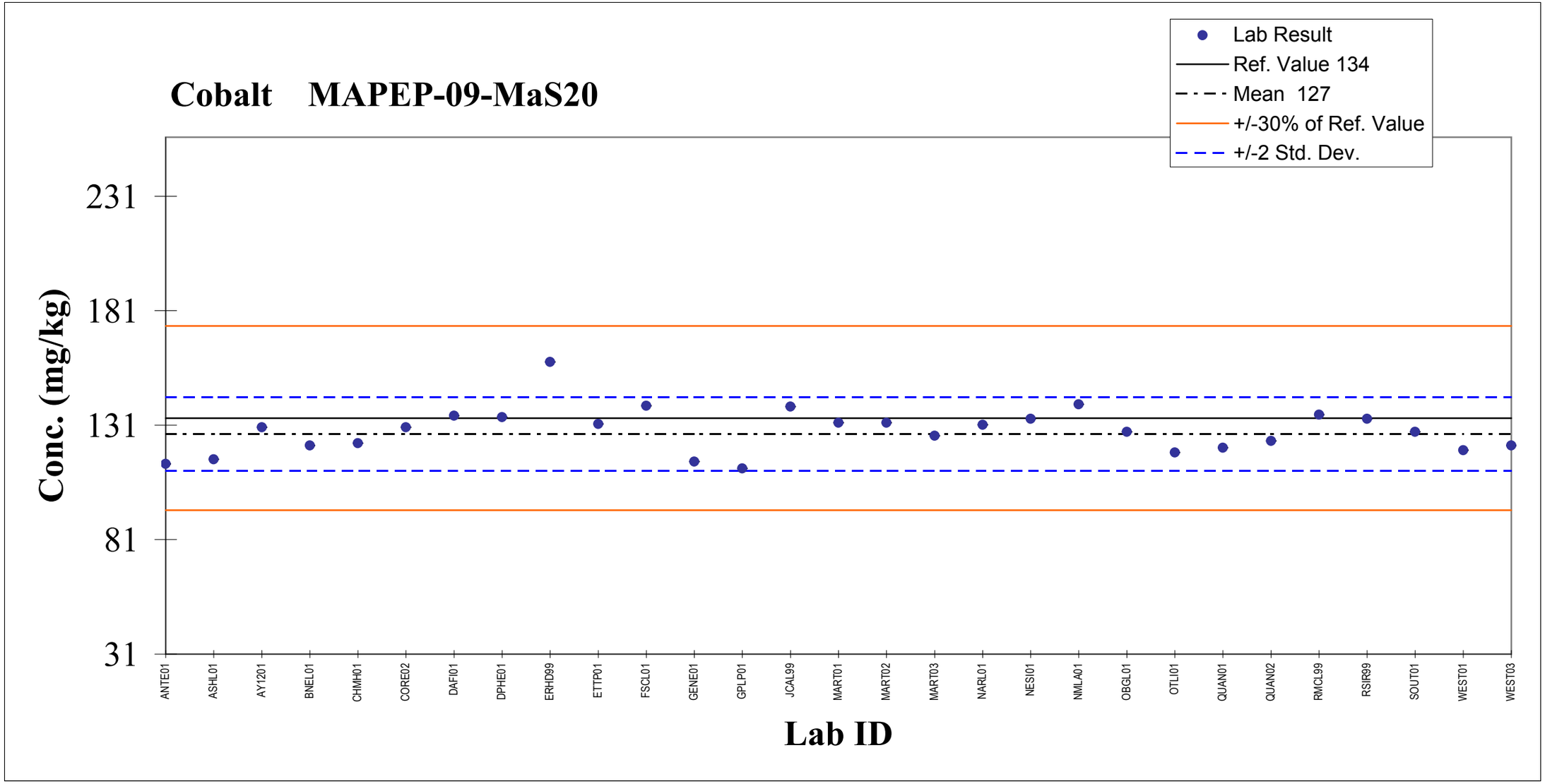

Arsenic MAPEP-09-MaS20
Lab Result
Ref. Value 92
Mean 91
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
182
162
142
122
102
82
62
42
22
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ETTP01
FSCL01
GENE01
GPLP01
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

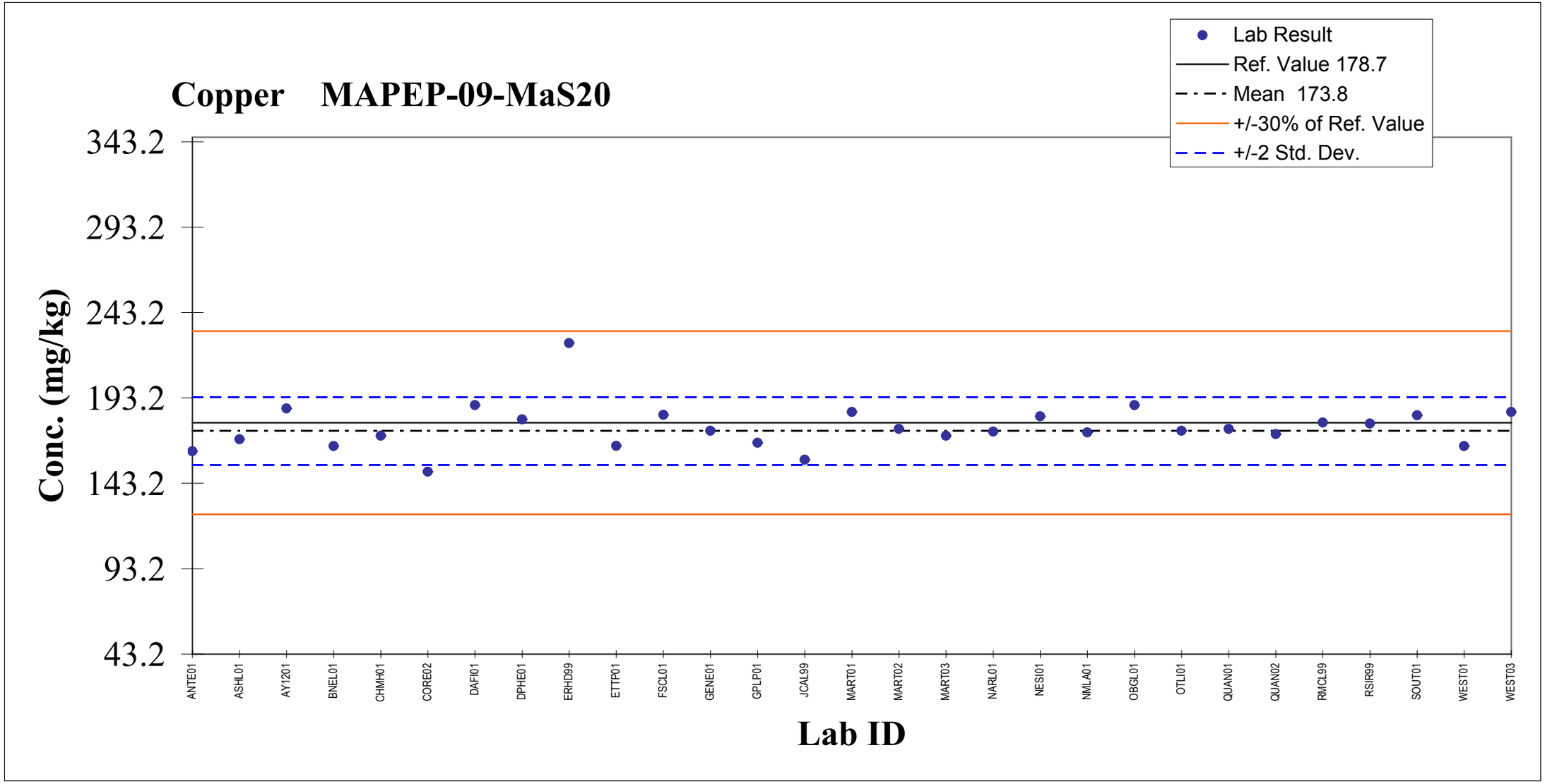

Barium MAPEP-09-MaS20
Lab Result
Ref. Value 912
Mean 862
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
1776
1576
1376
1176
976
776
576
376
176
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

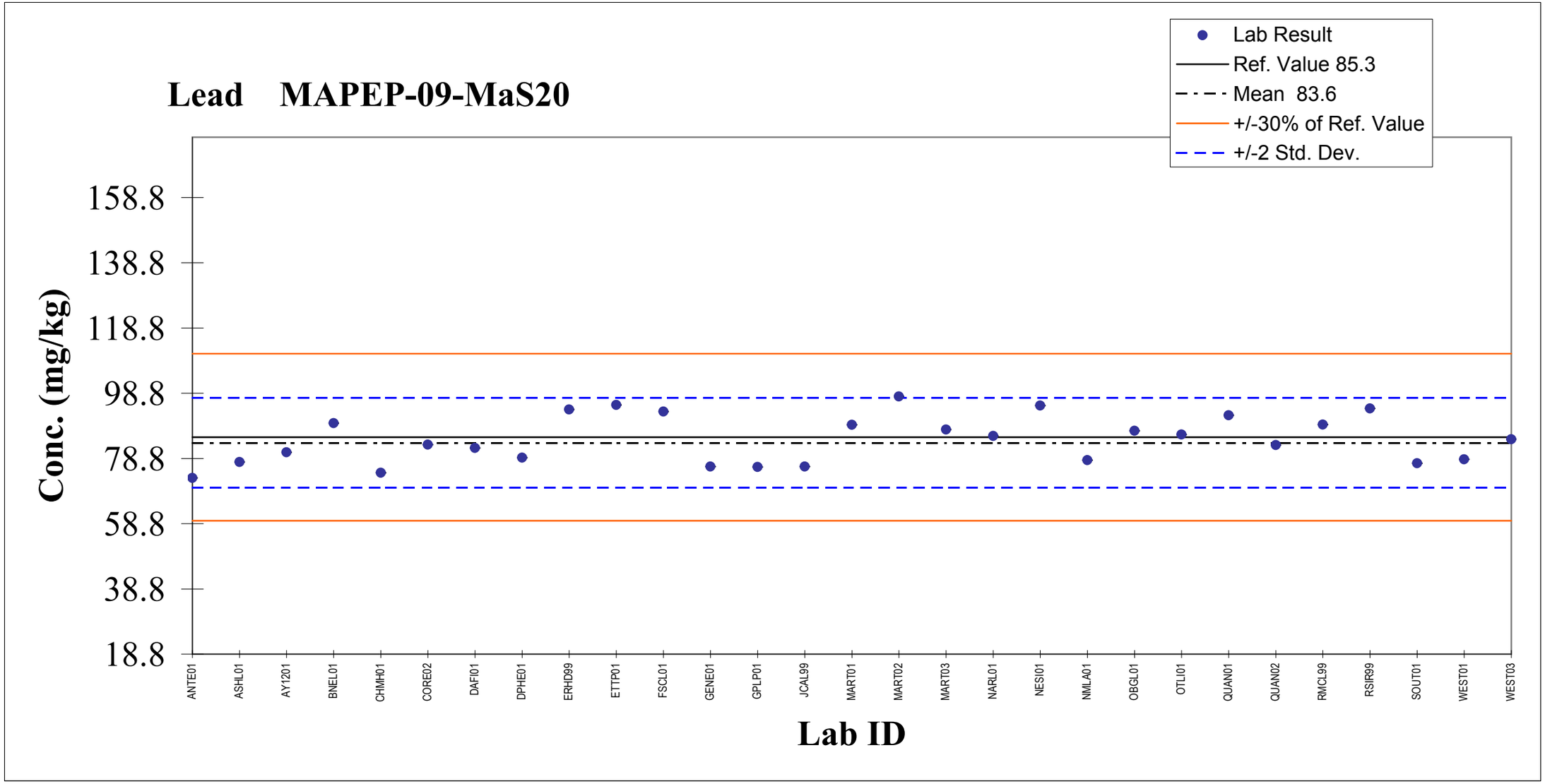

Beryllium MAPEP-09-MaS20
Lab Result
Ref. Value 40
Mean 38
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
69
59
49
39
29
19
9
ANTE01
ASHL01
AY1201
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

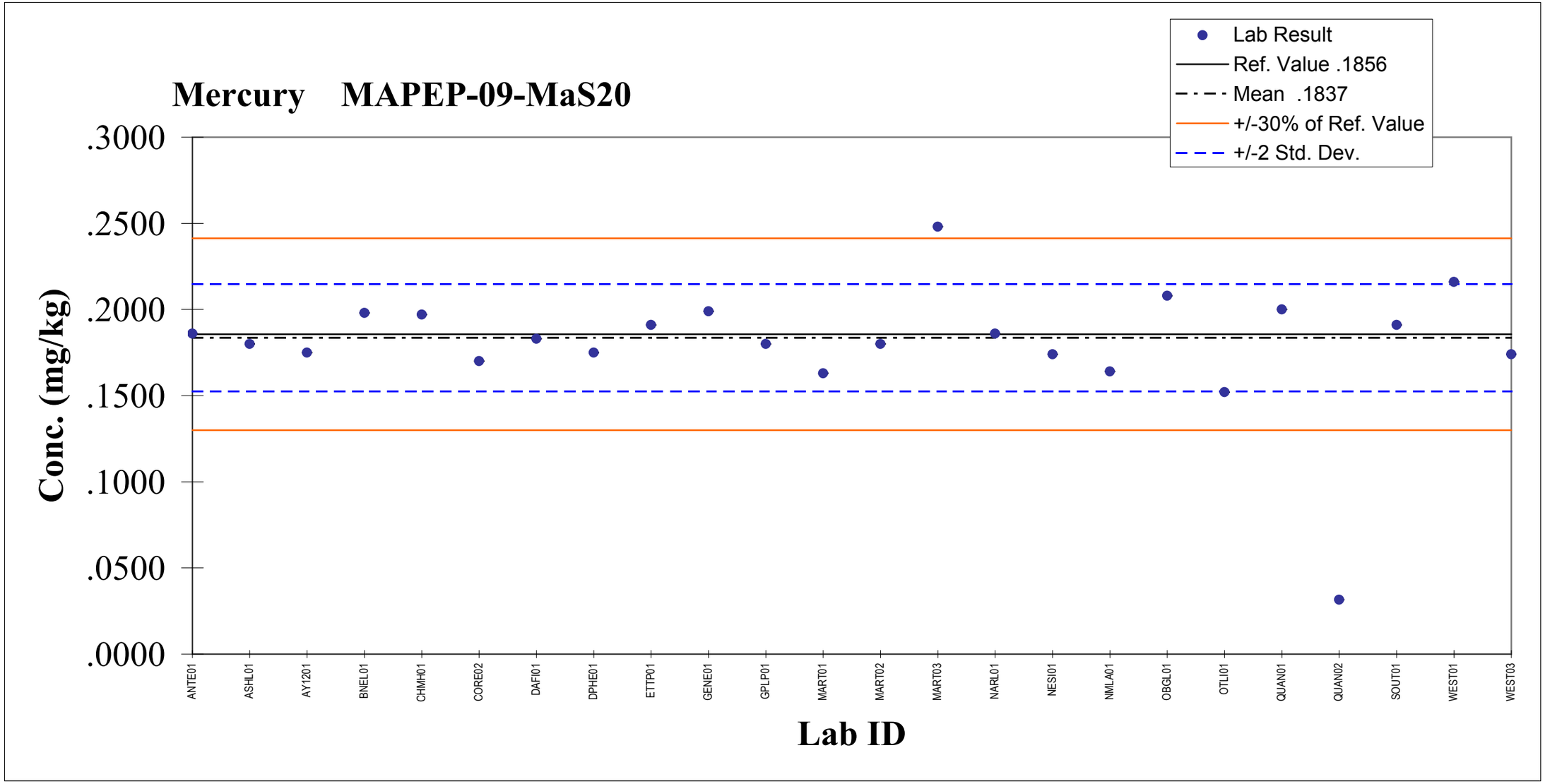

Cadmium MAPEP-09-MaS20
Lab Result
Ref. Value 11.99
Mean 11.22
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
22.40
17.40
12.40
7.40
2.40
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

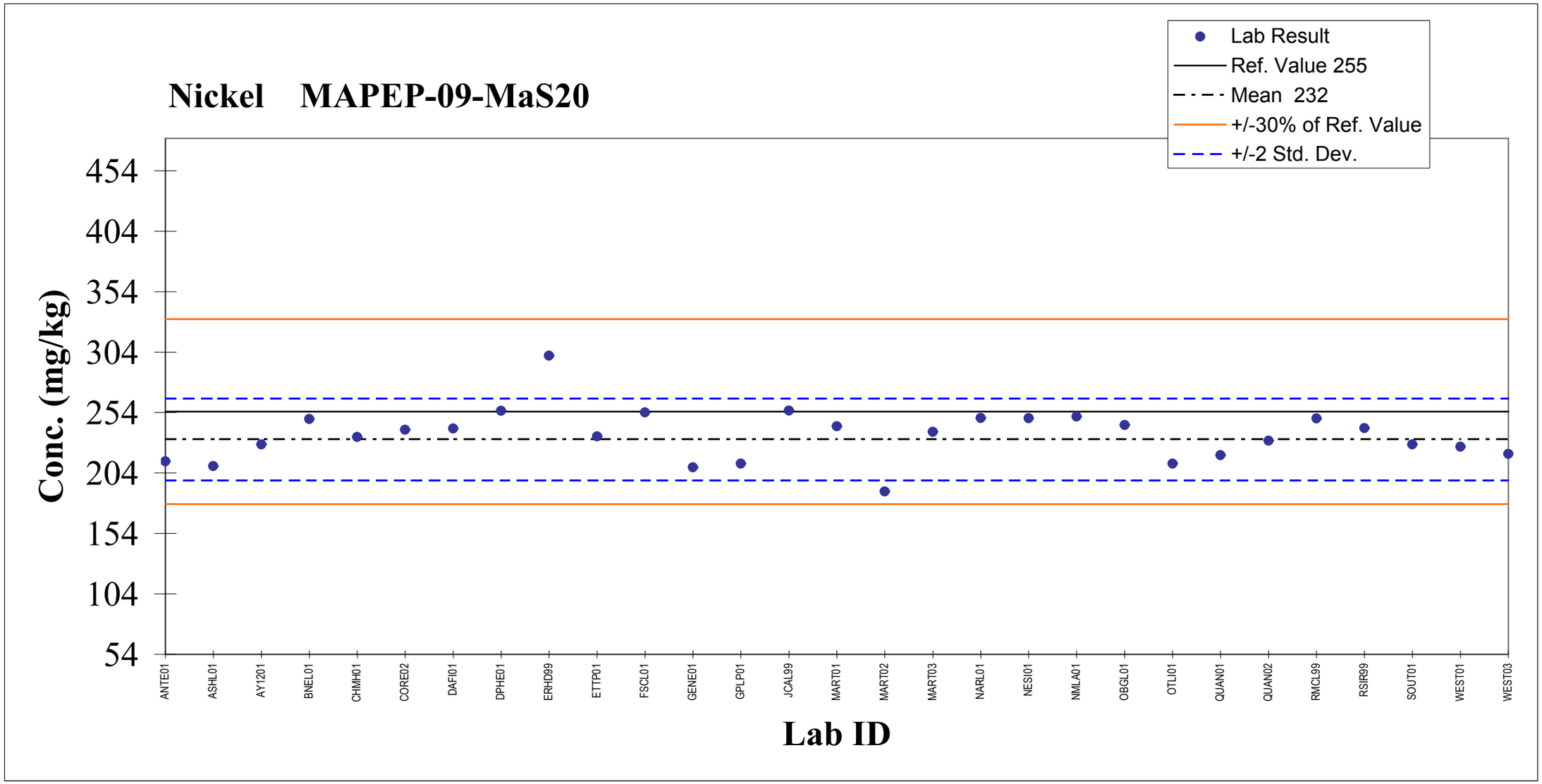

Chromium MAPEP-09-MaS20
Lab Result
Ref. Value 83
Mean 76
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
157
137
117
97
77
57
37
17
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
SOUT01
WEST01
WEST03
Lab ID

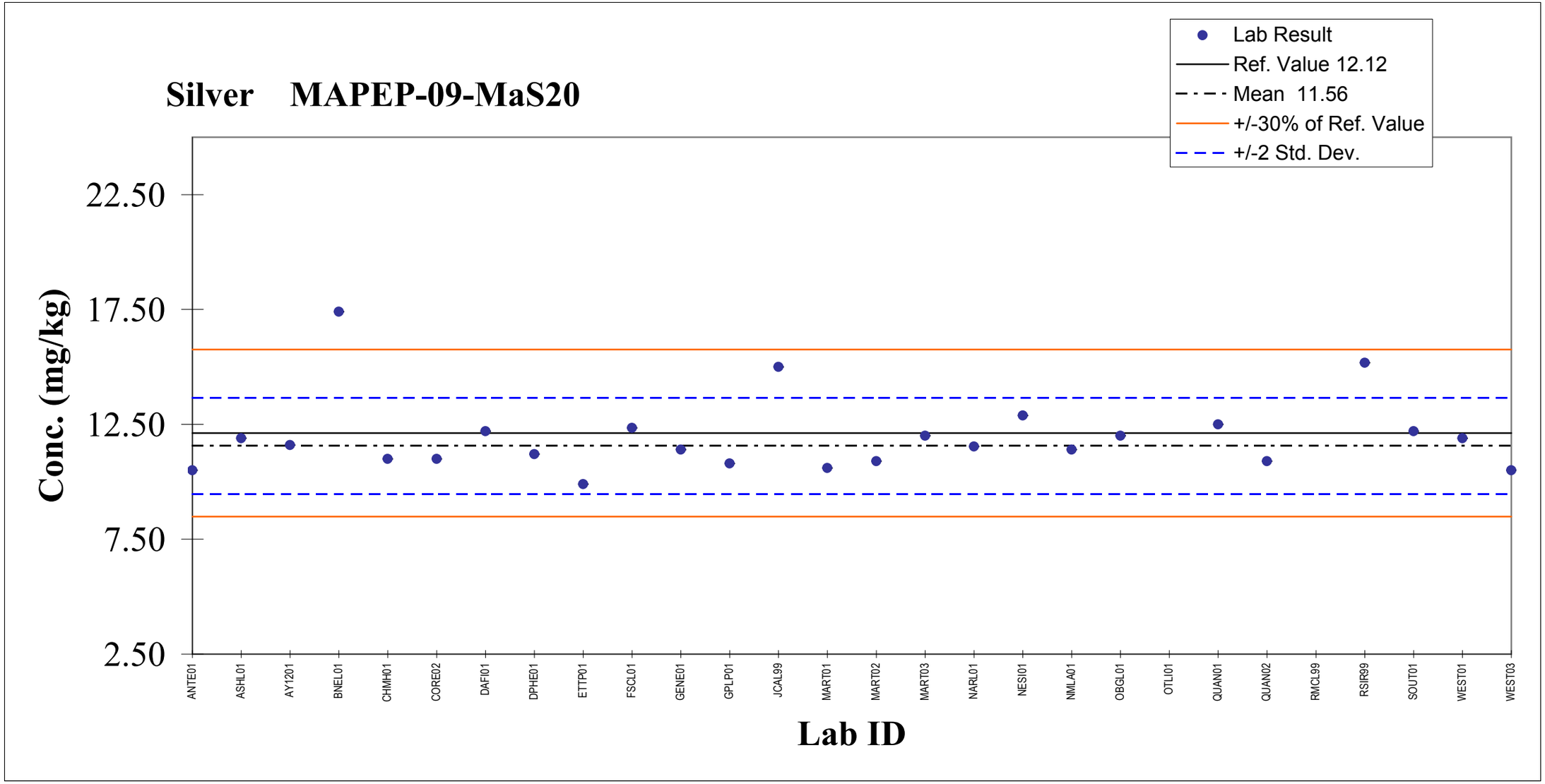

Cobalt MAPEP-09-MaS20
Lab Result
Ref. Value 134
Mean 127
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
231
181
131
81
31
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

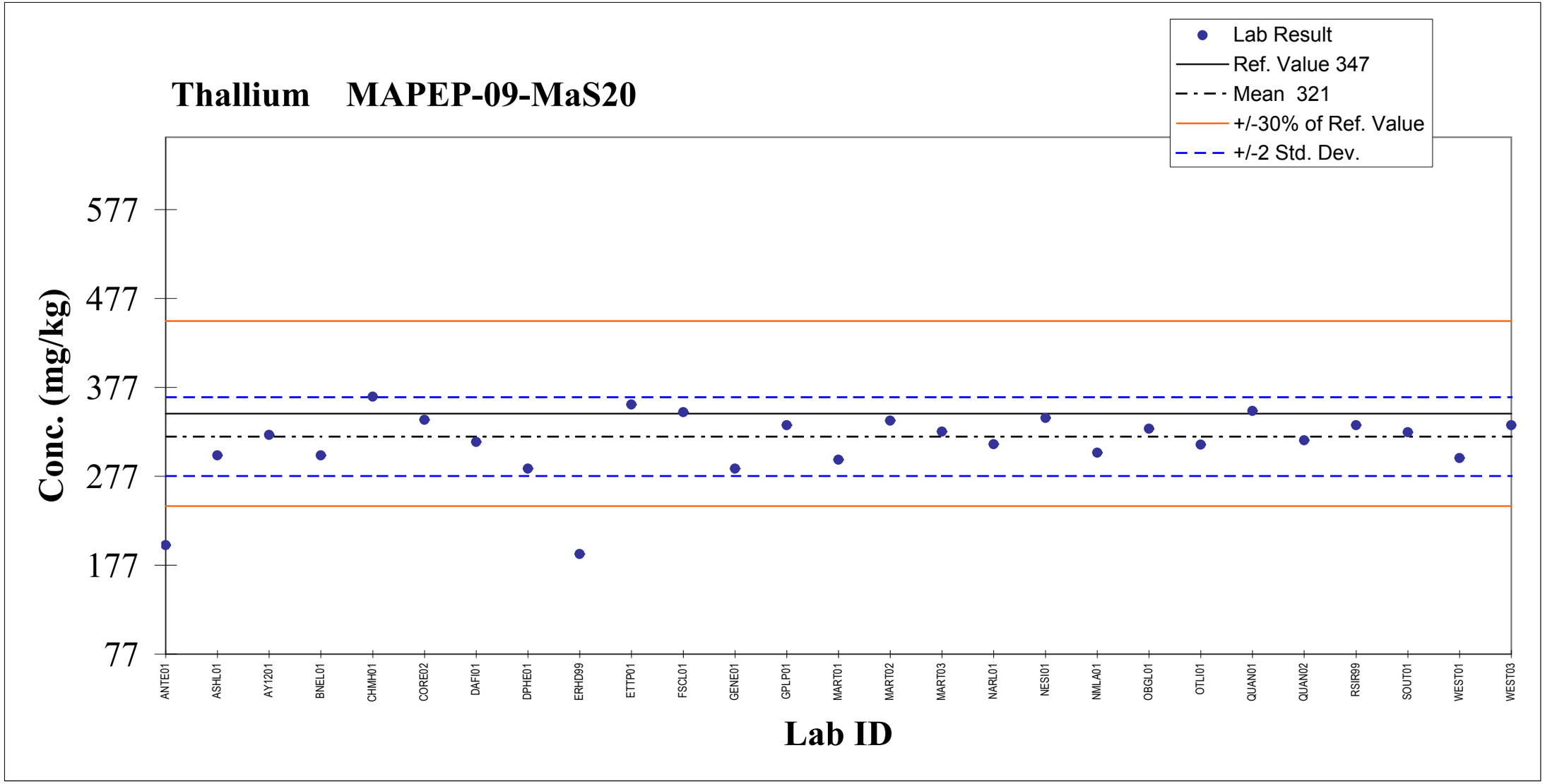

Copper MAPEP-09-MaS20
Lab Result
Ref. Value 178.7
Mean 173.8
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
343.2
293.2
243.2
193.2
143.2
93.2
43.2
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

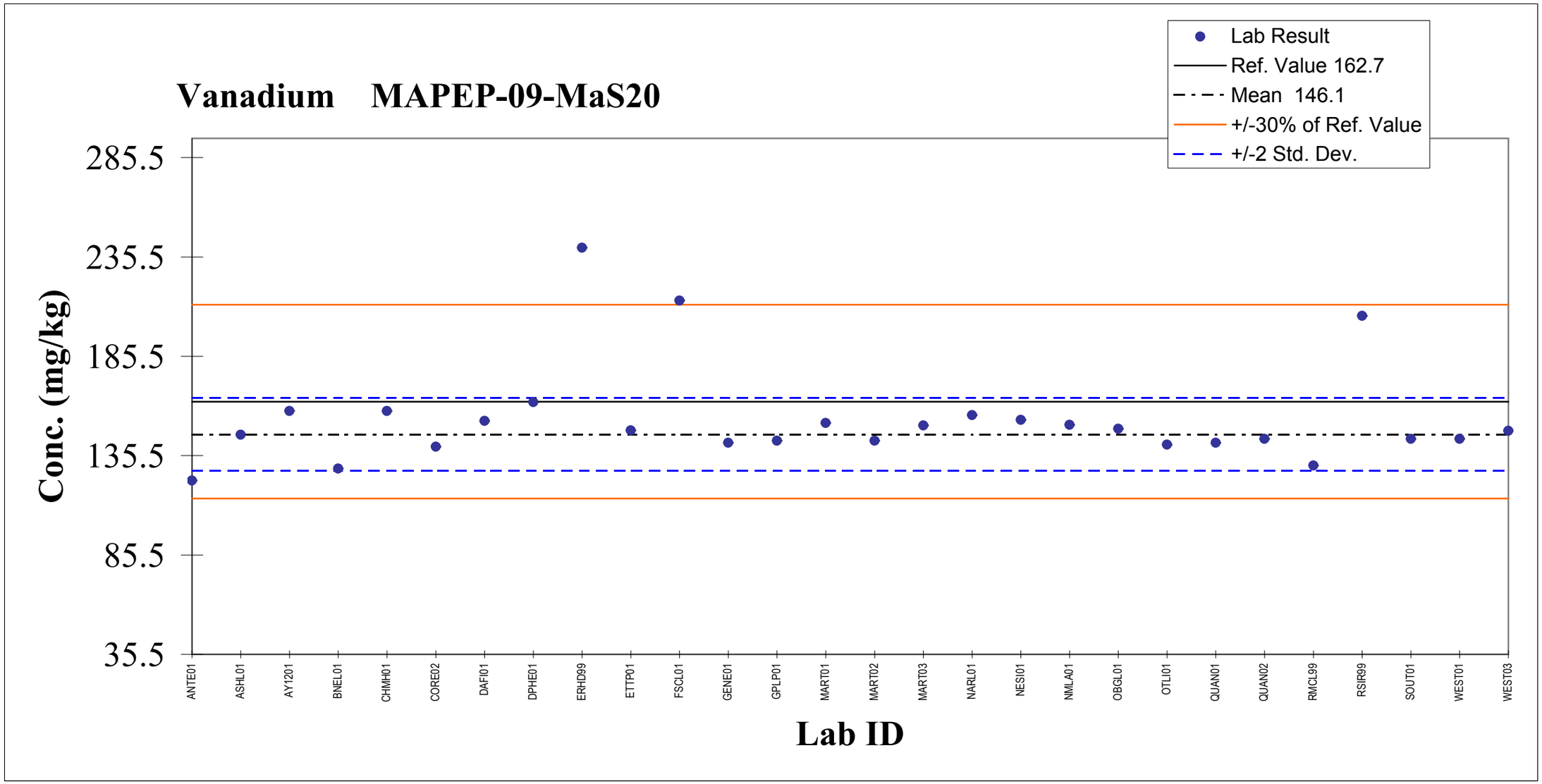

Lead MAPEP-09-MaS20
Lab Result
Ref. Value 85.3
Mean 83.6
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
158.8
138.8
118.8
98.8
78.8
58.8
38.8
18.8
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

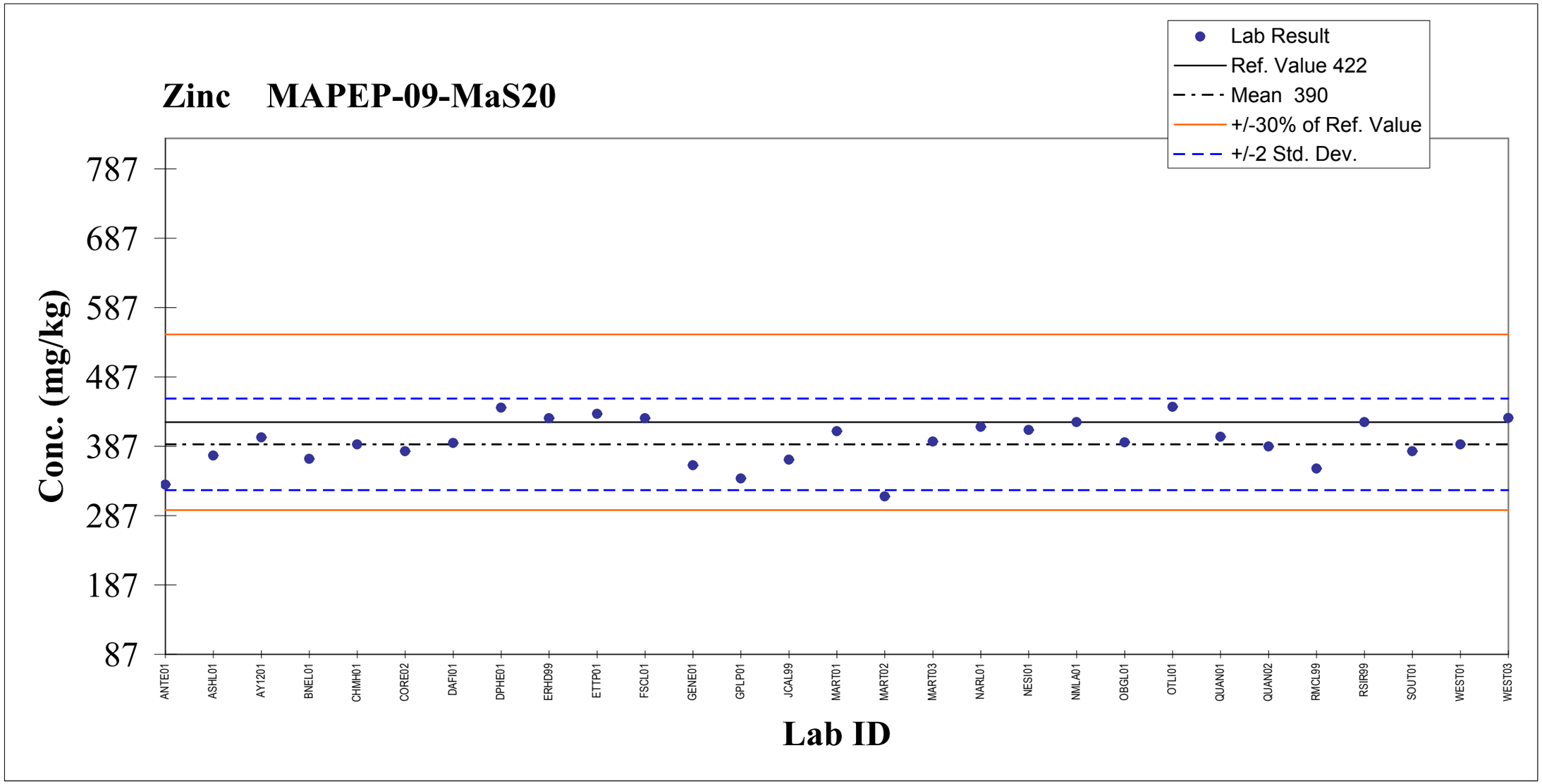

Mercury MAPEP-09-MaS20
Lab Result
Ref. Value .1856
Mean .1837
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
.3000
.2500
.2000
.1500
.1000
.0500
.0000
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ETTP01
GENE01
GPLP01
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

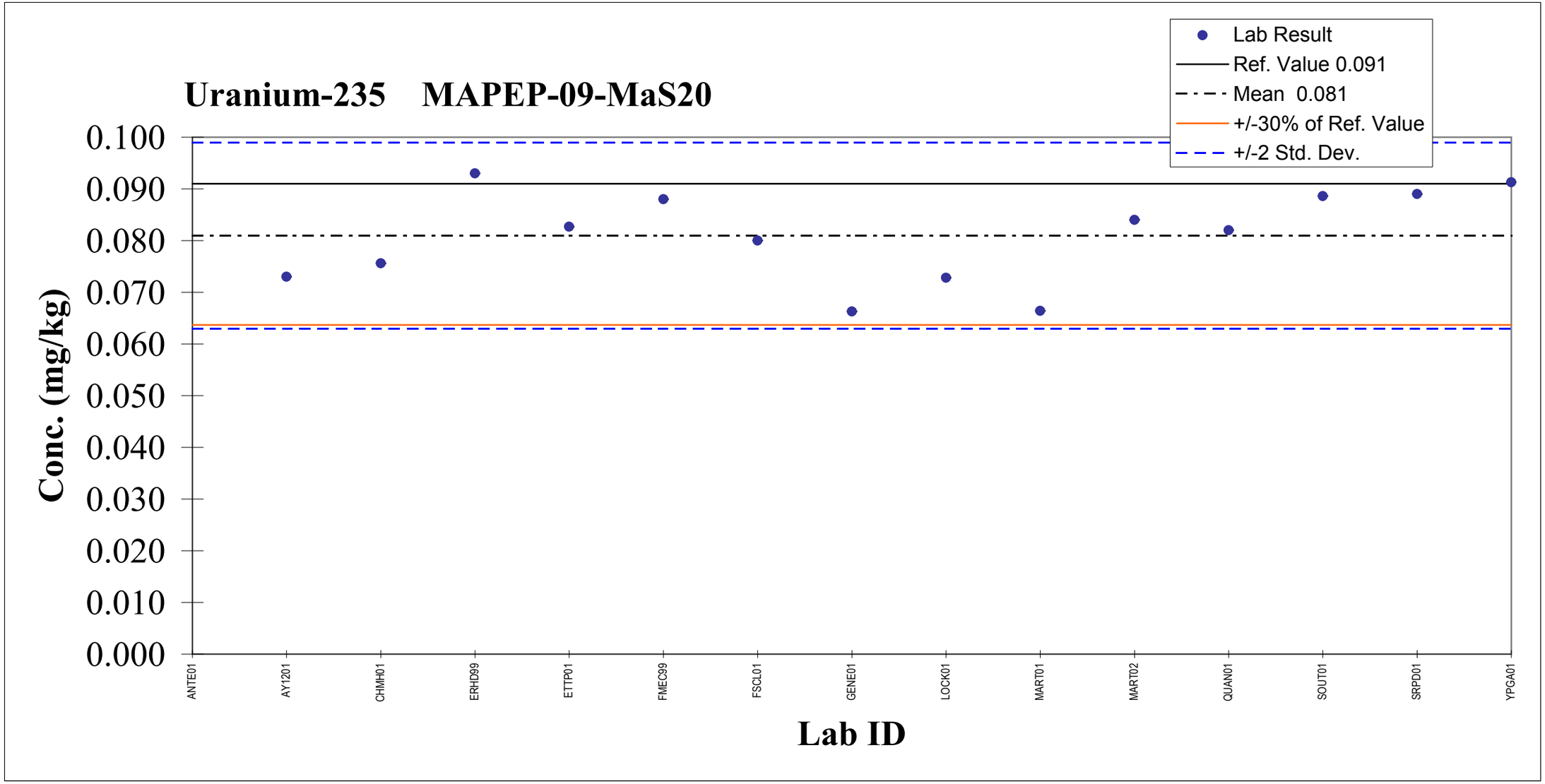

Nickel MAPEP-09-MaS20
Lab Result
Ref. Value 255
Mean 232
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
454
404
354
304
254
204
154
104
54
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

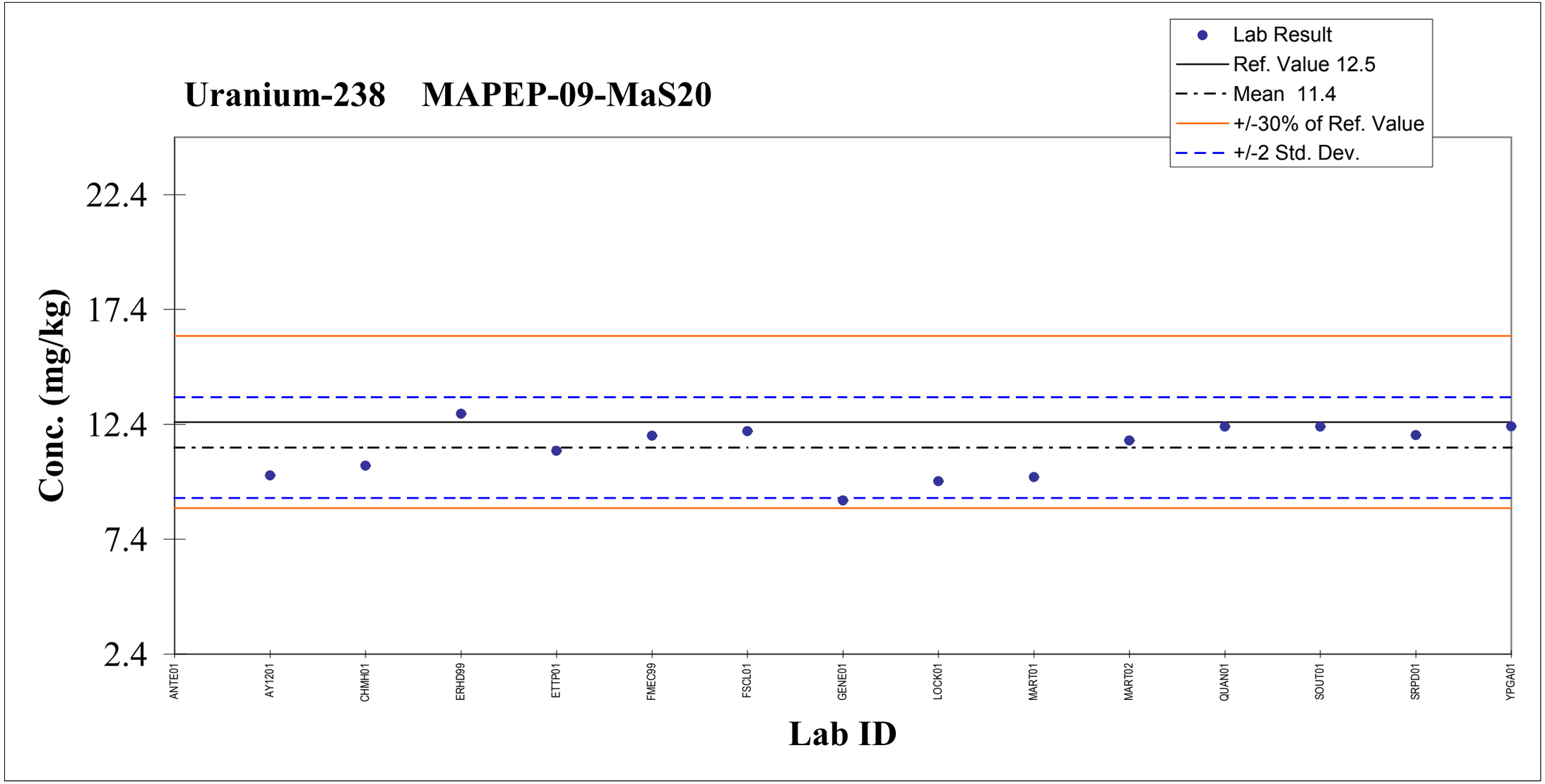

Silver MAPEP-09-MaS20
Lab Result
Ref. Value 12.12
Mean 11.56
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
22.50
17.50
12.50
7.50
2.50
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

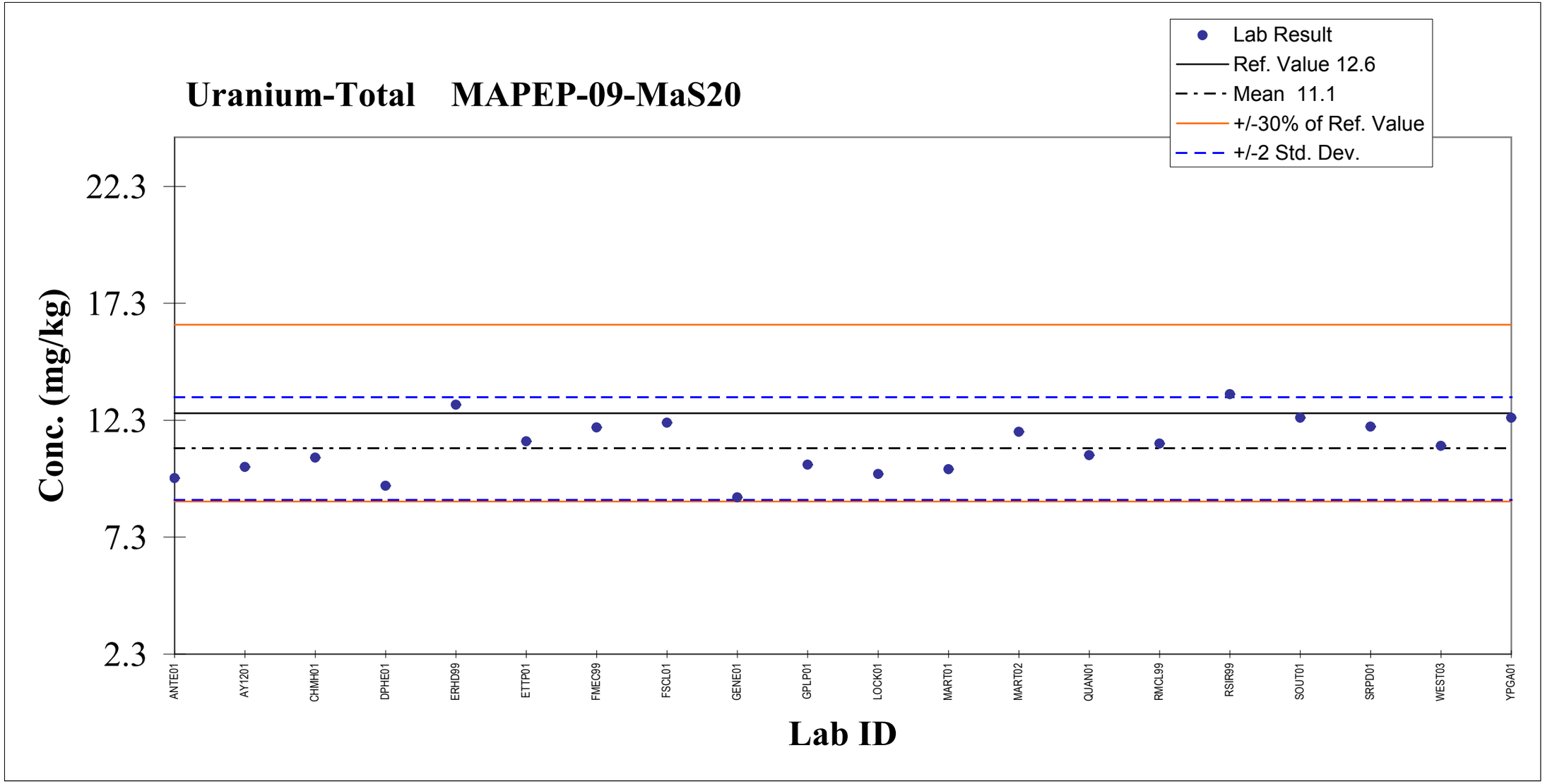

Thallium MAPEP-09-MaS20
Lab Result
Ref. Value 347
Mean 321
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
577
477
377
277
177
77
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RSIR99
SOUT01
WEST01
WEST03
Lab ID

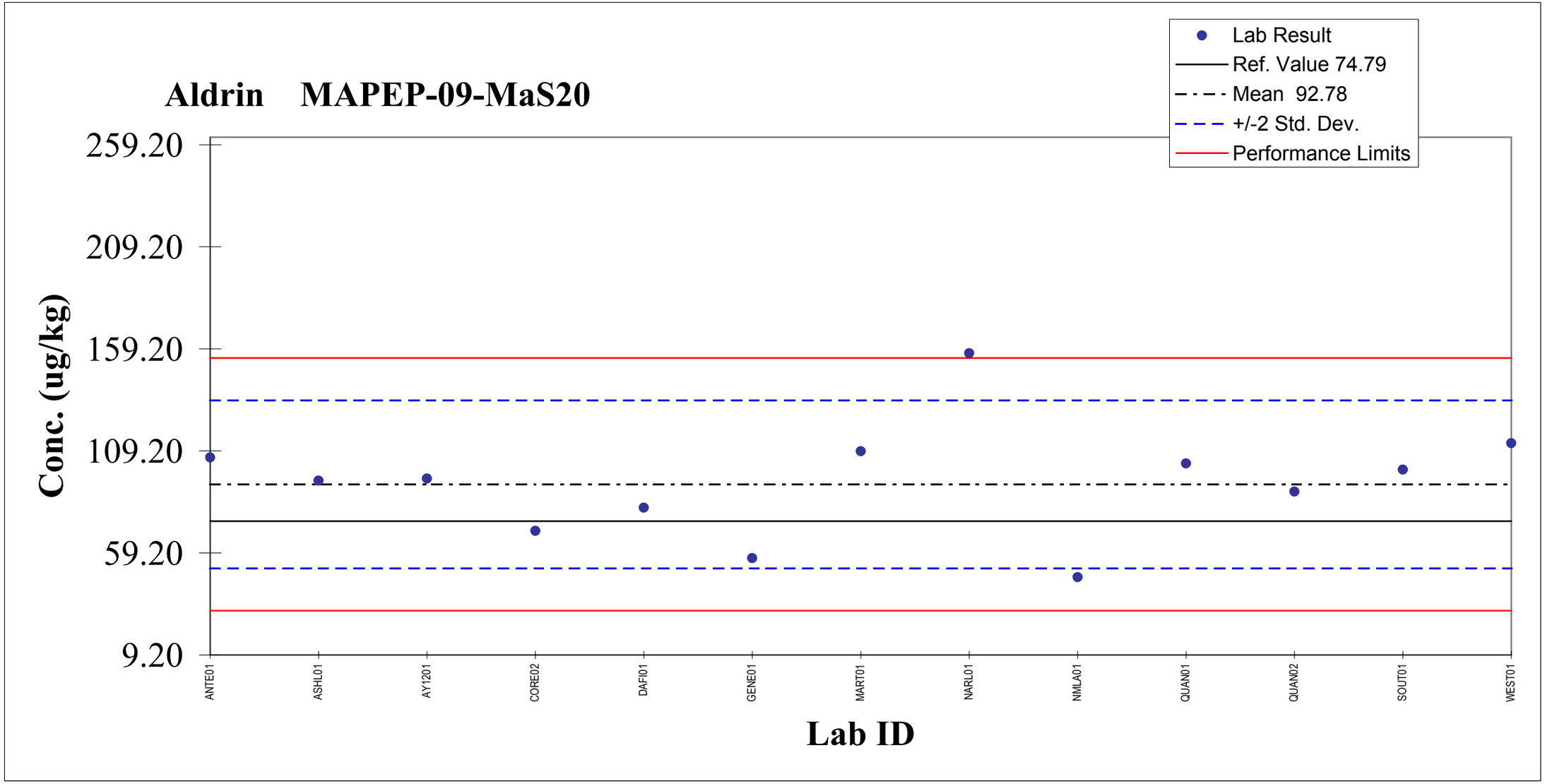

Vanadium MAPEP-09-MaS20
Lab Result
Ref. Value 162.7
Mean 146.1
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
285.5
235.5
185.5
135.5
85.5
35.5
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

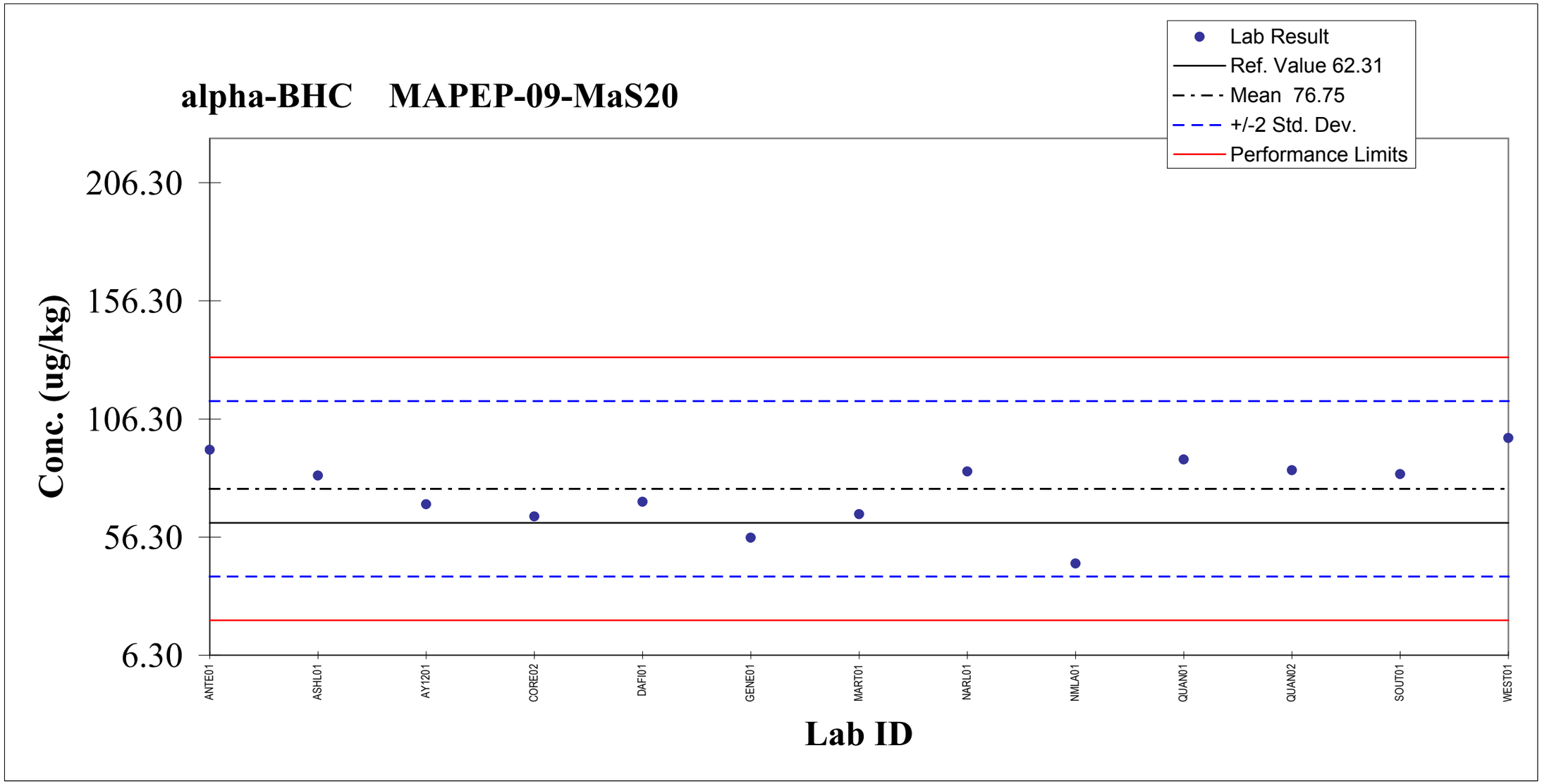

Zinc MAPEP-09-MaS20
Lab Result
Ref. Value 422
Mean 390
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
787
687
587
487
387
287
187
87
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
COREO2
DAFI01
DPHE01
ERHD99
ETTP01
FSCL01
GENE01
GPLP01
JCAL99
MART01
MART02
MART03
NARL01
NESI01
NMLA01
OBGL01
OTLI01
QUAN01
QUAN02
RMCL99
RSIR99
SOUT01
WEST01
WEST03
Lab ID

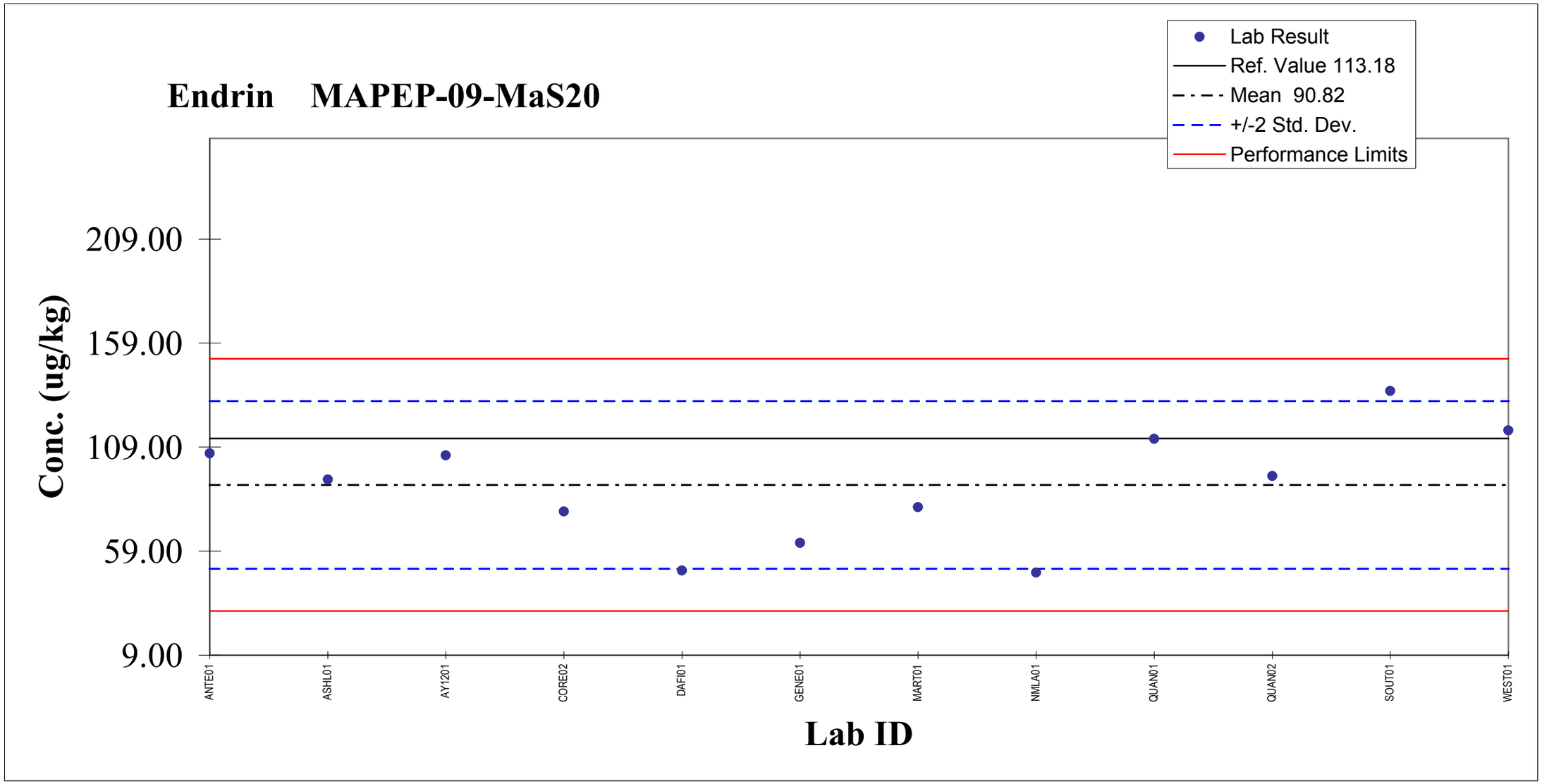

Uranium-235 MAPEP-09-MaS20
Lab Result
Ref. Value 0.091
Mean 0.081
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
0.100
0.090
0.080
0.070
0.060
0.050
0.040
0.030
0.020
0.010
0.000
ANTE01
AY1201
CHMH01
ERHD99
ETTP01
FMEC99
FSCL01
GENE01
LOCK01
MART01
MART02
QUAN01
SOUT01
SRPD01
YPGA01
Lab ID

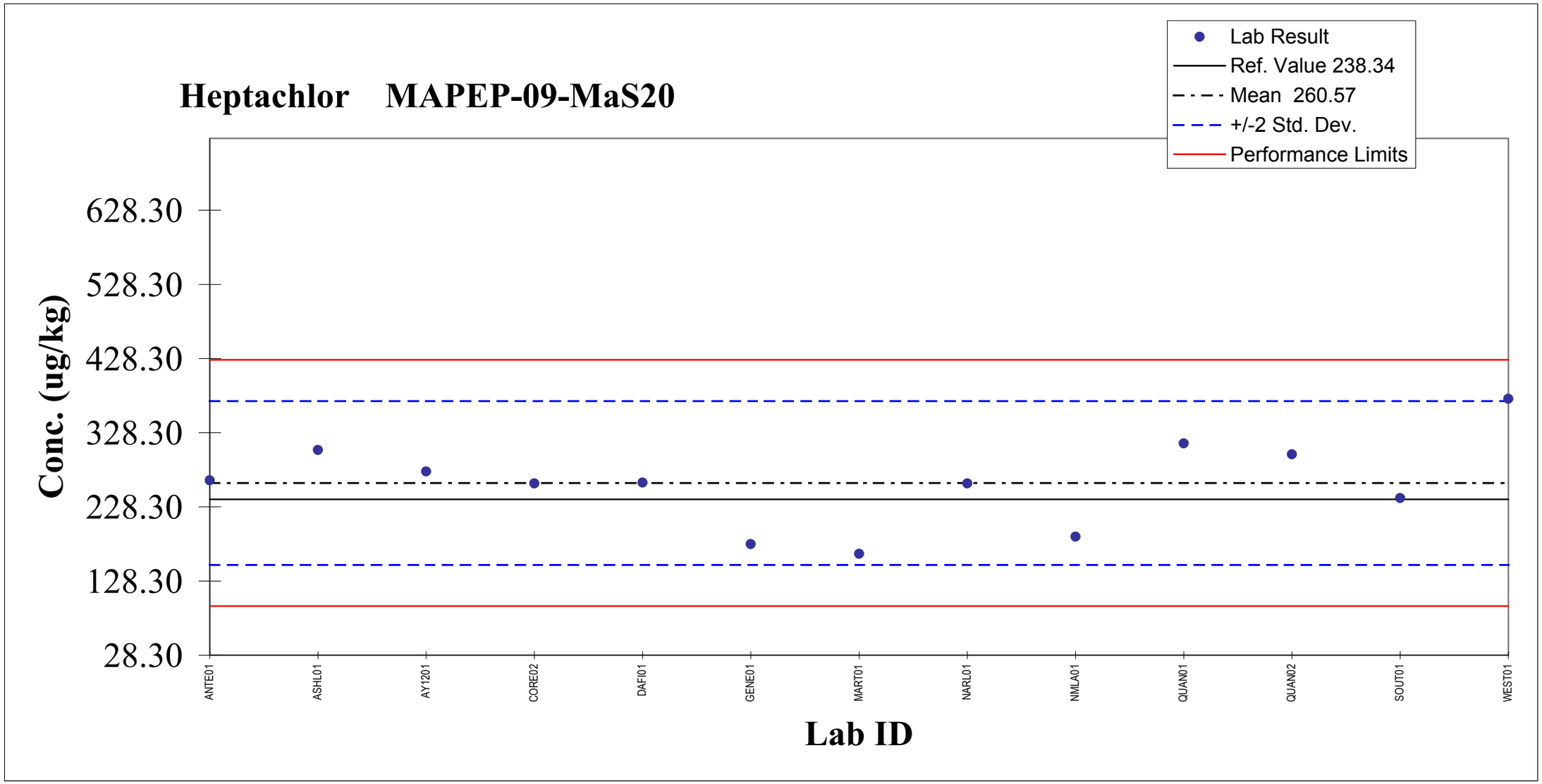

Uranium-238 MAPEP-09-MaS20
Lab Result
Ref. Value 12.5
Mean 11.4
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
22.4
17.4
12.4
7.4
2.4
ANTE01
AY1201
CHMH01
ERHD99
ETTP01
FMEC99
FSCL01
GENE01
LOCK01
MART01
MART02
QUAN01
SOUT01
SRPD01
YPGA01
Lab ID

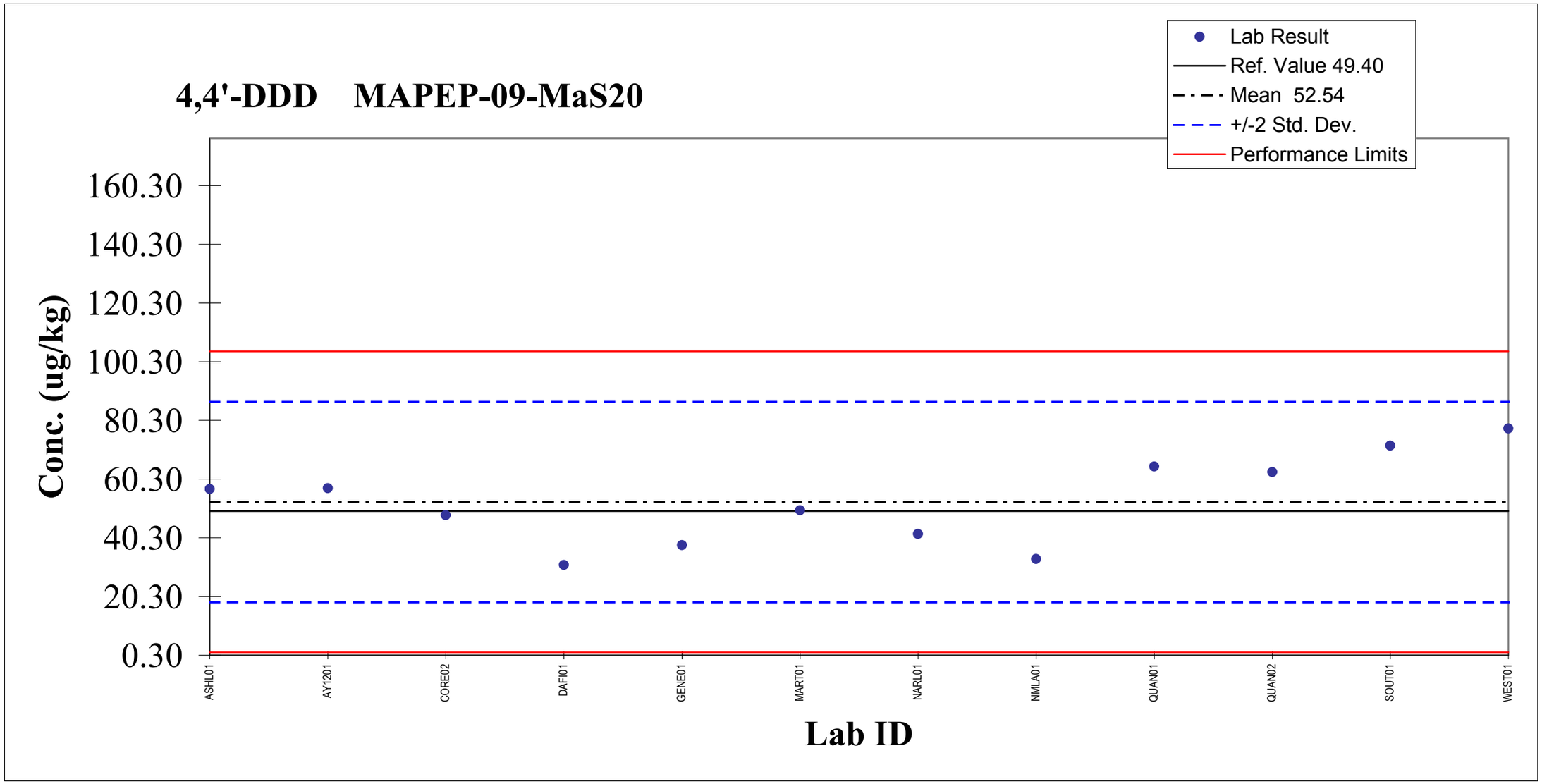

Uranium-Total MAPEP-09-MaS20
Lab Result
Ref. Value 12.6
Mean 11.1
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (mg/kg)
22.3
17.3
12.3
7.3
2.3
ANTE01
AY1201
CHMH01
DPHE01
ERHD99
ETTP01
FMEC99
FSCL01
GENE01
GPLP01
LOCK01
MART01
MART02
QUAN01
RMCL99
RSIR99
SOUT01
SRPD01
WEST03
YPGA01
Lab ID

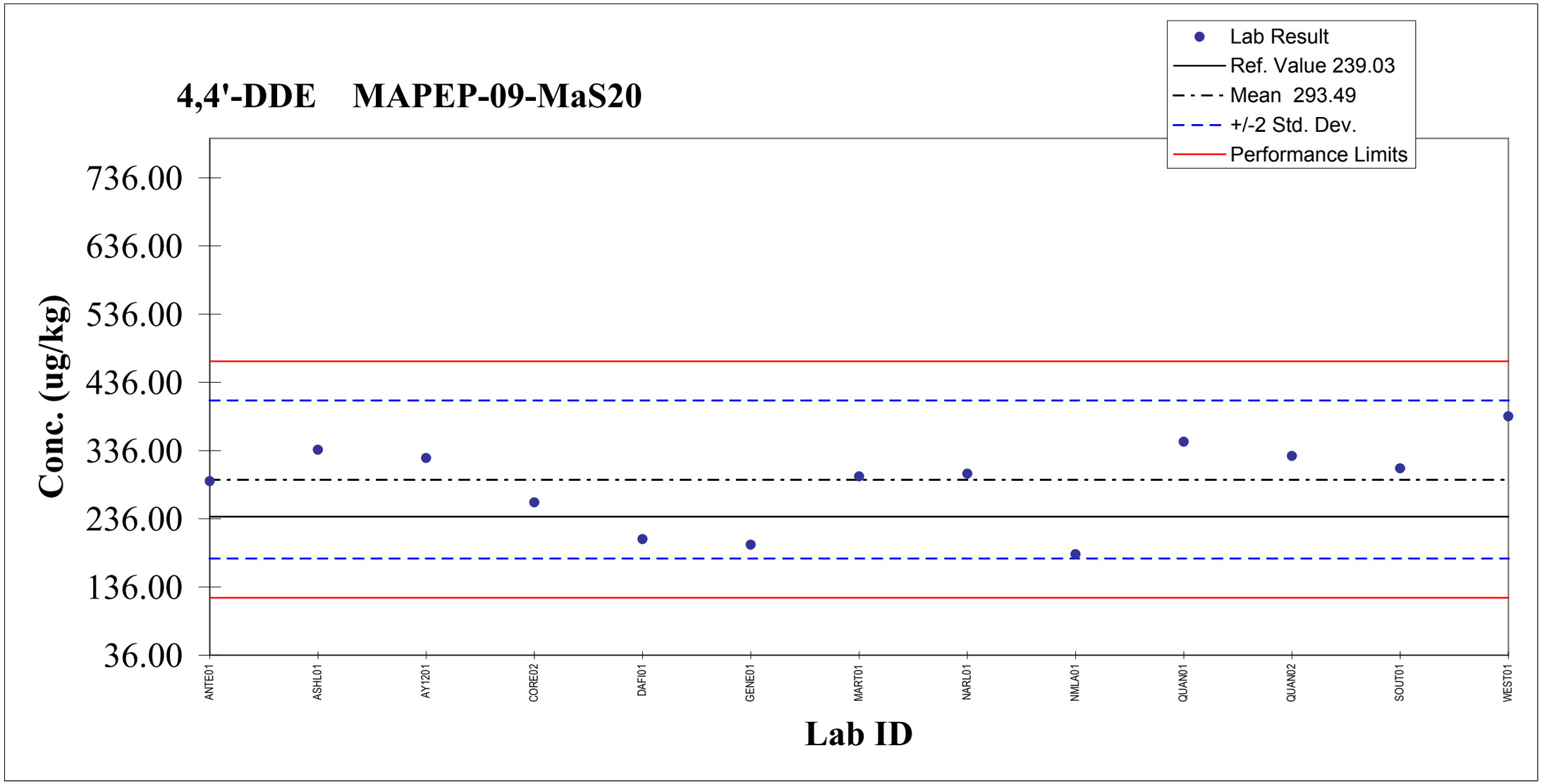

Aldrin MAPEP-09-MaS20
Lab Result
Ref. Value 74.79
Mean 92.78
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
259.20
209.20
159.20
109.20
59.20
9.20
ANTE01
ASHL01
AY1201
CORE02
DAFI01
GENE01
MART01
NARL01
NMLA01
QUAN01
QUAN02
SOUT01
WEST01
Lab ID

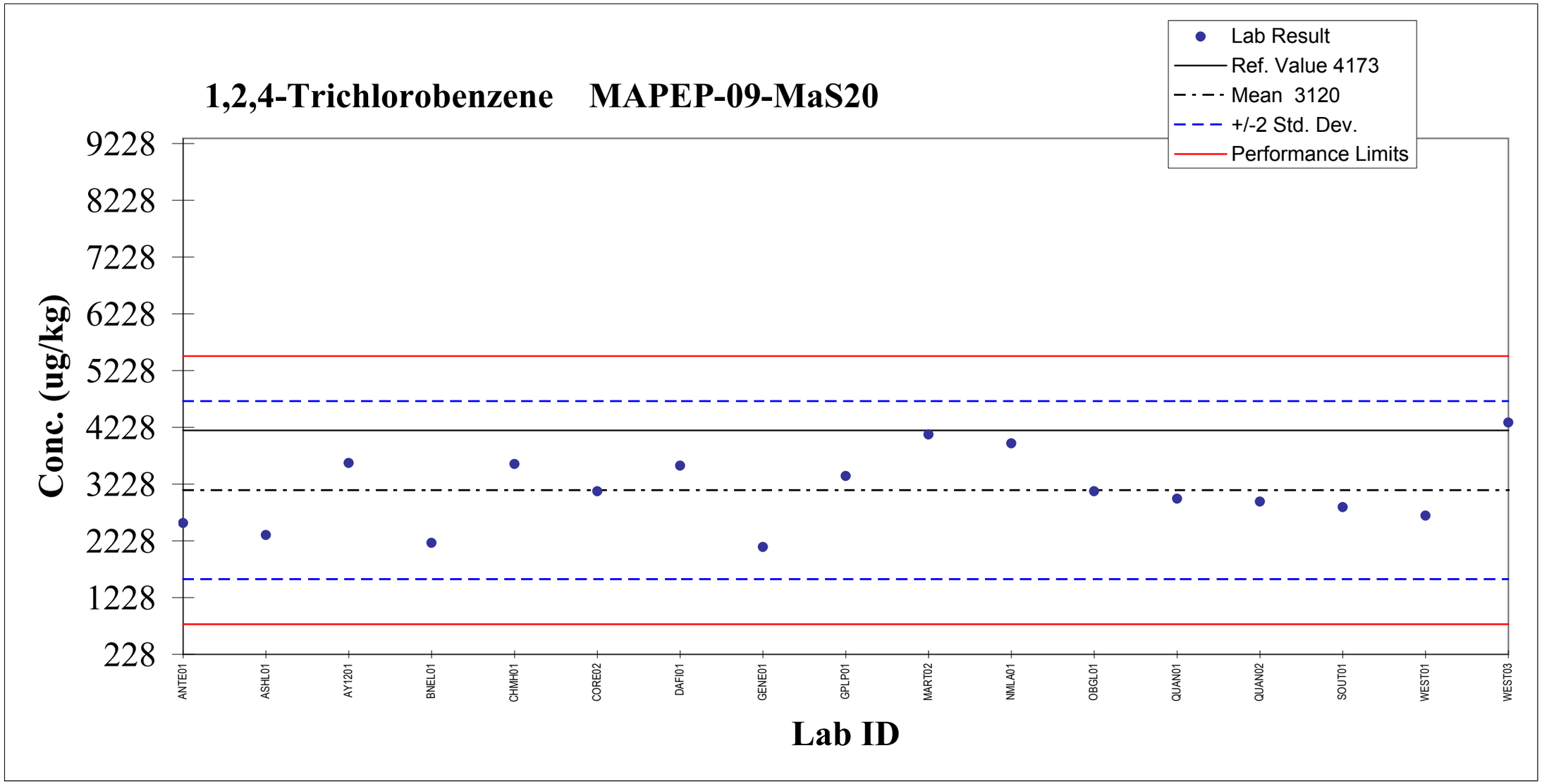

alpha-BHC MAPEP-09-MaS20
Lab Result
Ref. Value 62.31
Mean 76.75
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
206.30
156.30
106.30
56.30
6.30
ANTE01
ASHL01
AY1201
CORE02
DAFI01
GENE01
MART01
NARL01
NMLA01
QUAN01
QUAN02
SOUT01
WEST01
Lab ID

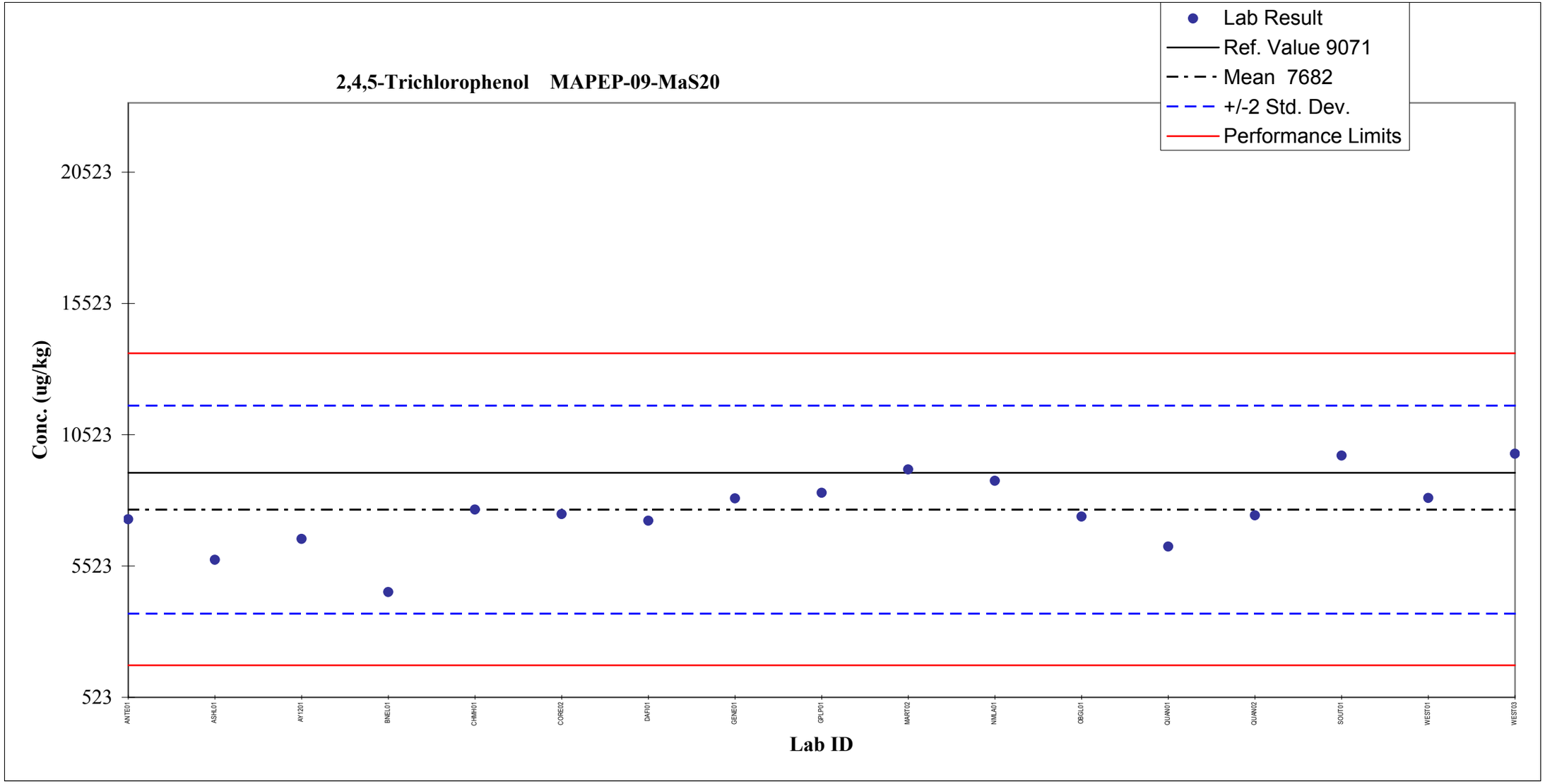

Endrin MAPEP-09-MaS20
Lab Result
Ref. Value 113.18
Mean 90.82
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
209.00
159.00
109.00
59.00
9.00
ANTE01
ASHL01
AY1201
CORE02
DAFI01
GENE01
MART01
NMLA01
QUAN01
QUAN02
SOUT01
WEST01
Lab ID

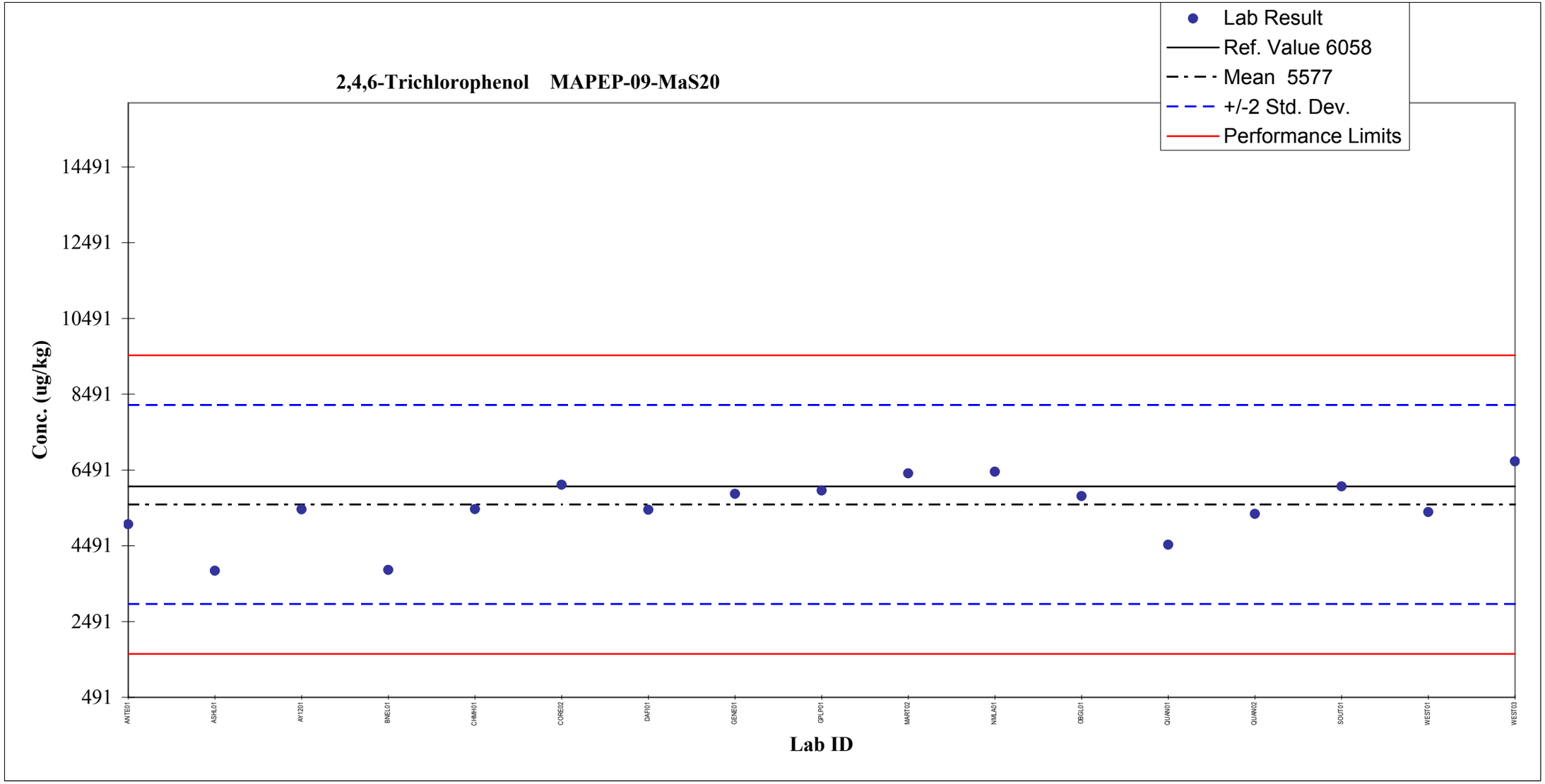

Heptachlor MAPEP-09-MaS20
Lab Result
Ref. Value 238.34
Mean 260.57
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
628.30
528.30
428.30
328.30
228.30
128.30
28.30
ANTE01
ASHL01
AY1201
CORE02
DAFI01
GENE01
MART01
NARL01
NMLA01
QUAN01
QUAN02
SOUT01
WEST01
Lab ID

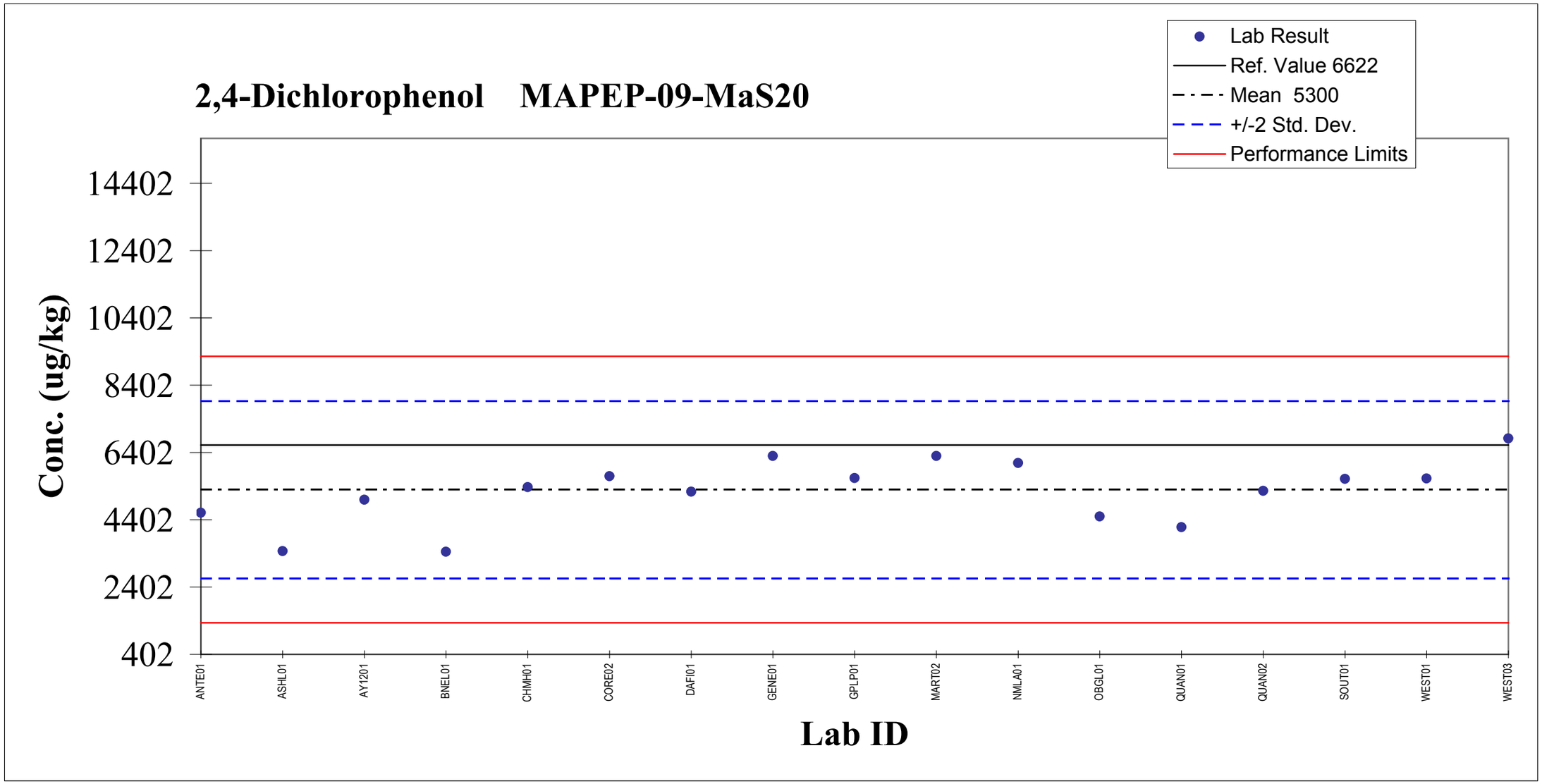

4,4'-DDD MAPEP-09-MaS20
Lab Result
Ref. Value 49.40
Mean 52.54
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
160.30
140.30
120.30
100.30
80.30
60.30
40.30
20.30
0.30
ASHL01
AY1201
CORE02
DAFI01
GENE01
MART01
NARL01
NMLA01
QUAN01
QUAN02
SOUT01
WEST01
Lab ID

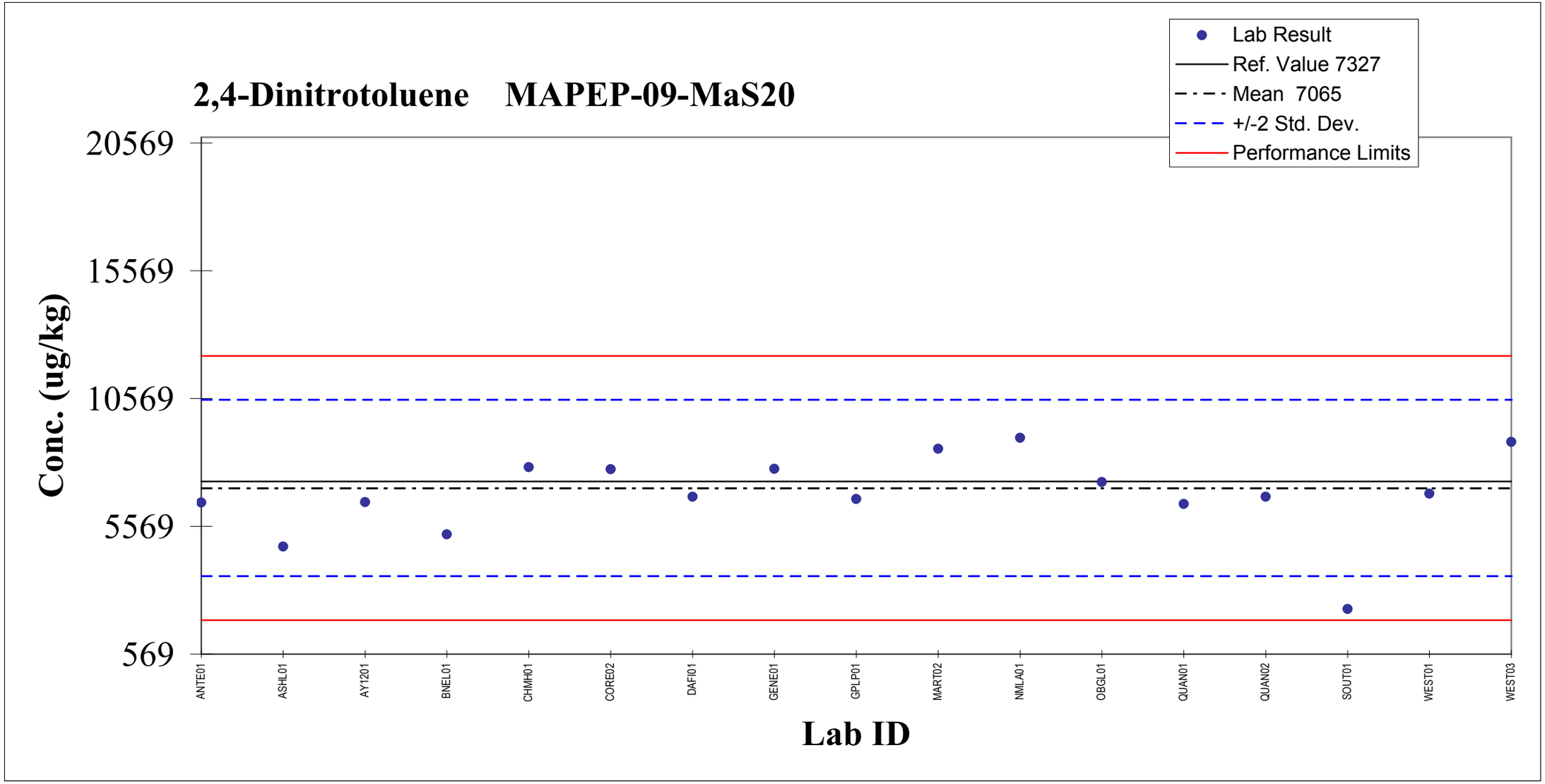

4,4'-DDE MAPEP-09-MaS20
Lab Result
Ref. Value 239.03
Mean 293.49
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
736.00
636.00
536.00
436.00
336.00
236.00
136.00
36.00
ANTE01
ASHL01
AY1201
CORE02
DAFI01
GENE01
MART01
NARL01
NMLA01
QUAN01
QUAN02
SOUT01
WEST01
Lab ID

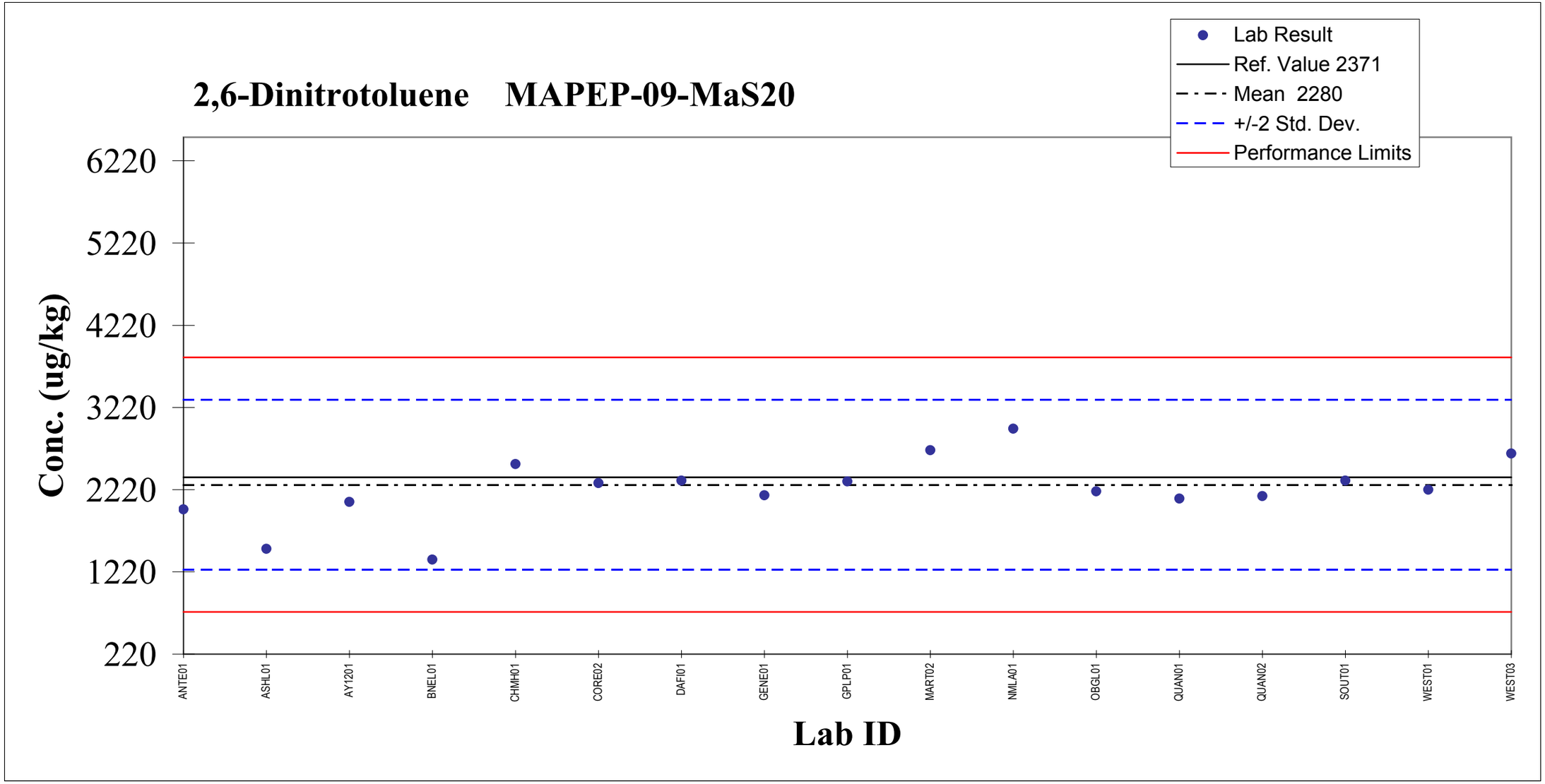

1,2,4-Trichlorobenzene MAPEP-09-MaS20
Lab Result
Ref. Value 4173
Mean 3120
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
9228
8228
7228
6228
5228
4228
3228
2228
1228
228
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

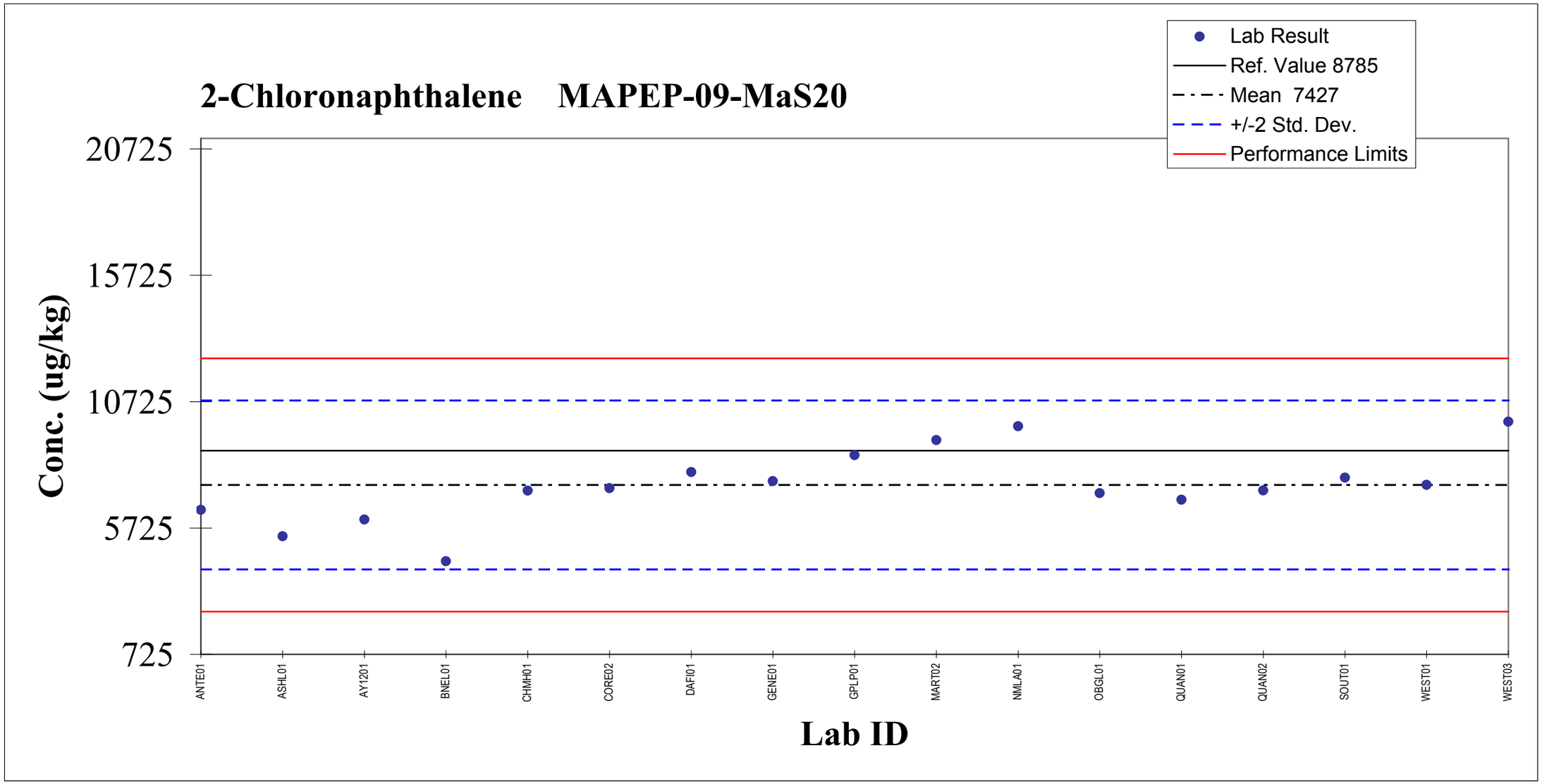

2,4,5-Trichlorophenol MAPEP-09-MaS20
Lab Result
Ref. Value 9071
Mean 7682
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20523
15523
10523
5523
523
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
COREO2
DAFI01
GENE01
GFLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

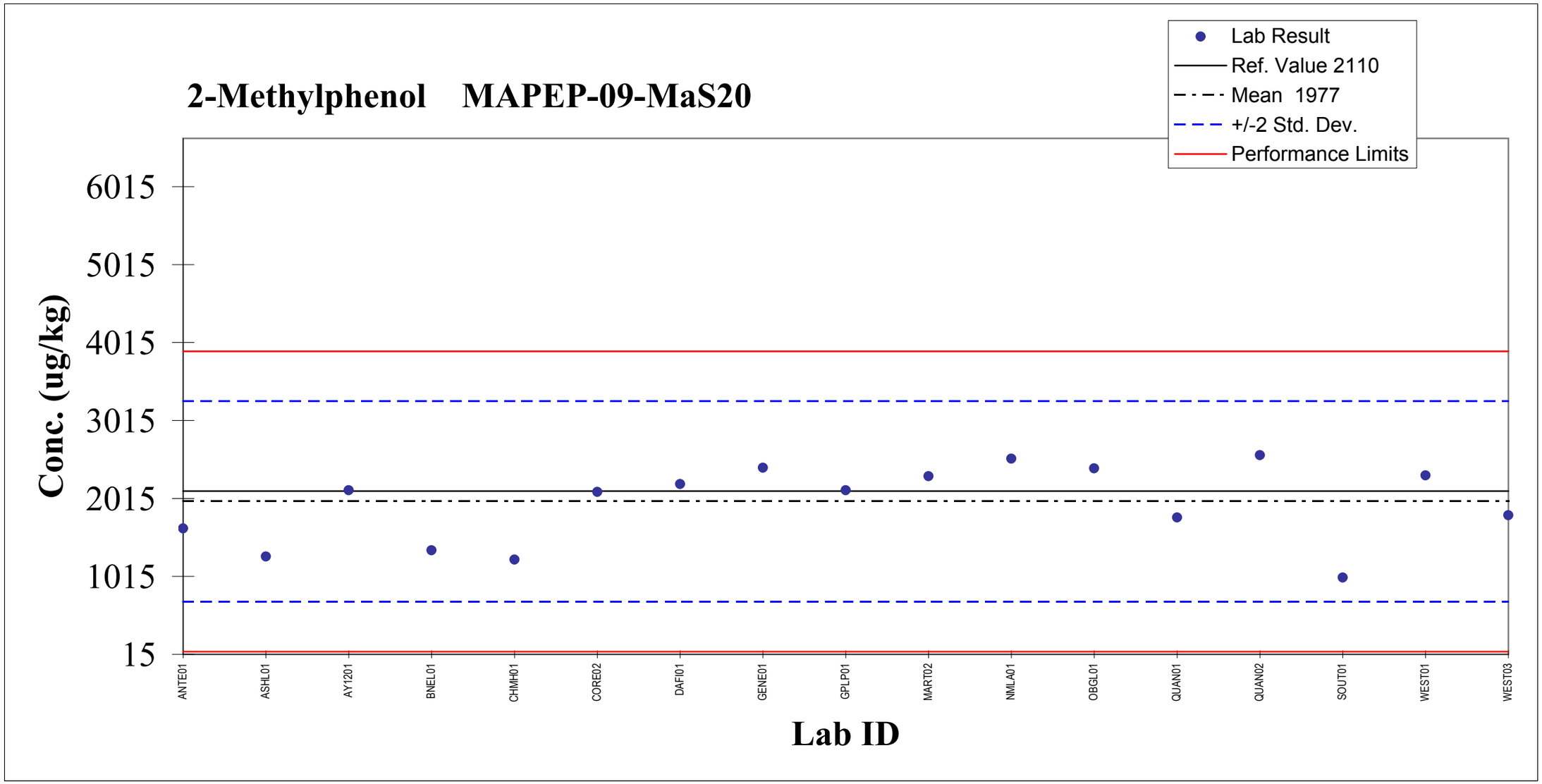

2,4,6-Trichlorophenol MAPEP-09-MaS20
Lab Result
Ref. Value 6058
Mean 5577
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
14491
12491
10491
8491
6491
4491
2491
491
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GFLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

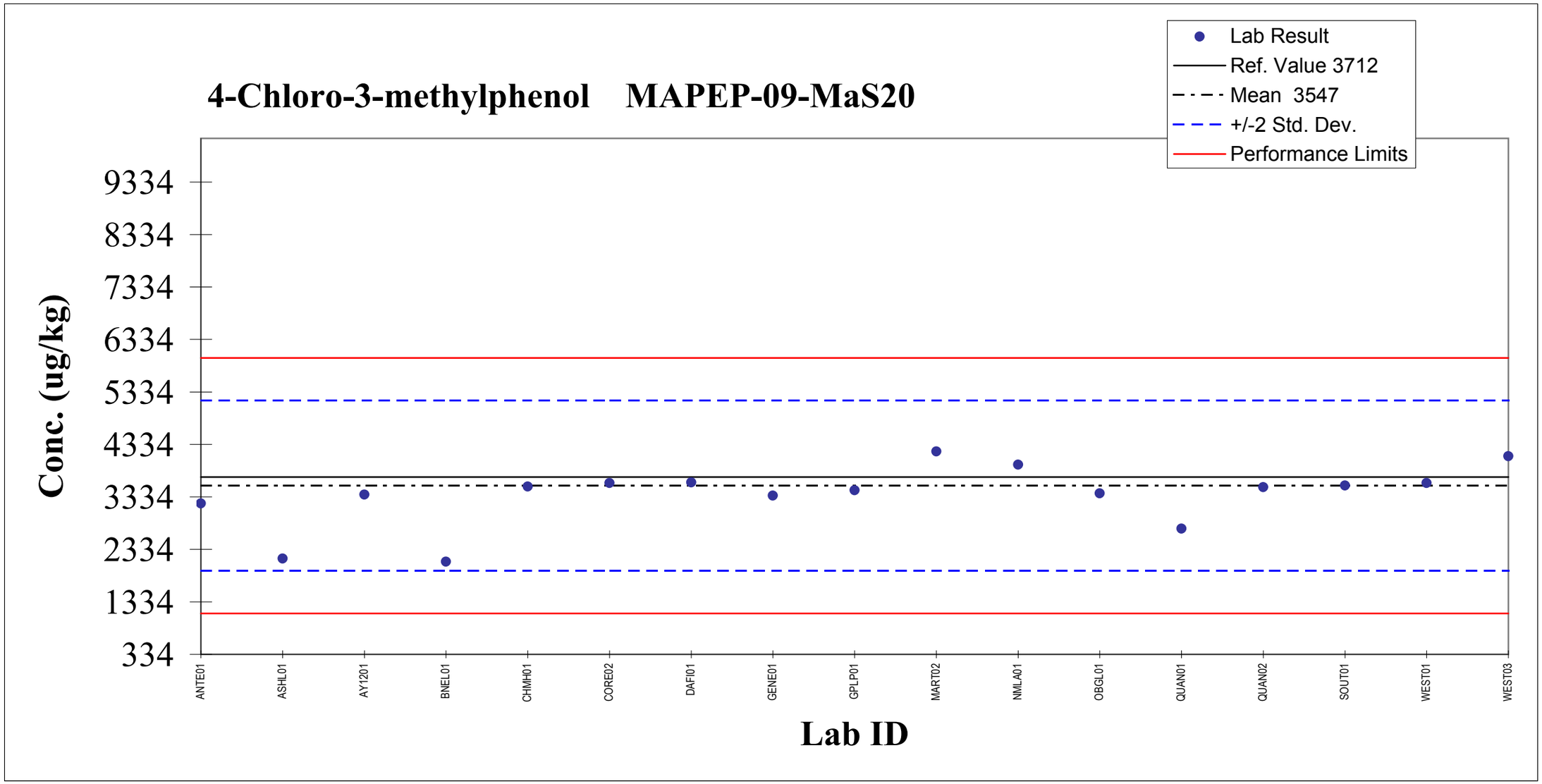

2,4-Dichlorophenol MAPEP-09-MaS20
Lab Result
Ref. Value 6622
Mean 5300
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
14402
12402
10402
8402
6402
4402
2402
402
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

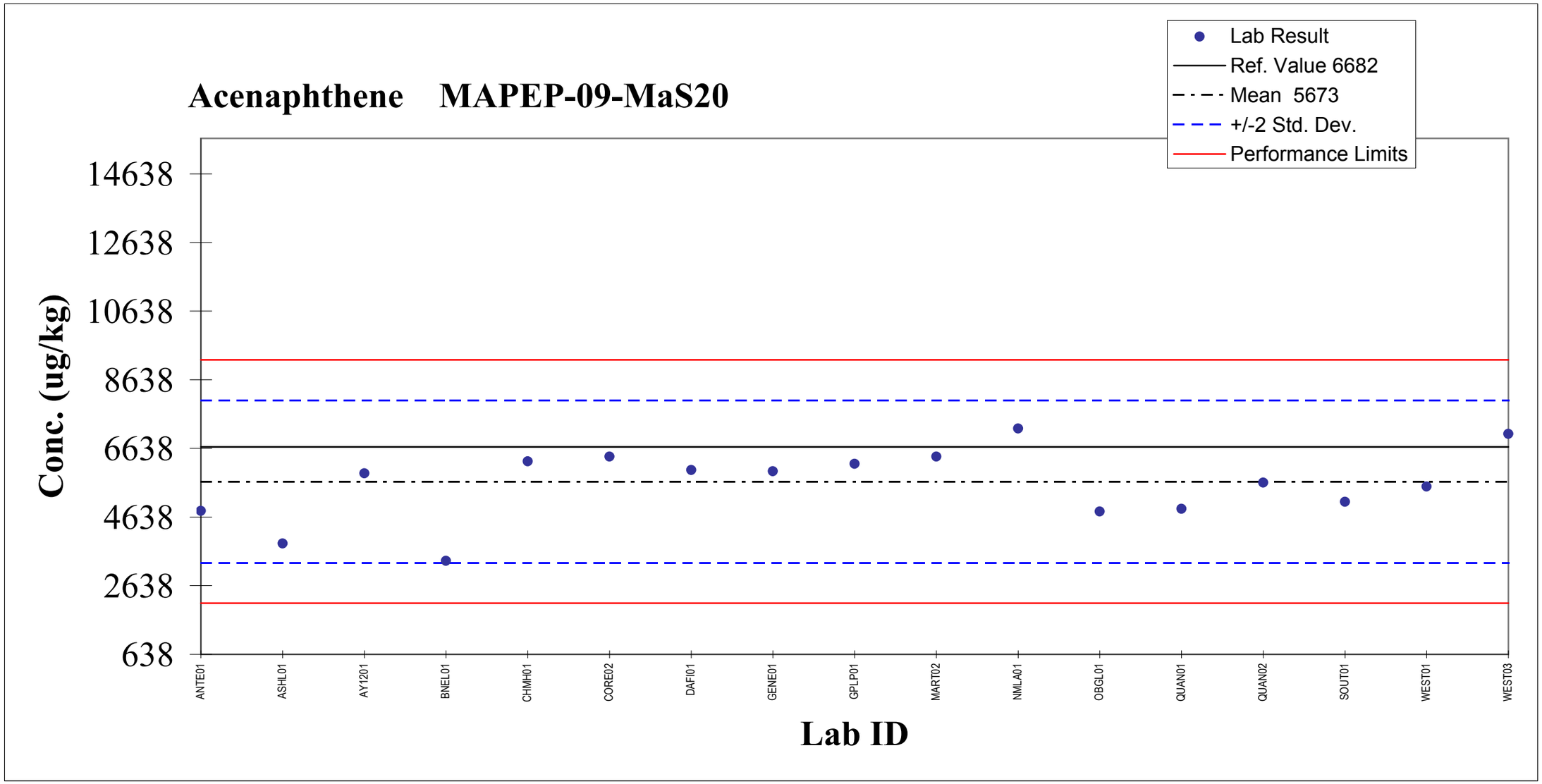

2,4-Dinitrotoluene MAPEP-09-MaS20
Lab Result
Ref. Value 7327
Mean 7065
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20569
15569
10569
5569
569
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

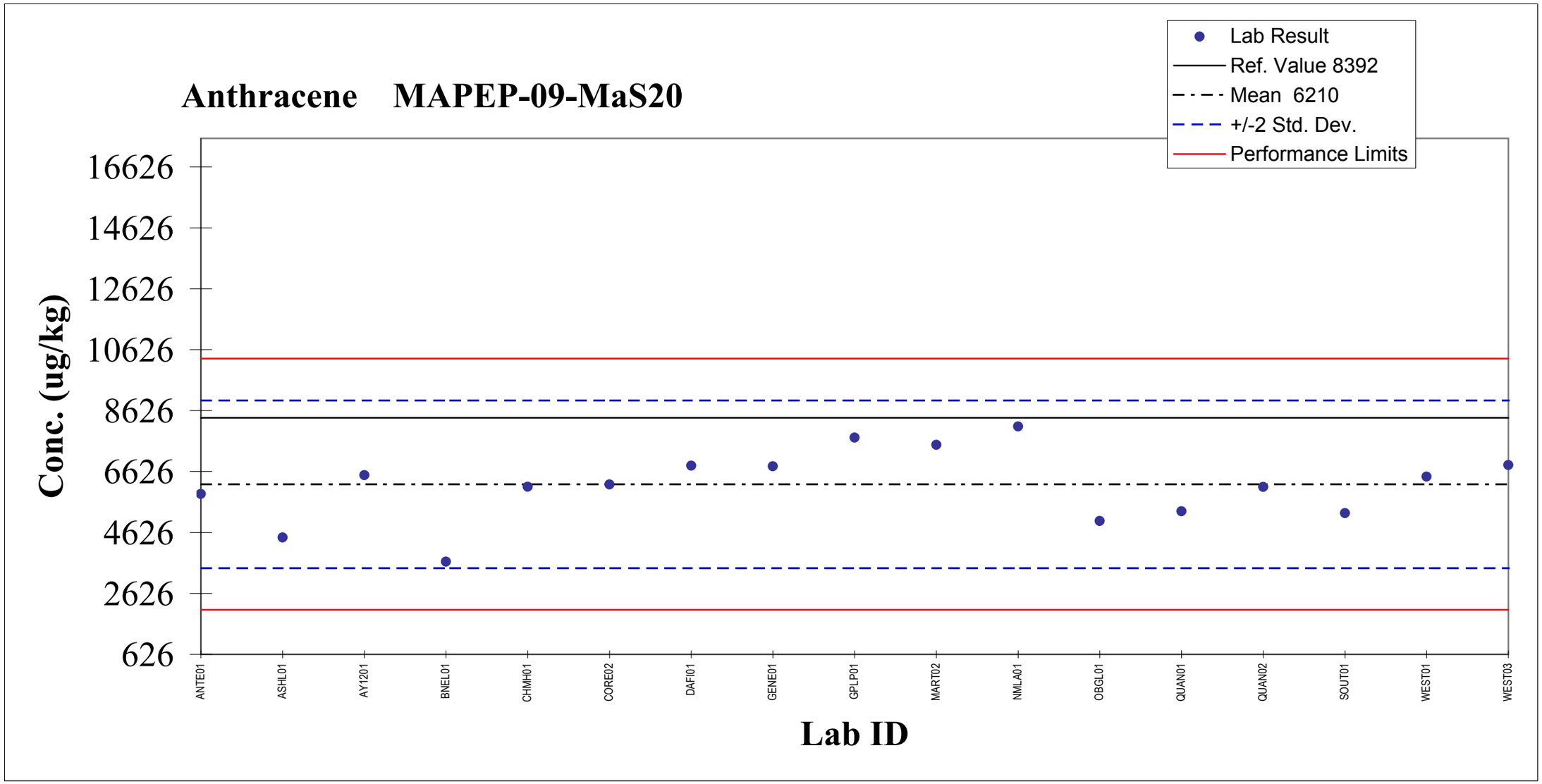

2,6-Dinitrotoluene MAPEP-09-MaS20
Lab Result
Ref. Value 2371
Mean 2280
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
6220
5220
4220
3220
2220
1220
220
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

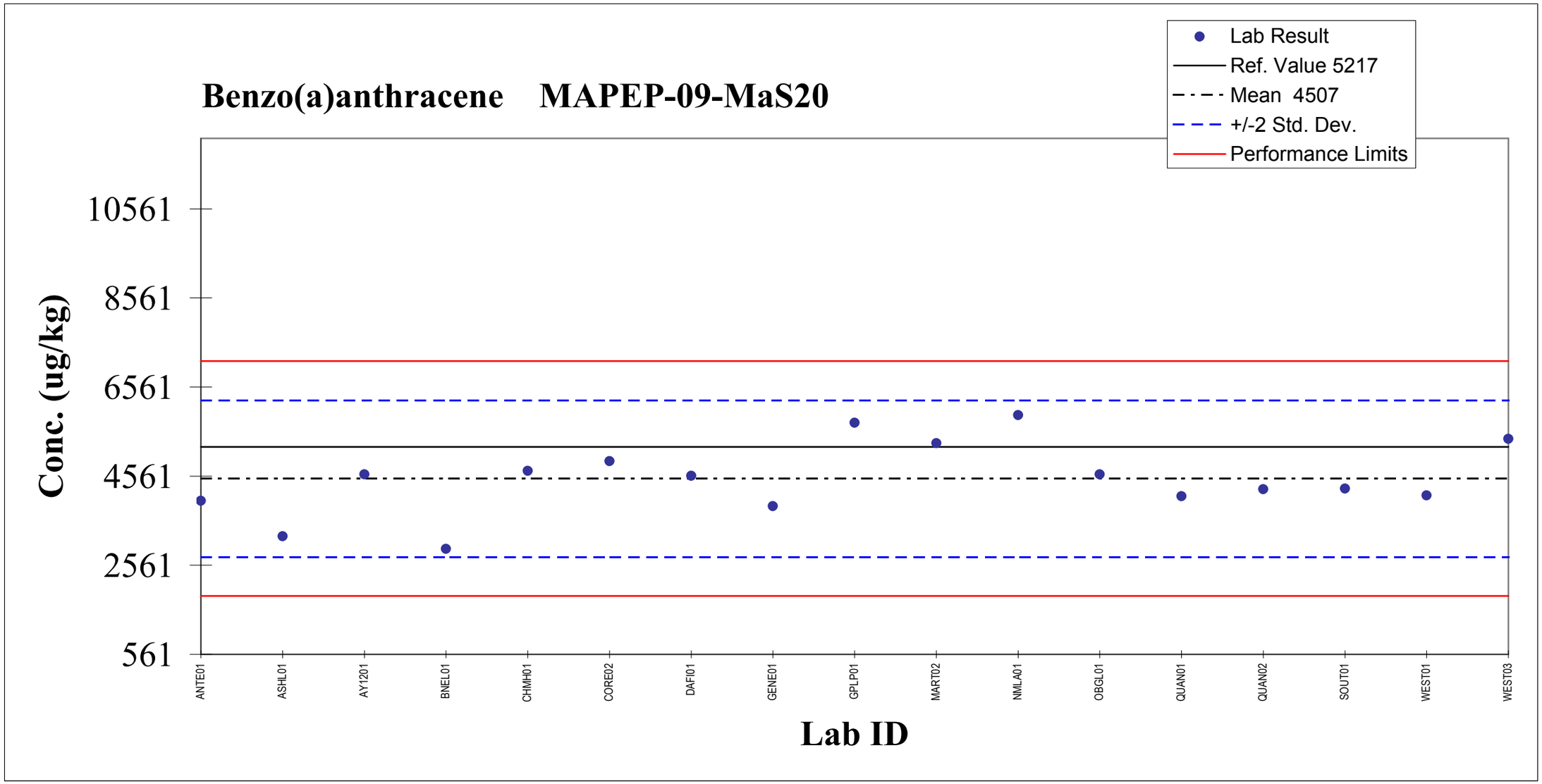

2-Chloronaphthalene MAPEP-09-MaS20
Lab Result
Ref. Value 8785
Mean 7427
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20725
15725
10725
5725
725
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

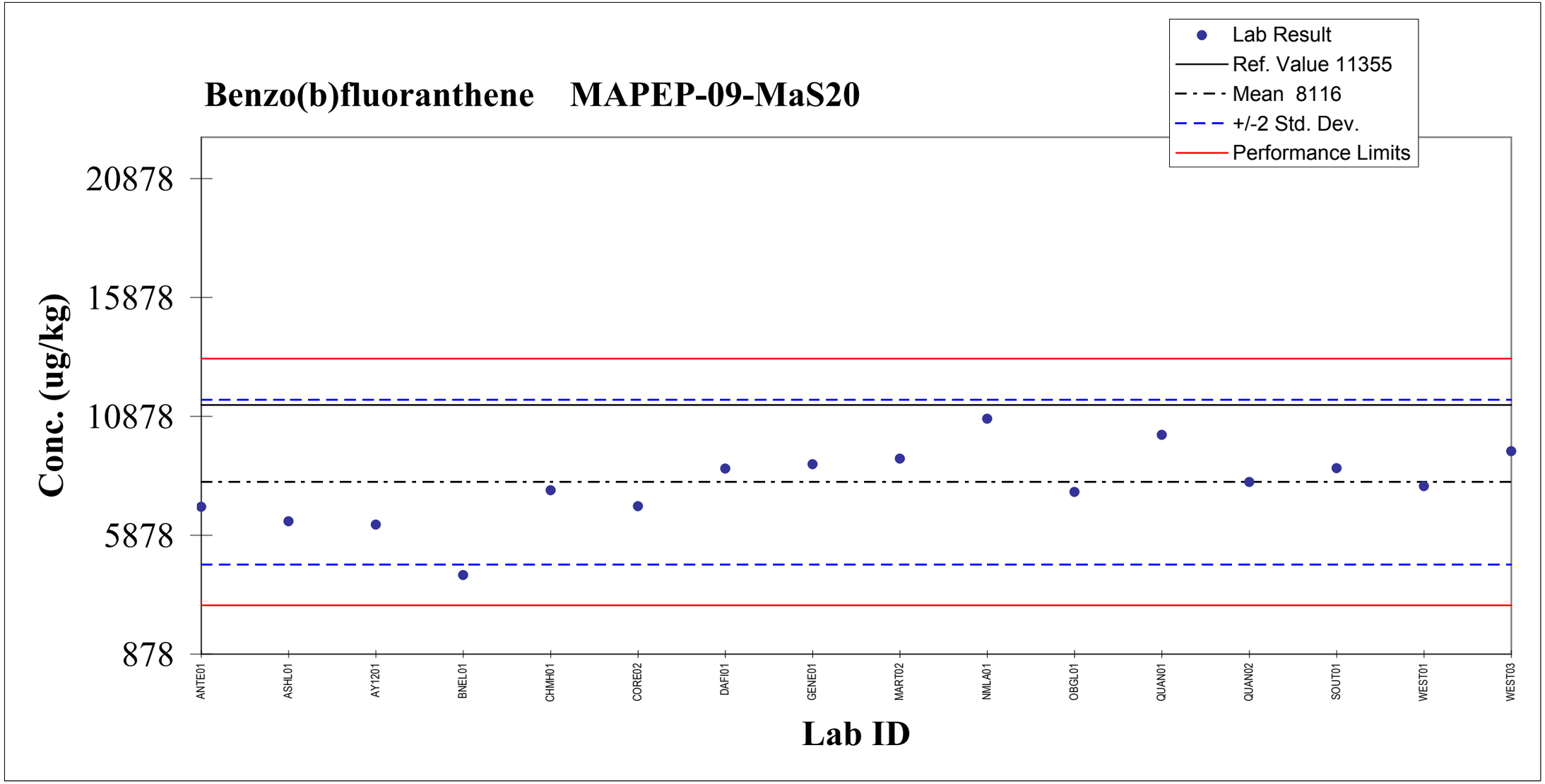

2-Methylphenol MAPEP-09-MaS20
Lab Result
Ref. Value 2110
Mean 1977
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
6015
5015
4015
3015
2015
1015
15
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

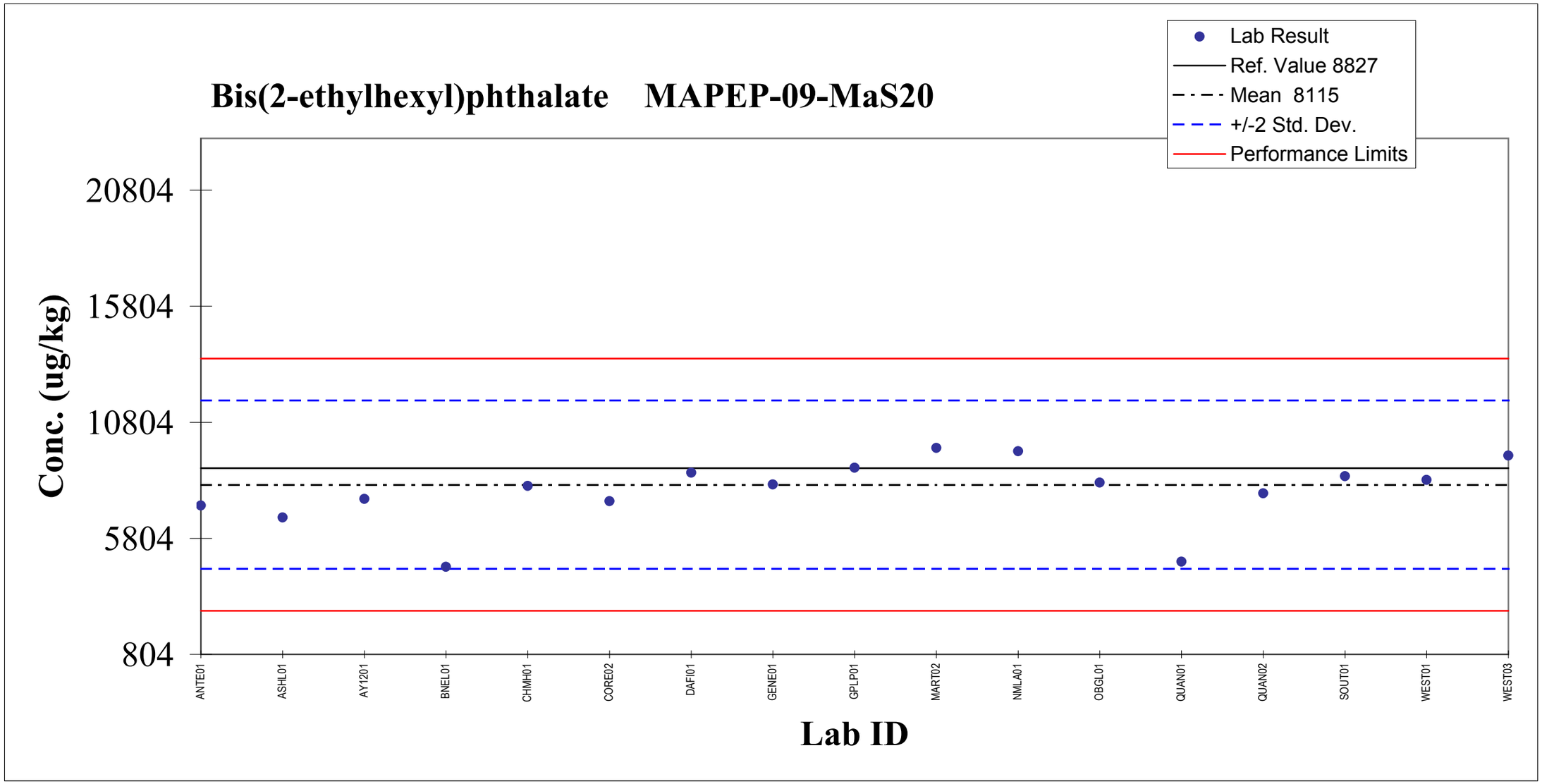

4-Chloro-3-methylphenol MAPEP-09-MaS20
Lab Result
Ref. Value 3712
Mean 3547
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
9334
8334
7334
6334
5334
4334
3334
2334
1334
334
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

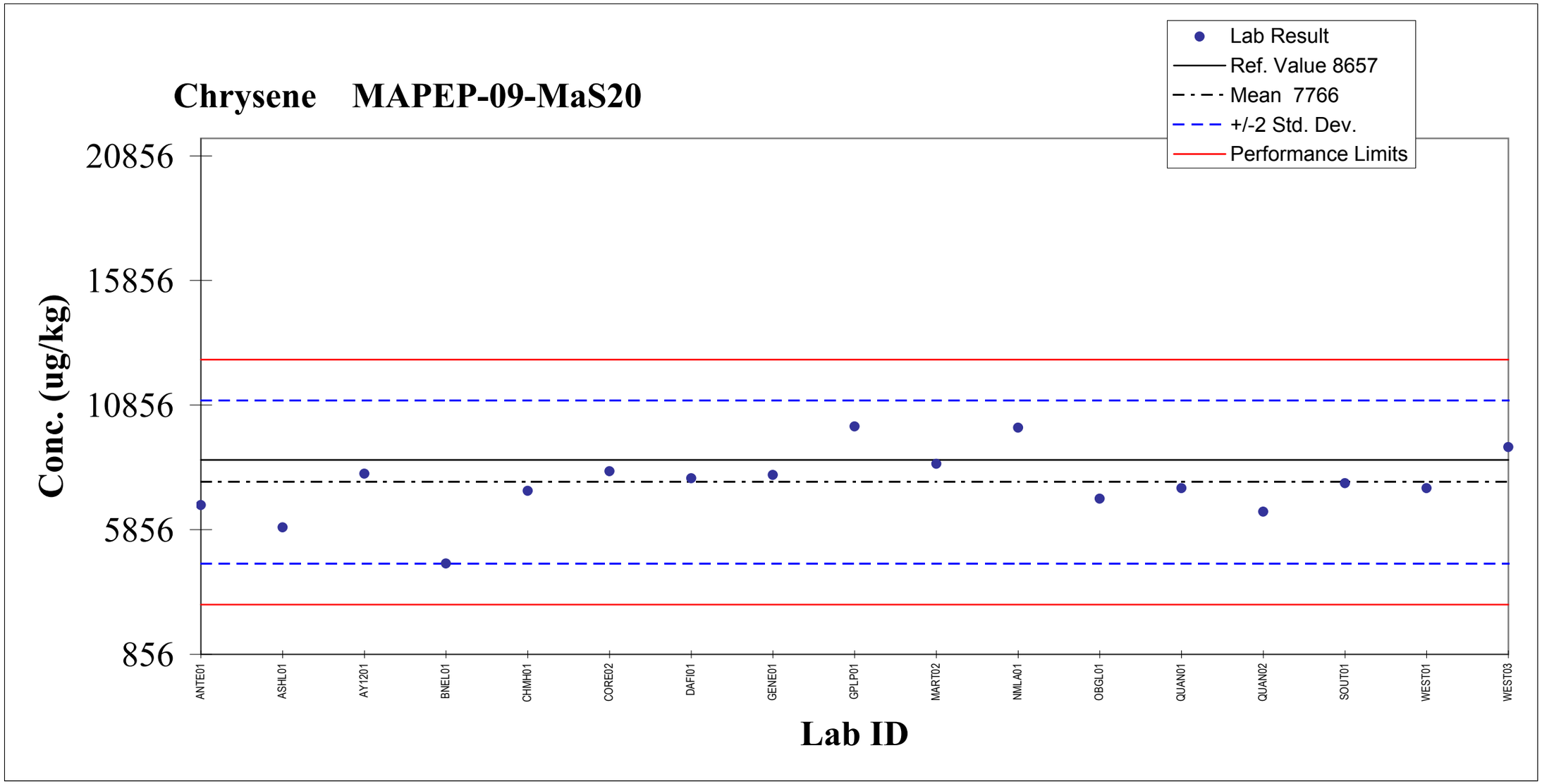

Acenaphthene MAPEP-09-MaS20
Lab Result
Ref. Value 6682
Mean 5673
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
14638
12638
10638
8638
6638
4638
2638
638
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

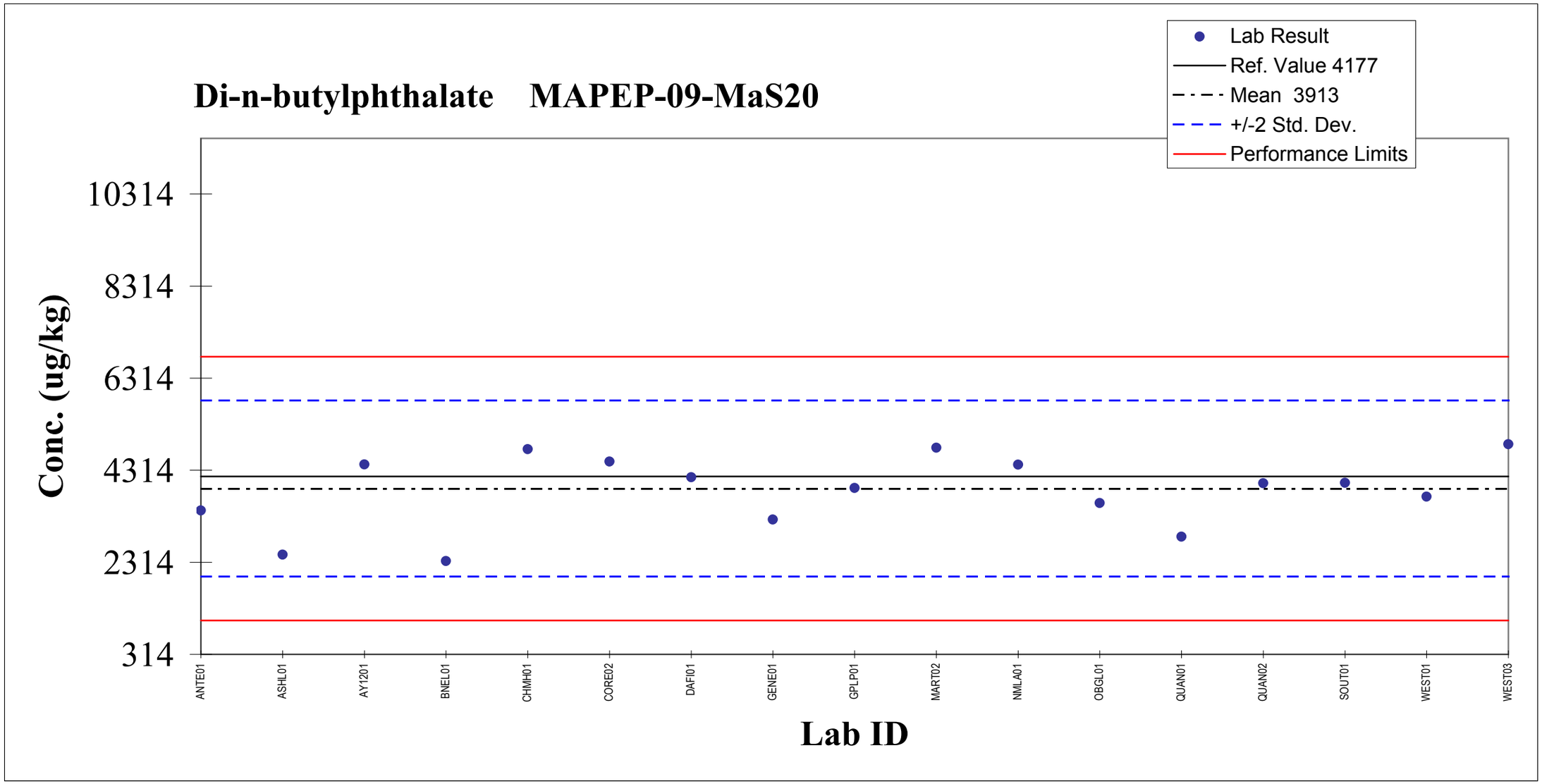

Anthracene MAPEP-09-MaS20
Lab Result
Ref. Value 8392
Mean 6210
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
16626
14626
12626
10626
8626
6626
4626
2626
626
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

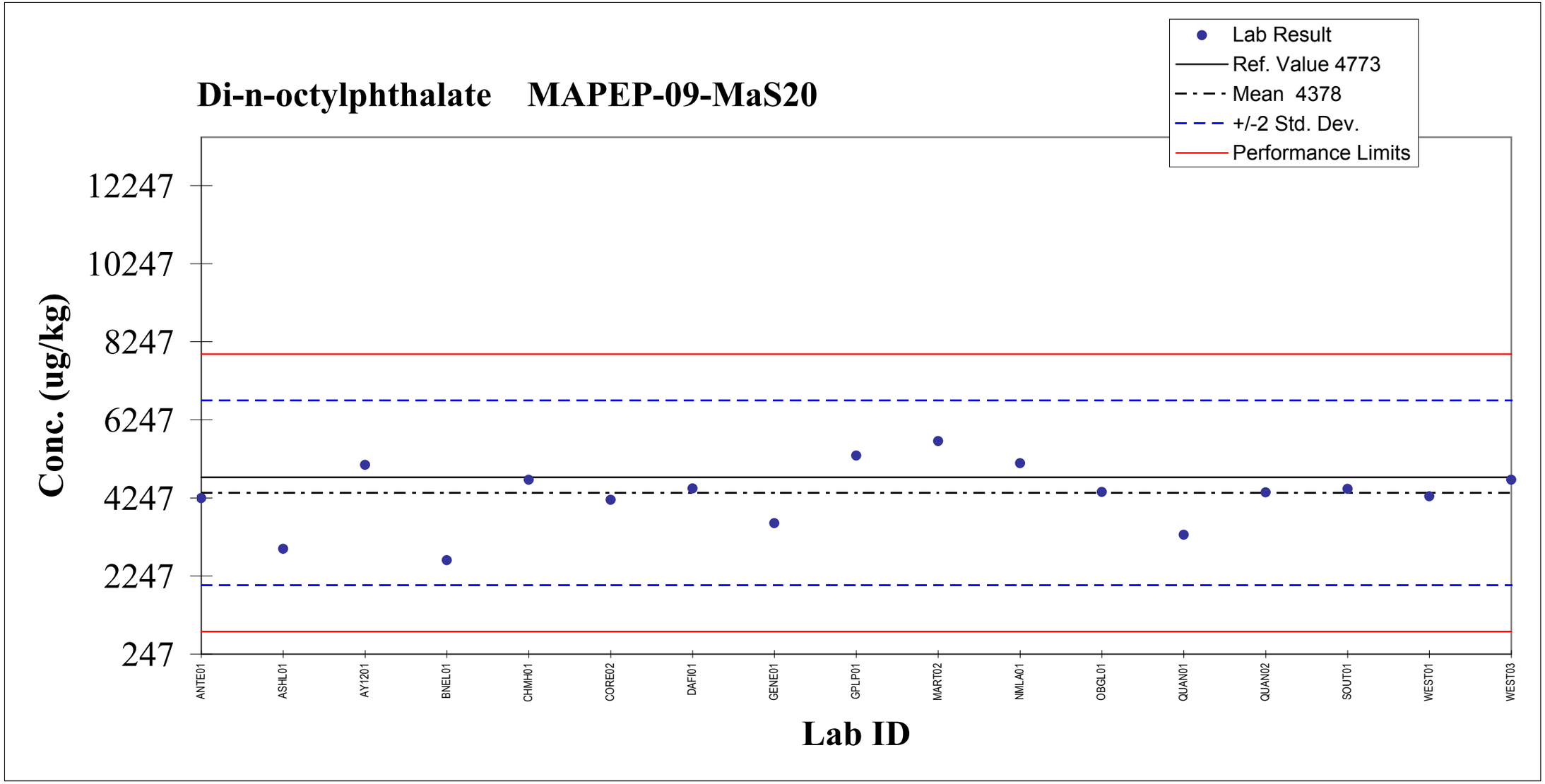

Benzo(a)anthracene MAPEP-09-MaS20
Lab Result
Ref. Value 5217
Mean 4507
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
10561
8561
6561
4561
2561
561
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

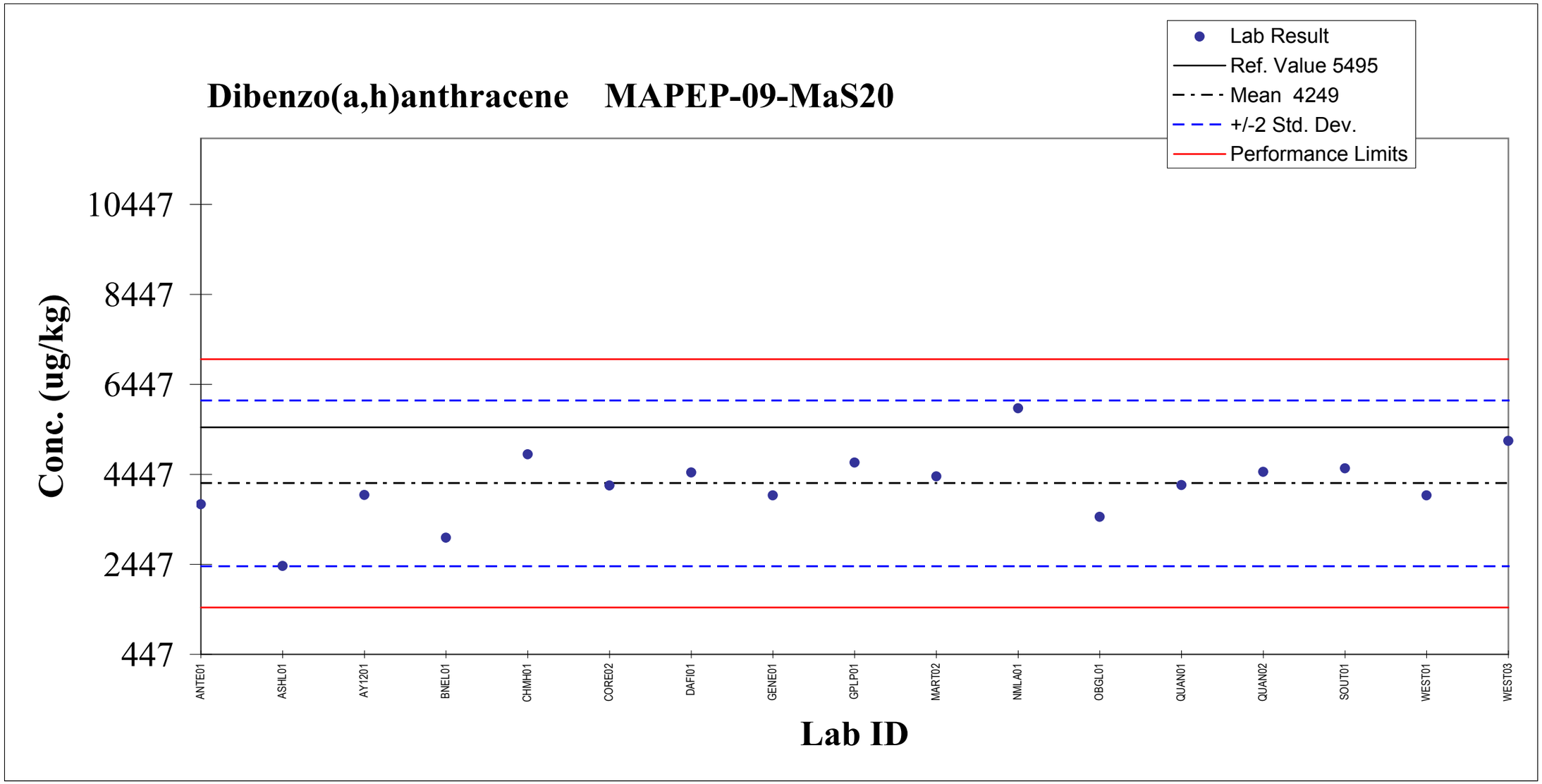

Benzo(b)fluoranthene MAPEP-09-MaS20
Lab Result
Ref. Value 11355
Mean 8116
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20878
15878
10878
5878
878
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

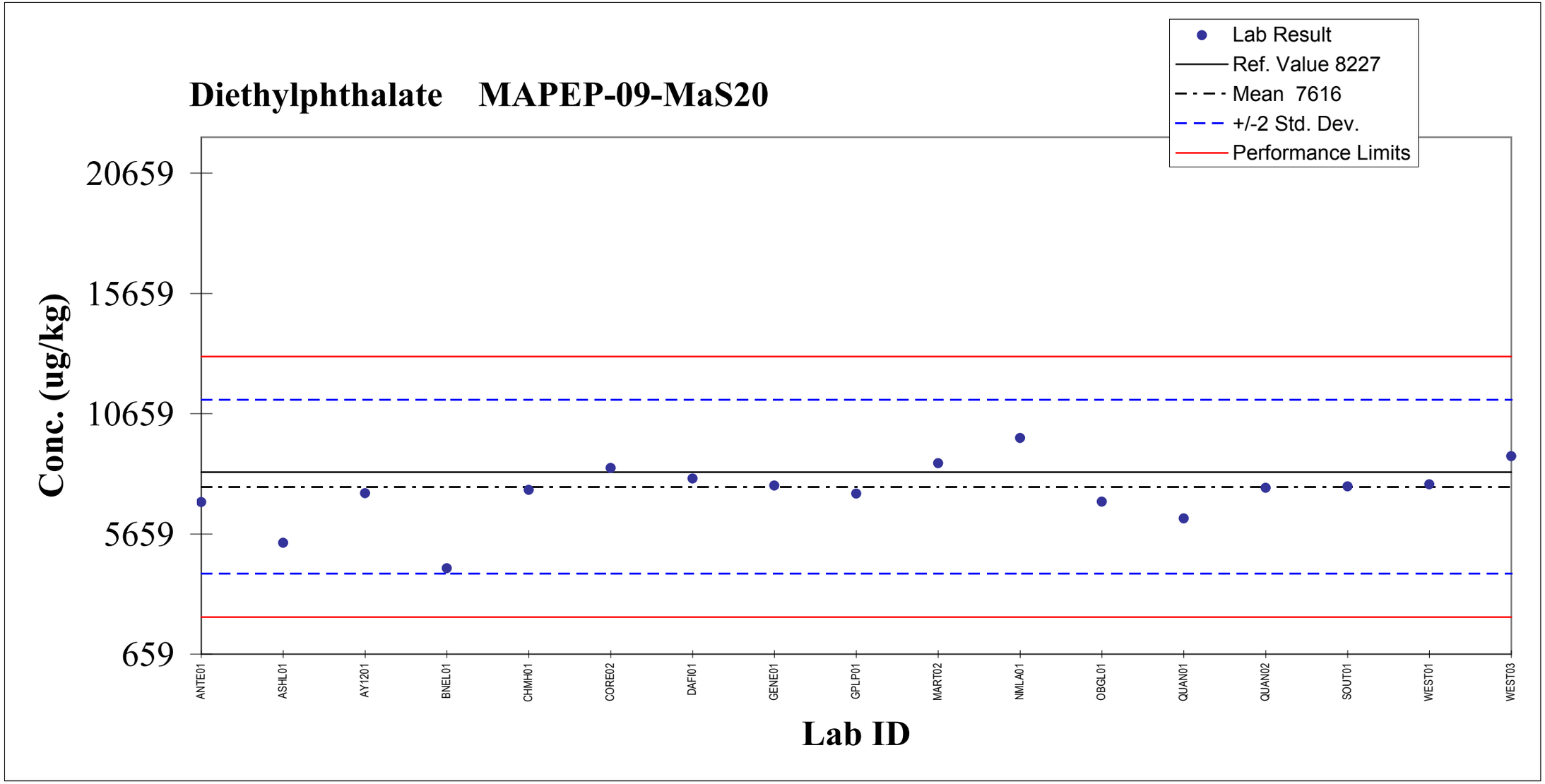

Bis(2-ethylhexyl)phthalate MAPEP-09-MaS20
Lab Result
Ref. Value 8827
Mean 8115
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20804
15804
10804
5804
804
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

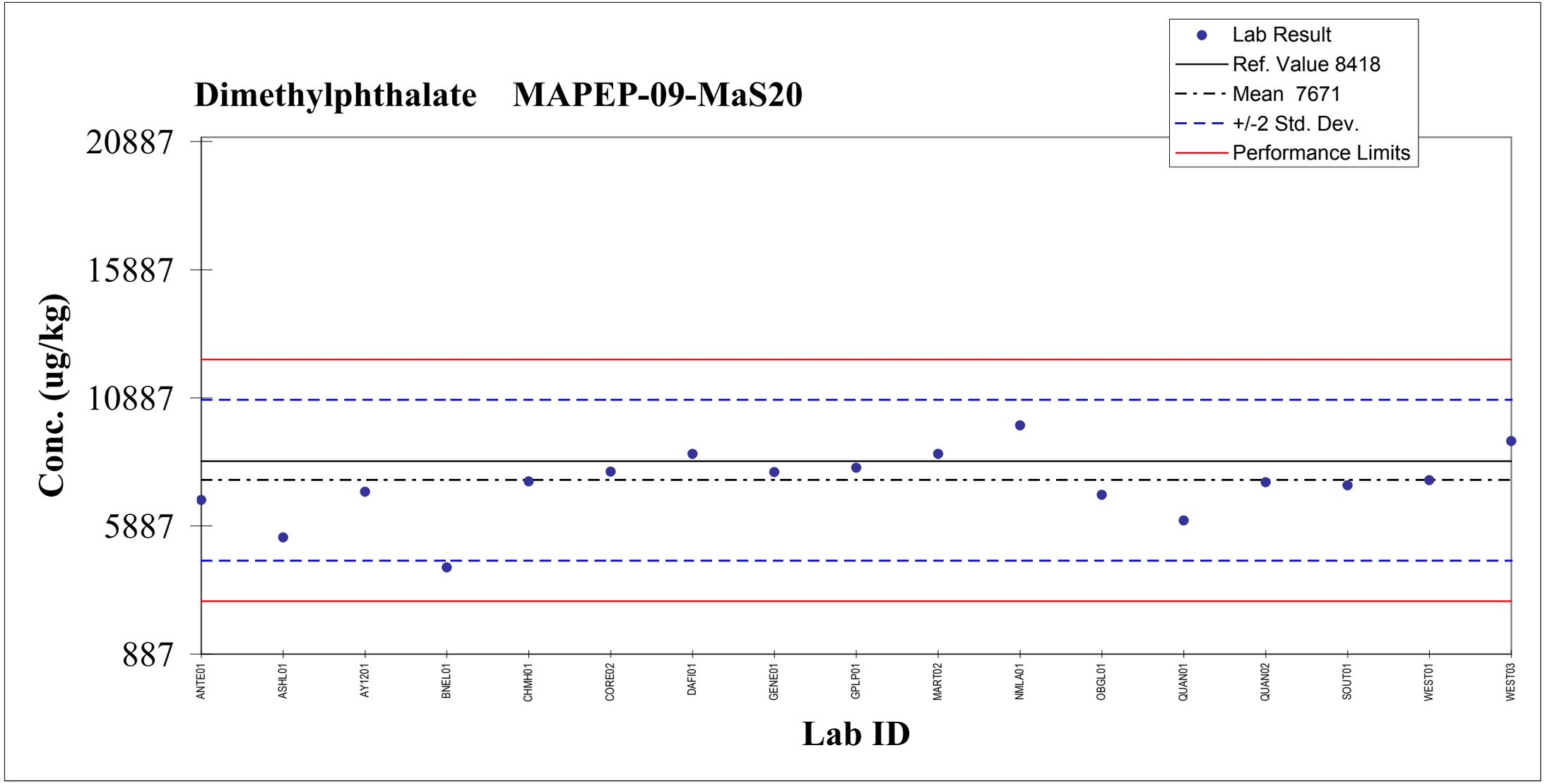

Chrysene MAPEP-09-MaS20
Lab Result
Ref. Value 8657
Mean 7766
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20856
15856
10856
5856
856
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

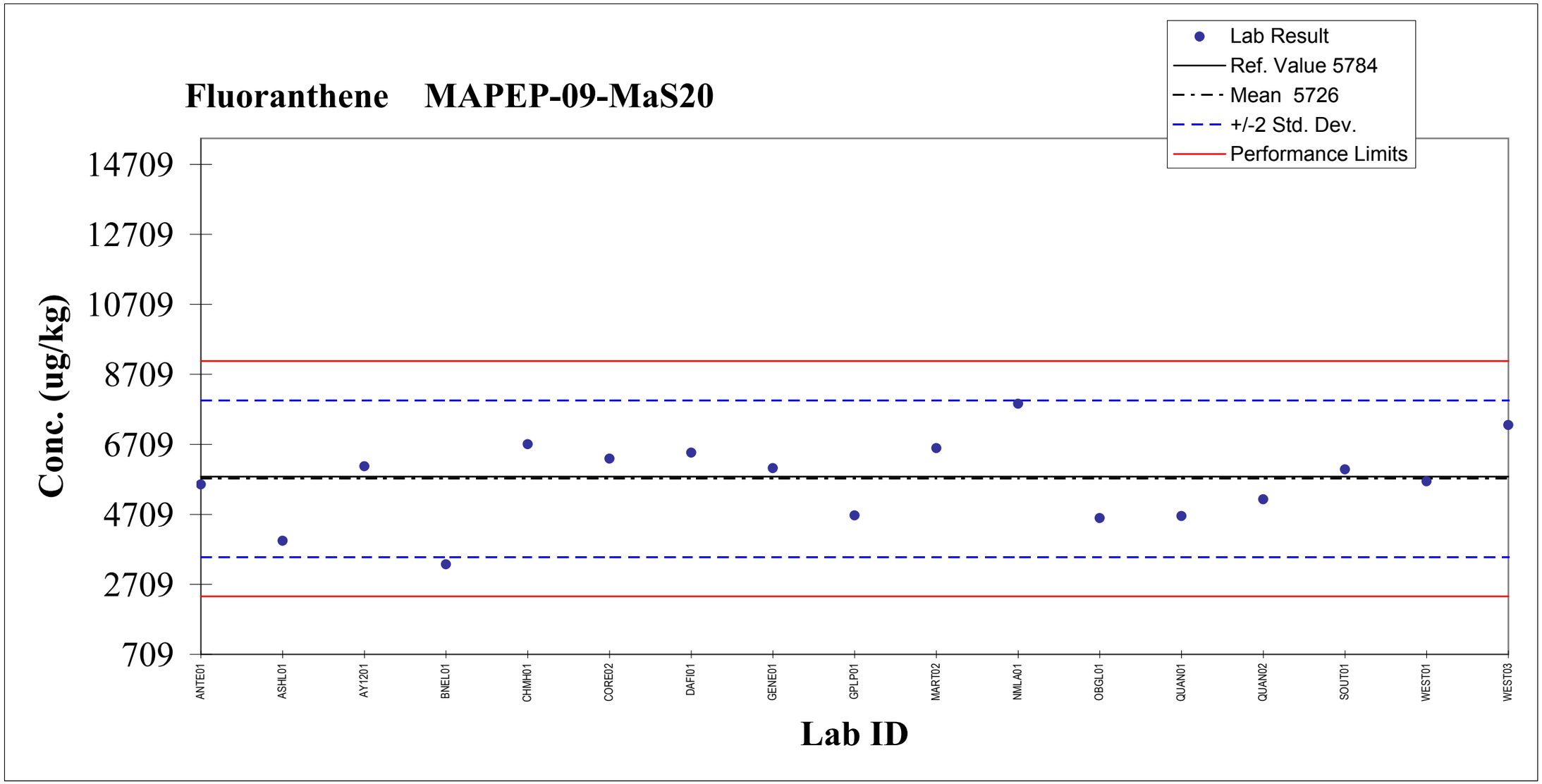

Di-n-butylphthalate MAPEP-09-MaS20
Lab Result
Ref. Value 4177
Mean 3913
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
10314
8314
6314
4314
2314
314
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

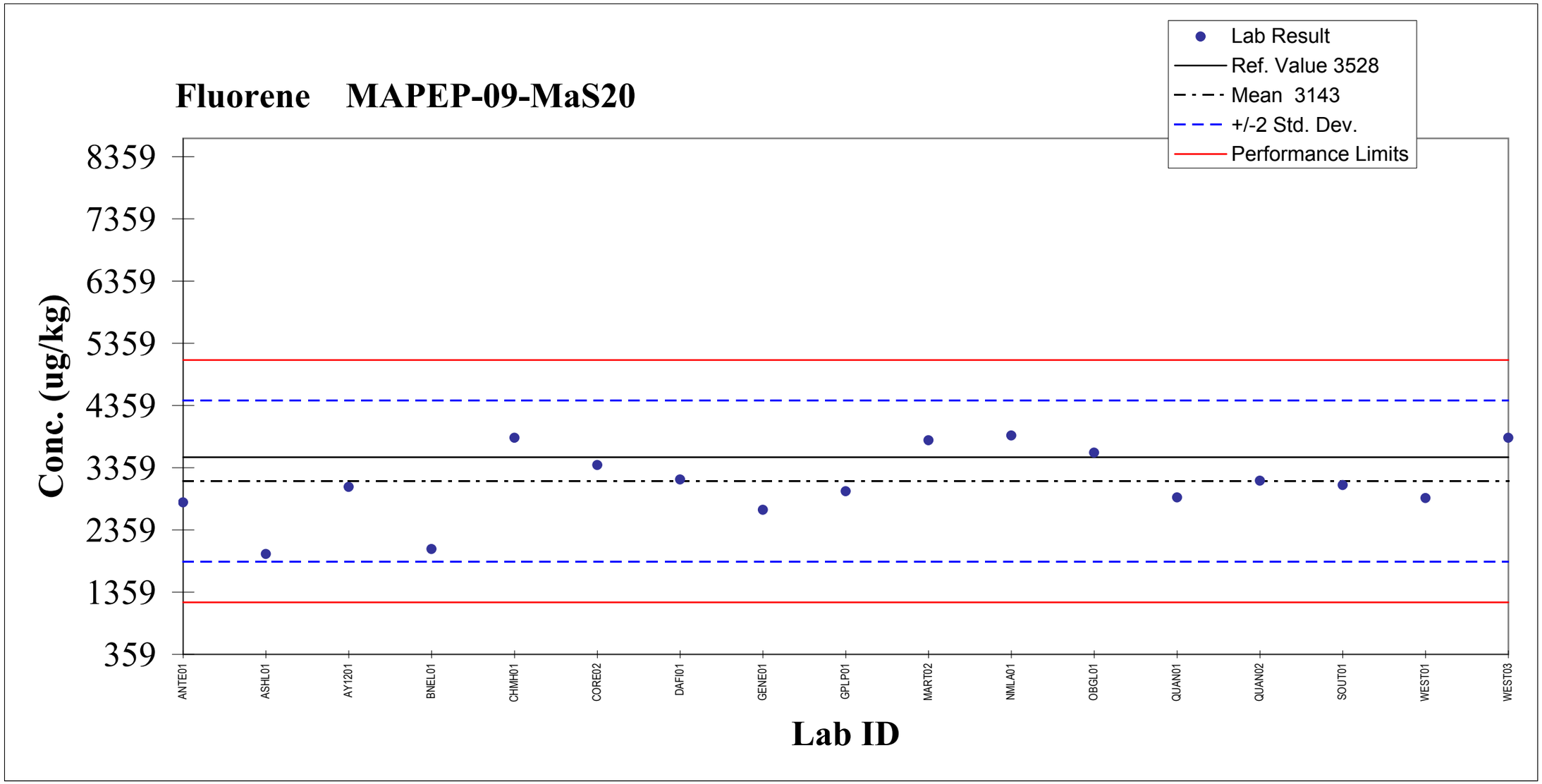

Di-n-octylphthalate MAPEP-09-MaS20
Lab Result
Ref. Value 4773
Mean 4378
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
12247
10247
8247
6247
4247
2247
247
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

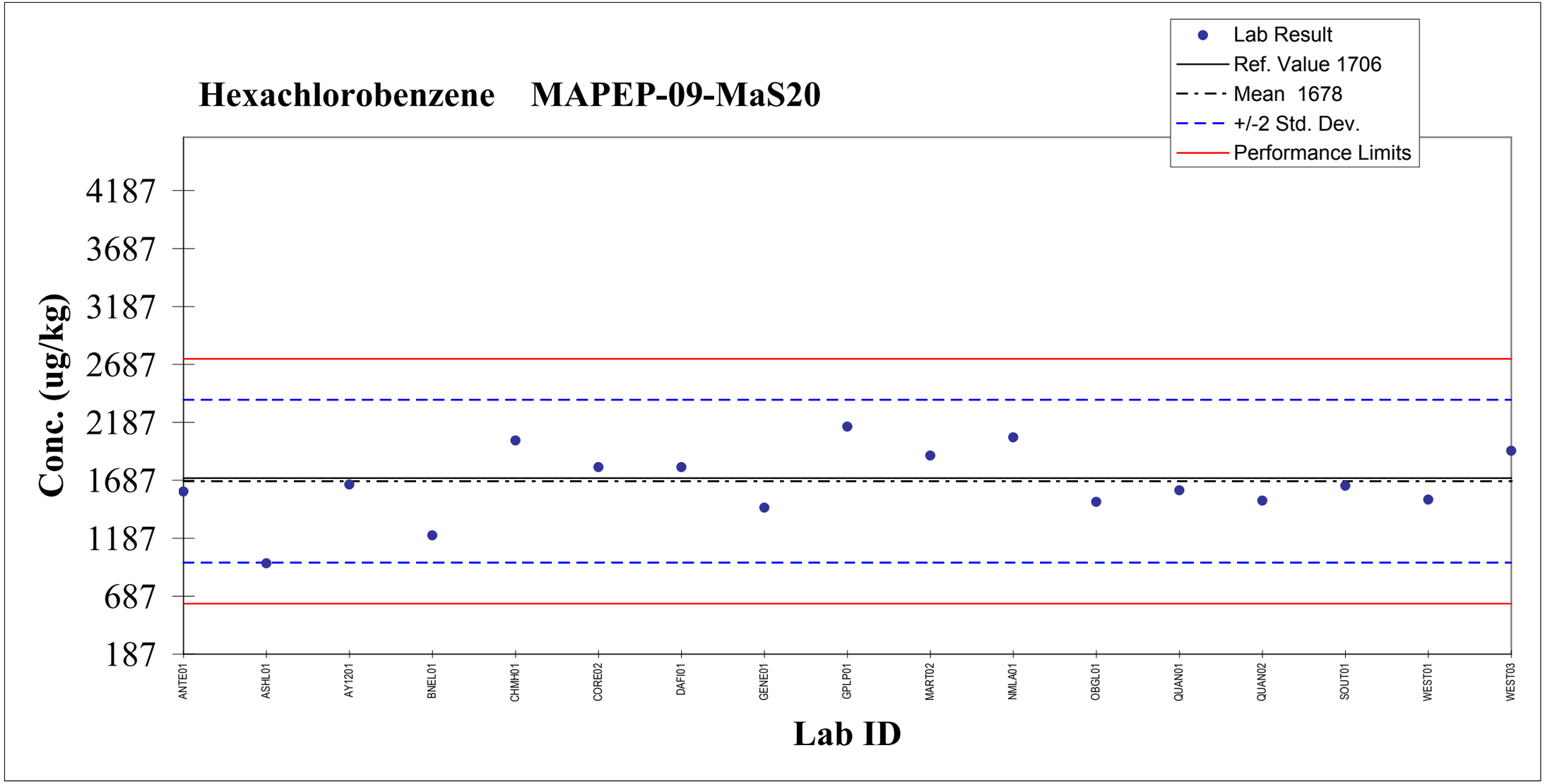

Dibenzo(a,h)anthracene MAPEP-09-MaS20
Lab Result
Ref. Value 5495
Mean 4249
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
10447
8447
6447
4447
2447
447
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

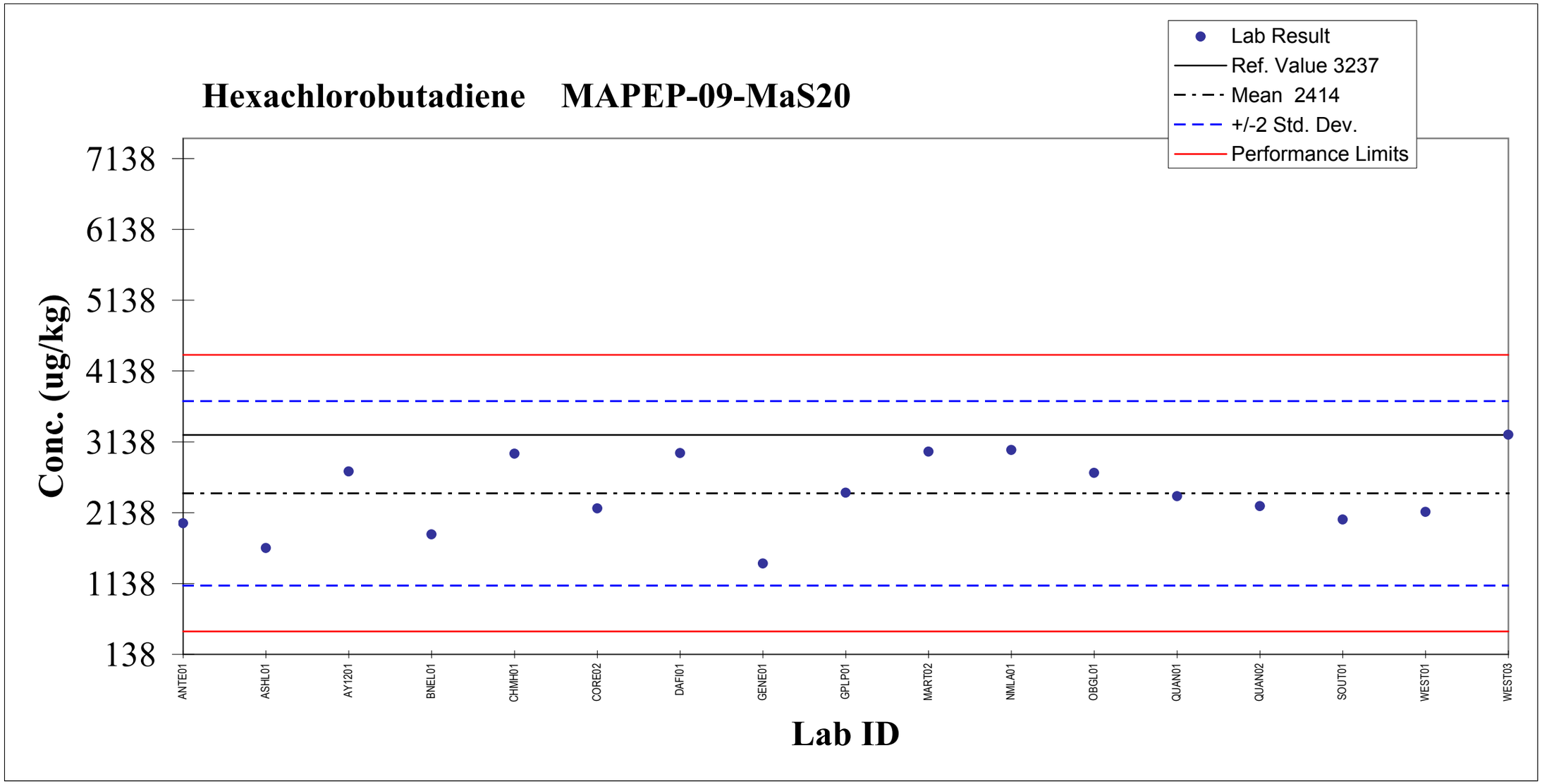

Diethylphthalate MAPEP-09-MaS20
Lab Result
Ref. Value 8227
Mean 7616
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20659
15659
10659
5659
659
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

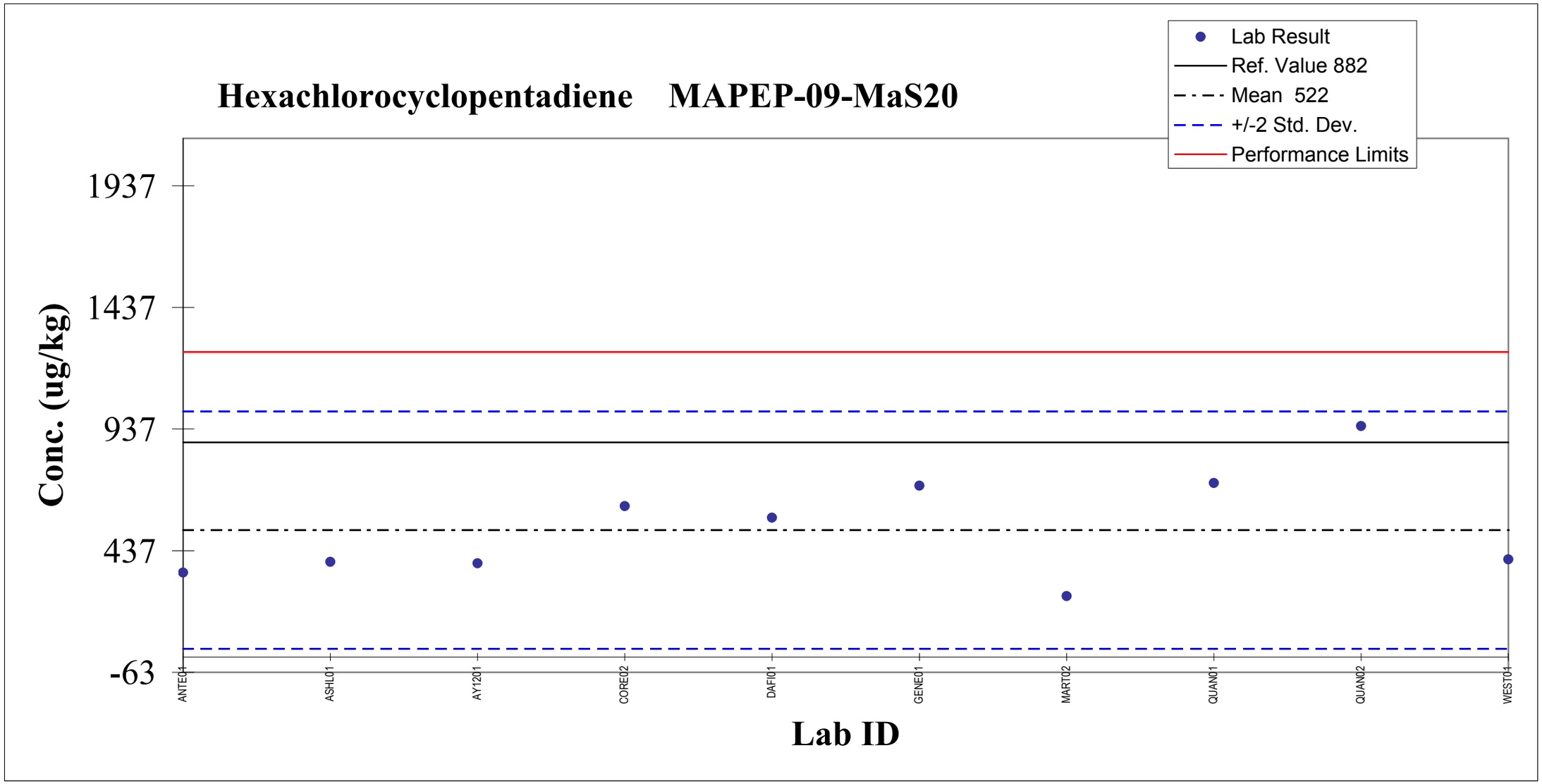

Dimethylphthalate MAPEP-09-MaS20
Lab Result
Ref. Value 8418
Mean 7671
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
20887
15887
10887
5887
887
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

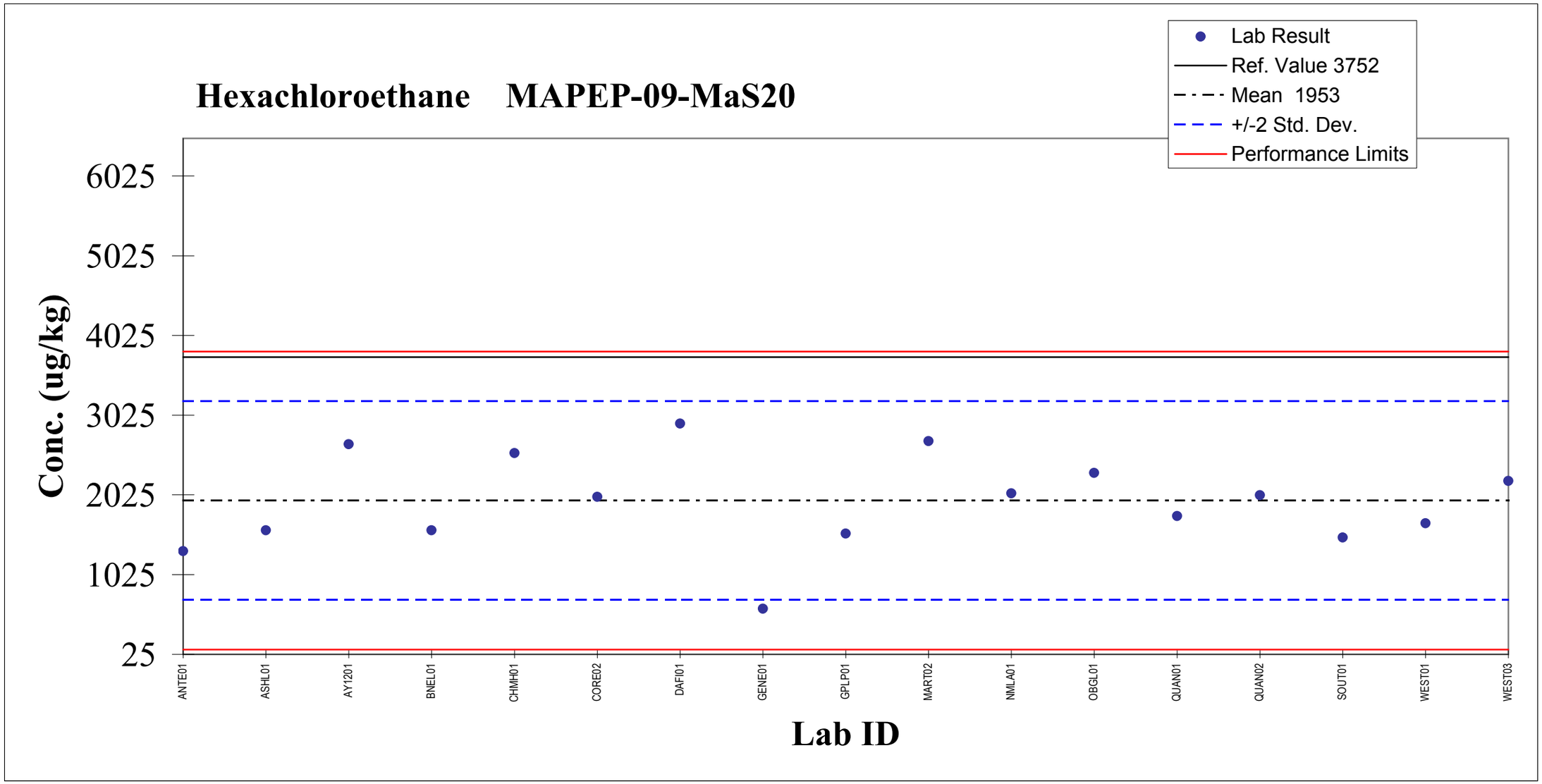

Fluoranthene MAPEP-09-MaS20
Lab Result
Ref. Value 5784
Mean 5726
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
14709
12709
10709
8709
6709
4709
2709
709
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

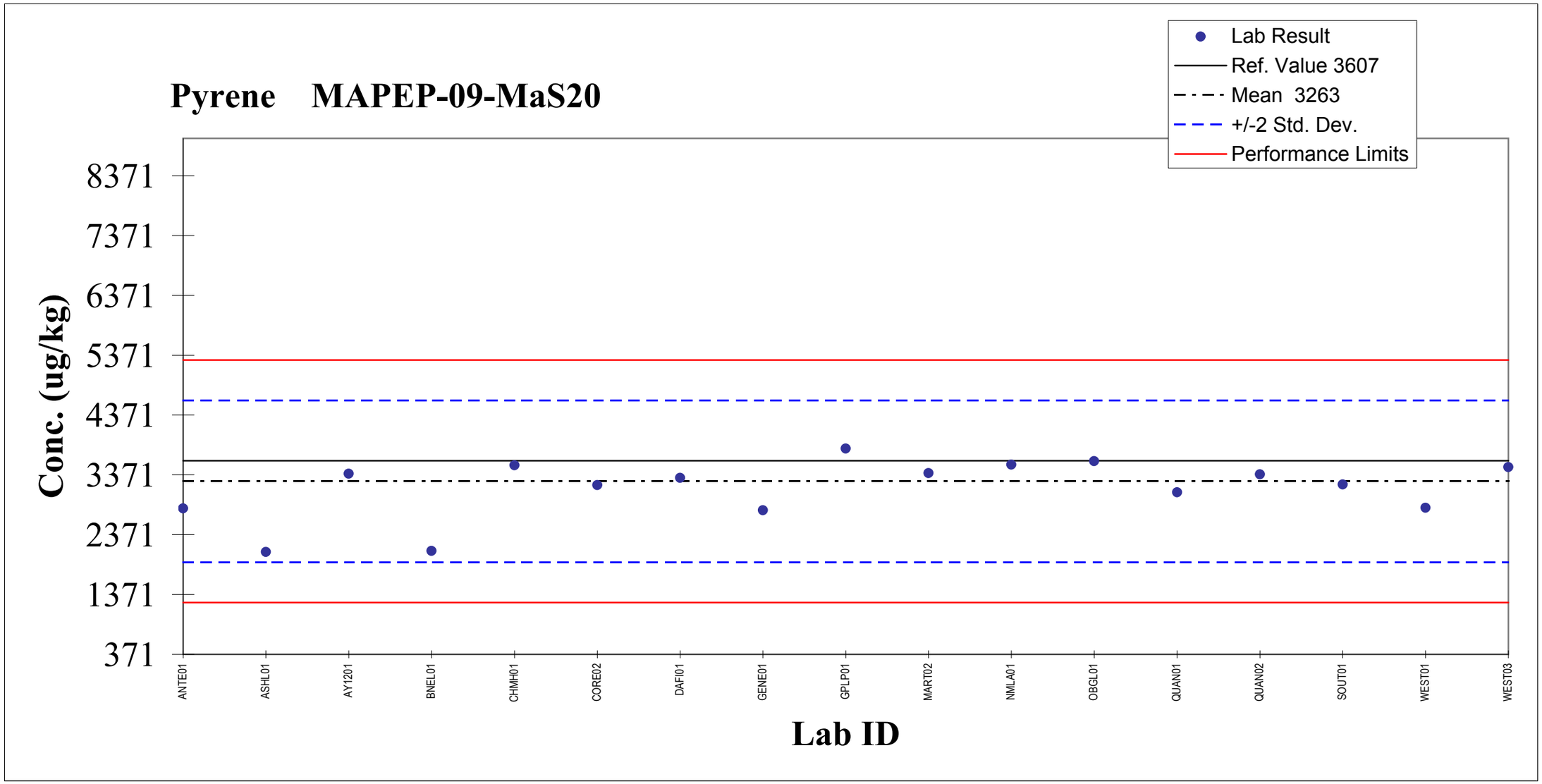

Fluorene MAPEP-09-MaS20
Lab Result
Ref. Value 3528
Mean 3143
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
8359
7359
6359
5359
4359
3359
2359
1359
359
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

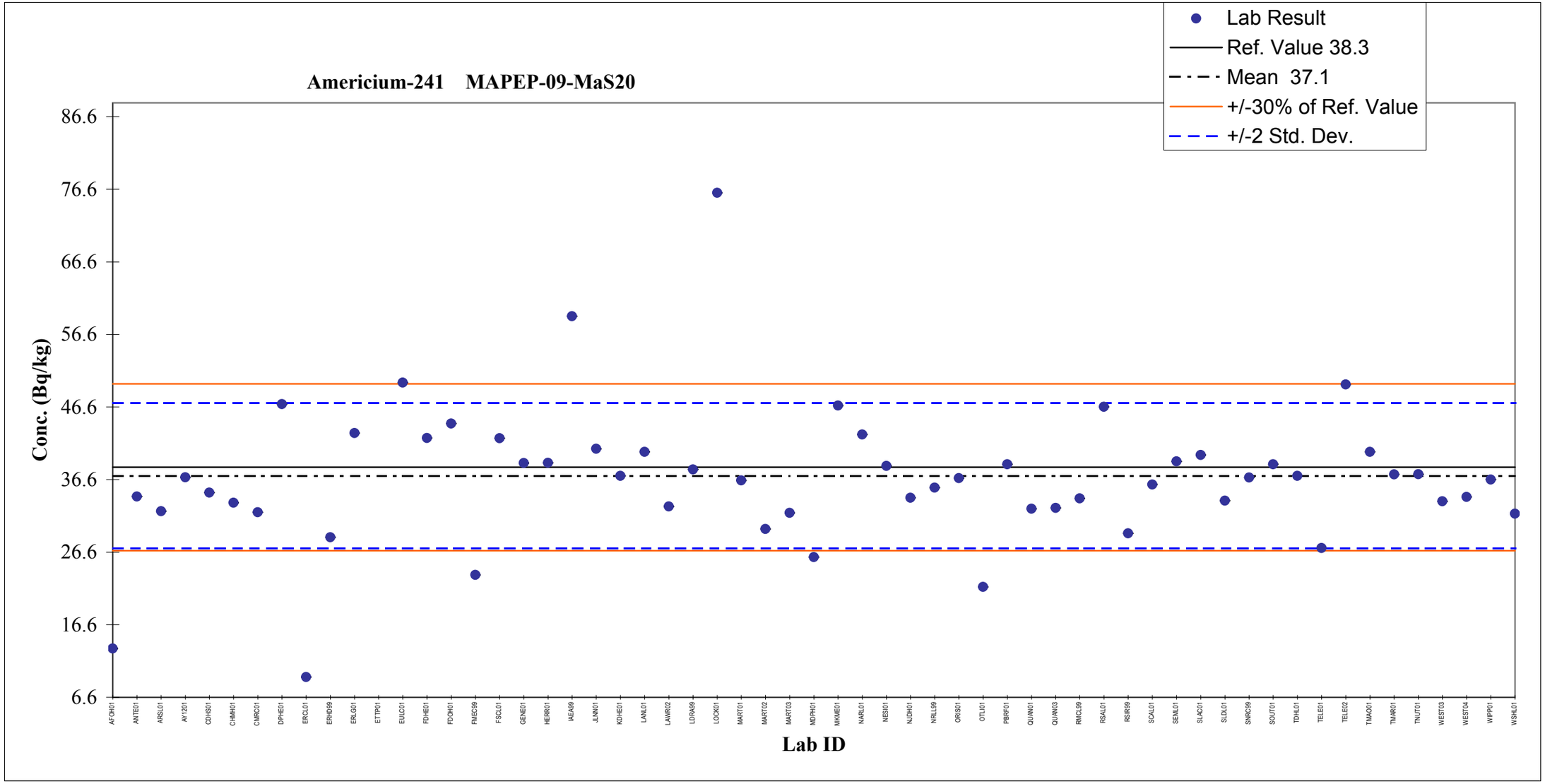

Hexachlorobenzene MAPEP-09-MaS20
Lab Result
Ref. Value 1706
Mean 1678
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
4187
3687
3187
2687
2187
1687
1187
687
187
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

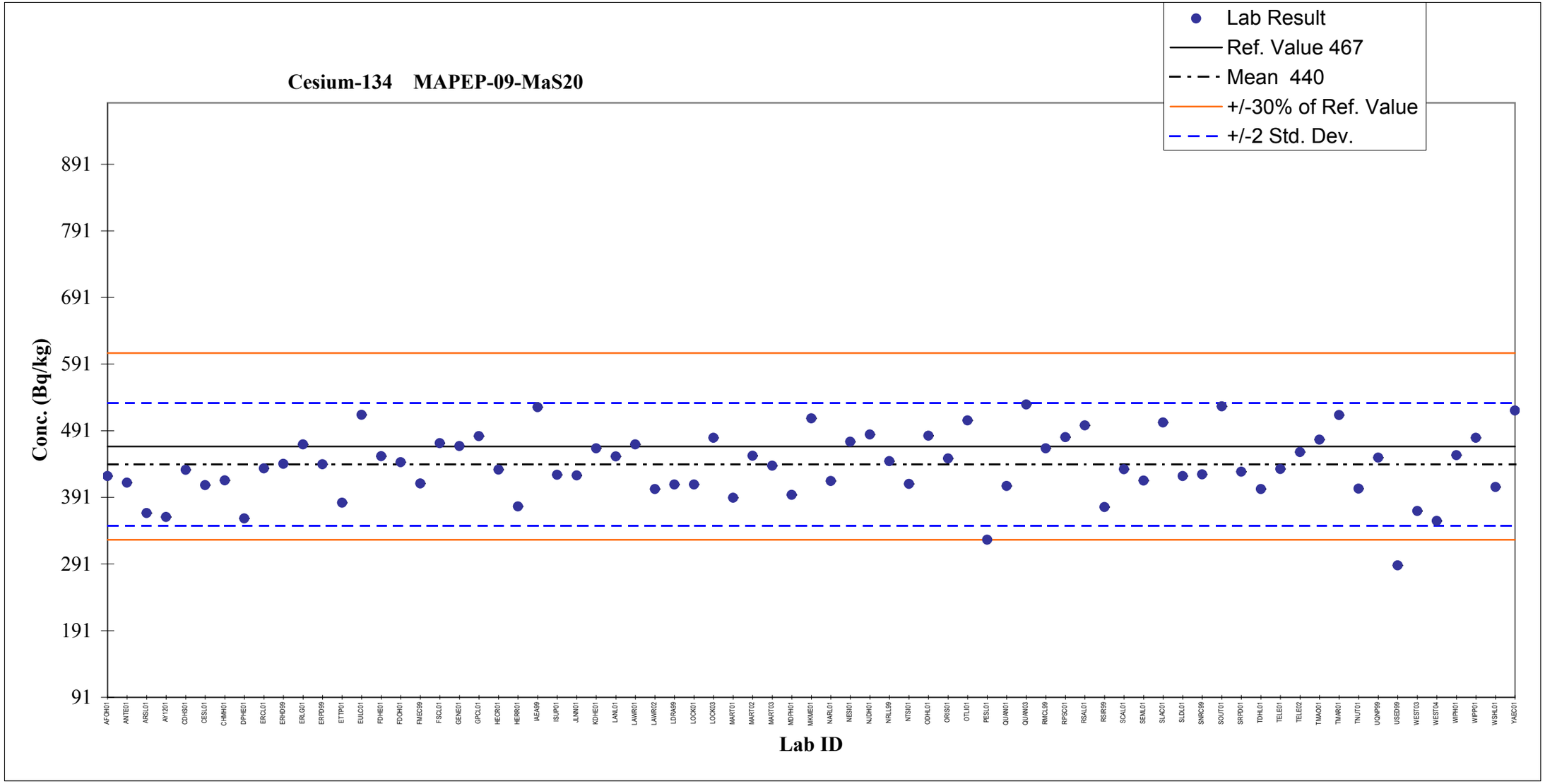

Hexachlorobutadiene MAPEP-09-MaS20
Lab Result
Ref. Value 3237
Mean 2414
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
7138
6138
5138
4138
3138
2138
1138
138
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

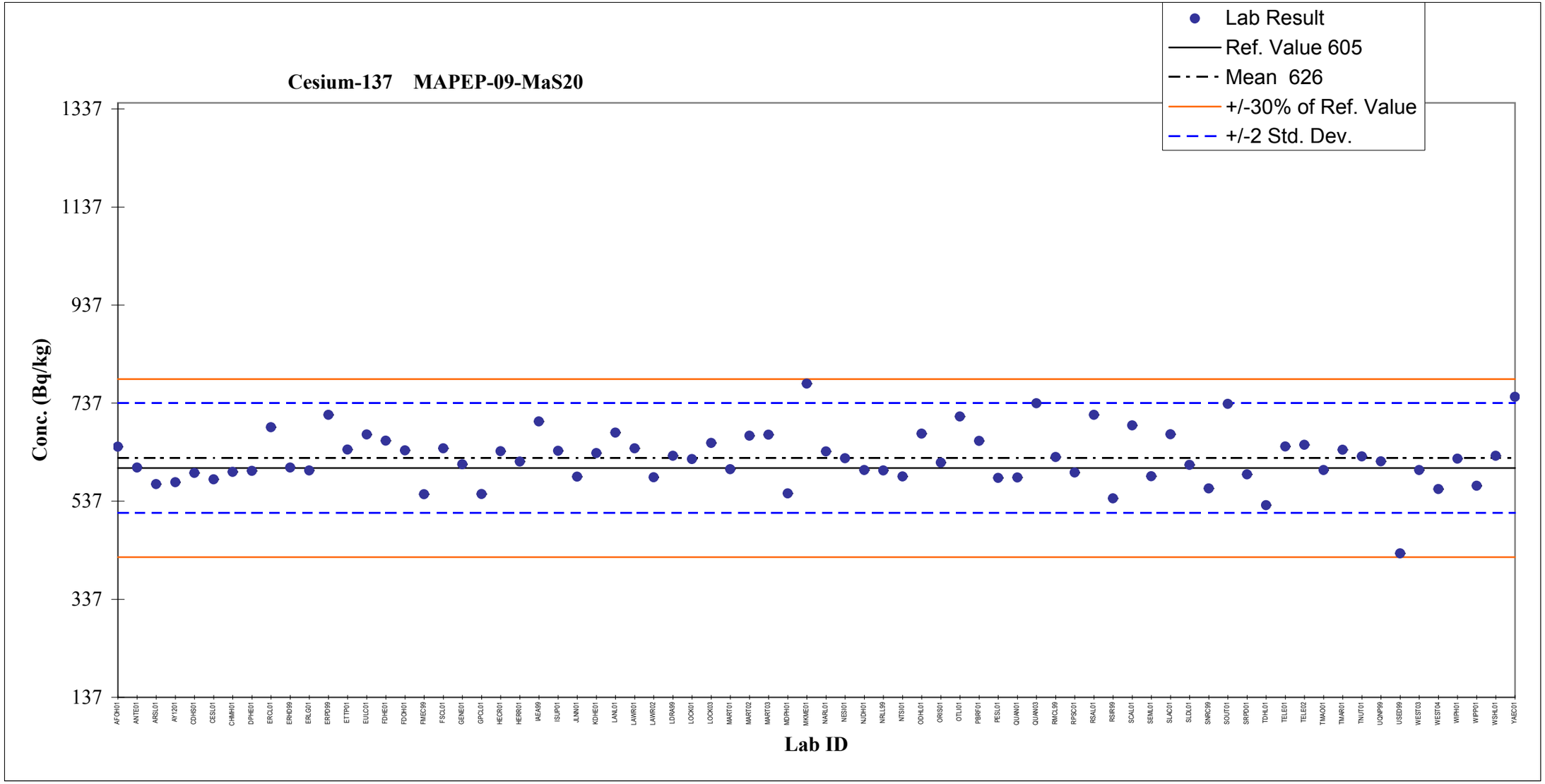

Hexachlorocyclopentadiene MAPEP-09-MaS20
Lab Result
Ref. Value 882
Mean 522
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
1937
1437
937
437
-63
ANTE04
ASHL01
AY1201
COREO2
DAFI01
GENE01
MARTO2
QUAN01
QUAN02
WEST04
Lab ID

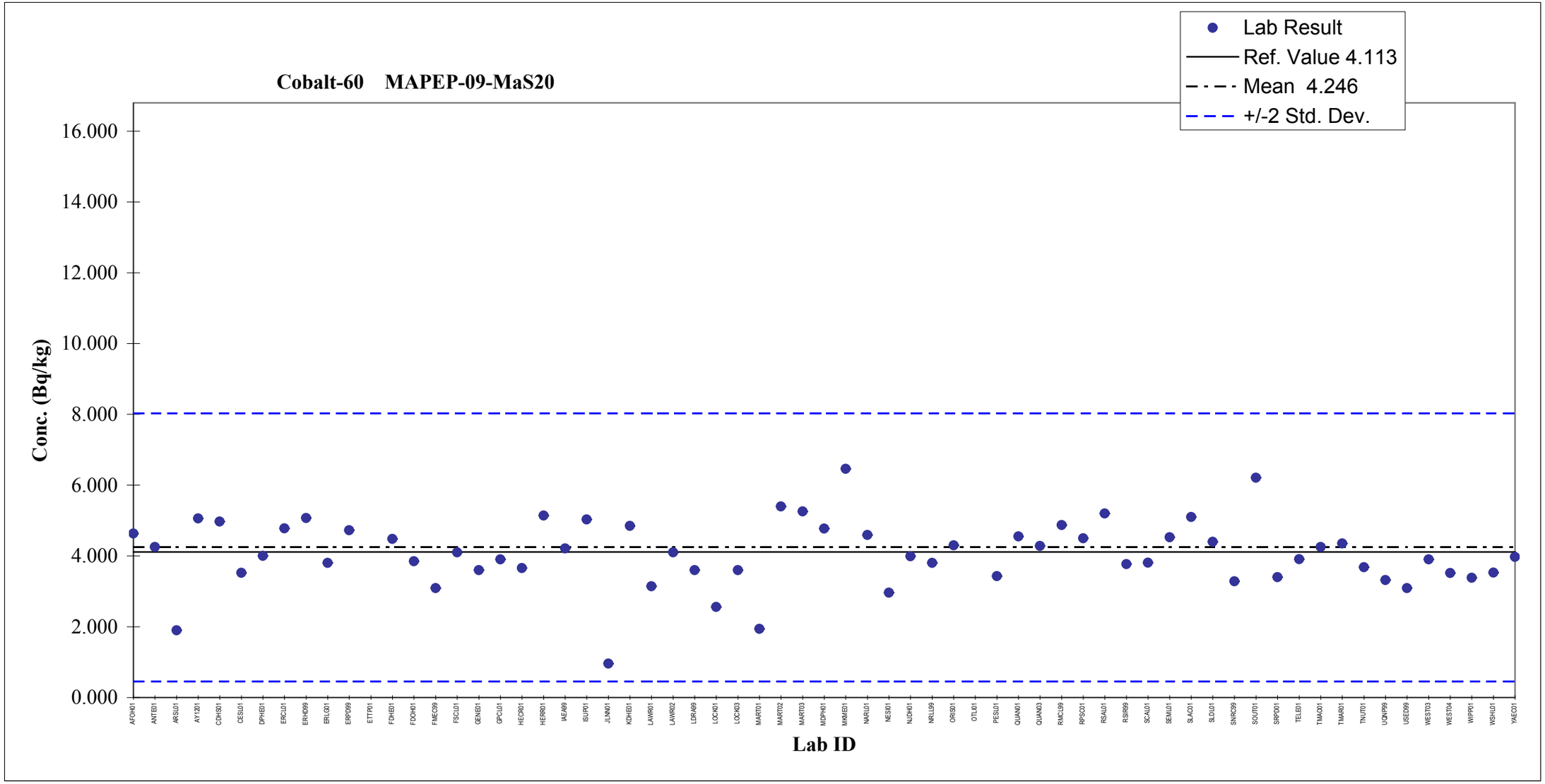

Hexachloroethane MAPEP-09-MaS20
Lab Result
Ref. Value 3752
Mean 1953
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
6025
5025
4025
3025
2025
1025
25
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

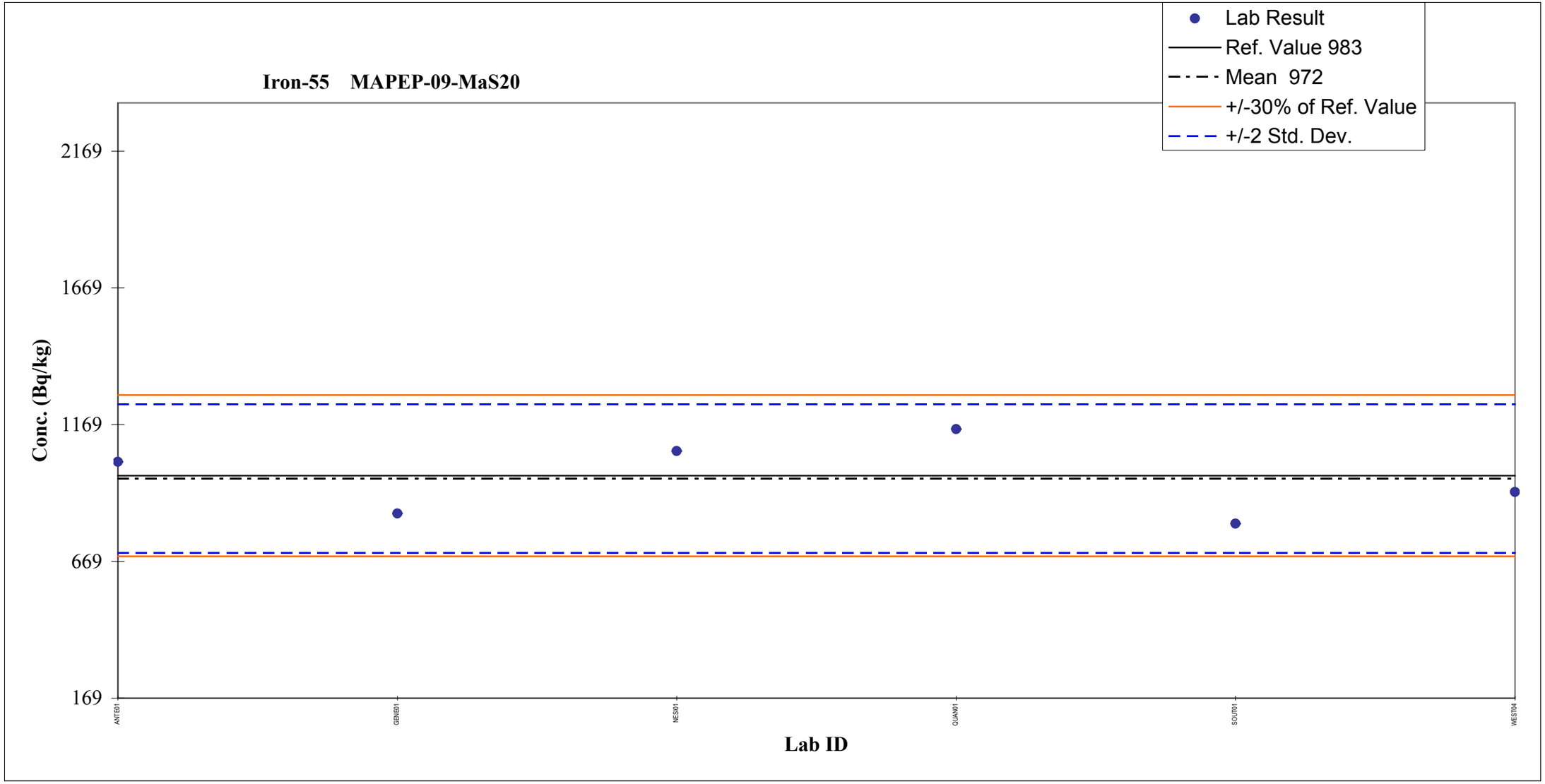

Pyrene MAPEP-09-MaS20
Lab Result
Ref. Value 3607
Mean 3263
+/-2 Std. Dev.
Performance Limits
Conc. (ug/kg)
8371
7371
6371
5371
4371
3371
2371
1371
371
ANTE01
ASHL01
AY1201
BNEL01
CHMH01
CORE02
DAFI01
GENE01
GPLP01
MART02
NMLA01
OBGL01
QUAN01
QUAN02
SOUT01
WEST01
WEST03
Lab ID

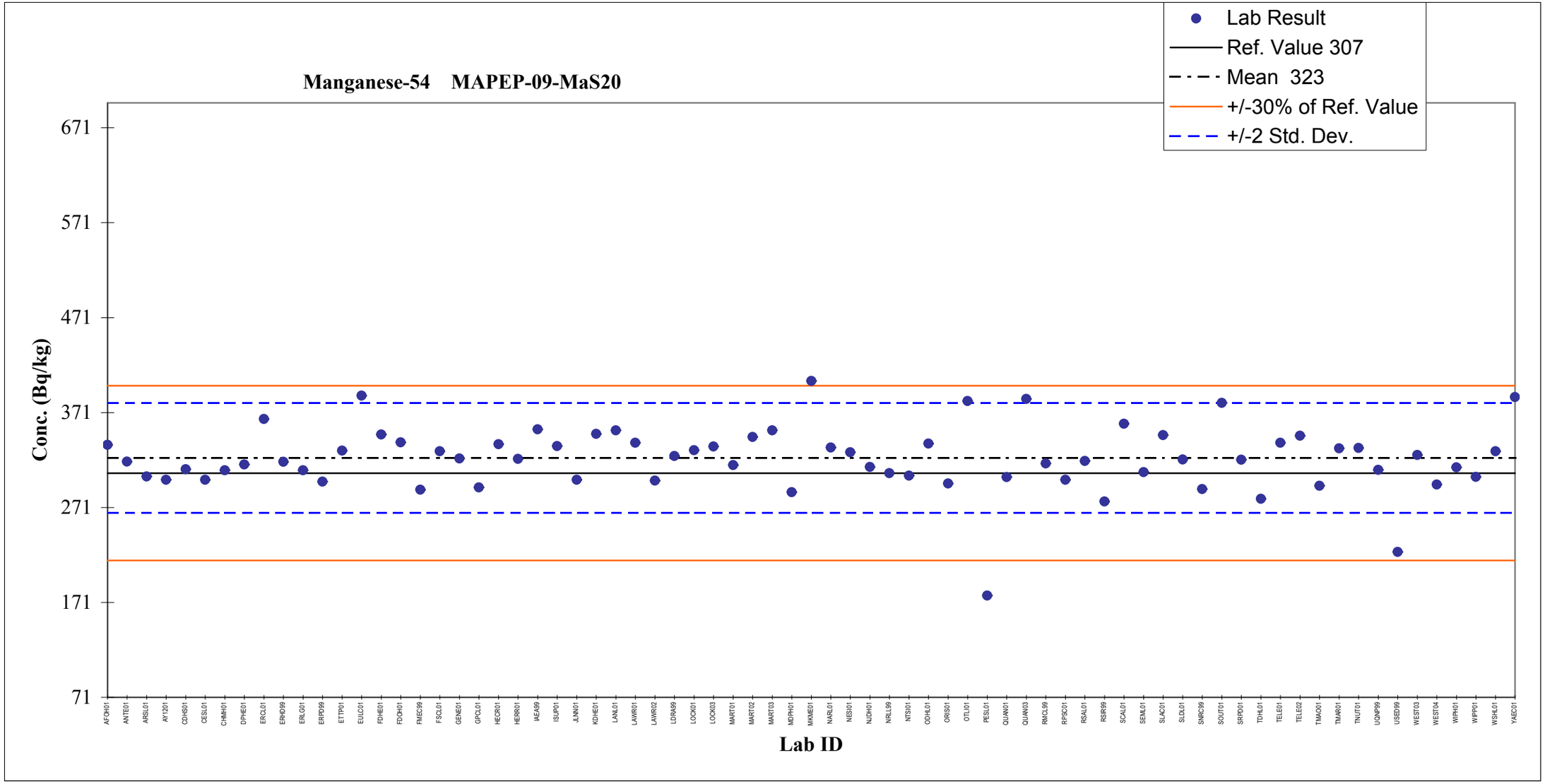

Americium-241 MAPEP-09-MaS20
Lab Result
Ref. Value 38.3
Mean 37.1
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
86.6
76.6
66.6
56.6
46.6
36.6
26.6
16.6
6.6
AFCN01
ANTE01
ARSL01
AY1201
CDHS01
CHMM01
CMRC01
DPHE01
ERCL01
ERHD99
ERLG01
ETTP01
EULC01
FDHE01
FDCH01
FMEC99
FSCL01
GENE01
HERR01
IAEA99
JLNN01
KDHE01
LANL01
LAWR02
LDRA99
LOCK01
MART01
MART02
MART03
MDPH01
MKME01
NARL01
NESI01
NJDH01
NRLL99
ORIS01
OTL01
PBRF01
QUAN01
QUAN03
RMCL99
RSAL01
RSIR99
SCAL01
SEML01
SLAC01
SLDL01
SNRC99
SOUT01
TDHL01
TELE01
TELE02
TMAN01
TMAR01
TNUT01
WEST03
WEST04
WPP01
WSHL01
Lab ID

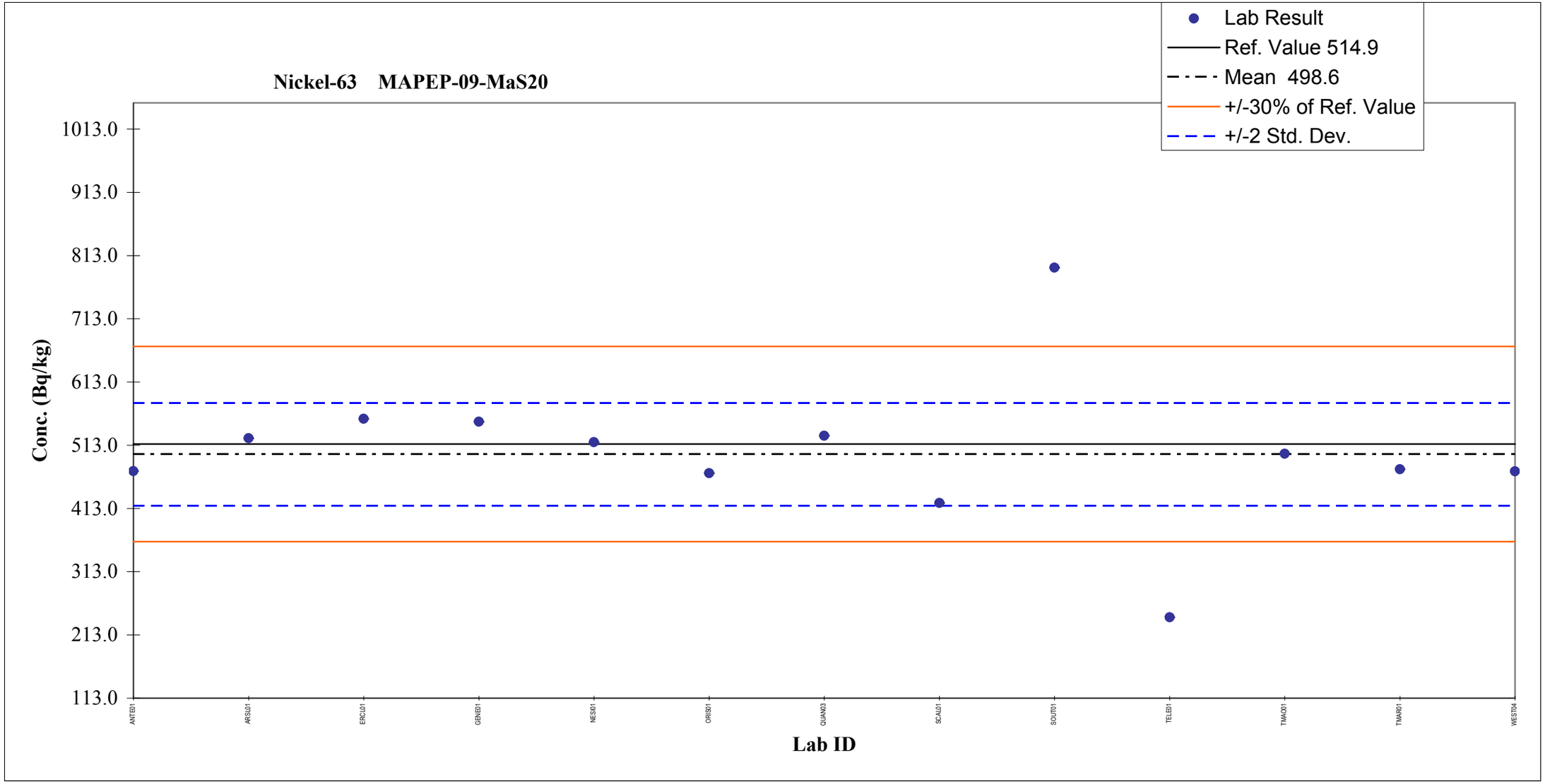

Cesium-134 MAPEP-09-MaS20
Lab Result
Ref. Value 467
Mean 440
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
891
791
691
591
491
391
291
191
91
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CESL01
CHMH01
DPHE01
ERCL01
ERHD99
ERLG01
ERPD99
ETTP01
EULC01
FDHE01
FDCH01
FMEC99
FSCL01
GENE01
GPCL01
HECR01
HERR01
IAEA99
ISUP01
JUNN01
KDHE01
LANL01
LAWR01
LAWR02
LDRA99
LOCK01
LOCK03
MART01
MART02
MART03
MDPH01
MKME01
NARL01
NESI01
NJDH01
NRLL99
NTSI01
ODHL01
ORIS01
OTL01
PESL01
QUAN01
QUAN03
RMCL99
RPSC01
RSAL01
RSIR99
SCAL01
SEML01
SLAC01
SLDL01
SNRC99
SOUT01
SRPD01
TDHL01
TELE01
TELE02
TMAO01
TMAR01
TNUT01
UQNP99
USED99
WEST03
WEST04
WIPH01
WPP01
WSHL01
YAE01
Lab ID

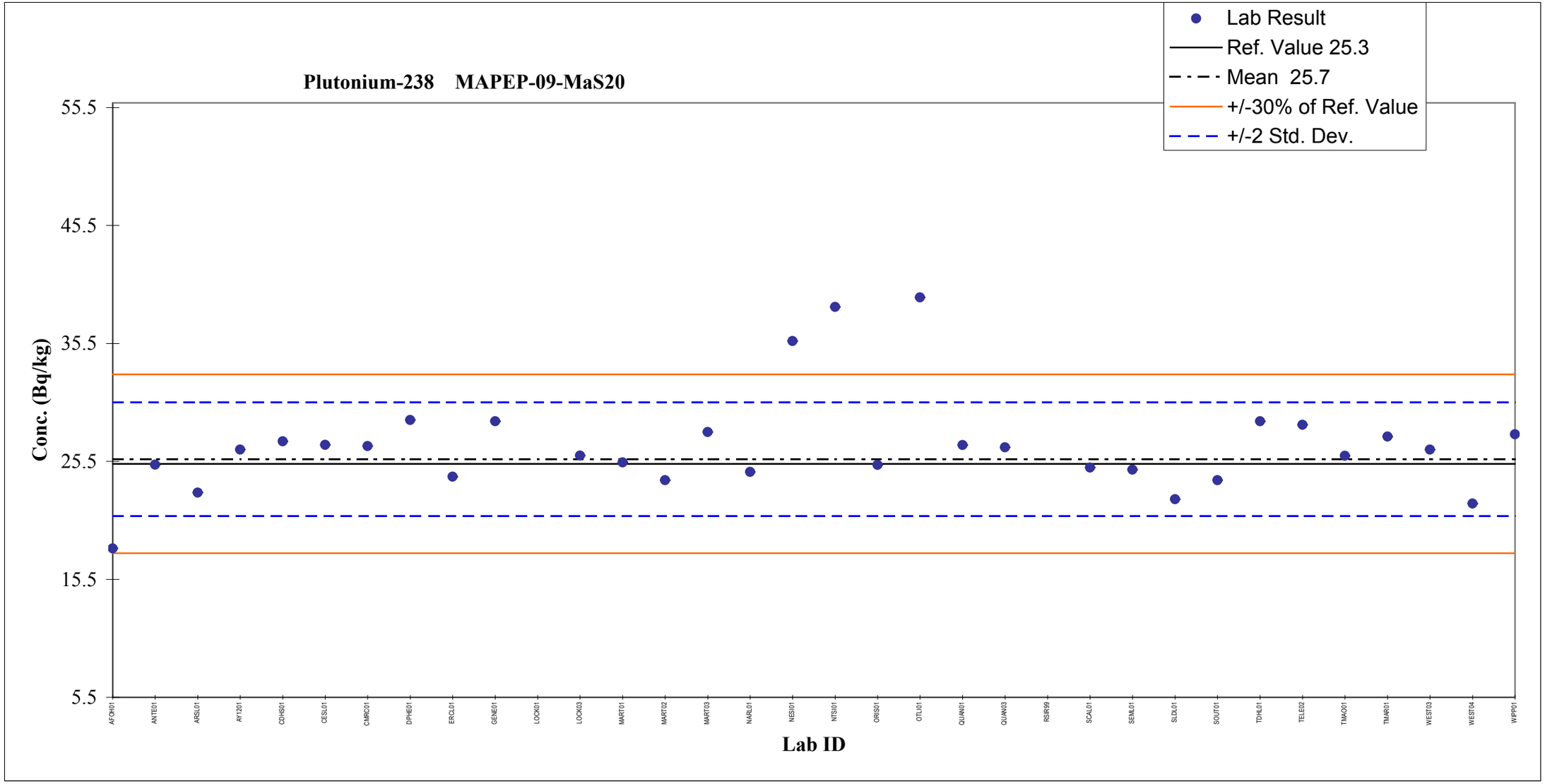

Cesium-137 MAPEP-09-MaS20
Lab Result
Ref. Value 605
Mean 626
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
1337
1137
937
737
537
337
137
Lab ID
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CESL01
CHMH01
DPHE01
ERCL01
ERHD99
ERLG01
ERPD99
ETTP01
EULC01
FDHE01
FDCH01
FMEC99
FSCL01
GENE01
GPCL01
HECR01
HERR01
IAEA99
ISUP01
JUNN01
KDHE01
LANL01
LAVR01
LAVR02
LDRA99
LOCK01
LOCK03
MART01
MART02
MART03
MDPH01
MKME01
NARL01
NESI01
NJDH01
NRLL99
NTSI01
ODHL01
ORIS01
OTL01
PBRF01
PESL01
QUAN01
QUAN03
RMCL99
RPSC01
RSAL01
RSIR99
SCAL01
SEML01
SLAC01
SLDL01
SNRC99
SOUT01
SRPD01
TDHL01
TELE01
TELE02
TIMA001
TIMAR01
TNUT01
UQNP99
USED99
WEST03
WEST04
WIPH01
WIPP01
WSHL01
YAEC01

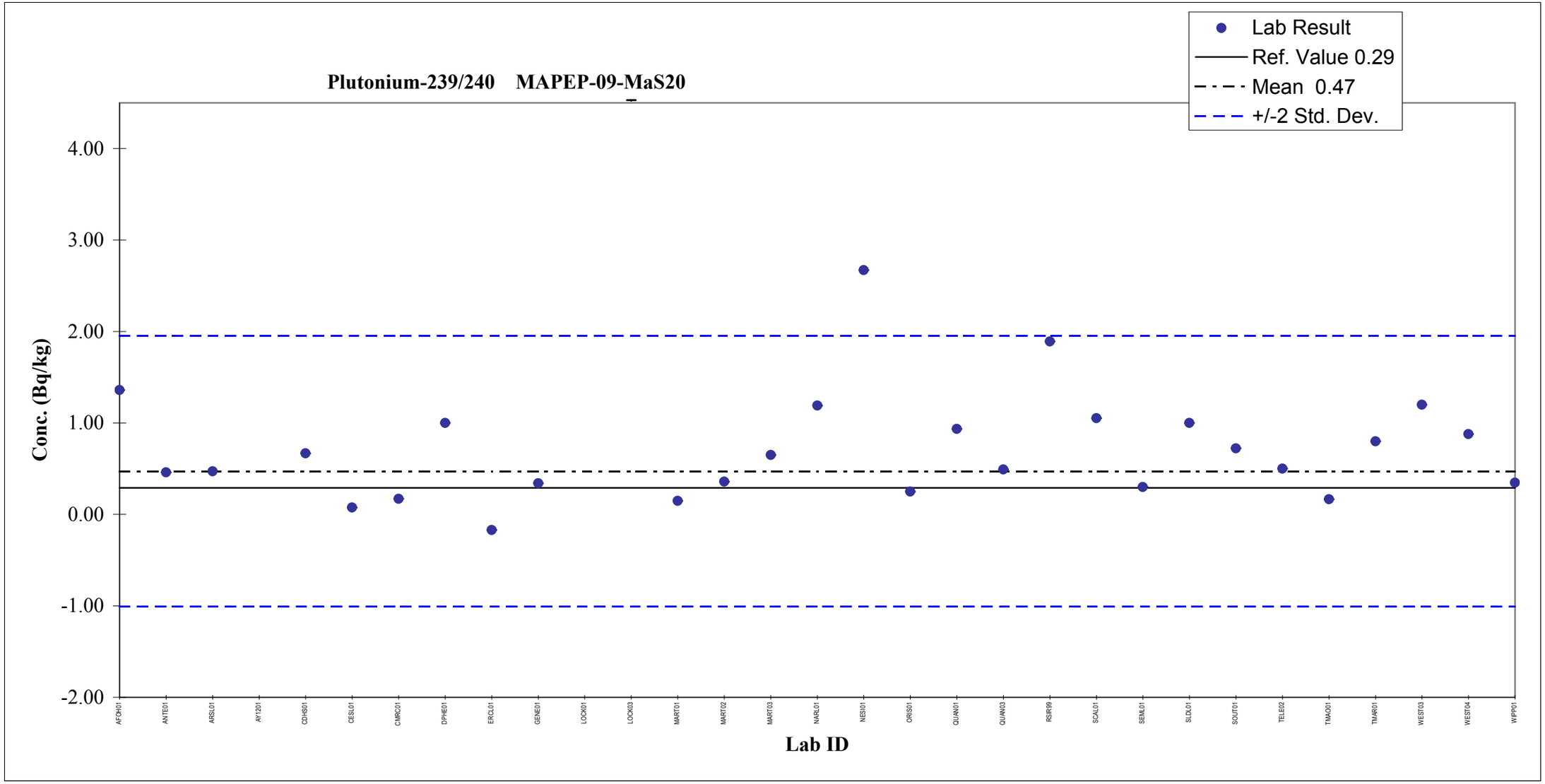

Cobalt-60 MAPEP-09-MaS20
Lab Result
Ref. Value 4.113
Mean 4.246
+/-2 Std. Dev.
Conc. (Bq/kg)
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
Lab ID

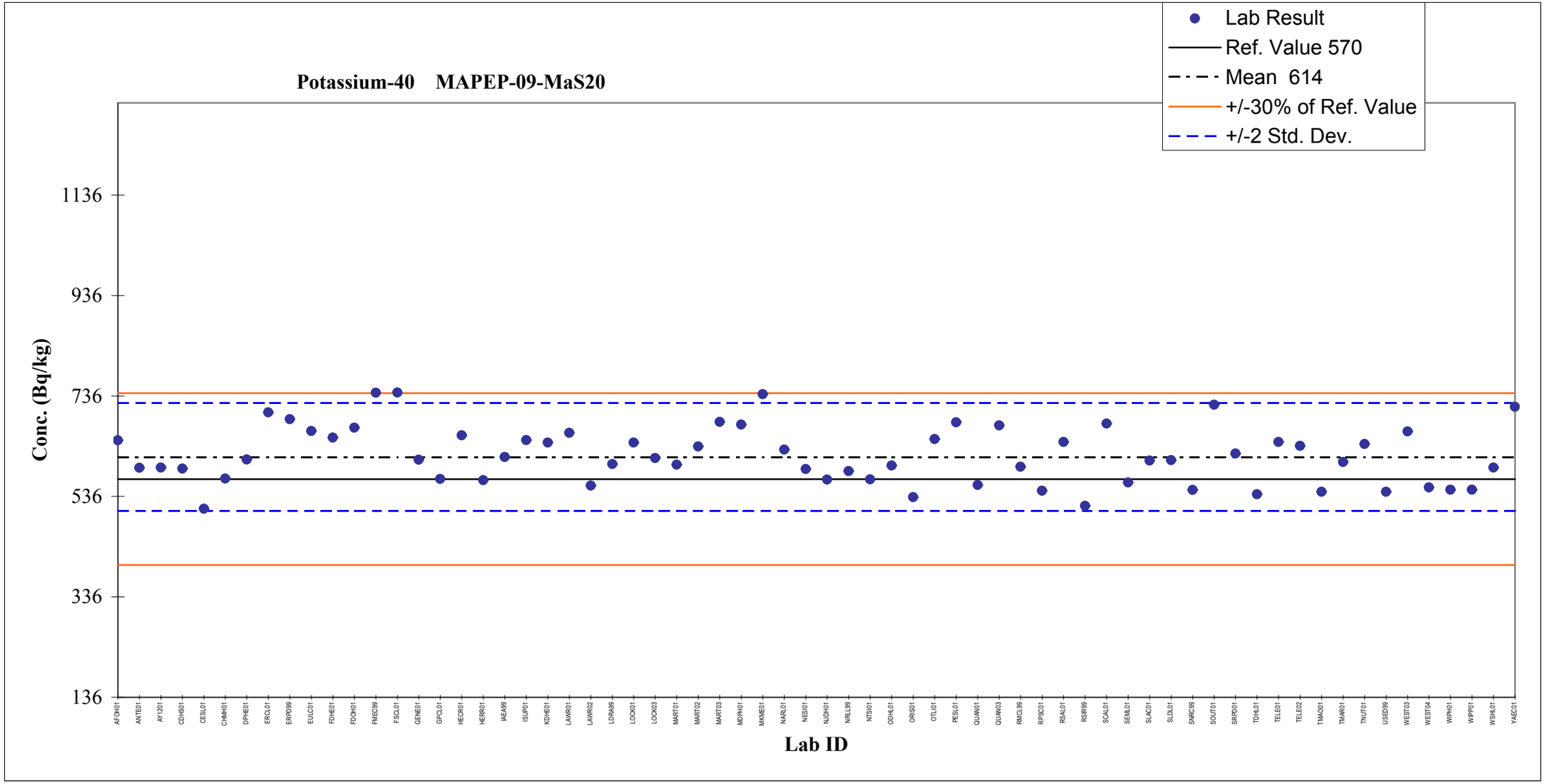

Iron-55 MAPEP-09-MaS20
Lab Result
Ref. Value 983
Mean 972
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
2169
1669
1169
669
169
ANTE01
GBRE01
NES01
QUAN01
SOJT01
WEST04
Lab ID

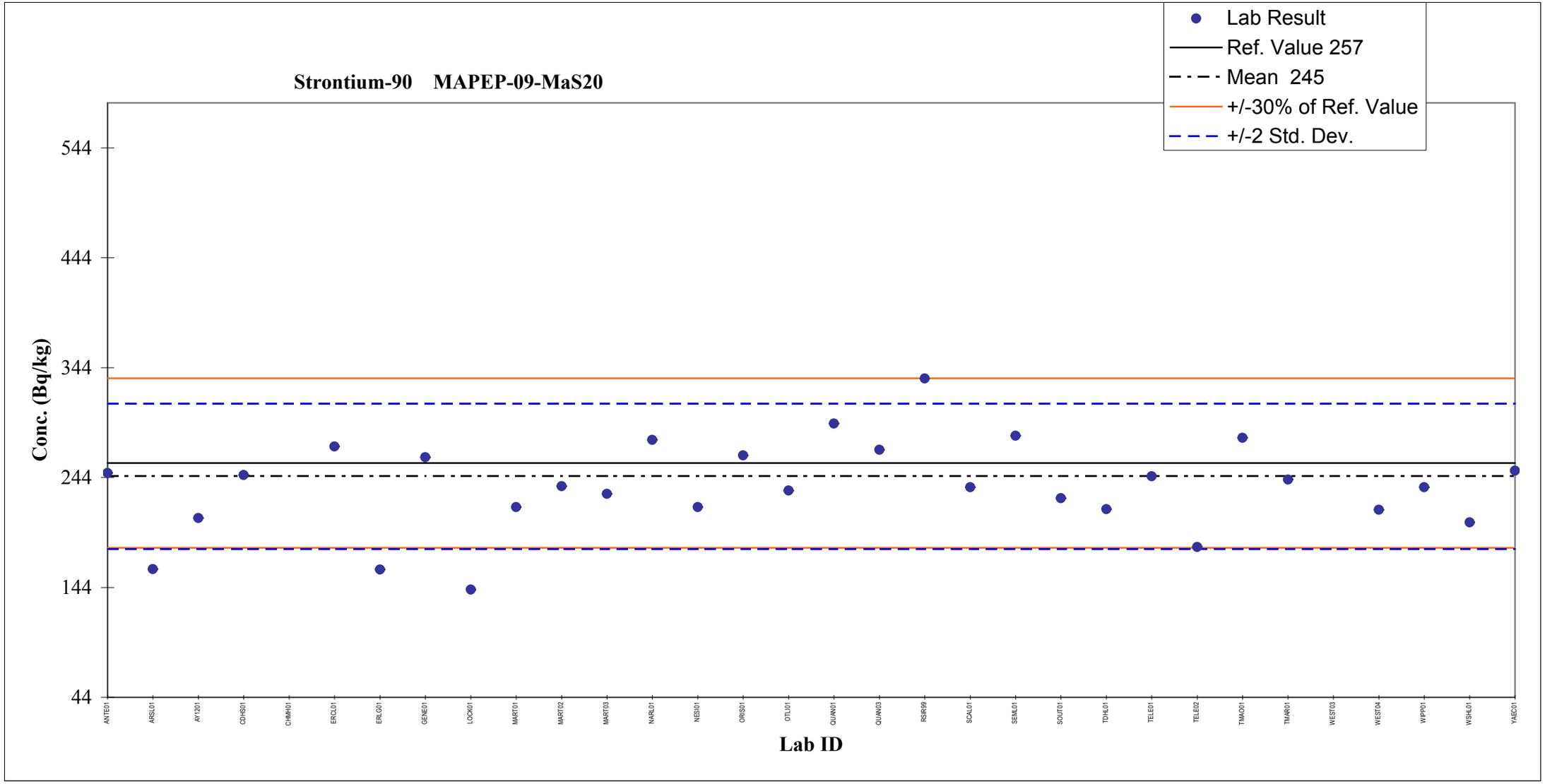

Manganese-54 MAPEP-09-MaS20
Lab Result
Ref. Value 307
Mean 323
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
671
571
471
371
271
171
71
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CESL01
CHMH01
DPHE01
ERCL01
ERHD99
ERLG01
ERPD99
ETTP01
EULC01
FDHE01
FDCH01
FMEC99
FSCL01
GENE01
GPCL01
HECR01
HERR01
IAEA99
ISUP01
JUNN01
KDHE01
LANL01
LAWR01
LAWR02
LDRA99
LOCK01
LOCK03
MART01
MART02
MART03
MDPH01
MKME01
NARL01
NESI01
NJDH01
NRLL99
NTSI01
ODHL01
ORIS01
OTL01
PESL01
QUAN01
QUAN03
RMCL99
RPSC01
RSAL01
RSIR99
SCAL01
SEML01
SLAC01
SLDL01
SNRC99
SOUT01
SRPD01
TDHL01
TELE01
TELE02
TMAO01
TMAR01
TNUT01
UQNP99
USED99
WEST03
WEST04
WIPH01
WPP01
WSHL01
YAEC01
Lab ID

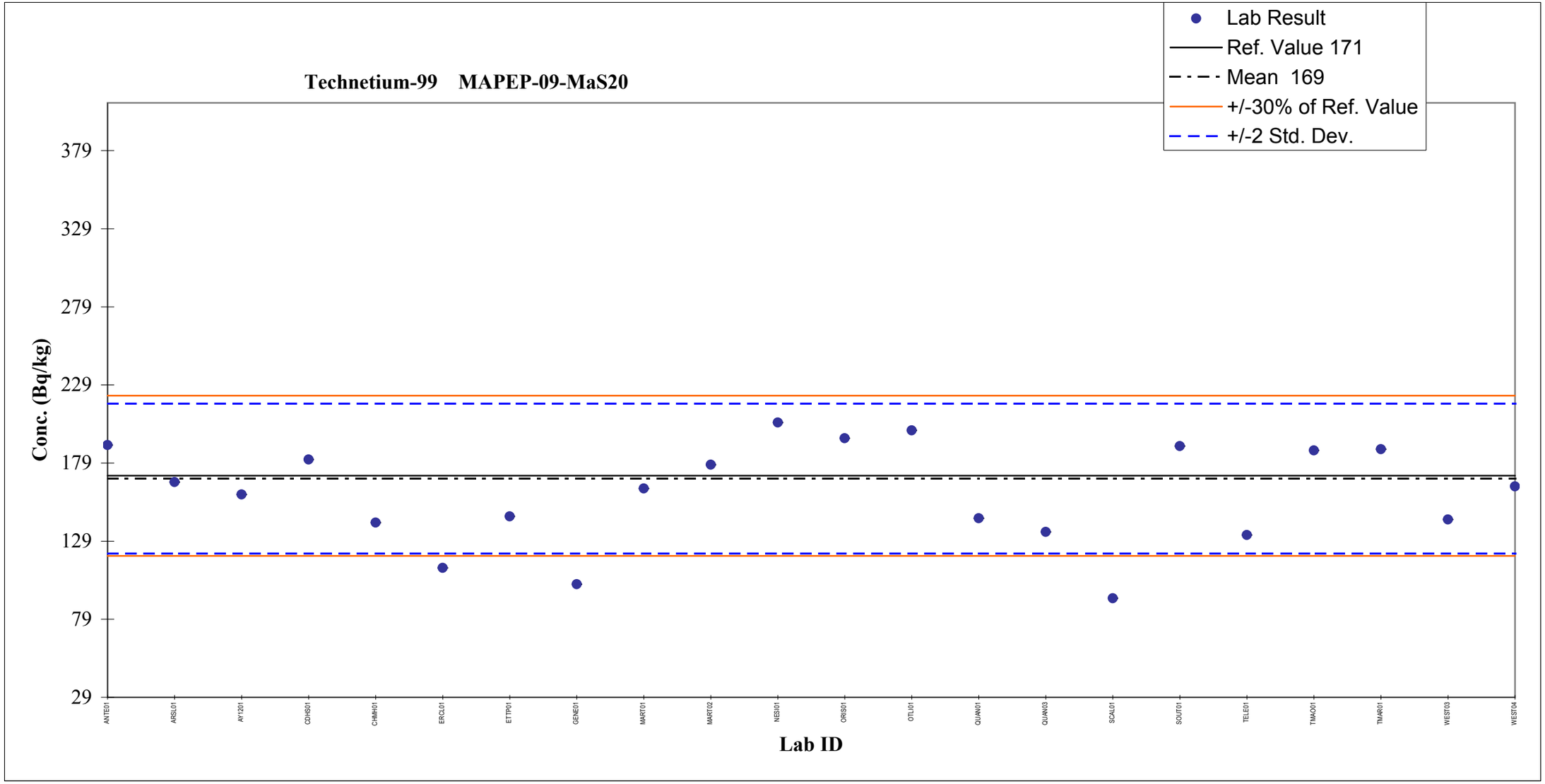

Nickel-63 MAPEP-09-MaS20
Lab Result
Ref. Value 514.9
Mean 498.6
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
1013.0
913.0
813.0
713.0
613.0
513.0
413.0
313.0
213.0
113.0
ANTE01
ARSU01
ERCU01
GRNE01
NES01
ORIS01
QUAN03
SCAU01
SOUT01
TELE01
TMAR01
TMAR01
WEST04
Lab ID

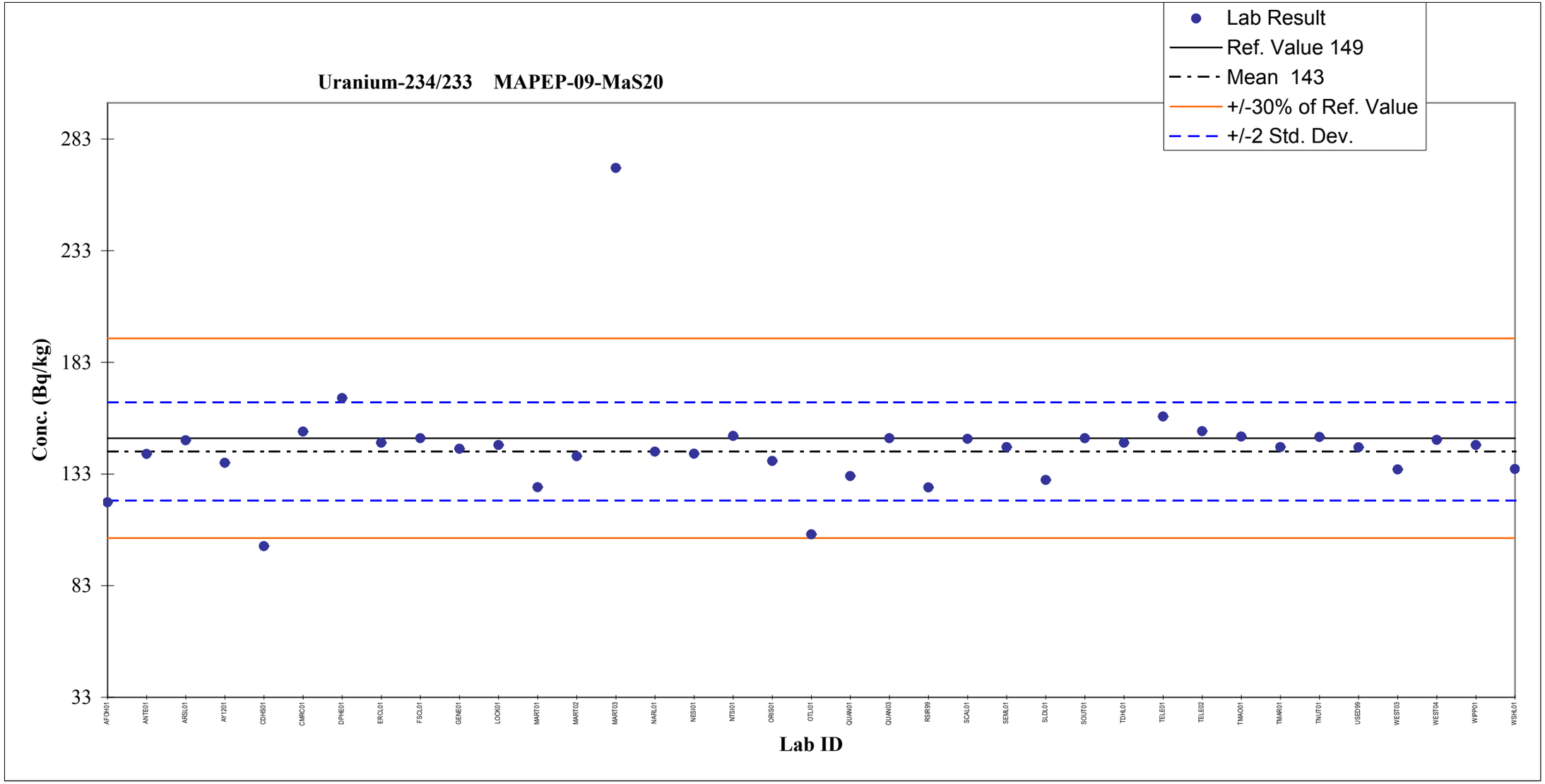

Plutonium-238 MAPEP-09-MaS20
Lab Result
Ref. Value 25.3
Mean 25.7
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
55.5
45.5
35.5
25.5
15.5
5.5
AFCN01
ANTE01
ARSL01
AY1201
CDHS01
CESL01
CMRC01
DPHE01
ERCL01
GENE01
LOCK01
LOCK03
MART01
MART02
MART03
NARL01
NESI01
NTSI01
ORIS01
OTL01
QUAN01
QUAN03
RSIR99
SCAL01
SEML01
SLDL01
SOUT01
TDHL01
TELE02
TIMA001
TMAR01
WEST03
WEST04
WPP001
Lab ID

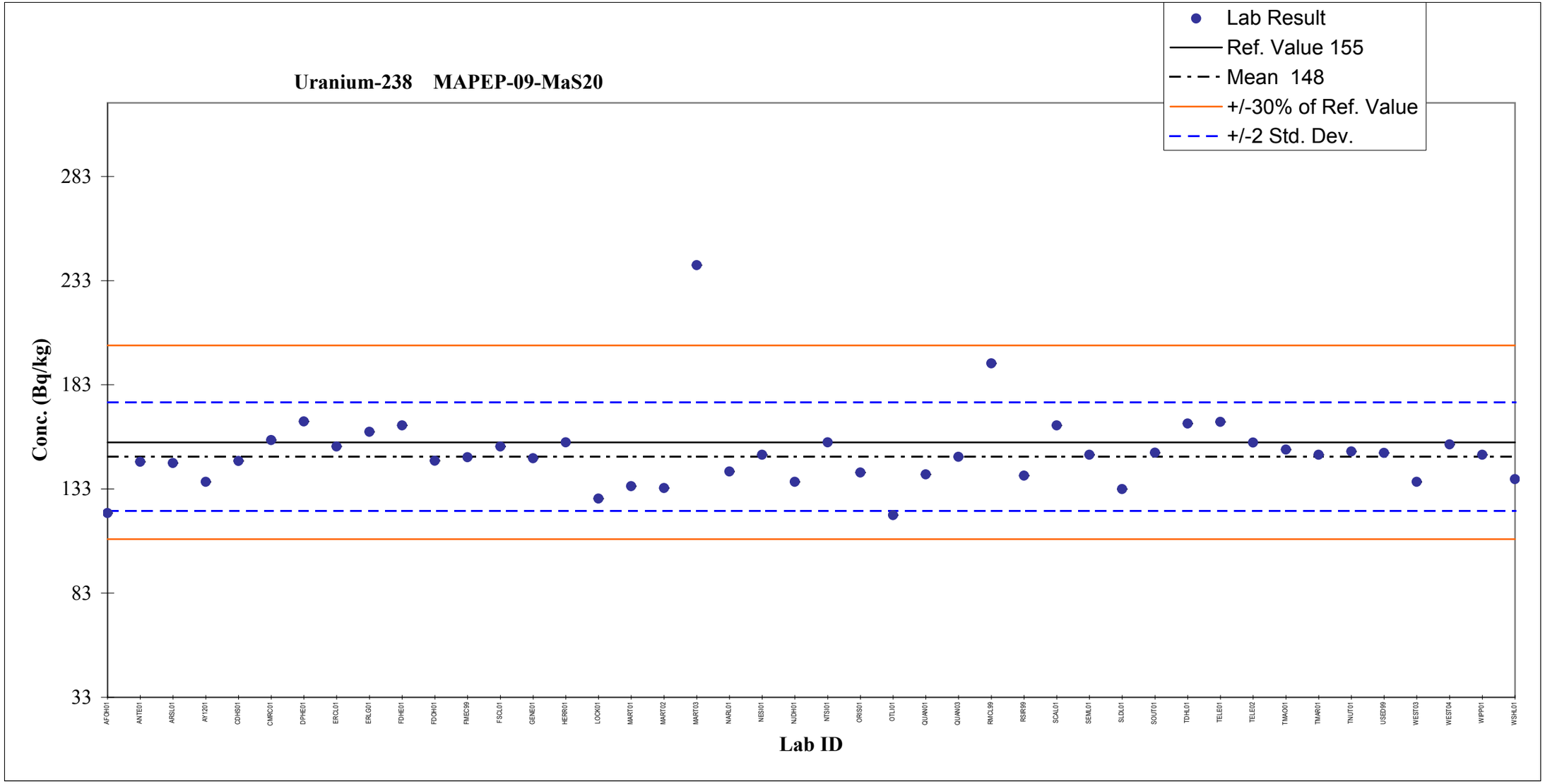

Plutonium-239/240 MAPEP-09-MaS20
Lab Result
Ref. Value 0.29
Mean 0.47
+/-2 Std. Dev.
Conc. (Bq/kg)
4.00
3.00
2.00
1.00
0.00
-1.00
-2.00
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CESL01
CMRC01
DPHE01
ERCL01
GENE01
LOCK01
LOCK03
MART01
MART02
MART03
NARL01
NESI01
ORIS01
QUAN01
QUAN03
RSIR99
SCAL01
SEML01
SLDL01
SOUT01
TELE02
TMAO01
TMAR01
WEST03
WEST04
WPP01
Lab ID


Potassium-40 MAPEP-09-MaS20
Lab Result
Ref. Value 570
Mean 614
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
1136
936
736
536
336
136
AFCH01
ANTE01
AY1201
CDHS01
CESL01
CHMM01
DPHE01
ERCL01
ERFD99
EULC01
FDHE01
FDCH01
FMEC99
FSCL01
GENE01
GPCL01
HECR01
HERR01
IAEA99
ISUP01
KDHE01
LAVR01
LAVR02
LDRA99
LOCK01
LOCK03
MART01
MART02
MART03
MDPH01
MKME01
NARL01
NESI01
NJDH01
NRLL99
NTSI01
ODHL01
ORIS01
OTL01
PESL01
QUAN01
QUAN03
RMCL99
RPSC01
RSAL01
RSIR99
SCAL01
SEML01
SLAC01
SLDL01
SNRC99
SOUT01
SRPD01
TDHL01
TELE01
TELE02
TMAL001
TMAR01
TNUT01
USED99
WEST03
WEST04
WIPH01
WIPP01
WSHL01
YAEC01
Lab ID


Strontium-90 MAPEP-09-MaS20
Lab Result
Ref. Value 257
Mean 245
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
544
444
344
244
144
44
ANTE01
ARSL01
AY1201
CDHS01
CHMH01
ERCL01
ERLG01
GENE01
LOCK01
MART01
MART02
MART03
NARL01
NESI01
ORIS01
OTL01
QUAN01
QUAN03
RSR99
SCAL01
SEML01
SOUT01
TDHL01
TELE01
TELE02
TMAL01
TMAR01
WEST03
WEST04
WPP01
WSHL01
YAE01
Lab ID


Technetium-99 MAPEP-09-MaS20
Lab Result
Ref. Value 171
Mean 169
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
379
329
279
229
179
129
79
29
ANTE01
ARSL01
AY1201
CDHS01
CHMH01
ERCL01
ETTP01
GENE01
MART01
MART02
NESI01
ORIS01
OTL01
QUAN01
QUAN03
SCAL01
SOUT01
TELE01
TIMA001
TMAR01
WEST03
WEST04
Lab ID


Uranium-234/233 MAPEP-09-MaS20
Lab Result
Ref. Value 149
Mean 143
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
283
233
183
133
83
33
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CMRC01
DPHE01
ERCL01
FSCL01
GENE01
LOCK01
MART01
MART02
MART03
NARL01
NESI01
NTSI01
ORISI01
OTL01
QUAN01
QUAN03
RSIR99
SCAL01
SEML01
SLCL01
SOUT01
TDHL01
TELE01
TELE02
TMAL001
TMAR01
TNUT01
USED99
WEST03
WEST04
WIPP01
WSHL01
Lab ID


Uranium-238 MAPEP-09-MaS20
Lab Result
Ref. Value 155
Mean 148
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
283
233
183
133
83
33
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CMRC01
DPHE01
ERCL01
ERLG01
FDHE01
FDCH01
FMEC99
FSCL01
GENE01
HERR01
LOCK01
MART01
MART02
MART03
NARL01
NESI01
NJDH01
NTSI01
ORIS01
OTL01
QUAN01
QUAN03
RMCL99
RSIR99
SCAL01
SEML01
SLDL01
SOUT01
TDHL01
TELE01
TELE02
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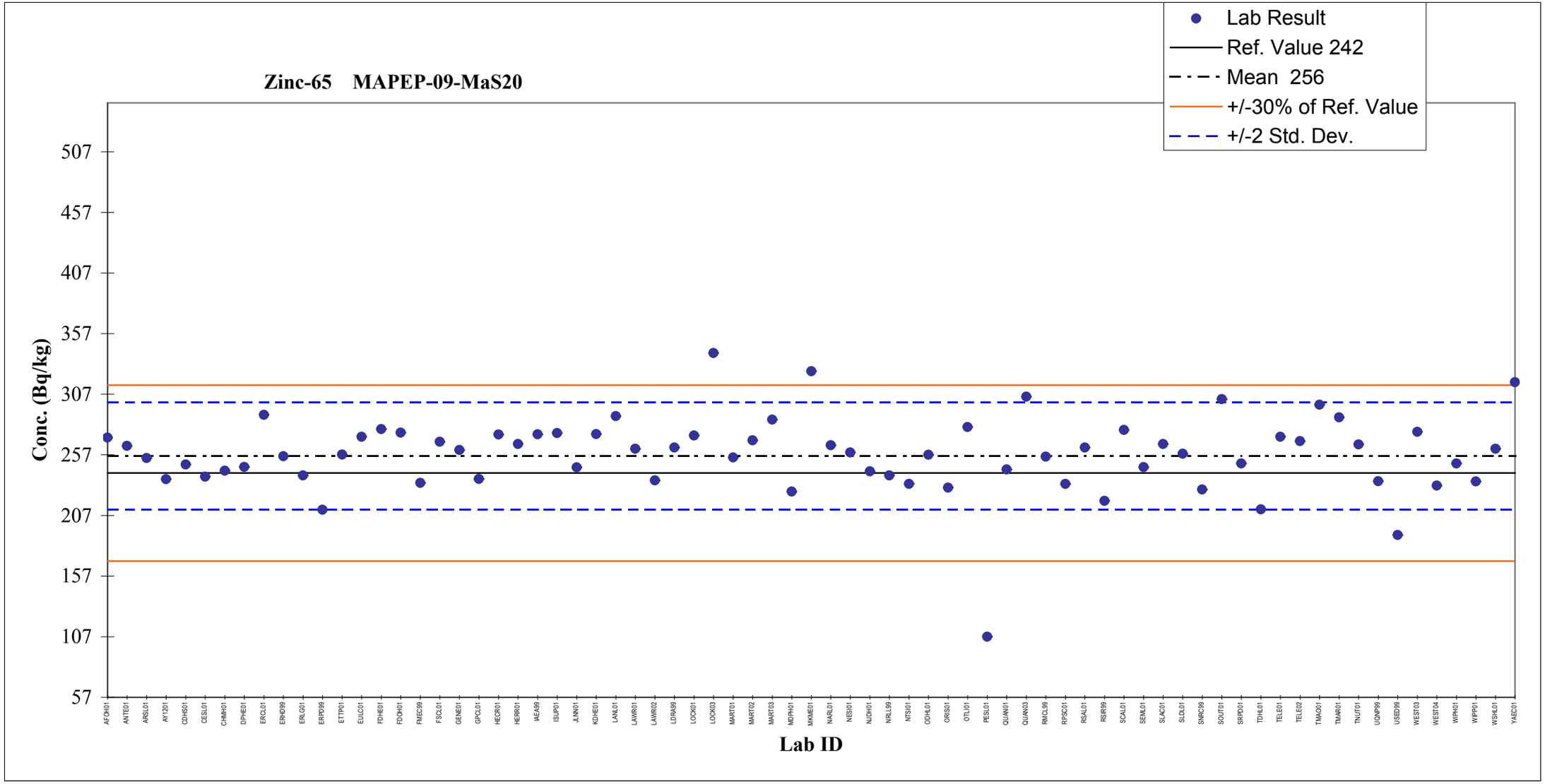
TMAR01
TNUT01
USED99
WEST03
WEST04
WIPP01
WSHL01
Lab ID


Zinc-65 MAPEP-09-MaS20
Lab Result
Ref. Value 242
Mean 256
+/-30% of Ref. Value
+/-2 Std. Dev.
Conc. (Bq/kg)
507
457
407
357
307
257
207
157
107
57
AFCH01
ANTE01
ARSL01
AY1201
CDHS01
CESL01
CHMH01
DPHE01
ERCL01
ERHD99
ERLG01
ERPD99
ETTP01
EULC01
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JUNN01
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RSIR99
SCAL01
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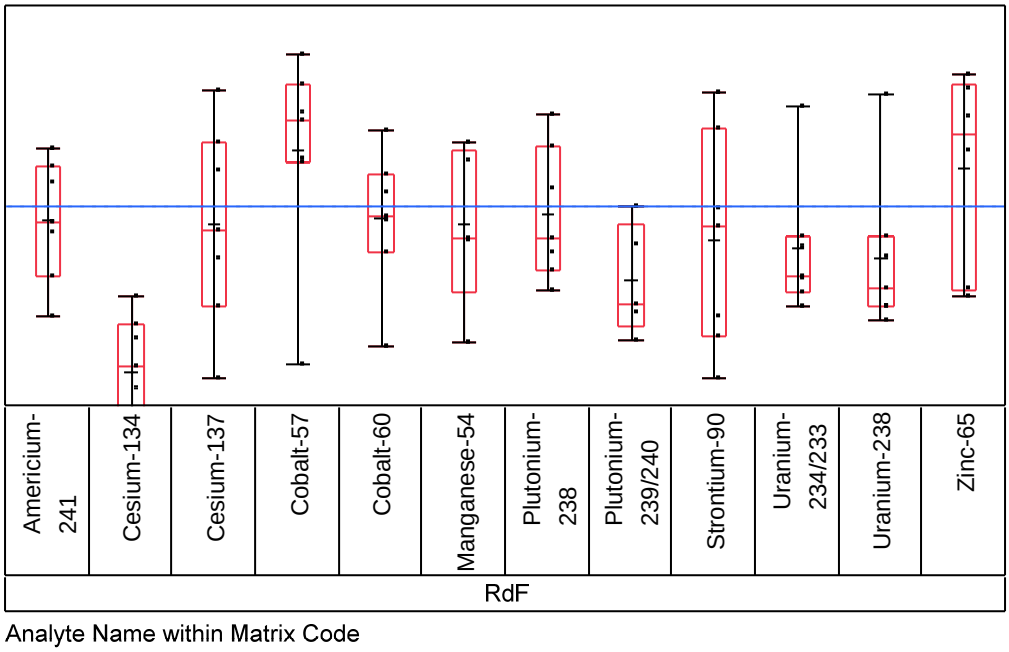
SLDL01
SNRC99
SOUT01
SRPD01
TDHL01
TELE01
TELE02
TMAO01
TMAR01
TNUT01
UQNP99
USED99
WEST03
WEST04
WIPH01
WPP01
WSHL01
YAEC01
Lab ID

The intent of the historical graphs contained within this report is to graphically illustrate how laboratories are historically performing within the MAPEP program. The data points (small 'dots') plot the bias (or z-score for organic constituents) of each of the analytes in each of the matrices for each of the studies for MAPEP since Series 12. The BLACK small horizontal line is the mean of the population of the bias shown for that analyte in the matrix. The red box is a typical "box plot" of the data.



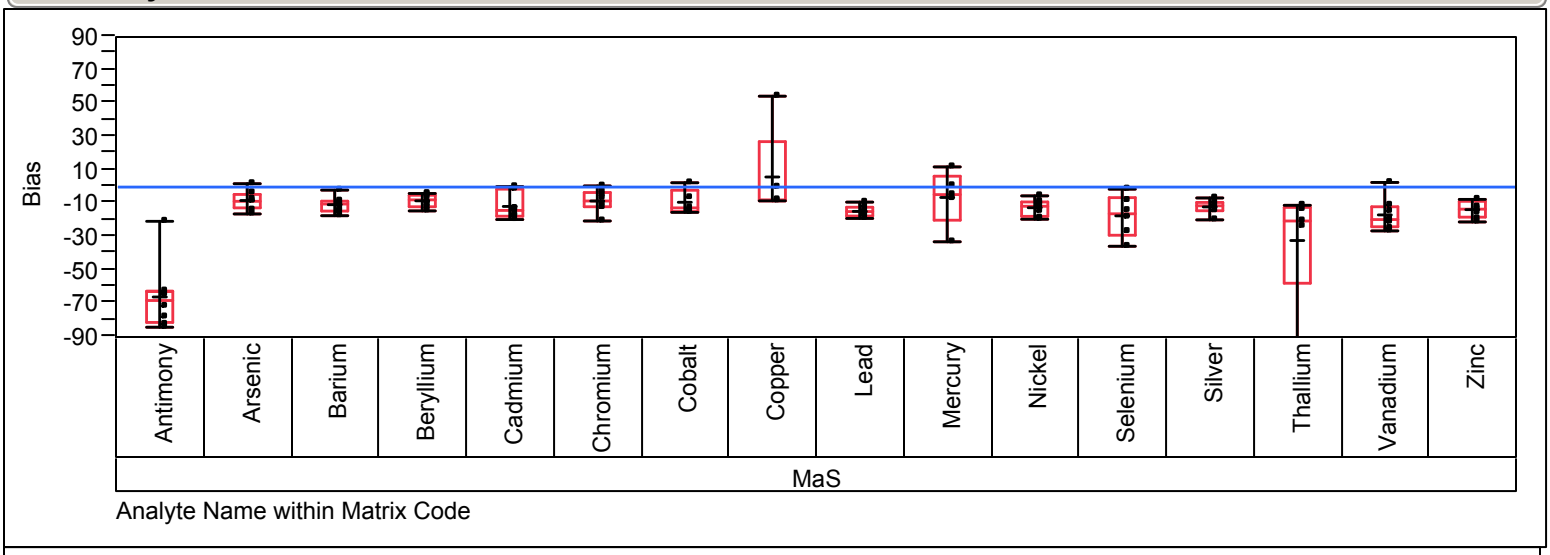
The box plots summarize the distribution of points for each analyte. The ends of the box are the 25th and 75th quantiles. The difference between the quartiles is the interquartile range. The line across the middle of the box identifies the median sample value. Each box has lines, sometimes called whiskers, that extend from each end. The whiskers extend from the ends of the end to the outermost data point that falls within the distances computed .

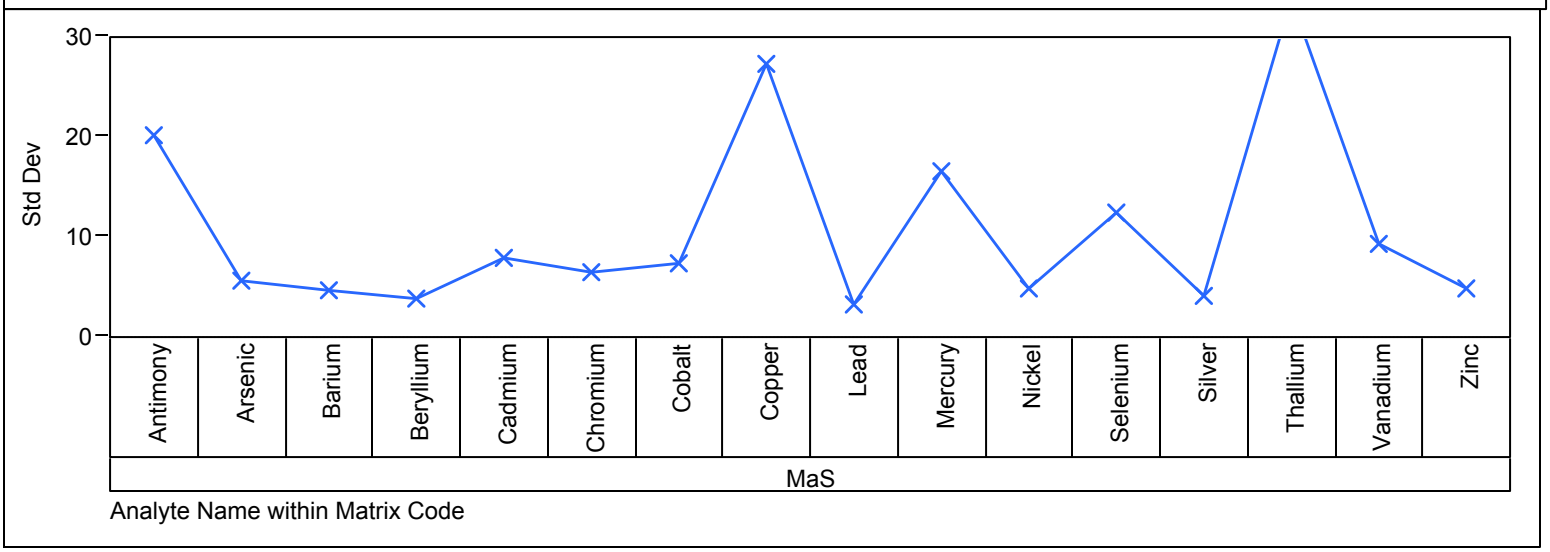
The box plot along with the laboratory bias data points and the mean visually illustrate the breadth of the distribution and where any potential outliers in the distribution might lie. The ideal visual representation would be to have a very small box plot on top of a very small distribution of data thus indicating very good precision. Accuracy would be reflected by having the mean bias very close to zero (i.e. the box plot overlaps zero at some point).

The Standard Deviation plot below the Bias plot is just that, the standard deviation of the % bias shown above. The ideal pot would be to have the standard deviation as small as possible.

Variability Gauge Lab Code=AALI01

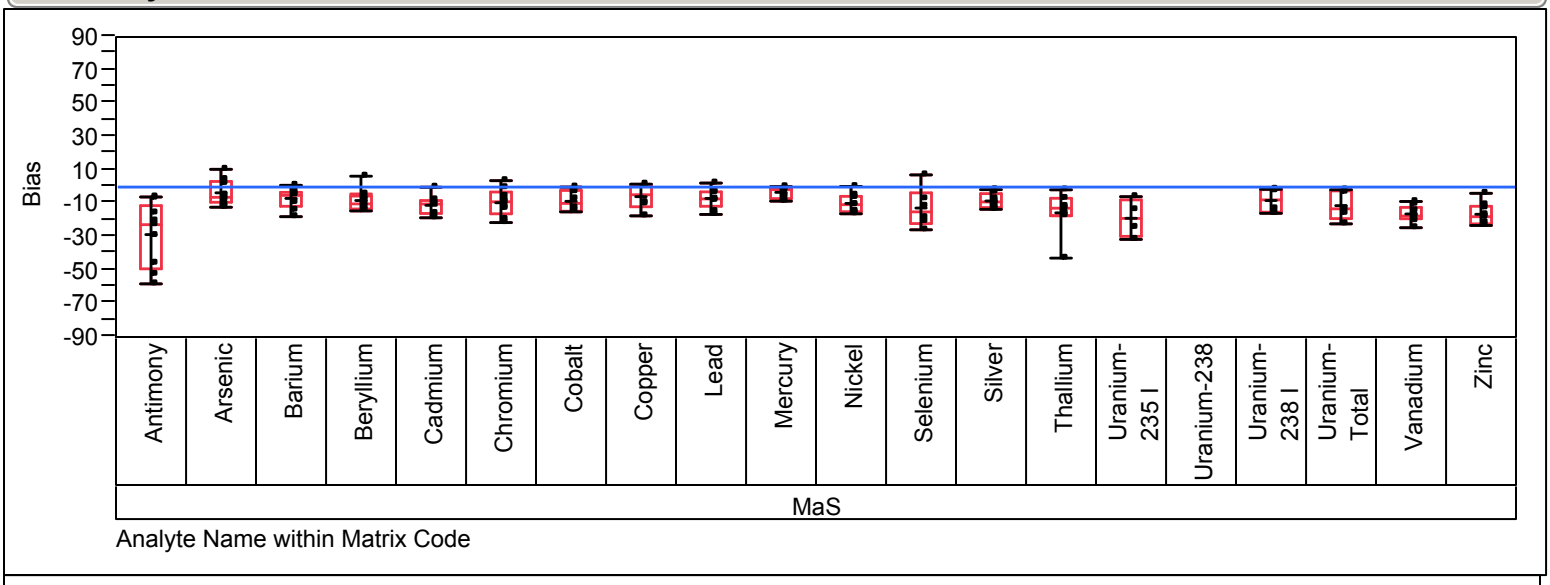
Variability Chart for Bias

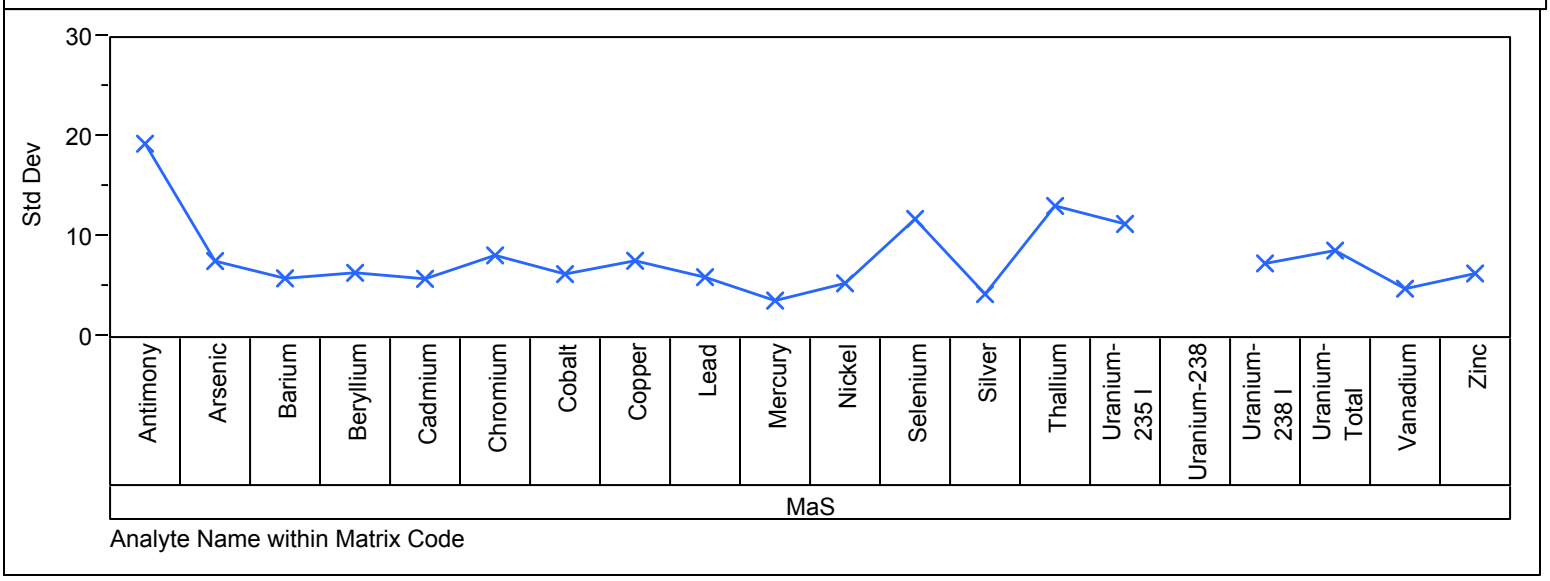




Variability Gauge Lab Code=ANTE01

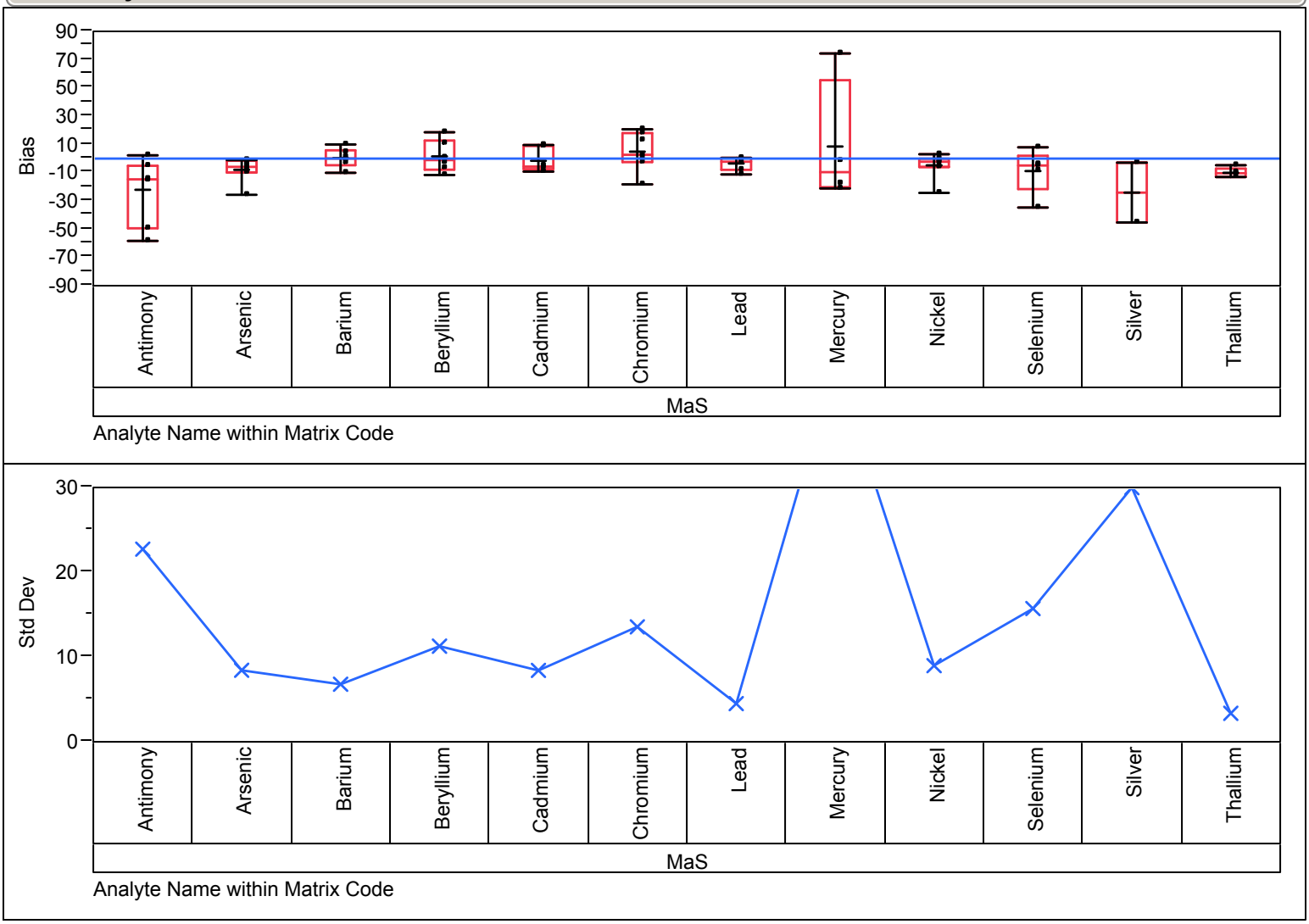
Variability Chart for Bias





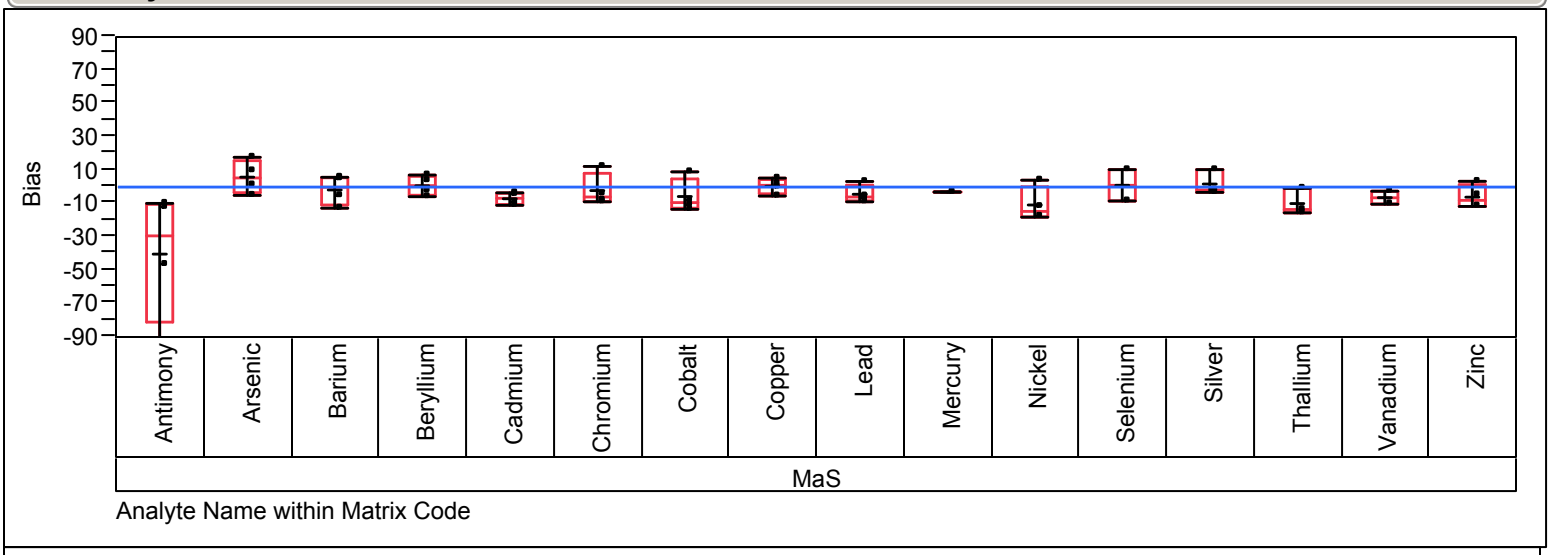
Variability Gauge Lab Code=ARGO01

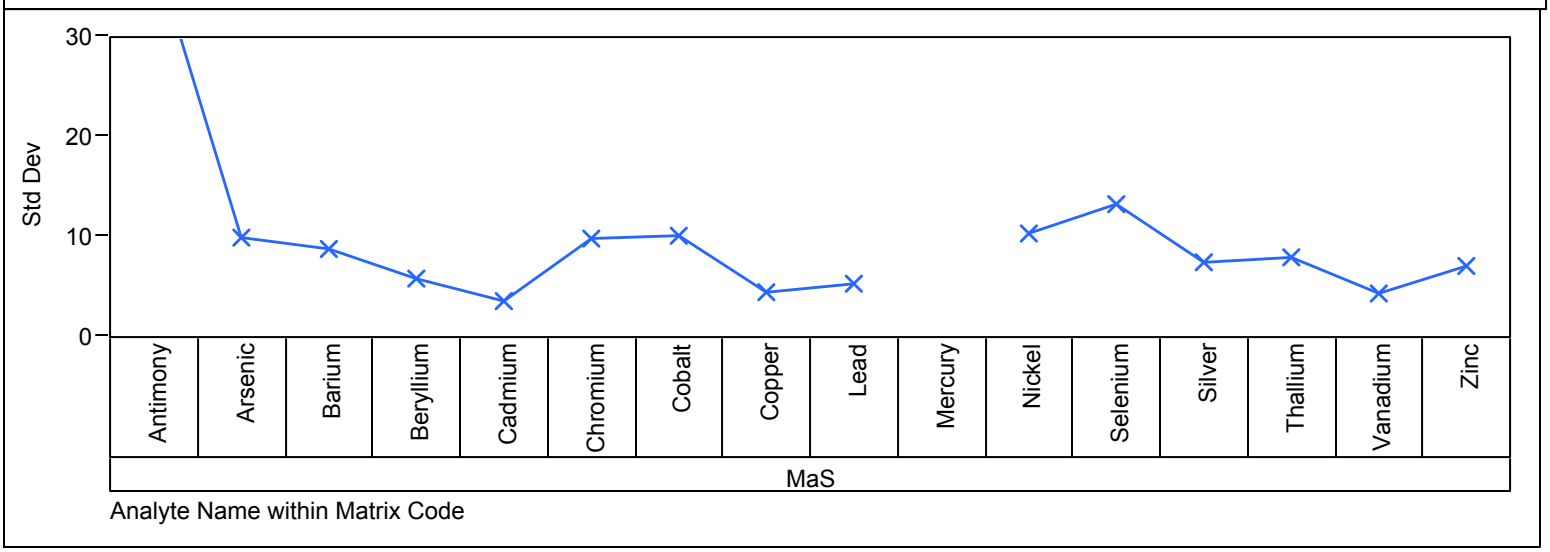
Variability Chart for Bias



Variability Gauge Lab Code=ASHL01

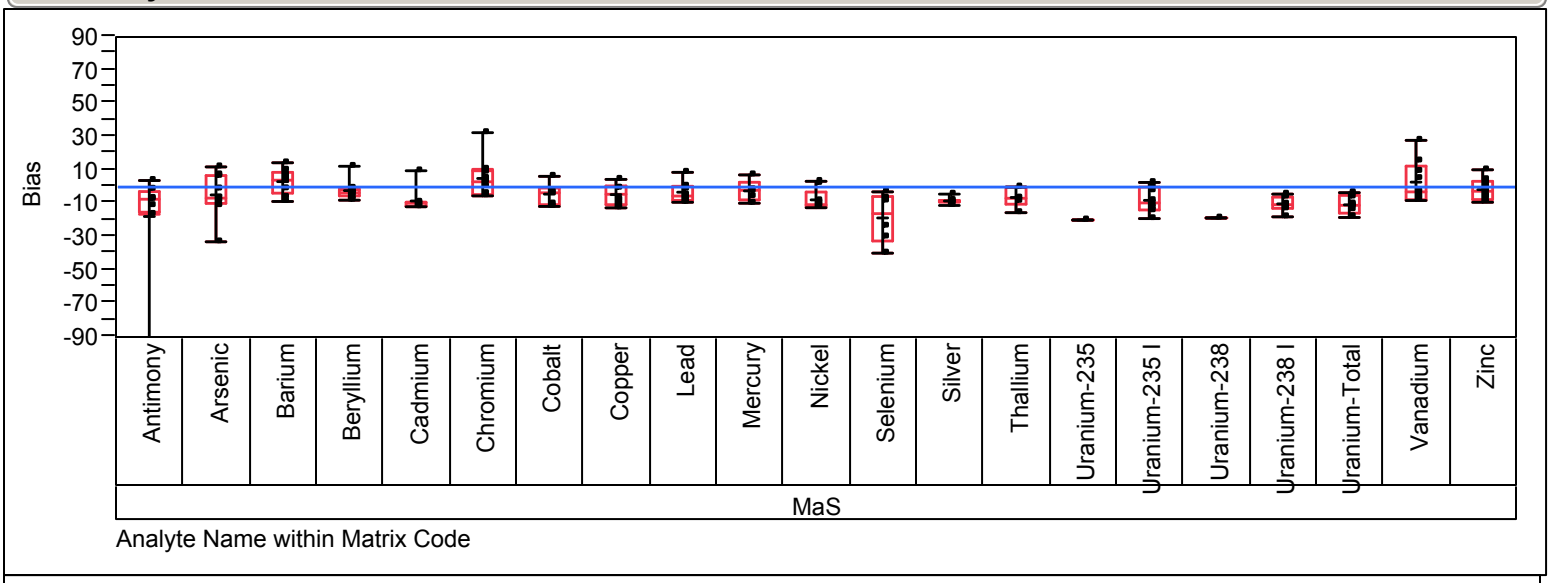
Variability Chart for Bias

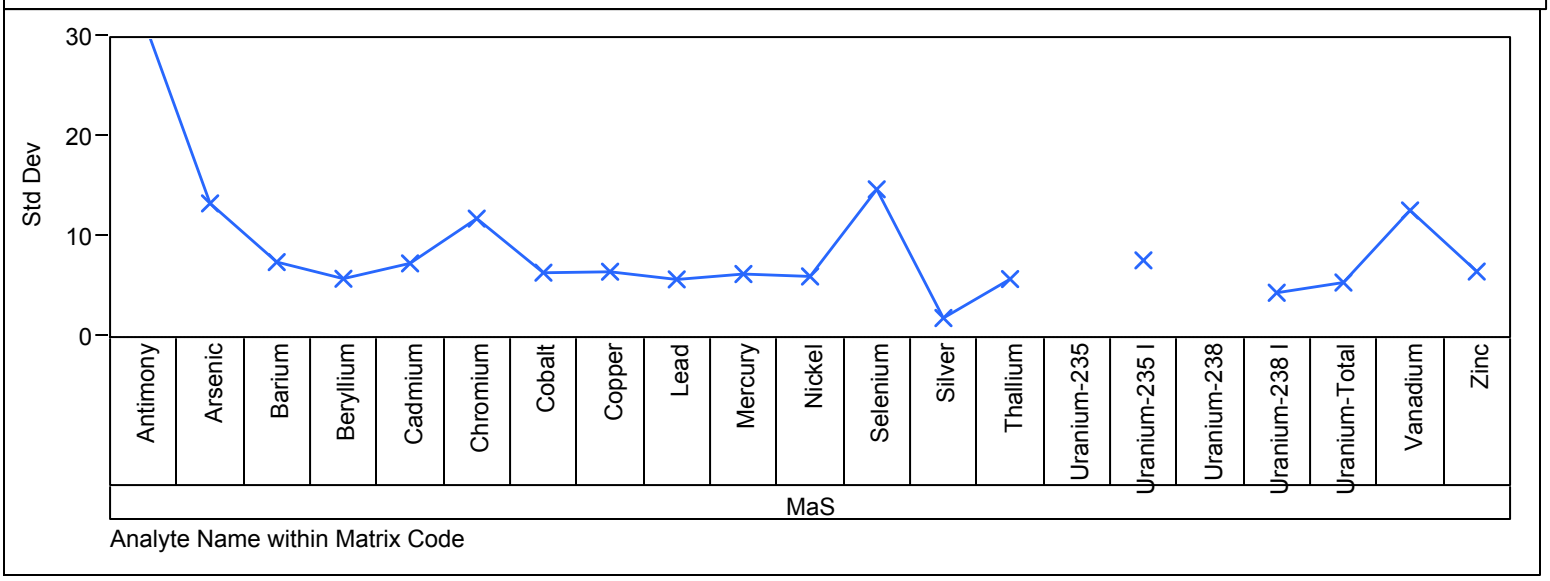




Variability Gauge Lab Code=AY1201

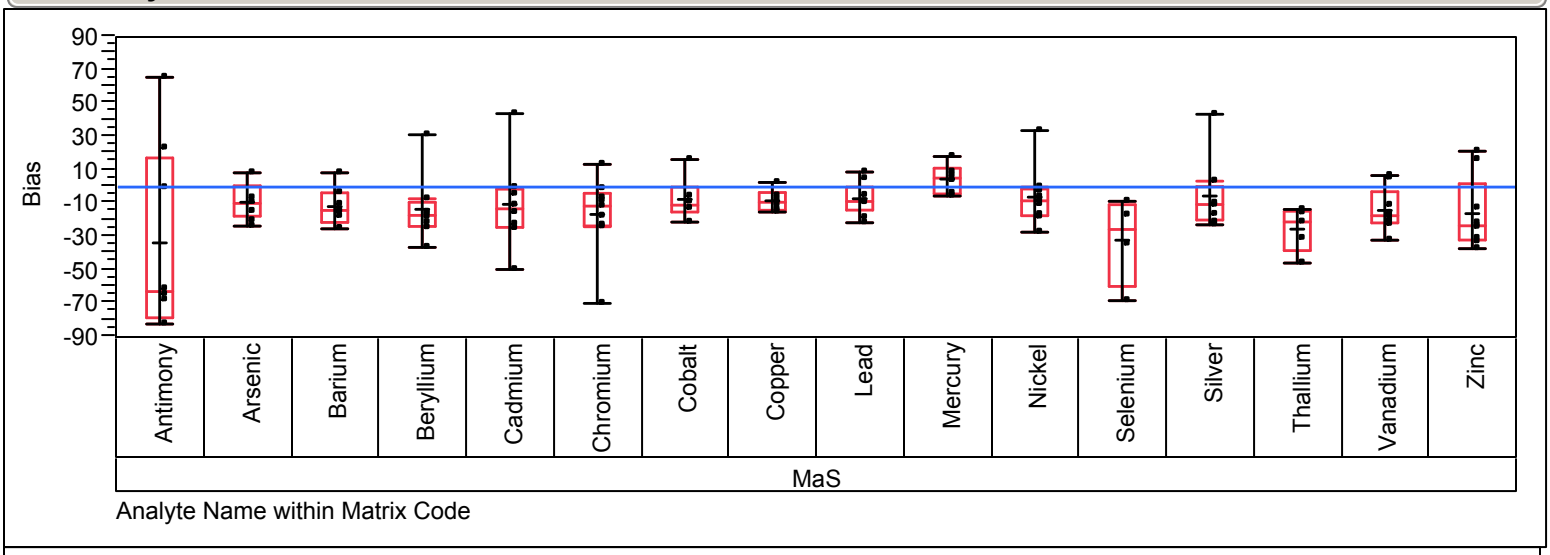
Variability Chart for Bias

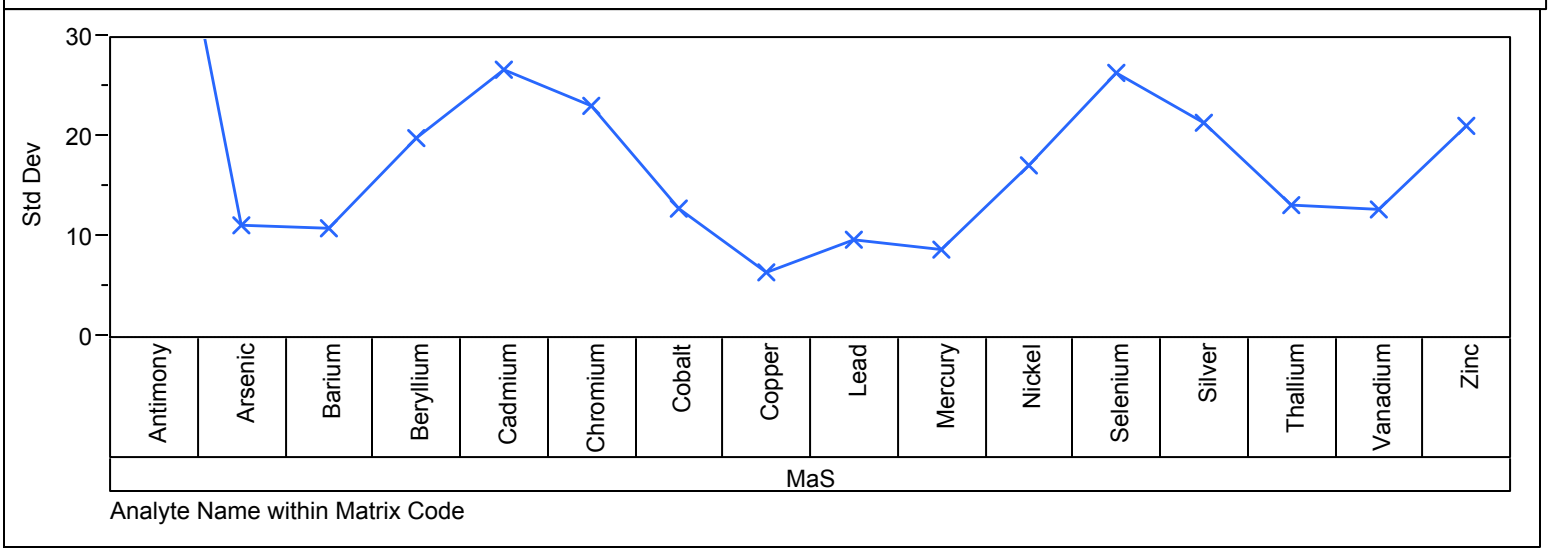




Variability Gauge Lab Code=BNEL01

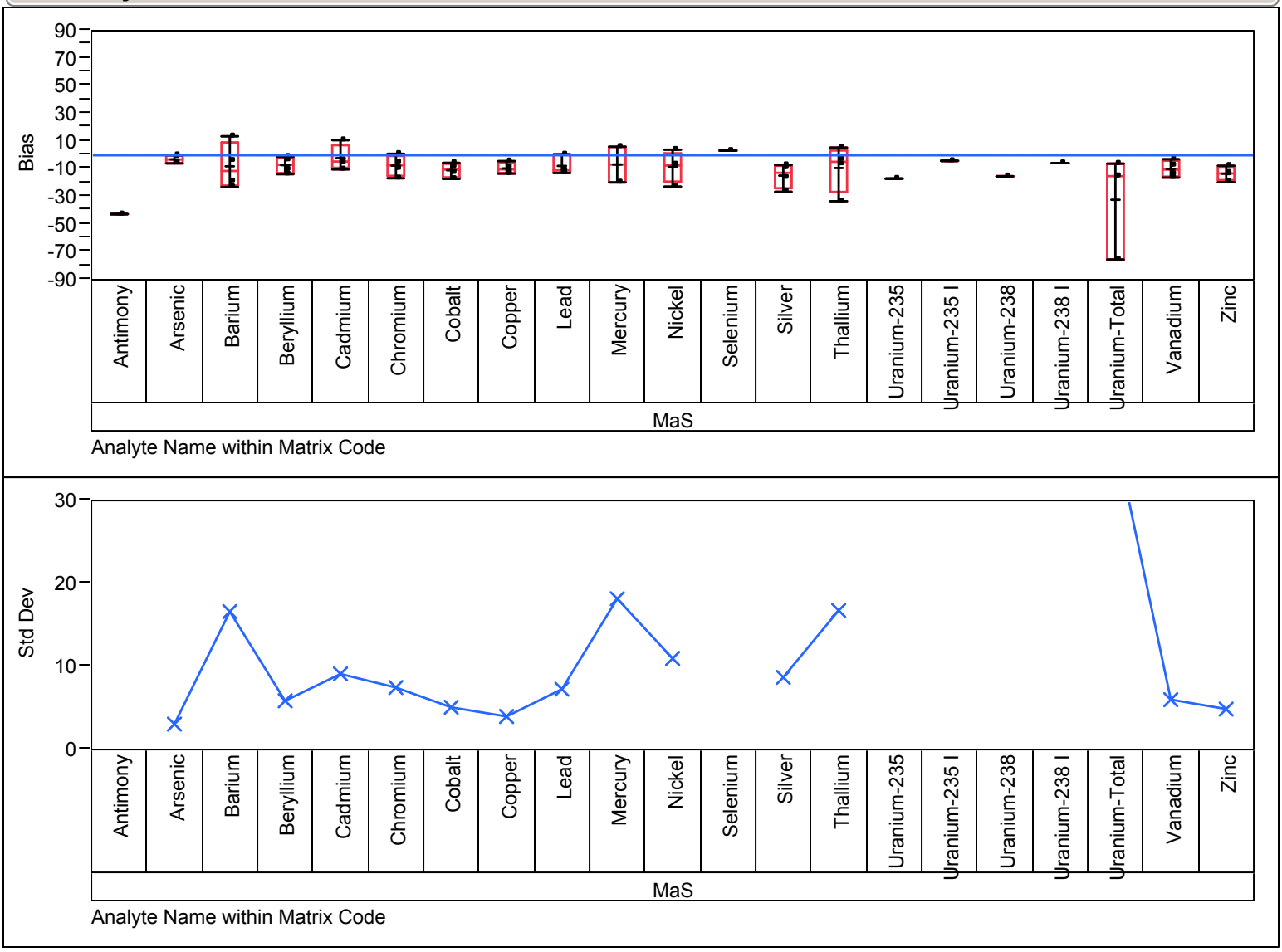
Variability Chart for Bias





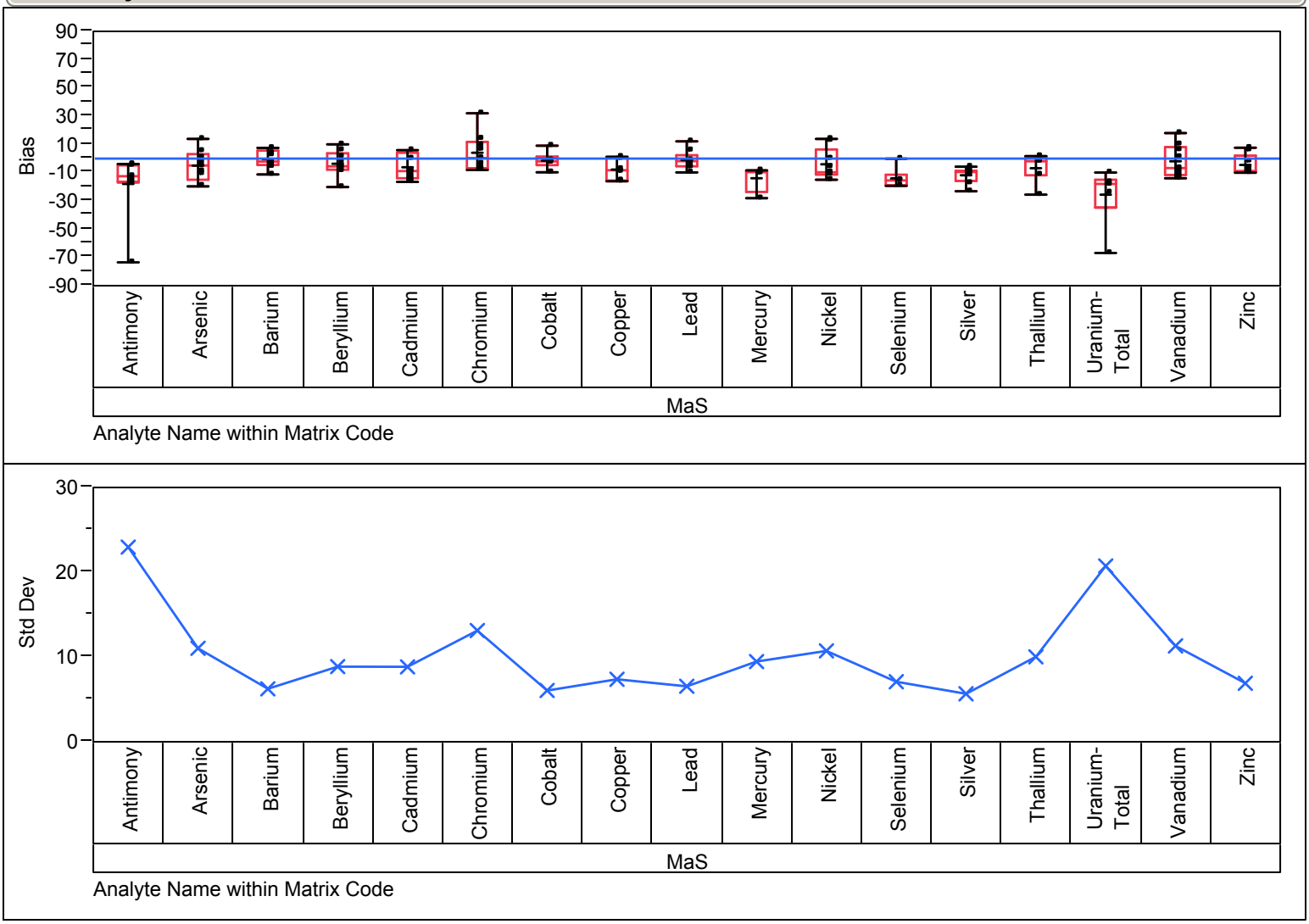
Variability Gauge Lab Code=CHMH01

Variability Chart for Bias



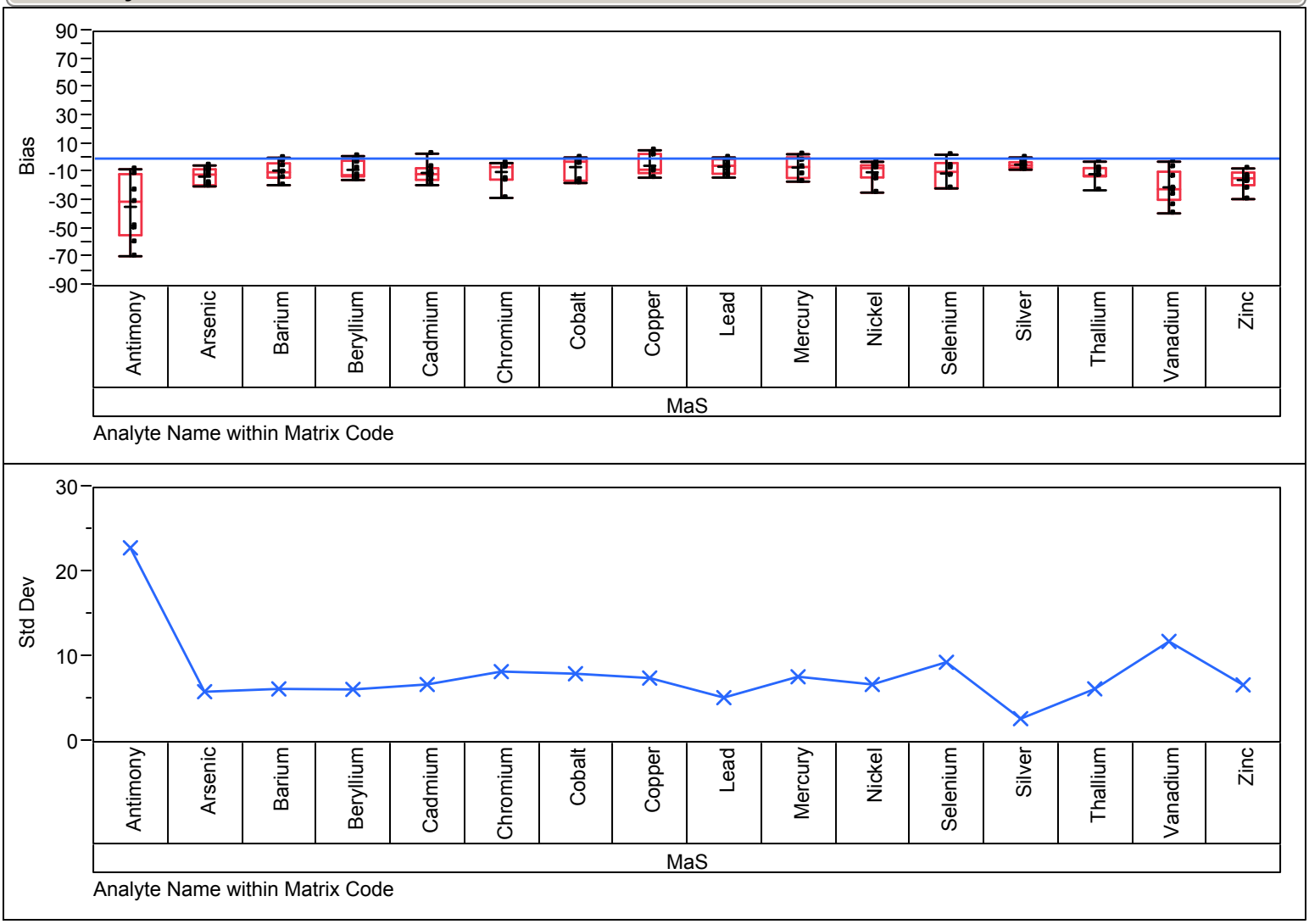
Variability Gauge Lab Code=CORE02

Variability Chart for Bias



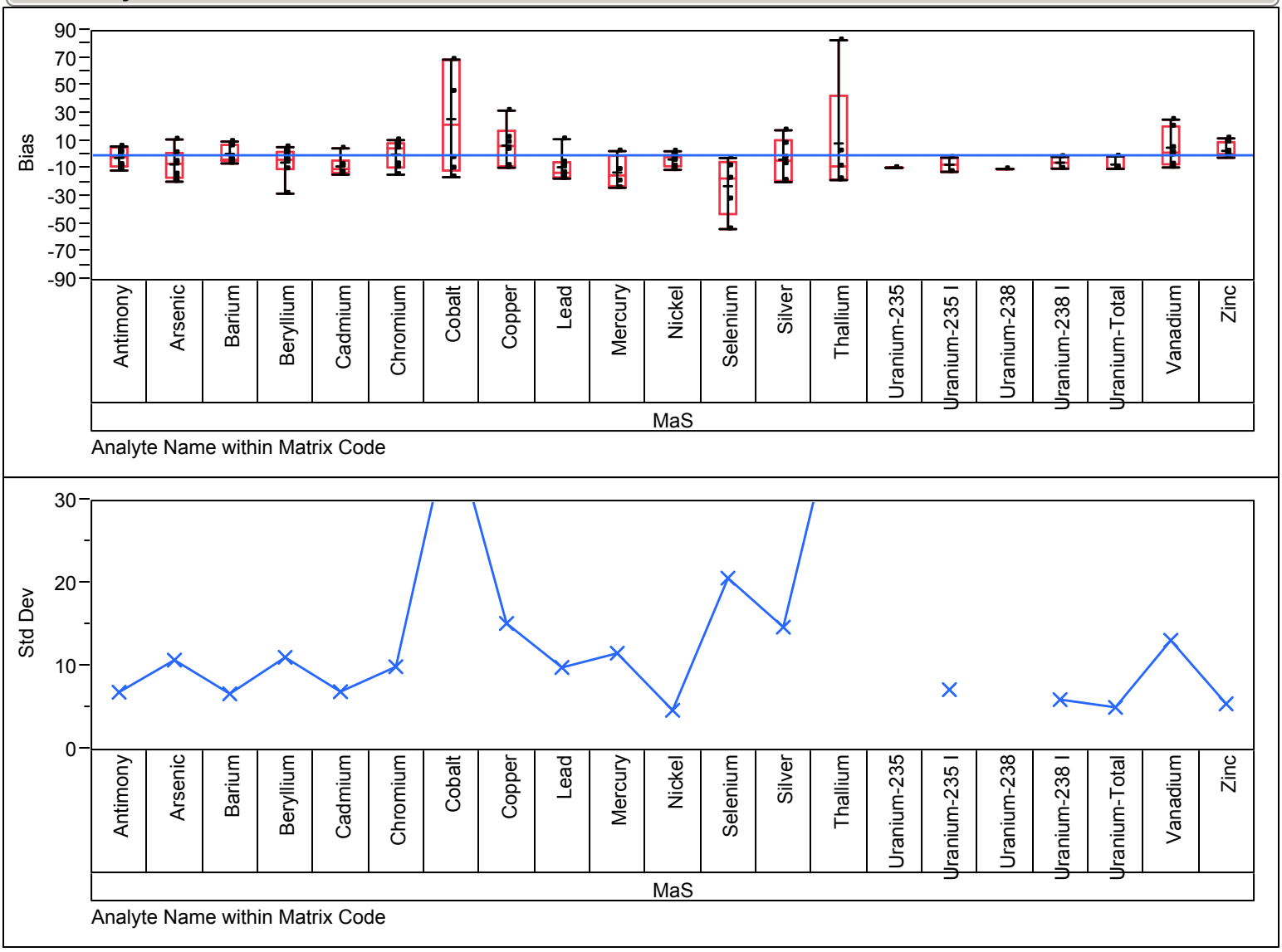
Variability Gauge Lab Code=DAFI01

Variability Chart for Bias



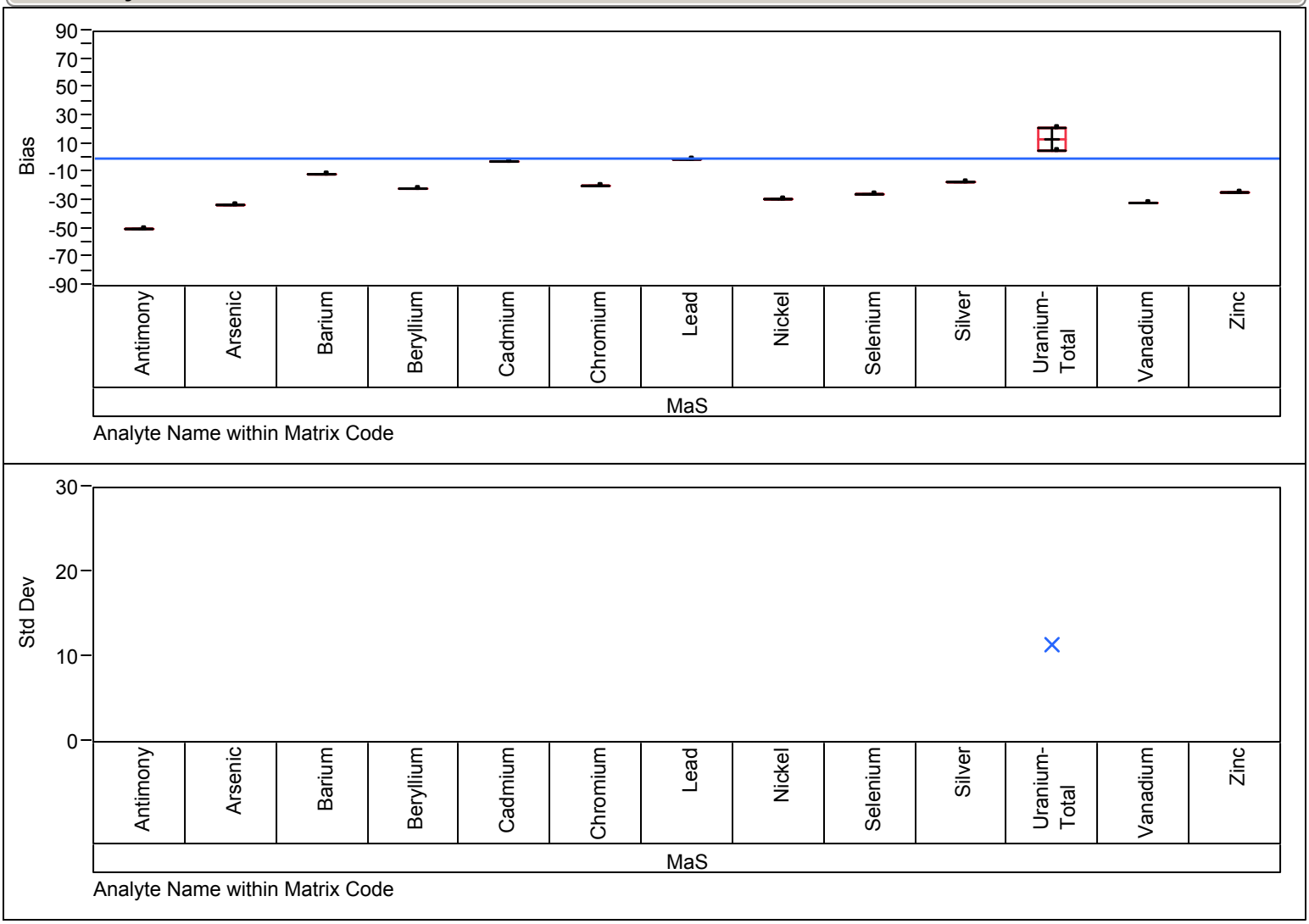
Variability Gauge Lab Code=ETTP01

Variability Chart for Bias



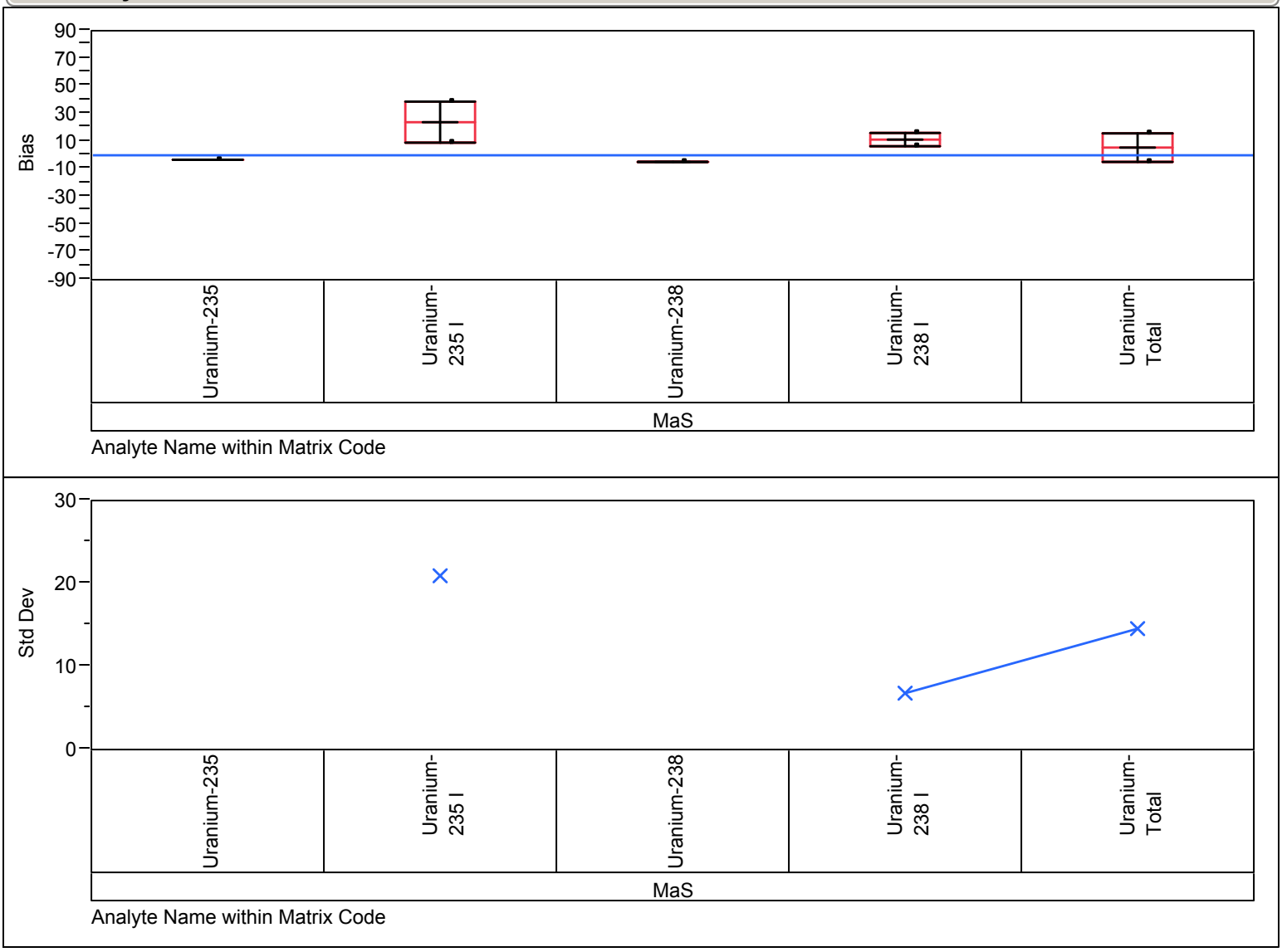
Variability Gauge Lab Code=FERM01

Variability Chart for Bias



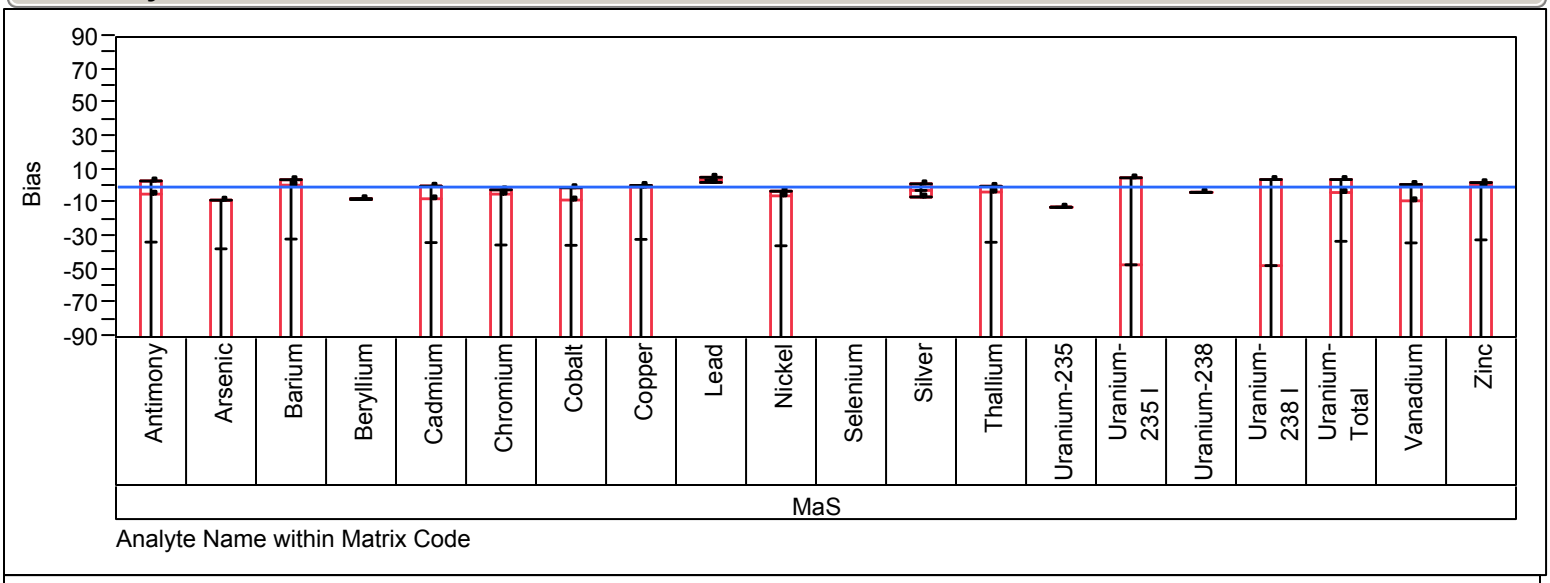
Variability Gauge Lab Code=FMEC99

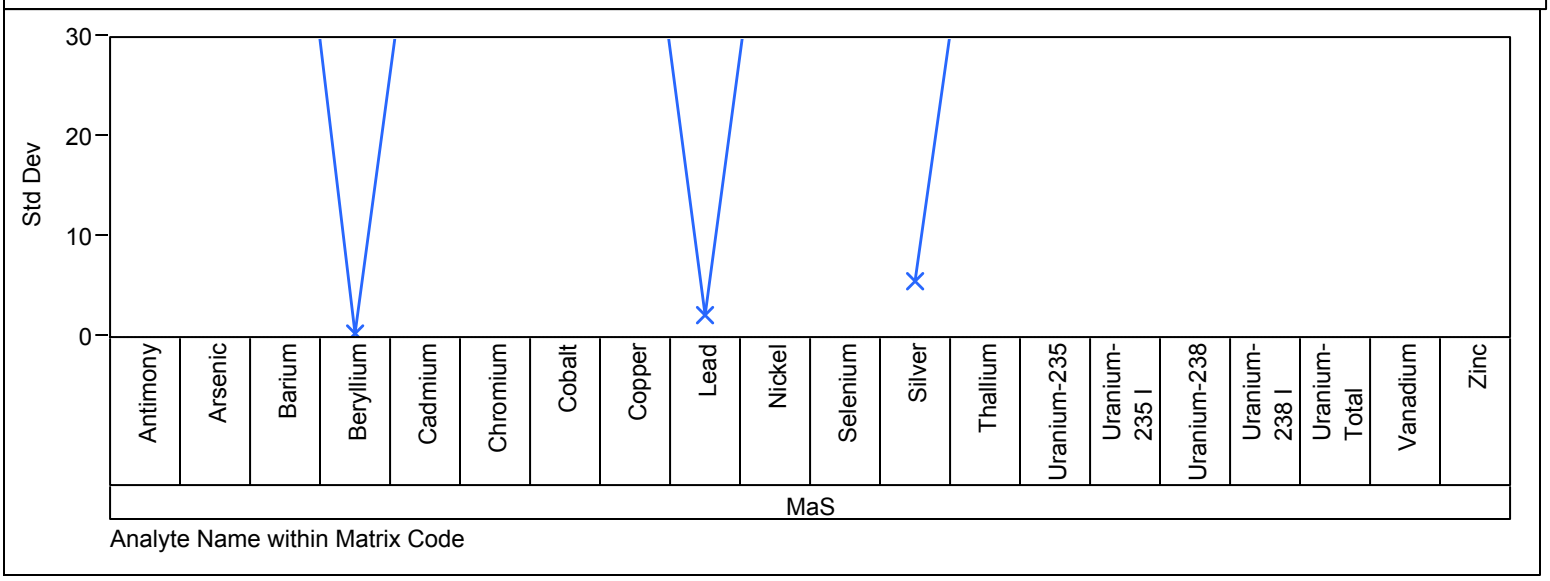
Variability Chart for Bias



Variability Gauge Lab Code=FSCL01

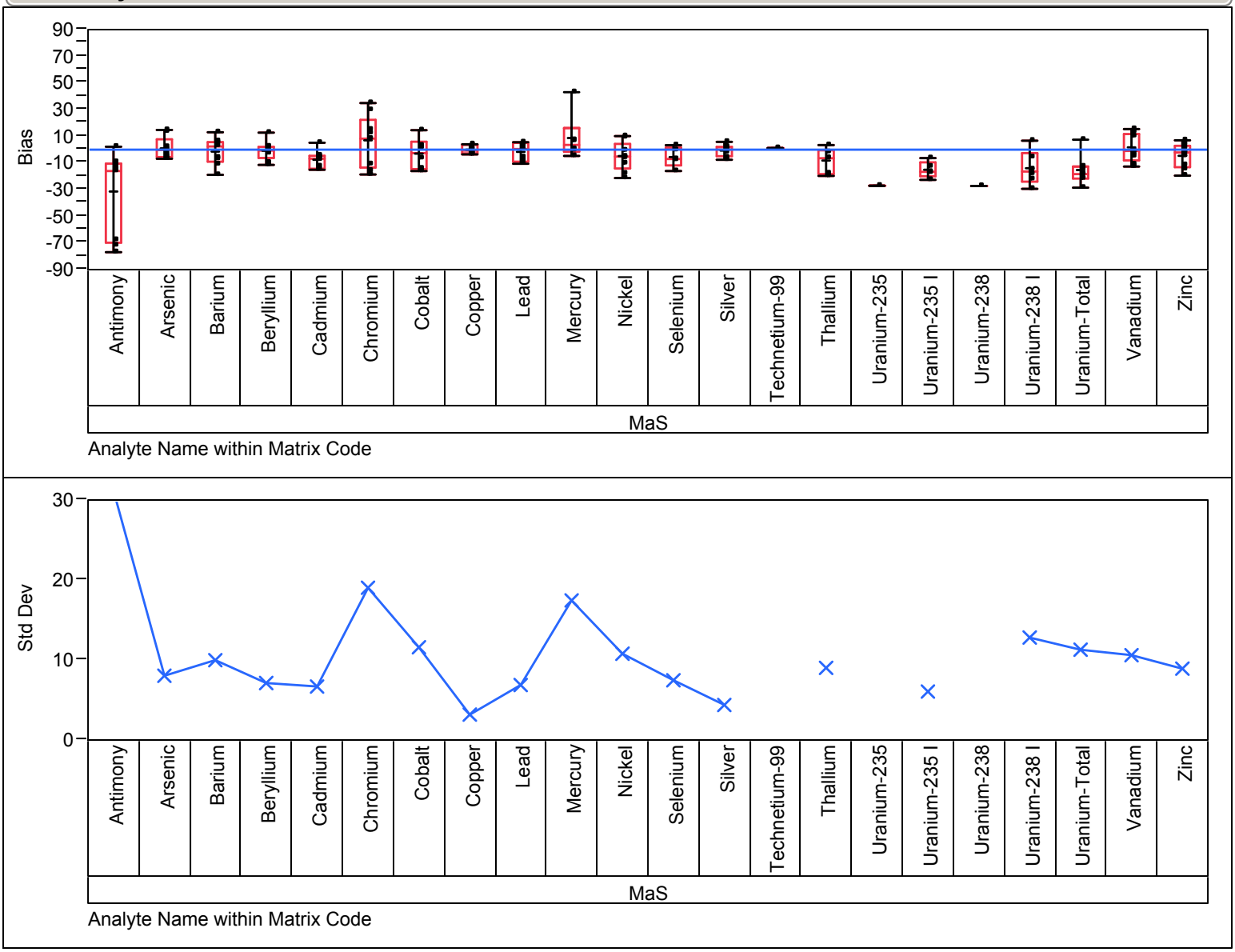
Variability Chart for Bias





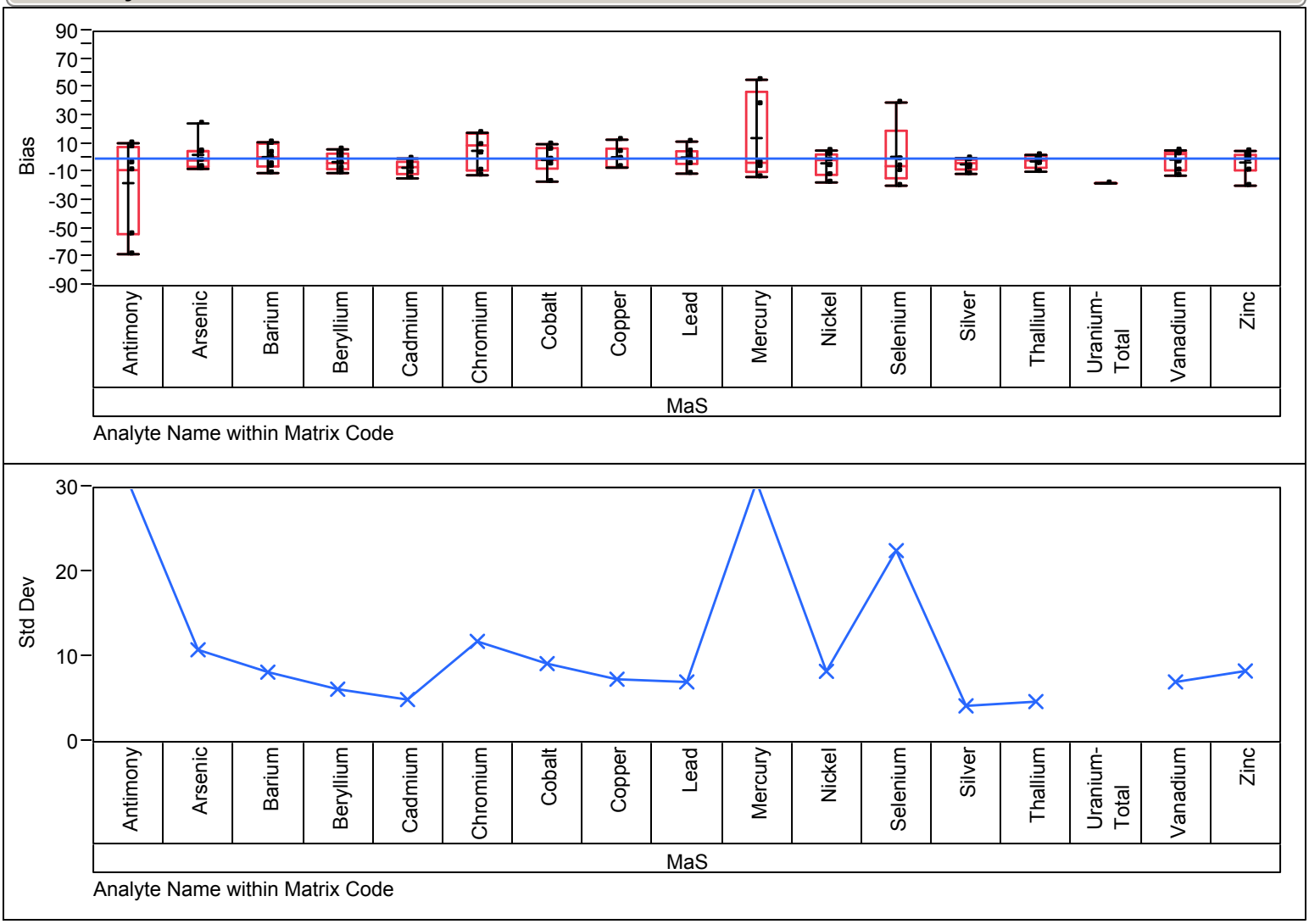
Variability Gauge Lab Code=GENE01

Variability Chart for Bias



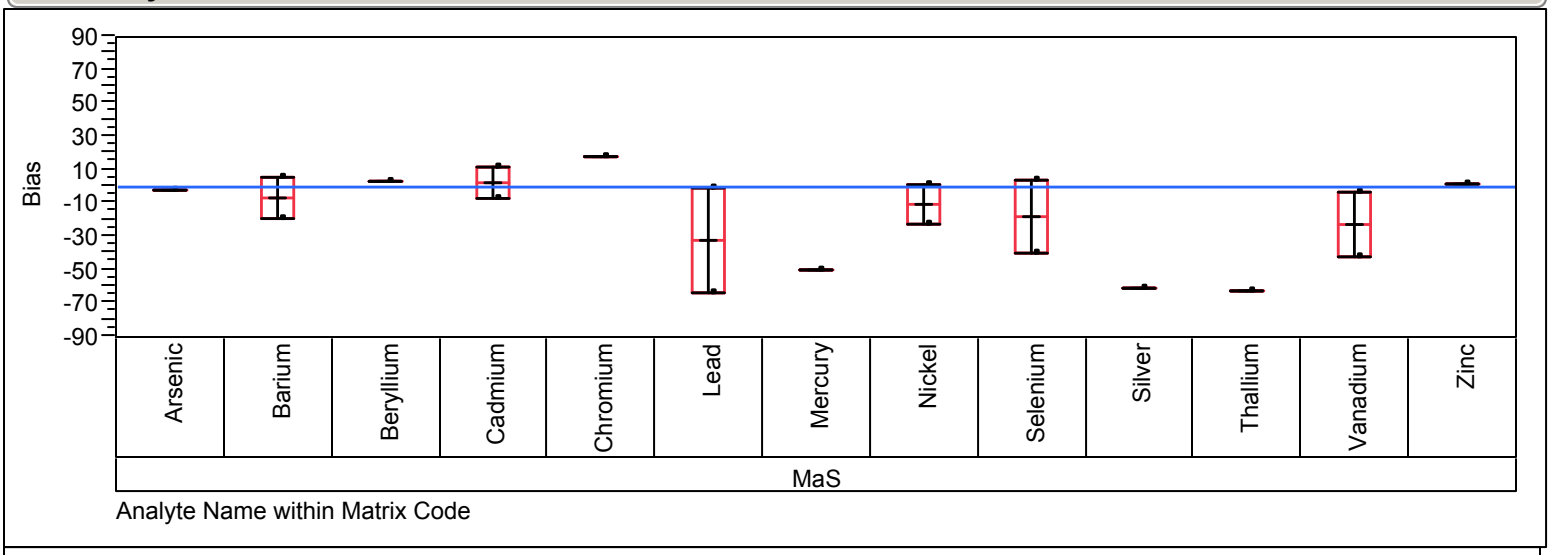
Variability Gauge Lab Code=GPLP01

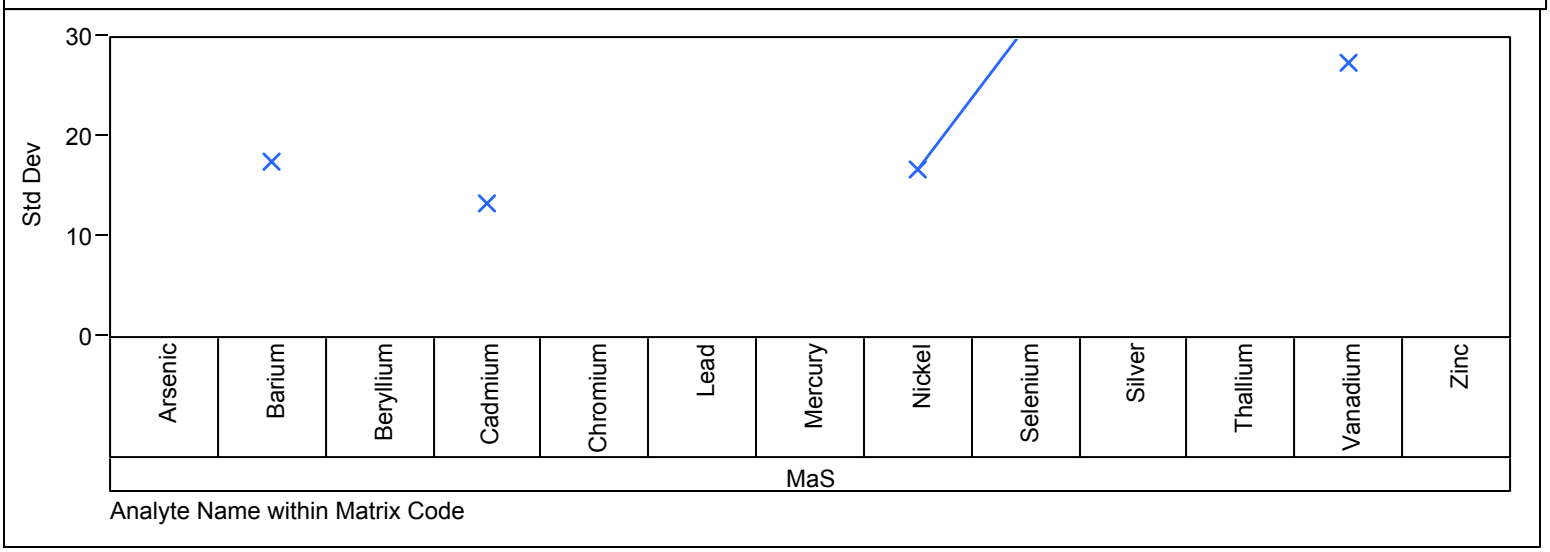
Variability Chart for Bias



Variability Gauge Lab Code=GROW01

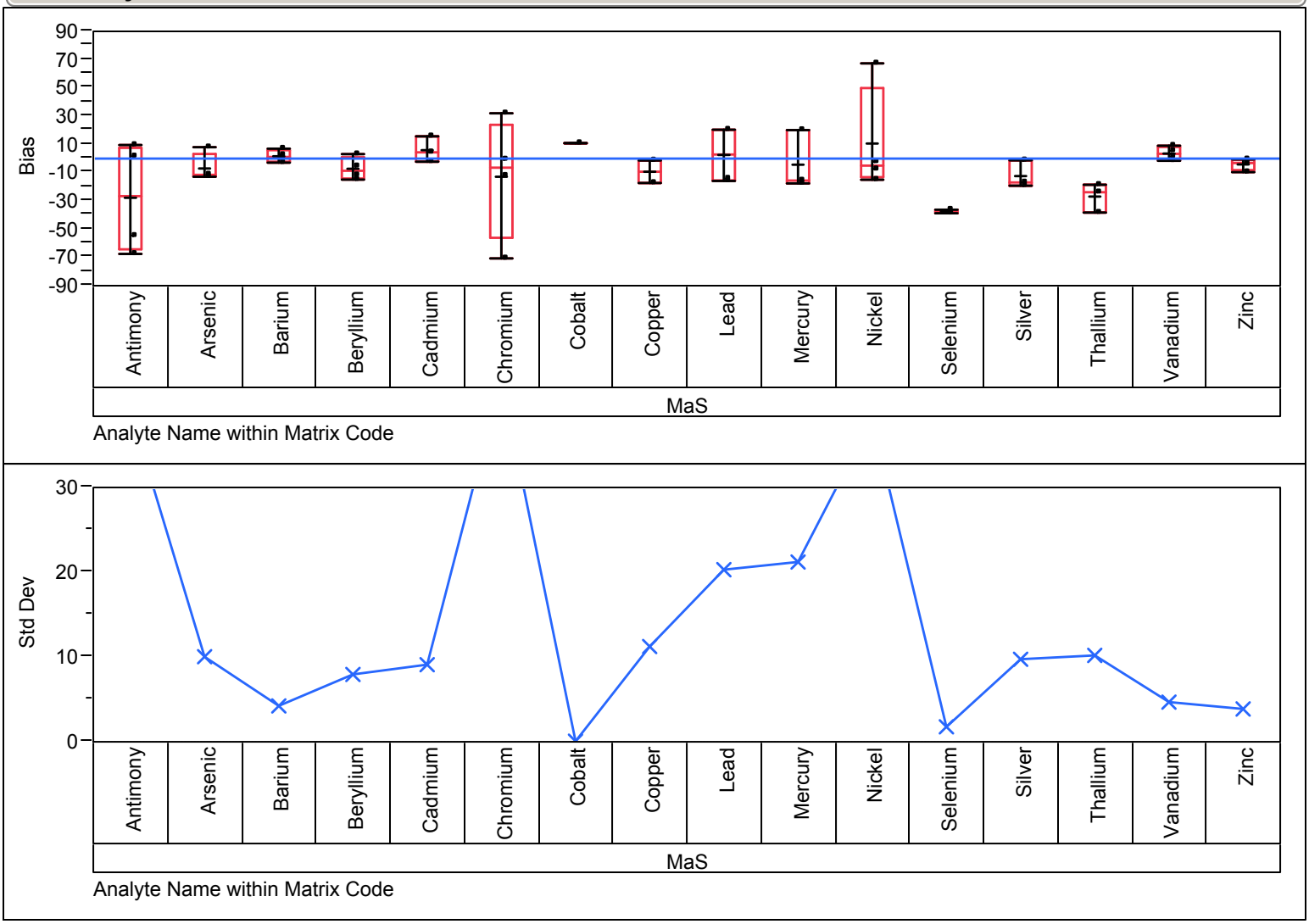
Variability Chart for Bias





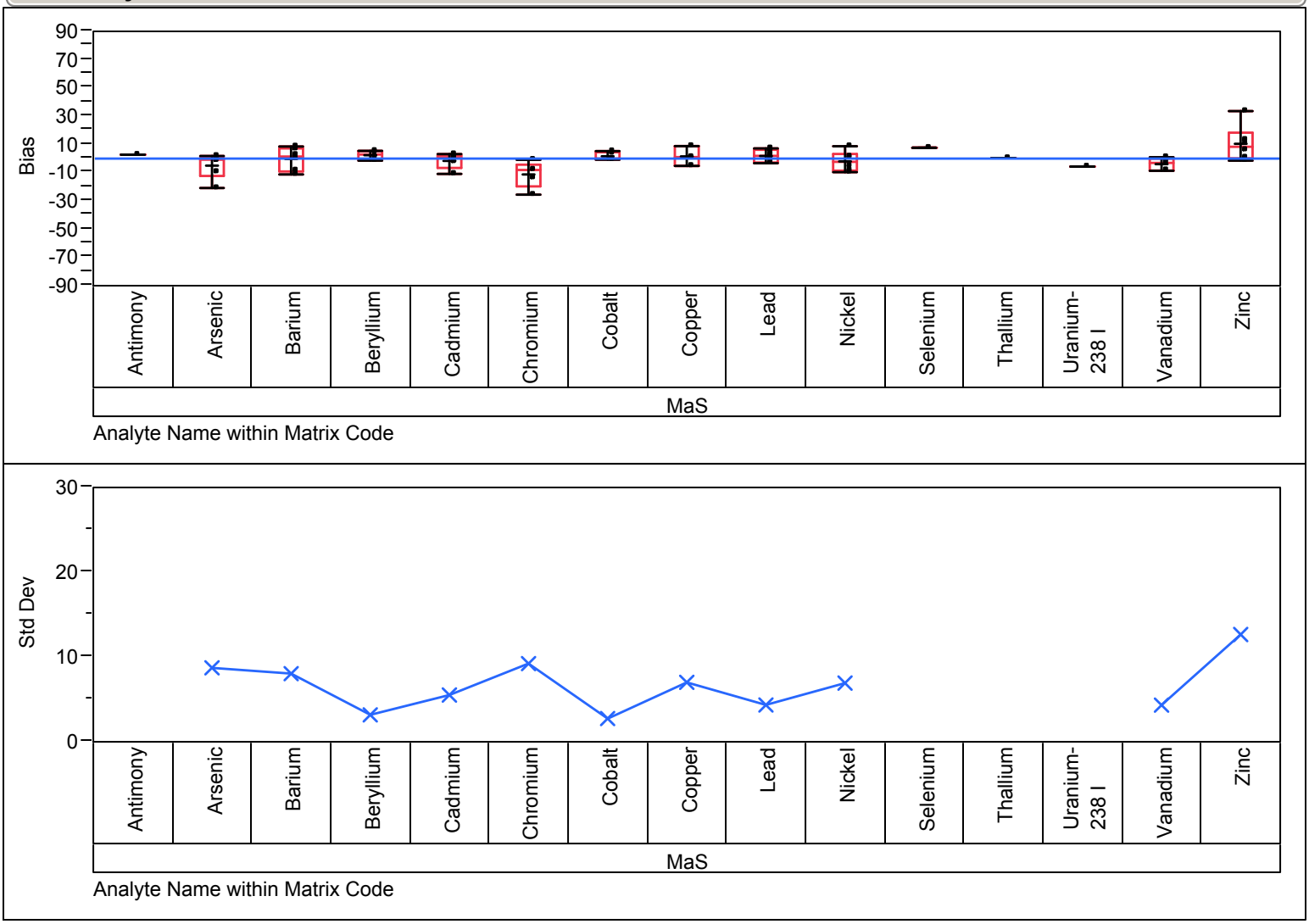
Variability Gauge Lab Code=HWRL01

Variability Chart for Bias



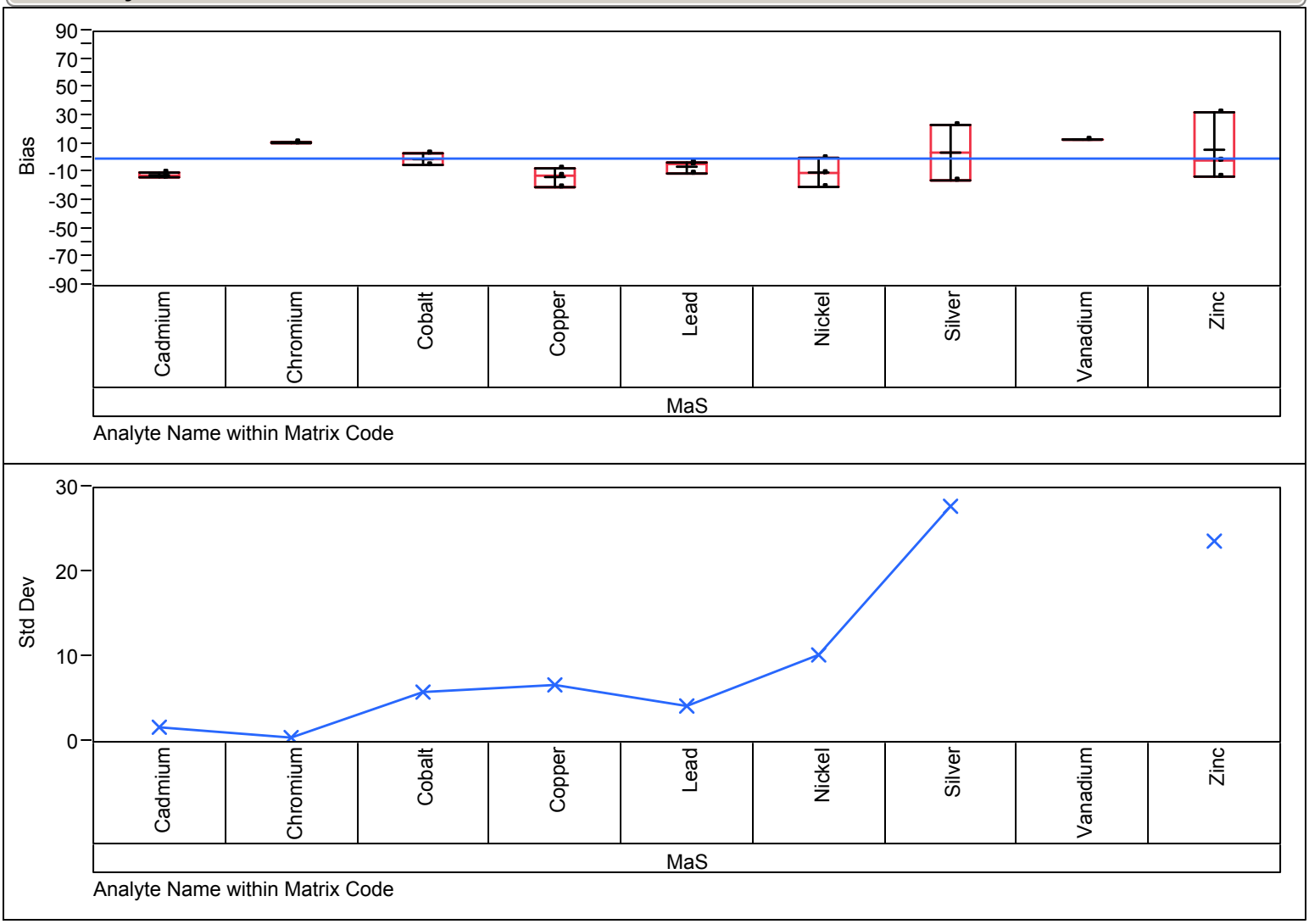
Variability Gauge Lab Code=IAEA99

Variability Chart for Bias



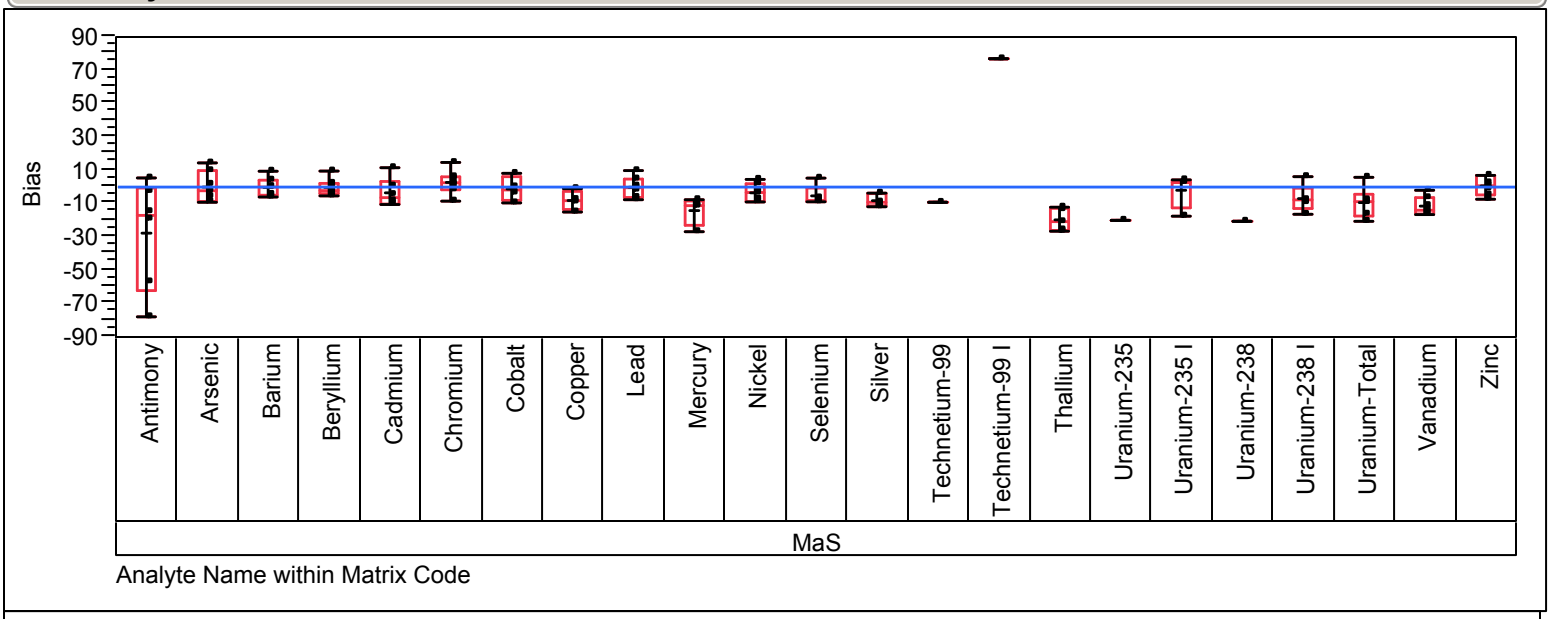
Variability Gauge Lab Code=JCAL99

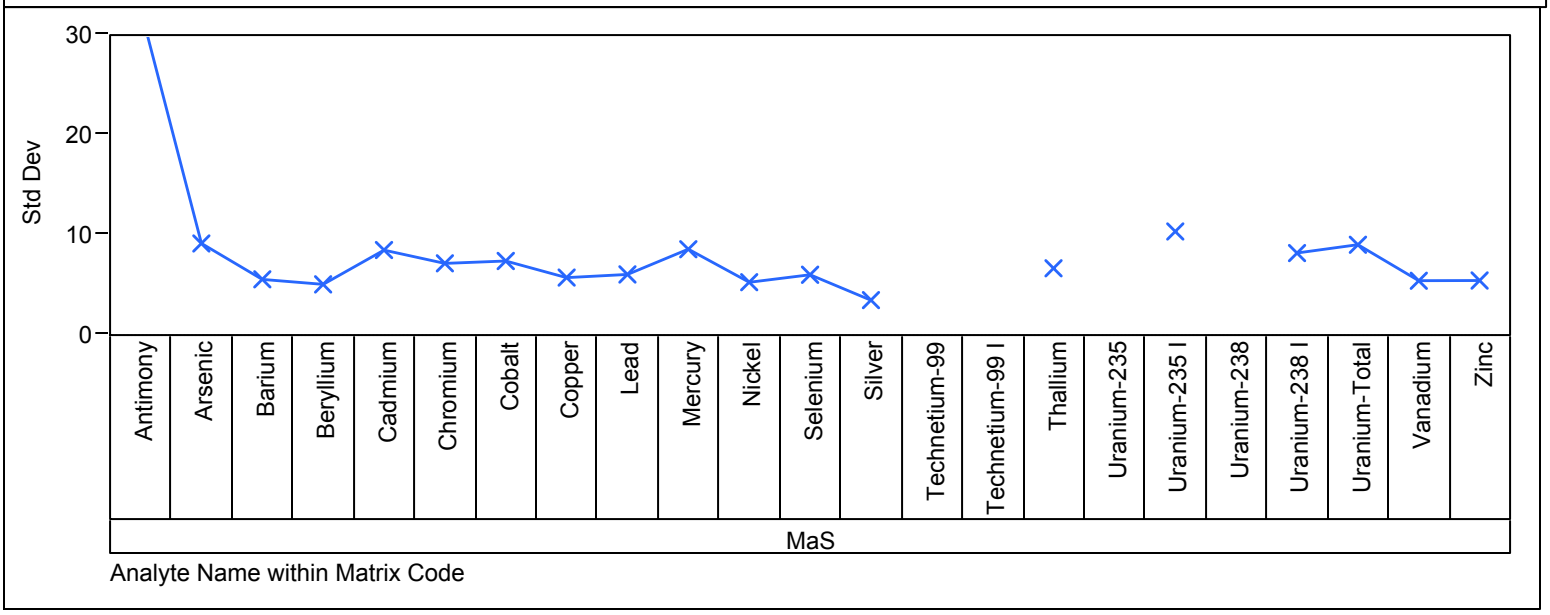
Variability Chart for Bias



Variability Gauge Lab Code=LOCK01

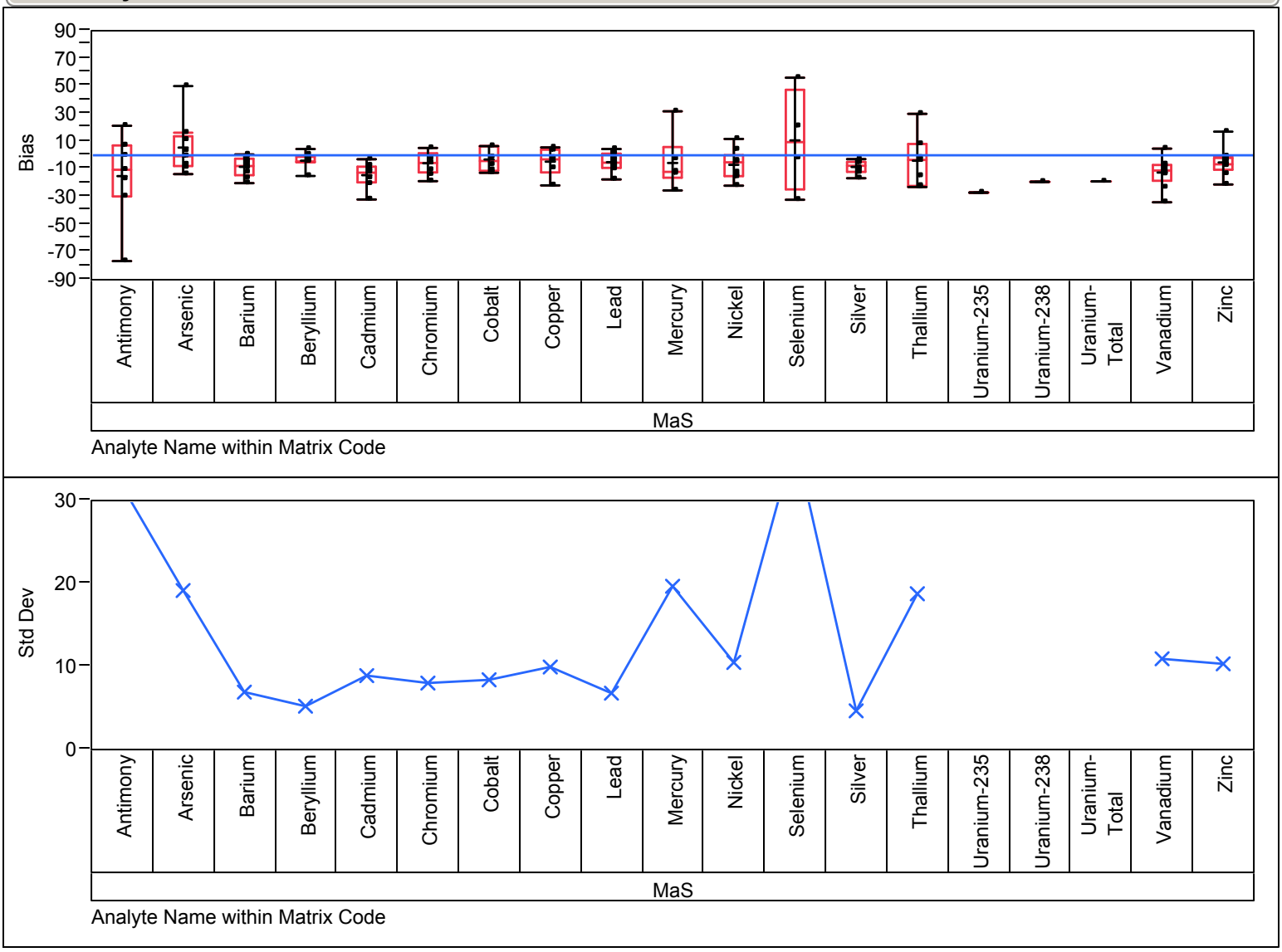
Variability Chart for Bias





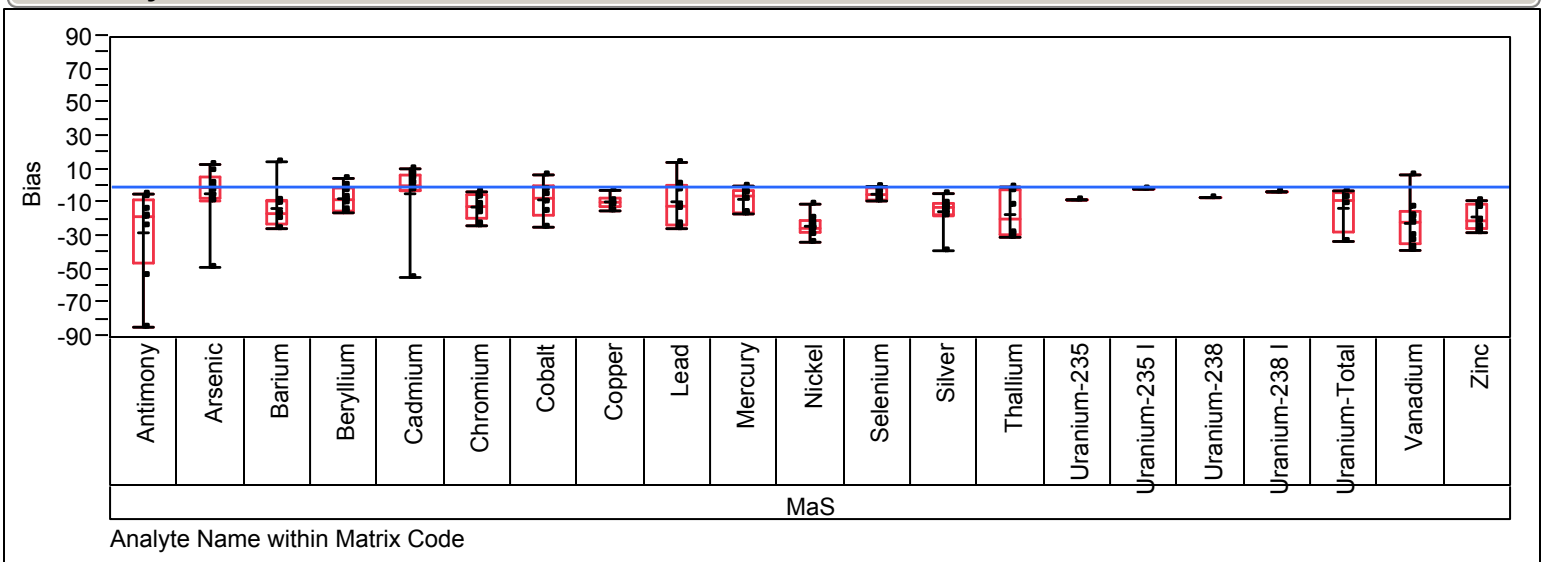
Variability Gauge Lab Code=MART01

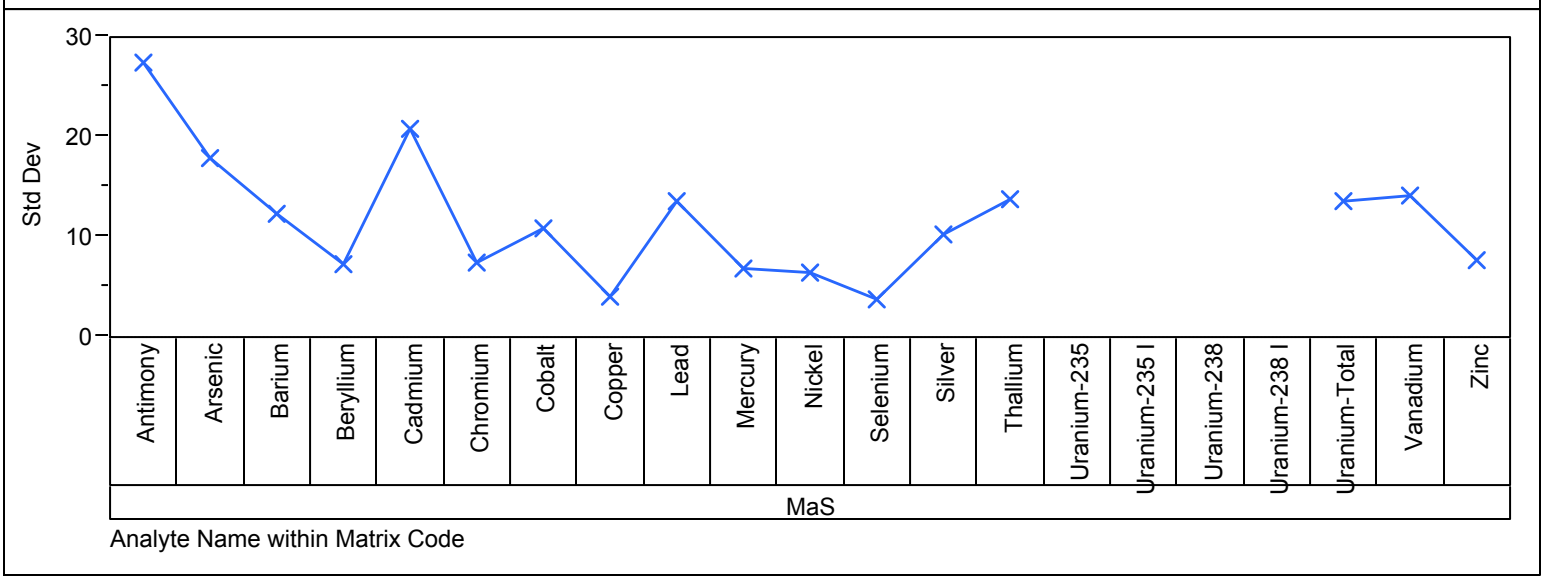
Variability Chart for Bias



Variability Gauge Lab Code=MART02

Variability Chart for Bias





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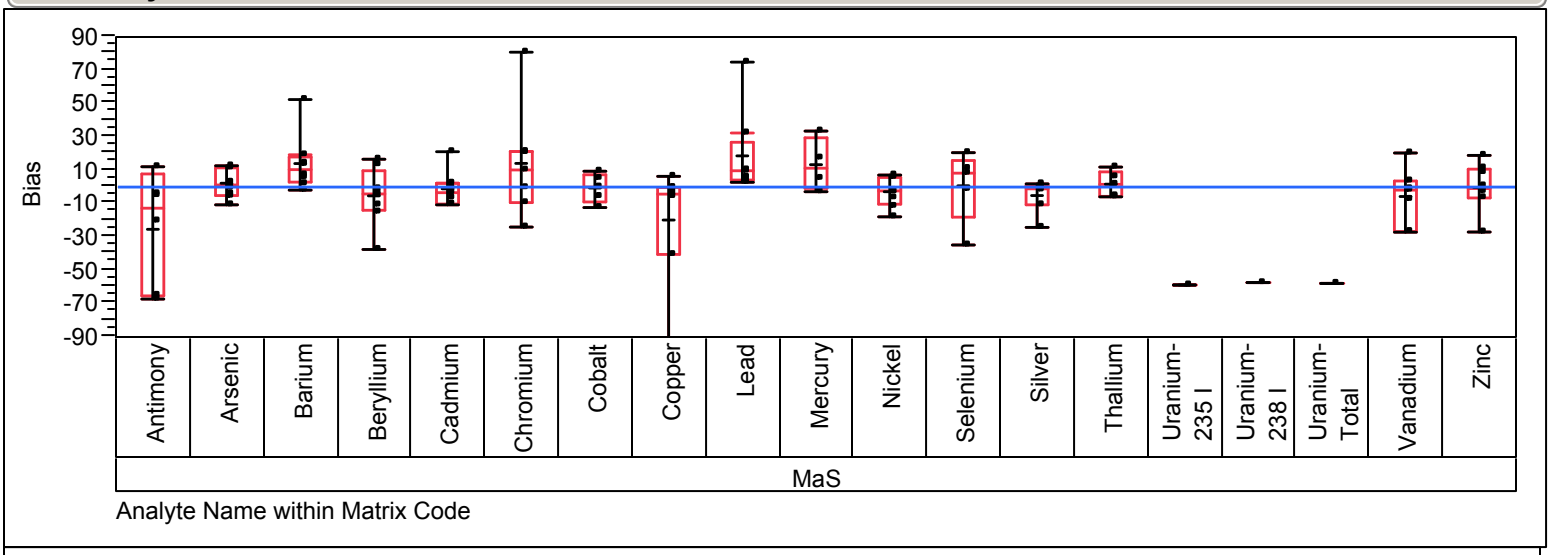
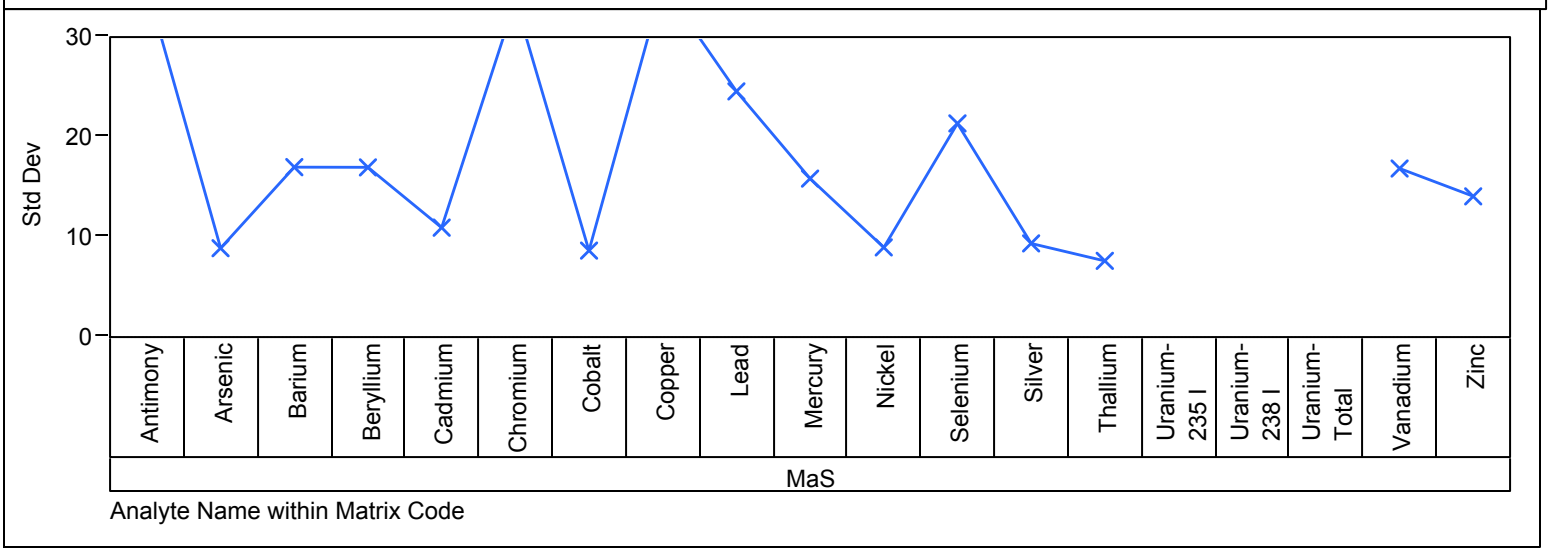
Variability Chart for Bias





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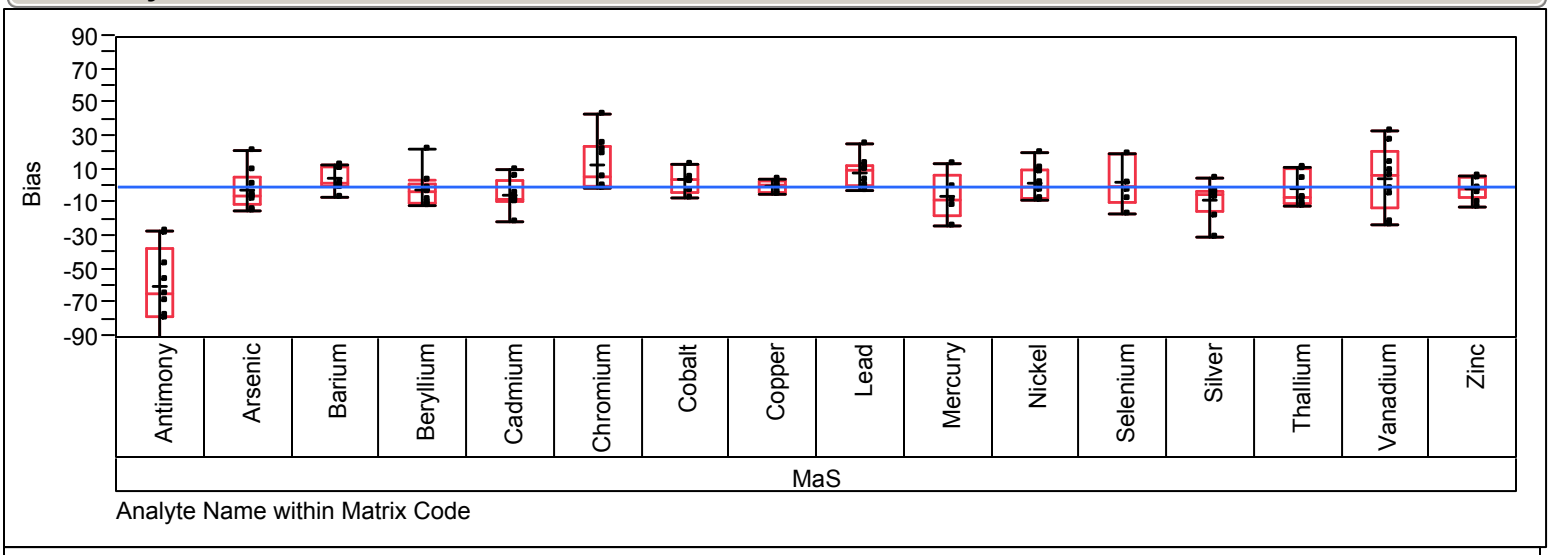
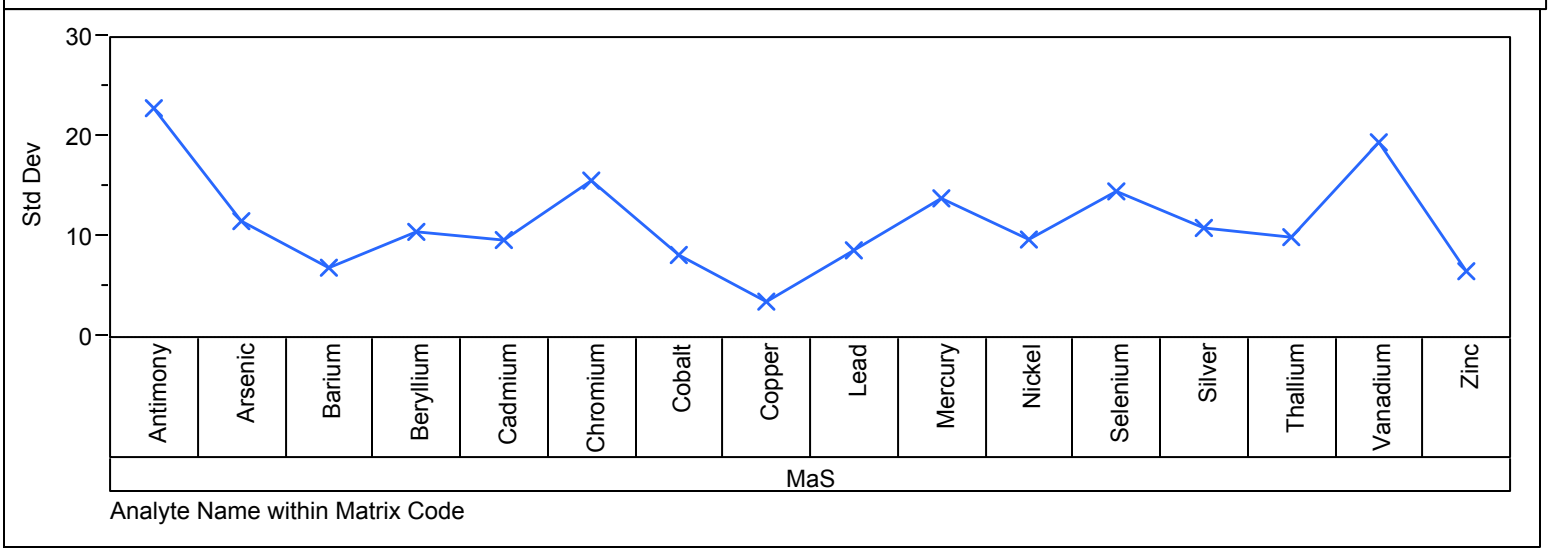
Variability Chart for Bias





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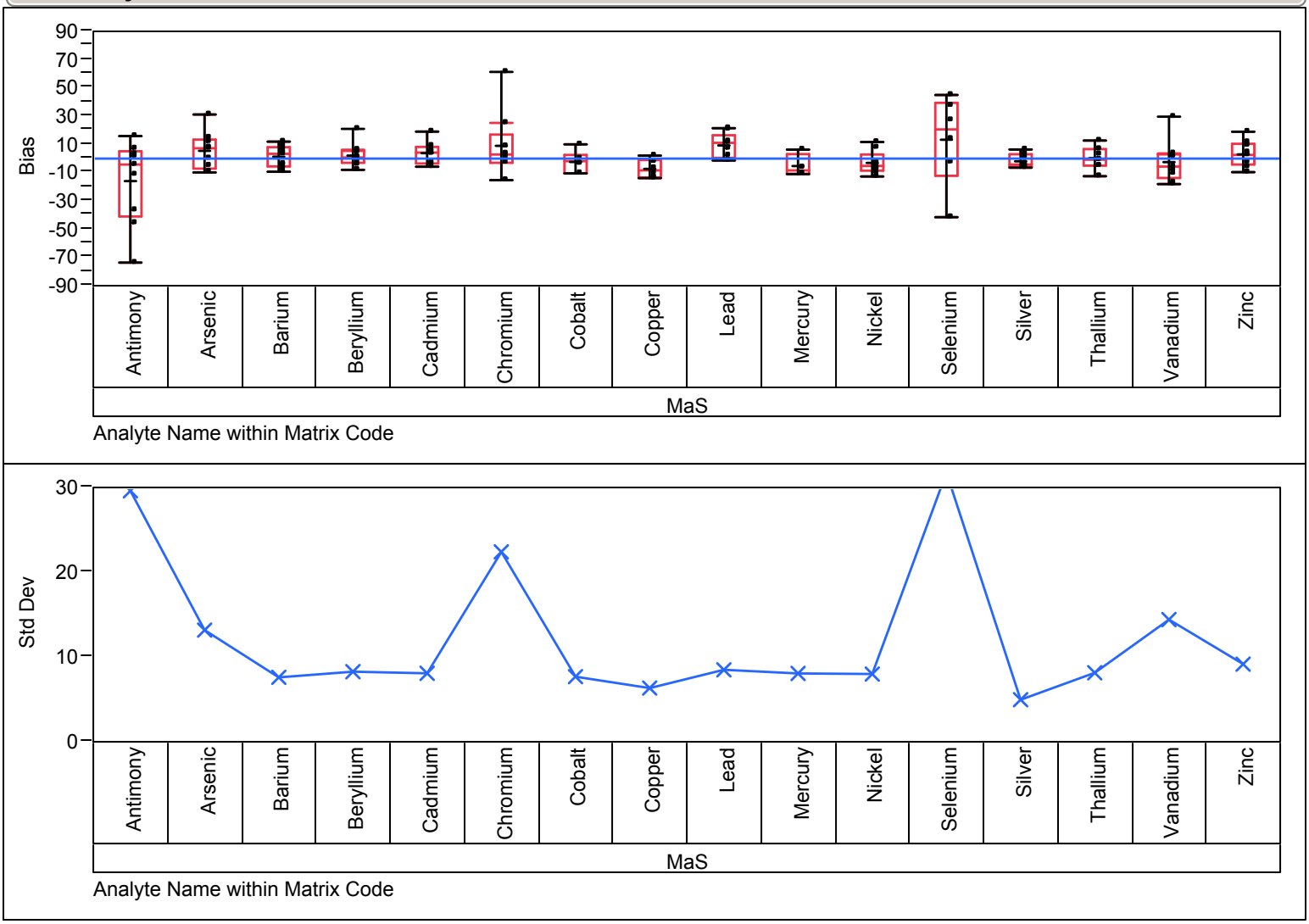
Variability Chart for Bias



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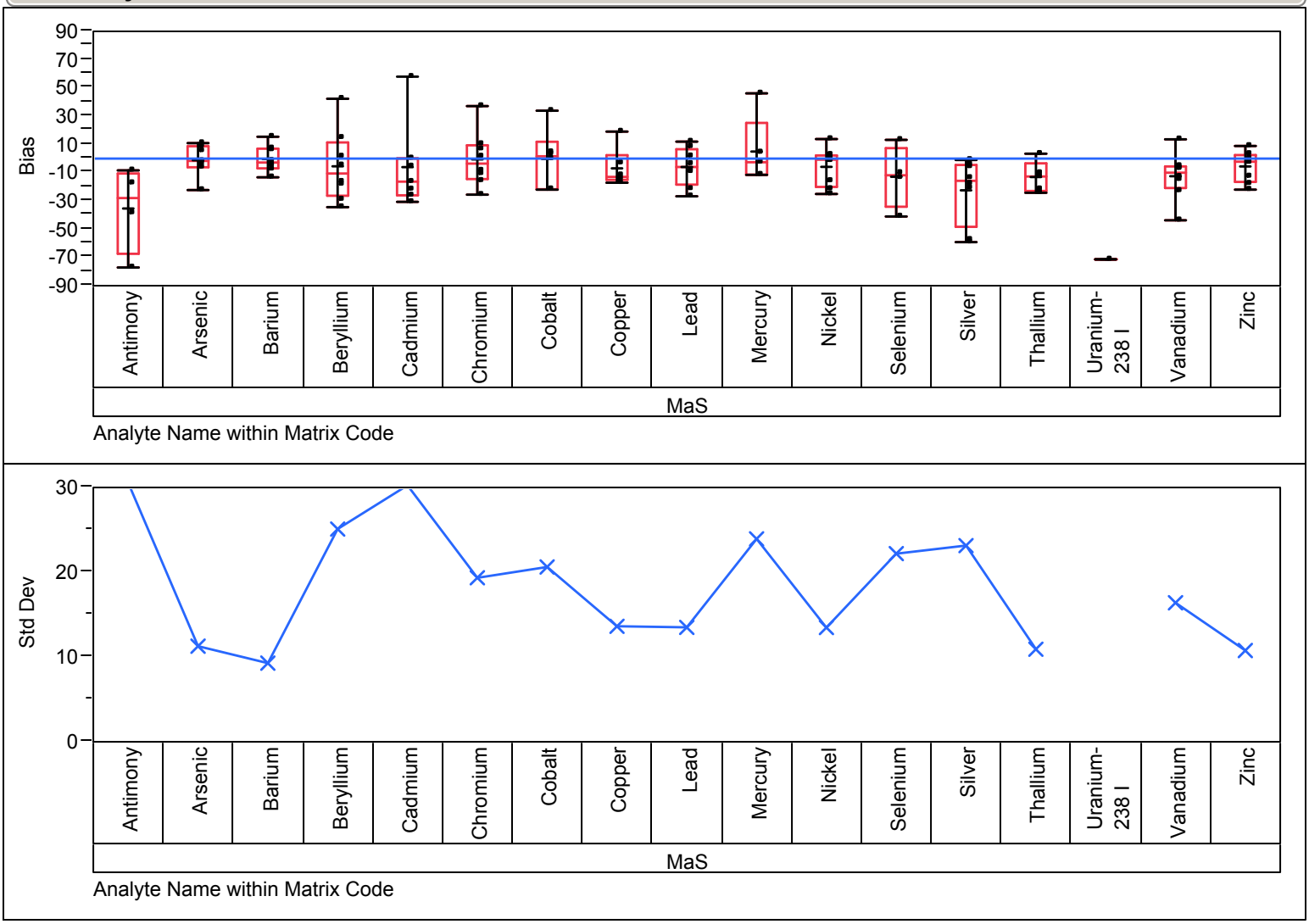
Variability Chart for Bias



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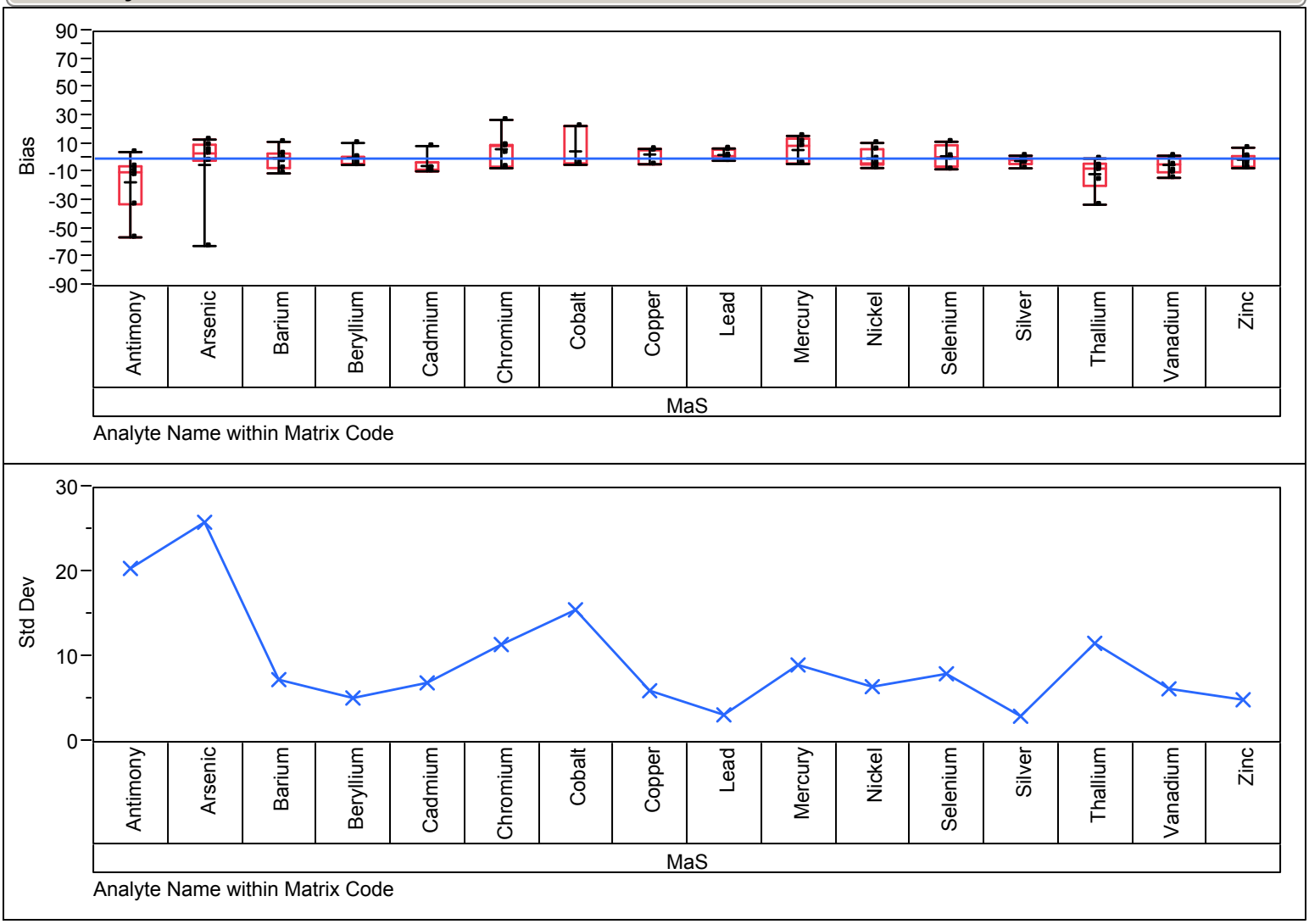
Variability Chart for Bias



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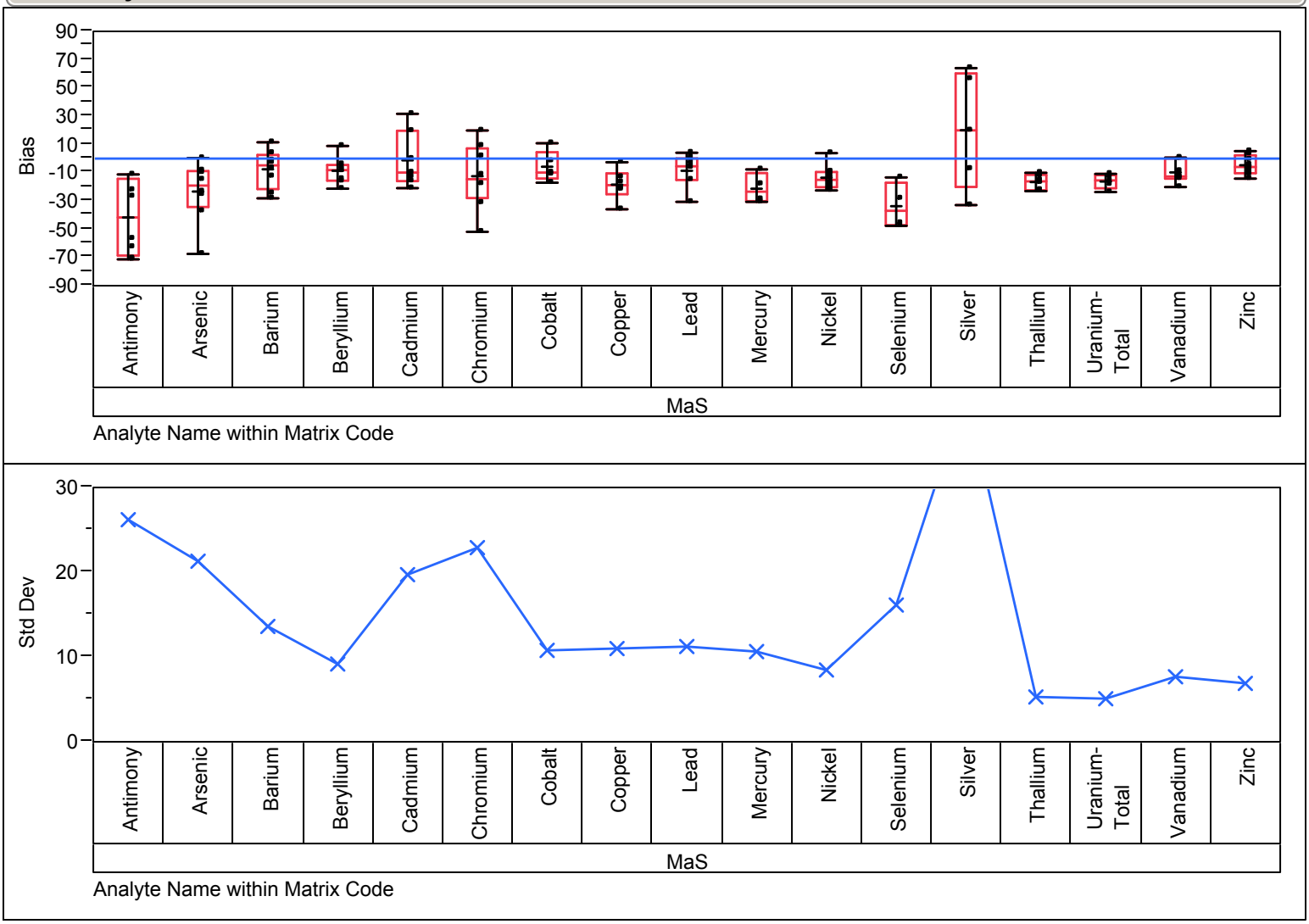
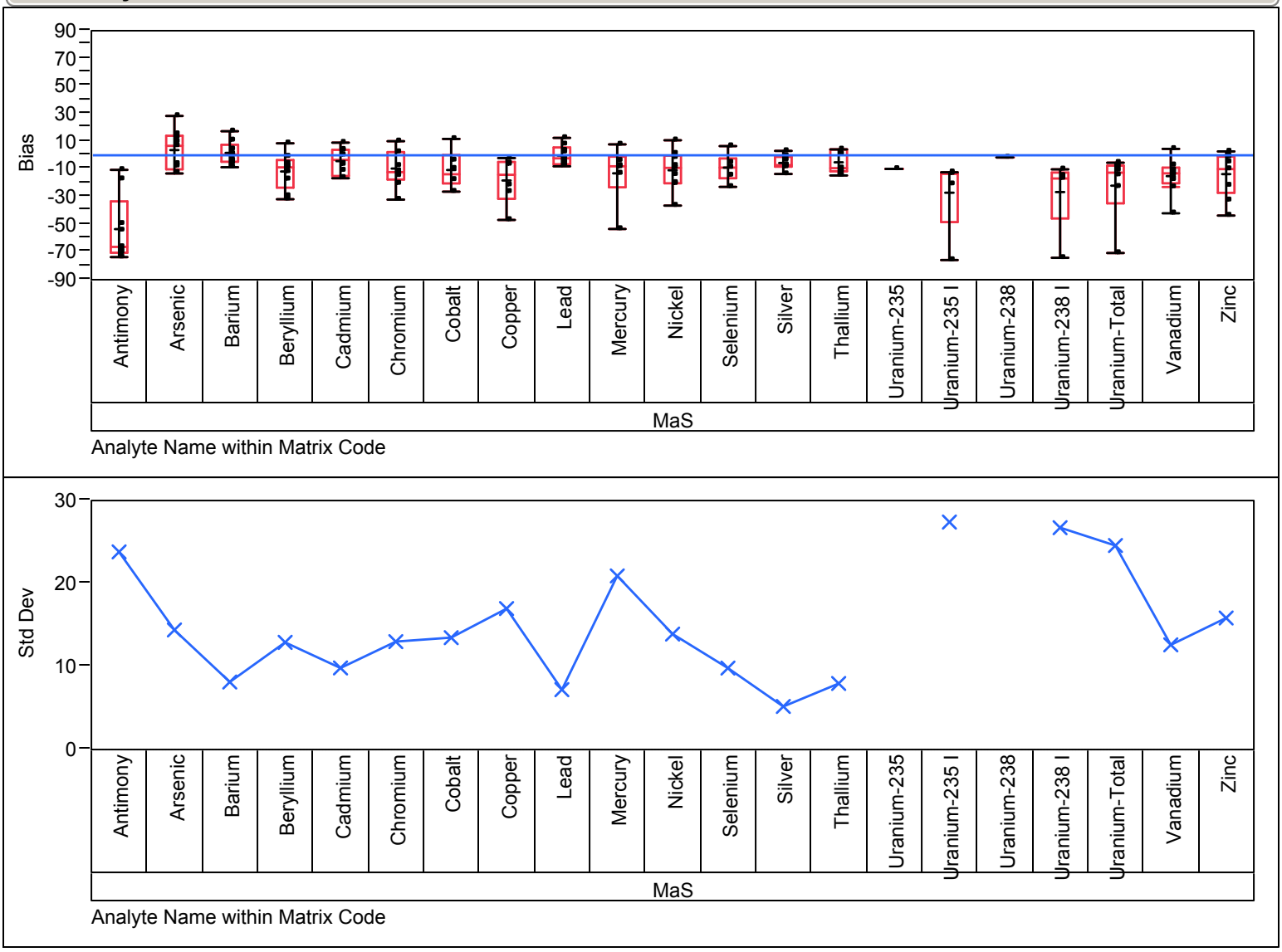
Variability Chart for Bias



Variability Gauge Lab Code=QUAN01

Variability Chart for Bias



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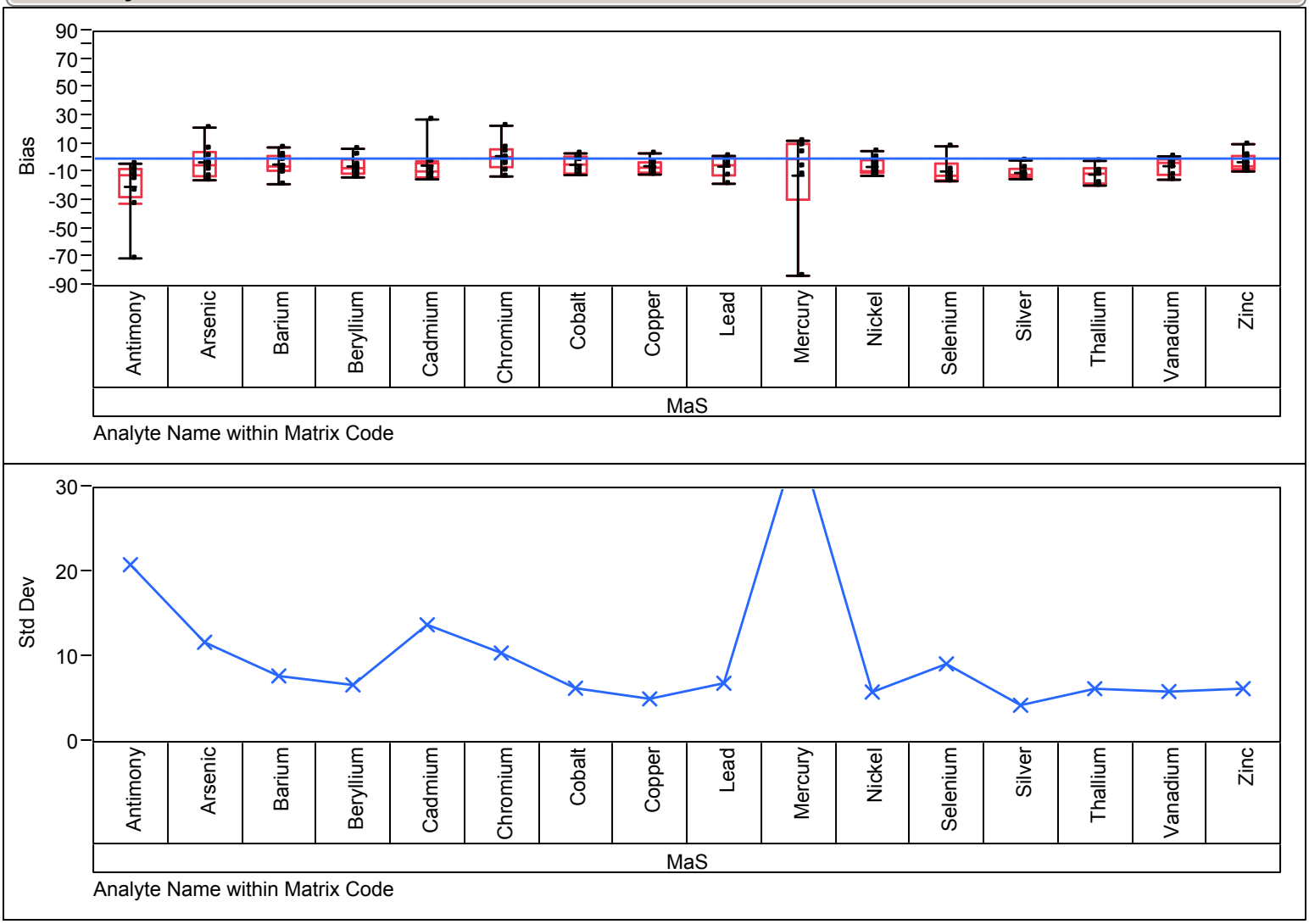

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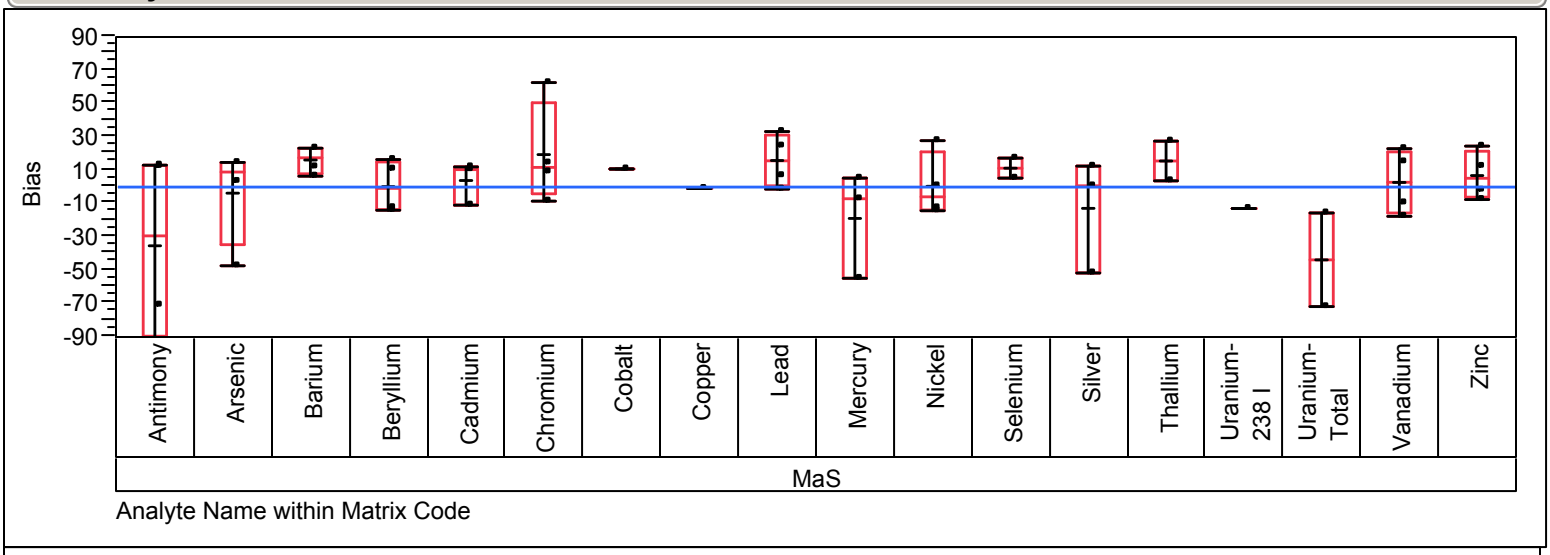
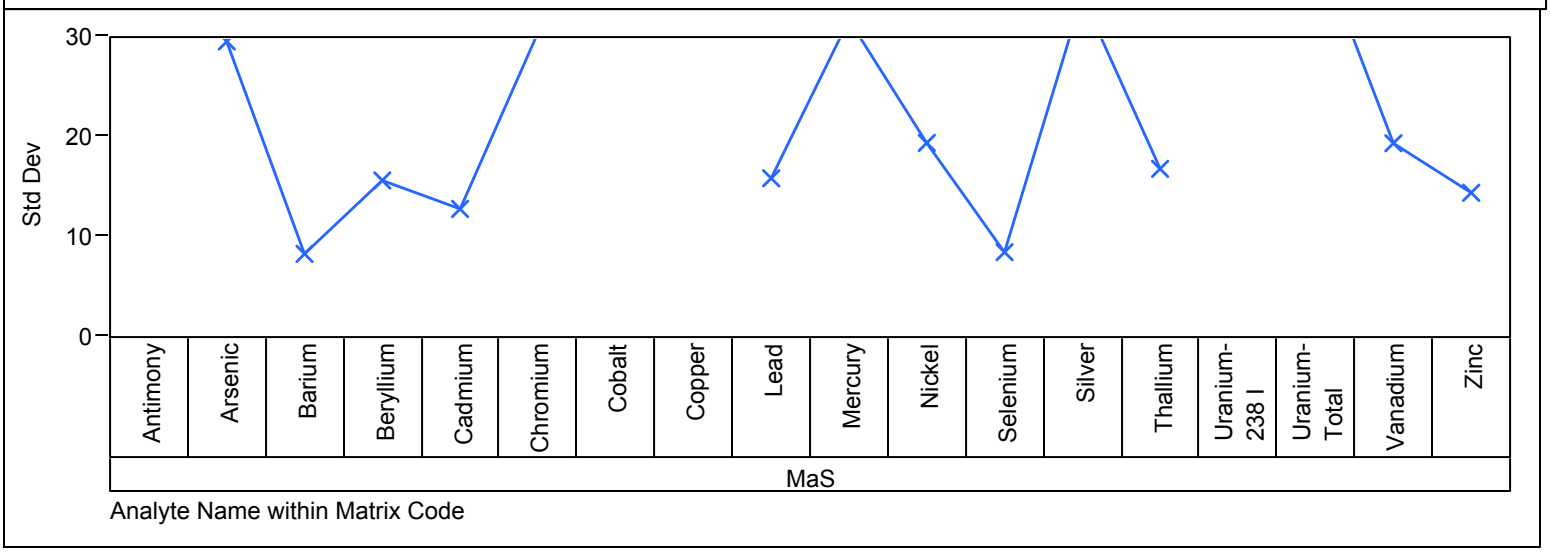
Variability Chart for Bias





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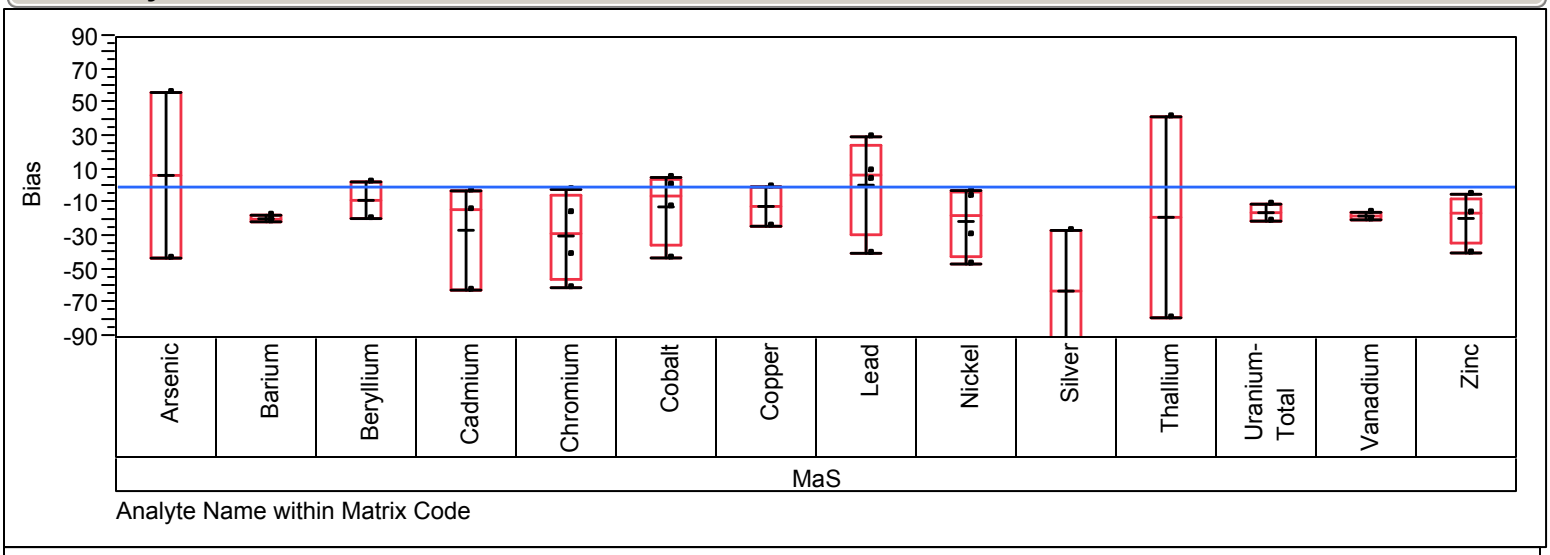
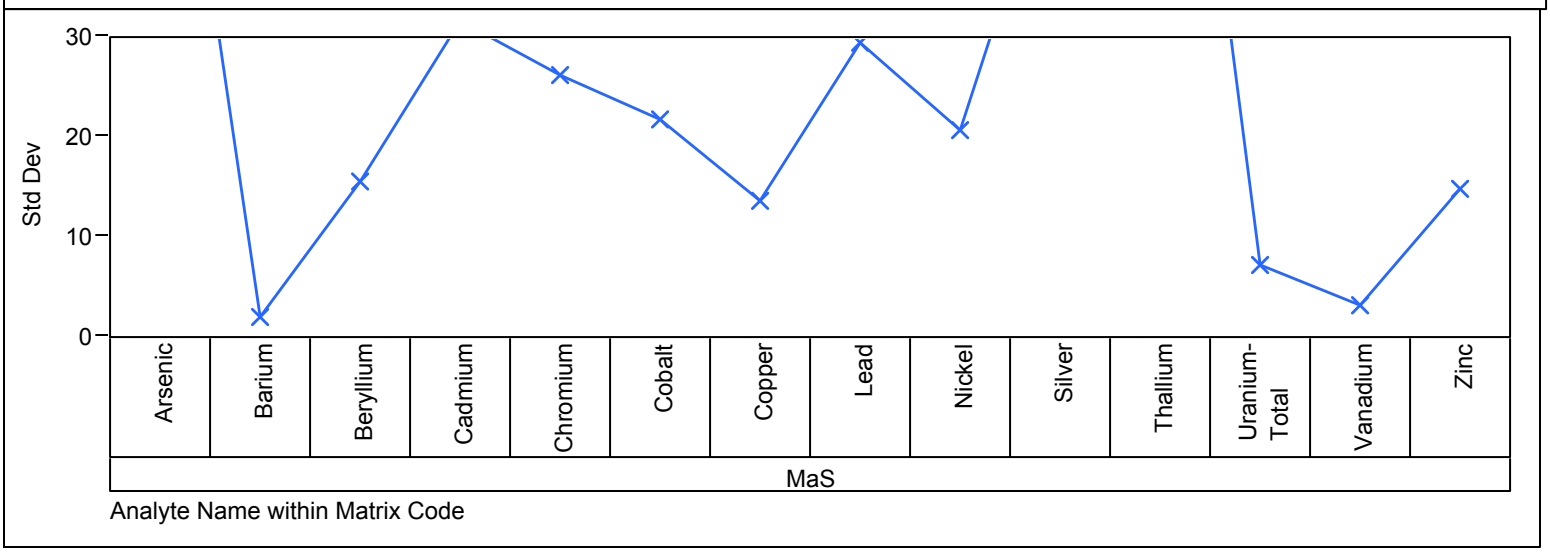
Variability Chart for Bias





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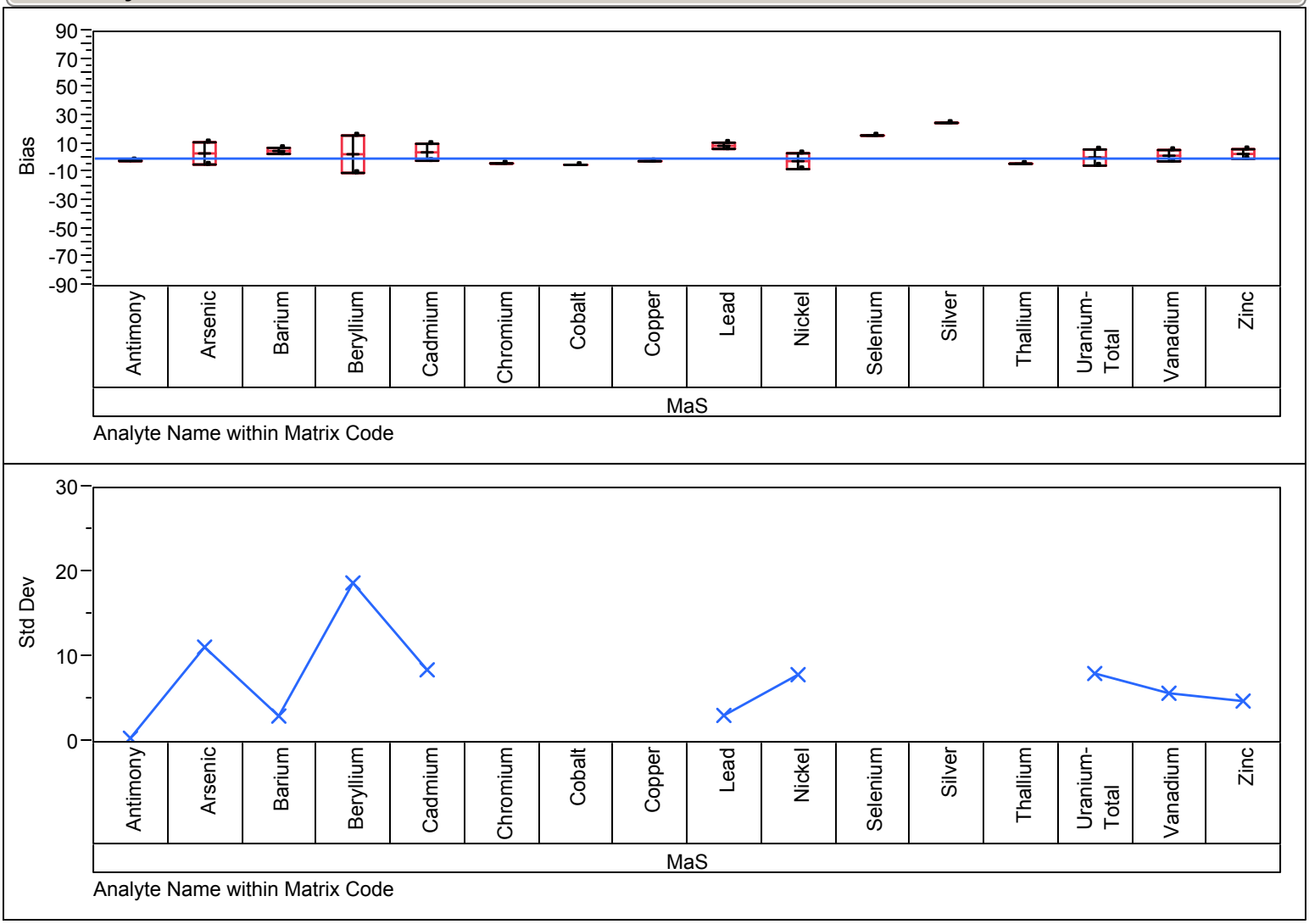
Variability Chart for Bias



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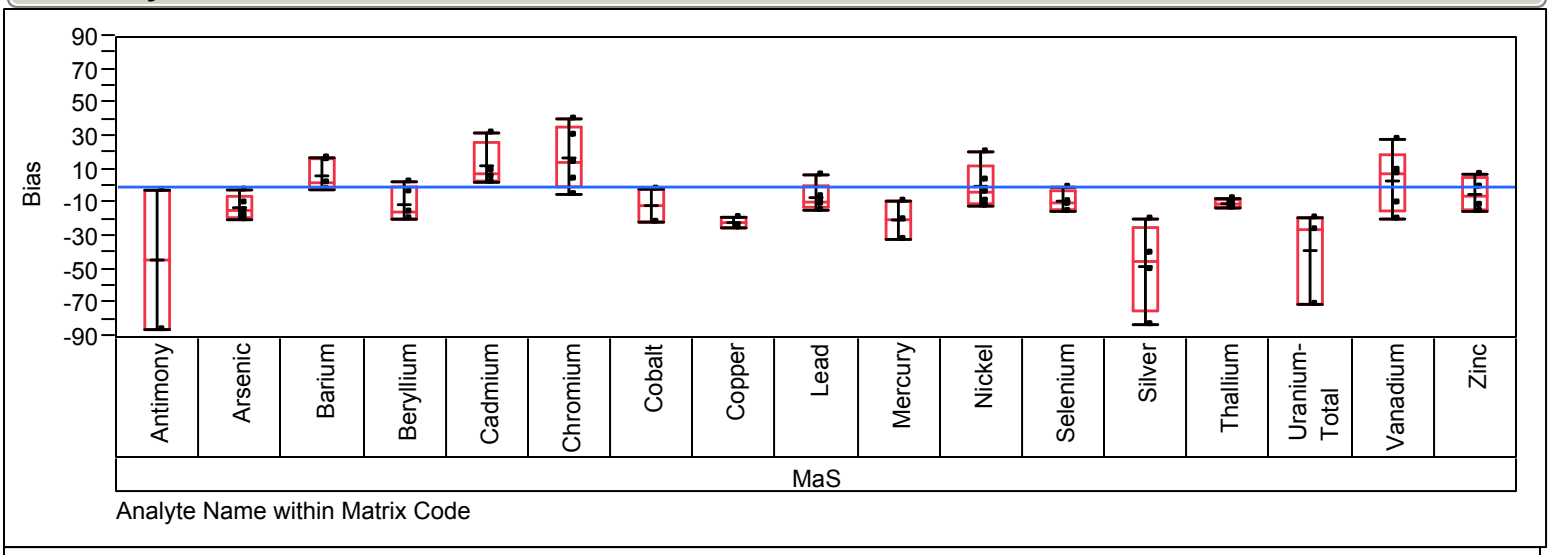
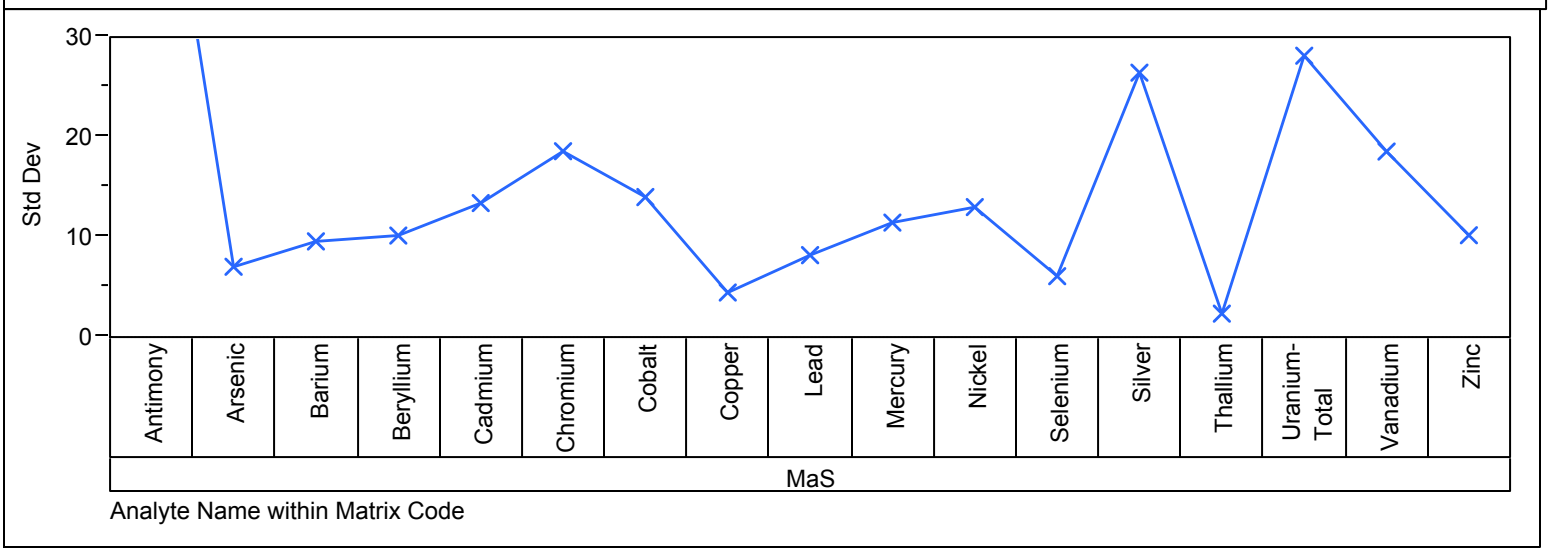
Variability Chart for Bias





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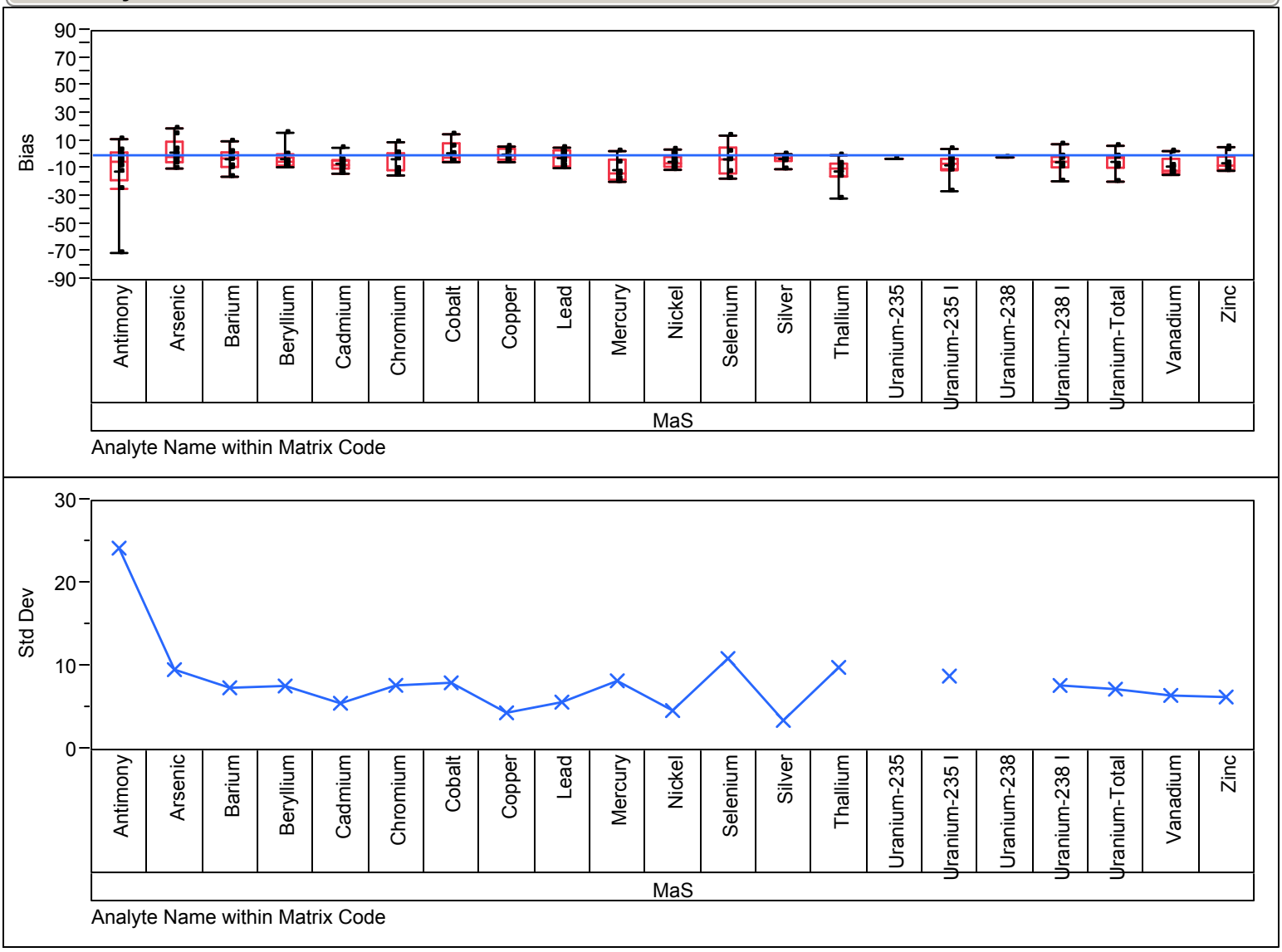
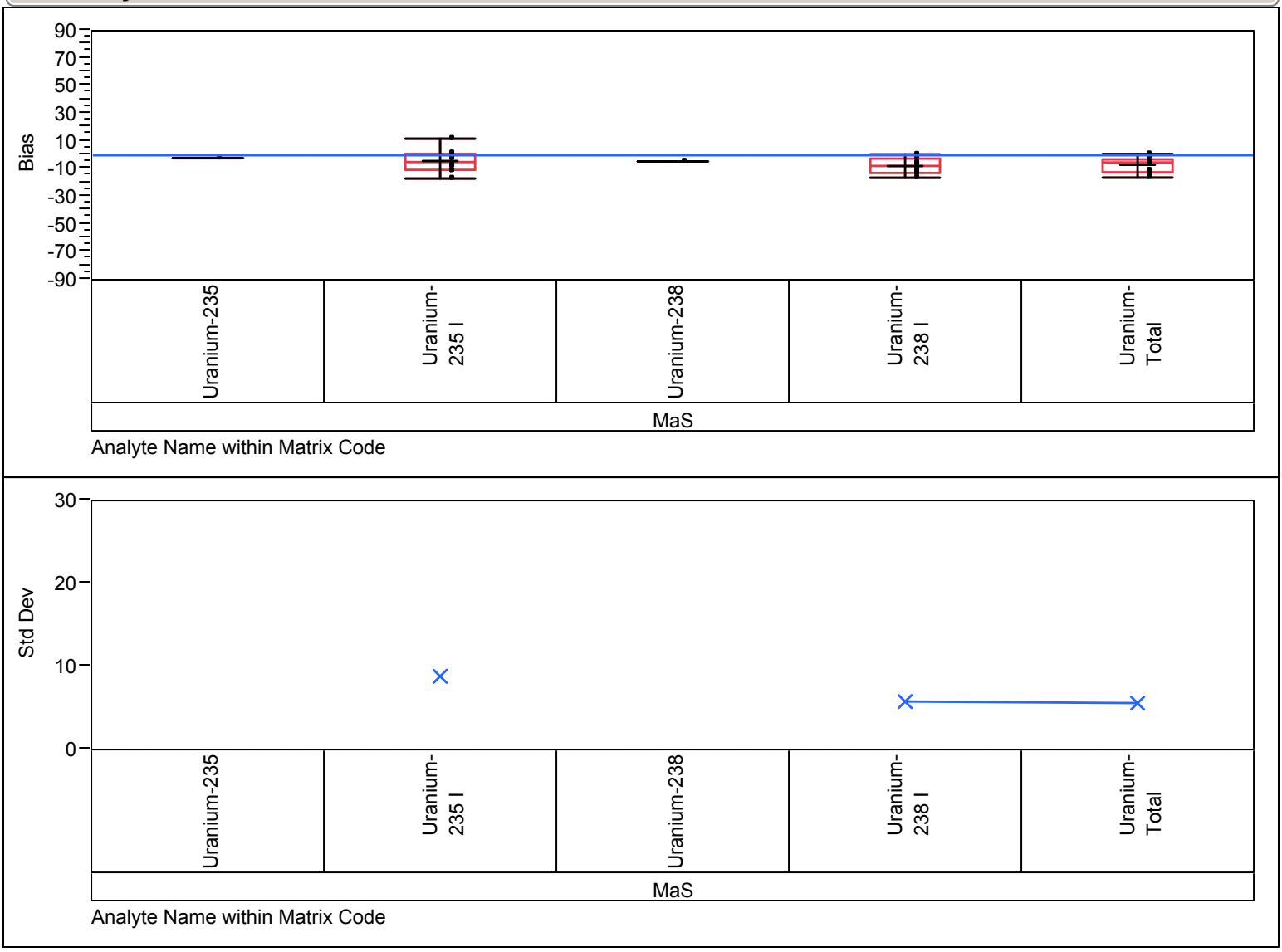
Variability Chart for Bias



Variability Gauge Lab Code=SRPD01

Variability Chart for Bias



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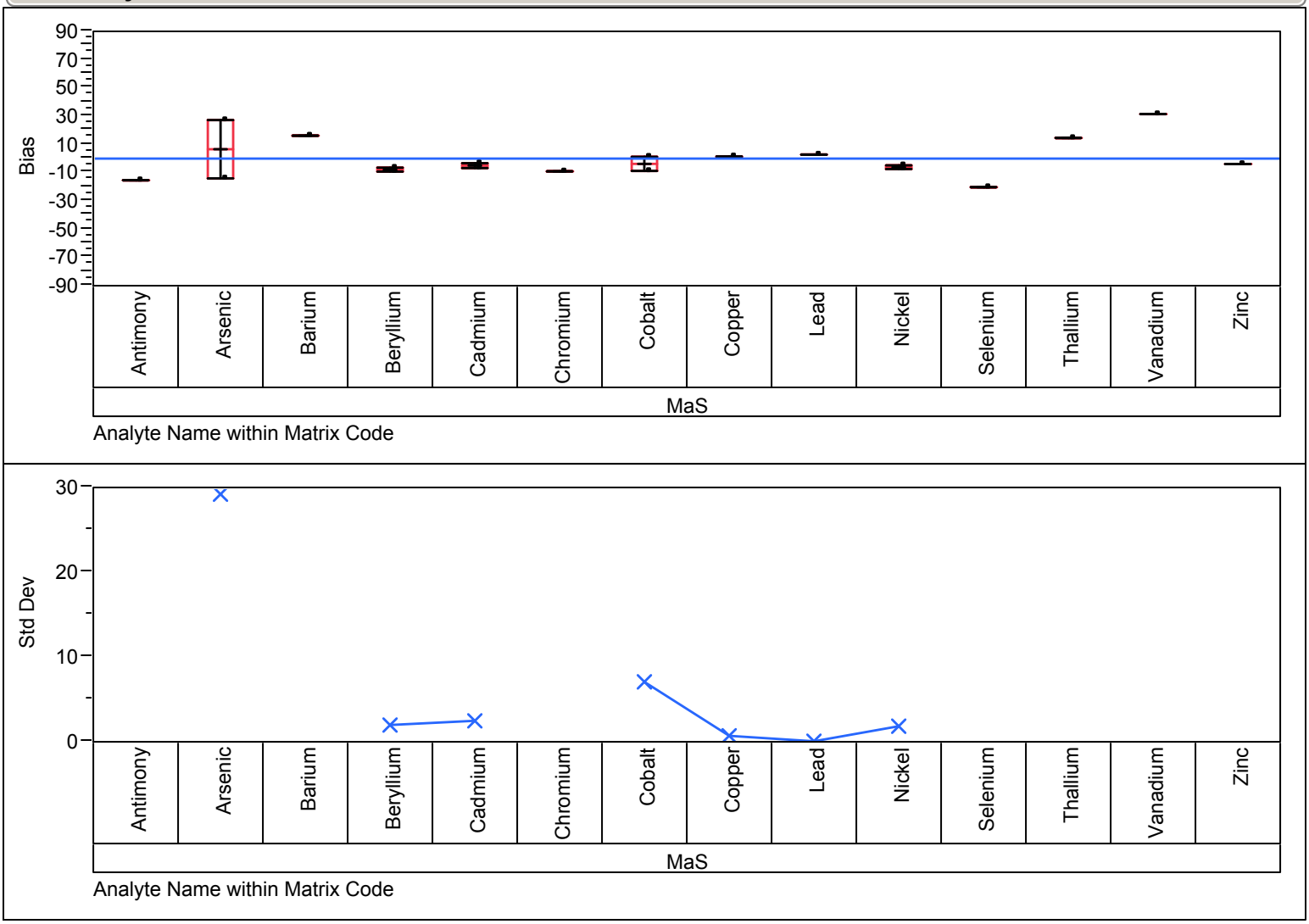
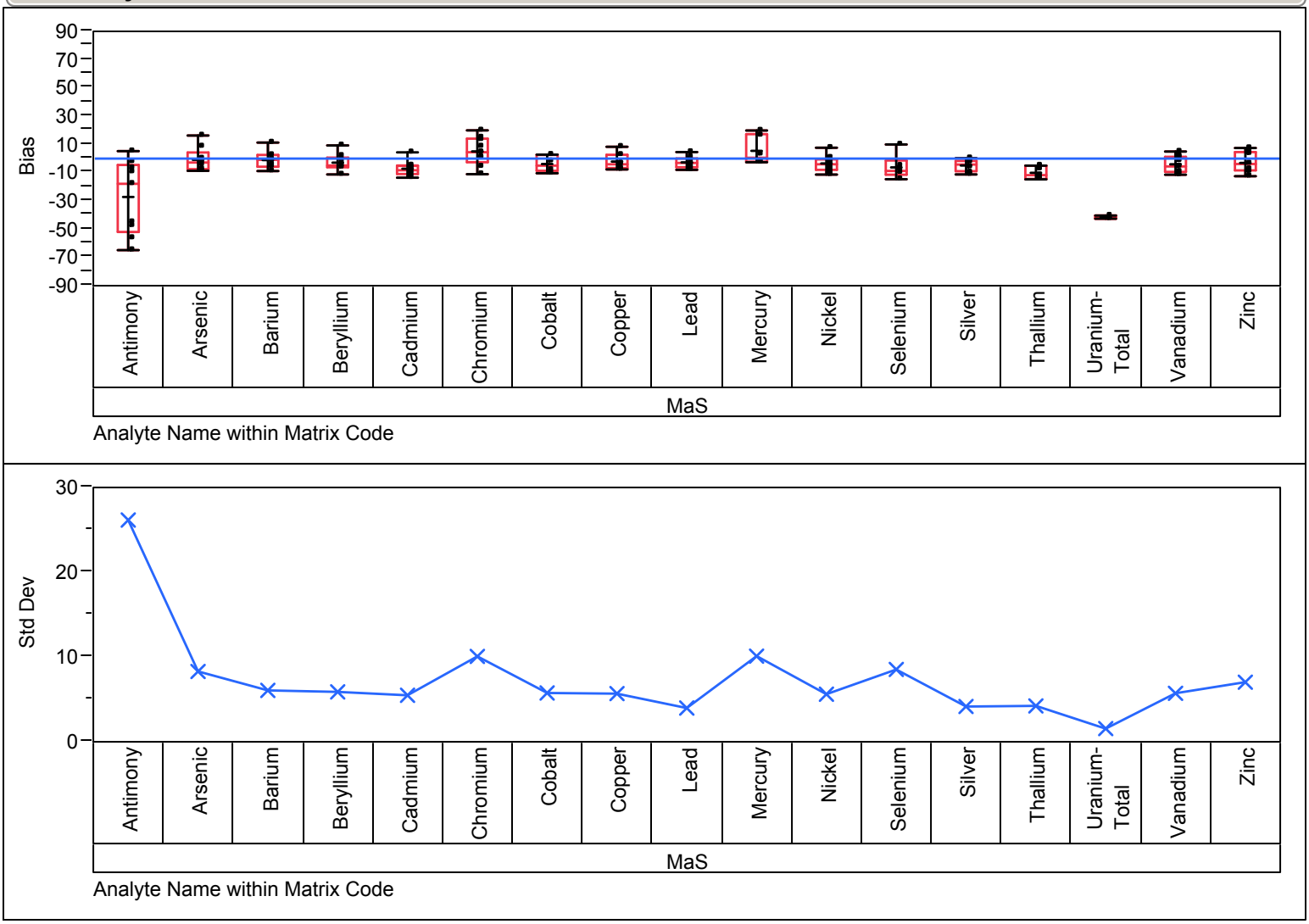
Variability Chart for Bias



Variability Gauge Lab Code=WEST01

Variability Chart for Bias



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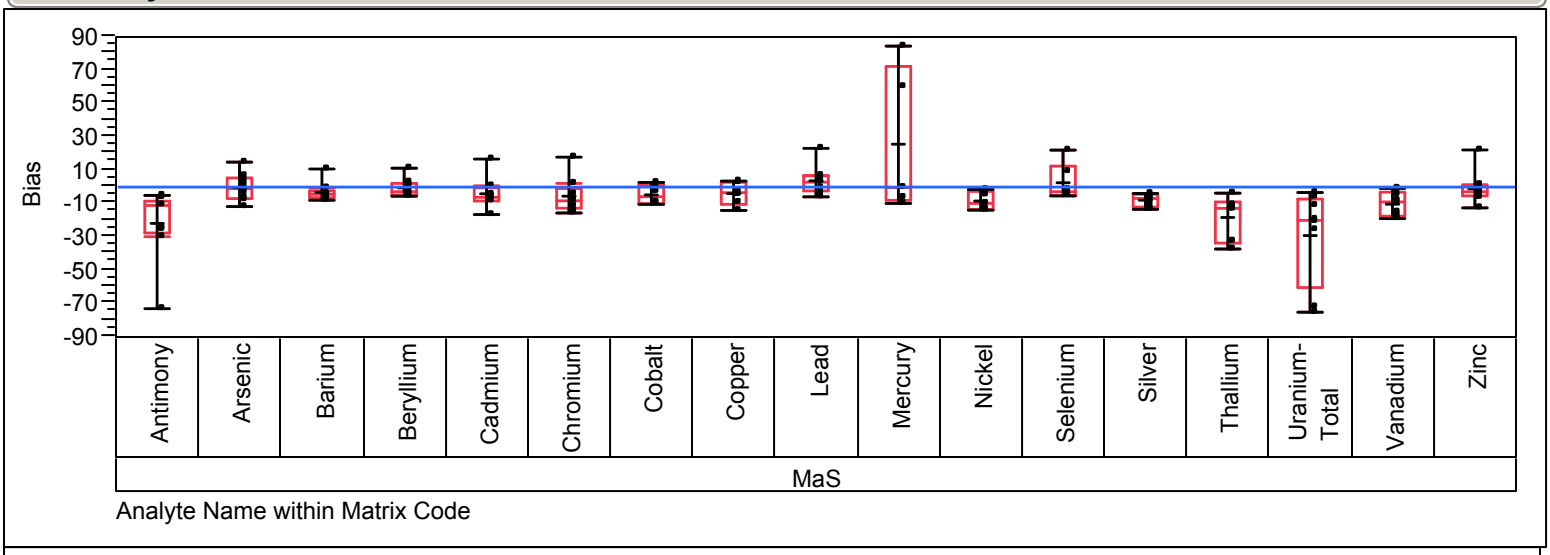

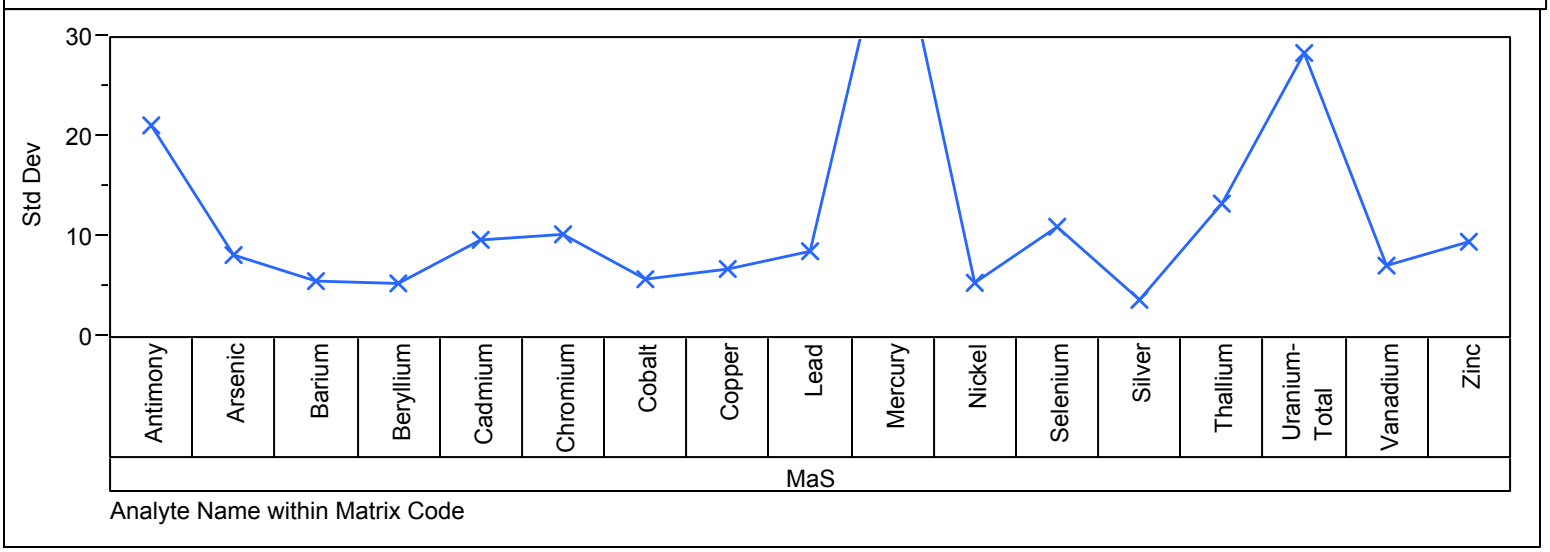

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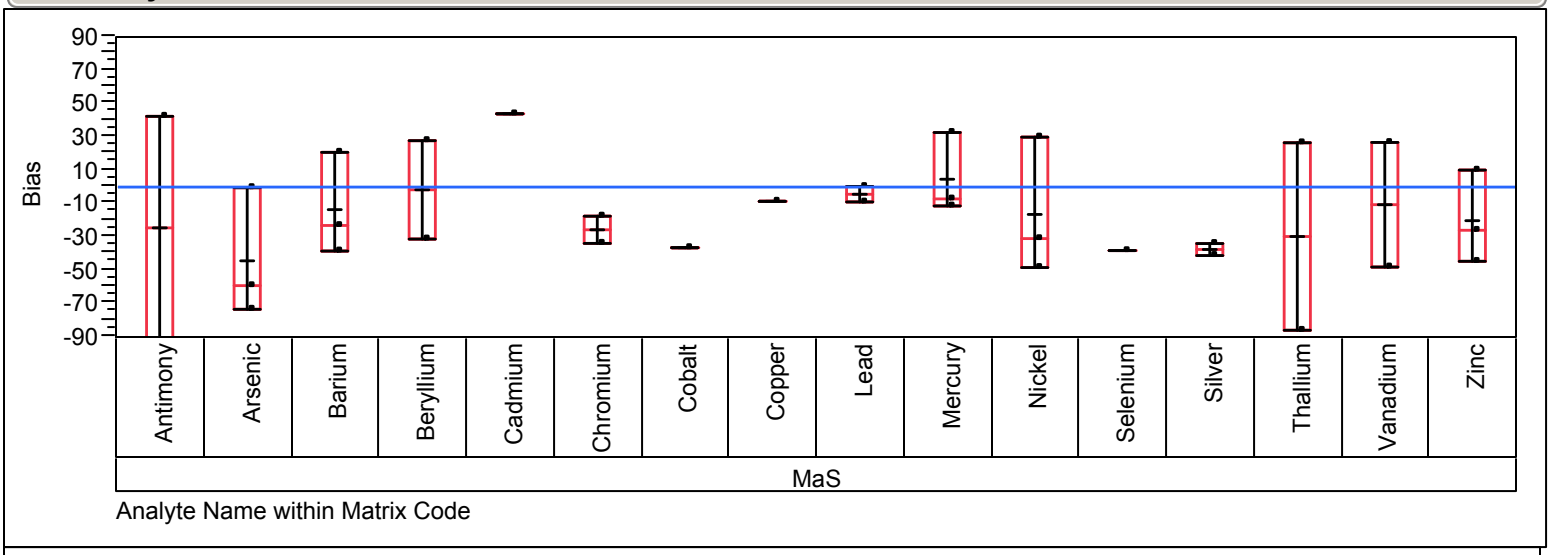
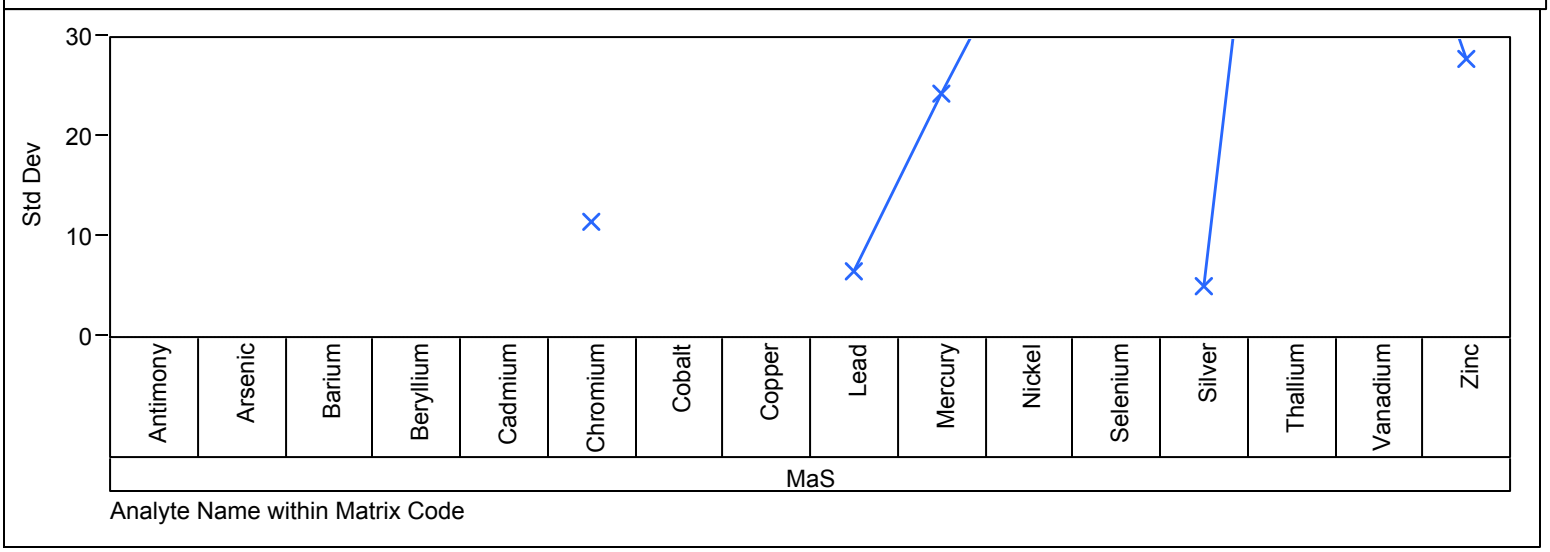
Variability Chart for Bias





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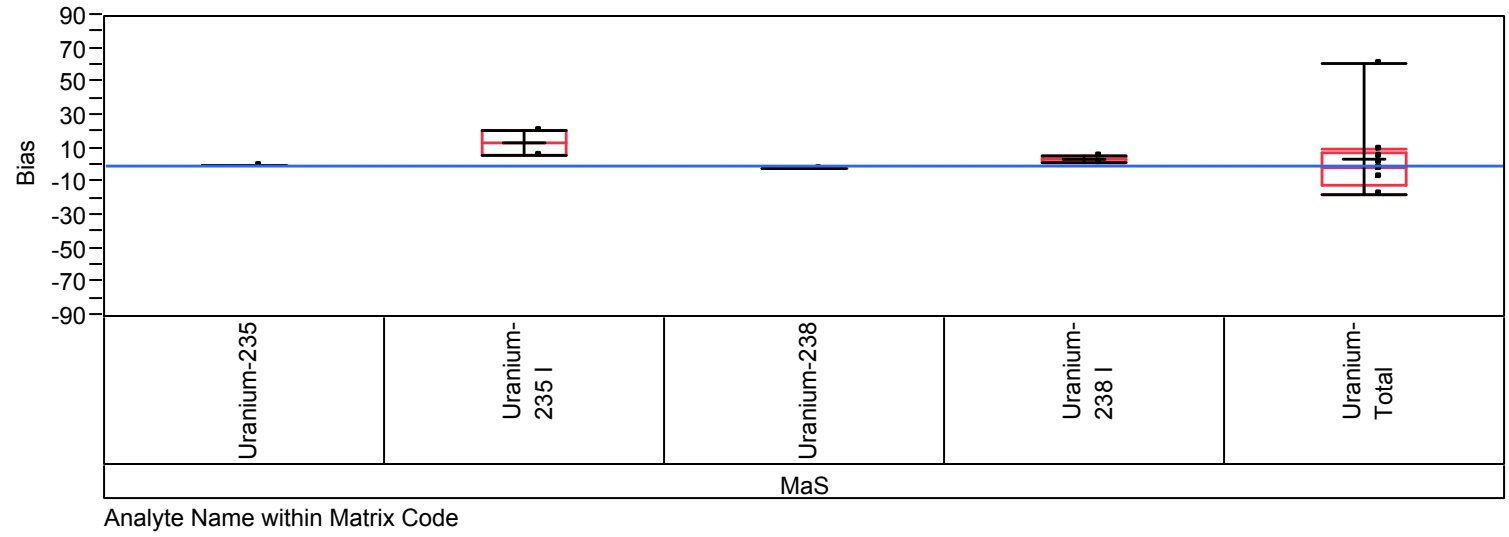
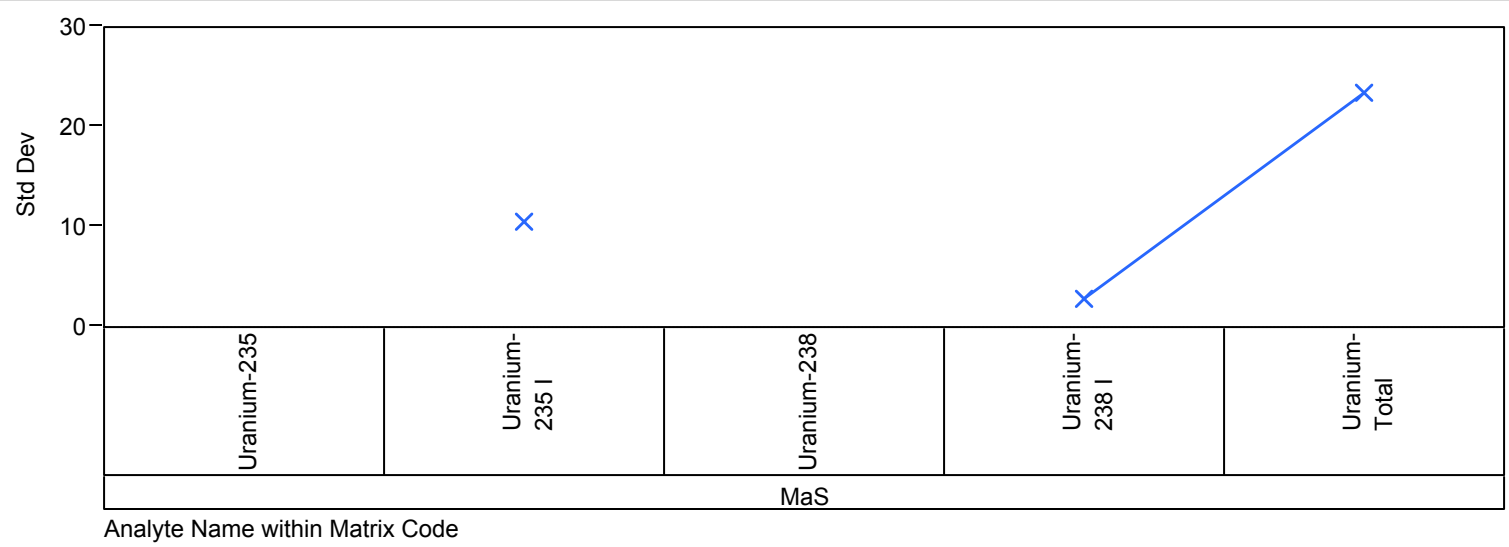
Variability Chart for Bias





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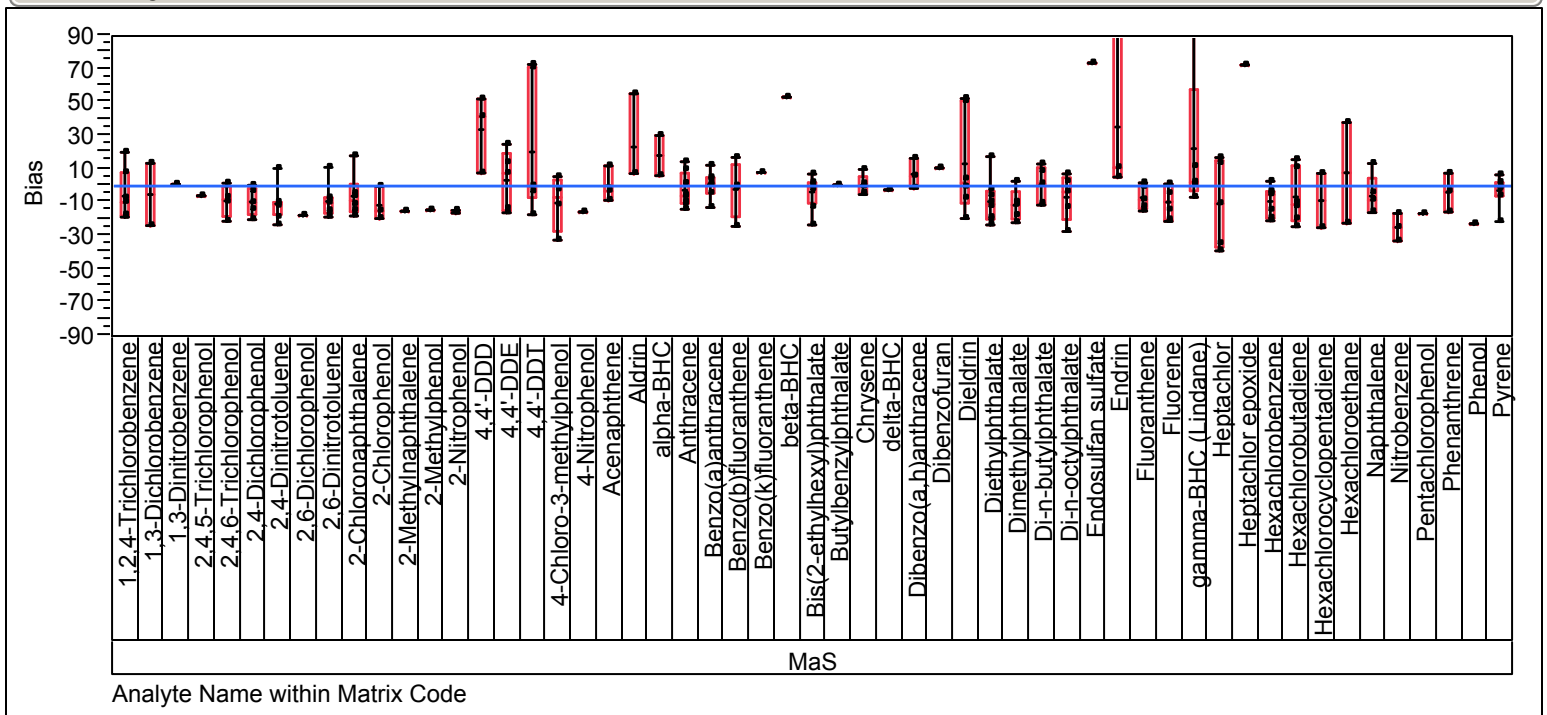
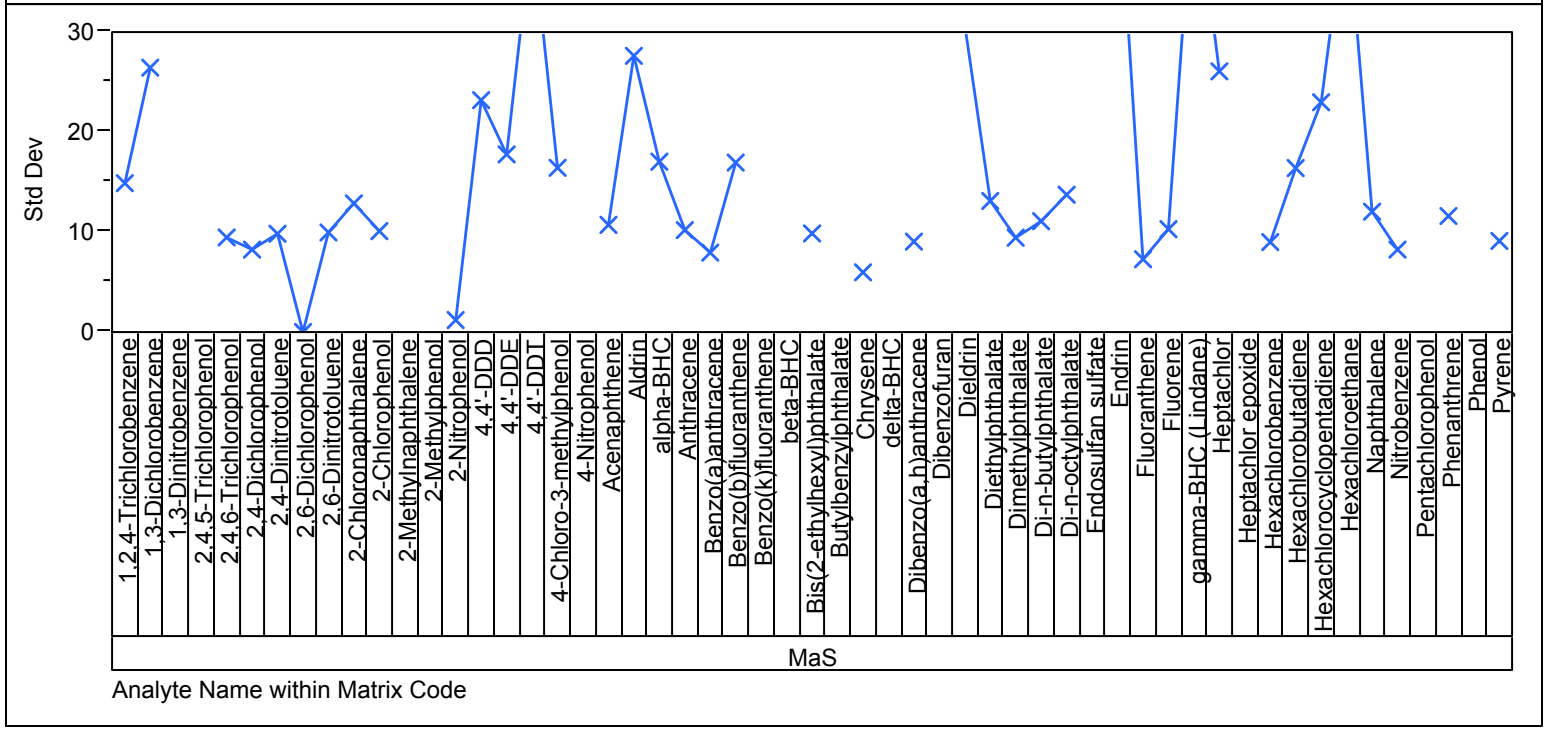
Variability Chart for Bias





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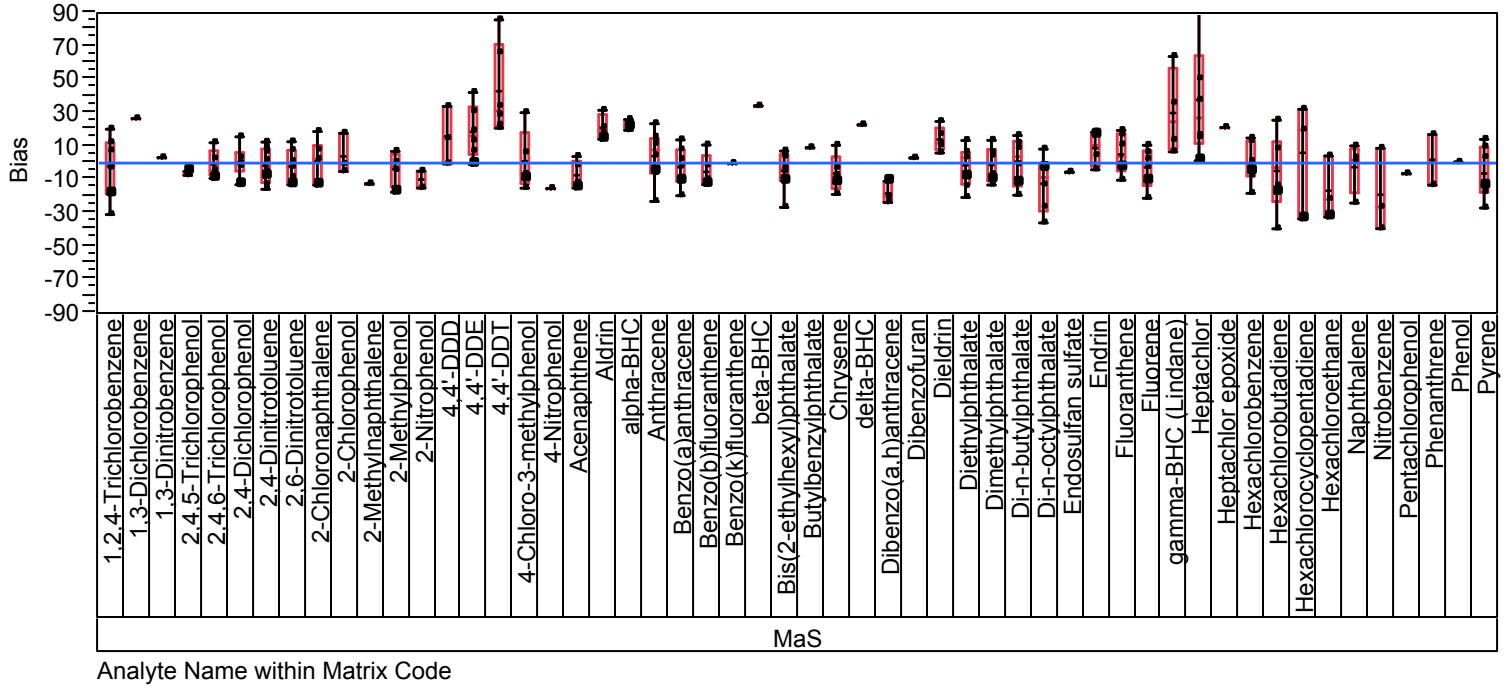
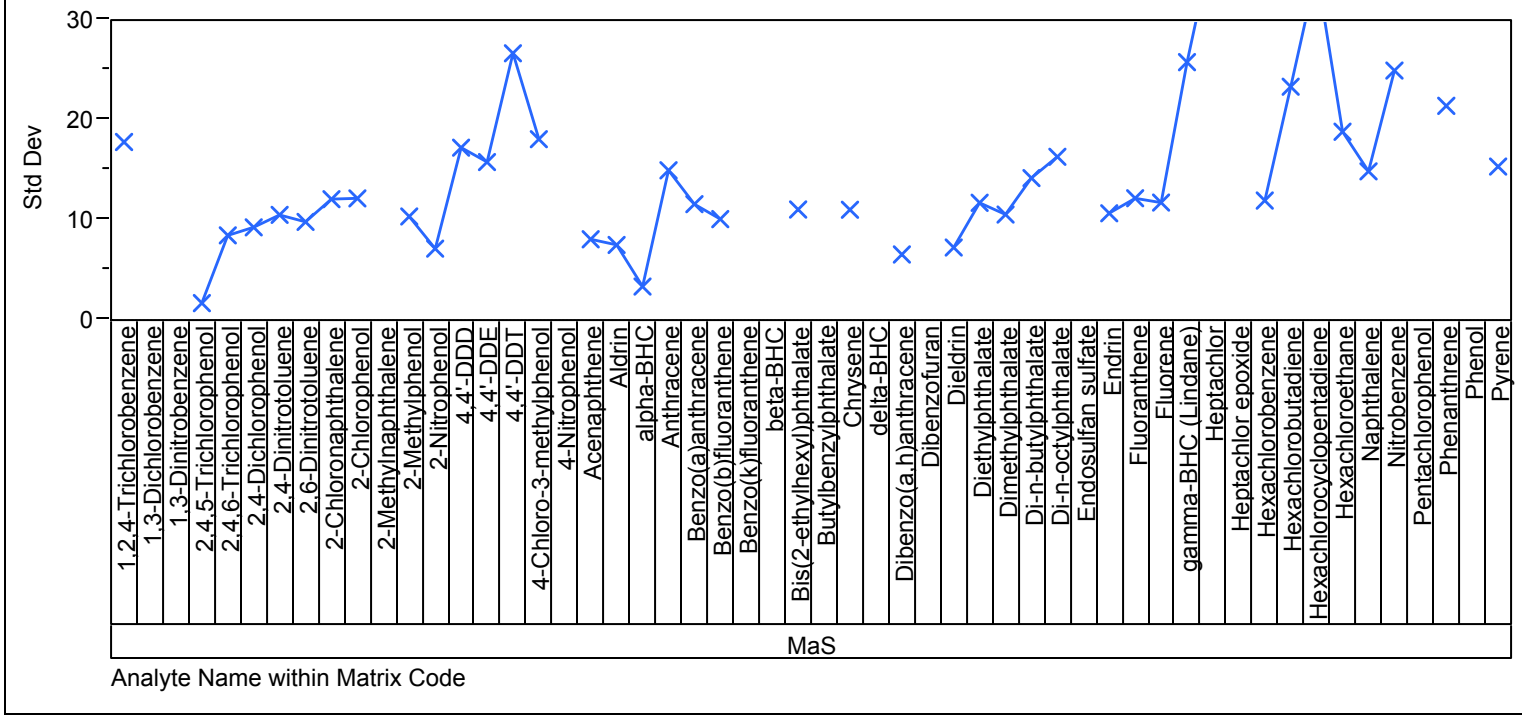
Variability Chart for Bias





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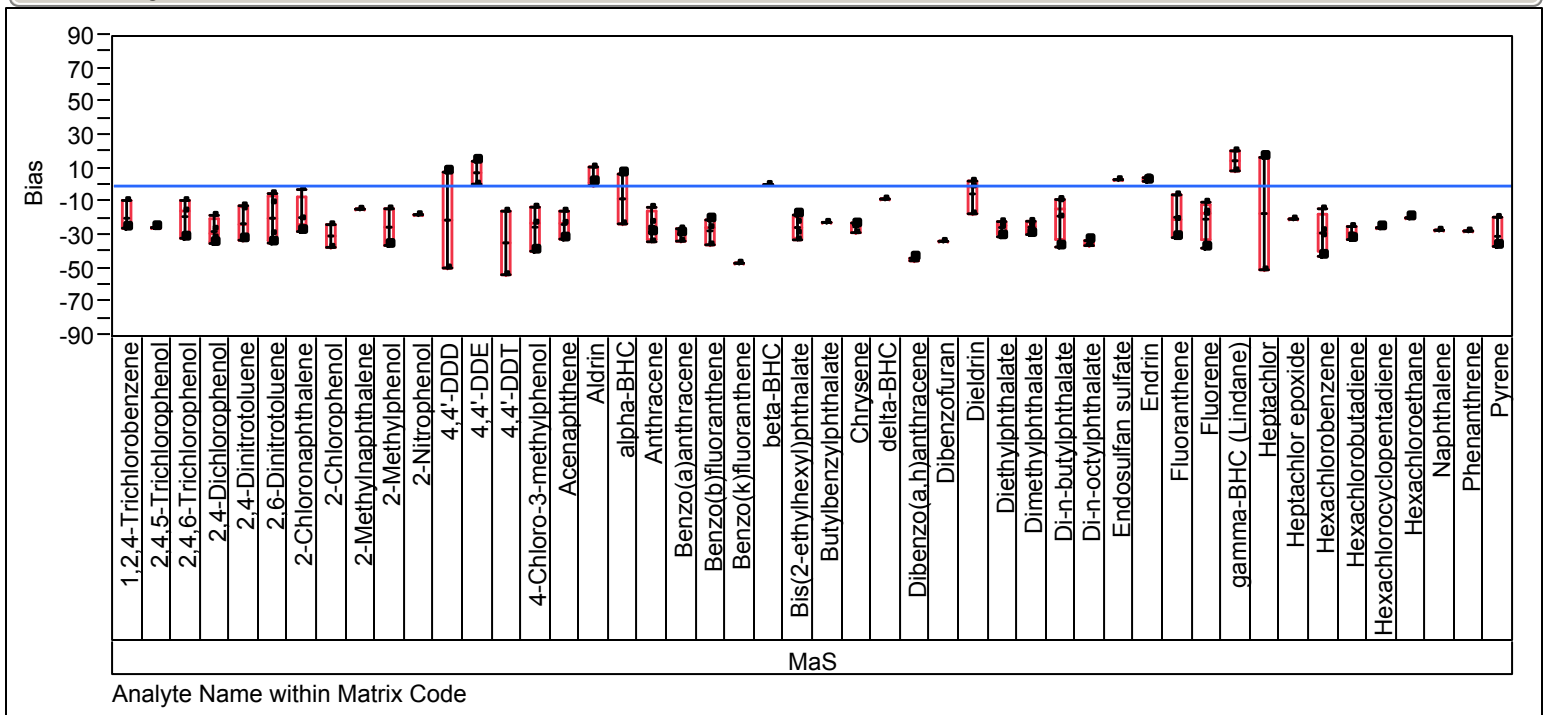
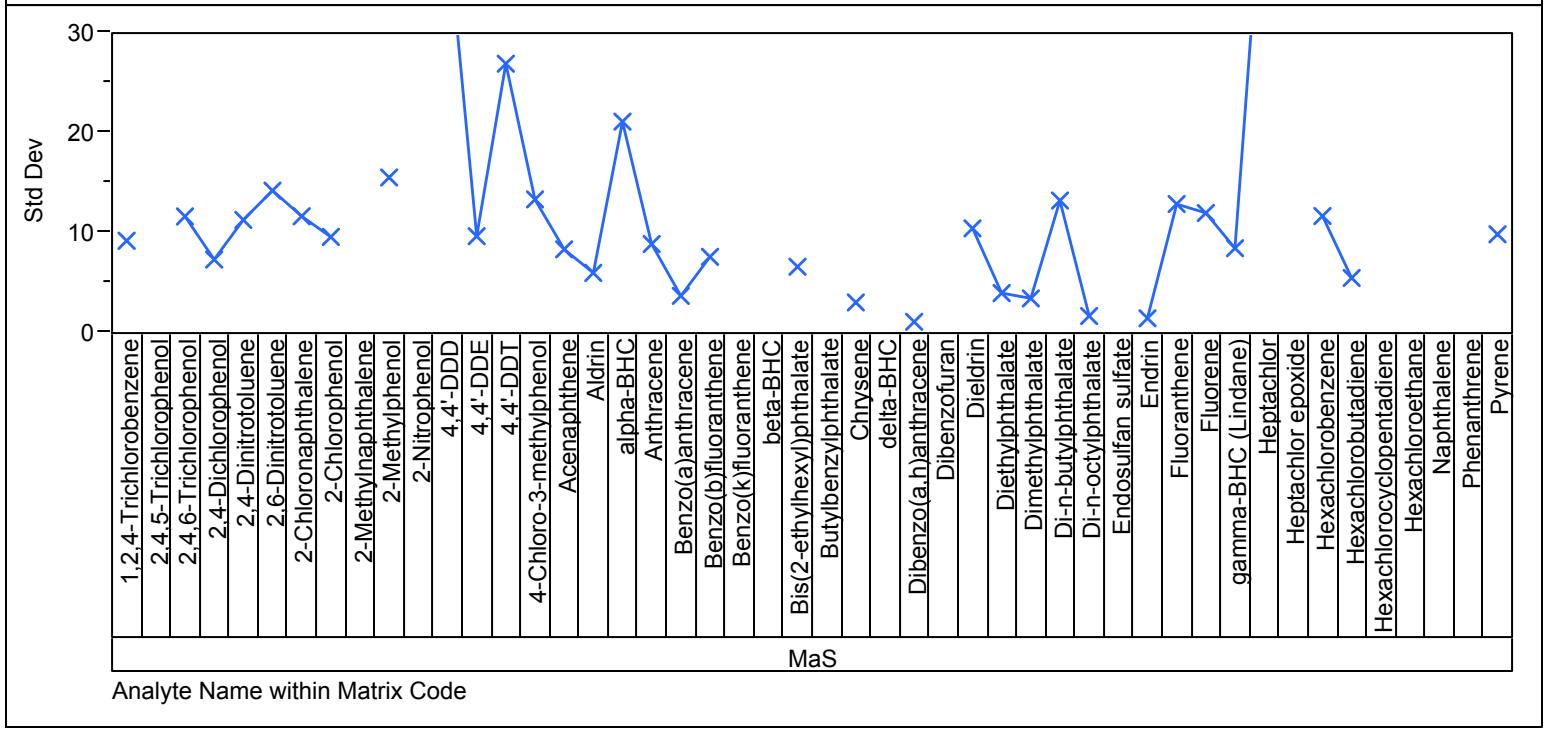
Variability Chart for Bias





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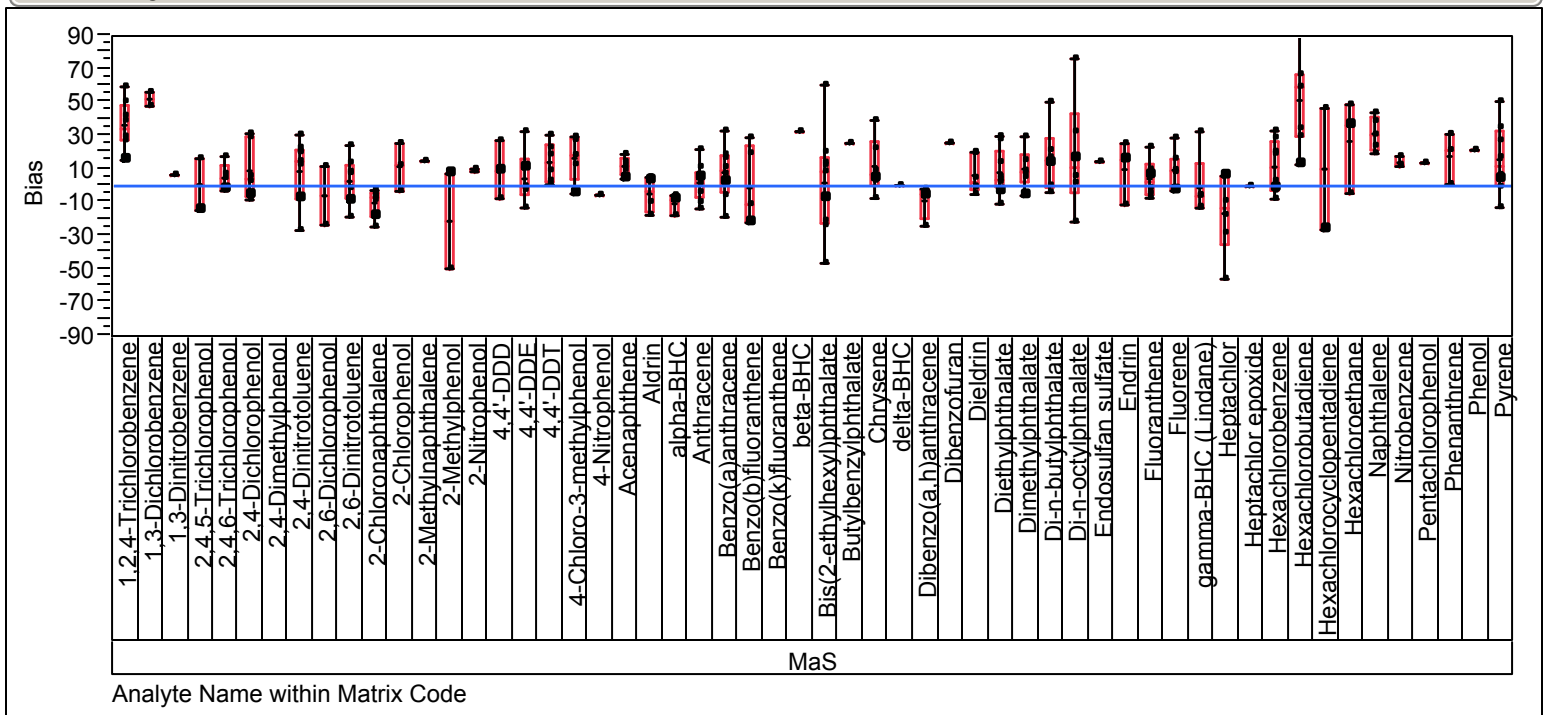
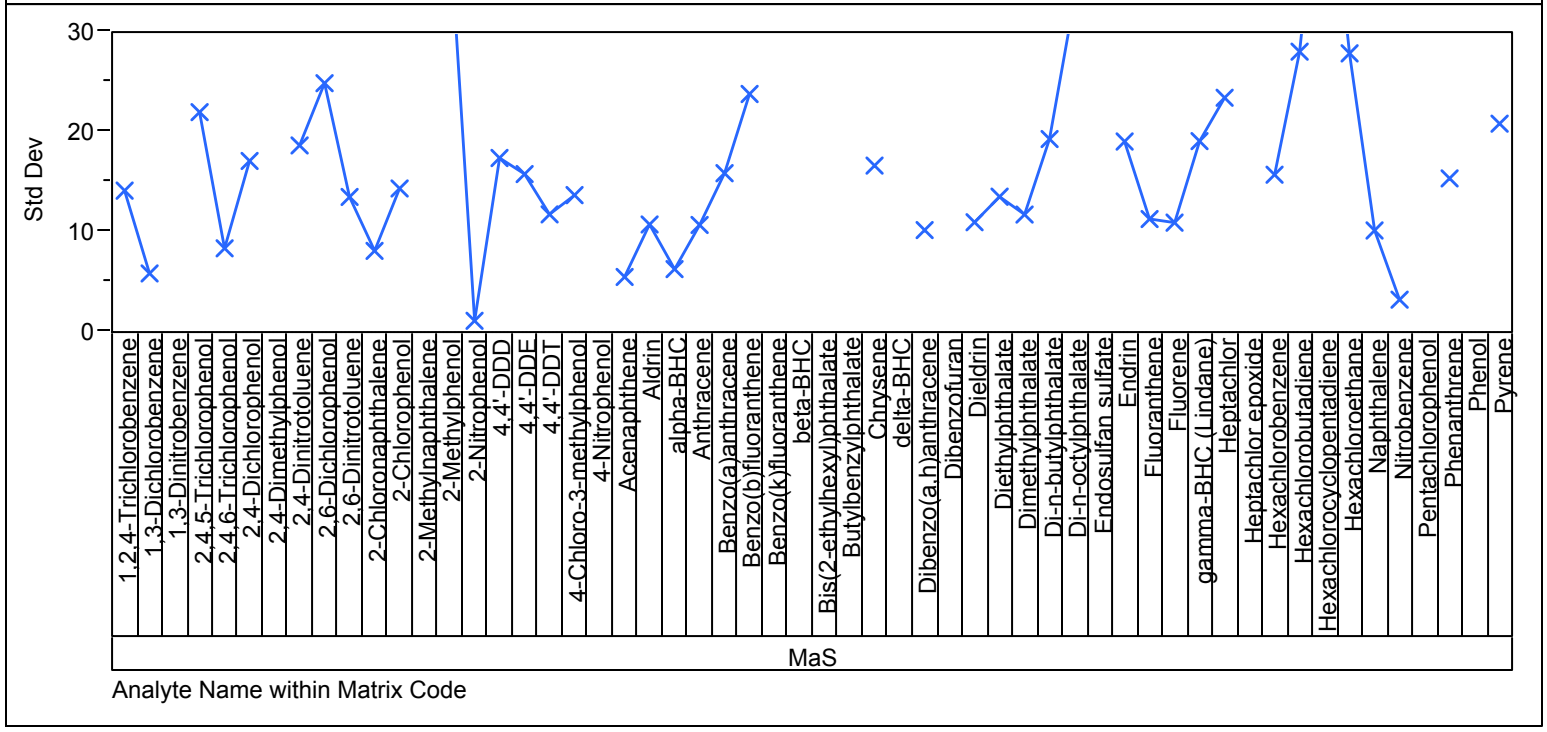
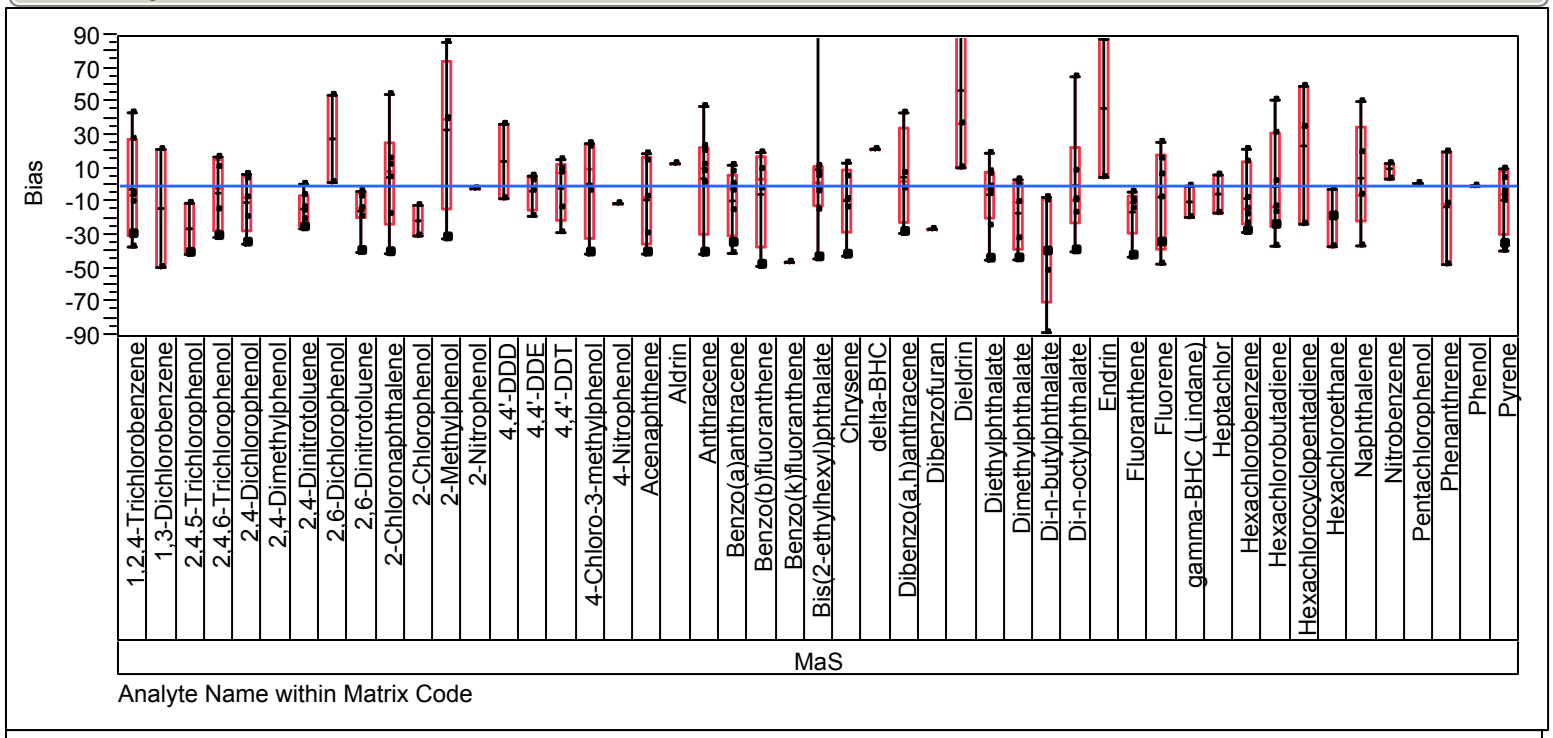
Variability Chart for Bias

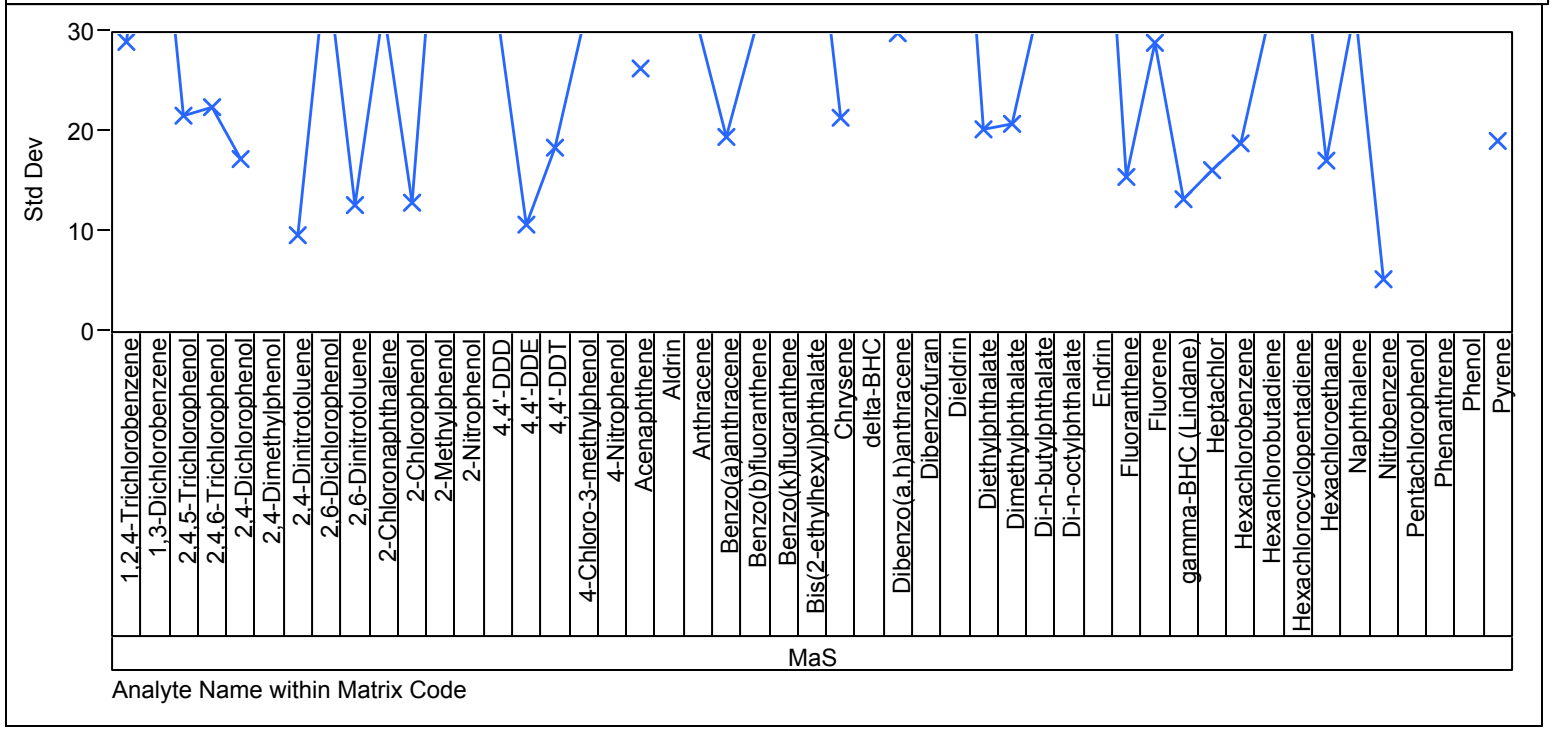




Variability Gauge Lab Code=BNEL01

Variability Chart for Bias





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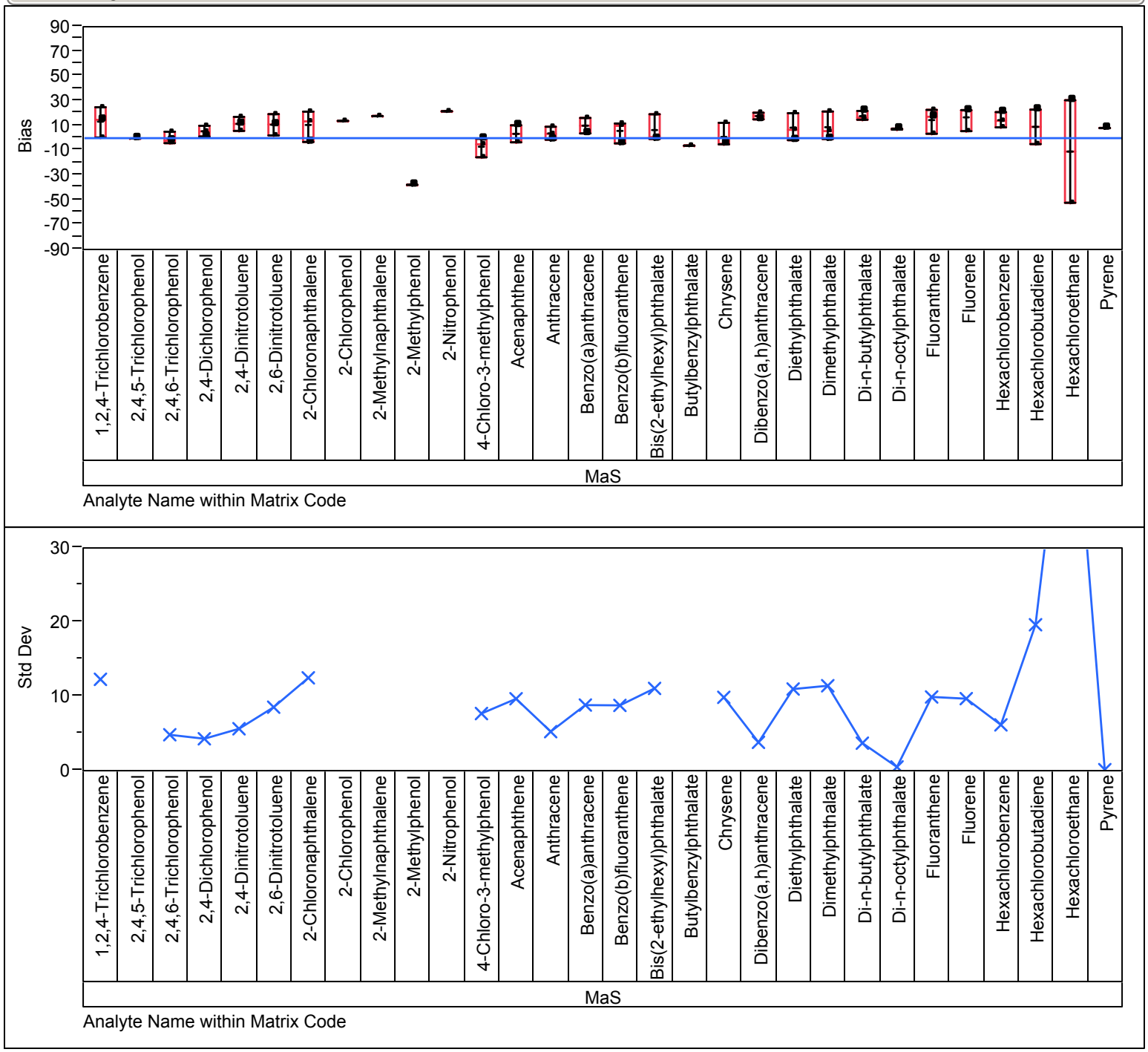
Variability Chart for Bias



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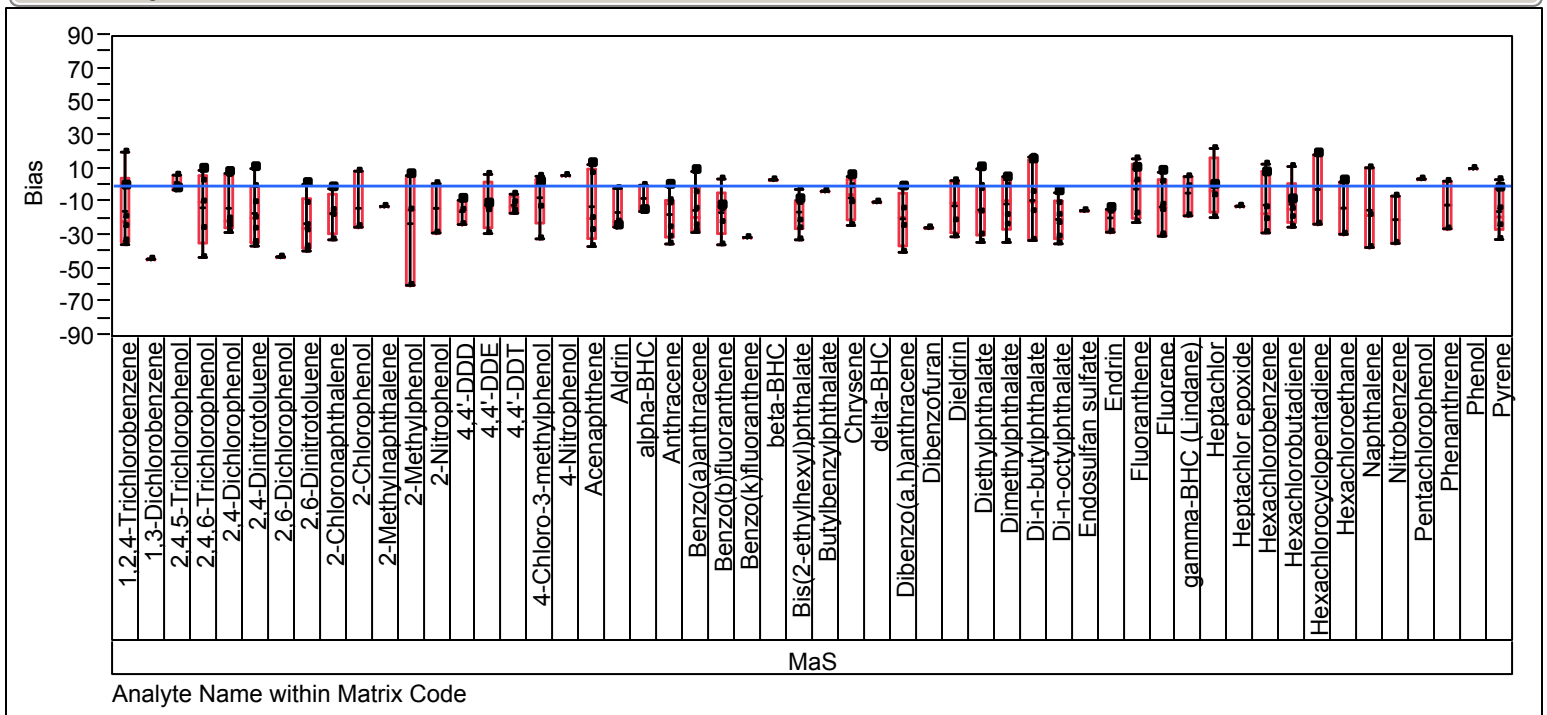
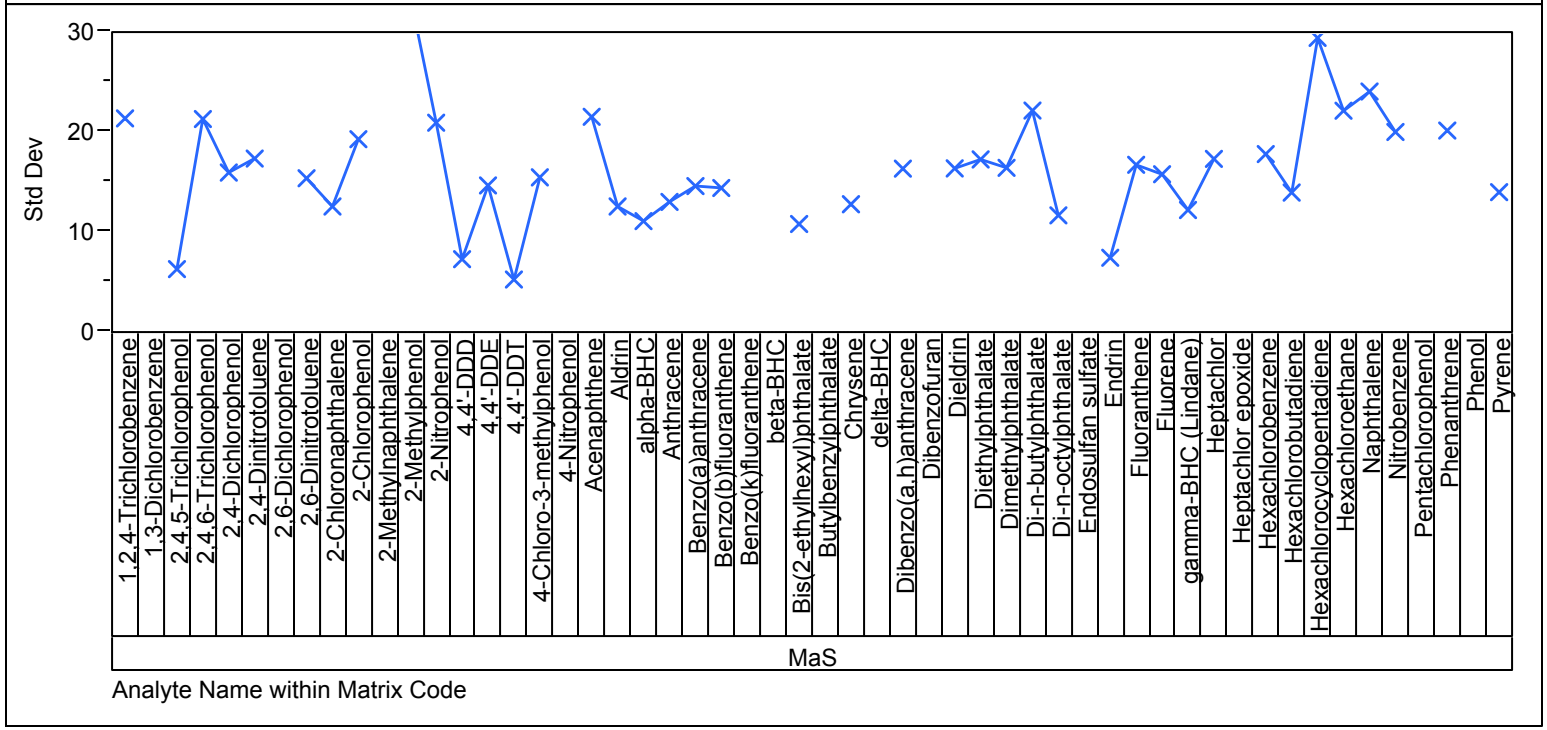
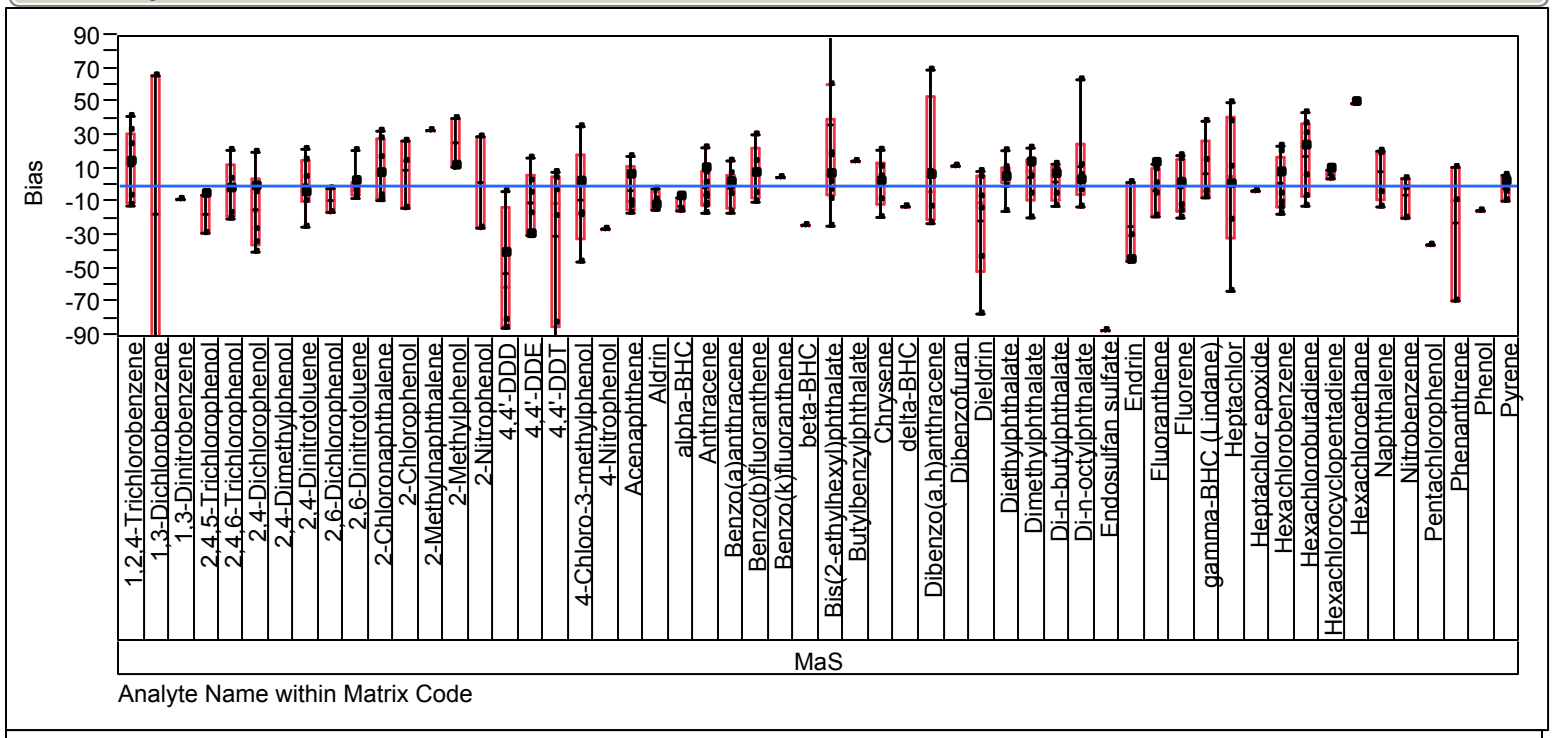
Variability Chart for Bias

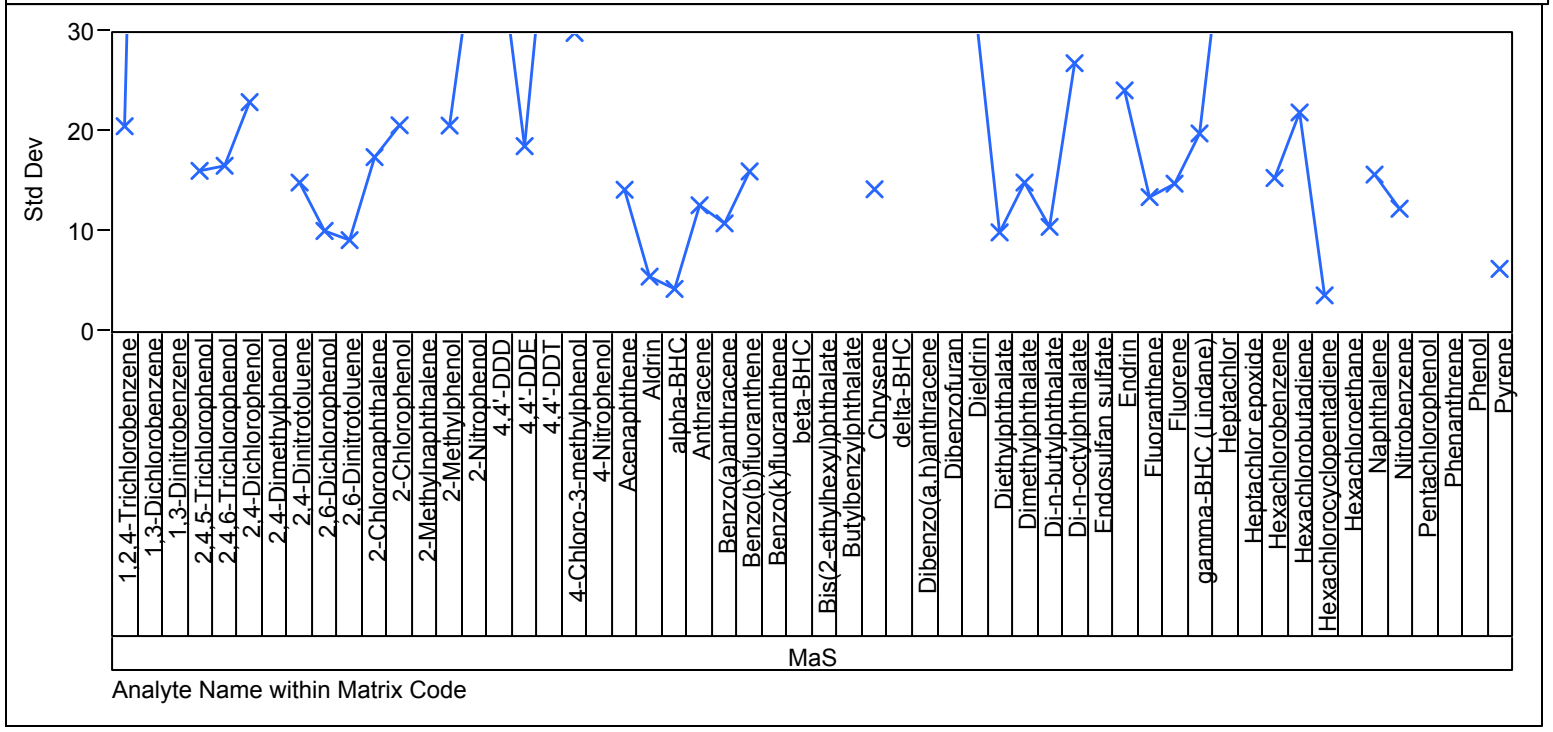




Variability Gauge Lab Code=DAFI01

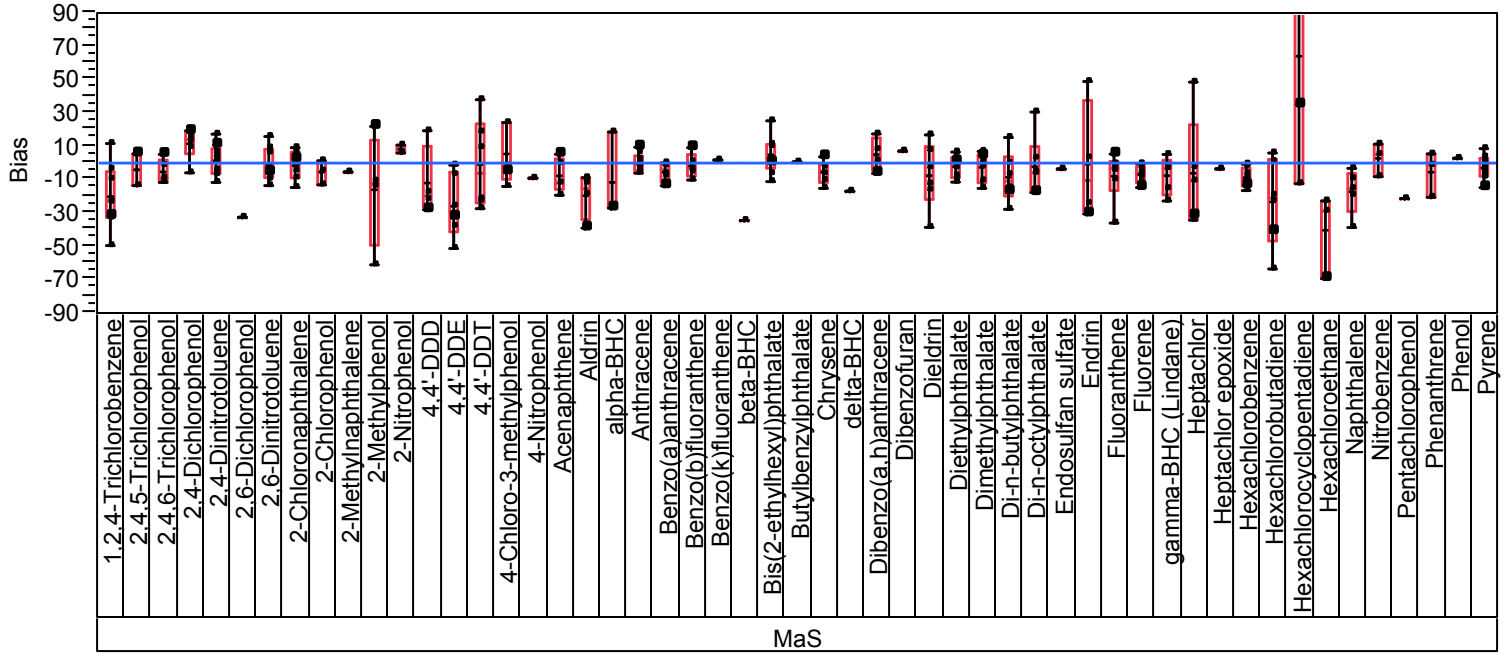
Variability Chart for Bias

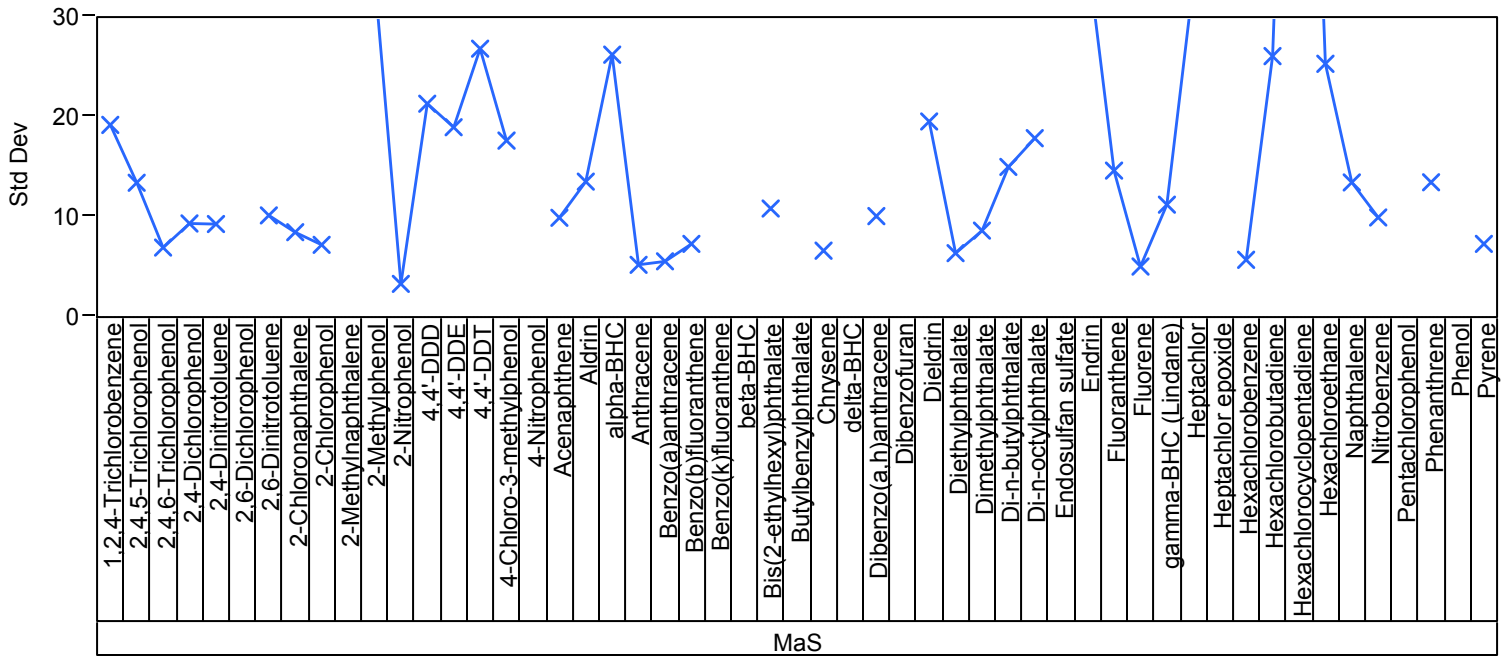




Variability Gauge Lab Code=GENE01

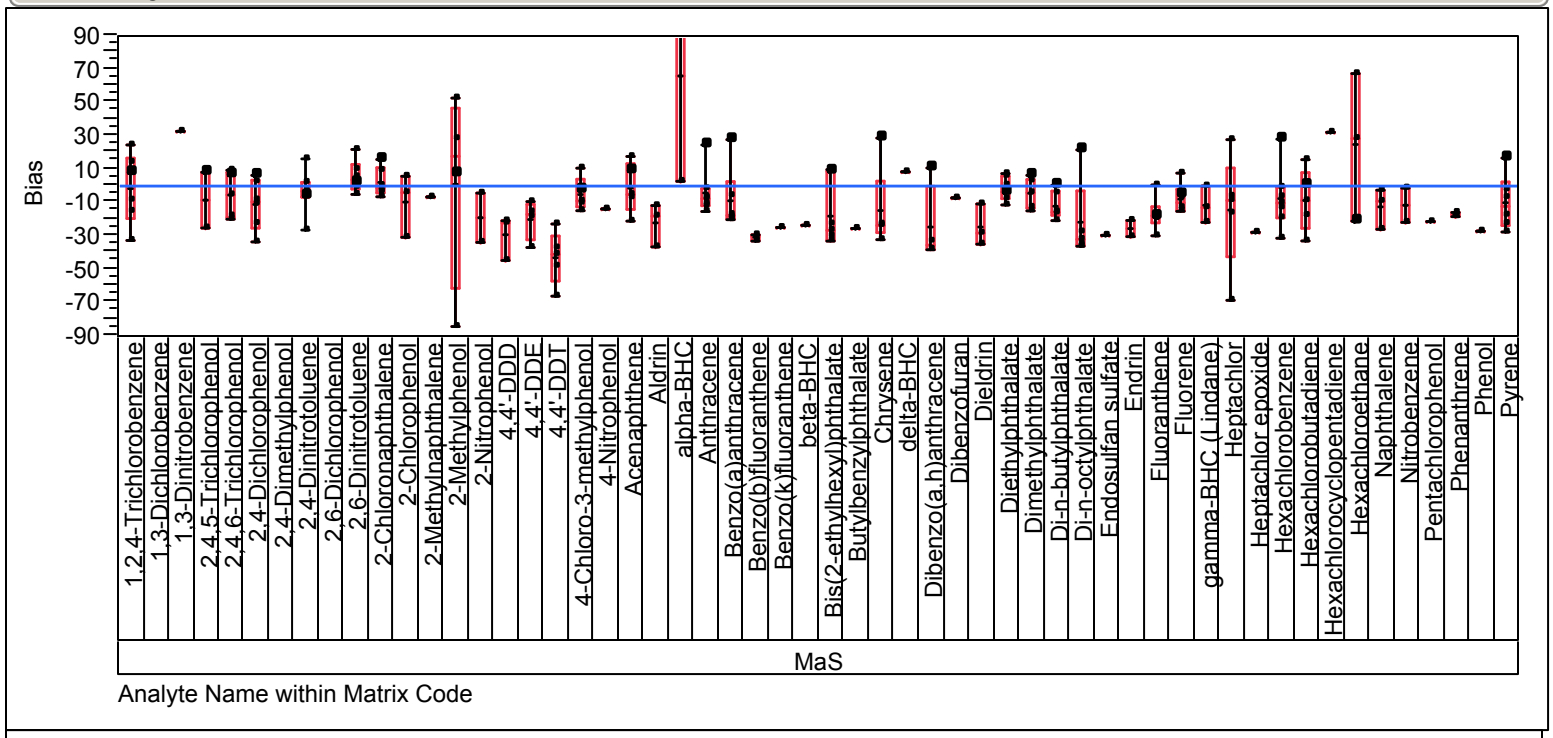
Variability Chart for Bias

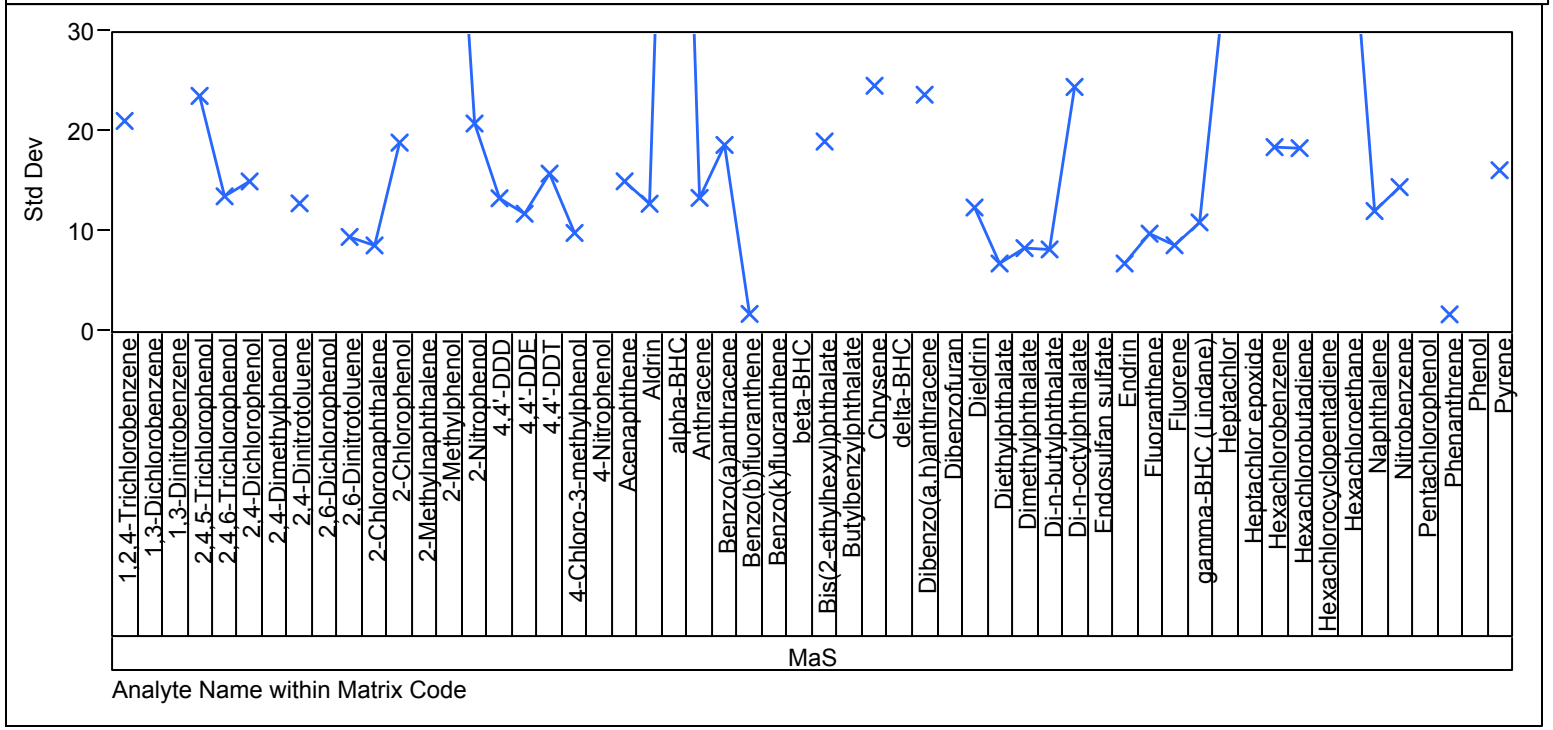




Variability Gauge Lab Code=GPLP01

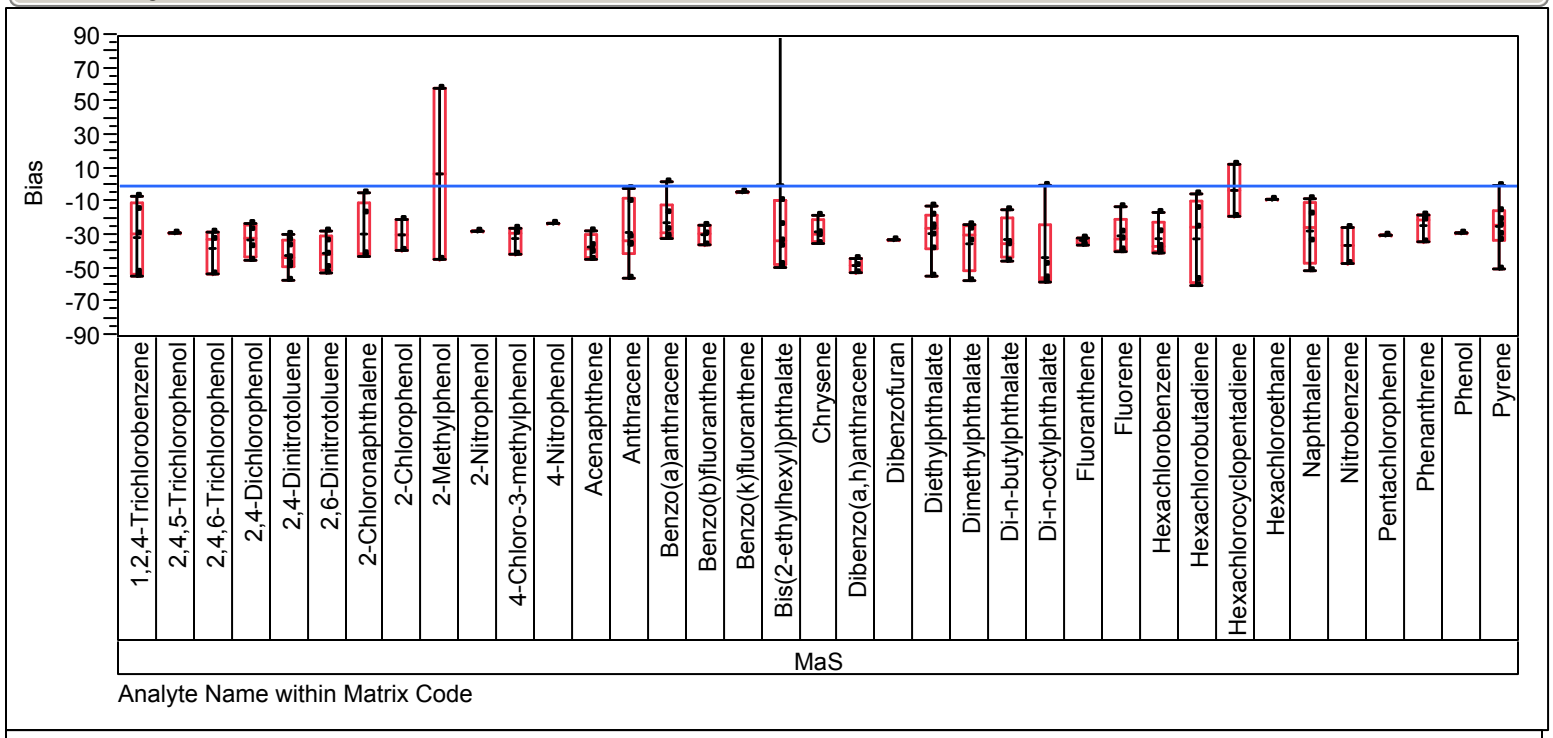
Variability Chart for Bias

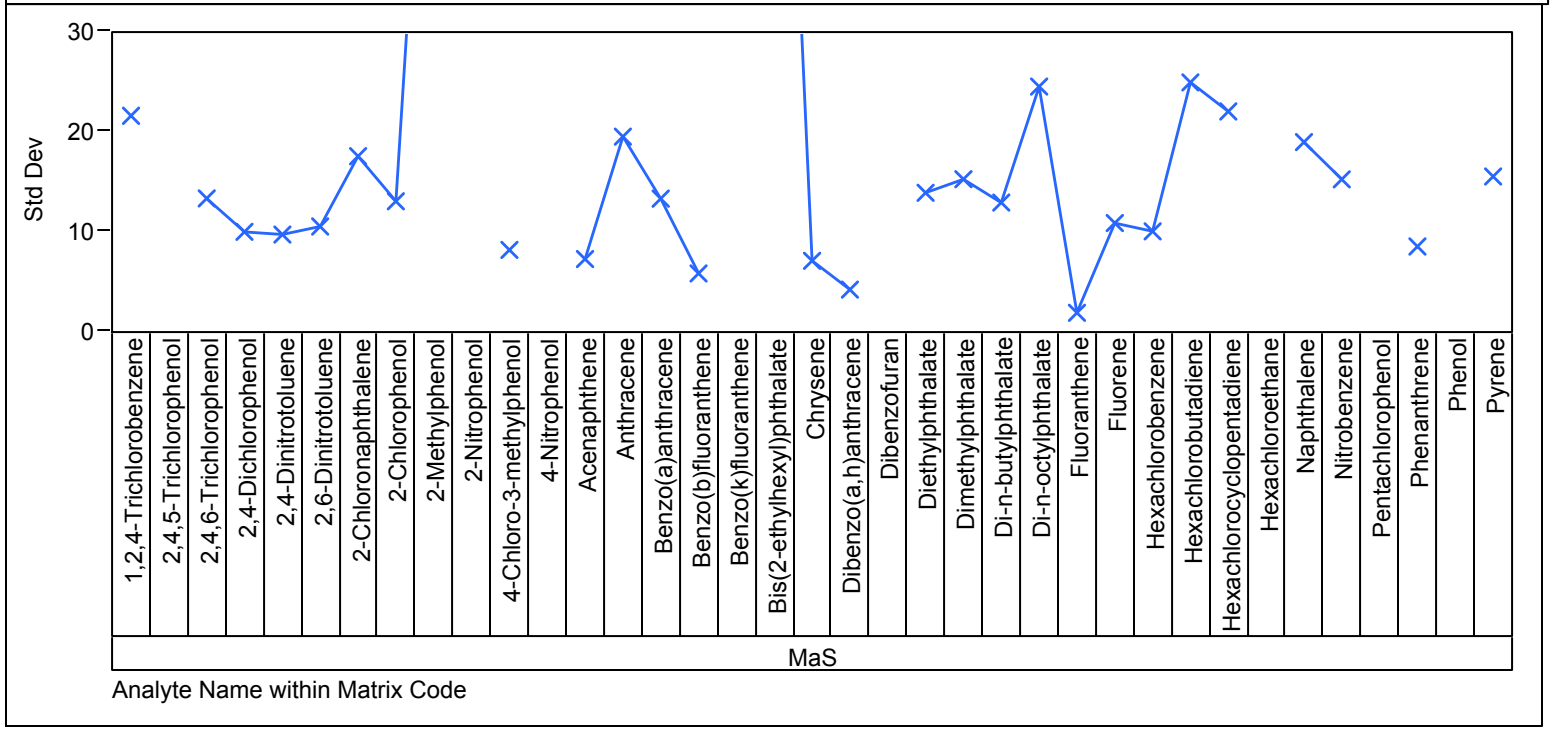




Variability Gauge Lab Code=LOCK01

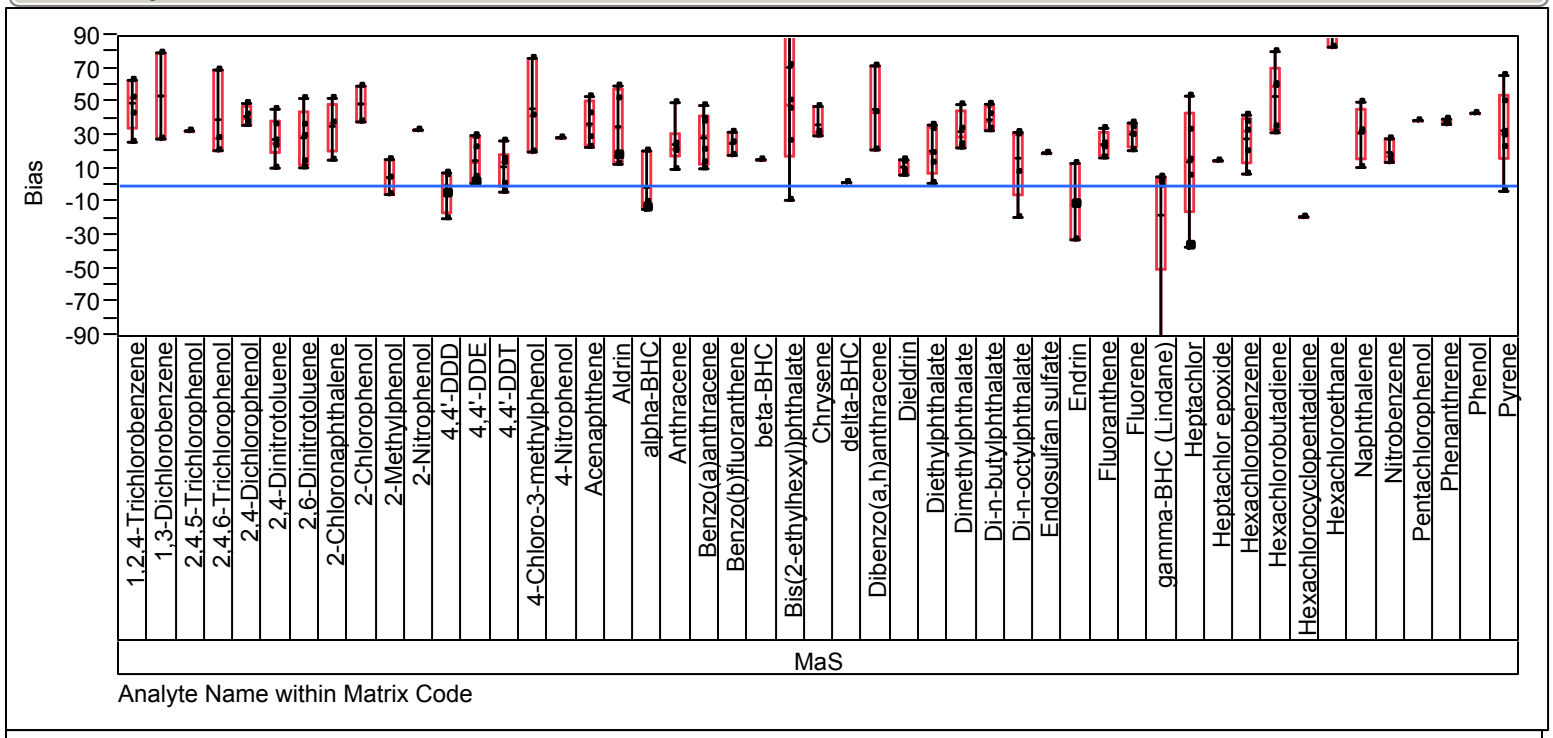
Variability Chart for Bias

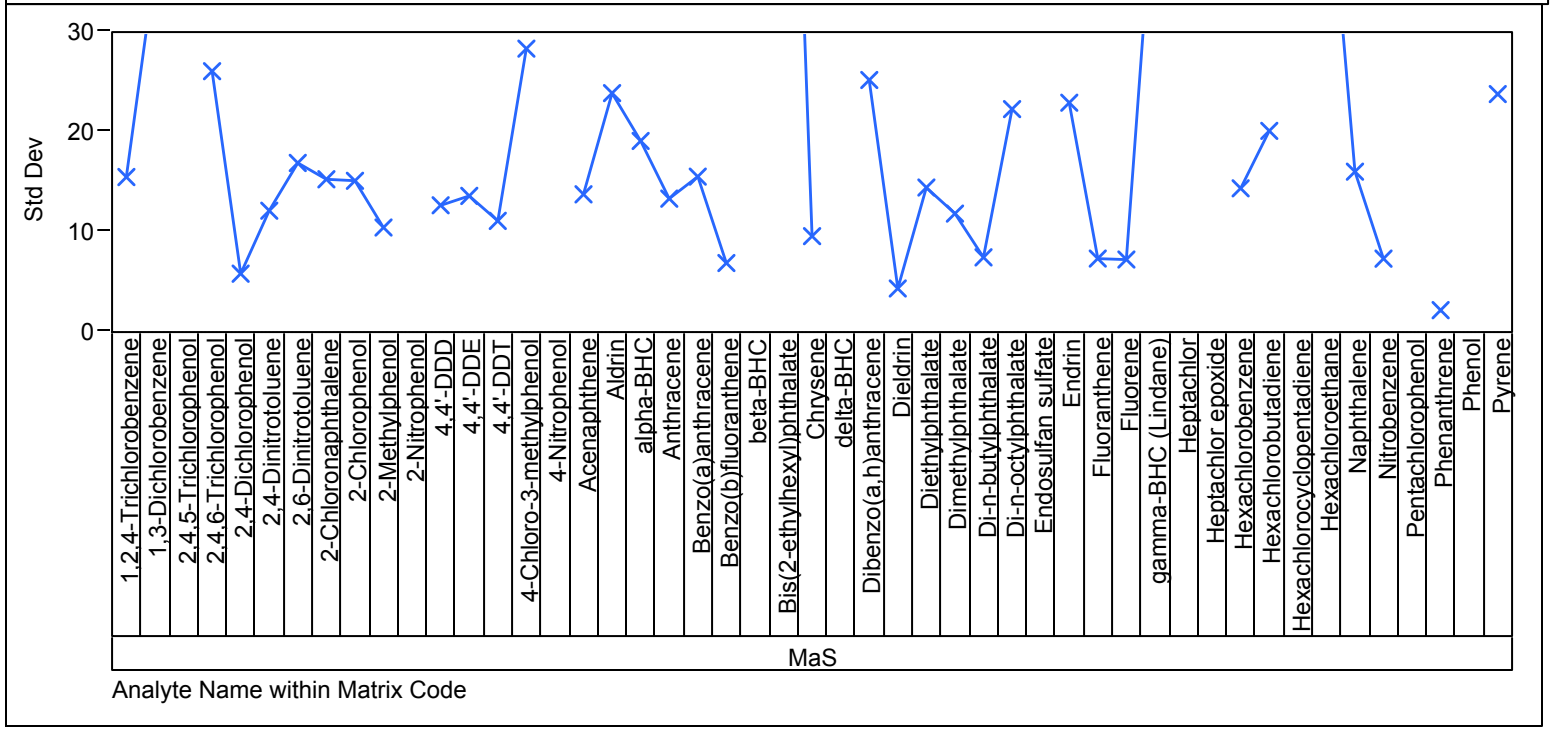




Variability Gauge Lab Code=MART01

Variability Chart for Bias





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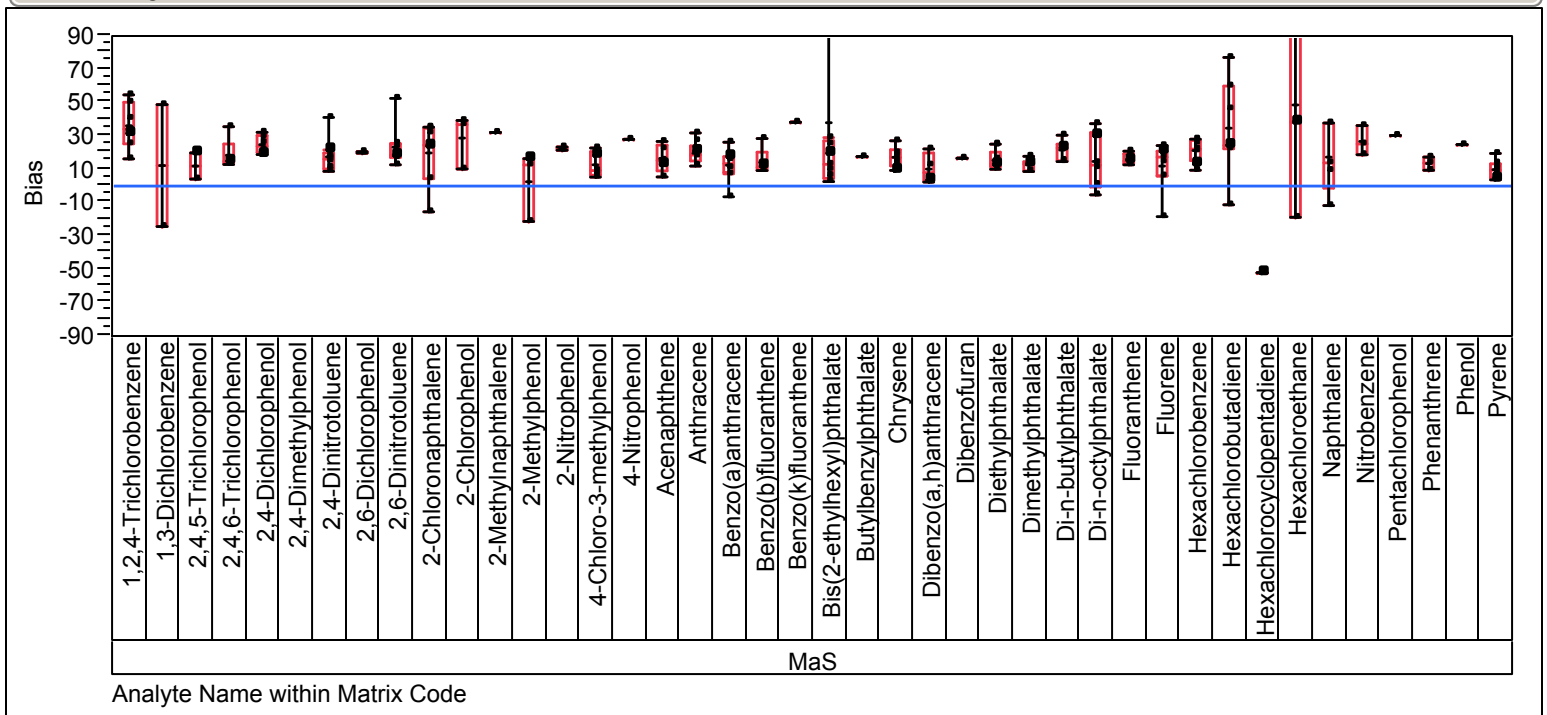
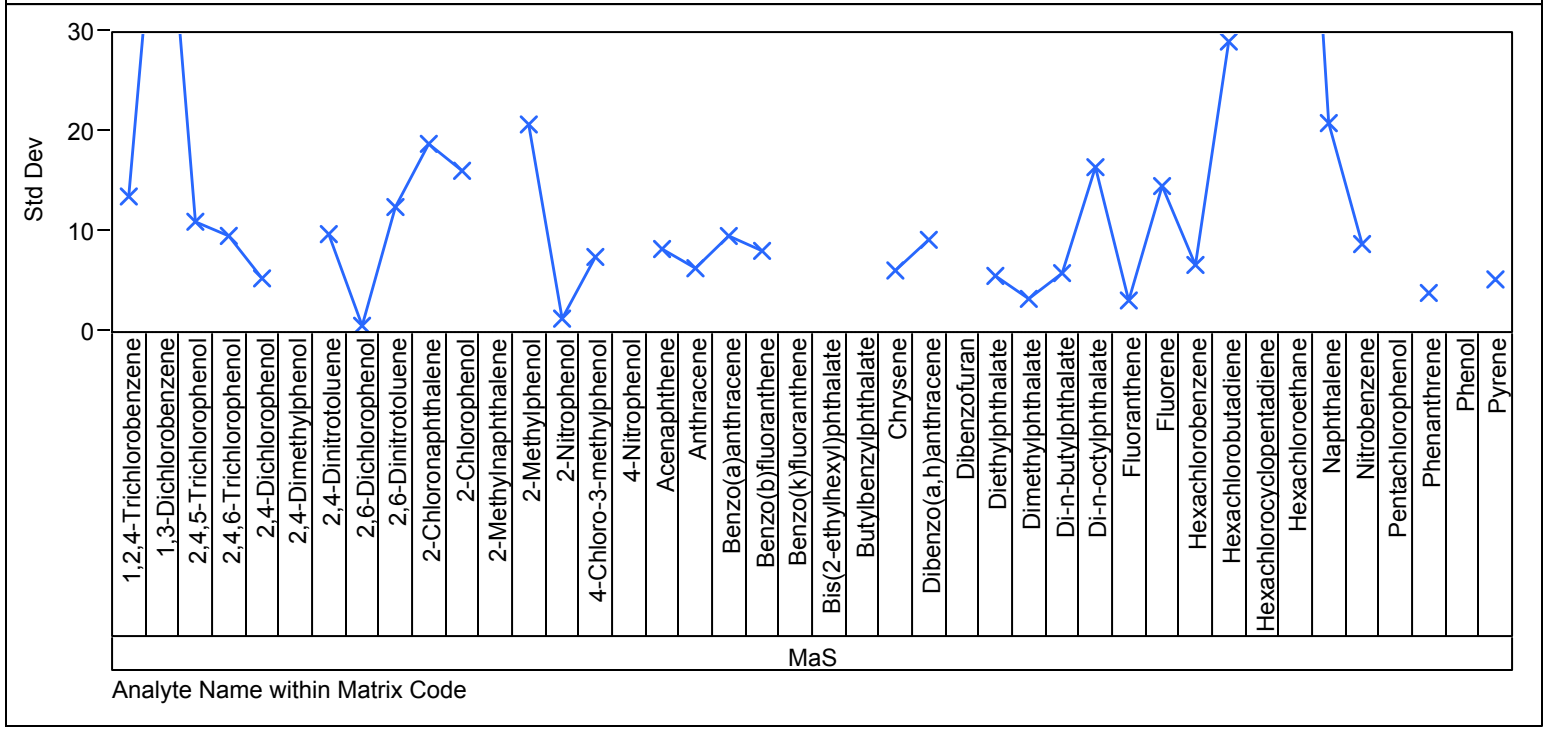
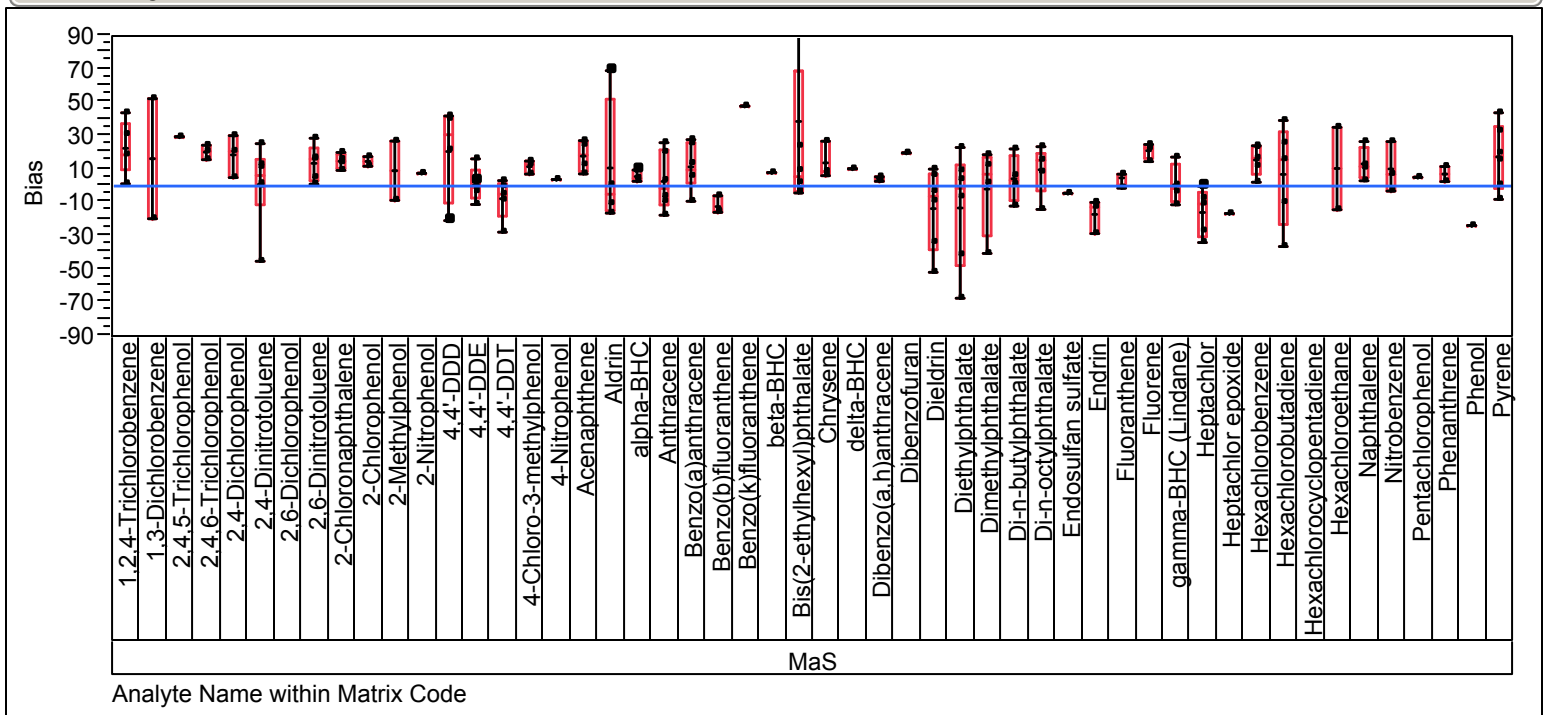
Variability Chart for Bias

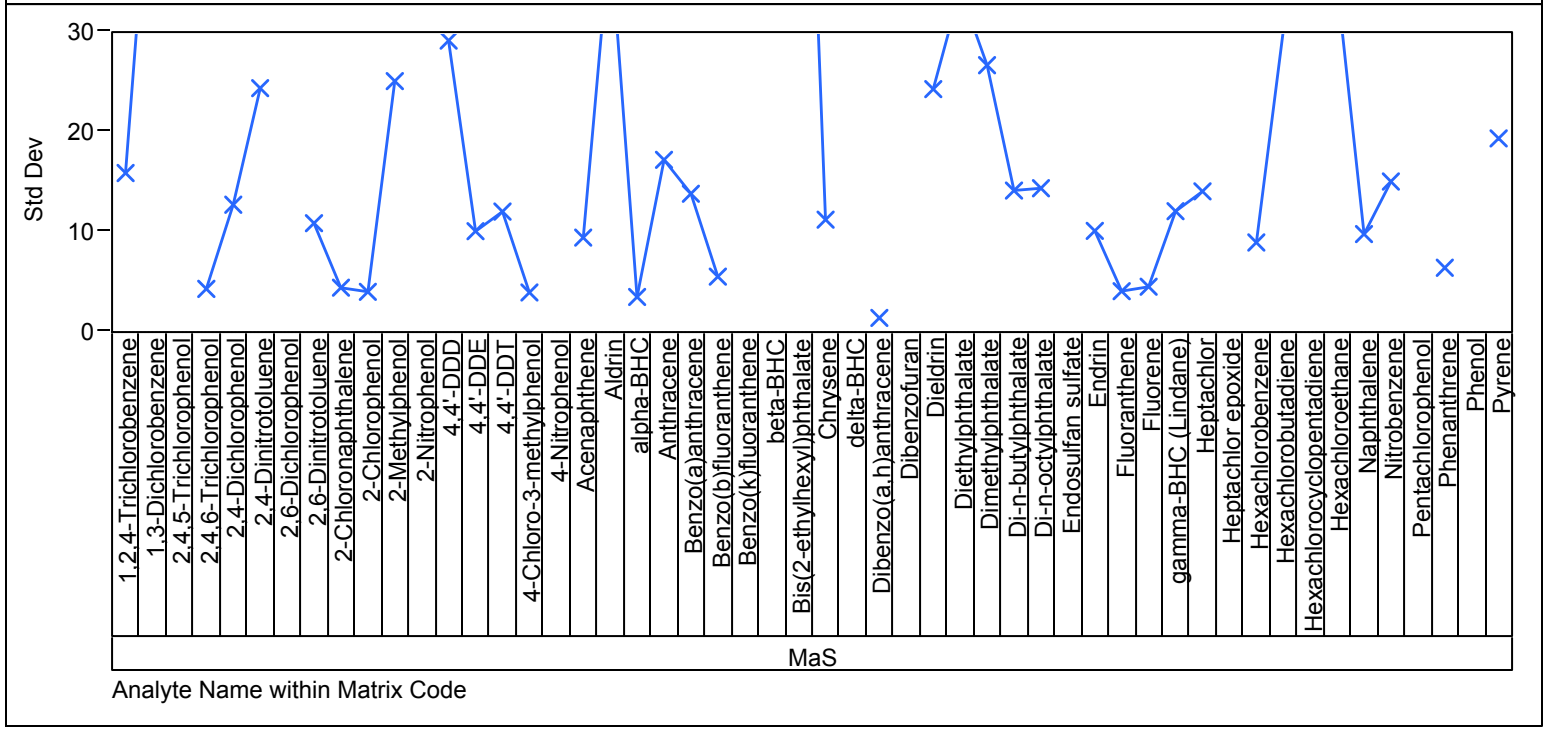




Variability Gauge Lab Code=NARL01

Variability Chart for Bias





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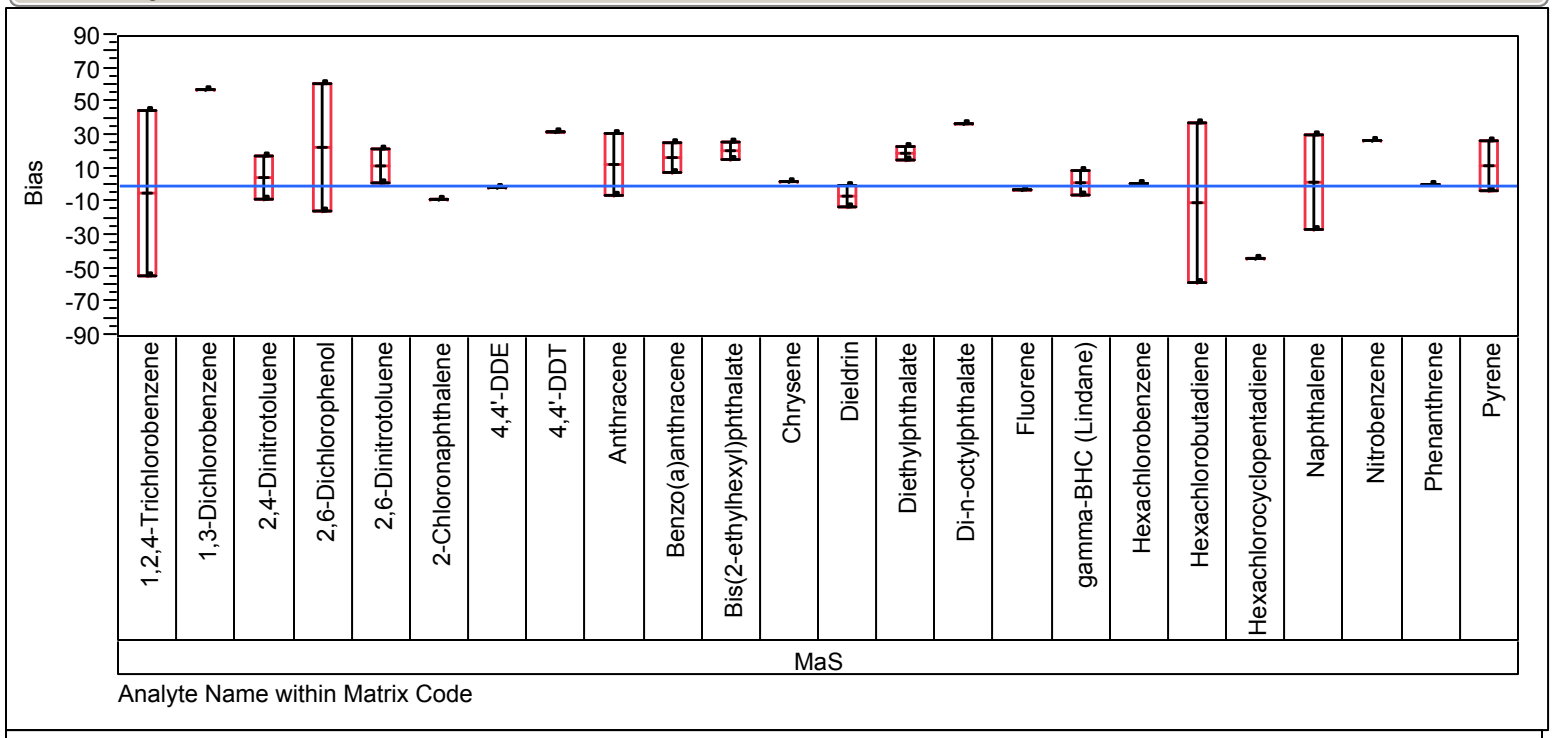
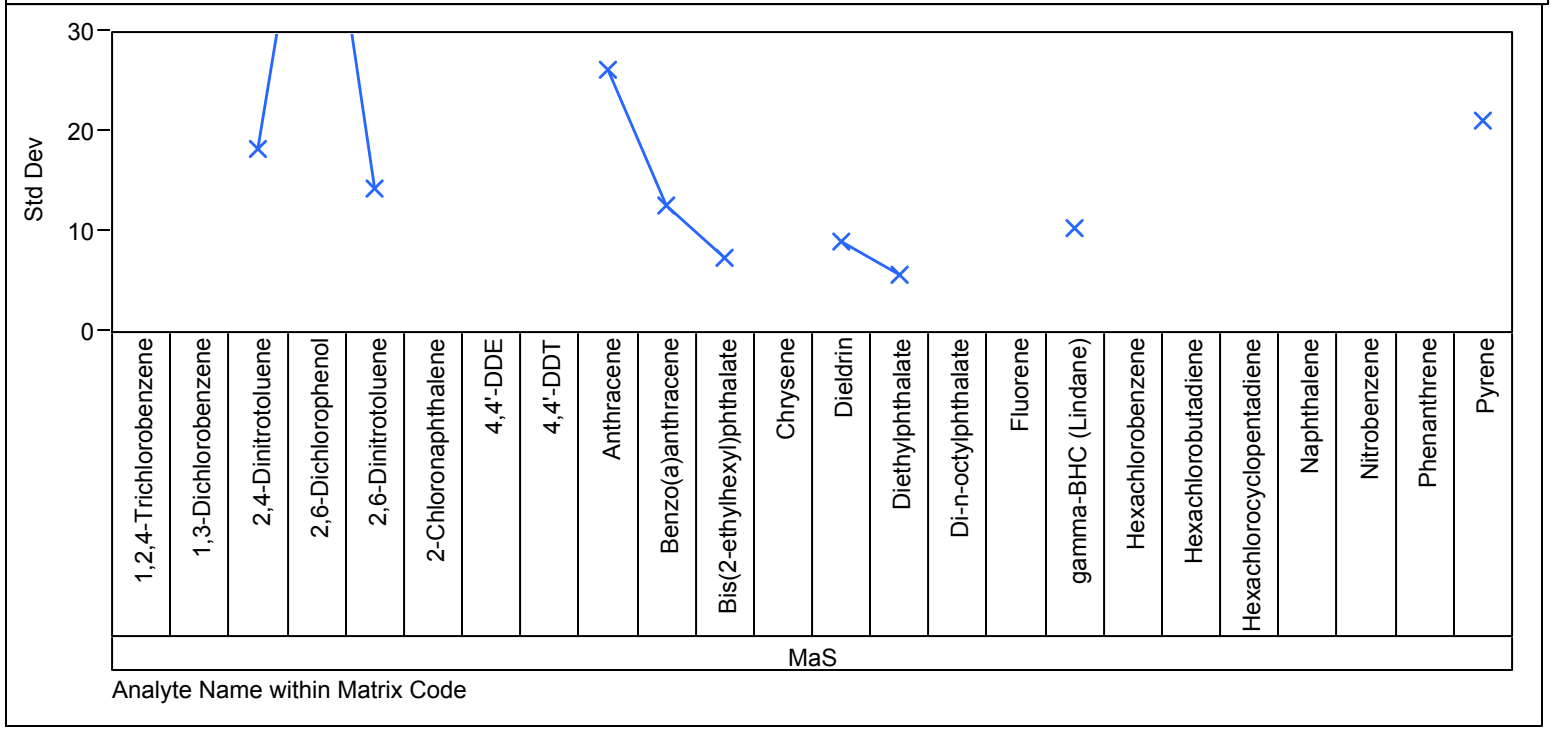
Variability Chart for Bias





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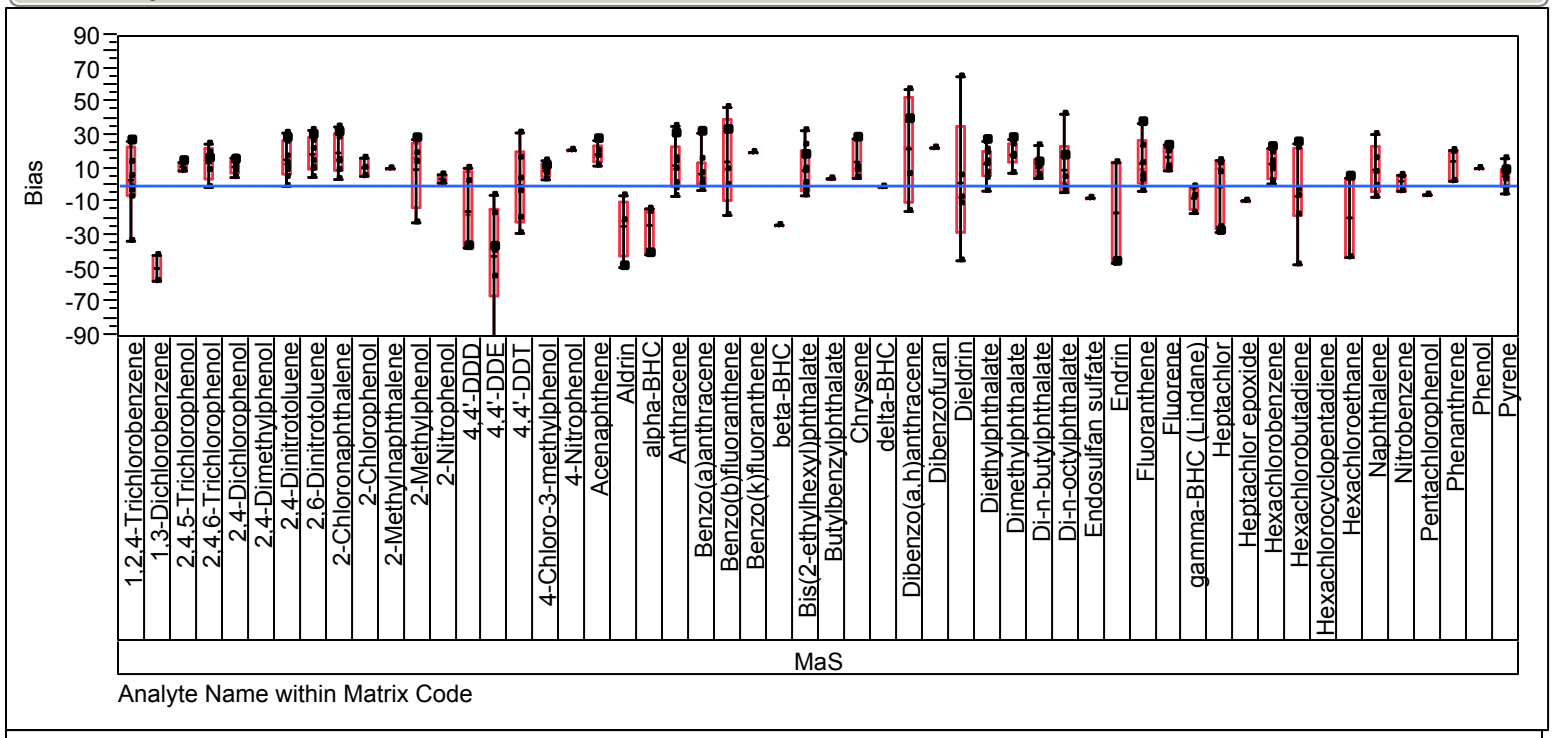
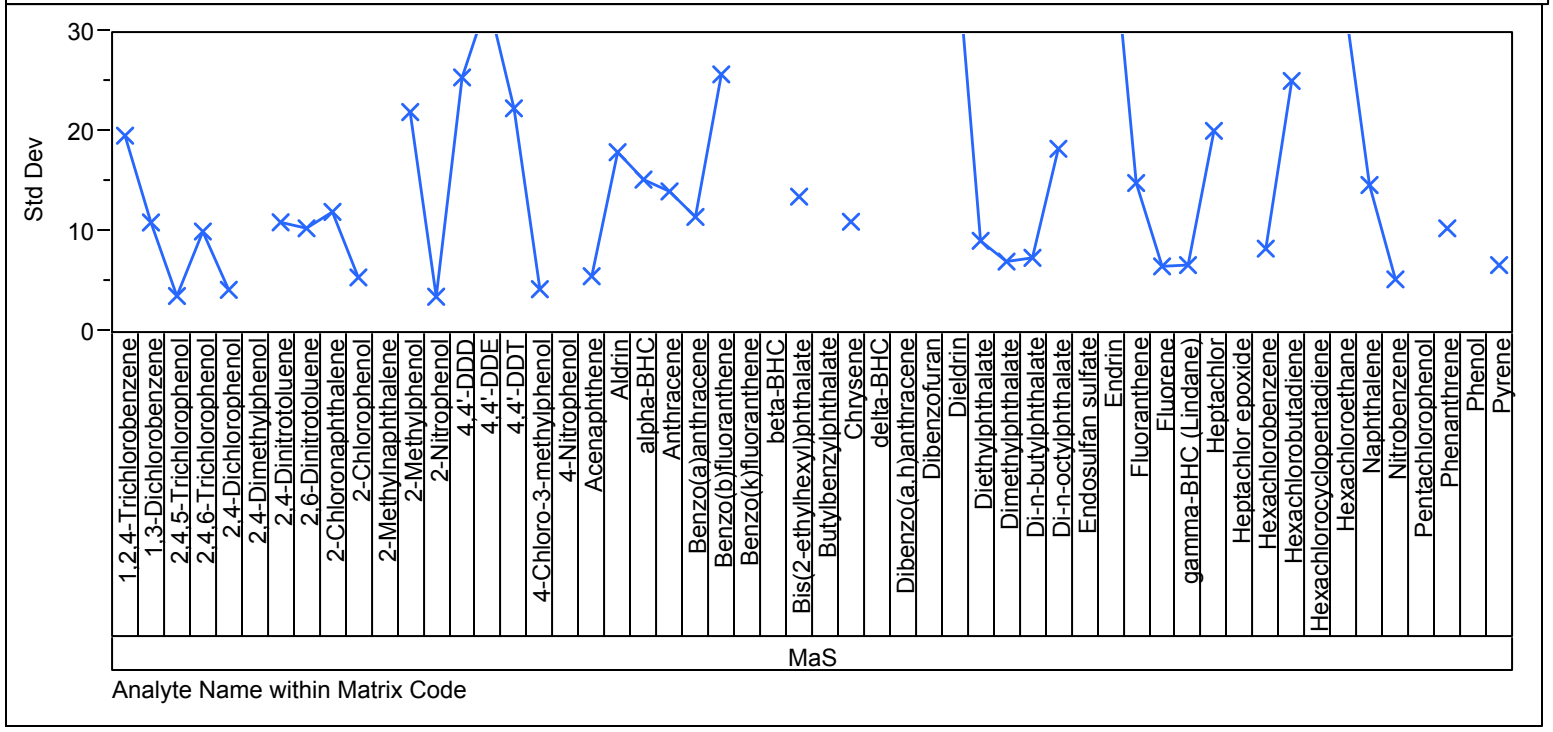
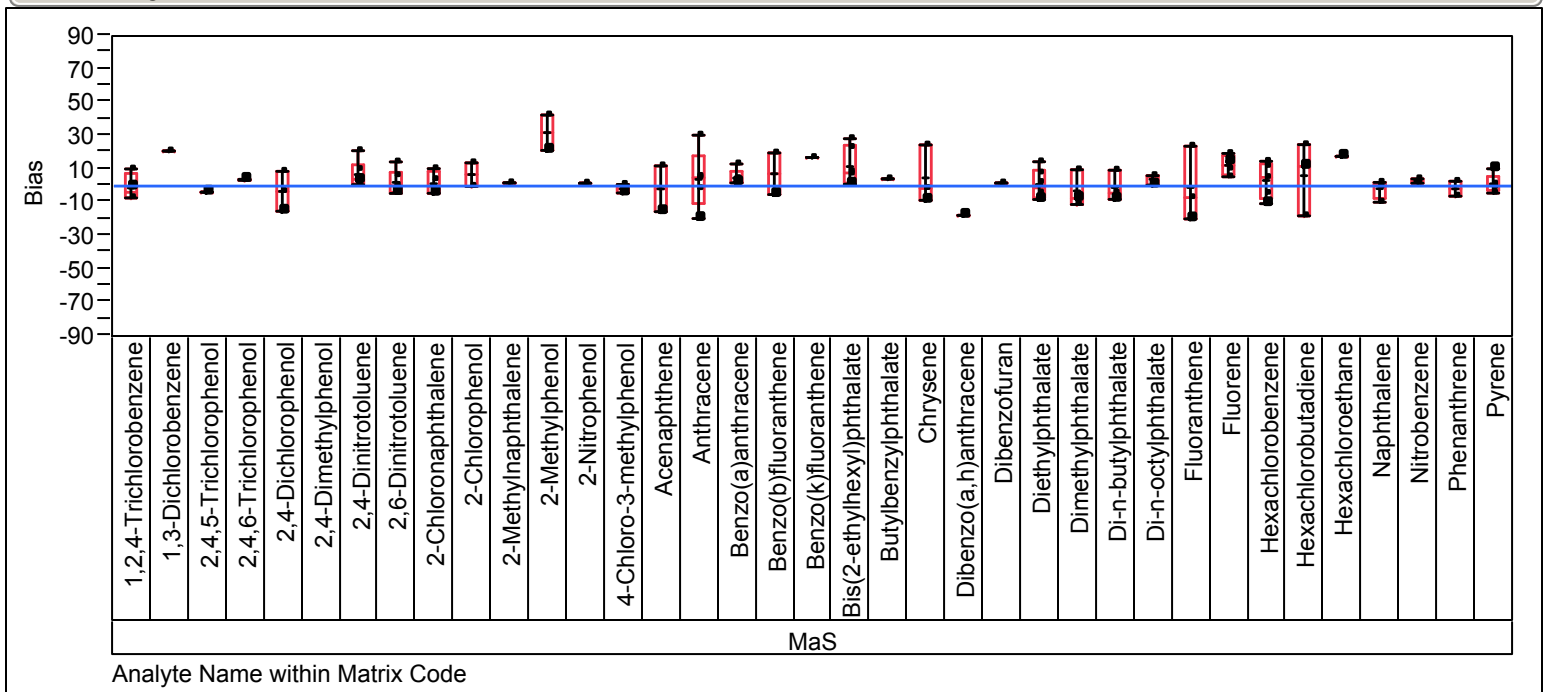
Variability Chart for Bias

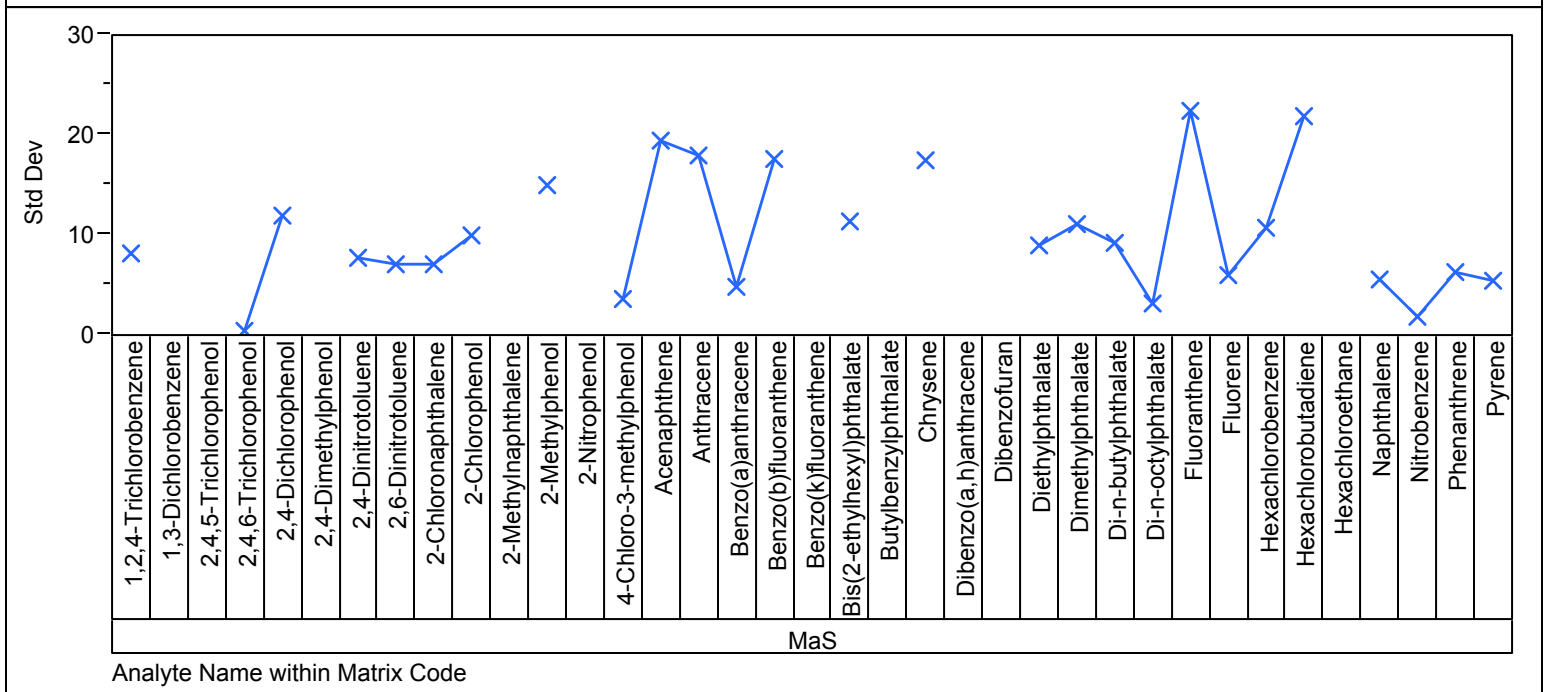




Variability Gauge Lab Code=OBGL01

Variability Chart for Bias



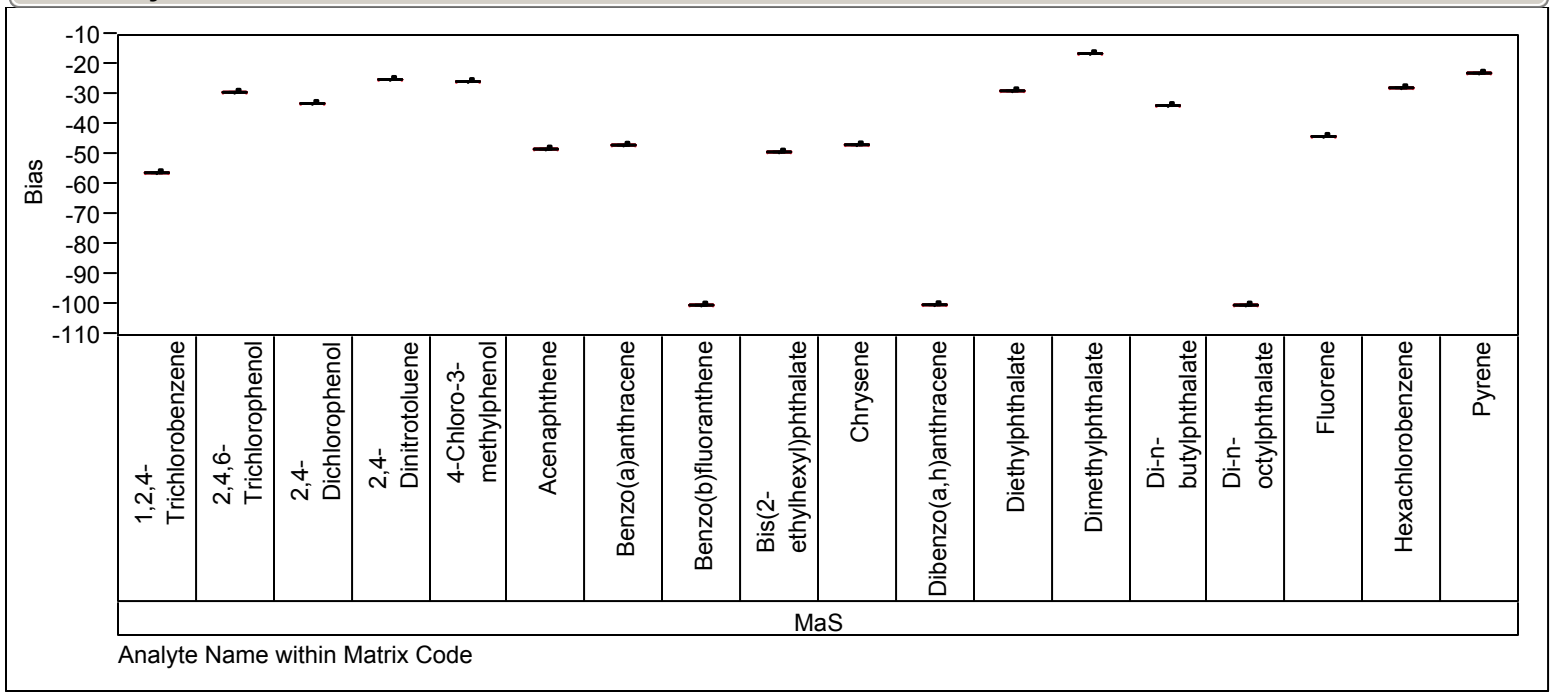


Variability Gauge Lab Code=OTLI01

Variability Chart for Bias

Variability Gauge Lab Code=OTLI01

Variability Chart for Bias

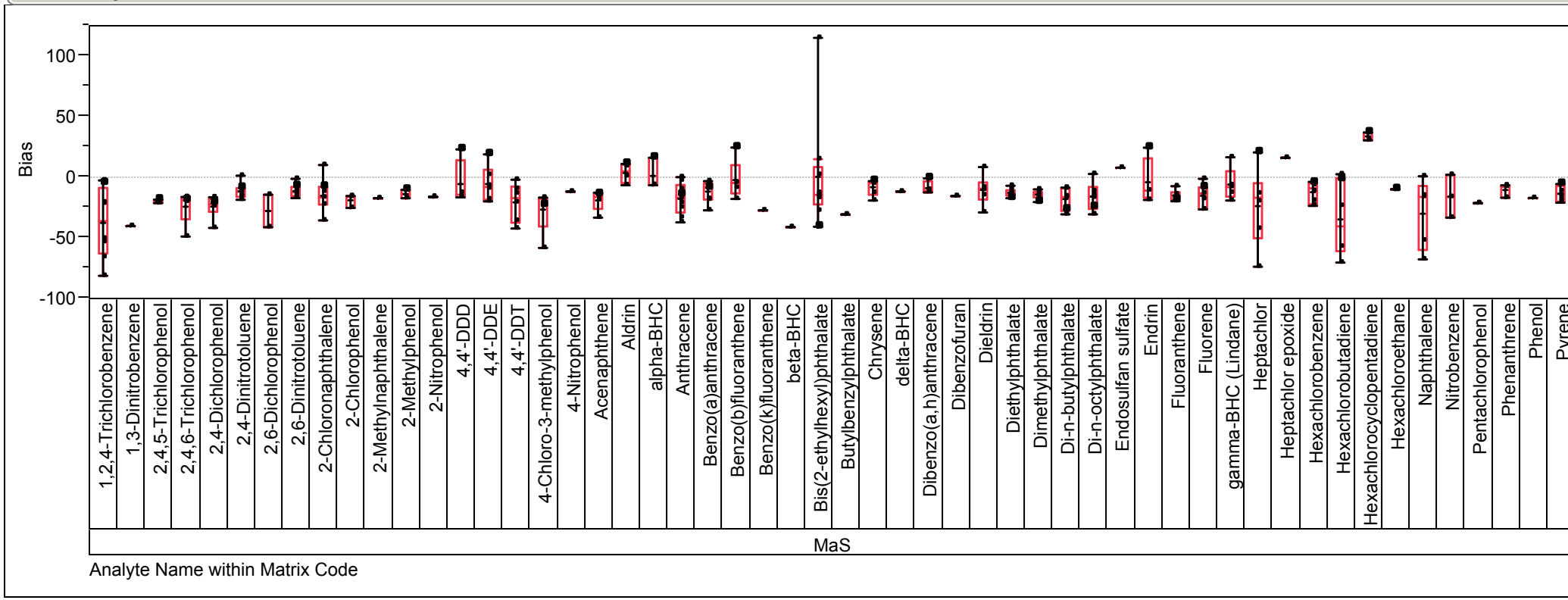


Variability Gauge Lab Code=QUAN01

Variability Chart for Bias

Variability Gauge Lab Code=QUAN01

Variability Chart for Bias



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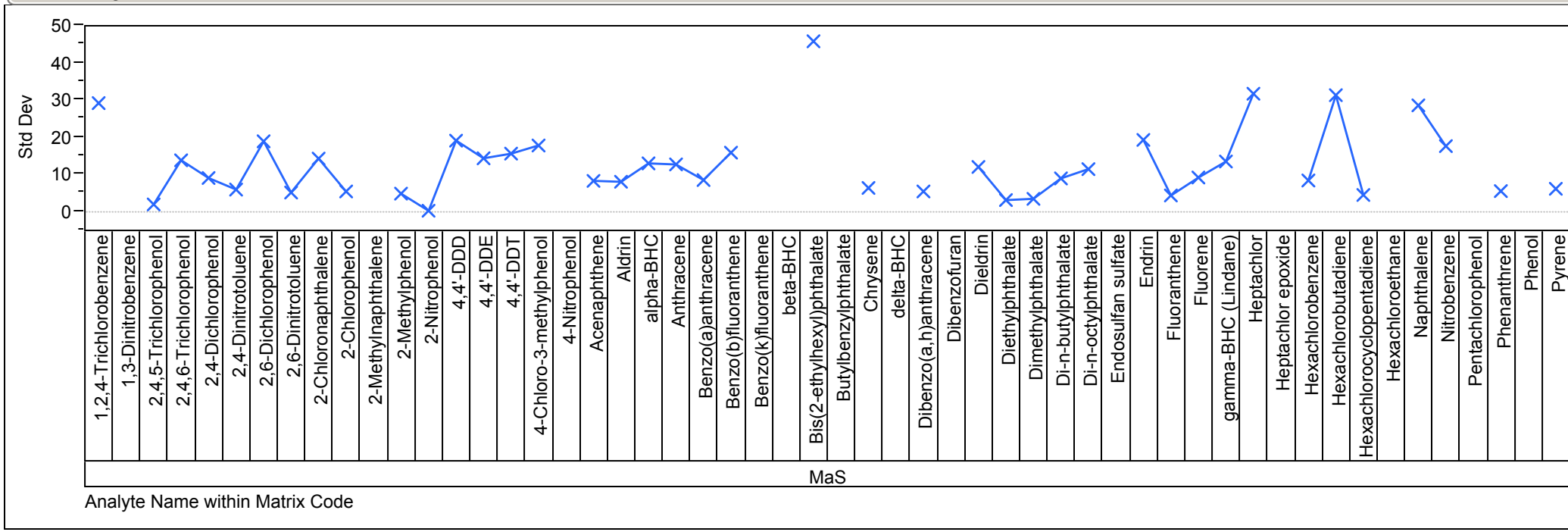
Variability Chart for Bias

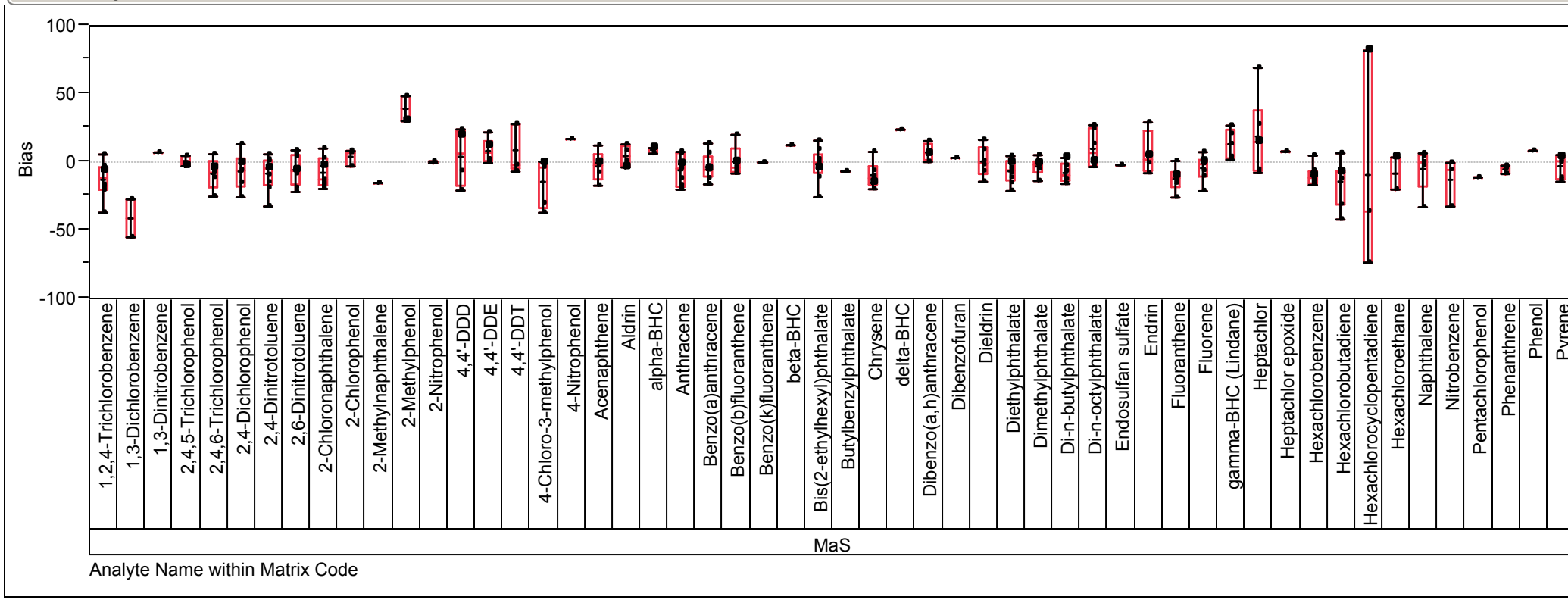


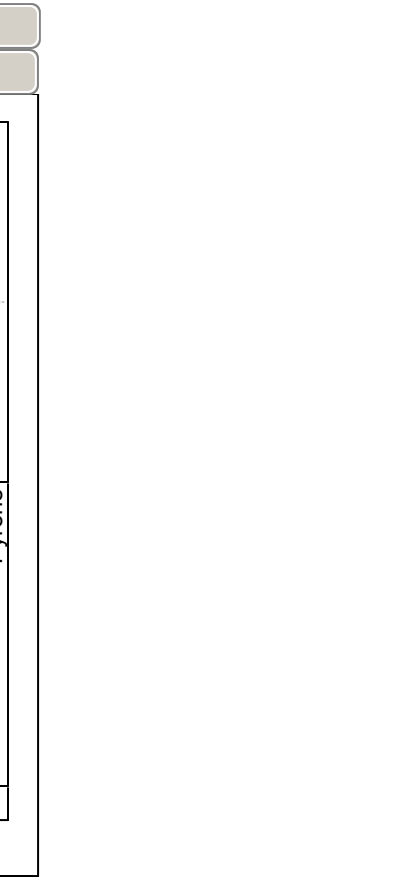
Variability Gauge Lab Code=QUAN02

Variability Chart for Bias

Variability Gauge Lab Code=QUAN02

Variability Chart for Bias





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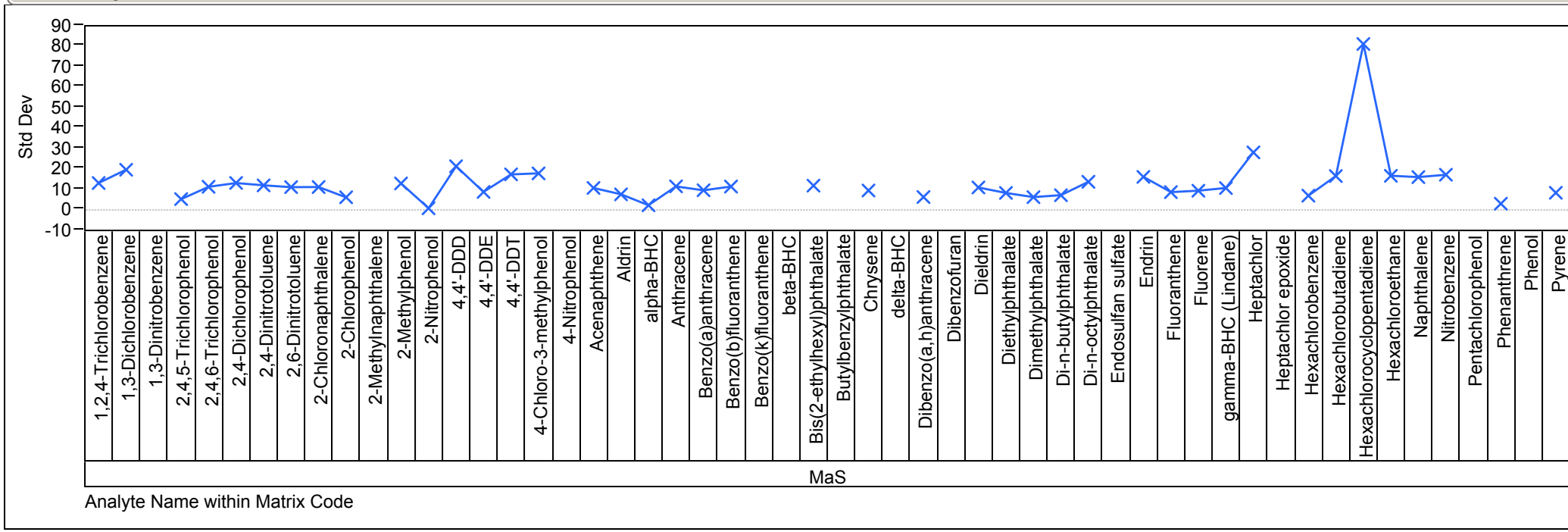
Variability Chart for Bias

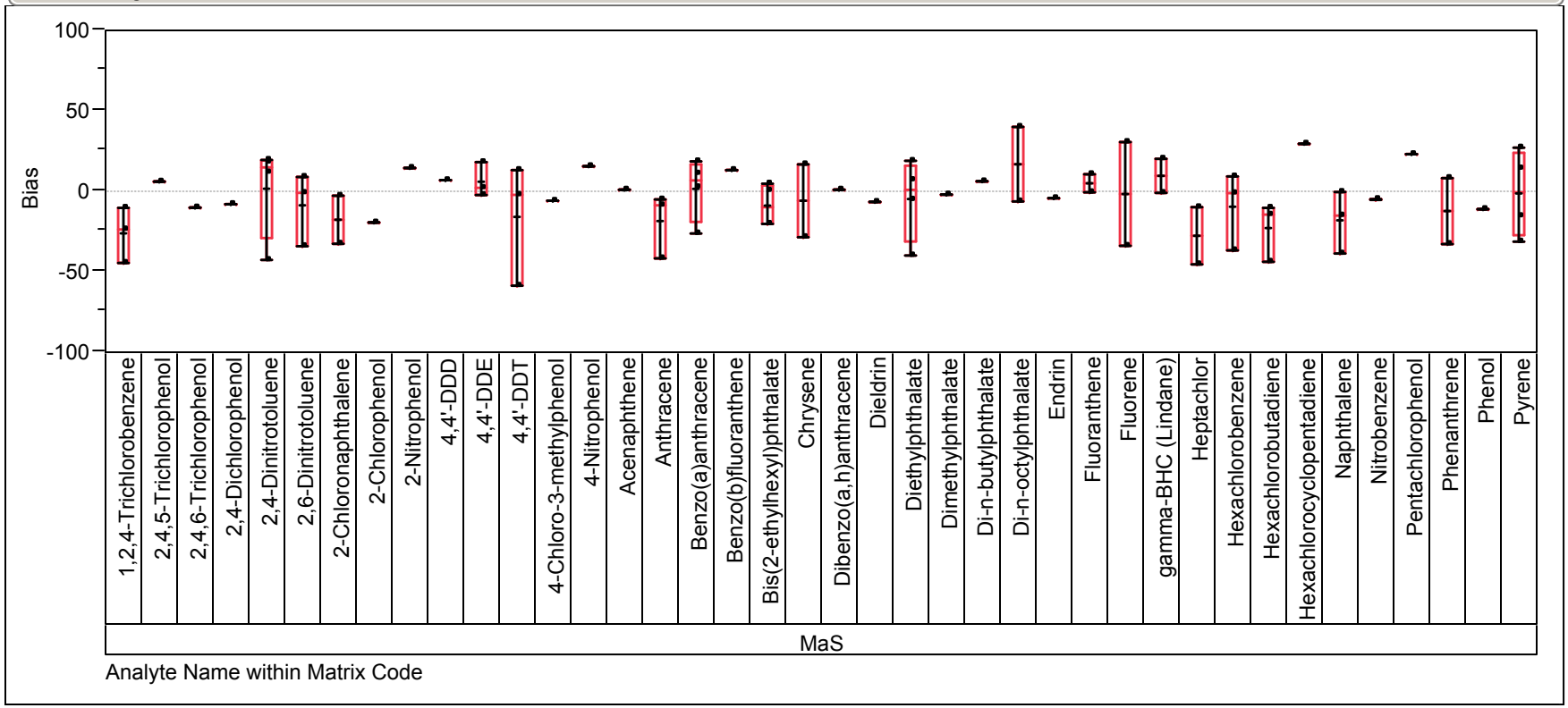


Variability Gauge Lab Code=RECC01

Variability Chart for Bias

Variability Gauge Lab Code=RECC01

Variability Chart for Bias



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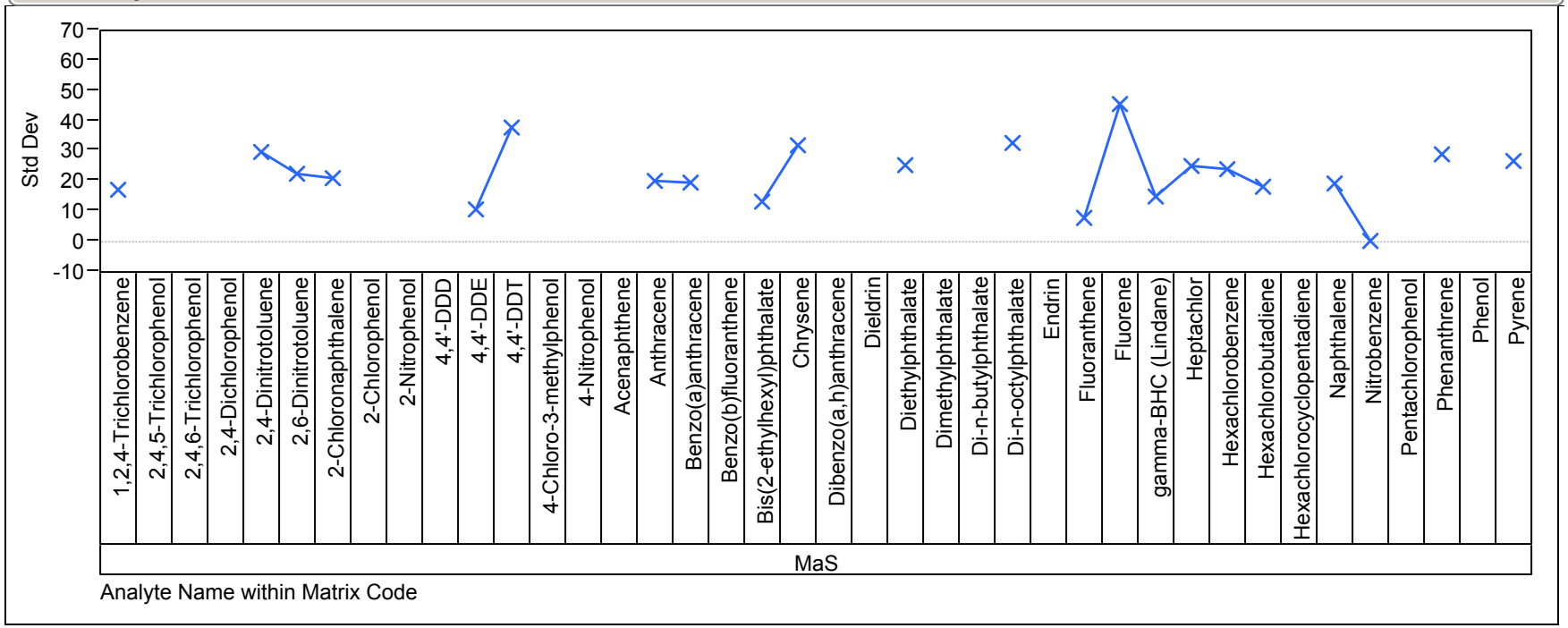
Variability Chart for Bias

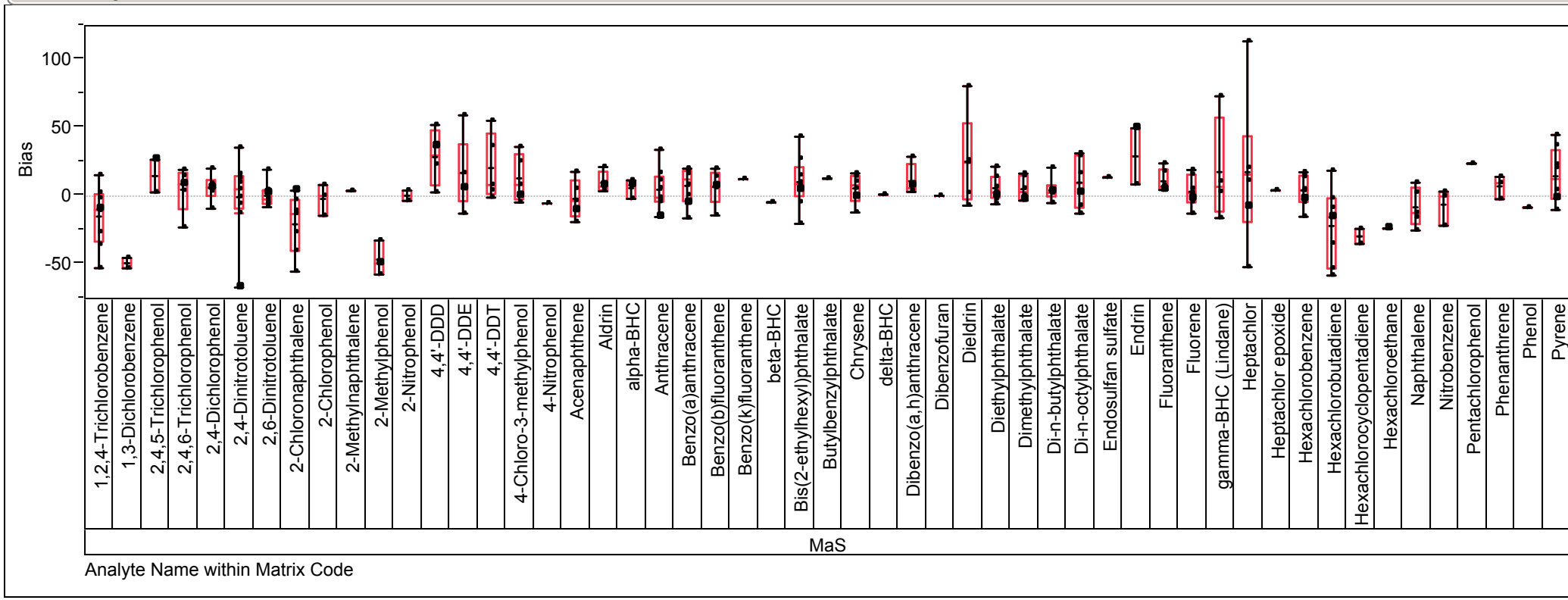


Variability Gauge Lab Code=SOUT01

Variability Chart for Bias

Variability Gauge Lab Code=SOUT01

Variability Chart for Bias



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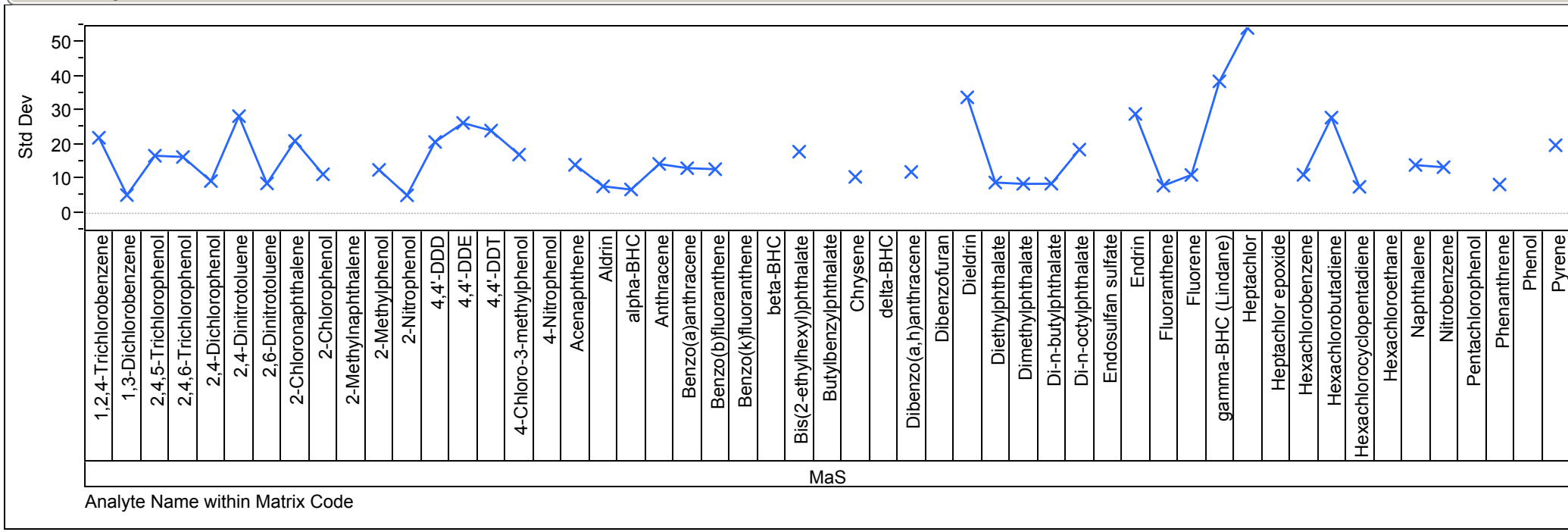
Variability Chart for Bias

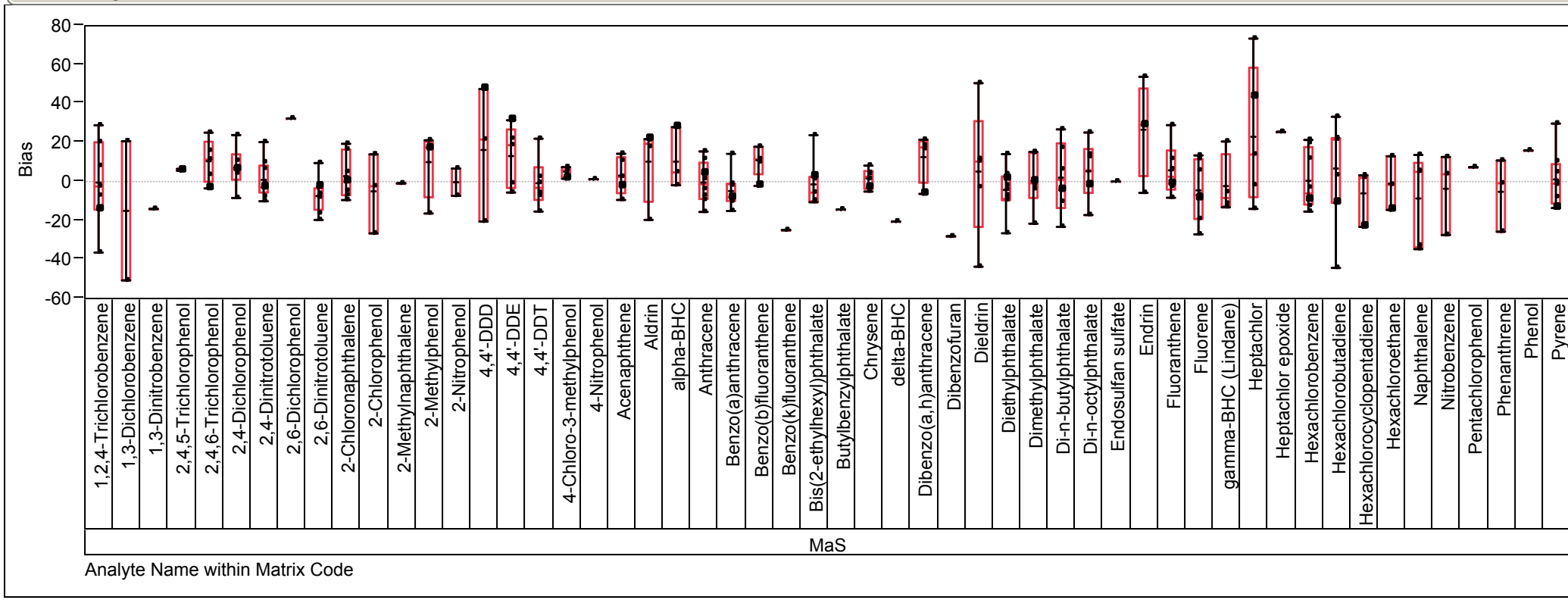


Variability Gauge Lab Code=WEST01

Variability Chart for Bias

Variability Gauge Lab Code=WEST01

Variability Chart for Bias



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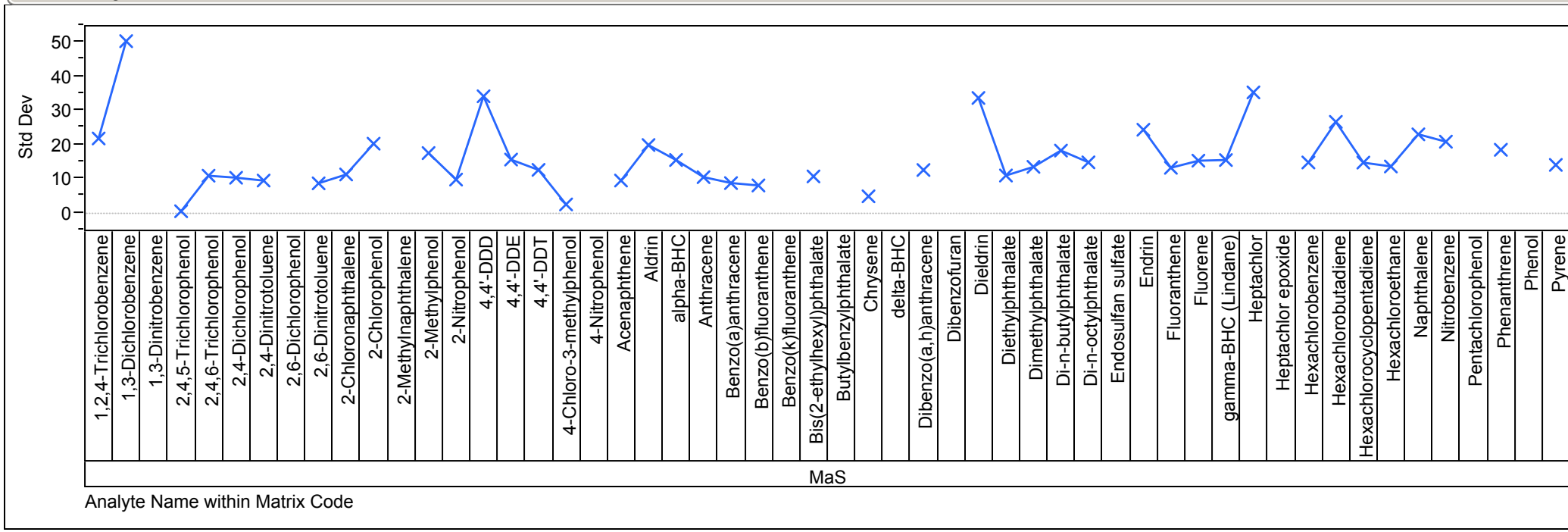
Variability Chart for Bias

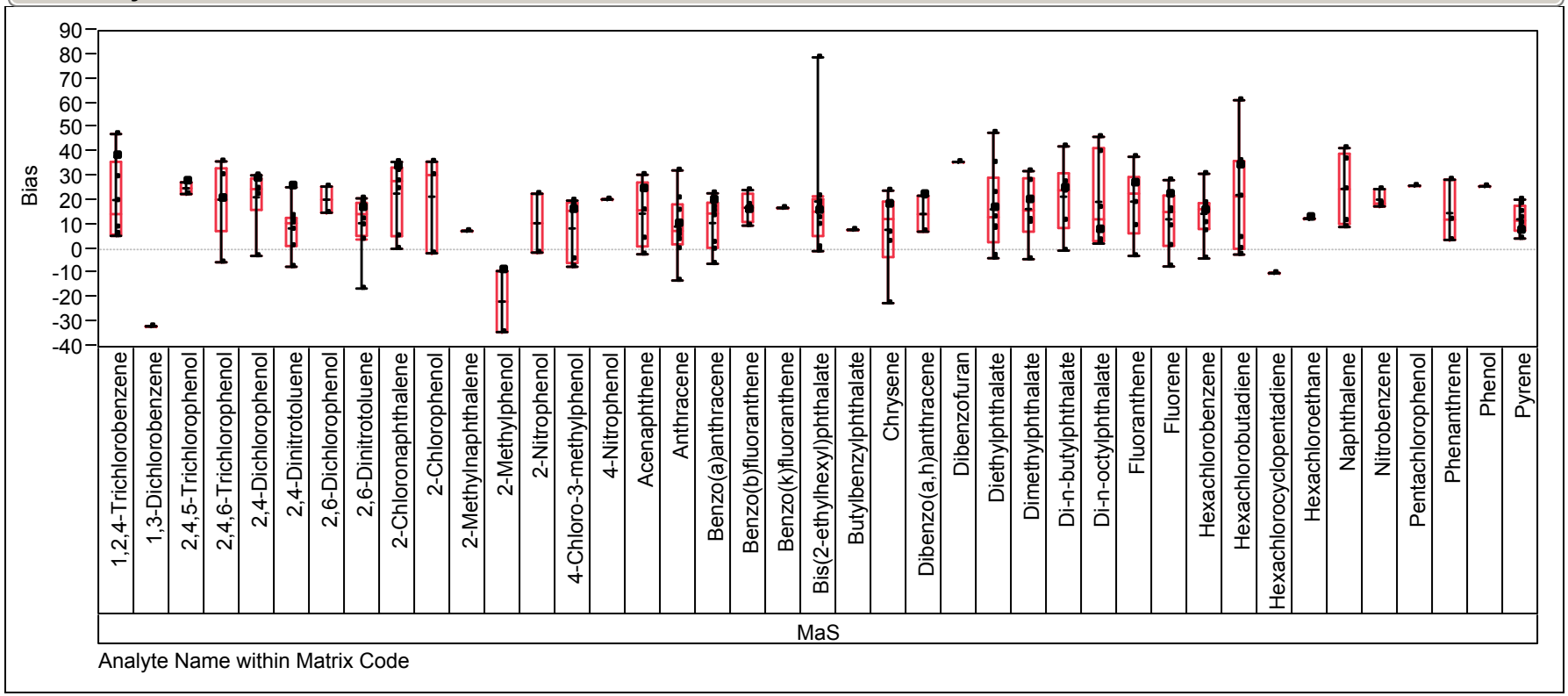


Variability Gauge Lab Code=WEST03

Variability Chart for Bias

Variability Gauge Lab Code=WEST03

Variability Chart for Bias



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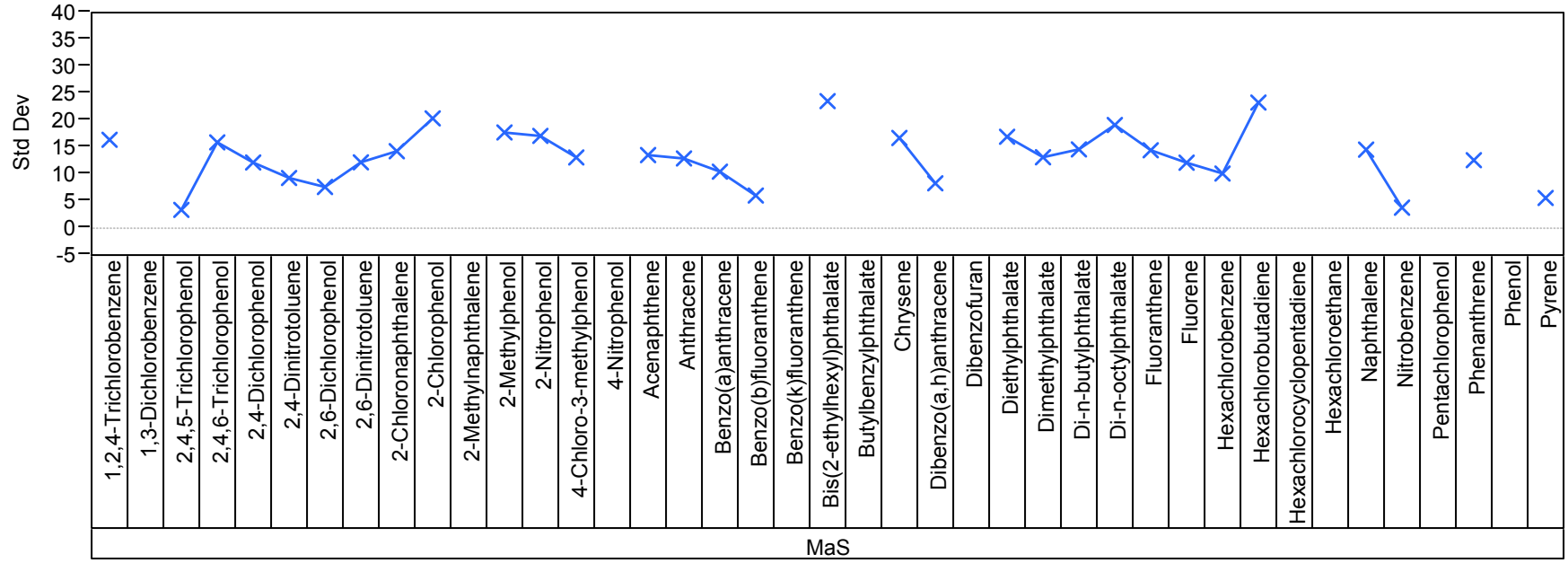
Variability Chart for Bias



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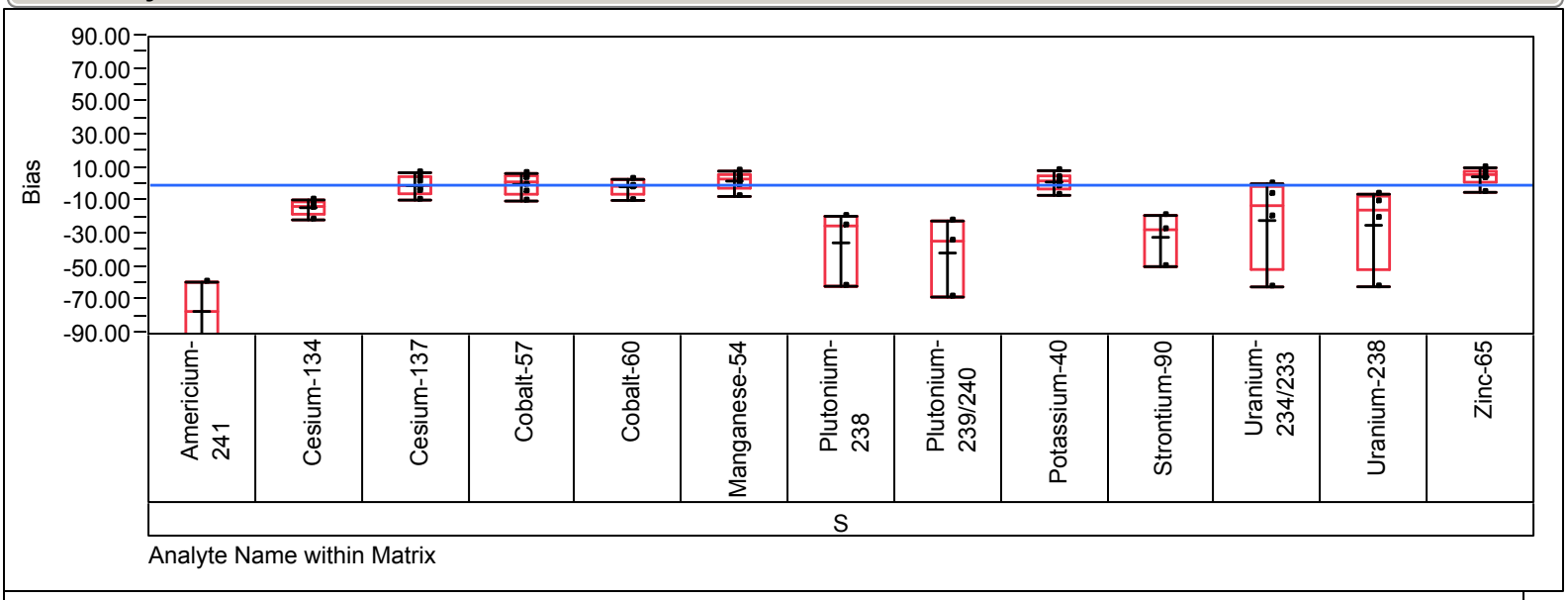
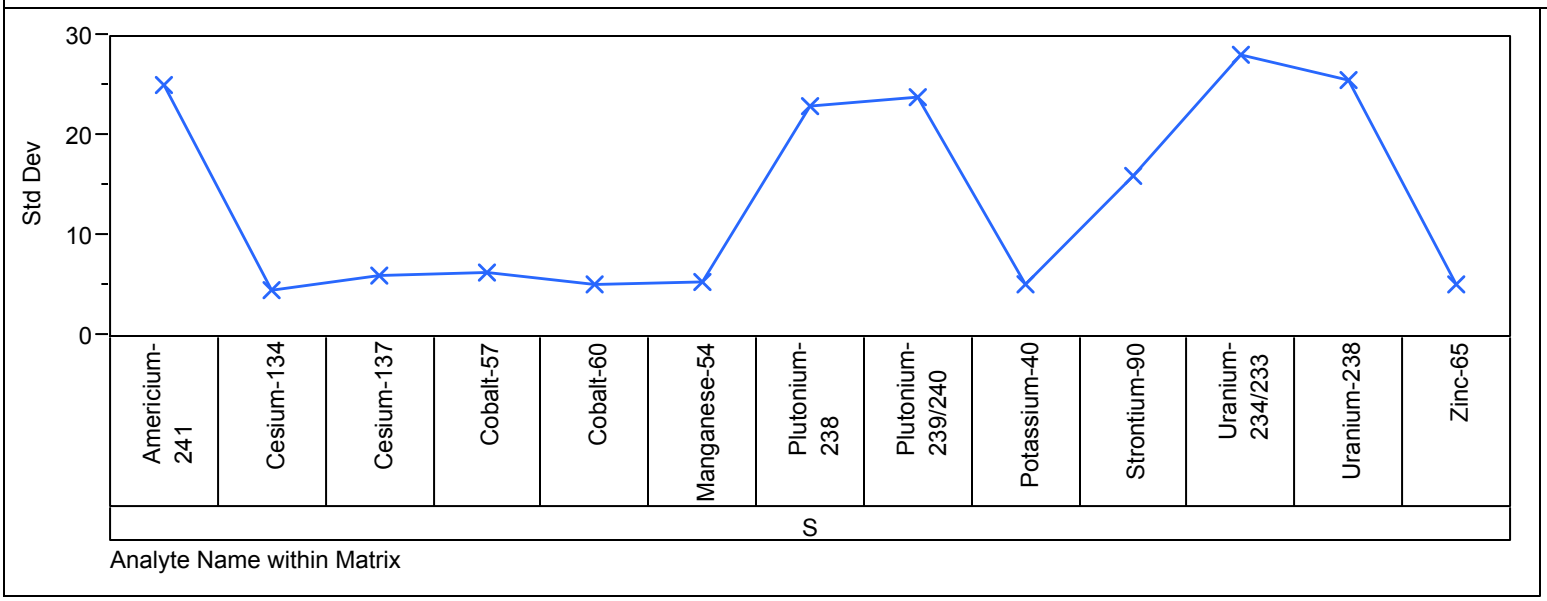
Variability Chart for Bias





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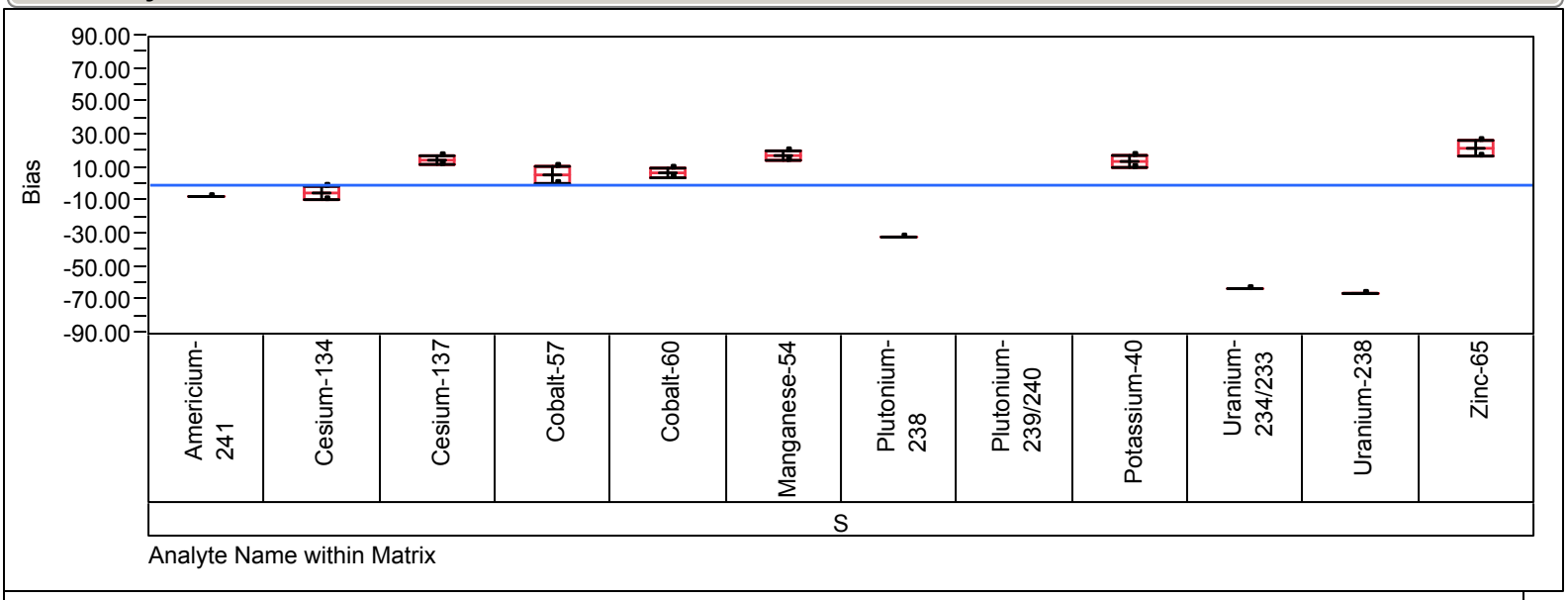
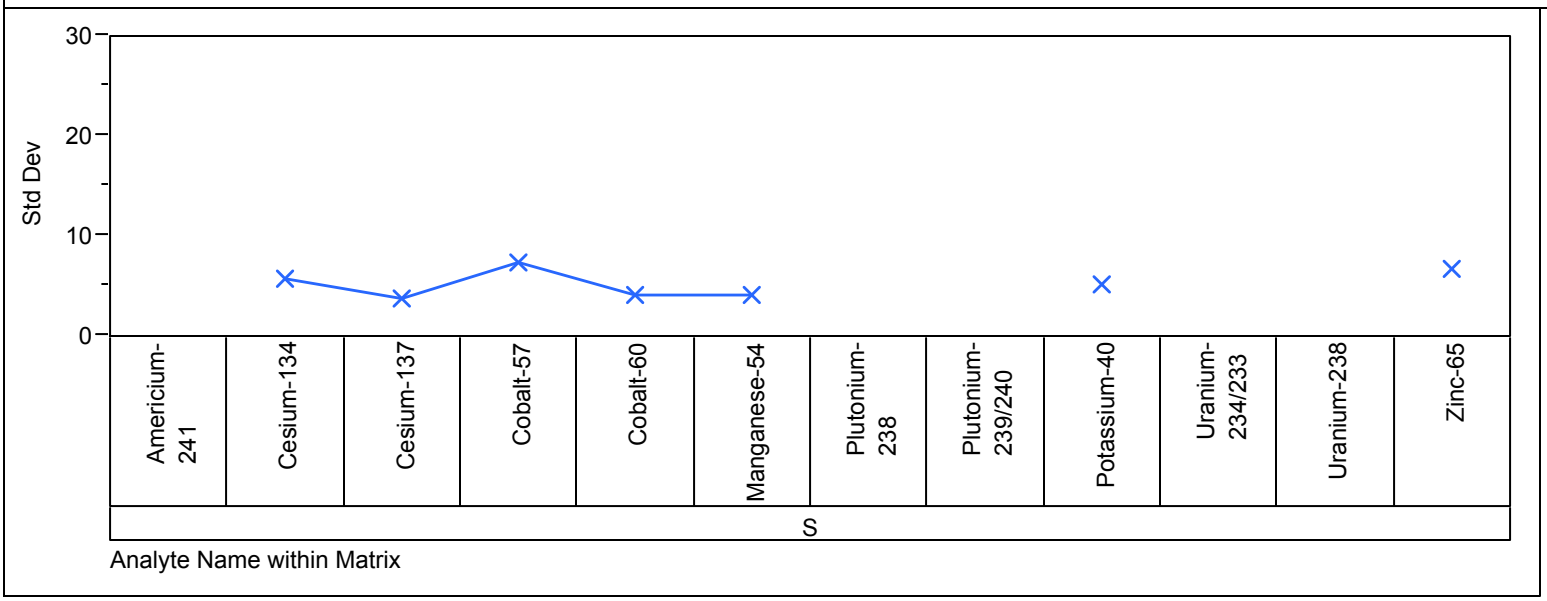
Variability Chart for Bias





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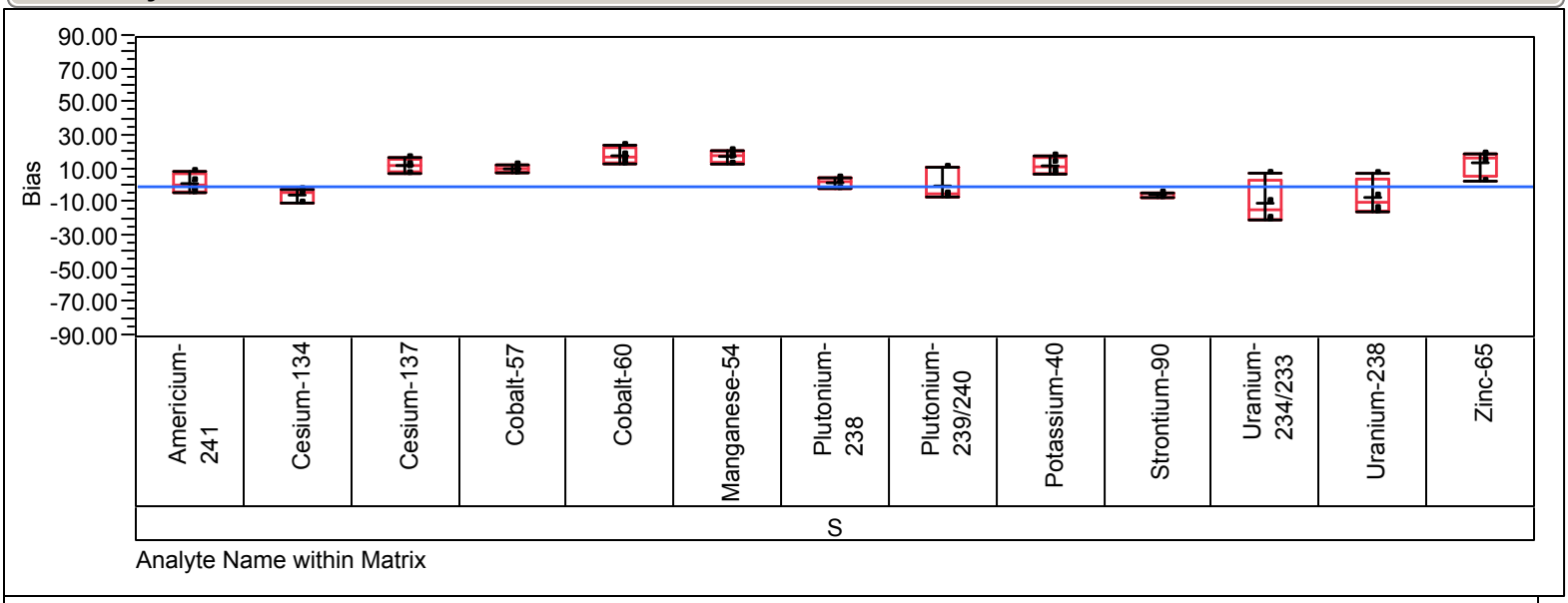

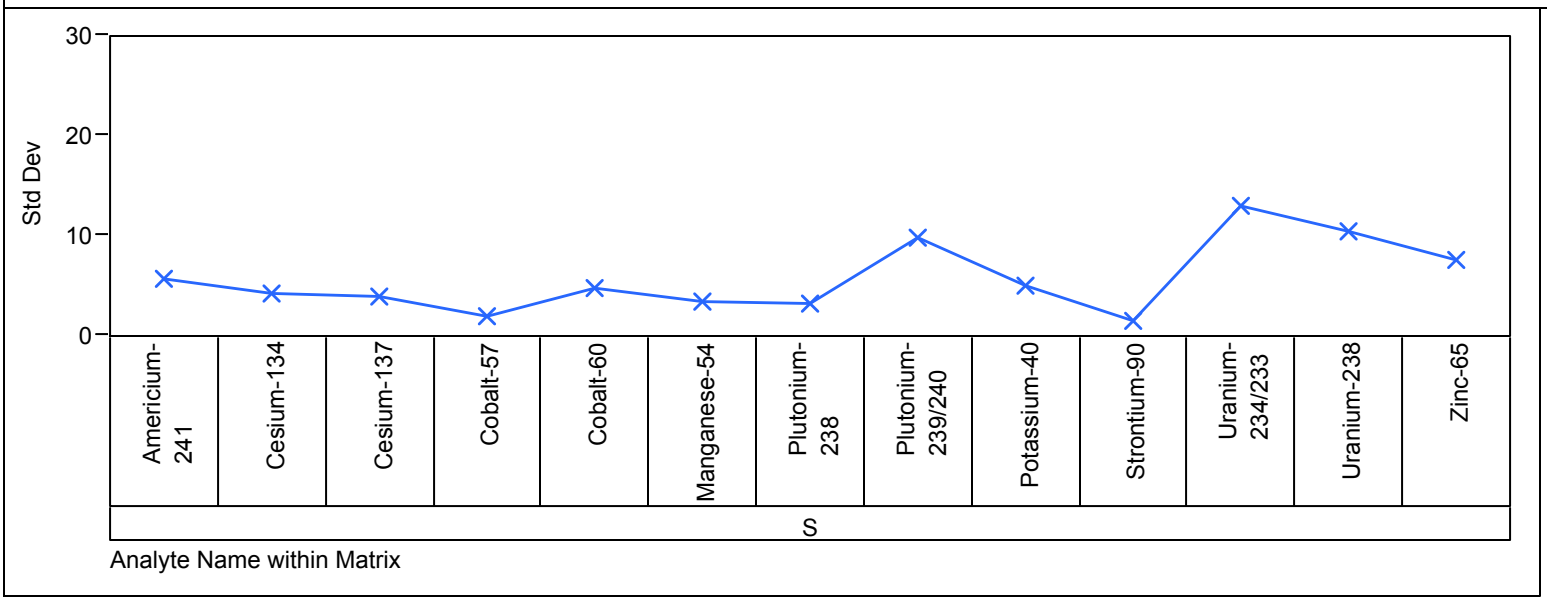

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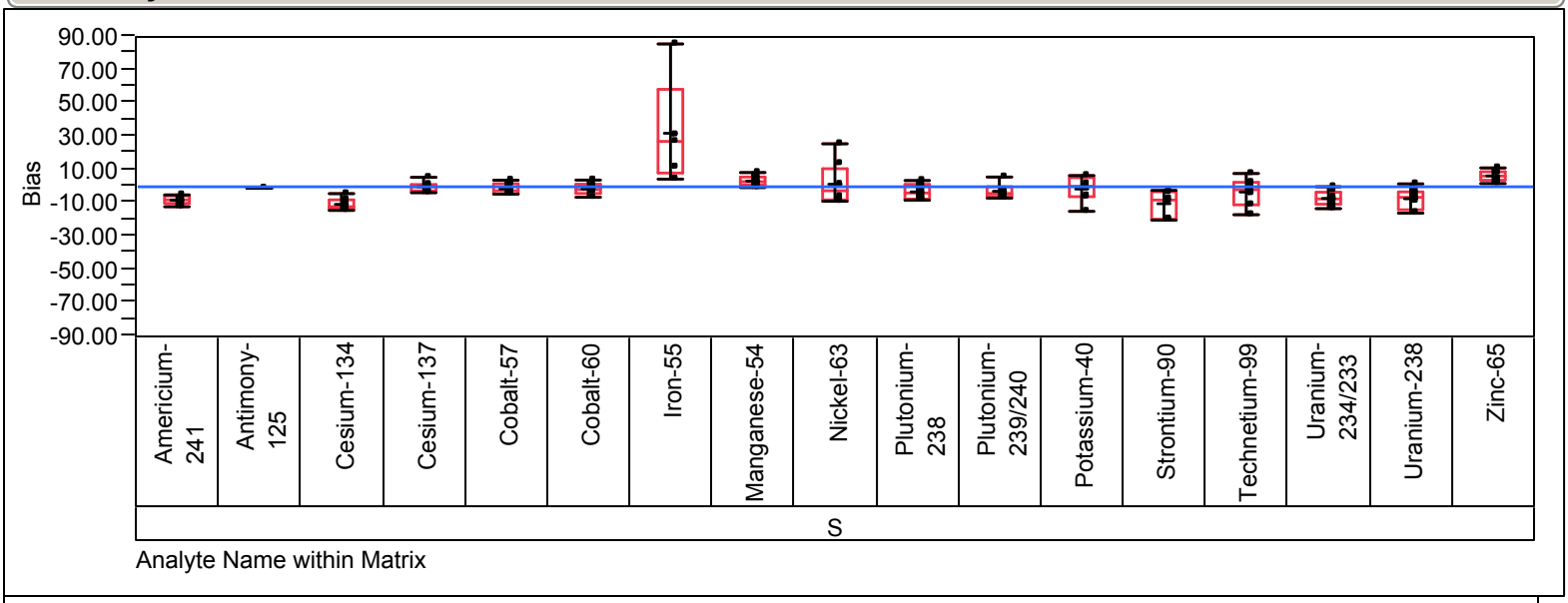
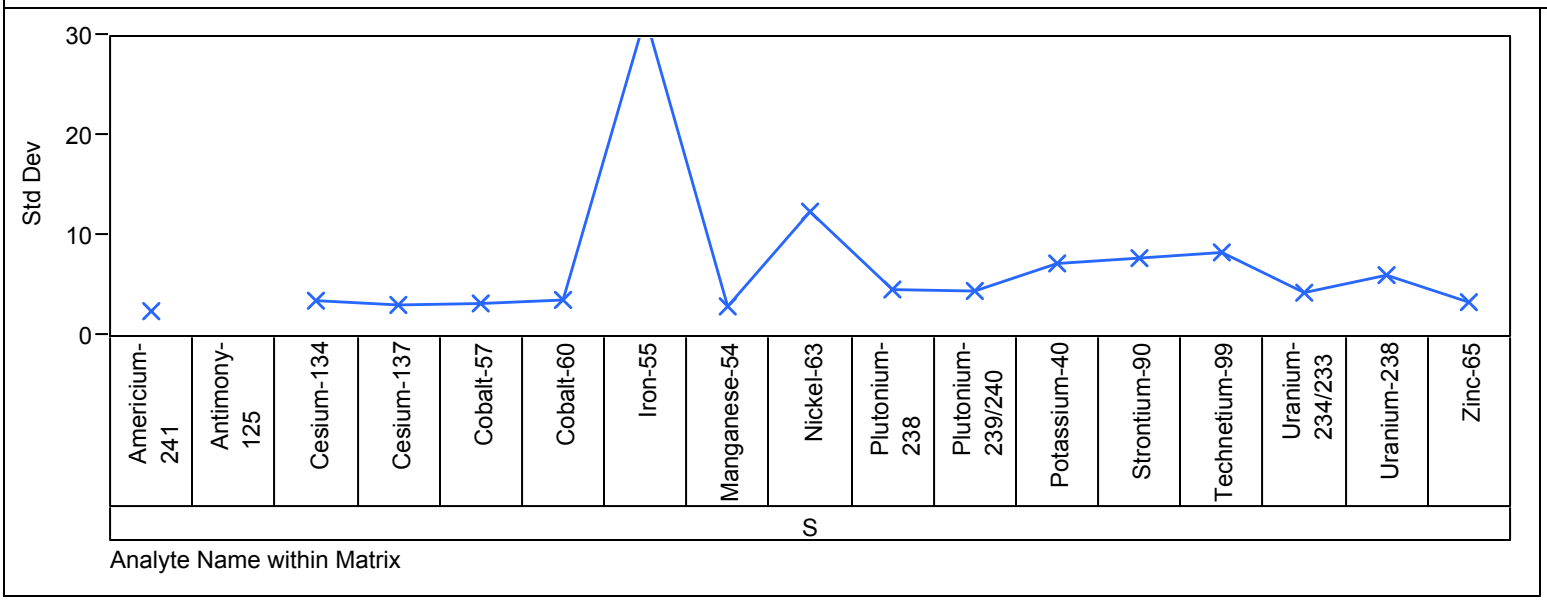
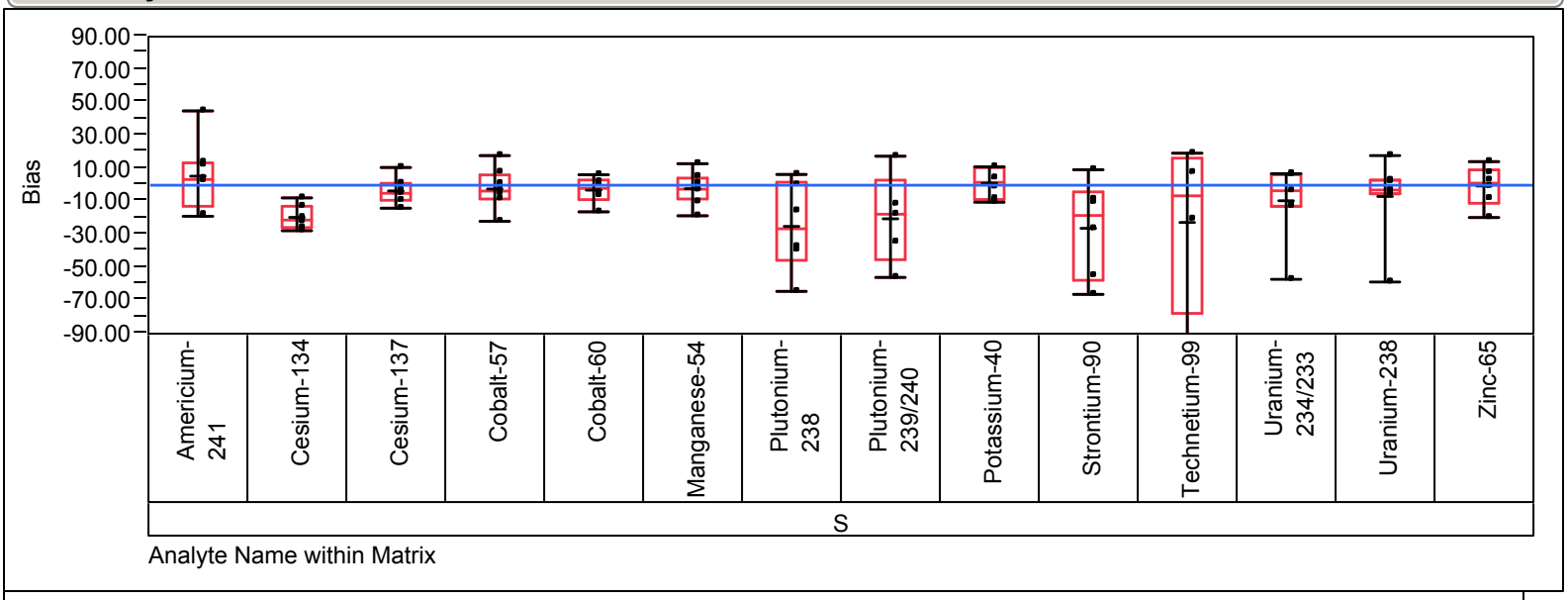
Variability Chart for Bias

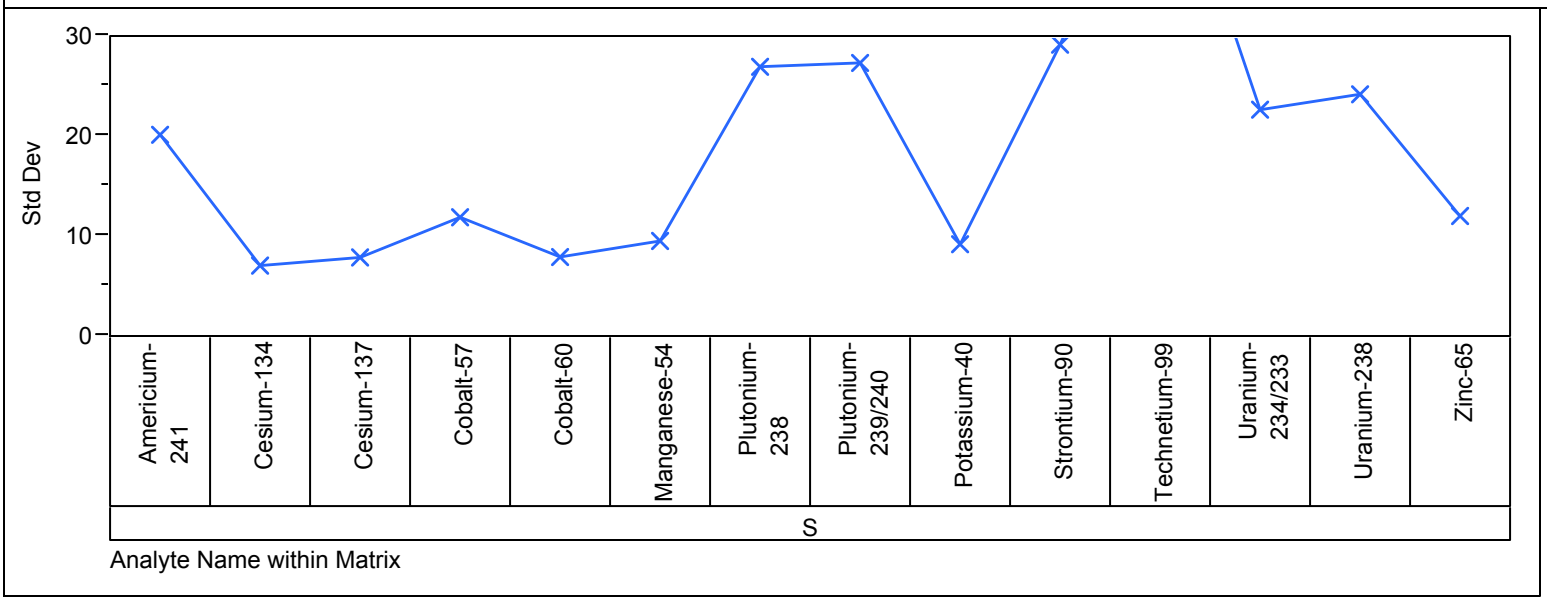




Variability Gauge Lab Code=ARSL01

Variability Chart for Bias





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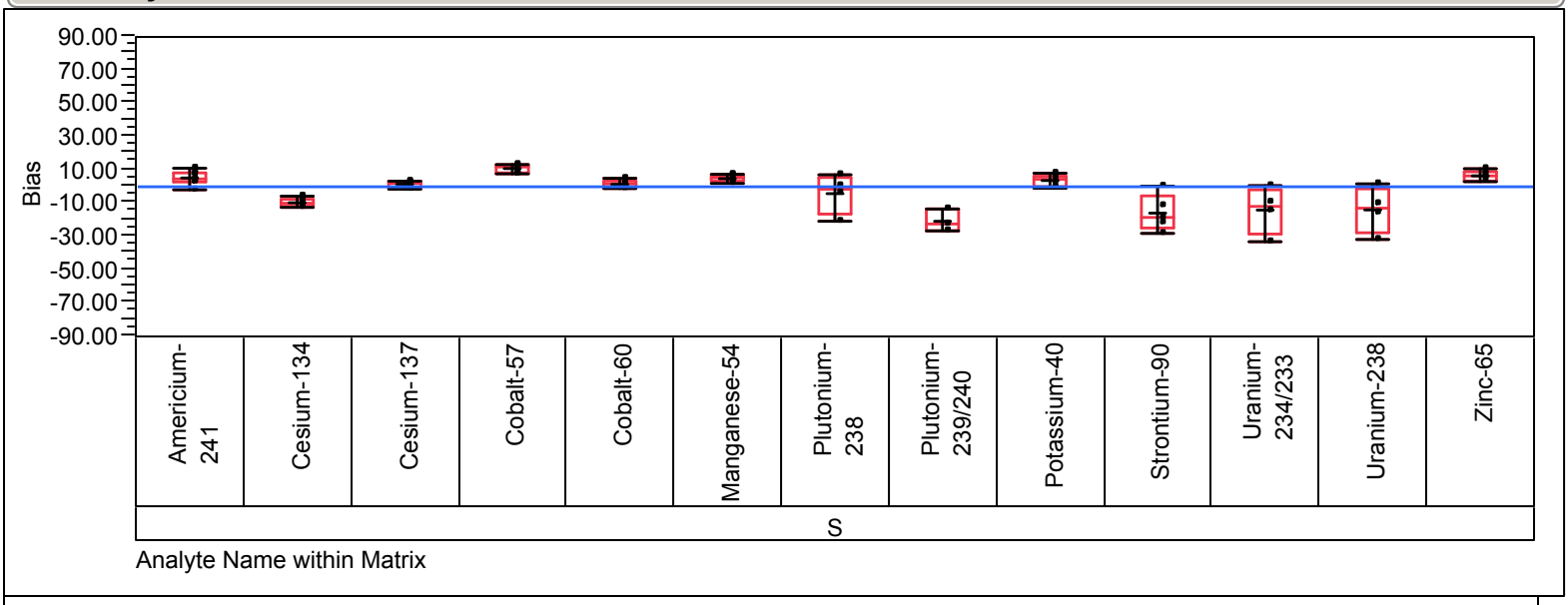
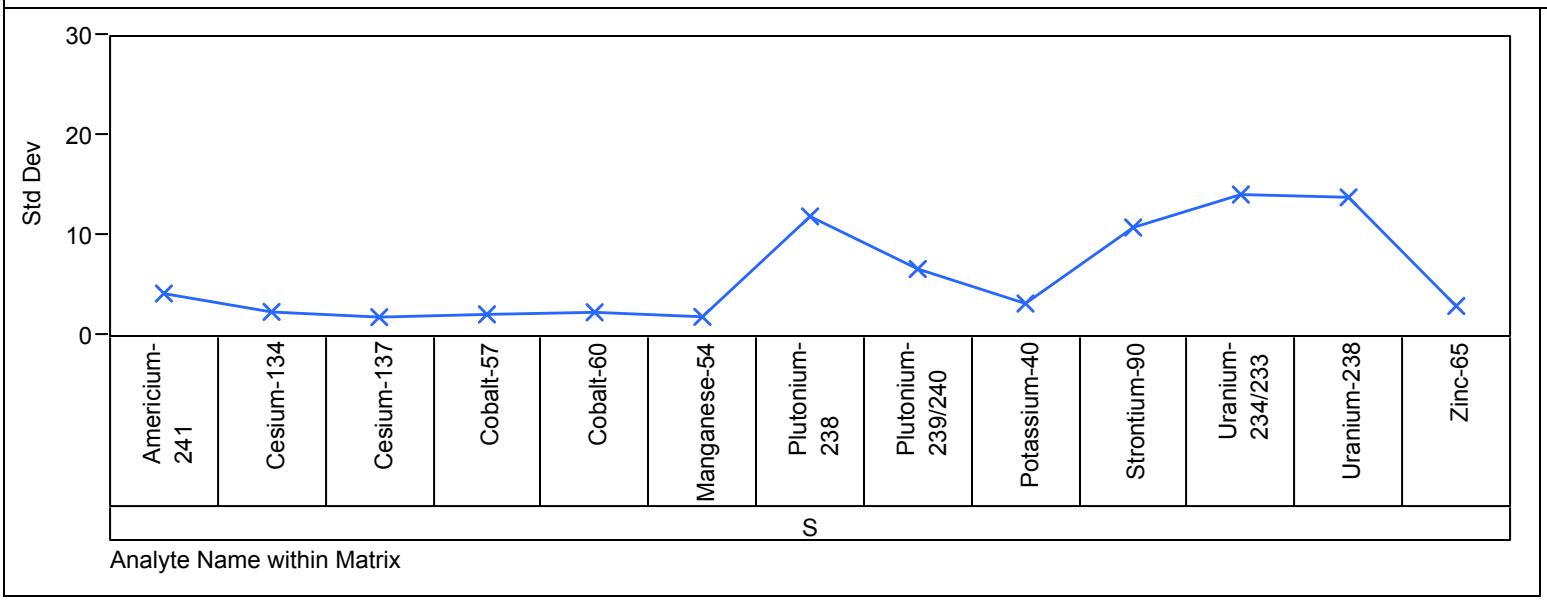
Variability Chart for Bias





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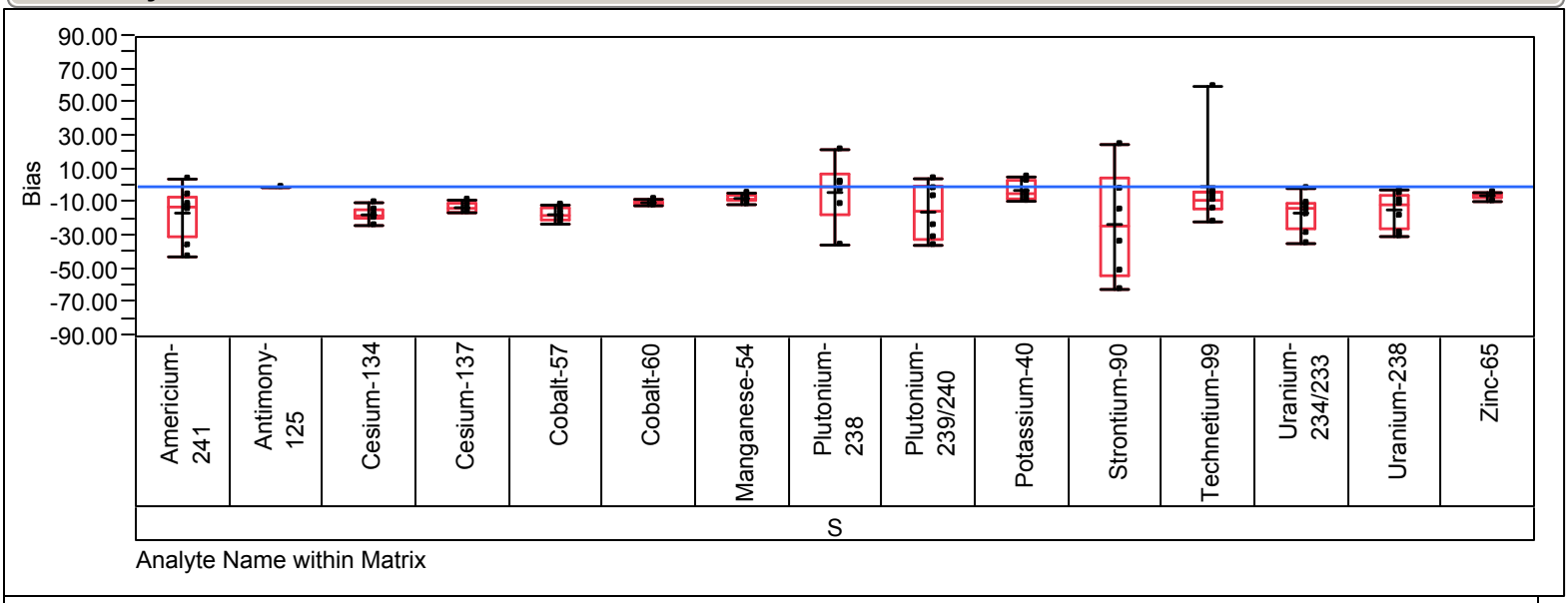
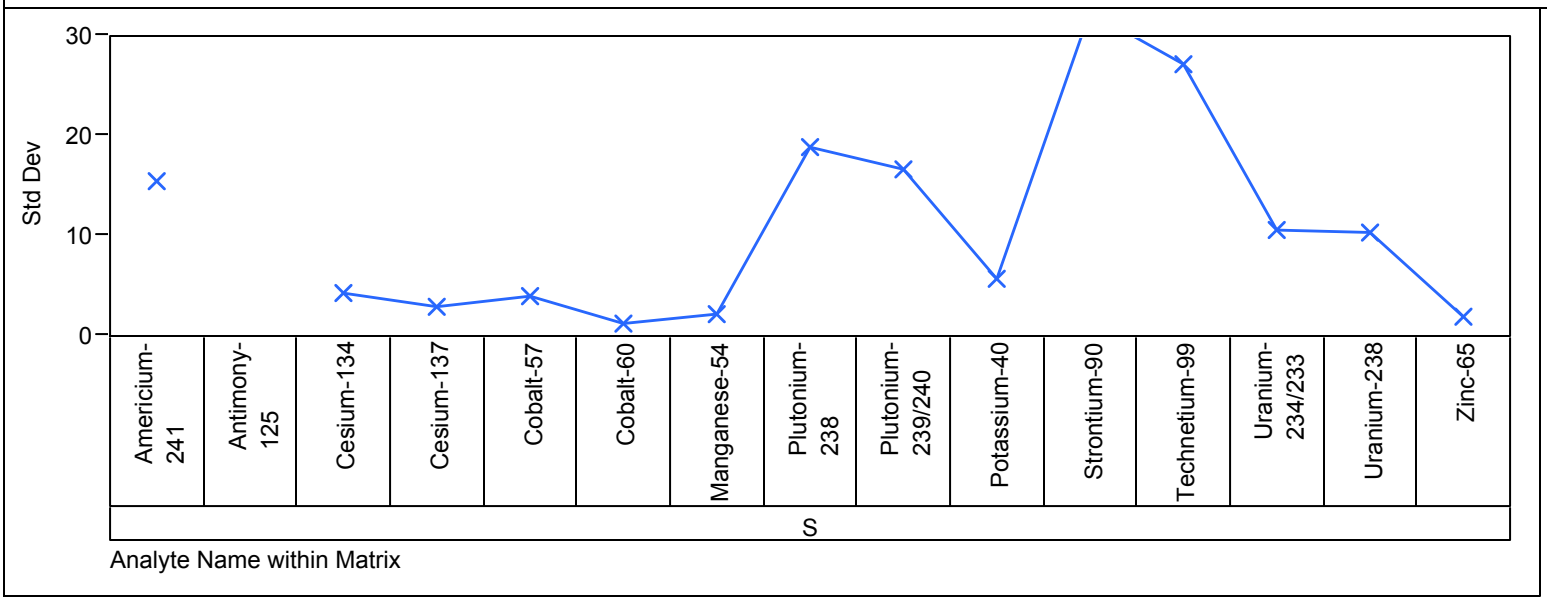
Variability Chart for Bias





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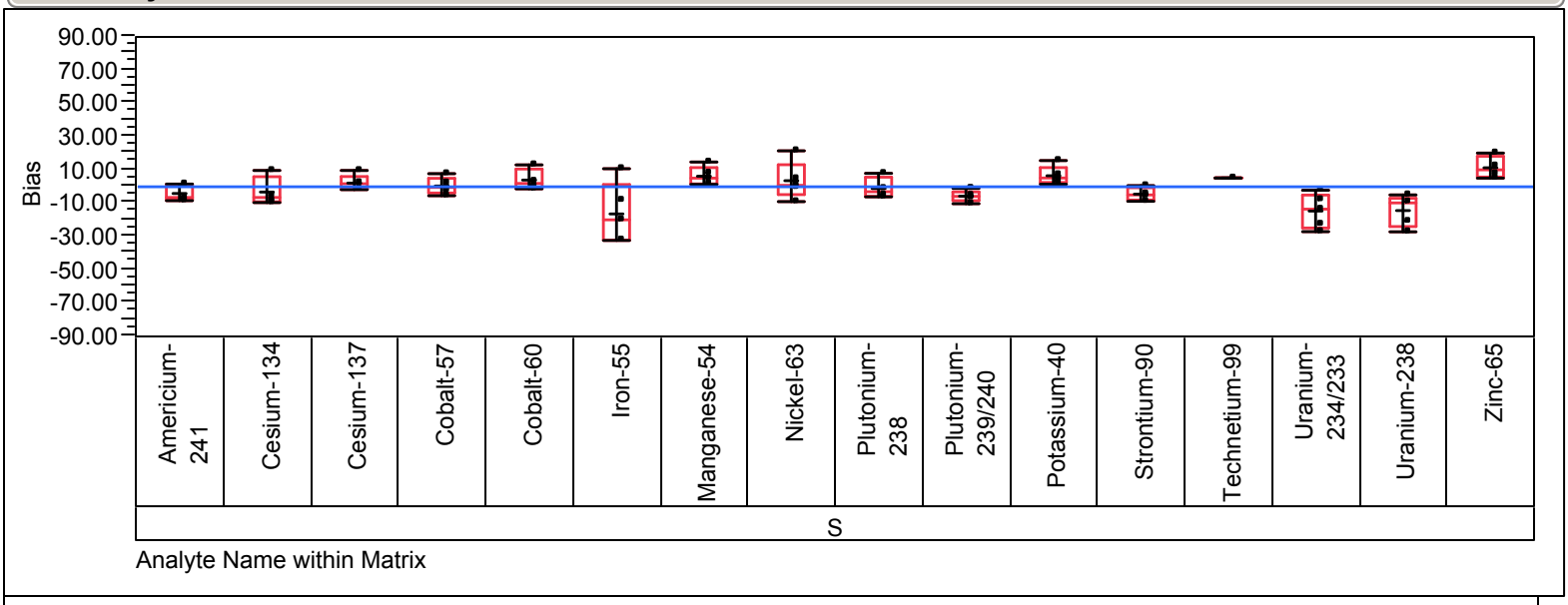
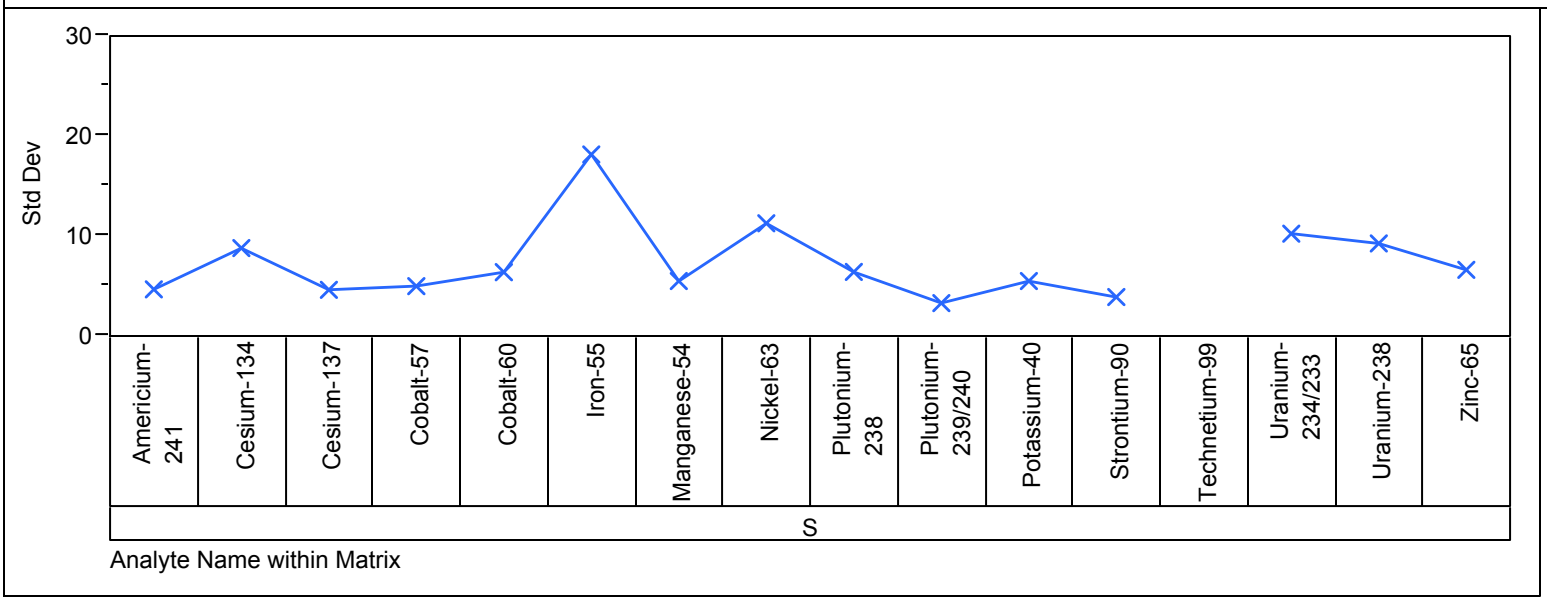
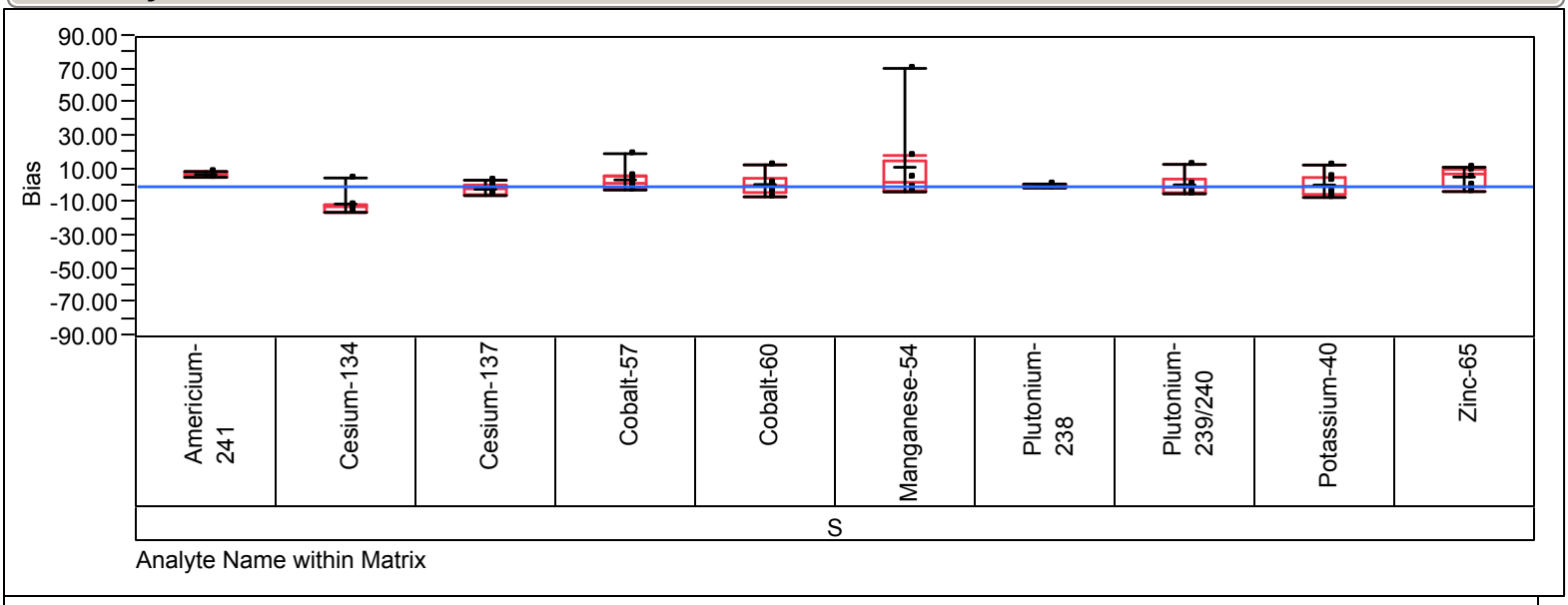
Variability Chart for Bias

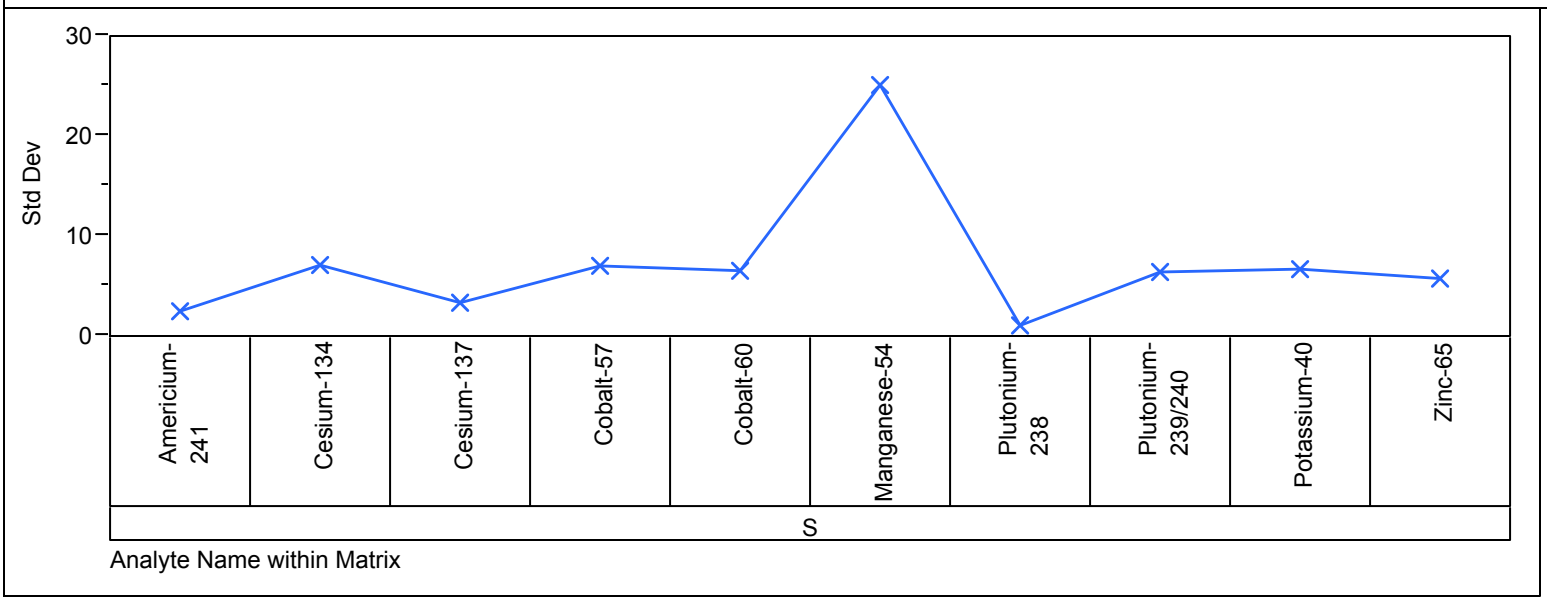




Variability Gauge Lab Code=CESL01

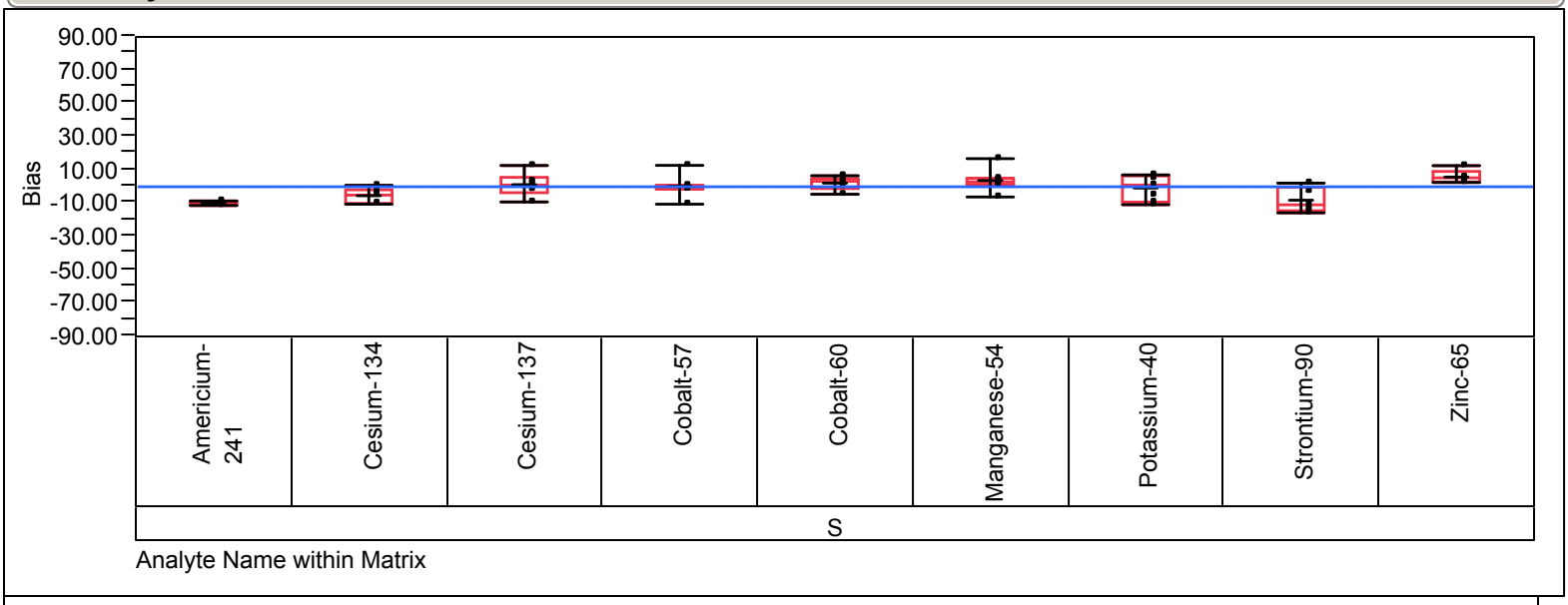
Variability Chart for Bias

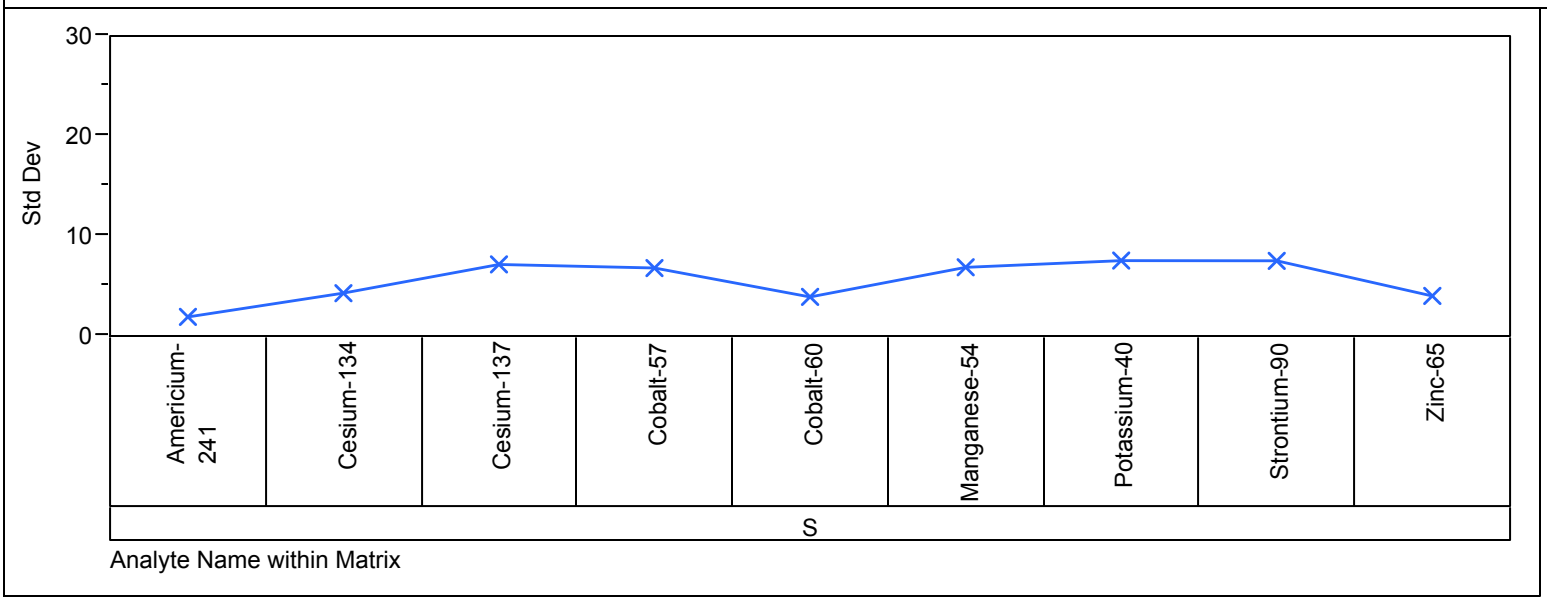




Variability Gauge Lab Code=CHMH01

Variability Chart for Bias





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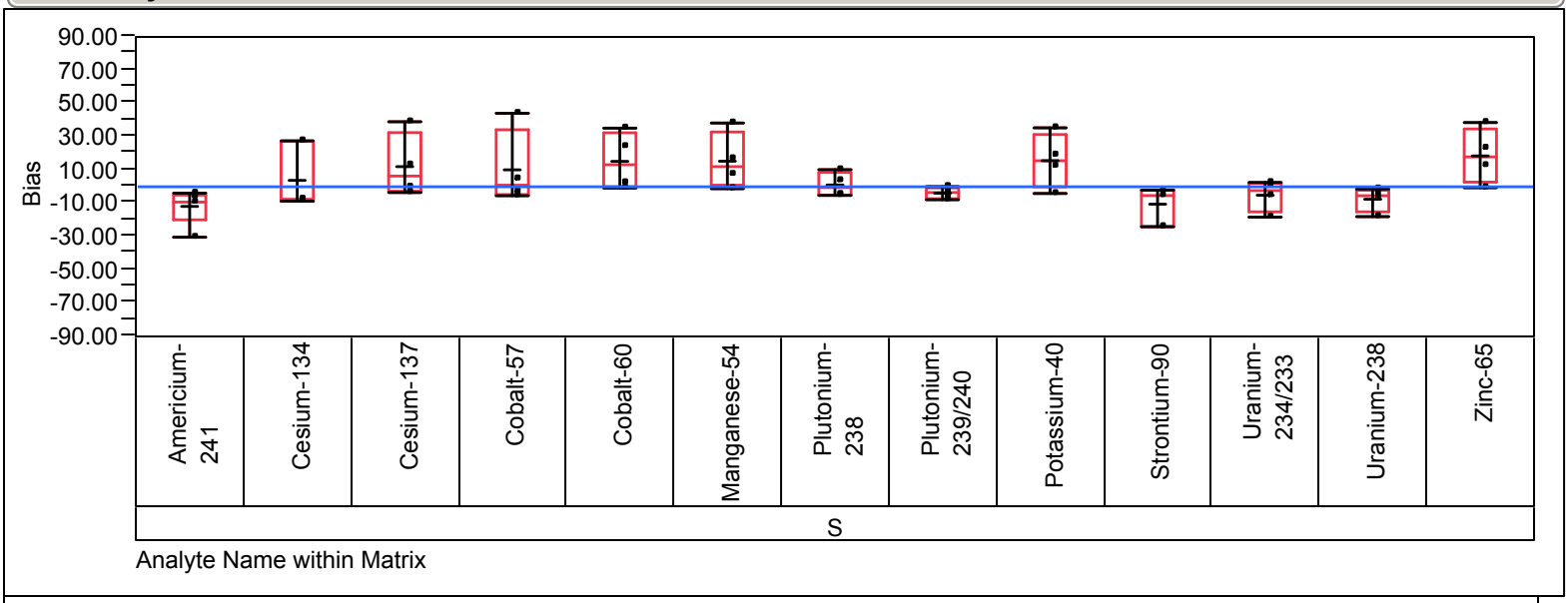
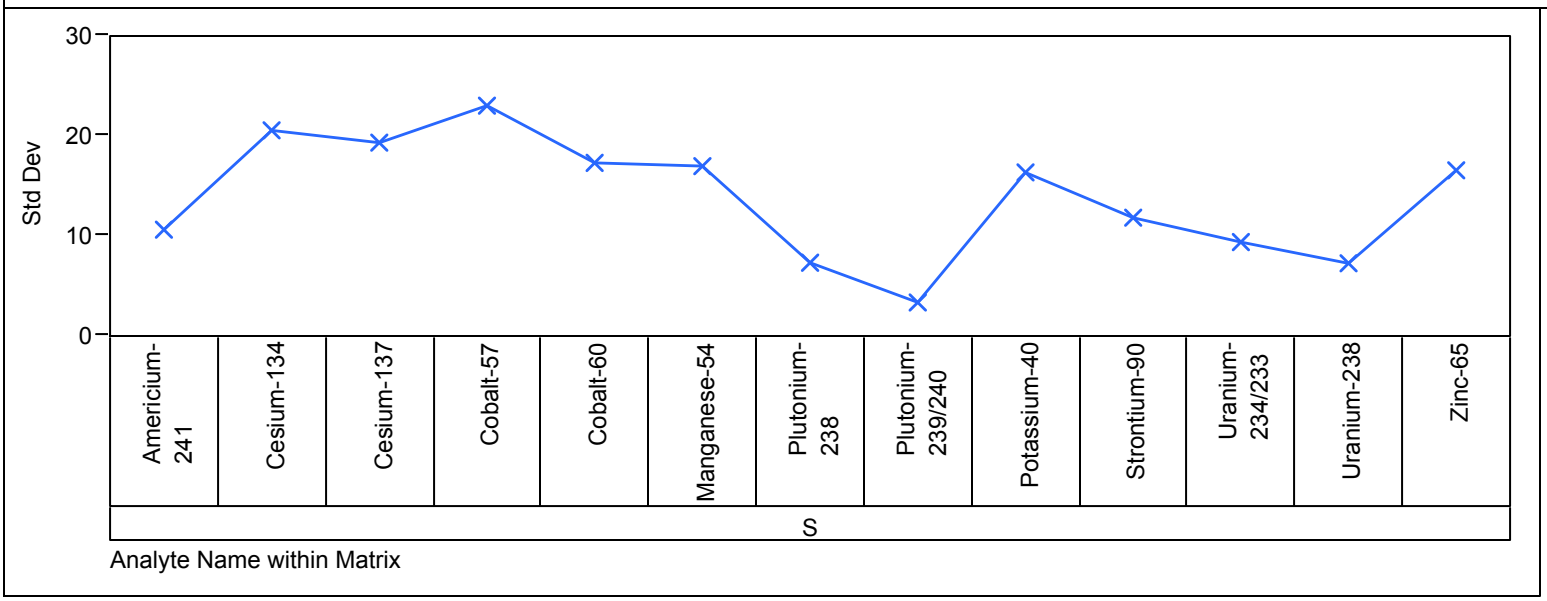
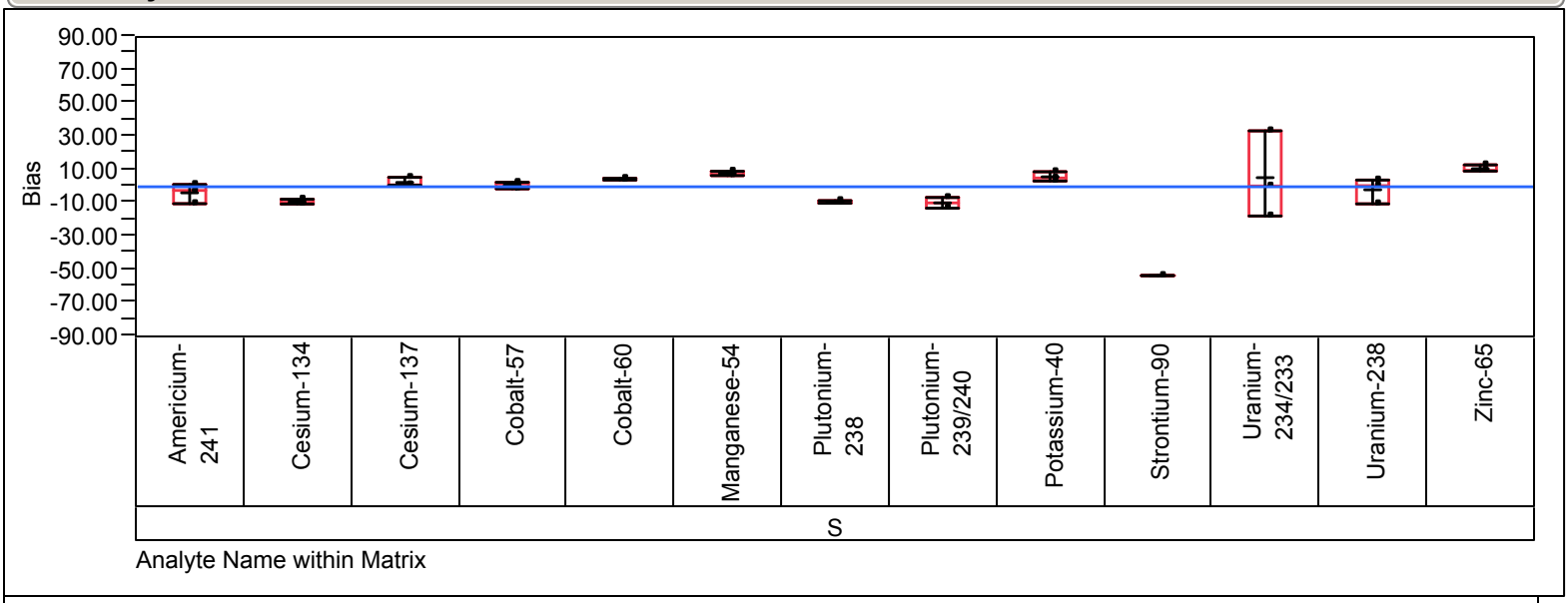
Variability Chart for Bias

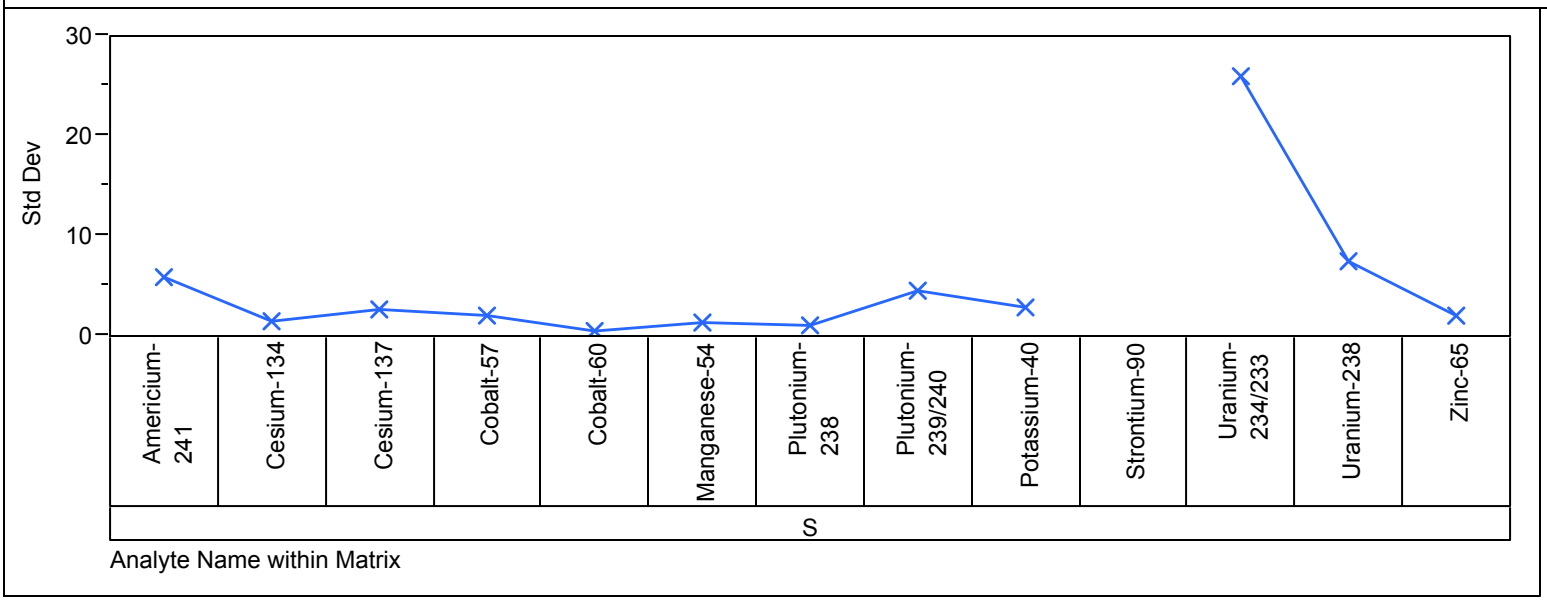




Variability Gauge Lab Code=CORE02

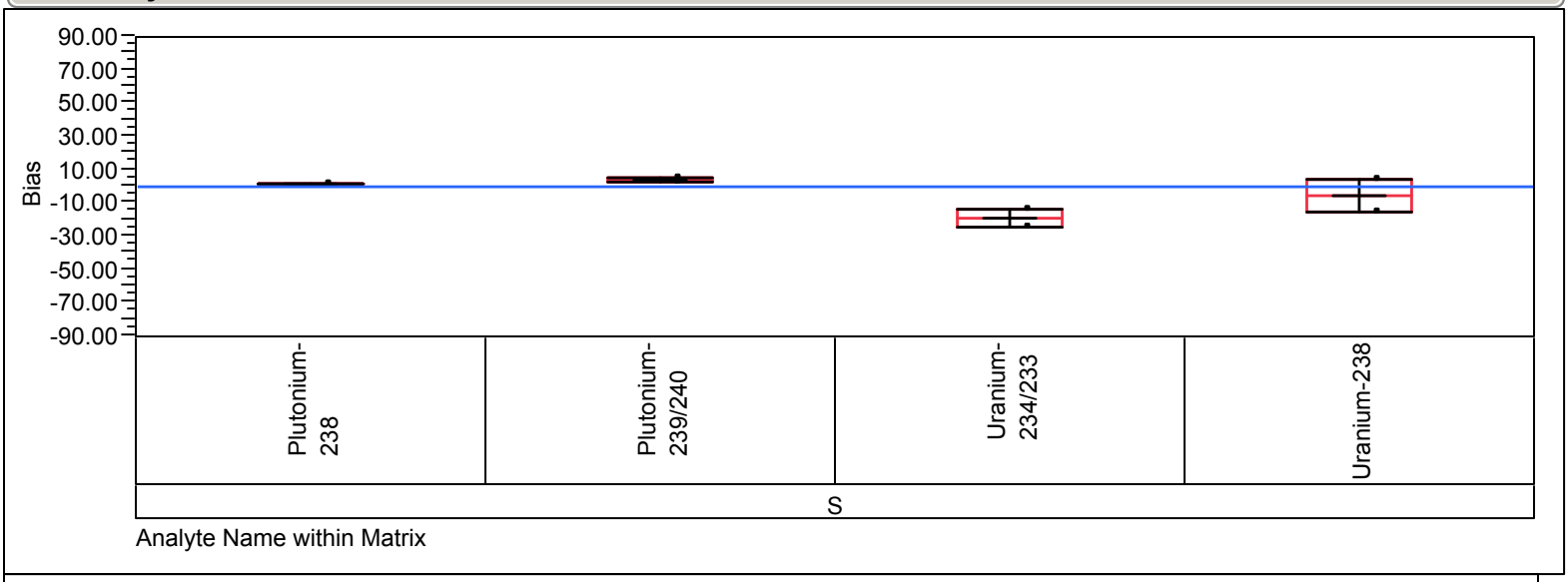
Variability Chart for Bias

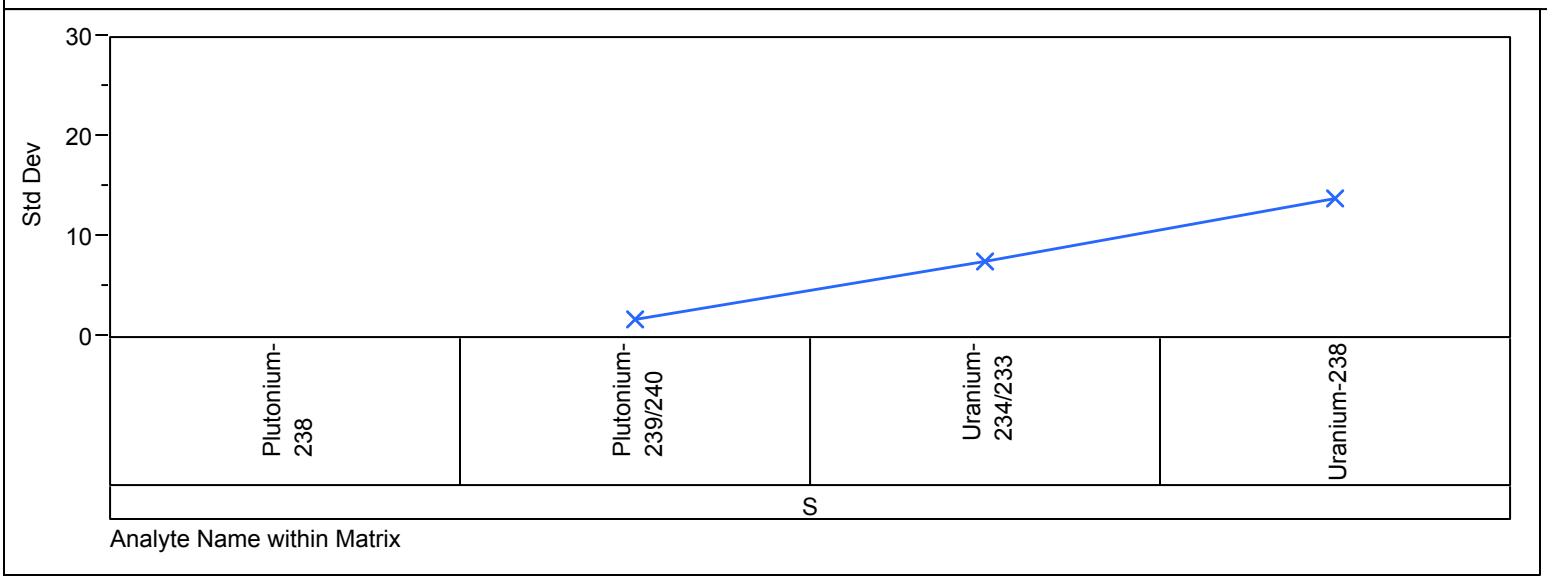




Variability Gauge Lab Code=EMBW01

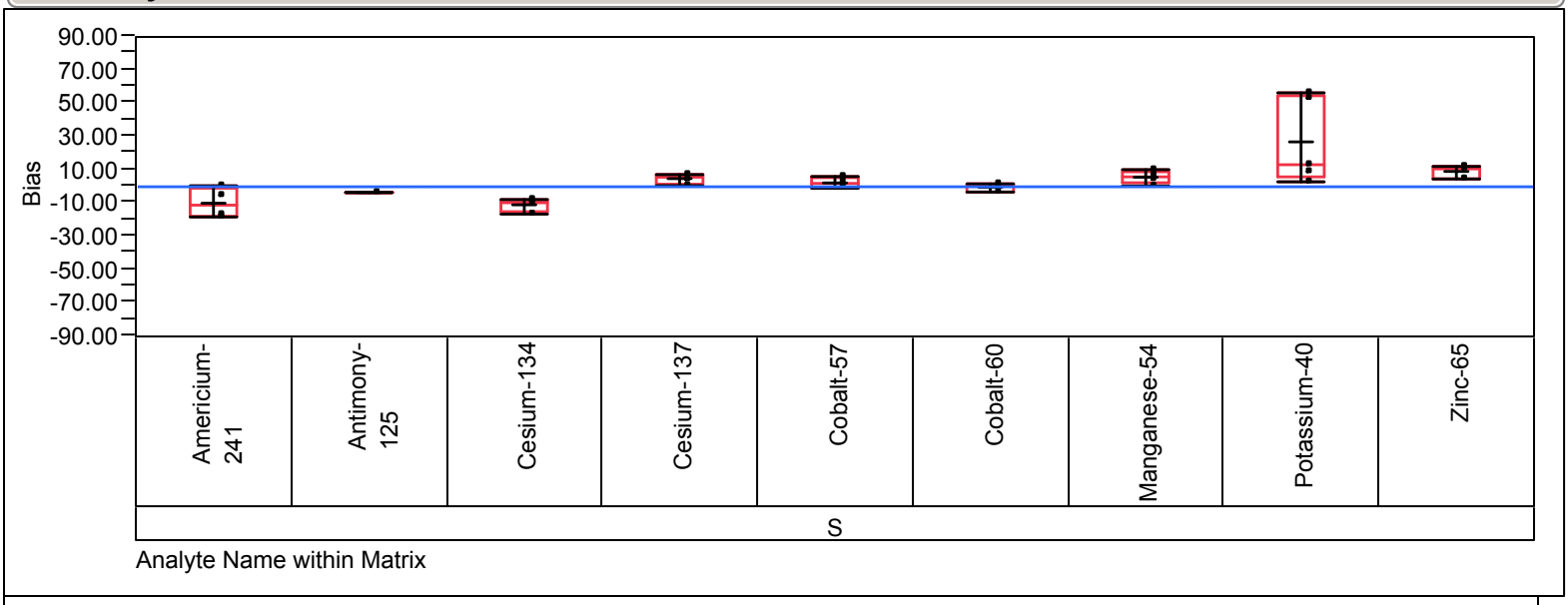
Variability Chart for Bias

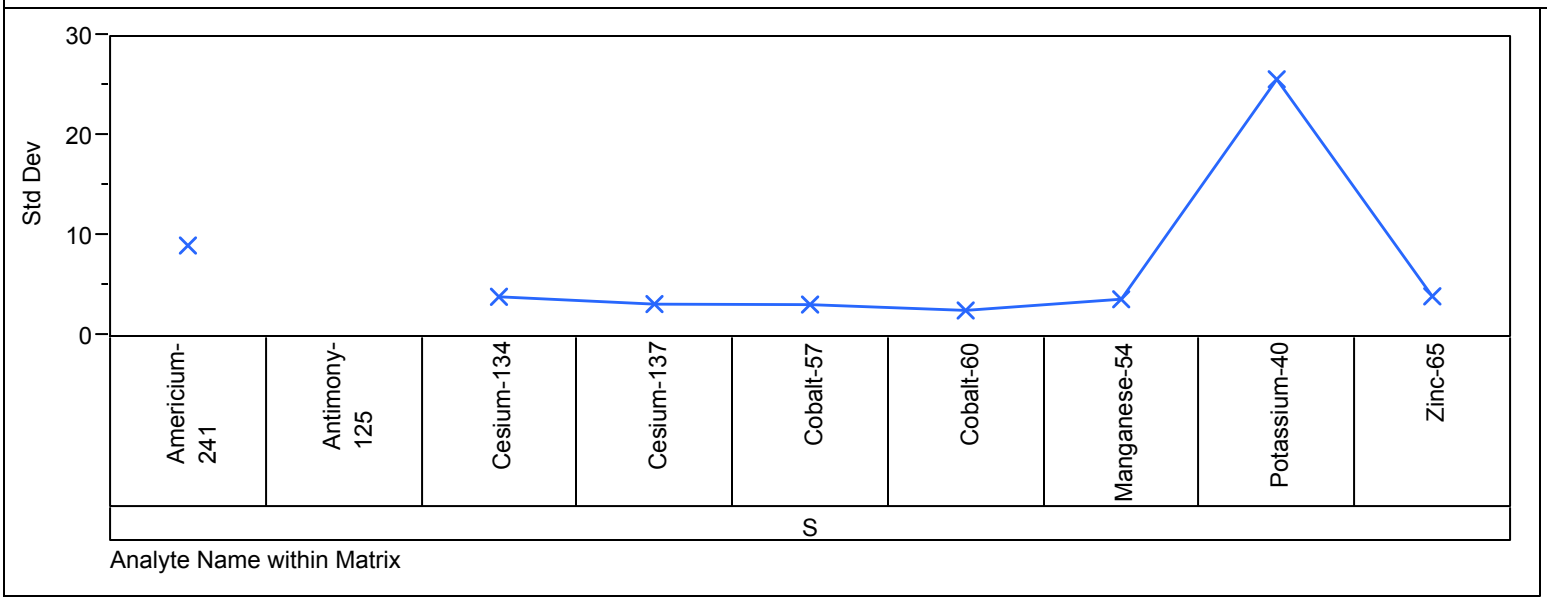




Variability Gauge Lab Code=ENES01

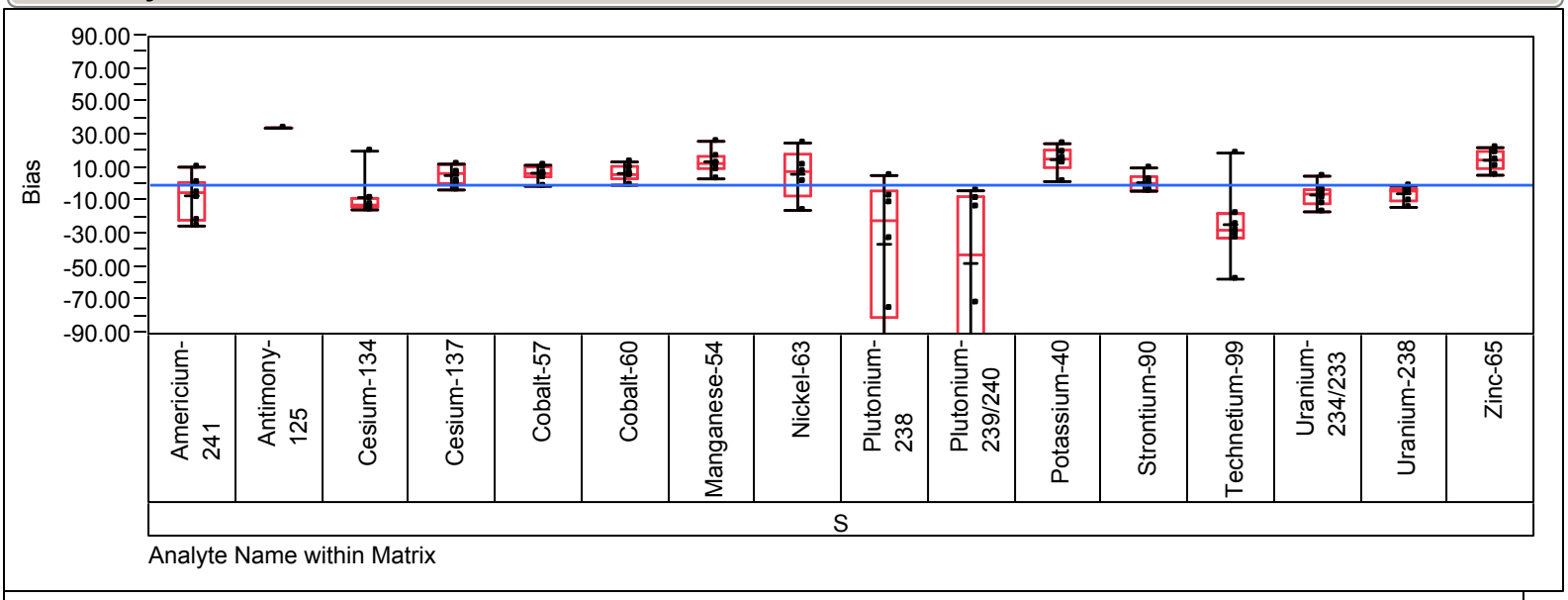
Variability Chart for Bias

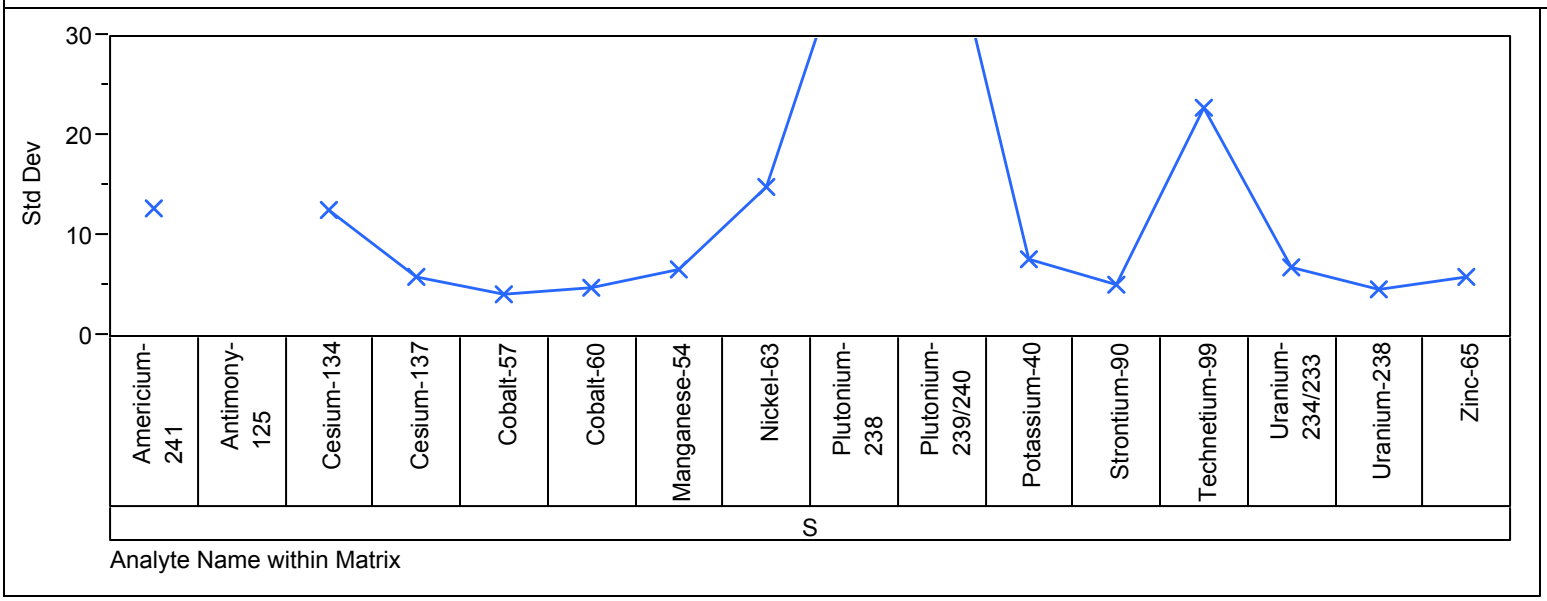




Variability Gauge Lab Code=ERCL01

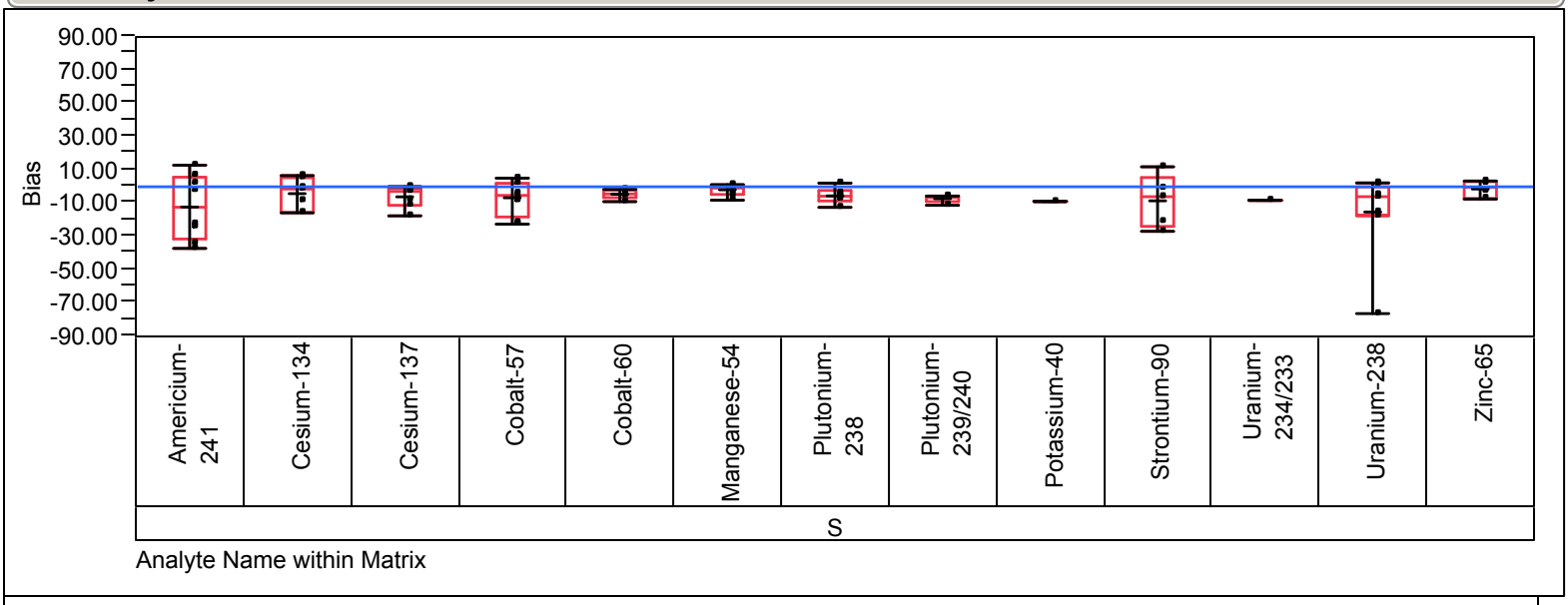
Variability Chart for Bias

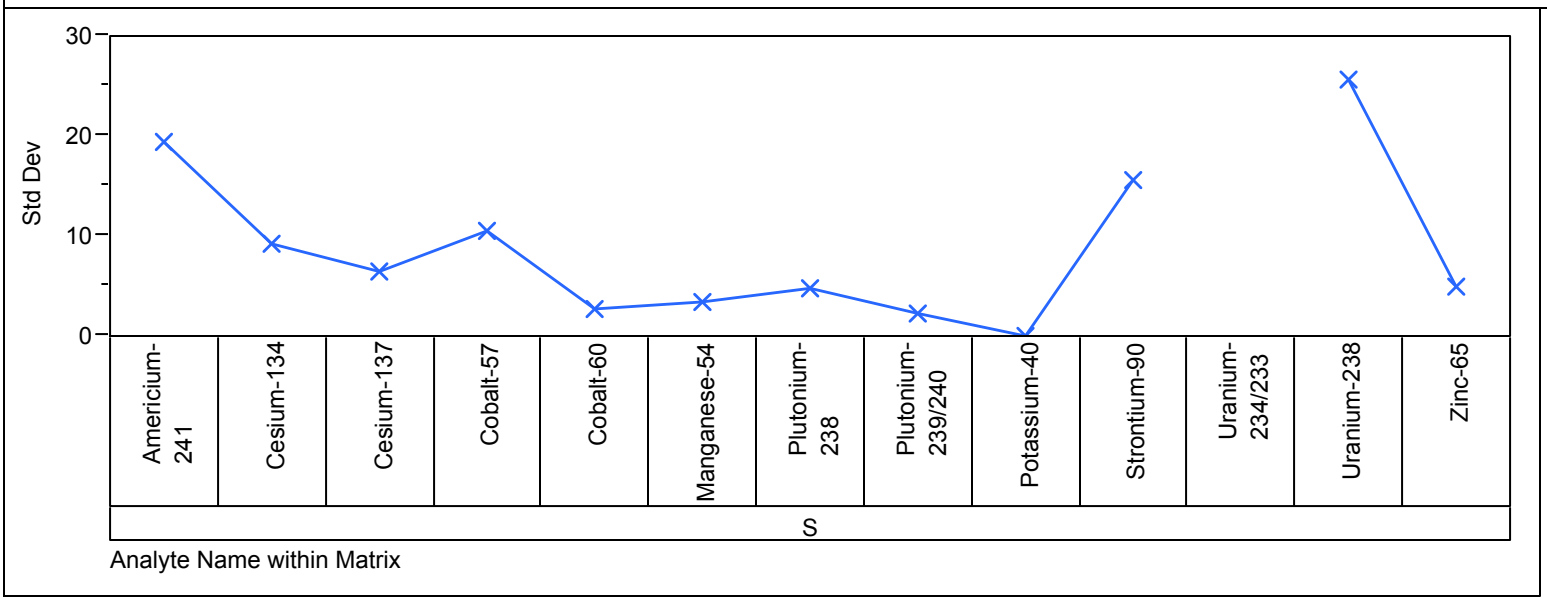




Variability Gauge Lab Code=ERLG01

Variability Chart for Bias





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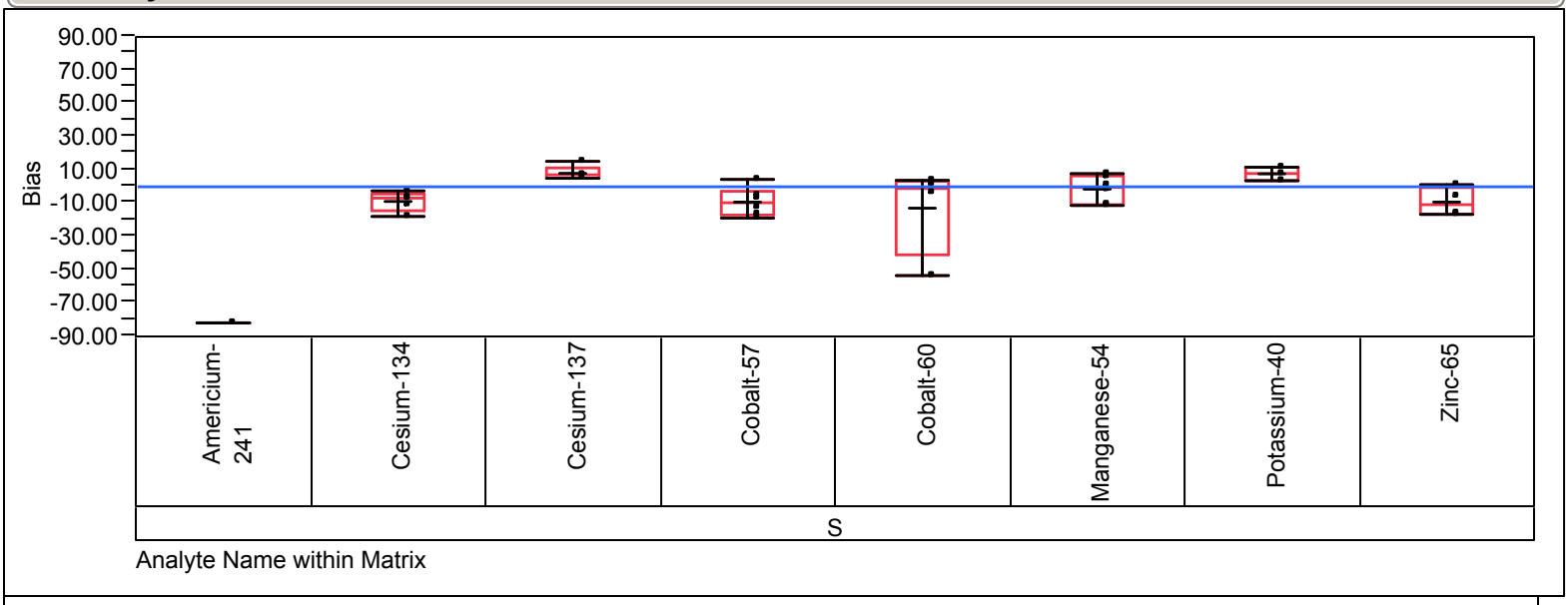
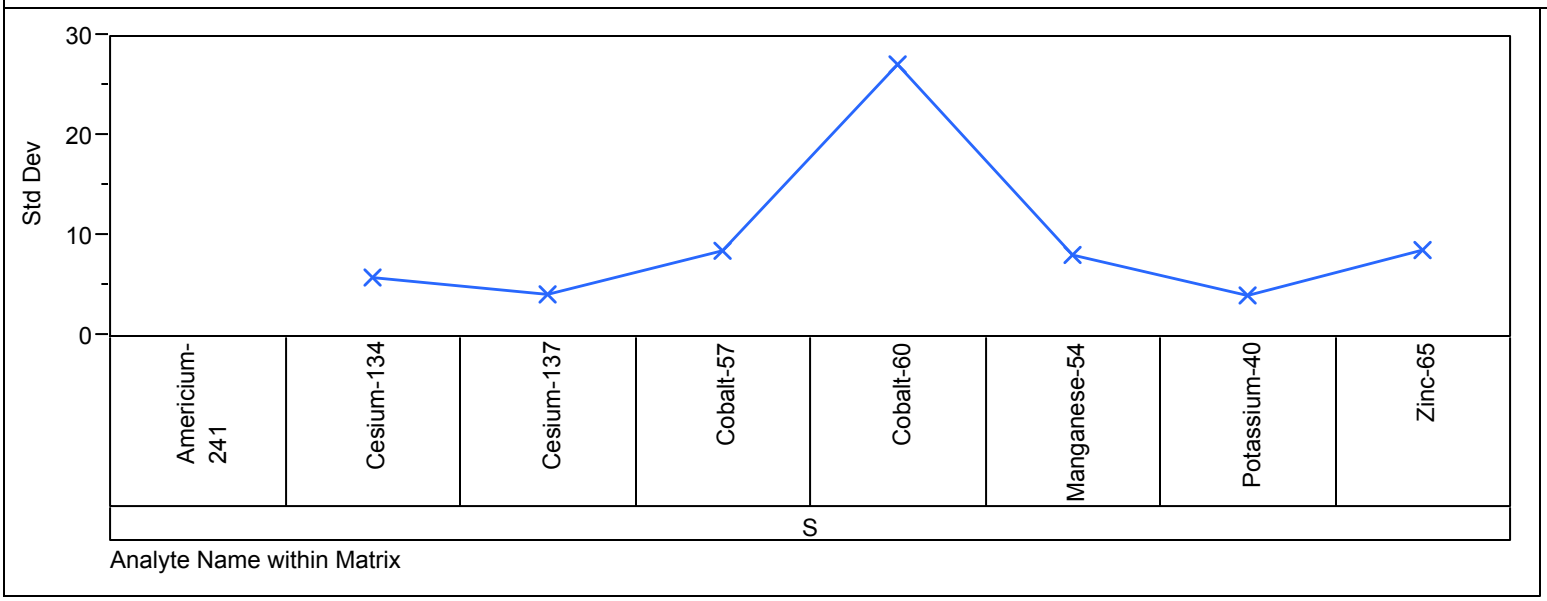
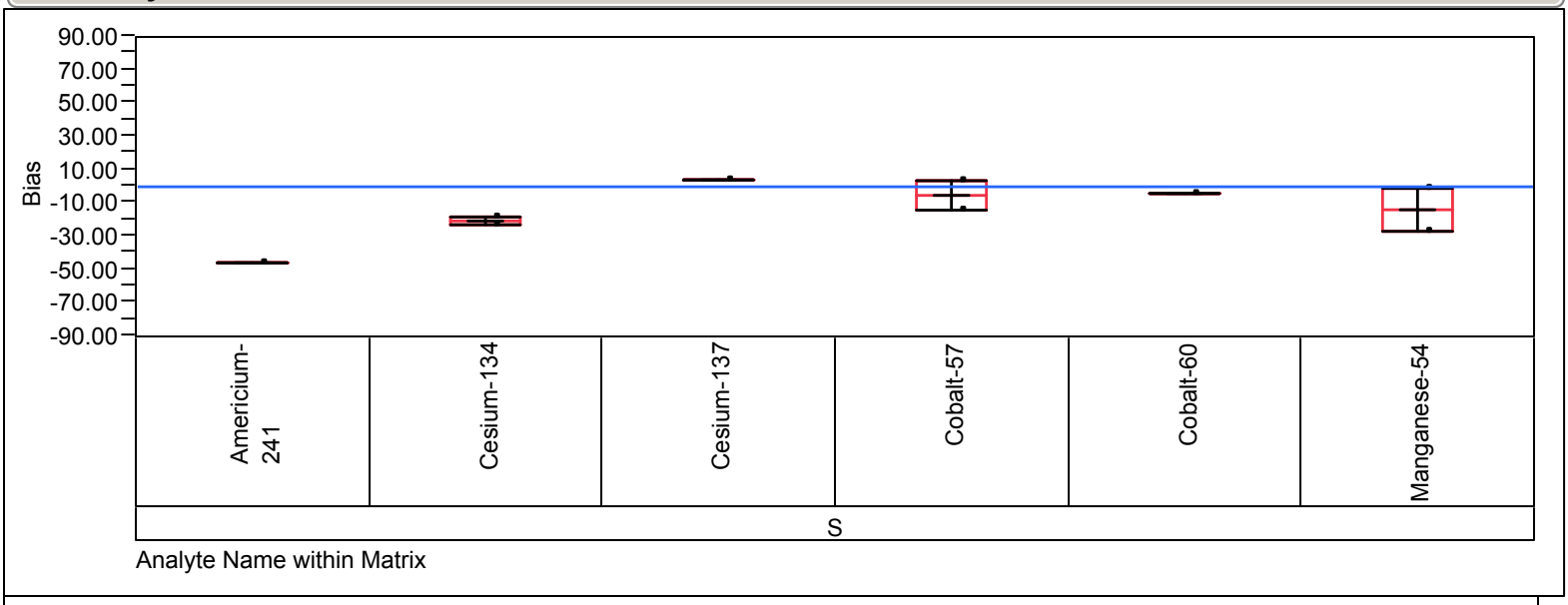
Variability Chart for Bias

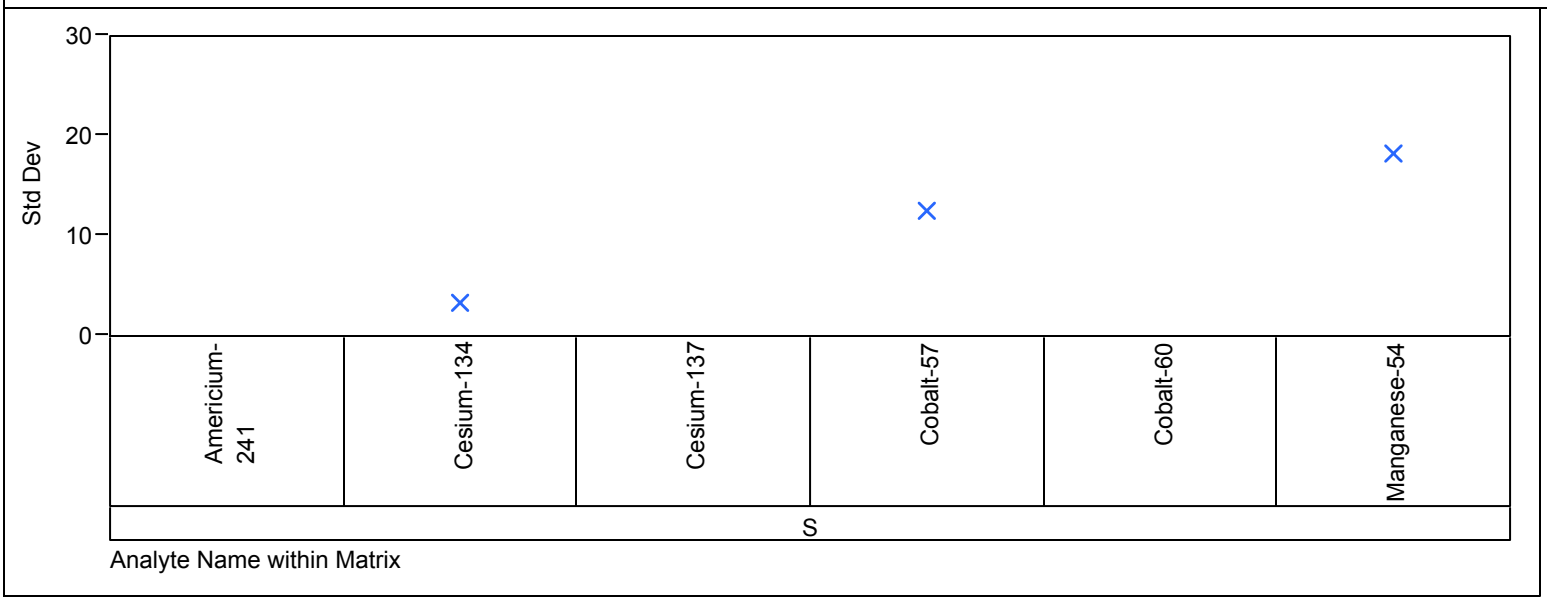




Variability Gauge Lab Code=ETTP01

Variability Chart for Bias





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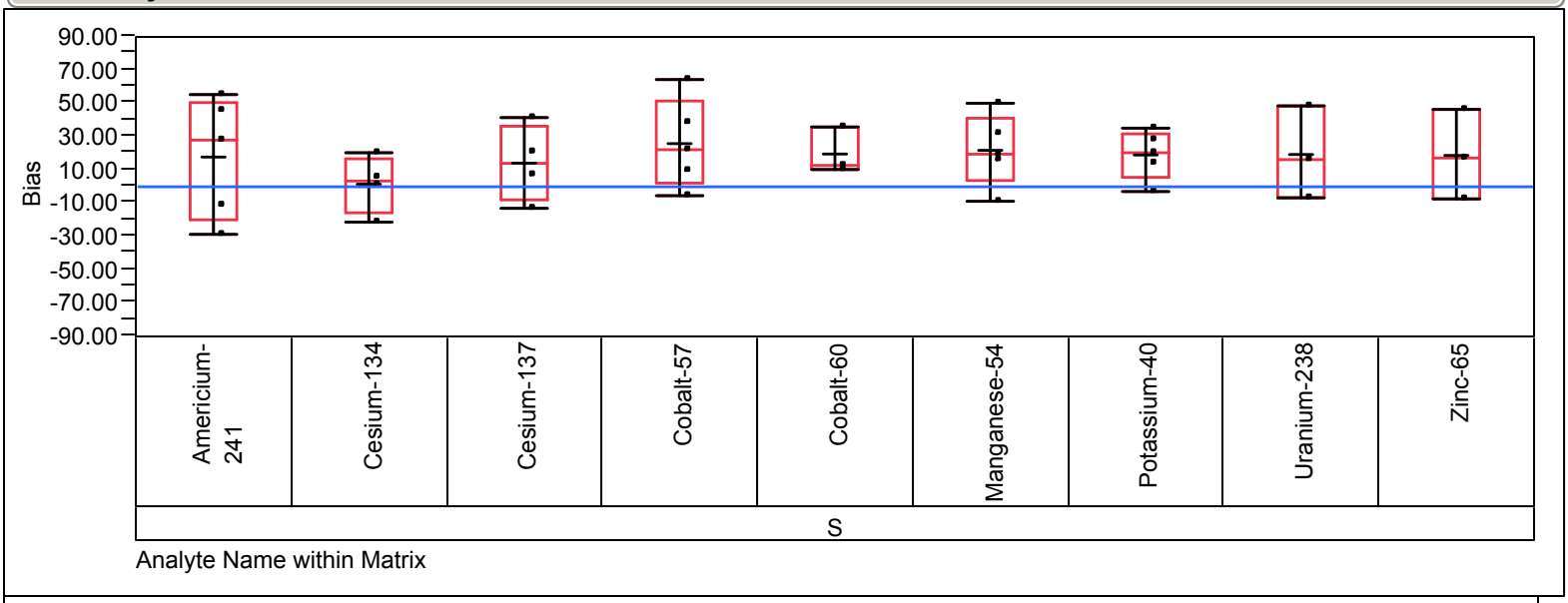
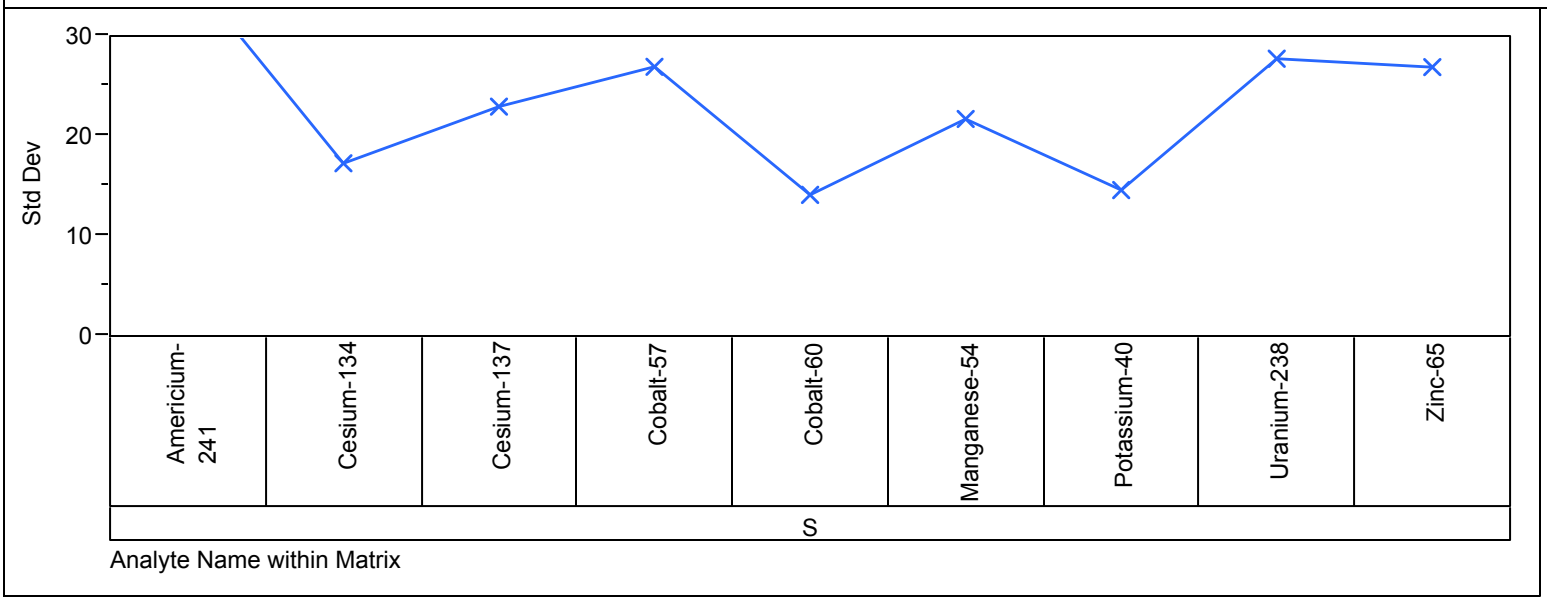
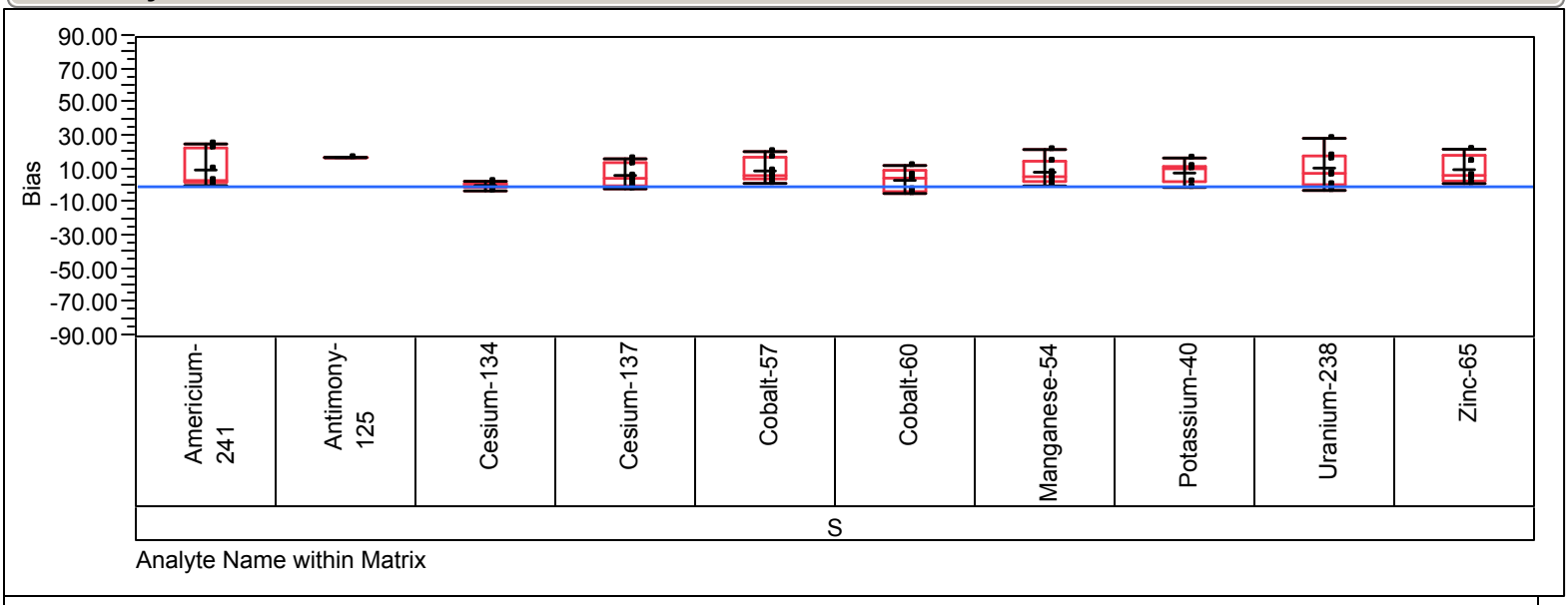
Variability Chart for Bias

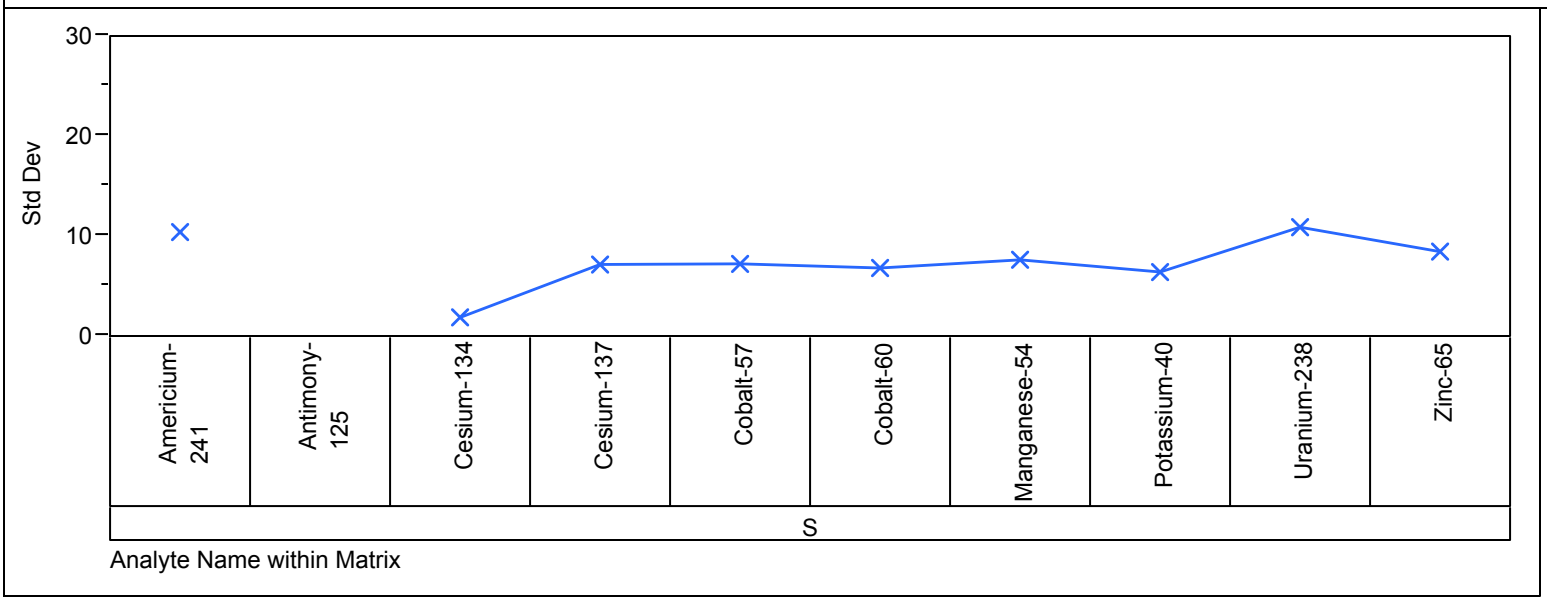




Variability Gauge Lab Code=FDHE01

Variability Chart for Bias





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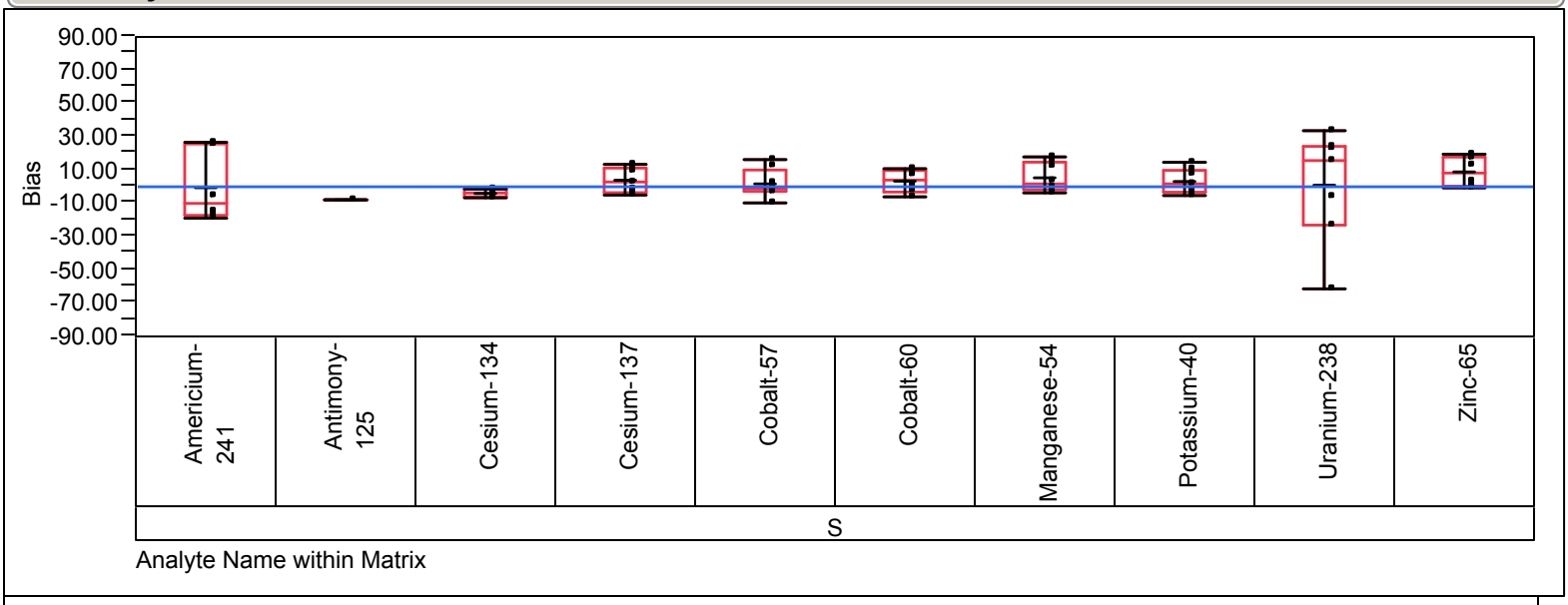
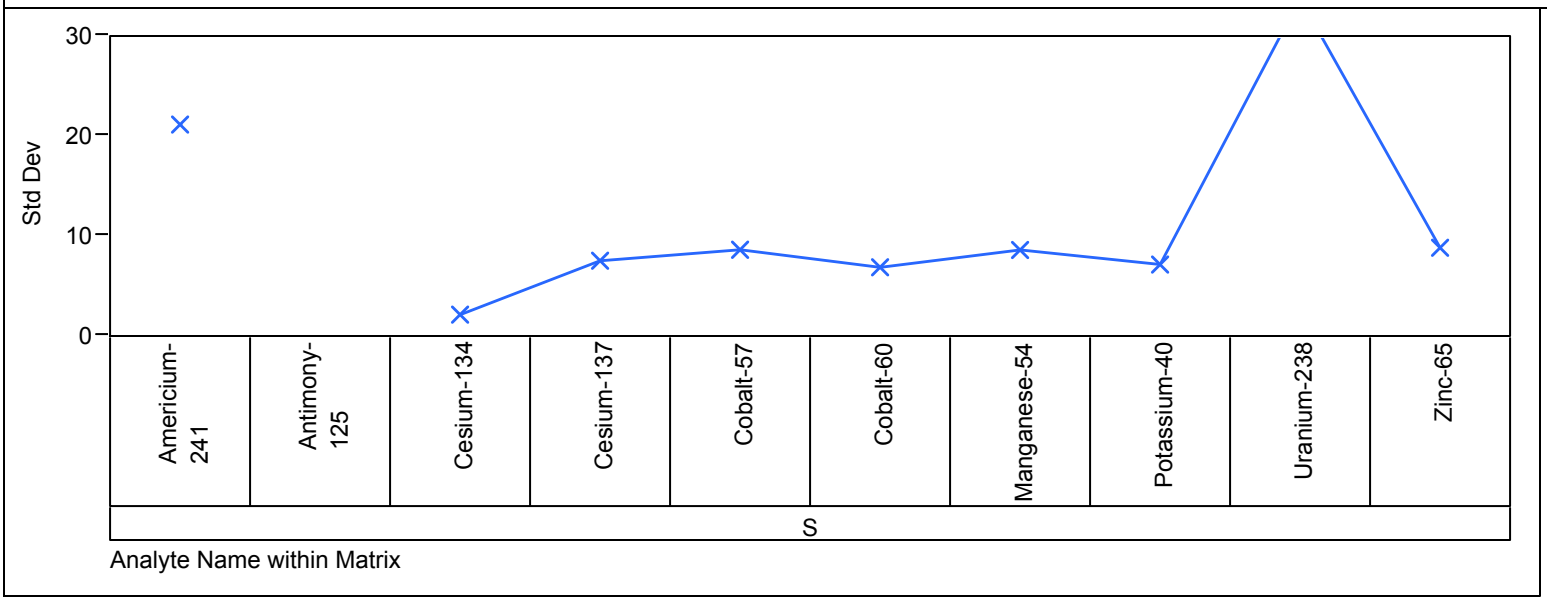
Variability Chart for Bias





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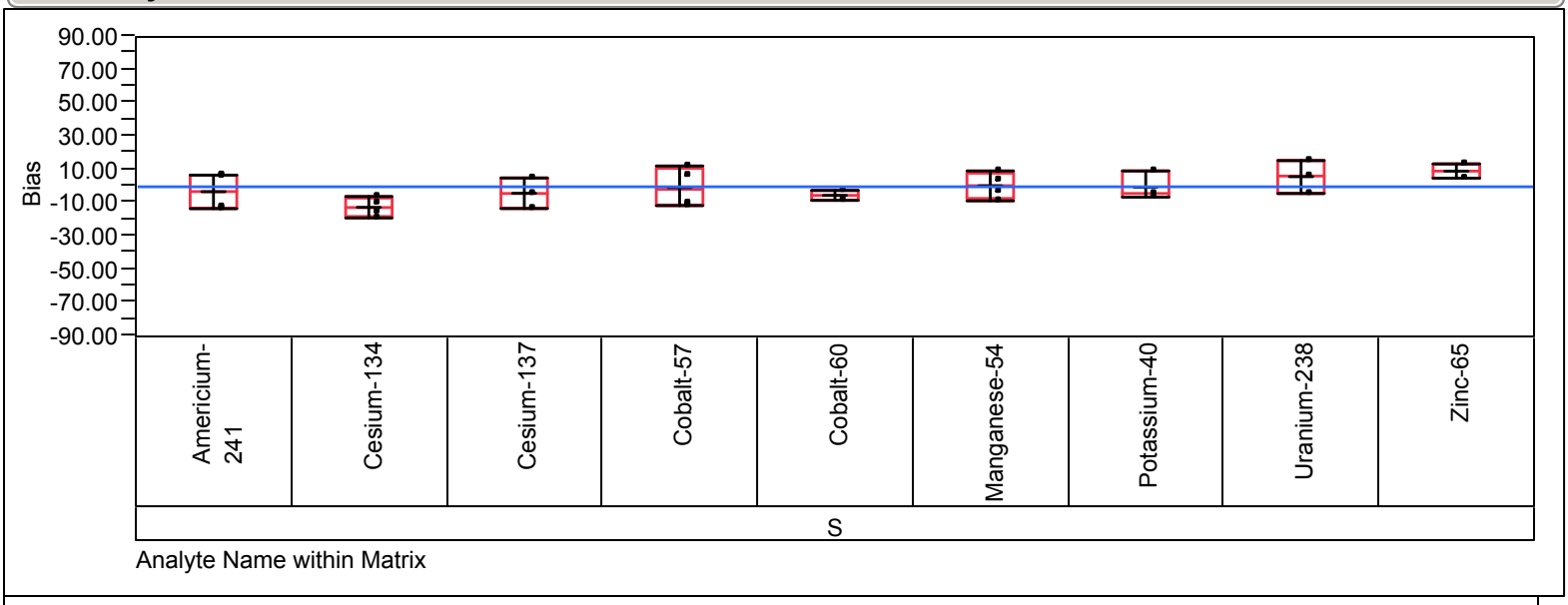
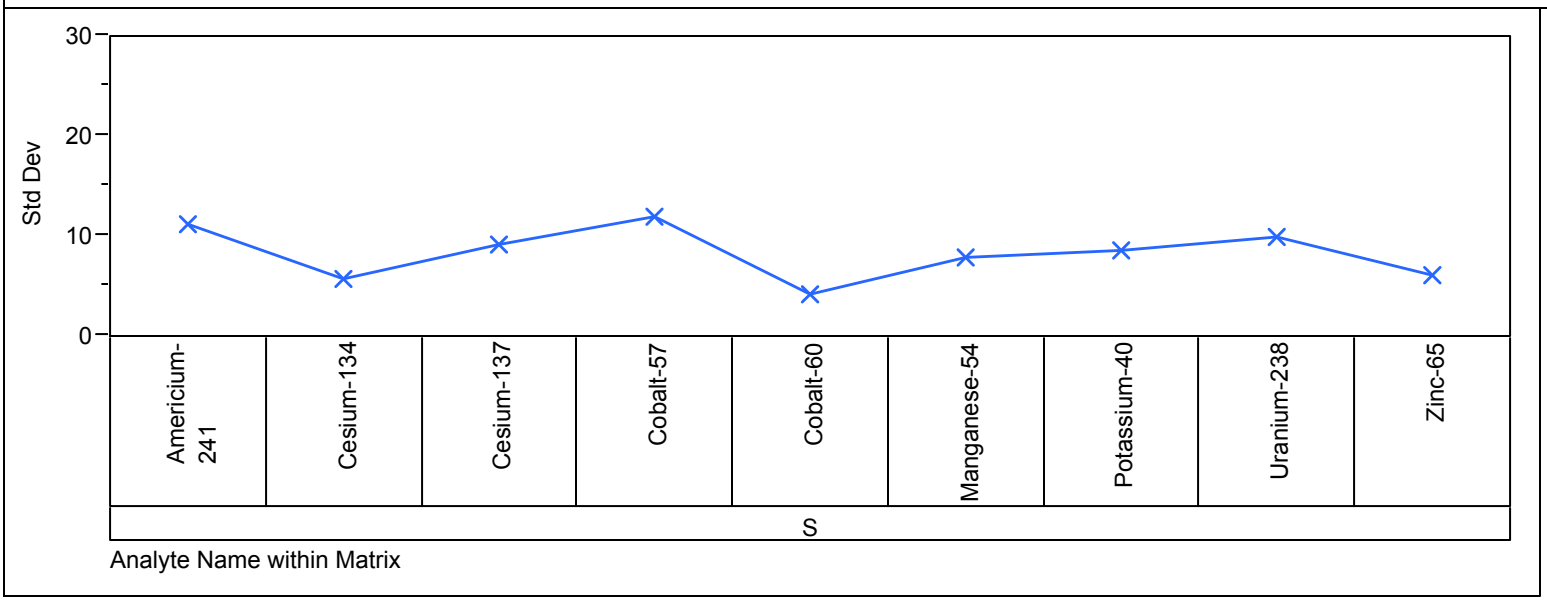
Variability Chart for Bias





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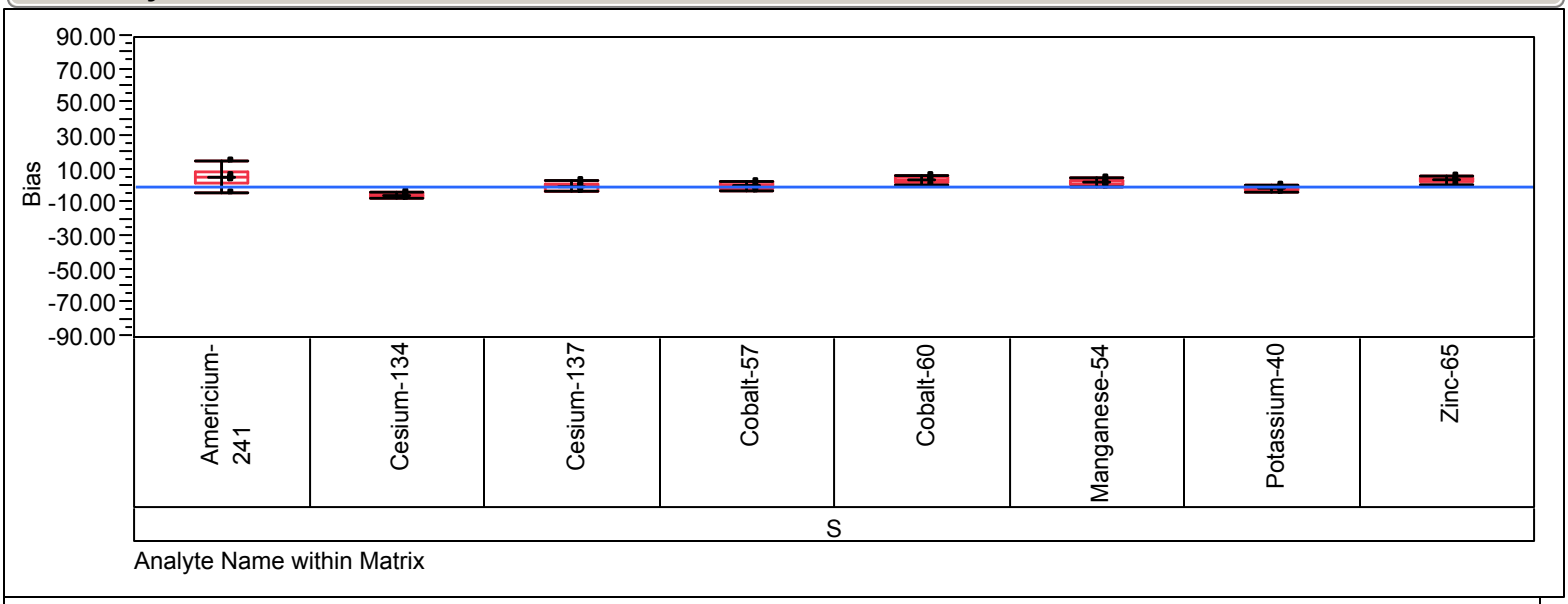
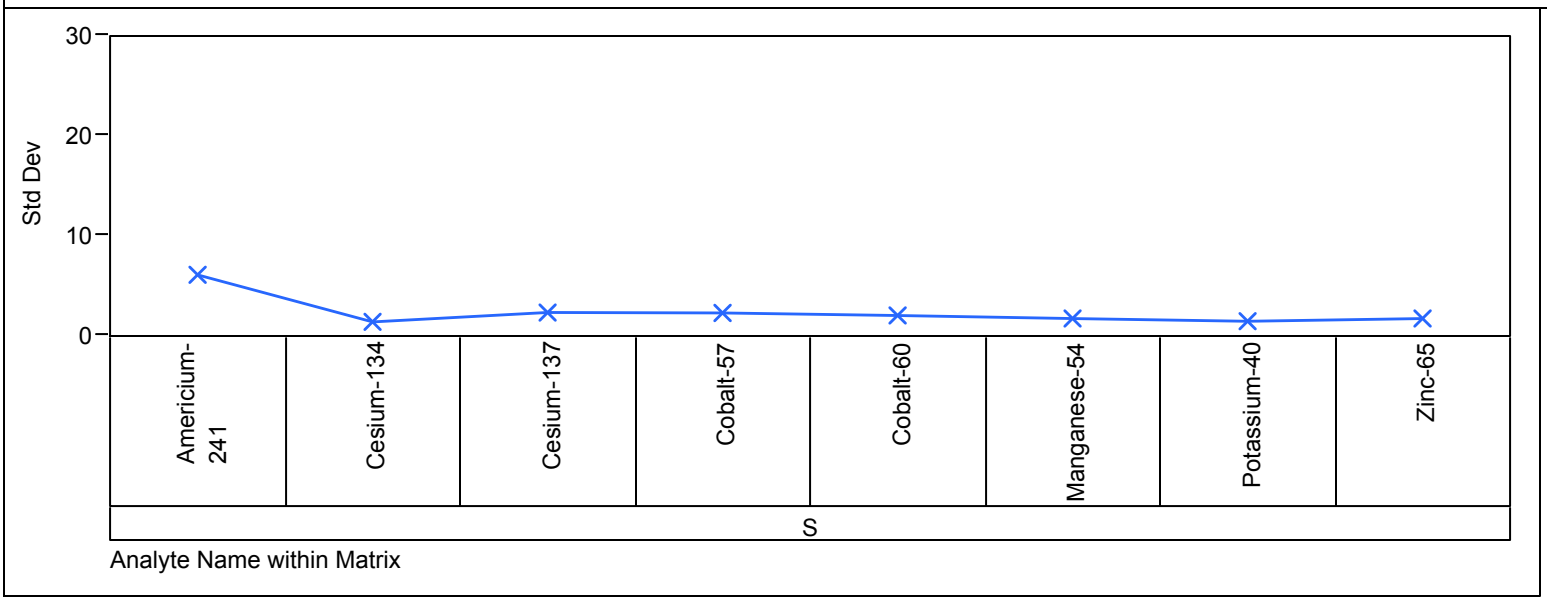
Variability Chart for Bias





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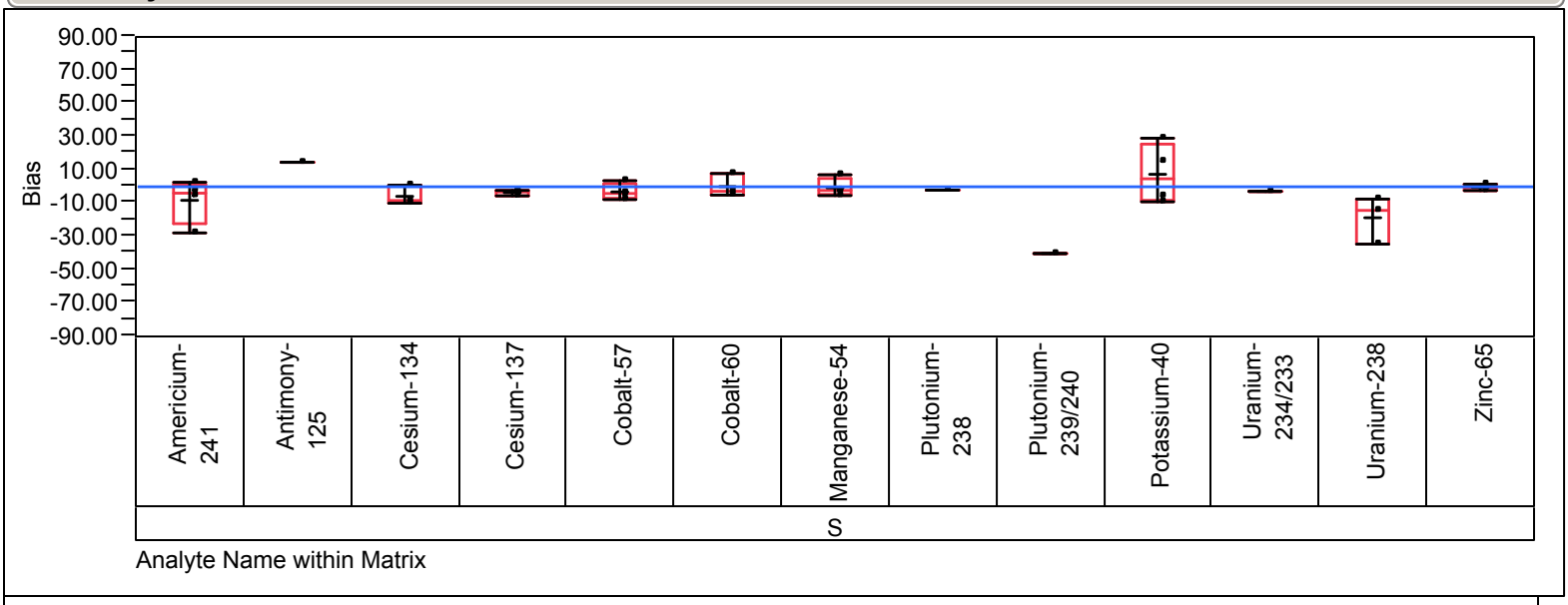
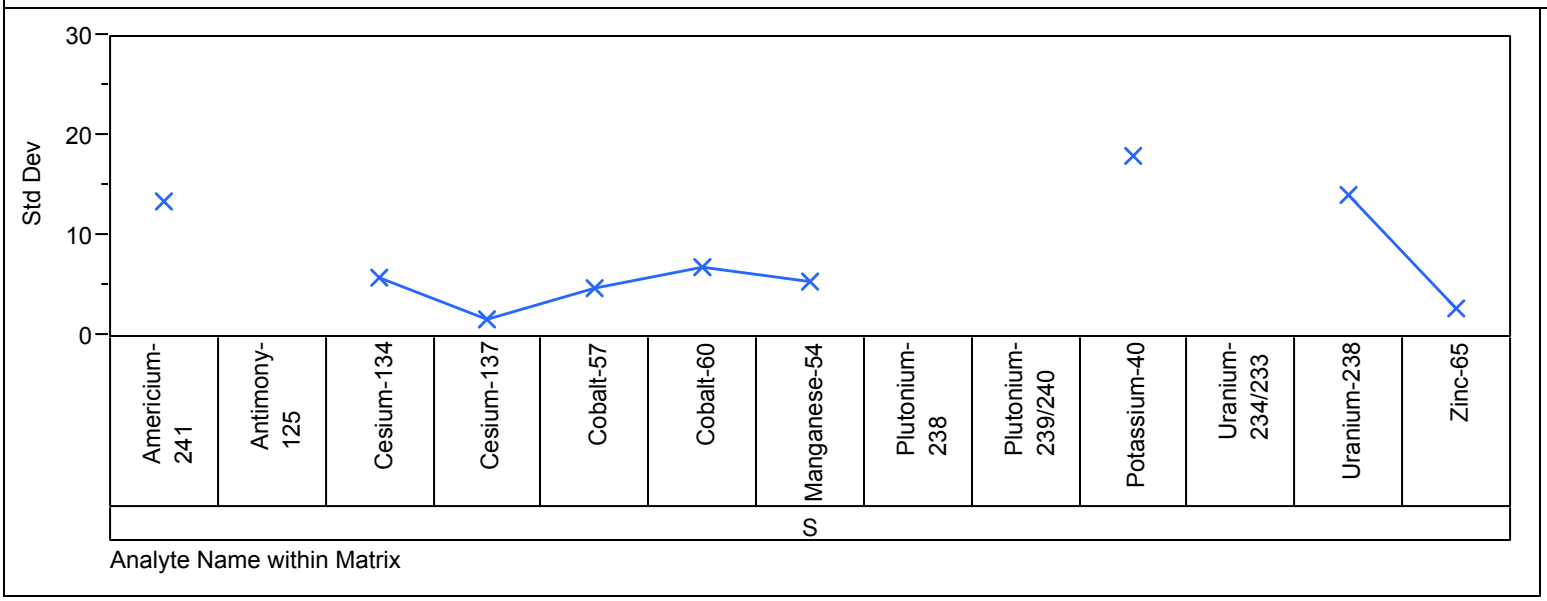
Variability Chart for Bias





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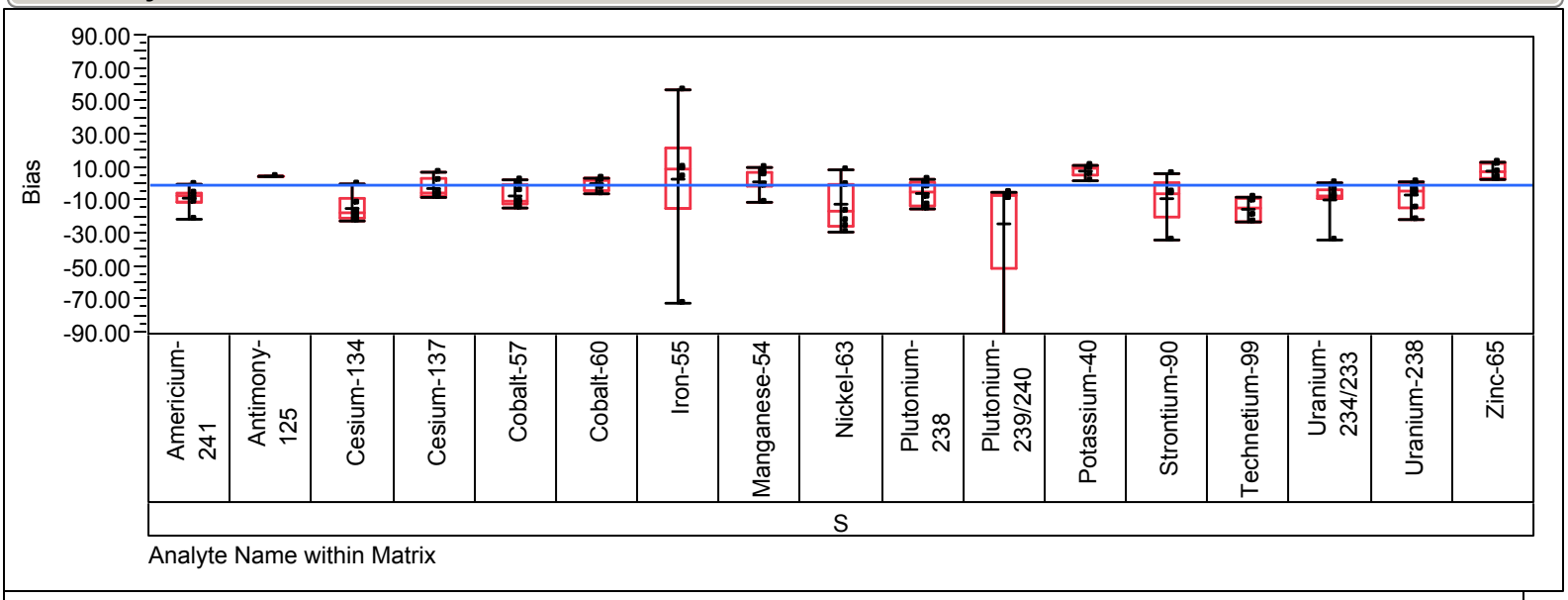
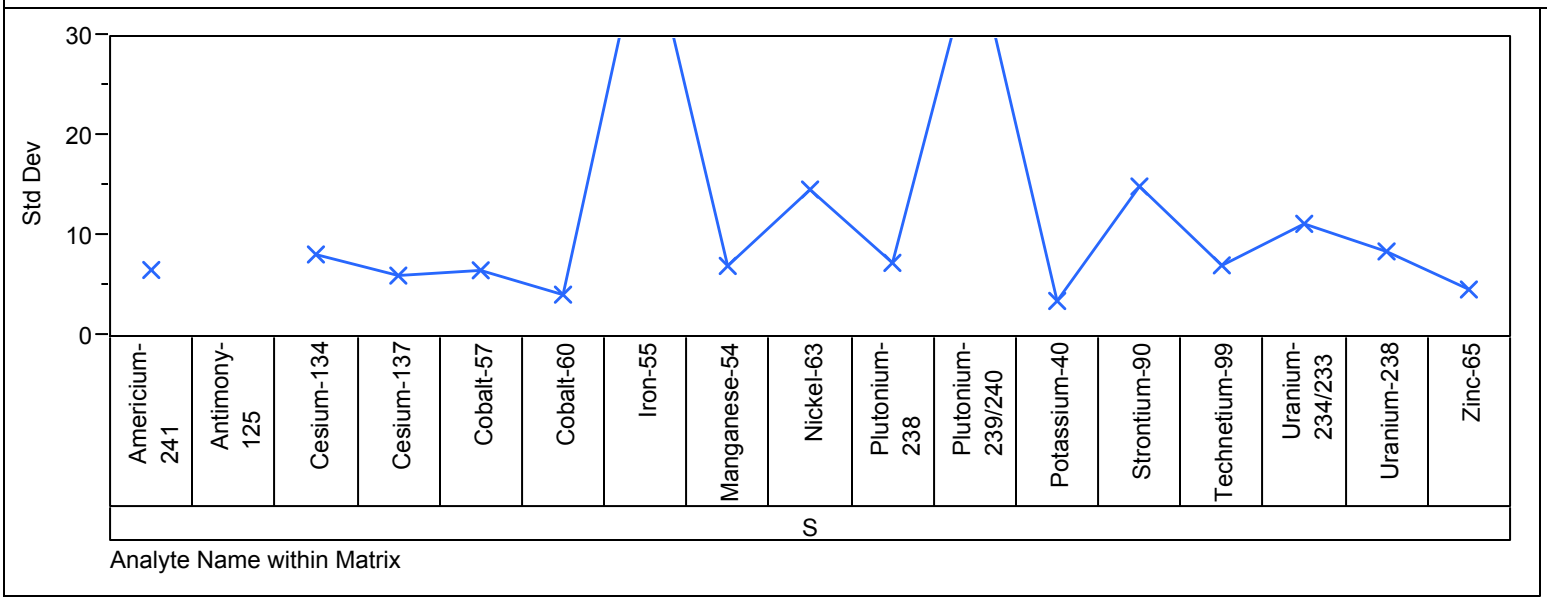
Variability Chart for Bias





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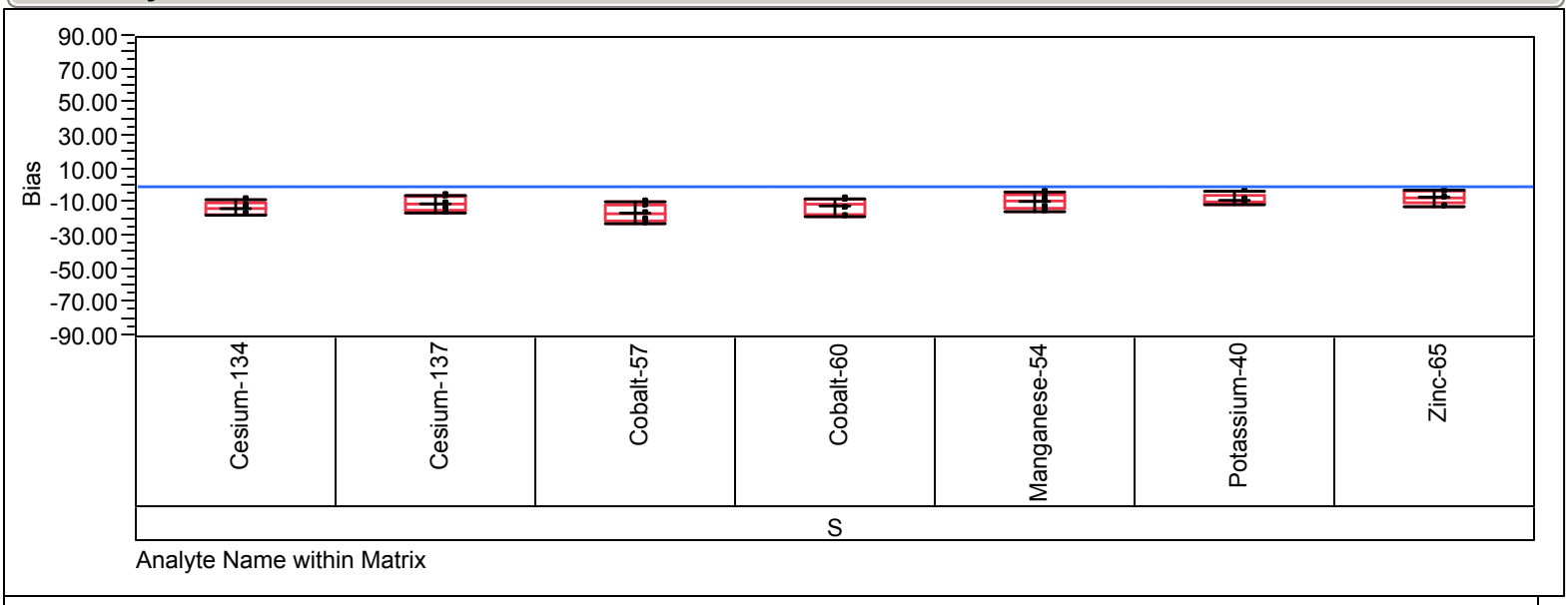
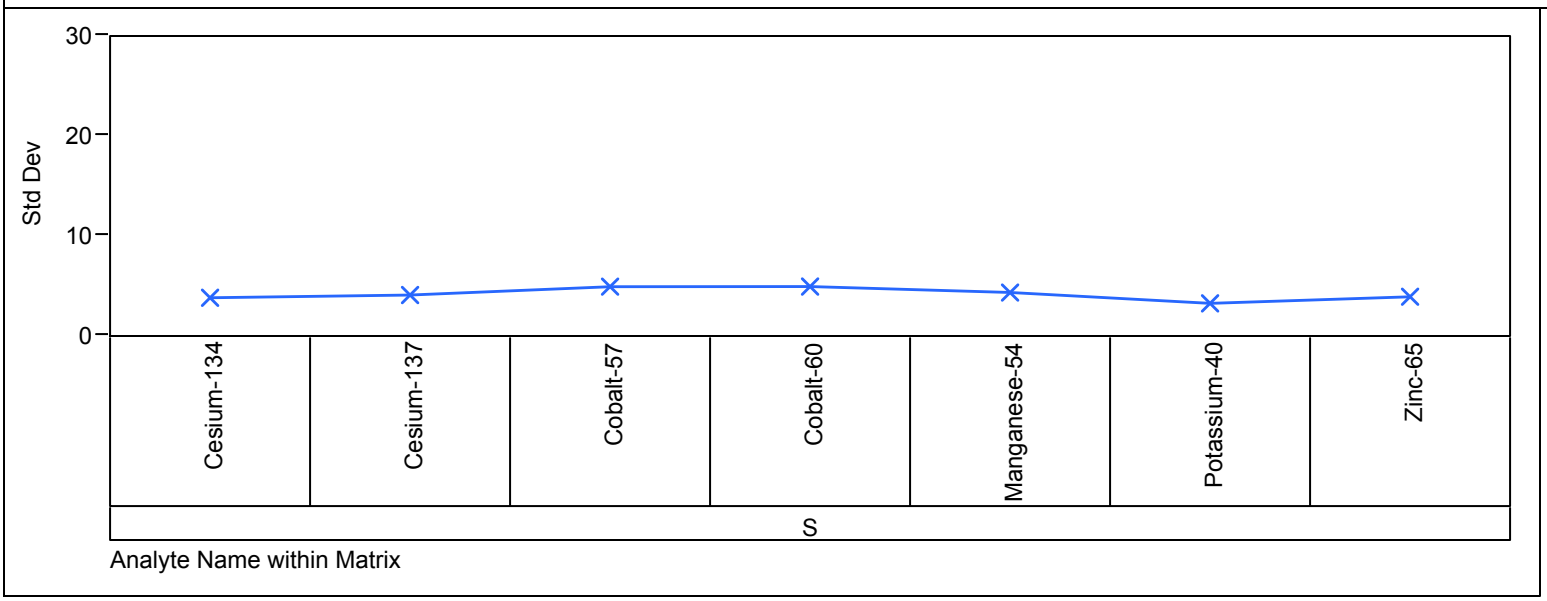
Variability Chart for Bias





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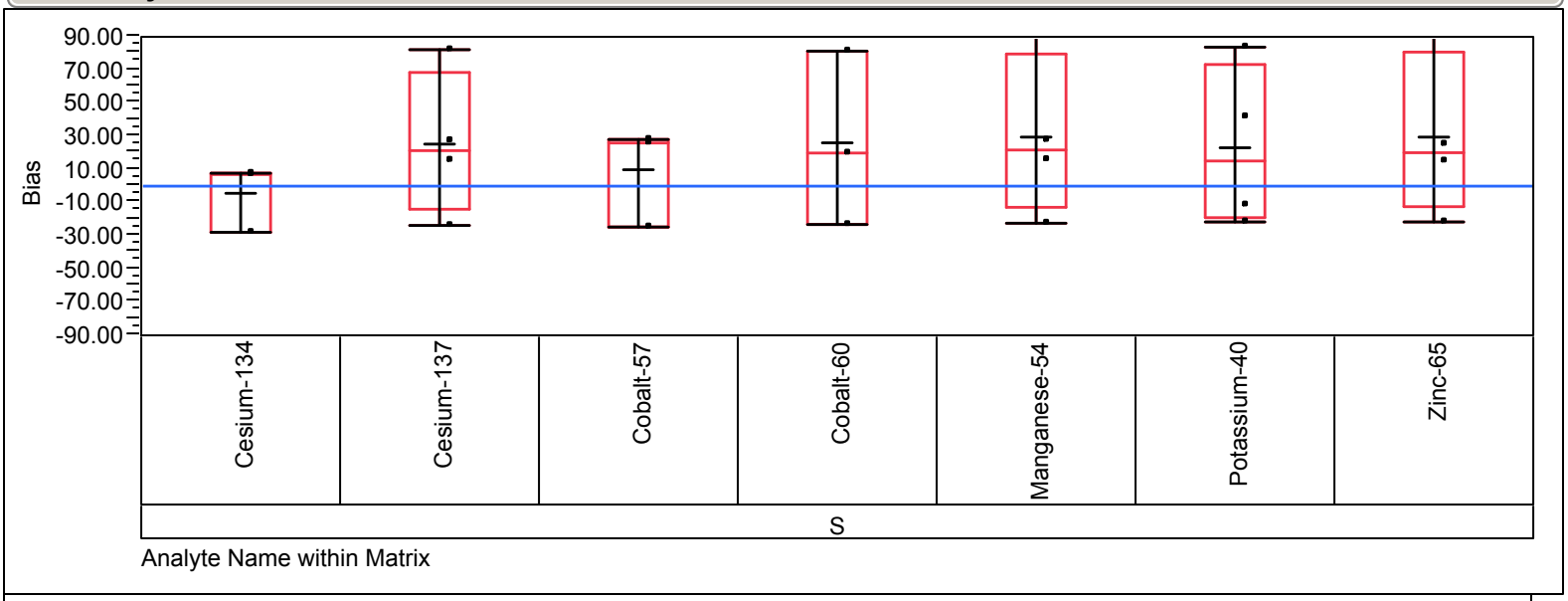
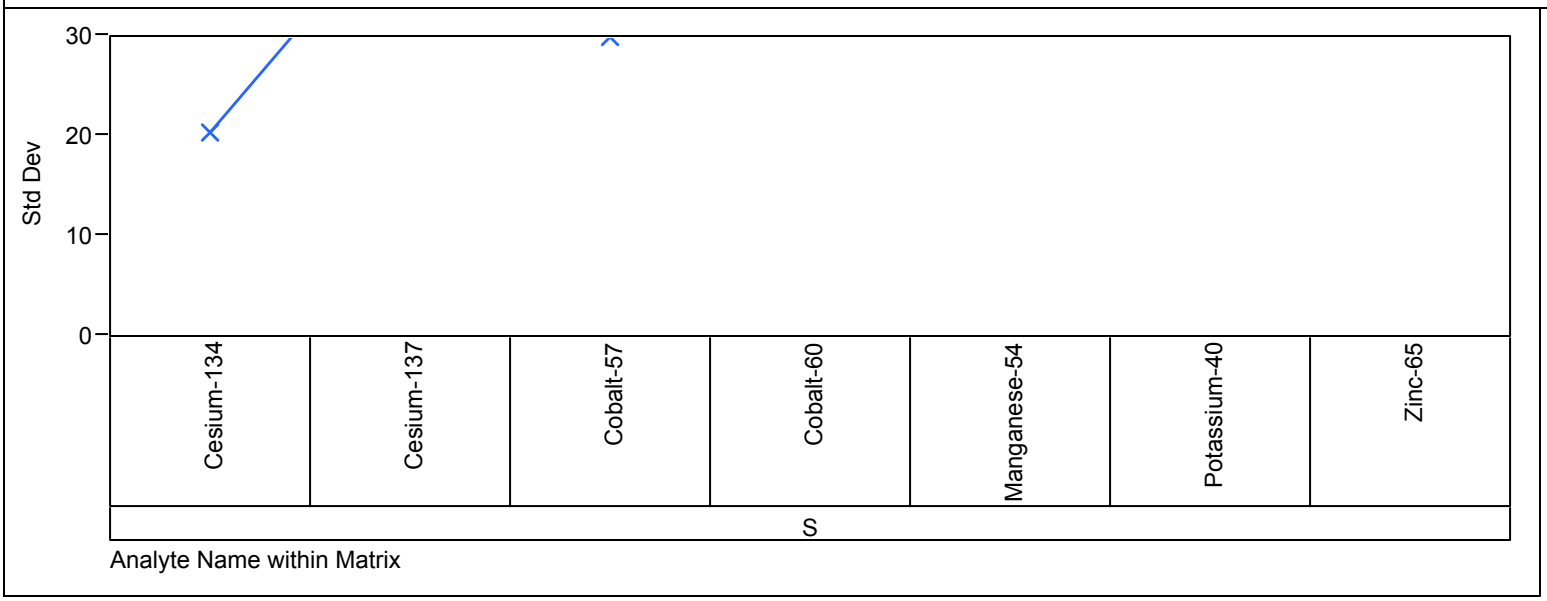
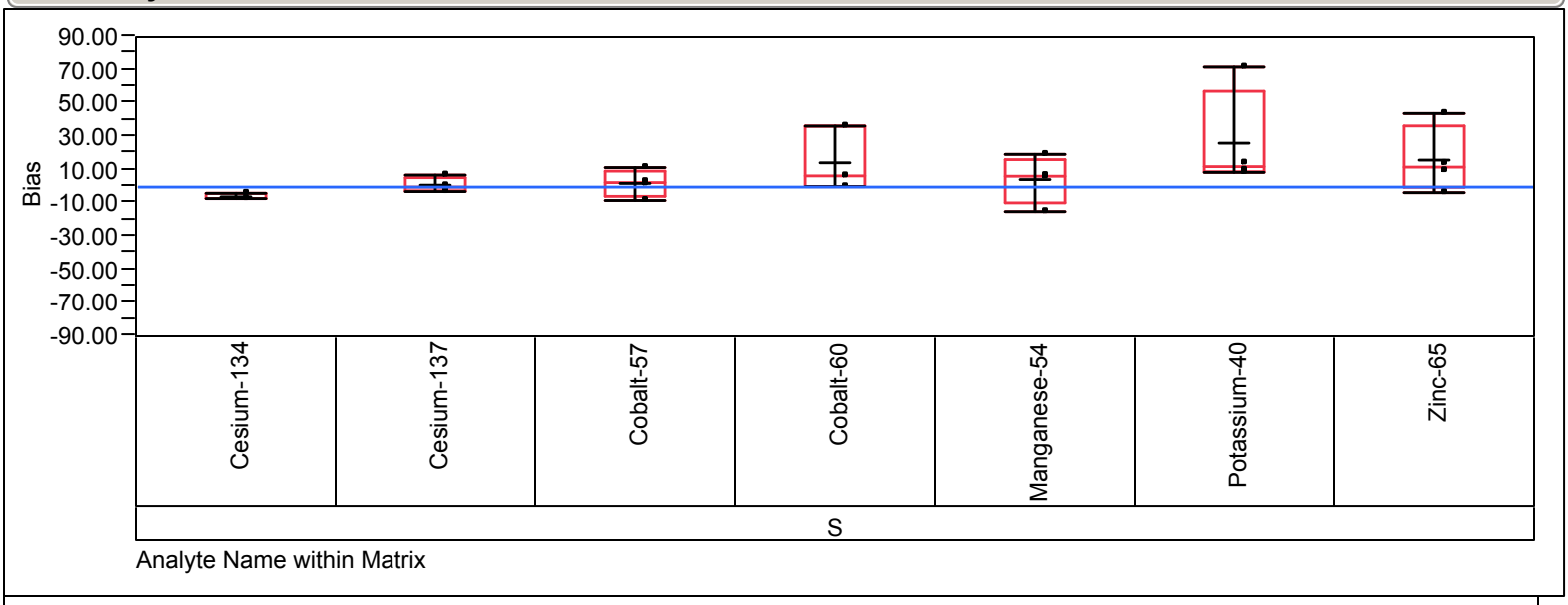
Variability Chart for Bias

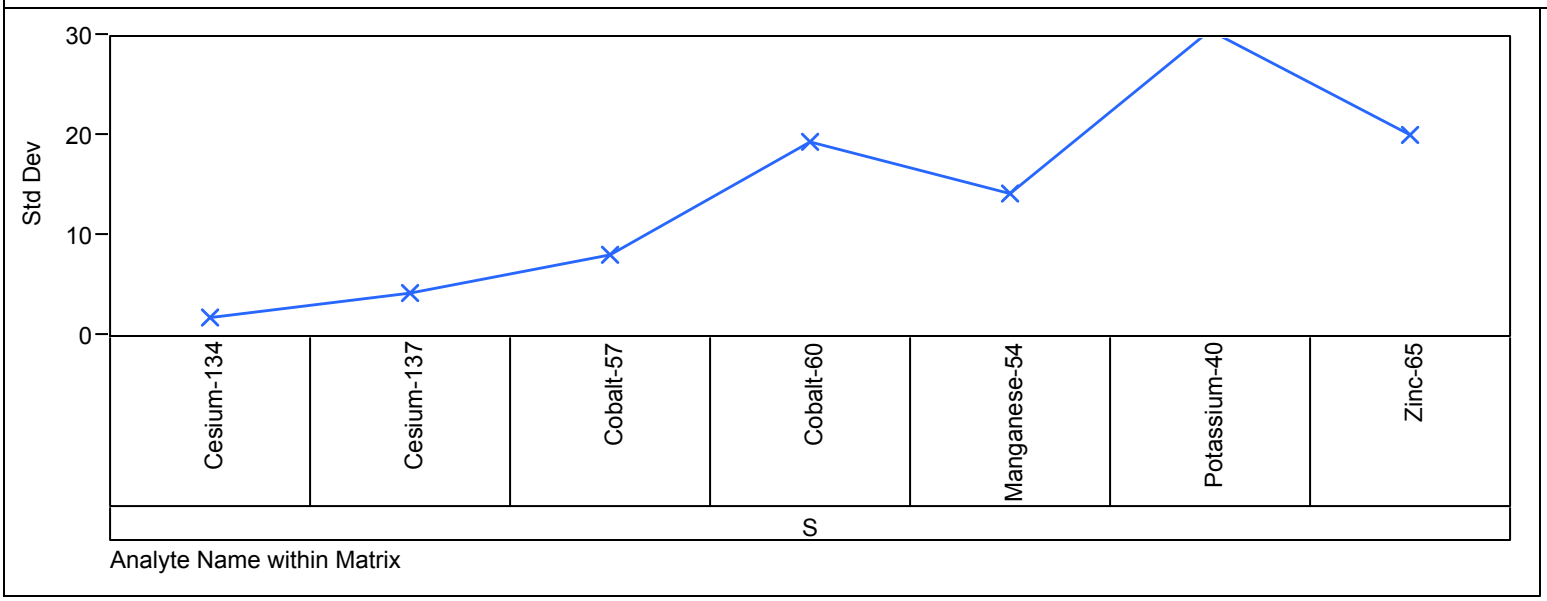




Variability Gauge Lab Code=GROW01

Variability Chart for Bias





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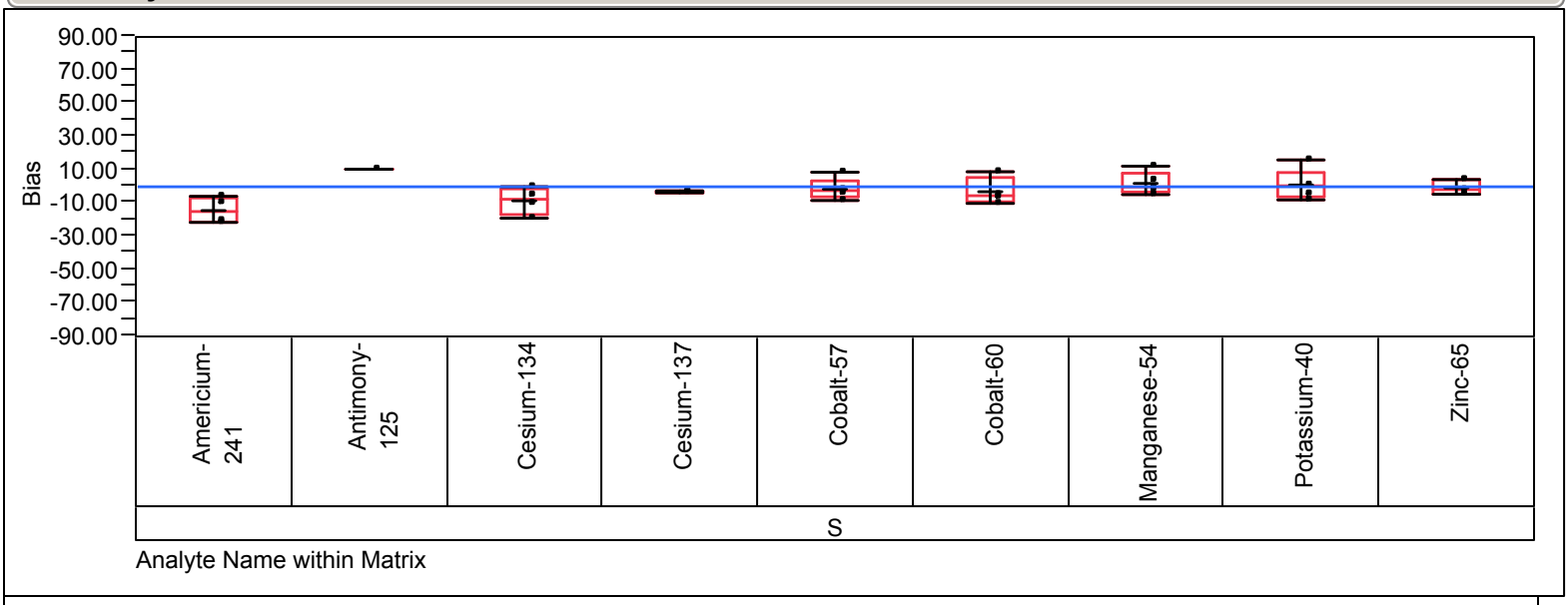
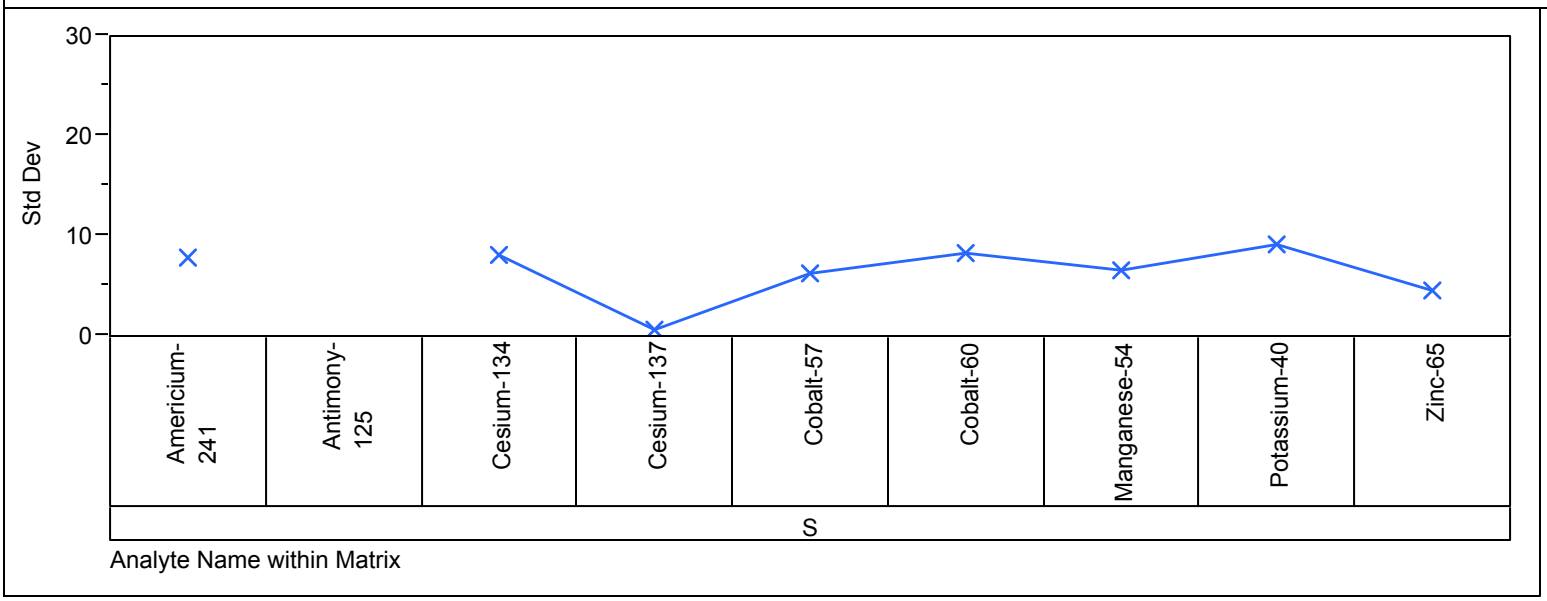
Variability Chart for Bias





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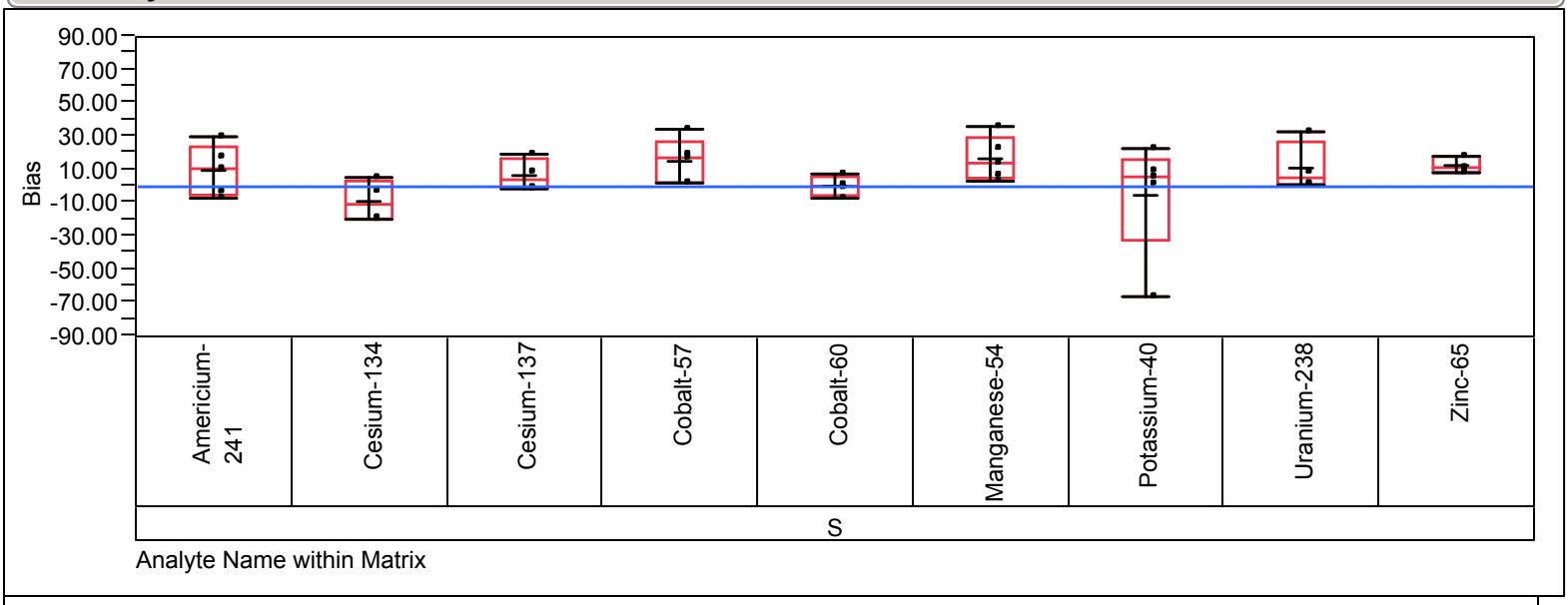
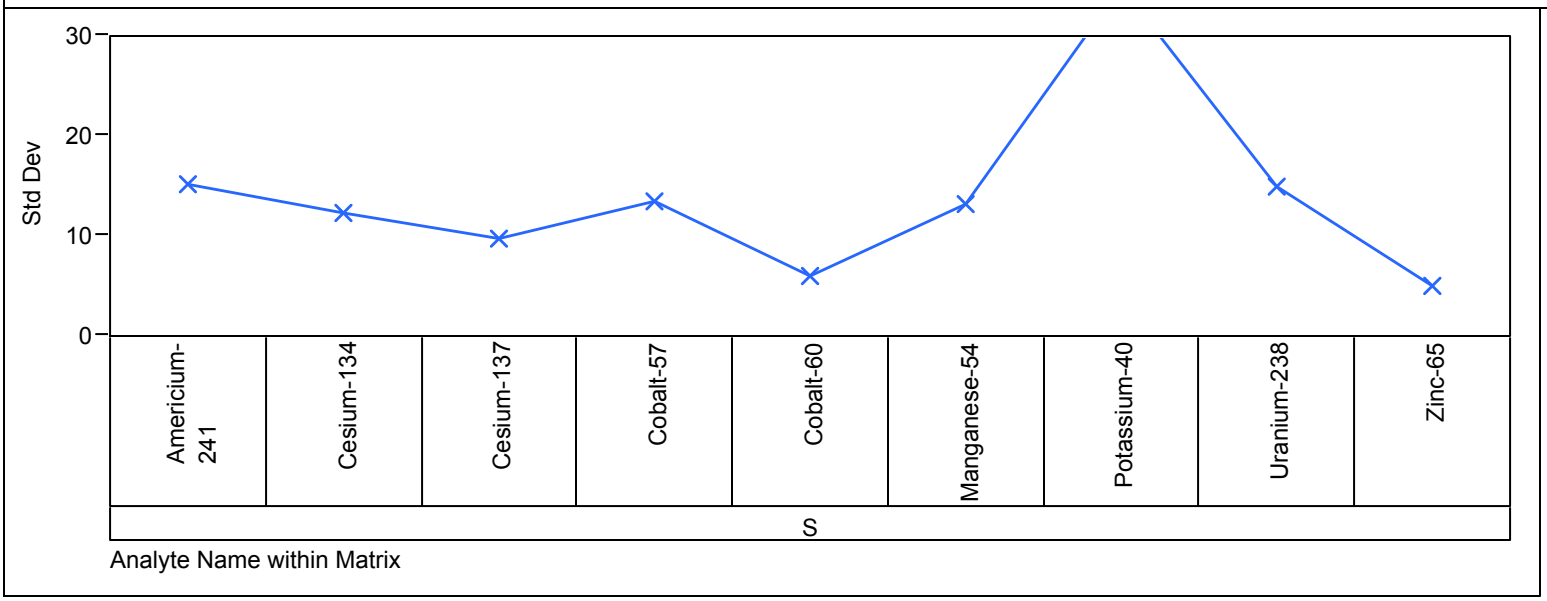
Variability Chart for Bias





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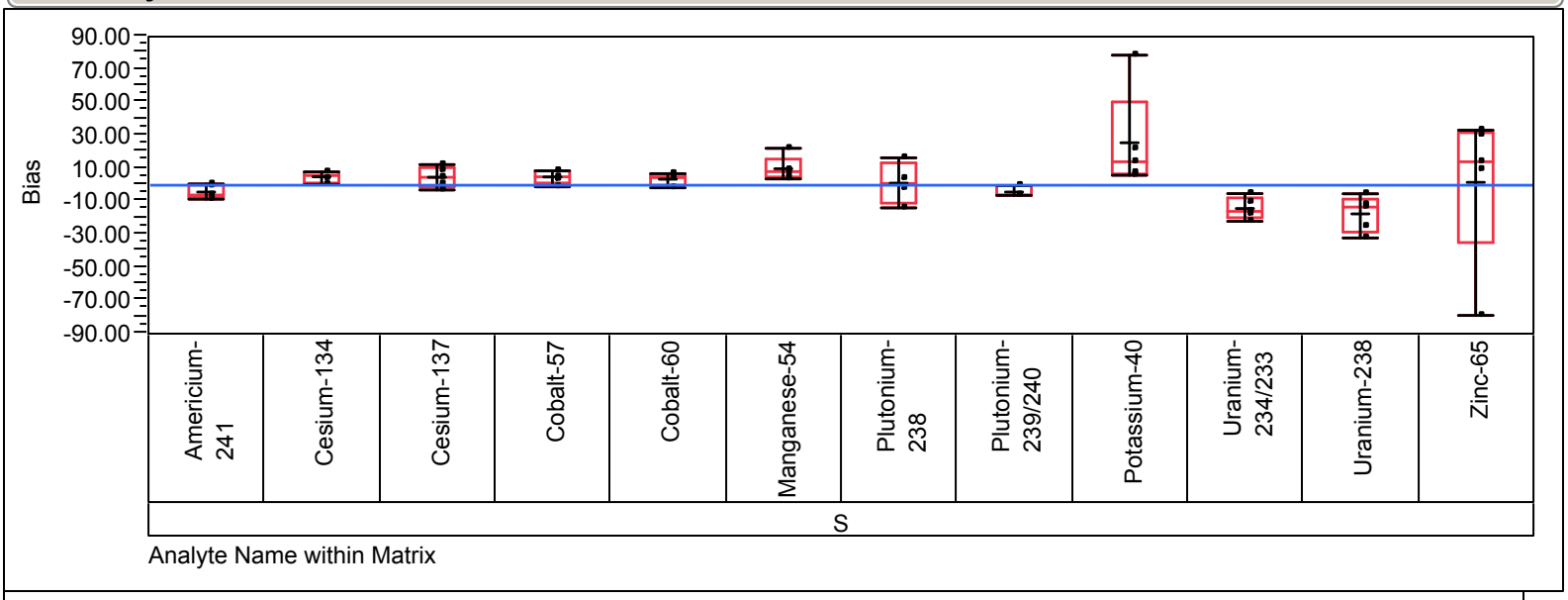
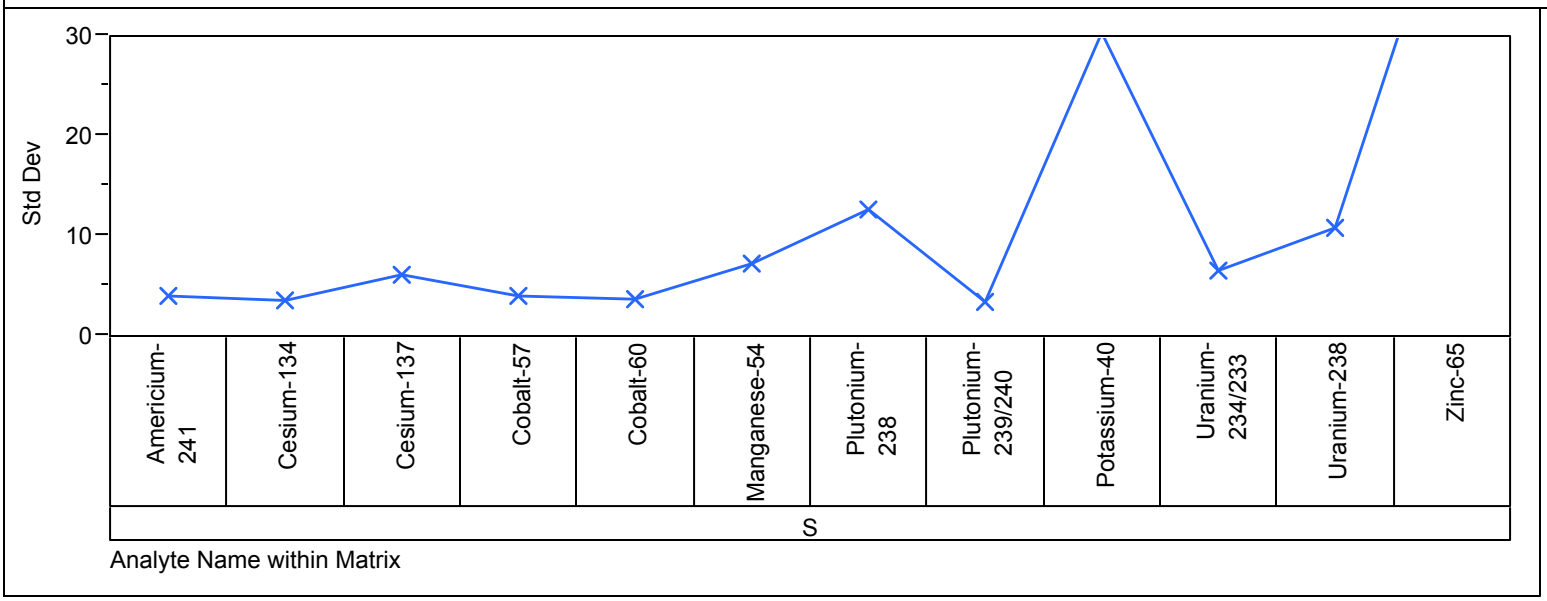
Variability Chart for Bias





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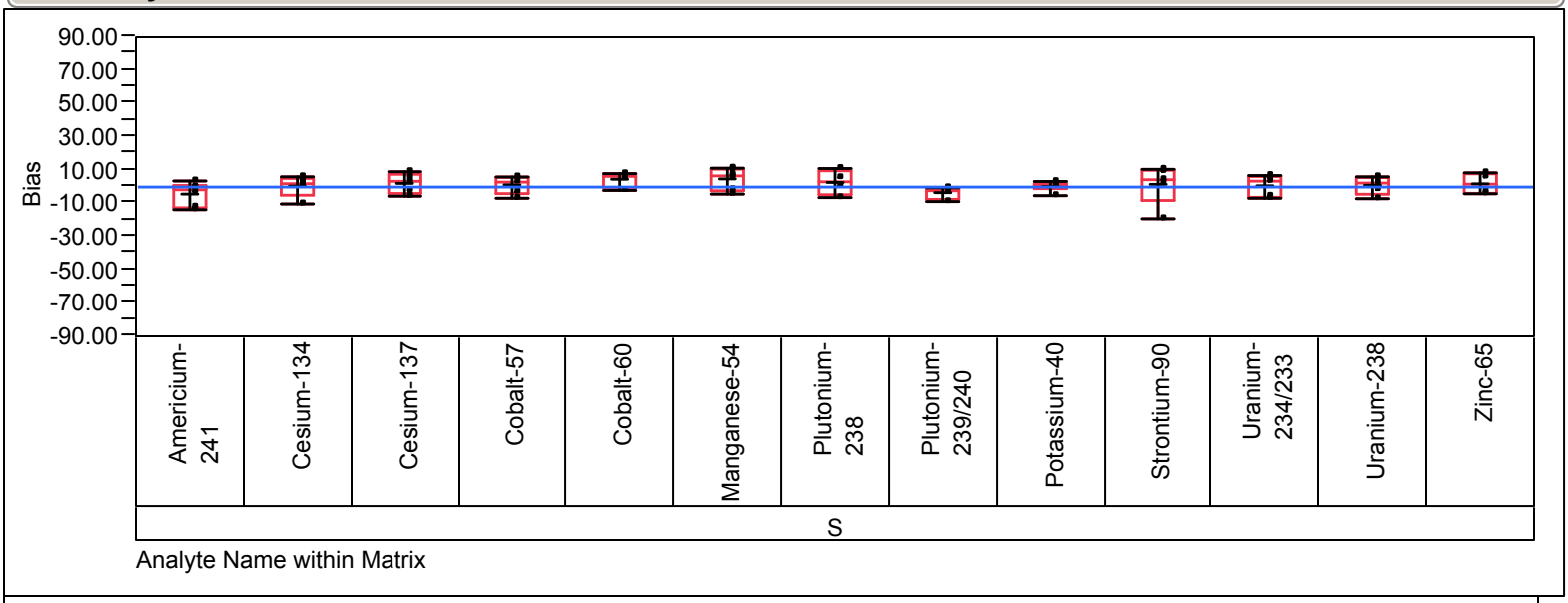
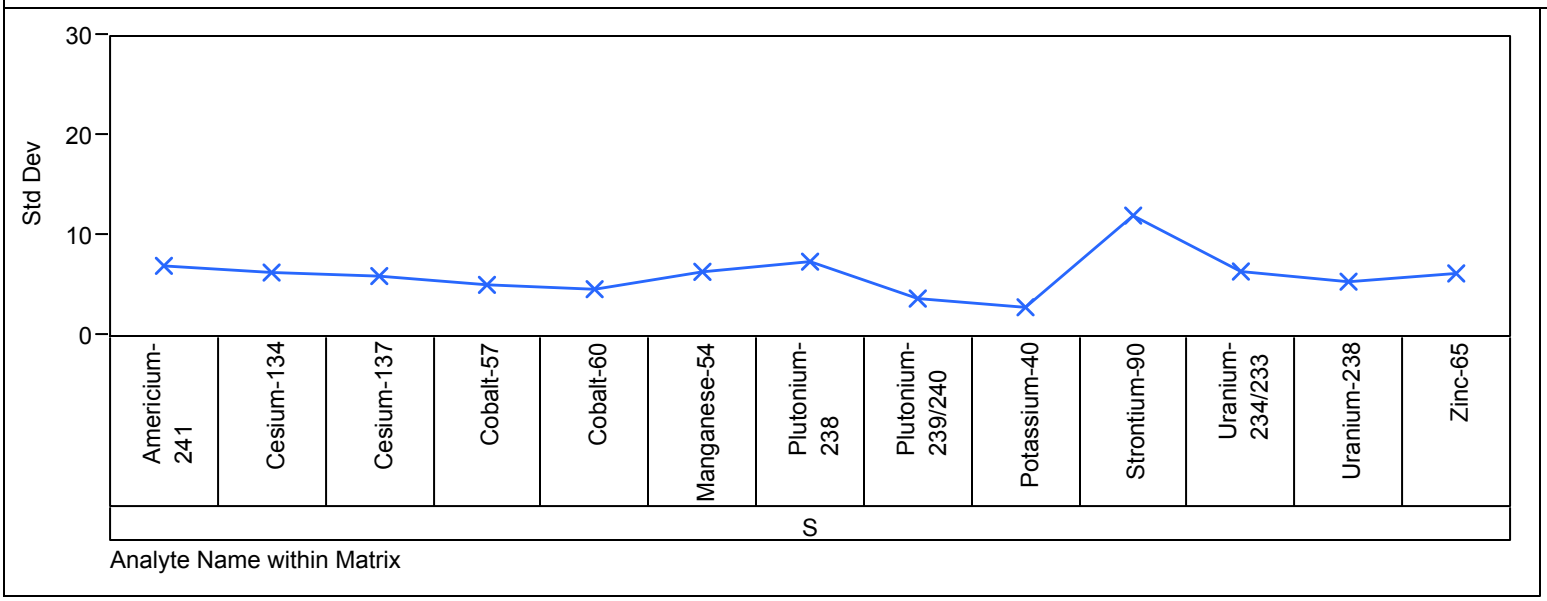
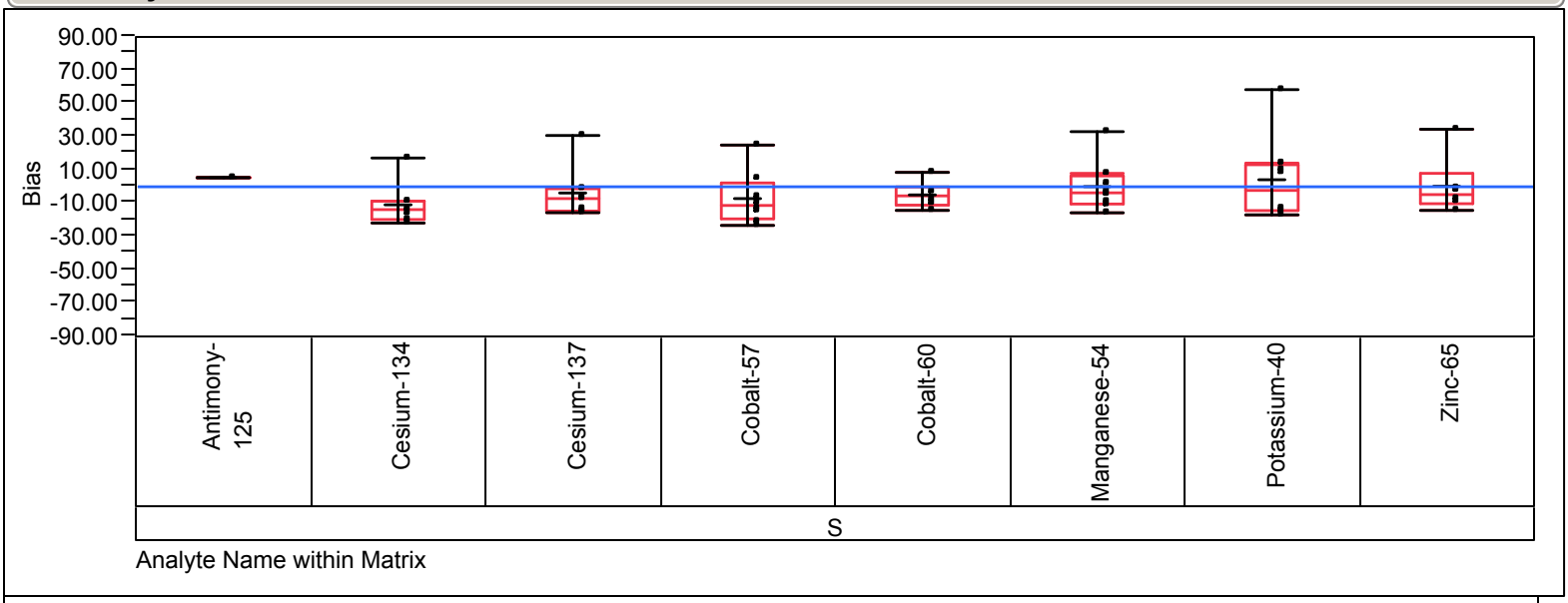
Variability Chart for Bias

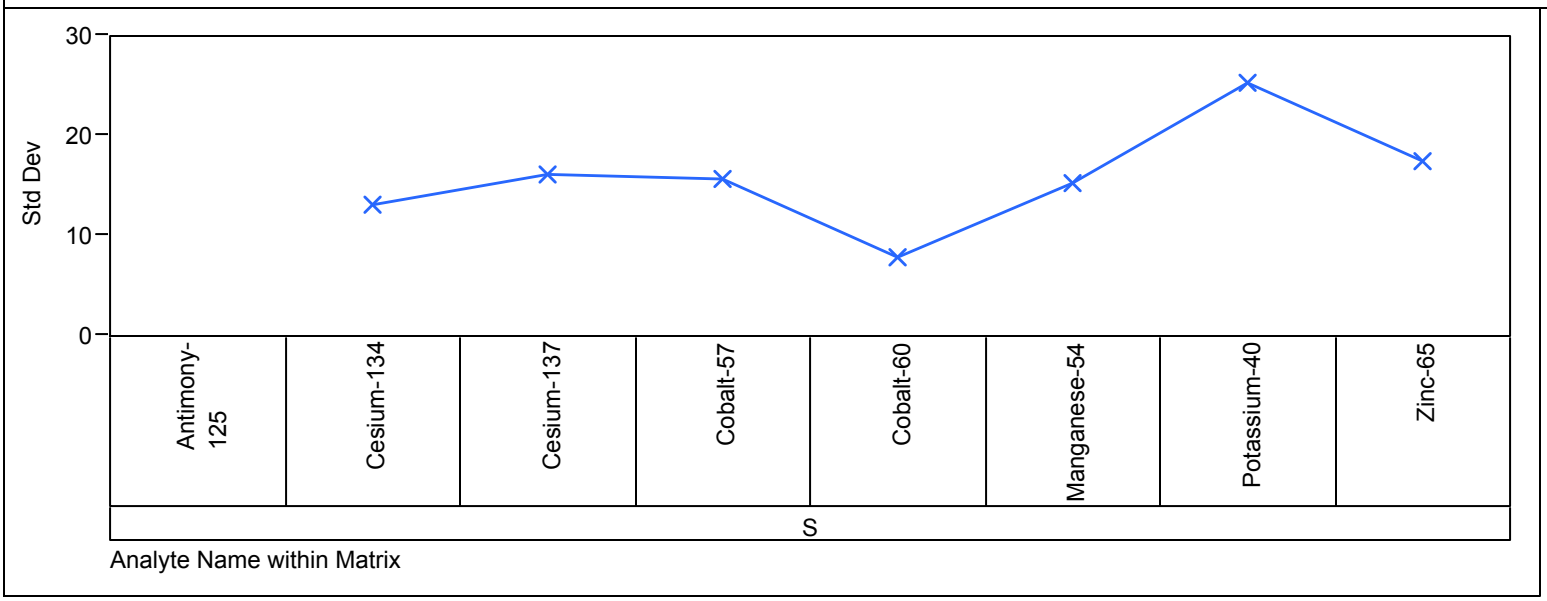




Variability Gauge Lab Code=ISUP01

Variability Chart for Bias





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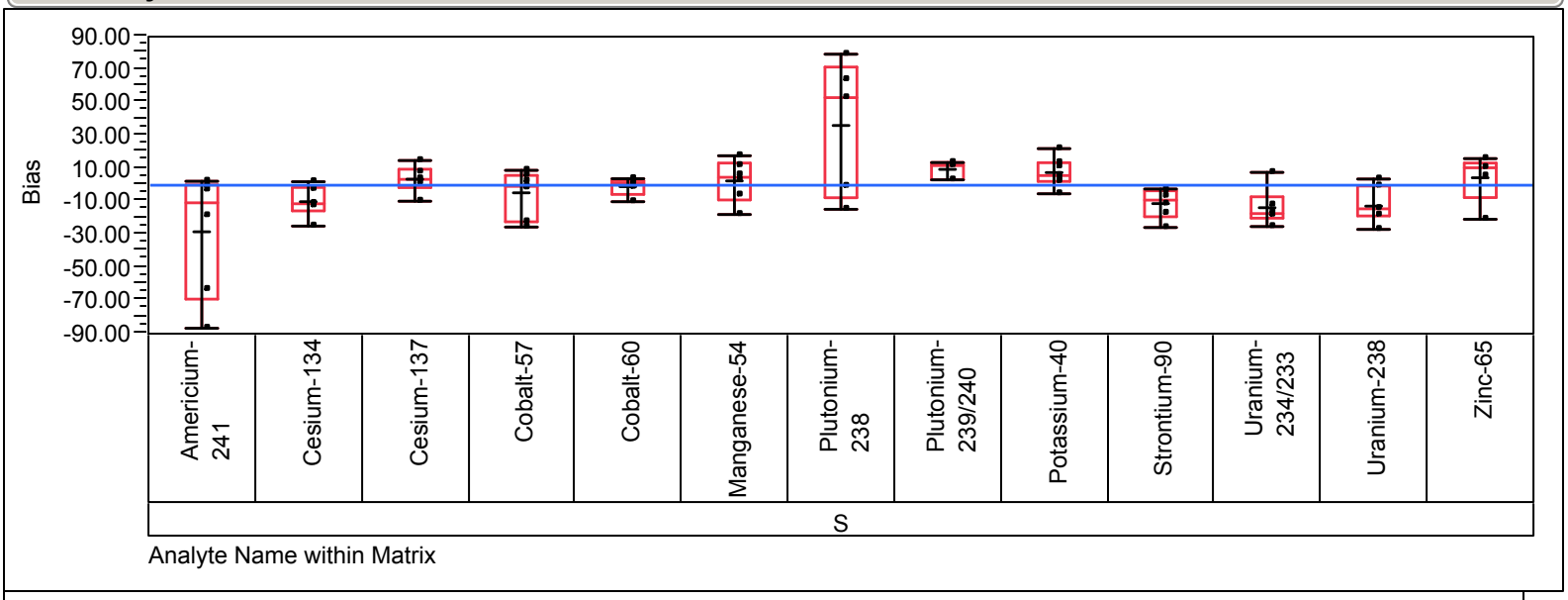
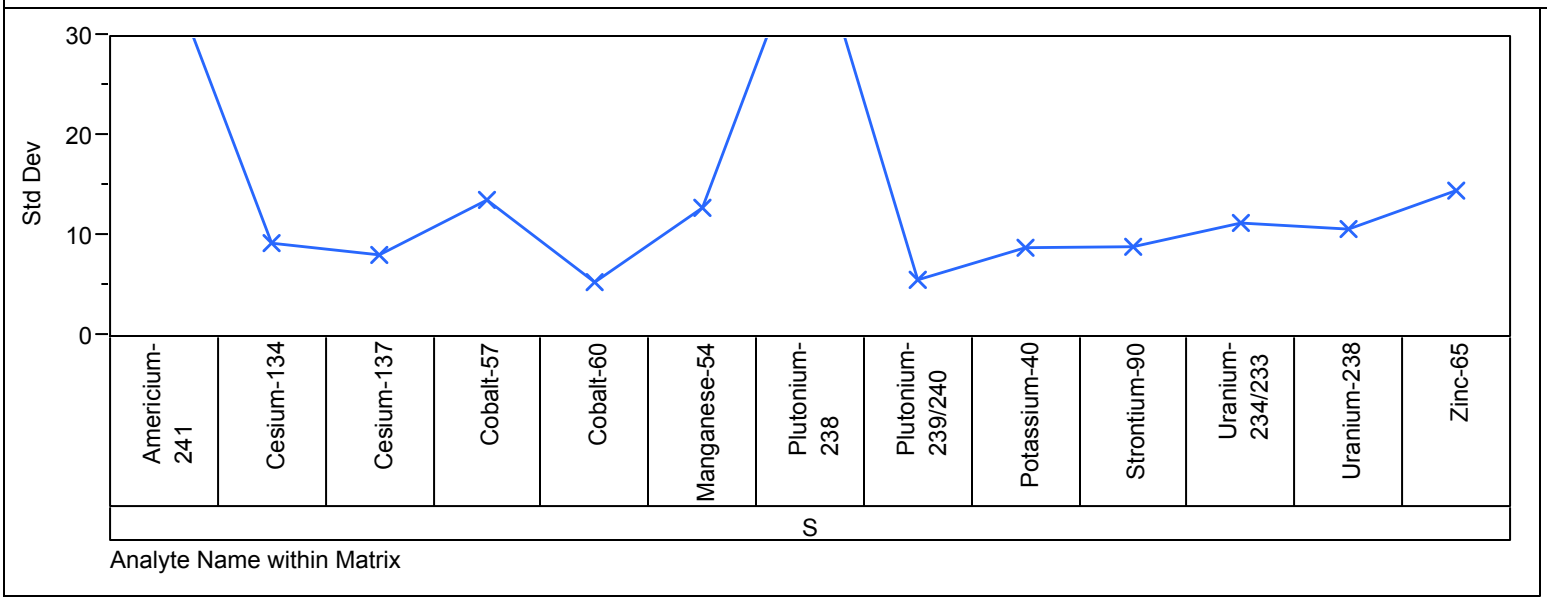
Variability Chart for Bias





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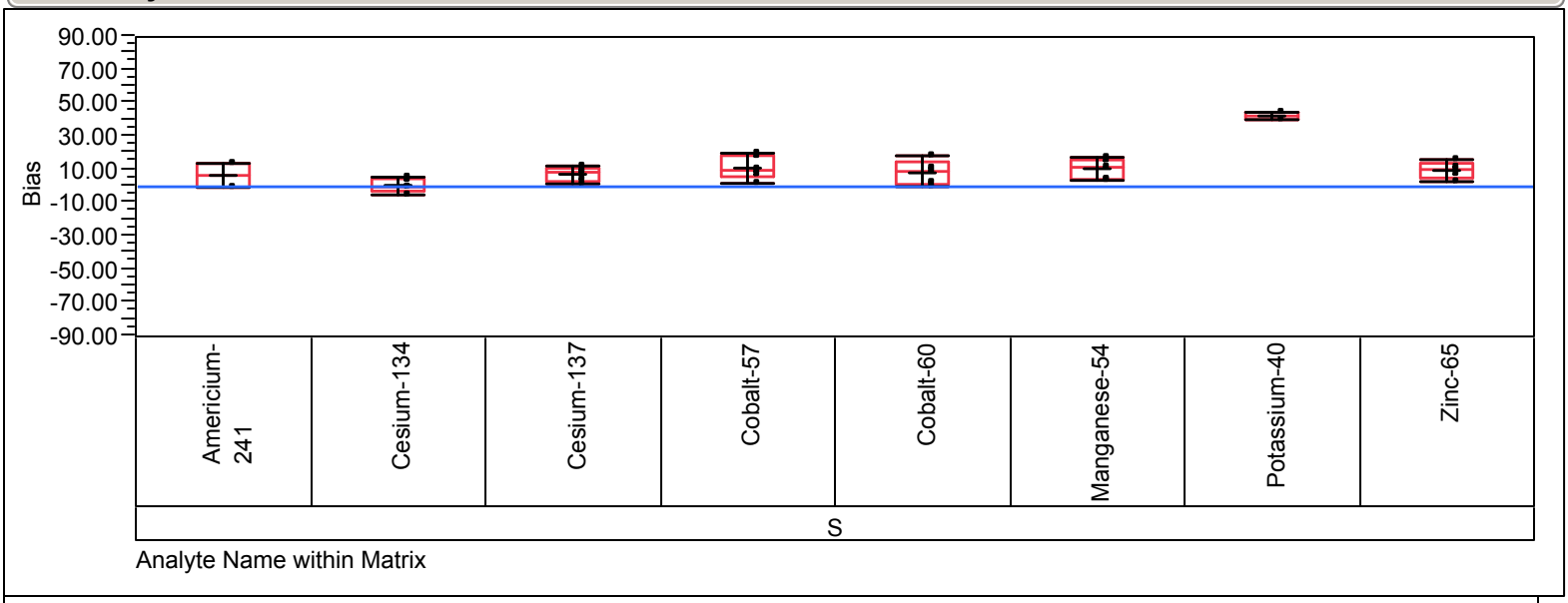
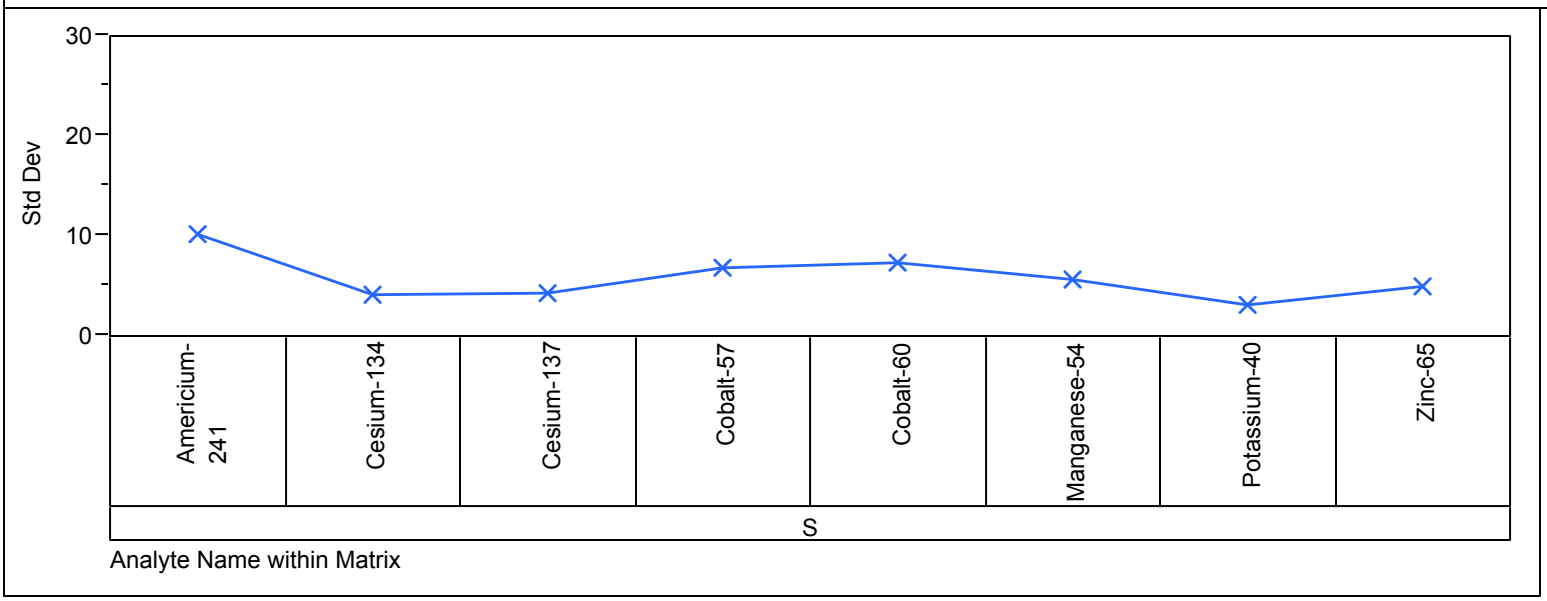
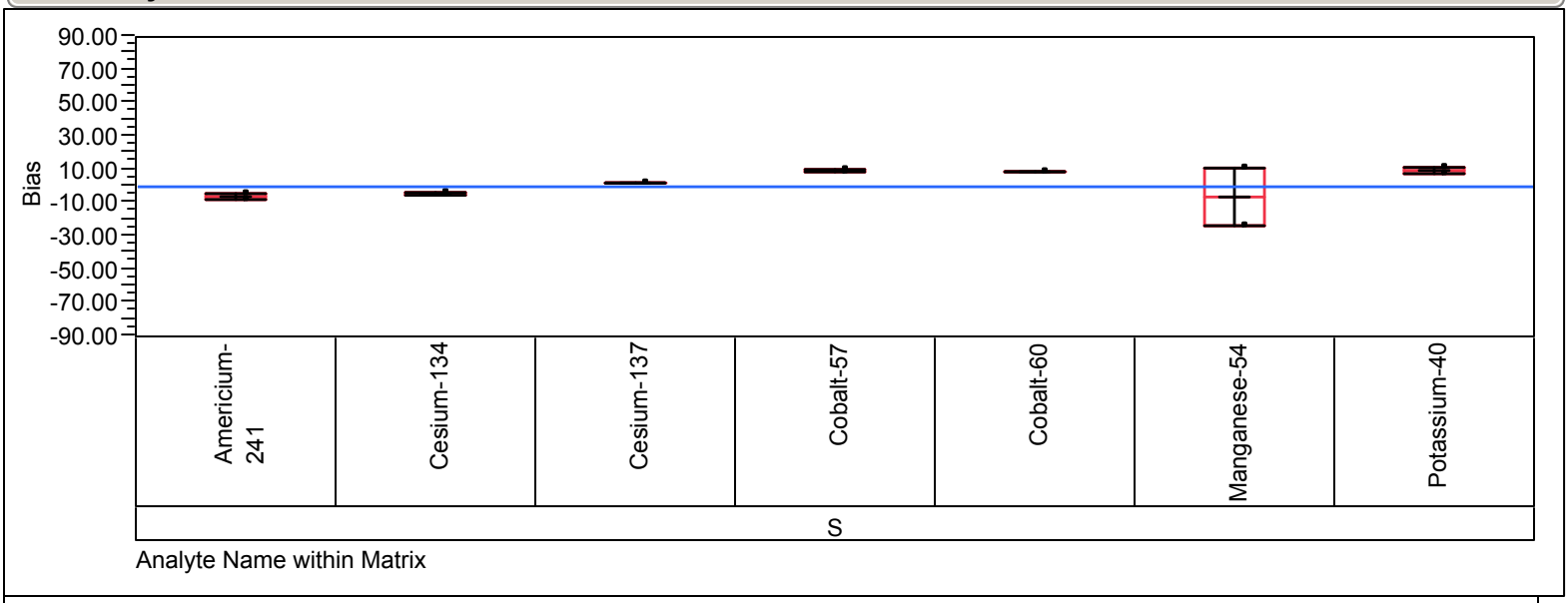
Variability Chart for Bias

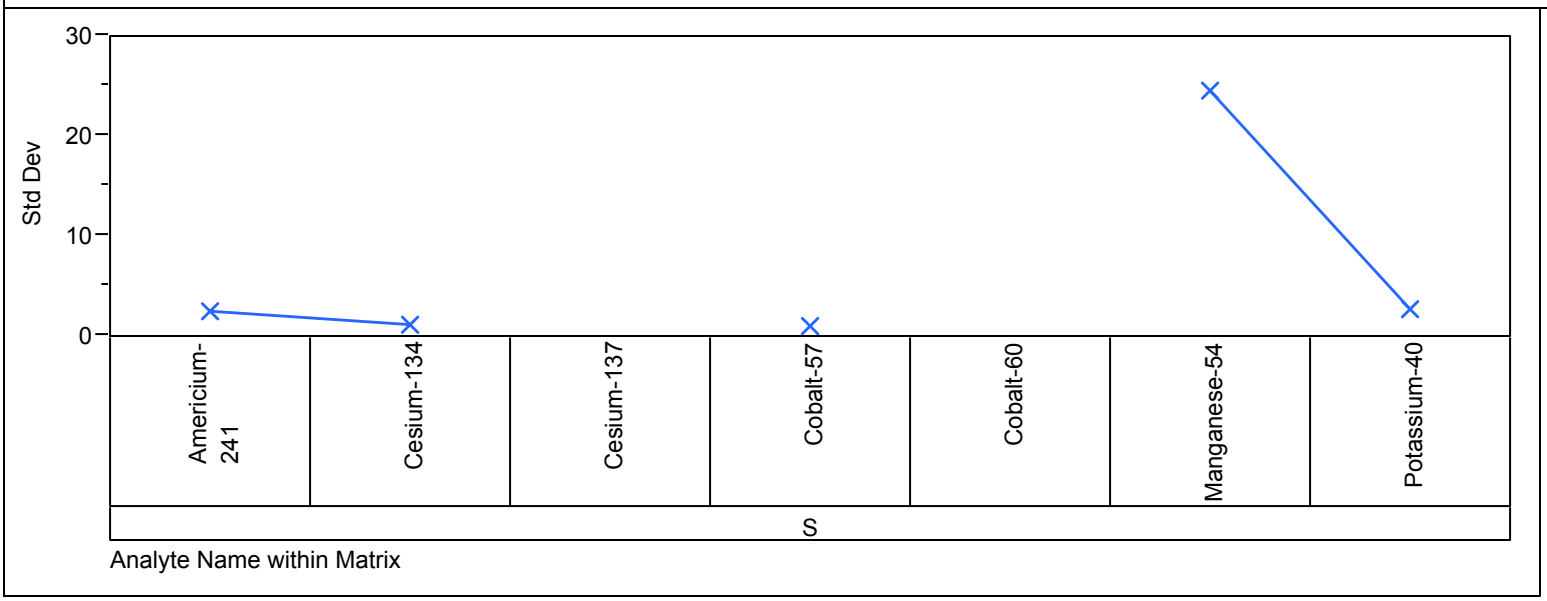




Variability Gauge Lab Code=KDHE01

Variability Chart for Bias





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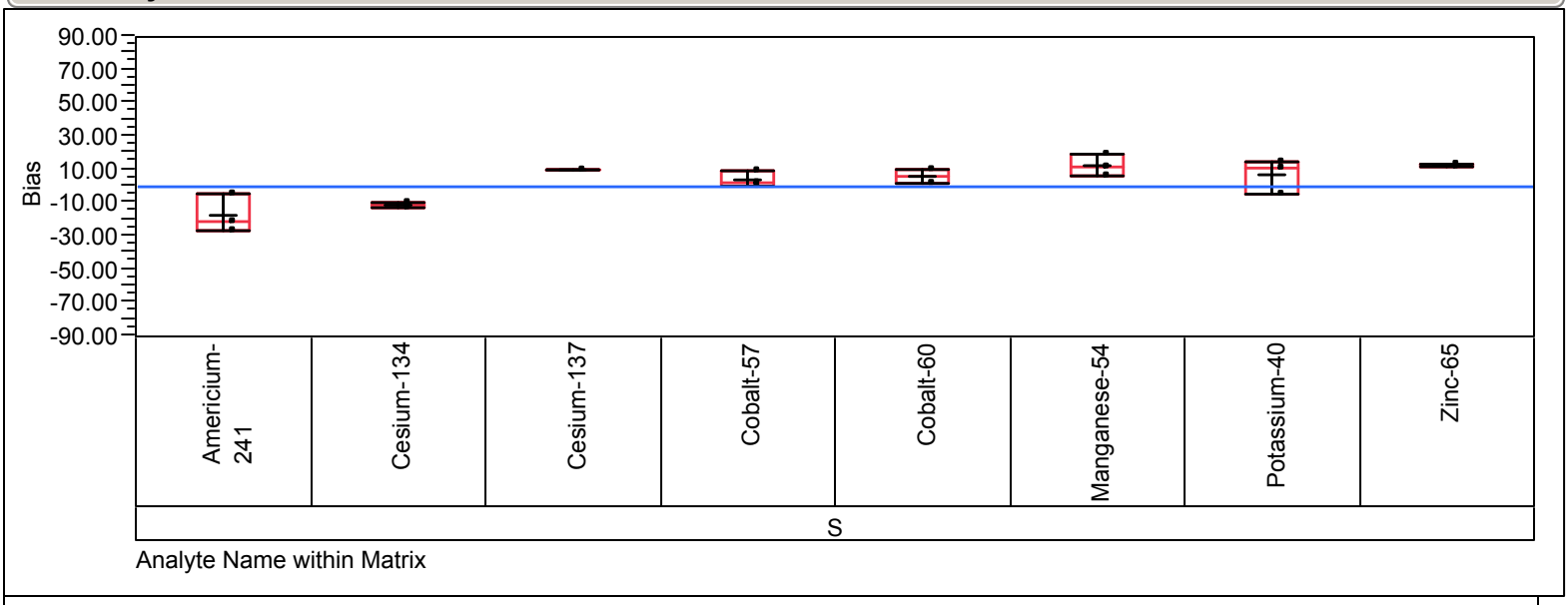
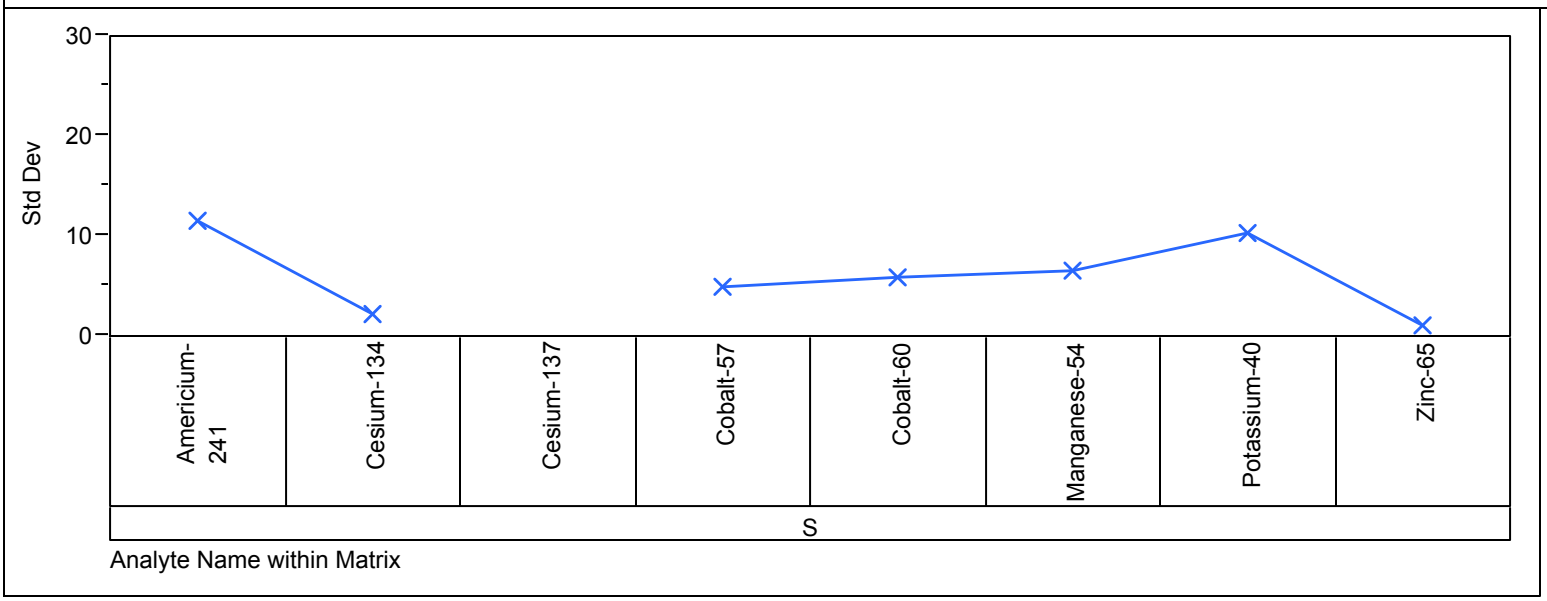
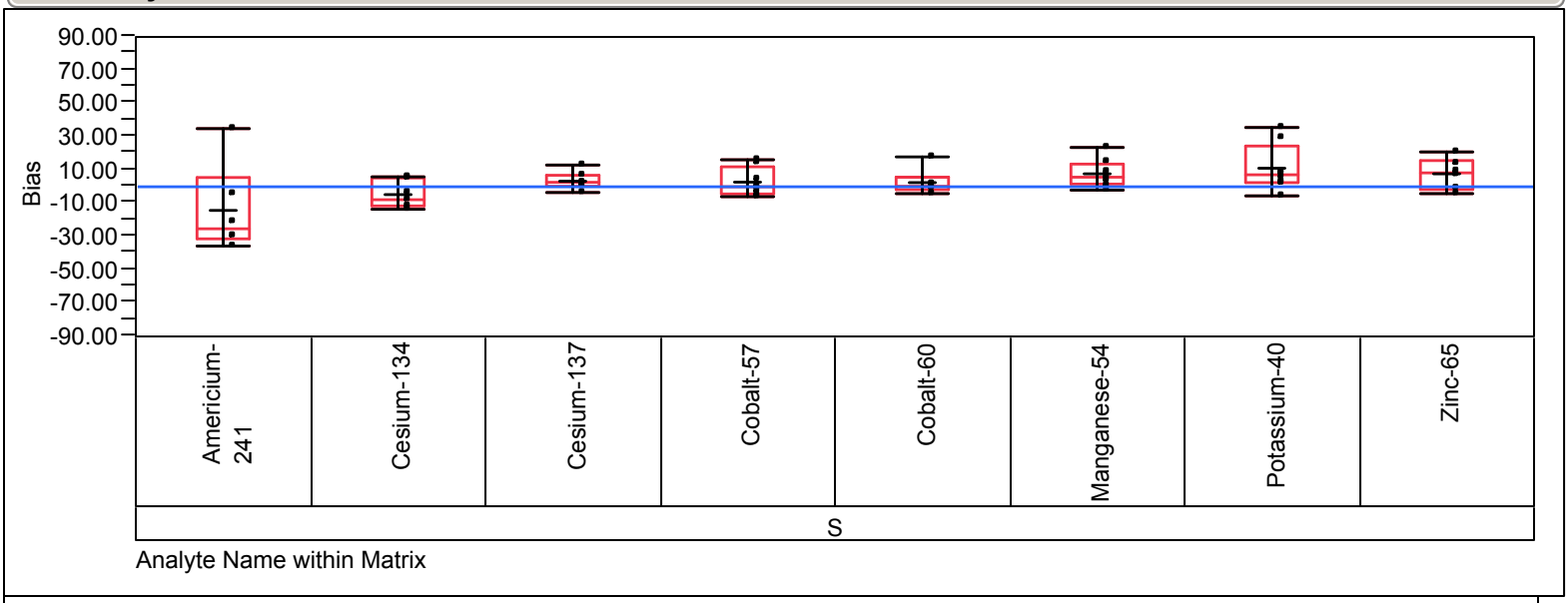
Variability Chart for Bias

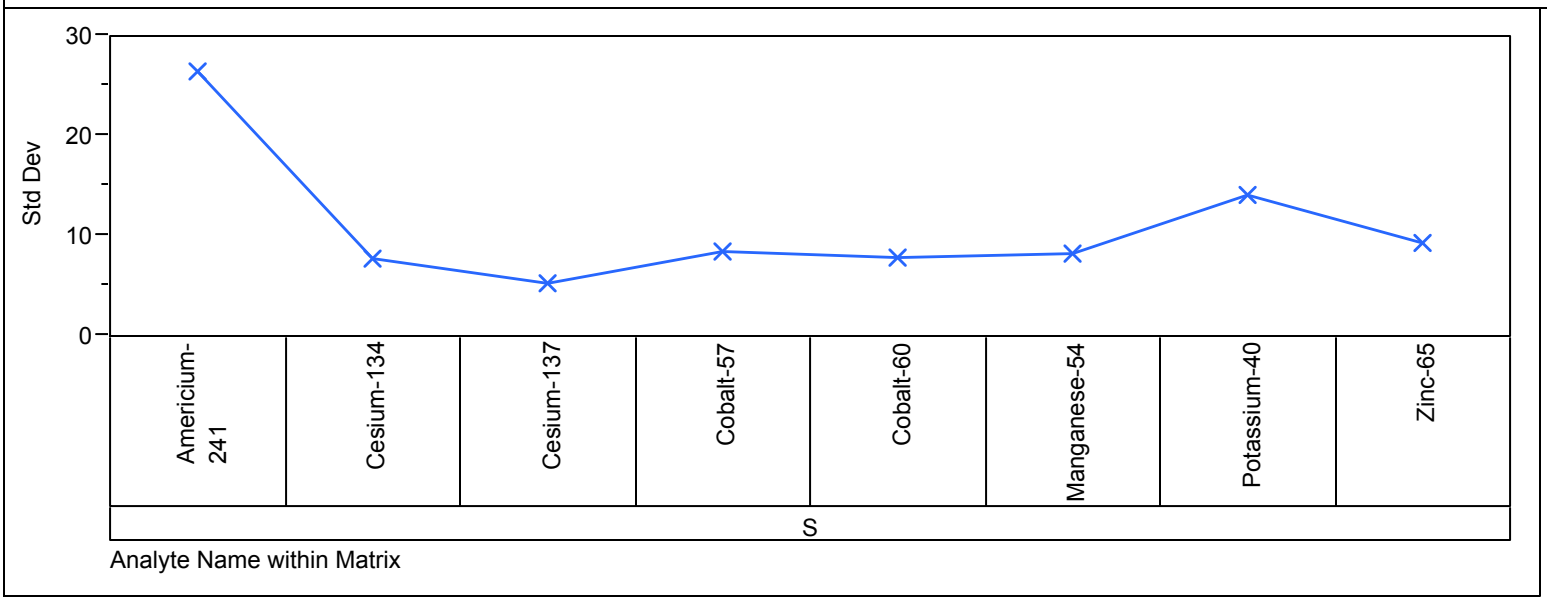




Variability Gauge Lab Code=LAWR01

Variability Chart for Bias





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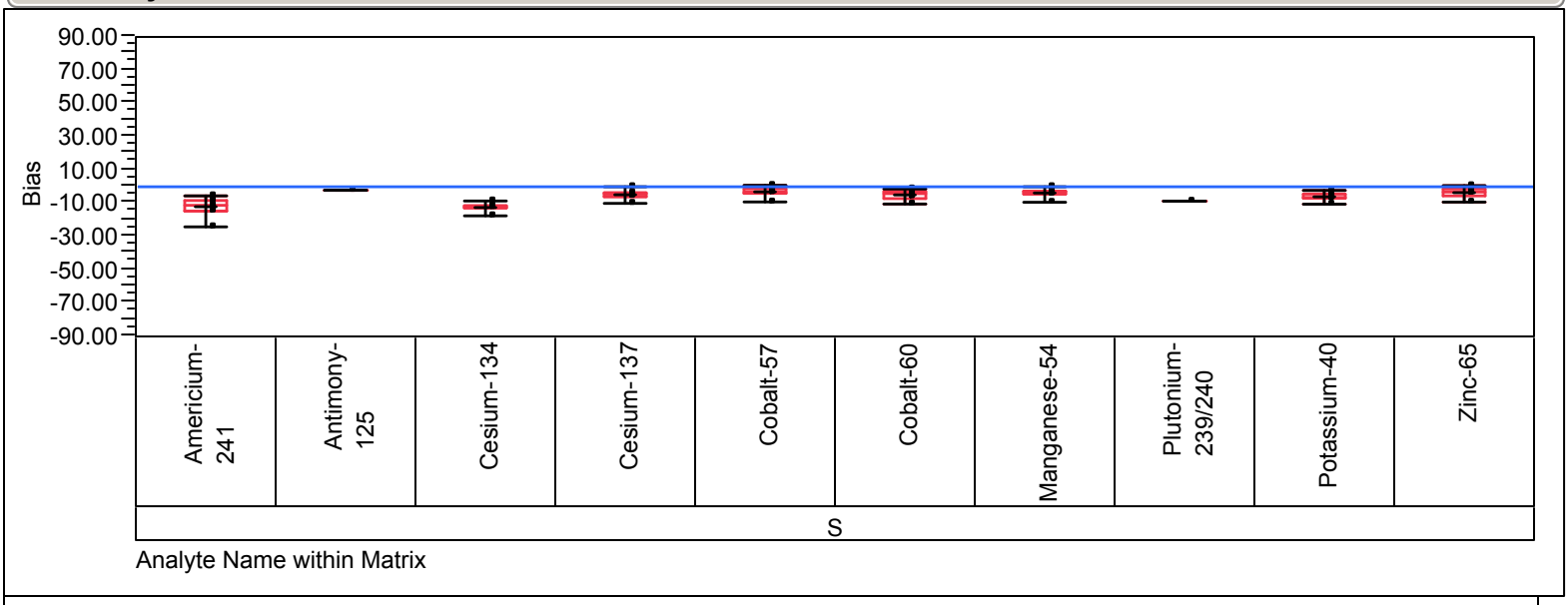
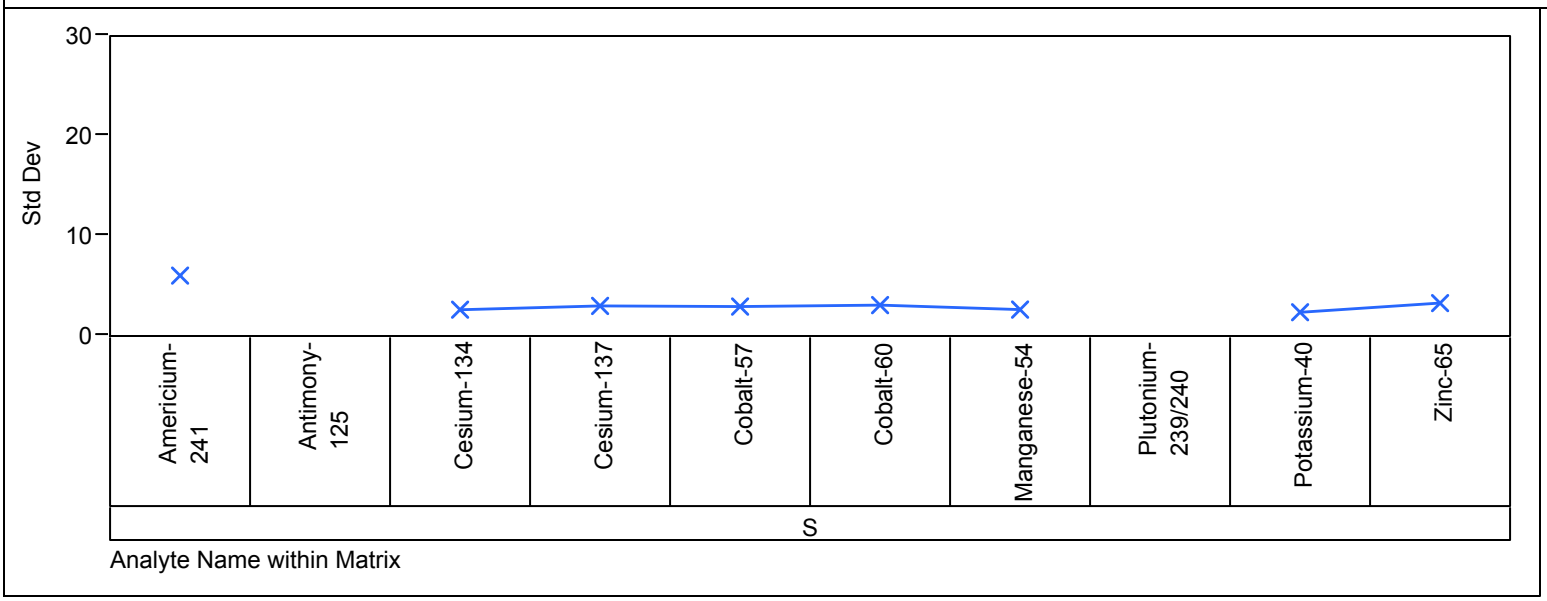
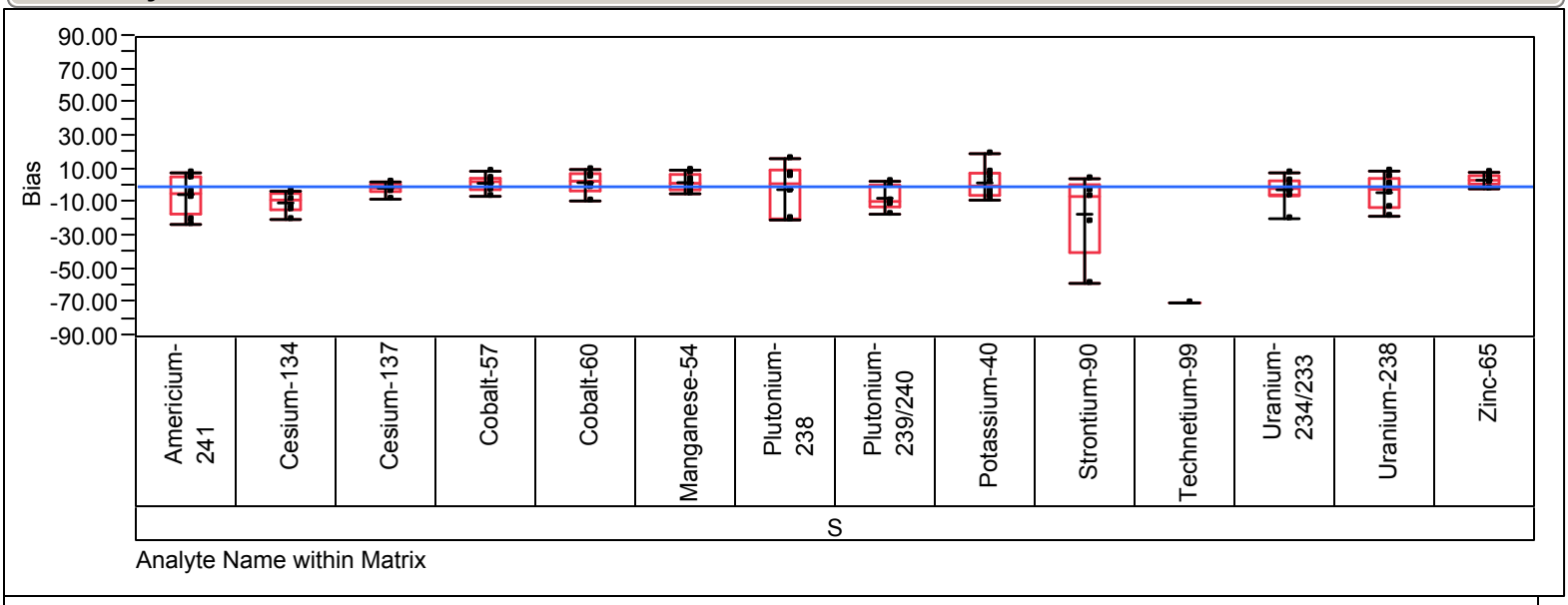
Variability Chart for Bias

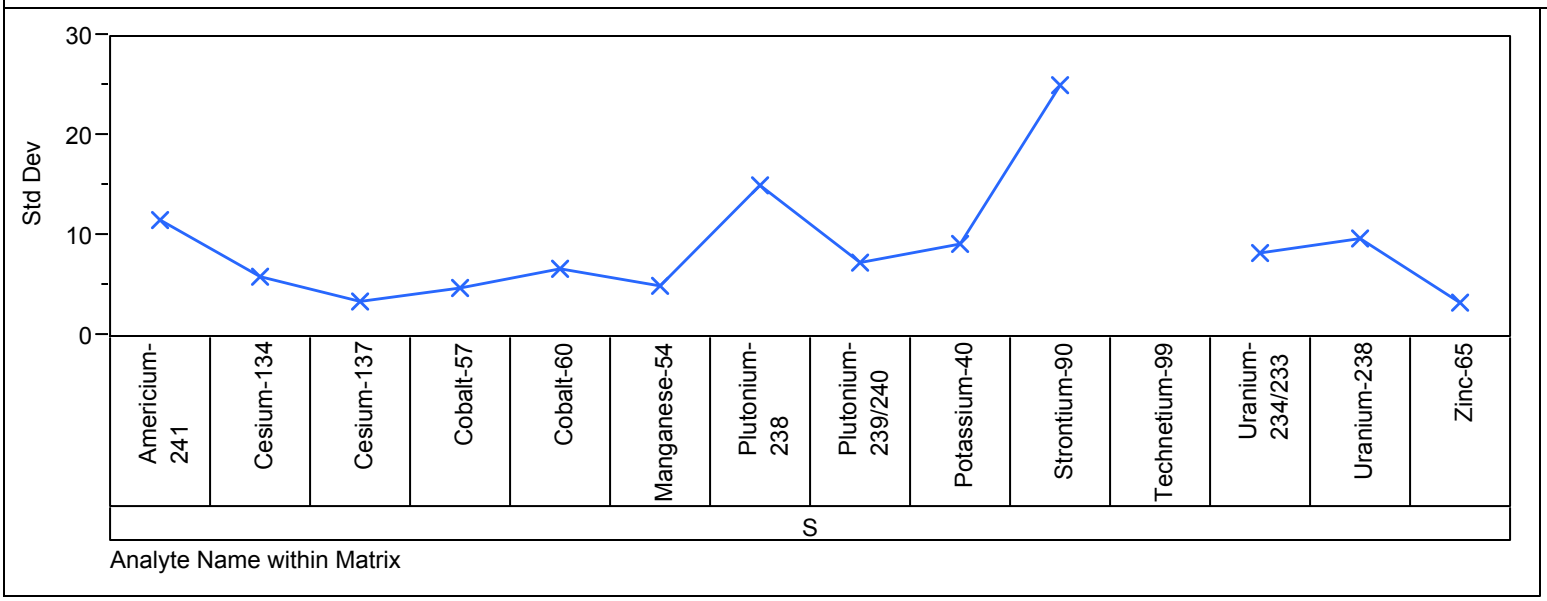




Variability Gauge Lab Code=LOCK01

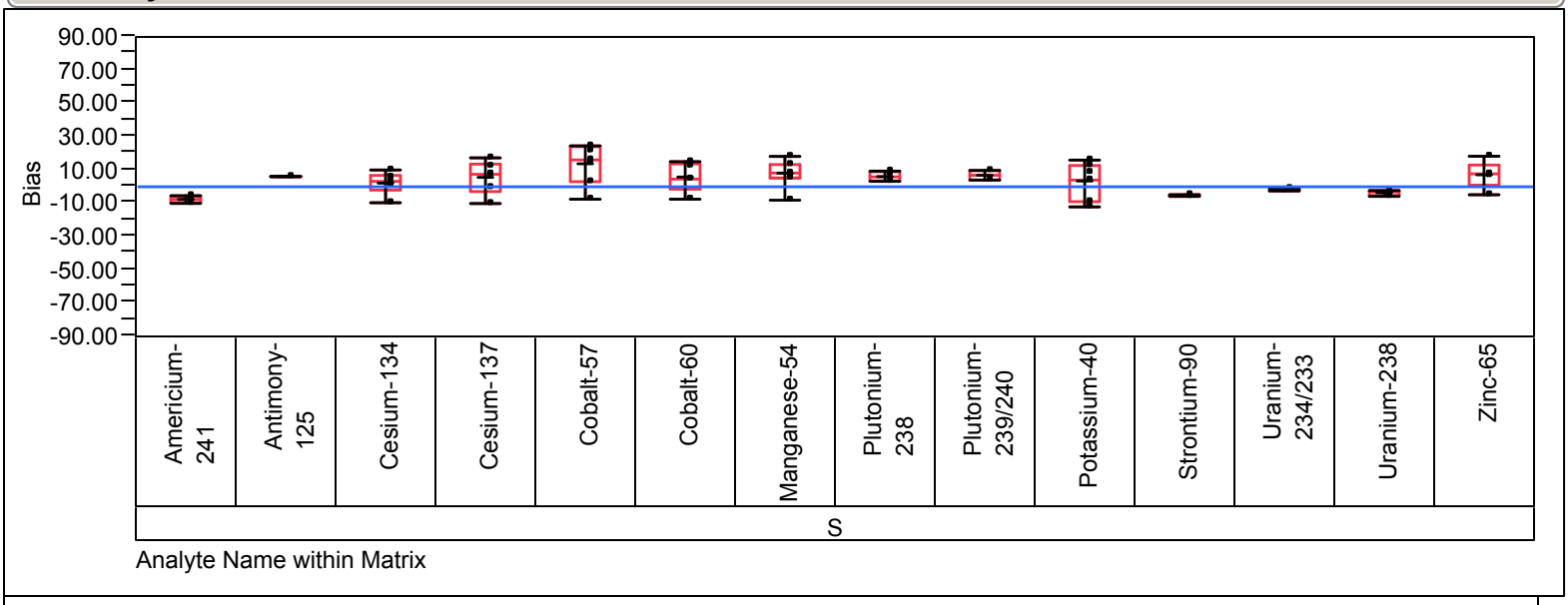
Variability Chart for Bias

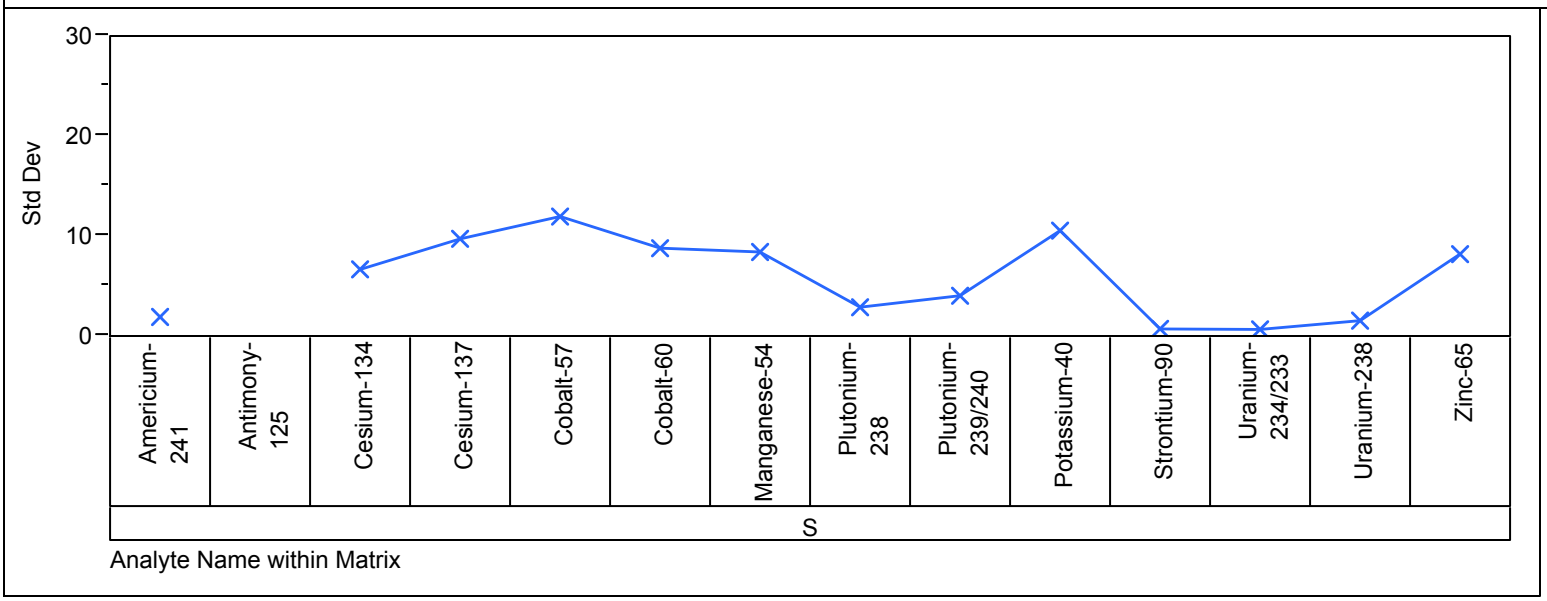




Variability Gauge Lab Code=LOCK03

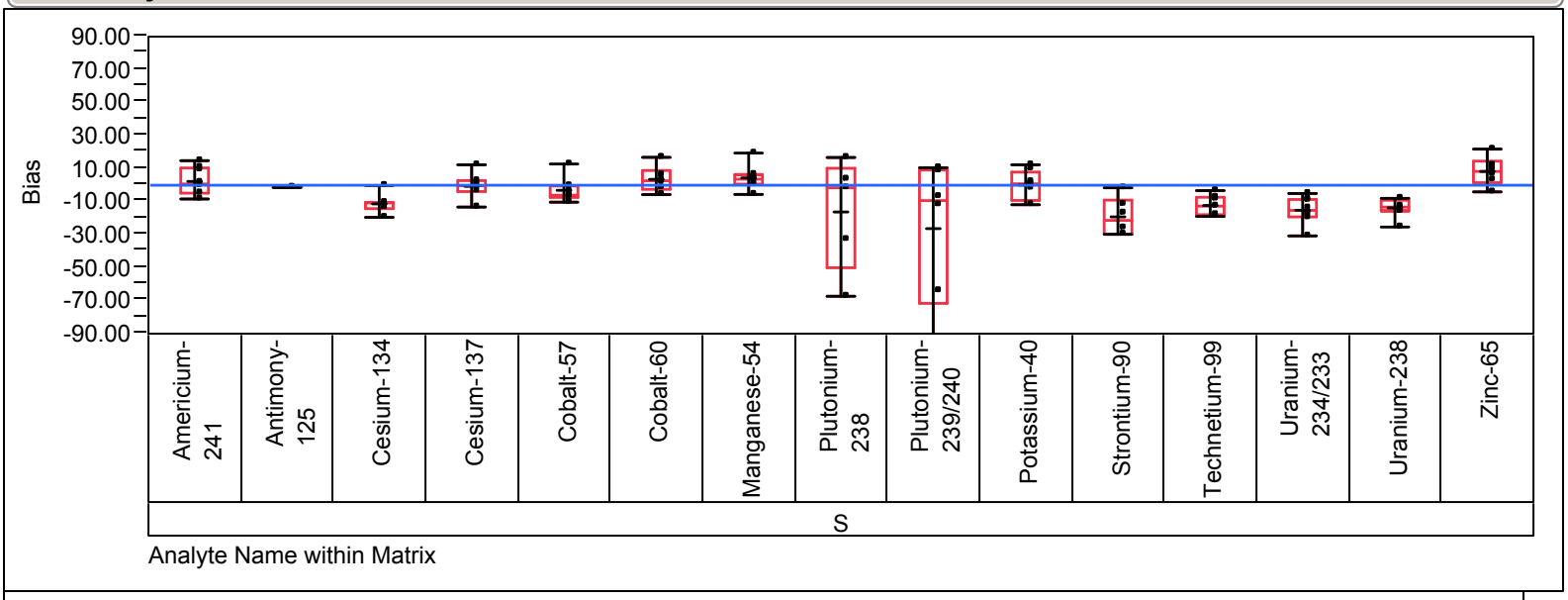
Variability Chart for Bias

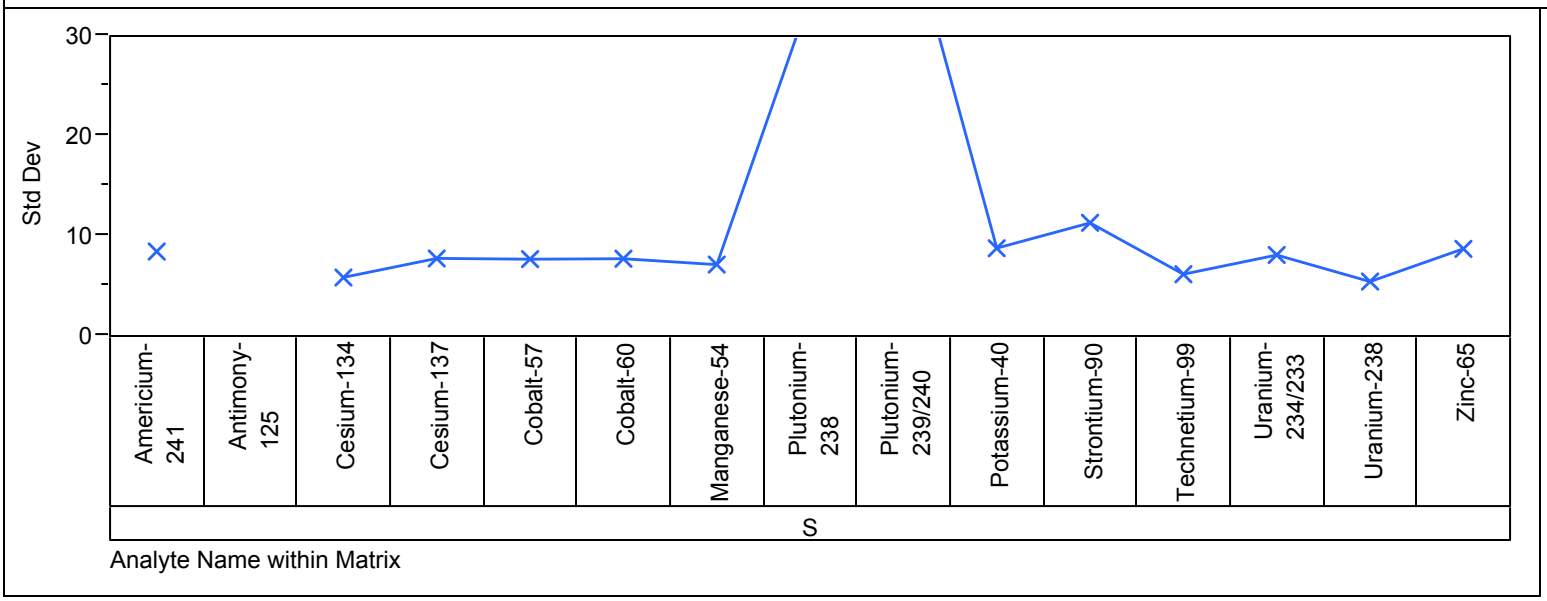




Variability Gauge Lab Code=MART01

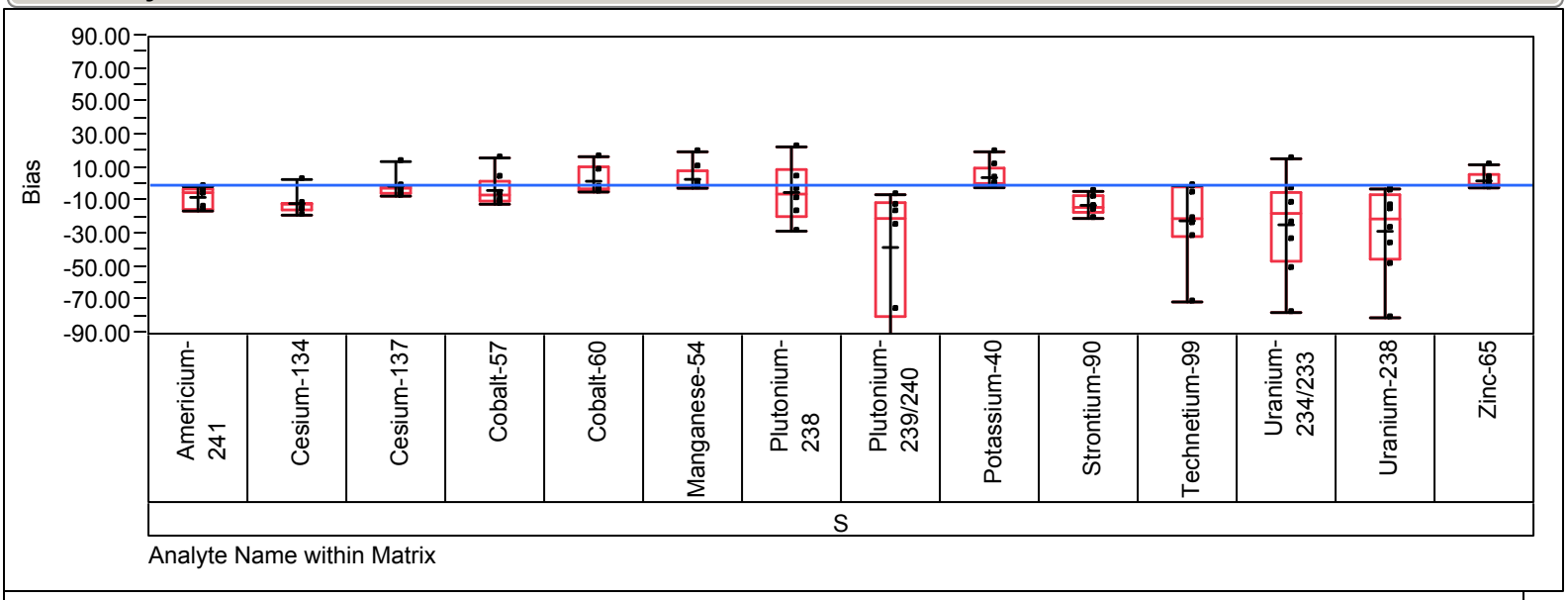
Variability Chart for Bias

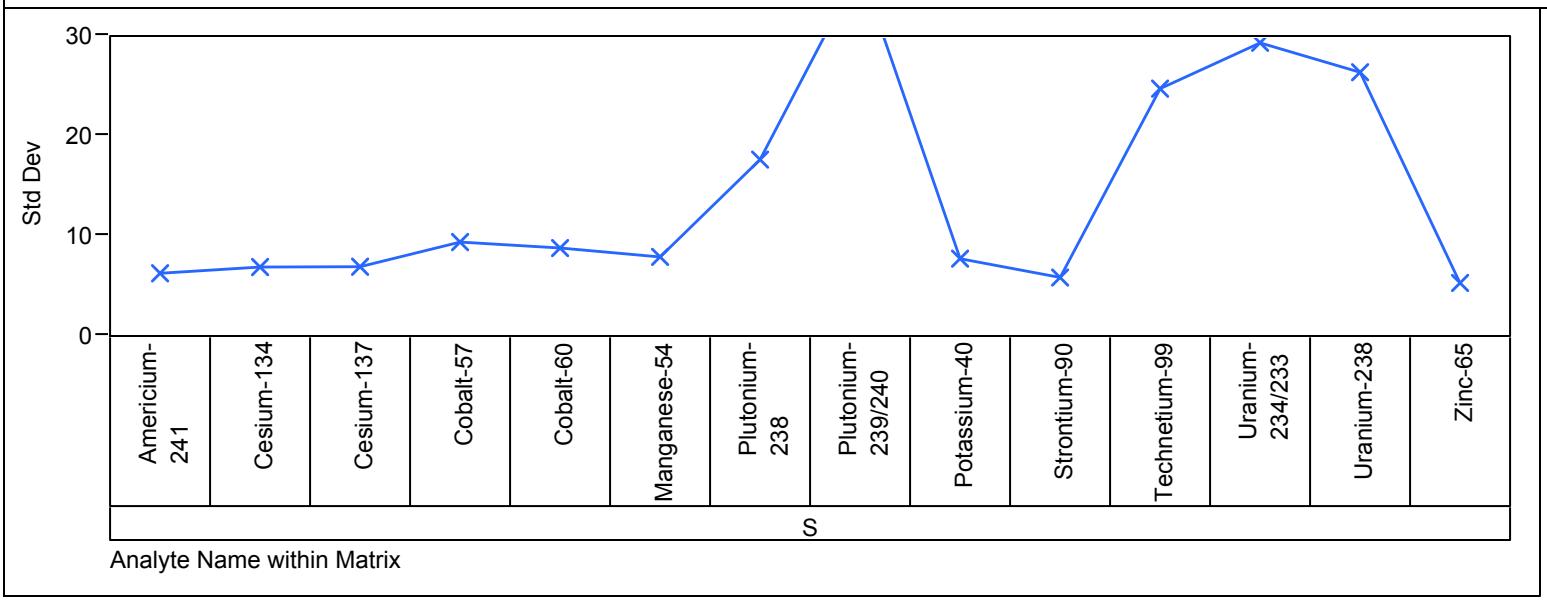




Variability Gauge Lab Code=MART02

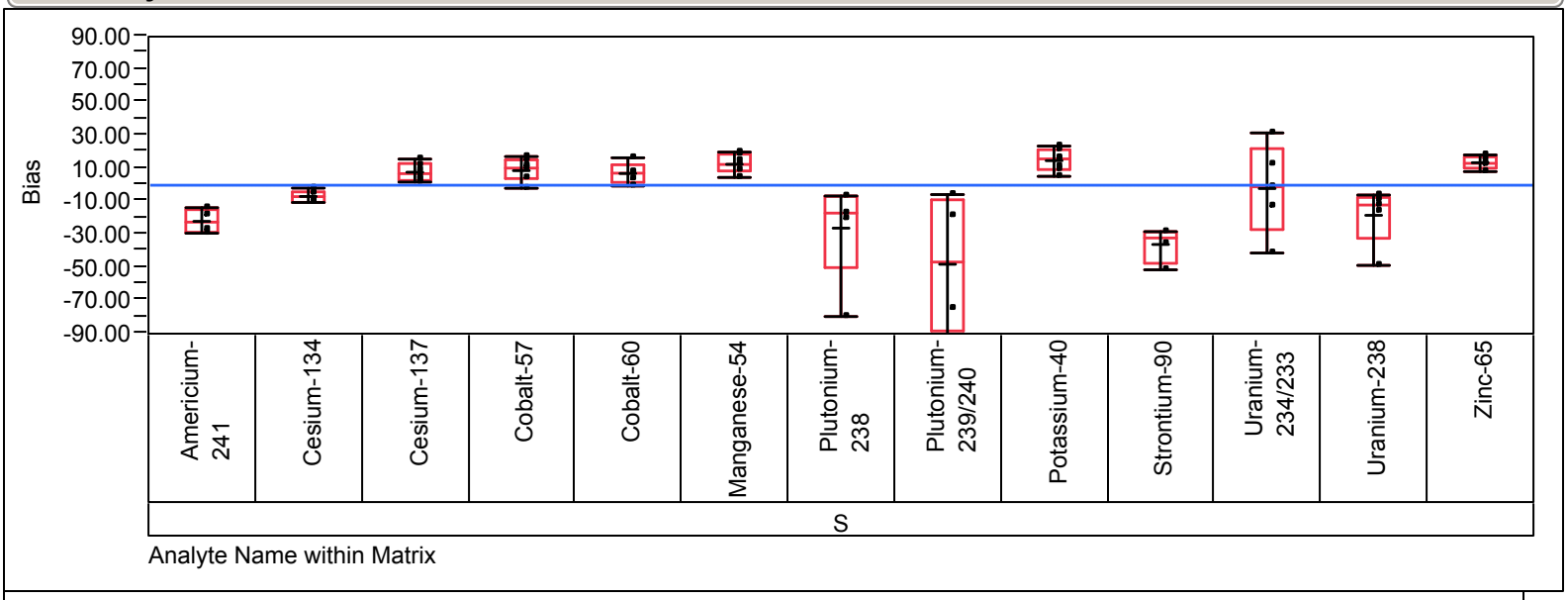
Variability Chart for Bias

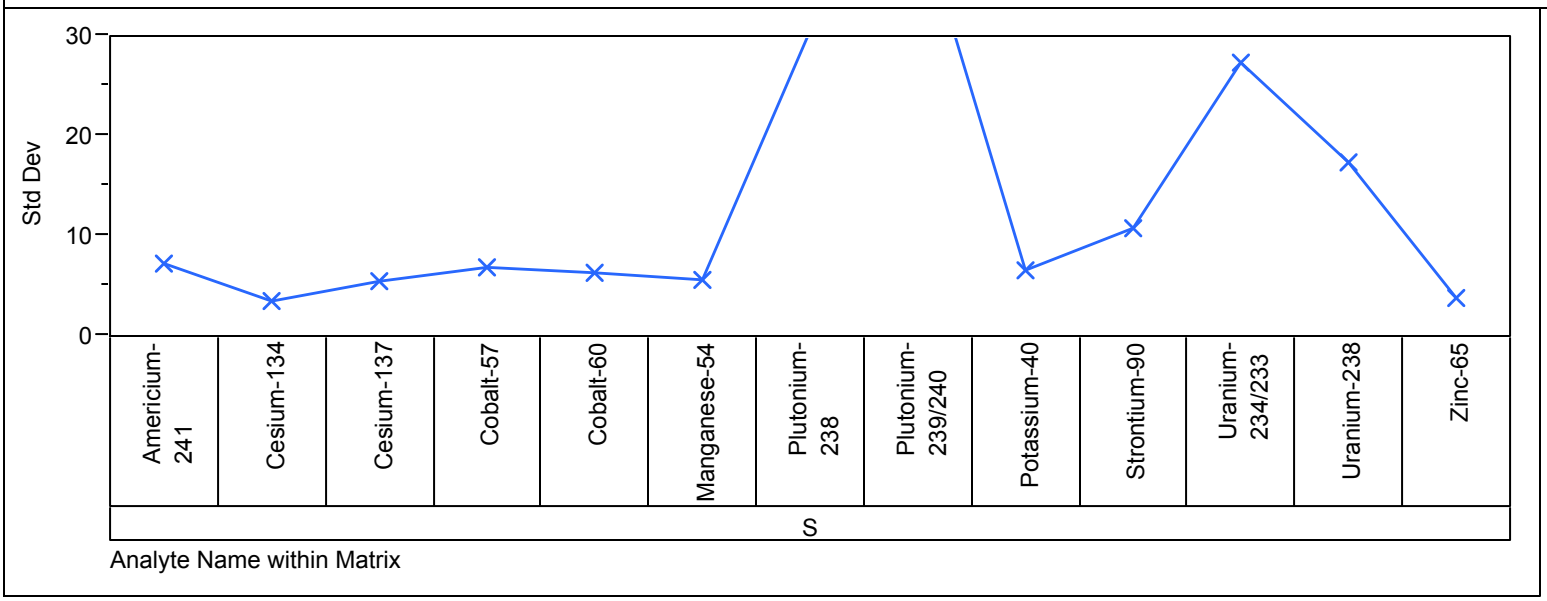




Variability Gauge Lab Code=MART03

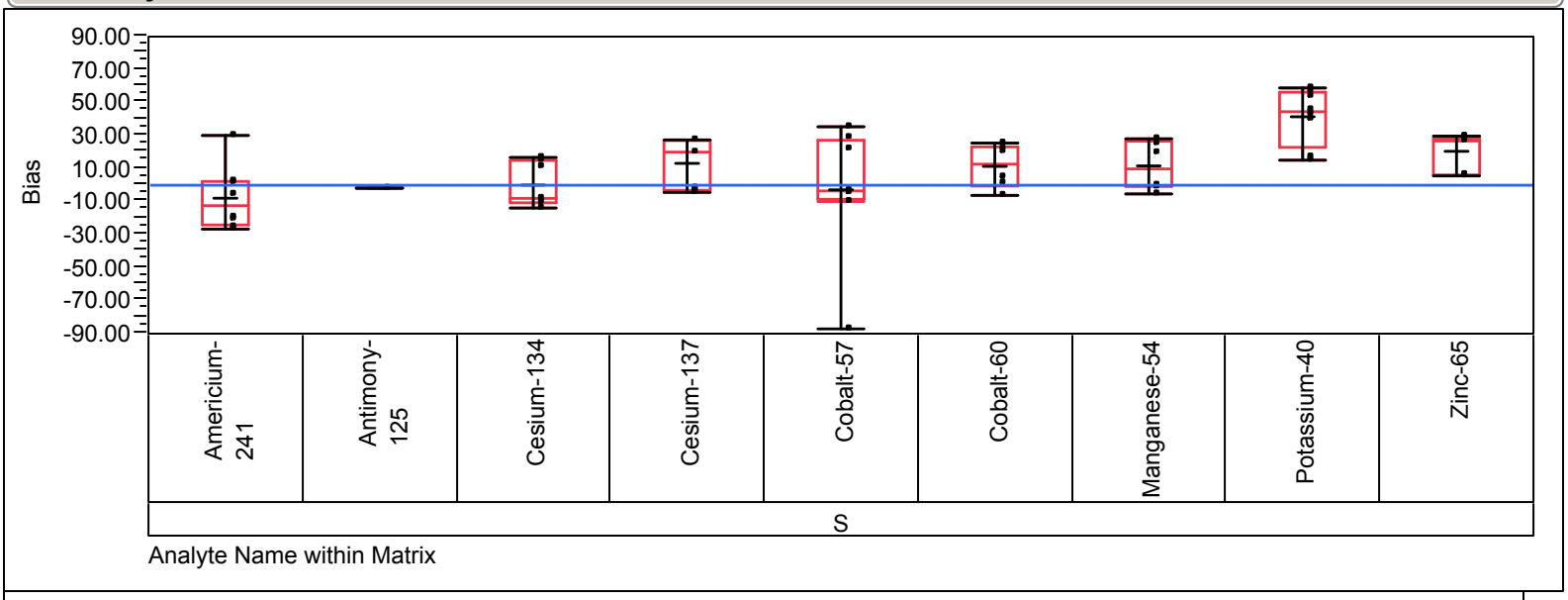
Variability Chart for Bias

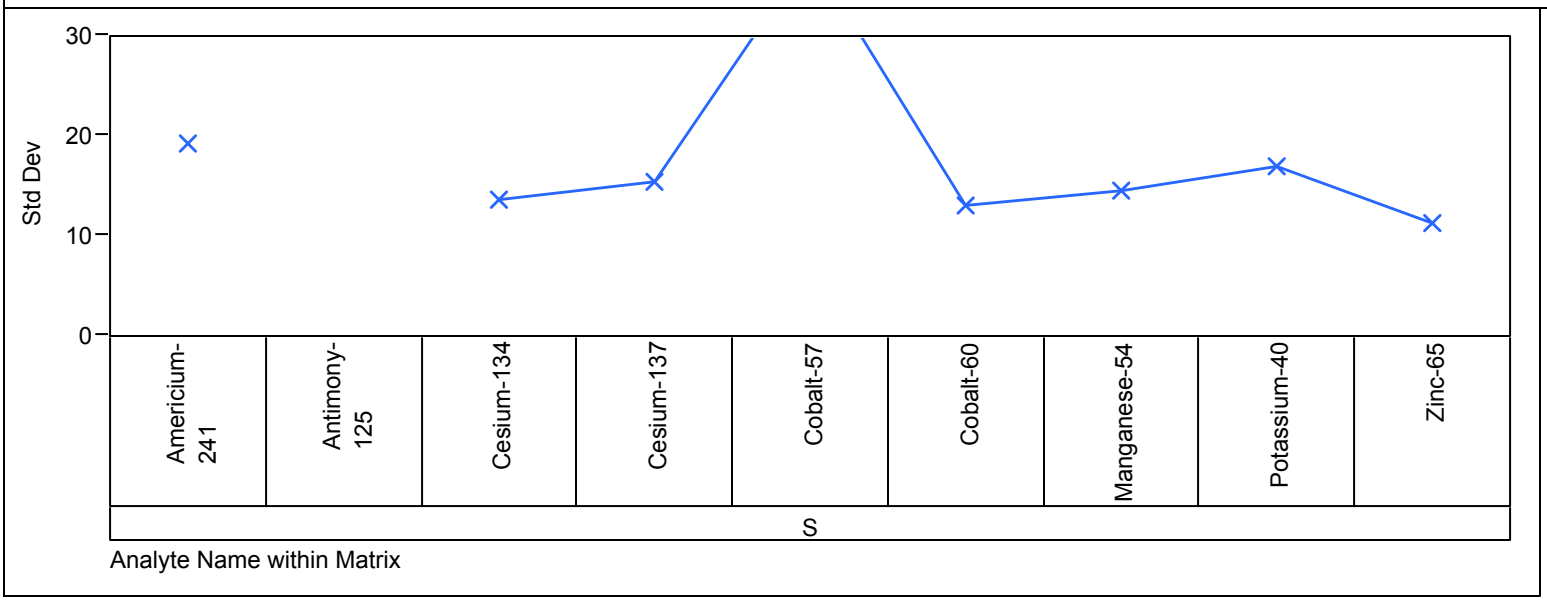




Variability Gauge Lab Code=MDPH01

Variability Chart for Bias





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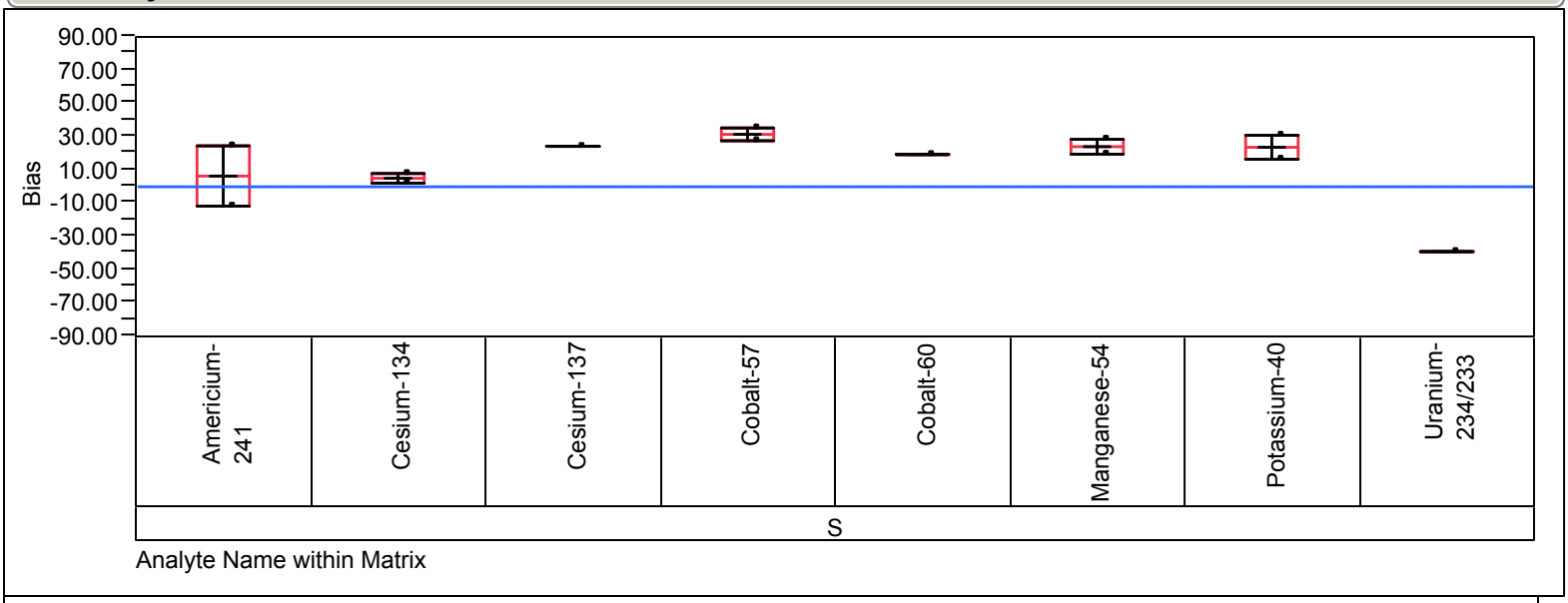
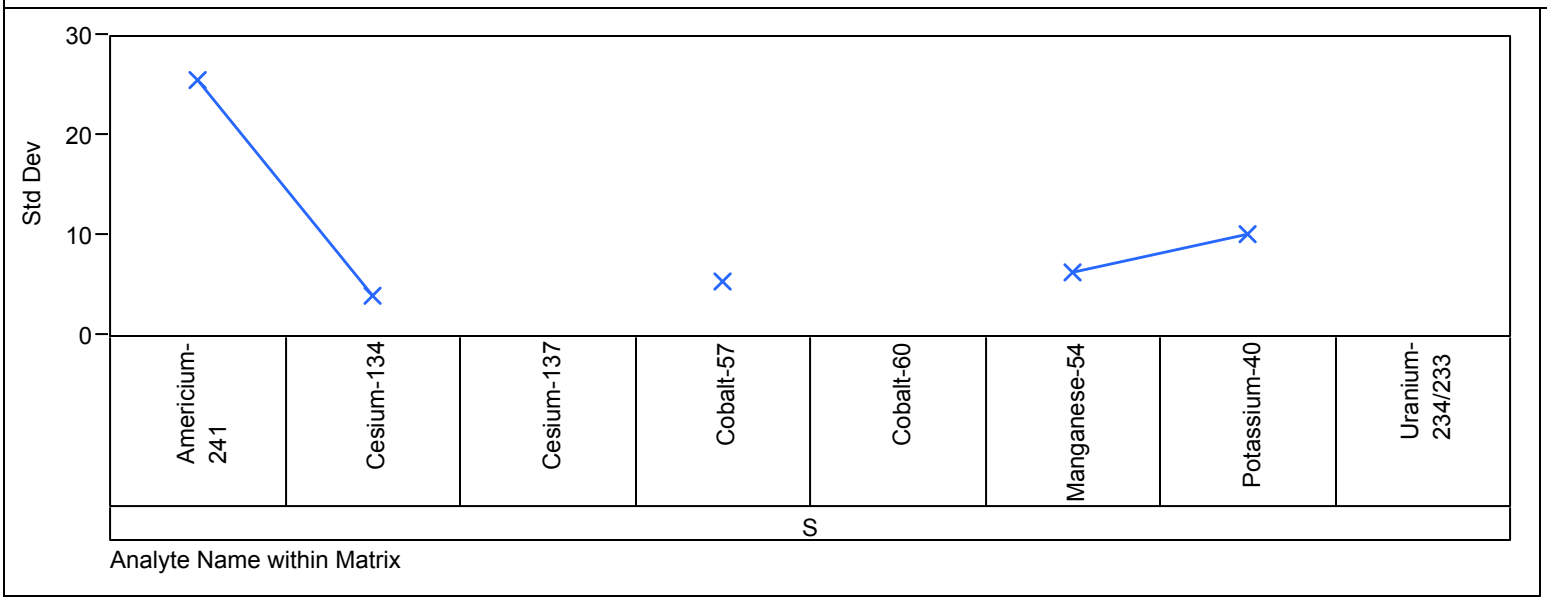
Variability Chart for Bias





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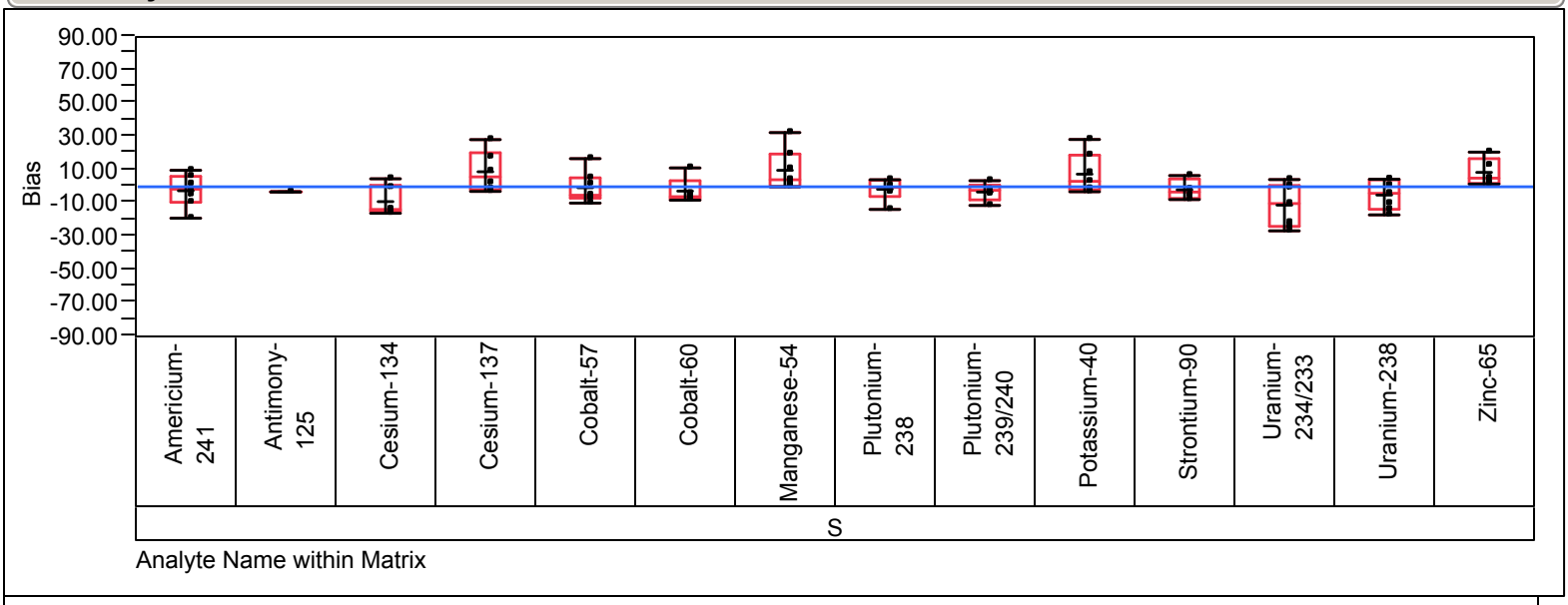
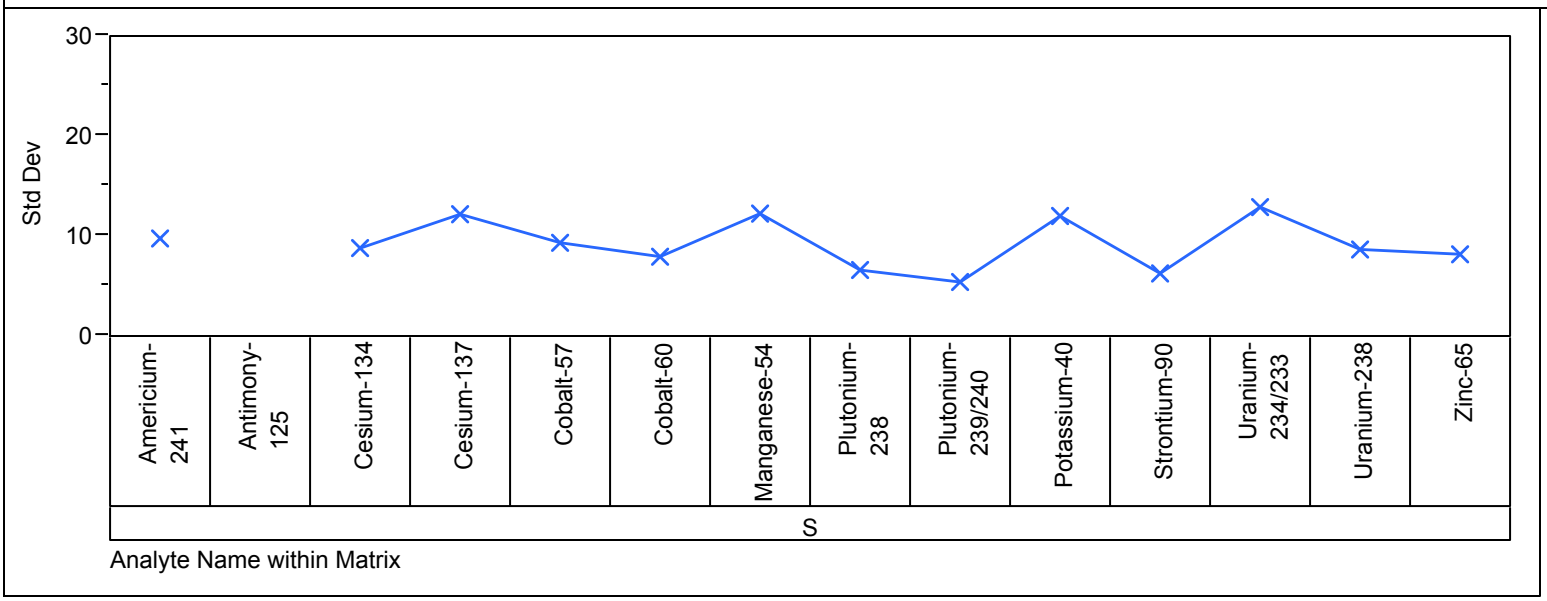
Variability Chart for Bias





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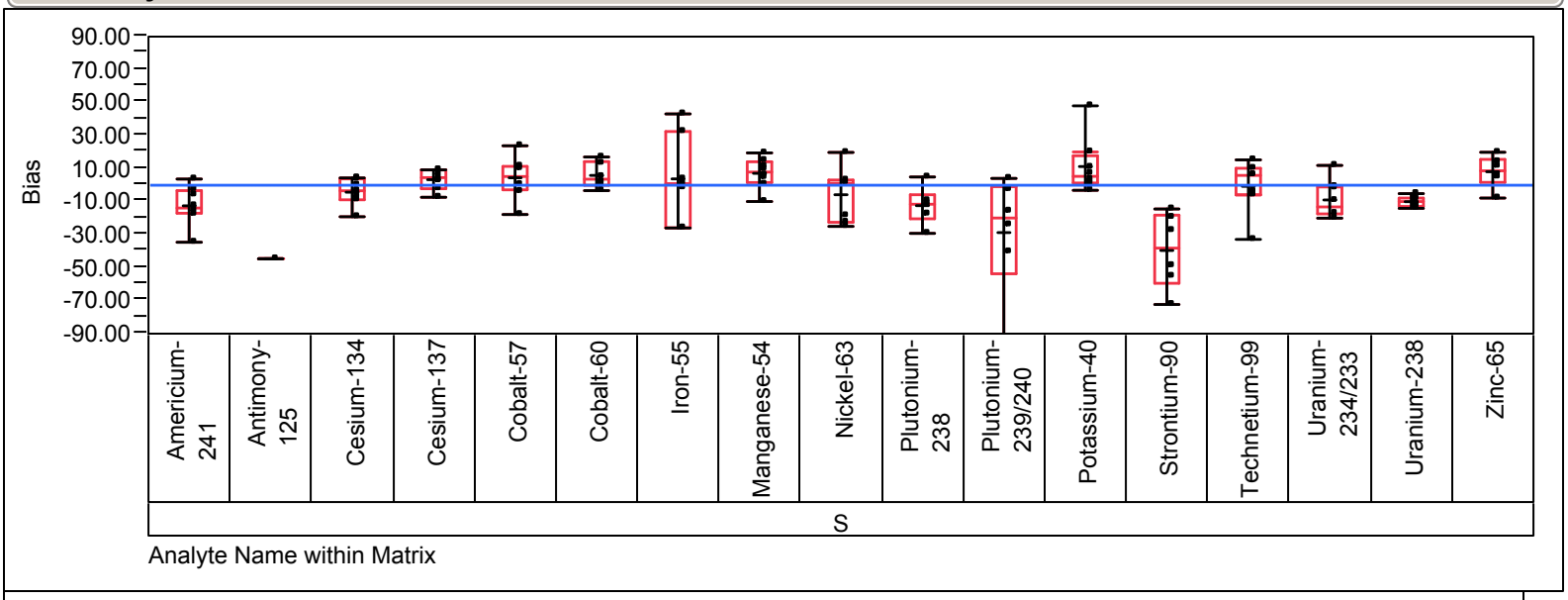
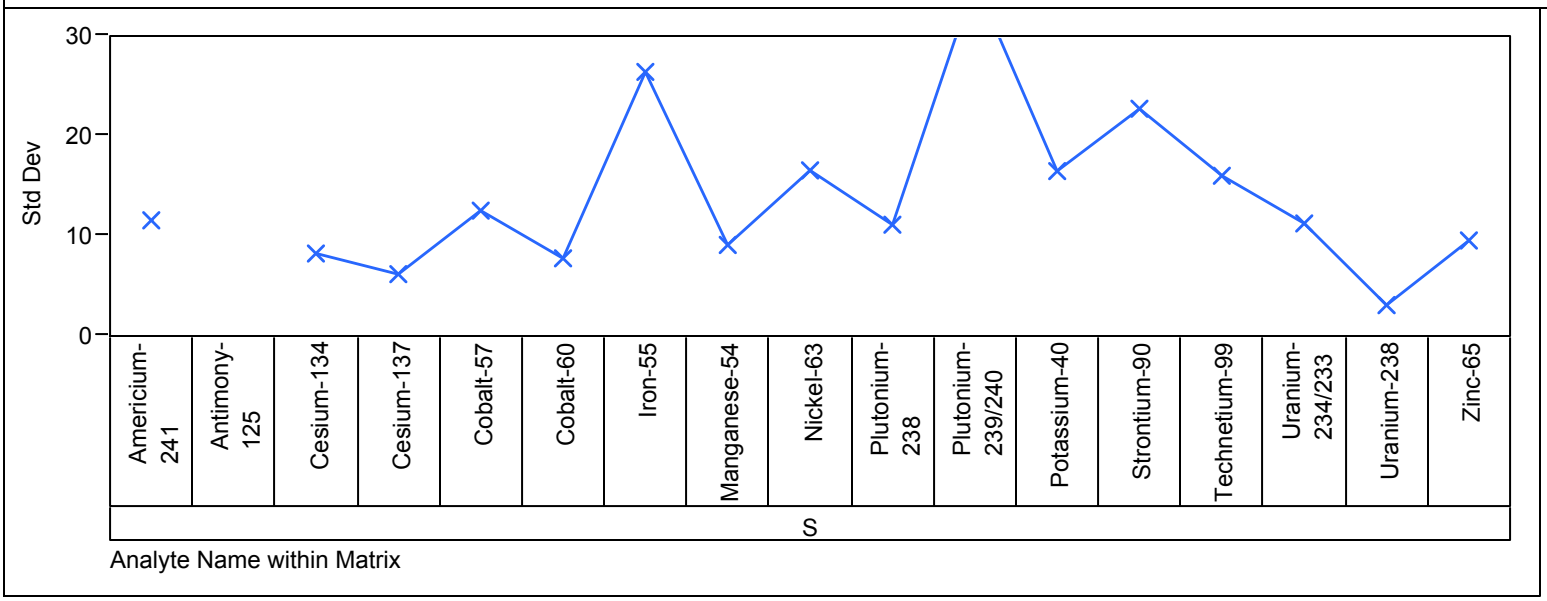
Variability Chart for Bias





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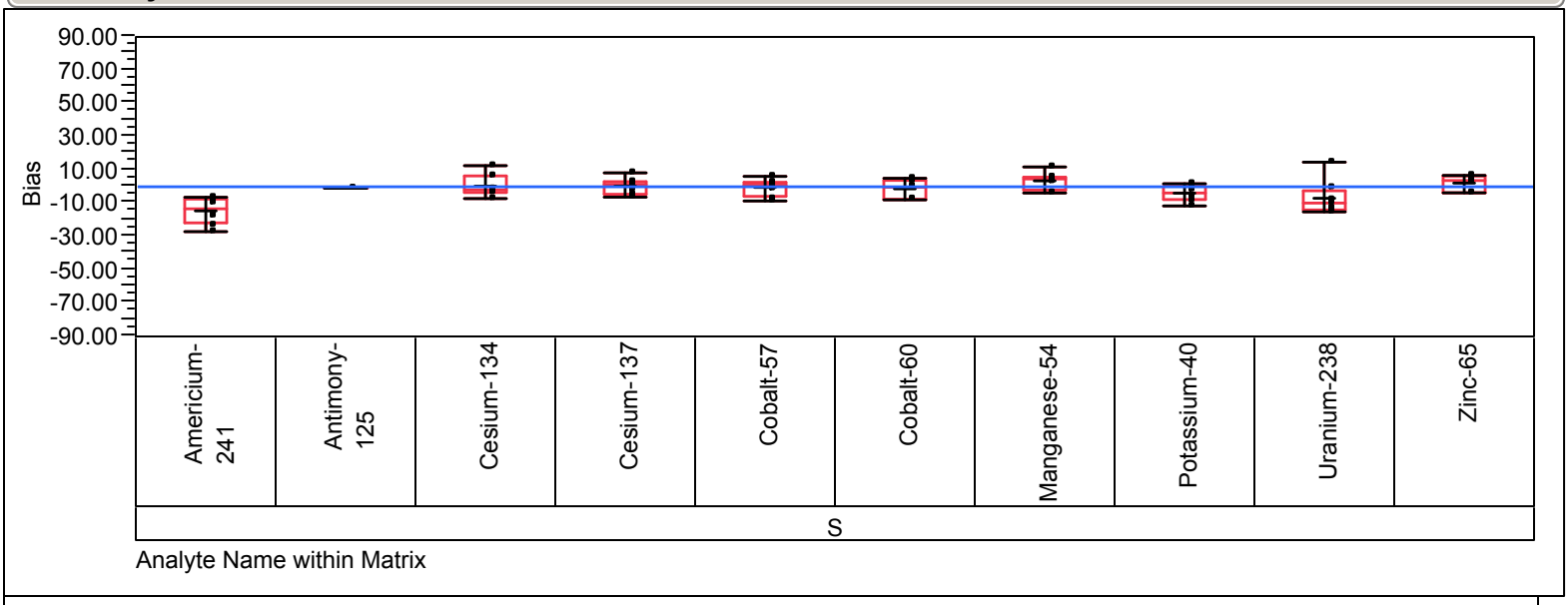
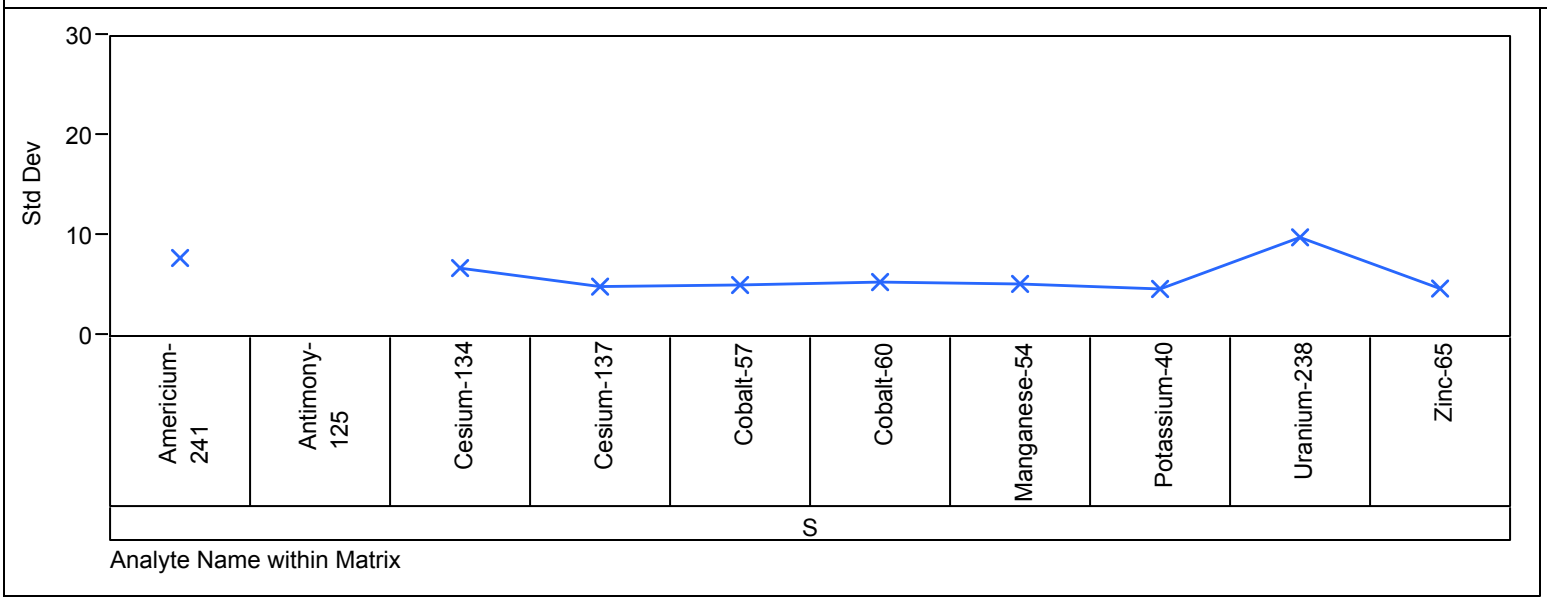
Variability Chart for Bias





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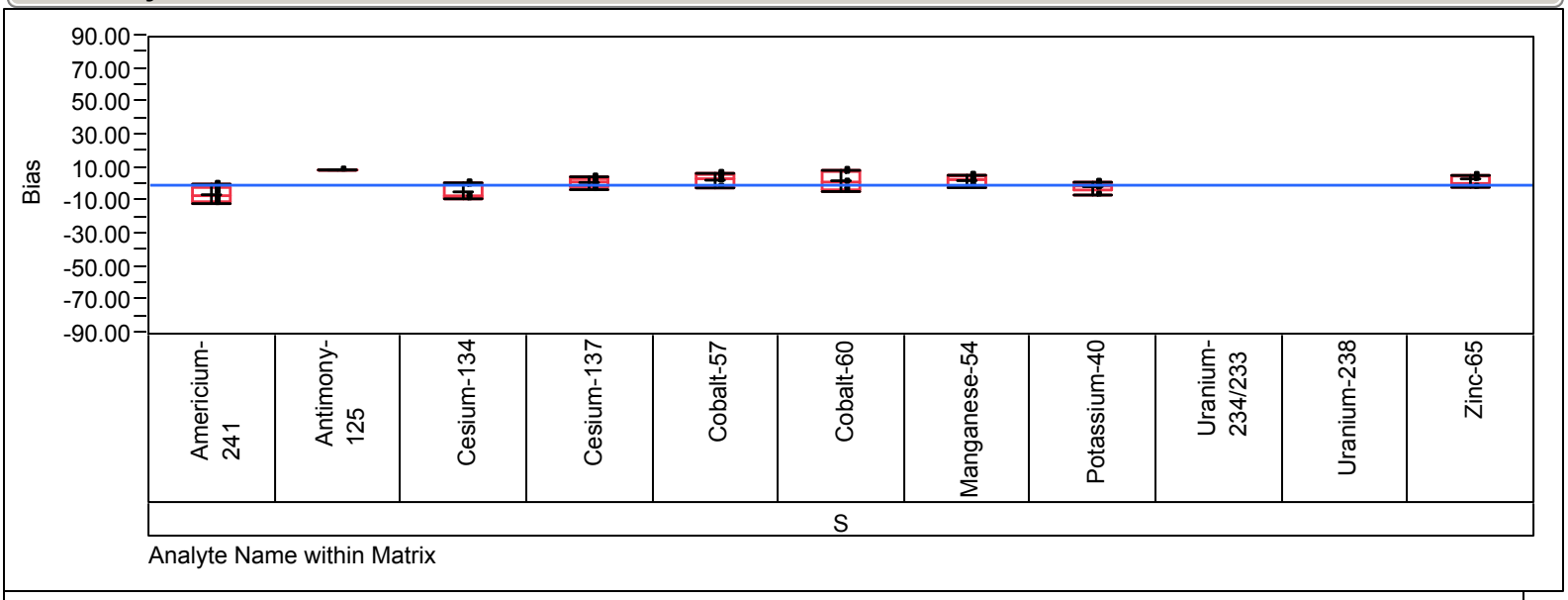
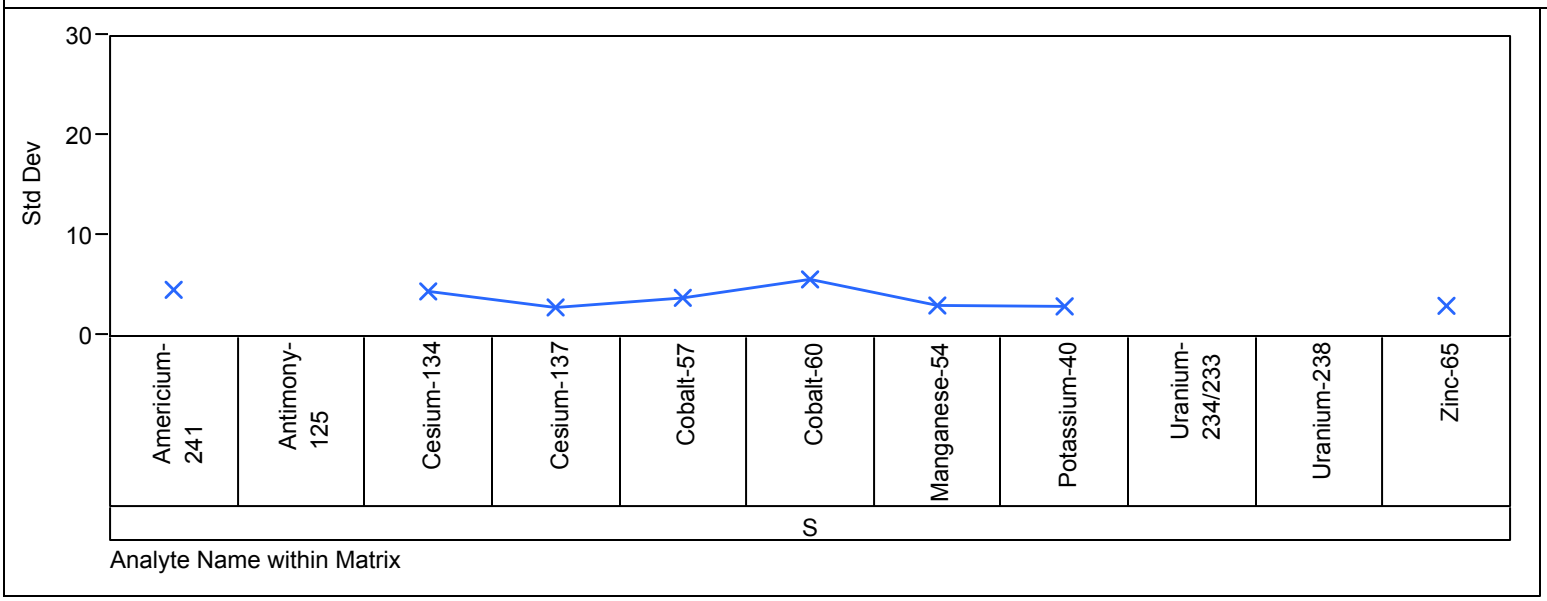
Variability Chart for Bias





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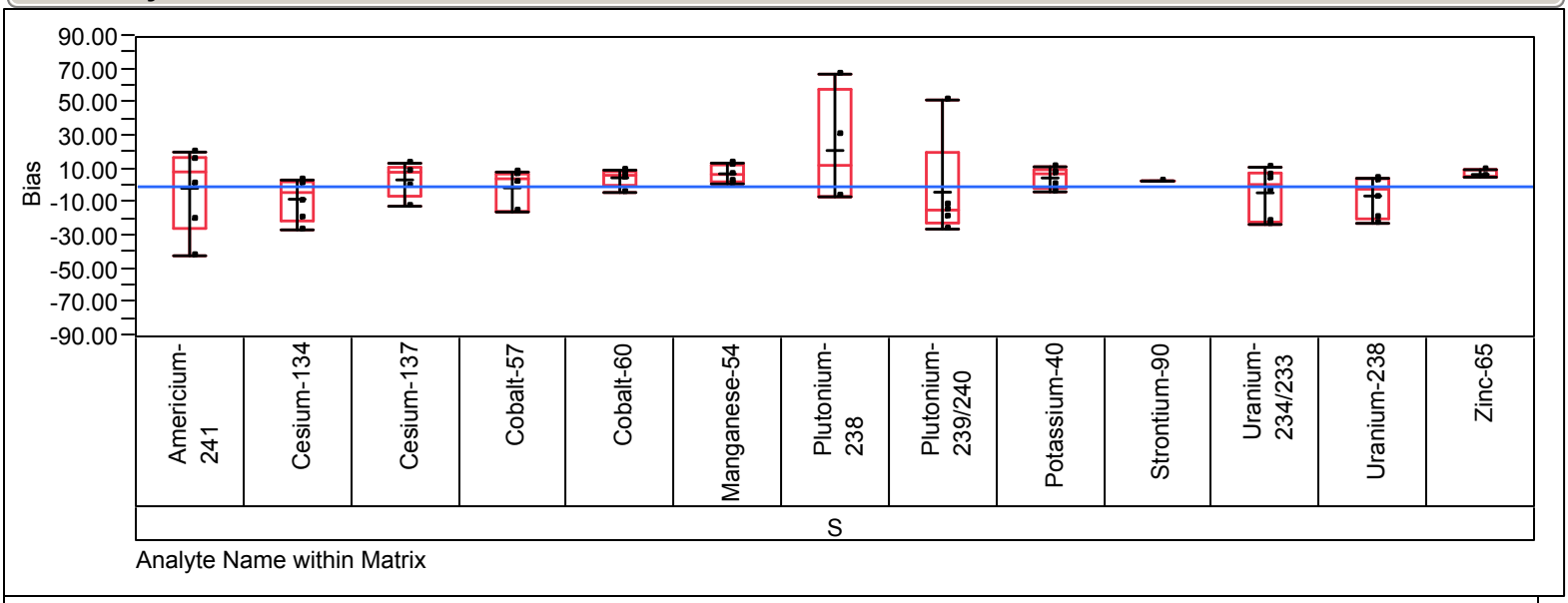
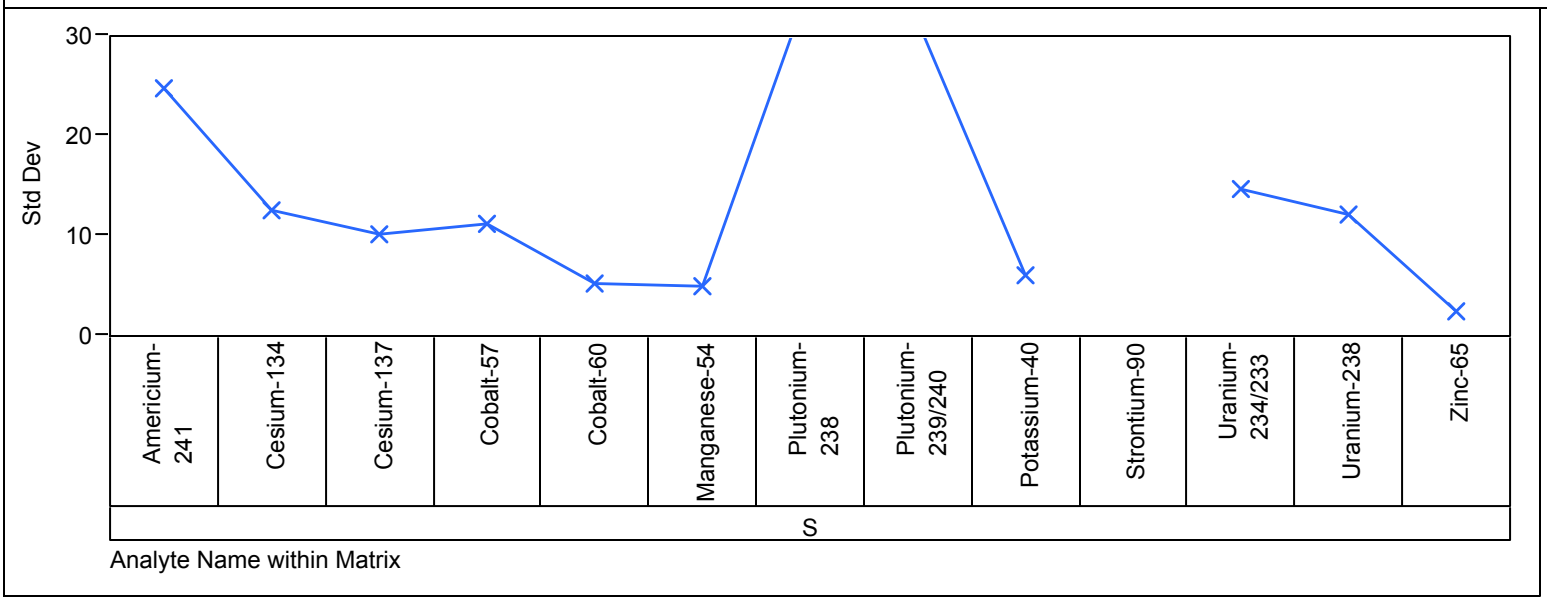
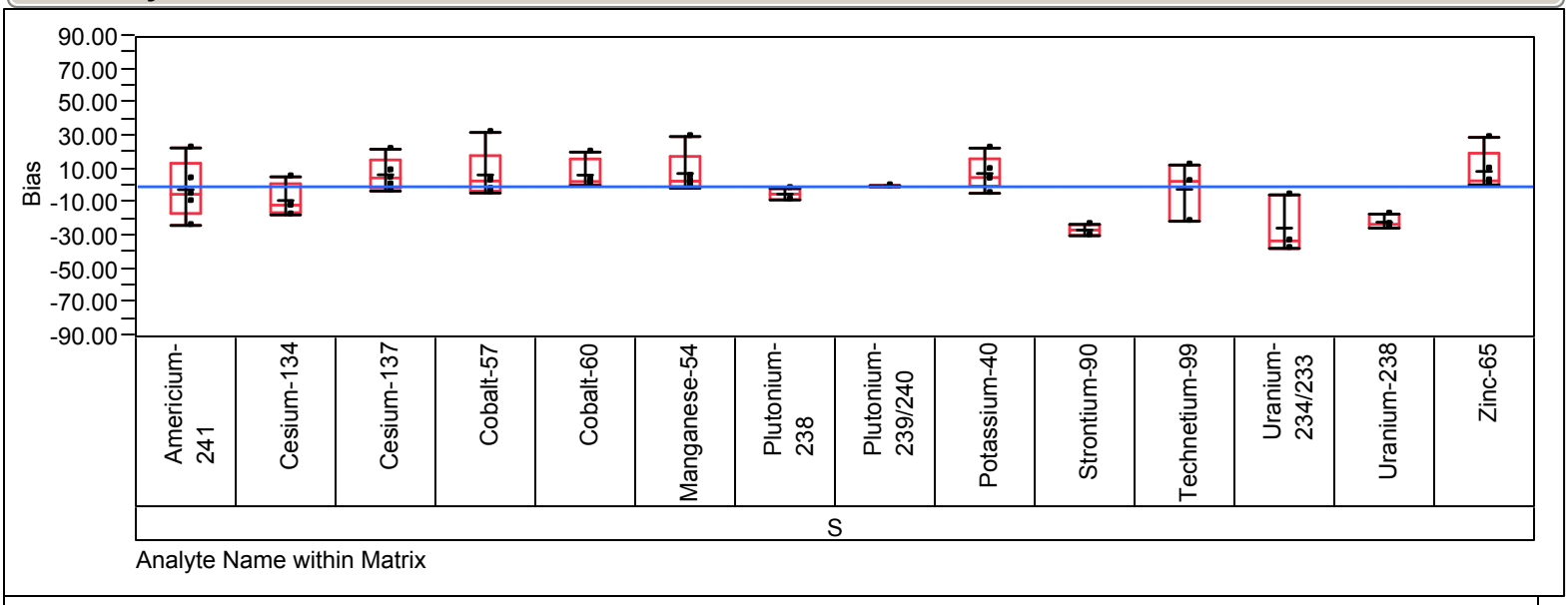
Variability Chart for Bias

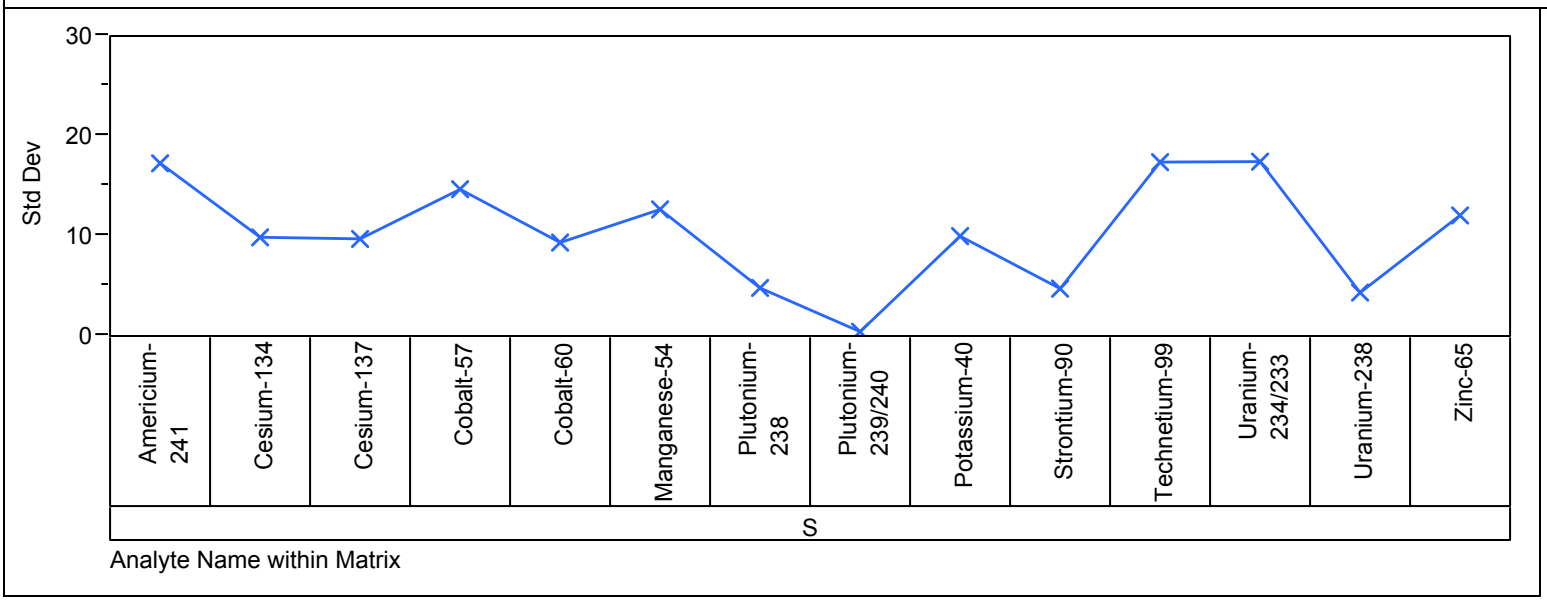




Variability Gauge Lab Code=OBGL01

Variability Chart for Bias





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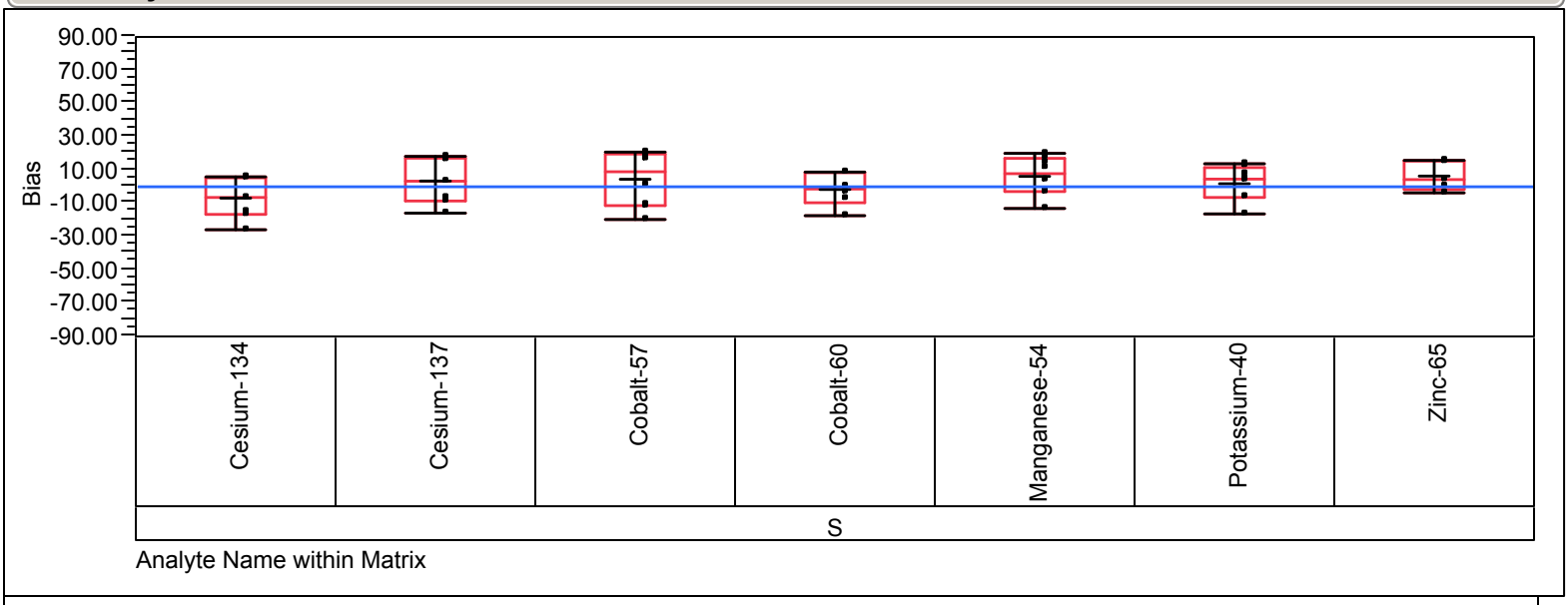
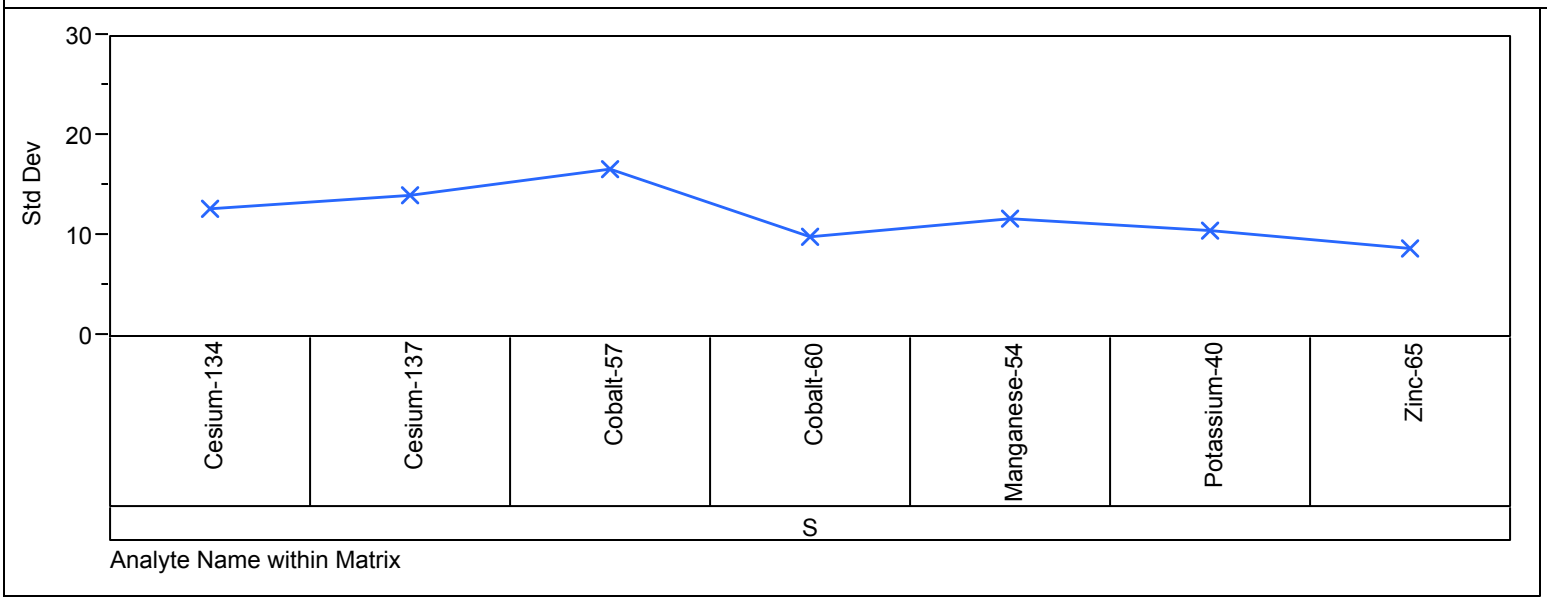
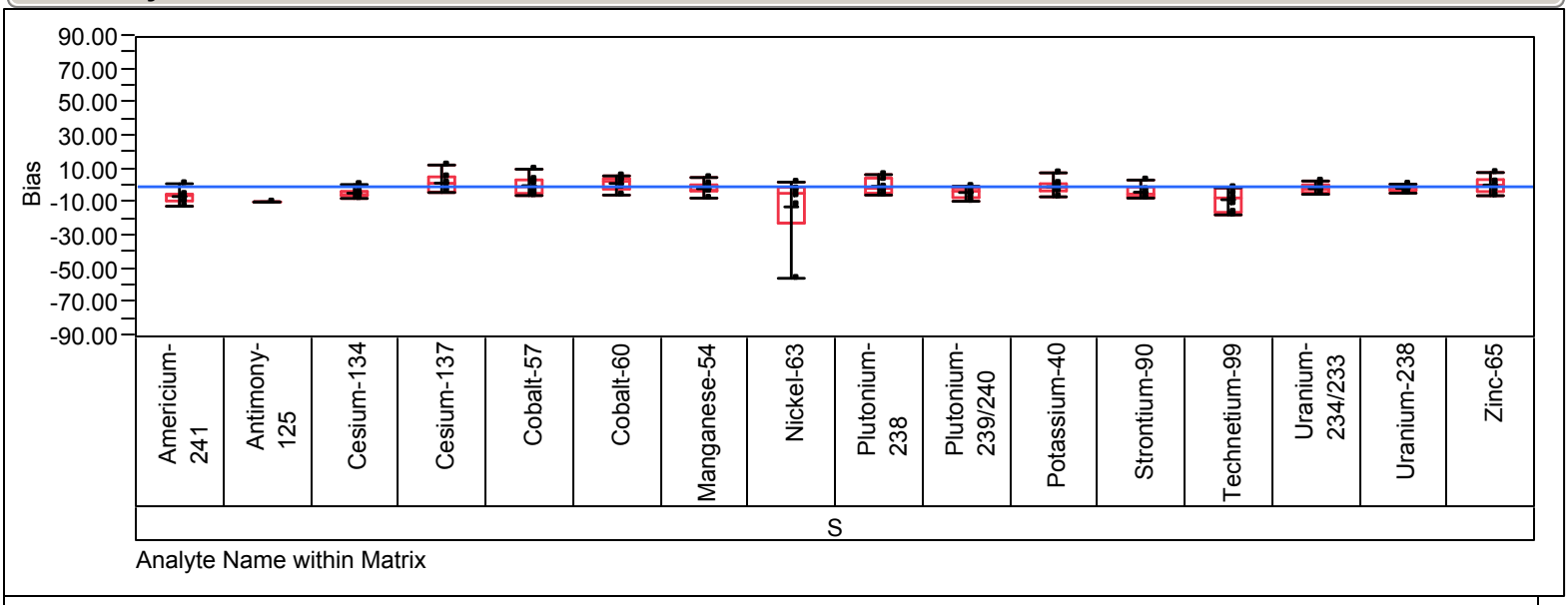
Variability Chart for Bias

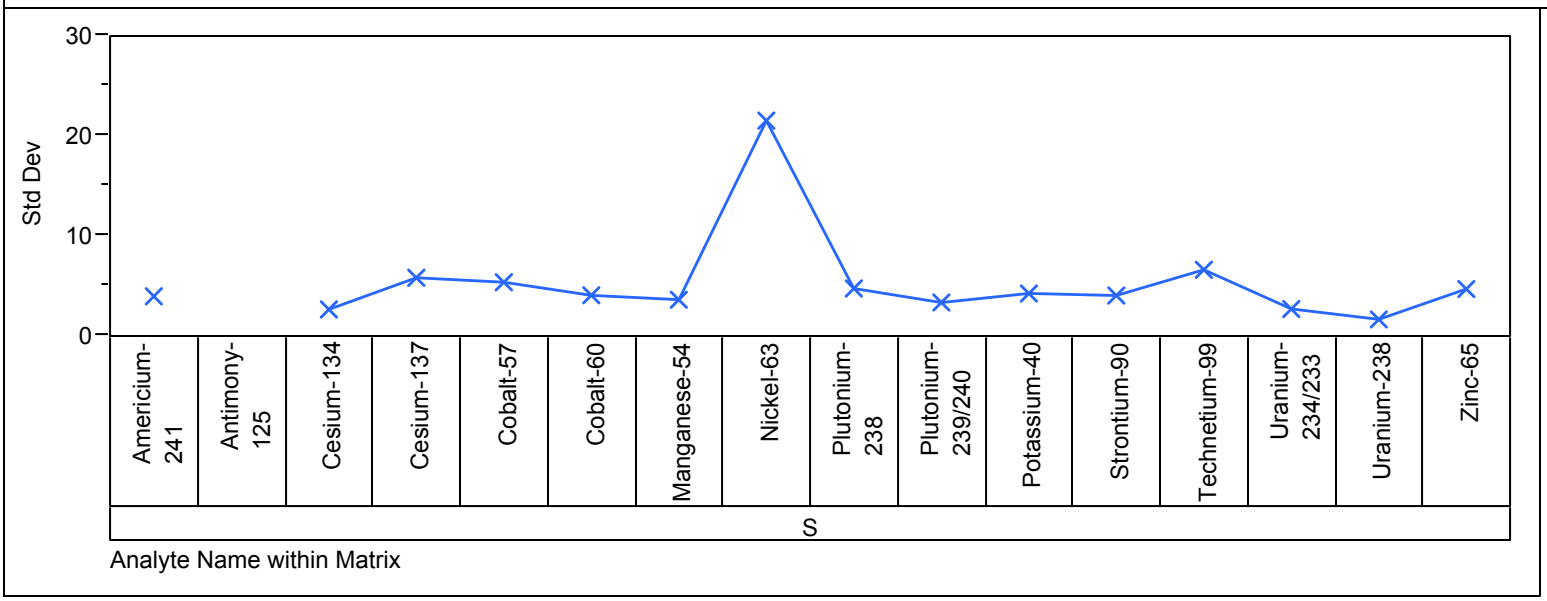




Variability Gauge Lab Code=ORIS01

Variability Chart for Bias





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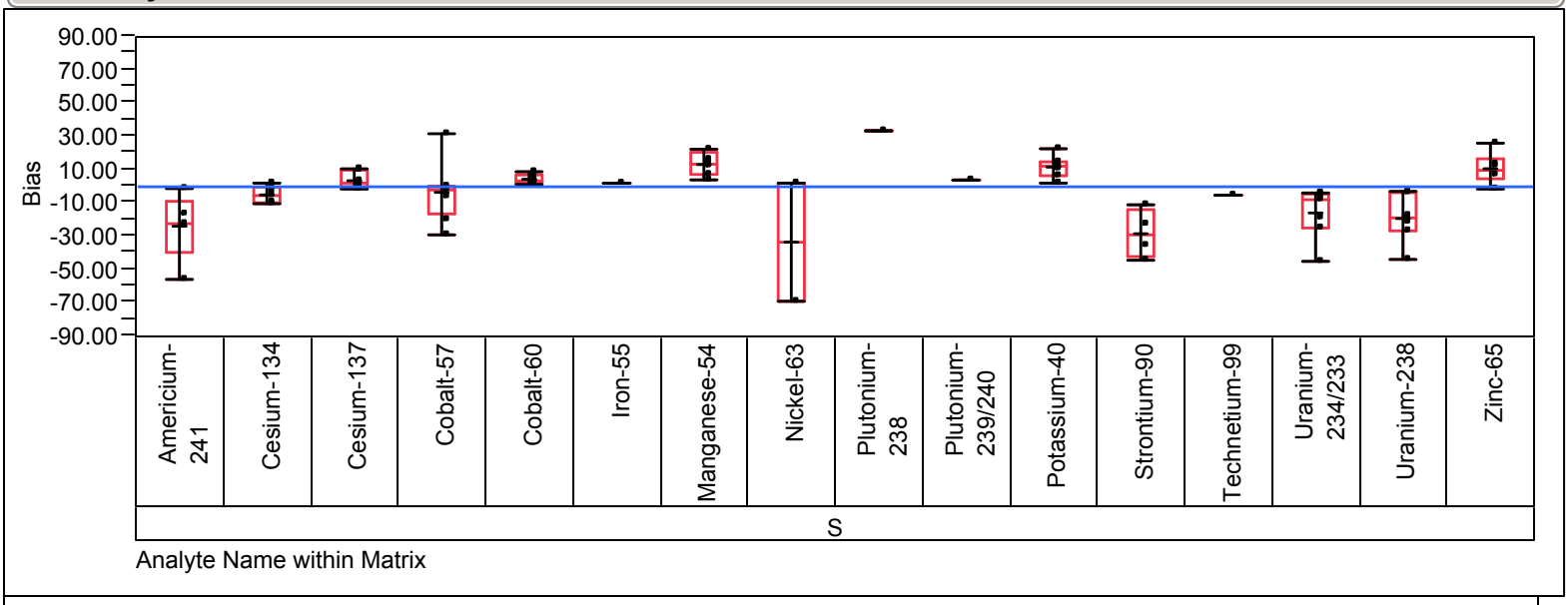
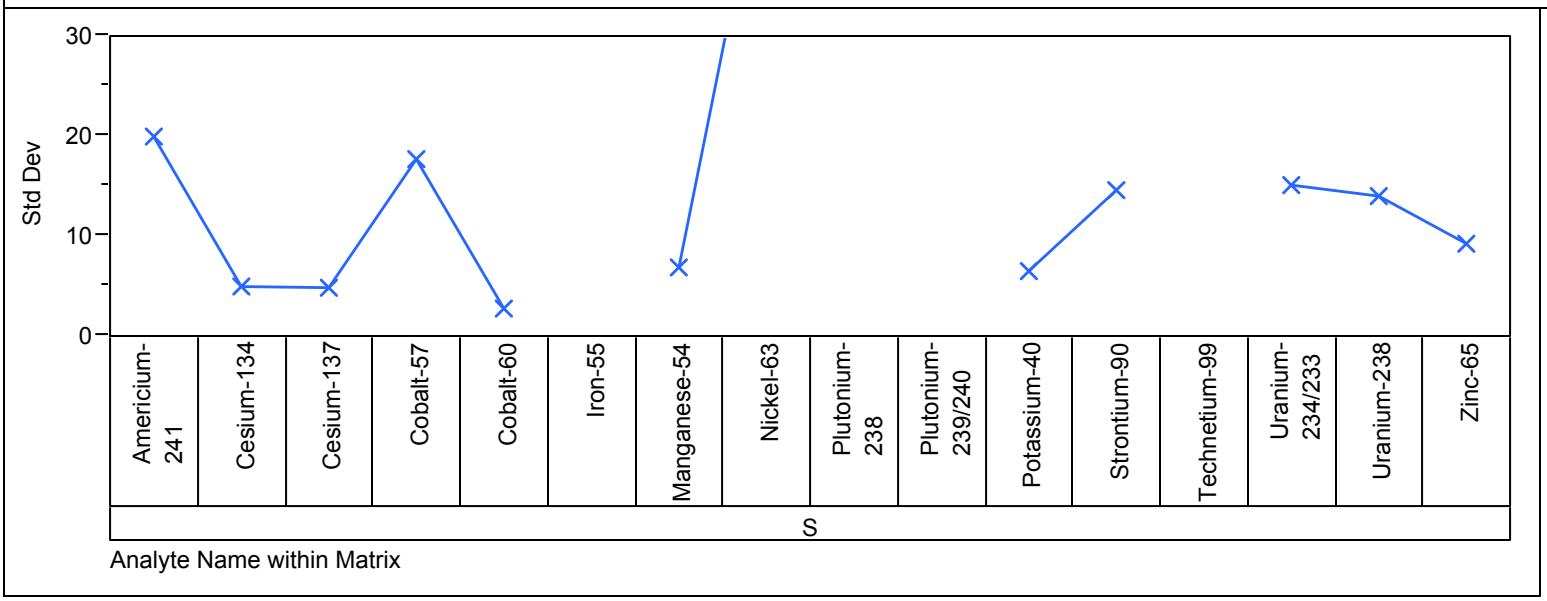
Variability Chart for Bias





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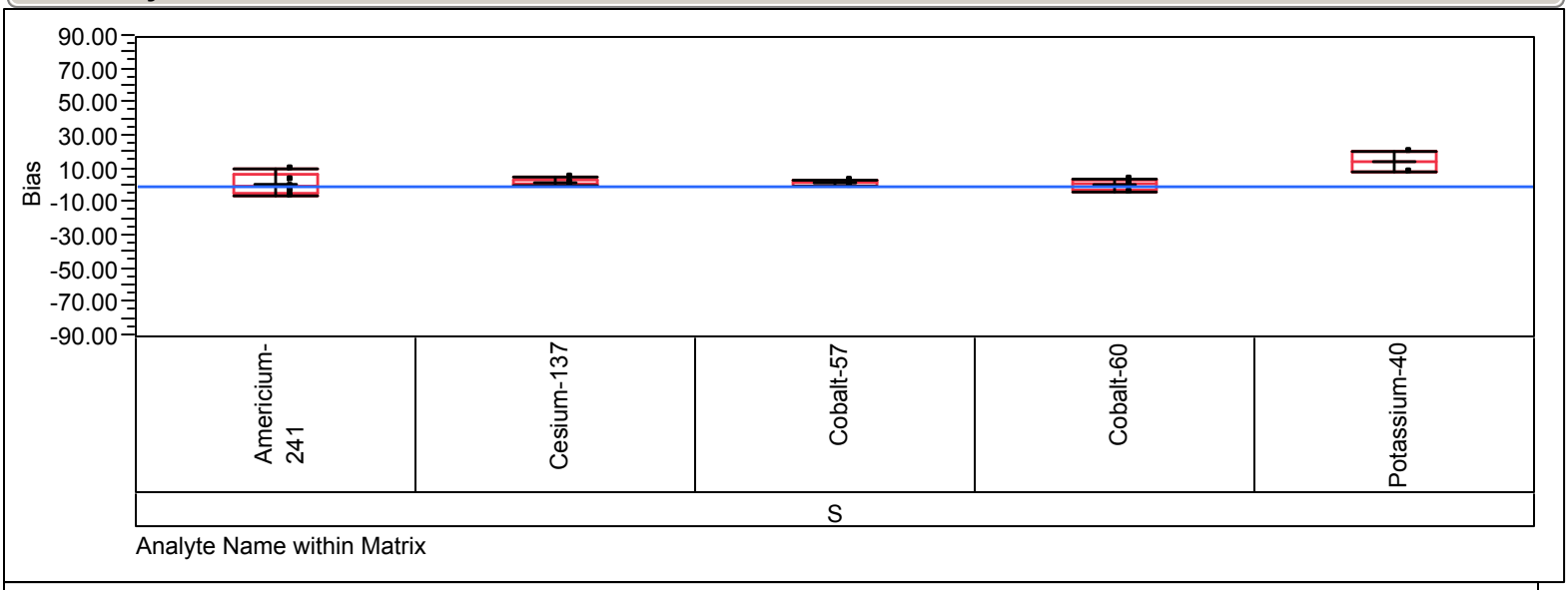
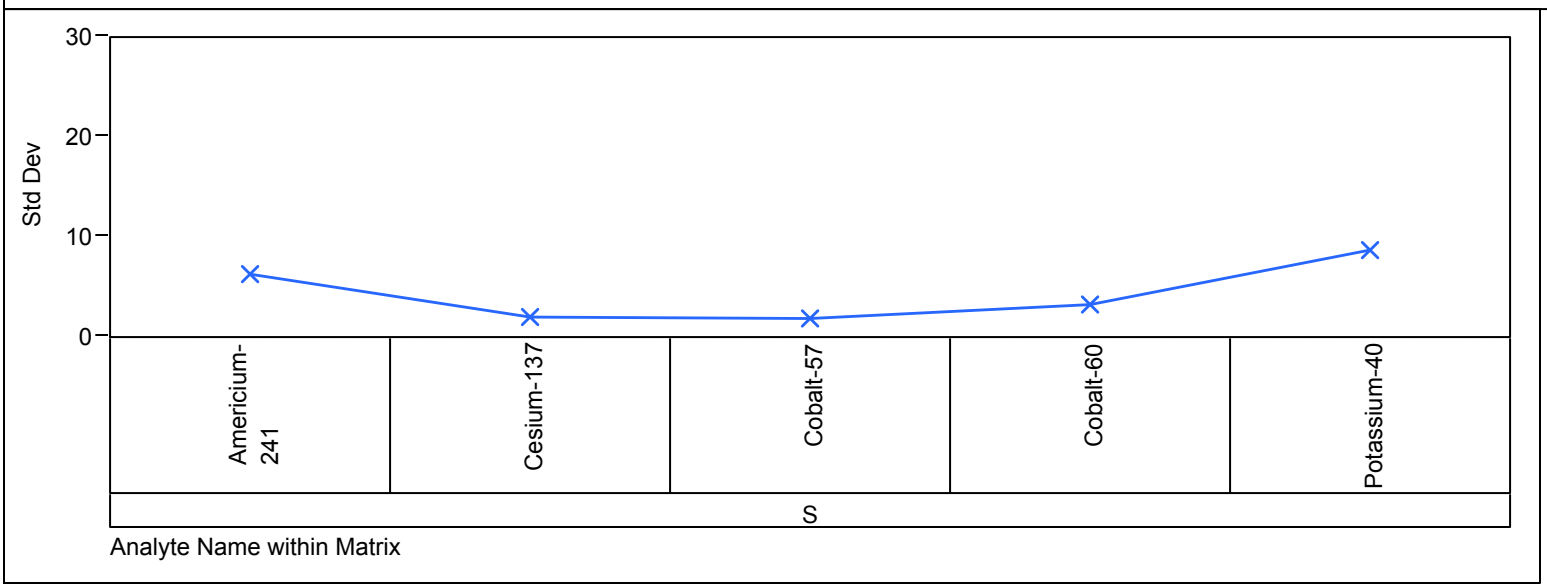
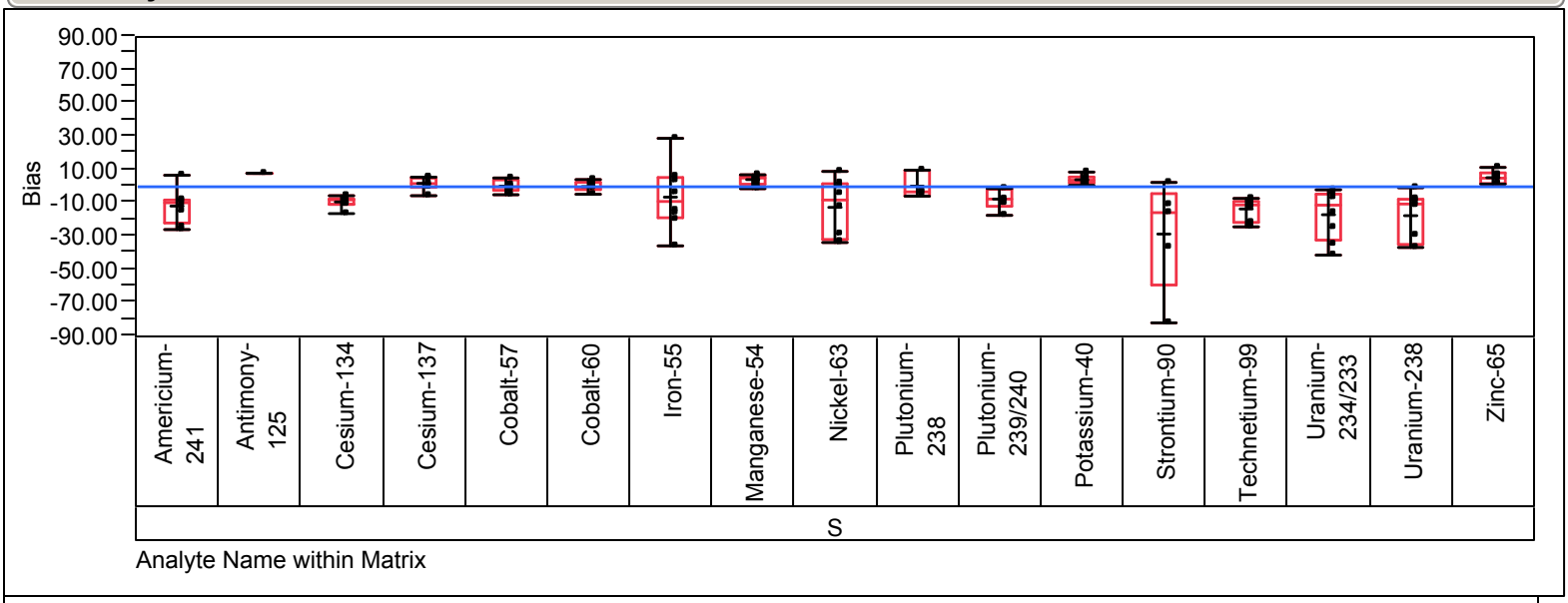
Variability Chart for Bias

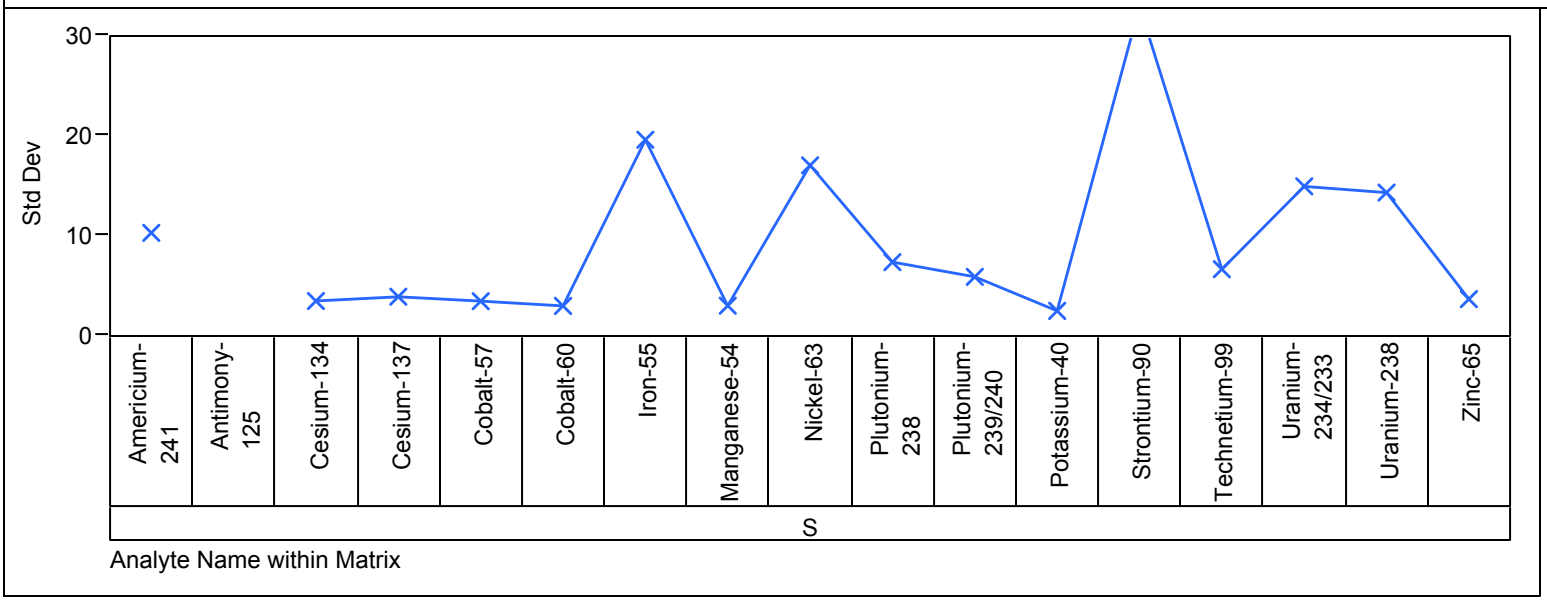




Variability Gauge Lab Code=QUAN01

Variability Chart for Bias





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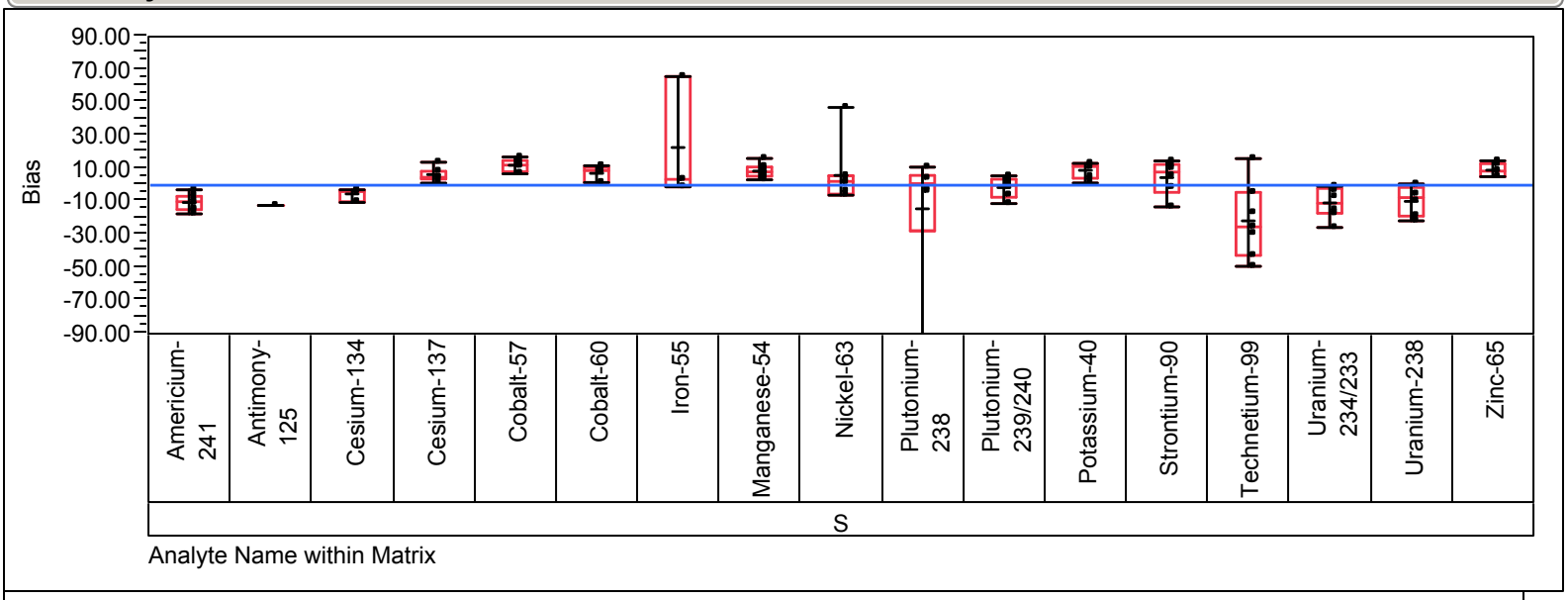
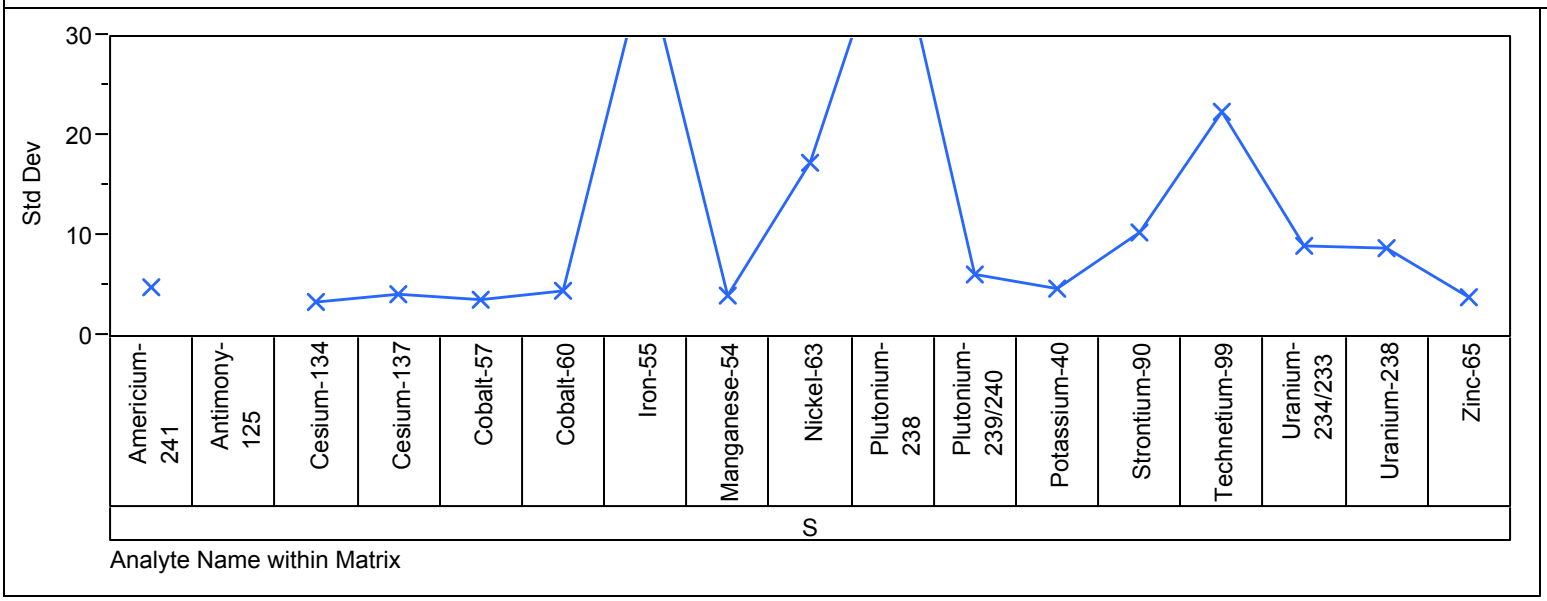
Variability Chart for Bias





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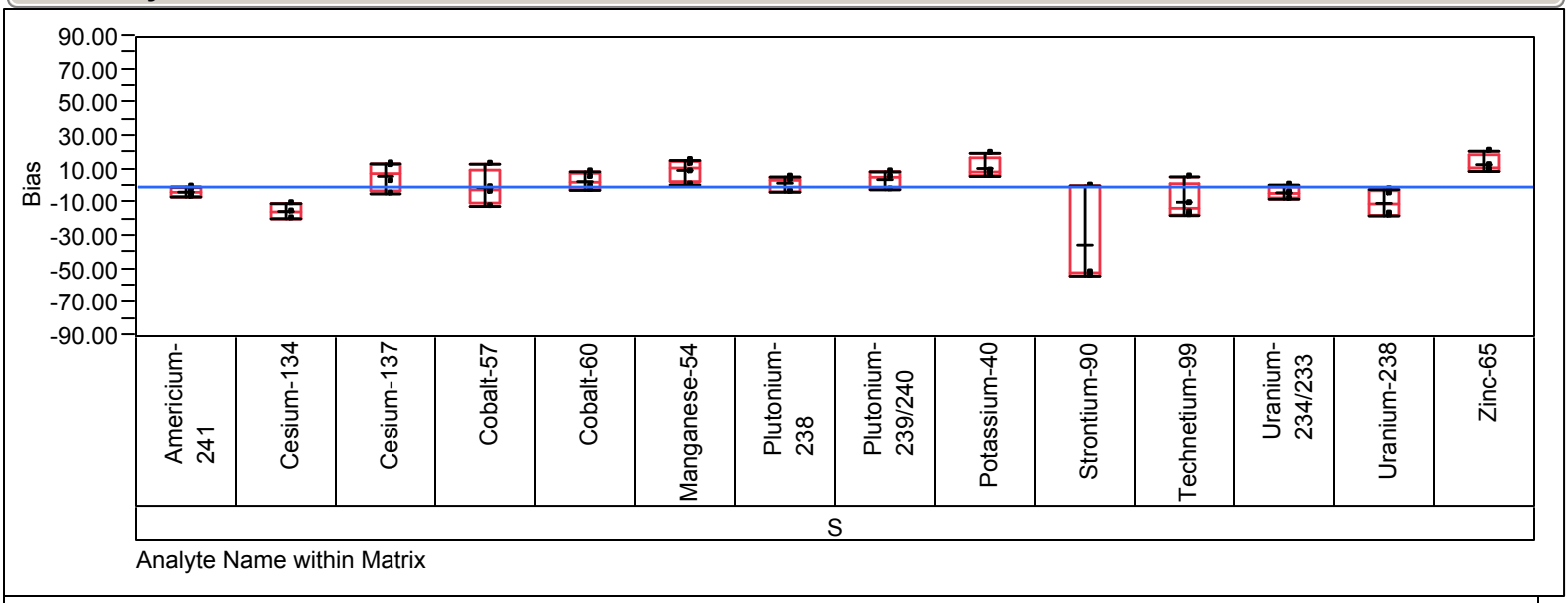
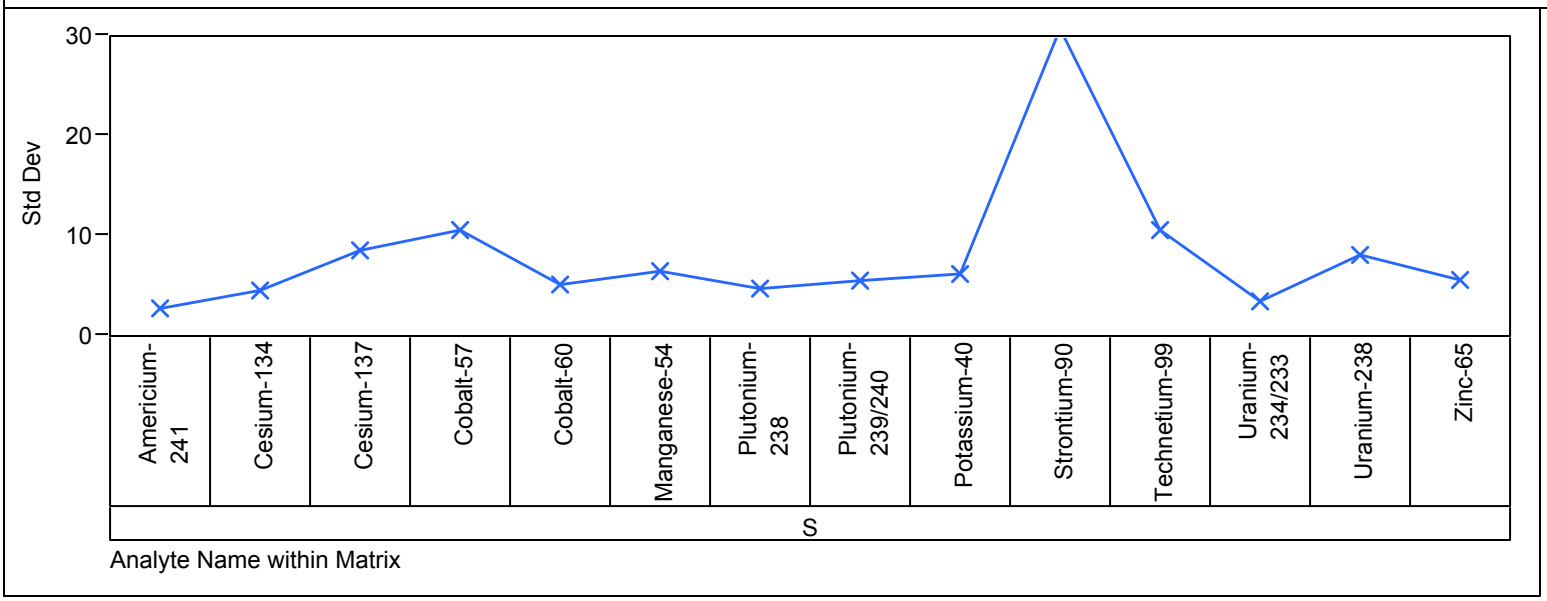
Variability Chart for Bias





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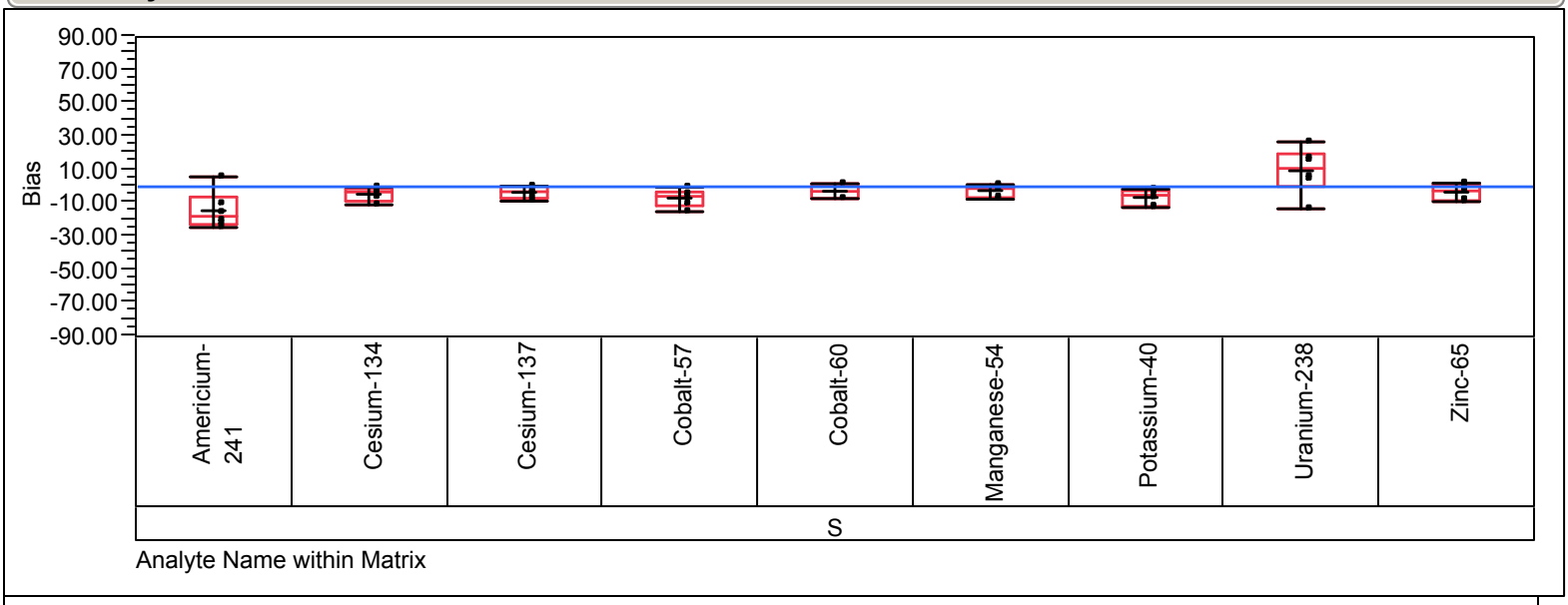
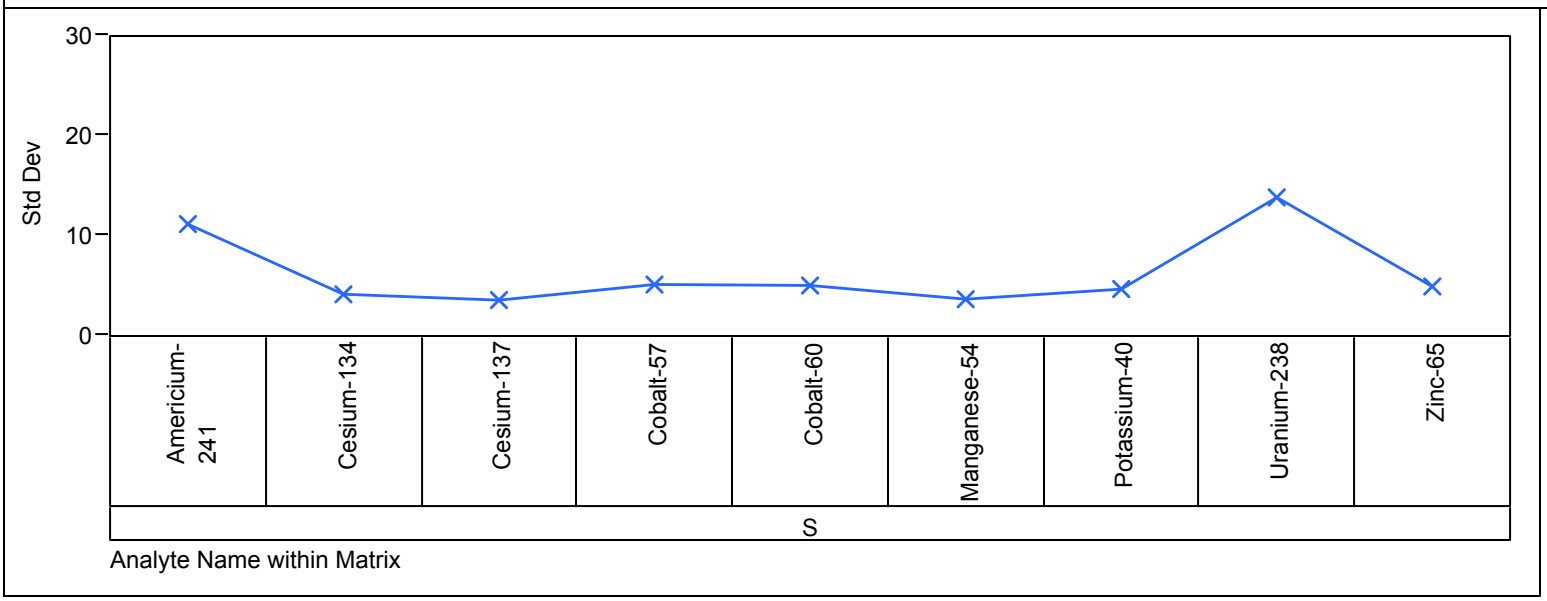
Variability Chart for Bias





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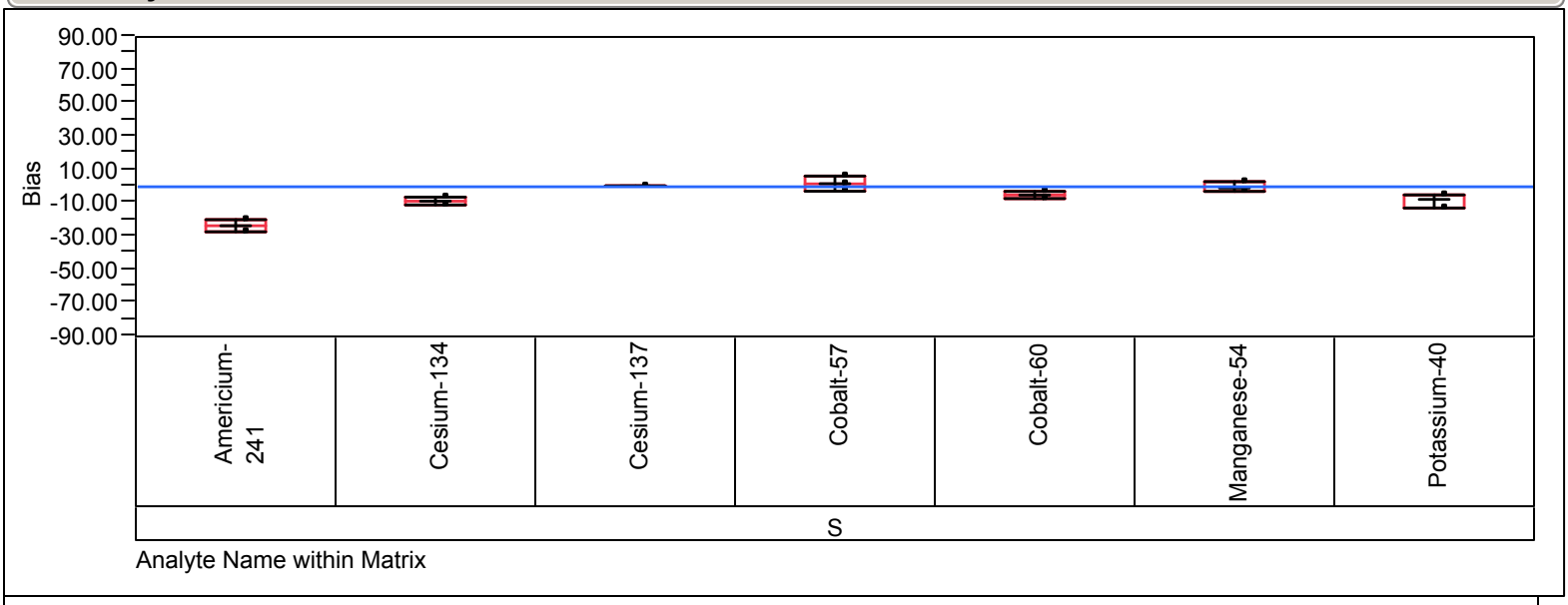
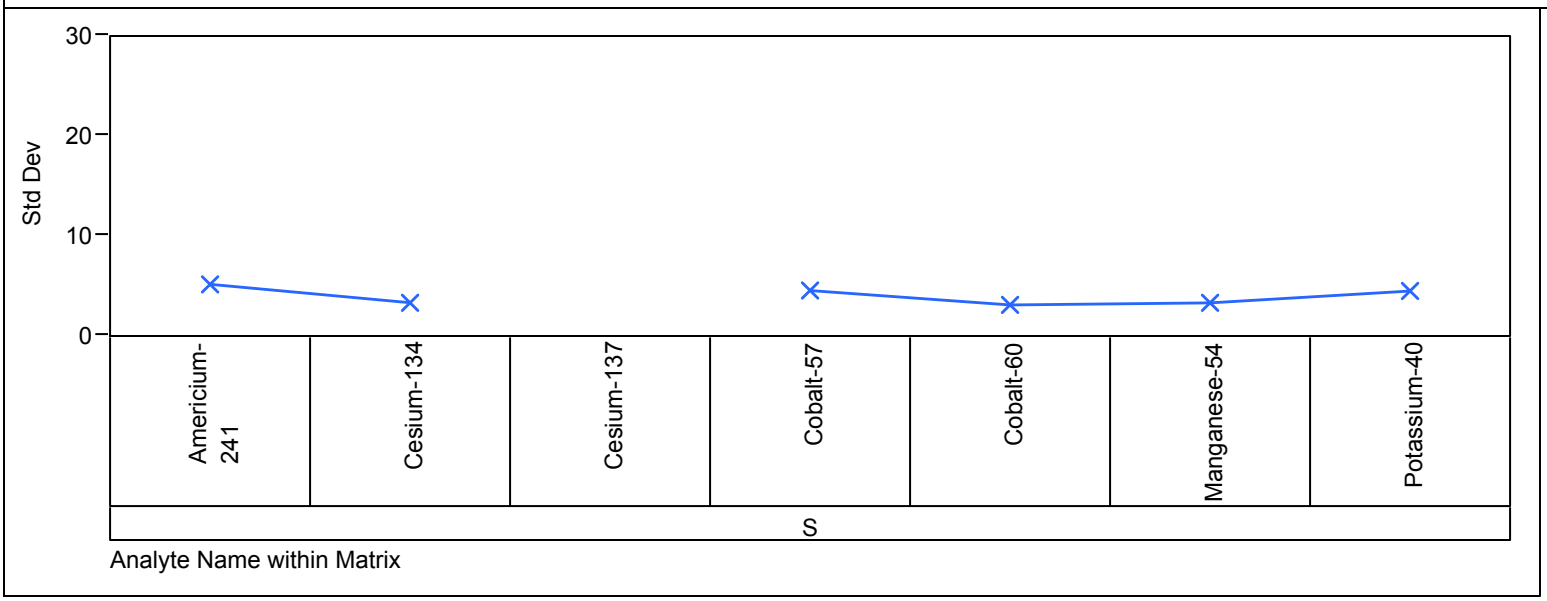
Variability Chart for Bias





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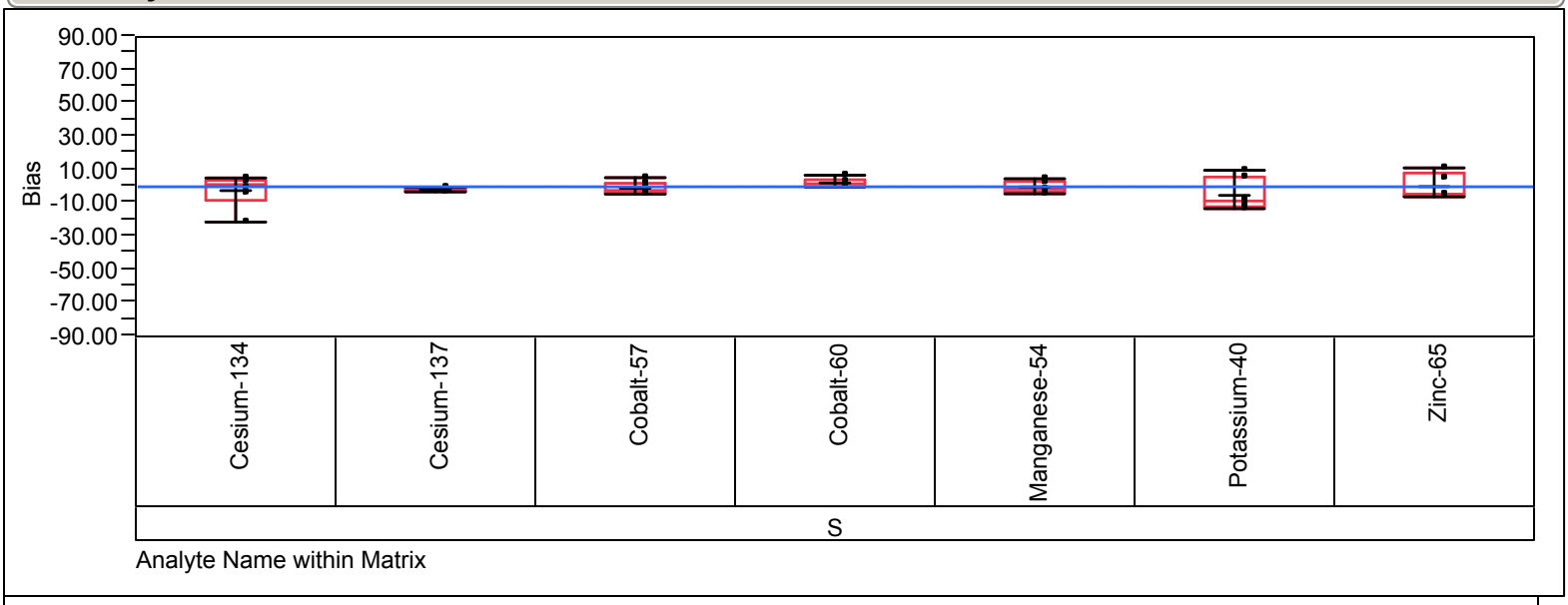
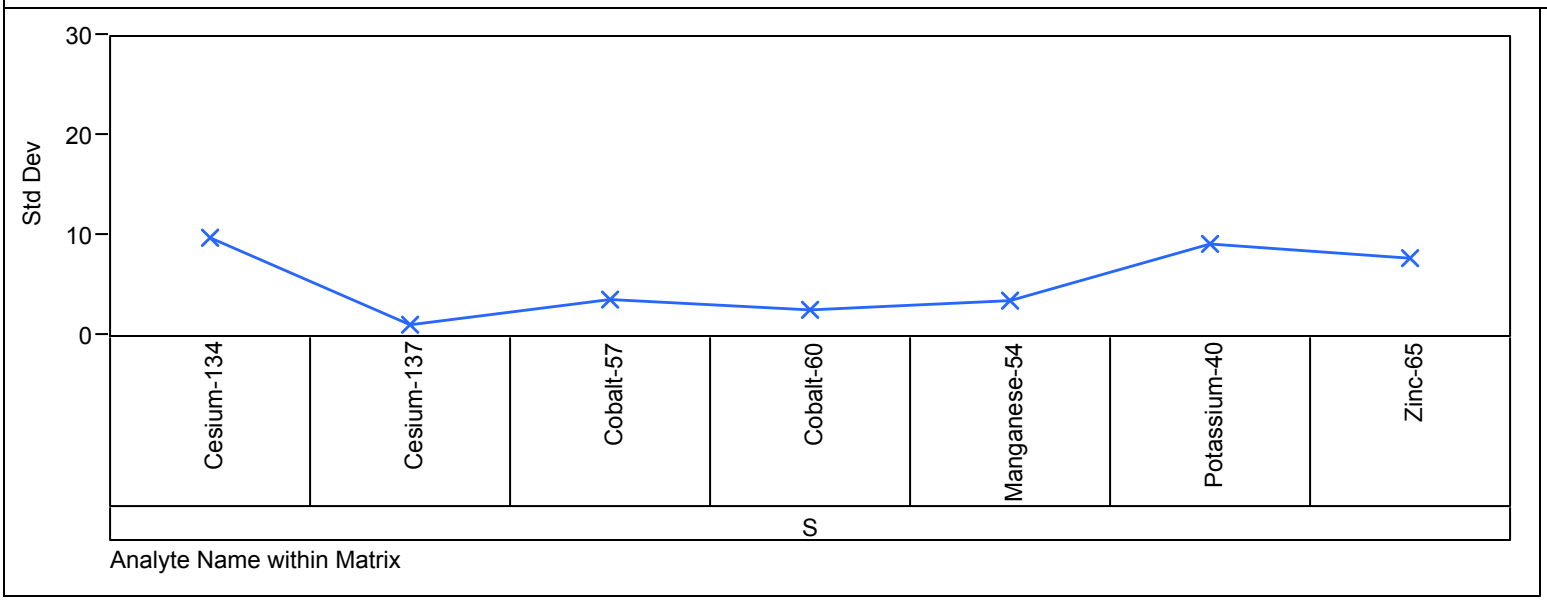
Variability Chart for Bias





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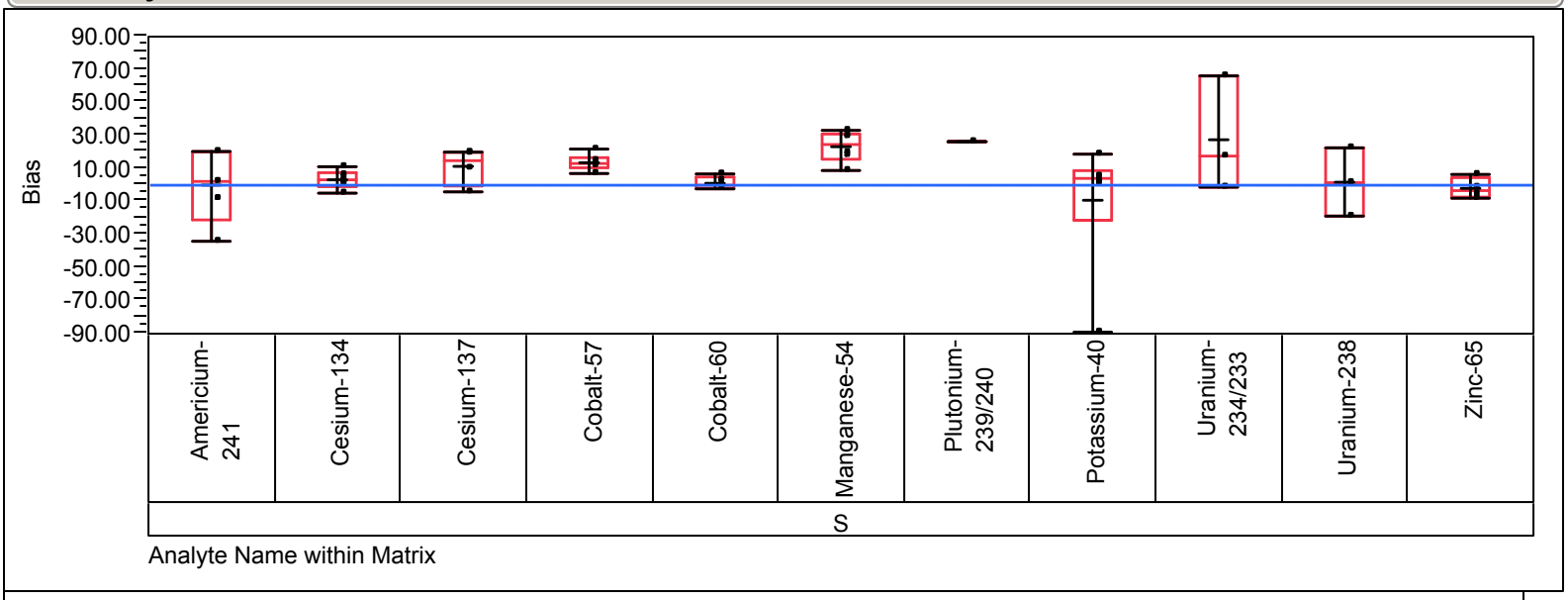
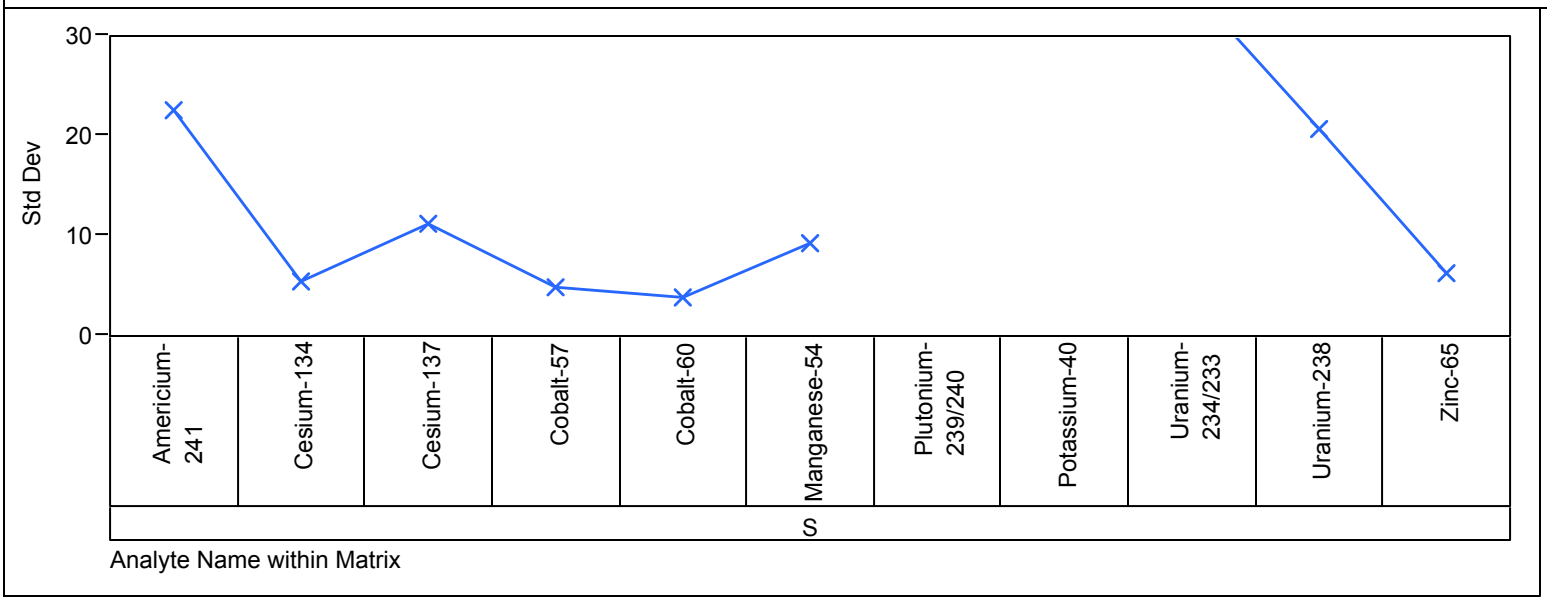
Variability Chart for Bias





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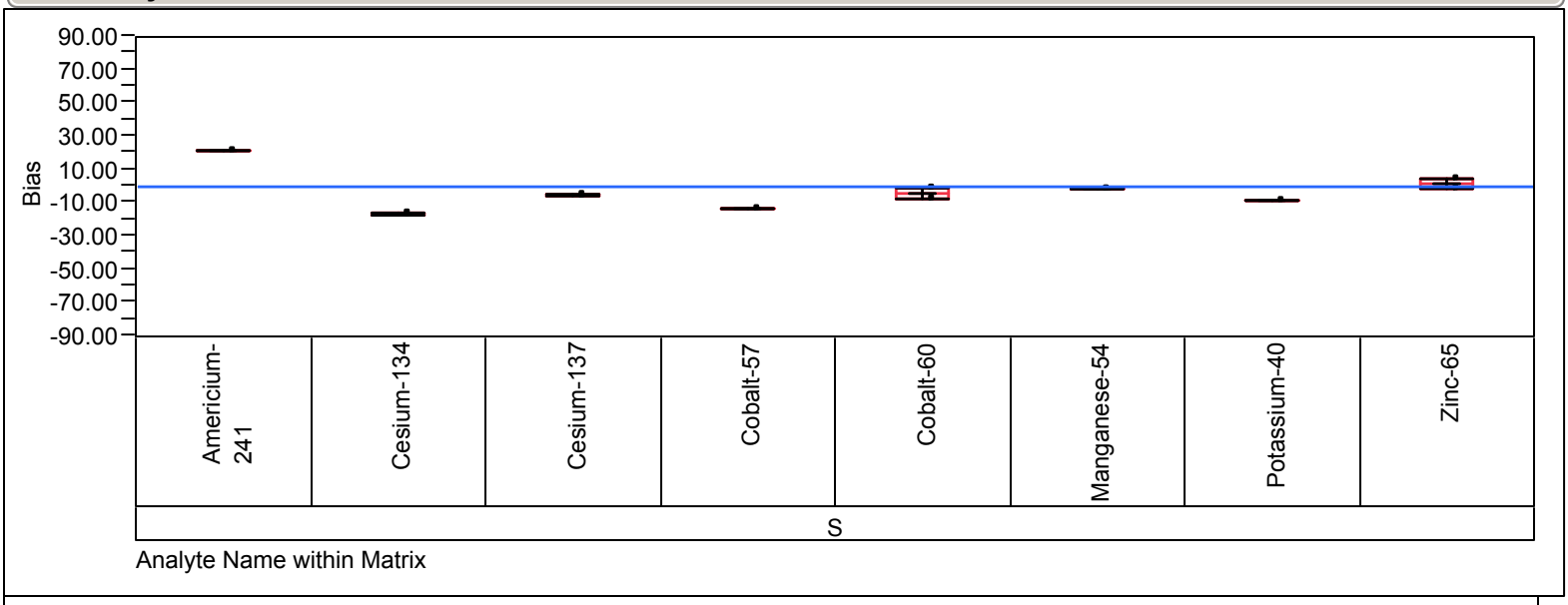
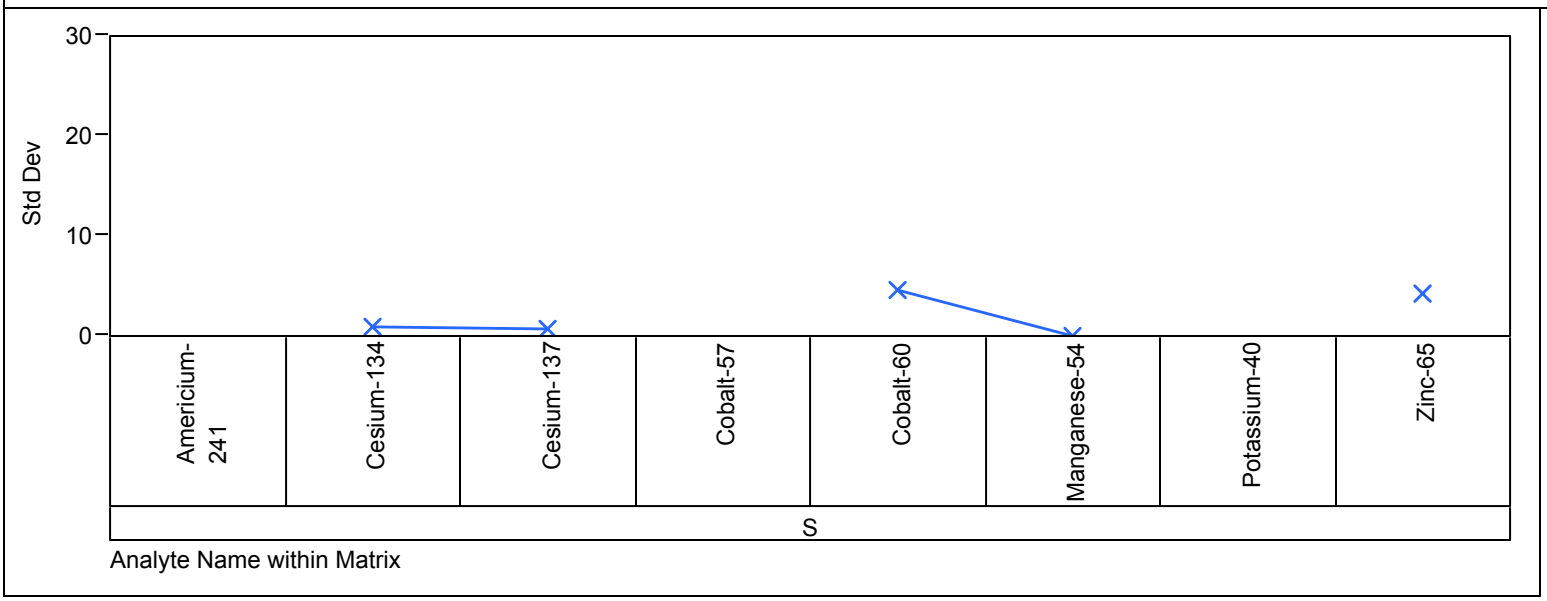
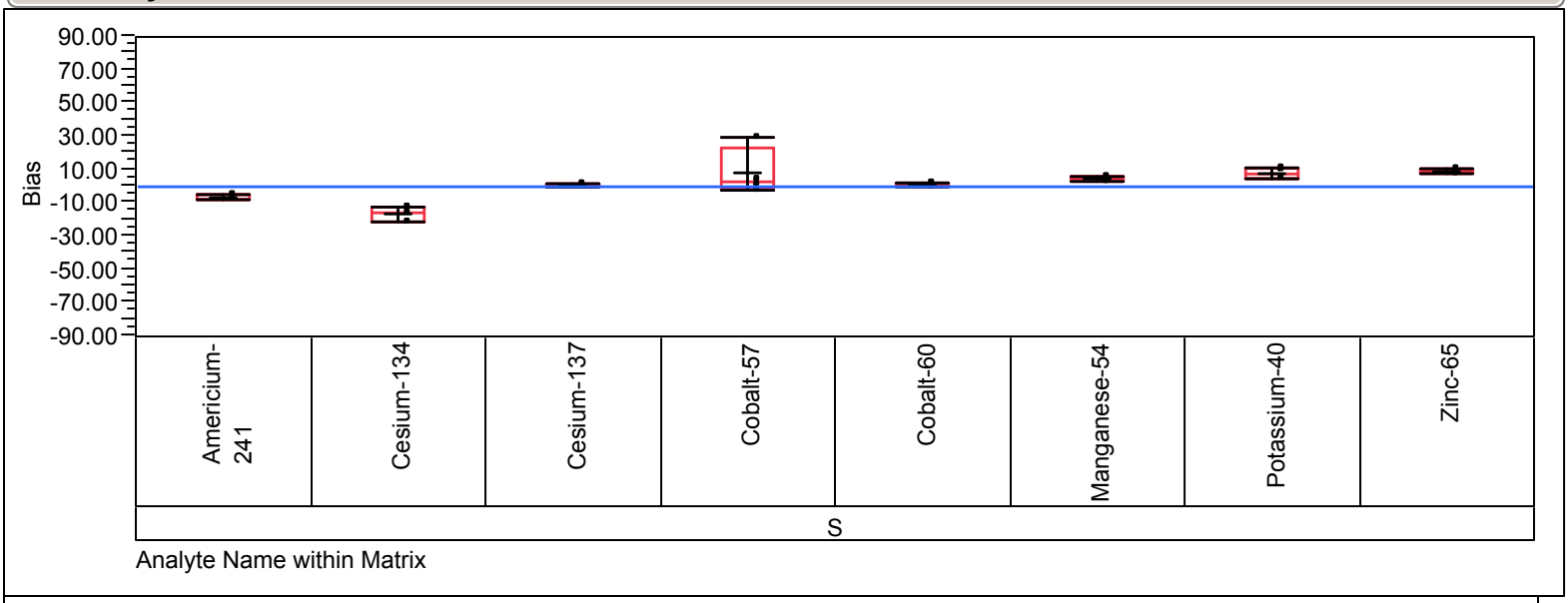
Variability Chart for Bias

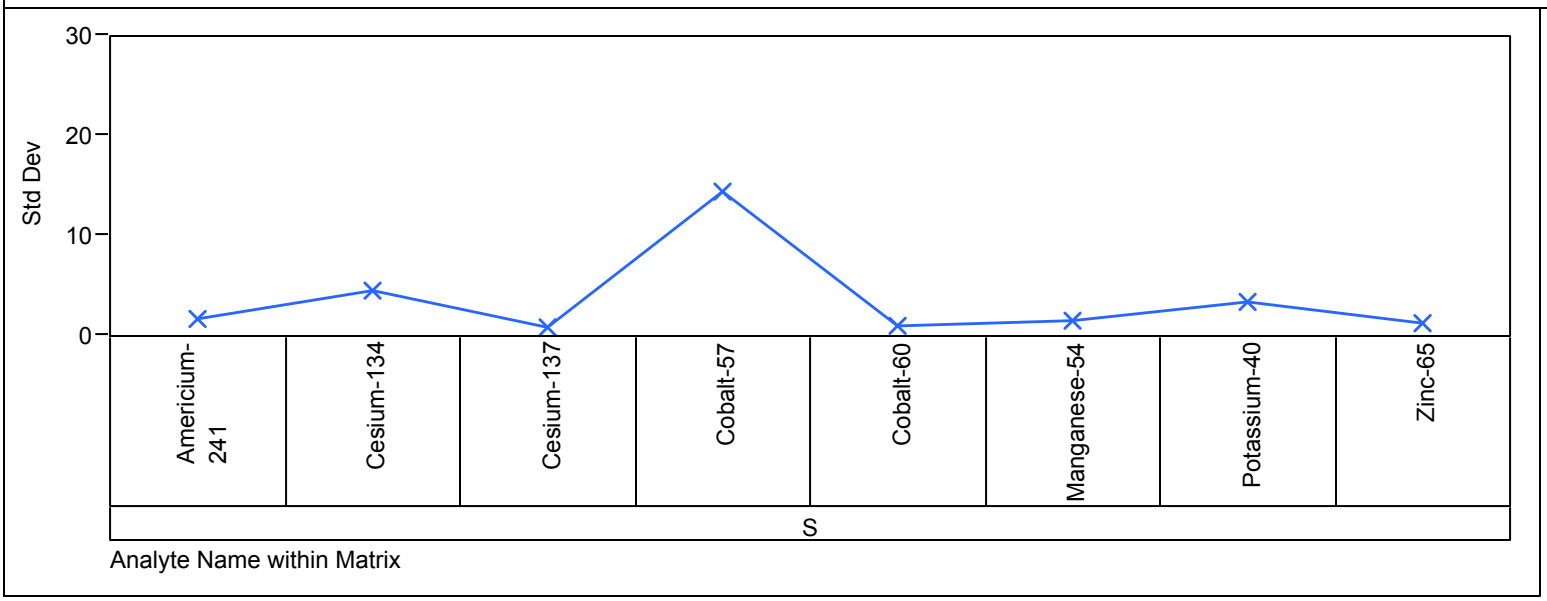




Variability Gauge Lab Code=SAIC01

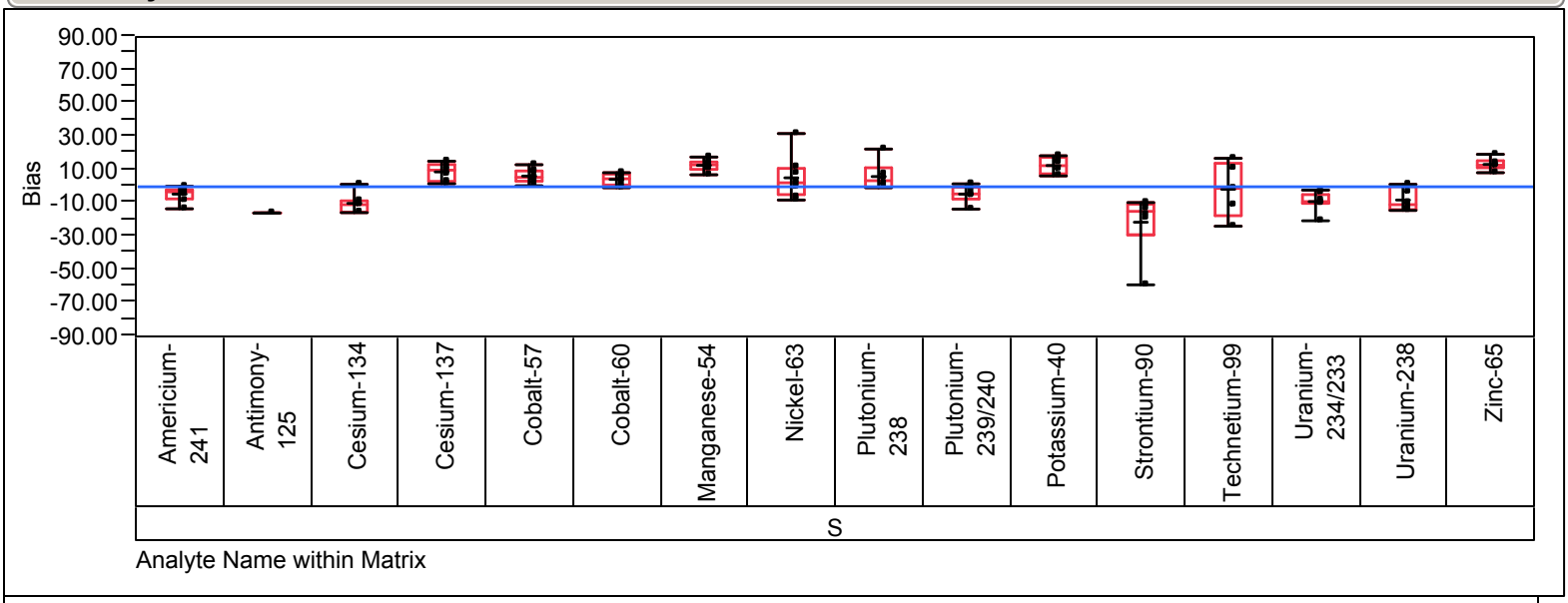
Variability Chart for Bias

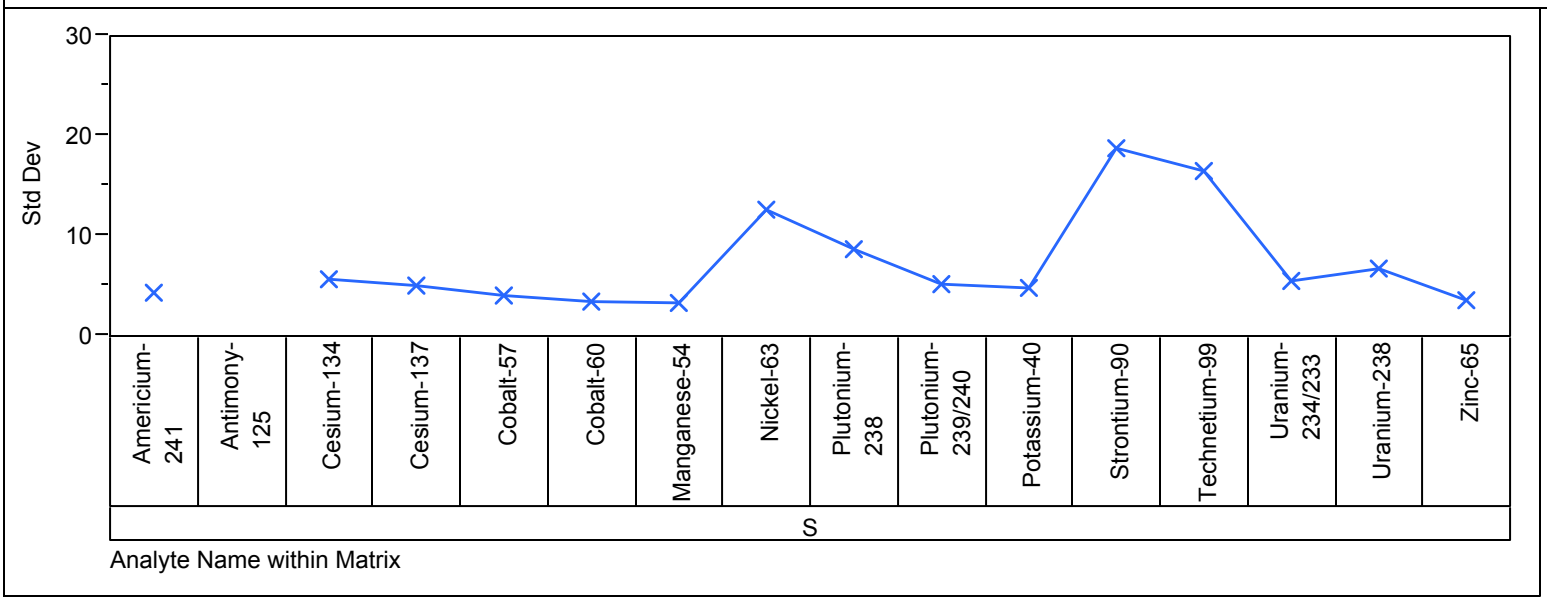




Variability Gauge Lab Code=SCAL01

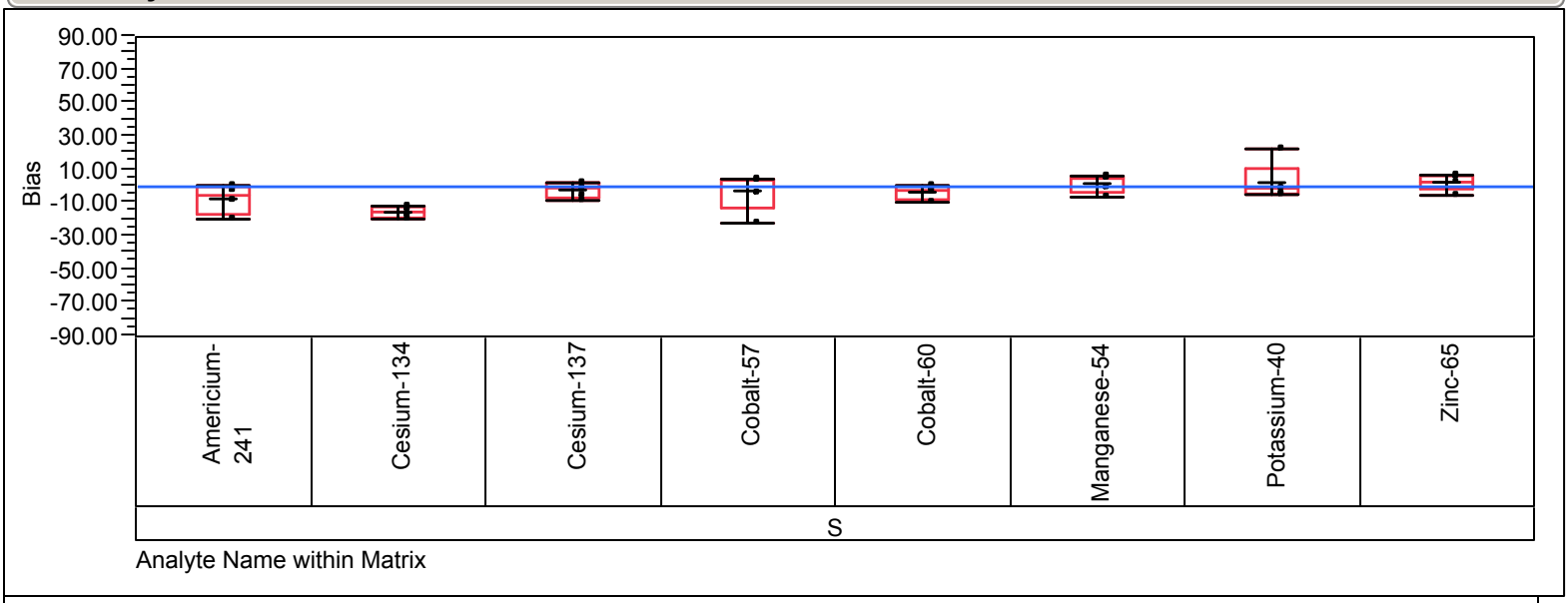
Variability Chart for Bias

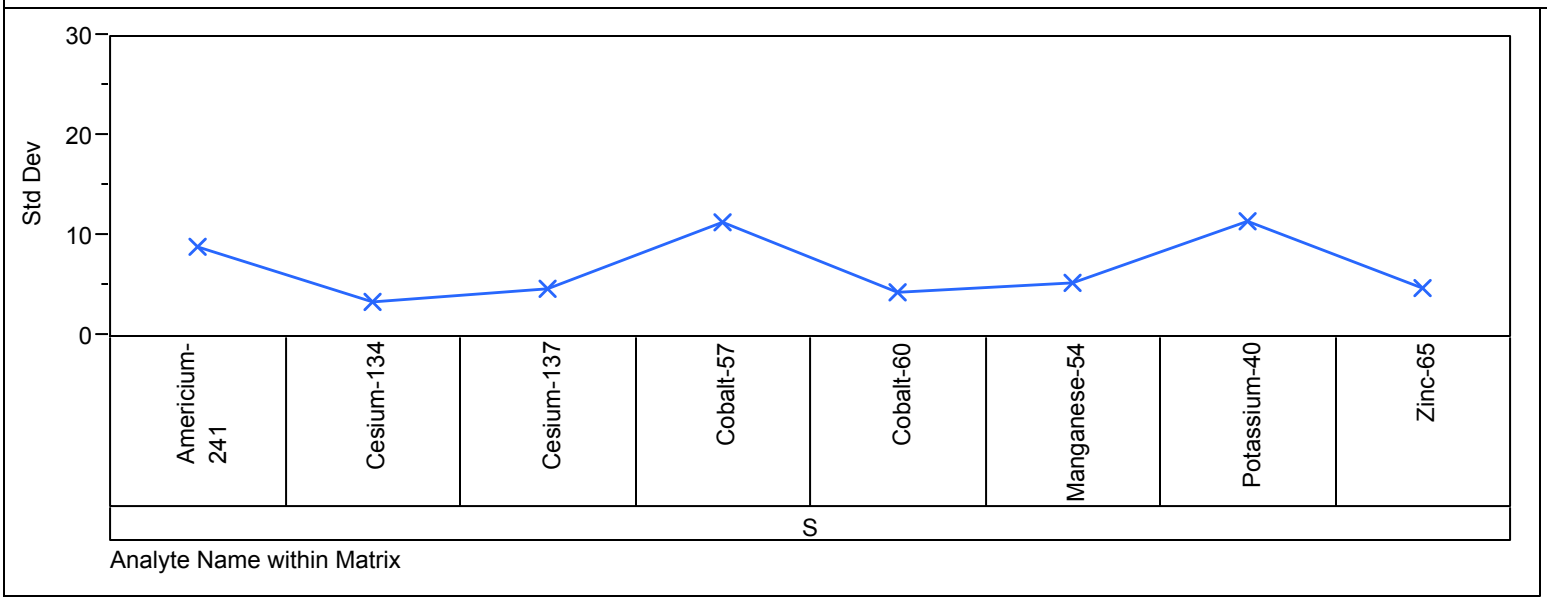




Variability Gauge Lab Code=SECR01

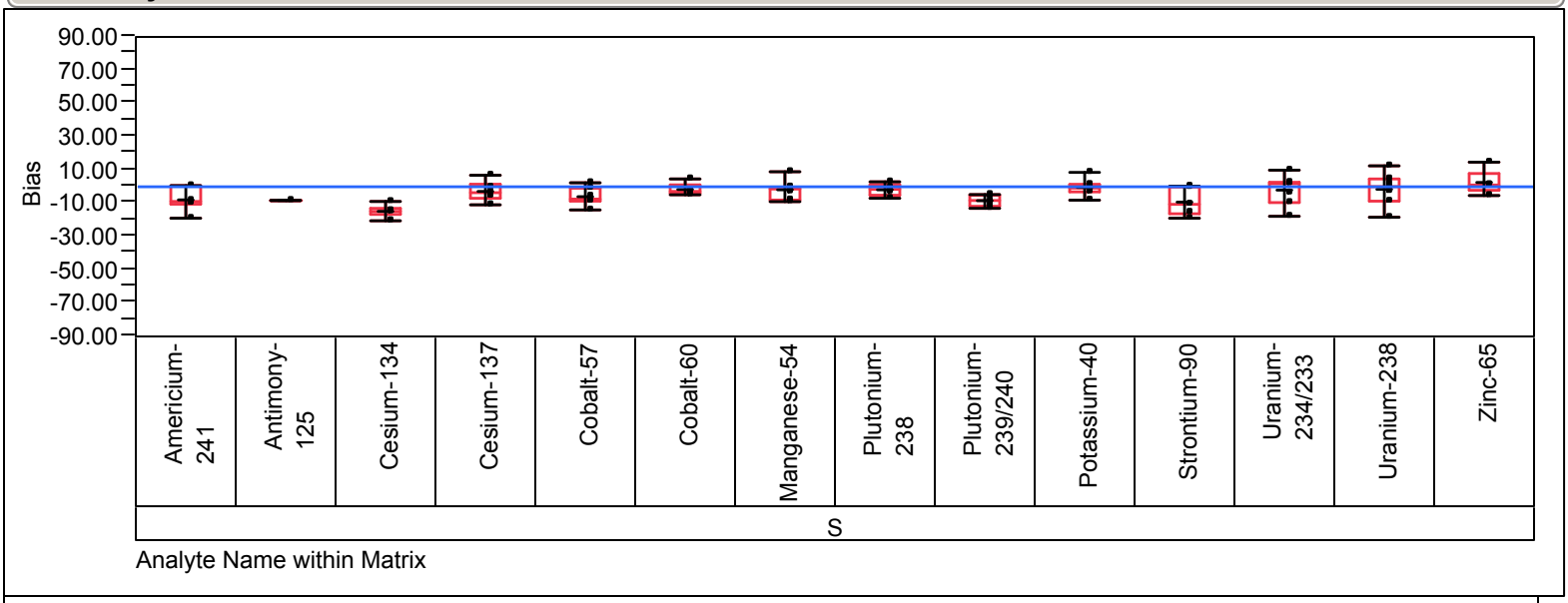
Variability Chart for Bias

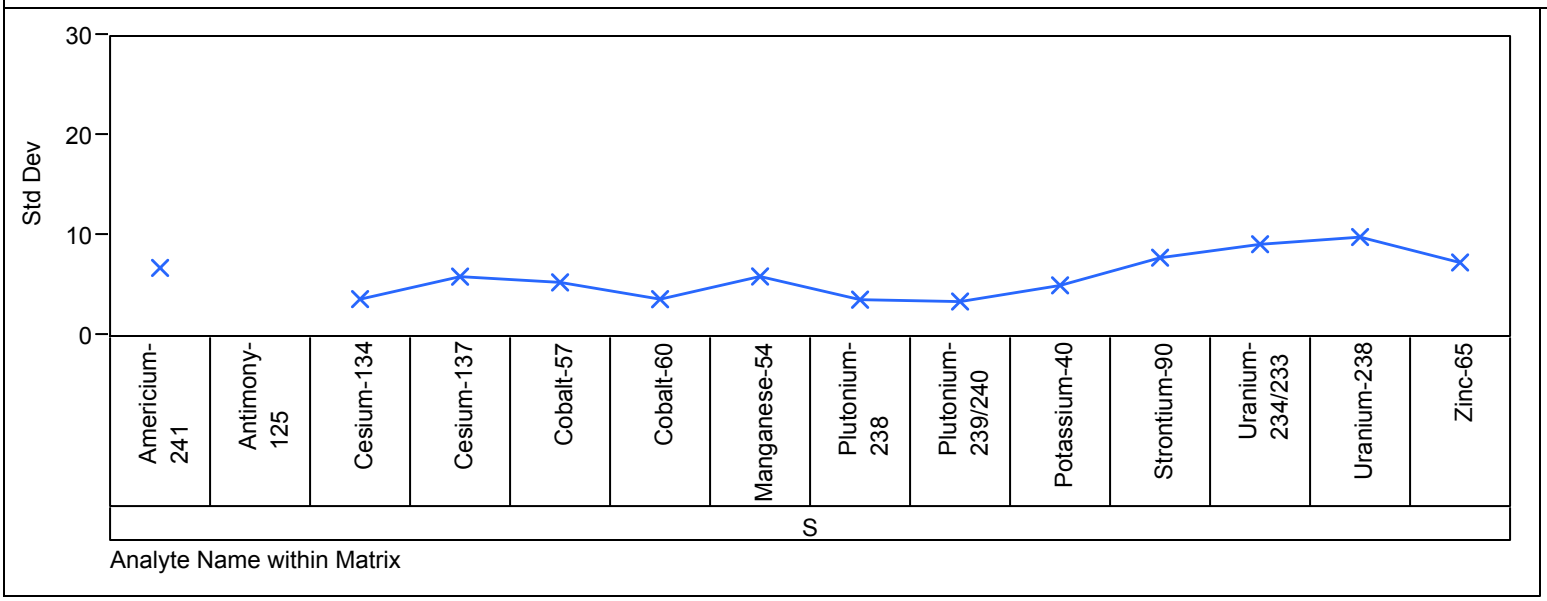




Variability Gauge Lab Code=SEML01

Variability Chart for Bias





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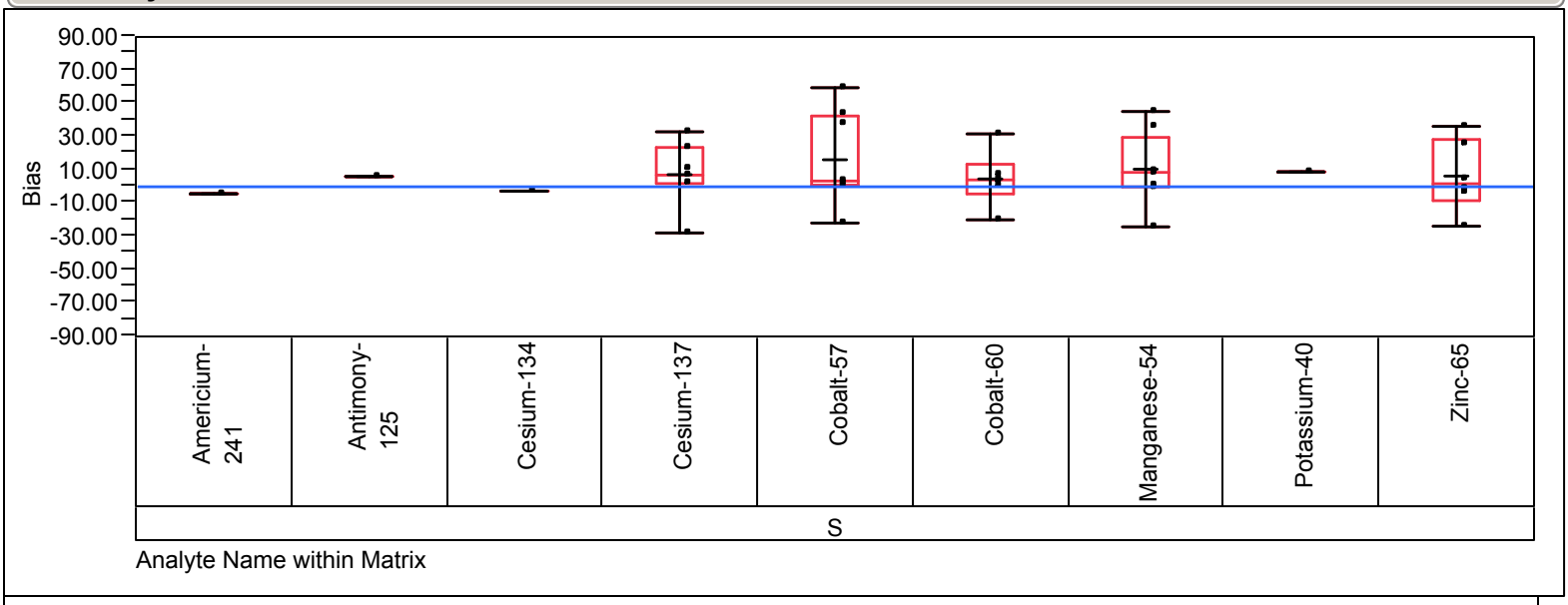
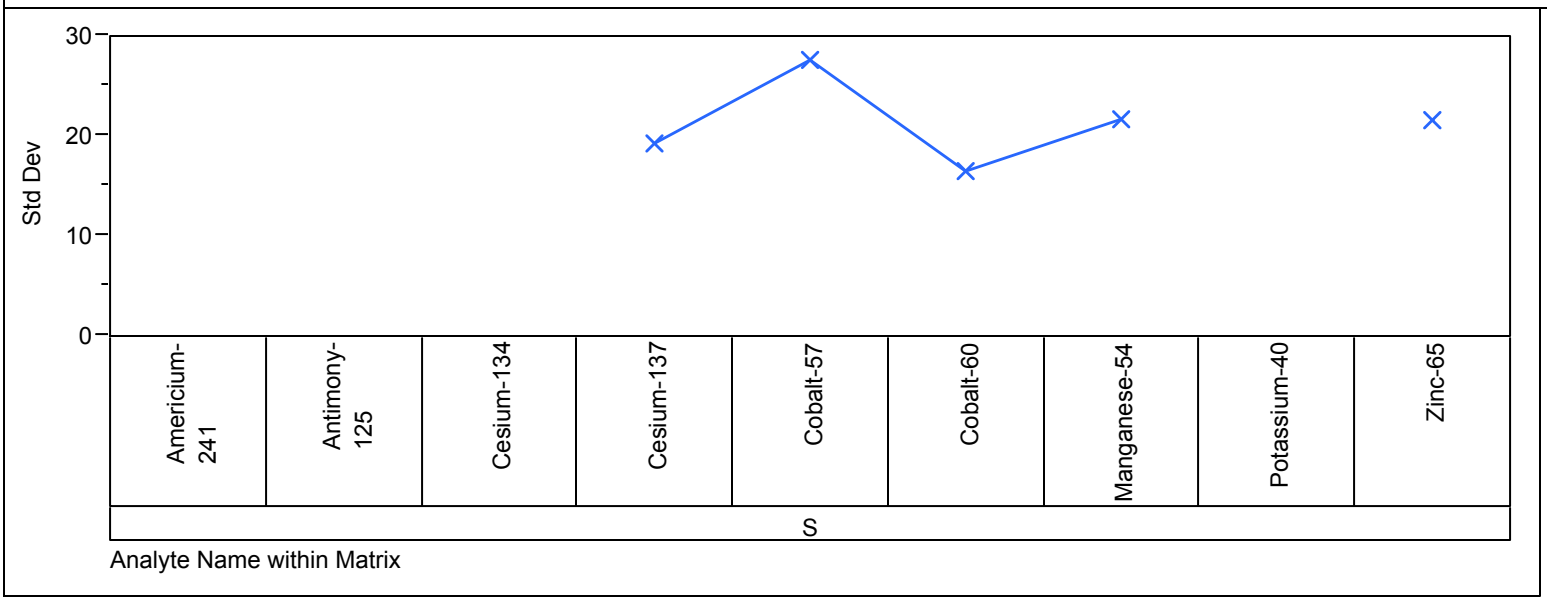
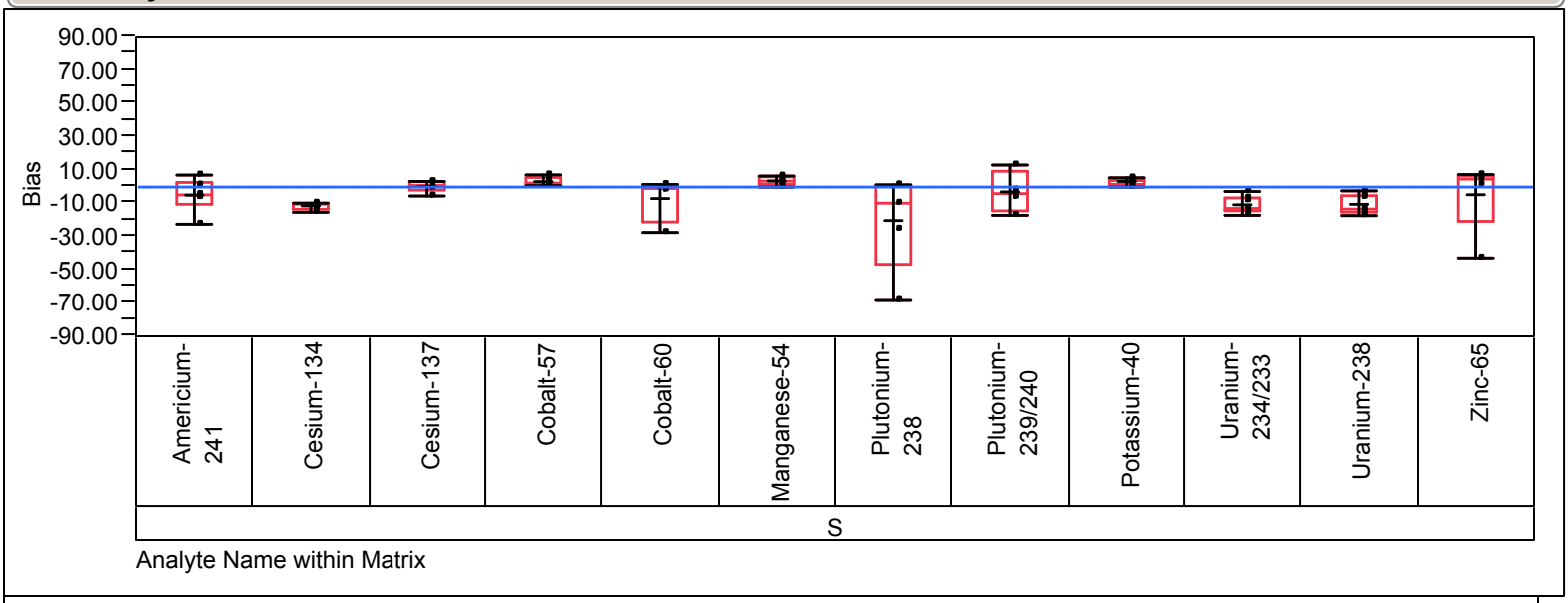
Variability Chart for Bias

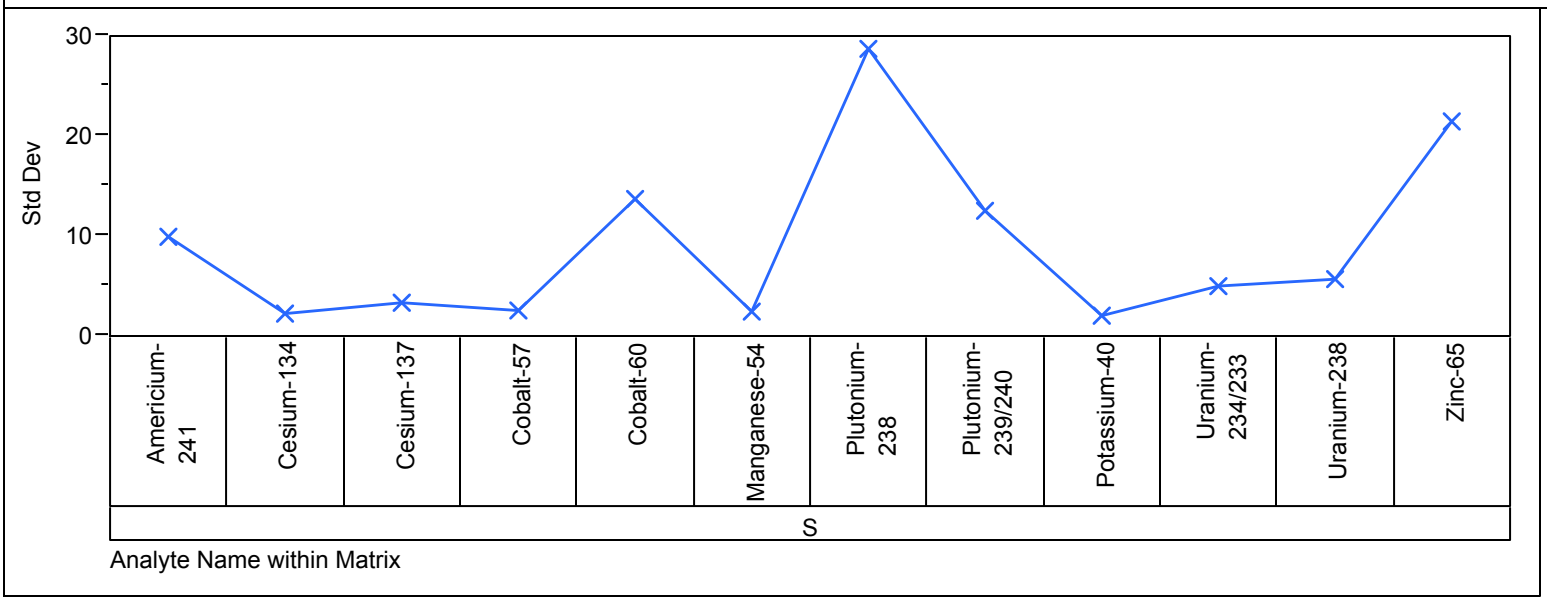




Variability Gauge Lab Code=SLDL01

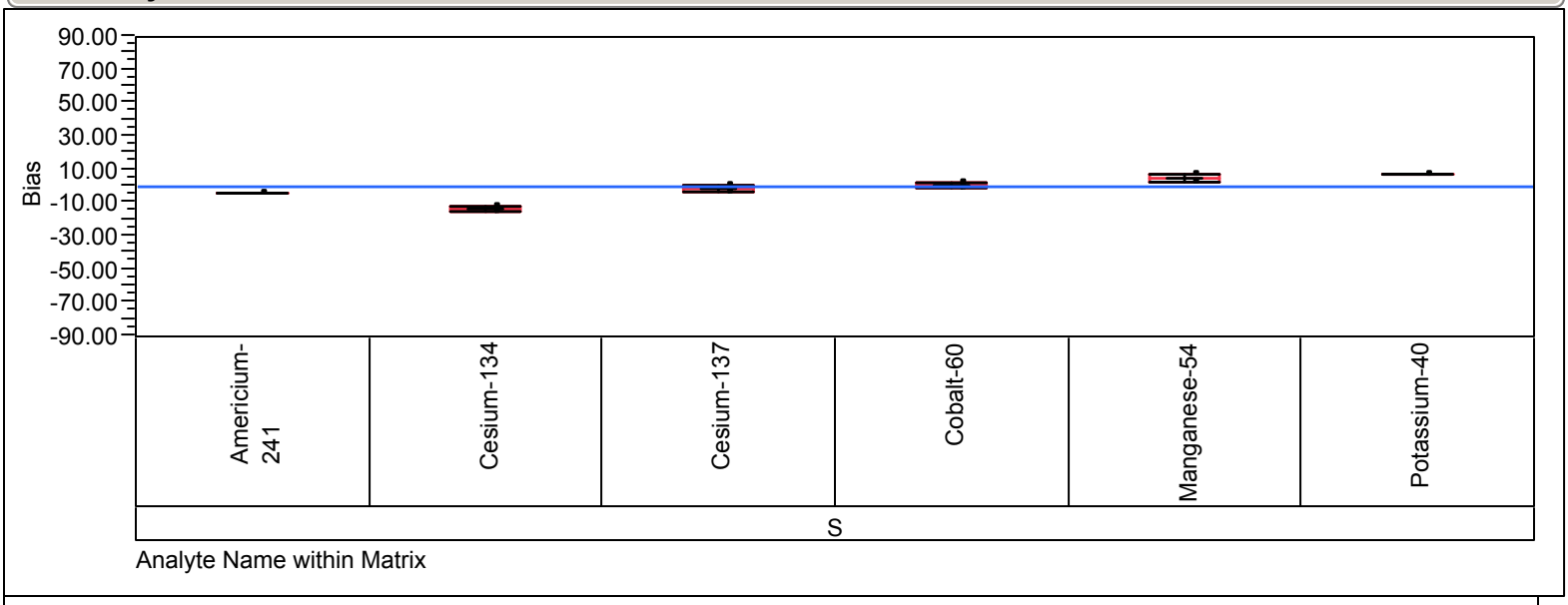
Variability Chart for Bias

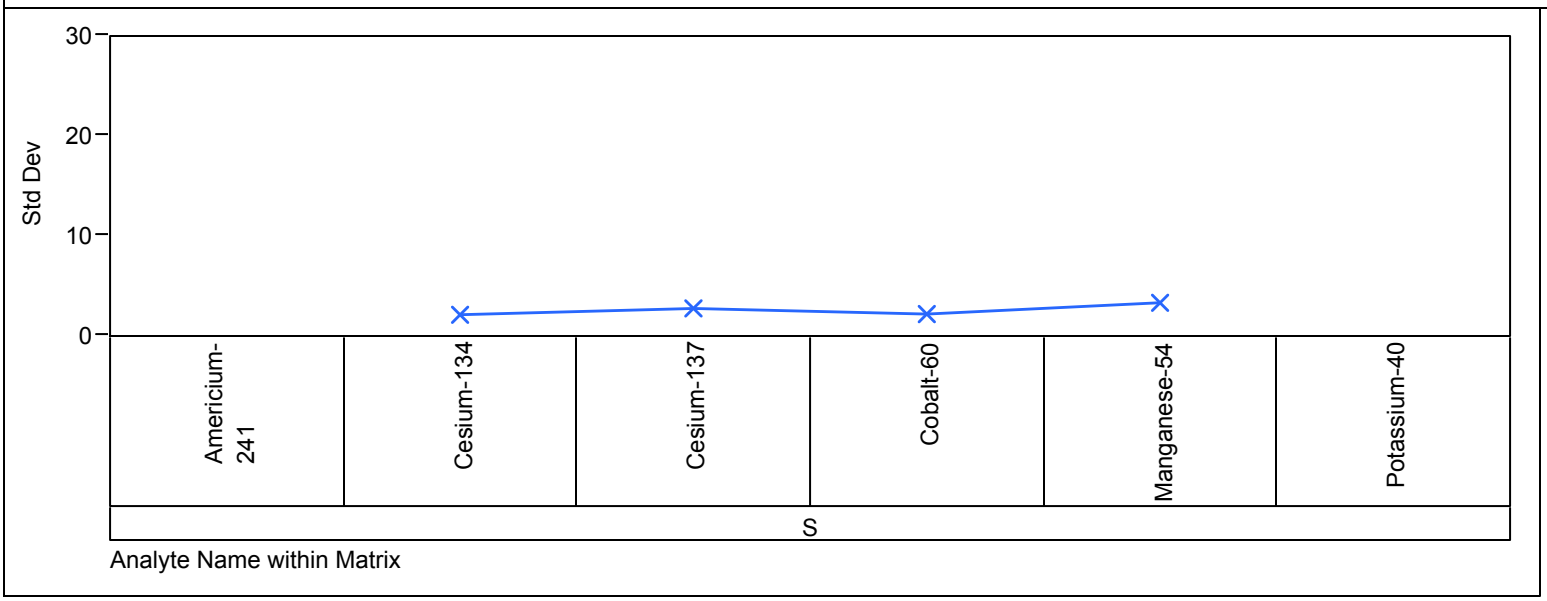




Variability Gauge Lab Code=SNEC01

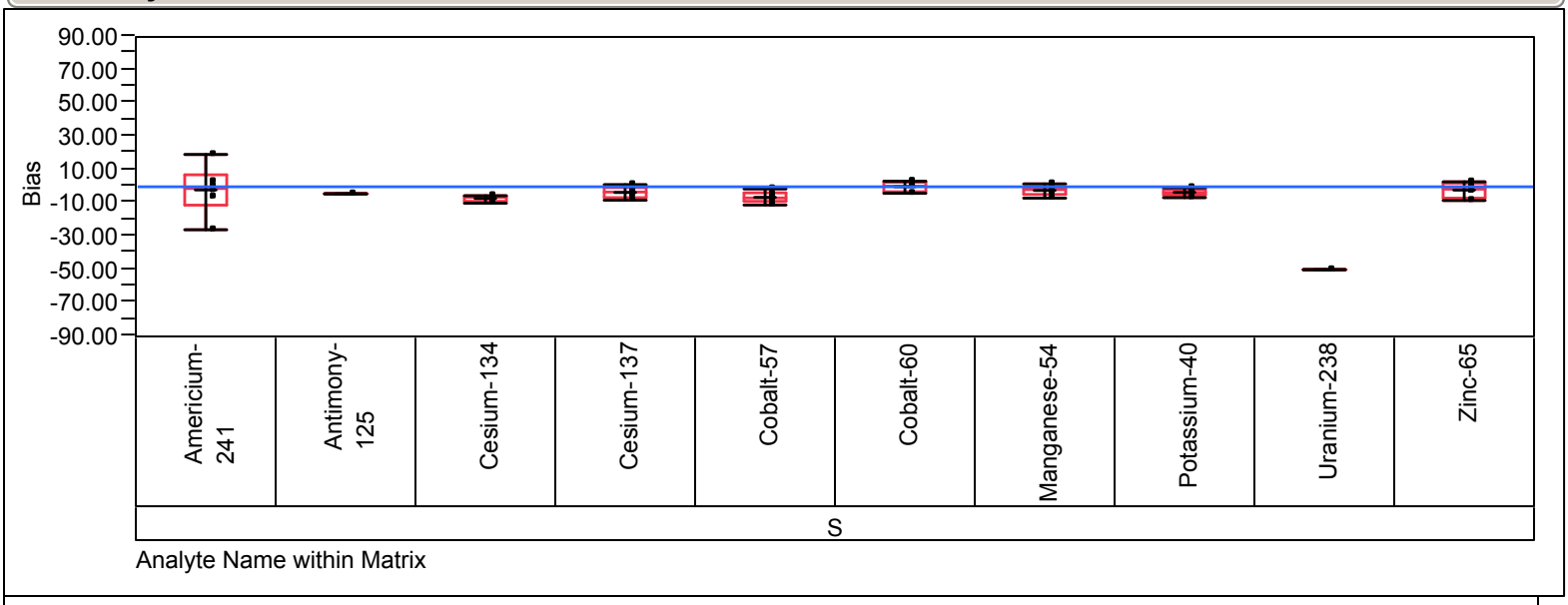
Variability Chart for Bias

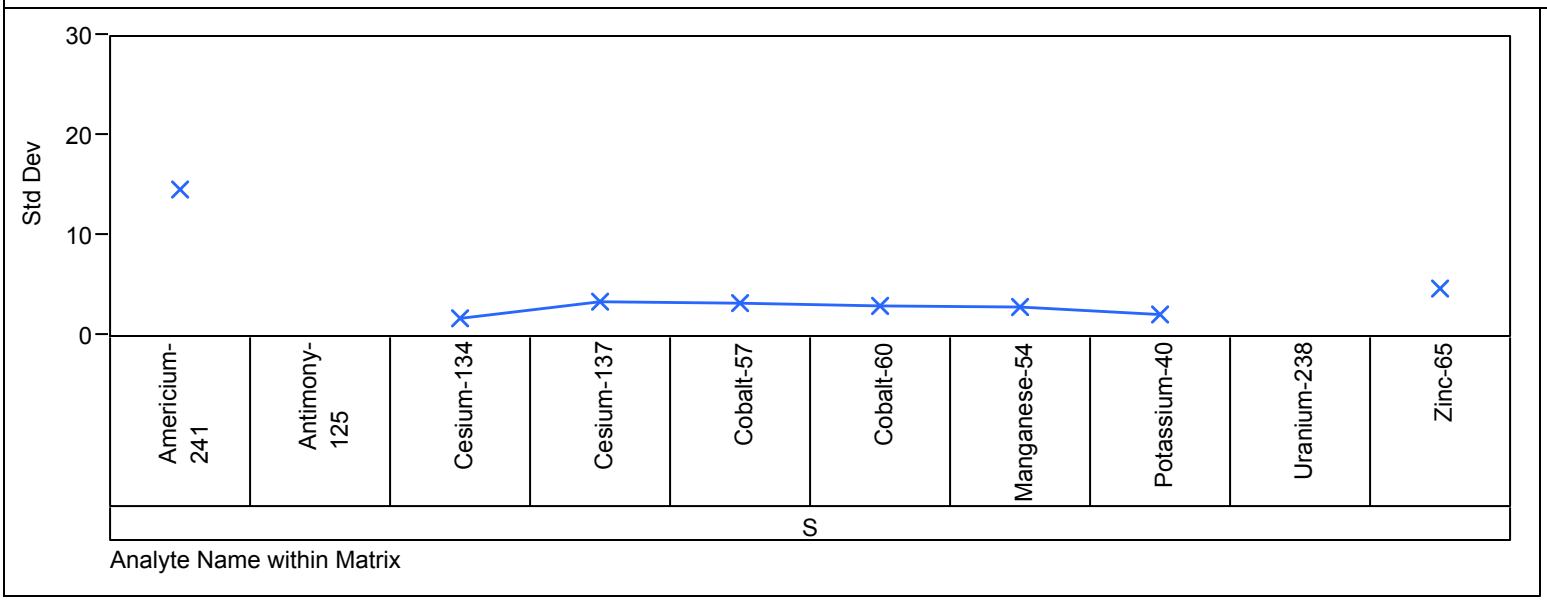




Variability Gauge Lab Code=SNRC99

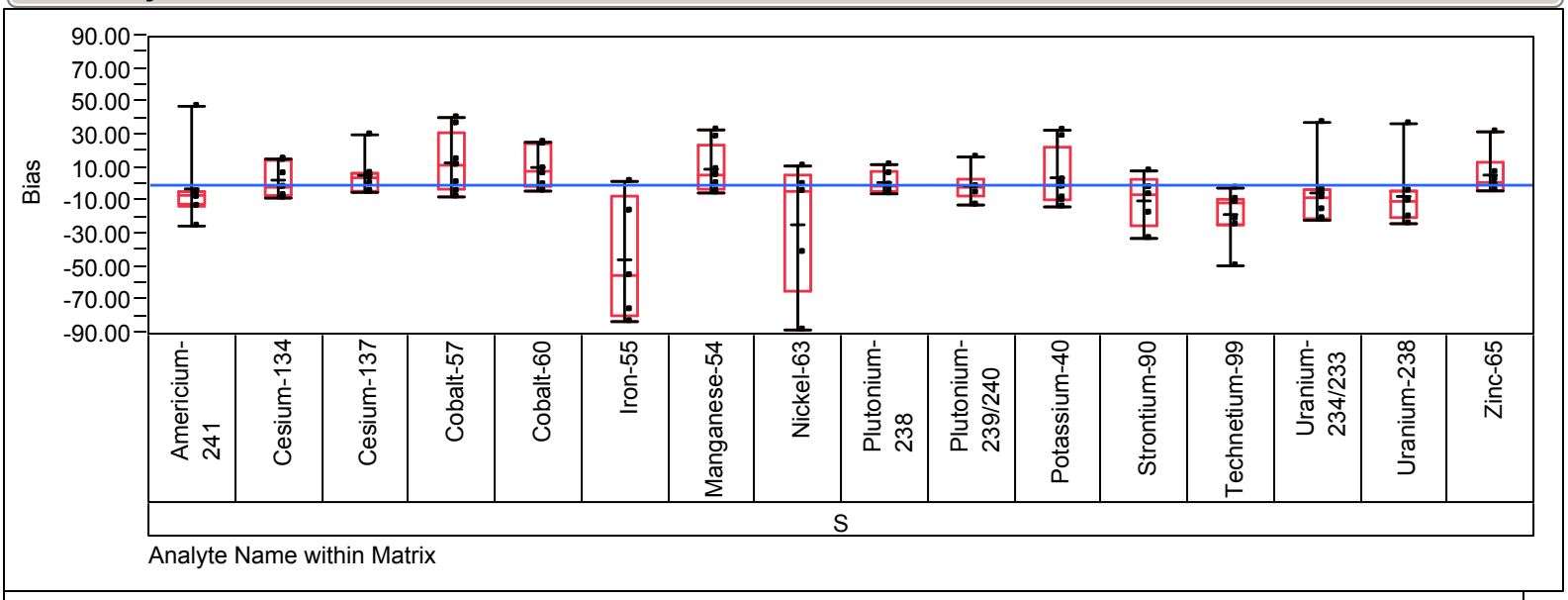
Variability Chart for Bias

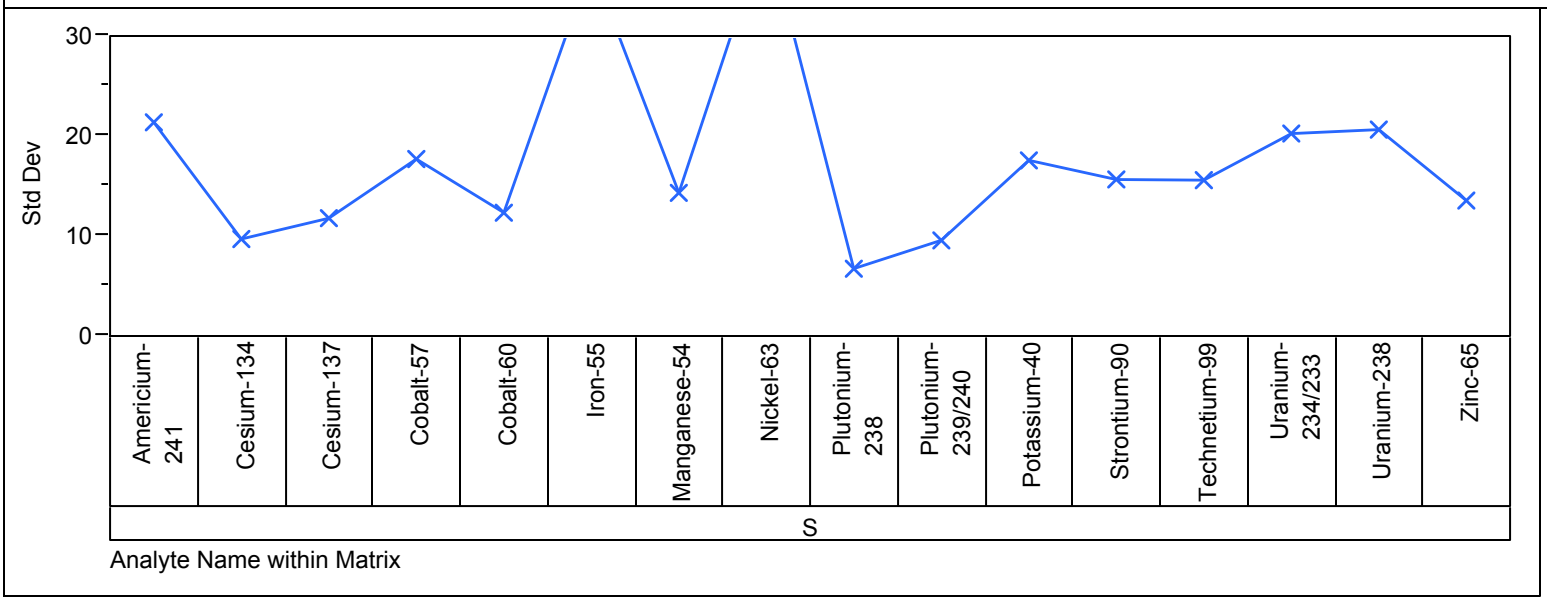




Variability Gauge Lab Code=SOUT01

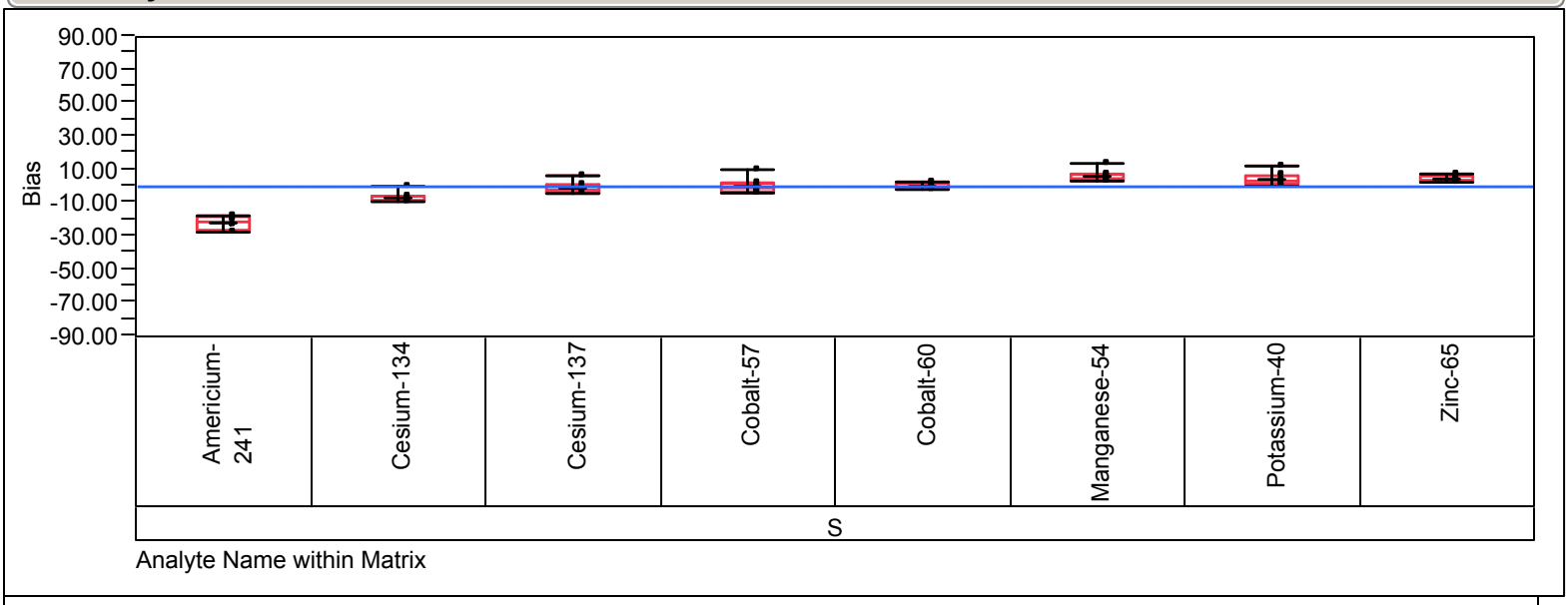
Variability Chart for Bias

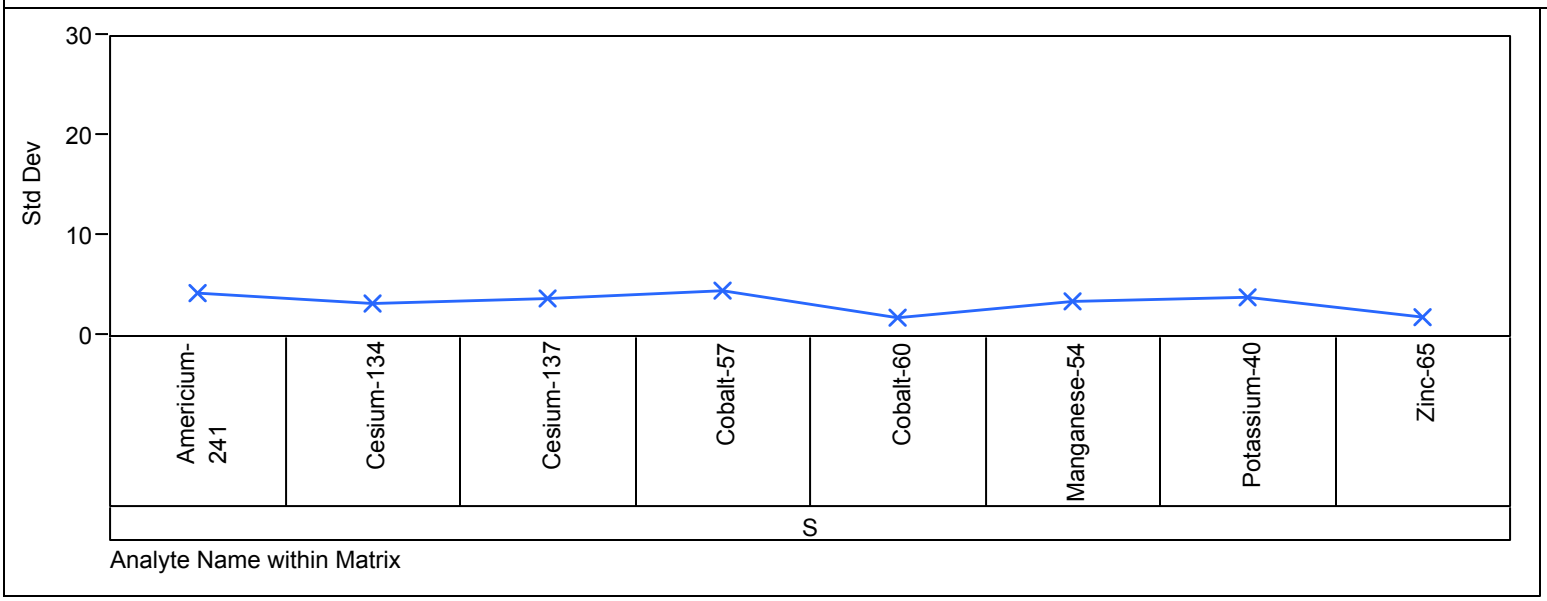




Variability Gauge Lab Code=SRPD01

Variability Chart for Bias





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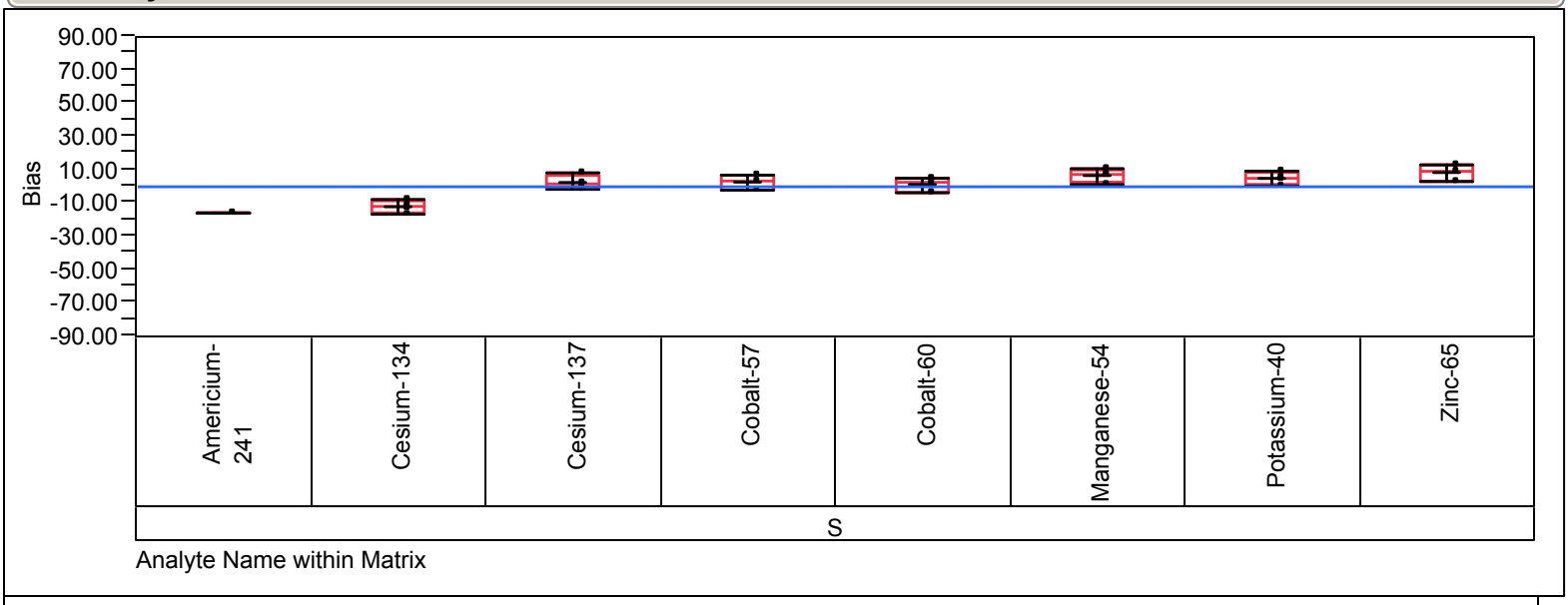
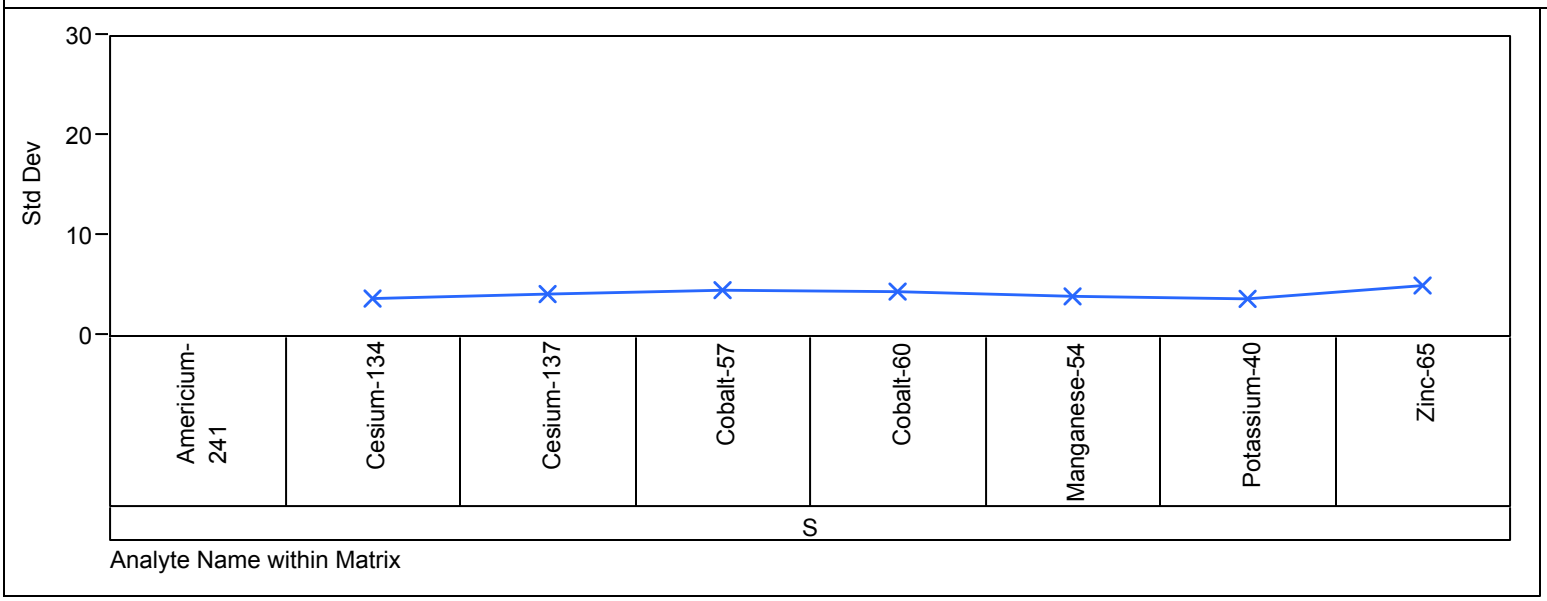
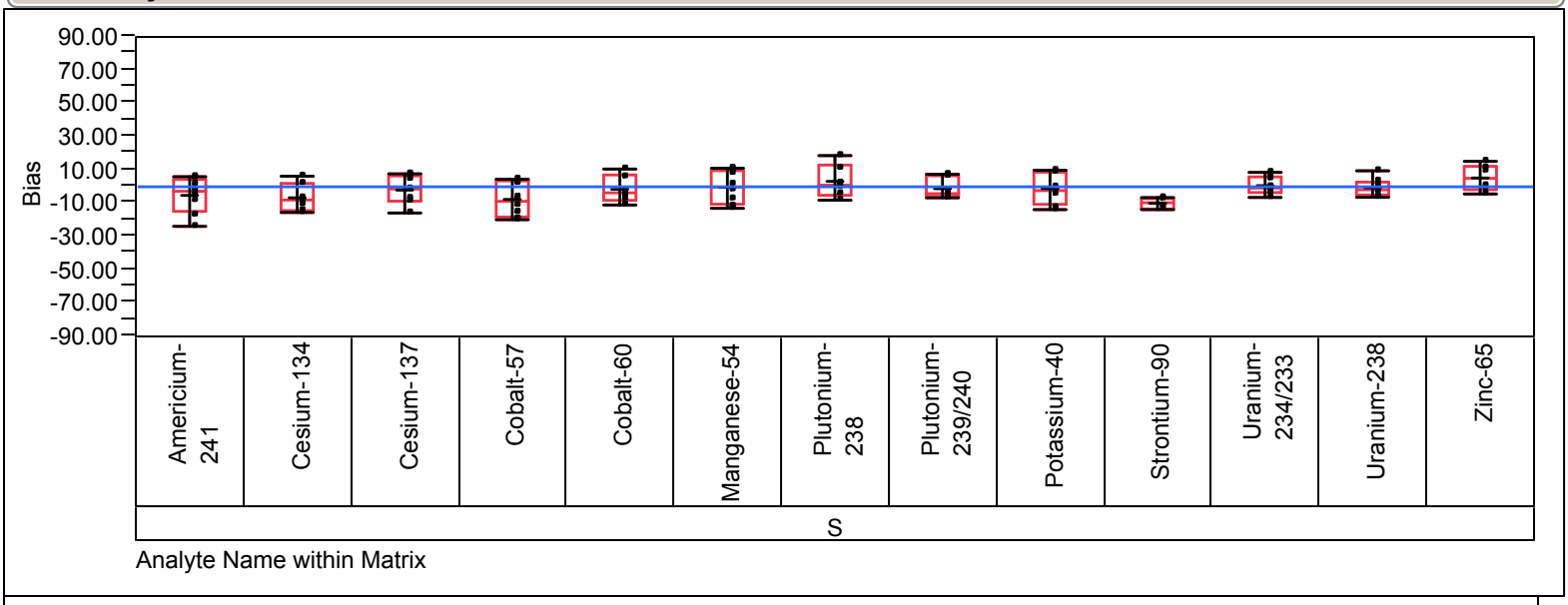
Variability Chart for Bias

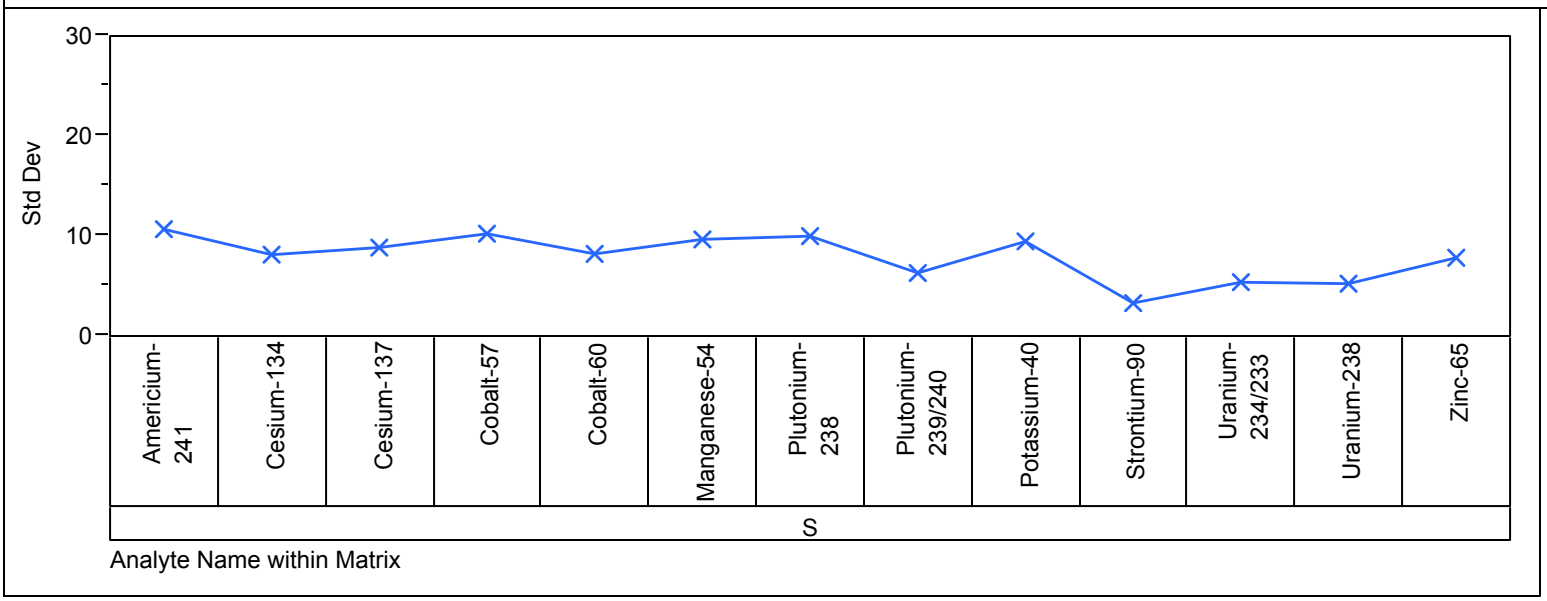




Variability Gauge Lab Code=TDHL01

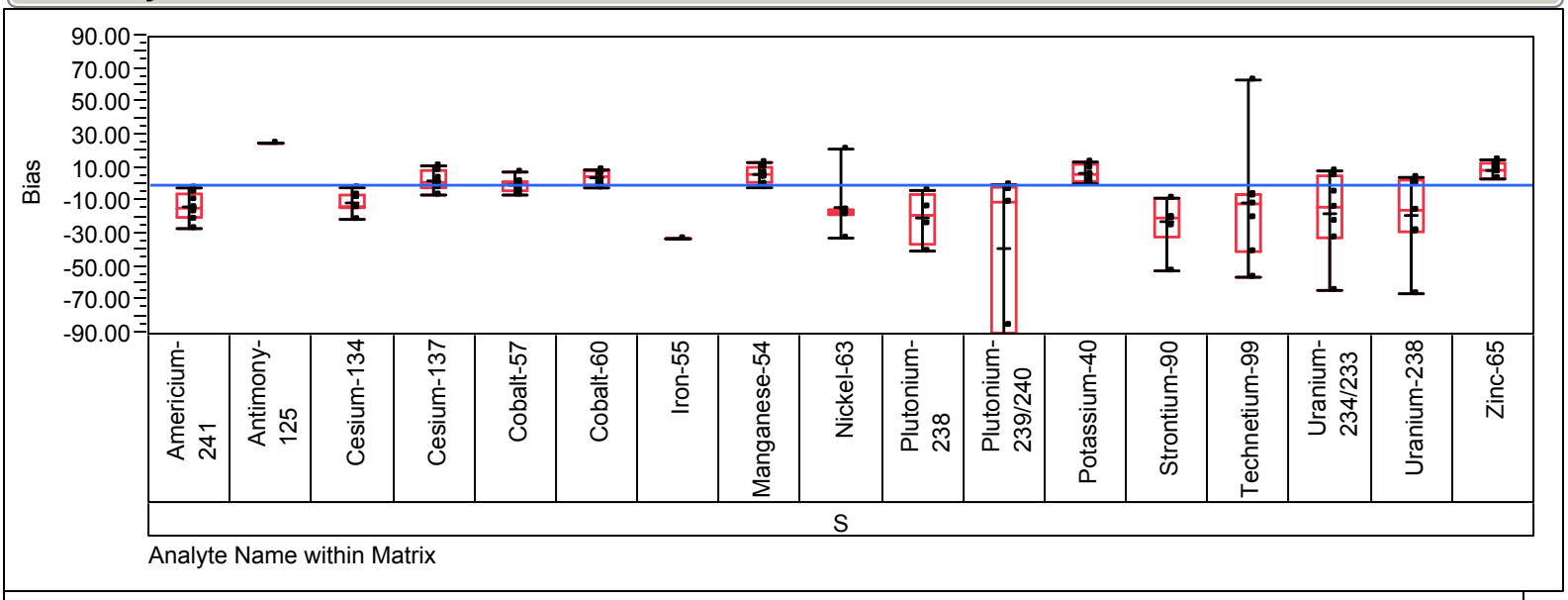
Variability Chart for Bias

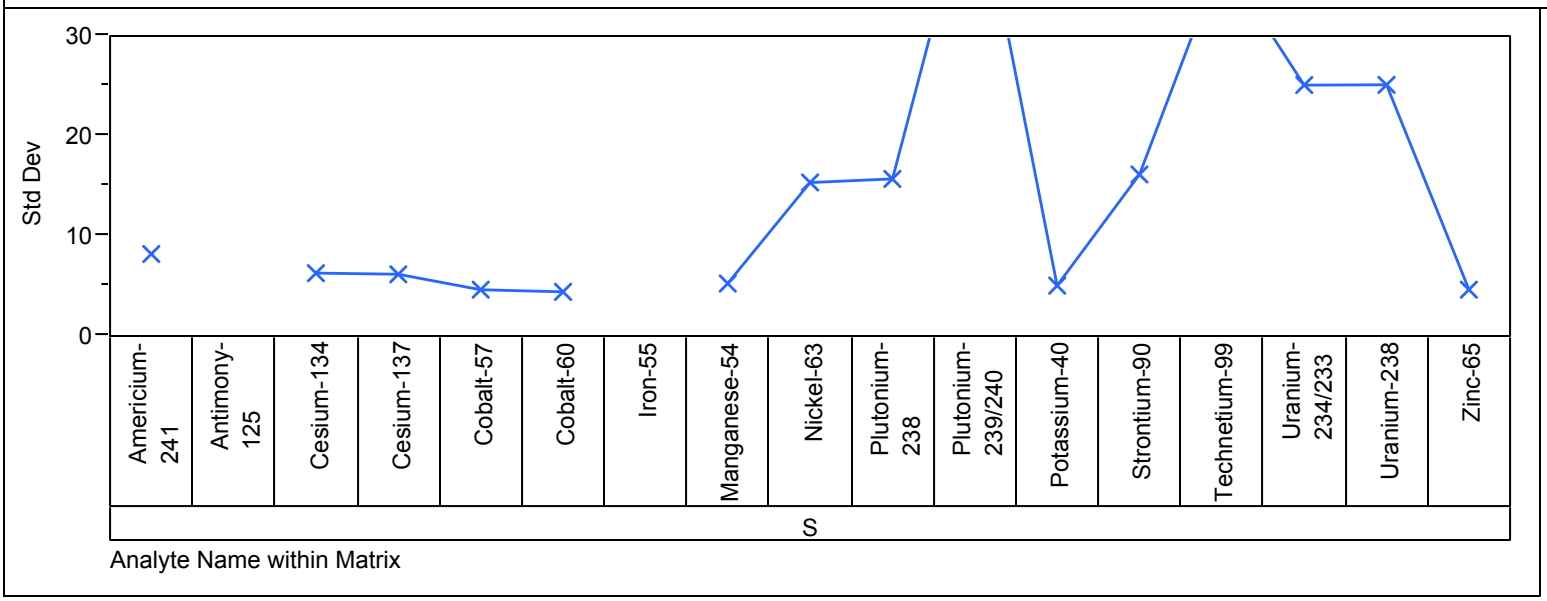




Variability Gauge Lab Code=TELE01

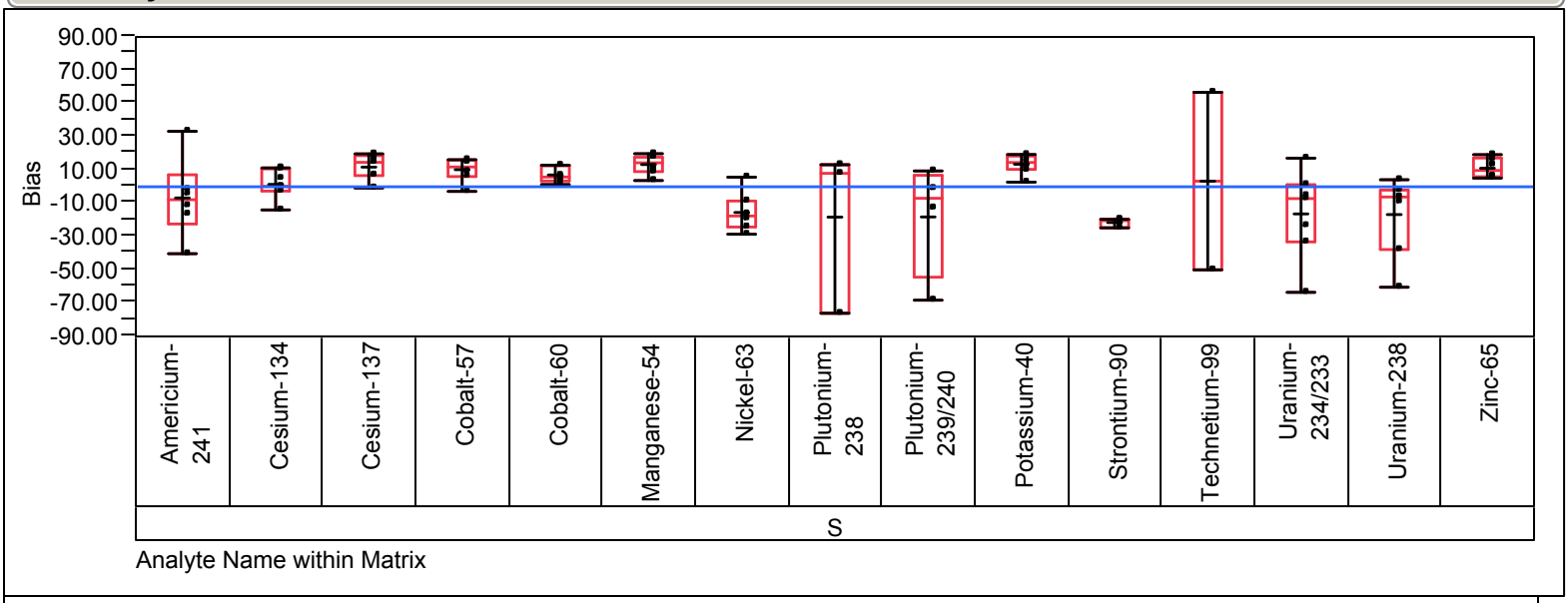
Variability Chart for Bias

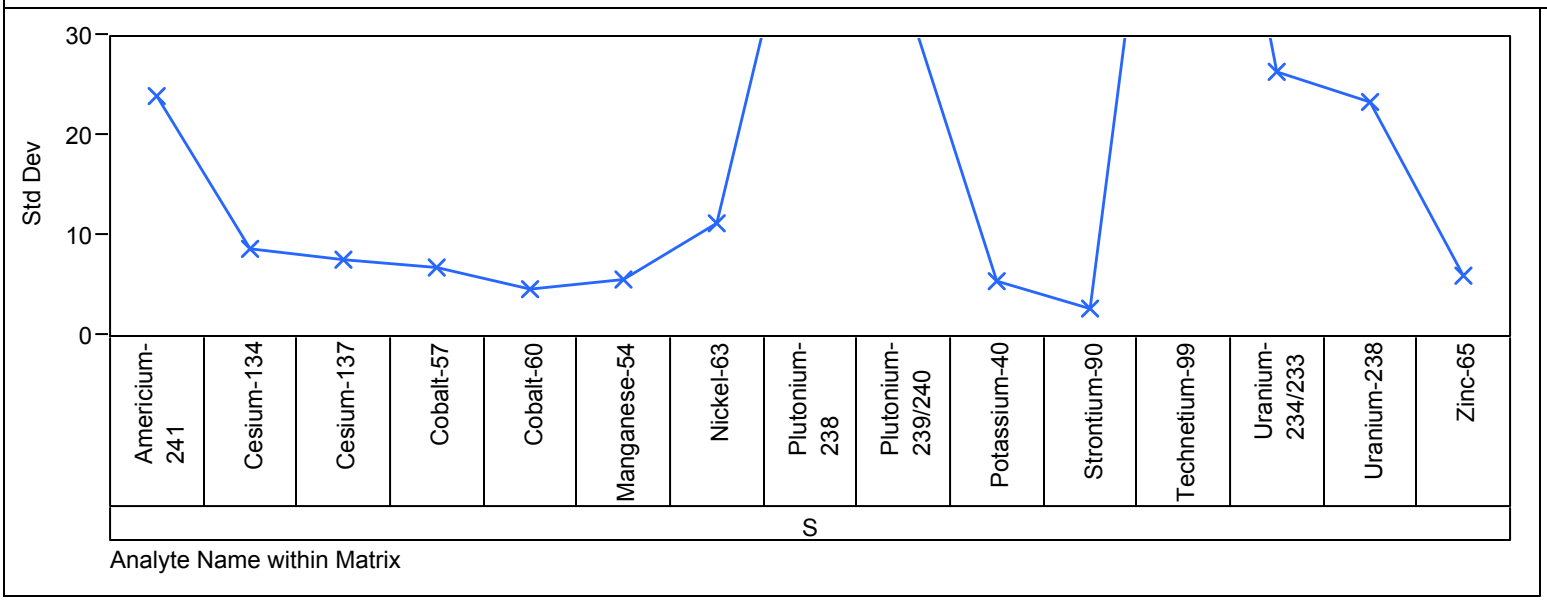




Variability Gauge Lab Code=TELE02

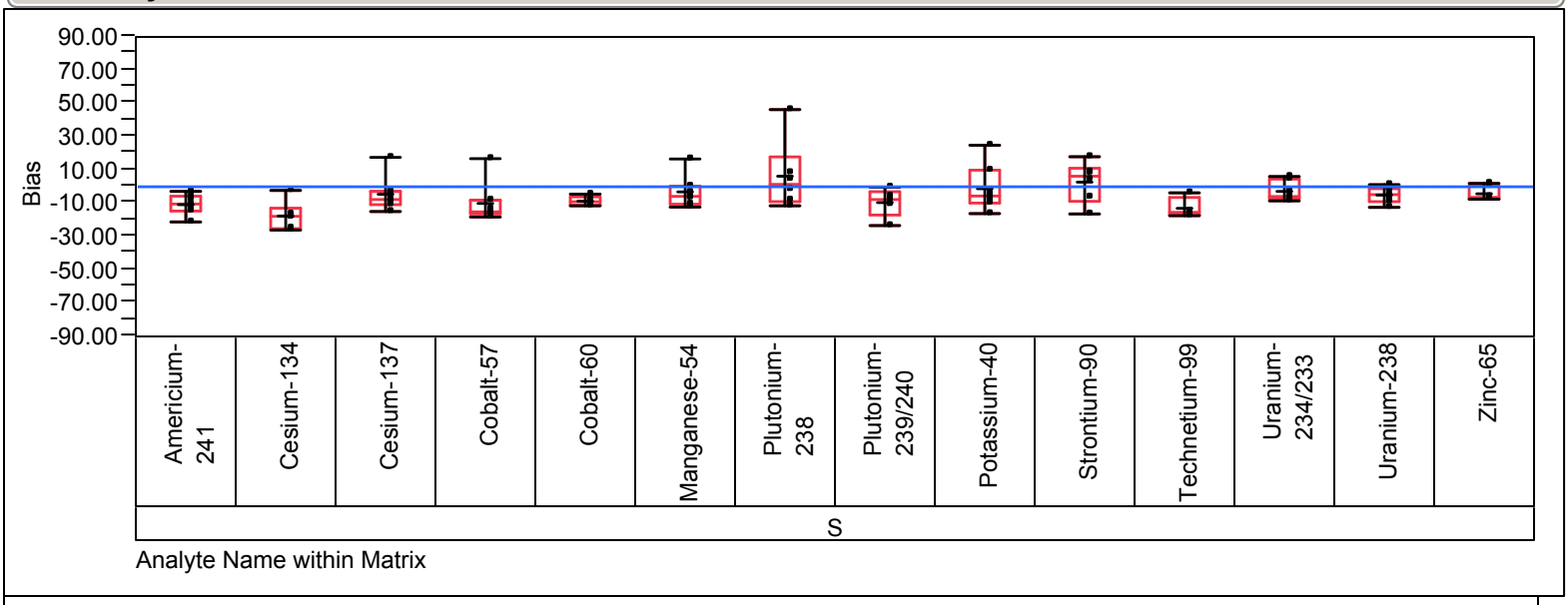
Variability Chart for Bias

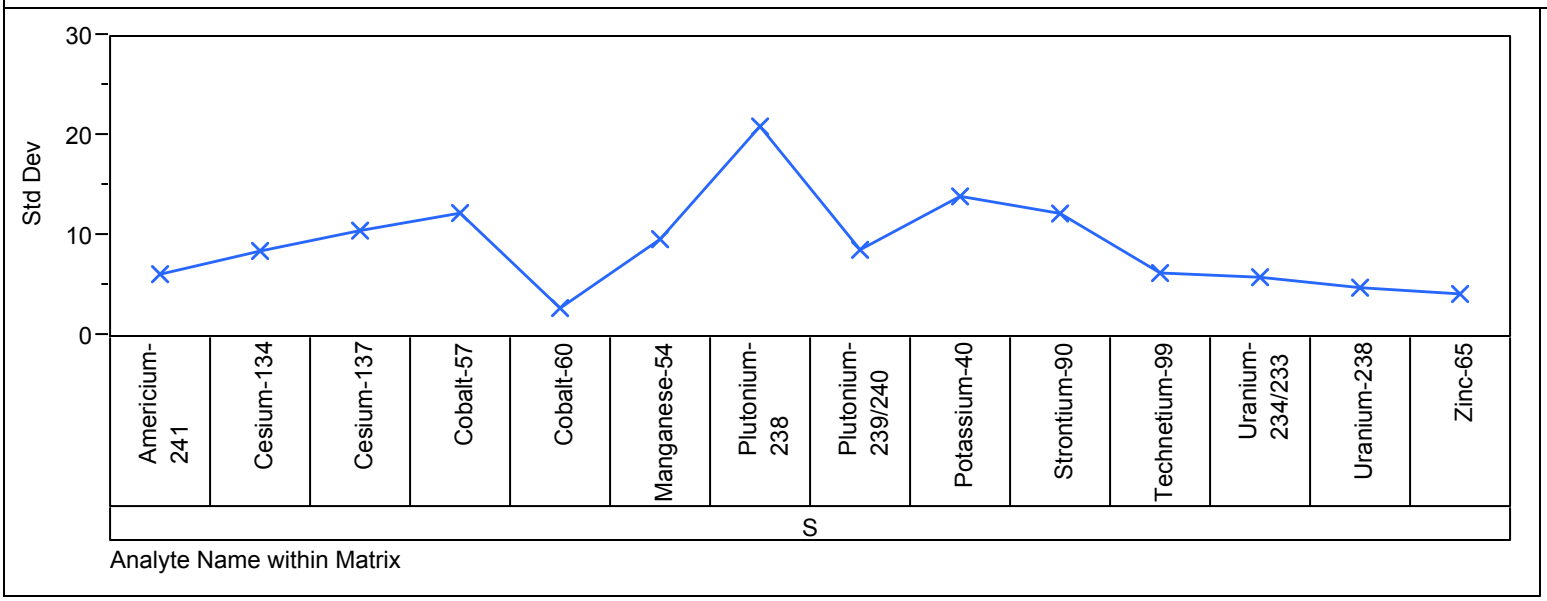




Variability Gauge Lab Code=TMAE01

Variability Chart for Bias





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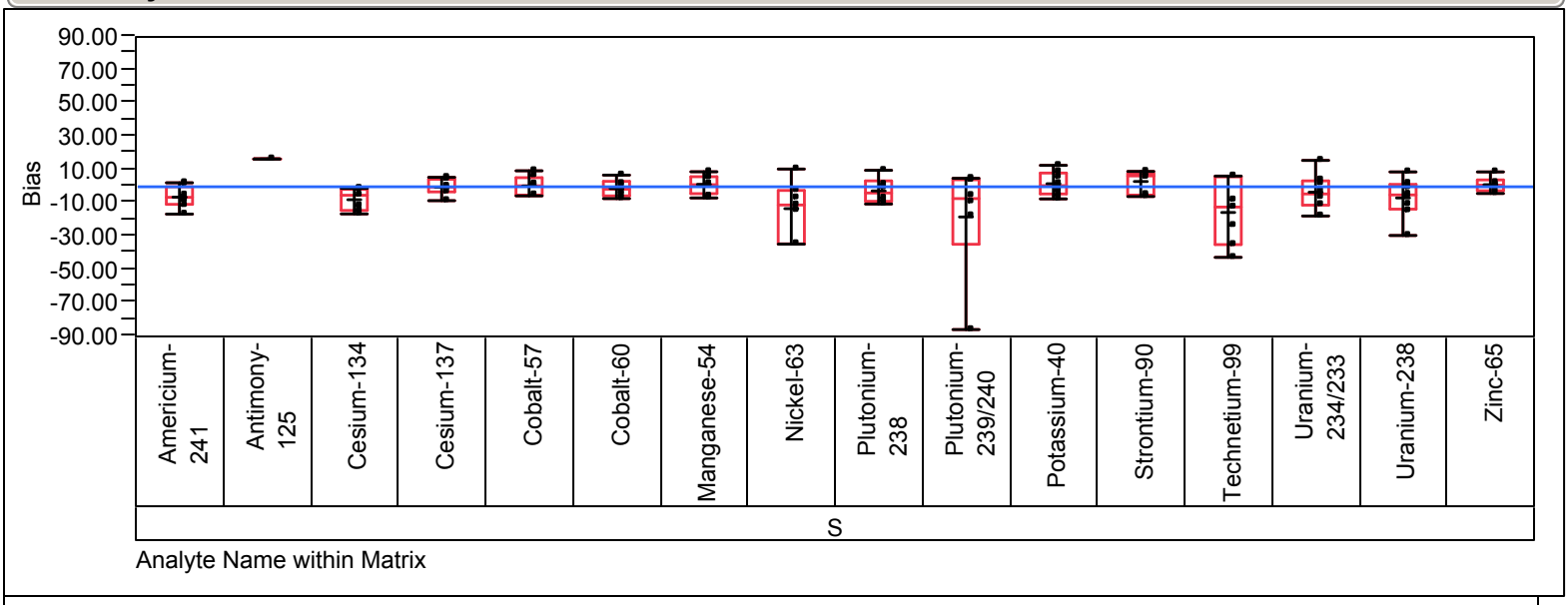
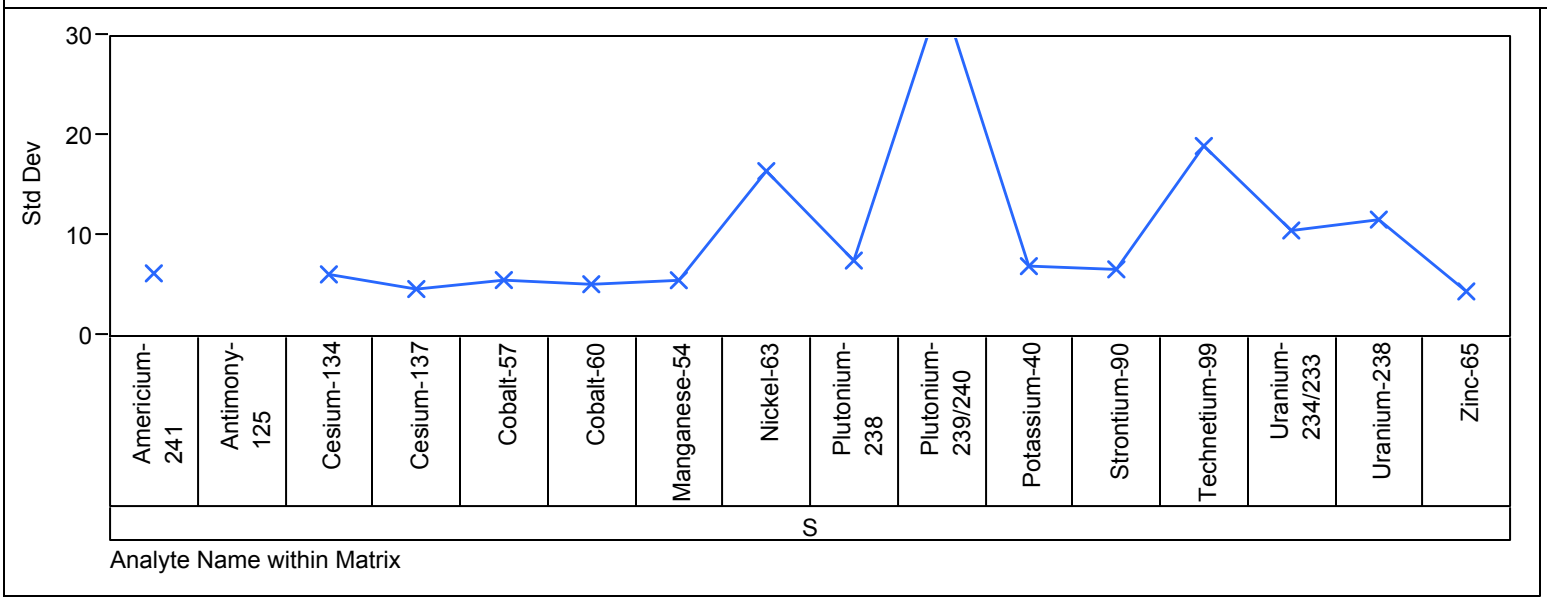
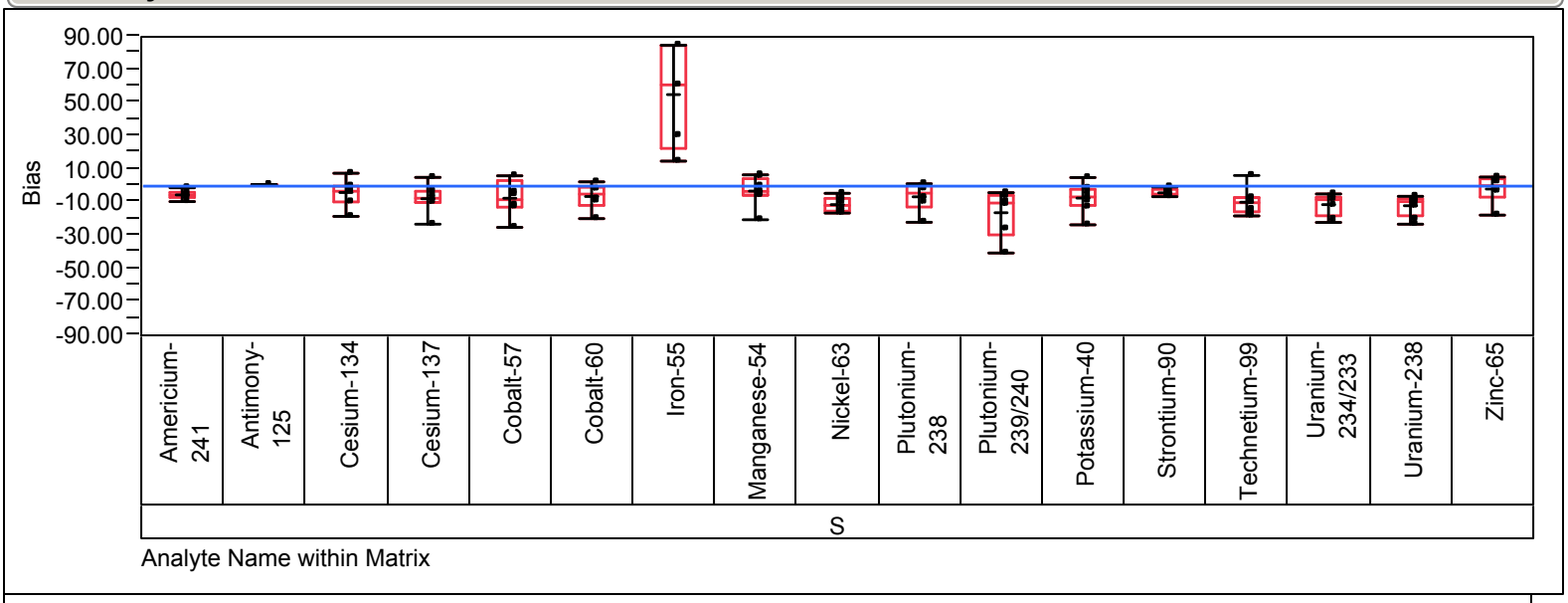
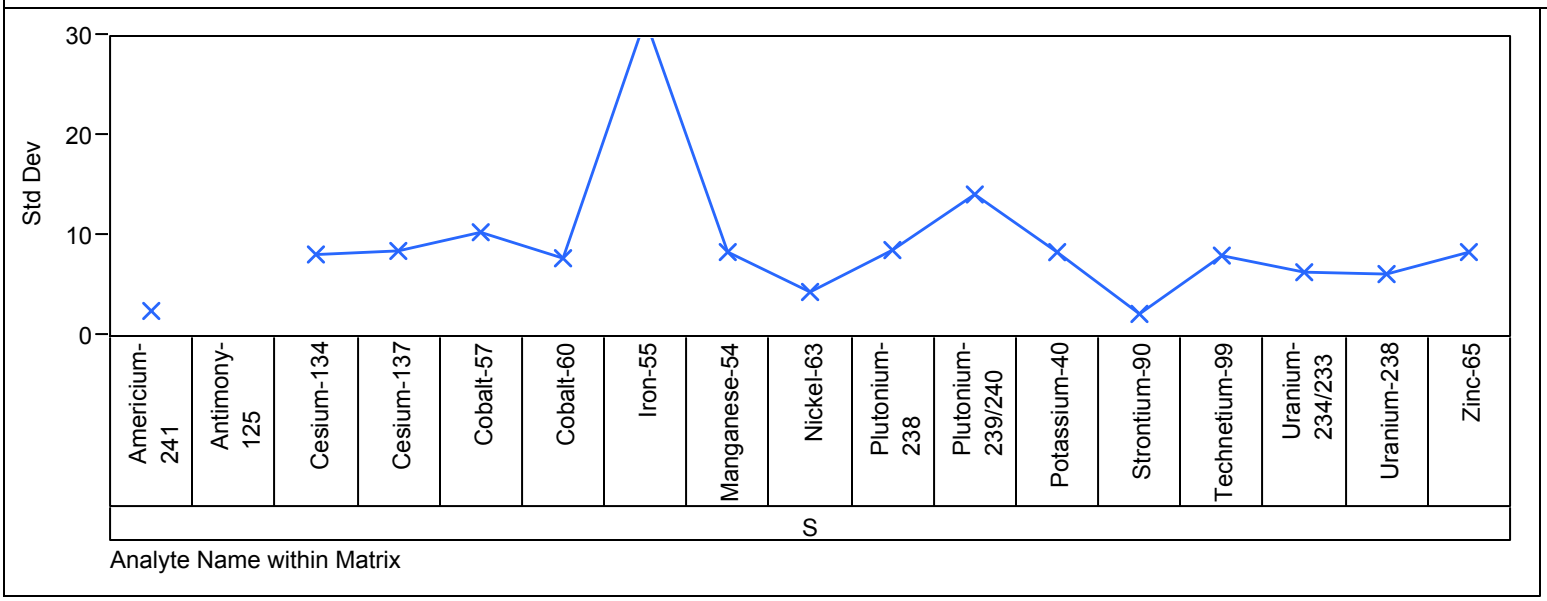




Variability Gauge Lab Code=TMAR01

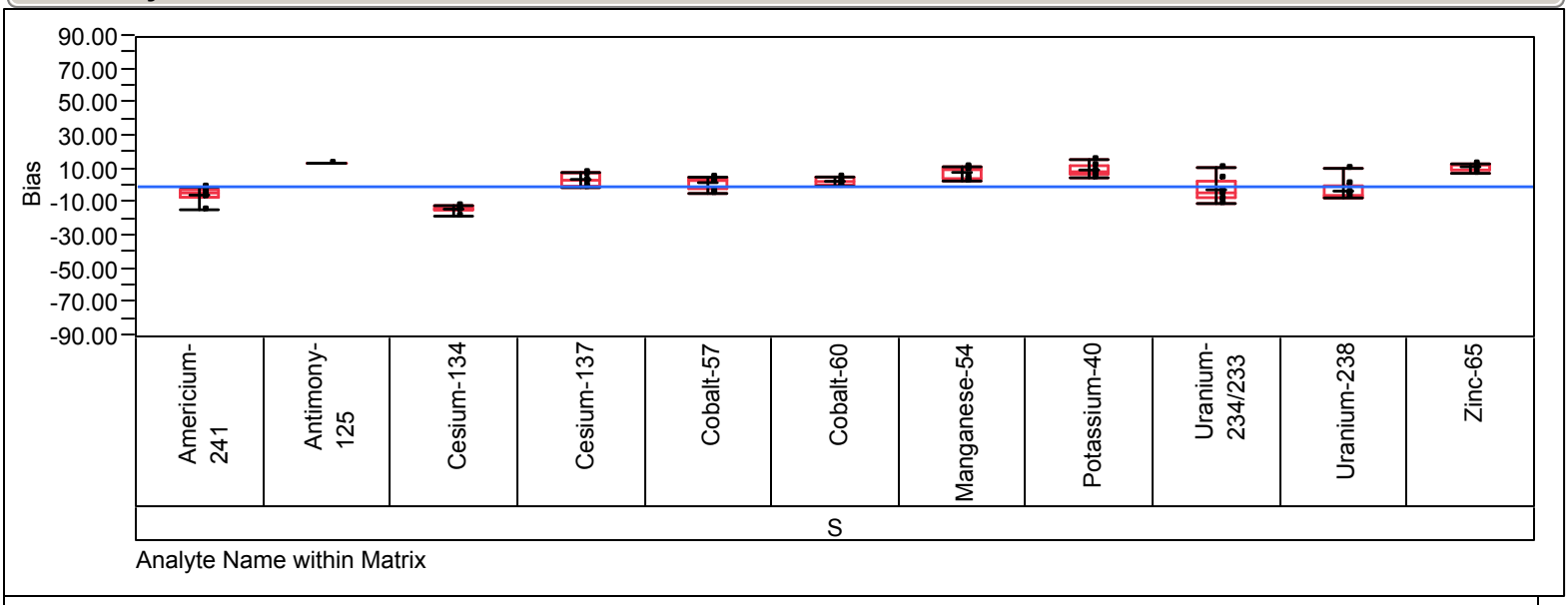
Variability Chart for Bias

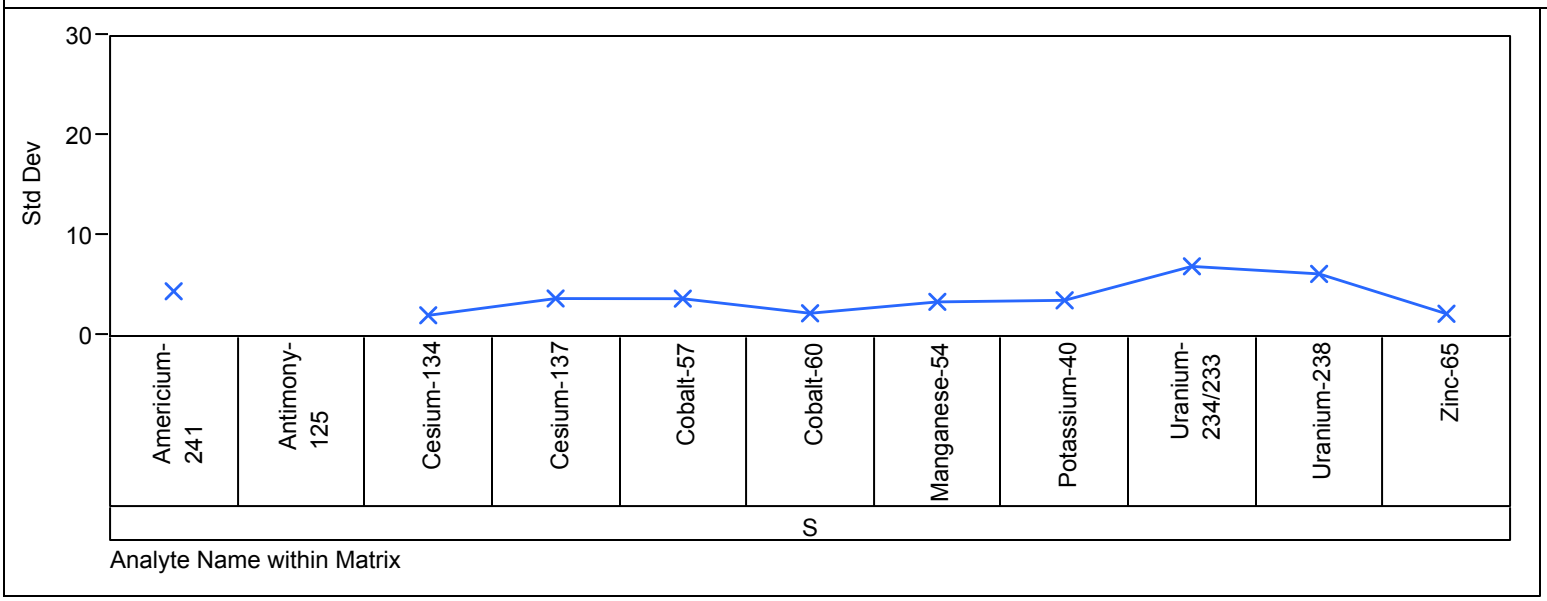




Variability Gauge Lab Code=TNUT01

Variability Chart for Bias





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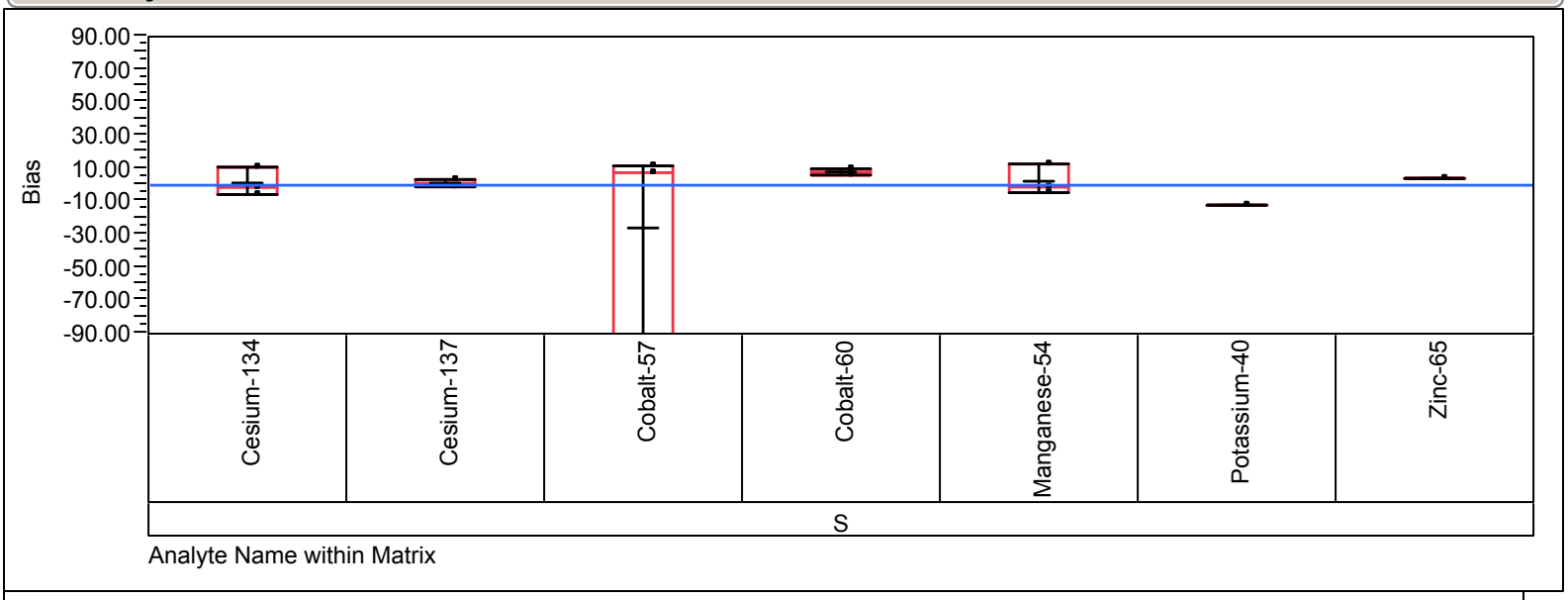
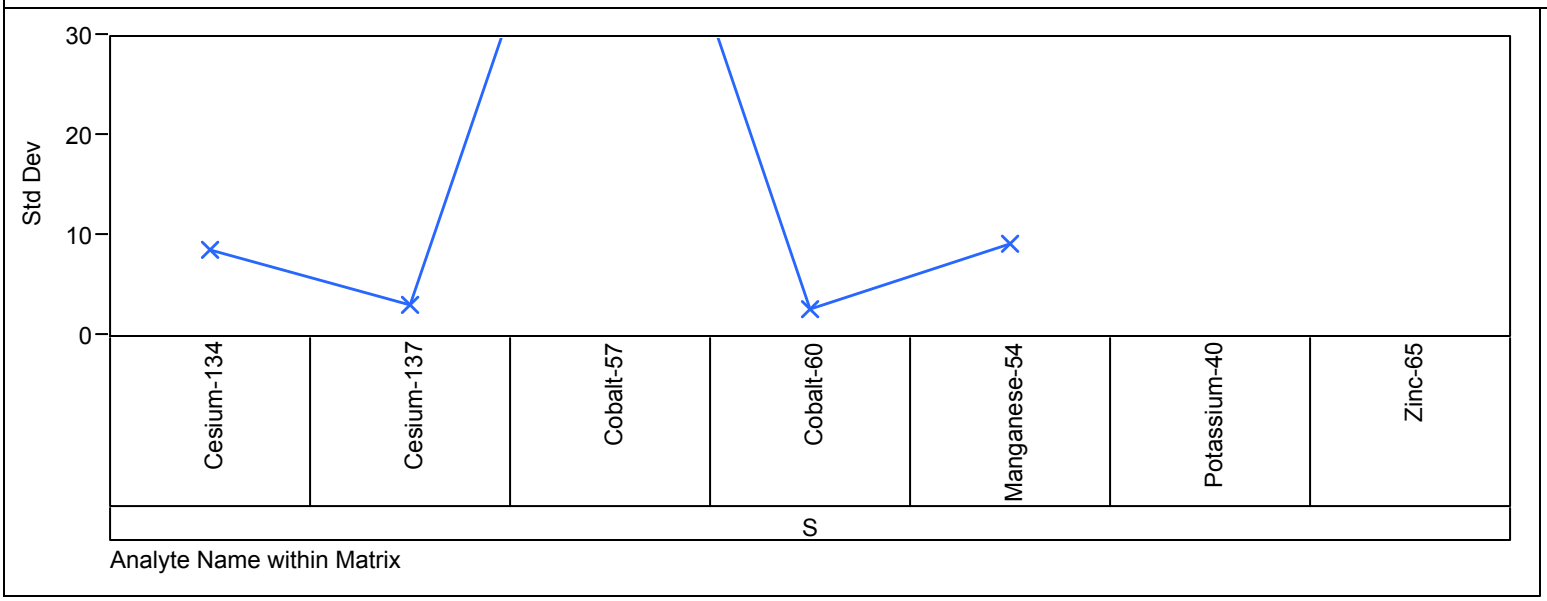
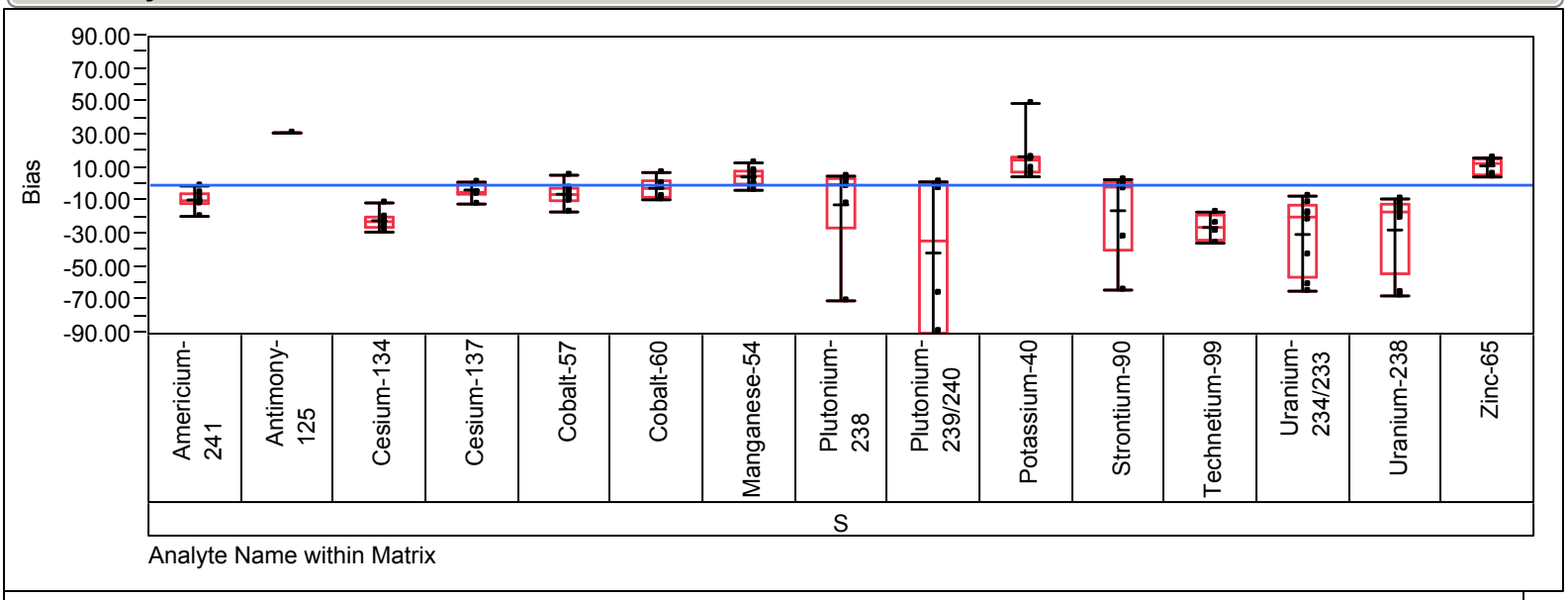
Variability Chart for Bias

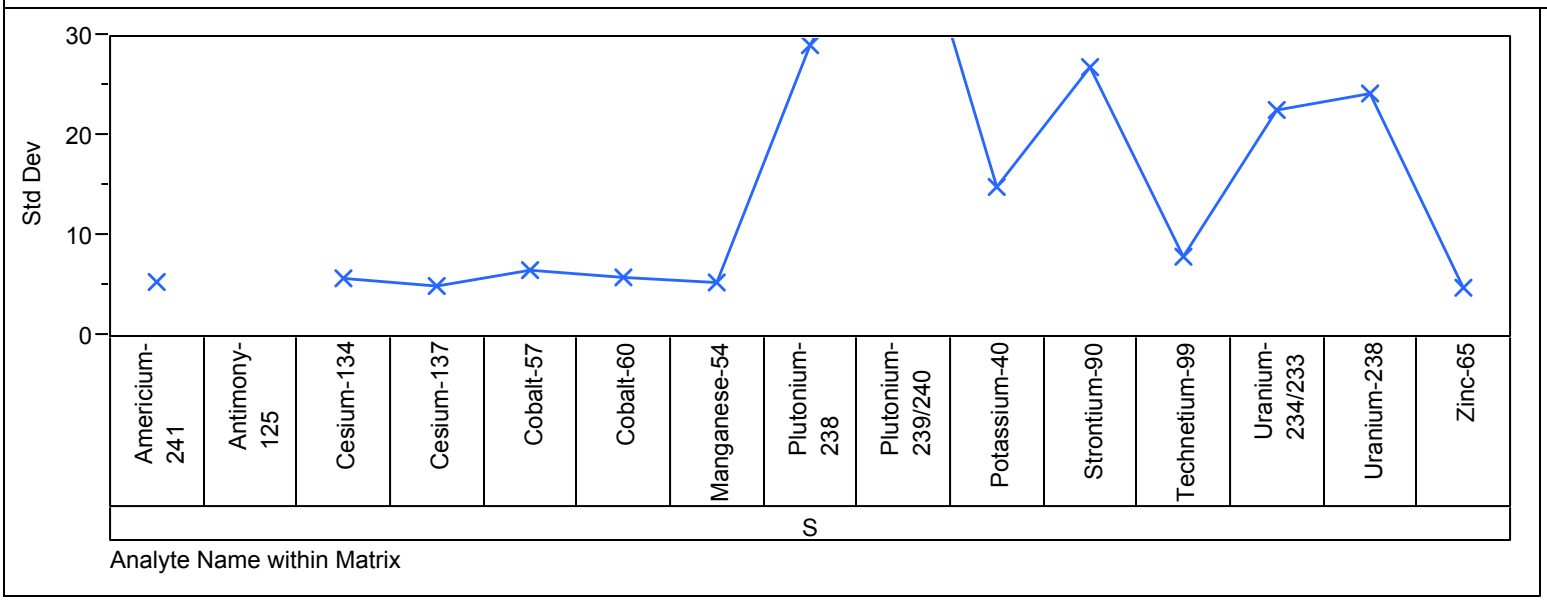




Variability Gauge Lab Code=WEST03

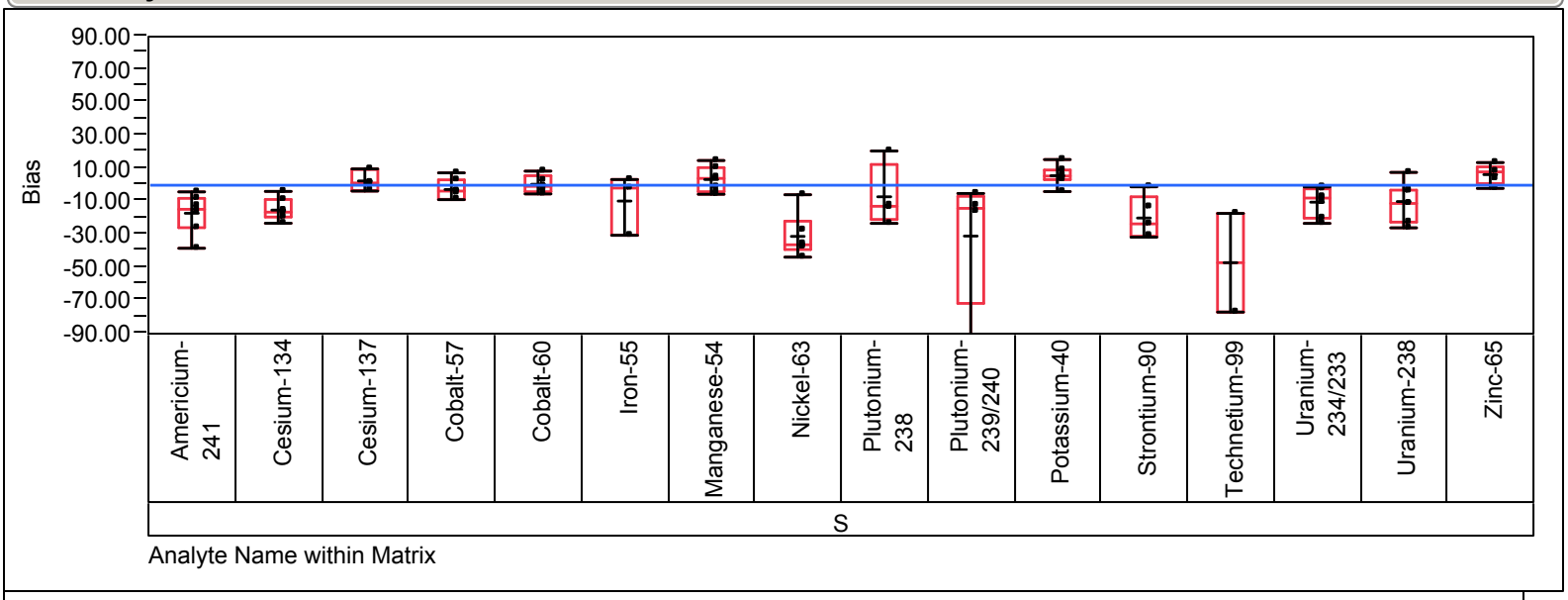
Variability Chart for Bias

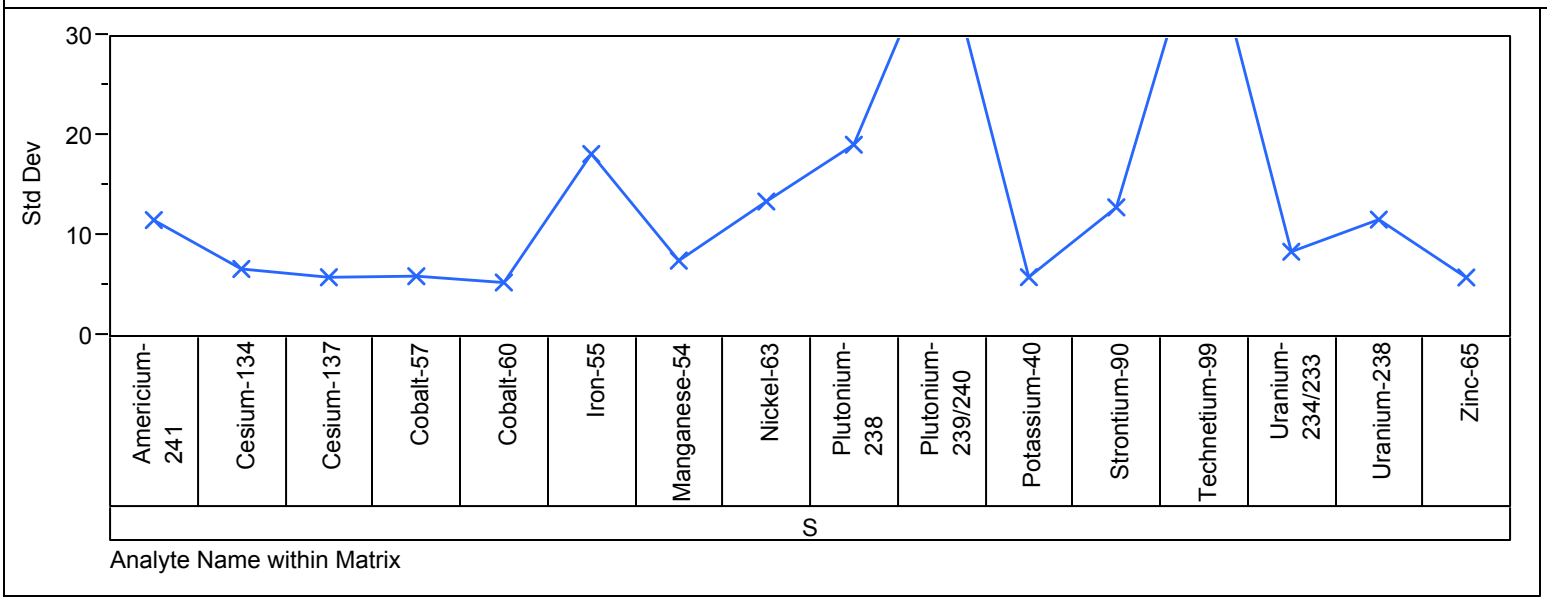




Variability Gauge Lab Code=WEST04

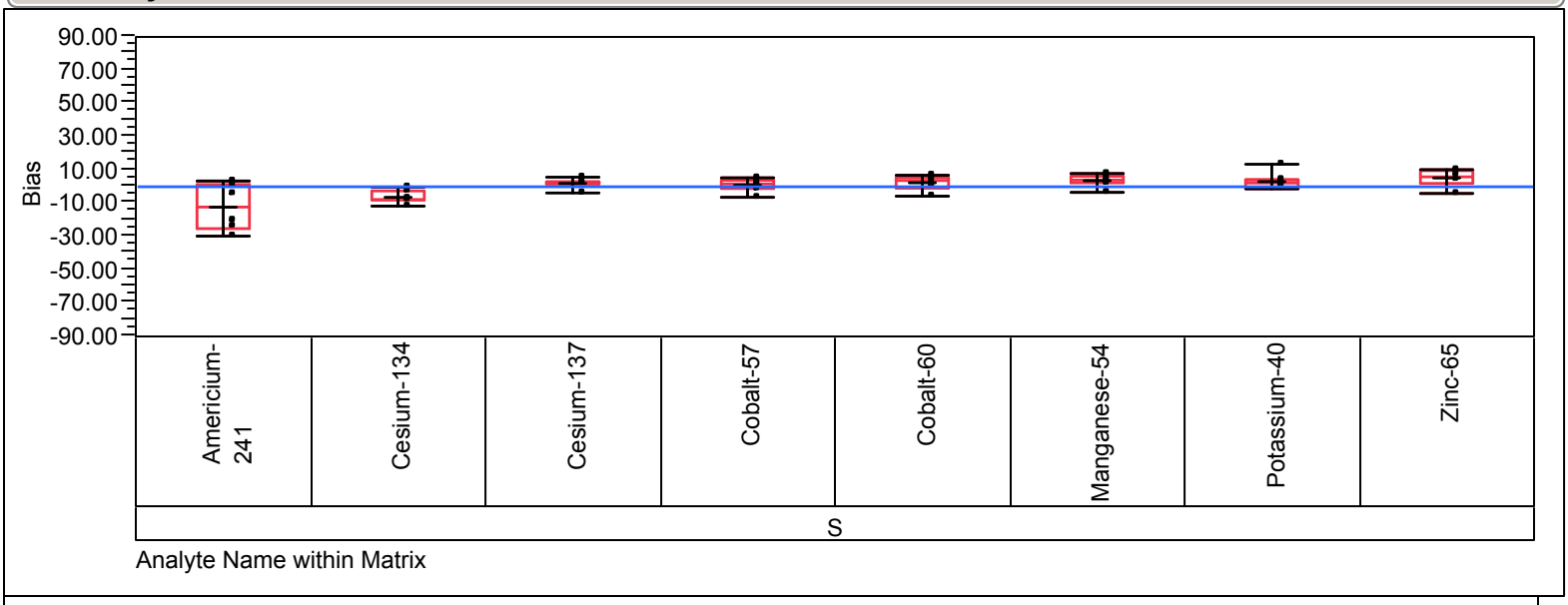
Variability Chart for Bias

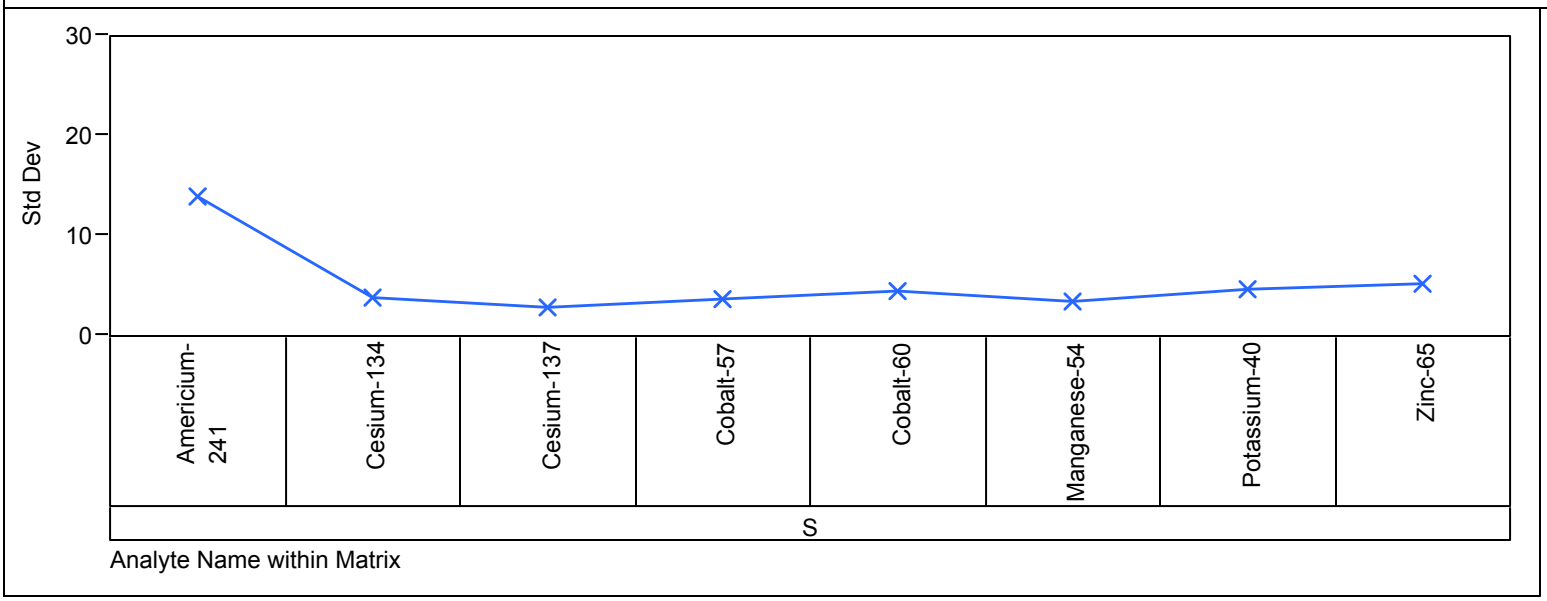




Variability Gauge Lab Code=WIPH01

Variability Chart for Bias





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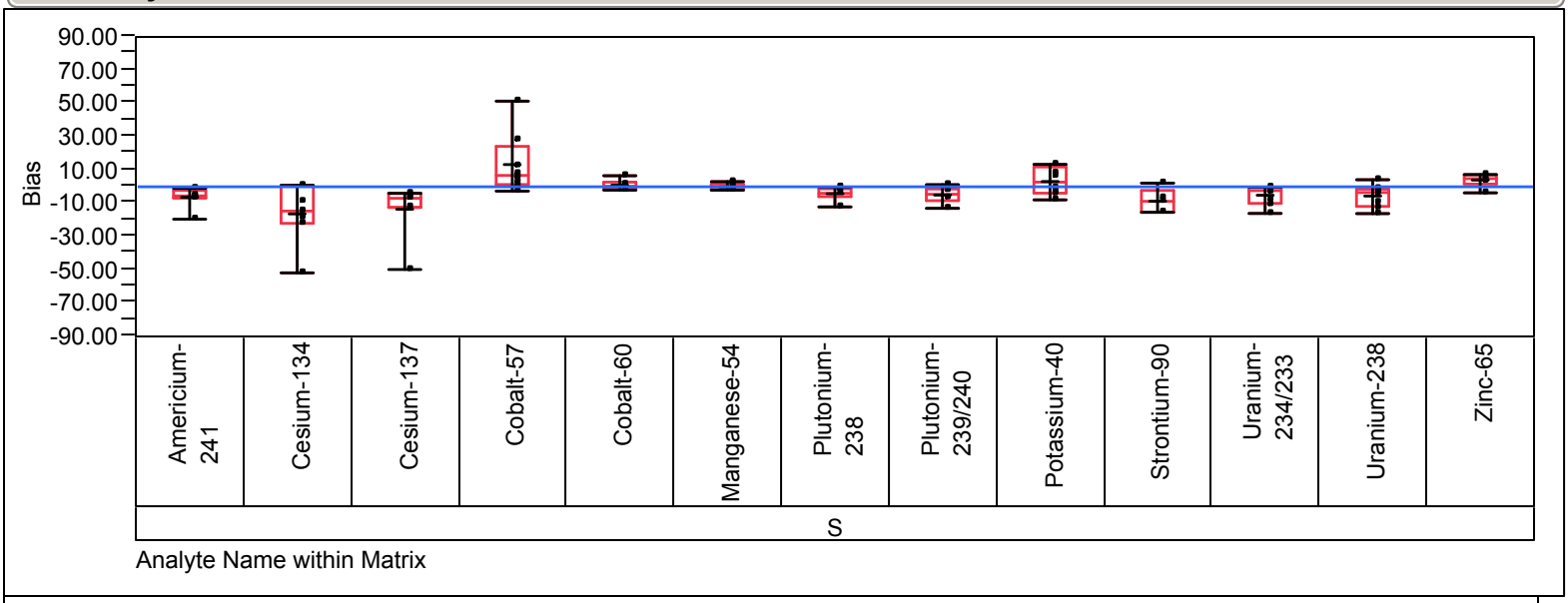
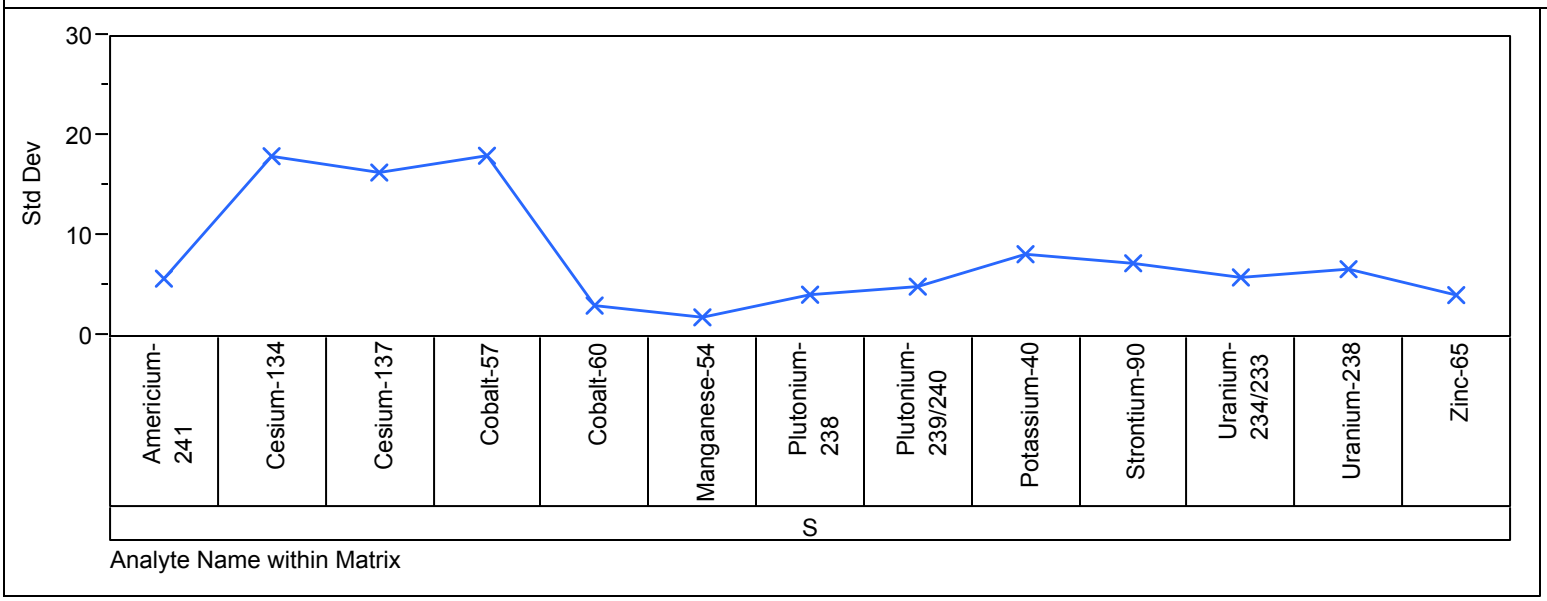
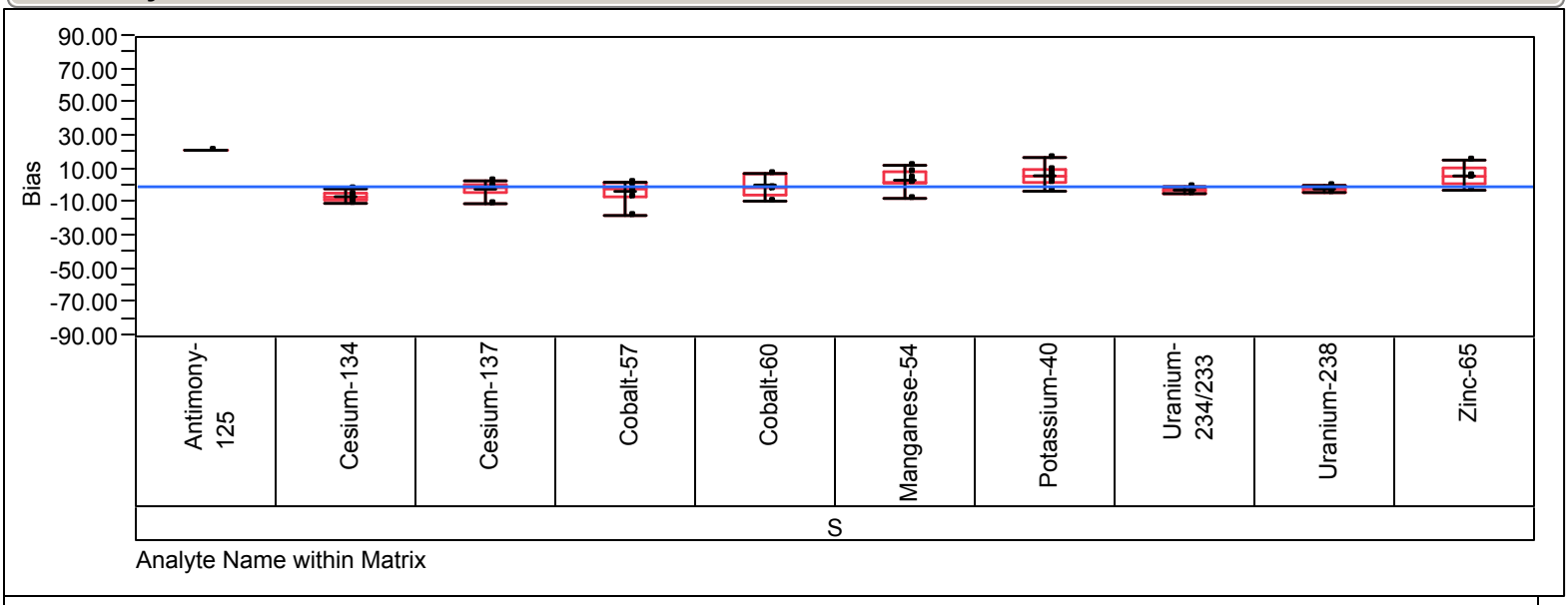
Variability Chart for Bias

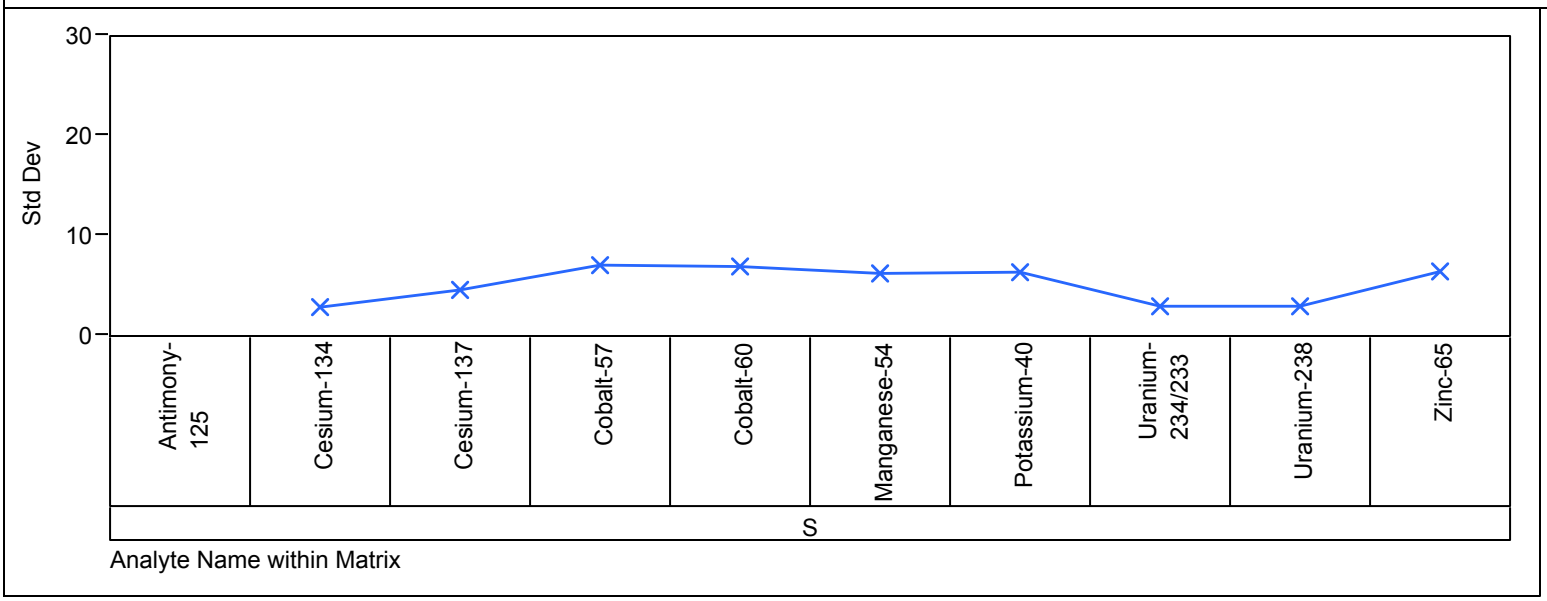




Variability Gauge Lab Code=WSHL01

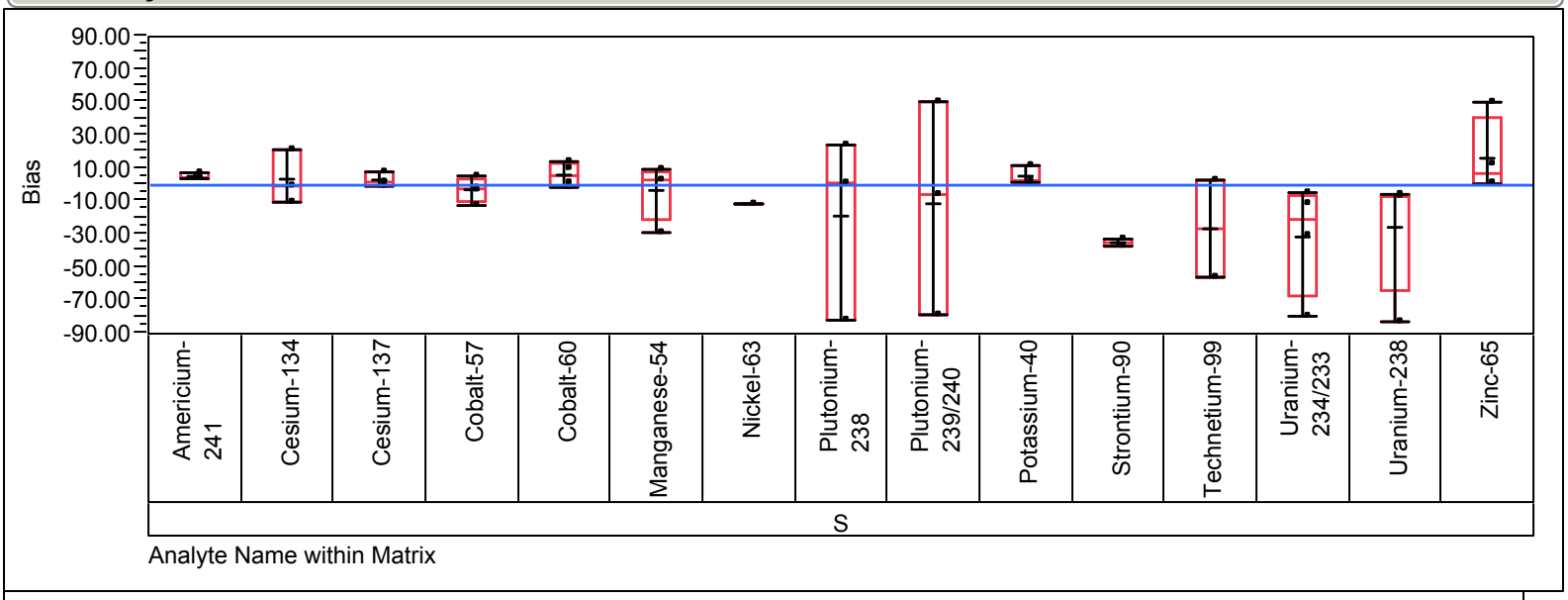
Variability Chart for Bias

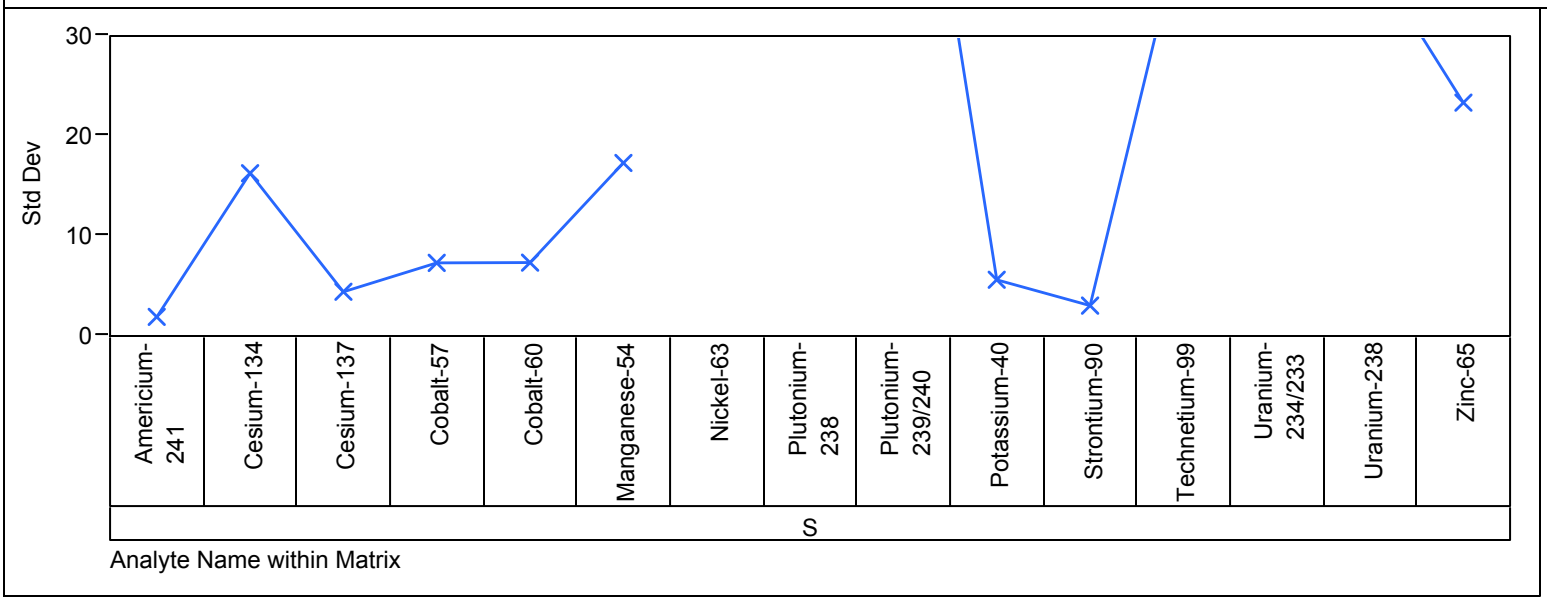




Variability Gauge Lab Code=WVNS01

Variability Chart for Bias





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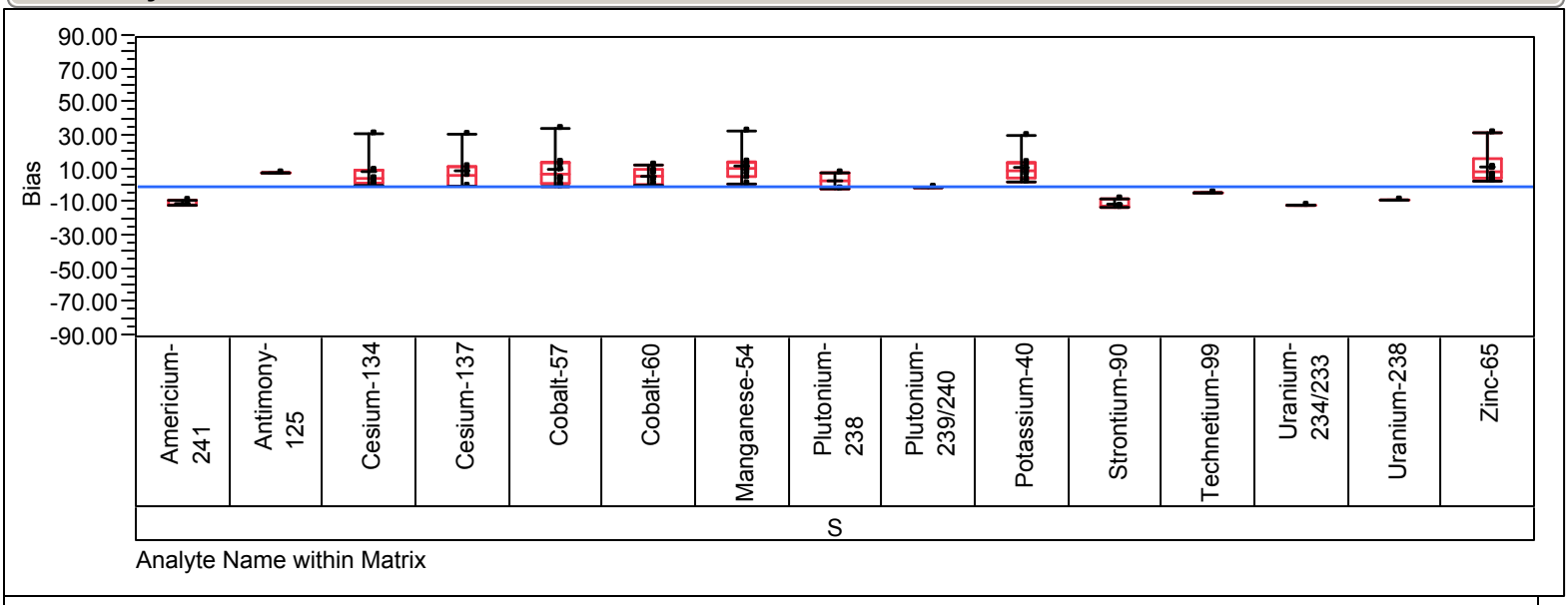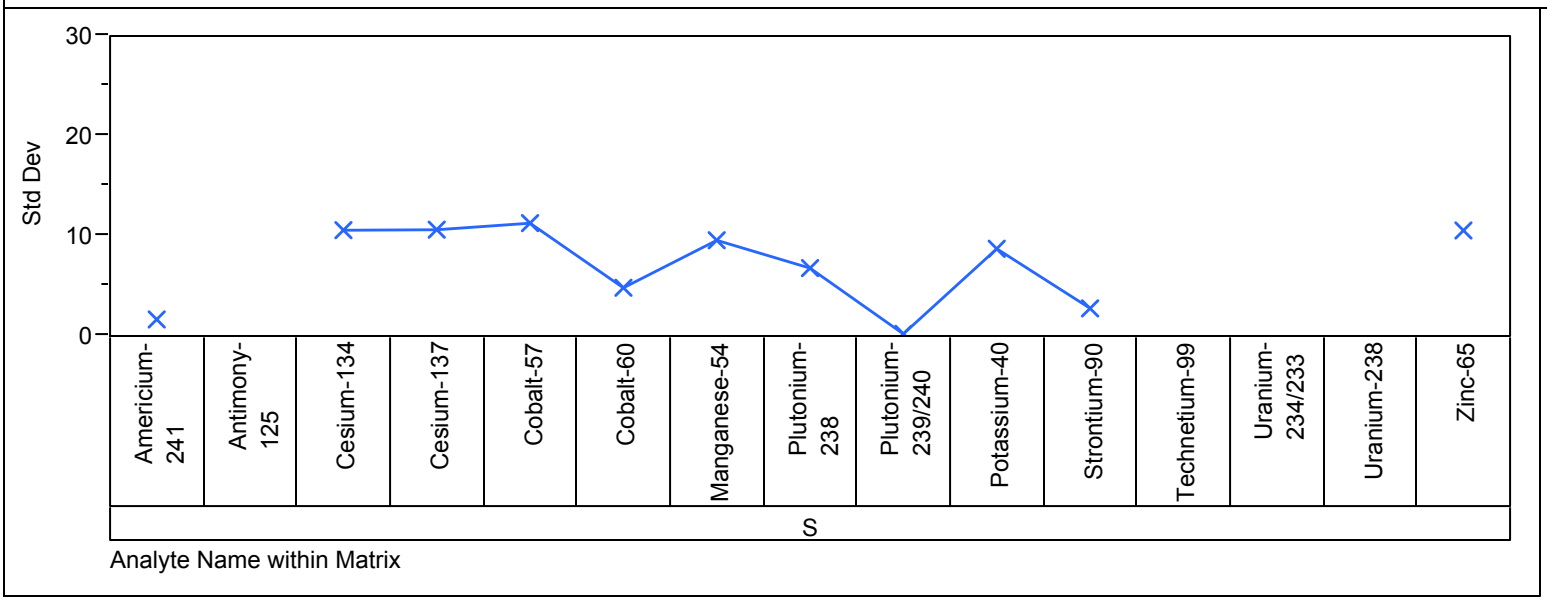
Variability Chart for Bias