

Mixed Analyte Performance Evaluation Program

Laboratory Results

Sample ID: MAPEP-05-GrF13

SEML01

SRS Environmental Monitoring Laboratory

Bldg 735-B

Aiken

SC

29808

Analyte	Result	Ref Value	Flag	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Gross Alpha	0.093	0.232	A	-59.9	0.000 - 0.464	0.012		Bq/sample
Gross Beta	0.29	0.297	A	-2.4	0.148 - 0.446	0.035		Bq/sample

Gross Alpha Flags:

A = Result acceptable, Bias $\leq \pm 100\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 100\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias $\leq \pm 50\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 50\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

FP = False Positive

FN = False Negative

NR = Not Reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

Sample ID: MAPEP-05-GrW13

SEML01 SRS Environmental Monitoring Laboratory

Bldg 735-B

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<i>Analyte</i>	<i>Result</i>	<i>Ref Value</i>	<i>Flag</i>	<i>Bias (%)</i>	<i>Acceptance Range</i>	<i>Unc Value</i>	<i>Unc. Flag</i>	<i>Units</i>
Gross alpha	0.414	0.525	A	-21.1	0.000 - 1.050	0.04		(Bq/L)
Gross beta	1.92	1.67	A	15.0	0.835 - 2.505	0.02	L	(Bq/L)

Gross Alpha Flags:

A = Result acceptable, Bias $\leq \pm 100\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 100\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias $\leq \pm 50\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 50\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Flags:

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

FP = False Positive

FN = False Negative

NR = Not Reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-MaS13

Bldg 735-B

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Antimony	NR	30.9				21.63 - 40.17			
Arsenic	NR	51.9				36.33 - 67.47			
Barium	NR	792				554.40 - 1029.60			
Beryllium	NR	10.3				7.21 - 13.39			
Cadmium	NR	13.2				9.24 - 17.16			
Chromium	NR	57.2				40.04 - 74.36			
Lead	NR	69.0				48.30 - 89.70			
Mercury	NR	0.437				0.31 - 0.57			
Nickel	NR	144				100.80 - 187.20			
Silver	NR	43.1				30.17 - 56.03			
Thallium	NR	61.8				43.26 - 80.34			
Uranium-238	NR	20.0				14.00 - 26.00			
Vanadium	NR	92.7				64.89 - 120.51			
Zinc	NR	200				140.00 - 260.00			
Americium-241	100	109	A		-8.3	76.30 - 141.70	8		(Bq/kg)
Cesium-134	648	759	A		-14.6	531.30 - 986.70	32		(Bq/kg)
Cesium-137	297	315	A		-5.7	220.50 - 409.50	15		(Bq/kg)
Cobalt-57	224	242	A		-7.4	169.40 - 314.60	9		(Bq/kg)
Cobalt-60	206	212	A		-2.8	148.40 - 275.60	10		(Bq/kg)
Iron-55	NR	1200				840.00 - 1560.00			
Manganese-54	484	485	A		-0.2	339.50 - 630.50	24		(Bq/kg)
Nickel-63	NR	1220				854.00 - 1586.00			
Plutonium-238	0.51	0.48	A	17			0.2		(Bq/kg)
Plutonium-239/240	85.3	89.5	A		-4.7	62.65 - 116.35	8		(Bq/kg)
Potassium-40	585	604	A		-3.1	422.80 - 785.20	29		(Bq/kg)
Strontium-90	571	640	A		-10.8	448.00 - 832.00	57		(Bq/kg)
Technetium-99	NR	190				133.00 - 247.00			
Uranium-234/233	64.1	62.5	A		2.6	43.75 - 81.25	5		(Bq/kg)
Uranium-238	242	249	A		-2.8	174.30 - 323.70	19		(Bq/kg)
Zinc-65	820	810	A		1.2	567.00 - 1053.00	41		(Bq/kg)

Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias <= 20%
20% < Bias <= 30%
Bias > 30%

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL > CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility Issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistical zero result
18 - Sensitivity evaluation, value not reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

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SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-MaS13

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Analyte	Result	Ref Value	Flag	Flag Text	Z Score	Acceptance Range	Units
1,3-Dichlorobenzene	NR	423				QL - 1153.26	
Nitrobenzene	NR	934				339.60 - 1529.33	
1,2,4-Trichlorobenzene	NR	602				QL - 1290.99	
Naphthalene	NR	834				150.28 - 1517.75	
Hexachlorobutadiene	NR	621				QL - 1394.87	
2,6-Dichlorophenol	NR	376				QL - 793.41	
2,6-Dinitrotoluene	NR	1047				516.97 - 1577.11	
2,4-Dinitrotoluene	NR	1084				532.35 - 1636.40	
Diethylphthalate	NR	1253				467.73 - 2037.72	
Anthracene	NR	582				182.32 - 980.92	
Pyrene	NR	1196				501.07 - 1890.18	
Benzo(a)anthracene	NR	1080				556.29 - 1603.07	
Bis(2-ethylhexyl)phthalat	NR	1566				612.53 - 2520.39	
Di-n-octylphthalate	NR	1513				493.54 - 2534.35	
gamma-BHC (Lindane)	NR	31.1				22.20 - 40.04	
4,4'-DDE	NR	30.3				25.95 - 34.62	
Dieldrin	NR	31.9				21.14 - 42.69	
4,4'-DDT	NR	33.2				12.28 - 54.15	

Flags:

A = Result acceptable

W = Result acceptable with warning

N = Result not acceptable

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

Z-score <=2.0

2.0 < Z-score <=3.0

Z-score > 3.0

Flag Text

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

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14 - Solubility Issue

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Sample ID: MAPEP-05-MaW13

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Antimony	<0.1		A				0.1		(mg/L)
Arsenic	0.0211		N	1			0.015		(mg/L)
Barium	2.56	2.63	A		-2.7	1.84 - 3.42	0.1		(mg/L)
Beryllium	0.399	0.417	A		-4.3	0.29 - 0.54	0.025		(mg/L)
Cadmium	0.287	0.303	A		-5.3	0.21 - 0.39	0.015		(mg/L)
Chromium	1.749	1.67	A		4.7	1.17 - 2.17	0.2		(mg/L)
Copper	1.803	1.92	A		-6.1	1.34 - 2.50	0.15		(mg/L)
Lead	1.14	1.21	A		-5.8	0.85 - 1.57	0.075		(mg/L)
Mercury	0.134	0.102	N		31.4	0.07 - 0.13	3	H	(mg/L)
Nickel	0.925	0.968	A		-4.4	0.68 - 1.26	0.05		(mg/L)
Selenium	0.302	0.362	A		-16.6	0.25 - 0.47	0.05		(mg/L)
Thallium	<0.06		A				0.06		(mg/L)
Uranium-238	NR	0.268							
Vanadium	3.58	3.67	A		-2.5	2.57 - 4.77	0.15		(mg/L)
Zinc	1.24	1.33	A		-6.8	0.93 - 1.73	0.075		(mg/L)
Americium-241	1.80	1.72	A		4.7	1.20 - 2.24	0.14		(Bq/L)
Cesium-134	110.8	127	A		-12.8	88.90 - 165.10	5.5		(Bq/L)
Cesium-137	326	332	A		-1.8	232.40 - 431.60	16		(Bq/L)
Cobalt-57	227.4	227	A		0.2	158.90 - 295.10	11.4		(Bq/L)
Cobalt-60	252	251	A		0.4	175.70 - 326.30	12.6		(Bq/L)
Hydrogen-3	297	280	A		6.1	196.00 - 364.00	15		(Bq/L)
Iron-55	NR	75.9				53.13 - 98.67			
Manganese-54	336	331	A		1.5	231.70 - 430.30	17		(Bq/L)
Plutonium-238	0.0036	0.018	A				.0009		(Bq/L)
Plutonium-239/240	2.70	2.4	A		12.5	1.68 - 3.12	0.2		(Bq/L)
Strontium-90	-5.6		A				2.8		(Bq/L)
Technetium-99	35.9	42.9	A		-16.3	30.03 - 55.77	2.7		(Bq/L)
Uranium-234/233	3.74	3.24	A		15.4	2.27 - 4.21	0.28		(Bq/L)
Uranium-238	3.91	3.33	A		17.4	2.33 - 4.33	0.29		(Bq/L)
Zinc-65	539	496	A		8.7	347.20 - 644.80	27		(Bq/L)

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Flags for Ni-63 Pu-238 Sensitivity Evaluations:

N = reported statistically positive result that is significantly different from RESL reference value of 9.0 +/- 1.1 Bq/L for Ni-63 and 0.018 +/- 0.004 Bq/L for Pu-238.

W = reported statistical zero, but the reported uncertainty indicates a sensitivity level that should have detected the activity.

Flags:

A = Result acceptable Bias <= 20%
W = Result acceptable with warning 20% < Bias <= 30%
N = Result not acceptable Bias > 30%
 L = Uncertainty potentially too low
 H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL > CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistical zero result
18 - Sensitivity evaluation, Value not Reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-RdF13

Bldg 735-B

Aiken

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.106	0.102	A		3.9	0.07 - 0.13	0.008		Bq/sample
Cesium-134	2.95	3.51	A		-16.0	2.46 - 4.56	0.15		Bq/sample
Cesium-137	2.01	2.26	A		-11.1	1.58 - 2.94	0.15		Bq/sample
Cobalt-57	4.31	4.92	A		-12.4	3.44 - 6.40	0.21		Bq/sample
Cobalt-60	2.97	3.03	A		-2.0	2.12 - 3.94	0.15		Bq/sample
Manganese-54	3.13	3.33	A		-6.0	2.33 - 4.33	0.16		Bq/sample
Plutonium-238	0.200	0.195	A		2.6	0.14 - 0.25	0.015		Bq/sample
Plutonium-239/240	0.156	0.165	A		-5.5	0.12 - 0.21	0.012		Bq/sample
Strontium-90	1.22	1.35	A		-9.6	0.94 - 1.75	0.07		Bq/sample
Uranium-234/233	0.389	0.34	A		14.4	0.24 - 0.44	0.029		Bq/sample
Uranium-238	0.411	0.352	A		16.8	0.25 - 0.46	0.03		Bq/sample
Zinc-65	3.00	3.14	A		-4.5	2.20 - 4.08	0.27		Bq/sample

Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias <= 20%
20% < Bias <= 30%
Bias > 30%

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL > CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

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SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-RdV13

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.131	0.145	A		-9.7	0.10 - 0.19	0.01		Bq/sample
Cesium-134	4.53	5.00	A		-9.4	3.50 - 6.50	0.23		Bq/sample
Cesium-137	3.68	4.11	A		-10.5	2.88 - 5.34	0.20		Bq/sample
Cobalt-57	9.07	9.88	A		-8.2	6.92 - 12.84	0.45		Bq/sample
Cobalt-60	3.44	3.15	A		9.2	2.21 - 4.10	0.17		Bq/sample
Manganese-54	5.11	5.18	A		-1.4	3.63 - 6.73	0.23		Bq/sample
Plutonium-238	0.163	0.224	W		-27.2	0.16 - 0.29	0.013		Bq/sample
Plutonium-239/240	0.001	0.0006	A	17			0.0005		Bq/sample
Plutonium-239/240	NR	0.0006							
Strontium-90	0.895	1.65	N		-45.8	1.15 - 2.14	0.089		Bq/sample
Uranium-234/233	0.083	0.0844	A		-1.7	0.06 - 0.11	0.007		Bq/sample
Uranium-238	0.426	0.407	A		4.7	0.28 - 0.53	0.034		Bq/sample
Zinc-65	5.97	6.29	A		-5.1	4.40 - 8.18	0.42		Bq/sample

Flags for Co-57, Co-60, Cs-134, Cs-137, Mn-54, Zn-65 and Am-241 by gamma spectrometry:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable

Bias <= 40%
40% < Bias <= 60%
Bias > 60%

Flag Text

- 1 - False Positive
- 2 - False Negative
- 4 - Sensitivity Evaluation
- 5 - Total Metal
- 6 - Not Evaluated
- 7 - DL > CLP Limit
- 9 - Check QL
- 10 - Check Isomer
- 11 - False Positive Test, Value Not Reported
- 14 - Solubility Issue
- 15 - Refractory
- 16 - Reported zero uncertainty
- 17 - NOT DETECTED, reported a statistically zero result.
- 18 - Sensitivity evaluation, value not reported.

Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-GrF14

Bldg 735-B

Gross alpha/beta Air Filters

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Gross alpha	0.25	0.482	A		-48.1	-0.17 - 0.80	0.026		Bq/sample
Gross beta	0.76	0.827	A		-8.1	0.55 - 1.22	0.037		Bq/sample

Gross Alpha Flags:

A = Result acceptable, Bias $\leq$ +/- 100% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 100% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias $\leq$ +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $>$ +/- 50% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias $\leq 20\%$
 $20\% < \text{Bias} \leq 30\%$
Bias $> 30\%$

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL $>$ CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility Issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistically zero result.
18 - Sensitivity evaluation, value not reported.

Mixed Analyte Performance Evaluation Program

Laboratory Results - Gross alpha / beta Water Standard

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-GrW14

Bldg 735-B

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Gross alpha	1.00	0.790	A		26.6	0.21 - 1.38	0.18		(Bq/L)
Gross beta	1.46	1.350	A		8.1	0.85 - 1.92	0.20		(Bq/L)

Gross Alpha Flags:

A = Result acceptable, Bias $\leq \pm 100\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 100\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

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Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias $\leq 20\%$
20% $<$ Bias $\leq 30\%$
Bias $> 30\%$

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL $>$ CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility Issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistically zero result.
18 - Sensitivity evaluation, value not reported.

Mixed Analyte Performance Evaluation Program

Laboratory Results - Mixed Analyte Soil Standard

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-MaS14

Bldg 735-B

Aiken

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Antimony	NR	51				35.70 - 66.30			
Arsenic	NR	38.7				27.09 - 50.31			
Barium	NR	400				280.00 - 520.00			
Beryllium	NR	29.1				20.37 - 37.83			
Cadmium	NR	6.8				4.76 - 8.84			
Chromium	NR	34.1				23.87 - 44.33			
Cobalt	NR	7.8							
Copper	NR	22							
Lead	NR	41				28.70 - 53.30			
Mercury	NR	1.53				1.07 - 1.99			
Nickel	NR	71				49.70 - 92.30			
Selenium	NR	15.01				10.51 - 19.51			
Uranium-Total	NR	13.5				9.52 - 17.69			
Uranium-235	NR	0.0441							
Uranium-238	NR	13.5							
Vanadium	NR	127.1				88.97 - 165.23			
Zinc	NR	158				110.60 - 205.40			
Americium-241	73.9	81.1	A		-8.9	56.77 - 105.43	5		(Bq/kg)
Cesium-134	486	568	A		-14.4	397.60 - 738.40	8.1	L	(Bq/kg)
Cesium-137	426	439	A		-3.0	307.30 - 570.70	13.8		(Bq/kg)
Cobalt-57	494	524	A		-5.7	366.80 - 681.20	12.2	L	(Bq/kg)
Cobalt-60	280	287	A		-2.4	200.90 - 373.10	5.8	L	(Bq/kg)
Iron-55	NR	357				249.90 - 464.10			
Manganese-54	436	439	A		-0.7	307.30 - 570.70	12.9	L	(Bq/kg)
Nickel-63	NR	445				311.50 - 578.50			
Plutonium-238	59.8	60.8	A		-1.6	42.56 - 79.04	4.2		(Bq/kg)
Plutonium-239/240	0.53		A	17			0.2		(Bq/kg)
Potassium-40	599	604	A		-0.8	422.80 - 785.20	23.4		(Bq/kg)
Strontium-90	613	757	A		-19.0	529.90 - 984.10	32		(Bq/kg)
Technetium-99	NR	315				220.50 - 409.50			
Uranium-234/233	57.7	52.5	A		9.9	36.75 - 68.25	4.0		(Bq/kg)
Uranium-238	189	168	A		12.5	117.60 - 218.40	13.2		(Bq/kg)
Zinc-65	830	823	A		0.9	576.10 - 1069.90	24	L	(Bq/kg)

Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias <= 20%
20% < Bias <= 30%
Bias > 30%

Flag Text

- 1 - False Positive
- 2 - False Negative
- 4 - Sensitivity Evaluation
- 5 - Total Metal
- 6 - Not Evaluated
- 7 - DL > CLP Limit
- 9 - Check QL
- 10 - Check Isomer
- 11 - False Positive Test, Value Not Reported
- 14 - Solubility Issue
- 15 - Refractory
- 16 - Reported zero uncertainty
- 17 - NOT DETECTED, reported a statistical zero result
- 18 - Sensitivity evaluation, value not reported
- 19 - Detection Limit Concern

Mixed Analyte Performance Evaluation Program

Laboratory Results - Mixed Analyte Soil Standard

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-MaS14

Bldg 735-B

Aiken

SC

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Analyte	Result	Ref Value	Flag	Flag Text	Z Score	Acceptance Range	Units
1,3-Dichlorobenzene	NR	190.2				QL - 626.67	
Nitrobenzene	NR	536.9				171.09 - 902.75	
2,4-Dimethylphenol	NR	105.3					
1,2,4-Trichlorobenzene	NR	471.9				QL - 1075.77	
Naphthalene	NR	461.6				QL - 923.99	
Hexachlorobutadiene	NR	376.7				QL - 950.88	
2,6-Dichlorophenol	NR	35.4					
2-Chloronaphthalene	NR	596.5				179.91 - 1013.03	
2,6-Dinitrotoluene	NR	801				490.86 - 1111.09	
2,4-Dinitrotoluene	NR	912.5				289.86 - 1535.15	
Diethylphthalate	NR	763.6				470.98 - 1056.26	
Hexachlorobenzene	NR	662.1				347.69 - 976.50	
Anthracene	NR	426.7				215.85 - 637.60	
1,3-Dinitrobenzene	NR	534.8				277.57 - 792.07	
Fluoranthene	NR	785				456.51 - 1113.58	
Pyrene	NR	752.2				452.61 - 1051.79	
Benzo(a)anthracene	NR	689.8				445.77 - 933.85	
Bis(2-ethylhexyl)phthalat	NR	1274				926.71 - 1622.53	
gamma-BHC (Lindane)	NR	40.2				20.18 - 60.24	
Heptachlor	NR	44.2				16.75 - 71.62	
4,4'-DDE	NR	32				15.97 - 48.06	
4,4'-DDT	NR	41.4				3.88 - 78.92	

Flags: A = Result acceptable Z-score <=2.0 **Flag Text**

W = Result acceptable with warning 2.0 < Z-score <=3.0

N = Result not acceptable Z-score > 3.0

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

1 - False Positive

2 - False Negative

4 - Sensitivity Evaluation

5 - Total Metal

6 - Not Evaluated

7 - DL > CLP Limit

9 - Check QL

10 - Check Isomer

11 - False Positive Test, Value Not Reported

14 - Solubility Issue

15 - Refractory

16 - Reported zero uncertainty

17 - NOT DETECTED, reported a statistical zero result

18 - Sensitivity evaluation, value not reported

Mixed Analyte Performance Evaluation Program

Laboratory Results

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-MaW14

Bldg 735-B

Mixed Analyte Water Standard

Aiken

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Antimony	1.76	1.77	A		-0.6	1.24 - 2.30	0.09		(mg/L)
Arsenic	2.02	2.04	A		-1.0	1.43 - 2.65	0.13		(mg/L)
Barium	16.8	16.34	A		2.8	11.44 - 21.24	0.75		(mg/L)
Beryllium	1.26	1.276	A		-1.3	0.89 - 1.66	0.05		(mg/L)
Cadmium	<0.01		A				0.08		(mg/L)
Chromium	1.29	1.27	A		1.6	0.89 - 1.65	0.03	L	(mg/L)
Copper	3.76	3.80	A		-1.1	2.66 - 4.94	0.12		(mg/L)
Lead	<0.02		A				0.18		(mg/L)
Mercury	0.010	0.00885	A		13.0	0.01 - 0.01	0.0003		(mg/L)
Nickel	1.5	1.457	A		3.0	1.02 - 1.89	0.07		(mg/L)
Selenium	0.396	0.443	A		-10.6	0.31 - 0.58	0.12	H	(mg/L)
Silver	<0.01		A				0.01		(mg/L)
Thallium	4.93	4.97	A		-0.8	3.48 - 6.46	0.25		(mg/L)
Uranium-Total	NR	0.344				0.24 - 0.45			
Uranium-235	NR	0.00248				0.00 - 0.00			
Uranium-238	NR	0.342				0.24 - 0.44			
Vanadium	0.90	0.876	A		2.7	0.61 - 1.14	0.19	H	(mg/L)
Zinc	4.42	4.57	A		-3.3	3.20 - 5.94	0.16		(mg/L)
Americium-241	2.19	2.23	A		-1.8	1.56 - 2.90	0.15		(Bq/L)
Cesium-134	147	167	A		-12.0	116.90 - 217.10	2.57	L	(Bq/L)
Cesium-137	326	333	A		-2.1	233.10 - 432.90	10.3		(Bq/L)
Cobalt-57	277	272	A		1.8	190.40 - 353.60	6.4	L	(Bq/L)
Cobalt-60	259	261	A		-0.8	182.70 - 339.30	5	L	(Bq/L)
Hydrogen-3	492	527	A		-6.6	368.90 - 685.10	23		(Bq/L)
Iron-55	NR	196				137.20 - 254.80			
Manganese-54	422	418	A		1.0	292.60 - 543.40	11.9	L	(Bq/L)
Nickel-63	120	100	A		20.0	70.00 - 130.00	6		(Bq/L)
Plutonium-238	1.71	1.67	A		2.4	1.34 - 2.48	0.12		(Bq/L)
Plutonium-239/240	2.37	2.45	A		-3.3	1.92 - 3.58	0.15		(Bq/L)
Strontium-90	7.88	8.98	A		-12.2	6.29 - 11.67	0.5		(Bq/L)
Technetium-99	60.6	66.5	A		-8.9	46.55 - 86.45	3		(Bq/L)
Uranium-234/233	4.30	4.1	A		4.9	2.87 - 5.33	0.30		(Bq/L)
Uranium-238	4.50	4.26	A		5.6	2.98 - 5.54	0.32		(Bq/L)
Zinc-65	359	330	A		8.8	231.00 - 429.00	10.3	L	(Bq/L)

Mixed Analyte Performance Evaluation Program

Laboratory Results

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-MaW14

Bldg 735-B

Mixed Analyte Water Standard

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Flags:

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W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias <= 20%
20% < Bias <= 30%
Bias > 30%

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL > CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility Issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistically zero result.
18 - Sensitivity evaluation, value not reported.

Mixed Analyte Performance Evaluation Program

Laboratory Results - Radiological Air Filter

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-RdF14

Bldg 735-B

Aiken

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Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.146	0.158	A		-7.6	0.11 - 0.21	0.010		Bq/sample
Cesium-134	3.39	3.85	A		-11.9	2.69 - 5.01	0.11		Bq/sample
Cesium-137	2.89	3.23	A		-10.5	2.26 - 4.20	0.155		Bq/sample
Cobalt-57	5.55	6.20	A		-10.5	4.34 - 8.06	0.18		Bq/sample
Cobalt-60	2.70	2.85	A		-5.3	1.99 - 3.70	0.11		Bq/sample
Manganese-54	4.12	4.37	A		-5.7	3.06 - 5.68	0.19		Bq/sample
Plutonium-238	0.106	0.0969	A		9.4	0.07 - 0.13	0.0074		Bq/sample
Plutonium-239/240	0.091	0.0898	A		1.3	0.06 - 0.12	0.006		Bq/sample
Strontium-90	1.87	2.25	A		-16.9	1.58 - 2.92	0.076		Bq/sample
Uranium-234/233	0.309	0.273	A		13.2	0.19 - 0.35	0.022		Bq/sample
Uranium-238	0.325	0.283	A		14.8	0.20 - 0.37	0.023		Bq/sample
Zinc-65	4.28	4.33	A		-1.2	3.03 - 5.63	0.28		Bq/sample

Flags:

A = Result acceptable
W = Result acceptable with warning
N = Result not acceptable
L = Uncertainty potentially too low
H = Uncertainty potentially too high
Q = Participant should evaluate reported value
QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias <= 20%
20% < Bias <= 30%
Bias > 30%

Flag Text

1 - False Positive
2 - False Negative
4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
7 - DL > CLP Limit
9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility Issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistically zero result.
18 - Sensitivity evaluation, value not reported.

Mixed Analyte Performance Evaluation Program

Laboratory Results - Radiological Vegetation

SEML01

SRS Environmental Monitoring Laboratory

Sample ID: MAPEP-05-RdV14

Bldg 735-B

Radiological Vegetation Standard

Aiken

SC

29808

Analyte	Result	Ref Value	Flag	Flag Text	Bias (%)	Acceptance Range	Unc Value	Unc. Flag	Units
Americium-241	0.28	0.23	W		21.7	0.16 - 0.30	0.028		Bq/sample
Cesium-134	3.63	4.09	A		-11.2	2.86 - 5.32	0.21		Bq/sample
Cesium-137	4.77	5.43	A		-12.2	3.80 - 7.06	0.35		Bq/sample
Cobalt-57	12.0	13.3	A		-9.8	9.31 - 17.29	0.45		Bq/sample
Cobalt-60	4.32	4.43	A		-2.5	3.10 - 5.76	0.24		Bq/sample
Manganese-54	6.1	6.57	A		-7.2	4.60 - 8.54	0.4		Bq/sample
Plutonium-238	0.002		A				0.001		Bq/sample
Plutonium-239/240	0.17	0.164	A		3.7	0.11 - 0.21	0.017		Bq/sample
Strontium-90	2.58	2.42	A		6.6	1.69 - 3.15	0.20		Bq/sample
Uranium-234/233	0.36	0.333	A		8.1	0.23 - 0.43	0.036		Bq/sample
Uranium-238	0.35	0.346	A		1.2	0.24 - 0.45	0.035		Bq/sample
Zinc-65	9.71	10.2	A		-4.8	7.14 - 13.26	0.83		Bq/sample

Flags:

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H = Uncertainty potentially too high
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QL = Quantitation Limit
RW = Report Warning
NR = Not Reported

Bias <= 20%

20% < Bias <= 30%

Bias > 30%

Flag Text

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4 - Sensitivity Evaluation
5 - Total Metal
6 - Not Evaluated
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9 - Check QL
10 - Check Isomer
11 - False Positive Test, Value Not Reported
14 - Solubility Issue
15 - Refractory
16 - Reported zero uncertainty
17 - NOT DETECTED, reported a statistically zero result.
18 - Sensitivity evaluation, value not reported.