

RESL CUSTOMER EXPORT CONTROL AGREEMENT

It is the Radiological and Environmental Sciences Laboratory's (RESL) policy to conduct business in accordance with all applicable U.S. export control laws and regulations. It is also RESL's policy that its Customers comply with U.S. export control laws and regulations. Therefore, Customer agrees to the following:

1. Because products, technical data, and technical assistance (i.e., services) provided to Customer by RESL may be subject to U.S. export control laws and regulations, (i) transactions with certain persons and companies and (ii) the export or reexport of certain types and levels of products, technical data, and services are prohibited or restricted.
2. Customer acknowledges that it is responsible for its own compliance with U.S. export control laws and regulations. Customer further agrees that it assumes the responsibility to obtain all necessary U.S. export licenses or other U.S. governmental authorizations, as well as all liability for the failure to do so.
3. Customer acknowledges that export control requirements may change and that the export or reexport of RESL products, technical data, and services without an export license or other appropriate governmental authorization may result in criminal and/or civil liability.
4. The obligations and requirements described herein shall survive the expiration or termination of any agreement or contract between RESL and Customer.

XaW39 Participating Laboratories

Lab Code	Lab Name	Matrix Code
ANTE01	ALS Environmental - Fort Collins, CO	XaW
ARSL01	ARS Aleut Analytical, LLC	XaW
CDHS01	California Department of Public Health	XaW
CHMH01	222-S Laboratory	XaW
ERCL01	Washington State Public Health Laboratories	XaW
EULC01	EnergySolutions, LLC	XaW
FDHE01	Florida Dept of Health Environmental Laboratory	XaW
FDOH01	Florida Dept. of Health, Mobile Environmental Radiological Lab	XaW
GENE01	GEL Laboratories, LLC	XaW
NARL01	National Analytical Radiation Environmental Laboratory	XaW
NARL02	USEPA - NAREL - MERL	XaW
NESI01	BWXT-Radioisotope & Analytical Chemistry Laboratory	XaW
ORIS01	ORISE/IEAV	XaW
QUAN01	TestAmerica St. Louis	XaW
QUAN03	TestAmerica Laboratories - Richland	XaW
SAVA01	SAVANNAH RIVER NUCLEAR SOLUTIONS (SRNS)	XaW
SEML01	SRS Environmental Monitoring Laboratory	XaW
SOUT01	Southwest Research Institute	XaW
TELE02	ATI Environmental, Inc., Midwest Lab	XaW
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	XaW

Study Reference Values

MAPEP-18-XaW39

Radiological Reference Date: 08/01/2018

Analyte	Ref Value	Ref Unc
Radiological		Units: (Bq/L)
Iodine-129	1.62	0.03

Sample Statistical Summary

MAPEP-18-XaW39

Radiological Reference Date: 08/01/2018

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/L)
Iodine-129	20	18	1.59	0.22	1.62	0.03	1.13 - 2.11

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

Result Flags:

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

Uncertainty Flags:

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

Flag Summary Report

MAPEP-18-XaW39

Radiological

Analyte	A	W	RW	N
Iodine-129	15	3		2



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

Laboratory Results For MAPEP-18-XaW39
 (ANTE01) ALS Environmental - Fort Collins, CO
 225 Commerce Drive
 Fort Collins, CO 80524-1416

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.75	1.62	A		8.0	1.13 - 2.11	0.71	N

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (ARSL01) ARS Aleut Analytical, LLC
 2609 North River Road
 Port Allen, LA 70767

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	.91543	1.62	N		-43.5	1.13 - 2.11	.21263	W

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (CDHS01) California Department of Public Health
 Drinking Water & Radiation Lab.
 Richmond, CA 94804-6403

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.98	1.62	W		22.2	1.13 - 2.11	0.03	N

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (CHMH01) 222-S Laboratory
 1955 Jadwin Ave Suite 330
 Richland, WA 99354

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.62	1.62	A		0.0	1.13 - 2.11	0.266	W

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150th Street
 Shoreline, WA 98155-9701

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.57	1.62	A		-3.1	1.13 - 2.11	0.05	A

Radiological Reference Date: August 1, 2018

Result Flags:

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

Uncertainty Flags:

- NOT ACCEPTABLE.....RP<2%
- ACCEPTABLE.....2%<=RP<=15%
- ACCEPTABLE WITH WARNING.....15%<RP<=30%
- NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (EULC01) EnergySolutions, LLC
 I-80, Exit 49
 Clive, UT 84029

Radiological Units: (Bq/L)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.976	1.62	W		22.0	1.13 - 2.11	.437	W

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (FDHE01) Florida Dept of Health Environmental Laboratory
 PO Box 680069
 Orlando, FL 32868-0069

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.478	1.62	A		-8.8	1.13 - 2.11	0.104	A

Radiological Reference Date: August 1, 2018

Result Flags:

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

Uncertainty Flags:

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



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

Laboratory Results For MAPEP-18-XaW39

(FDOH01) Florida Dept. of Health, Mobile Environmental Radiological Lab
 PO Box 680069
 Orlando, FL 32868-0069

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.543	1.62	A		-4.8	1.13 - 2.11	0.099	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias $\leq 20\%$

W = Result acceptable with warning $20\% < \text{Bias} < 30\%$

N = Result not acceptable Bias $> 30\%$

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP $< 2\%$

ACCEPTABLE..... $2\% \leq \text{RP} \leq 15\%$

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

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

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (GENE01) GEL Laboratories, LLC
 2040 Savage Road
 Charleston, SC 29407

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.63	1.62	A		0.6	1.13 - 2.11	0.101	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (NARL01) National Analytical Radiation Environmental Laboratory
 540 S. Morris Ave.
 Montgomery, AL 36115-2601

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.77	1.62	A		9.3	1.13 - 2.11	0.111	A

Radiological Reference Date: August 1, 2018

Result Flags:

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

Uncertainty Flags:

- NOT ACCEPTABLE.....RP<2%
- ACCEPTABLE.....2%<=RP<=15%
- ACCEPTABLE WITH WARNING.....15%<RP<=30%
- NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (NARL02) USEPA - NAREL - MERL
 540 S Morris Ave
 Montgomery, AL 36115

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.14	1.62	W		-29.6	1.13 - 2.11	0.0494	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (NESI01) BWXT-Radioisotope & Analytical Chemistry Laboratory
 Lynchburg Technology Center
 Lynchburg, VA 24504-5447

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.08	1.62	N		-33.3	1.13 - 2.11	0.21	W

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39

(ORIS01) ORISE/IEAV

PO Box 117

Oak Ridge, TN 37831-0117

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.70	1.62	A		4.9	1.13 - 2.11	0.31	W

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39

(QUAN01) TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045-1205

Radiological Units: (Bq/L)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.36	1.62	A		-16.0	1.13 - 2.11	0.0719	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (QUAN03) TestAmerica Laboratories - Richland
 2800 GEORGE WASHINGTON WAY
 RICHLAND, WA 99354-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.79	1.62	A		10.5	1.13 - 2.11	0.11	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (SAVA01) SAVANNAH RIVER NUCLEAR SOLUTIONS (SRNS)
 SRNL (non-purchased material receipt)
 AIKEN, SC 29808-0000

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.38	1.62	A		-14.8	1.13 - 2.11	0.104	A

Radiological Reference Date: August 1, 2018

Result Flags:

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

Uncertainty Flags:

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

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (SEML01) SRS Environmental Monitoring Laboratory
 Bldg 735-B
 Aiken, SC 29808

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.4	1.62	A		-13.6	1.13 - 2.11	0.5	N

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (SOUT01) Southwest Research Institute
 6220 Culebra Rd.
 San Antonio, TX 78228-0510

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.66	1.62	A		2.5	1.13 - 2.11	0.0970	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (TELE02) ATI Environmental, Inc., Midwest Lab
 700 Landwehr Road
 Northbrook, IL 60062-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.32	1.62	A		-18.5	1.13 - 2.11	0.08	A

Radiological Reference Date: August 1, 2018

Result Flags:

A = Result acceptable Bias <=20%

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

N = Result not acceptable Bias > 30%

RW = Report Warning

NR = Not Reported

Uncertainty Flags:

NOT ACCEPTABLE.....RP<2%

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

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

NOT ACCEPTABLE.....RP>30%

RP = Relative Precision



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

Laboratory Results For MAPEP-18-XaW39
 (TMAO01) EBERLINE SERVICES OAK RIDGE LABORATORY
 601 SCARBORO RD
 OAK RIDGE, TN 37830-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Iodine-129	1.5737	1.62	A		-2.9	1.13 - 2.11	0.1837	A

Radiological Reference Date: August 1, 2018

Result Flags:

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

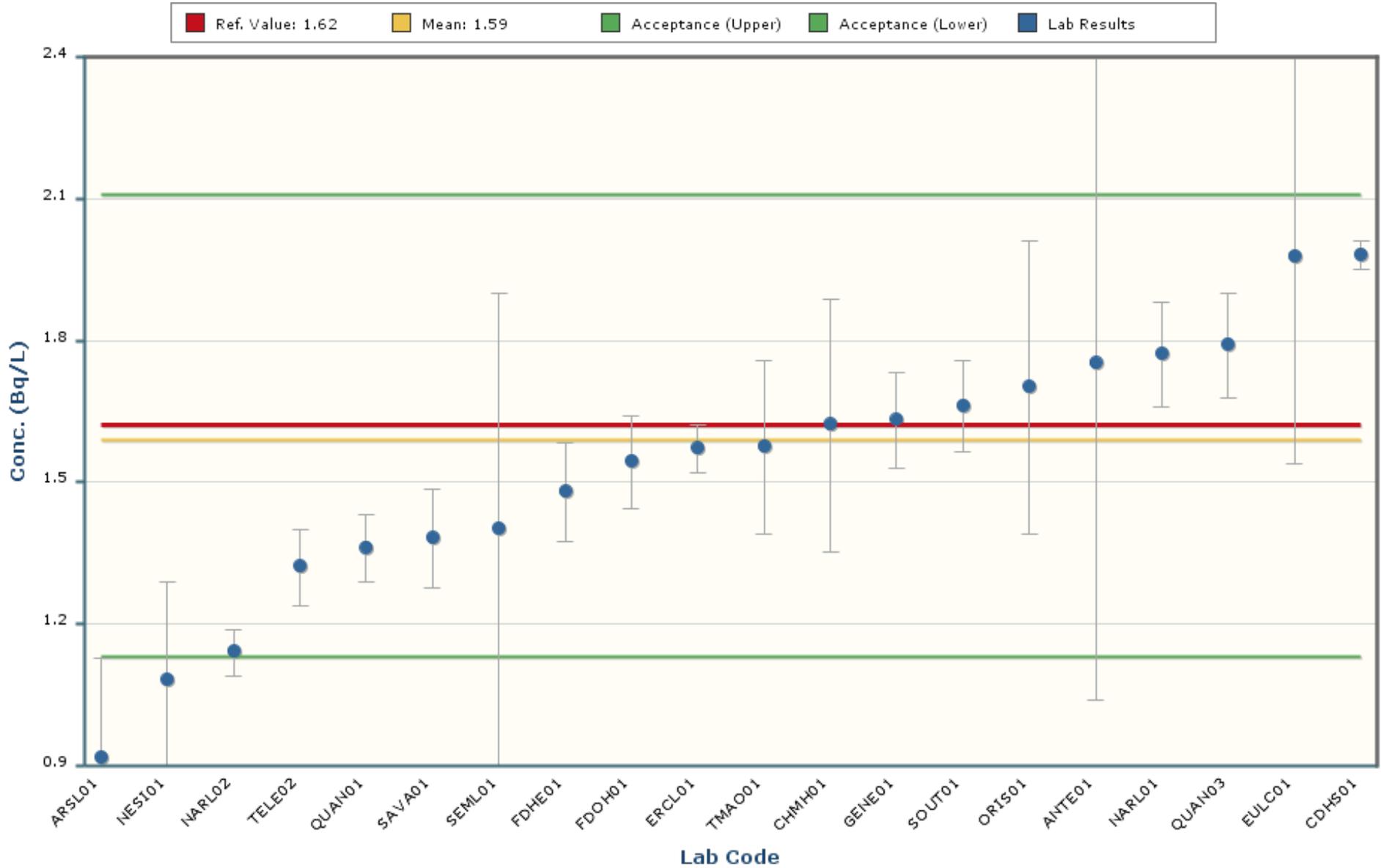
Uncertainty Flags:

- NOT ACCEPTABLE.....RP<2%
- ACCEPTABLE.....2%<=RP<=15%
- ACCEPTABLE WITH WARNING.....15%<RP<=30%
- NOT ACCEPTABLE.....RP>30%

RP = Relative Precision

Iodine-129

MAPEP-18-XaW39



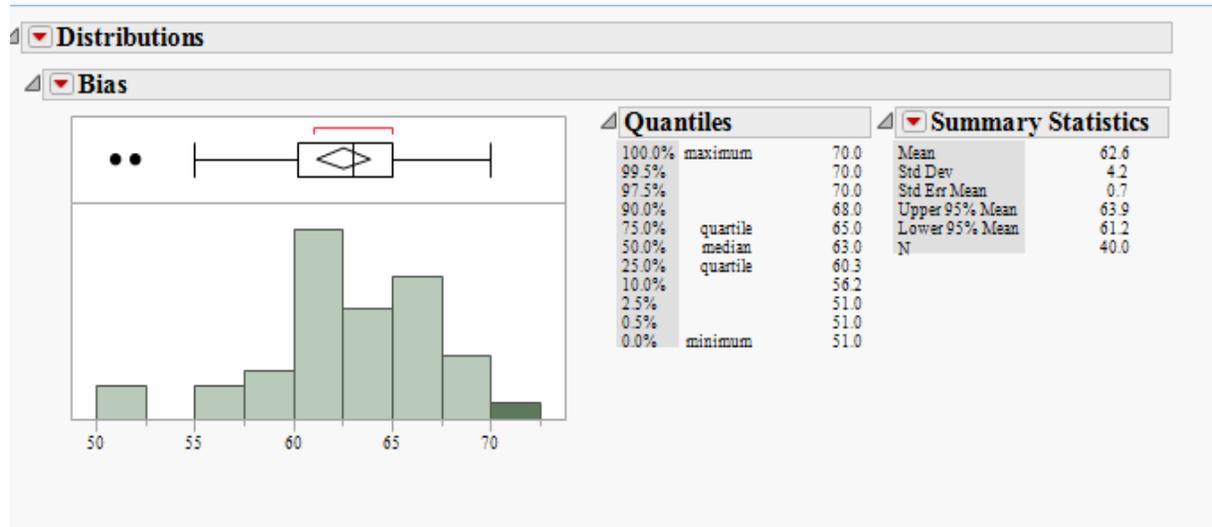
Notes:

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

The chart shows only data points with values between 0.48 and 2.70 (± 5 Standard Deviations).

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

The intent of the distribution graphs contained within this report is to graphically demonstrate to users how % Bias data within the current MAPEP Series appears when examined by matrix, by analyte, by method of sample preparation or by method of detection. Biases greater than +/- 100% have been screened from the data. The box plot of the bias data points and the mean visually illustrate the breadth of the distribution and where potential outliers in the distribution might lie. The statistics for the distribution plot are provided adjacent to the Bias plot. In some cases, N becomes very small and thus developed statistics may not accurately reflect estimates of the population if N were a significantly larger value.

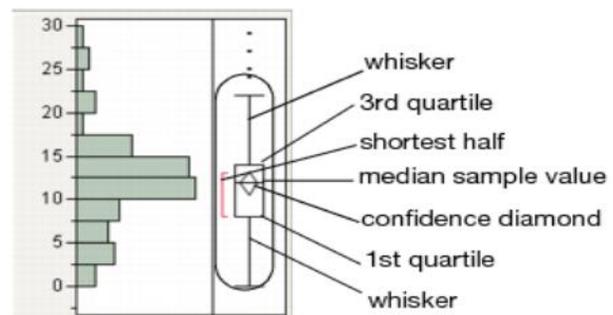


Outlier Box Plot

The BLACK small vertical line inside the small rectangle at the top of the data distribution graph is the median of the population of the bias shown for that analyte in the matrix. The confidence diamond contains the mean and the upper and lower 95% of the mean. If you drew a line through the middle of the diamond, you would have the mean. The top and bottom points of the diamond represent the upper and lower 95% of the mean. The ends of the box represent the 25th and 75th quantiles, also expressed as 1st and 3rd quartile. The difference between the 1st and 3rd quartiles is called the interquartile range. Each box has lines that extend from each end, sometimes called whiskers. The whiskers extend from the ends of the box to the outermost data point that falls within the distances computed as follows:

3rd quartile + 1.5*(interquartile range)

1st quartile - 1.5*(interquartile range)

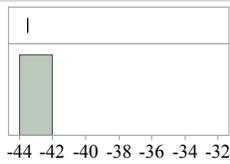


If the data points do not reach the computed ranges, then the whiskers are determined by the upper and lower data point values (not including outliers). The bracket outside of the box identifies the *shortest half*, which is the most dense 50% of the observations (Rousseuw and Leroy 1987).

XaW Distribution by Prep Method

Distributions Analyte_Method=Iodine-129 EPA 901.1, Gamma Emitting, 600/4-80-032

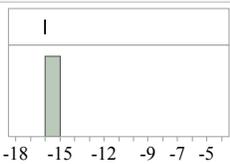
Bias



Quantiles		Summary Statistics		
100.0%	maximum	-43.5	Mean	-43.5
99.5%		-43.5	Std Dev	.
97.5%		-43.5	Std Err Mean	.
90.0%		-43.5	Upper 95% Mean	.
75.0%	quartile	-43.5	Lower 95% Mean	.
50.0%	median	-43.5	N	1.0
25.0%	quartile	-43.5		
10.0%		-43.5		
2.5%		-43.5		
0.5%		-43.5		
0.0%	minimum	-43.5		

Distributions Analyte_Method=Iodine-129 Evaporation, acidified

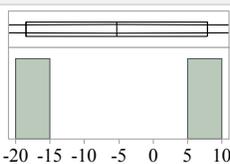
Bias



Quantiles		Summary Statistics		
100.0%	maximum	-16.0	Mean	-16.0
99.5%		-16.0	Std Dev	.
97.5%		-16.0	Std Err Mean	.
90.0%		-16.0	Upper 95% Mean	.
75.0%	quartile	-16.0	Lower 95% Mean	.
50.0%	median	-16.0	N	1.0
25.0%	quartile	-16.0		
10.0%		-16.0		
2.5%		-16.0		
0.5%		-16.0		
0.0%	minimum	-16.0		

Distributions Analyte_Method=Iodine-129 Ion Exchange Chromatography / Ion Chromatography

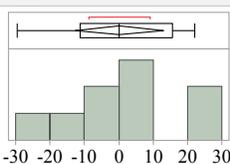
Bias



Quantiles		Summary Statistics		
100.0%	maximum	8.0	Mean	-5.3
99.5%		8.0	Std Dev	18.7
97.5%		8.0	Std Err Mean	13.3
90.0%		8.0	Upper 95% Mean	163.1
75.0%	quartile	8.0	Lower 95% Mean	-173.6
50.0%	median	-5.3	N	2.0
25.0%	quartile	-18.5		
10.0%		-18.5		
2.5%		-18.5		
0.5%		-18.5		
0.0%	minimum	-18.5		

Distributions Analyte_Method=Iodine-129 No preparation - analyzed as received

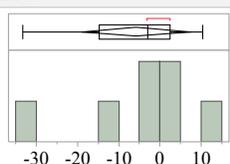
Bias



Quantiles		Summary Statistics		
100.0%	maximum	22.2	Mean	0.2
99.5%		22.2	Std Dev	16.8
97.5%		22.2	Std Err Mean	5.6
90.0%		22.2	Upper 95% Mean	13.1
75.0%	quartile	15.7	Lower 95% Mean	-12.7
50.0%	median	0.0	N	9.0
25.0%	quartile	-11.2		
10.0%		-29.6		
2.5%		-29.6		
0.5%		-29.6		
0.0%	minimum	-29.6		

Distributions Analyte_Method=Iodine-129 Other

Bias

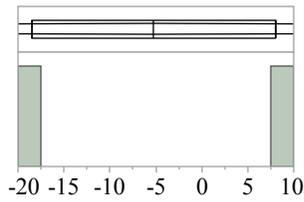


Quantiles		Summary Statistics		
100.0%	maximum	10.5	Mean	-5.8
99.5%		10.5	Std Dev	14.3
97.5%		10.5	Std Err Mean	5.4
90.0%		10.5	Upper 95% Mean	7.4
75.0%	quartile	2.5	Lower 95% Mean	-19.0
50.0%	median	-2.9	N	7.0
25.0%	quartile	-14.8		
10.0%		-33.3		
2.5%		-33.3		
0.5%		-33.3		
0.0%	minimum	-33.3		

XaW Distribution by Detection Method

Distributions Analyte_Detection=Iodine-129 Beta Counting - 2 pi gas flow proportional counter

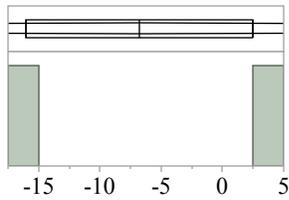
Bias



Quantiles		Summary Statistics		
100.0%	maximum	8.0	Mean	-5.3
99.5%		8.0	Std Dev	18.7
97.5%		8.0	Std Err Mean	13.3
90.0%		8.0	Upper 95% Mean	163.1
75.0%	quartile	8.0	Lower 95% Mean	-173.6
50.0%	median	-5.3	N	2.0
25.0%	quartile	-18.5		
10.0%		-18.5		
2.5%		-18.5		
0.5%		-18.5		
0.0%	minimum	-18.5		

Distributions Analyte_Detection=Iodine-129 Beta Counting - liquid scintillation counter

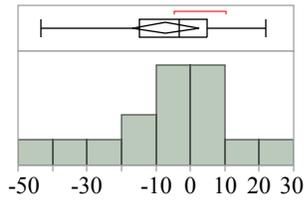
Bias



Quantiles		Summary Statistics		
100.0%	maximum	2.5	Mean	-6.8
99.5%		2.5	Std Dev	13.1
97.5%		2.5	Std Err Mean	9.3
90.0%		2.5	Upper 95% Mean	110.8
75.0%	quartile	2.5	Lower 95% Mean	-124.3
50.0%	median	-6.8	N	2.0
25.0%	quartile	-16.0		
10.0%		-16.0		
2.5%		-16.0		
0.5%		-16.0		
0.0%	minimum	-16.0		

Distributions Analyte_Detection=Iodine-129 Gamma Spectrometry

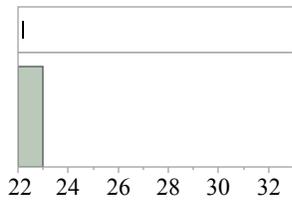
Bias



Quantiles		Summary Statistics		
100.0%	maximum	22.0	Mean	-7.1
99.5%		22.0	Std Dev	17.6
97.5%		22.0	Std Err Mean	4.5
90.0%		15.1	Upper 95% Mean	2.6
75.0%	quartile	4.9	Lower 95% Mean	-16.9
50.0%	median	-3.1	N	15.0
25.0%	quartile	-14.8		
10.0%		-37.4		
2.5%		-43.5		
0.5%		-43.5		
0.0%	minimum	-43.5		

Distributions Analyte_Detection=Iodine-129 Inductively Coupled Plasma Mass Spectrometry

Bias



Quantiles		Summary Statistics		
100.0%	maximum	22.2	Mean	22.2
99.5%		22.2	Std Dev	.
97.5%		22.2	Std Err Mean	.
90.0%		22.2	Upper 95% Mean	.
75.0%	quartile	22.2	Lower 95% Mean	.
50.0%	median	22.2	N	1.0
25.0%	quartile	22.2		
10.0%		22.2		
2.5%		22.2		
0.5%		22.2		
0.0%	minimum	22.2		