

GrW24 Samples Shipped

Lab Code	Lab Name	GrW
CHMH01	222-S Laboratory	1
ADFC99	Abu Dhabi Food Control Authority Laboratories	1
LOCK03	Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory	1
ADEM01	Alabama Department of Environmental Management	1
ANTE01	ALS Environmental	1
ARSL01	American Radiation Services Inc.	1
ARPL01	Analytical Support Operations - Radiochemical Processing Lab	1
DRMG01	B&W Pantex - D&RMG	1
NEIS01	B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory	1
AY1201	B&W Y-12, Analytical Chemistry Organization Laboratory	1
CDHS01	California Department of Public Health	1
CMRC01	Carlsbad Environmental Monitoring and Research Center	1
CHPR01	CHPRC Central Count Room	1
DPHE01	Colorado Dept. of Public Health & Env. / Laboratory Services Div.	1
DEHS01	Department of Environmental Health & Safety	1
DLEA01	DLE Associates	1
TMAR01	Eberline Analytical Corp. Richmond CA Lab	1
TMAO01	EBERLINE SERVICES OAK RIDGE LABORATORY	1
ERLG01	Environmental Radiation Laboratory	1
TELE02	Environmental, Inc., Midwest Lab	1
FDHE01	Florida Dept of Health Environmental Laboratory	1
FMEC99	Foods and Water Laboratories Center	1
TNUT01	FUSRAP	1
GENE01	GEL Laboratories, LLC	1
HCAL01	Hazards Control Analytical Lab	1
HPAC99	HPA, CRCE Scotland	1
ARGO01	Idaho National Laboratory	1
ISUP01	ISU - Department of Physics/Health Physics/EAL	1
KDHE01	Kansas Dept. of Health & Environment	1
CEEA99	Laboratorio de Vigilancia Ambiental Radiactiva	1
LAWR01	LAWRENCE BERKELEY NATIONAL LABORATORY	1
CESL01	Lawrence Livermore National Laboratory - EMRL	1
LAEC99	Lebanese Atomic Energy Commission - Environmental Radiation	1
LGCL99	LGC Ltd	1
MDPH01	MDPH-Radiation Control Program	1
ERPD99	Ministry Of Health,Radiation Protection Department Lab	1
MSCL01	MSC	1
NARL01	National Air and Radiation Environmental Laboratory	1
USED99	National Center for Nuclear Energy, Sciences and Techniques	1
NRL99	National Radiation Laboratory	1
NTSI01	Nuclear Technology Services, Inc.	1

ODHL01	Ohio Department of Health Laboratory	1
ORIS01	ORISE/IEAV	1
OTLI01	Outreach Technologies, Inc.	1
WEST04	PACE ANALYTICAL SERVICES, PITTSBURGH	1
MKME01	PIKA International	1
JAEC99	Radiation Measurements Laboratory	2
ERHD99	Radiation Protection Bureau RSD NMS	1
RPSC01	Radiation Protection Service	1
MART03	Radioactive Material Analysis Laboratory	1
RMCL99	Royal Scientific Society - Radiation Protection Lab	1
RSAL01	RSA Laboratories, Inc.	1
HECR01	SC Dept. Health and Environmental Control Radiological Laboratory	1
SNRC99	Soreq NRC	1
SOUT01	Southwest Research Institute	1
SEML01	SRS Environmental Monitoring Laboratory	1
TELE01	TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES	1
QUAN03	TestAmerica	1
QUAN01	TestAmerica St. Louis	1
TDHL01	Texas Department of State Health Services Laboratory	1
MART02	United States Enrichment Corporation	1
MART01	USEC, Inc.	1
ERCL01	Washington State Public Health Laboratories	1
WEST03	Waste Sampling and Characterization Facility, MSA/RJLG	1
WIPP01	WIPP Laboratories	1
WSHL01	Wisconsin State Laboratory of Hygiene	1
WVDP01	WVDP Environmental Laboratory	1

GrW24 Participating Laboratories Not Reporting Data

8 of 51 labs who received samples for this study have not yet entered data.

Lab Code	Lab Name	Standard
AREV01	AREVA - CMC	GrW
CHPR01	CHPRC Central Count Room	GrW
MDPH01	MDPH-Radiation Control Program	GrW
MSCL01	MSC	GrW
NARL01	National Air and Radiation Environmental Laboratory	GrW
NTSI01	Nuclear Technology Services, Inc.	GrW
RSAL01	RSA Laboratories, Inc.	GrW
WSTI01	Waste Stream Technology Inc.	GrW

MAPEP-11-GrW24 Reference Values

Analyte Name	Reference		False Pos	Sens Eval
	Value	Uncertainty		
Gross alpha	1.14	0.01		
Gross beta	2.96	0.07		

Reference Date: 2/1/11 12:00 PM

Sample Statistical Summary

MAPEP-11-GrW24

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/L)
Gross alpha	53	49	1.093	0.305	1.136	0.012	0.341 - 1.931
Gross beta	53	50	3.10	0.39	2.96	0.07	1.48 - 4.44

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".

Gross Alpha Flags:

A = Result acceptable, Bias 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 > +/- 70% or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:

A = Result acceptable, Bias 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)

Flag Summary Report

MAPEP-11-GrW24

Radiological				
Analyte	A	W	RW	N
Gross alpha	49			4
Gross beta	50			3



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

Laboratory Results For MAPEP-11-GrW24
 (ADEM01) Alabama Department of Environmental Management
 Montgomery Laboratory
 Montgomery, AL 36110

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	10.27	1.136	N		804.0	0.341 - 1.931	1.35	
Gross beta	35.20	2.96	N		1089.2	1.48 - 4.44	2.36	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24

(ANTE01) ALS Environmental

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
Gross alpha	1.44	1.136	A		26.8	0.341 - 1.931	0.12	
Gross beta	3	2.96	A		1.4	1.48 - 4.44	0.24	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(AREV01) AREVA - CMC

1724 Mount Athos Road

Lynchburg, VA 24504

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24
 (ARSL01) American Radiation Services Inc.
 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
Gross alpha	1.143	1.136	A		0.6	0.341 - 1.931	0.280	H
Gross beta	2.652	2.96	A		-10.4	1.48 - 4.44	0.624	H

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(AY1201) B&W Y-12, Analytical Chemistry Organization Laboratory

Y12, NSC, Bldg. 9995, Rm 142

Oak Ridge, TN 37831-8189

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.28	1.136	A		12.7	0.341 - 1.931	0.12	
Gross beta	3.15	2.96	A		6.4	1.48 - 4.44	0.17	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (CESL01) Lawrence Livermore National Laboratory - EMRL
 7000 East Avenue
 Livermore, CA 94551

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	5.31E-01	1.136	A		-53.3	0.341 - 1.931	1.16E-01	H
Gross beta	3.56E+00	2.96	A		20.3	1.48 - 4.44	3.55E-01	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(CHMH01) 222-S Laboratory

P.O. Box 250, MS T6-10

Richland, WA 99352

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.12	1.136	A		-1.4	0.341 - 1.931	0.30	H
Gross beta	3.66	2.96	A		23.6	1.48 - 4.44	0.557	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (CHPR01) CHPRC Central Count Room
 2420 Stevens Center Place
 Richland, WA 99352

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (CMRC01) Carlsbad Environmental Monitoring and Research Center
 1400 University Dr.
 Carlsbad, NM 88220

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.746	1.136	A		-34.3	0.341 - 1.931	0.460	H
Gross beta	3.18	2.96	A		7.4	1.48 - 4.44	0.66	H

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (DEHS01) Department of Environmental Health & Safety
 North Carolina State Univ.
 Raleigh, NC 27695-8007

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.62	1.136	A		42.6	0.341 - 1.931	0.08	
Gross beta	3.56	2.96	A		20.3	1.48 - 4.44	0.09	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(DLEA01) DLE Associates

730 Alfred Nobel Drive

Hercules, CA 94547

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.48	1.136	A		30.3	0.341 - 1.931	0.35	H
Gross beta	2.34	2.96	A		-20.9	1.48 - 4.44	0.25	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(DPHE01) Colorado Dept. of Public Health & Env. / Laboratory Services Div.

8100 Lowry Blvd
Denver, CO 80230

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.66	1.136	A		46.1	0.341 - 1.931	0.26	
Gross beta	3.55	2.96	A		19.9	1.48 - 4.44	0.28	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(DRMG01) B&W Pantex - D&RMG

Bldg 12-122

Amarillo, TX 79120-0020

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	7.99E-01	1.136	A		-29.7	0.341 - 1.931	6.66E-02	
Gross beta	2.79E+00	2.96	A		-5.7	1.48 - 4.44	8.14E-02	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150 th Street
 Shoreline, WA 98155-9701

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.34	1.136	A		18.0	0.341 - 1.931	0.20	
Gross beta	3.17	2.96	A		7.1	1.48 - 4.44	0.20	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (ERHD99) Radiation Protection Bureau RSD NMS
 775 Brookfield Road AL6302D1
 Ottawa, Ontario K1A 1C1

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.87	1.136	A		-23.4	0.341 - 1.931	0.21	H
Gross beta	3.08	2.96	A		4.1	1.48 - 4.44	0.77	H

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (ERLG01) Environmental Radiation Laboratory
 Georgia Institute of Tech.
 Atlanta, GA 30332

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.3	1.136	A		14.4	0.341 - 1.931	.2	
Gross beta	3.1	2.96	A		4.7	1.48 - 4.44	.2	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (ERPD99) Ministry Of Health, Radiation Protection Department Lab
 Al-Awqaf Complex-Tower#12
 Sharq, Kuwait 656

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.332	1.136	N		-70.8	0.341 - 1.931	0.039	
Gross beta	2.616	2.96	A		-11.6	1.48 - 4.44	0.314	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24
 (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
Gross alpha	1.06	1.136	A		-6.7	0.341 - 1.931	0.08	
Gross beta	3.04	2.96	A		2.7	1.48 - 4.44	0.07	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (FMEC99) Foods and Water Laboratories Center
 Ministry of Regional Municipalities and Water Resources
 Muscat, B.O.Box. 3094 111

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.7975	1.136	A		58.2	0.341 - 1.931	0.043	L
Gross beta	2.97882	2.96	A		0.6	1.48 - 4.44	0.056	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24

(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
Gross alpha	1.019	1.136	A		-10.3	0.341 - 1.931	0.046	
Gross beta	3.140	2.96	A		6.1	1.48 - 4.44	0.054	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (HCAL01) Hazards Control Analytical Lab
 Lawrence Livermore National
 Livermore, CA 94551

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.22	1.136	A		7.4	0.341 - 1.931	.14	
Gross beta	3.26	2.96	A		10.1	1.48 - 4.44	.19	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(HECR01) SC Dept. Health and Environmental Control Radiological Laboratory
 2600 Bull St.
 Columbia, SC 29201

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.33	1.136	A		17.1	0.341 - 1.931	0.31	H
Gross beta	2.89	2.96	A		-2.4	1.48 - 4.44	0.19	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

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

785 S. 8th Ave, Rm 120

Pocatello, ID 83209-8106

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.44	1.136	A		-61.3	0.341 - 1.931	0.05	
Gross beta	4.22	2.96	A		42.6	1.48 - 4.44	0.10	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (JAEC99) Radiation Measurements Laboratory
 Jordan Atomic Energy Commission
 Amman, Jordan 00962 6

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.967	1.136	A		-14.9	0.341 - 1.931	0.126	
Gross beta	4.08	2.96	A		37.8	1.48 - 4.44	0.142	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (KDHE01) Kansas Dept. of Health & Environment
 Forbes Bldg. 740
 Topeka, KS 66620

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.15	1.136	A		1.2	0.341 - 1.931	0.20	
Gross beta	3.42	2.96	A		15.5	1.48 - 4.44	0.20	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

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

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.636	1.136	A		-44.0	0.341 - 1.931	.127	
Gross beta	3.00	2.96	A		1.4	1.48 - 4.44	.116	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(LGCL99) LGC Ltd

Queens Road

Teddington, Middlesex TW11 0LY

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.784	1.136	A		-31.0	0.341 - 1.931	0.112	
Gross beta	2.921	2.96	A		-1.3	1.48 - 4.44	0.234	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

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

INL/Battelle Energy Alliance, LLC

Idaho Falls, ID 83415-7111

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.94	1.136	A		-17.3	0.341 - 1.931	0.084	
Gross beta	3.62	2.96	A		22.3	1.48 - 4.44	0.20	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(MART01) USEC, Inc.
 Lab COC, Bldg. X-710, Rm 222
 Piketon, OH 45661-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.09	1.136	A		-4.0	0.341 - 1.931	0.116	
Gross beta	3.32	2.96	A		12.2	1.48 - 4.44	0.161	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (MART02) United States Enrichment Corporation
 PO Box 1410
 Paducah, KY 42002

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.26	1.136	A		10.9	0.341 - 1.931	0.13	
Gross beta	2.48	2.96	A		-16.2	1.48 - 4.44	0.16	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (MART03) Radioactive Material Analysis Laboratory
 ORNL
 Oak Ridge, TN 37831-6223

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.84	1.136	A		-26.1	0.341 - 1.931	0.26	H
Gross beta	3.28	2.96	A		10.8	1.48 - 4.44	0.4	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (MDPH01) MDPH-Radiation Control Program
 MERL-Room 002
 Jamaica Plain, MA 02130-3597

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(MKME01) PIKA International

5025 Arnold Ave, Ste. 100

McClellan, CA 95652

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	.005	1.136	N		-99.6	0.341 - 1.931	0.1	H
Gross beta	1.27	2.96	N		-57.1	1.48 - 4.44	1	H

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24

(MSCL01) MSC
 804 S. Illinois Ave
 Oak Ridge, TN 37830

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (NARL01) National Air and 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
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (NCNS99) National Center for Nuclear Sciences and Technologies
 Technopole Sidi
 Thabet Ariana, Ariana 2020

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.526	1.136	A		-53.7	0.341 - 1.931	0.028	
Gross beta	3.938	2.96	A		33.0	1.48 - 4.44	0.081	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(NESI01) B&W Technical Services-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
Gross alpha	0.97	1.136	A		-14.6	0.341 - 1.931	0.04	
Gross beta	2.82	2.96	A		-4.7	1.48 - 4.44	0.05	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (NRL99) National Radiation Laboratory
 PO Box 25099
 Christchurch, Christchurch 8144

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.238	1.136	A		9.0	0.341 - 1.931	0.081	
Gross beta	2.94	2.96	A		-0.7	1.48 - 4.44	0.18	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (NTSI01) Nuclear Technology Services, Inc.
 635 Hembree Parkway
 Roswell, GA 30076

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (ODHL01) Ohio Department of Health Laboratory
 8995 E Main Street
 Reynoldsburg, OH 43068

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.9114333	1.136	A		-19.8	0.341 - 1.931	0.204733	H
Gross beta	2.7417	2.96	A		-7.4	1.48 - 4.44	0.3885	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(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
Gross alpha	1.33	1.136	A		17.1	0.341 - 1.931	0.05	
Gross beta	3.33	2.96	A		12.5	1.48 - 4.44	0.06	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(OTLI01) Outreach Technologies, Inc.

311 N. Aspen

Broken Arrow, OK 74012-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.15	1.136	A		1.2	0.341 - 1.931	0.13	
Gross beta	2.68	2.96	A		-9.5	1.48 - 4.44	0.15	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(QUAN01) TestAmerica St. Louis

13715 Rider Trail North

Earth City, MO 63045-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.525	1.136	A		34.2	0.341 - 1.931	0.1071	
Gross beta	2.991	2.96	A		1.0	1.48 - 4.44	0.1258	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(QUAN03) TestAmerica
 2800 GEORGE WASHINGTON WAY
 RICHLAND, WA 99354-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.906	1.136	A		-20.2	0.341 - 1.931	0.01	L
Gross beta	3.09	2.96	A		4.4	1.48 - 4.44	0.197	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(RPSC01) Radiation Protection Service

Ontario Ministry of Labour

Weston, Ontario M9P 3T1

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.5	1.136	A		32.0	0.341 - 1.931	.3	
Gross beta	2.7	2.96	A		-8.8	1.48 - 4.44	.3	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(RSAL01) RSA Laboratories, Inc.

PO Box 61

Hebron, CT 06248

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24
 (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
Gross alpha	1.28	1.136	A		12.7	0.341 - 1.931	0.22	
Gross beta	3.34	2.96	A		12.8	1.48 - 4.44	0.29	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (SNRC99) Soreq NRC
 Radioactivity Measurement Section
 Yavne, Israel 81800

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.07	1.136	A		-5.8	0.341 - 1.931	0.19	
Gross beta	3.11	2.96	A		5.1	1.48 - 4.44	0.25	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (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
Gross alpha	1.20	1.136	A		5.6	0.341 - 1.931	0.0770	
Gross beta	2.56	2.96	A		-13.5	1.48 - 4.44	0.154	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (TDHL01) Texas Department of State Health Services Laboratory
 1100 W 49th Street
 Austin, TX 78756

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.07	1.136	A		-5.8	0.341 - 1.931	0.10	
Gross beta	2.97	2.96	A		0.3	1.48 - 4.44	0.07	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(TELE01) TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES

2508 Quality Lane

Knoxville, TN 37931-6819

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.767	1.136	A		-32.5	0.341 - 1.931	0.198	H
Gross beta	3.43	2.96	A		15.9	1.48 - 4.44	0.249	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (TELE02) 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
Gross alpha	0.82	1.136	A		-27.8	0.341 - 1.931	0.07	
Gross beta	2.82	2.96	A		-4.7	1.48 - 4.44	0.07	L

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (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
Gross alpha	1.215	1.136	A		7.0	0.341 - 1.931	0.234	
Gross beta	3.176	2.96	A		7.3	1.48 - 4.44	0.227	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (TMAR01) Eberline Analytical Corp. Richmond CA Lab
 2030 Wright Ave
 Richmond, CA 94804-3849

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.91	1.136	A		-19.9	0.341 - 1.931	0.17	
Gross beta	2.84	2.96	A		-4.1	1.48 - 4.44	0.34	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(TNUT01) FUSRAP
8945 LATTY AVE
BERKELEY, MO 63134-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.0457	1.136	A		-7.9	0.341 - 1.931	0.2916	H
Gross beta	2.7803	2.96	A		-6.1	1.48 - 4.44	0.3436	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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



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

Laboratory Results For MAPEP-11-GrW24

(WEST03) Waste Sampling and Characterization Facility, MSA/RJLG

PO Box 650, S3-30

Richland, WA 99352

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.67	1.136	A		-41.0	0.341 - 1.931	0.08	
Gross beta	2.82	2.96	A		-4.7	1.48 - 4.44	0.18	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (WEST04) PACE ANALYTICAL SERVICES, PITTSBURGH
 1638 Roseytown Road
 Greensburg, PA 15601

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.9759	1.136	A		-14.1	0.341 - 1.931	0.1867	
Gross beta	2.983	2.96	A		0.8	1.48 - 4.44	0.5493	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(WIPP01) WIPP Laboratories

1400 University Drive

Carlsbad, NM 88220

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	3.04E-01	1.136	N		-73.2	0.341 - 1.931	2.41E-02	
Gross beta	1.22E+00	2.96	N		-58.8	1.48 - 4.44	5.77E-02	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (WSHL01) Wisconsin State Laboratory of Hygiene
 2601 Agriculture Drive
 Madison, WI 53718

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.458	1.136	A		28.3	0.341 - 1.931	0.160	
Gross beta	2.9856	2.96	A		0.9	1.48 - 4.44	0.1313	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24

(WSTI01) Waste Stream Technology Inc.

302 Grote Ave
Buffalo, NY 14207

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	1.136				0.341 - 1.931		
Gross beta	NR	2.96				1.48 - 4.44		

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

A = Result acceptable, Bias ≤ 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 $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
A = Result acceptable, Bias ≤ 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)



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

Laboratory Results For MAPEP-11-GrW24
 (WVDP01) WVDP Environmental Laboratory
 10282 Rock Springs Road
 West Valley, NY 14171

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.17	1.136	A		3.0	0.341 - 1.931	0.0740	
Gross beta	2.83	2.96	A		-4.4	1.48 - 4.44	0.117	

Radiological Reference Date: February 1, 2011

Gross Alpha Flags:

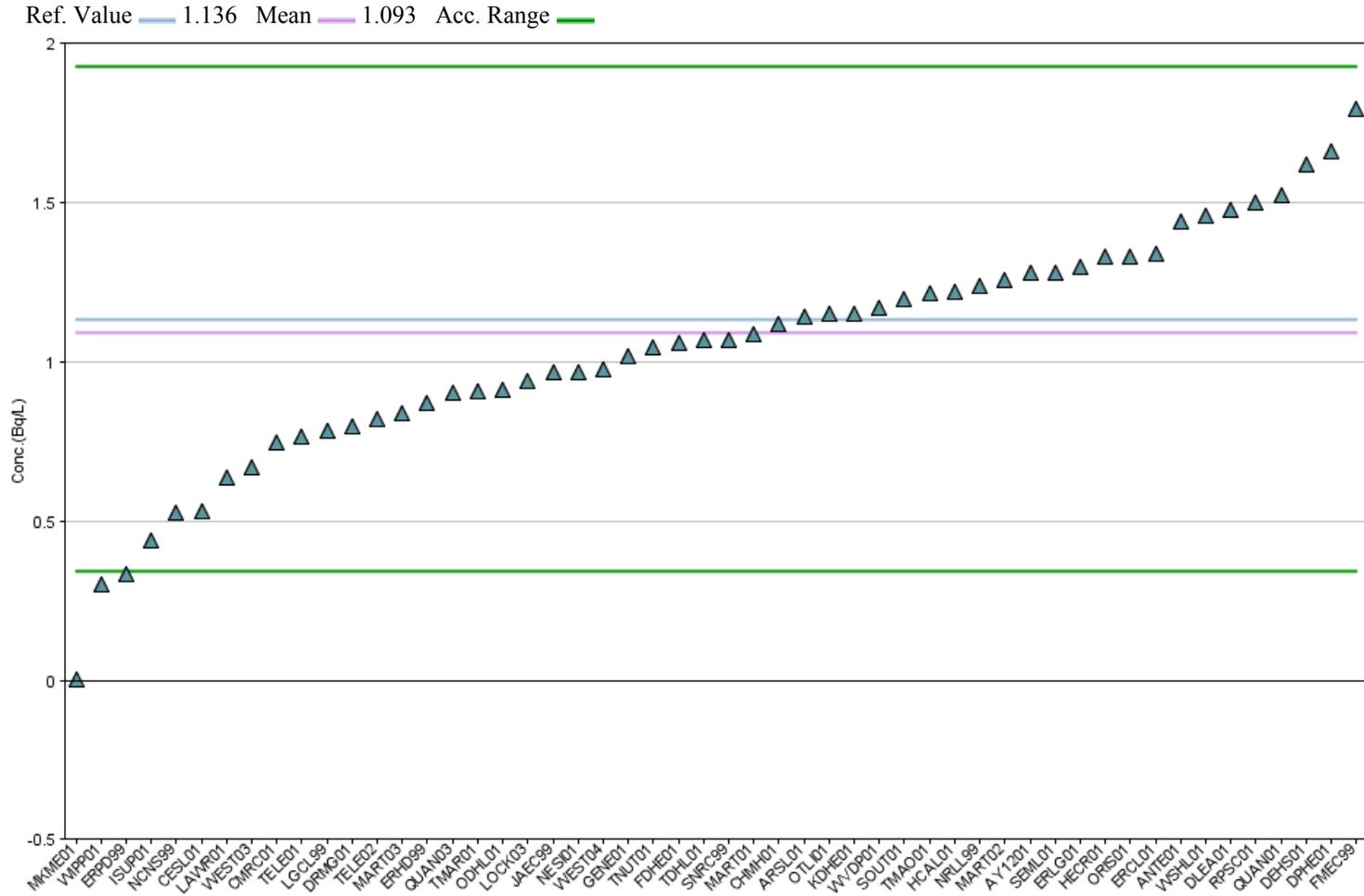
A = Result acceptable, Bias ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero). N = Result not acceptable, Bias $> \pm 70\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty)

Gross Beta Flags:
 A = Result acceptable, Bias ≤ 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)

Gross alpha

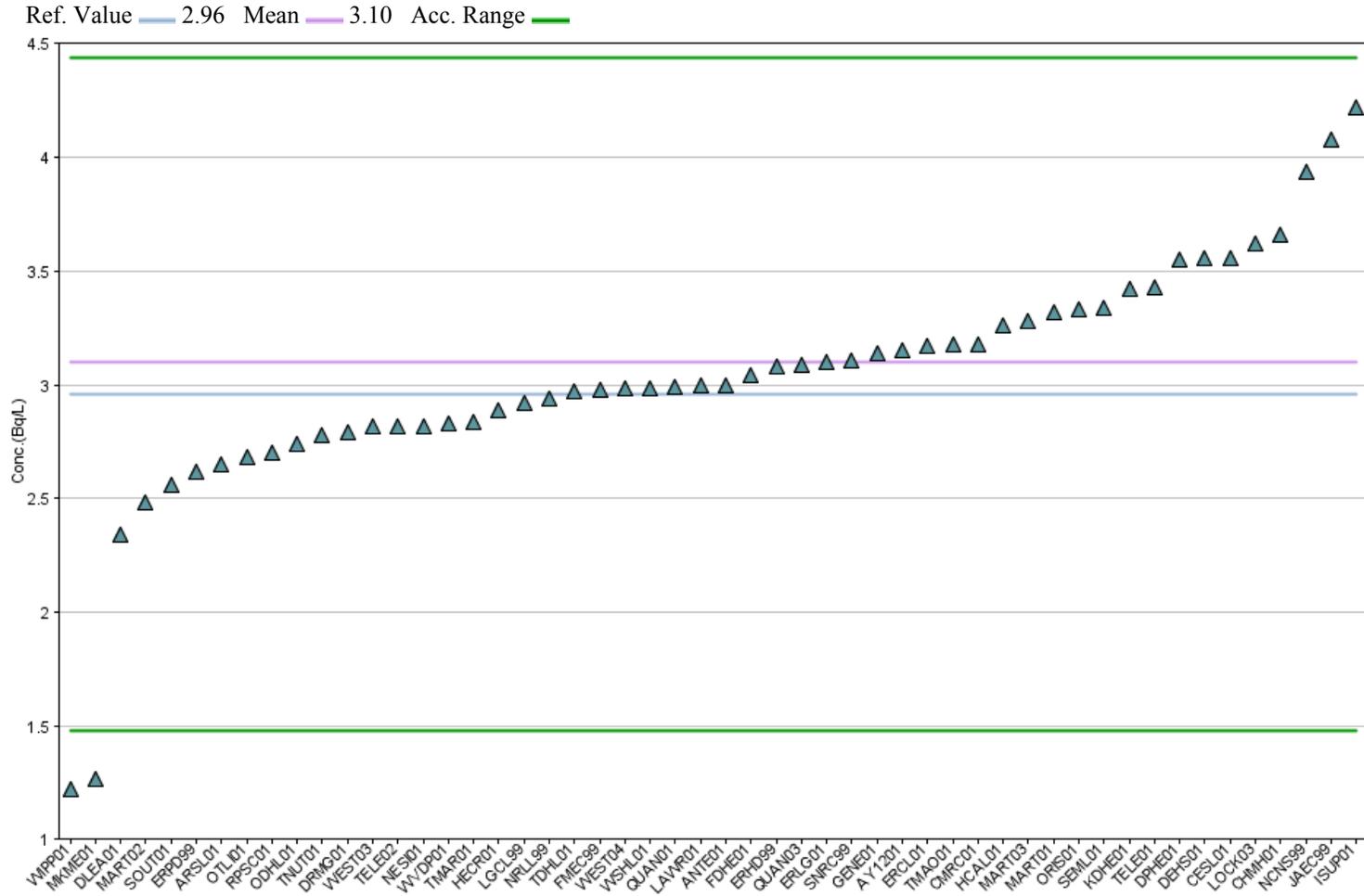
MAPEP-11-GrW24



Note: This chart shows only data points with values between 0.00 and 2.62 (± 5 Standard Deviations)

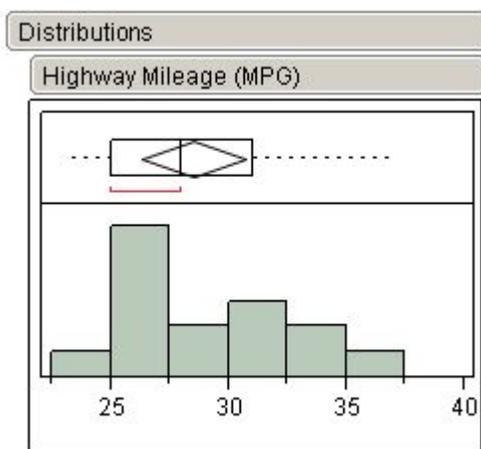
Gross beta

MAPEP-11-GrW24

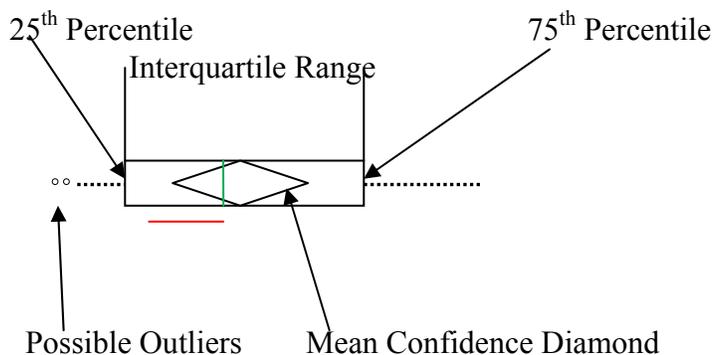


Note: This chart shows only data points with values between 1.15 and 5.05 (± 5 Standard Deviations)

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. The data points (small 'dots') plot the bias (or z-score for organic constituents) of each of the analytes in each of the matrices. The BLACK small vertical line inside the small rectangle at the top of the data distribution graph is the mean of the population of the bias shown for that analyte in the matrix.



Moments	
Mean	28.466667
Std Dev	3.9797104
Std Err Mean	1.0275568
Upper 95% Mean	30.670557
Lower 95% Mean	26.262776
N	15
Sum Wgt	15
Sum	427
Variance	15.838095
Skewness	0.7309964
Kurtosis	-0.165153
CV	13.980247
N Missing	0

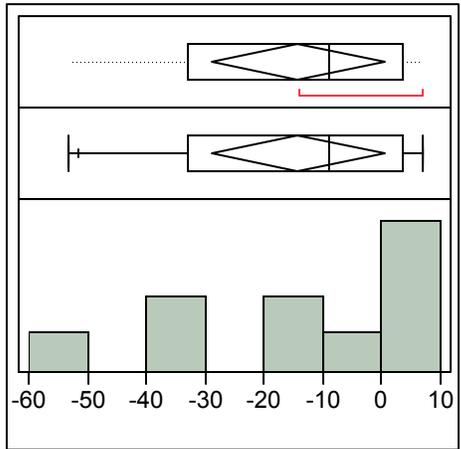


The box plots summarize the distribution of points for each analyte. The ends of the box are the 25th and 75th quantiles. The difference between the quartiles is the interquartile range. The line across the middle of the box identifies the median bias value. Each box has lines, sometimes called whiskers, which extend from each end. The whiskers extend from the ends of the small box to the outermost data point that falls within the distances computed. Any potential outliers are represented as small black dots.

The box plot of the bias data points and the mean visually illustrate the breadth of the distribution and where any potential outliers in the distribution might lie. The moments for the distribution plot are provided below 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.

Distributions Analyte Name=Gross alpha, Detection Method=Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	7
99.5%		7
97.5%		7
90.0%		6.86
75.0%	quartile	3.65
50.0%	median	-9.05
25.0%	quartile	-32.95
10.0%		-51.4
2.5%		-53.3
0.5%		-53.3
0.0%	minimum	-53.3

Moments

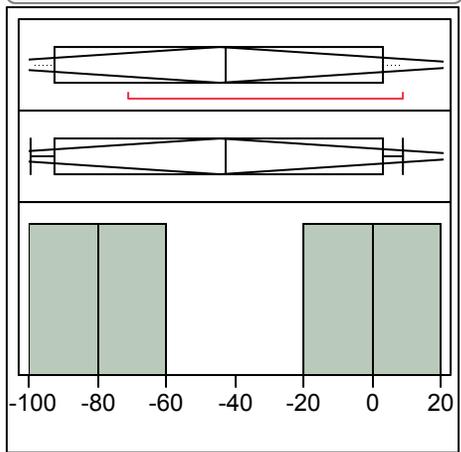
Mean	-14.19
Std Dev	20.441268
Std Err Mean	6.4640966
Upper 95% Mean	0.4328024
Lower 95% Mean	-28.8128
N	10
Sum Wgt	10
Sum	-141.9
Variance	417.84544
Skewness	-0.774694
Kurtosis	-0.442086
CV	-144.054
N Missing	0

Distributions Analyte Name=Gross alpha, Detection Method=Beta Counting - liquid scintillation counter

Bias

Distributions Analyte Name=Gross alpha, Detection Method=Beta Counting - liquid scintillation counter

Bias



Quantiles

100.0%	maximum	9
99.5%		9
97.5%		9
90.0%		9
75.0%	quartile	3.025
50.0%	median	-42.85
25.0%	quartile	-92.4
10.0%		-99.6
2.5%		-99.6
0.5%		-99.6
0.0%	minimum	-99.6

Moments

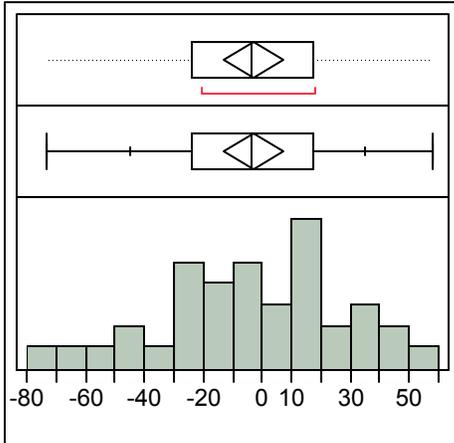
Mean	-44.075
Std Dev	49.884492
Std Err Mean	24.942246
Upper 95% Mean	35.302358
Lower 95% Mean	-123.4524
N	4
Sum Wgt	4
Sum	-176.3
Variance	2488.4625
Skewness	-0.085549
Kurtosis	-3.447476
CV	-113.1809
N Missing	0

Distributions Analyte Name=Gross alpha, Detection Method=Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias

Distributions Analyte Name=Gross alpha, Detection
 Method=Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	58.2
99.5%		58.2
97.5%		58.2
90.0%		35.04
75.0%	quartile	17.325
50.0%	median	-3.6
25.0%	quartile	-24.075
10.0%		-44.97
2.5%		-73.2
0.5%		-73.2
0.0%	minimum	-73.2

Moments

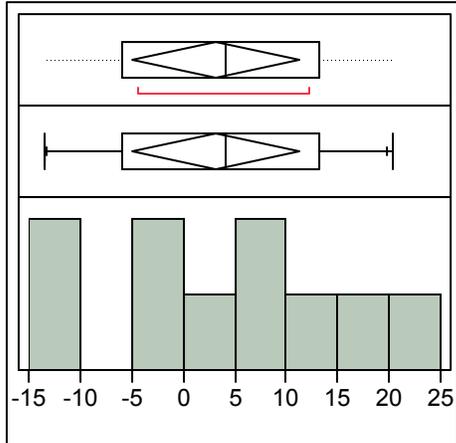
Mean	-2.889474
Std Dev	30.452664
Std Err Mean	4.9400744
Upper 95% Mean	7.1200679
Lower 95% Mean	-12.89902
N	38
Sum Wgt	38
Sum	-109.8
Variance	927.36475
Skewness	-0.230605
Kurtosis	-0.26598
CV	-1053.917
N Missing	0

Distributions Analyte Name=Gross beta, Detection
 Method=Beta Counting - 2 pi gas flow proportional counter

Bias

Distributions Analyte Name=Gross beta, Detection
Method=Beta Counting - 2 pi gas flow proportional counter

Bias



Quantiles

100.0%	maximum	20.3
99.5%		20.3
97.5%		20.3
90.0%		19.86
75.0%	quartile	13.125
50.0%	median	4.05
25.0%	quartile	-5.9
10.0%		-13.19
2.5%		-13.5
0.5%		-13.5
0.0%	minimum	-13.5

Moments

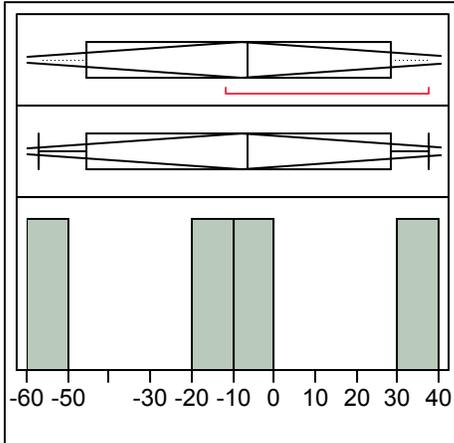
Mean	3.15
Std Dev	11.302827
Std Err Mean	3.5742676
Upper 95% Mean	11.235555
Lower 95% Mean	-4.935555
N	10
Sum Wgt	10
Sum	31.5
Variance	127.75389
Skewness	0.0075347
Kurtosis	-1.171728
CV	358.81989
N Missing	0

Distributions Analyte Name=Gross beta, Detection
Method=Beta Counting - liquid scintillation counter

Bias

Distributions Analyte Name=Gross beta, Detection Method=Beta Counting - liquid scintillation counter

Bias



Quantiles

100.0%	maximum	37.8
99.5%		37.8
97.5%		37.8
90.0%		37.8
75.0%	quartile	28.175
50.0%	median	-6.15
25.0%	quartile	-45.725
10.0%		-57.1
2.5%		-57.1
0.5%		-57.1
0.0%	minimum	-57.1

Moments

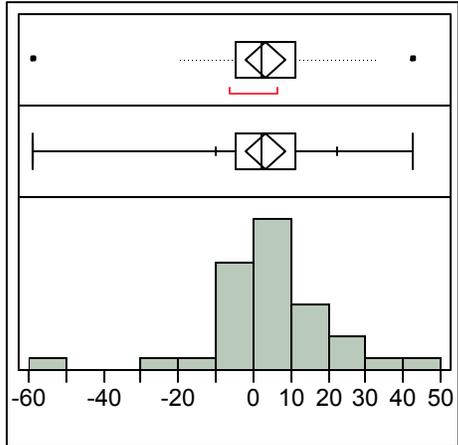
Mean	-7.9
Std Dev	39.049797
Std Err Mean	19.524899
Upper 95% Mean	54.236942
Lower 95% Mean	-70.03694
N	4
Sum Wgt	4
Sum	-31.6
Variance	1524.8867
Skewness	-0.261184
Kurtosis	1.1565377
CV	-494.3012
N Missing	0

Distributions Analyte Name=Gross beta, Detection Method=Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias

Distributions Analyte Name=Gross beta, Detection
 Method=Gross Alpha/Beta - 2 pi gas flow proportional counter

Bias



Quantiles

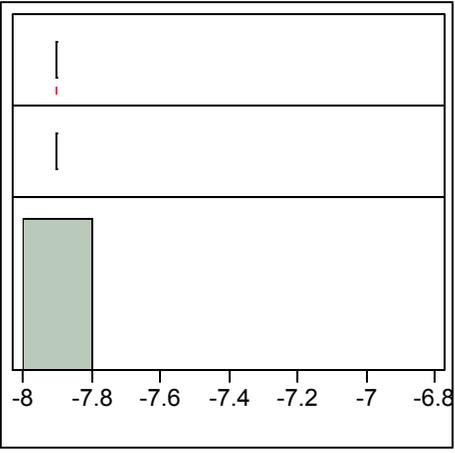
100.0%	maximum	42.6
99.5%		42.6
97.5%		42.6
90.0%		22.43
75.0%	quartile	11.225
50.0%	median	2.05
25.0%	quartile	-4.7
10.0%		-10.17
2.5%		-58.8
0.5%		-58.8
0.0%	minimum	-58.8

Moments

Mean	3.1157895
Std Dev	16.378191
Std Err Mean	2.6568935
Upper 95% Mean	8.499167
Lower 95% Mean	-2.267588
N	38
Sum Wgt	38
Sum	118.4
Variance	268.24515
Skewness	-0.962539
Kurtosis	5.1362952
CV	525.65141
N Missing	0

Distributions Analyte Name=Gross alpha,
Preparation Method=Coprecipitation, acidified

Bias



Quantiles

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

Moments

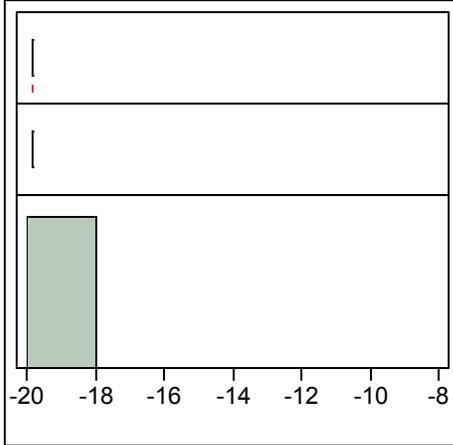
Mean	-7.9
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1
Sum Wgt	1
Sum	-7.9
Variance	.
Skewness	.
Kurtosis	.
CV	.
N Missing	0

Distributions Analyte Name=Gross alpha,
Preparation Method=Coprecipitation, straight

Bias

Distributions Analyte Name=Gross alpha,
Preparation Method=Coprecipitation, straight

Bias



Quantiles

100.0%	maximum	-19.8
99.5%		-19.8
97.5%		-19.8
90.0%		-19.8
75.0%	quartile	-19.8
50.0%	median	-19.8
25.0%	quartile	-19.8
10.0%		-19.8
2.5%		-19.8
0.5%		-19.8
0.0%	minimum	-19.8

Moments

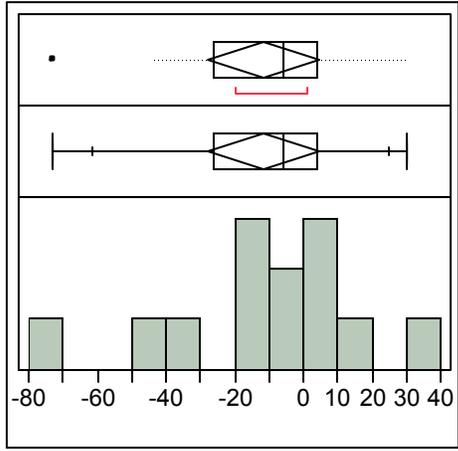
Mean	-19.8
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1
Sum Wgt	1
Sum	-19.8
Variance	.
Skewness	.
Kurtosis	.
CV	.
N Missing	0

Distributions Analyte Name=Gross alpha, Preparation Method=EPA
900, Radioactivity, Gross Alpha/Beta Screening, 600/4-80-032

Bias

Distributions Analyte Name=Gross alpha, Preparation Method=EPA 900, Radioactivity, Gross Alpha/Beta Screening, 600/4-80-032

Bias



Quantiles

100.0%	maximum	30.3
99.5%		30.3
97.5%		30.3
90.0%		25.02
75.0%	quartile	4.1
50.0%	median	-5.8
25.0%	quartile	-26.2
10.0%		-61.52
2.5%		-73.2
0.5%		-73.2
0.0%	minimum	-73.2

Moments

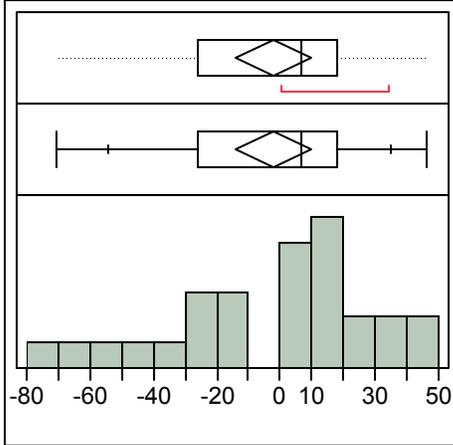
Mean	-11.77692
Std Dev	26.902731
Std Err Mean	7.461475
Upper 95% Mean	4.4802344
Lower 95% Mean	-28.03408
N	13
Sum Wgt	13
Sum	-153.1
Variance	723.75692
Skewness	-0.832912
Kurtosis	1.2092401
CV	-228.436
N Missing	0

Distributions Analyte Name=Gross alpha, Preparation Method=Evaporation, acidified

Bias

Distributions Analyte Name=Gross alpha,
Preparation Method=Evaporation, acidified

Bias



Quantiles

100.0%	maximum	46.1
99.5%		46.1
97.5%		46.1
90.0%		35.04
75.0%	quartile	17.775
50.0%	median	6.5
25.0%	quartile	-25.9
10.0%		-54.46
2.5%		-70.8
0.5%		-70.8
0.0%	minimum	-70.8

Moments

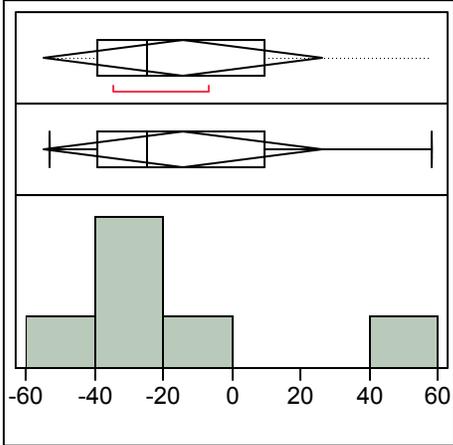
Mean	-2.021429
Std Dev	31.011555
Std Err Mean	5.8606331
Upper 95% Mean	10.003597
Lower 95% Mean	-14.04645
N	28
Sum Wgt	28
Sum	-56.6
Variance	961.71656
Skewness	-0.583227
Kurtosis	-0.336394
CV	-1534.141
N Missing	0

Distributions Analyte Name=Gross alpha,
Preparation Method=Evaporation, straight

Bias

Distributions Analyte Name=Gross alpha,
Preparation Method=Evaporation, straight

Bias



Quantiles

100.0%	maximum	58.2
99.5%		58.2
97.5%		58.2
90.0%		58.2
75.0%	quartile	9.525
50.0%	median	-24.75
25.0%	quartile	-39.05
10.0%		-53.3
2.5%		-53.3
0.5%		-53.3
0.0%	minimum	-53.3

Moments

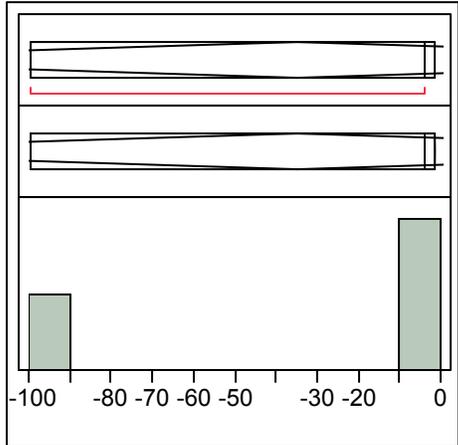
Mean	-14.26667
Std Dev	38.618786
Std Err Mean	15.766054
Upper 95% Mean	26.261264
Lower 95% Mean	-54.7946
N	6
Sum Wgt	6
Sum	-85.6
Variance	1491.4107
Skewness	1.6201815
Kurtosis	3.2193653
CV	-270.6924
N Missing	0

Distributions Analyte Name=Gross alpha, Preparation
Method=No preparation - analyzed as received

Bias

Distributions Analyte Name=Gross alpha, Preparation Method=No preparation - analyzed as received

Bias



Quantiles

100.0%	maximum	-1.4
99.5%		-1.4
97.5%		-1.4
90.0%		-1.4
75.0%	quartile	-1.4
50.0%	median	-4
25.0%	quartile	-99.6
10.0%		-99.6
2.5%		-99.6
0.5%		-99.6
0.0%	minimum	-99.6

Moments

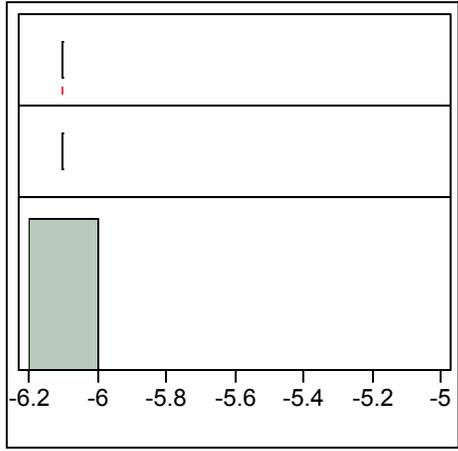
Mean	-35
Std Dev	55.960343
Std Err Mean	32.308719
Upper 95% Mean	104.0132
Lower 95% Mean	-174.0132
N	3
Sum Wgt	3
Sum	-105
Variance	3131.56
Skewness	-1.727845
Kurtosis	.
CV	-159.8867
N Missing	0

Distributions Analyte Name=Gross beta, Preparation Method=Coprecipitation, acidified

Bias

Distributions Analyte Name=Gross beta,
Preparation Method=Coprecipitation, acidified

Bias



Quantiles

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

Moments

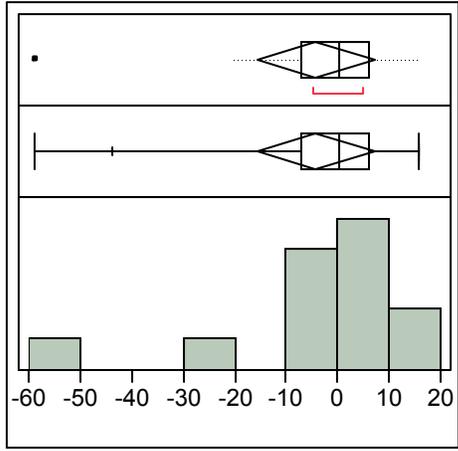
Mean	-6.1
Std Dev	.
Std Err Mean	.
Upper 95% Mean	.
Lower 95% Mean	.
N	1
Sum Wgt	1
Sum	-6.1
Variance	.
Skewness	.
Kurtosis	.
CV	.
N Missing	0

Distributions Analyte Name=Gross beta, Preparation Method=EPA
900, Radioactivity, Gross Alpha/Beta Screening, 600/4-80-032

Bias

Distributions Analyte Name=Gross beta, Preparation Method=EPA 900, Radioactivity, Gross Alpha/Beta Screening, 600/4-80-032

Bias



Quantiles

100.0%	maximum	15.9
99.5%		15.9
97.5%		15.9
90.0%		15.74
75.0%	quartile	6.2
50.0%	median	0.3
25.0%	quartile	-7.1
10.0%		-43.64
2.5%		-58.8
0.5%		-58.8
0.0%	minimum	-58.8

Moments

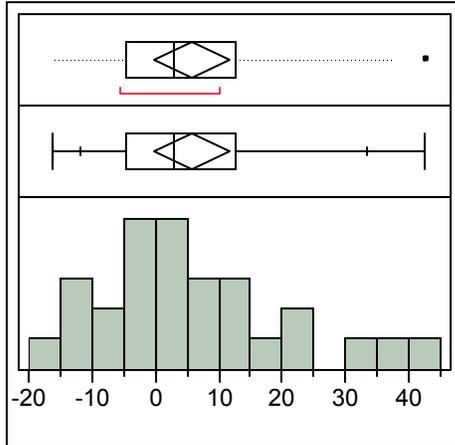
Mean	-4.161538
Std Dev	19.102946
Std Err Mean	5.2982041
Upper 95% Mean	7.3822566
Lower 95% Mean	-15.70533
N	13
Sum Wgt	13
Sum	-54.1
Variance	364.92256
Skewness	-2.113408
Kurtosis	5.7324254
CV	-459.0357
N Missing	0

Distributions Analyte Name=Gross beta, Preparation Method=Evaporation, acidified

Bias

Distributions Analyte Name=Gross beta,
Preparation Method=Evaporation, acidified

Bias



Quantiles

100.0%	maximum	42.6
99.5%		42.6
97.5%		42.6
90.0%		33.48
75.0%	quartile	12.725
50.0%	median	2.9
25.0%	quartile	-4.7
10.0%		-11.79
2.5%		-16.2
0.5%		-16.2
0.0%	minimum	-16.2

Moments

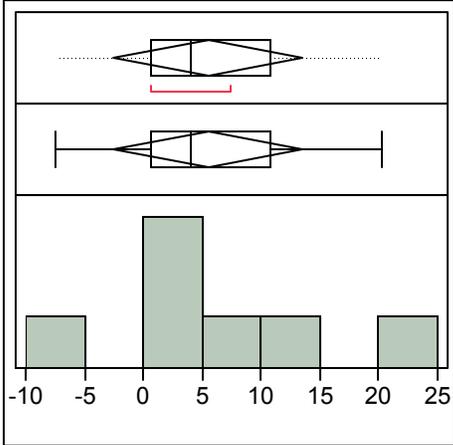
Mean	5.7607143
Std Dev	15.114068
Std Err Mean	2.8562905
Upper 95% Mean	11.621338
Lower 95% Mean	-0.09991
N	28
Sum Wgt	28
Sum	161.3
Variance	228.43507
Skewness	0.9035014
Kurtosis	0.3967128
CV	262.36449
N Missing	0

Distributions Analyte Name=Gross beta,
Preparation Method=Evaporation, straight

Bias

Distributions Analyte Name=Gross beta,
Preparation Method=Evaporation, straight

Bias



Quantiles

100.0%	maximum	20.3
99.5%		20.3
97.5%		20.3
90.0%		20.3
75.0%	quartile	10.8
50.0%	median	4.1
25.0%	quartile	0.6
10.0%		-7.4
2.5%		-7.4
0.5%		-7.4
0.0%	minimum	-7.4

Moments

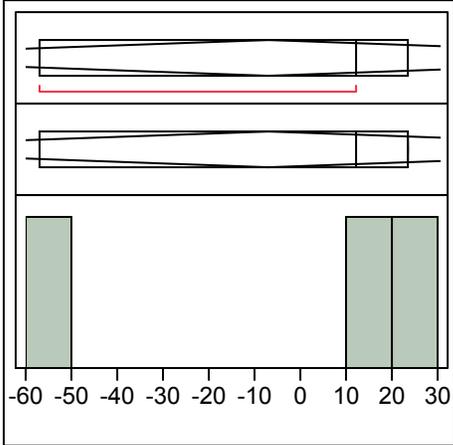
Mean	5.5
Std Dev	8.6694867
Std Err Mean	3.276758
Upper 95% Mean	13.517938
Lower 95% Mean	-2.517938
N	7
Sum Wgt	7
Sum	38.5
Variance	75.16
Skewness	0.3969447
Kurtosis	0.9704525
CV	157.62703
N Missing	0

Distributions Analyte Name=Gross beta, Preparation
Method=No preparation - analyzed as received

Bias

Distributions Analyte Name=Gross beta, Preparation
Method=No preparation - analyzed as received

Bias



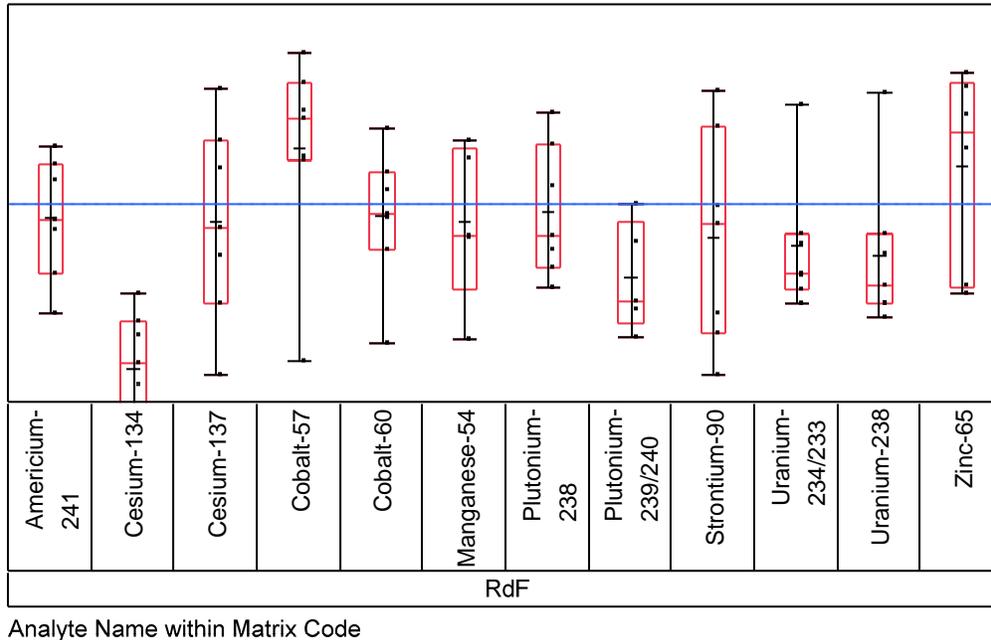
Quantiles

100.0%	maximum	23.6
99.5%		23.6
97.5%		23.6
90.0%		23.6
75.0%	quartile	23.6
50.0%	median	12.2
25.0%	quartile	-57.1
10.0%		-57.1
2.5%		-57.1
0.5%		-57.1
0.0%	minimum	-57.1

Moments

Mean	-7.1
Std Dev	43.674821
Std Err Mean	25.21567
Upper 95% Mean	101.39427
Lower 95% Mean	-115.5943
N	3
Sum Wgt	3
Sum	-21.3
Variance	1907.49
Skewness	-1.600239
Kurtosis	.
CV	-615.1383
N Missing	0

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.



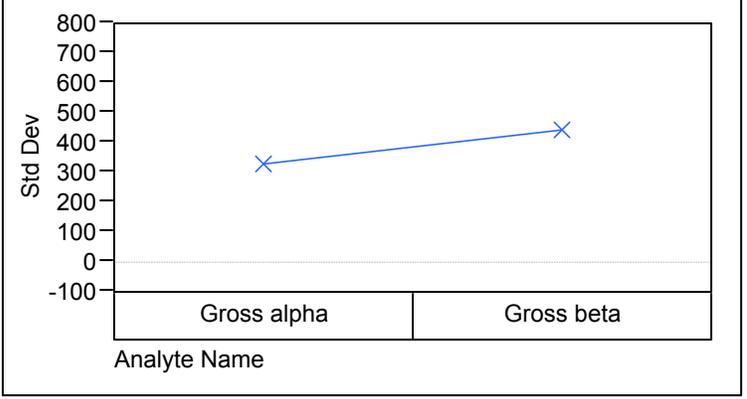
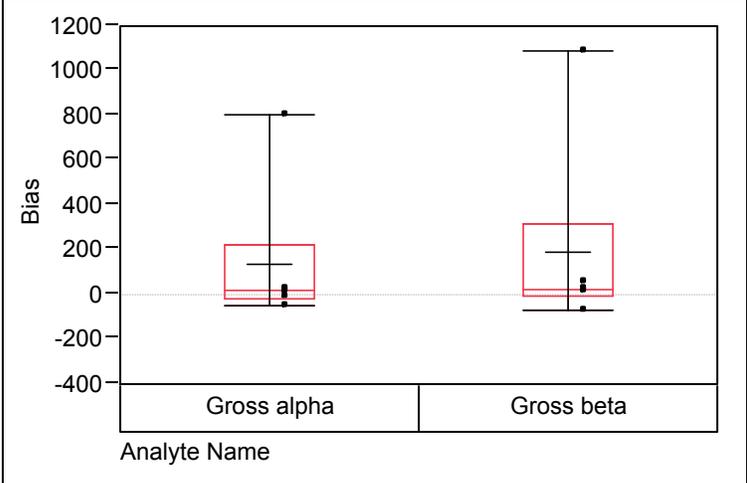
The box plots summarize the distribution of points for each analyte. The ends of the box are the 25th and 75th quantiles. The difference between the quartiles is the interquartile range. The line across the middle of the box identifies the median sample value. Each box has lines, sometimes called whiskers, that extend from each end. The whiskers extend from the ends of the box 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 plot would be to have the standard deviation as small as possible.

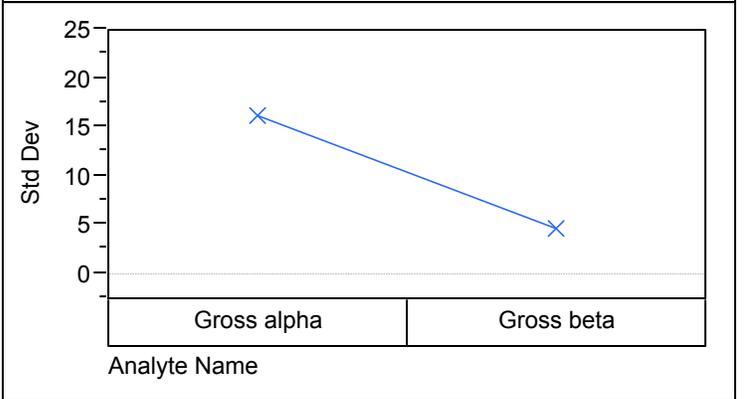
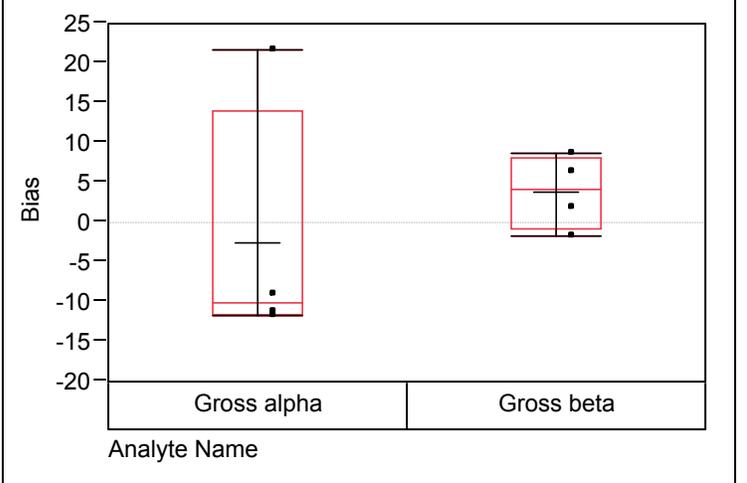
Variability Gauge Lab Code=ADEM01

Variability Chart for Bias



Variability Gauge Lab Code=AFOH01

Variability Chart for Bias

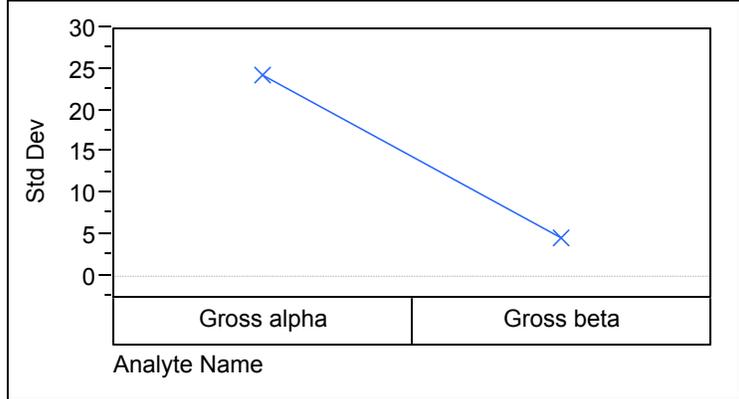
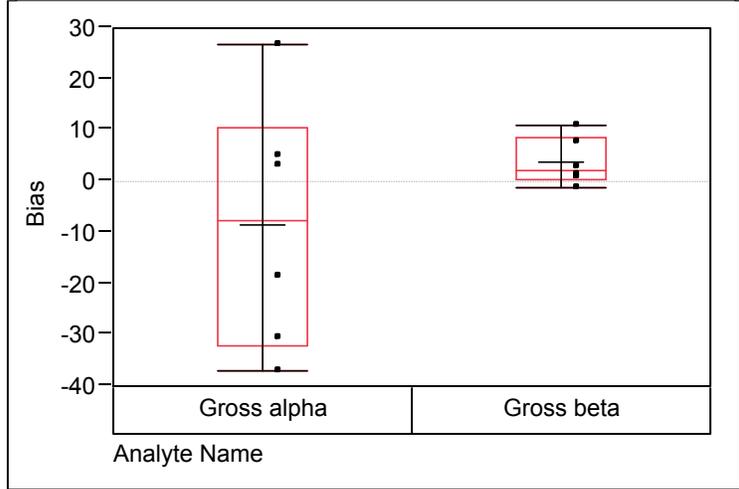


Variability Gauge Lab Code=ANTE01

Variability Chart for Bias

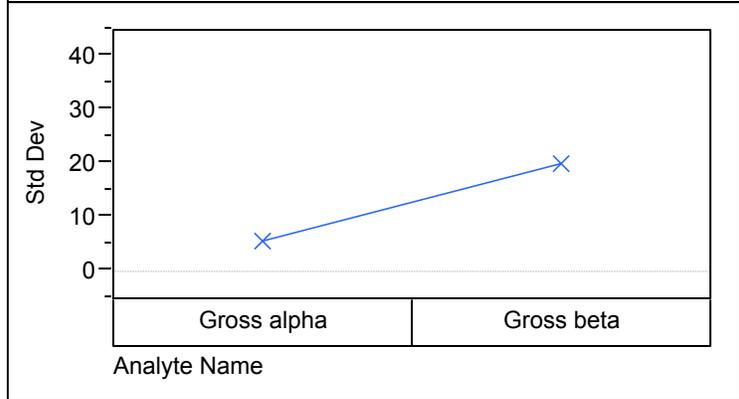
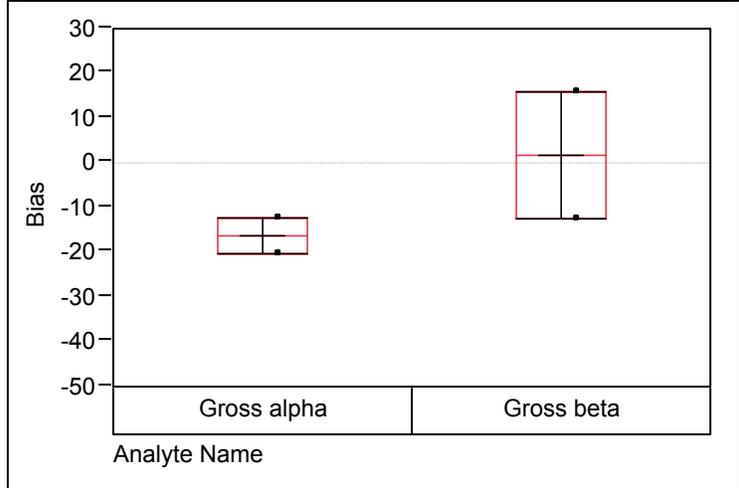
Variability Gauge Lab Code=ANTE01

Variability Chart for Bias



Variability Gauge Lab Code=ARPL01

Variability Chart for Bias

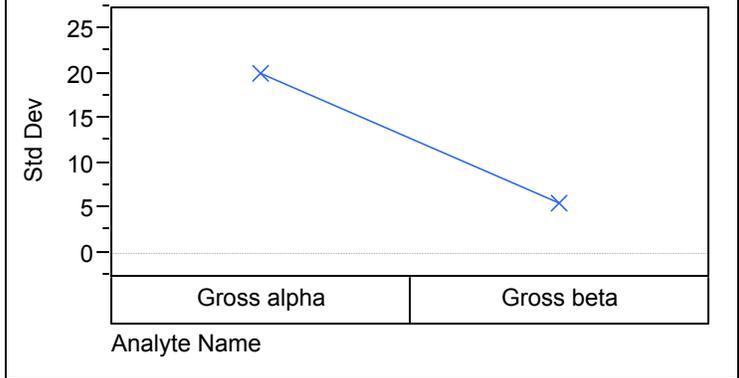
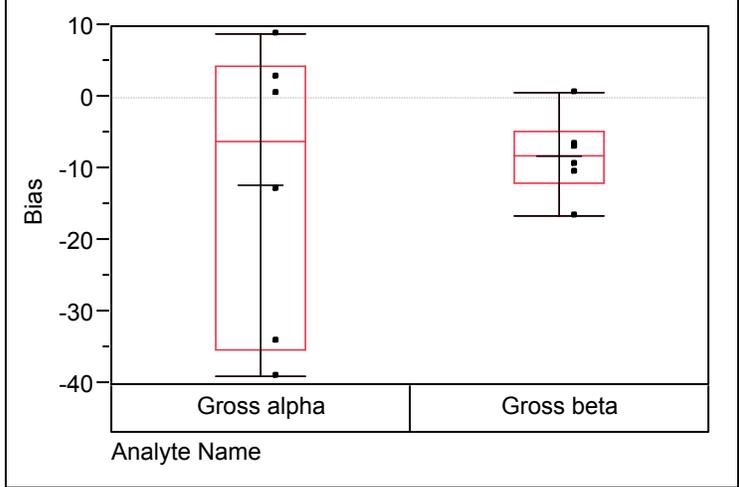


Variability Gauge Lab Code=ARSL01

Variability Chart for Bias

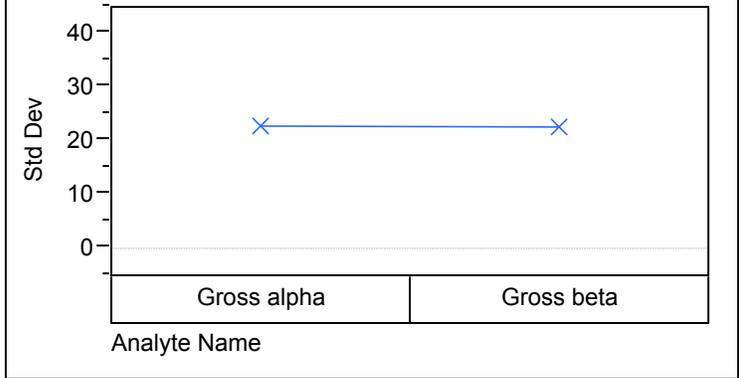
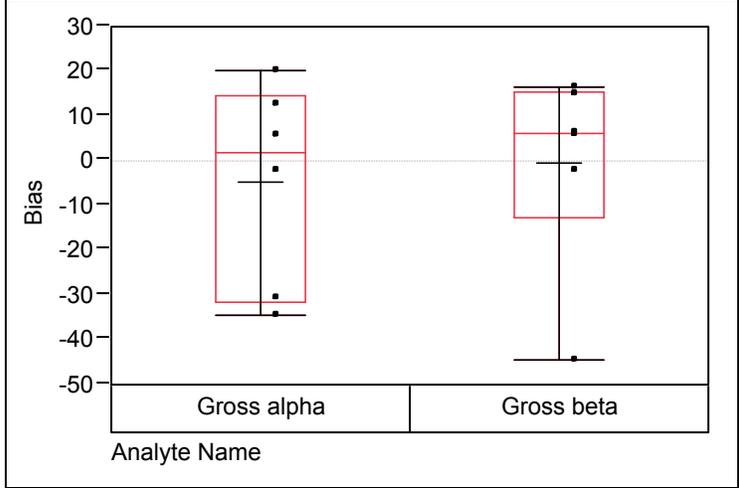
Variability Gauge Lab Code=ARSL01

Variability Chart for Bias



Variability Gauge Lab Code=AY1201

Variability Chart for Bias

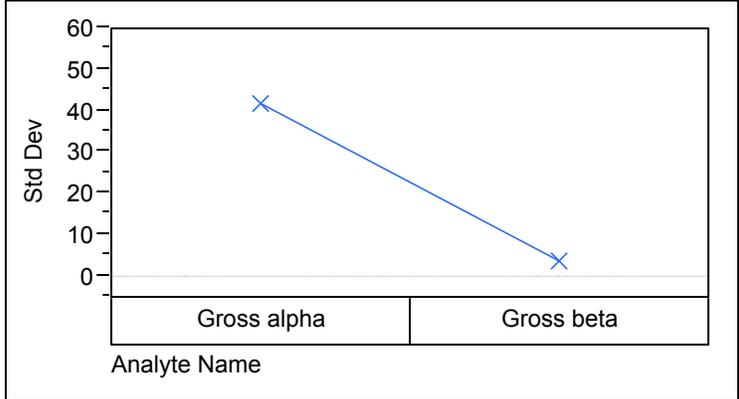
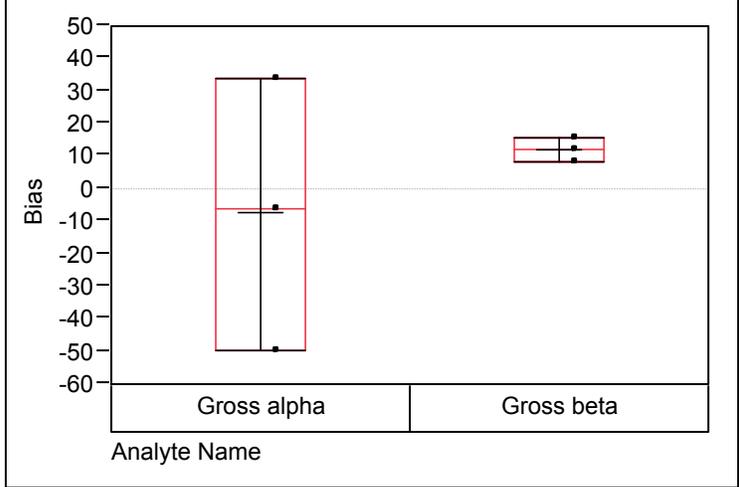


Variability Gauge Lab Code=CDHS01

Variability Chart for Bias

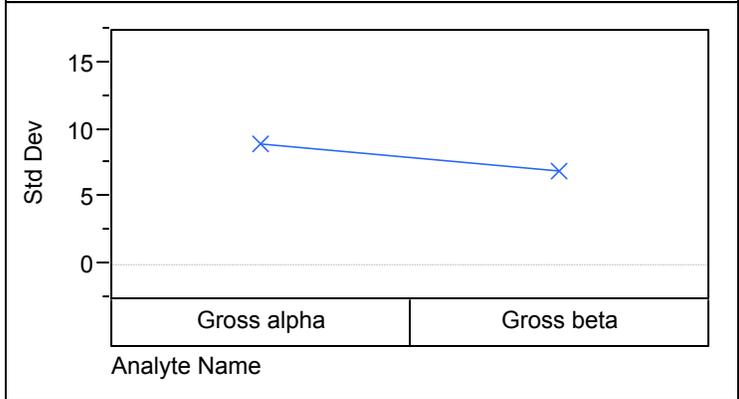
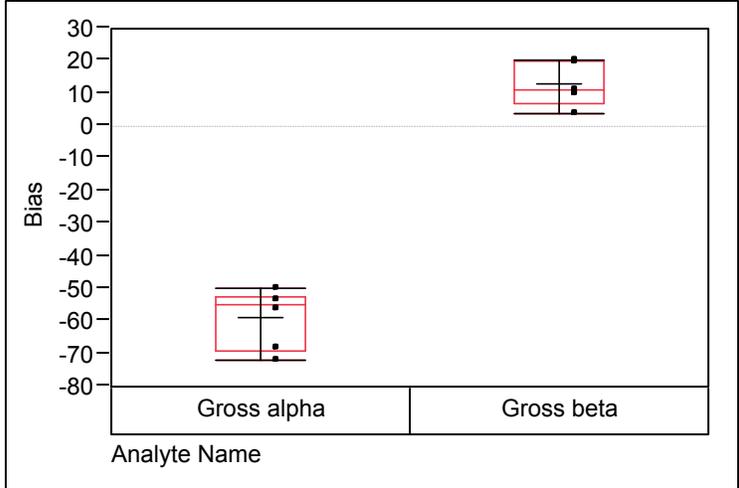
Variability Gauge Lab Code=CDHS01

Variability Chart for Bias



Variability Gauge Lab Code=CESL01

Variability Chart for Bias

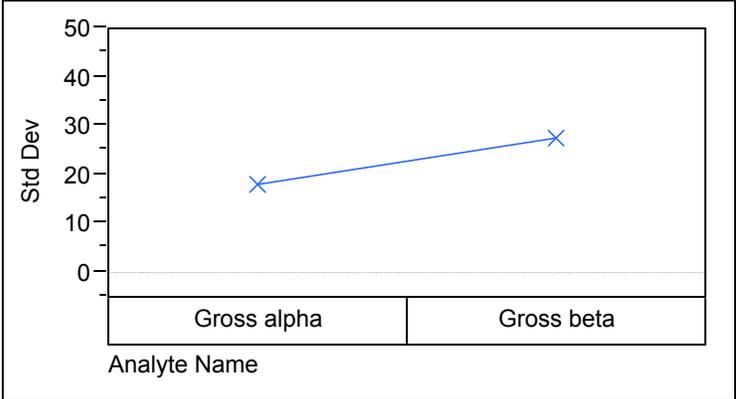
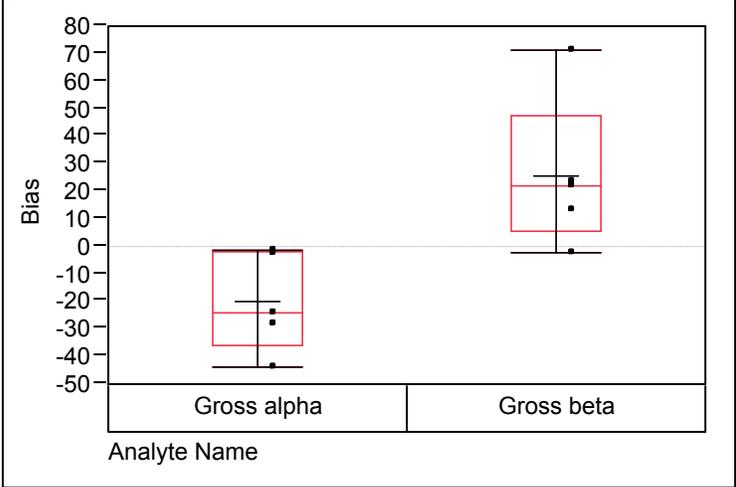


Variability Gauge Lab Code=CHMH01

Variability Chart for Bias

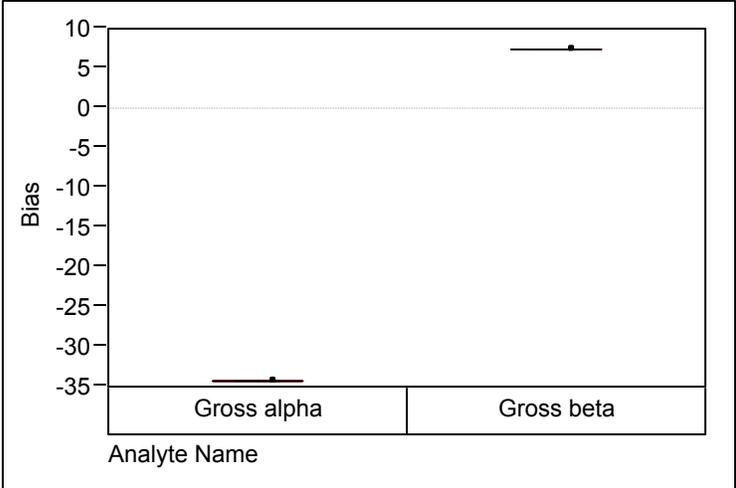
Variability Gauge Lab Code=CHMH01

Variability Chart for Bias



Variability Gauge Lab Code=CMRC01

Variability Chart for Bias

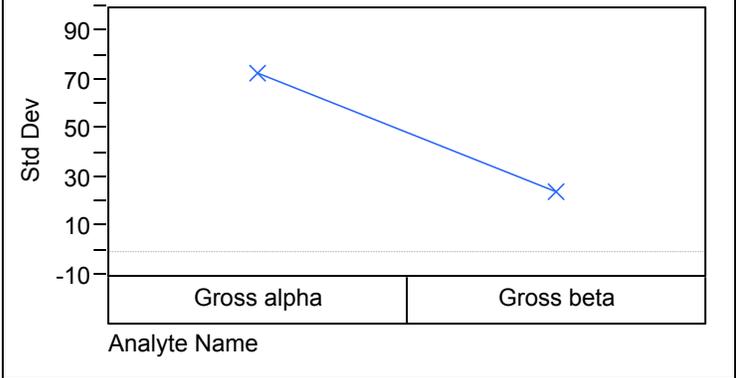
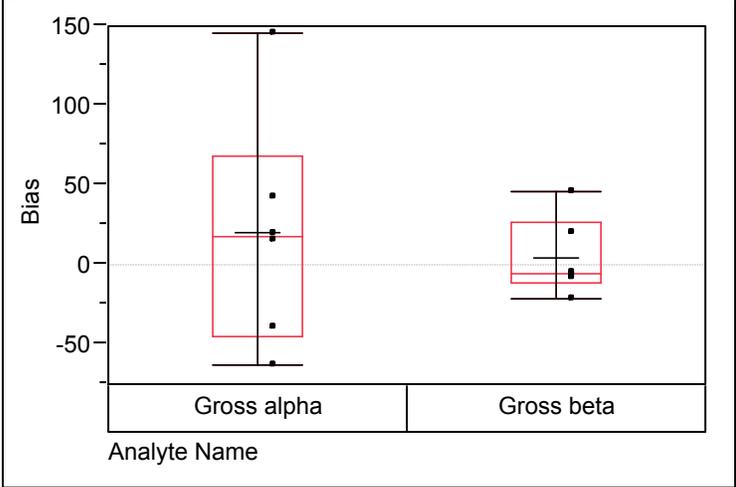


Variability Gauge Lab Code=DEHS01

Variability Chart for Bias

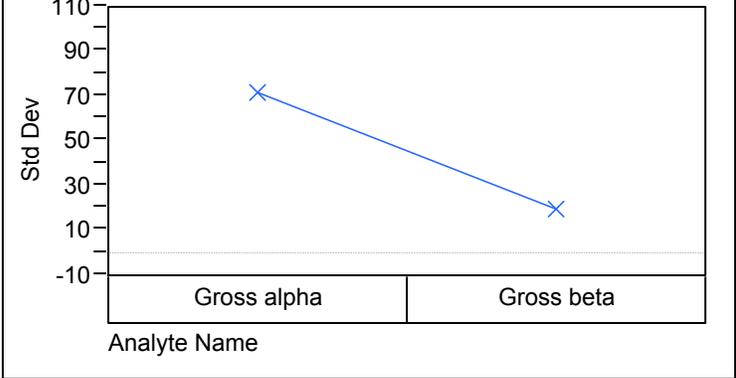
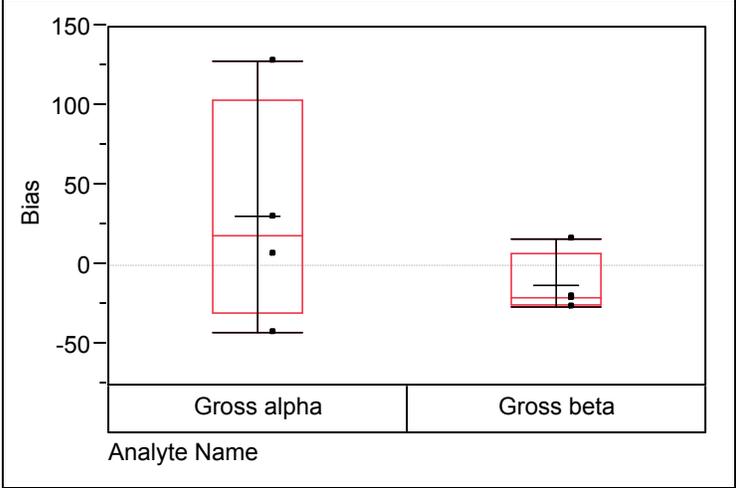
Variability Gauge Lab Code=DEHS01

Variability Chart for Bias



Variability Gauge Lab Code=DLEA01

Variability Chart for Bias

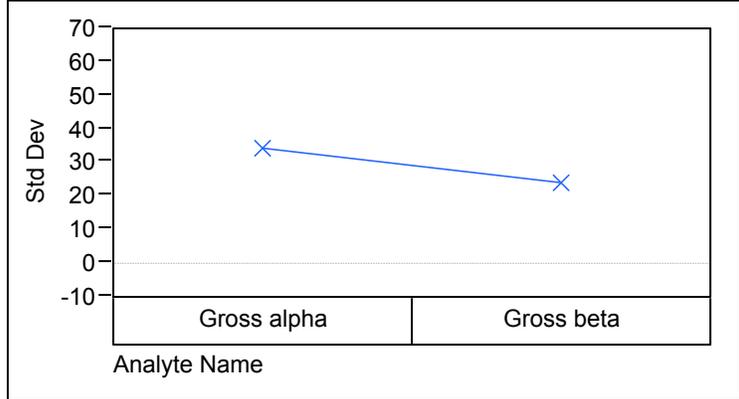
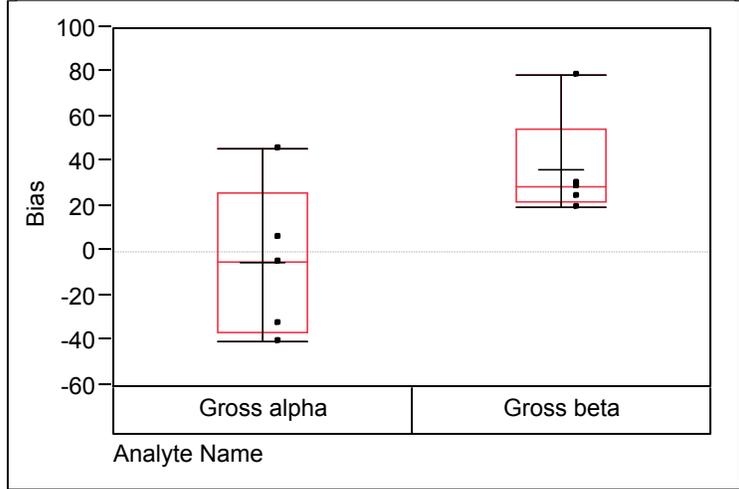


Variability Gauge Lab Code=DPHE01

Variability Chart for Bias

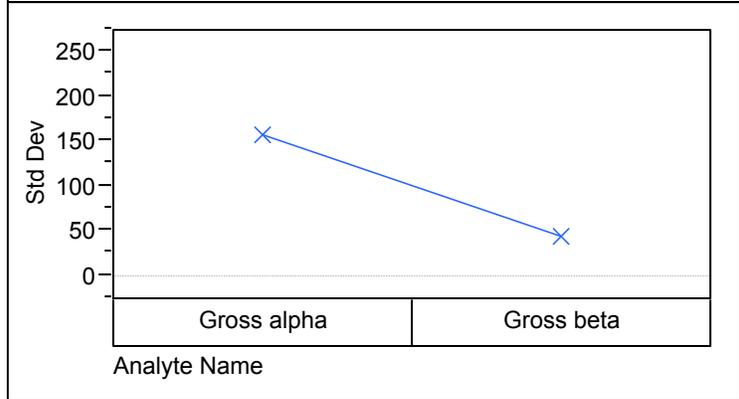
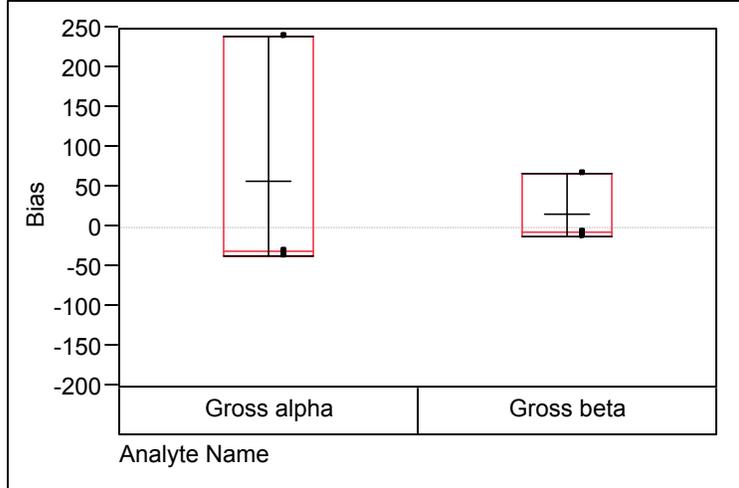
Variability Gauge Lab Code=DPHE01

Variability Chart for Bias



Variability Gauge Lab Code=DRMG01

Variability Chart for Bias

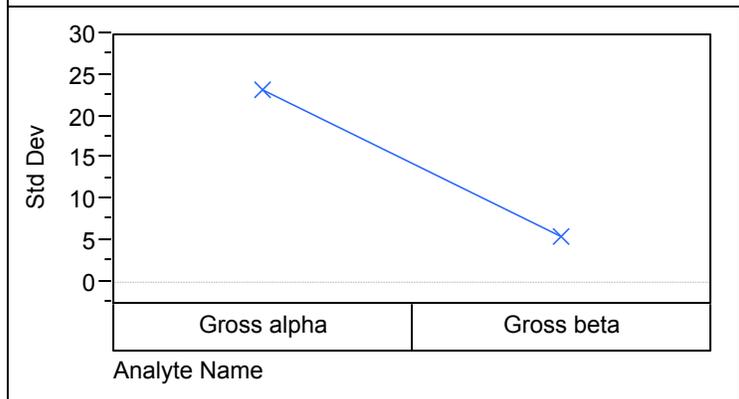
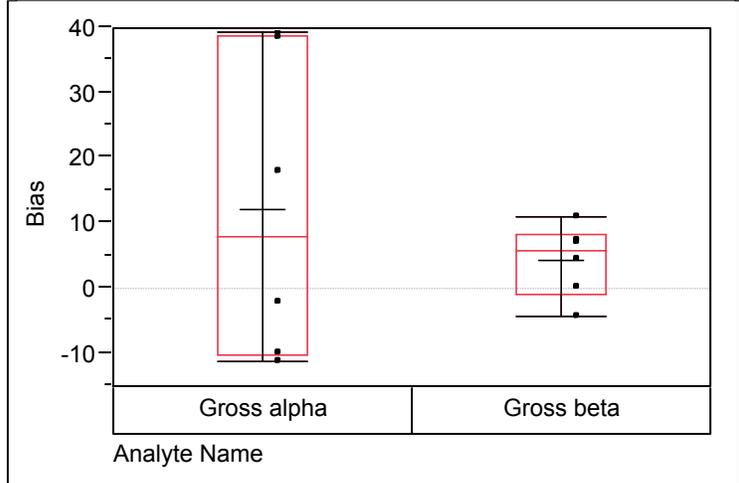


Variability Gauge Lab Code=ERCL01

Variability Chart for Bias

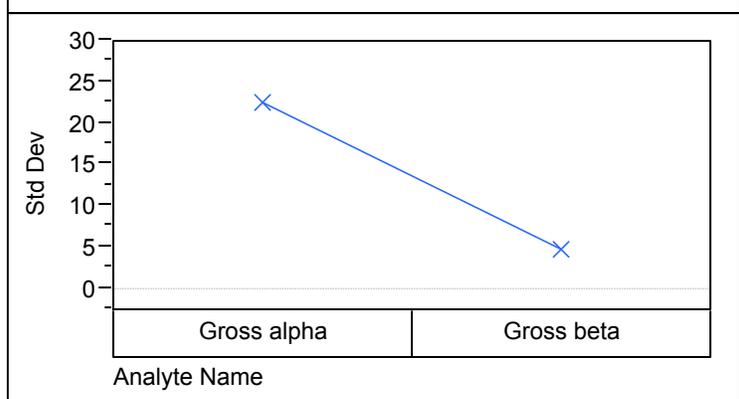
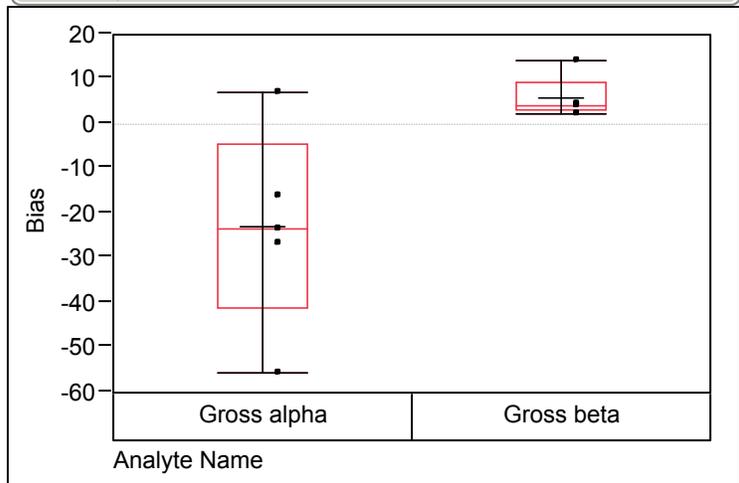
Variability Gauge Lab Code=ERCL01

Variability Chart for Bias



Variability Gauge Lab Code=ERHD99

Variability Chart for Bias

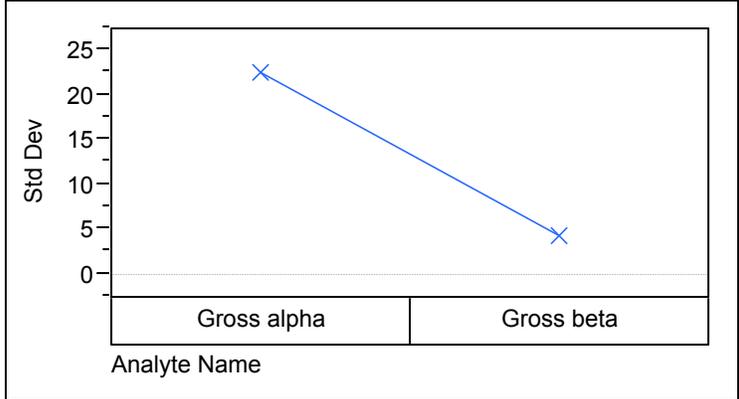
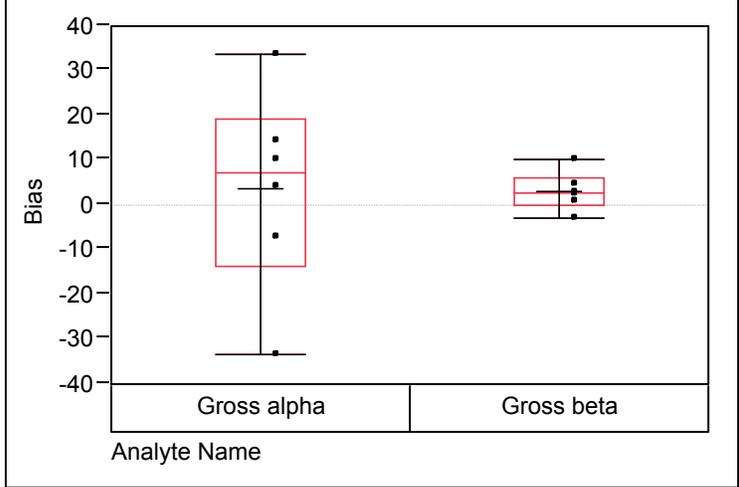


Variability Gauge Lab Code=ERLG01

Variability Chart for Bias

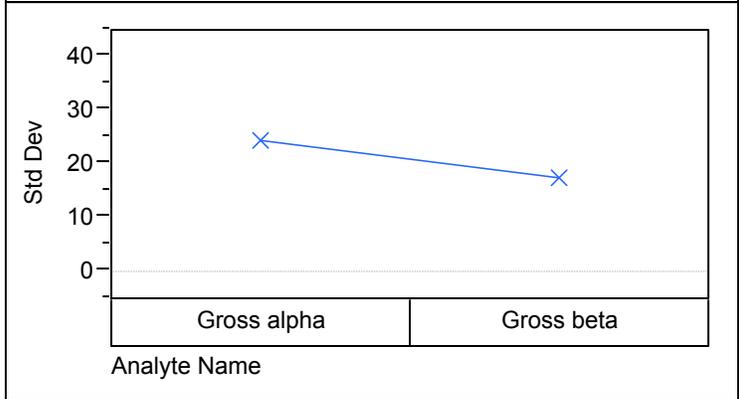
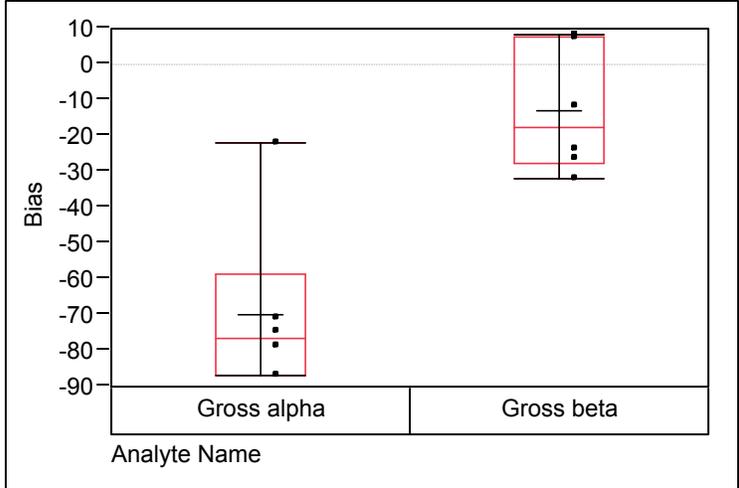
Variability Gauge Lab Code=ERLG01

Variability Chart for Bias



Variability Gauge Lab Code=ERPD99

Variability Chart for Bias

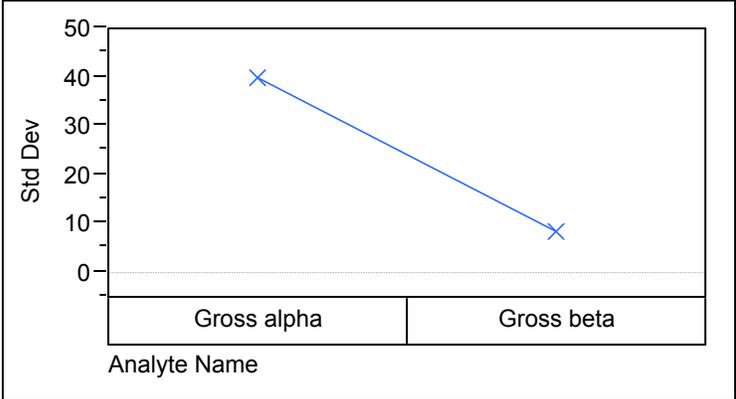
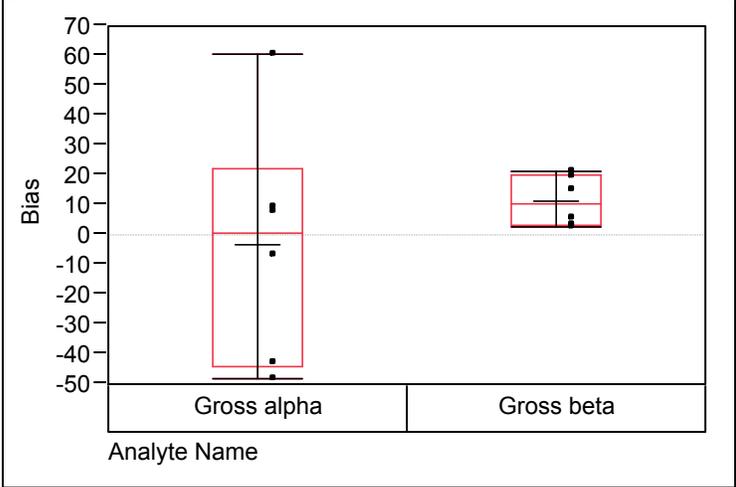


Variability Gauge Lab Code=FDHE01

Variability Chart for Bias

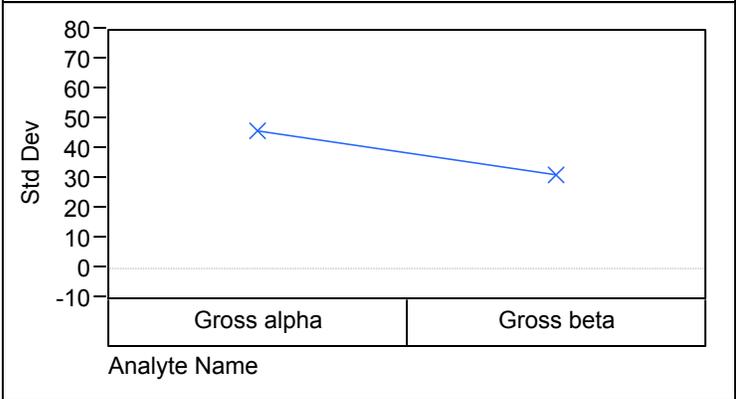
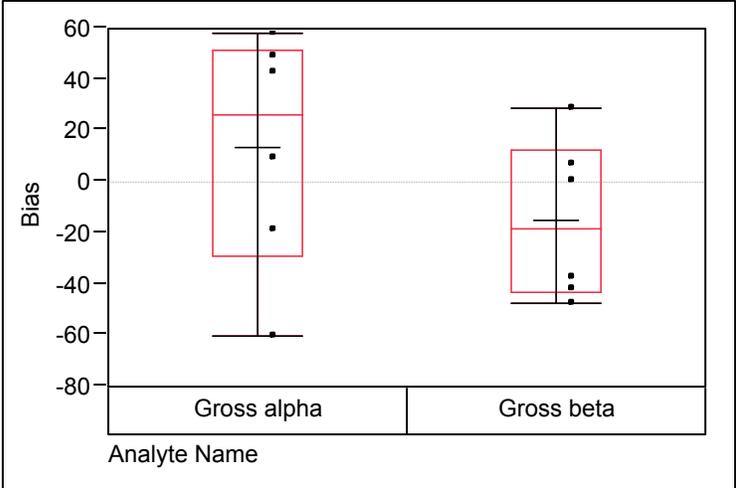
Variability Gauge Lab Code=FDHE01

Variability Chart for Bias



Variability Gauge Lab Code=FMEC99

Variability Chart for Bias

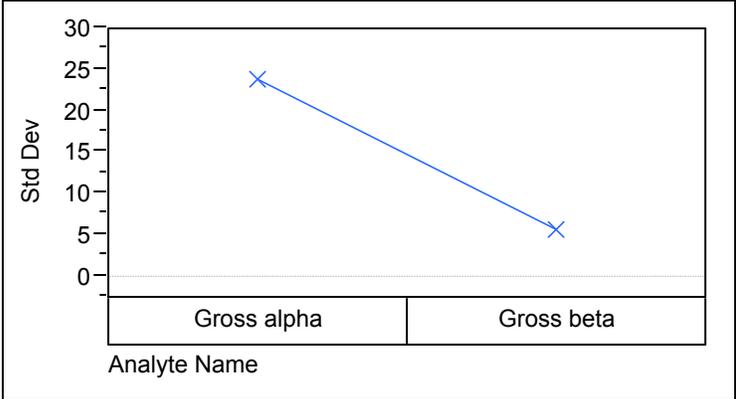
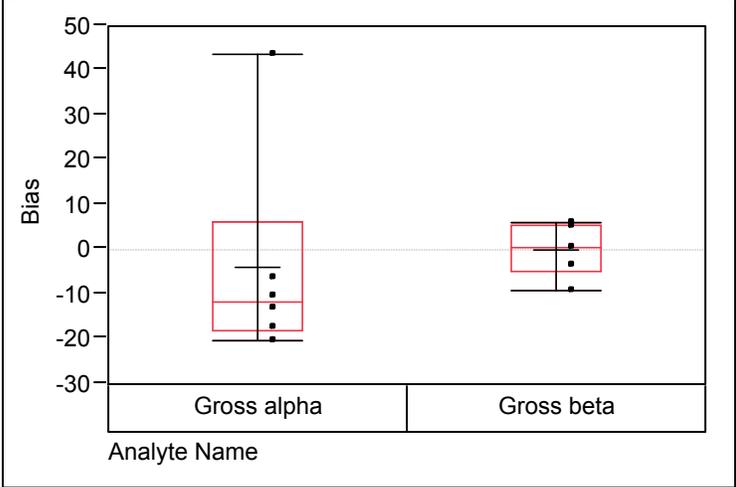


Variability Gauge Lab Code=GENE01

Variability Chart for Bias

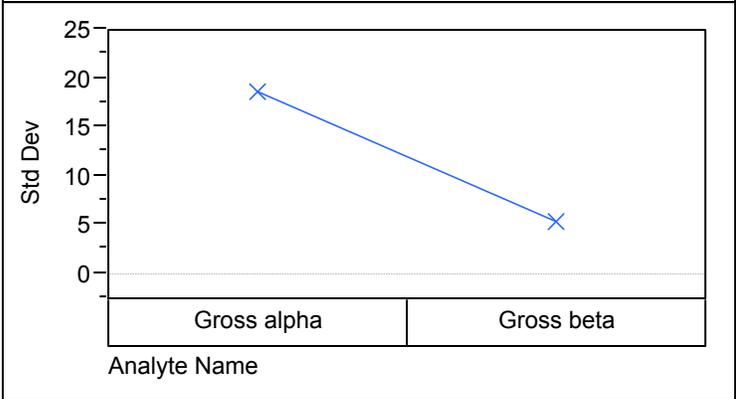
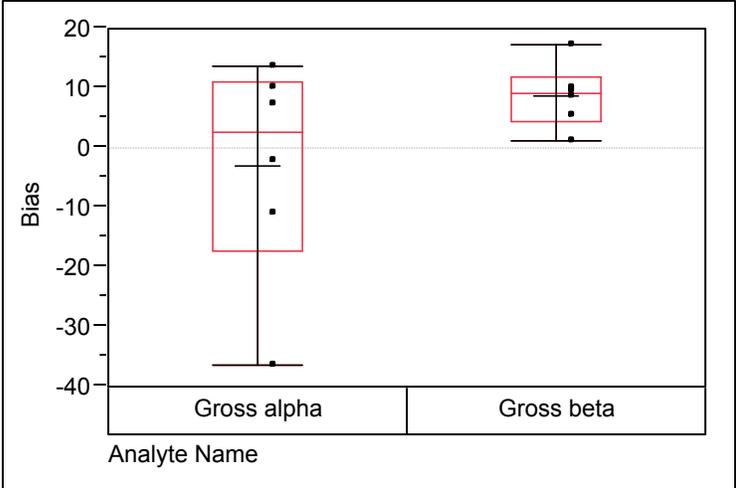
Variability Gauge Lab Code=GENE01

Variability Chart for Bias



Variability Gauge Lab Code=HCAL01

Variability Chart for Bias

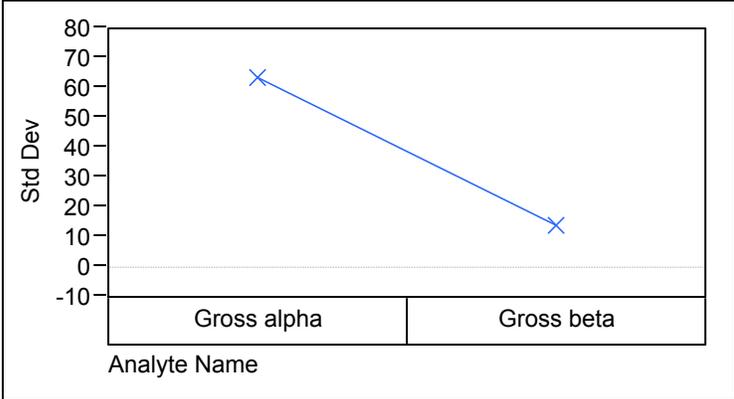
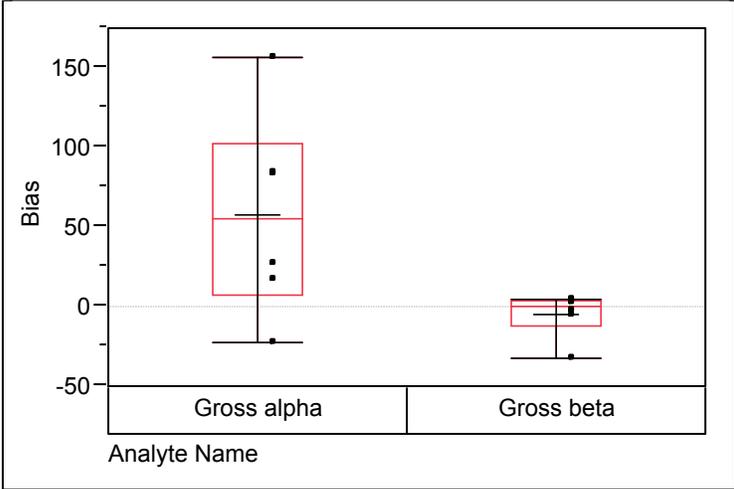


Variability Gauge Lab Code=HECR01

Variability Chart for Bias

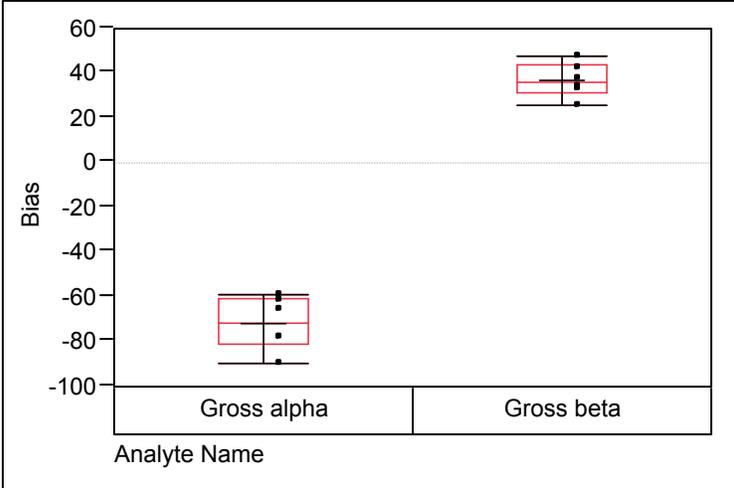
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Variability Chart for Bias



Variability Gauge Lab Code=ISUP01

Variability Chart for Bias

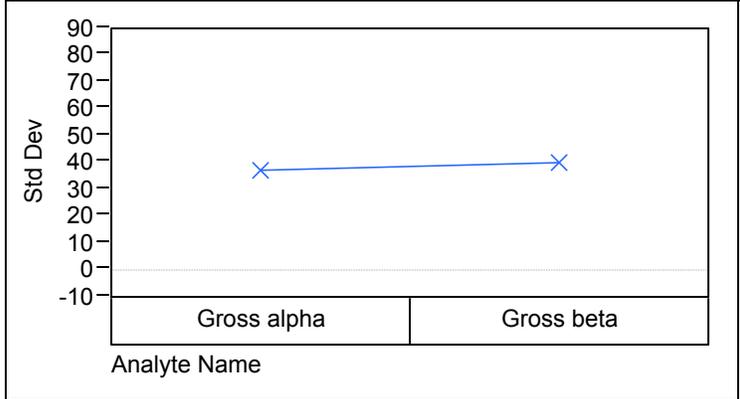
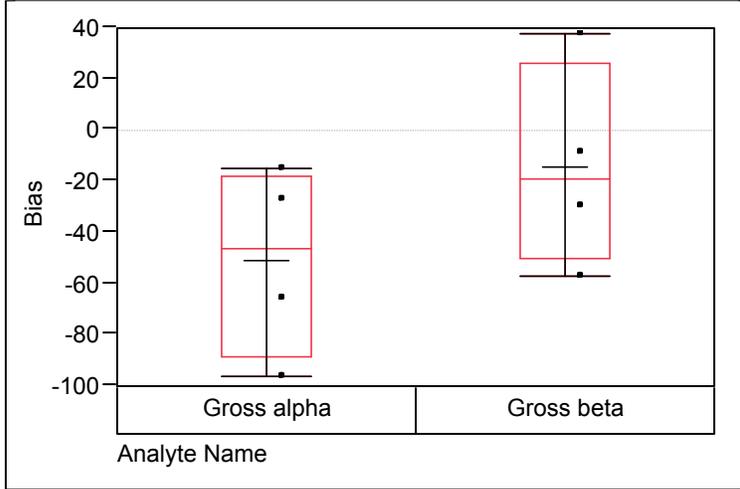


Variability Gauge Lab Code=JAEC99

Variability Chart for Bias

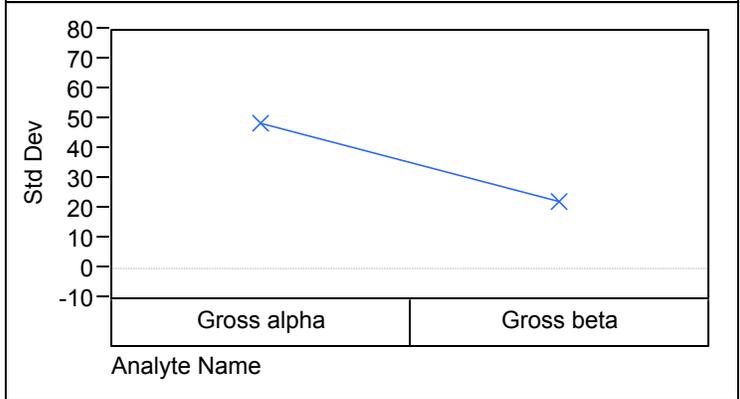
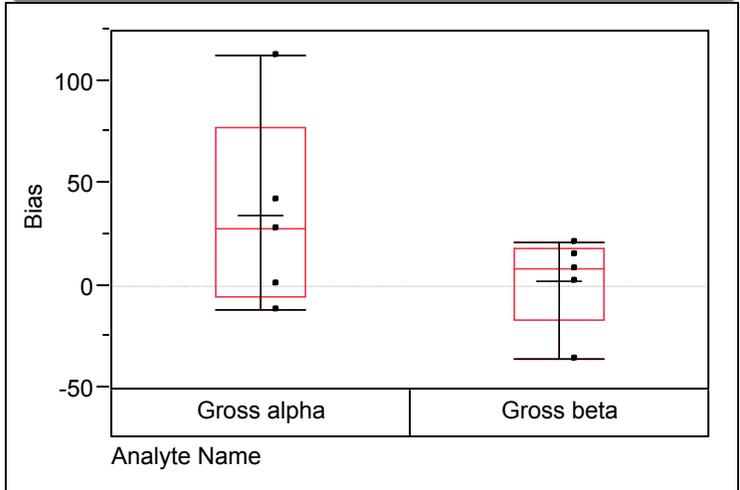
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Variability Chart for Bias



Variability Gauge Lab Code=KDHE01

Variability Chart for Bias

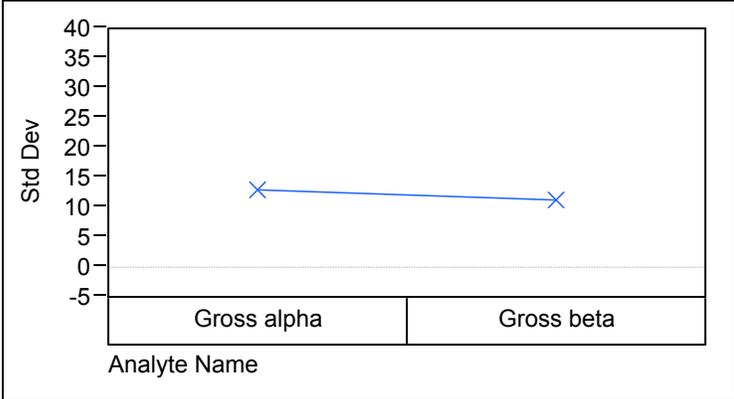
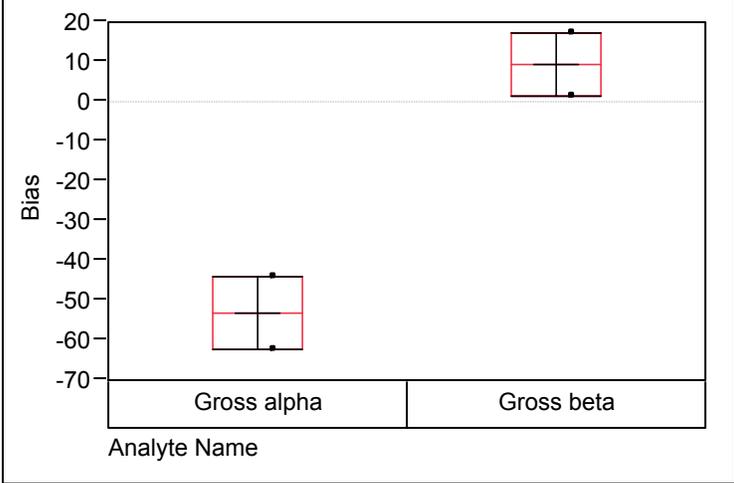


Variability Gauge Lab Code=LAWR01

Variability Chart for Bias

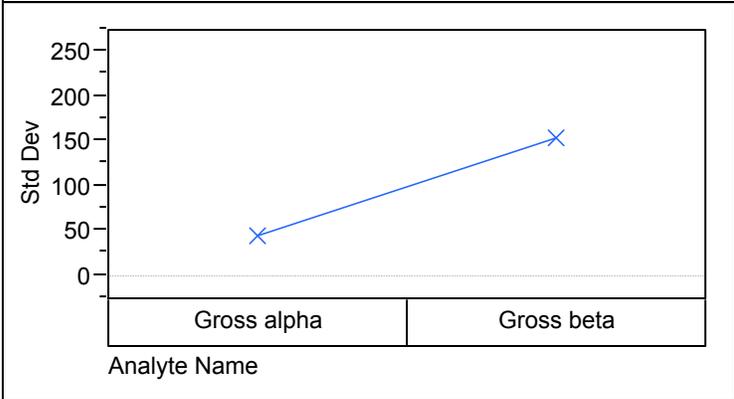
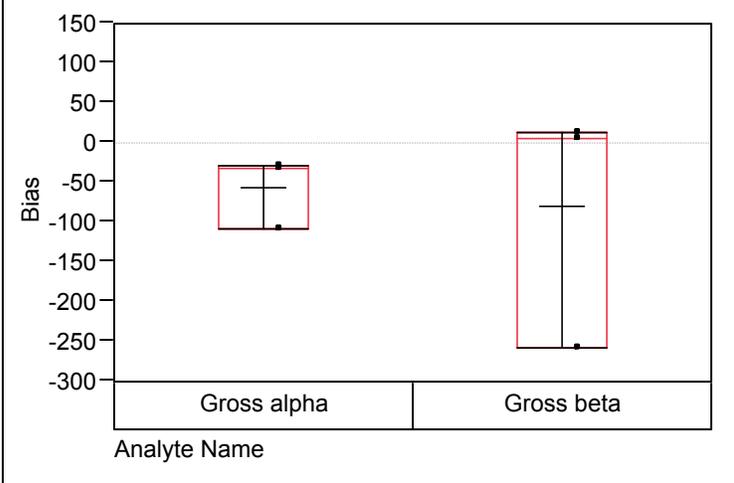
Variability Gauge Lab Code=LAWR01

Variability Chart for Bias



Variability Gauge Lab Code=LDRA99

Variability Chart for Bias

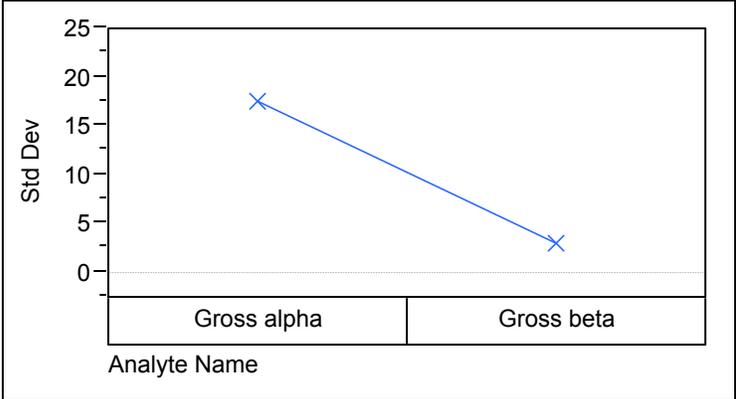
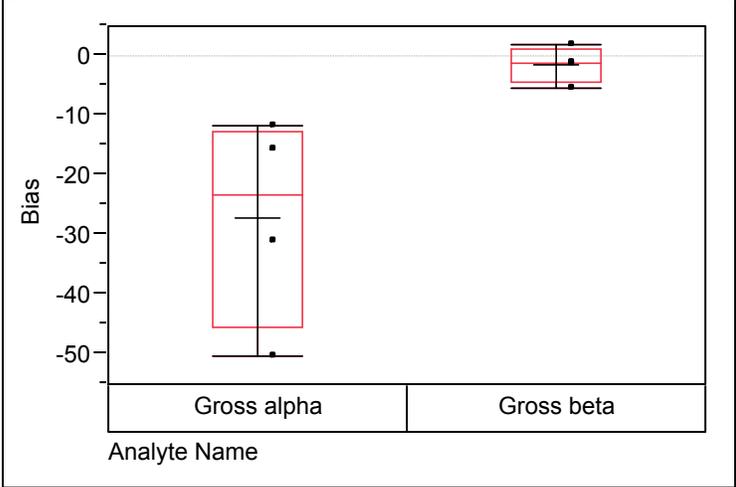


Variability Gauge Lab Code=LGCL99

Variability Chart for Bias

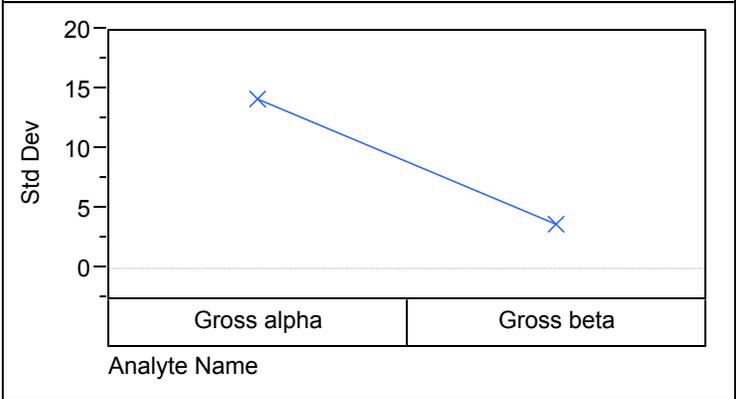
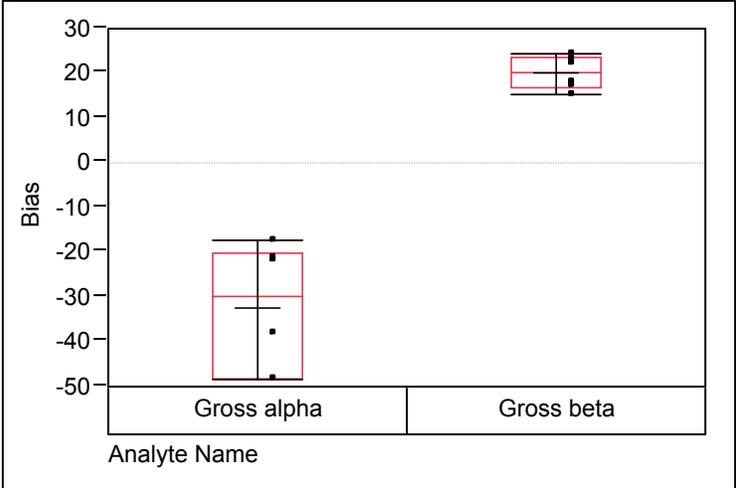
Variability Gauge Lab Code=LGCL99

Variability Chart for Bias



Variability Gauge Lab Code=LOCK03

Variability Chart for Bias

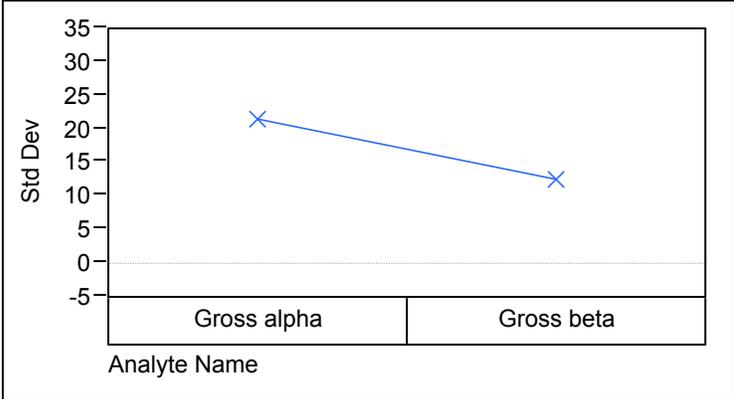
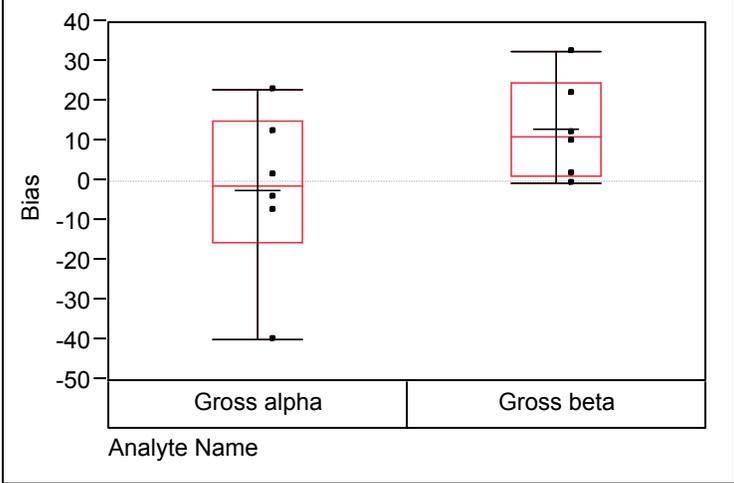


Variability Gauge Lab Code=MART01

Variability Chart for Bias

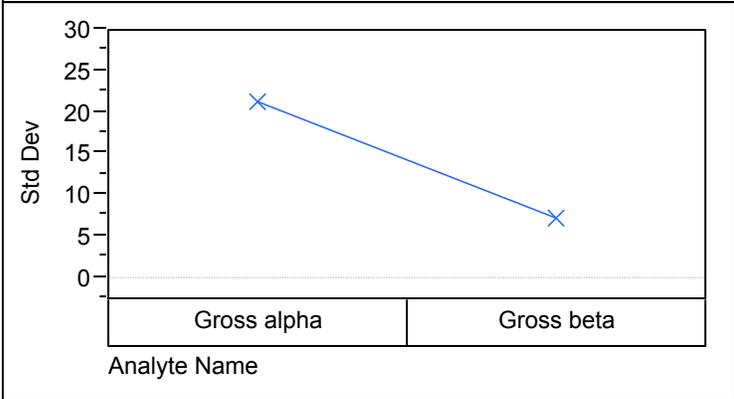
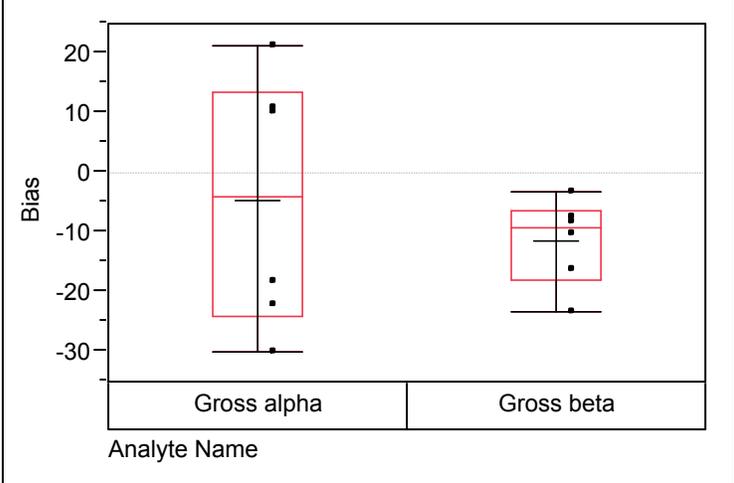
Variability Gauge Lab Code=MART01

Variability Chart for Bias



Variability Gauge Lab Code=MART02

Variability Chart for Bias

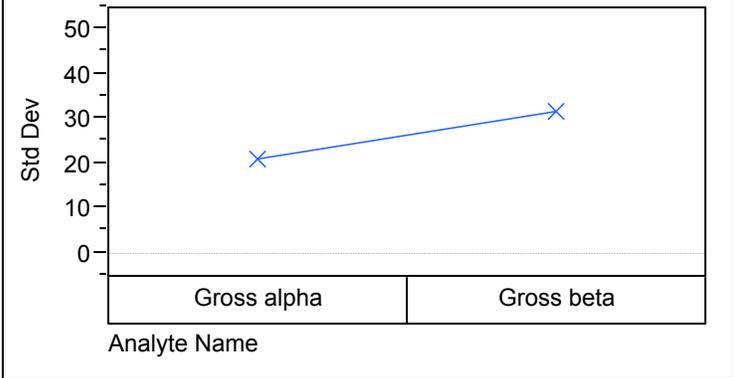
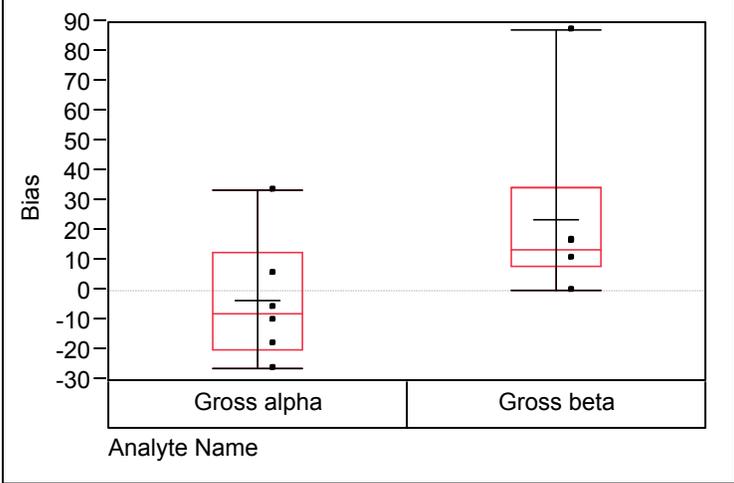


Variability Gauge Lab Code=MART03

Variability Chart for Bias

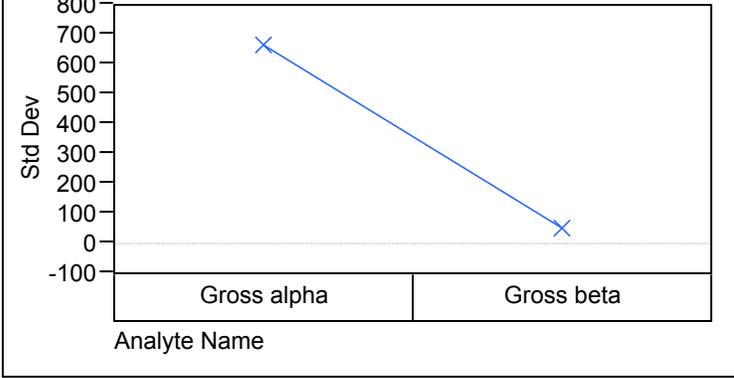
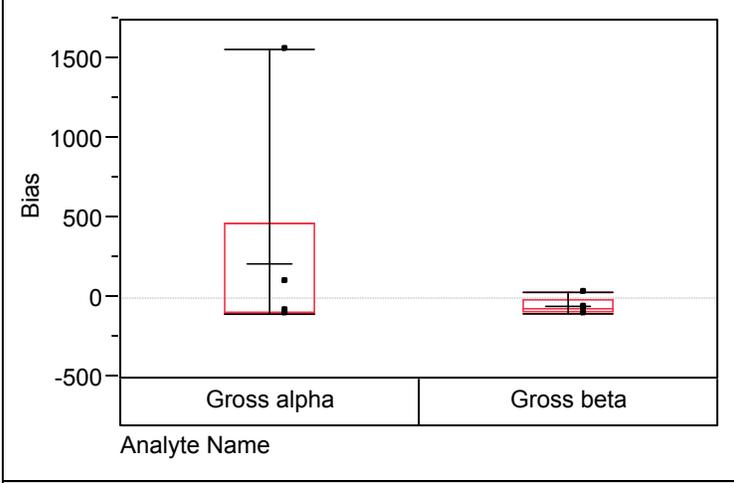
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Variability Chart for Bias



Variability Gauge Lab Code=MKME01

Variability Chart for Bias

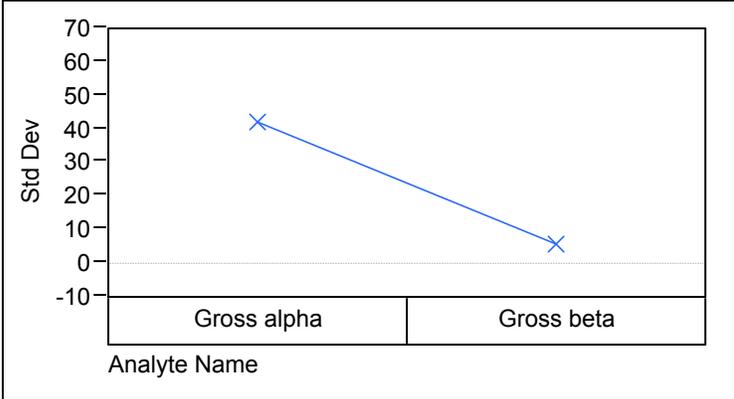
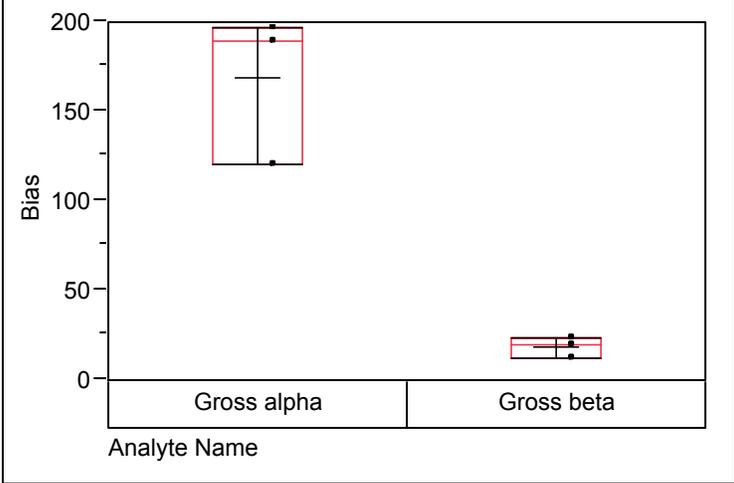


Variability Gauge Lab Code=NARL01

Variability Chart for Bias

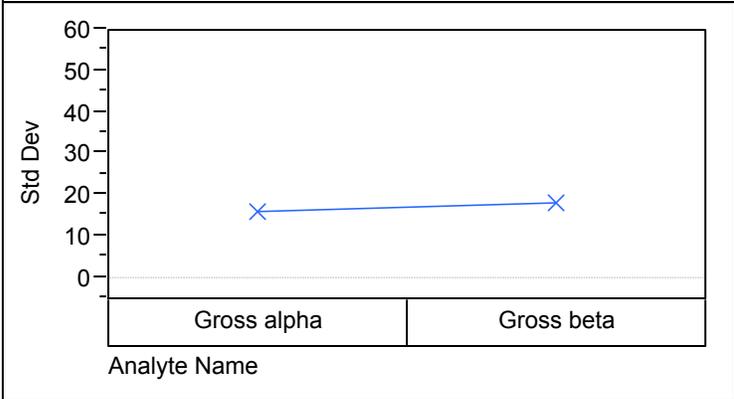
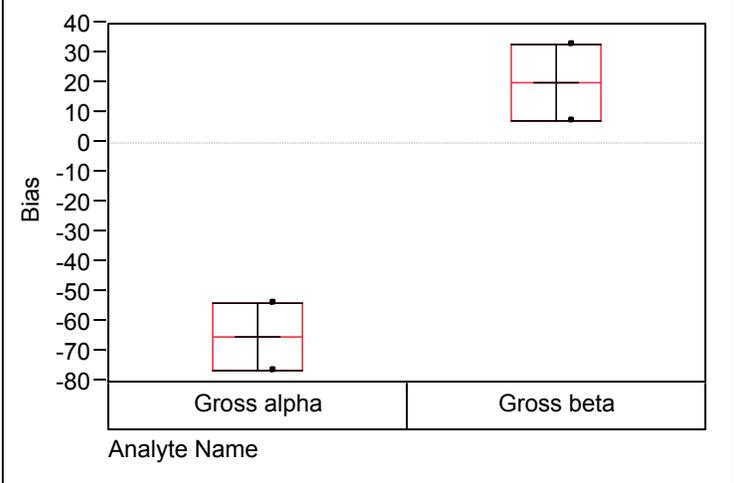
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Variability Chart for Bias



Variability Gauge Lab Code=NCNS99

Variability Chart for Bias

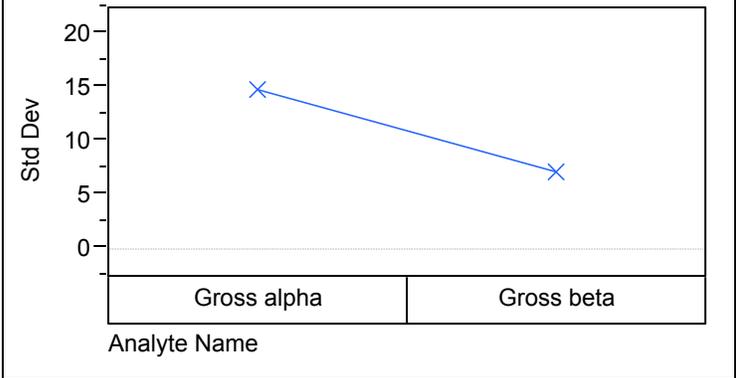
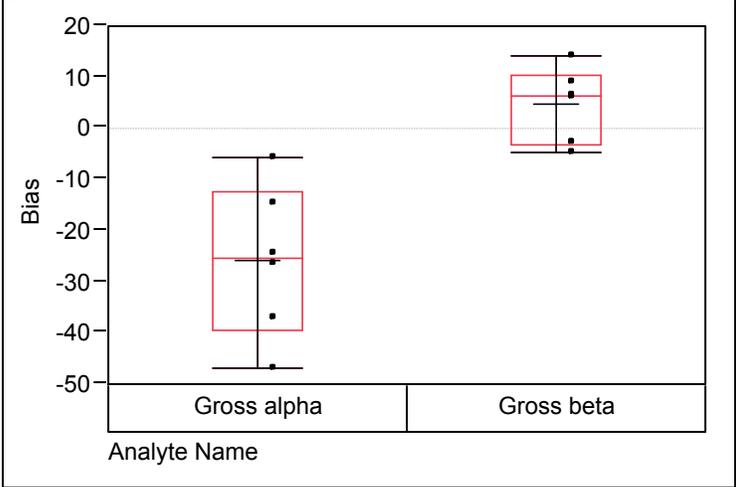


Variability Gauge Lab Code=NESI01

Variability Chart for Bias

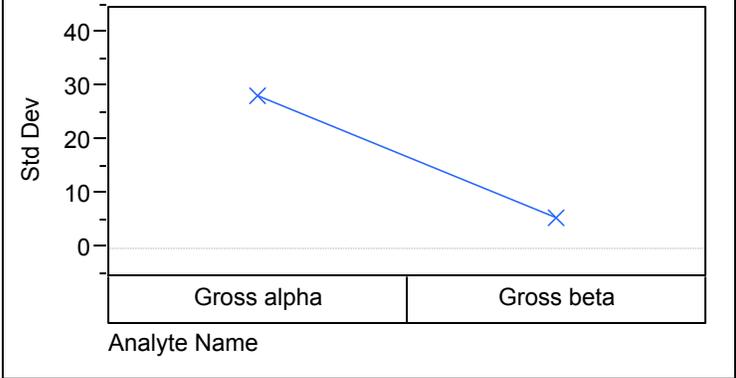
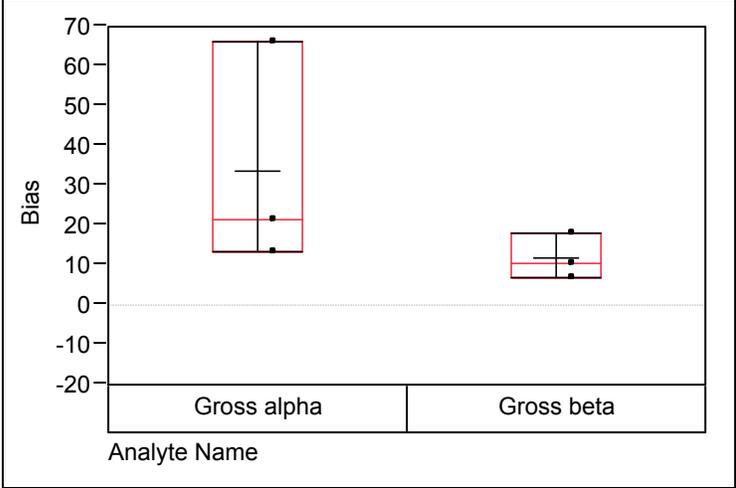
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Variability Chart for Bias



Variability Gauge Lab Code=NJDH01

Variability Chart for Bias

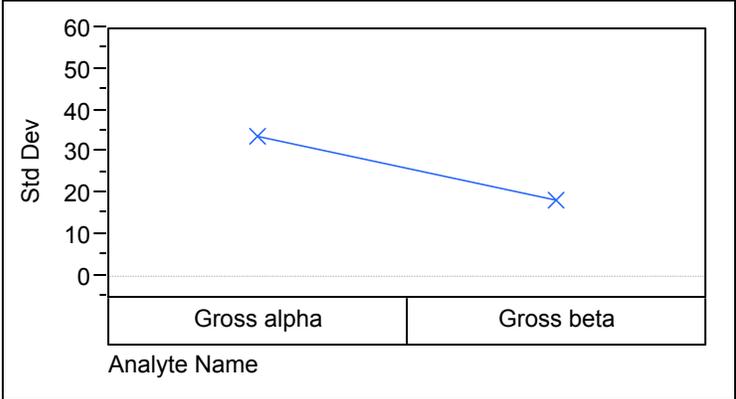
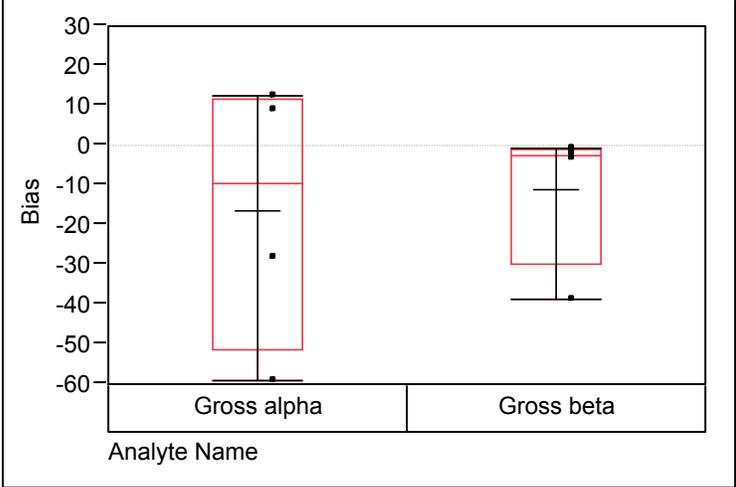


Variability Gauge Lab Code=NRLL99

Variability Chart for Bias

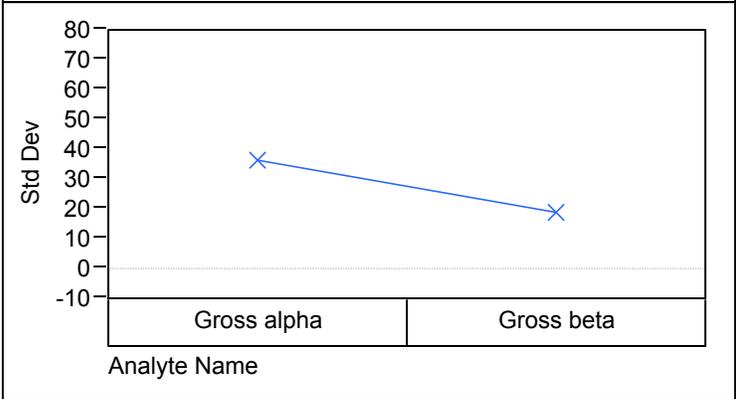
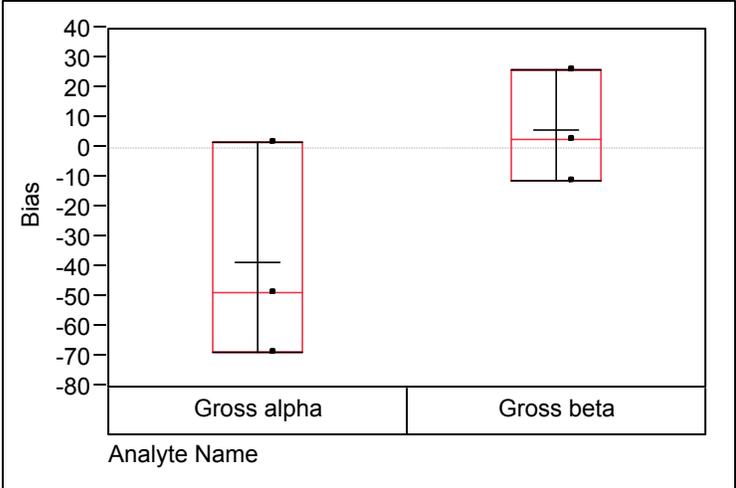
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Variability Chart for Bias



Variability Gauge Lab Code=NTSI01

Variability Chart for Bias

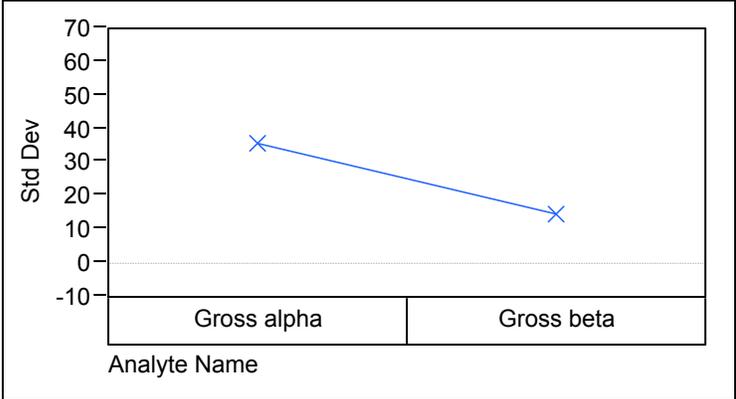
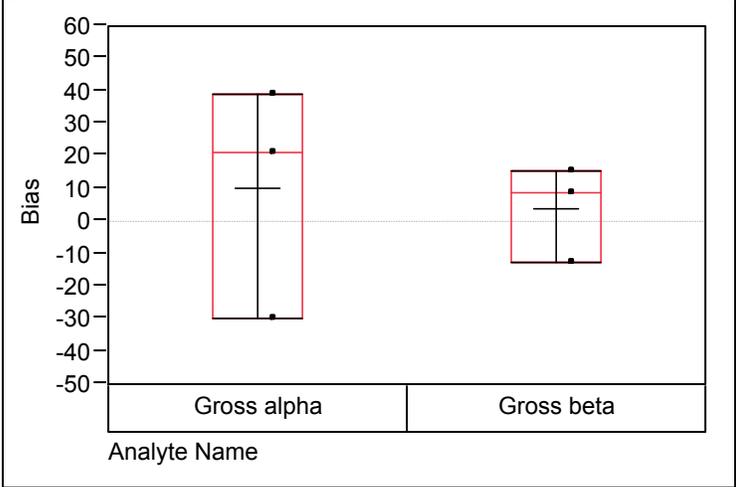


Variability Gauge Lab Code=OBGL01

Variability Chart for Bias

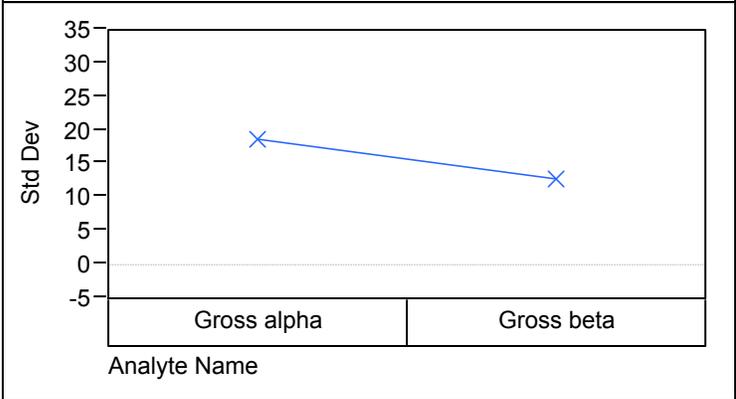
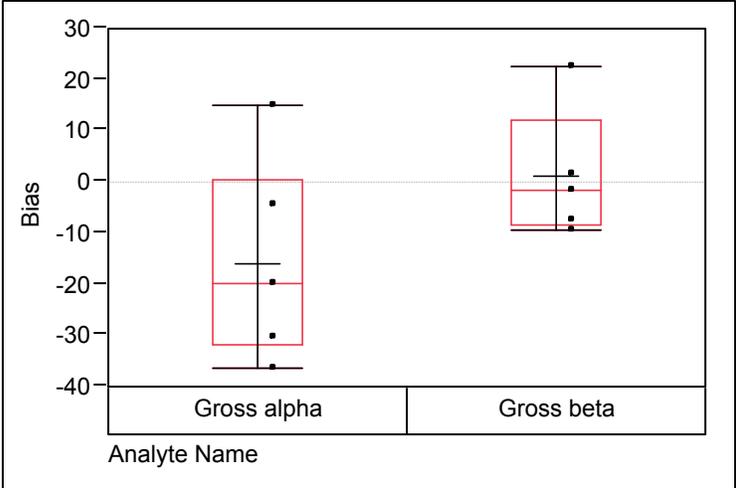
Variability Gauge Lab Code=OBGL01

Variability Chart for Bias



Variability Gauge Lab Code=ODHL01

Variability Chart for Bias

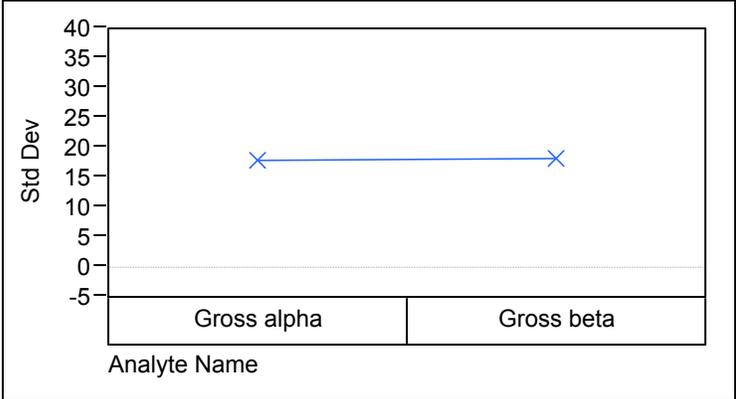
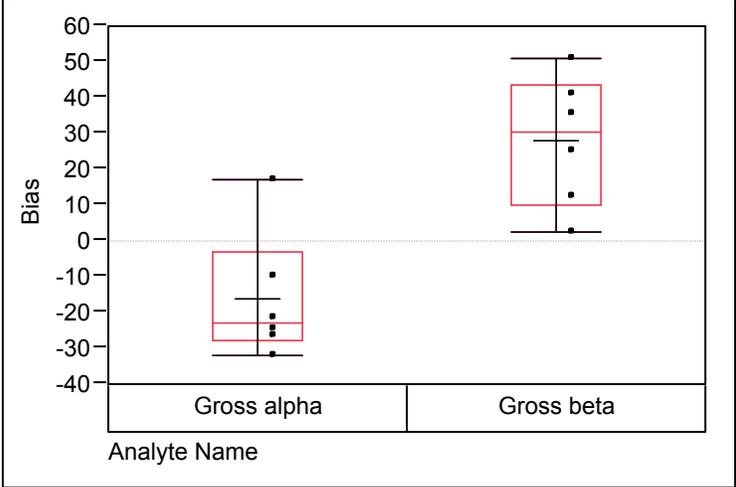


Variability Gauge Lab Code=ORIS01

Variability Chart for Bias

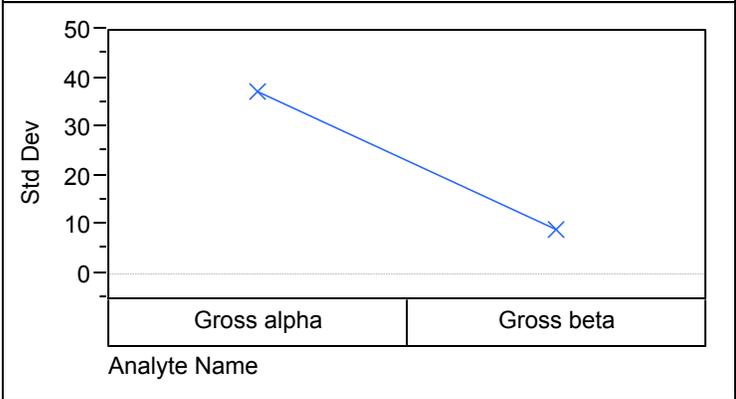
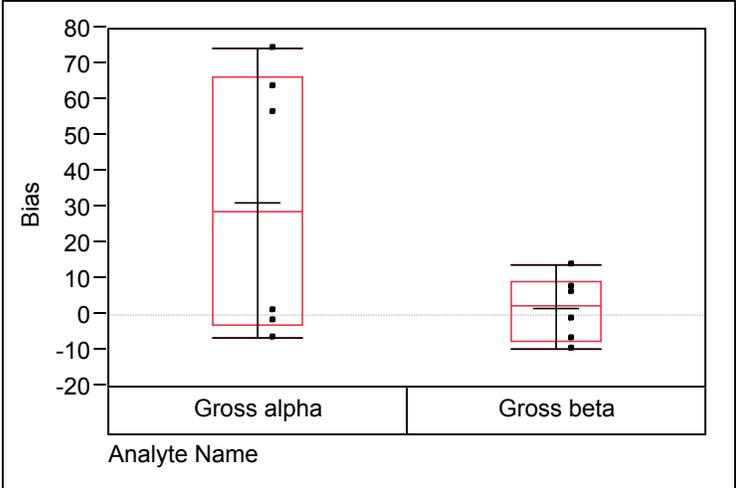
Variability Gauge Lab Code=ORIS01

Variability Chart for Bias



Variability Gauge Lab Code=OTLI01

Variability Chart for Bias

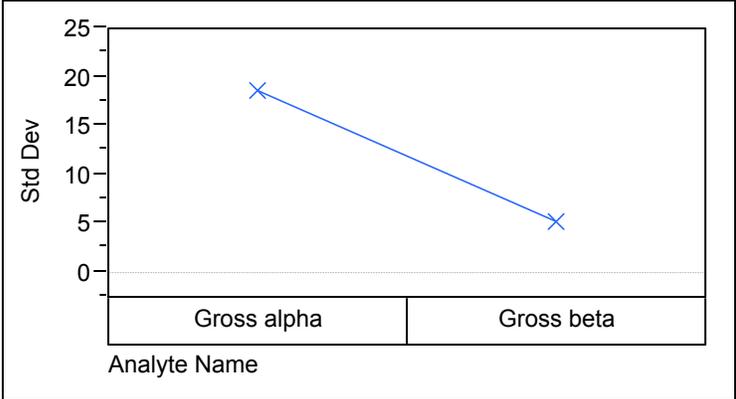
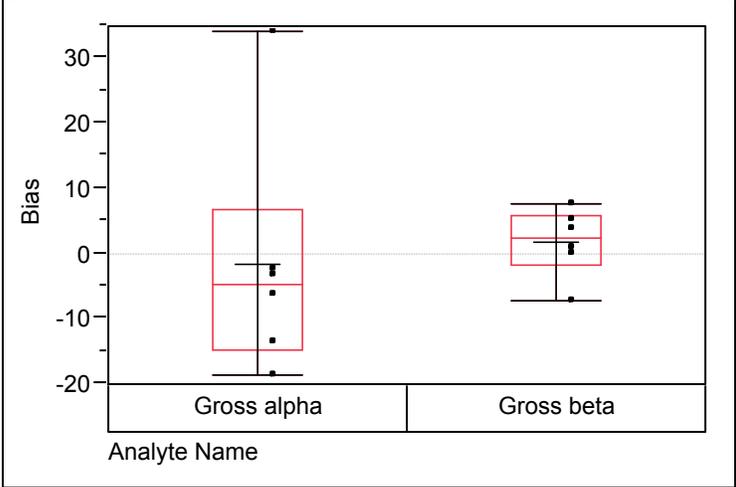


Variability Gauge Lab Code=QUAN01

Variability Chart for Bias

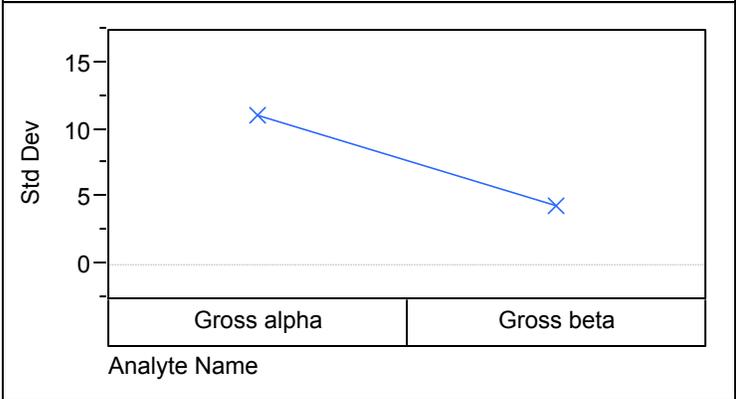
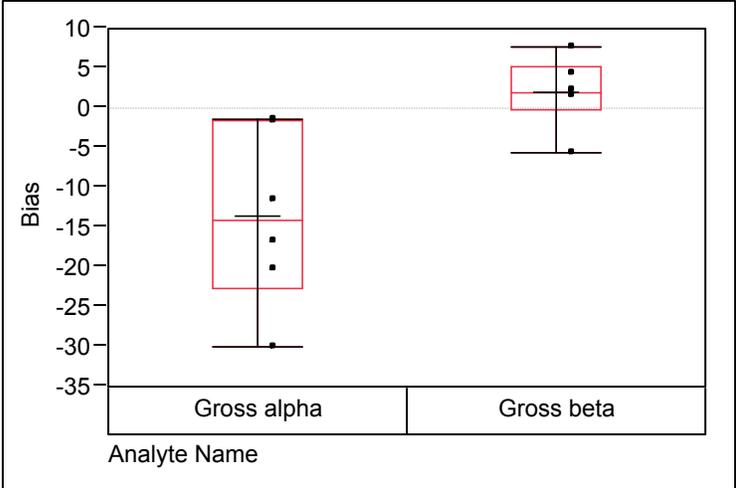
Variability Gauge Lab Code=QUAN01

Variability Chart for Bias



Variability Gauge Lab Code=QUAN03

Variability Chart for Bias

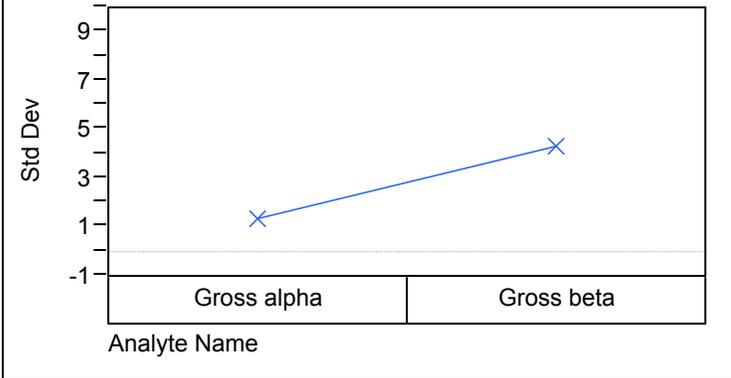
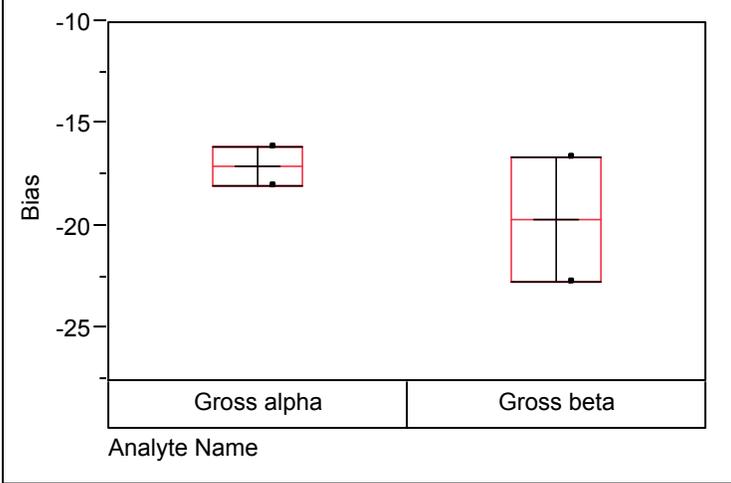


Variability Gauge Lab Code=RMCL99

Variability Chart for Bias

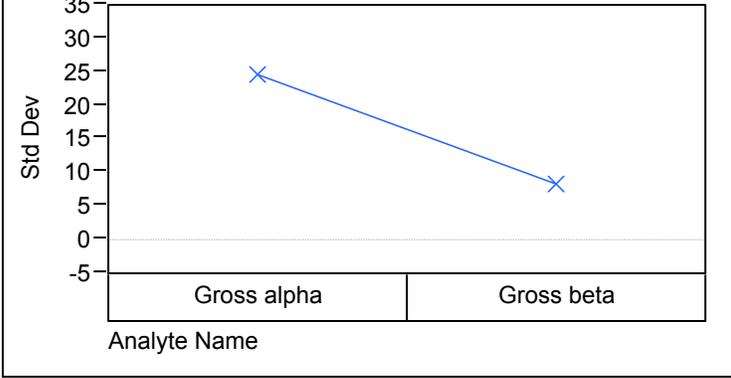
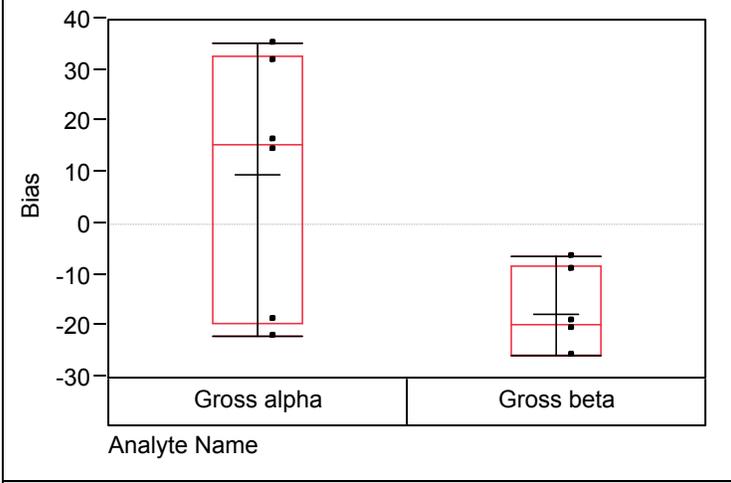
Variability Gauge Lab Code=RMCL99

Variability Chart for Bias



Variability Gauge Lab Code=RPSC01

Variability Chart for Bias

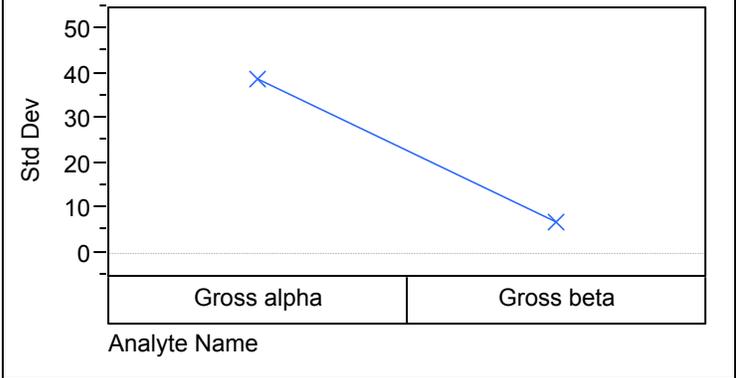
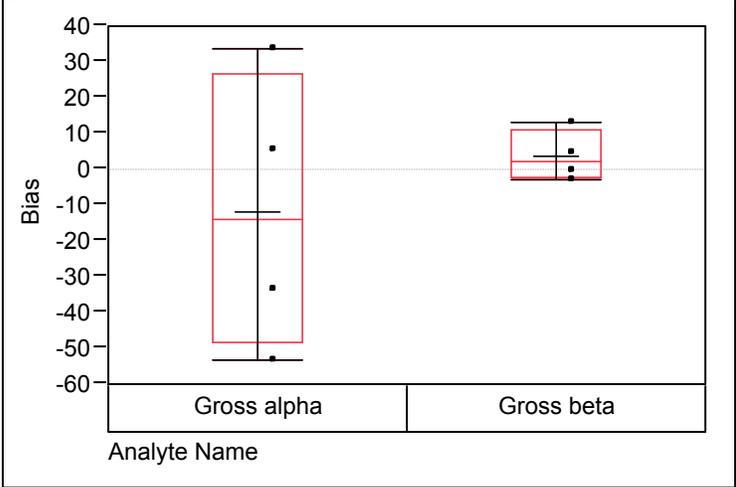


Variability Gauge Lab Code=RSAL01

Variability Chart for Bias

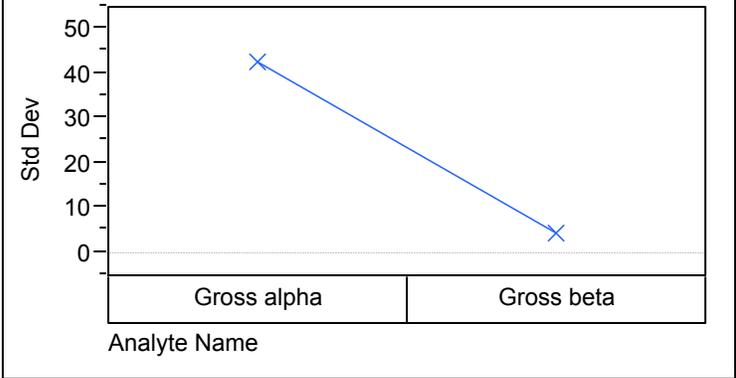
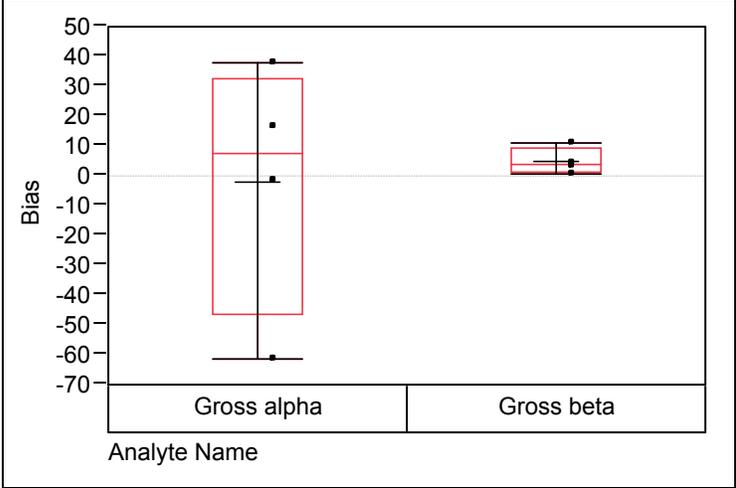
Variability Gauge Lab Code=RSAL01

Variability Chart for Bias



Variability Gauge Lab Code=SCAL01

Variability Chart for Bias

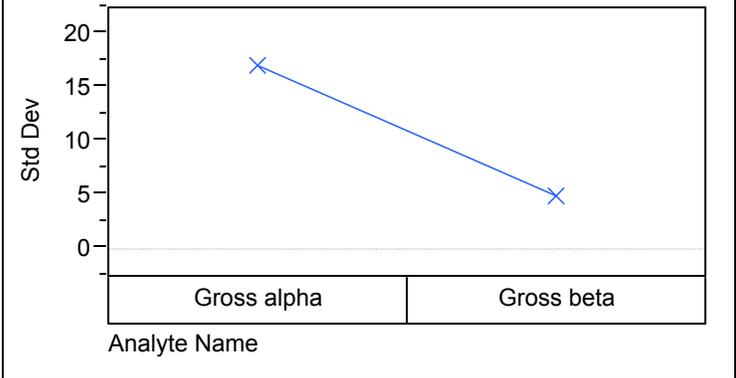
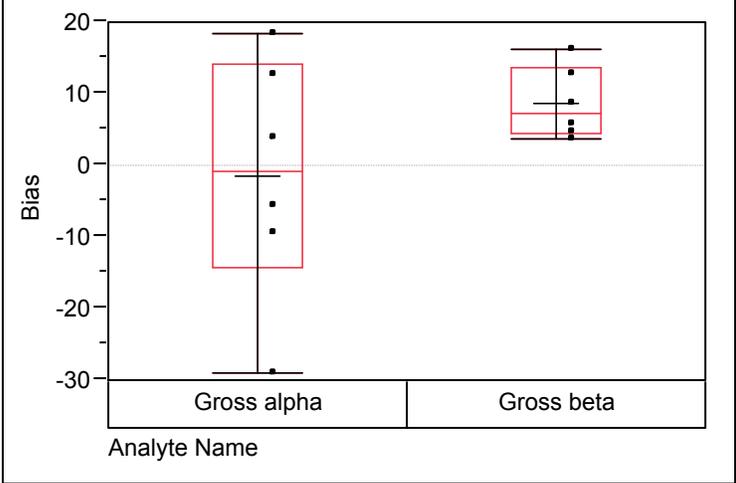


Variability Gauge Lab Code=SEML01

Variability Chart for Bias

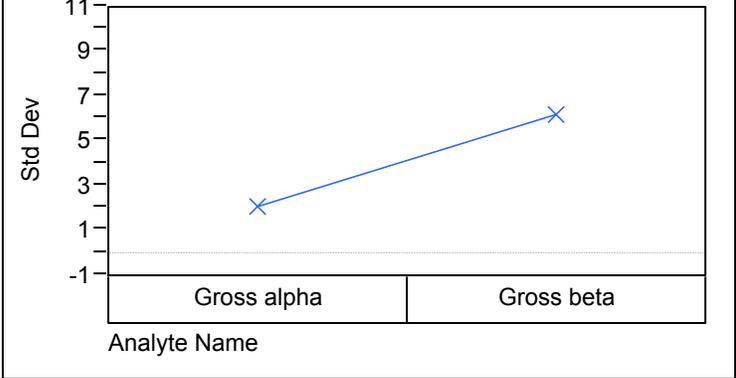
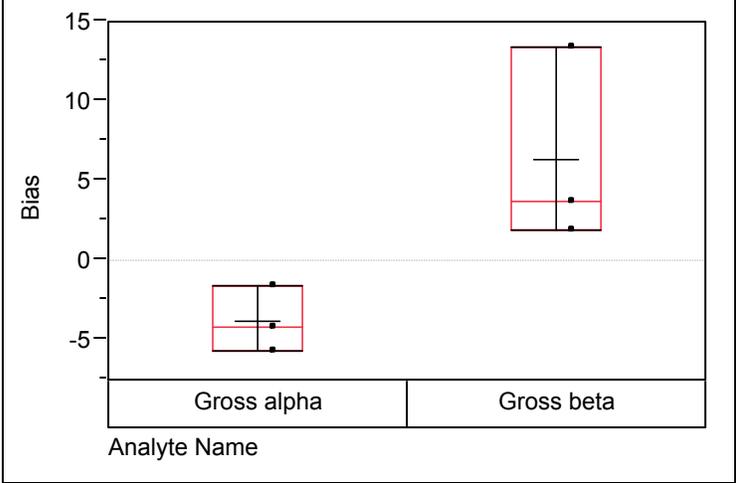
Variability Gauge Lab Code=SEML01

Variability Chart for Bias



Variability Gauge Lab Code=SLDL01

Variability Chart for Bias

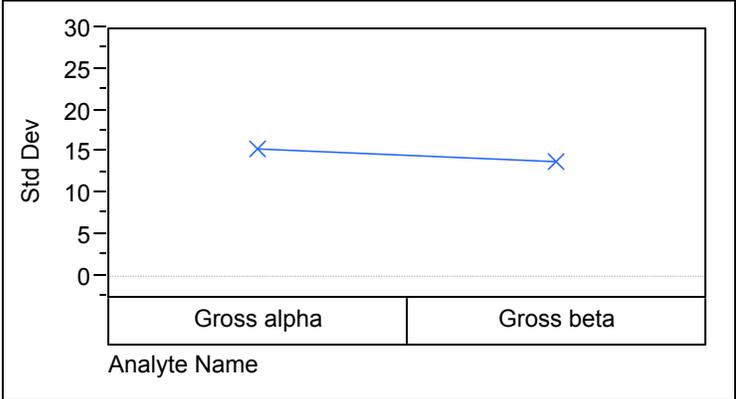
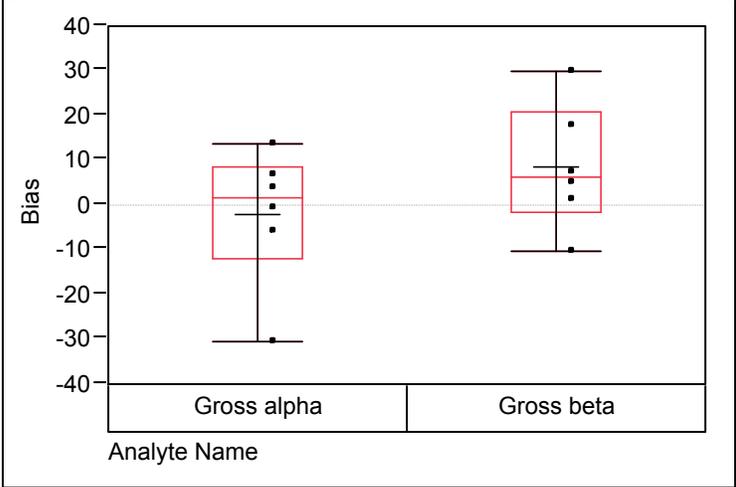


Variability Gauge Lab Code=SNRC99

Variability Chart for Bias

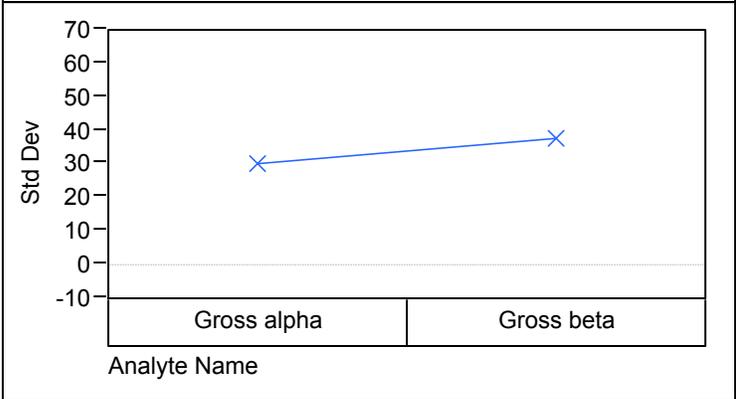
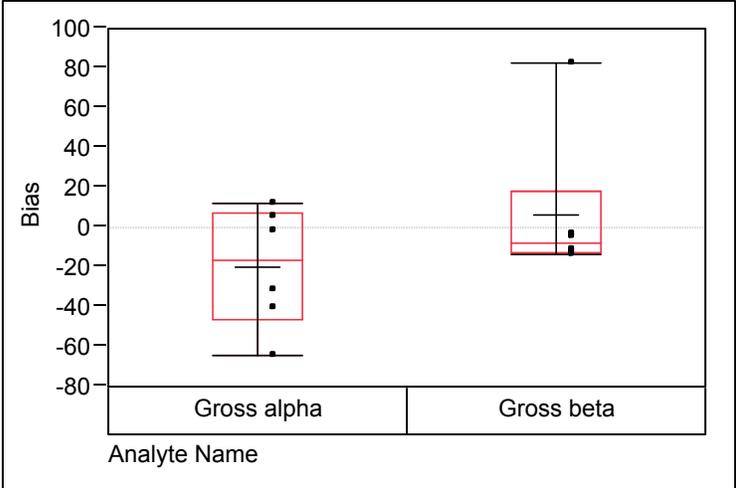
Variability Gauge Lab Code=SNRC99

Variability Chart for Bias



Variability Gauge Lab Code=SOUT01

Variability Chart for Bias

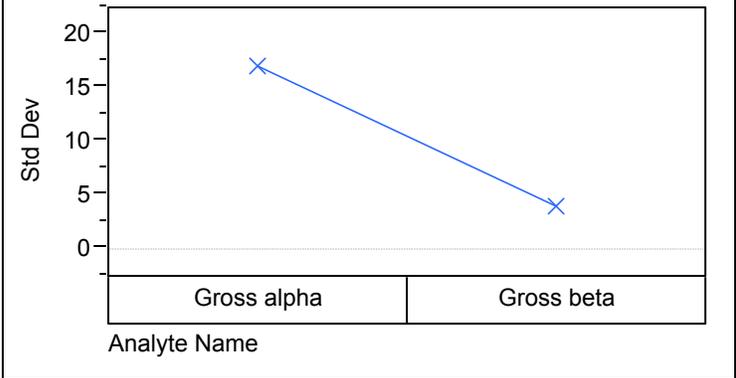
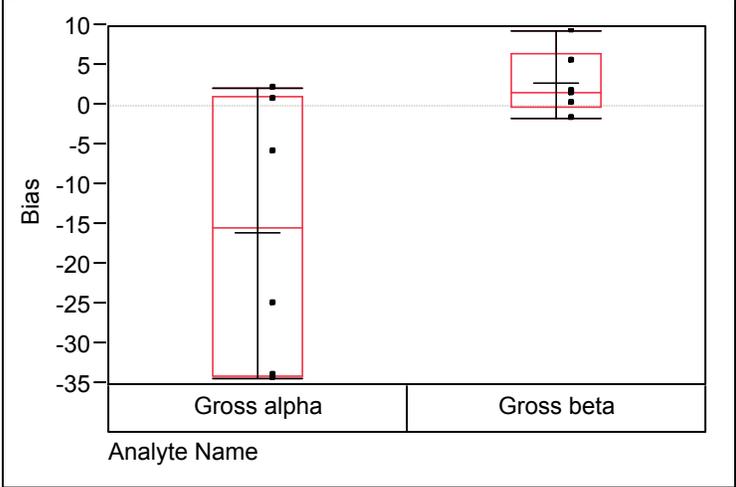


Variability Gauge Lab Code=TDHL01

Variability Chart for Bias

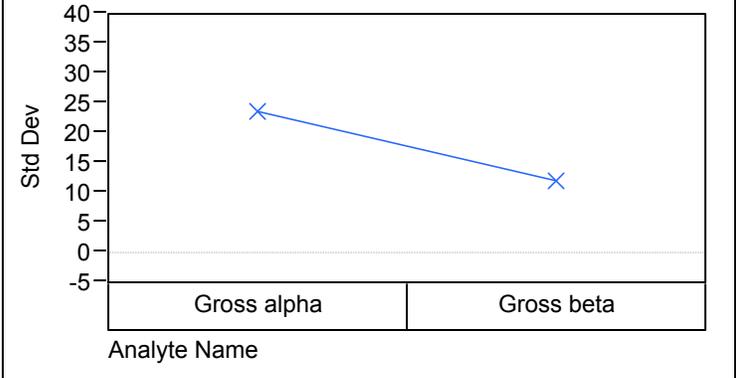
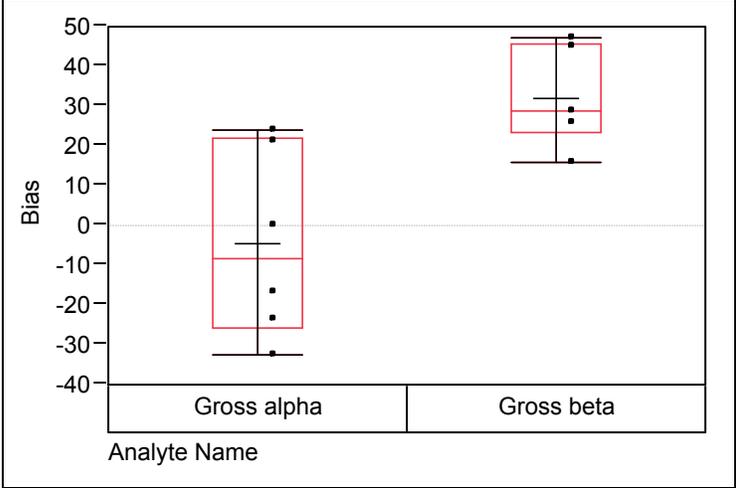
Variability Gauge Lab Code=TDHL01

Variability Chart for Bias



Variability Gauge Lab Code=TELE01

Variability Chart for Bias

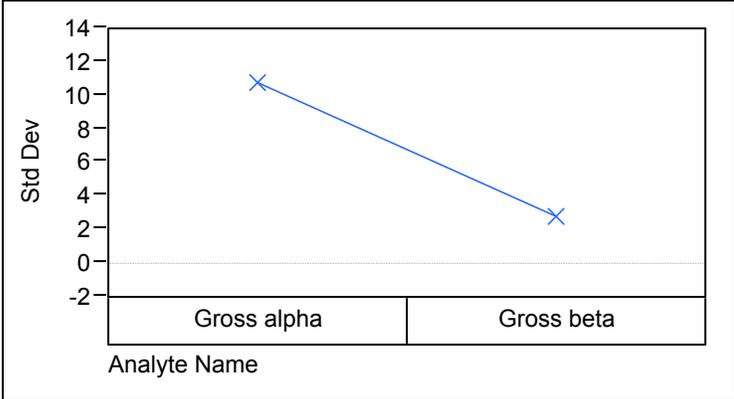
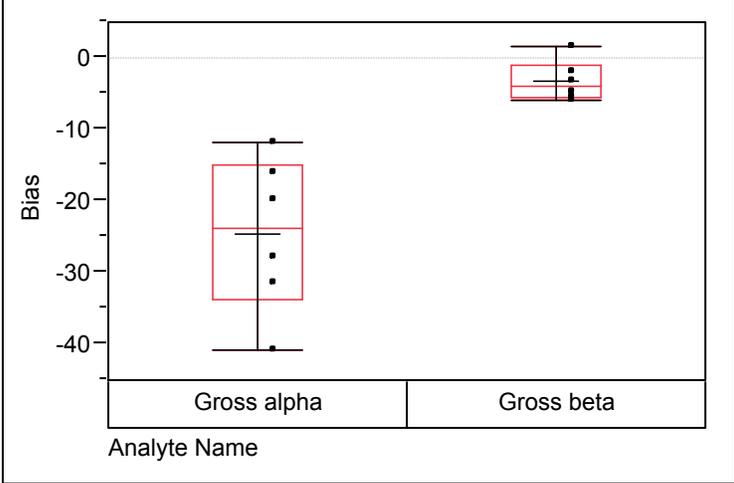


Variability Gauge Lab Code=TELE02

Variability Chart for Bias

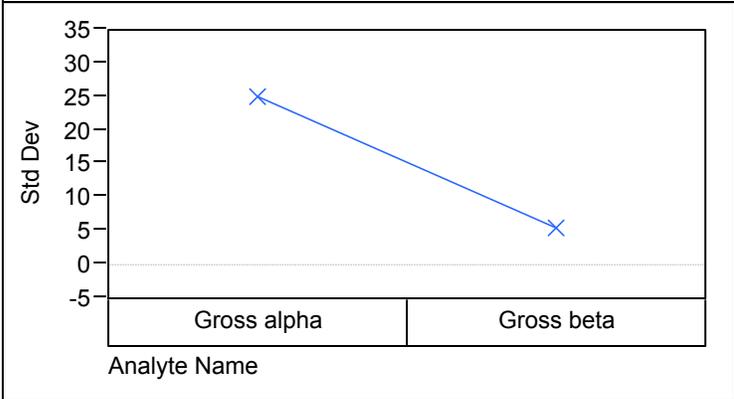
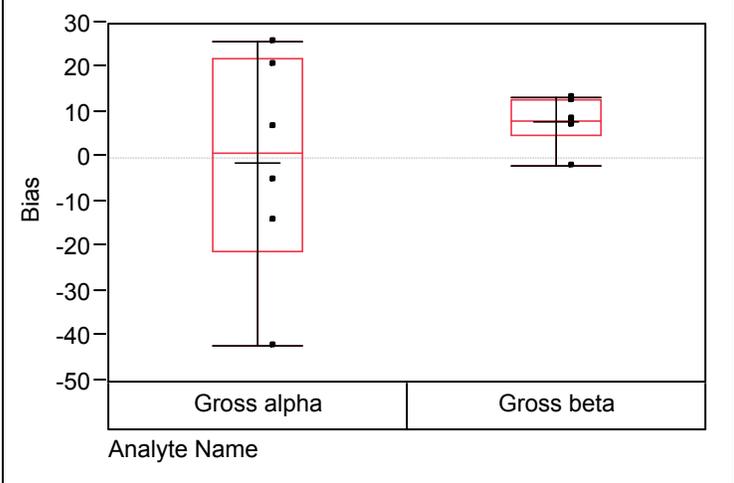
Variability Gauge Lab Code=TELE02

Variability Chart for Bias



Variability Gauge Lab Code=TMAO01

Variability Chart for Bias

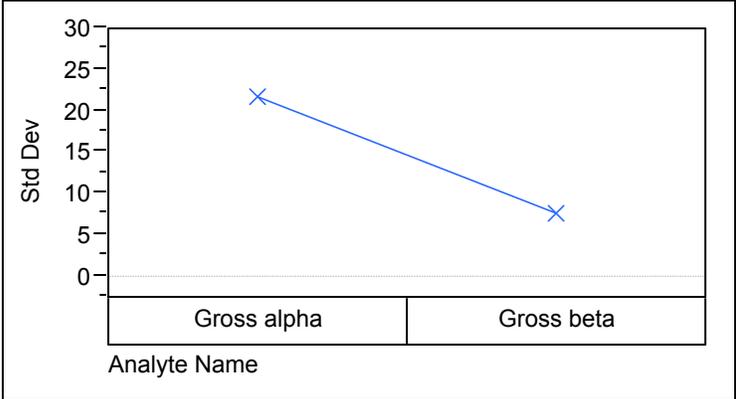
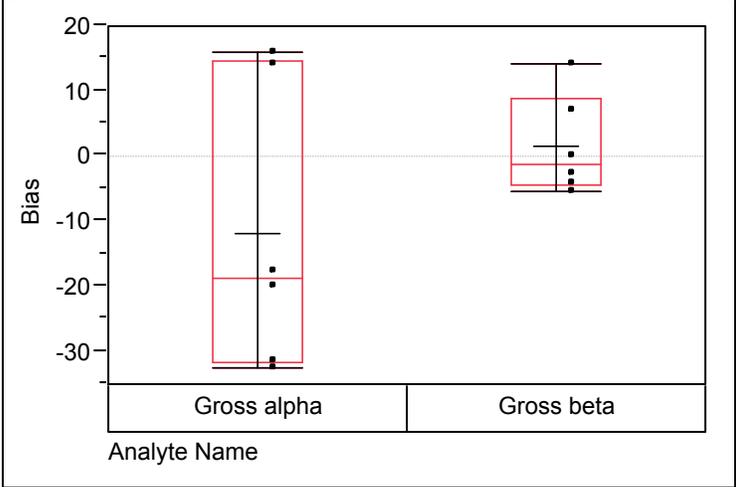


Variability Gauge Lab Code=TMAR01

Variability Chart for Bias

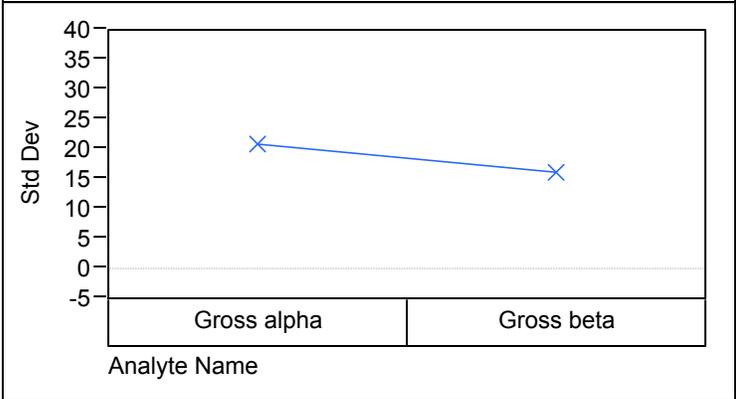
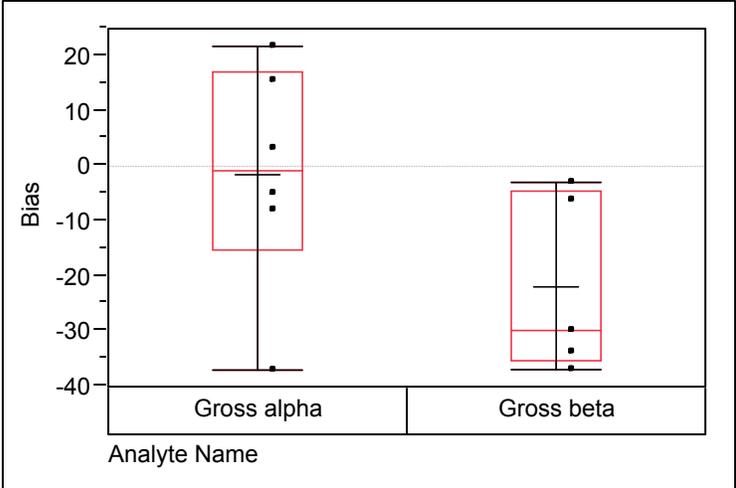
Variability Gauge Lab Code=TMAR01

Variability Chart for Bias



Variability Gauge Lab Code=TNUT01

Variability Chart for Bias

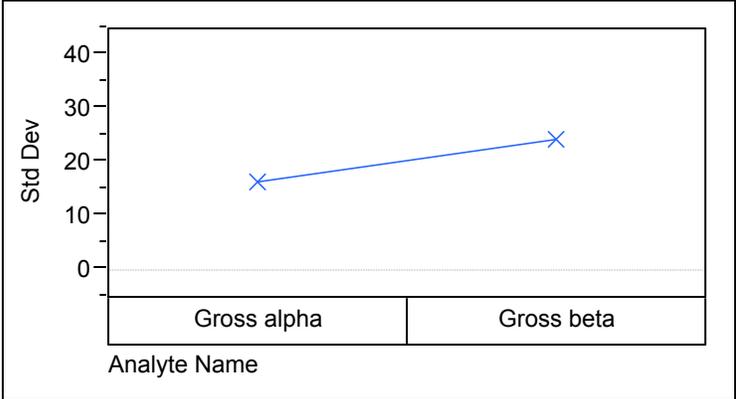
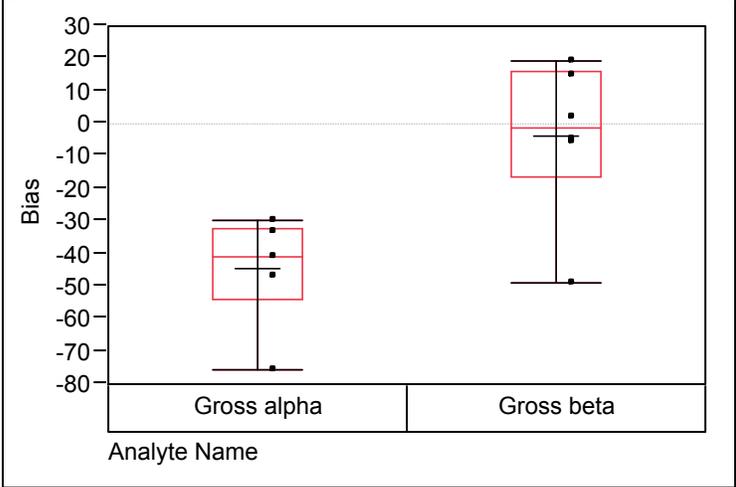


Variability Gauge Lab Code=WEST03

Variability Chart for Bias

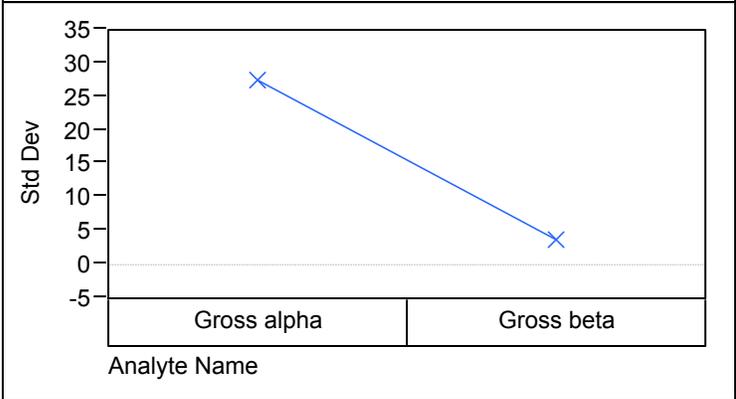
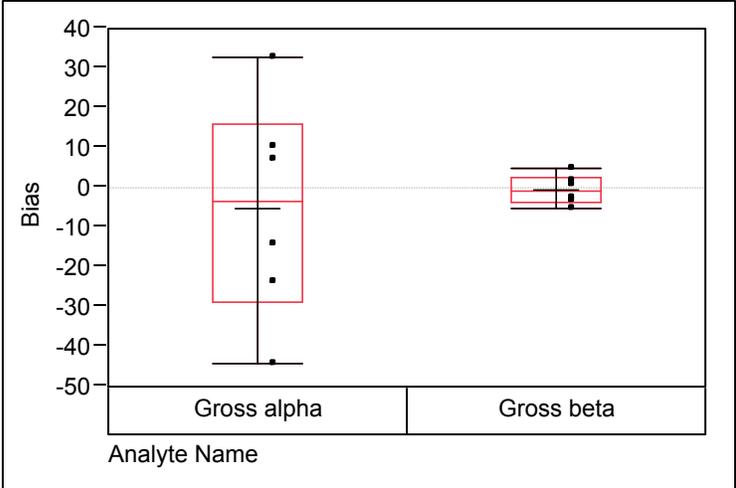
Variability Gauge Lab Code=WEST03

Variability Chart for Bias



Variability Gauge Lab Code=WEST04

Variability Chart for Bias

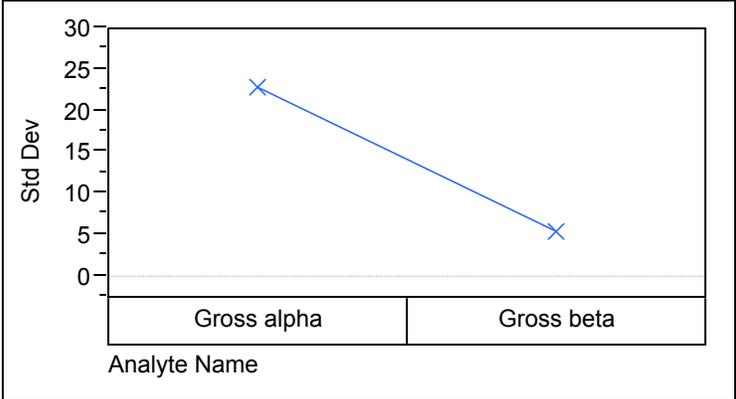
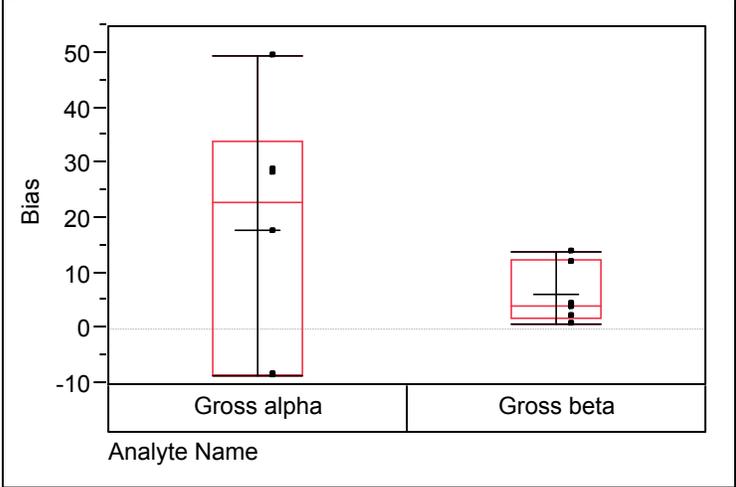


Variability Gauge Lab Code=WSHL01

Variability Chart for Bias

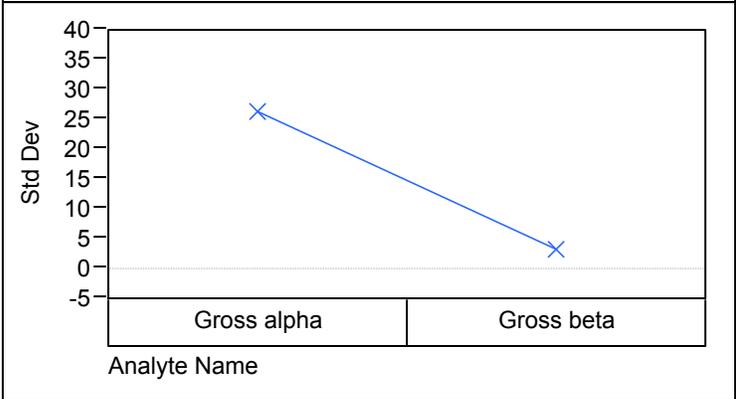
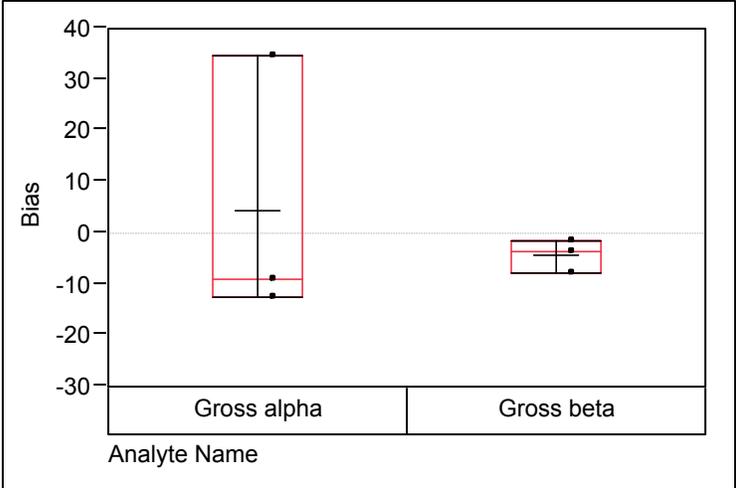
Variability Gauge Lab Code=WSHL01

Variability Chart for Bias



Variability Gauge Lab Code=WSTI01

Variability Chart for Bias

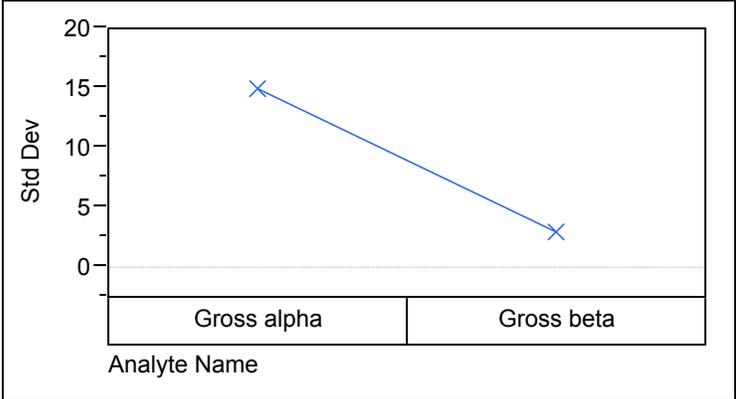
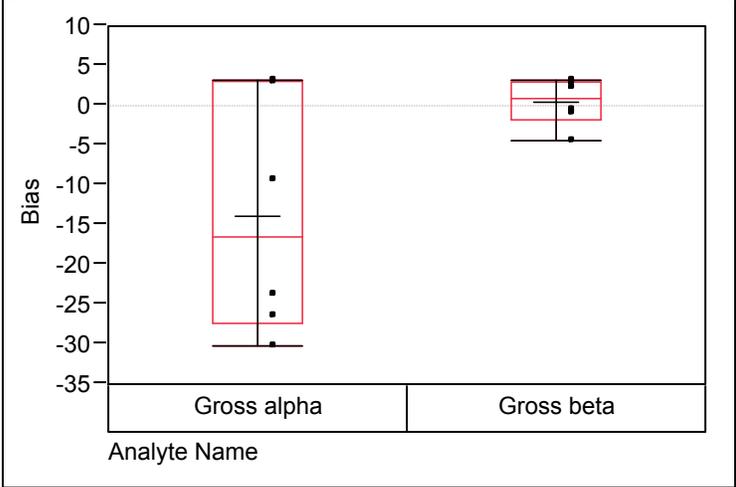


Variability Gauge Lab Code=WVDP01

Variability Chart for Bias

Variability Gauge Lab Code=WVDP01

Variability Chart for Bias



Variability Gauge Lab Code=WVNS01

Variability Chart for Bias

