

Lab Code Lab Name

ADEM01 Alabama Department of Environmental Management
AFOH01 USAFSAM/OEHHL
ANTE01 ALS Group USA, Corp
ARSL01 American Radiation Services Inc.
AY1201 B&W Y-12, Analytical Chemistry Organization Laboratory
CDHS01 California Department of Public Health
CESL01 Lawrence Livermore National Laboratory - EMRL
CHMH01 222-S Laboratory
CHPR01 CHPRC Central Count Room
CMRC01 Carlsbad Environmental Monitoring and Research Center
DEHS01 Department of Environmental Health & Safety
DLEA01 DLE Associates
DPHE01 Colorado Dept. of Public Health & Env. / Laboratory Services Div.
DRMG01 B&W Pantex - D&RMG
EPAL01 U. S. EPA Office of Radiation and Indoor Air
ERCL01 Washington State Public Health Laboratories
ERHD99 Radiation Protection Bureau ERHD NMS
ERLG01 Environmental Radiation Laboratory
ERPD99 Ministry Of Health,Radiation Protection Department Lab
FDHE01 Florida Dept of Health Environmental Laboratory
FMEC99 Foods and Water Laboratories Center
GENE01 GEL Laboratories, LLC
HCAL01 Hazards Control Analytical Lab
HECR01 SC Dept. Health and Environmental Control Radiological Laboratory
HPAC99 HPA, CRCE Scotland
ISUP01 ISU - Department of Physics/Health Physics/EAL
JAEC99 Radiation Measurements Laboratory
KUFS99 Center for Research in Environmental Radiation
LAEC99 Lebanese Atomic Energy Commission - Environmental Radiation
LAWR01 LAWRENCE BERKELEY NATIONAL LABORATORY
LDRA99 Laboratori de Radiologia Ambiental-Universitat de Barcelona
LGCL99 LGC Ltd
LOCK03 Advanced Test Reactor (ATR) Complex Radioanalytical Laboratory
MART01 USEC, Inc.
MART02 United States Enrichment Corporation
MART03 Radioactive Material Analysis Laboratory
MKME01 PIKA International
MSCL01 MSC
NARL01 National Air and Radiation Environmental Laboratory
NCNS99 National Center for Nuclear Sciences and Technologies
NESI01 B&W Technical Services-Radioisotope & Analytical Chemistry Laboratory
NRLL99 National Radiation Laboratory
NTSI01 Nuclear Technology Services, Inc.
OBGL01 Life Science Laboratories, Inc.
ODHL01 Ohio Department of Health Laboratory
ORIS01 ORISE/IEAV
OTLI01 Outreach Technologies, Inc.
PESL01 Environmental Science Lab PNNL/ESL
QUAN01 TestAmerica St. Louis
QUAN03 TestAmerica

RMCL99 Royal Scientific Society - Radiation Measurements Lab
RPSC01 Radiation Protection Service
RSAL01 RSA Laboratories, Inc.
SCAL01 Centauri Labs
SEML01 SRS Environmental Monitoring Laboratory
SNRC99 Soreq NRC
SOUT01 Southwest Research Institute
TDHL01 Texas Department of State Health Services Laboratory
TELE01 TELEDYNE BROWN ENGINEERING - ENVIRONMENTAL SERVICES
TELE02 Environmental, Inc., Midwest Lab
TMAO01 EBERLINE SERVICES OAK RIDGE LABORATORY
TMAR01 Eberline Analytical Corp. Richmond CA Lab
TNUT01 FUSRAP
USED99 National Center for Nuclear Energy, Sciences and Techniques
WEST03 Waste Sampling and Characterization Facility, MSA/RJLG
WEST04 PACE ANALYTICAL SERVICES, PITTSBURGH
WIPP01 WIPP Laboratories
WSHL01 Wisconsin State Laboratory of Hygiene
WSTI01 Waste Stream Technology Inc.
WVDP01 WVDP Environmental Laboratory
WVNS01 West Valley Process Chemistry

16 Laboratories did not return data for this matrix.

GrW22 Radiological Reference Values

Analyte Name	Reference		Rad Reference Date
	Value	Uncertainty	
1 Gross alpha	0.68	0.01	3/1/10 12:00 PM
2 Gross beta	3.09	0.07	3/1/10 12:00 PM

Sample Statistical Summary

MAPEP-10-GrW22

Analyte	T(1)	A(2)	Grand(3) Mean	Std Dev	Ref Value	Ref Unc	Acceptance Range
Radiological							Units: (Bq/L)
Gross alpha	53	51	0.442	0.142	0.676	0.007	>0.0 - 1.352
Gross beta	52	51	3.18	0.56	3.09	0.07	1.55 - 4.64

Note: (1) T = Total number of laboratories reporting analyte.
(2) A = Number of laboratories with 'Acceptable' performance.

Gross Alpha Criteria:

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

Gross Beta Criteria:

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

Flag Summary Report

MAPEP-10-GrW22

Radiological				
Analyte	A	W	RW	N
Gross alpha	51			2
Gross beta	51			1



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.62	0.676	A		-8.3	>0.0 - 1.352	0.01	L
Gross beta	3.53	3.09	A		14.2	1.55 - 4.64	0.01	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(AFOH01) USAFSAM/OEHHL

2350 Gillingham Dr

Brooks City-Base, TX 78235-5103

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.600	0.676	A		-11.2	>0.0 - 1.352	0.065	
Gross beta	3.288	3.09	A		6.4	1.55 - 4.64	0.081	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(ANTE01) ALS Group USA, Corp
 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	0.47	0.676	A		-30.5	>0.0 - 1.352	0.04	
Gross beta	3.18	3.09	A		2.9	1.55 - 4.64	0.25	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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

Laboratory Results For MAPEP-10-GrW22
 (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	0.413	0.676	A		-38.9	>0.0 - 1.352	0.113	H
Gross beta	2.58	3.09	A		-16.5	1.55 - 4.64	0.607	H

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.469	0.676	A		-30.6	>0.0 - 1.352	0.090	
Gross beta	3.60	3.09	A		16.5	1.55 - 4.64	0.20	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	1.90E-01	0.676	A		-71.9	>0.0 - 1.352	1.32E-	H
Gross beta	3.40E+00	3.09	A		10.0	1.55 - 4.64	5.92E-	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	.38	0.676	A		-43.8	>0.0 - 1.352	.116	H
Gross beta	3.5	3.09	A		13.3	1.55 - 4.64	.304	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	1.66	0.676	N		145.6	>0.0 - 1.352	0.42	H
Gross beta	4.51	3.09	A		46.0	1.55 - 4.64	0.53	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.39	0.676	A		-42.3	>0.0 - 1.352	0.04	
Gross beta	2.28	3.09	A		-26.2	1.55 - 4.64	0.12	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.46	0.676	A		-32.0	>0.0 - 1.352	0.16	H
Gross beta	4.04	3.09	A		30.7	1.55 - 4.64	0.32	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (ERCL01) Washington State Public Health Laboratories
 1610 N.E. 150 th Srteet
 Shoreline, WA 98155-9701

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.60	0.676	A		-11.2	>0.0 - 1.352	0.11	
Gross beta	3.23	3.09	A		4.5	1.55 - 4.64	0.14	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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

Laboratory Results For MAPEP-10-GrW22
 (ERHD99) Radiation Protection Bureau ERHD 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	0.30	0.676	A		-55.6	>0.0 - 1.352	0.08	H
Gross beta	3.23	3.09	A		4.5	1.55 - 4.64	0.81	H

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.45	0.676	A		-33.4	>0.0 - 1.352	0.1	H
Gross beta	3	3.09	A		-2.9	1.55 - 4.64	0.2	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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

Laboratory Results For MAPEP-10-GrW22
 (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	0.089	0.676	A		-86.8	>0.0 - 1.352	0.009	
Gross beta	2.361	3.09	A		-23.6	1.55 - 4.64	0.241	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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

Laboratory Results For MAPEP-10-GrW22

(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	0.35	0.676	A		-48.2	>0.0 - 1.352	0.04	
Gross beta	3.70	3.09	A		19.7	1.55 - 4.64	0.05	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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

Laboratory Results For MAPEP-10-GrW22
 (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	0.74	0.676	A		9.5	>0.0 - 1.352	0.029	
Gross beta	1.80	3.09	A		-41.7	1.55 - 4.64	0.068	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.559	0.676	A		-17.3	>0.0 - 1.352	0.039	
Gross beta	3.110	3.09	A		0.6	1.55 - 4.64	0.53	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.43	0.676	A		-36.4	>0.0 - 1.352	.06	
Gross beta	3.36	3.09	A		8.7	1.55 - 4.64	0.19	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.523	0.676	A		-22.6	>0.0 - 1.352	0.177	H
Gross beta	3.166	3.09	A		2.5	1.55 - 4.64	0.165	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.07	0.676	A		-89.6	>0.0 - 1.352	0.04	H
Gross beta	4.15	3.09	A		34.3	1.55 - 4.64	0.11	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(LDRA99) Laboratori de Radiologia Ambiental-Universitat de Barcelona

Facultat de Quimica

Barcelona, Barcelona 08028

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.46	0.676	A		-32.0	>0.0 - 1.352	0.03	
Gross beta	3.5	3.09	A		13.3	1.55 - 4.64	0.1	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.336	0.676	A		-50.3	>0.0 - 1.352	0.05	
Gross beta	3.15	3.09	A		1.9	1.55 - 4.64	0.253	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

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

INL/Battelle Energy Alliance, LLC

Scoville, ID 83415-7111

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.35	0.676	A		-48.2	>0.0 - 1.352	0.06	
Gross beta	3.81	3.09	A		23.3	1.55 - 4.64	0.21	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.407	0.676	A		-39.8	>0.0 - 1.352	0.094	H
Gross beta	3.15	3.09	A		1.9	1.55 - 4.64	0.157	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.473	0.676	A		-30.0	>0.0 - 1.352	0.174	H
Gross beta	2.37	3.09	A		-23.3	1.55 - 4.64	0.229	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.638	0.676	A		-5.6	>0.0 - 1.352	0.486	H
Gross beta	5.79	3.09	N		87.4	1.55 - 4.64	2.55	H

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(MKME01) PIKA International

5025 Arnold Ave

McClellan, CA 95652

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.38	0.676	N		104.1	>0.0 - 1.352	0.14	
Gross beta	NR	3.09				1.55 - 4.64		

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.359	0.676	A		-46.9	>0.0 - 1.352	0.027	
Gross beta	3.29	3.09	A		6.5	1.55 - 4.64	0.09	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.486	0.676	A		-28.1	>0.0 - 1.352	0.035	
Gross beta	3.03	3.09	A		-1.9	1.55 - 4.64	0.15	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.689	0.676	A		1.9	>0.0 - 1.352	0.09	
Gross beta	3.9	3.09	A		26.2	1.55 - 4.64	0.25	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.43	0.676	A		-36.4	>0.0 - 1.352	0.15	H
Gross beta	3.14	3.09	A		1.6	1.55 - 4.64	.42	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.46	0.676	A		-32.0	>0.0 - 1.352	0.04	
Gross beta	3.87	3.09	A		25.2	1.55 - 4.64	0.18	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.665	0.676	A		-1.6	>0.0 - 1.352	0.025	
Gross beta	3.33	3.09	A		7.8	1.55 - 4.64	.123	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (PESL01) Environmental Science Lab PNNL/ESL
 RPL 309/BRM # 13056
 Richland, WA 99352

Radiological						Units: (Bq/L)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	NR	0.676				>0.0 - 1.352		
Gross beta	NR	3.09				1.55 - 4.64		

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.5504	0.676	A		-18.6	>0.0 - 1.352	0.0530	
Gross beta	3.255	3.09	A		5.3	1.55 - 4.64	0.1359	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.473	0.676	A		-30.0	>0.0 - 1.352	0.057	
Gross beta	3.14	3.09	A		1.6	1.55 - 4.64	0.211	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.55	0.676	A		-18.6	>0.0 - 1.352	0.11	
Gross beta	2.46	3.09	A		-20.4	1.55 - 4.64	0.25	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	.316	0.676	A		-53.3	>0.0 - 1.352	.088	H
Gross beta	3.08	3.09	A		-0.3	1.55 - 4.64	.254	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(SCAL01) Centauri Labs
 1000 Monticello Court
 Montgomery, AL 36117-

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.2609	0.676	A		-61.4	>0.0 - 1.352	0.0463	
Gross beta	3.2227	3.09	A		4.3	1.55 - 4.64	0.3256	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.48	0.676	A		-29.0	>0.0 - 1.352	0.14	H
Gross beta	3.27	3.09	A		5.8	1.55 - 4.64	0.28	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.47	0.676	A		-30.5	>0.0 - 1.352	0.10	H
Gross beta	3.32	3.09	A		7.4	1.55 - 4.64	0.26	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.241	0.676	A		-64.3	>0.0 - 1.352	0.0221	
Gross beta	2.99	3.09	A		-3.2	1.55 - 4.64	0.183	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.444	0.676	A		-34.3	>0.0 - 1.352	0.063	
Gross beta	3.263	3.09	A		5.6	1.55 - 4.64	0.118	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.5173	0.676	A		-23.5	>0.0 - 1.352	0.2503	H
Gross beta	3.98	3.09	A		28.8	1.55 - 4.64	0.283	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.40	0.676	A		-40.8	>0.0 - 1.352	0.05	
Gross beta	3.03	3.09	A		-1.9	1.55 - 4.64	0.07	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.392	0.676	A		-42.0	>0.0 - 1.352	0.132	H
Gross beta	3.487	3.09	A		12.8	1.55 - 4.64	0.233	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.456	0.676	A		-32.5	>0.0 - 1.352	0.103	H
Gross beta	3.530	3.09	A		14.2	1.55 - 4.64	0.507	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.4256	0.676	A		-37.0	>0.0 - 1.352	0.1028	H
Gross beta	1.9507	3.09	A		-36.9	1.55 - 4.64	0.2629	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22

(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	0.165	0.676	A		-75.6	>0.0 - 1.352	0.026	
Gross beta	1.58	3.09	A		-48.9	1.55 - 4.64	0.91	H

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.377	0.676	A		-44.2	>0.0 - 1.352	0.078	H
Gross beta	3.145	3.09	A		1.8	1.55 - 4.64	0.581	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.62	0.676	A		-8.3	>0.0 - 1.352	0.11	
Gross beta	3.16	3.09	A		2.3	1.55 - 4.64	0.14	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	.615	0.676	A		-9.0	>0.0 - 1.352	.127	H
Gross beta	2.85	3.09	A		-7.8	1.55 - 4.64	.172	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (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	0.516	0.676	A		-23.7	>0.0 - 1.352	0.0438	
Gross beta	3.16	3.09	A		2.3	1.55 - 4.64	0.0929	L

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

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

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



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

Laboratory Results For MAPEP-10-GrW22
 (WVNS01) West Valley Process Chemistry
 10282 Rock Springs Road
 West Valley, NY 14171-9799

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.400	0.676	A		-40.8	>0.0 - 1.352	0.0612	
Gross beta	2.97	3.09	A		-3.9	1.55 - 4.64	0.455	

Radiological Reference Date: March 1, 2010

Gross Alpha Flags:

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

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

Gross Beta Flags:

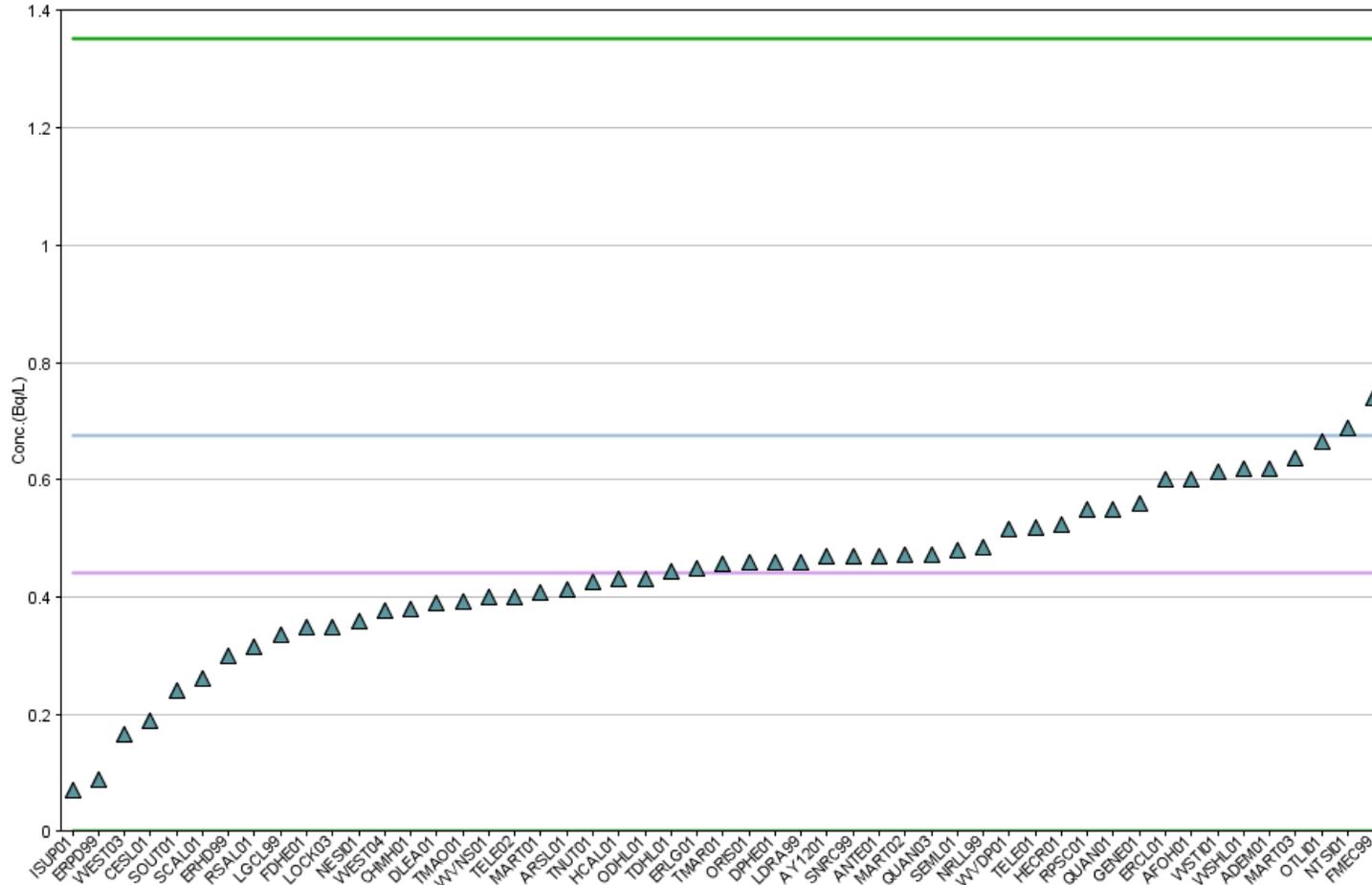
A = Result acceptable, Bias \leq +/- 50% with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

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

Gross alpha

MAPEP-10-GrW22

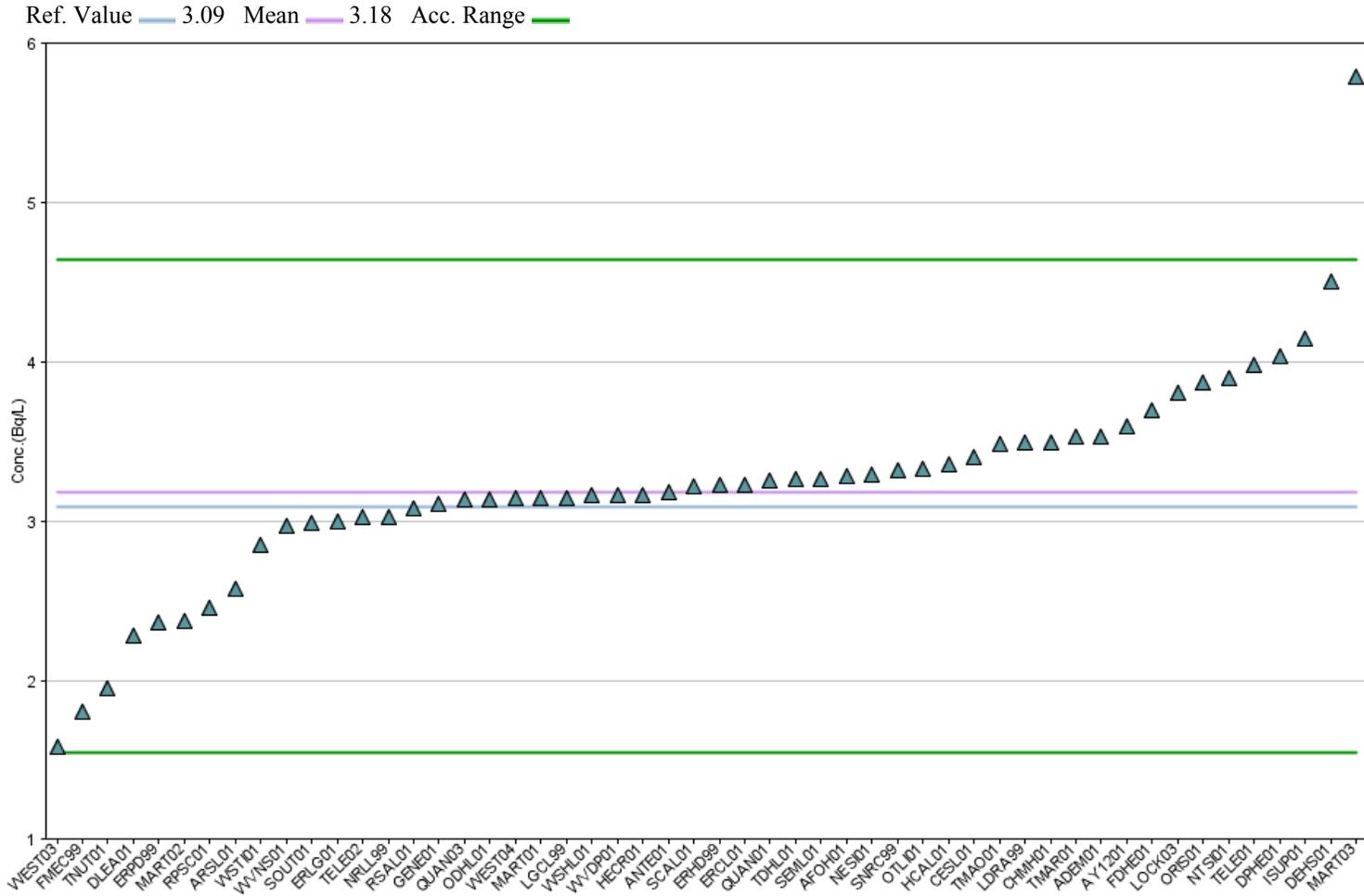
Ref. Value 0.676 Mean 0.442 Acc. Range



Note: This chart shows only data points with values between 0.00 and 1.15 (± 5 Standard Deviations)

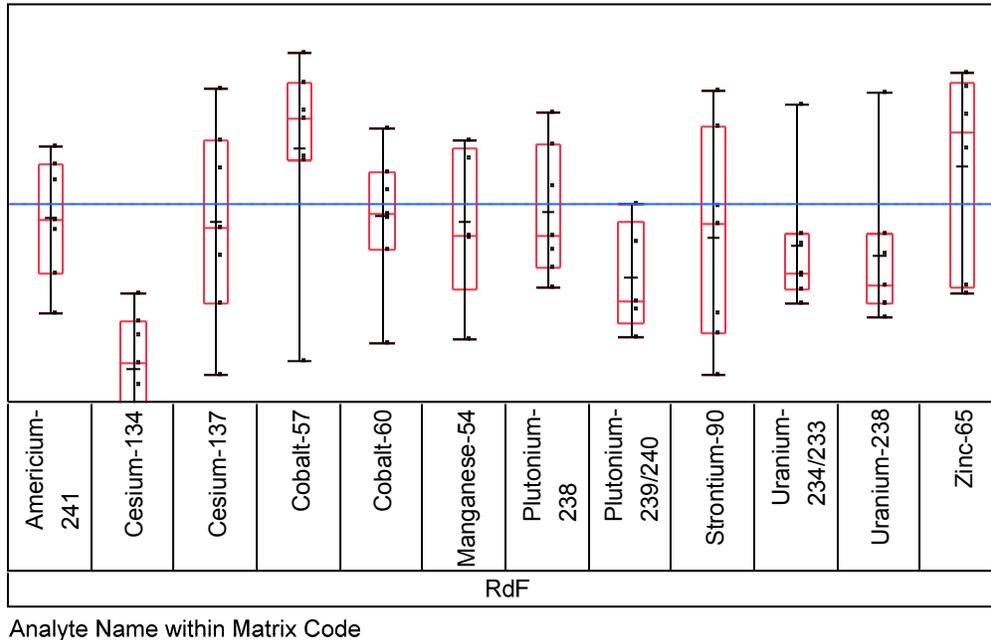
Gross beta

MAPEP-10-GrW22



Note: This chart shows only data points with values between 0.38 and 5.98 (± 5 Standard Deviations)

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 16. 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.



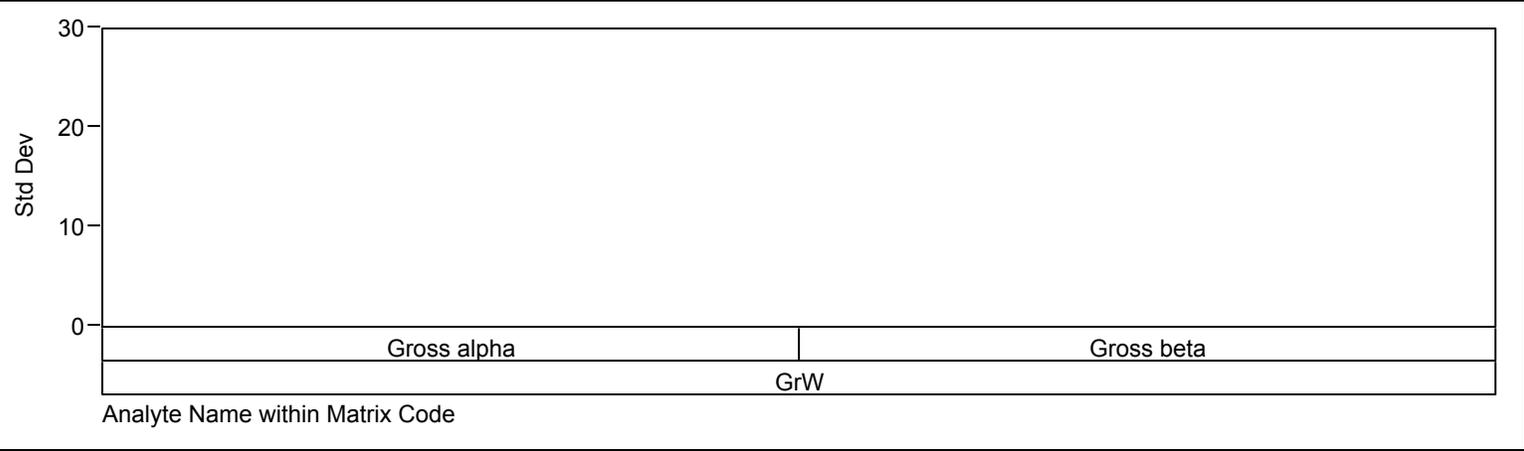
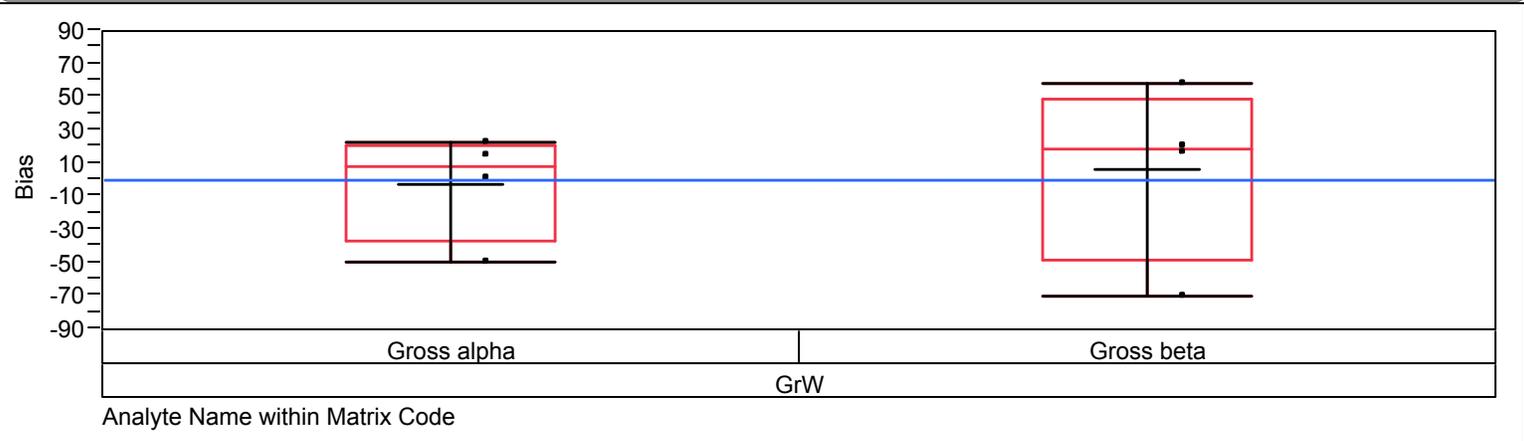
The box plots summarize the distribution of points for each analyte. The ends of the box are the 25th and 75th quantiles. The difference between the quartiles is the interquartile range. The line across the middle of the box identifies the median sample value. Each box has lines, sometimes called whiskers, 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.

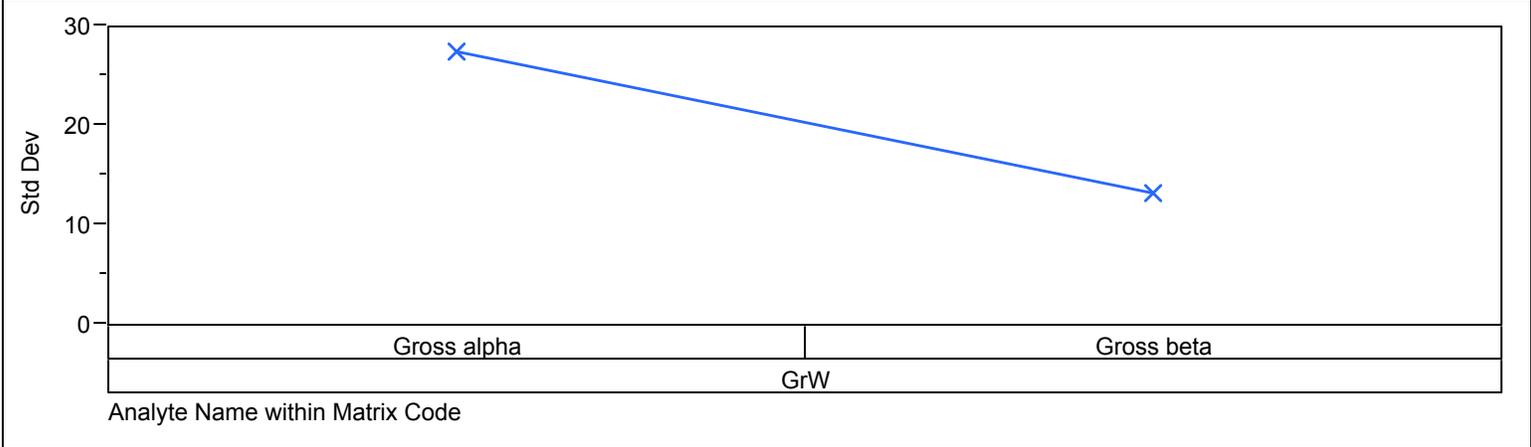
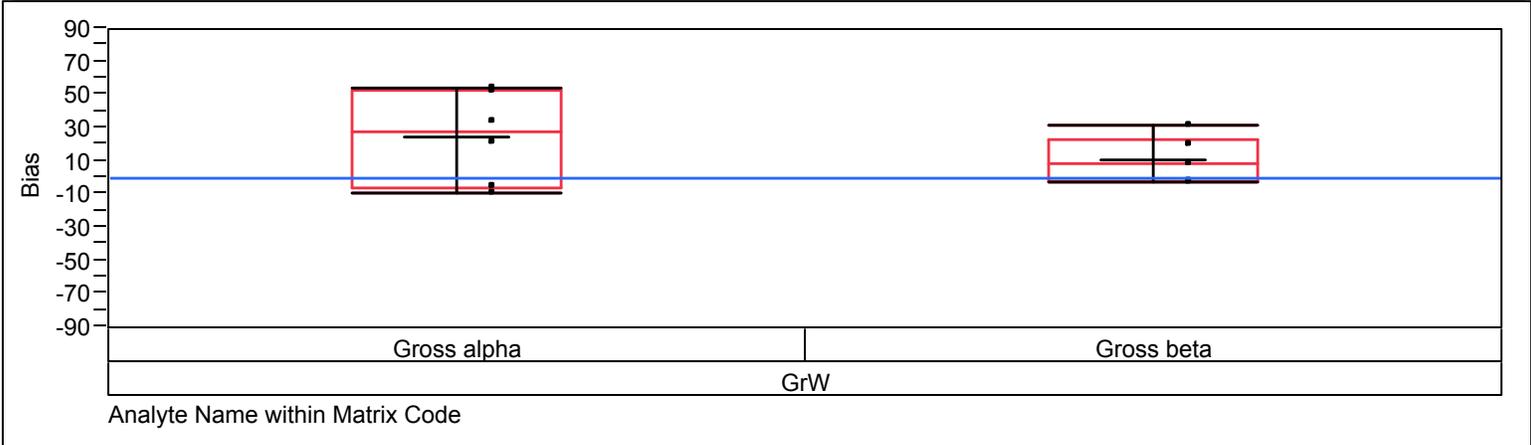
Variability Gauge Lab Code=ADEM01

Variability Chart for Bias



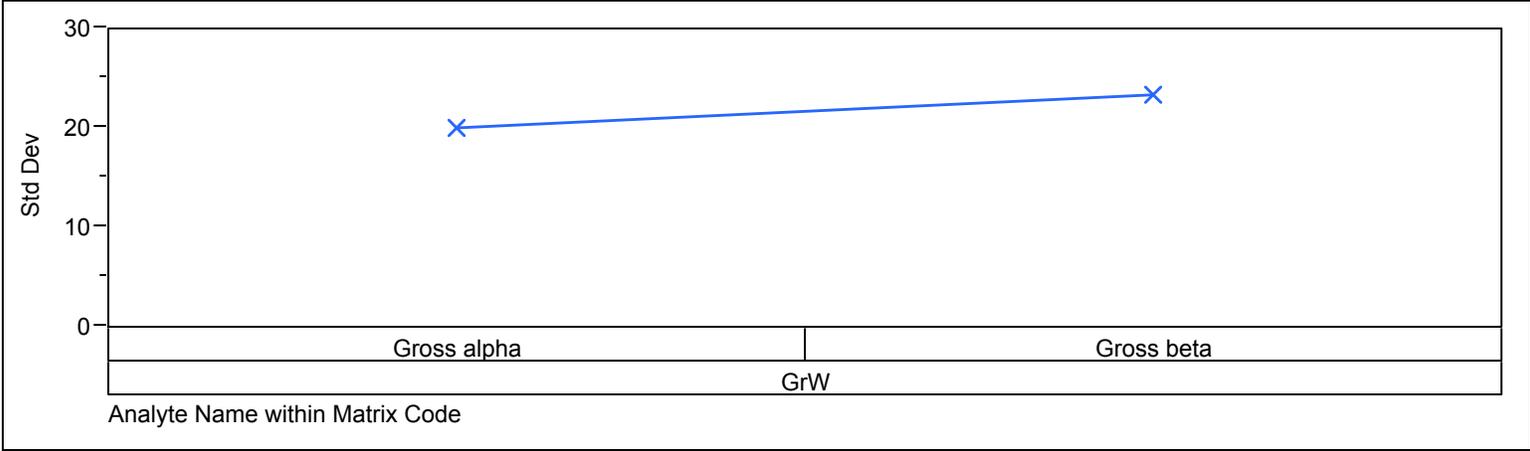
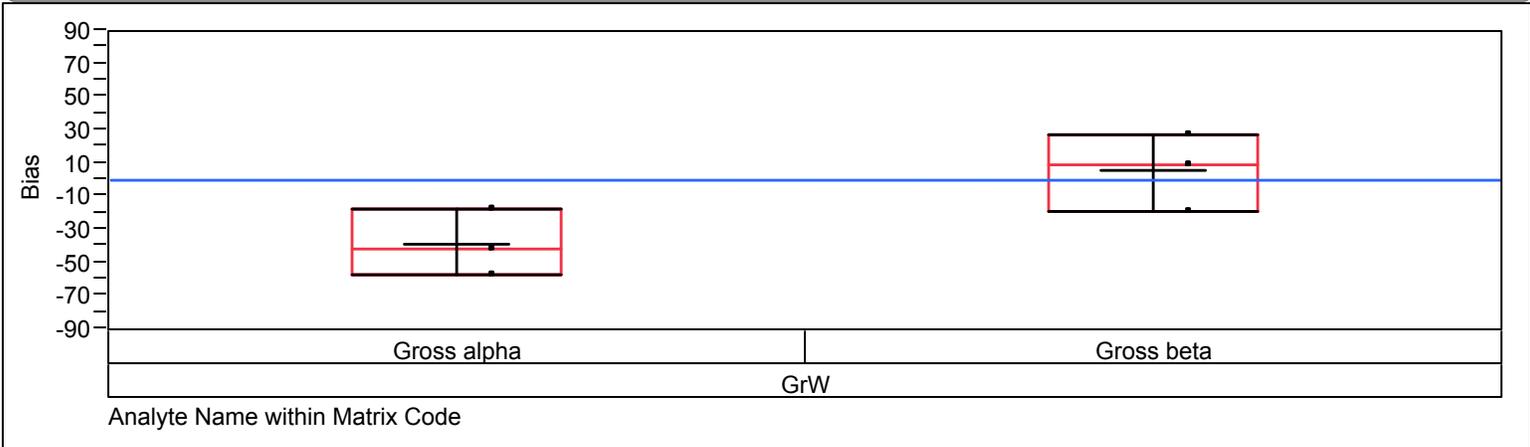
Variability Gauge Lab Code=AFOH01

Variability Chart for Bias



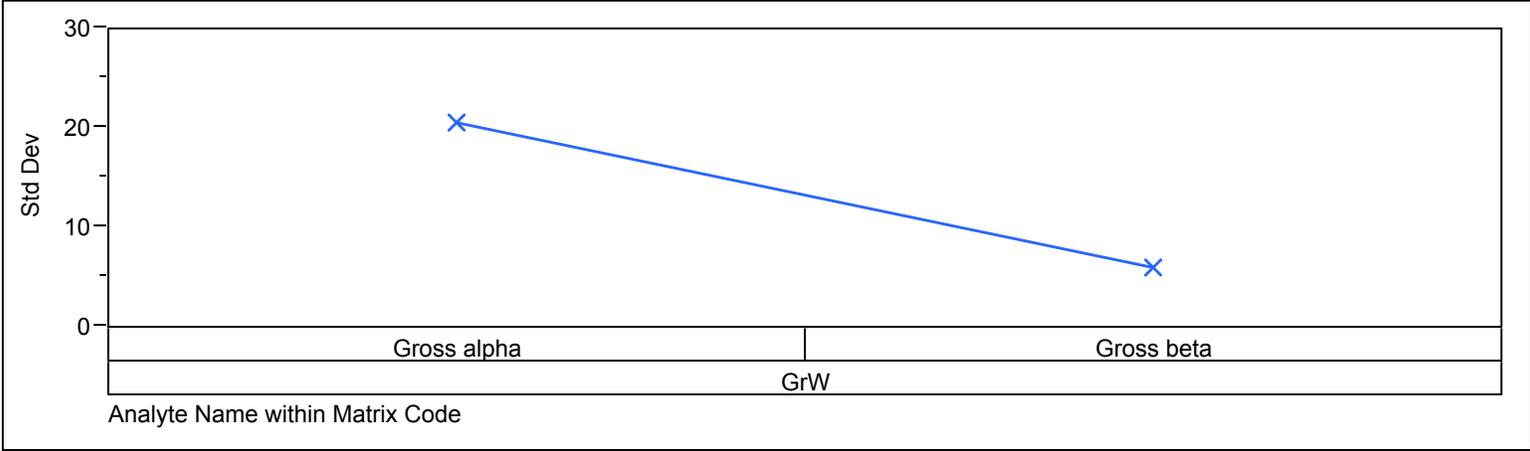
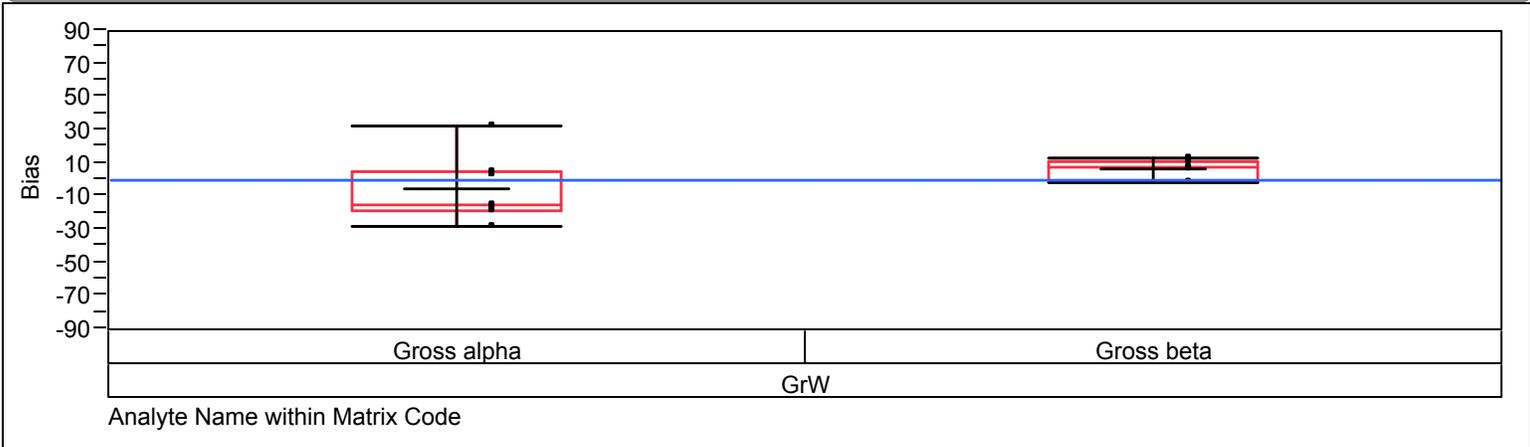
Variability Gauge Lab Code=ANLA01

Variability Chart for Bias



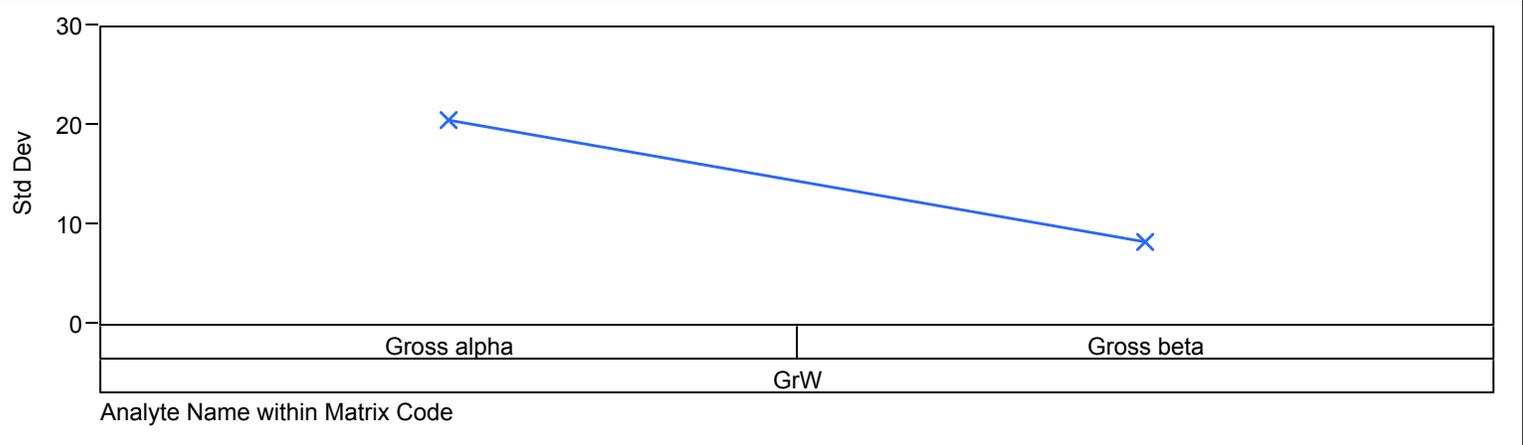
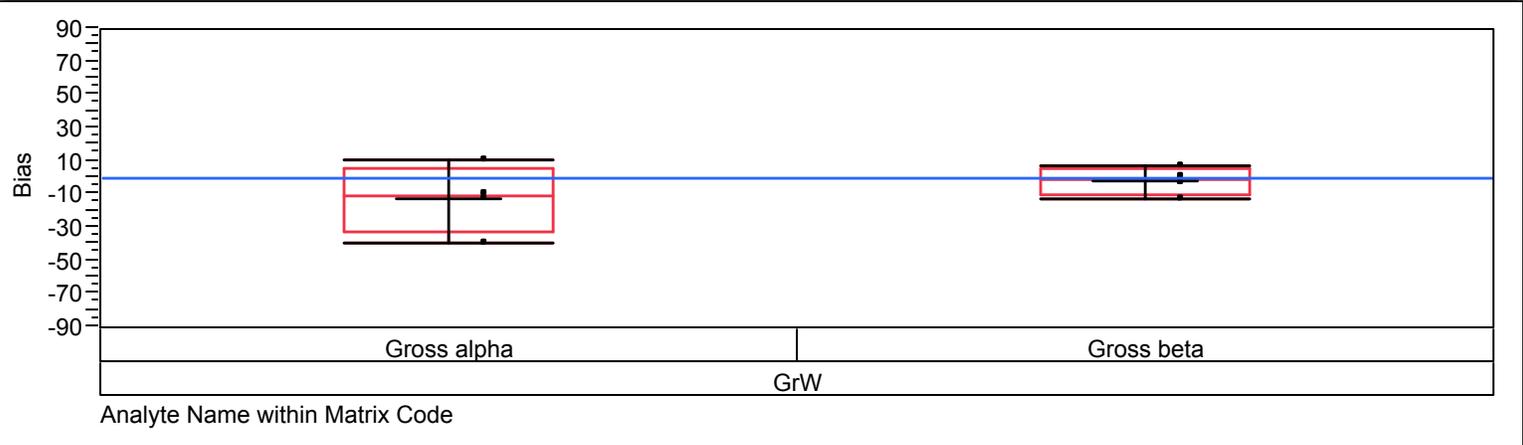
Variability Gauge Lab Code=ANTE01

Variability Chart for Bias



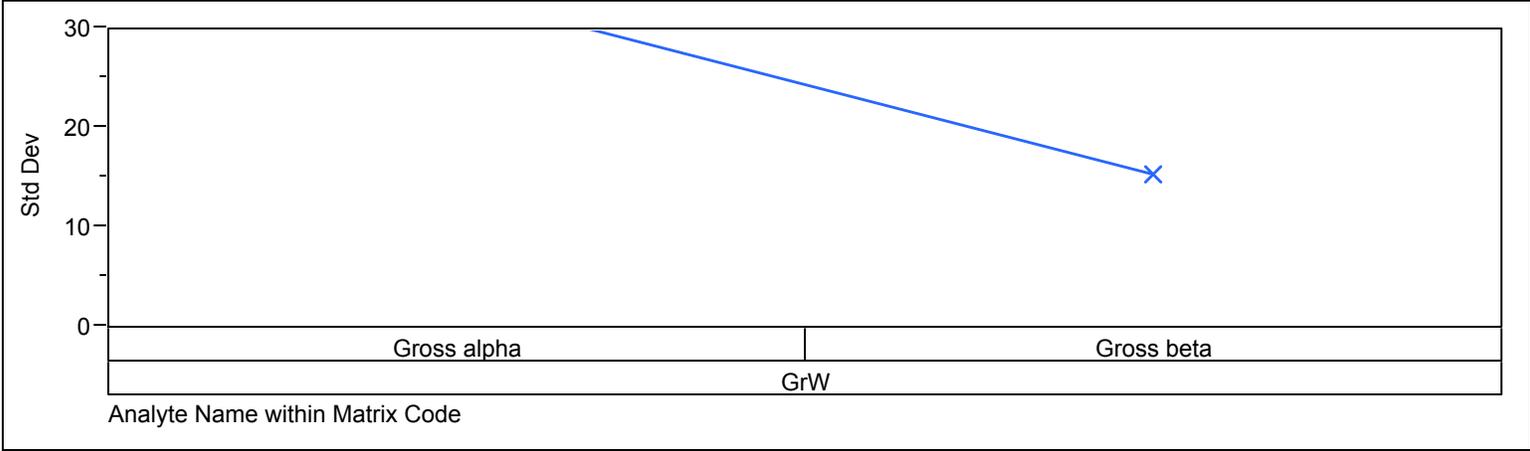
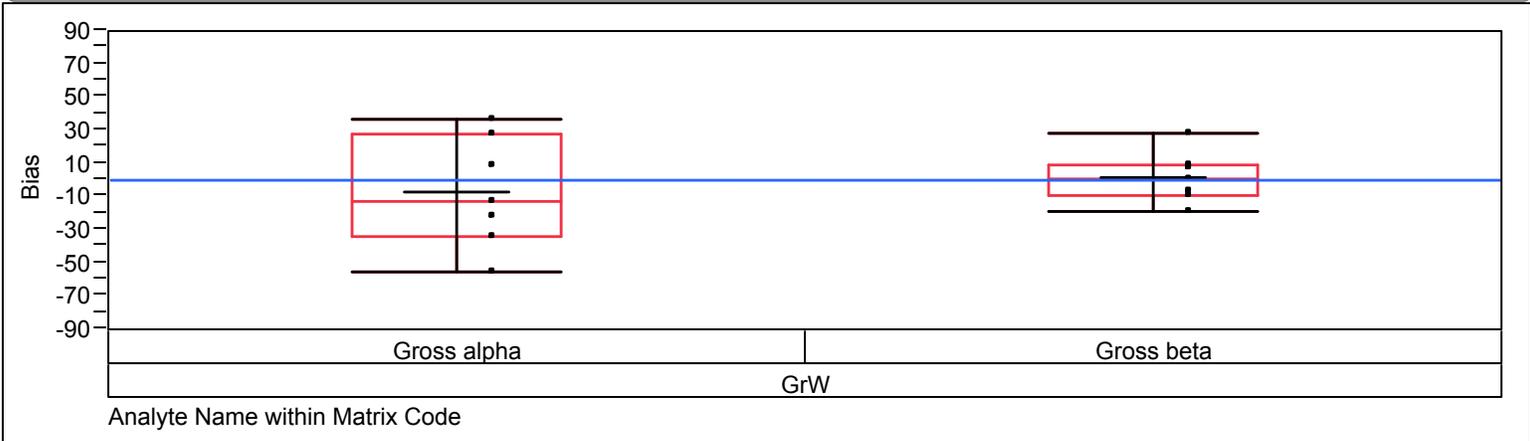
Variability Gauge Lab Code=ARPL01

Variability Chart for Bias



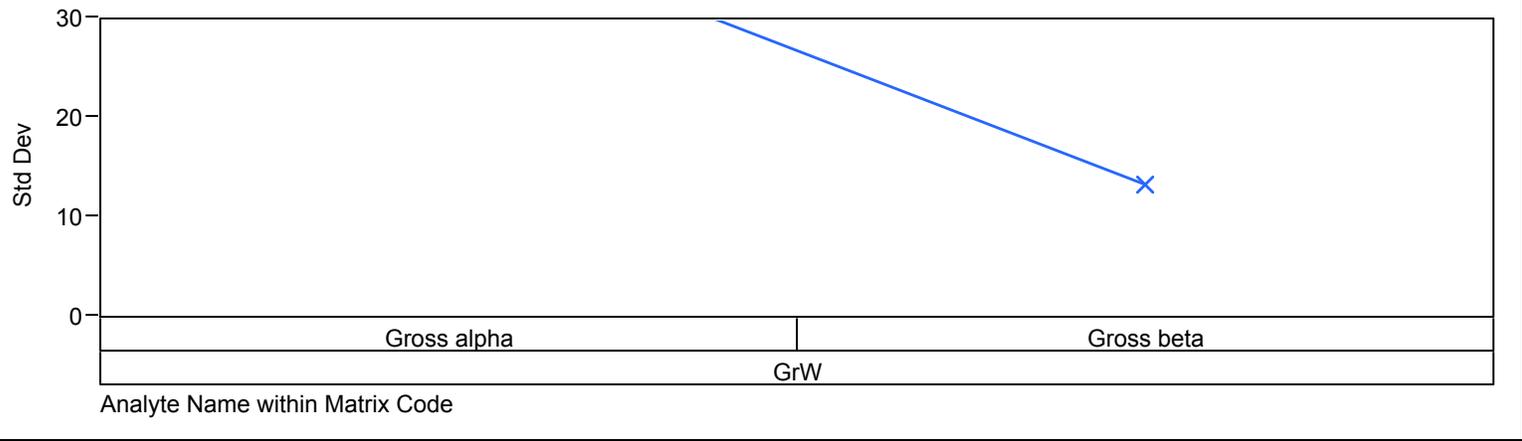
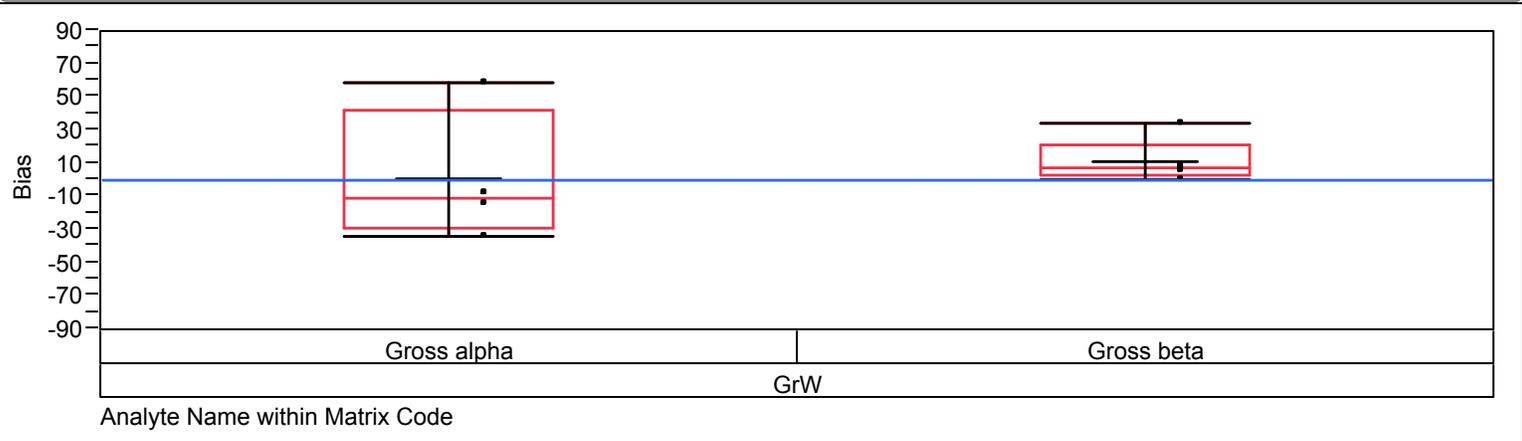
Variability Gauge Lab Code=ARSL01

Variability Chart for Bias



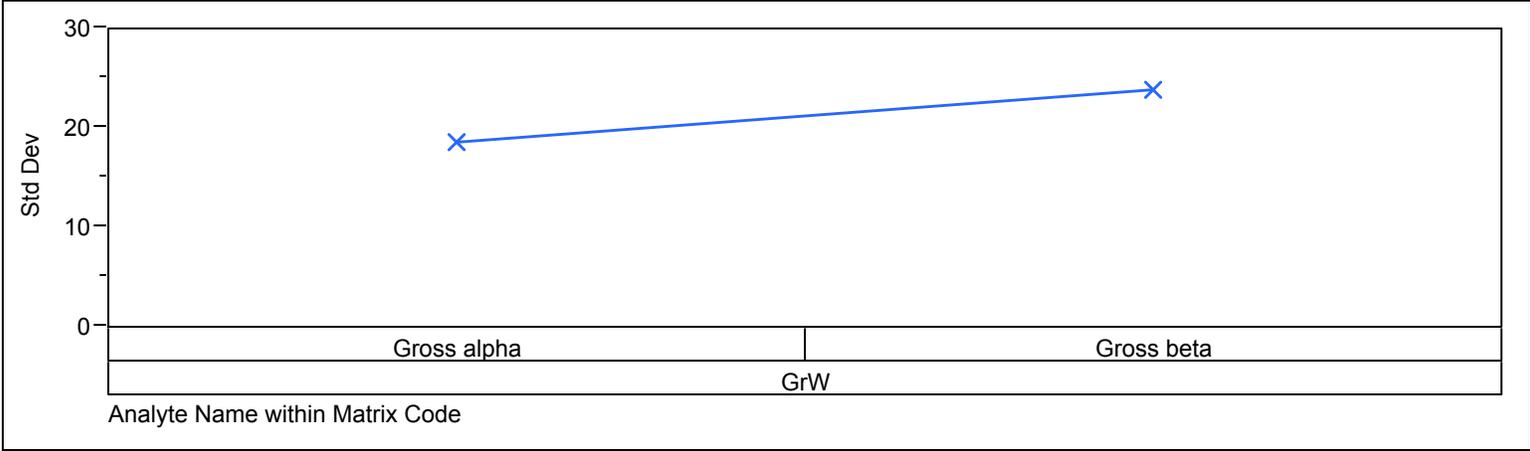
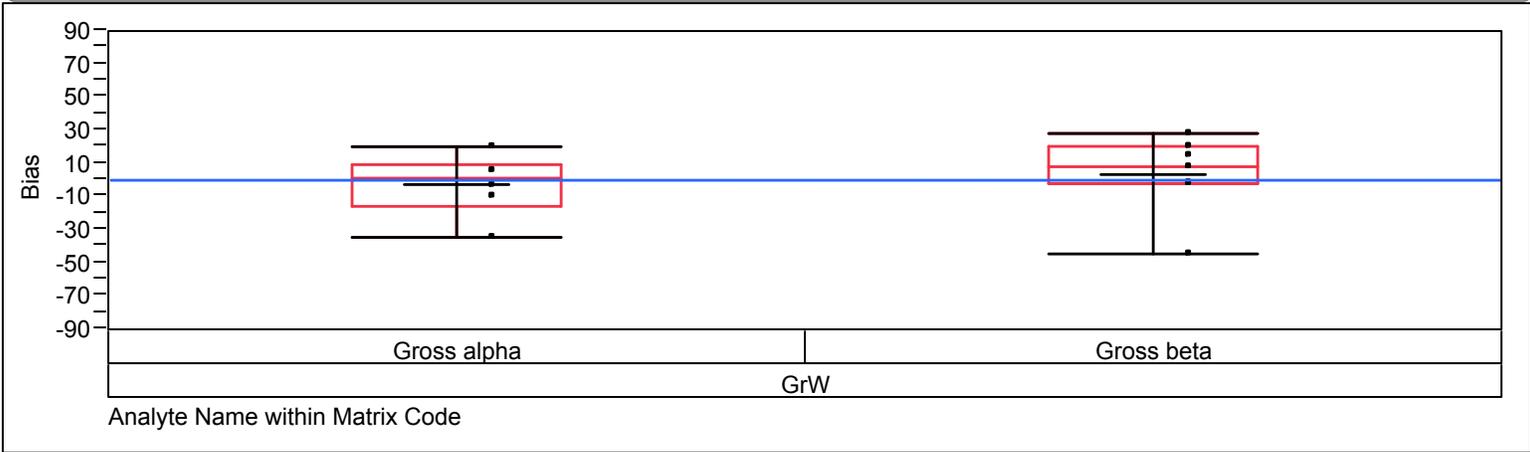
Variability Gauge Lab Code=ATLI01

Variability Chart for Bias



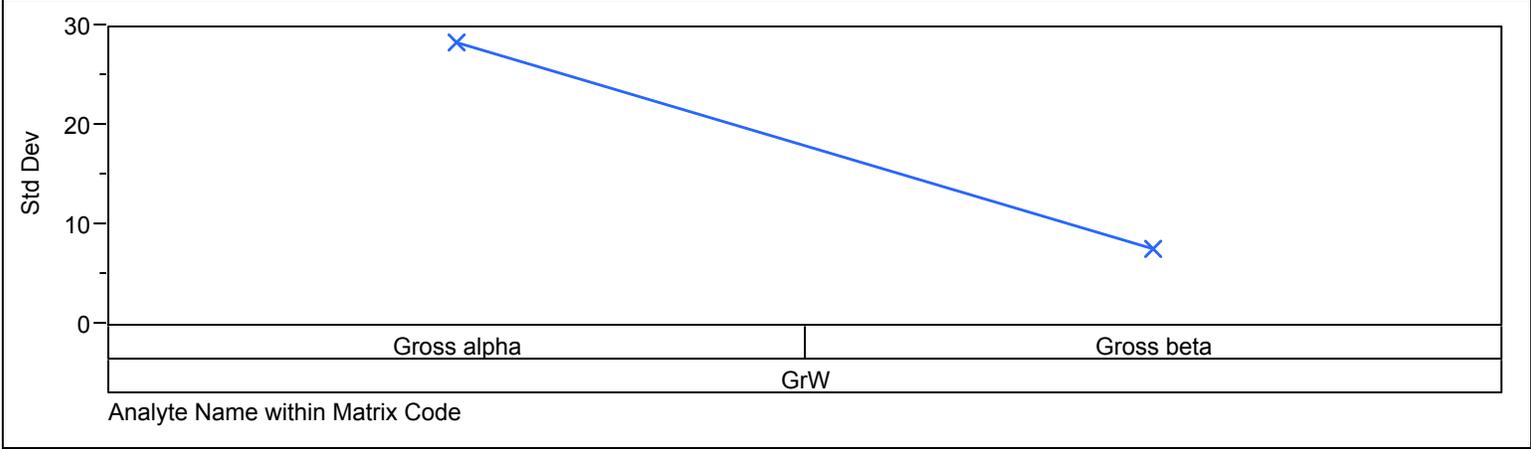
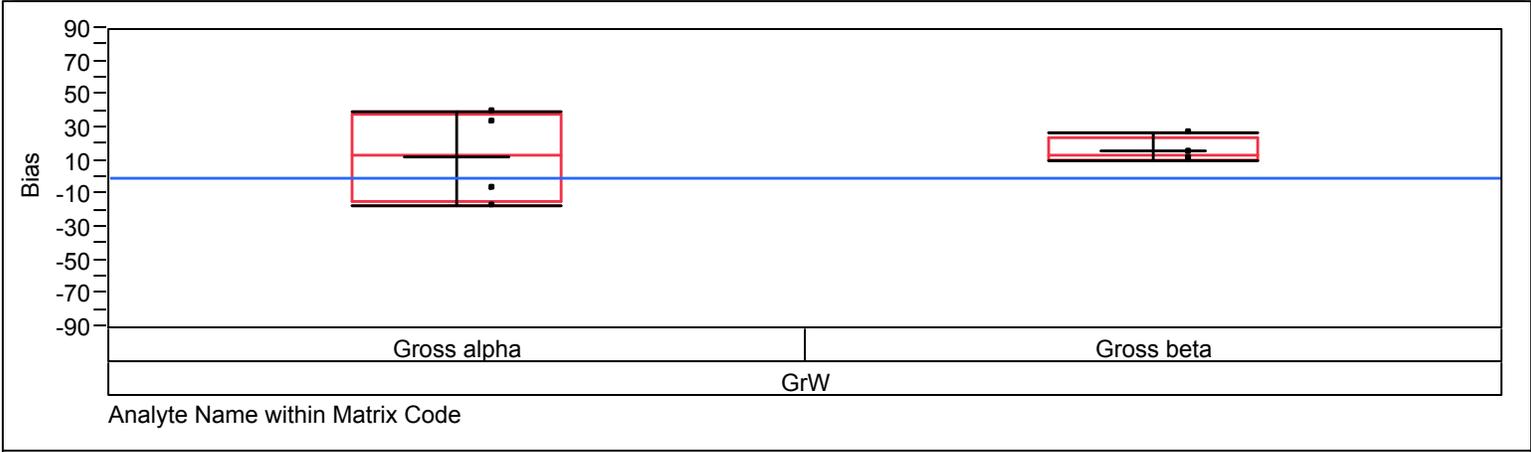
Variability Gauge Lab Code=AY1201

Variability Chart for Bias



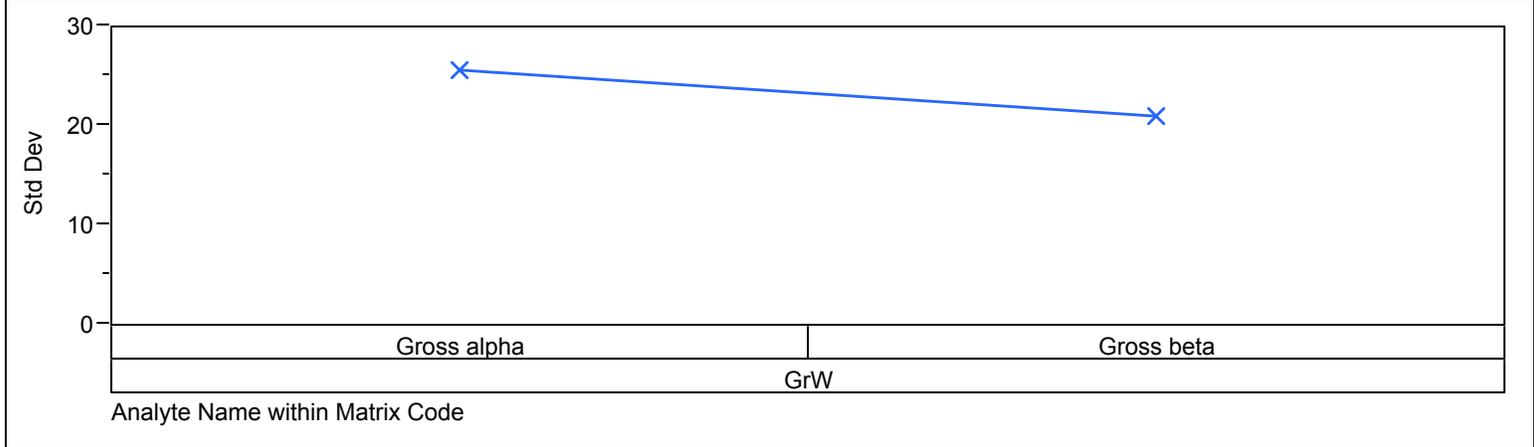
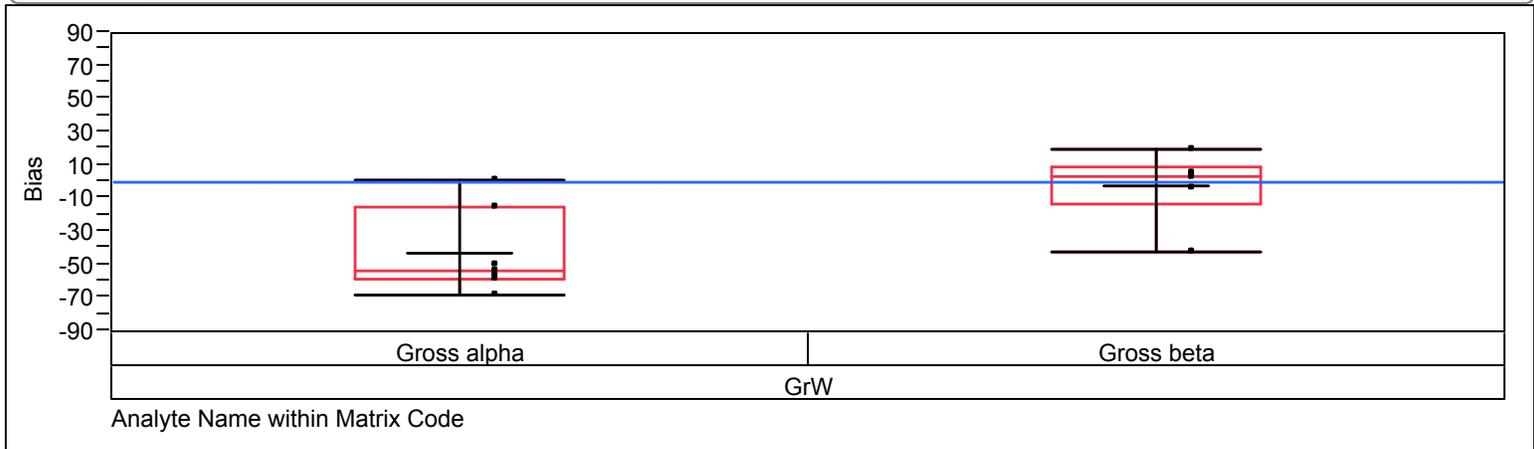
Variability Gauge Lab Code=CDHS01

Variability Chart for Bias



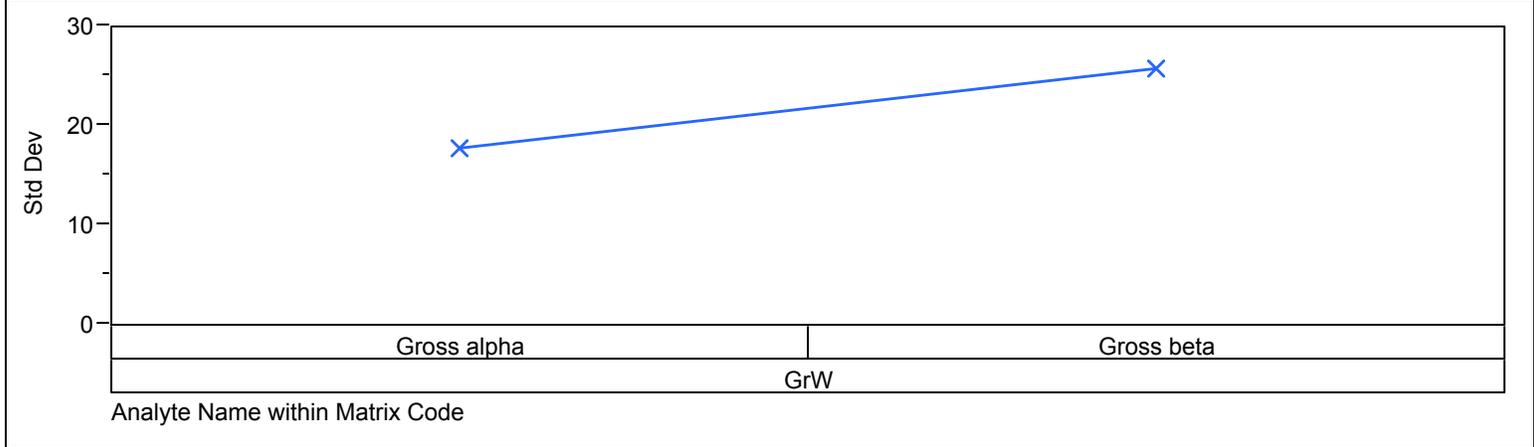
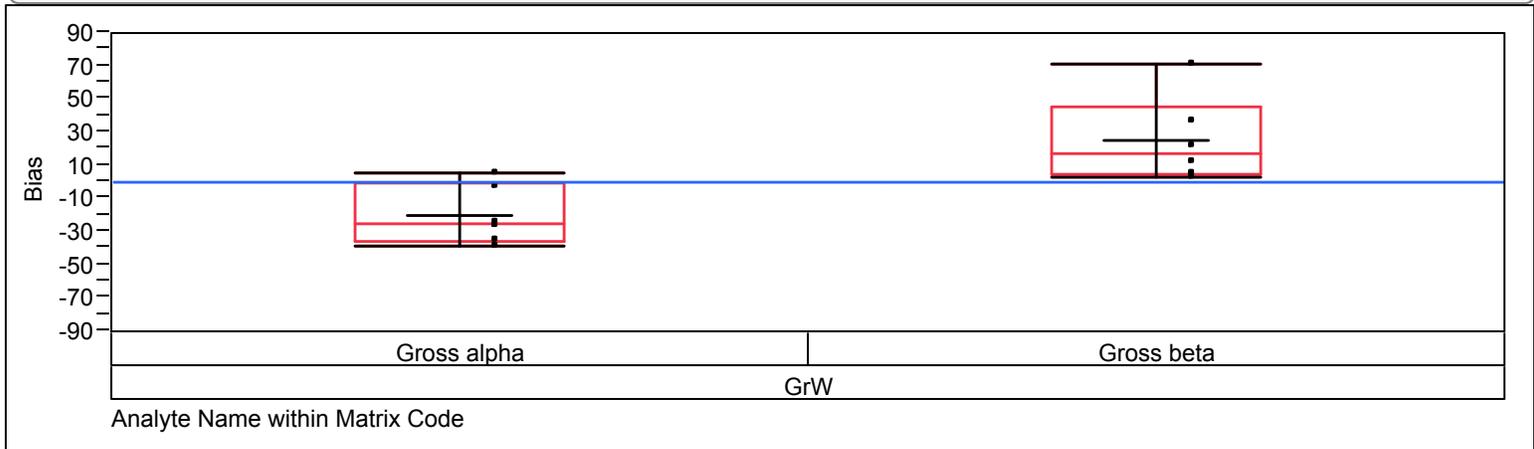
Variability Gauge Lab Code=CESL01

Variability Chart for Bias



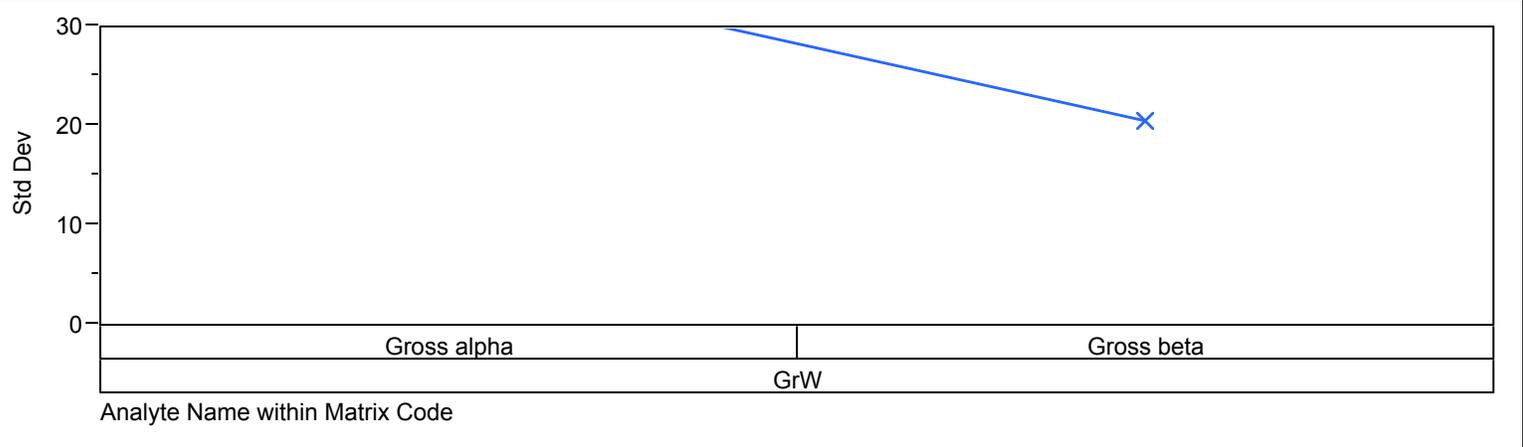
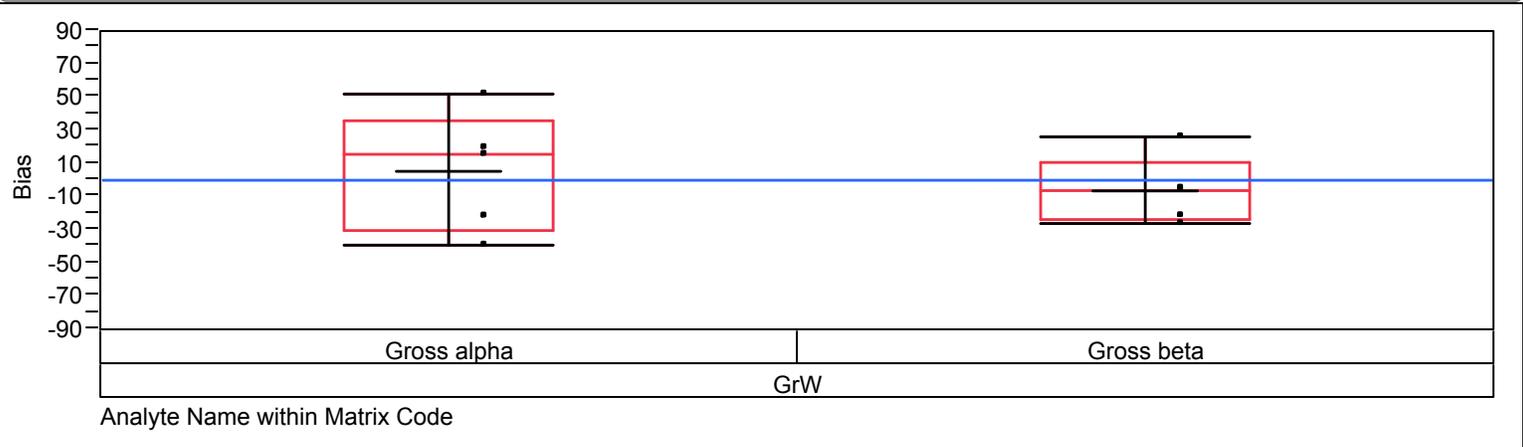
Variability Gauge Lab Code=CHMH01

Variability Chart for Bias



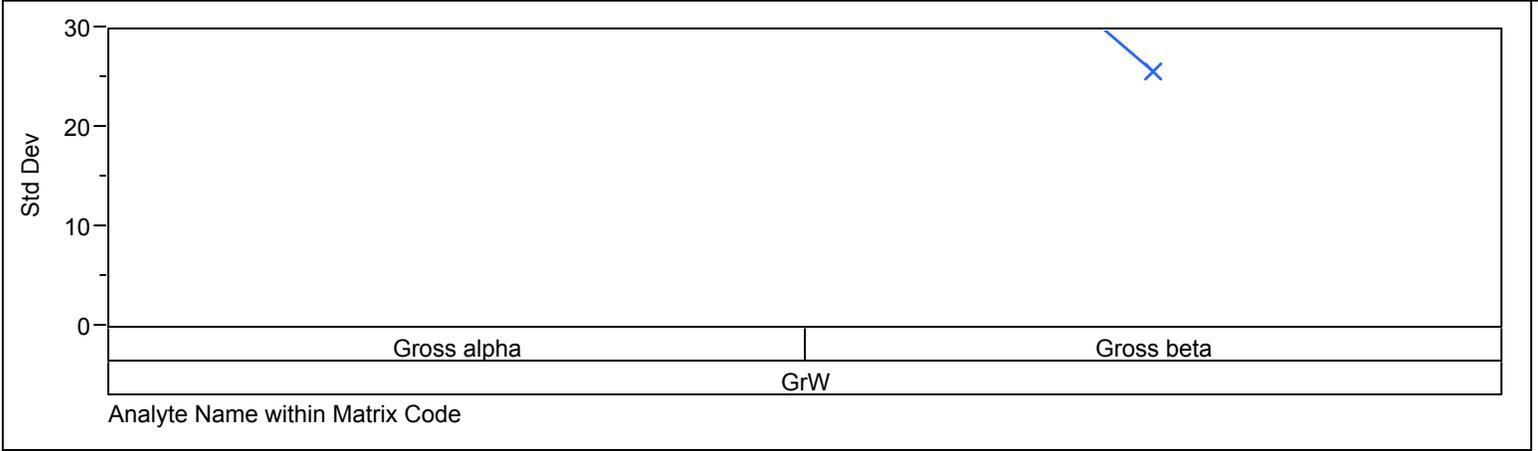
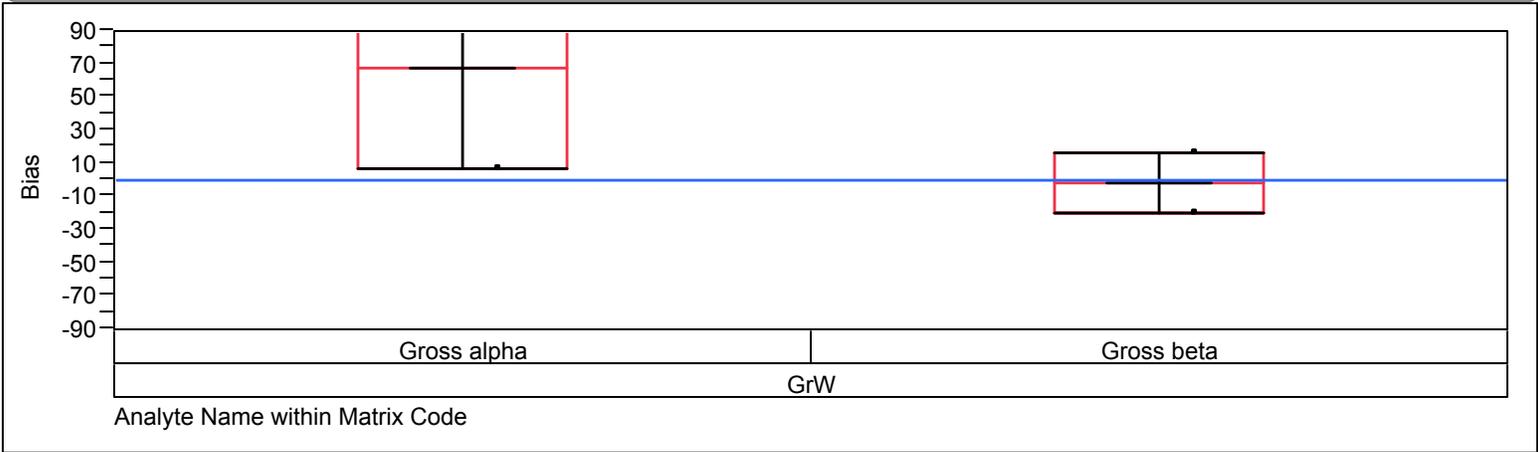
Variability Gauge Lab Code=DEHS01

Variability Chart for Bias



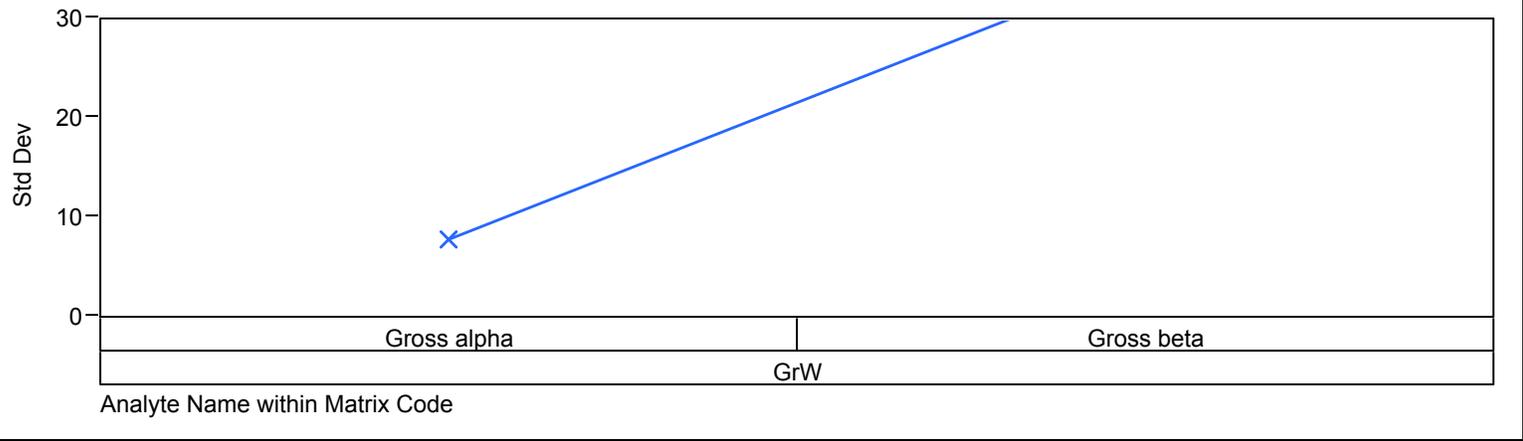
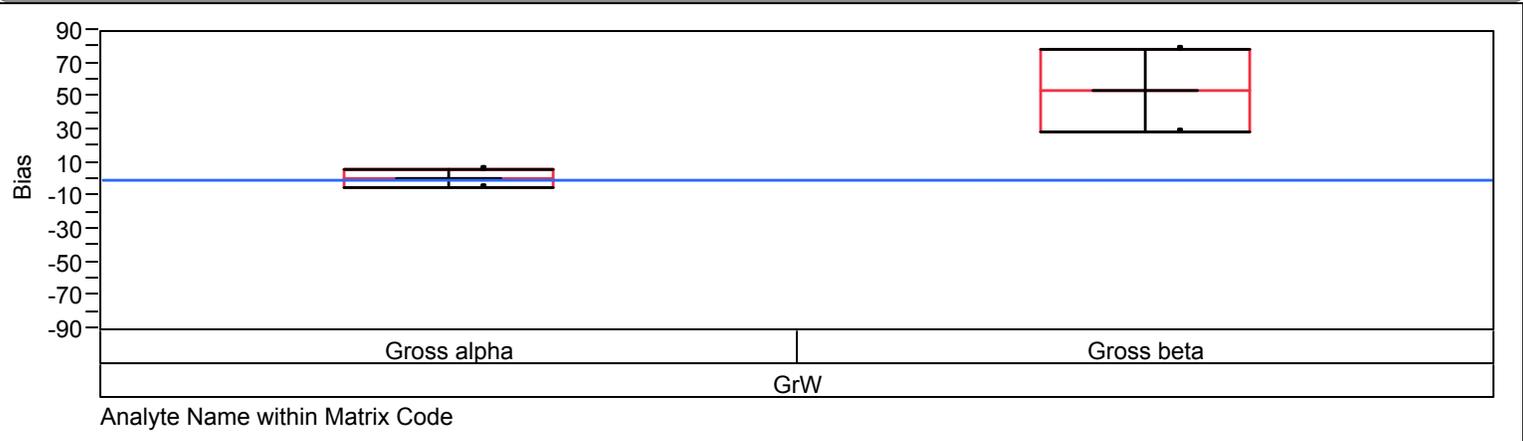
Variability Gauge Lab Code=DLEA01

Variability Chart for Bias



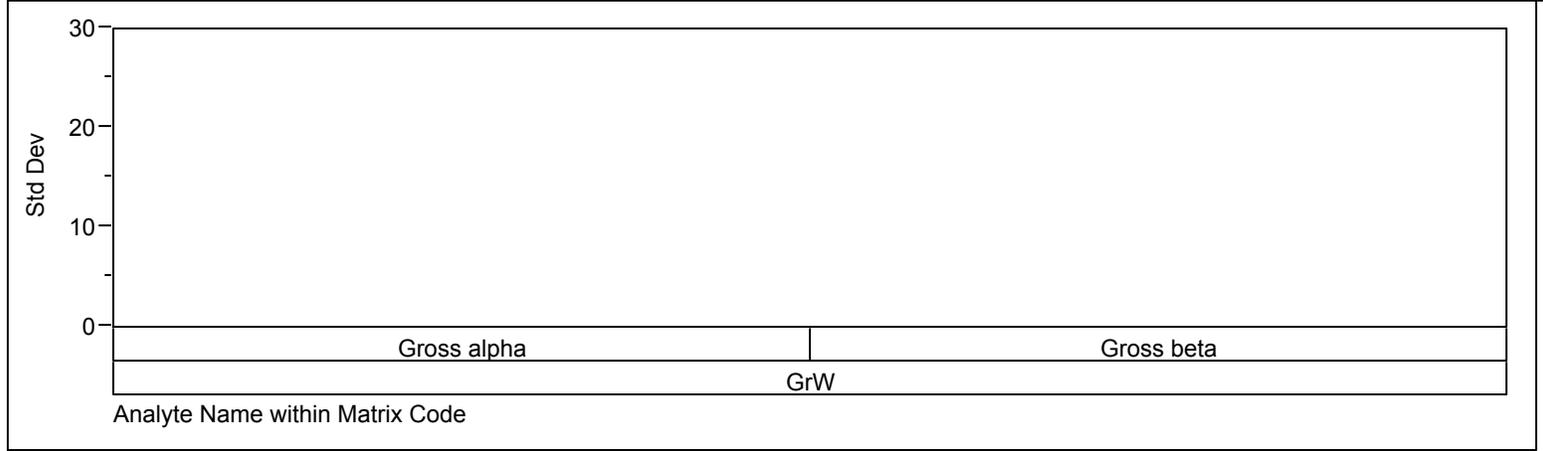
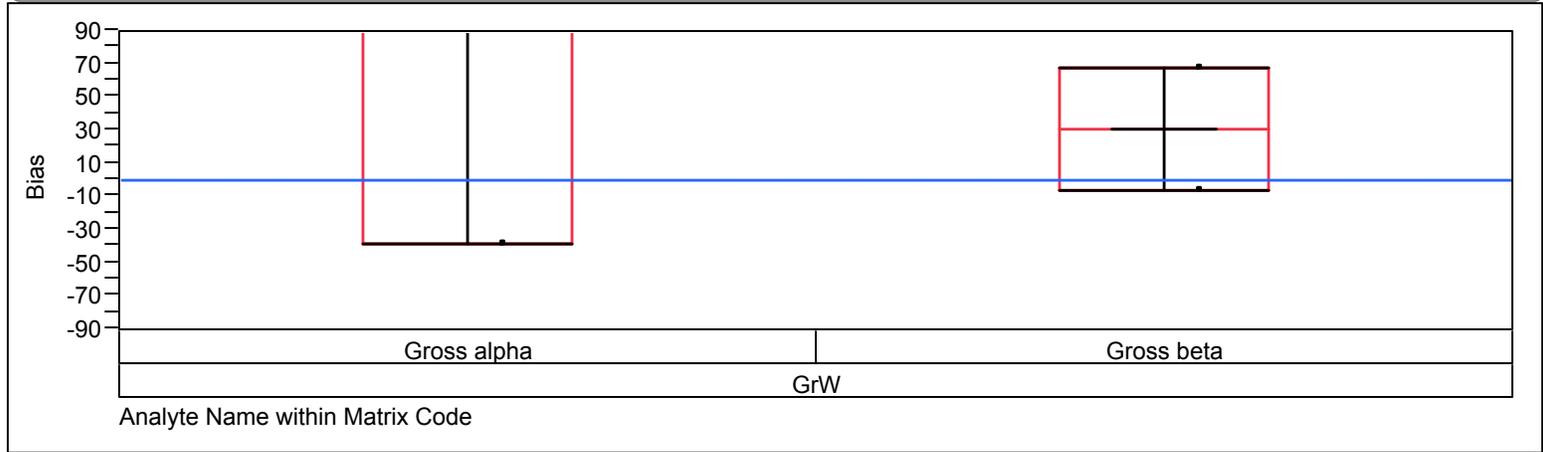
Variability Gauge Lab Code=DPHE01

Variability Chart for Bias



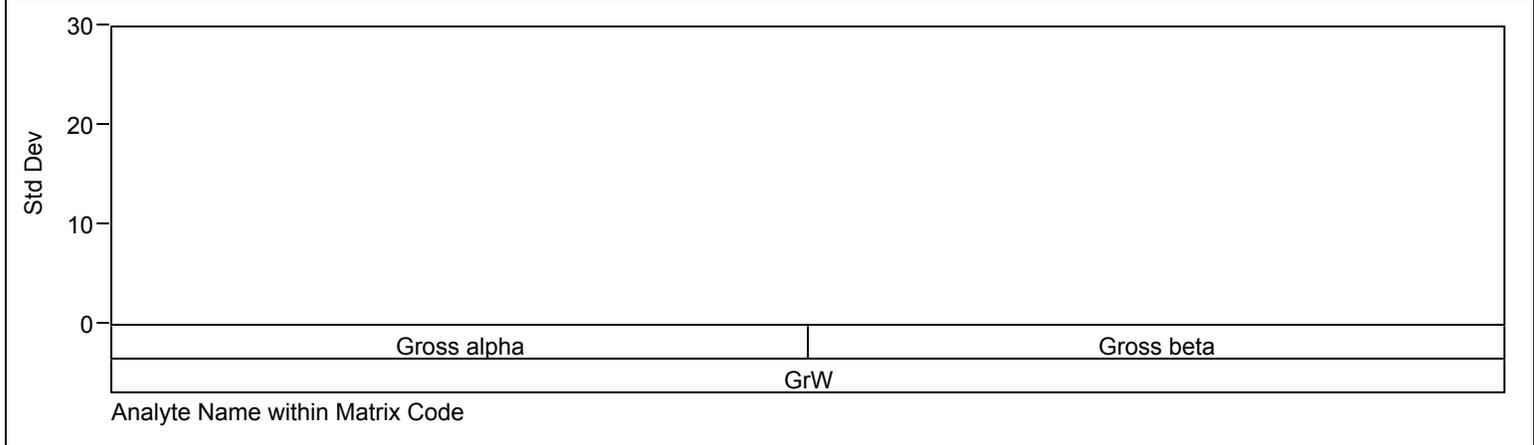
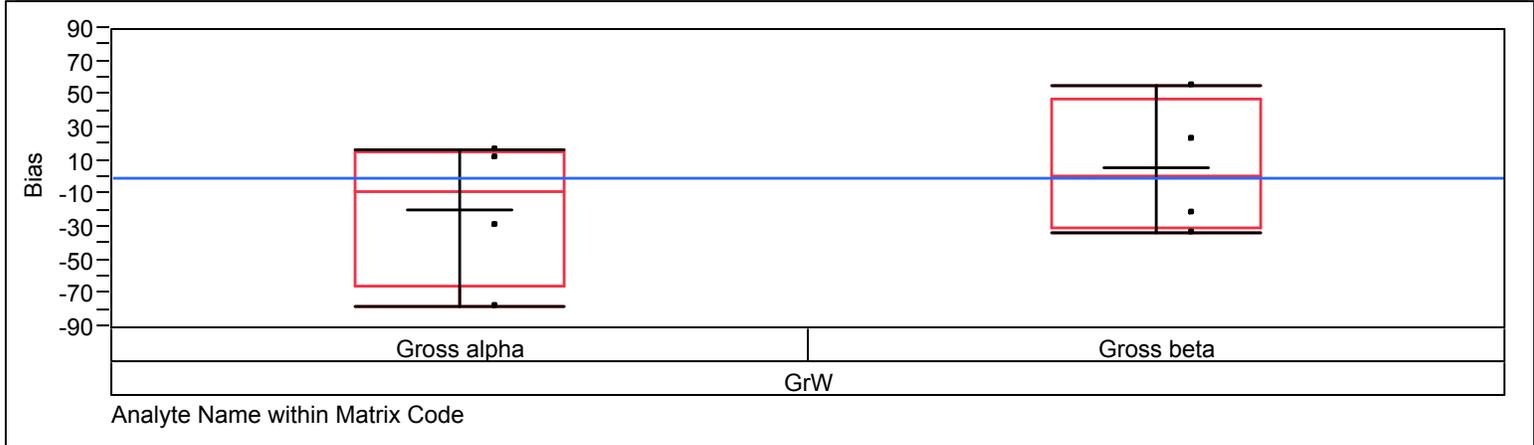
Variability Gauge Lab Code=DRMG01

Variability Chart for Bias



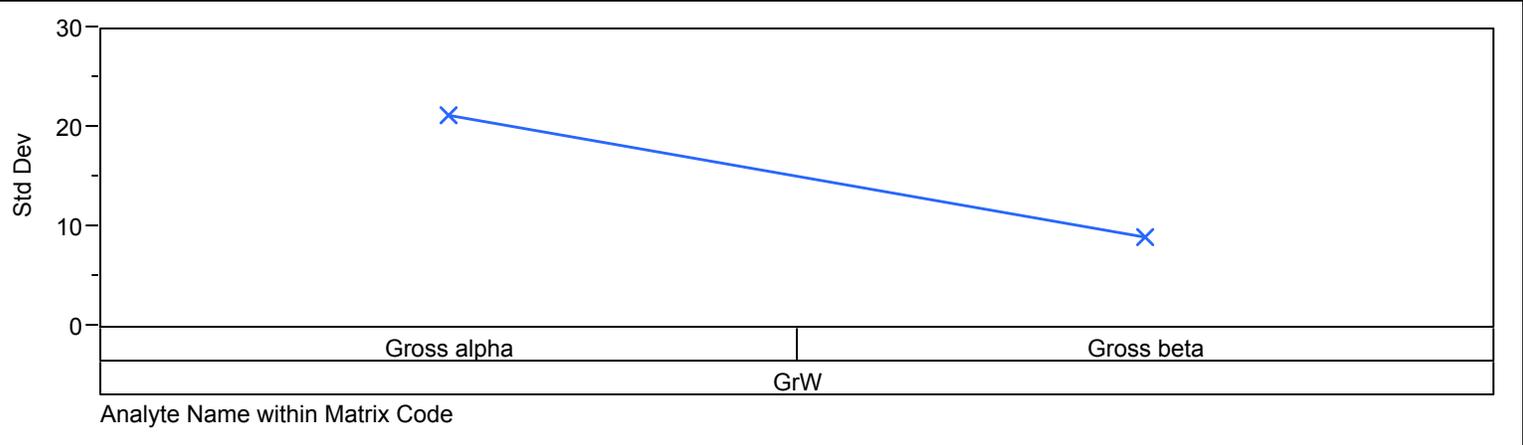
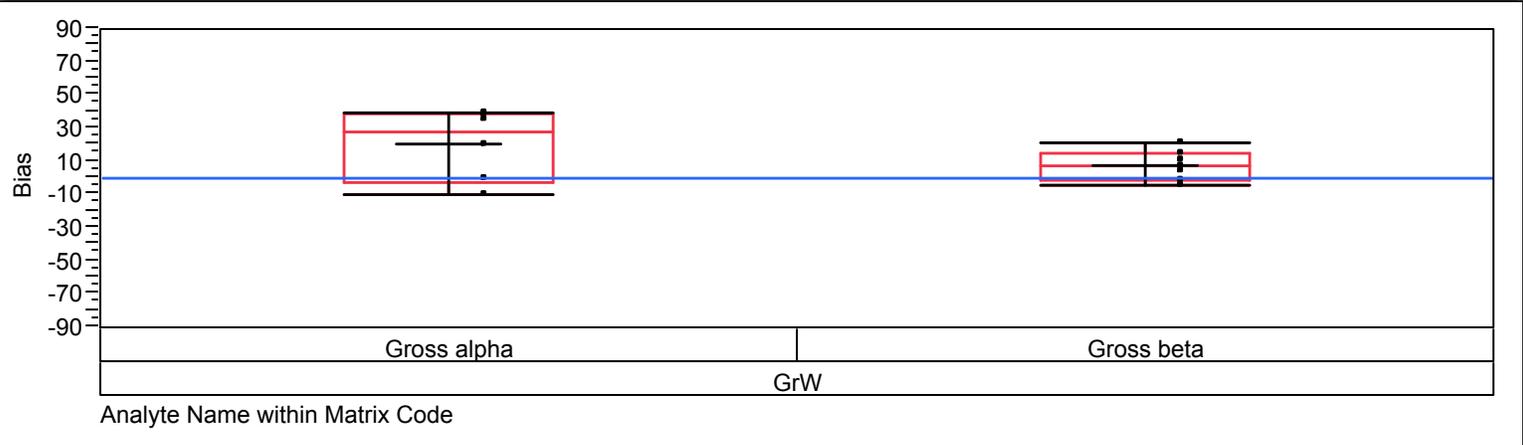
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Variability Chart for Bias



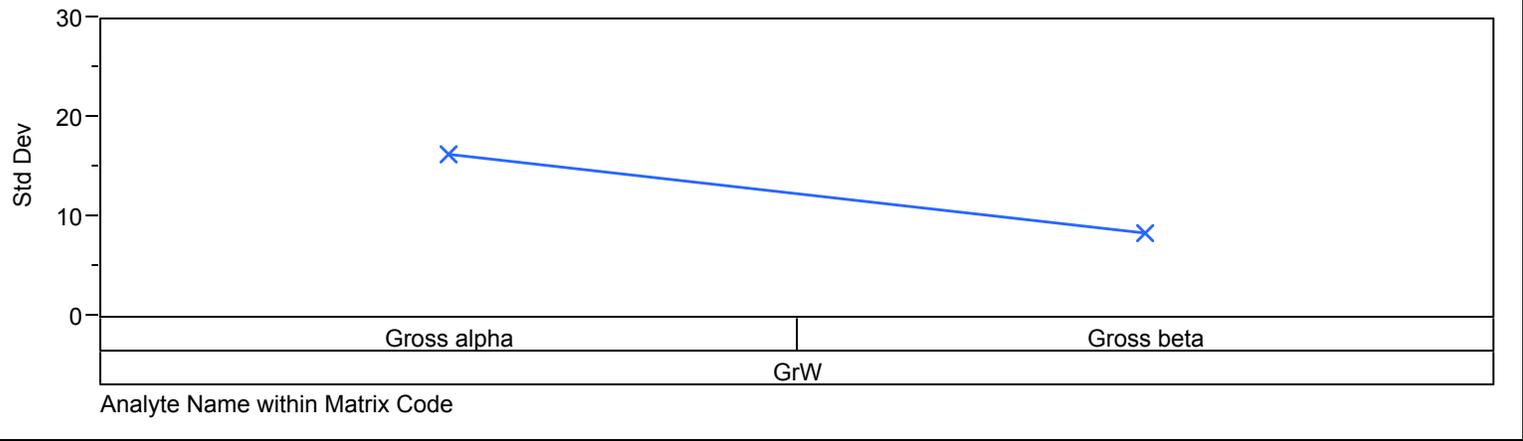
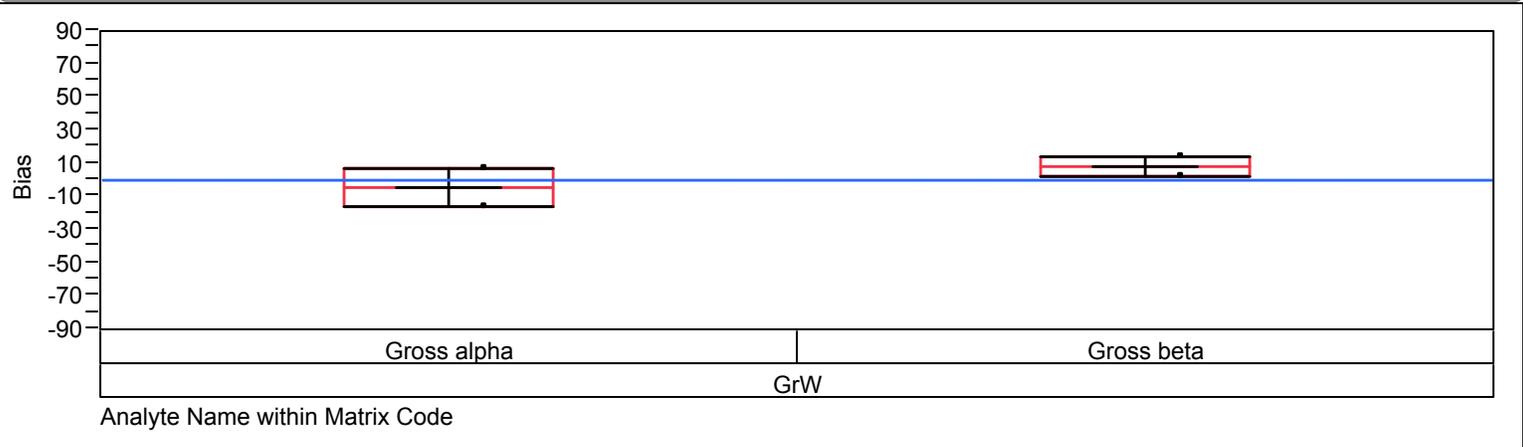
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Variability Chart for Bias



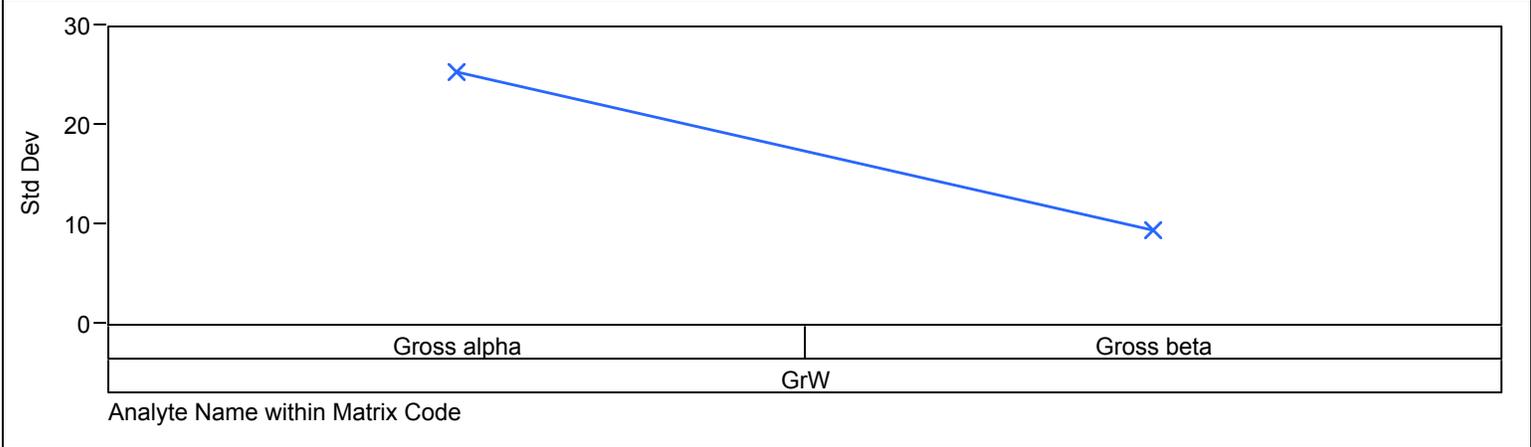
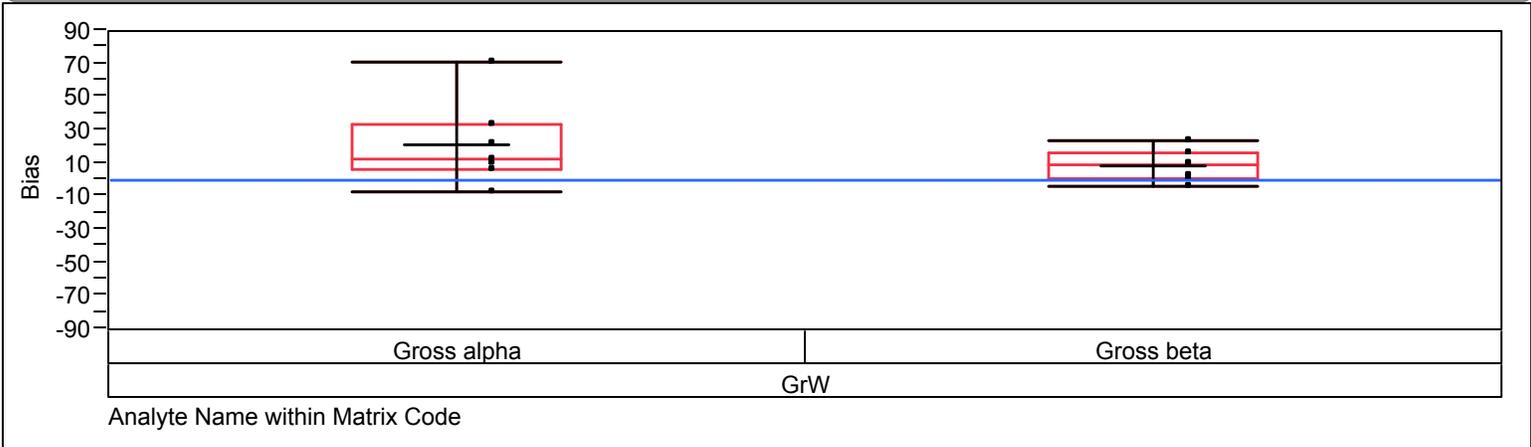
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Variability Chart for Bias



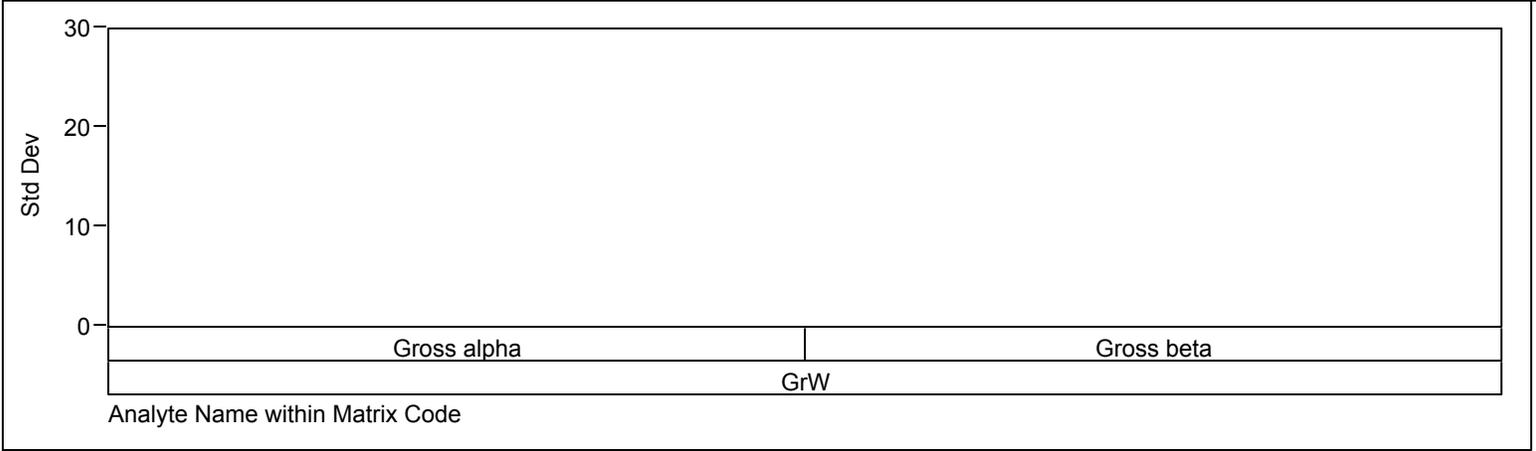
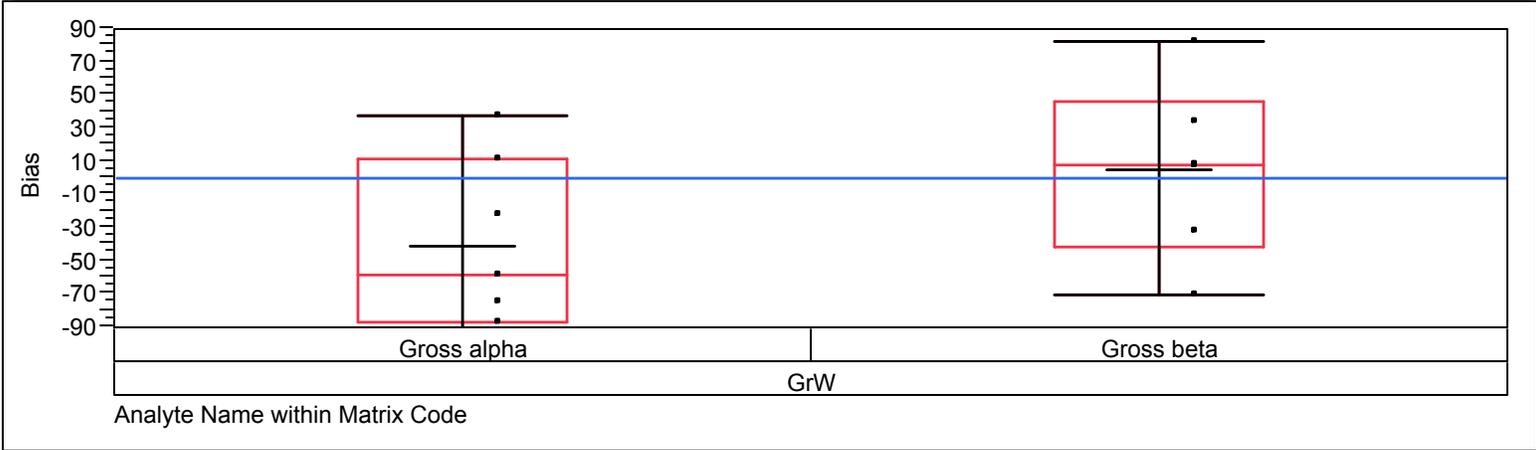
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Variability Chart for Bias



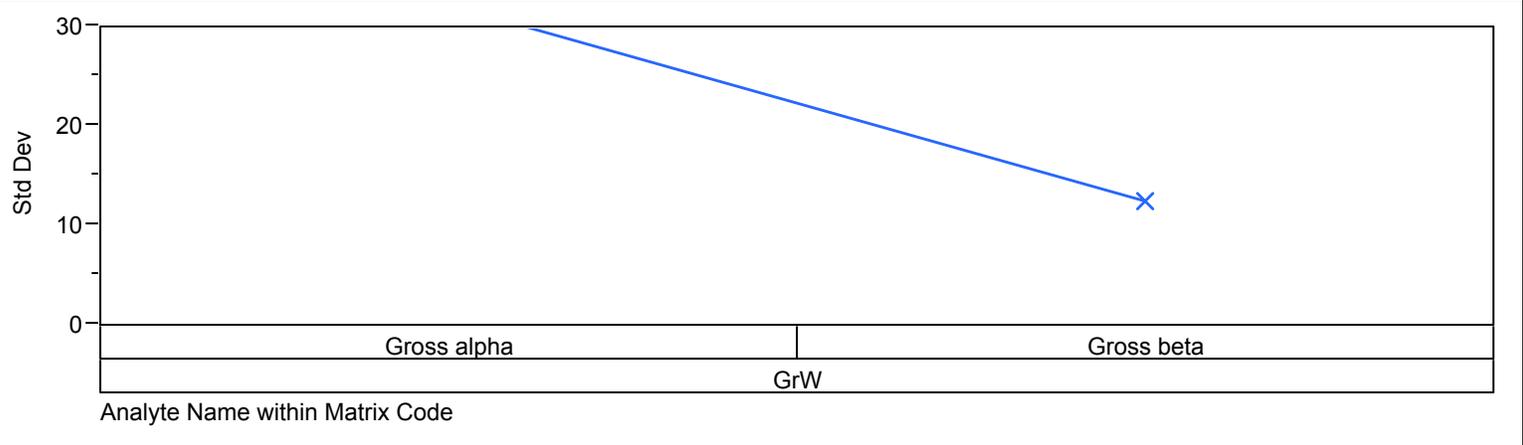
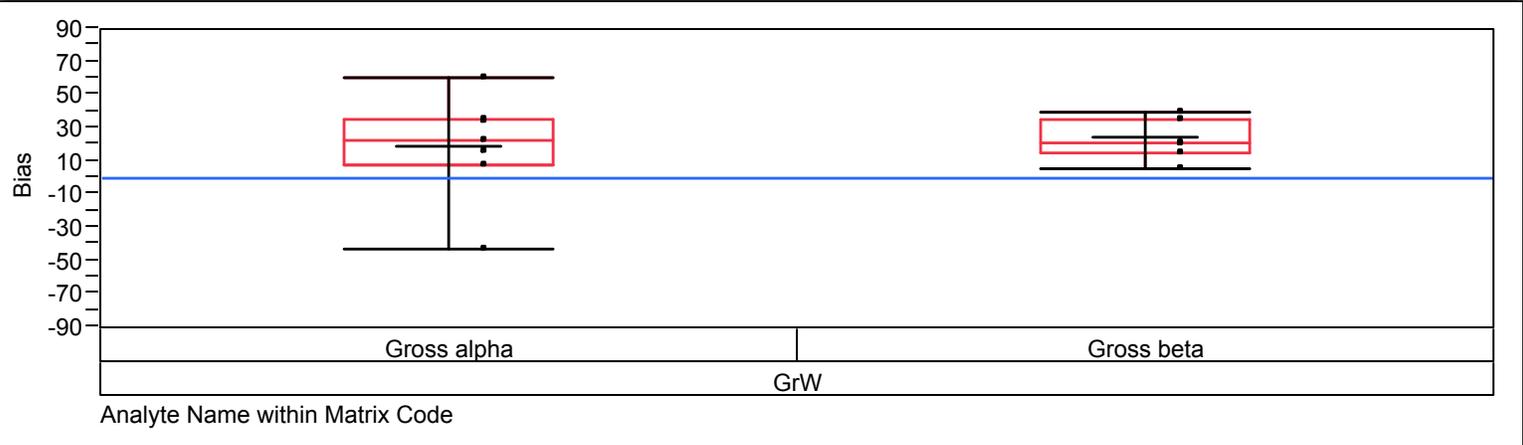
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Variability Chart for Bias



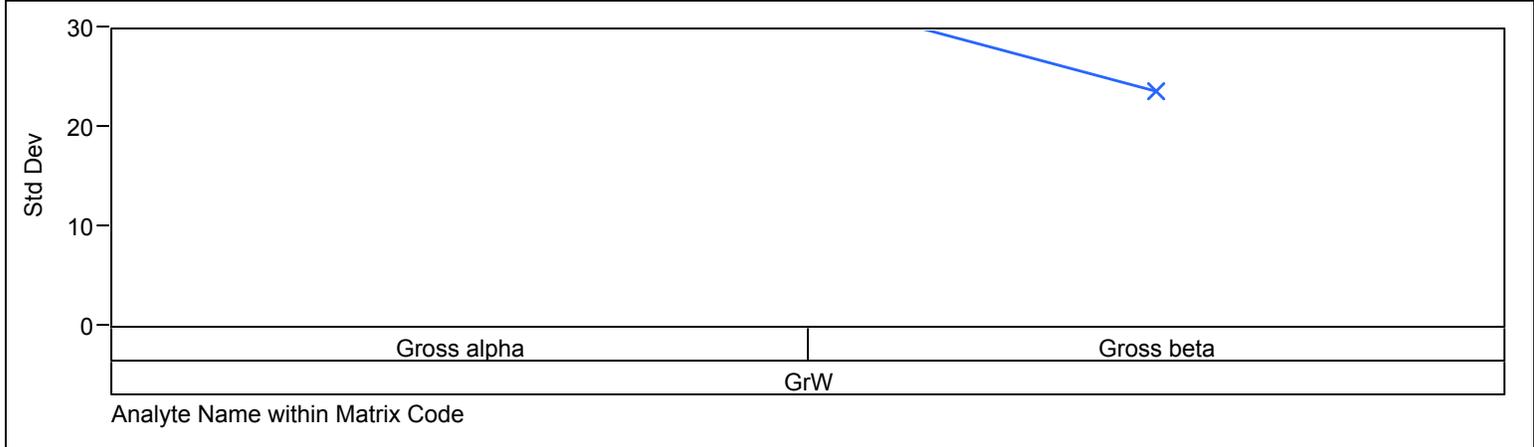
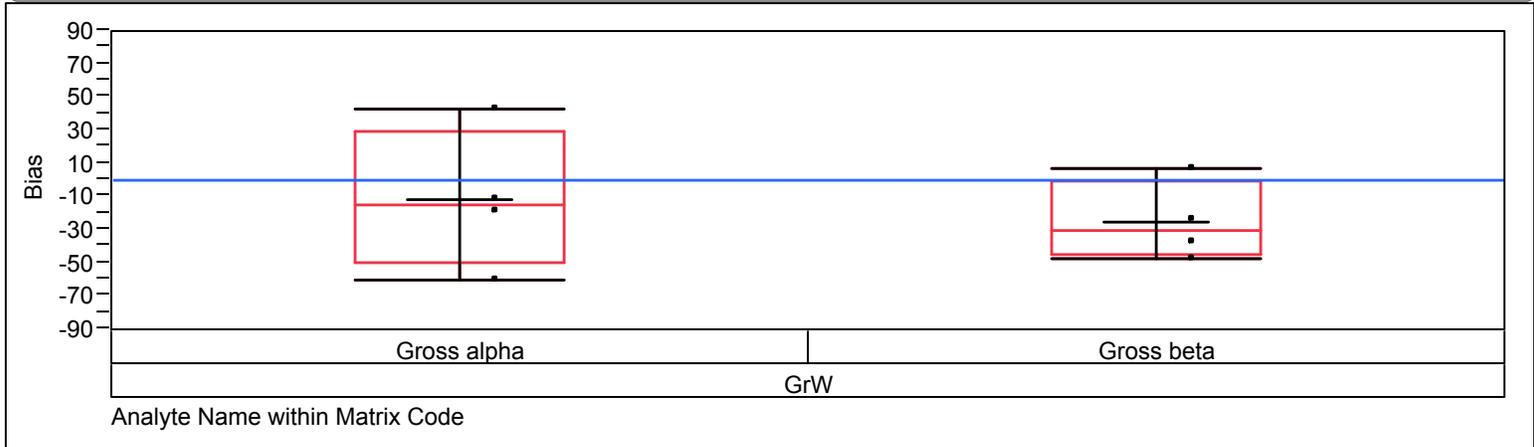
Variability Gauge Lab Code=FDHE01

Variability Chart for Bias



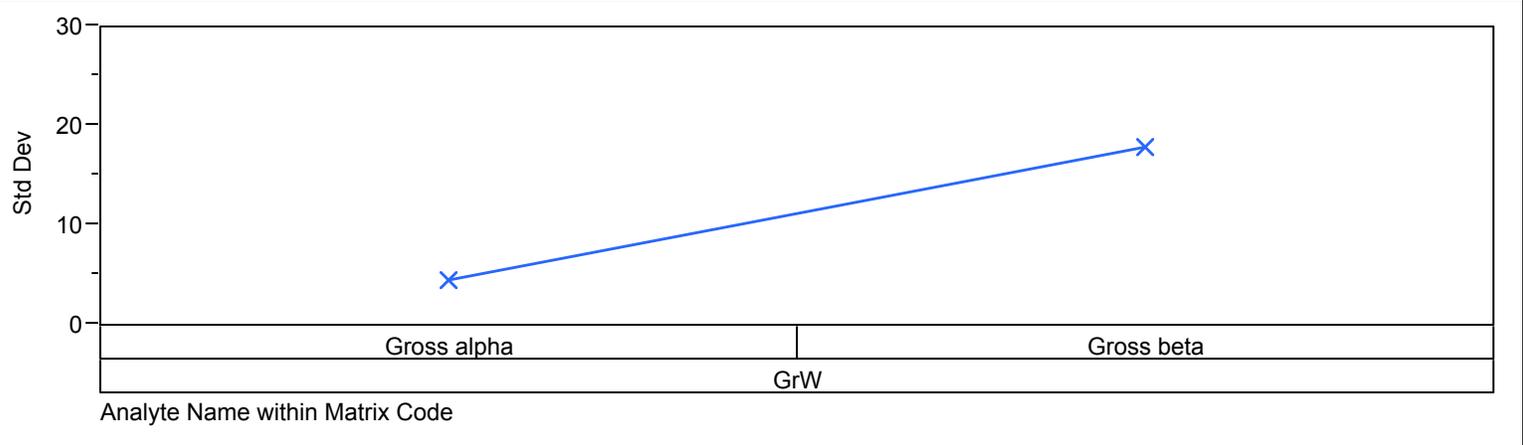
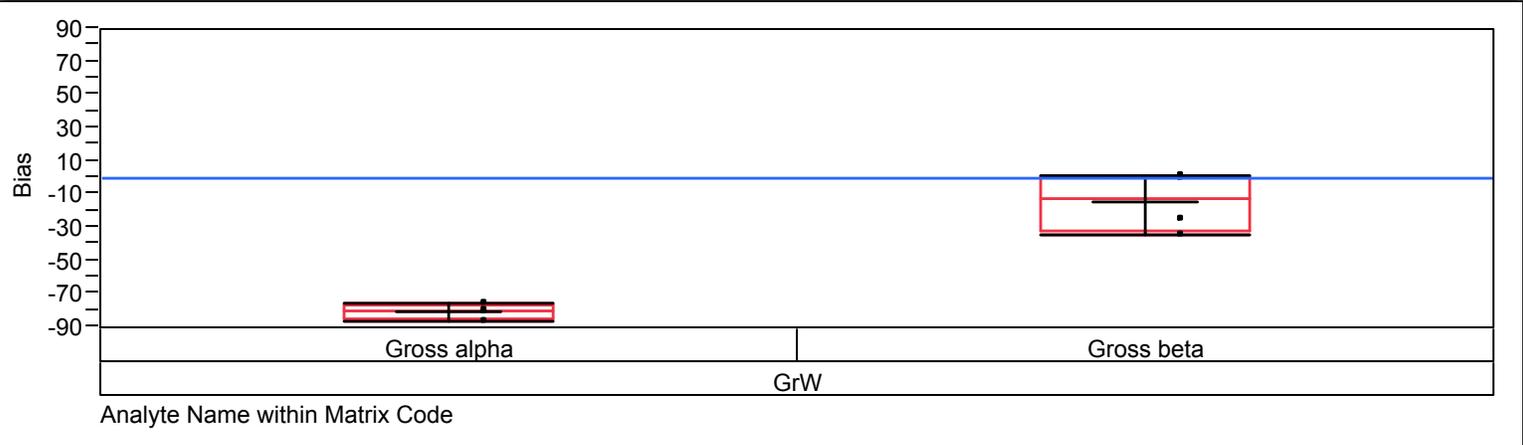
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Variability Chart for Bias



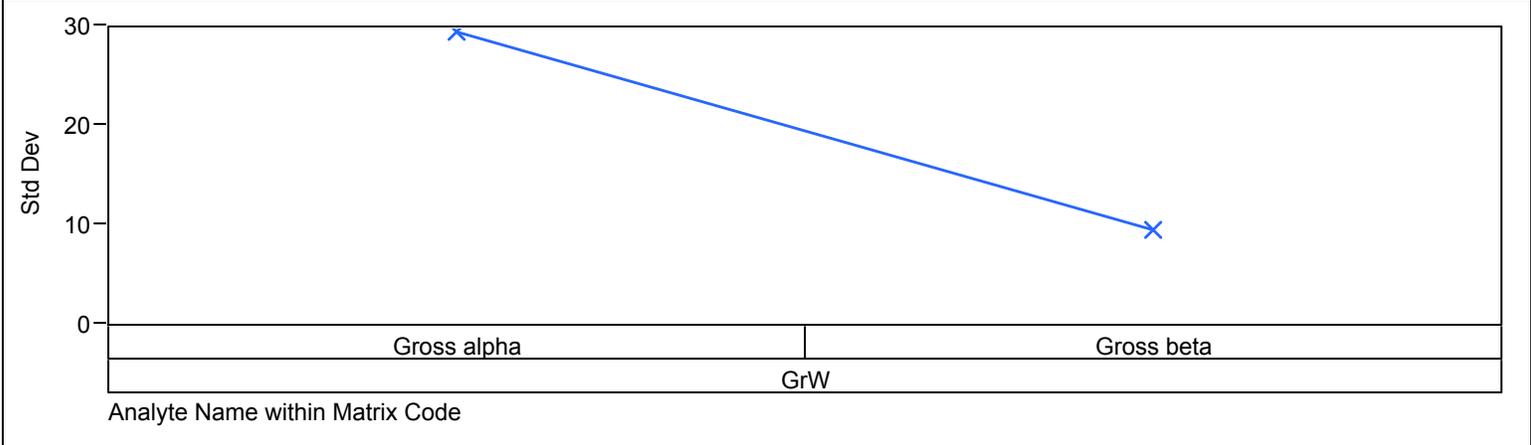
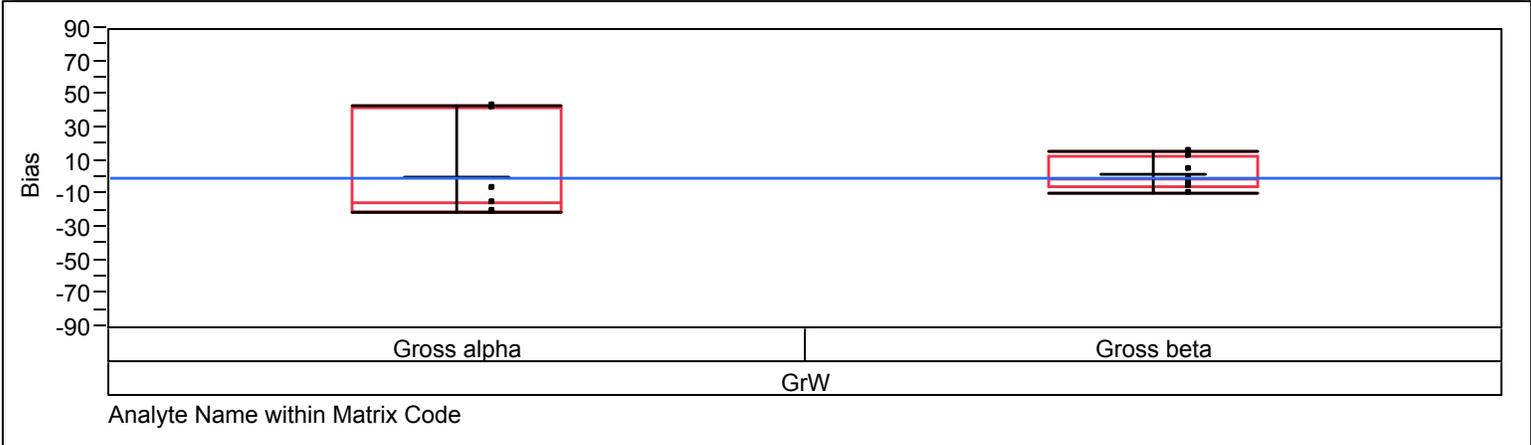
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Variability Chart for Bias



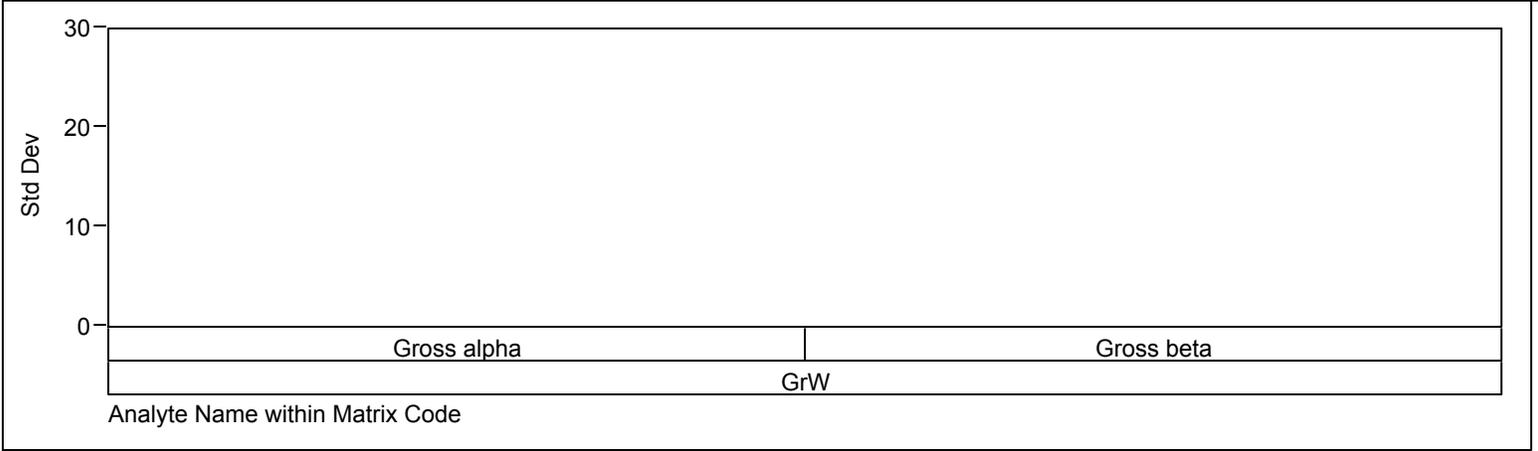
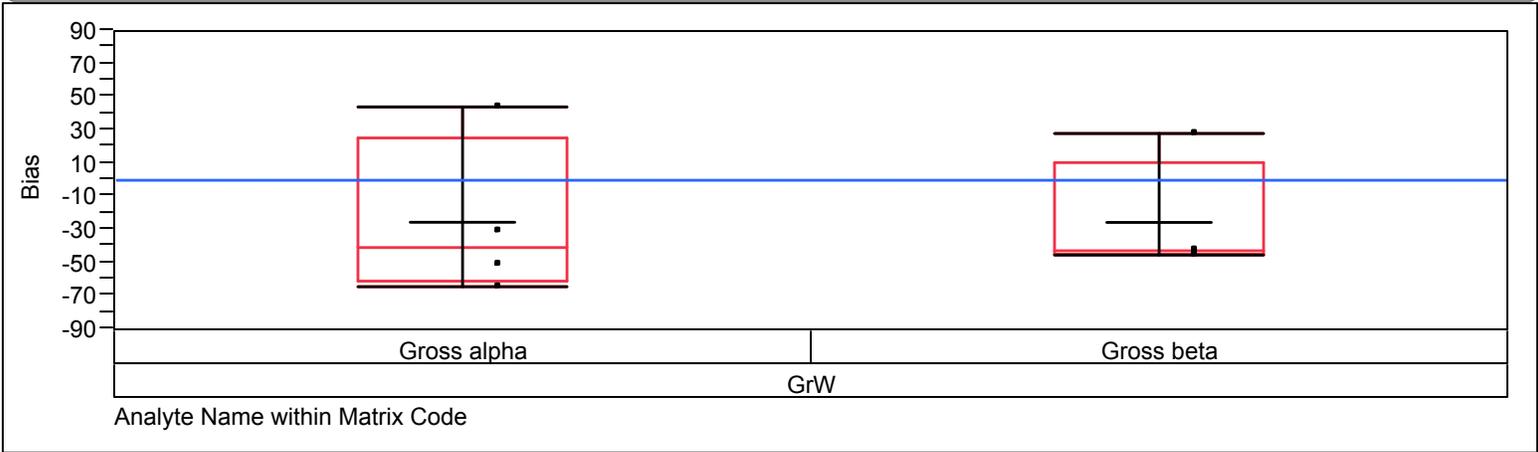
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Variability Chart for Bias



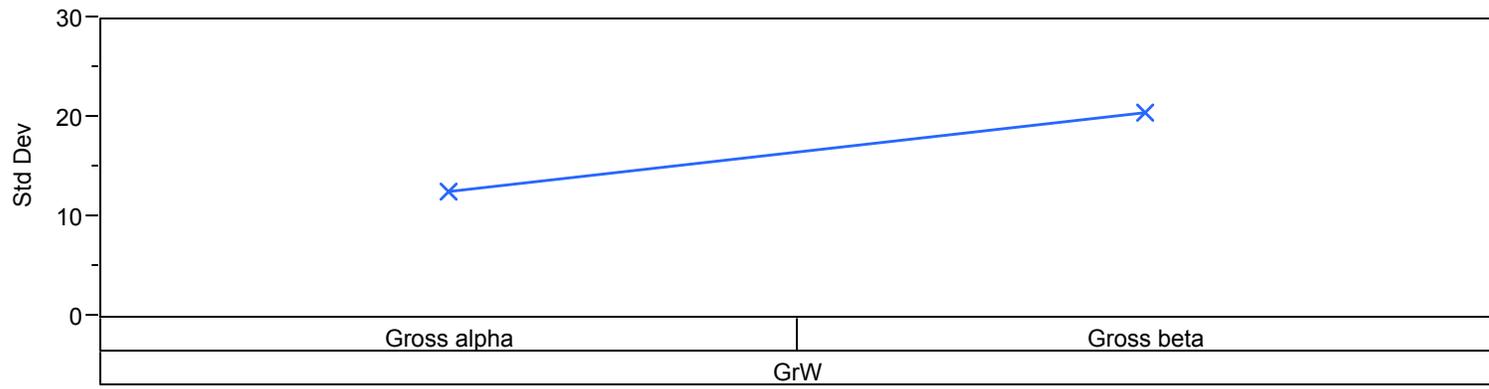
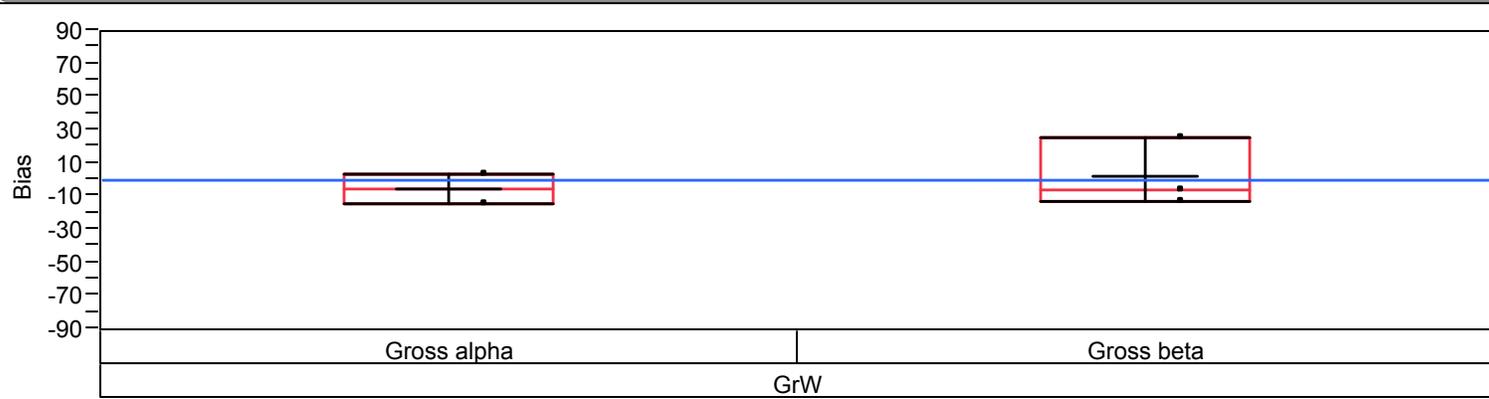
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Variability Chart for Bias



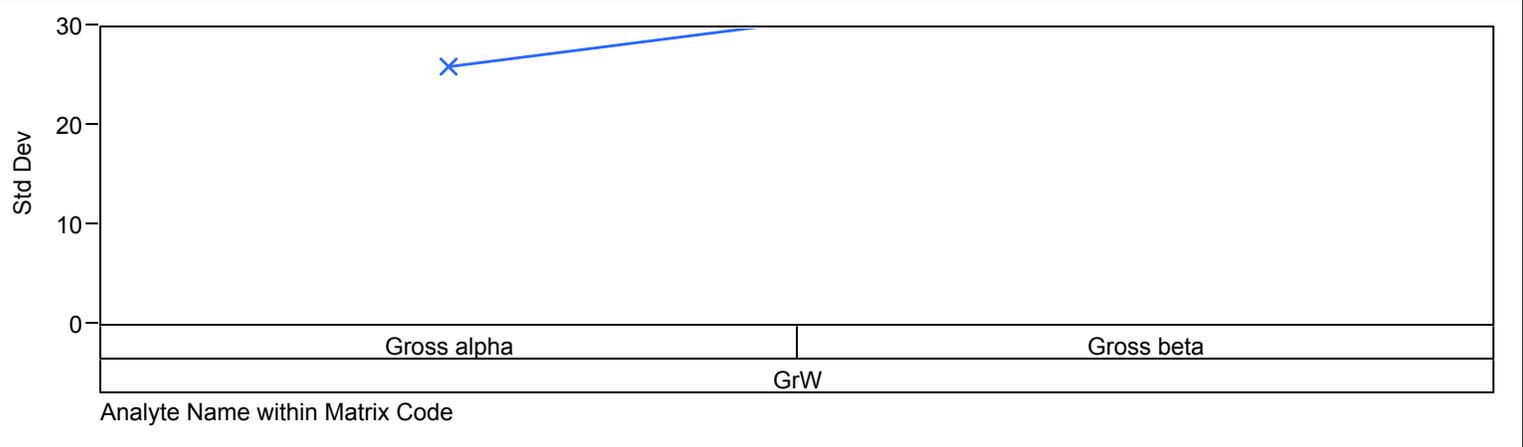
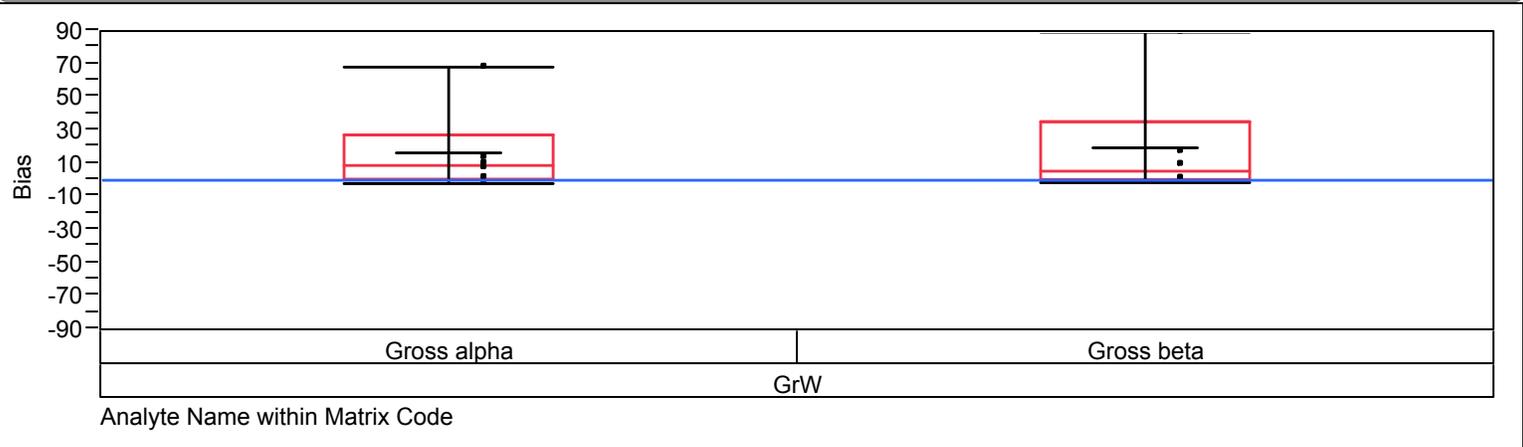
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Variability Chart for Bias



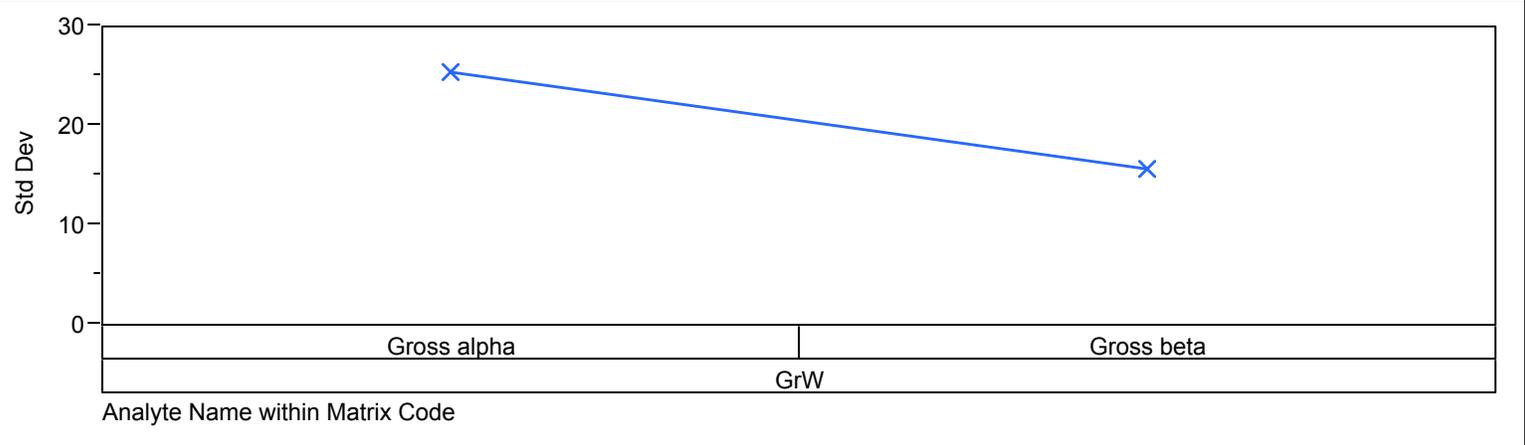
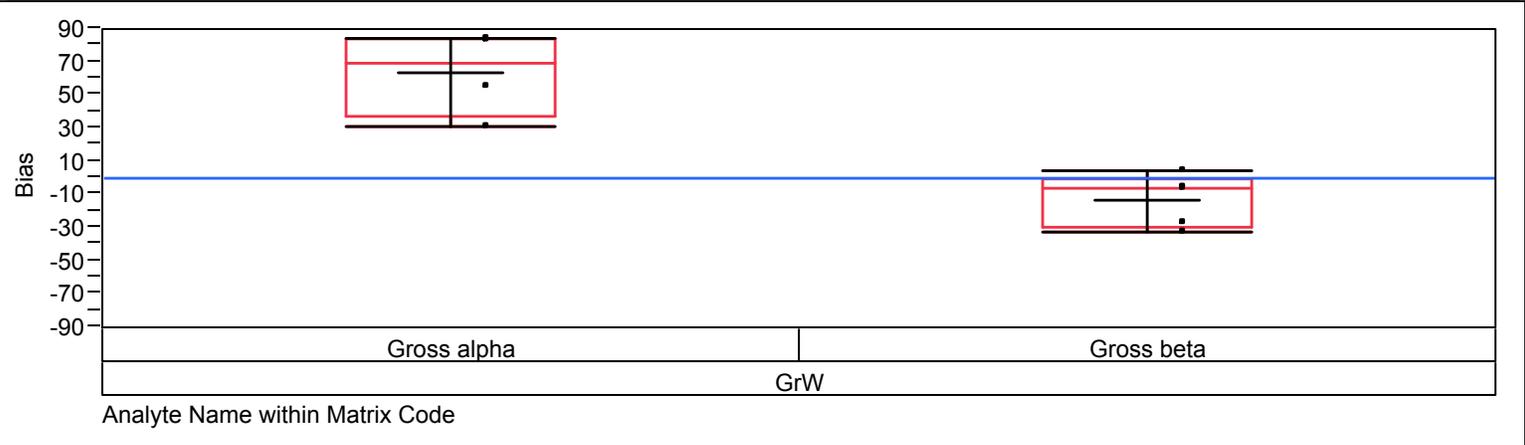
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Variability Chart for Bias



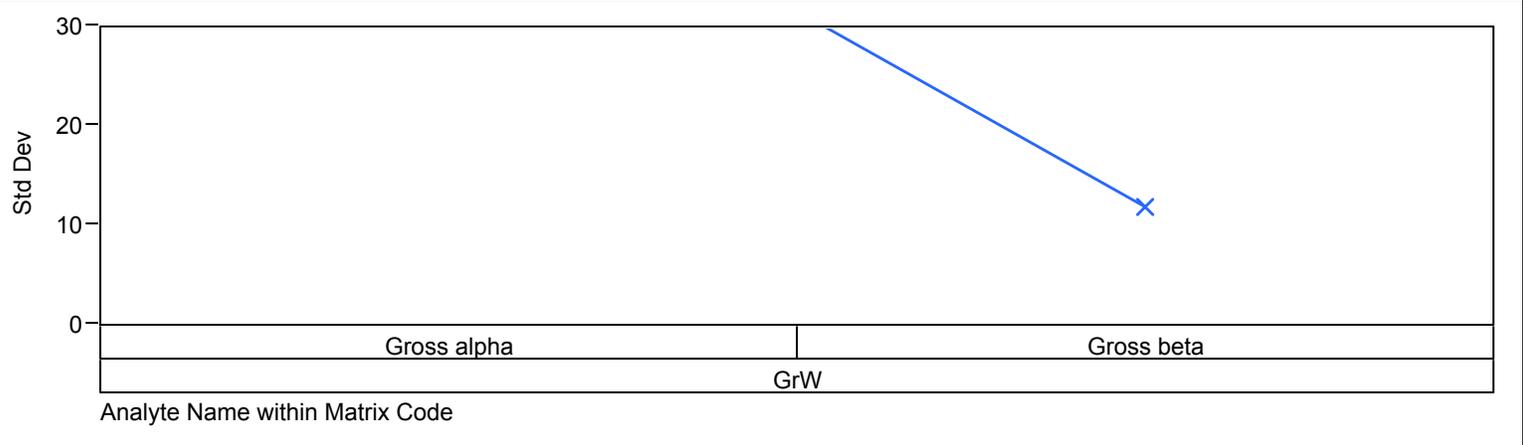
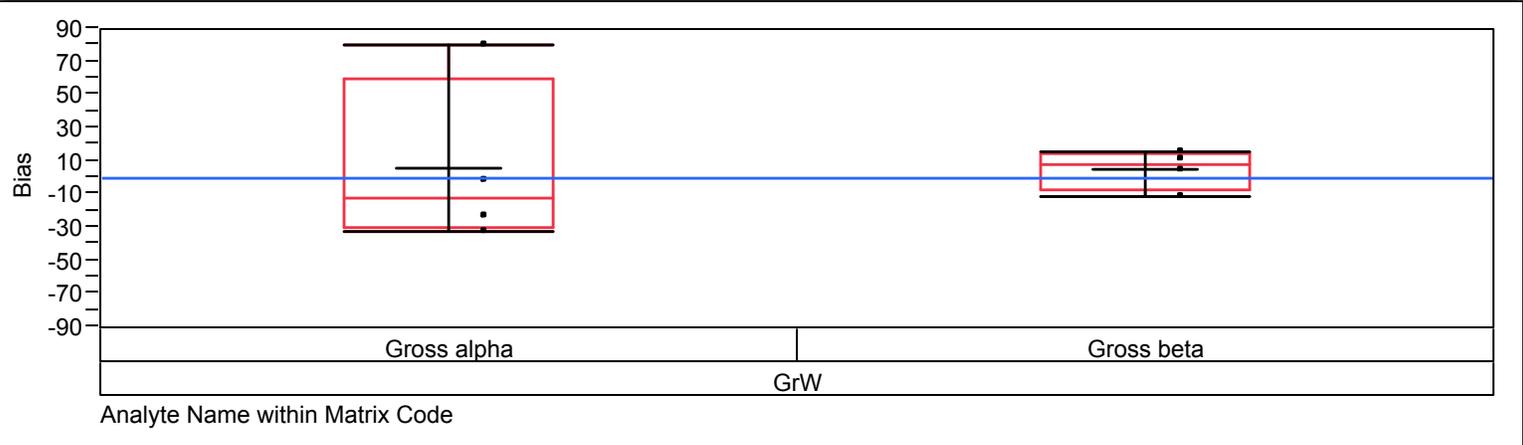
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Variability Chart for Bias



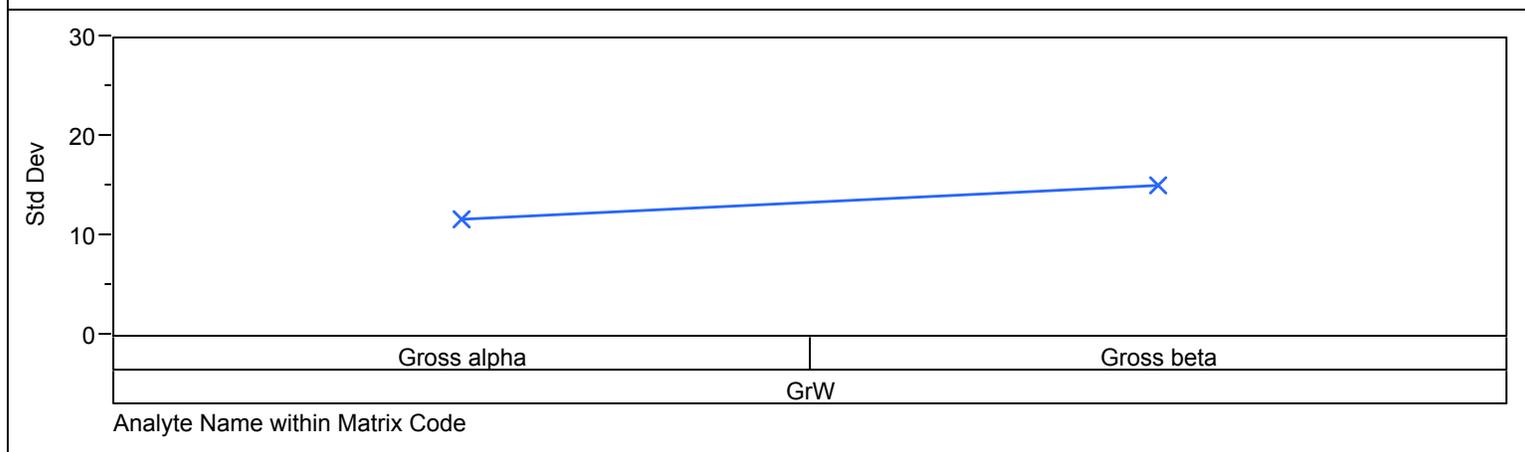
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Variability Chart for Bias



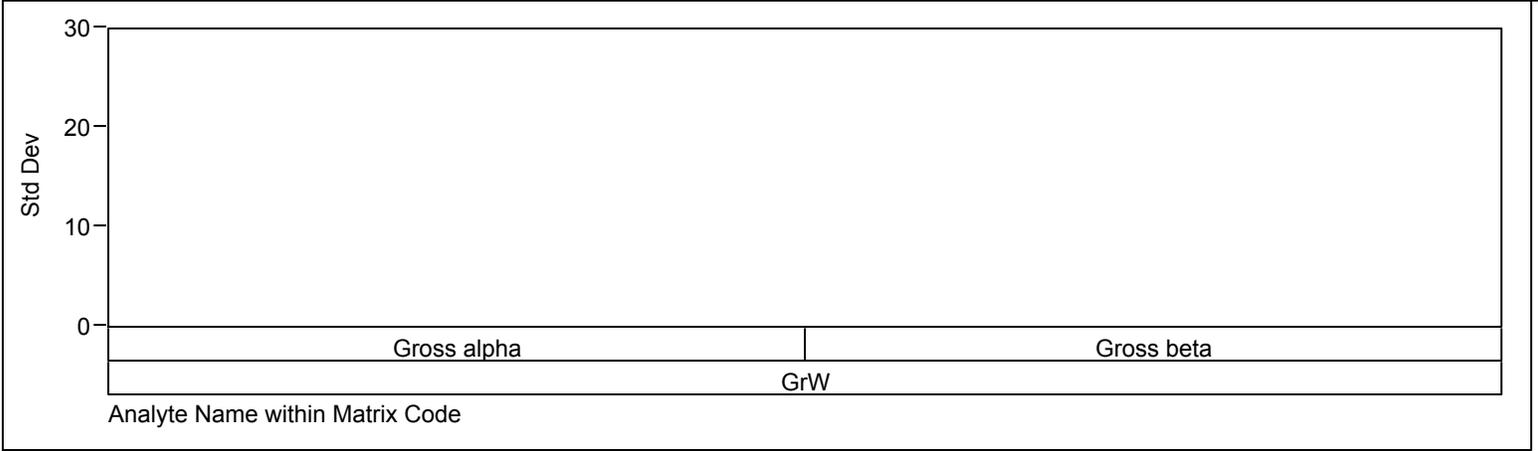
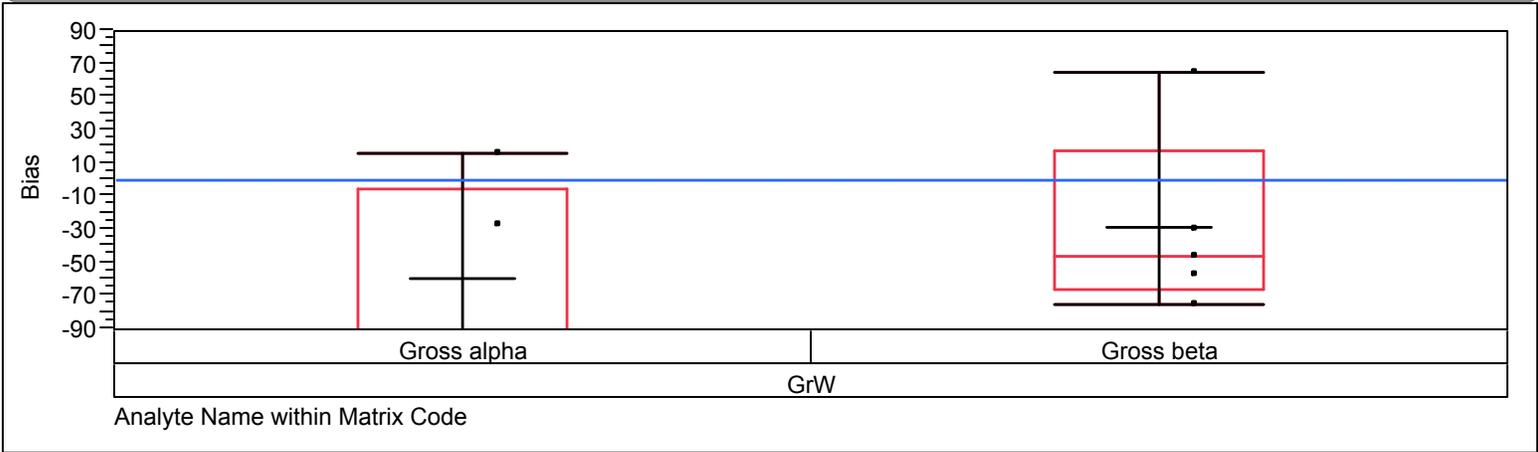
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Variability Chart for Bias



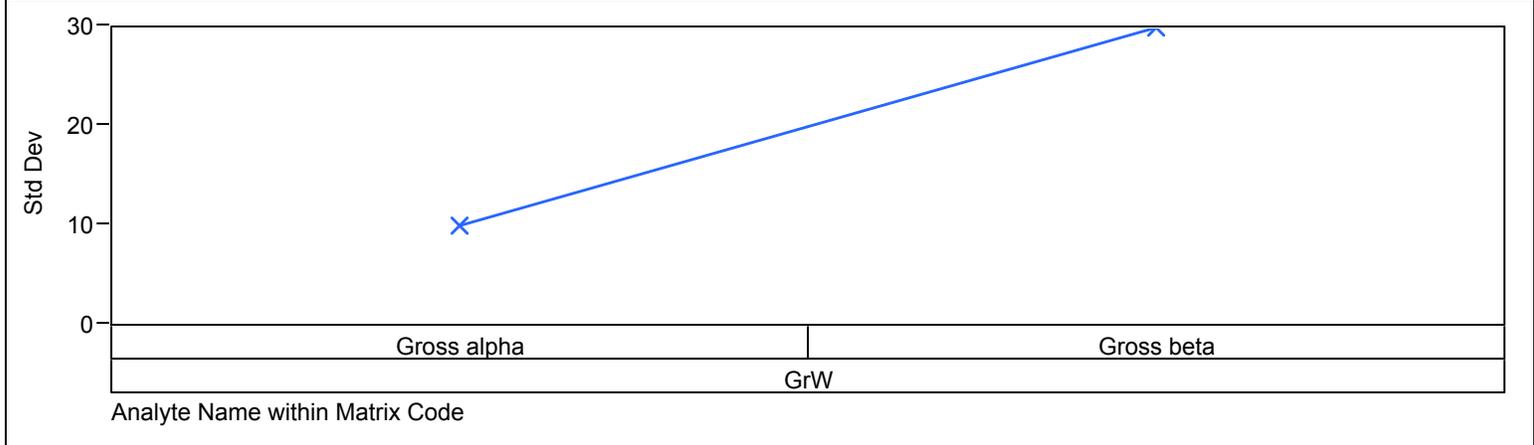
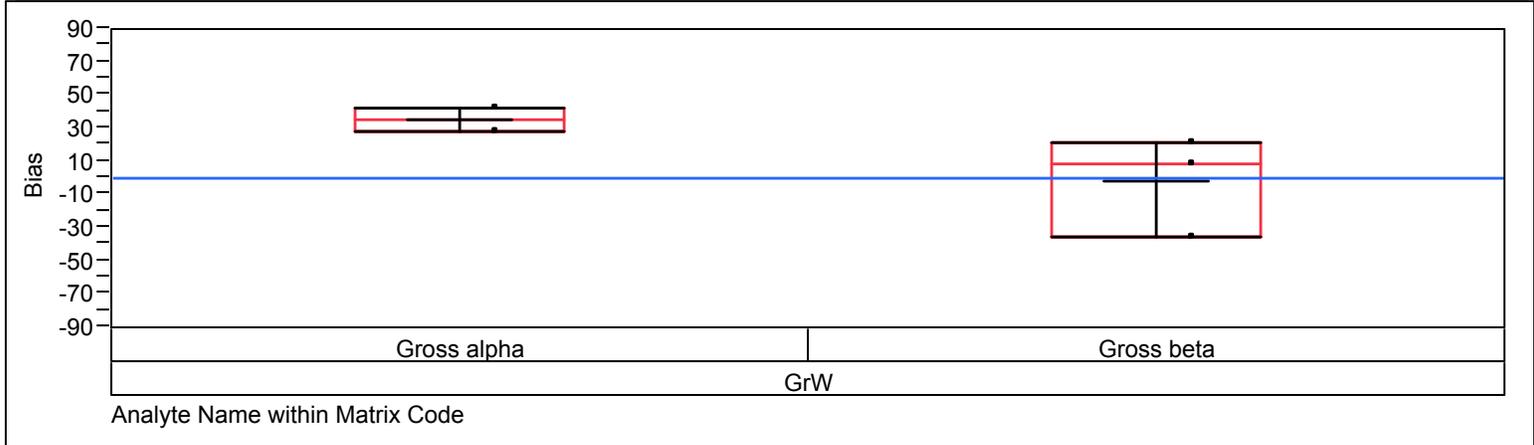
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Variability Chart for Bias



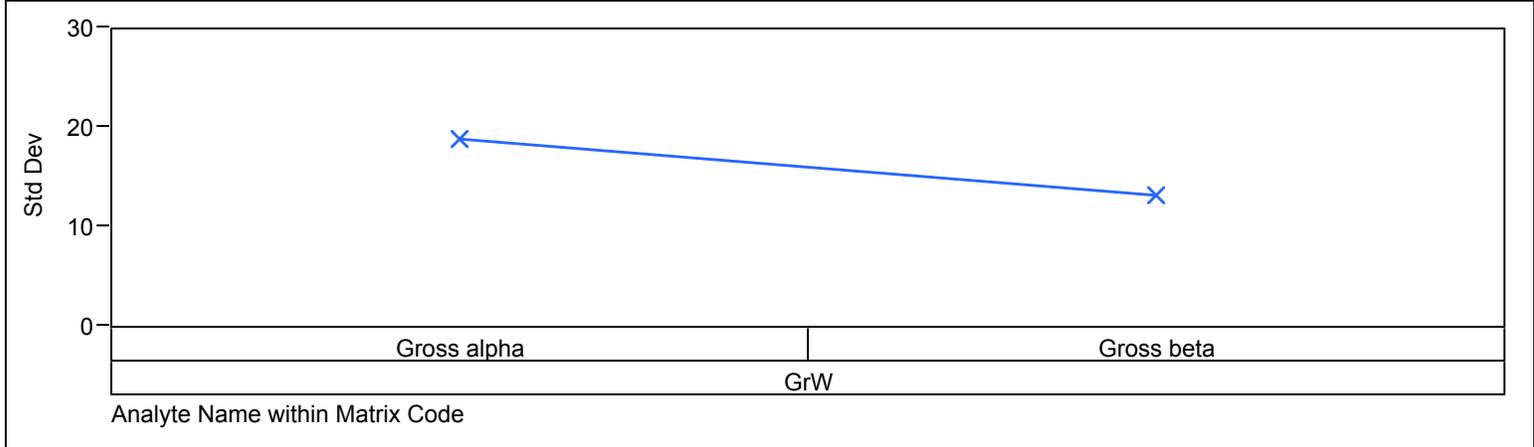
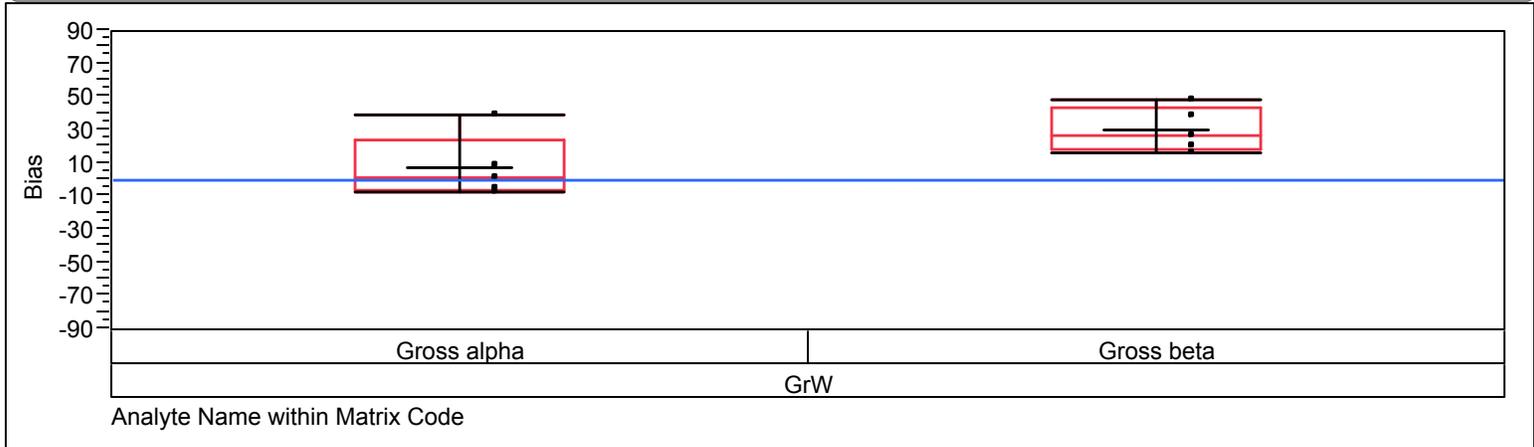
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Variability Chart for Bias



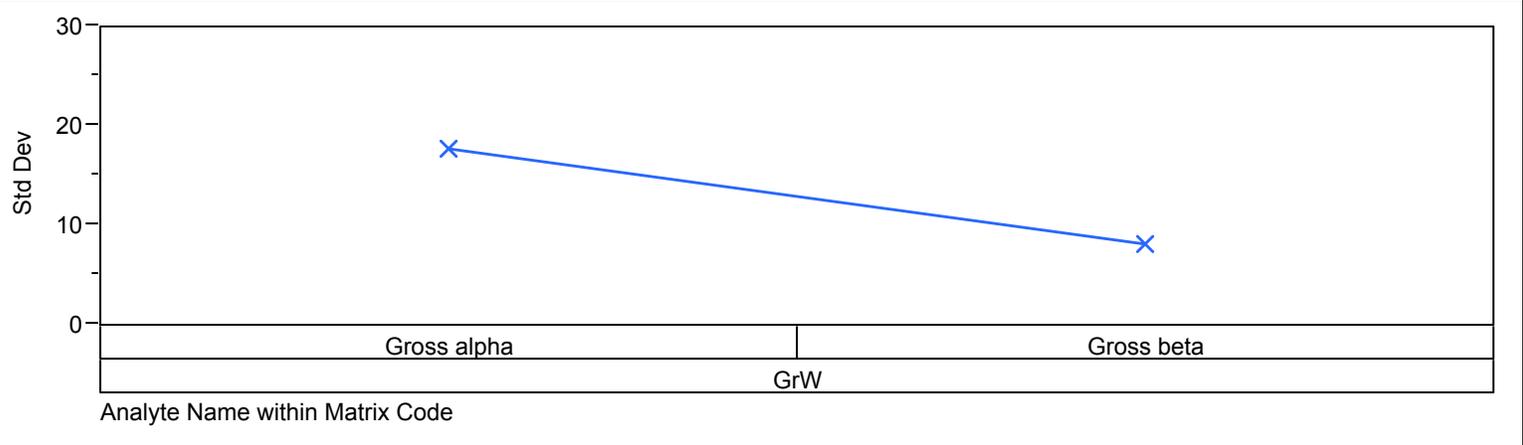
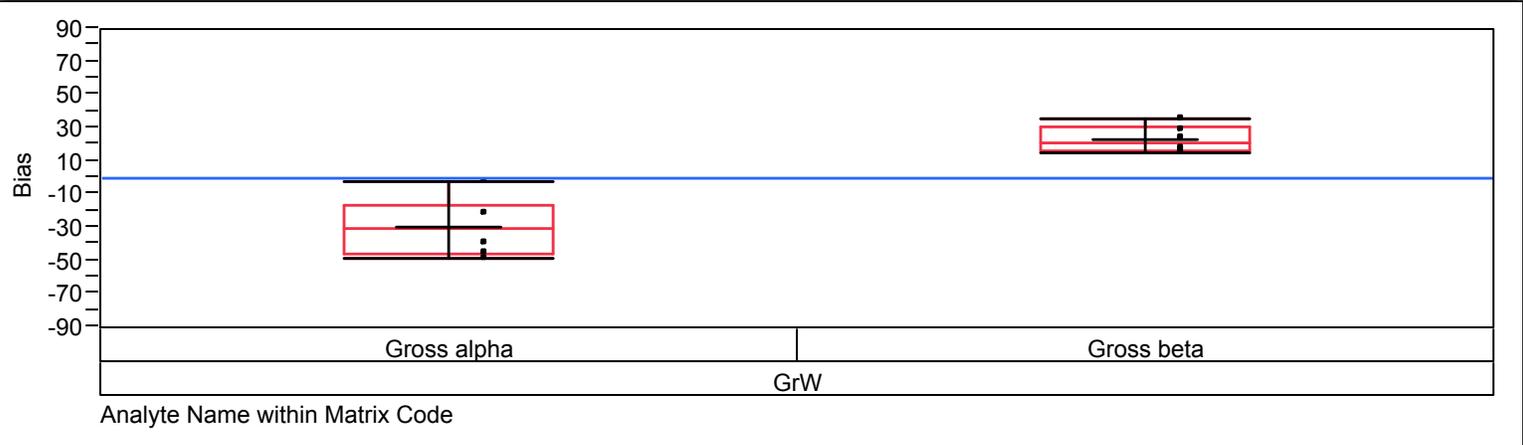
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Variability Chart for Bias



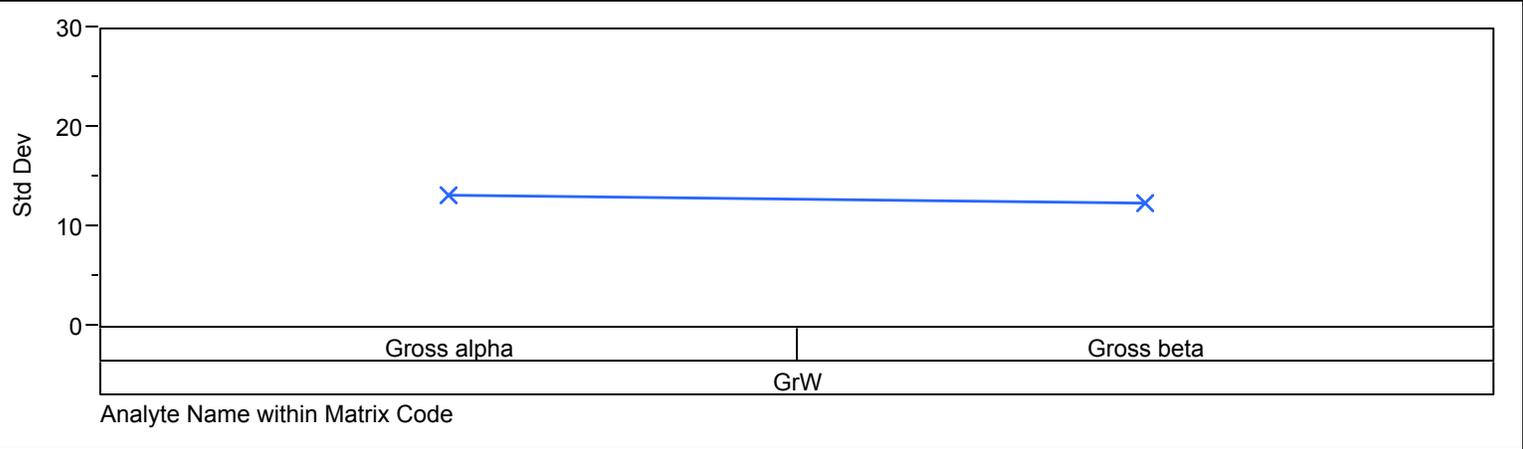
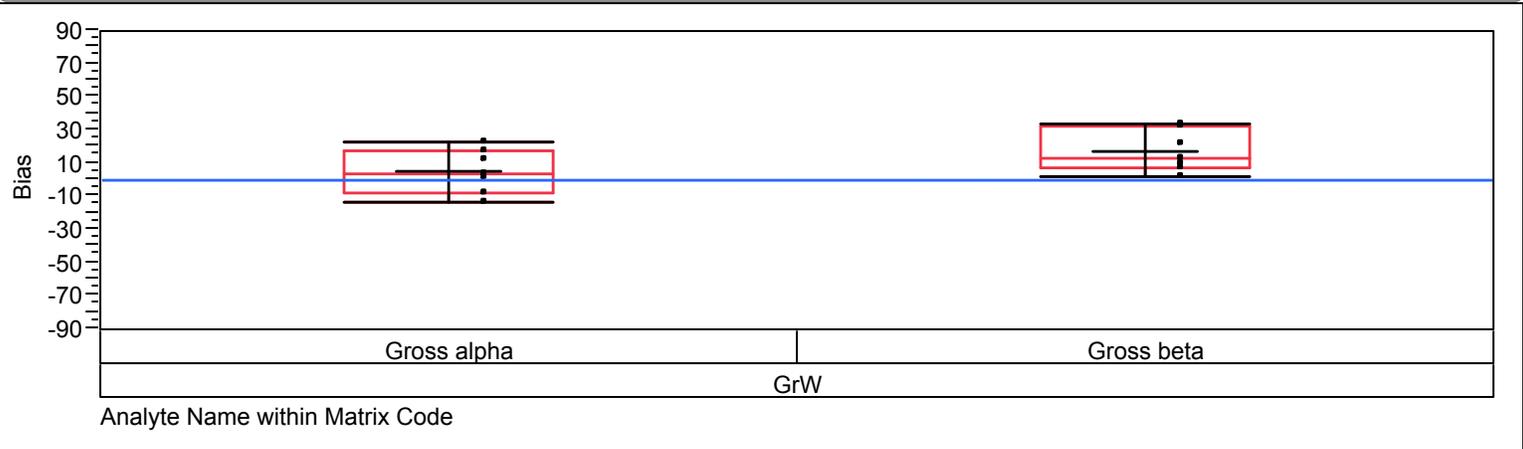
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Variability Chart for Bias



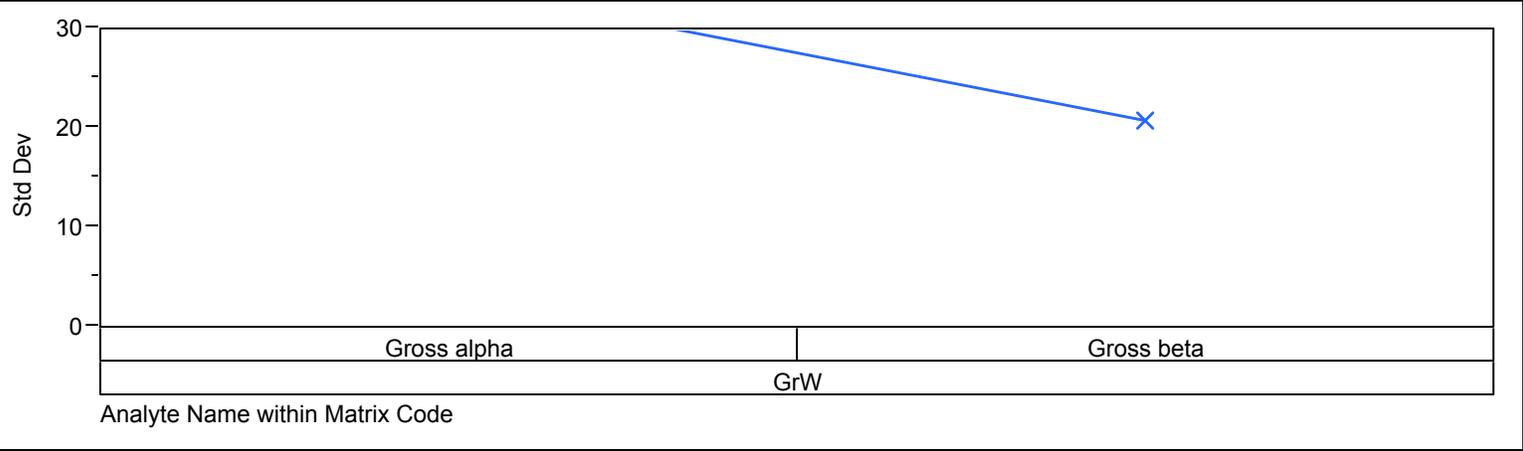
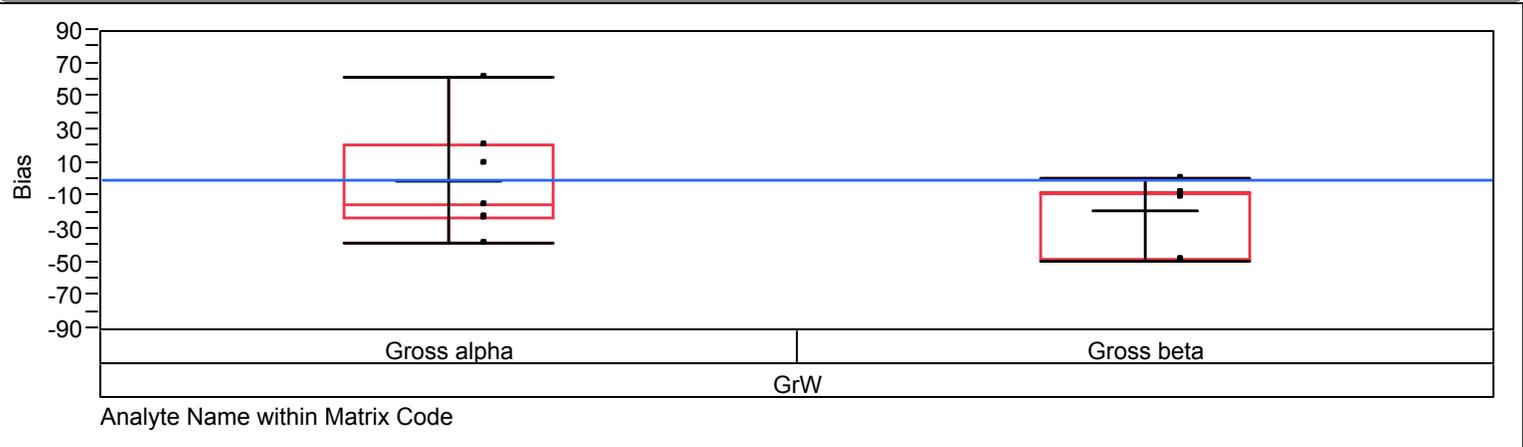
Variability Gauge Lab Code=MART01

Variability Chart for Bias



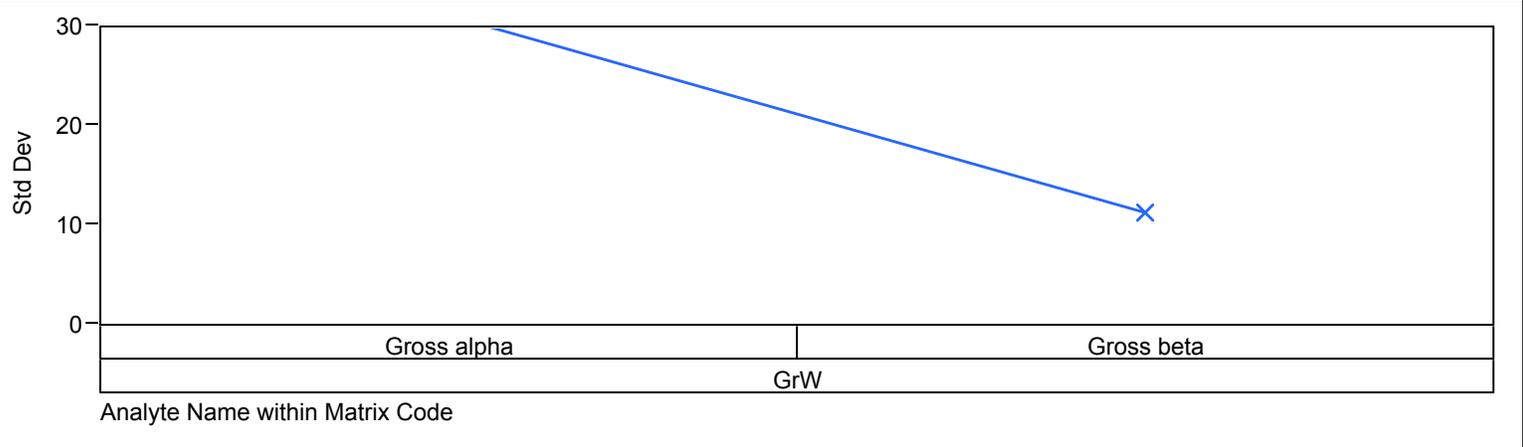
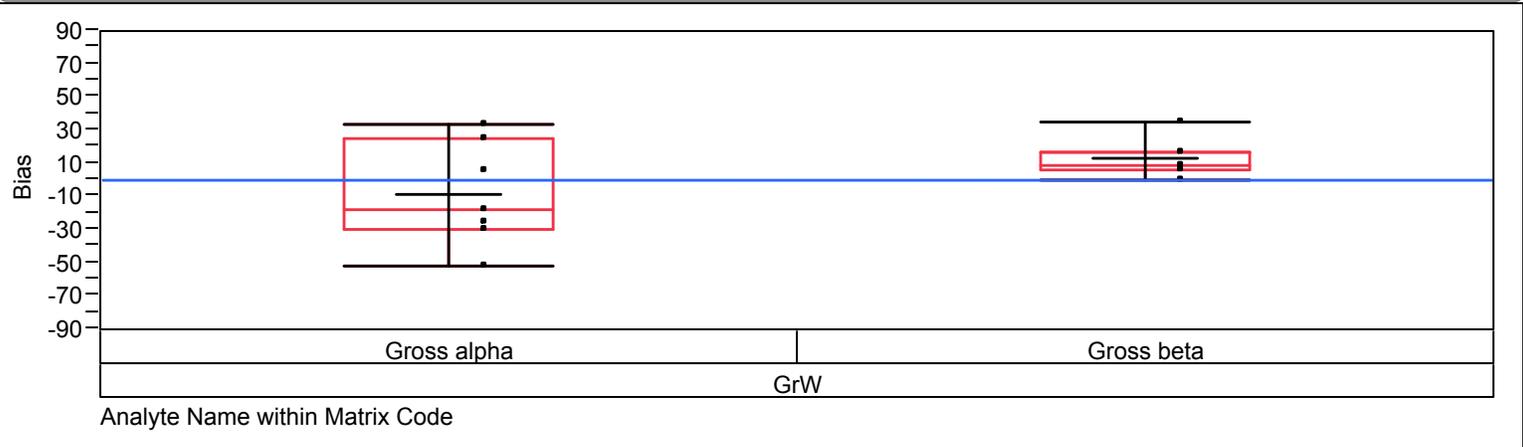
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Variability Chart for Bias



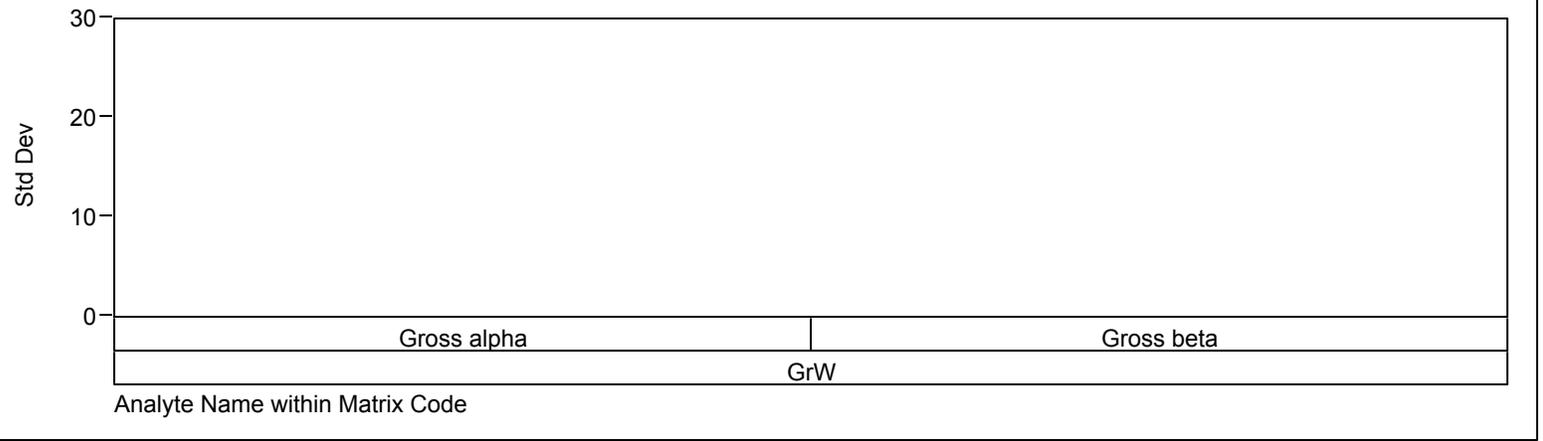
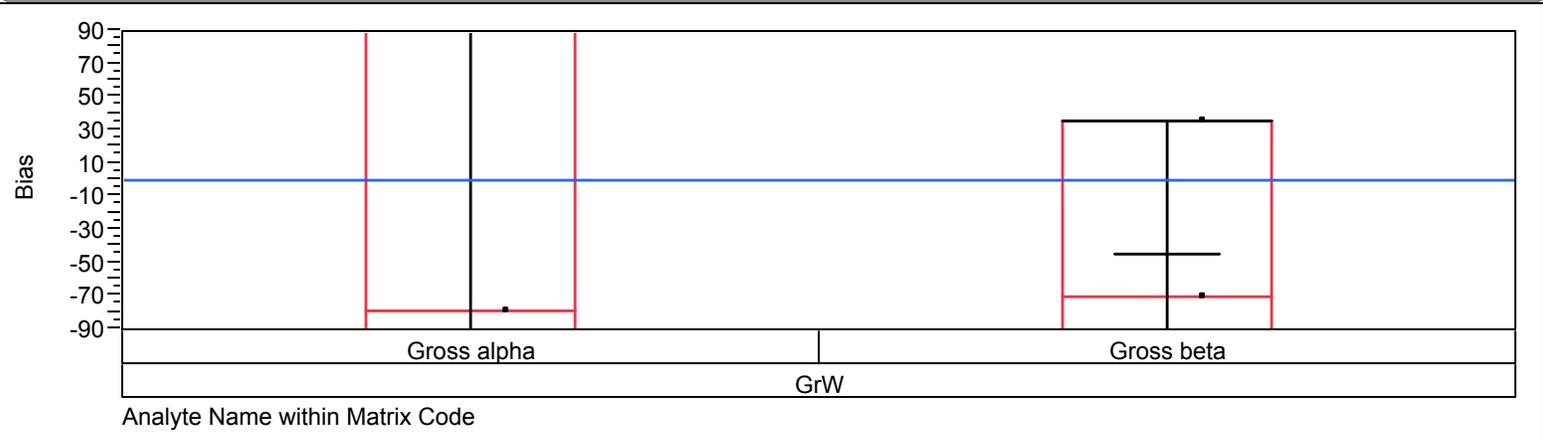
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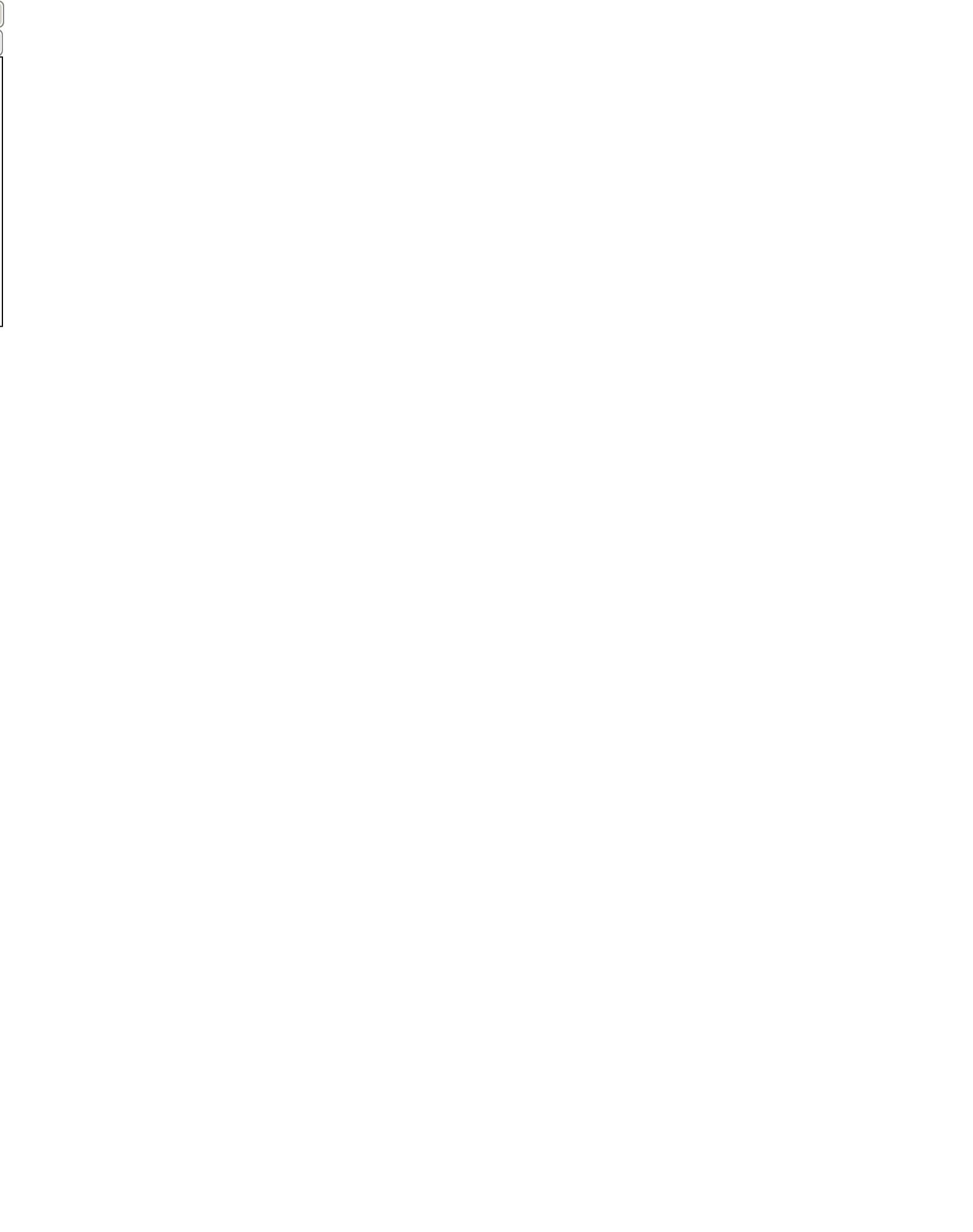
Variability Chart for Bias



Variability Gauge Lab Code=MKME01

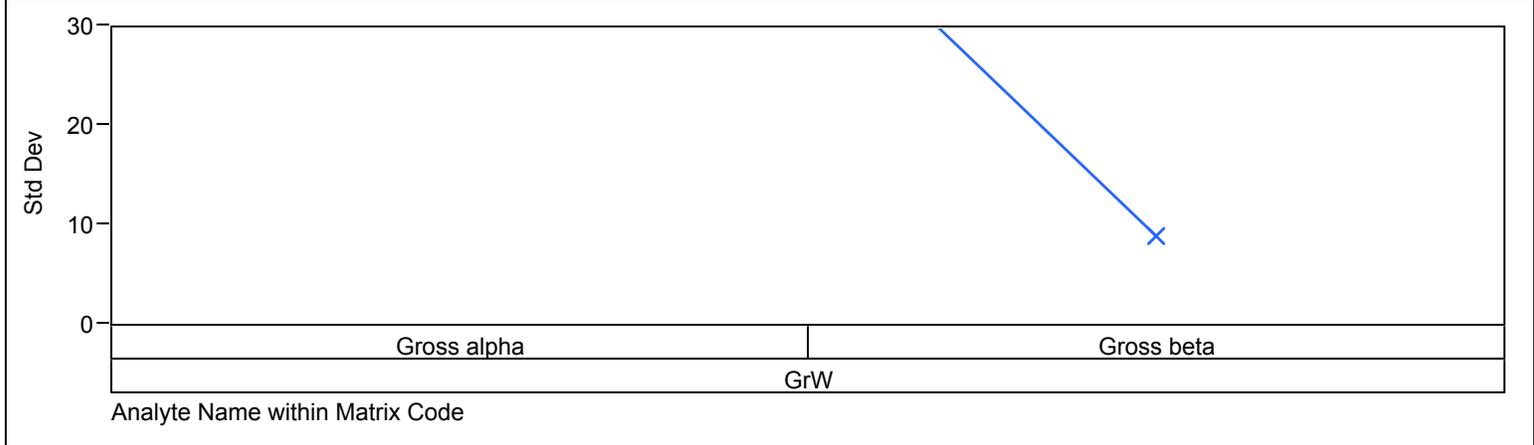
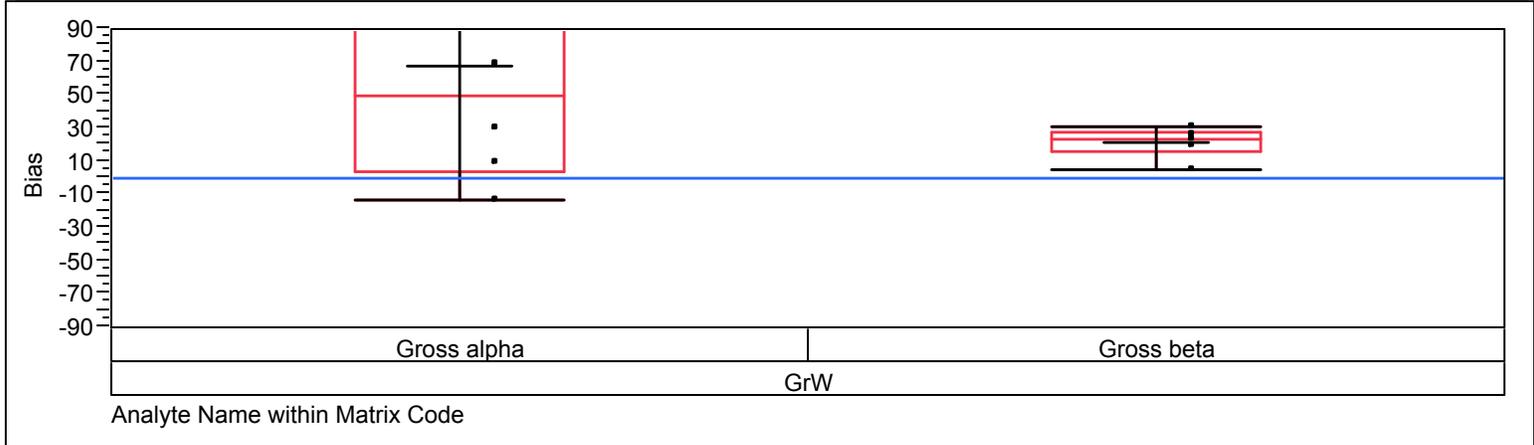
Variability Chart for Bias





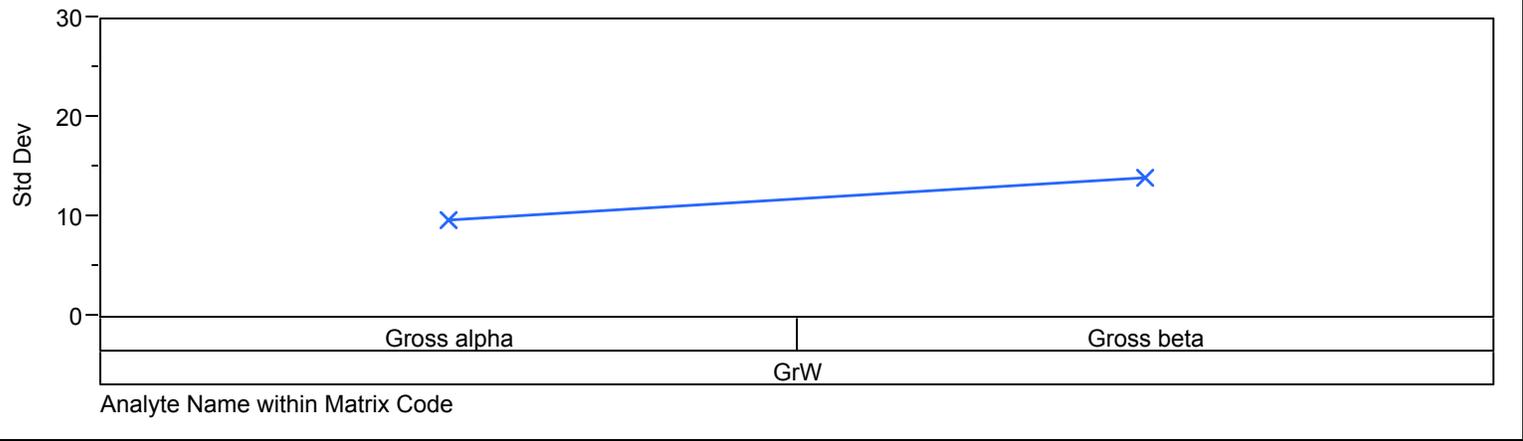
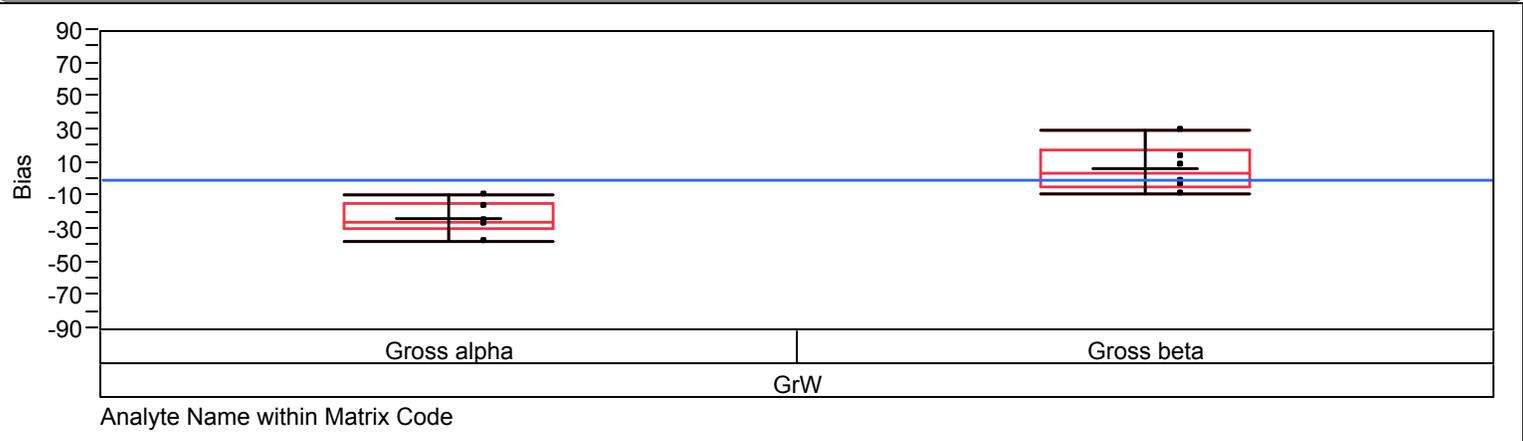
Variability Gauge Lab Code=NARL01

Variability Chart for Bias



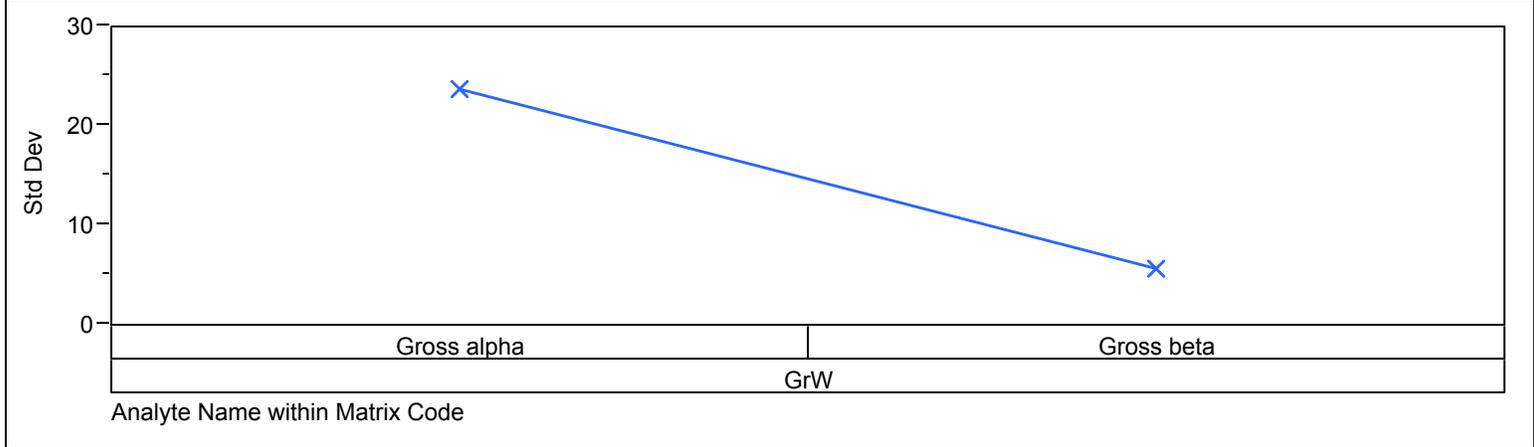
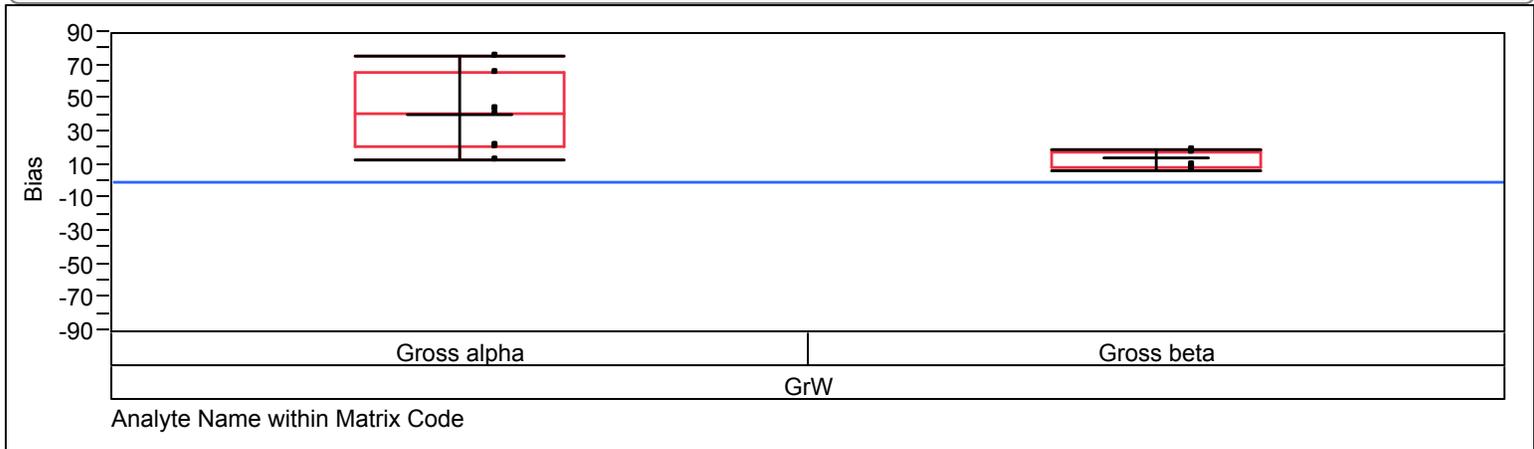
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Variability Chart for Bias



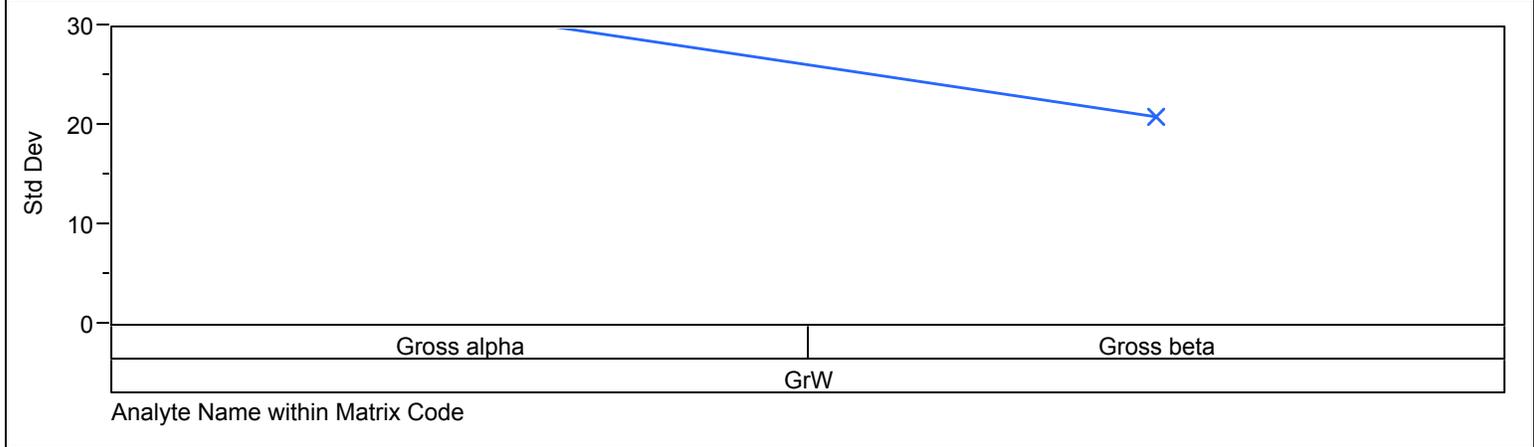
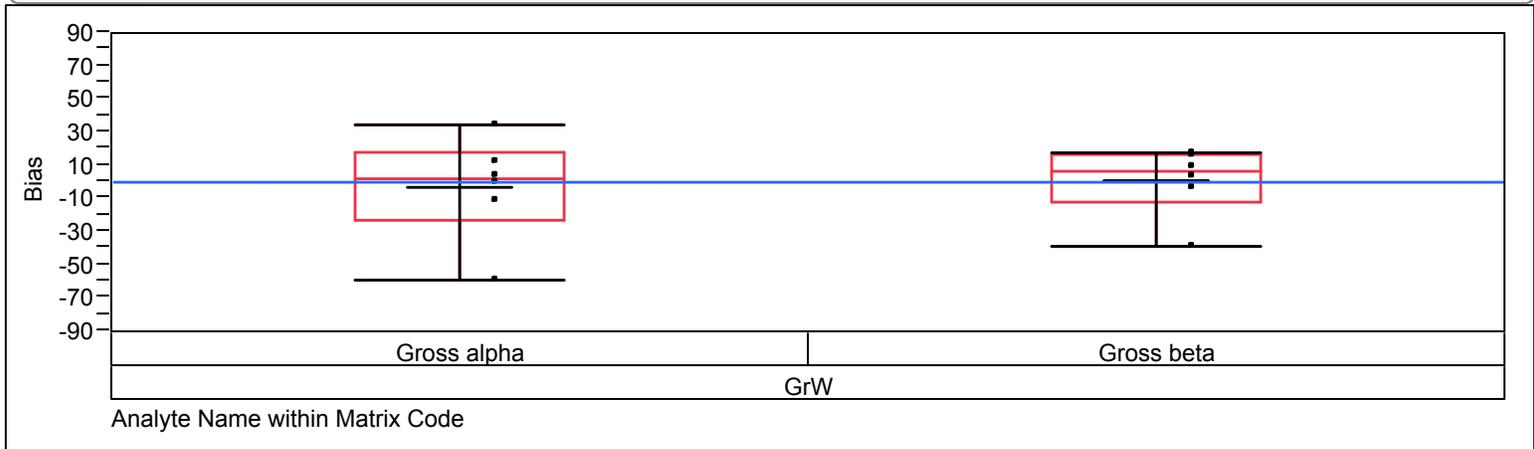
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Variability Chart for Bias



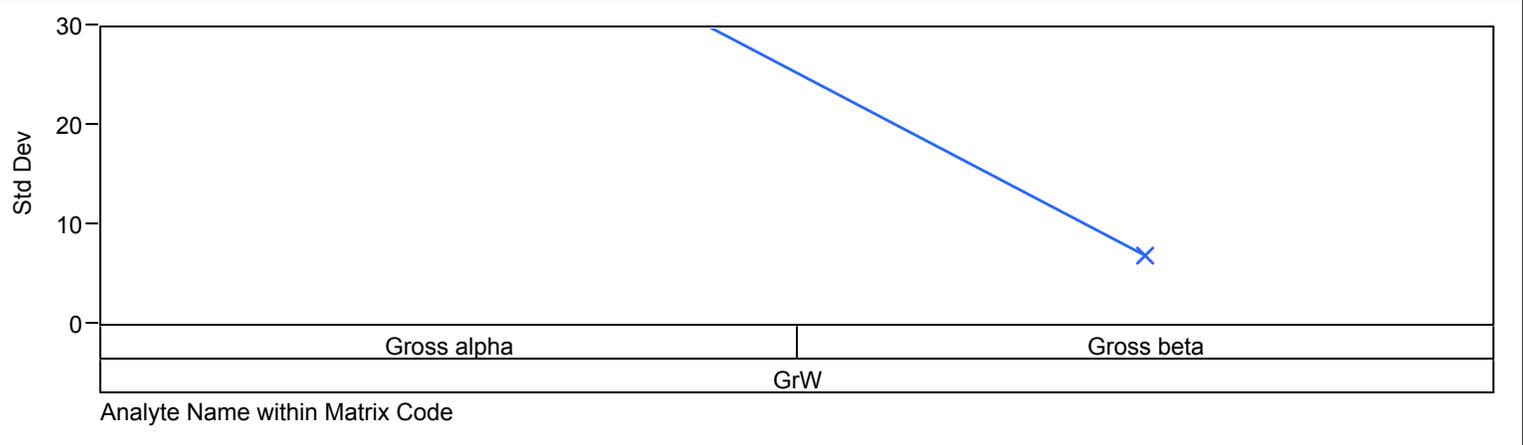
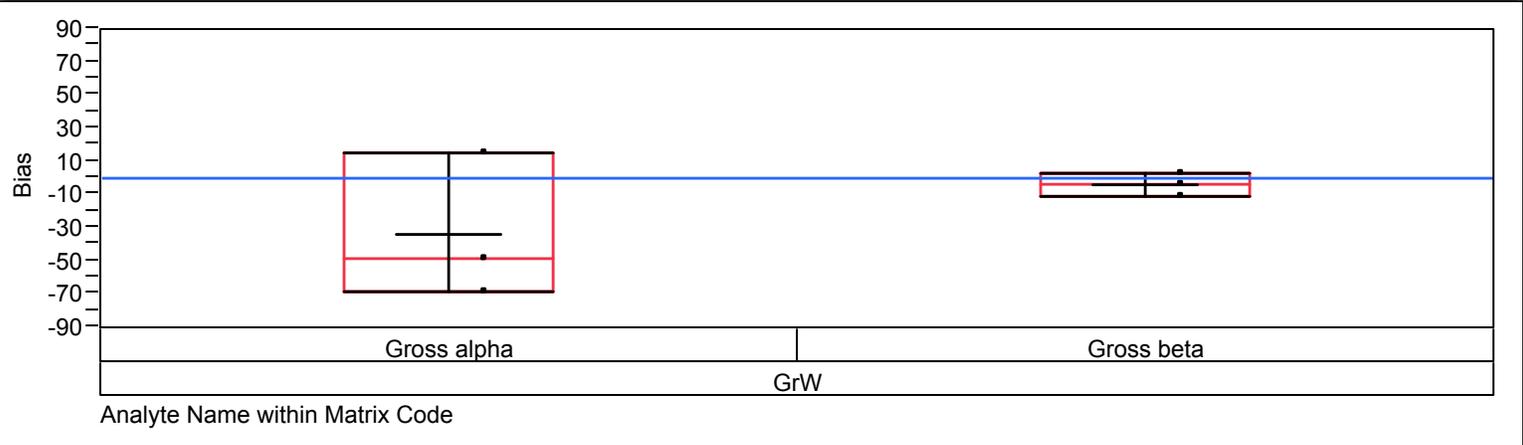
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Variability Chart for Bias



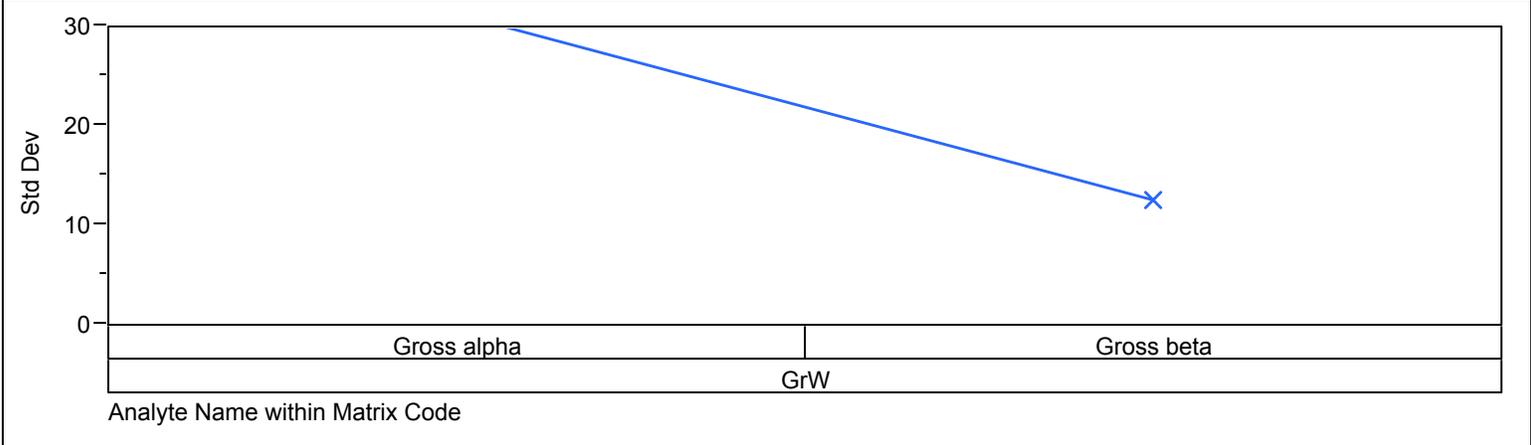
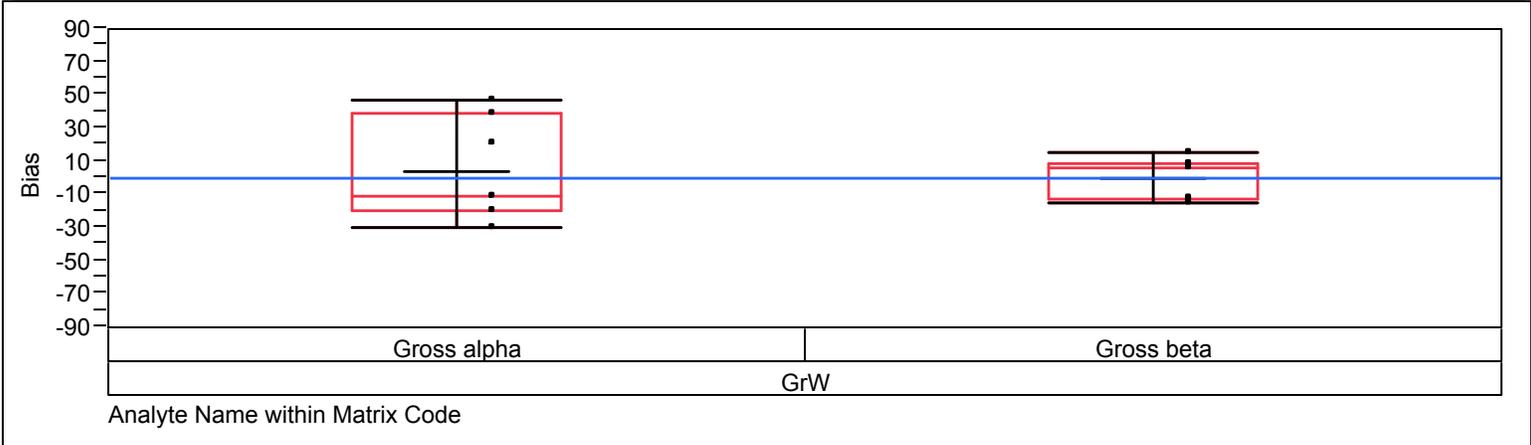
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Variability Chart for Bias



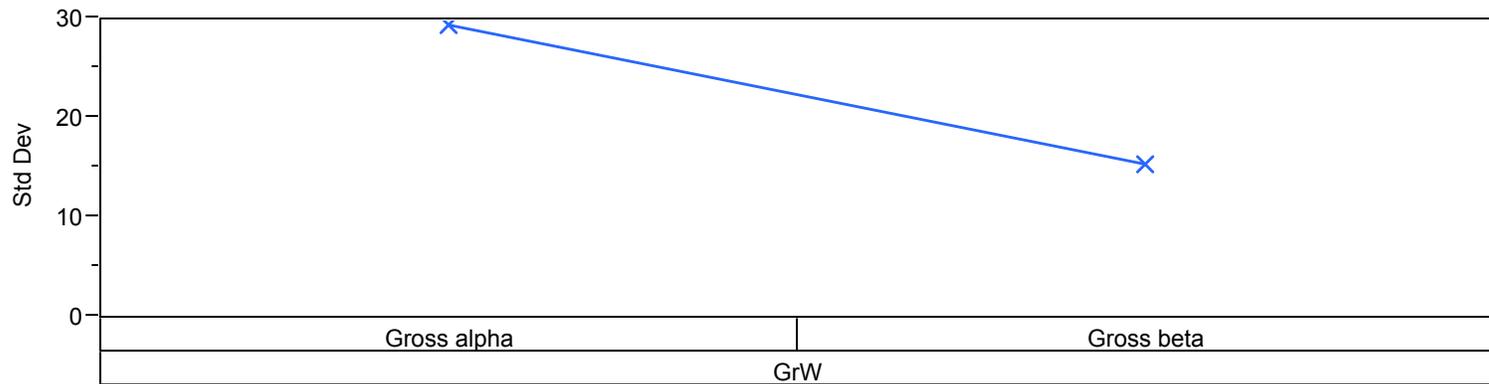
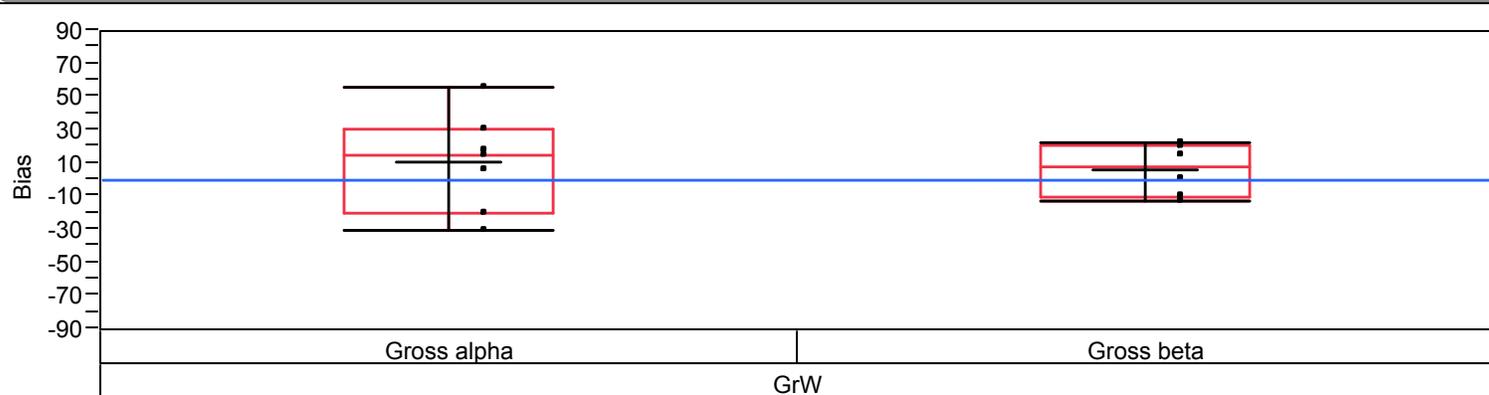
Variability Gauge Lab Code=OBGL01

Variability Chart for Bias



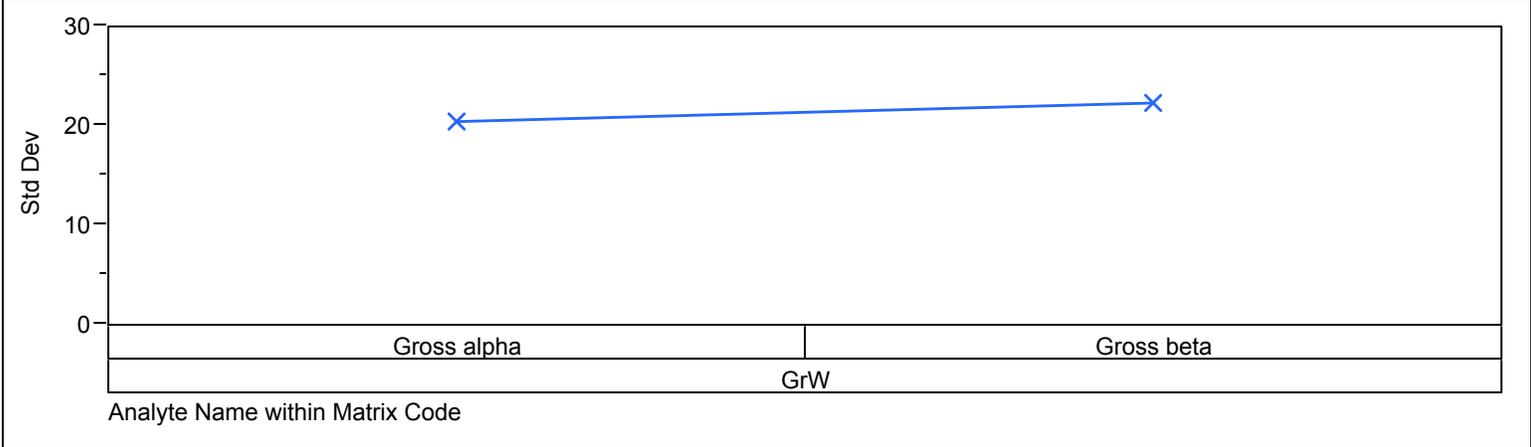
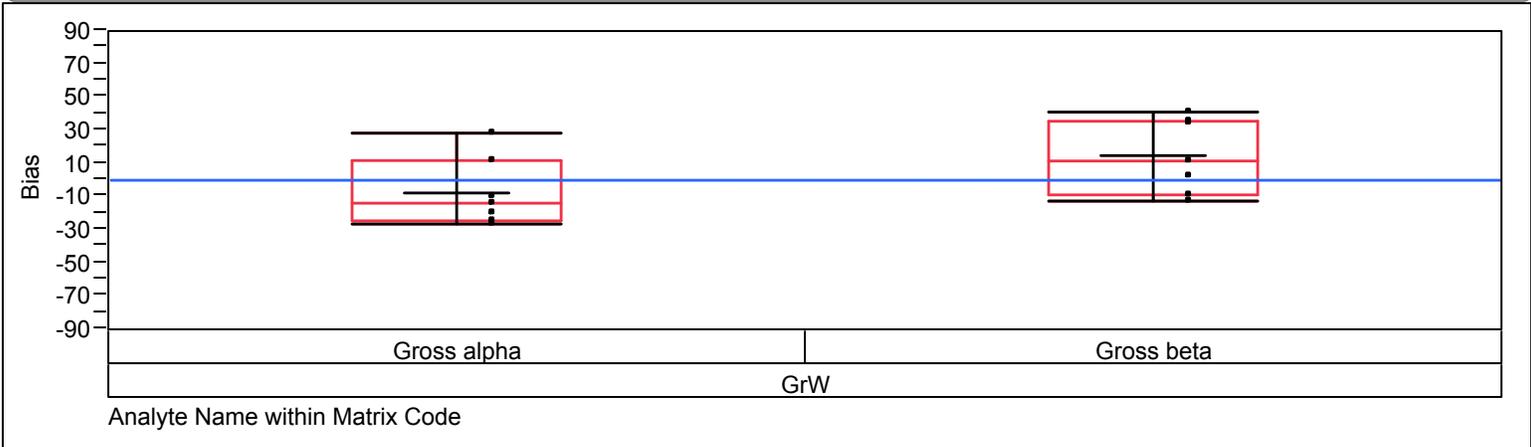
Variability Gauge Lab Code=ODHL01

Variability Chart for Bias



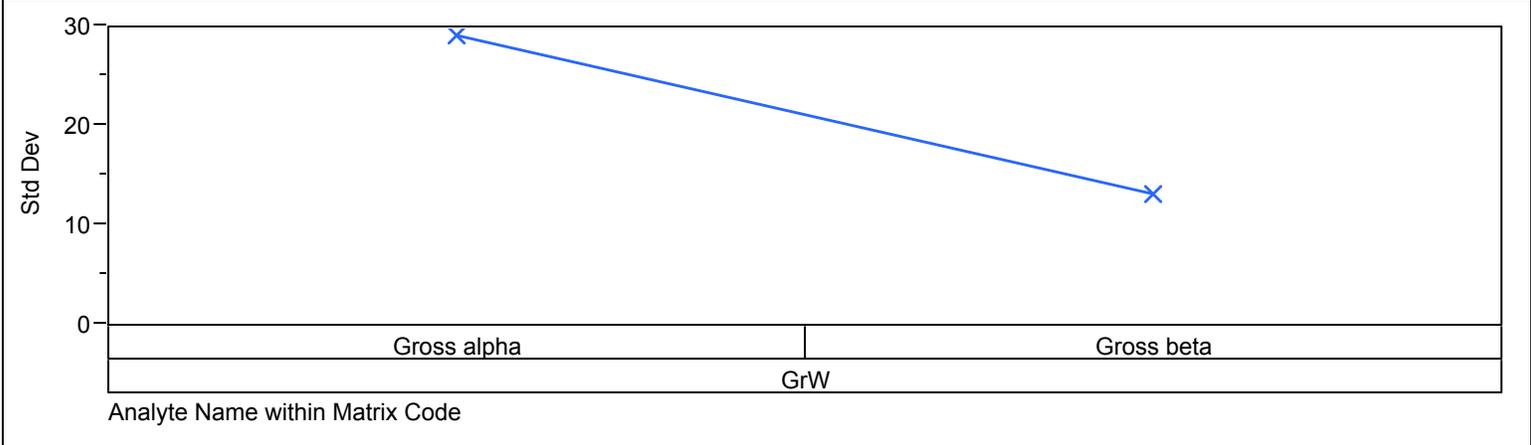
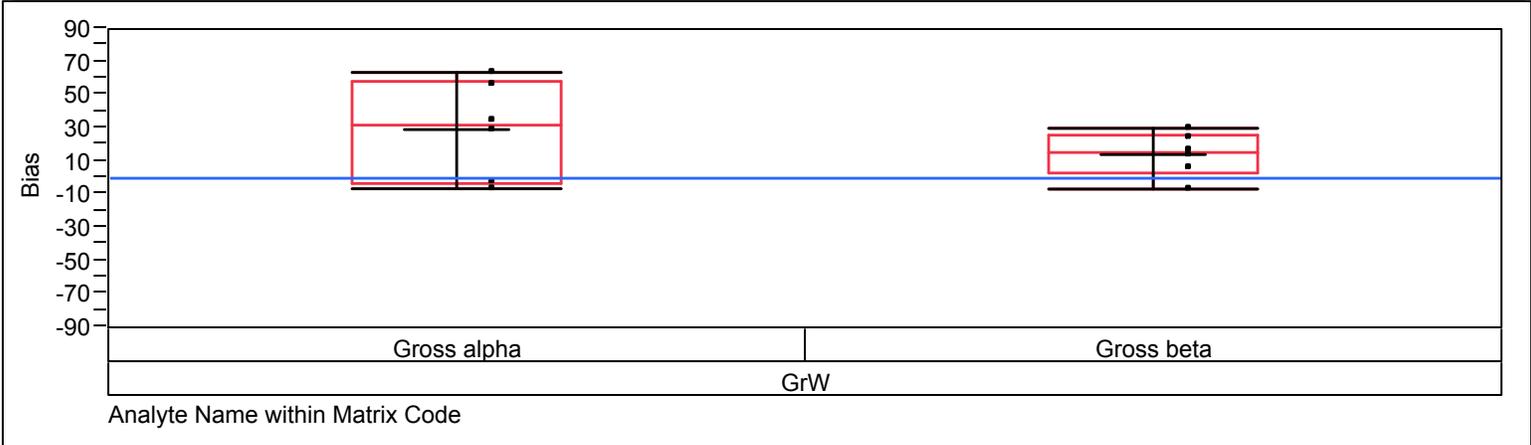
Variability Gauge Lab Code=ORIS01

Variability Chart for Bias



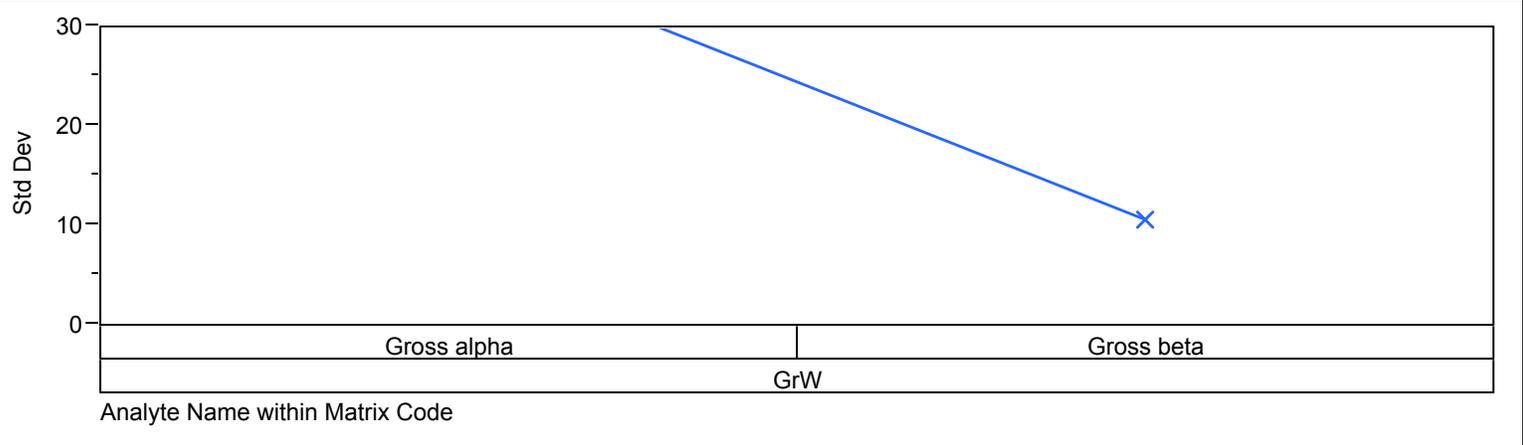
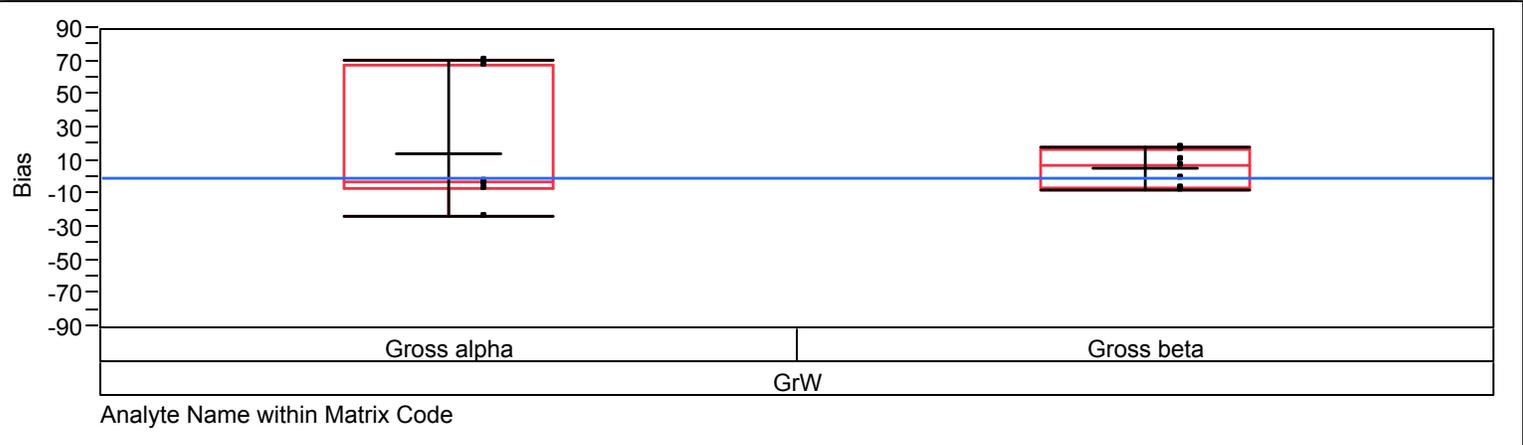
Variability Gauge Lab Code=OTLI01

Variability Chart for Bias



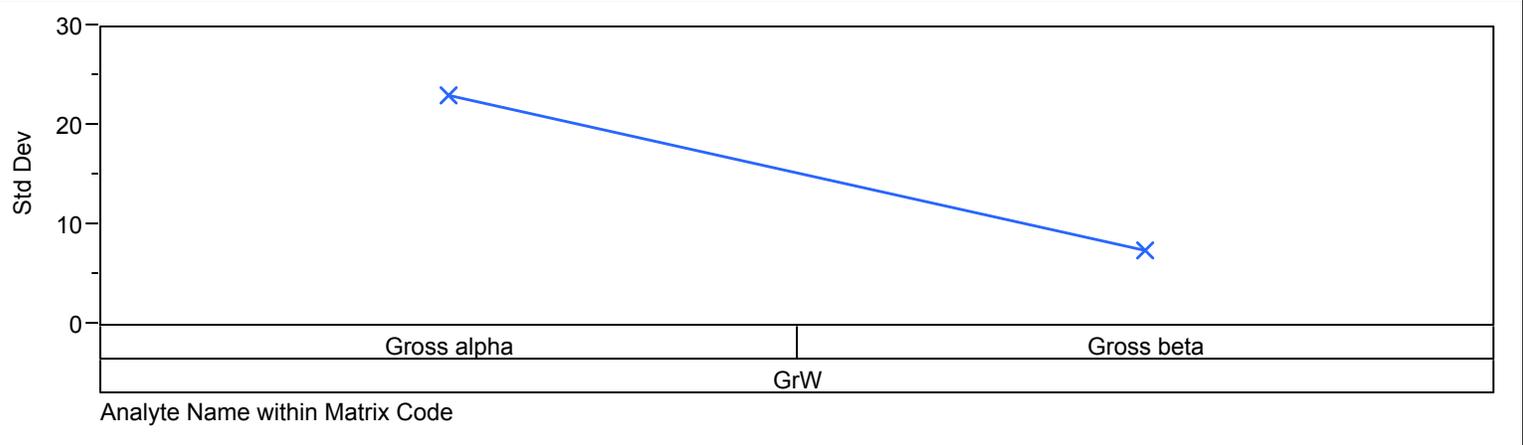
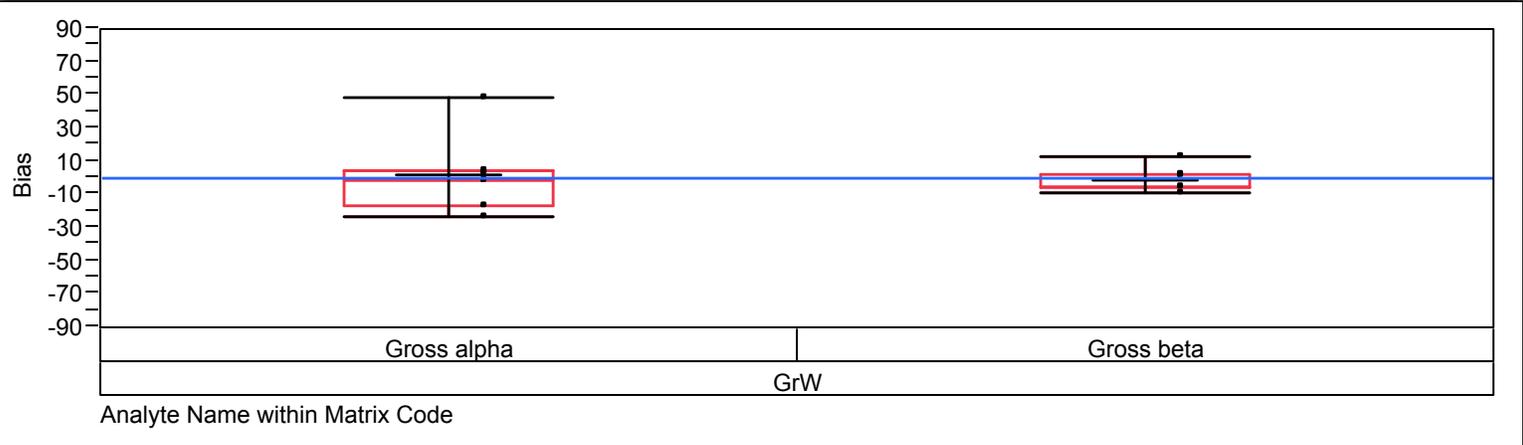
Variability Gauge Lab Code=QUAN01

Variability Chart for Bias



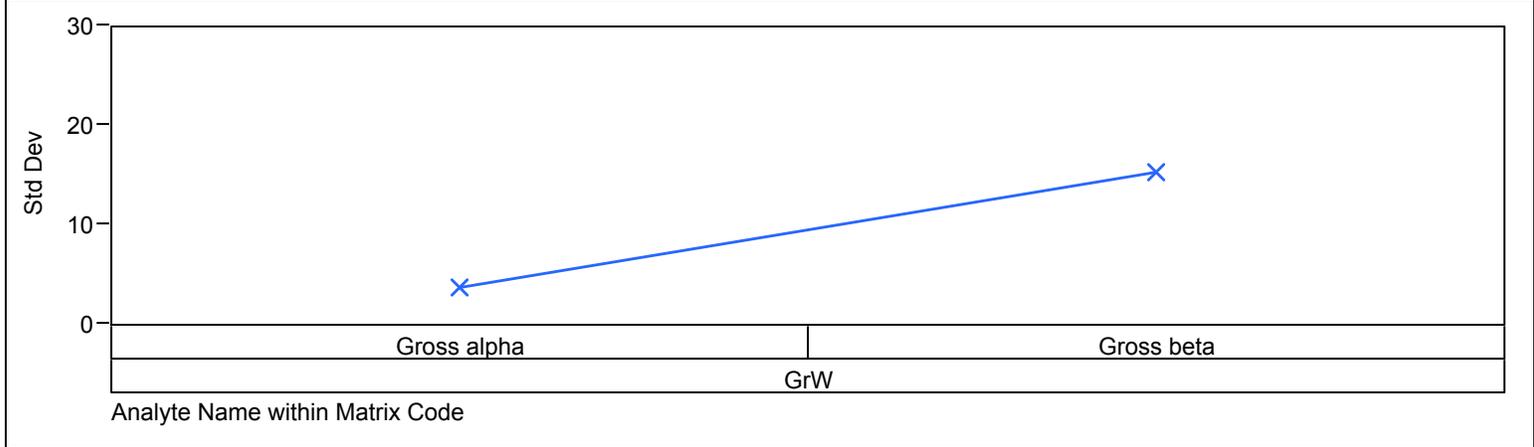
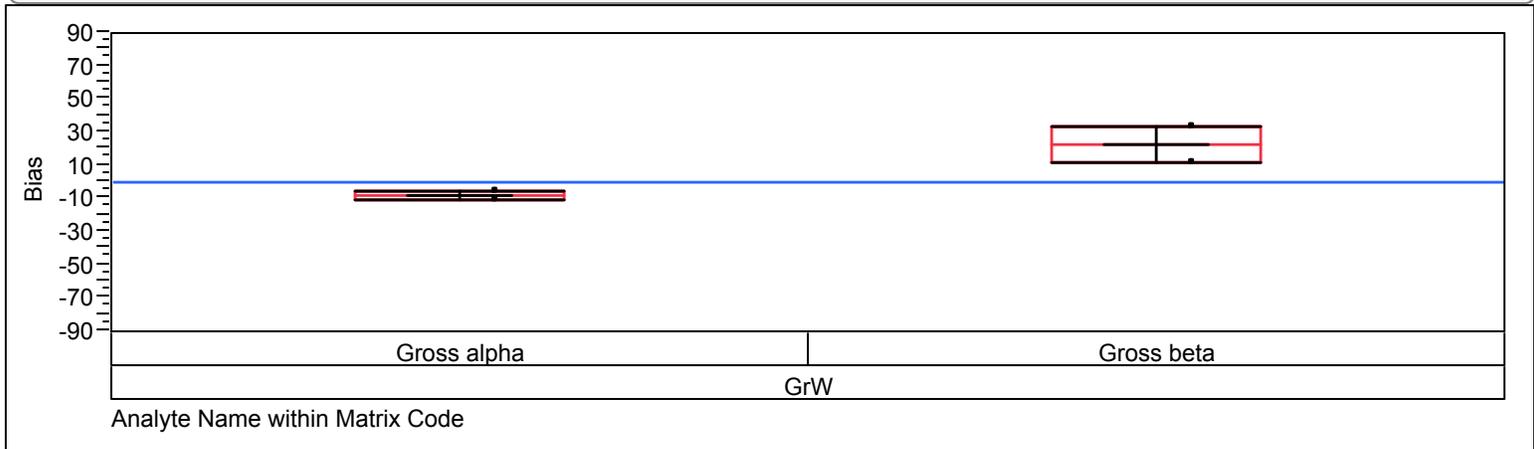
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Variability Chart for Bias



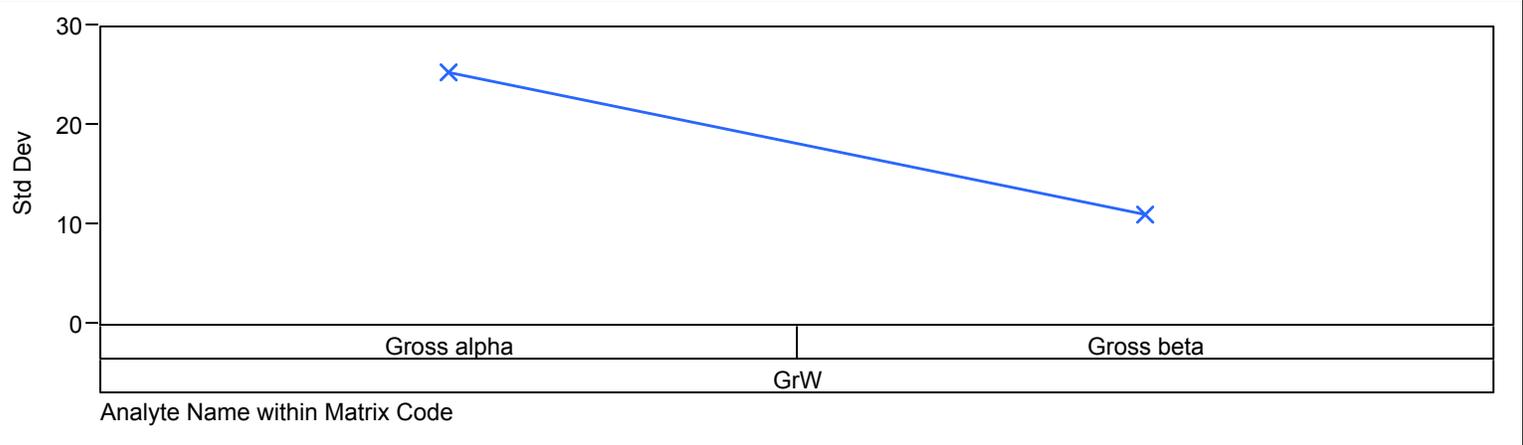
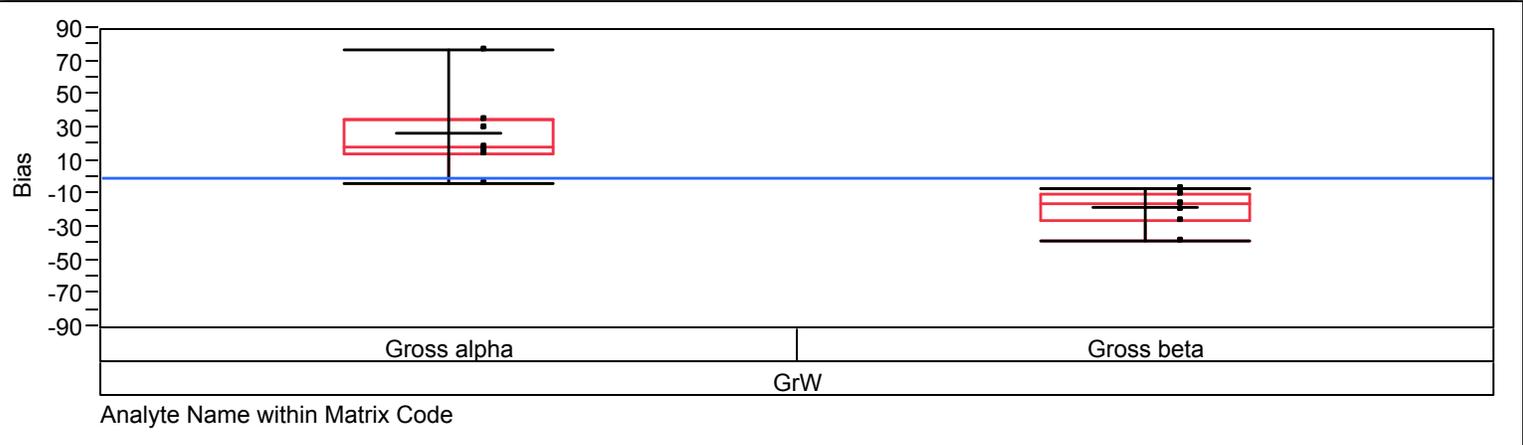
Variability Gauge Lab Code=RECC01

Variability Chart for Bias



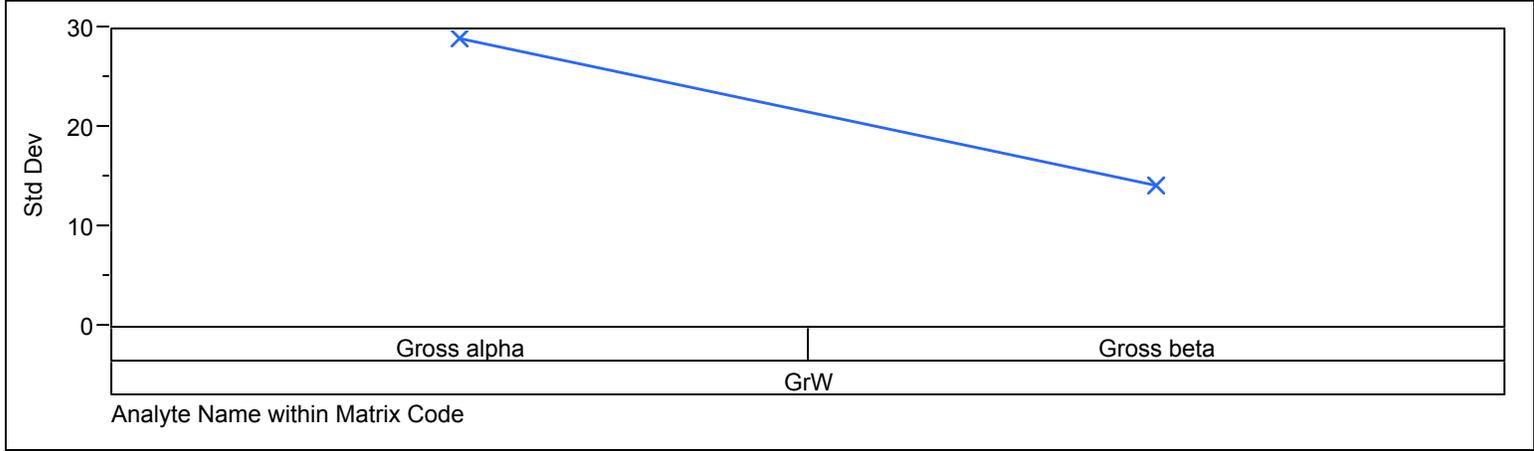
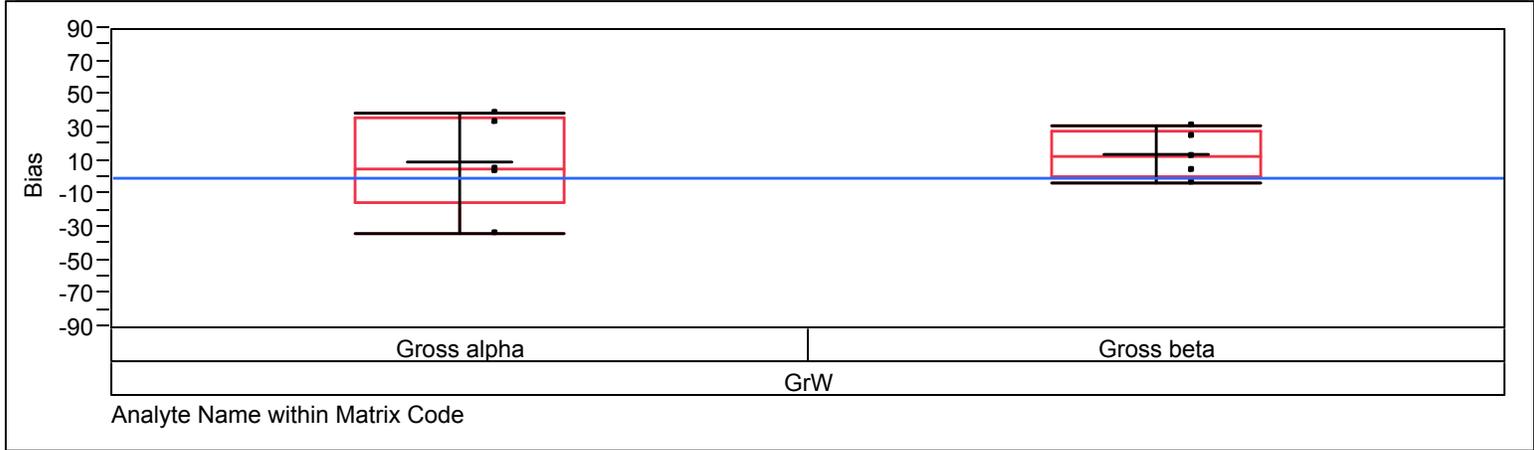
Variability Gauge Lab Code=RPSC01

Variability Chart for Bias



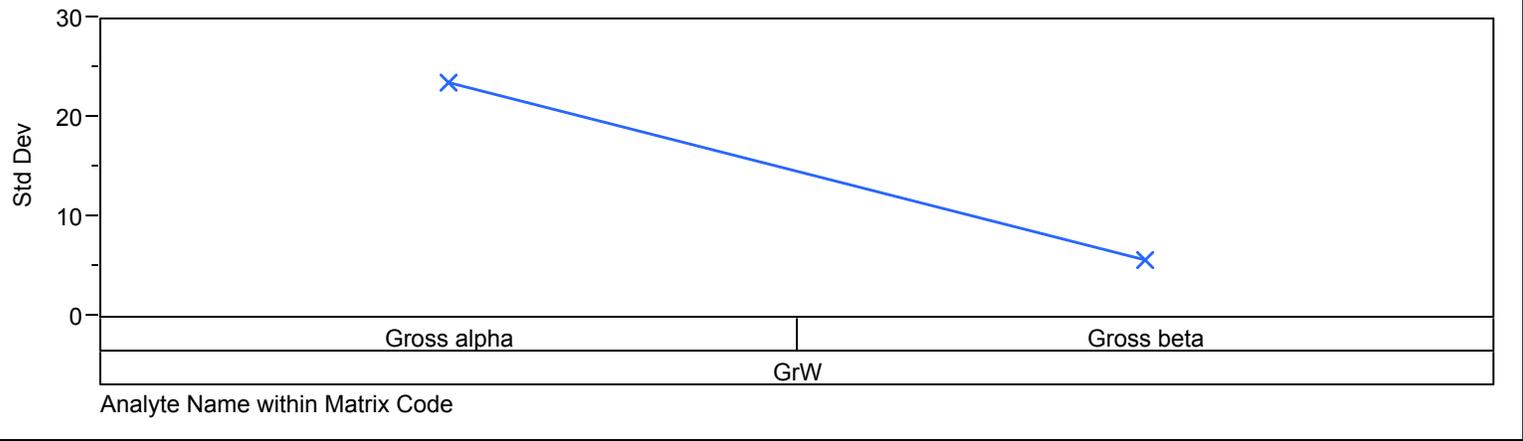
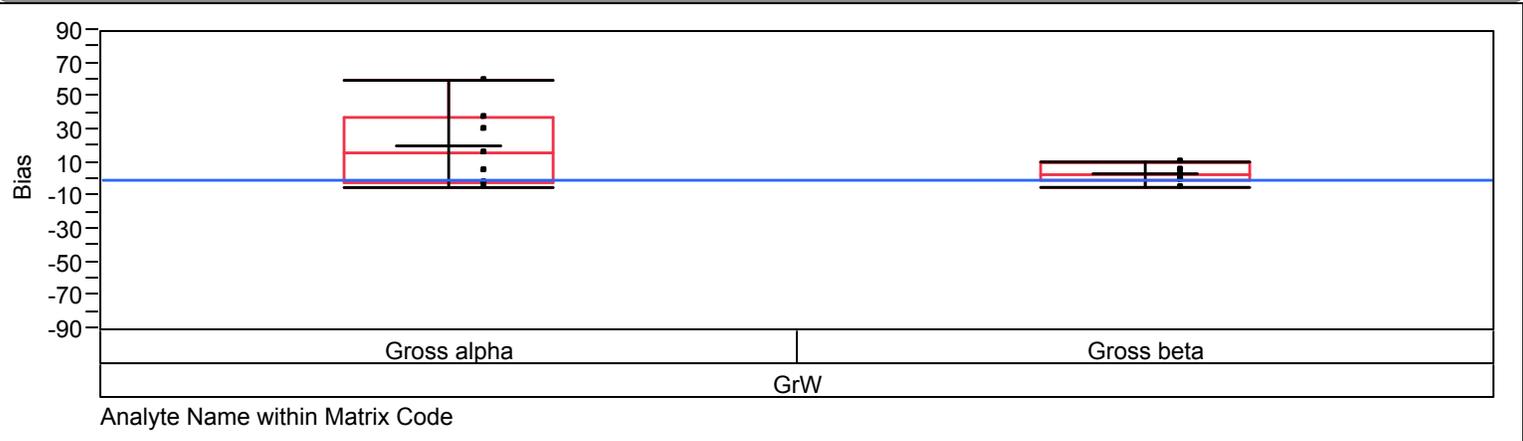
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Variability Chart for Bias



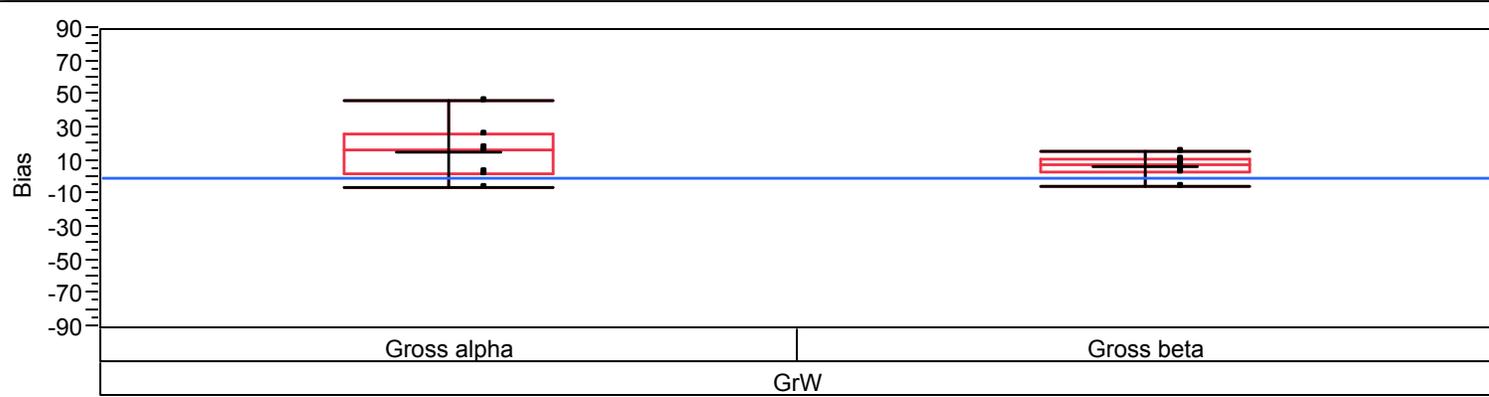
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Variability Chart for Bias

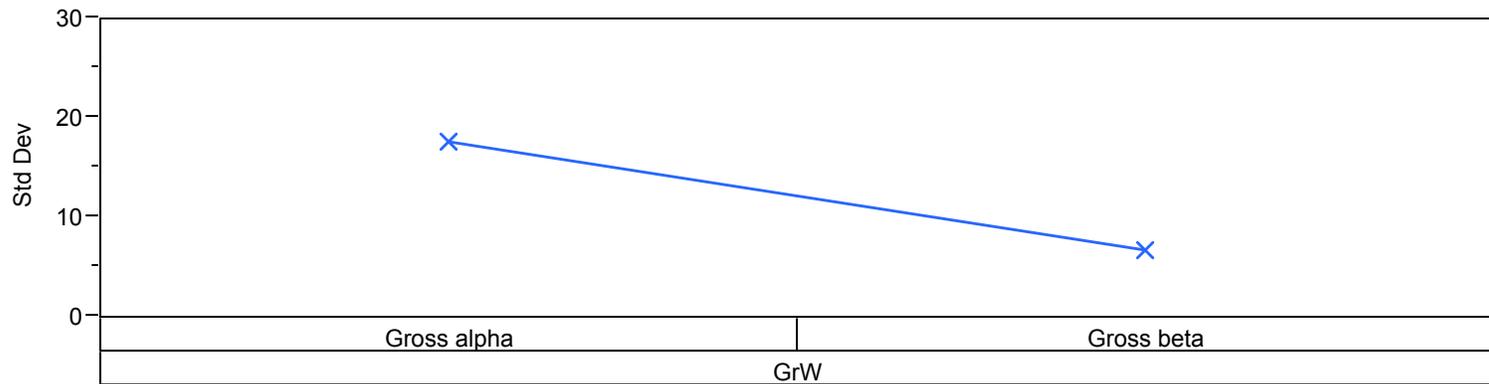


Variability Gauge Lab Code=SEML01

Variability Chart for Bias



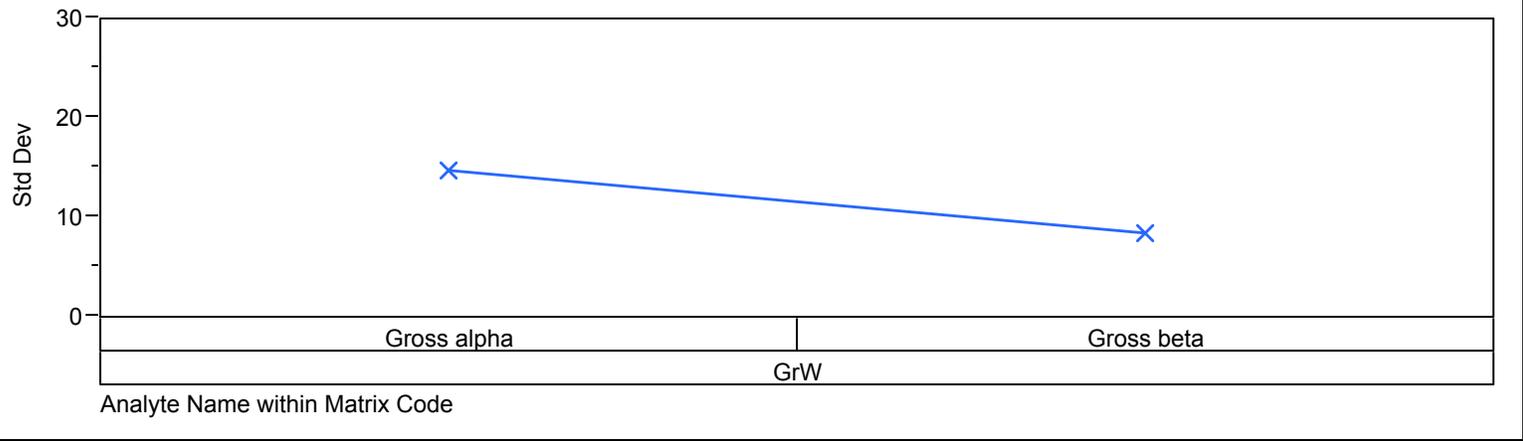
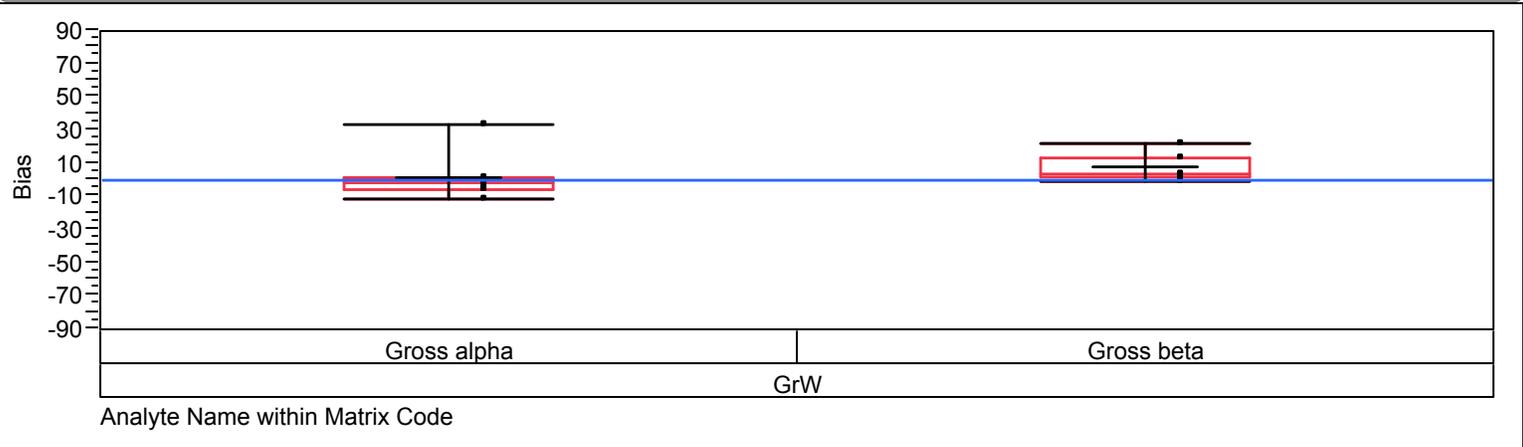
Analyte Name within Matrix Code



Analyte Name within Matrix Code

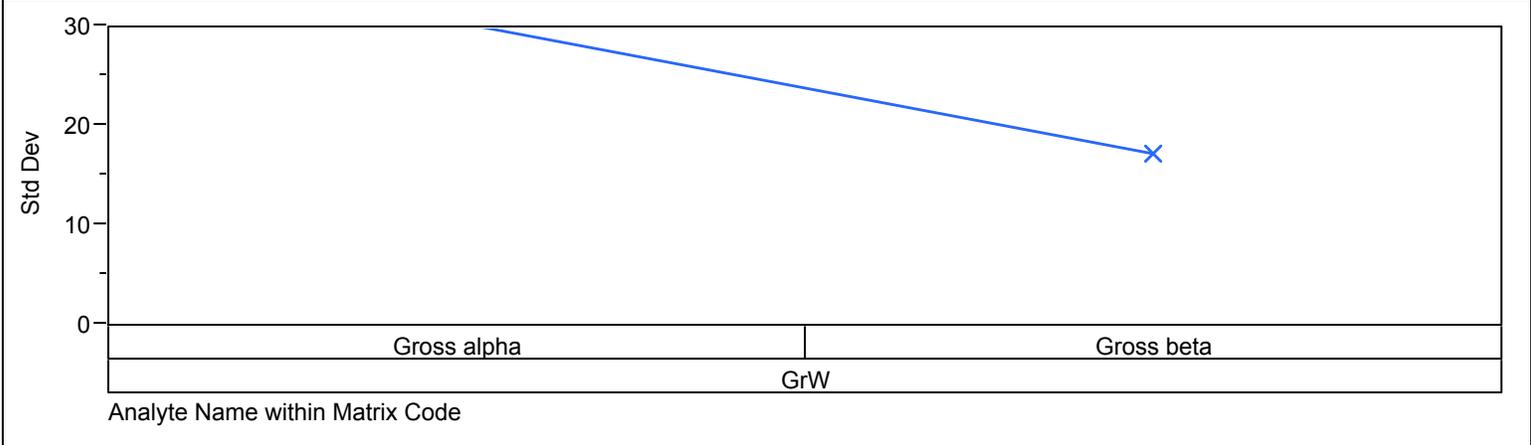
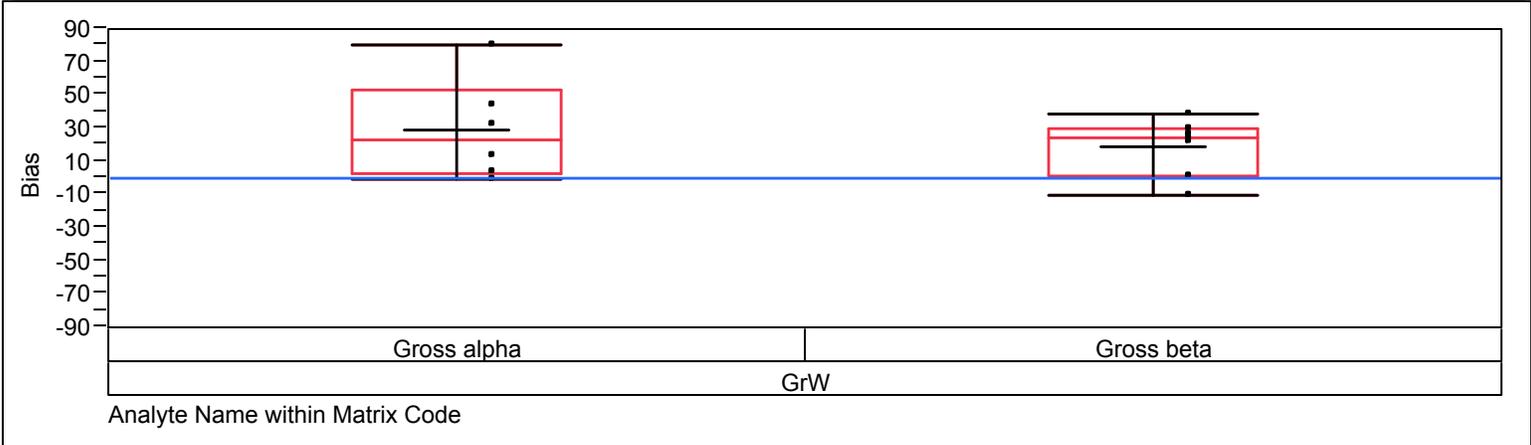
Variability Gauge Lab Code=SLDL01

Variability Chart for Bias



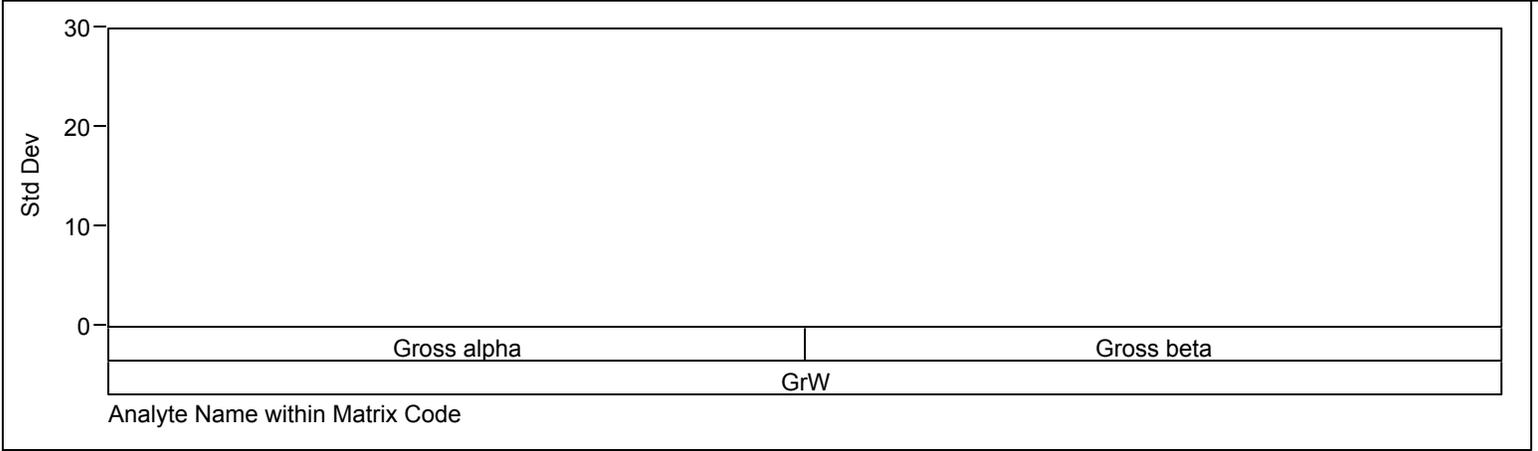
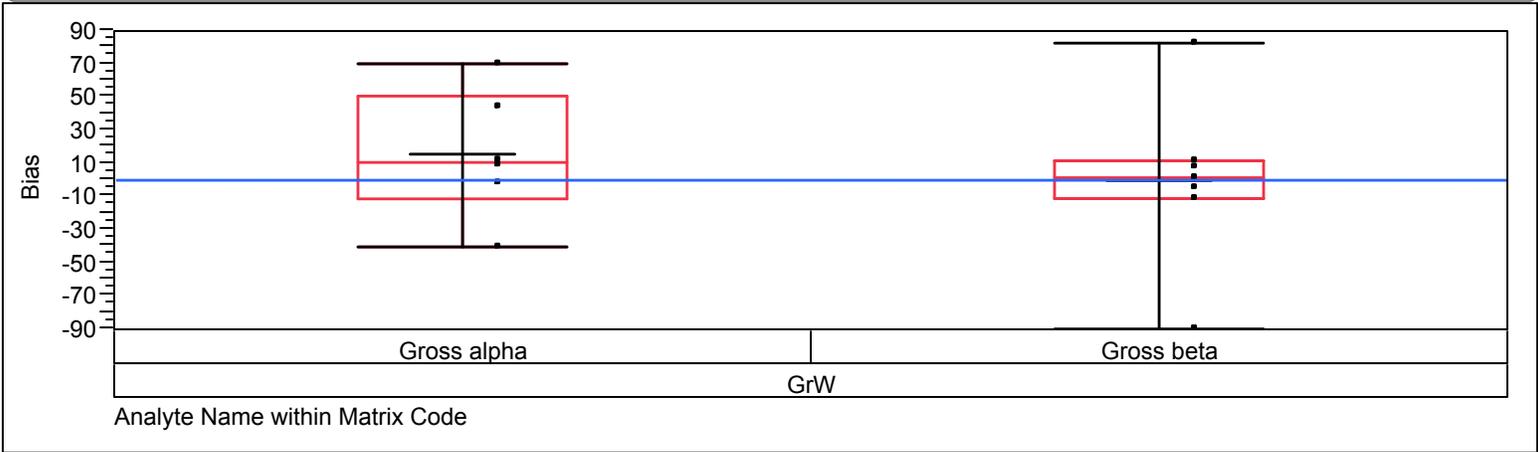
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Variability Chart for Bias



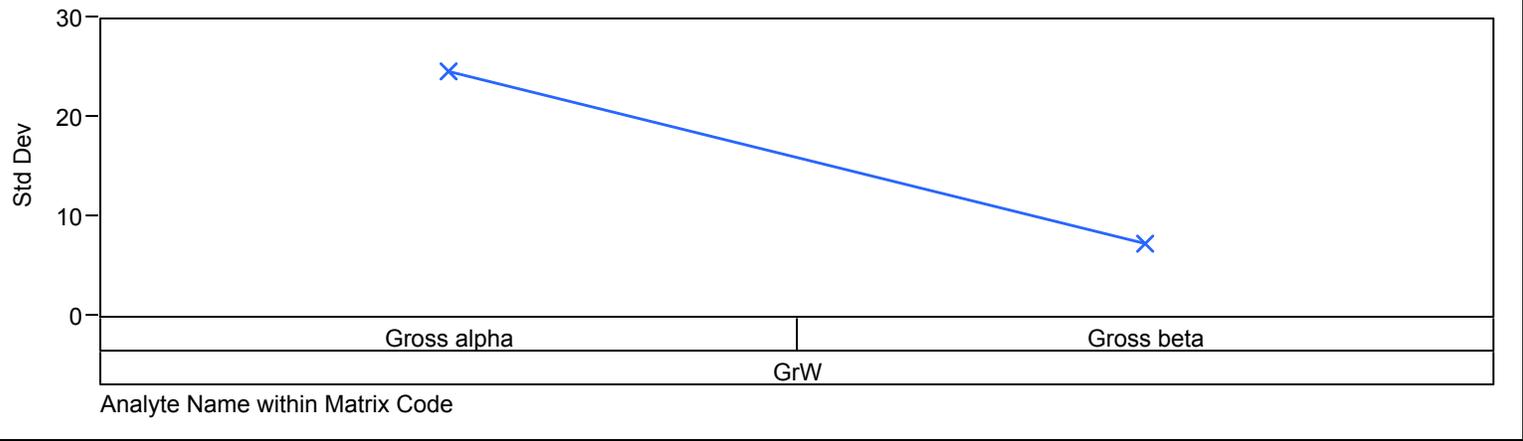
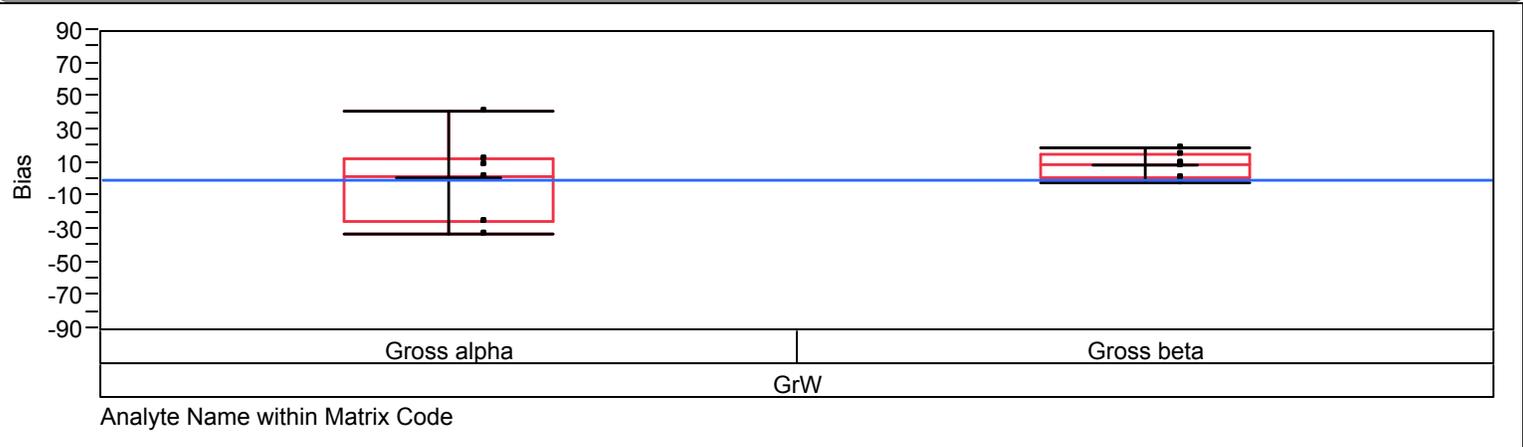
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Variability Chart for Bias



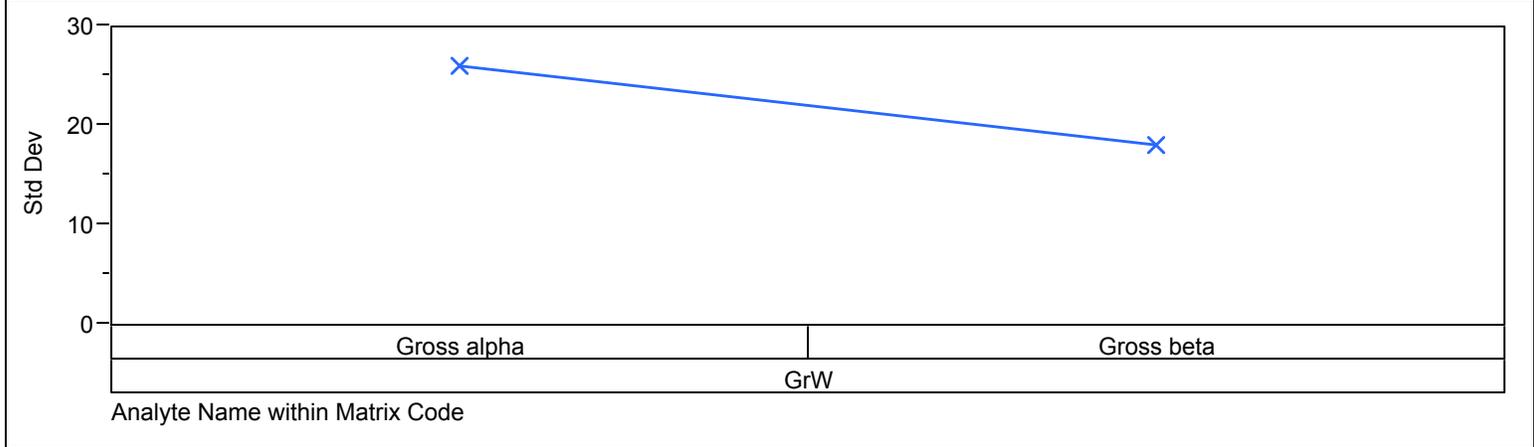
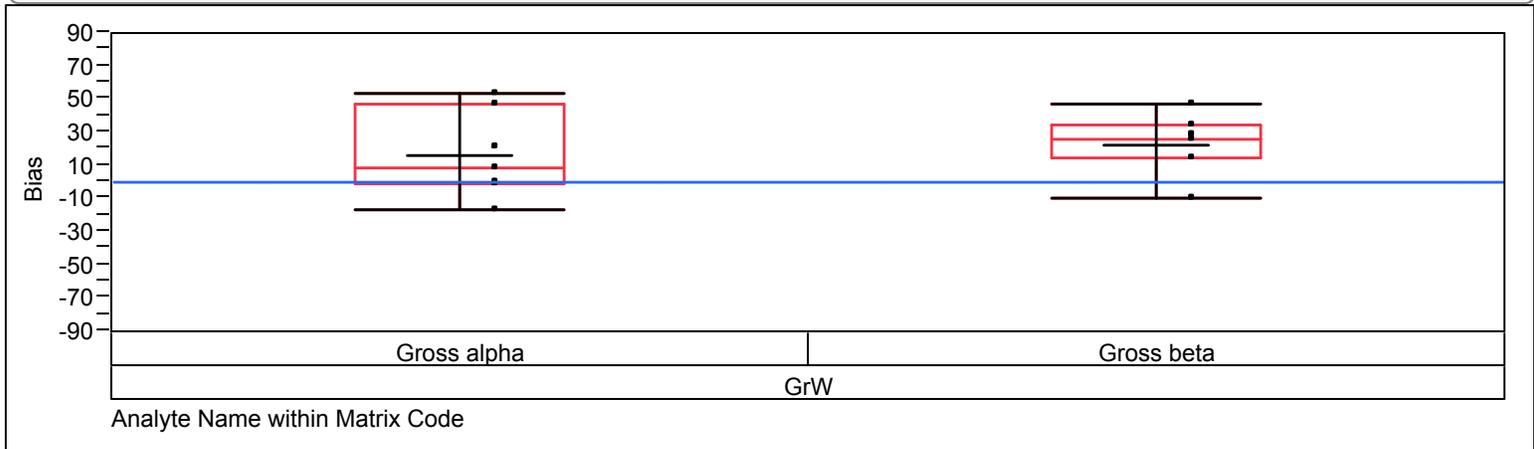
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Variability Chart for Bias



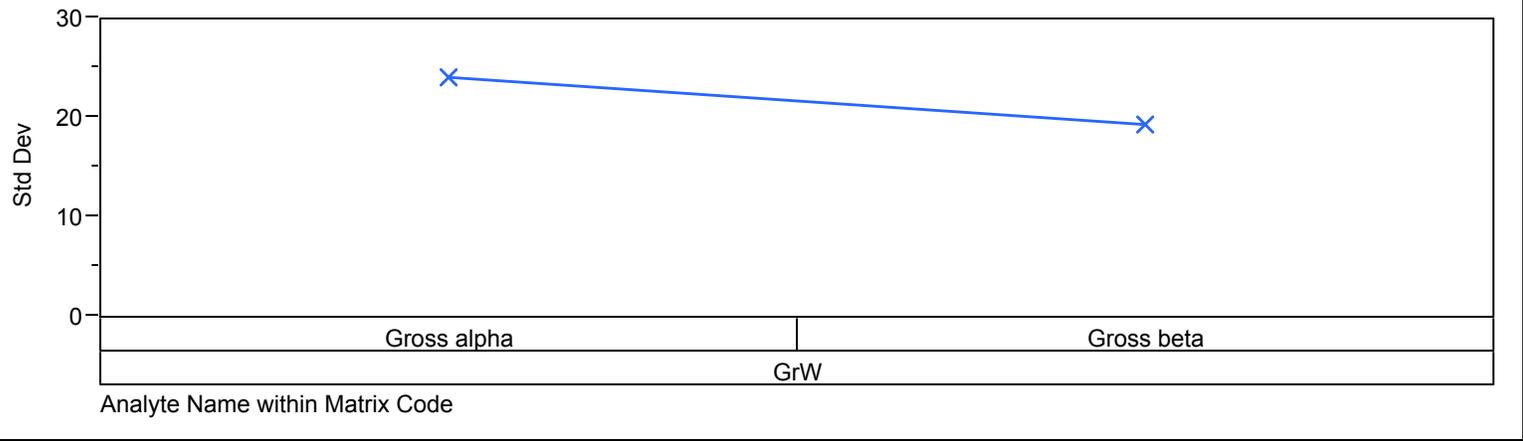
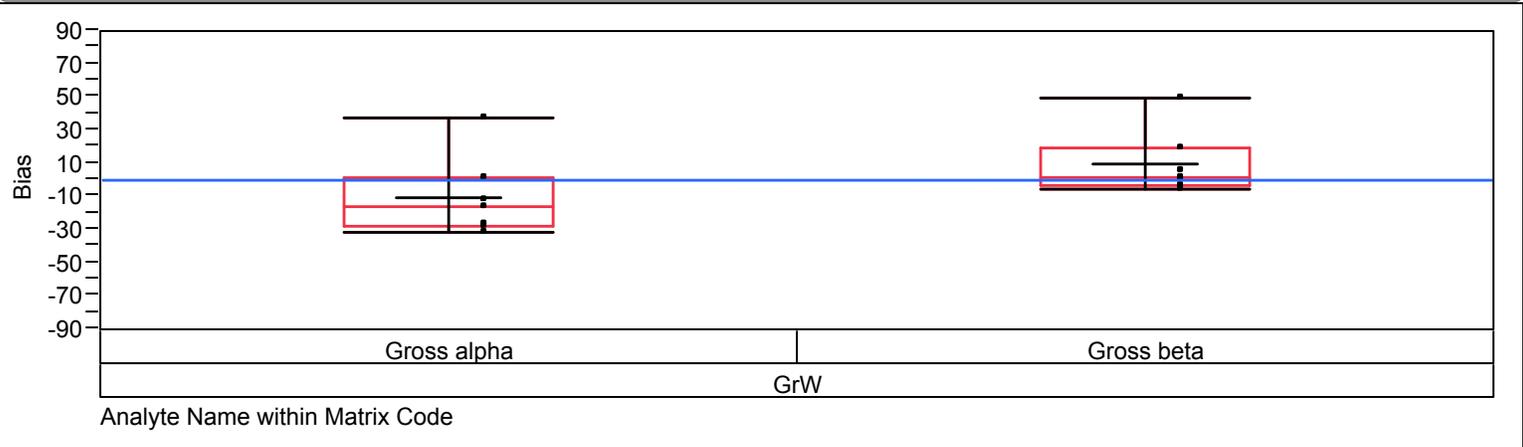
Variability Gauge Lab Code=TELE01

Variability Chart for Bias



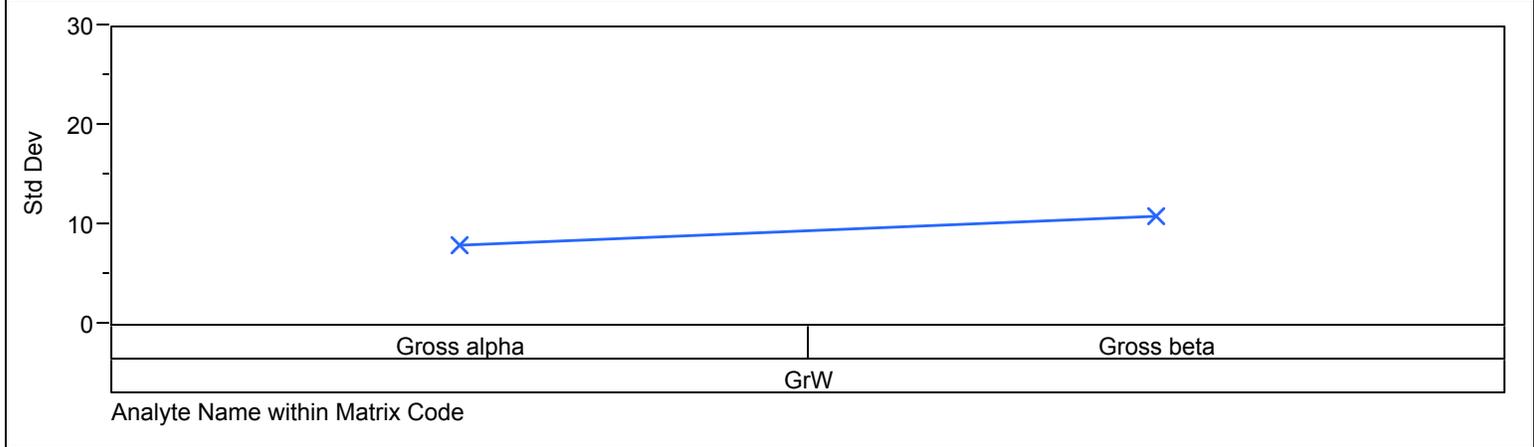
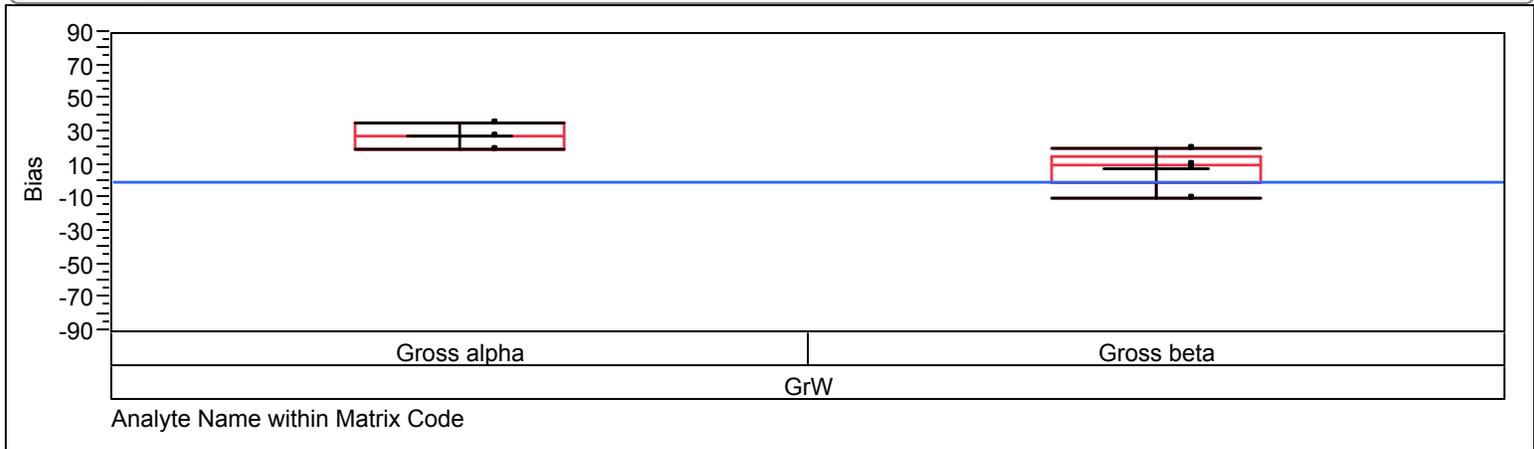
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Variability Chart for Bias



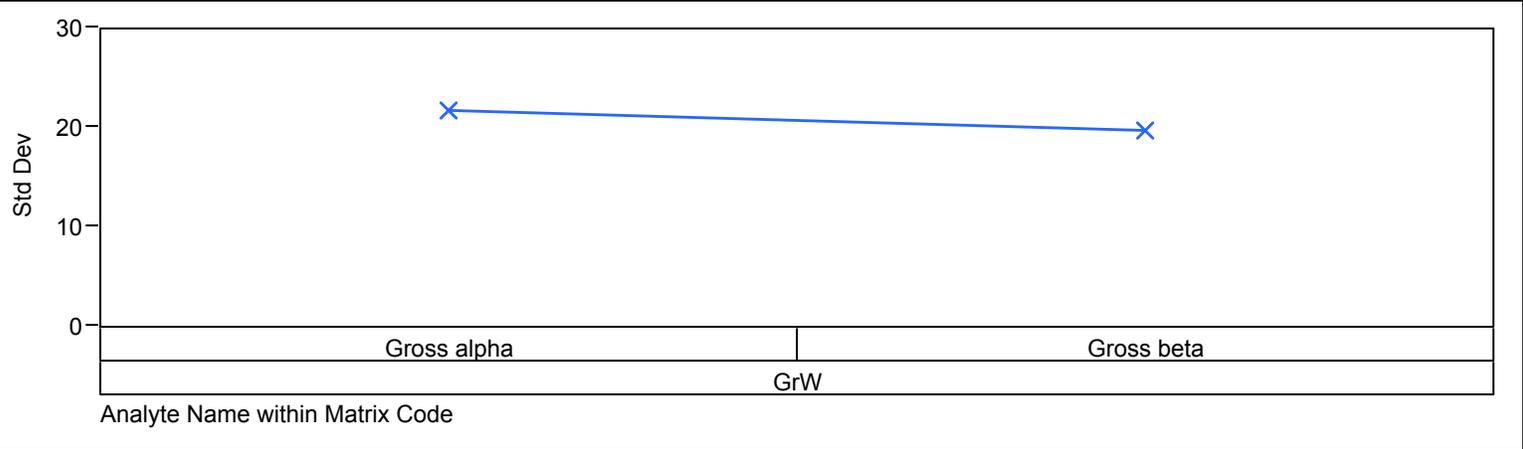
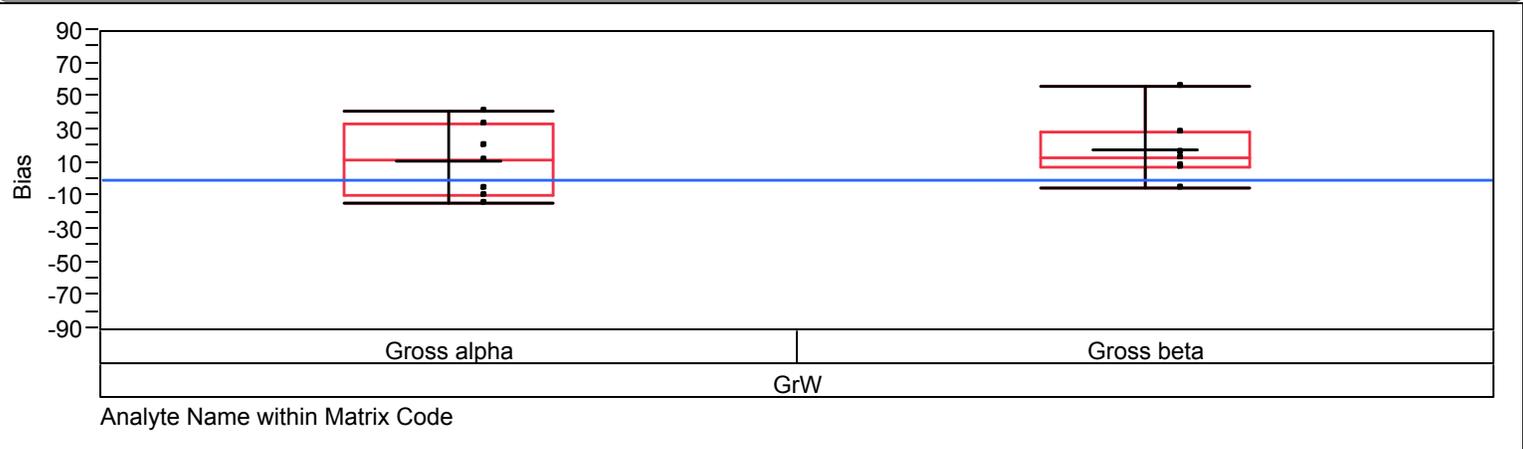
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Variability Chart for Bias



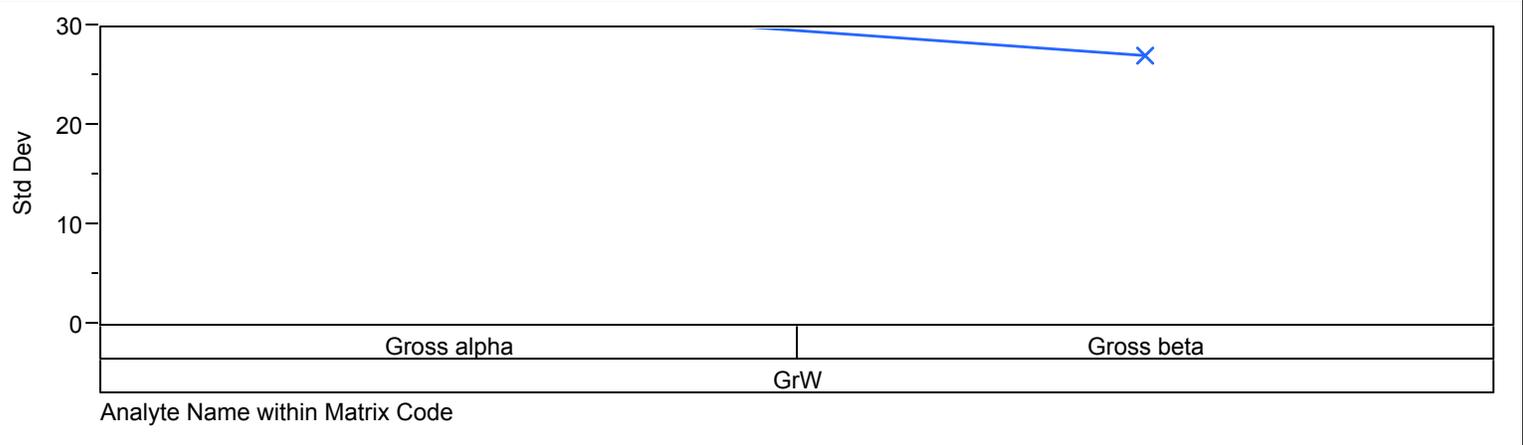
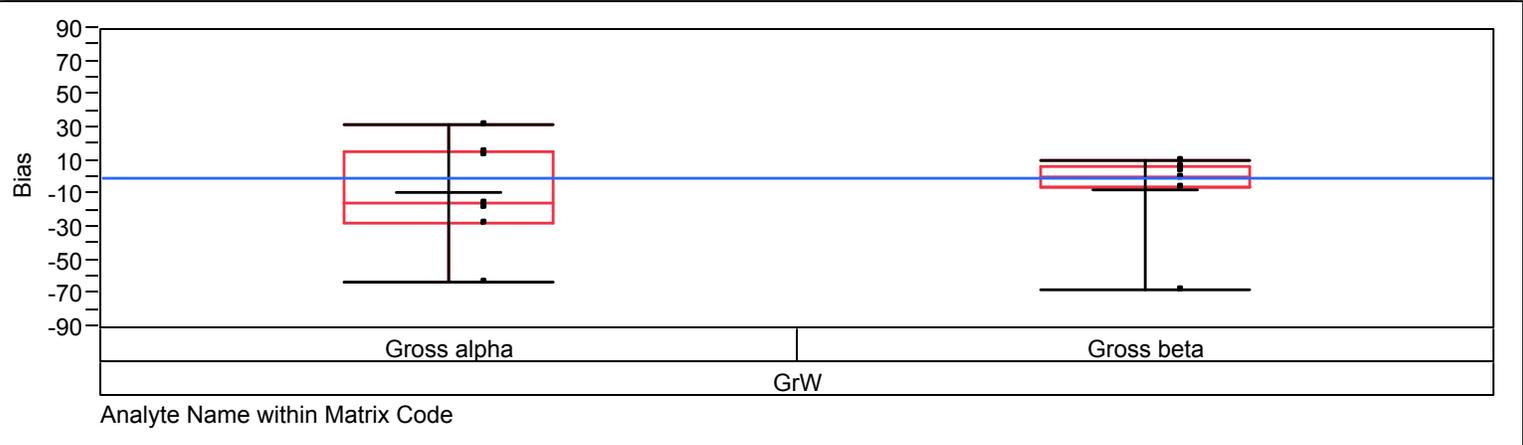
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Variability Chart for Bias



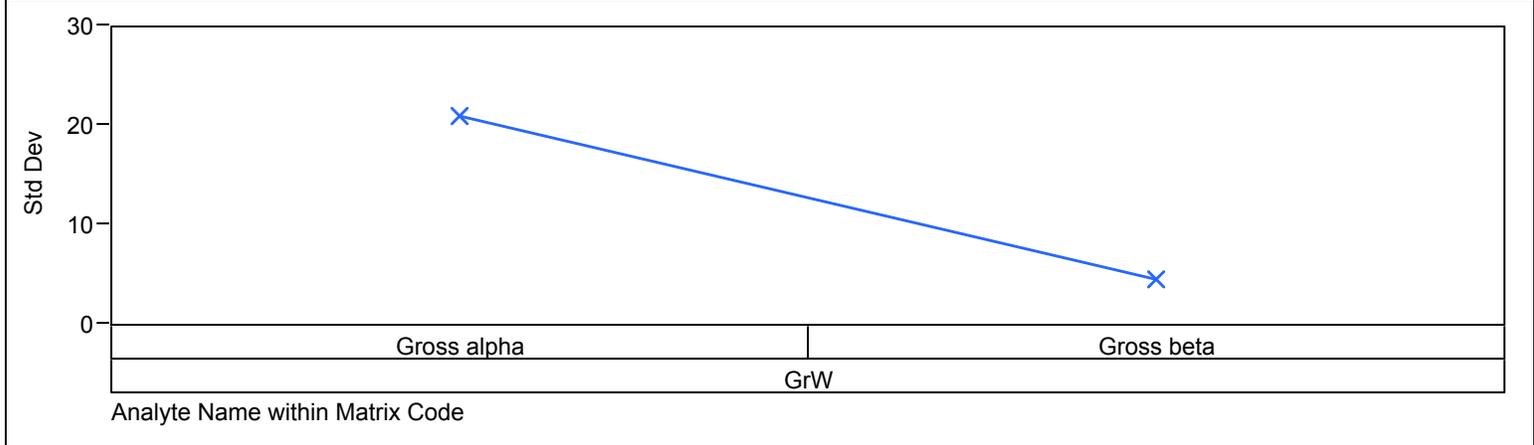
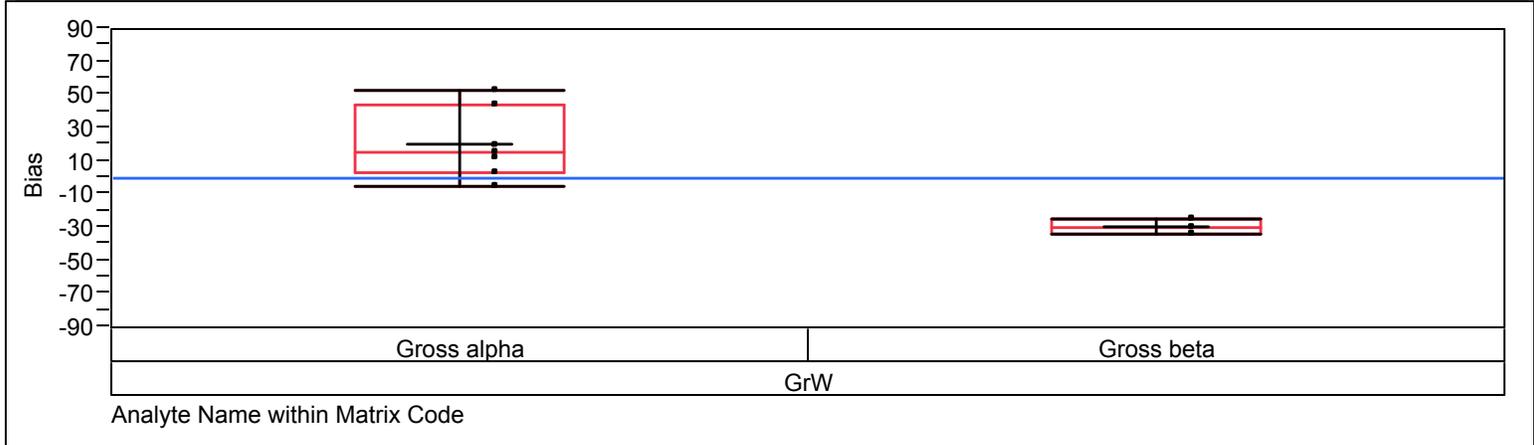
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Variability Chart for Bias



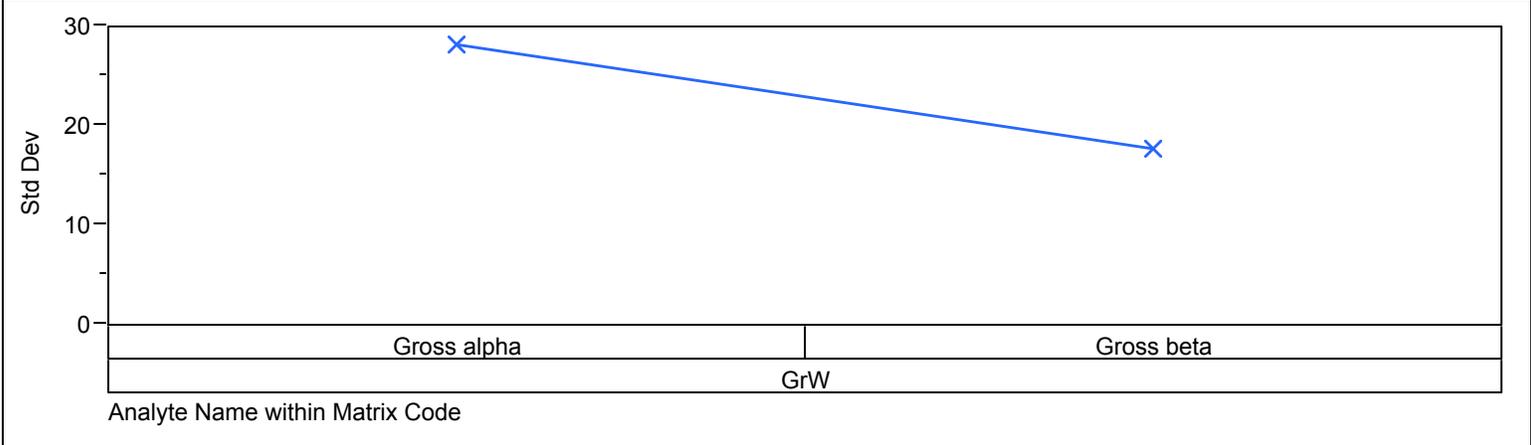
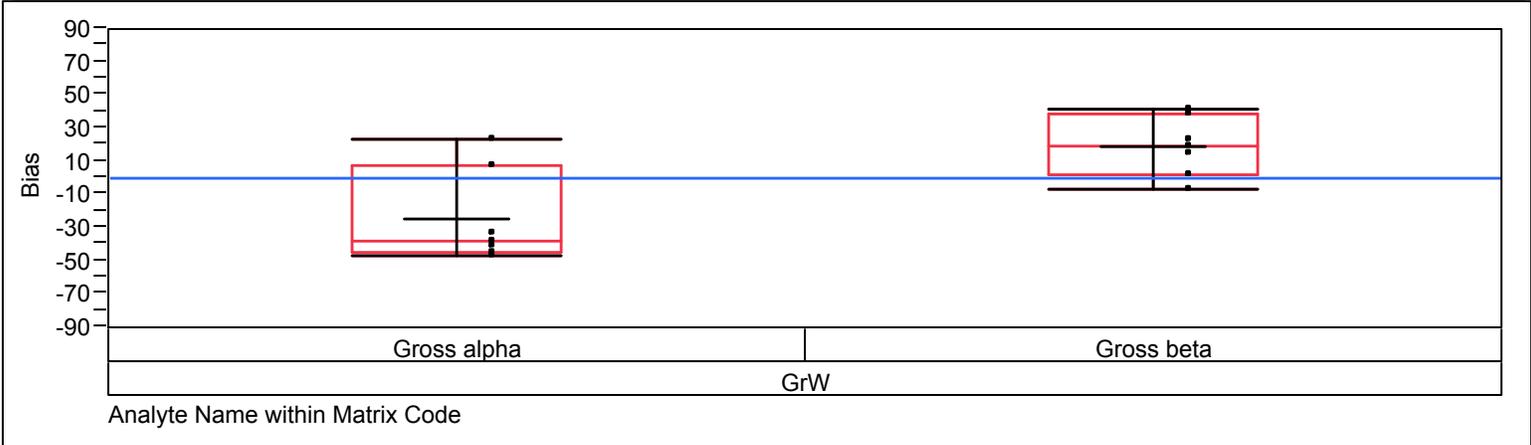
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Variability Chart for Bias



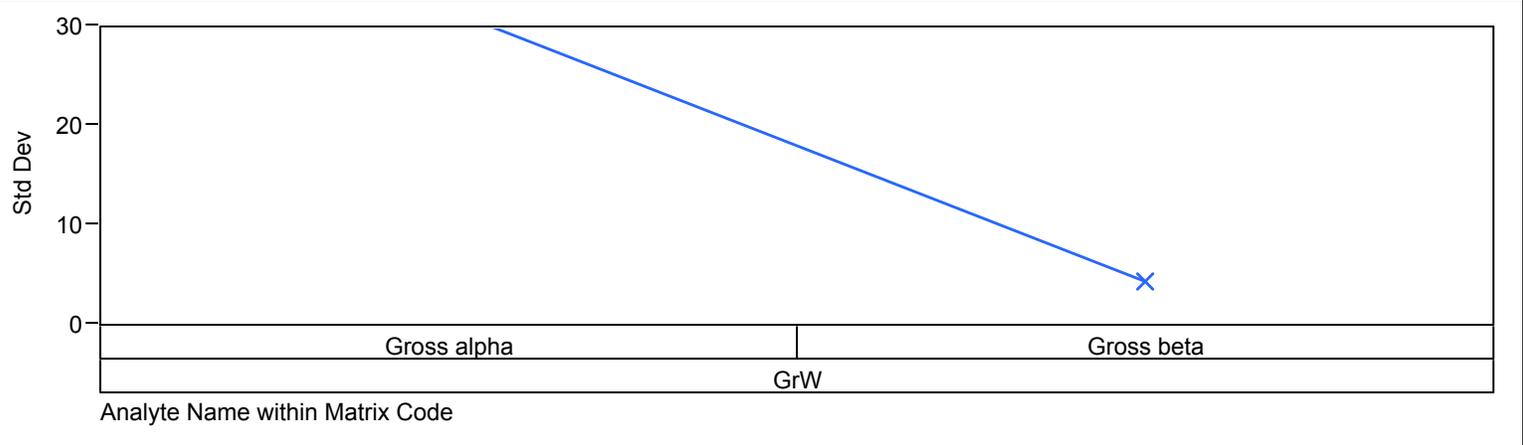
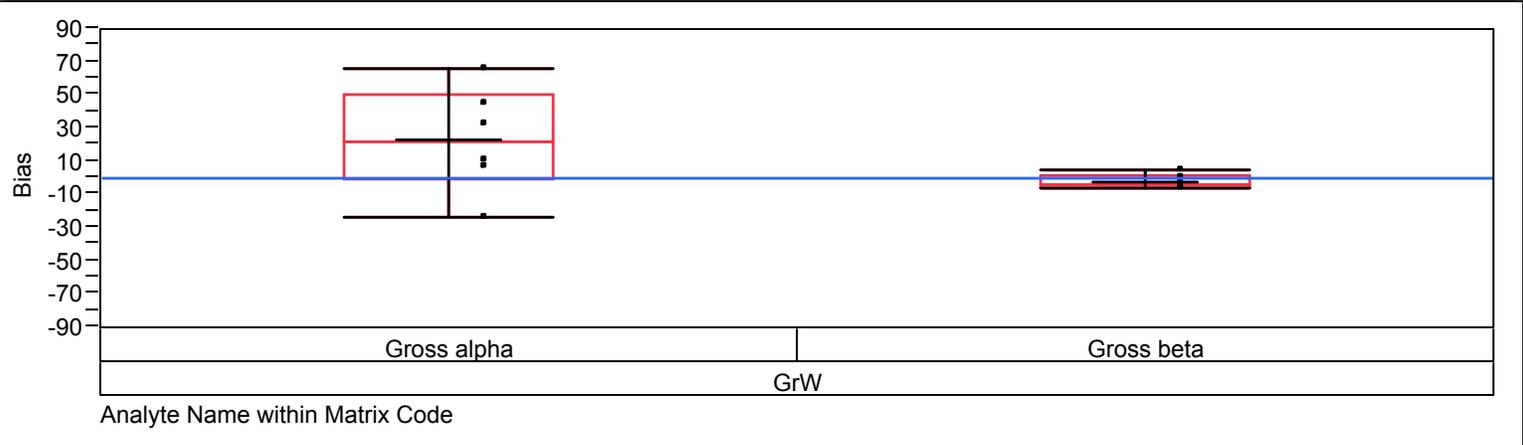
Variability Gauge Lab Code=WEST03

Variability Chart for Bias



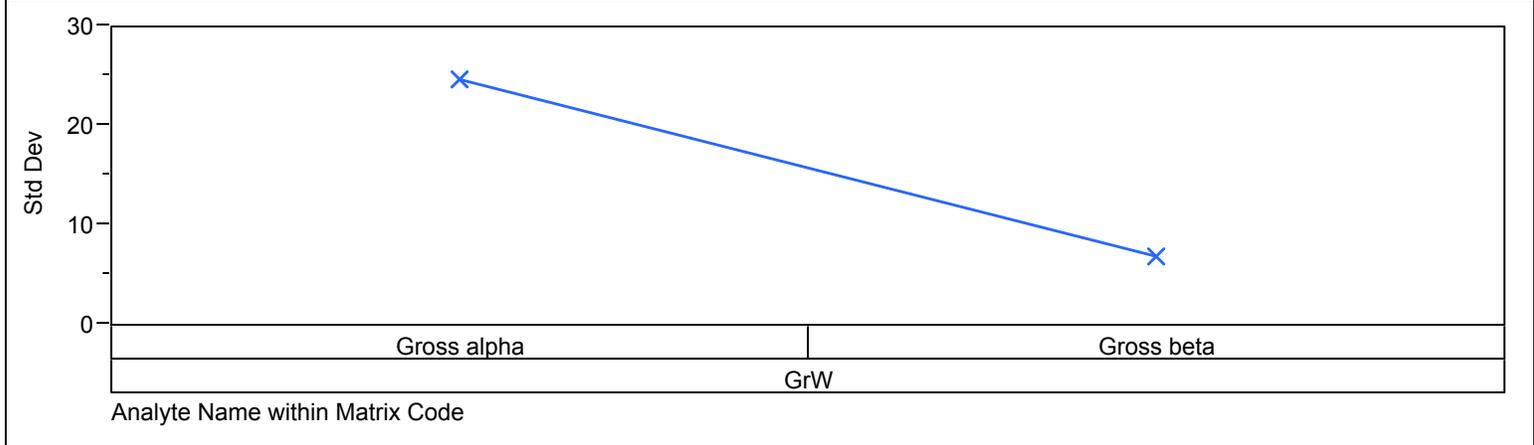
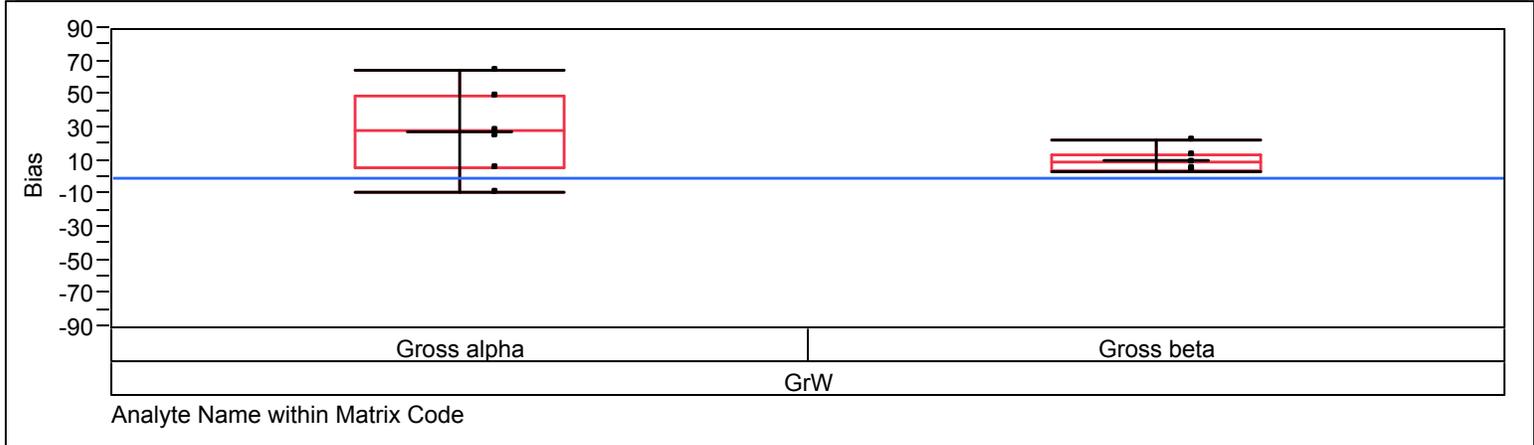
Variability Gauge Lab Code=WEST04

Variability Chart for Bias



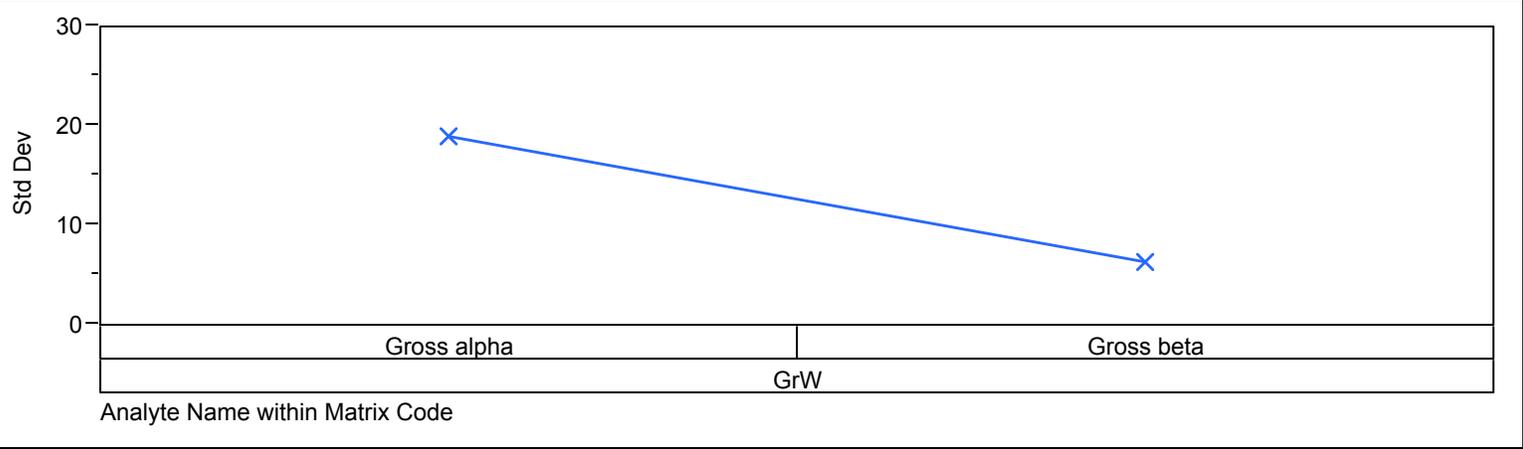
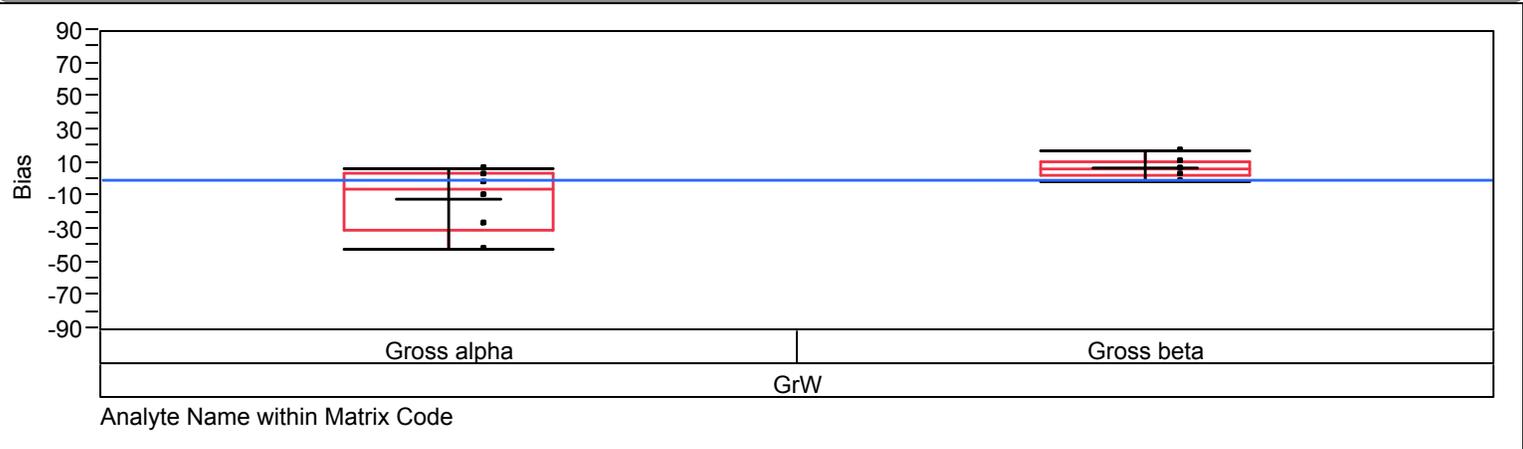
Variability Gauge Lab Code=WSHL01

Variability Chart for Bias



Variability Gauge Lab Code=WVDP01

Variability Chart for Bias



Variability Gauge Lab Code=WVNS01

Variability Chart for Bias

