

Lab Code U****A

Here is a sample of an Individual Report sent to participants in the CTS Rubber Interlaboratory Testing Program. You can view the Summary Reports of all participants' data on this Web site.

Lab Manager
Company Name
123 Main Street
Your town, Your state 12345

This is your Individual Report from Rubber Program Cycle # 139

For guidance on interpreting this report, please refer to the Report Guide, located in the Rubber section of our website www.collaborativetesting.com. If you need assistance with interpreting the statistics and terms used in the report, please reference the Key to Individual Reports that can be found on the reverse of this page or on the CTS Website. As always, you may contact the Rubber Program Analyst for assistance with any aspect of the program.

On each "Performance Analysis Report" there is a WebCode printed in the first column. Use your WebCodes to locate your results in the Summary Report that is now available on our Website. In order to maintain confidentiality, your WebCode will be unique for each analysis and will change with each report.

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Key to Individual Reports in the Rubber Program

- Lab Code** - Assigned laboratory identification number (permanent) used to maintain information on a confidential basis.

- WebCode** - Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Rubber Report published on the CTS Web site.

- Lab Mean** - Tensile & Hardness: the average of the median values obtained for each sample.
All other tests: the average of the test results obtained by the participant.

- Grand Mean** - The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

- Between-Lab Standard Deviation** - An indication of the precision of measurement between the laboratories.
- The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

- Comparative Performance Value** - An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa).

- Data Flag** - DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

Data Flag	Statistically Included/Excluded	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside the drawn 95% ellipse but within a 99% ellipse that is calculated but not drawn. Labs flagged with an * do not typically receive a specific note regarding the flag. If this error is repeated in future rounds, however, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two or more M flags for a test may need to stop and review its testing procedures.

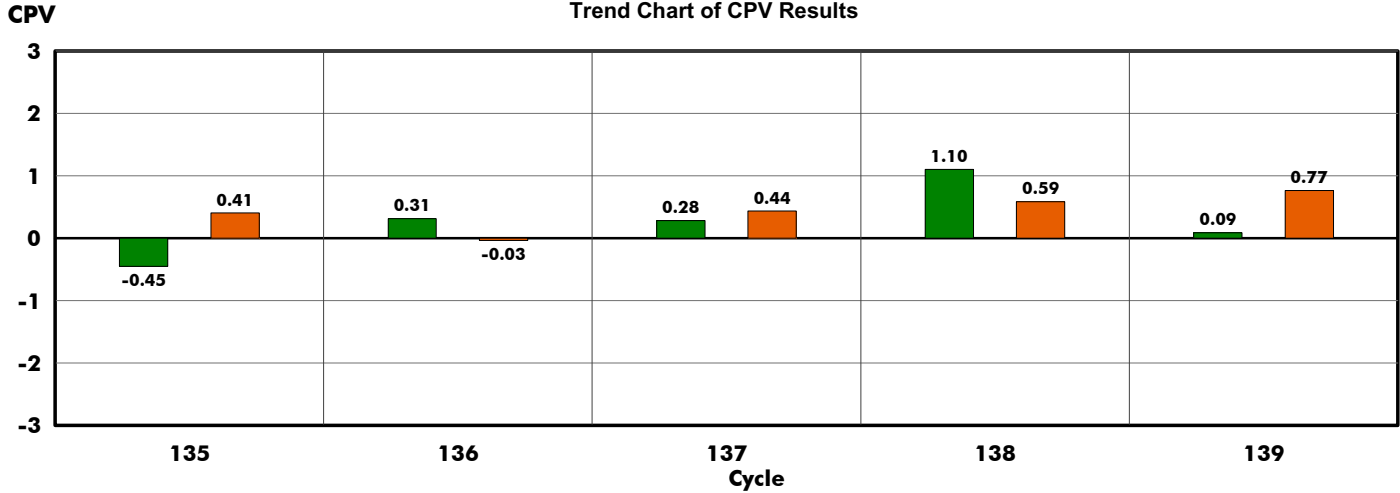
Graph

For each laboratory, the **Lab Mean** for the first sample (x-axis) is plotted against the **Lab Mean** for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the **Grand Means** for each sample. When 20 or more laboratories are included in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above. Labs not receiving a data flag appear points on the plot. Provided your data falls within the boundaries of the plot, your location on the plot will be indicated by a small circle.



Performance Analysis Report - Trend Chart
Analysis #605: Tensile Strength (psi)
using ASTM Method D412

Lab Code: U****A



A maximum of 5 test cycles are printed on this page. If there are fewer than 5 sets of bar graphs on the chart and the laboratory was enrolled for all cycles, then one of the following situations occurred: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

WebCode	Test Cycle	Sample Code	$\left(\begin{matrix} \text{Lab Mean} \\ - \\ \text{Grand Mean} \end{matrix} \right) \div$		Between Lab Std Dev	= CPV	Data Flag (if assigned)
AAAAA1	135 1st Qtr 03	A31-A32	3,151.5	3,209.82	130.26	-0.45	125 of 131 labs included
		A33-A34	3,272.0	3,215.68	138.61	0.41	
BBBBB1	136 2nd Qtr 03	B31-B32	3,235.5	3,196.09	125.75	0.31	132 of 138 labs included
		B33-B34	3,202.5	3,206.77	131.04	-0.03	
CCCCC1	137 3rd Qtr 03	C31-C32	3,384.0	3,339.41	157.43	0.28	130 of 136 labs included
		C33-C34	3,352.5	3,285.60	152.86	0.44	
DDDDD1	138 4th Qtr 03	D31-D32	3,290.8	3,136.97	139.28	1.10	131 of 140 labs included
		D33-D34	3,238.5	3,158.46	136.26	0.59	
EEEEEE1	139 1st Qtr 04	A41-A42	3,258.5	3,243.94	165.71	0.09	119 of 124 labs included
		A43-A44	3,360.5	3,240.05	157.03	0.77	

Sample Report

Current Cycle Performance Analysis Report #139 - 1st Qtr 04

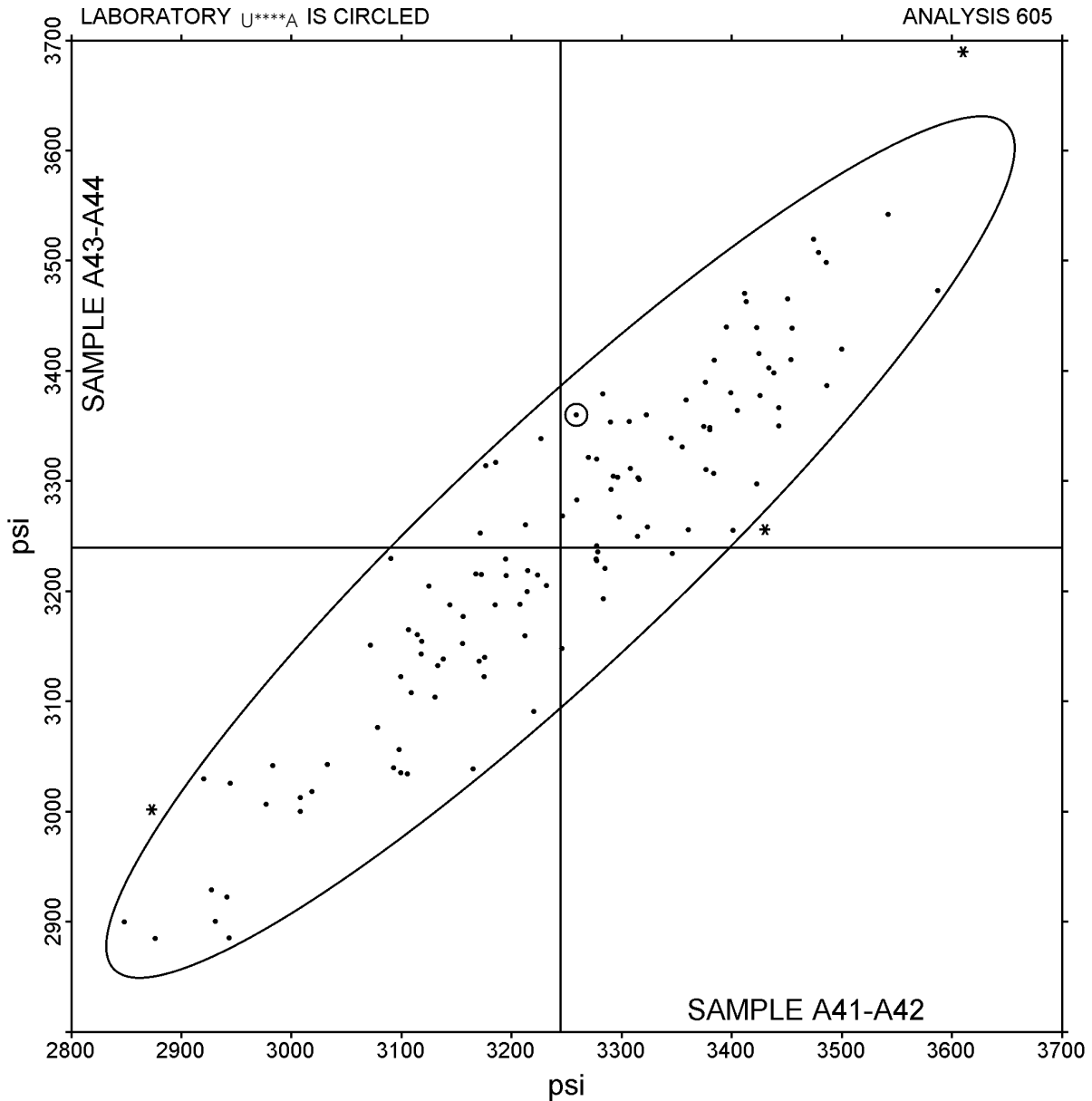
Analysis #605: Tensile Strength

Lab Code: U****A

Data in units of: psi

Sample Report

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WebCode	Data Flag	Sample A41-A42			Sample A43-A44		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

EEEE1		3,258.5	14.6	0.09	3,360.5	120.4	0.77
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Consensus Results (all laboratories)

Grand Means	3,243.94 psi	3,240.05 psi
Btwn Lab Standard Deviation	165.71 psi	157.03 psi
<i>Consensus statistics based on 119 of 124 reporting participants</i>		

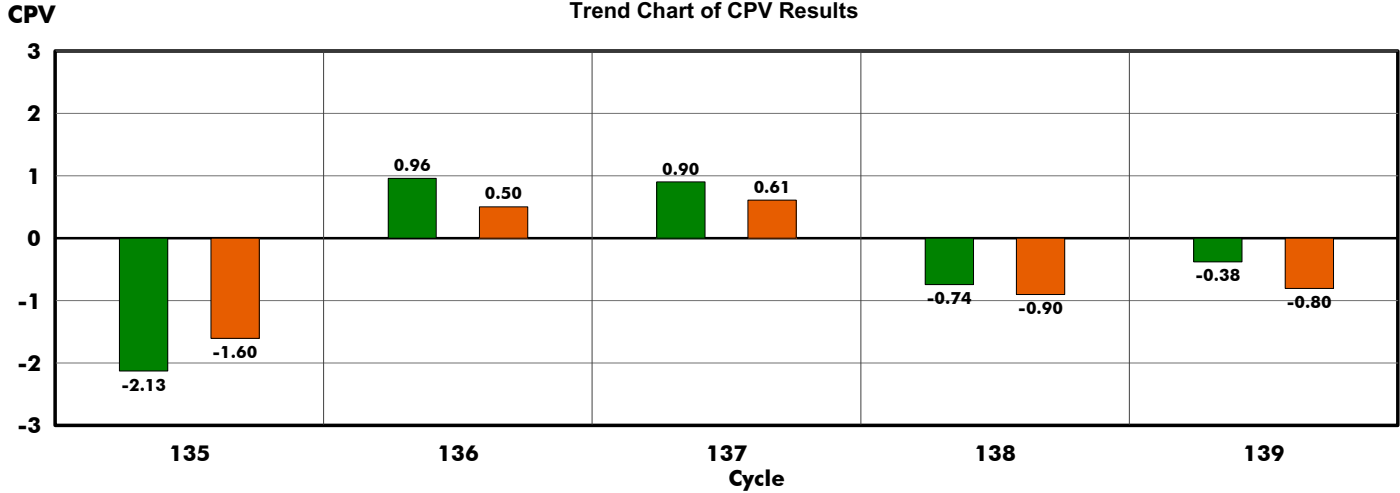
Consensus Results in SI Units

Grand Means (SI)	22.366 MPa	22.34 MPa
Btwn Lab Standard Deviation	1.143 MPa	1.08 MPa



Performance Analysis Report - Trend Chart
Analysis #606: Ultimate Elongation (percent)
using ASTM Method D412

Lab Code: U****A



A maximum of 5 test cycles are printed on this page. If there are fewer than 5 sets of bar graphs on the chart and the laboratory was enrolled for all cycles, then one of the following situations occurred: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

WebCode	Test Cycle	Sample Code	$\left(\begin{matrix} \text{Lab} \\ \text{Mean} \end{matrix} - \begin{matrix} \text{Grand} \\ \text{Mean} \end{matrix} \right) \div$		Between Lab Std Dev	= CPV	Data Flag (if assigned)
AAAAA2	135 1st Qtr 03	A31-A32	497.5	548.77	24.10	-2.13	117 of 128 labs included
		A33-A34	512.0	549.56	23.41	-1.60	
BBBBB2	136 2nd Qtr 03	B31-B32	569.5	548.89	21.43	0.96	128 of 137 labs included
		B33-B34	562.0	551.12	21.66	0.50	
CCCCC2	137 3rd Qtr 03	C31-C32	585.0	562.39	25.04	0.90	124 of 134 labs included
		C33-C34	575.0	559.41	25.55	0.61	
DDDDD2	138 4th Qtr 03	D31-D32	562.5	578.78	21.90	-0.74	123 of 139 labs included
		D33-D34	559.5	578.53	21.13	-0.90	
EEEEEE2	139 1st Qtr 04	A41-A42	582.0	591.00	23.71	-0.38	111 of 123 labs included
		A43-A44	572.5	591.15	23.18	-0.80	

Sample Report

Current Cycle Performance Analysis Report #139 - 1st Qtr 04

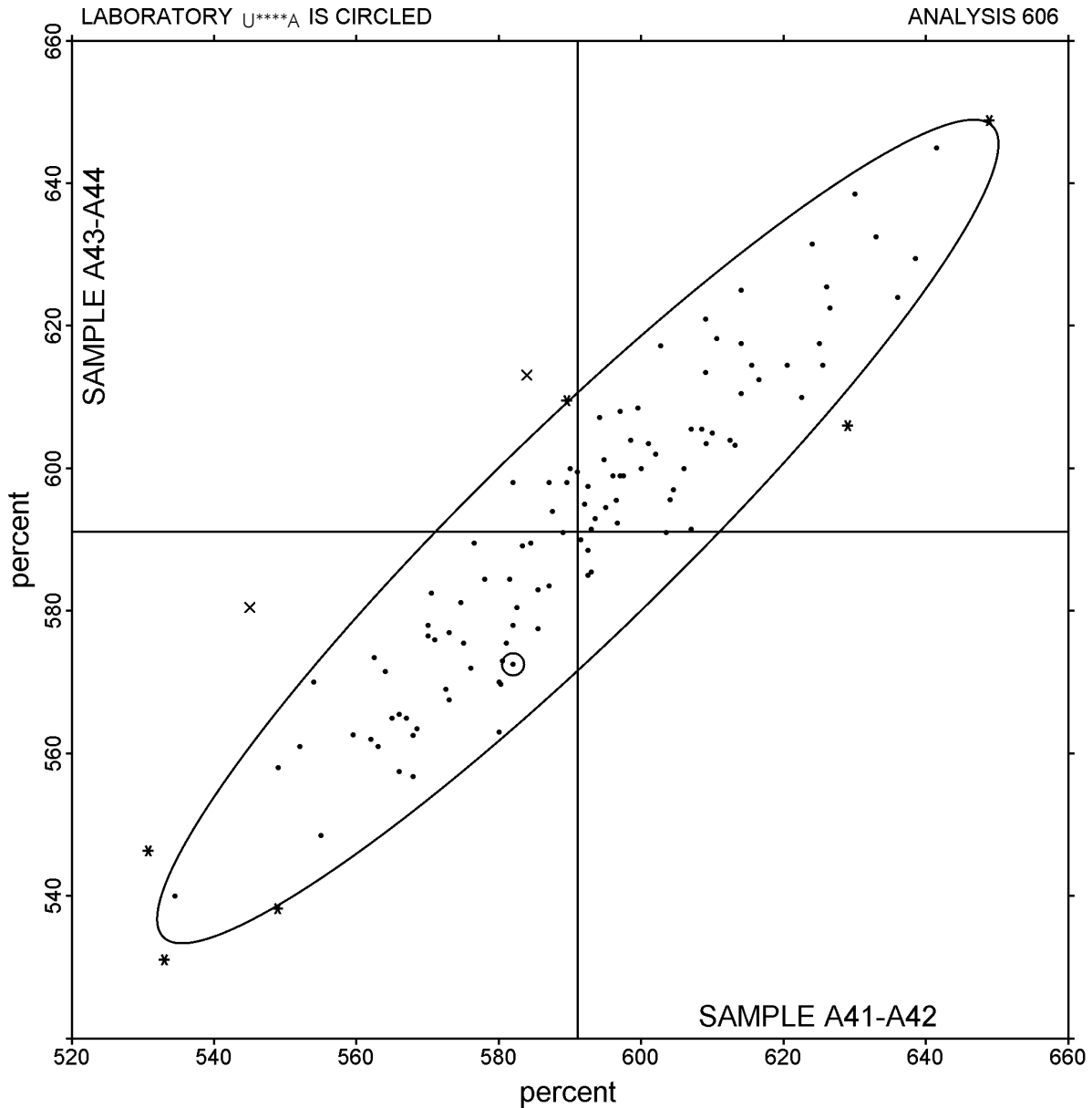
Analysis #606: Ultimate Elongation

Lab Code: U****A

Data in units of: percent

Sample Report

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WebCode	Data Flag	Sample A41-A42			Sample A43-A44		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

EEEE2	582.0	-9.0	-0.38	572.5	-18.7	-0.80
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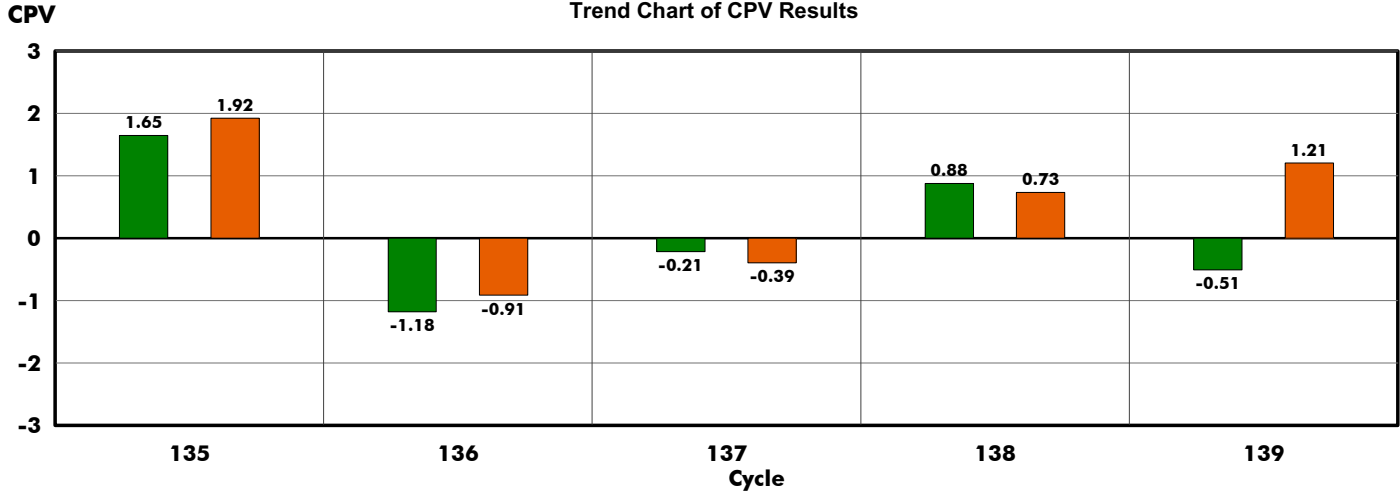
Consensus Results (all laboratories)

Grand Means	591.00 percent	591.15 percent
Btwn Lab Standard Deviation	23.71 percent	23.18 percent
<i>Consensus statistics based on 111 of 123 reporting participants</i>		



Performance Analysis Report - Trend Chart
Analysis #607: Stress at 300% Elongation (psi)
using ASTM Method D412

Lab Code: U****A



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WebCode	Test Cycle	Sample Code	Lab Mean	Grand Mean	Between Lab Std Dev	CPV	Data Flag (if assigned)
AAAAA3	135 1st Qtr 03	A31-A32	1,421.0	1,277.16	87.41	1.65	111 of 126 labs included
		A33-A34	1,449.0	1,280.66	87.54	1.92	
BBBBB3	136 2nd Qtr 03	B31-B32	1,159.5	1,258.81	84.30	-1.18	124 of 131 labs included
		B33-B34	1,170.5	1,251.68	89.18	-0.91	
CCCCC3	137 3rd Qtr 03	C31-C32	1,251.0	1,273.06	102.98	-0.21	120 of 130 labs included
		C33-C34	1,220.0	1,262.36	107.54	-0.39	
DDDDD3	138 4th Qtr 03	D31-D32	1,094.2	1,030.01	72.83	0.88	122 of 132 labs included
		D33-D34	1,121.7	1,065.22	77.01	0.73	
EEEEEE3	139 1st Qtr 04	A41-A42	1,001.0	1,037.62	72.32	-0.51	107 of 113 labs included
		A43-A44	1,113.5	1,029.12	69.97	1.21	

Data not reported for sample A41. Reported results suggest slight inconsistency in testing.

Sample Report

Current Cycle Performance Analysis Report #139 - 1st Qtr 04

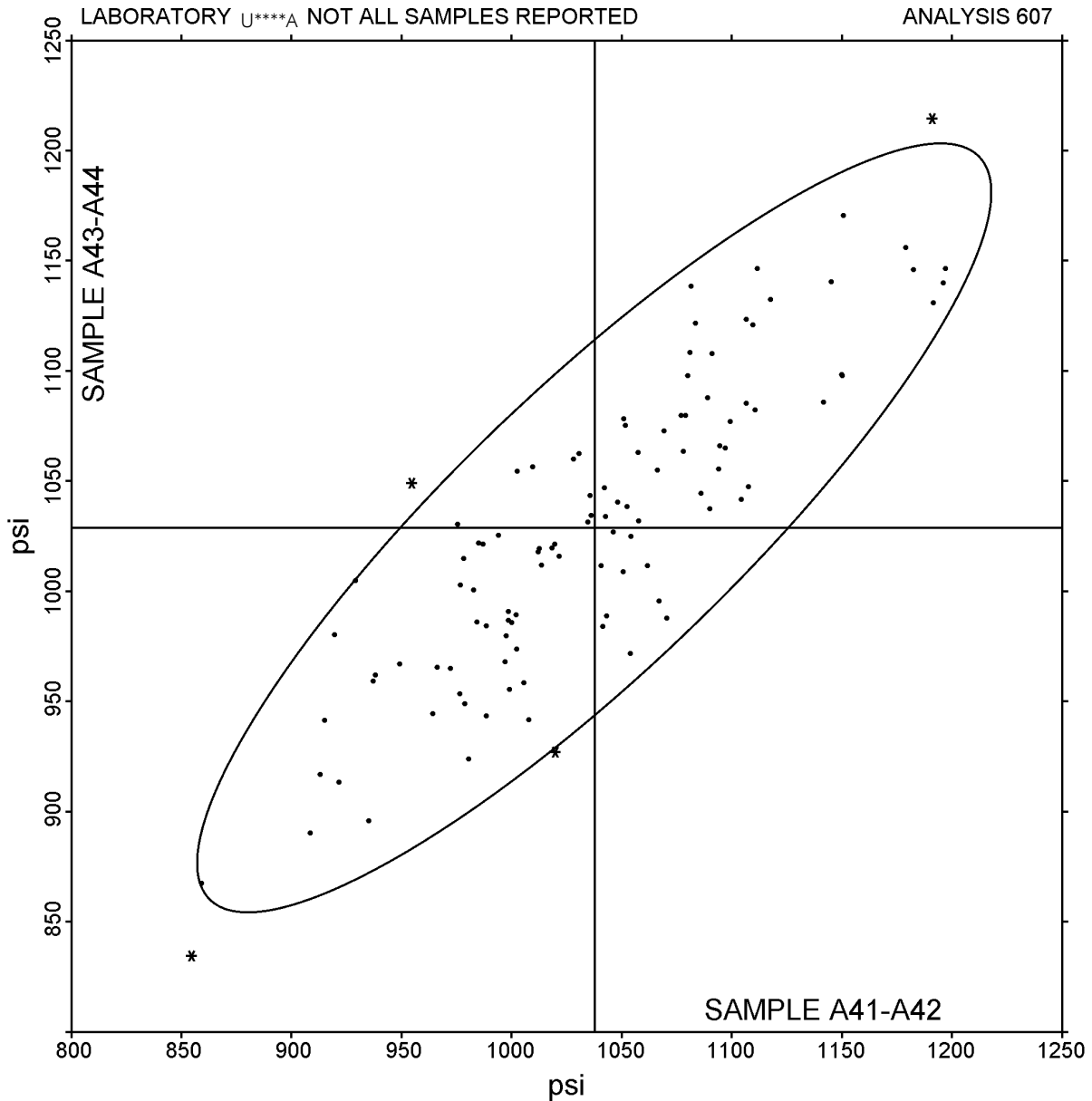
Analysis #607: Stress at 300% Elongation

Lab Code: U****A

Data in units of: psi

Sample Report

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WebCode	Data Flag	Sample A41-A42			Sample A43-A44		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

EEEE3	M	1,001.0	-36.6	-0.51	1,113.5	84.4	1.21
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Consensus Results (all laboratories)

Grand Means	1,037.62 psi	1,029.12 psi
Btwn Lab Standard Deviation	72.32 psi	69.97 psi
<i>Consensus statistics based on 107 of 113 reporting participants</i>		

Consensus Results in SI Units

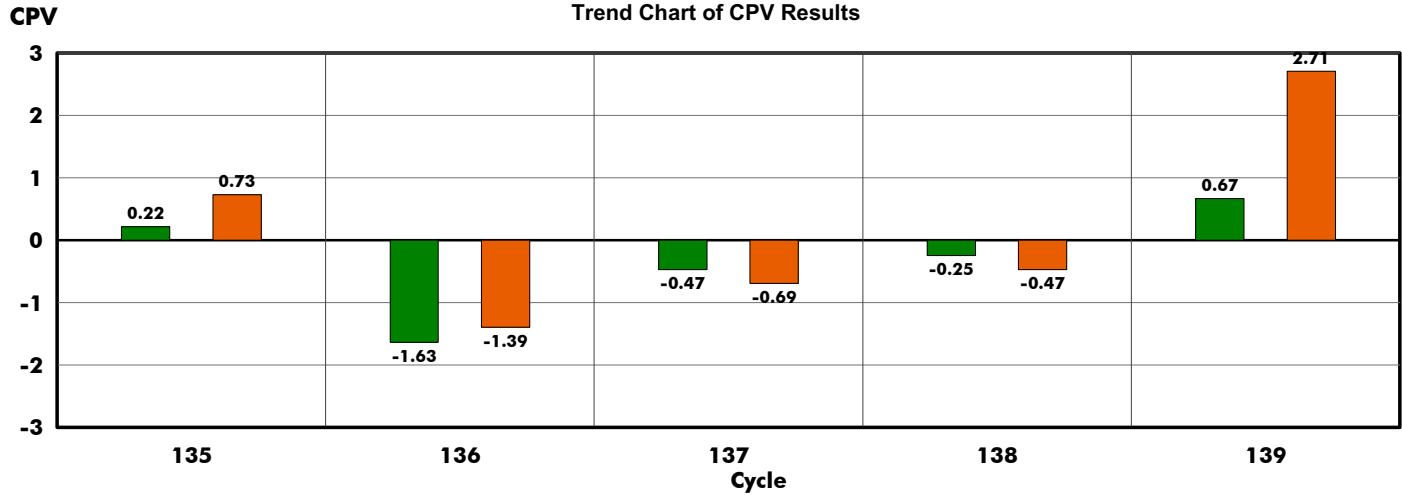
Grand Means (SI)	7.1541 MPa	7.10 MPa
Btwn Lab Standard Deviation	0.4986 MPa	0.48 MPa



Performance Analysis Report - Trend Chart
Analysis #608: Stress at 100% Elongation (psi)
using ASTM Method D412

Lab Code: U****A

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A maximum of 5 test cycles are printed on this page. If there are fewer than 5 sets of bar graphs on the chart and the laboratory was enrolled for all cycles, then one of the following situations occurred: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

WebCode	Test Cycle	Sample Code	$\left(\begin{matrix} \text{Lab Mean} \\ - \\ \text{Grand Mean} \end{matrix} \right) \div$		Between Lab Std Dev	=	CPV	Data Flag (if assigned)
AAAAA4	135 1st Qtr 03	A31-A32	257.5	253.74	17.23		0.22	113 of 124 labs included
		A33-A34	267.5	254.96	17.15		0.73	
BBBBB4	136 2nd Qtr 03	B31-B32	226.5	251.52	15.33		-1.63	122 of 129 labs included
		B33-B34	227.5	250.63	16.62		-1.39	
CCCCC4	137 3rd Qtr 03	C31-C32	245.0	253.17	17.36		-0.47	120 of 129 labs included
		C33-C34	235.5	248.63	19.05		-0.69	
DDDDD4	138 4th Qtr 03	D31-D32	212.3	215.45	12.95		-0.25	120 of 131 labs included
		D33-D34	216.4	223.22	14.55		-0.47	
EEEEEE4	139 1st Qtr 04	A41-A42	237.5	228.32	13.73		0.67	107 of 117 labs included
		A43-A44	260.5	226.86	12.42		2.71	

Action Item ! Your performance for this cycle was assigned an X Data Flag. Analyst Comment: Slight inconsistency in testing between sample sets.

Sample Report

Current Cycle Performance Analysis Report #139 - 1st Qtr 04

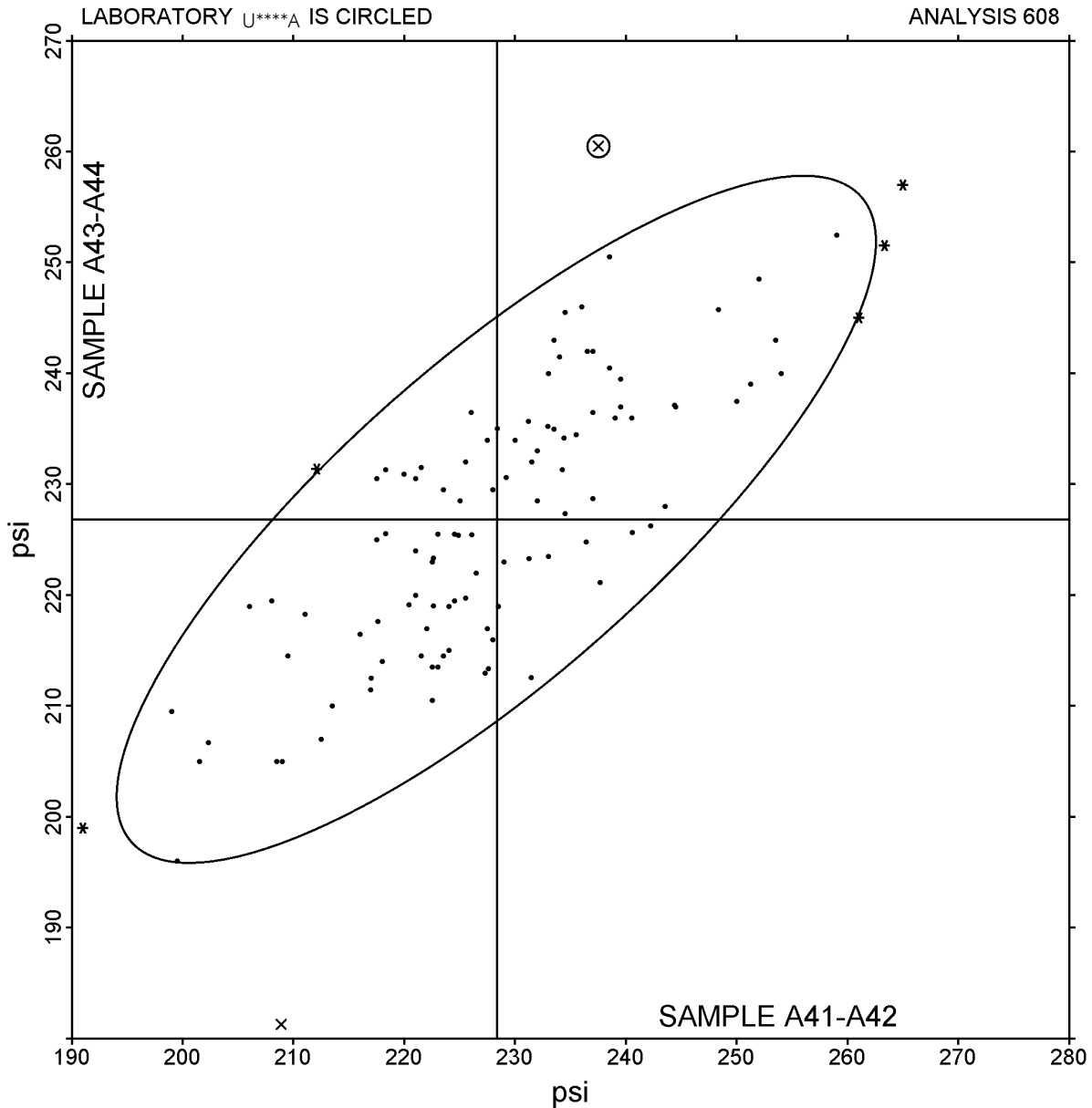
Analysis #608: Stress at 100% Elongation

Lab Code: U****A

Data in units of: psi

Sample Report

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WebCode	Data Flag	Sample A41-A42			Sample A43-A44		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

EEEE4	X	237.5	9.2	0.67	260.5	33.6	2.71
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Consensus Results (all laboratories)

Grand Means	228.32 psi	226.86 psi
Btwn Lab Standard Deviation	13.73 psi	12.42 psi
<i>Consensus statistics based on 107 of 117 reporting participants</i>		

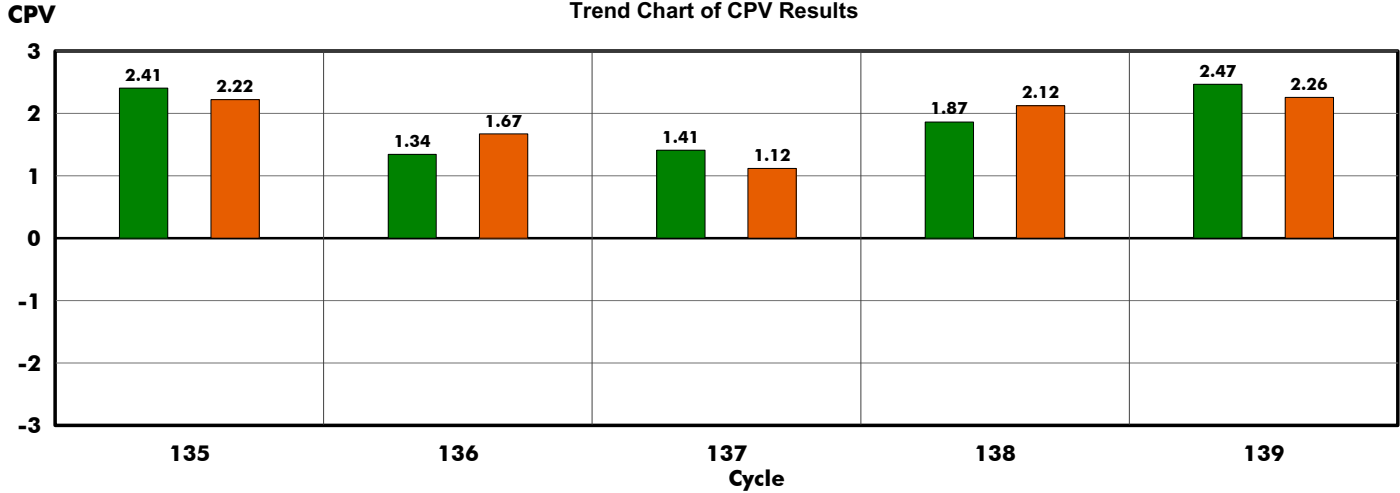
Consensus Results in SI Units

Grand Means (SI)	1.5742 MPa	1.56 MPa
Btwn Lab Standard Deviation	0.0947 MPa	0.09 MPa



Performance Analysis Report - Trend Chart
Analysis #620: Hardness (Shore A/Type A)
using ASTM Method D2240

Lab Code: U****A



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WebCode	Test Cycle	Sample Code	$\left(\begin{array}{cc} \text{Lab Mean} & - & \text{Grand Mean} \end{array} \right) \div$		Between Lab Std Dev	=	CPV	Data Flag (if assigned)
AAAAA5	135 1st Qtr 03	A31-A32	56.00	52.516	1.447		2.41	104 of 109 labs included
		A33-A34	56.00	52.647	1.508		2.22	
BBBBB5	136 2nd Qtr 03	B31-B32	54.50	52.387	1.573		1.34	109 of 115 labs included
		B33-B34	55.00	52.342	1.588		1.67	
CCCCC5	137 3rd Qtr 03	C31-C32	55.20	52.764	1.724		1.41	108 of 115 labs included
		C33-C34	54.35	52.368	1.768		1.12	
DDDDD5	138 4th Qtr 03	D31-D32	53.30	50.431	1.538		1.87	112 of 119 labs included
		D33-D34	53.75	50.527	1.518		2.12	
EEEEE5	139 1st Qtr 04	A41-A42	55.50	51.325	1.691		2.47	97 of 102 labs included
		A43-A44	55.00	51.176	1.692		2.26	

Sample Report

Current Cycle Performance Analysis Report #139 - 1st Qtr 04

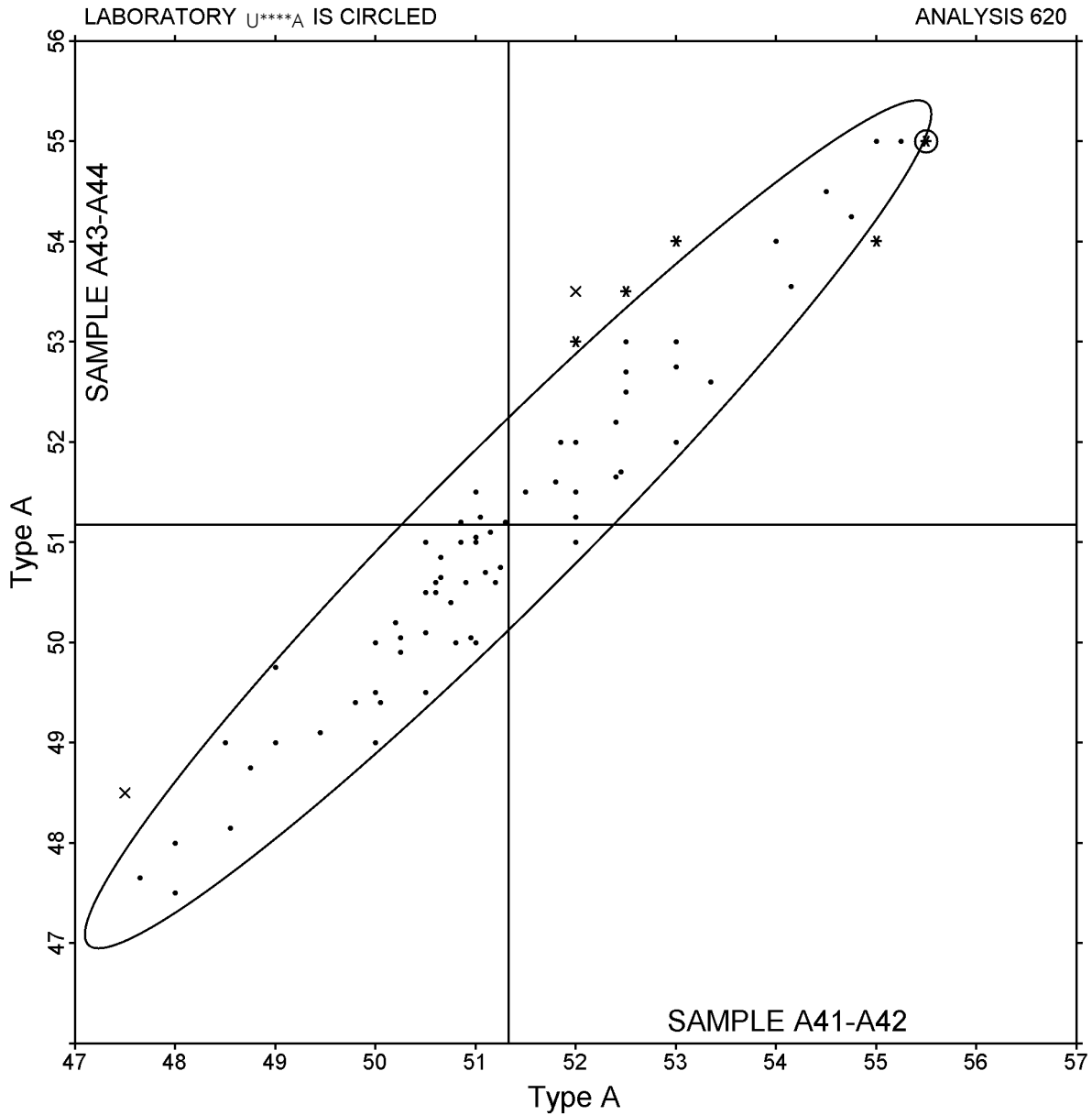
Analysis #620: Hardness

Lab Code: U****A

Data in units of: Type A

Sample Report

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WebCode	Data Flag	Sample A41-A42			Sample A43-A44		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

EEEE5	*	55.50	4.18	2.47	55.00	3.82	2.26
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Consensus Results (all laboratories)

Grand Means	51.325 Type A	51.176 Type A
Btwn Lab Standard Deviation	1.691 Type A	1.692 Type A

Consensus statistics based on 97 of 102 reporting participants