Collaborative Testing Services, Inc.

Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 132, 4th Qtr 2020

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ABOUT THE FASTENERS & METALS PROGRAM

Collaborative Testing Services operates and maintains the program for Fasteners and Metals as part of a series of Proficiency and Interlaboratory Testing Programs offered by CTS in cooperation with various associations for a wide range of industries. Personnel from the National Institute of Standards and Technology (formerly the National Bureau of Standards), Industrial Fasteners Institute (IFI), and the Naval Shipyard Laboratories provide technical guidance and advice to this program.

The purpose of the program is to give participating laboratories a means to compare periodically the level and uniformity of their testing with that of other laboratories in the industry. It also provides a realistic assessment of the state of fasteners and metals testing proficiency.

In each report, there is a summary of the statistics for the analysis and a graphical representation of the data for each test. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations. Refer to the KEY TO TABLES AND GRAPHS for an explanation of terms and guidelines to interpreting the results.

ABOUT CTS

Founded in 1971, CTS is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 50 countries, currently participate in the CTS programs.
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Key for Fasteners & Metals Program Web Summary Report

WebCode - Assigned laboratory identification number(temporary)used to ensure lab confidentiality while permitting a lab to locate its data in the report published on the CTS website.

Lab Mean - 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 (CPV) - 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. CPV = (LAB MEAN - GRAND MEAN)/ BETWEEN-LAB STANDARD DEVIATION. 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).

Instr. Code - A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).

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 Flags

Data Flag Type	Statistically Included/Excluded	ACTION REQUIRED
*	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 (all tests exept Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data are excluded. For Chemical Analyses see an additional Memo.
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 second sample (y-axis) is plotted against the Lab Mean for the first sample (x-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 as points on the plot.

Fasteners and Metals Interlaboratory Testing Program

Analysis 1004

Charpy V-Notch (Room Temperature)
ASTM E23

		Sample U71			Sample U72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
7BZXKB		63.04	-5.62	-1.49	68.17	0.14	0.03
AUYKFP		68.57	-0.09	-0.03	65.27	-2.76	-0.64
BG6JGU		68.69	0.03	0.01	67.11	-0.92	-0.21
BHLKJW		63.08	-5.58	-1.48	63.35	-4.68	-1.08
CZE6BZ		68.33	-0.33	-0.09	72.33	4.30	0.99
D7KQ6P		67.77	-0.89	-0.24	64.83	-3.20	-0.74
D98H7U		75.50	6.84	1.81	78.84	10.81	2.49
EZURDF		68.50	-0.16	-0.04	64.56	-3.47	-0.80
FNUUDK		68.67	0.01	0.00	64.57	-3.46	-0.80
FUYB9Z	*	69.33	0.67	0.18	80.33	12.30	2.84
G6HDWD		70.50	1.84	0.49	67.79	-0.24	-0.06
GDBFAH		63.73	-4.93	-1.31	62.37	-5.66	-1.31
GWY2TK		66.33	-2.33	-0.62	69.33	1.30	0.30
H7JRRH		69.33	0.67	0.18	68.00	-0.03	-0.01
HD33ZR		67.48	-1.18	-0.31	63.68	-4.35	-1.00
HK48VH		71.33	2.67	0.71	73.33	5.30	1.22
J36ADL		70.97	2.31	0.61	69.77	1.74	0.40
JBQM7Q		73.67	5.01	1.33	68.67	0.64	0.15
K8ATNK		68.33	-0.33	-0.09	68.33	0.30	0.07
KKEN8L	X	29.42	-39.24	-10.40	70.72	2.69	0.62
MMB2XH	*	78.00	9.34	2.48	65.00	-3.03	-0.70
NHFMWE		65.67	-2.99	-0.79	66.30	-1.73	-0.40
R3D89G		68.57	-0.09	-0.03	69.77	1.74	0.40
WU2PRD		65.67	-2.99	-0.79	67.67	-0.36	-0.08
WVG2HV		72.00	3.34	0.89	67.67	-0.36	-0.08
YK6V9C		70.67	2.01	0.53	68.00	-0.03	-0.01
Z3NT8H		61.47	-7.19	-1.91	63.72	-4.31	-0.99

Summary Statistics

	Sample U71		Sample U72	
Grand Means	68.66	Joule	68.03	Joule
Stnd Dev Btwn Labs	3.77	Joule	4.33	Joule

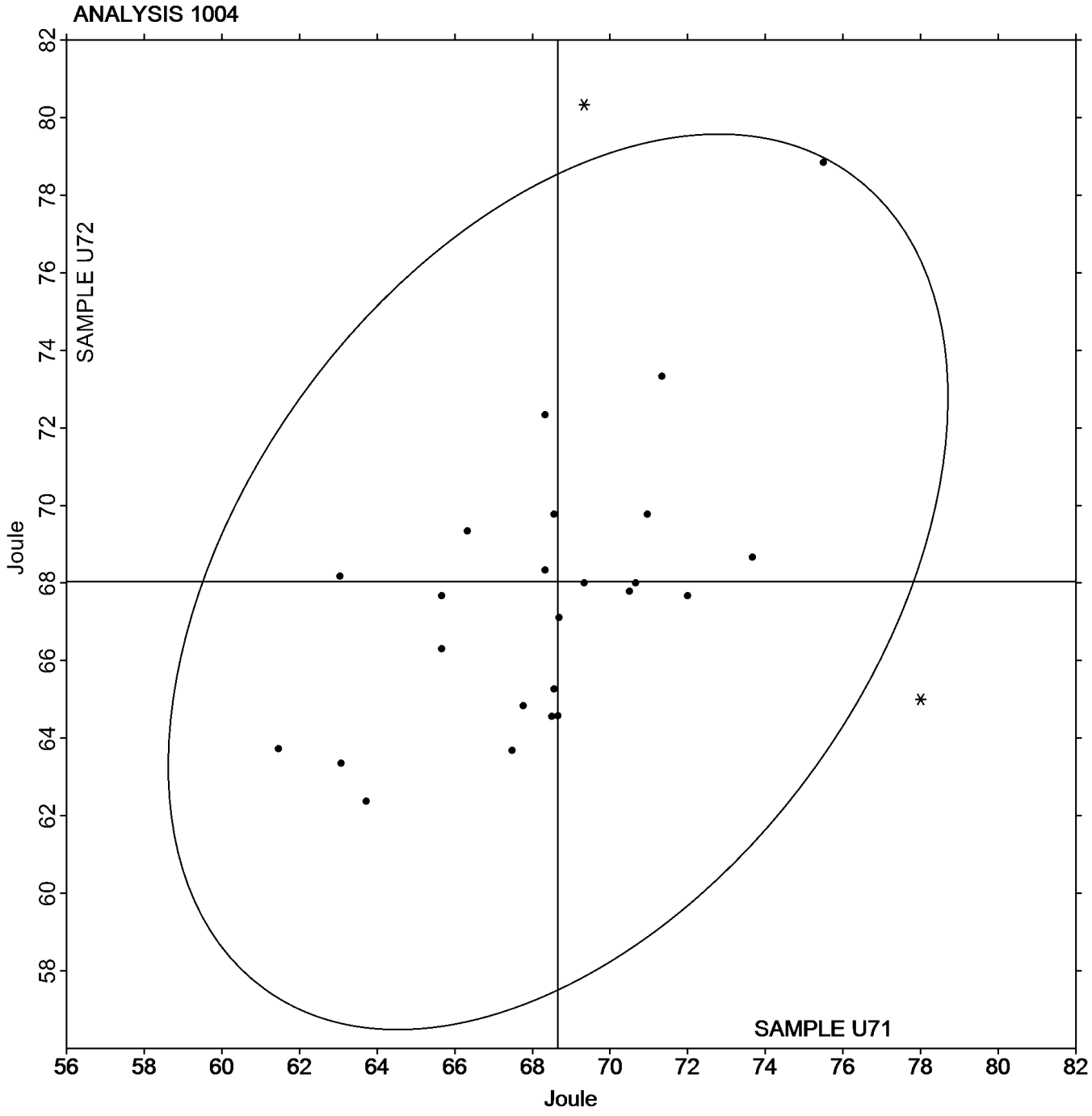
Samples U71, U72 : AISI 4340, AISI 4340

Statistics based on 26 of 27 reporting participants

Comments on Assigned Data Flags for Test #1004

KKEN8L (X) - Data for sample U71 are low.

SAMPLE U71	SAMPLE U72
68.66 Joule	68.03 Joule



		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2GJPN8		74.90	-0.45	-0.53	73.10	-0.59	-0.72
44QVDP		74.39	-0.96	-1.13	73.01	-0.68	-0.83
48LLP3		74.64	-0.71	-0.83	73.03	-0.66	-0.81
4C2XYQ		74.70	-0.66	-0.77	73.32	-0.37	-0.45
4DB8P3		74.33	-1.02	-1.19	72.49	-1.20	-1.47
4FW7QD		75.74	0.39	0.45	73.58	-0.11	-0.13
4JVGLD	X	70.50	-4.85	-5.68	72.50	-1.19	-1.46
4KAN6A		74.90	-0.45	-0.53	73.00	-0.69	-0.84
4TR7U4	*	75.31	-0.04	-0.05	72.12	-1.57	-1.93
6UW6FV		75.20	-0.15	-0.18	73.20	-0.49	-0.60
73QH6N	X	53.00	-22.35	-26.15	52.10	-21.59	-26.47
77PU2M	X	52.90	-22.45	-26.27	52.20	-21.49	-26.35
7KPVEN		75.82	0.47	0.55	73.20	-0.48	-0.59
7WZEP6		75.30	-0.05	-0.06	74.80	1.11	1.36
83Y9C6		75.85	0.50	0.58	73.75	0.06	0.08
8KYBUA		76.62	1.27	1.48	75.59	1.90	2.33
8PRAAQ		75.70	0.35	0.41	73.50	-0.19	-0.23
8TACFA	*	77.62	2.27	2.65	74.64	0.96	1.17
8UALDL		74.14	-1.22	-1.42	72.93	-0.75	-0.92
8XN6CU		76.80	1.45	1.69	74.90	1.21	1.49
8YW6M4	X	74.80	-0.55	-0.65	71.50	-2.19	-2.68
8ZAWDY		74.41	-0.95	-1.11	72.08	-1.60	-1.97
8ZCGBZ		75.17	-0.18	-0.21	73.94	0.25	0.31
9FLWMU	X	74.80	-0.55	-0.65	83.20	9.51	11.67
9MJM96	X	74.10	-1.25	-1.47	76.00	2.31	2.84
9Q64QQ		75.10	-0.25	-0.30	73.78	0.09	0.12
ATNDG3		76.52	1.17	1.36	74.82	1.13	1.39
ATNHR6		75.40	0.05	0.05	73.00	-0.69	-0.84
AUH9VY		74.75	-0.60	-0.71	72.90	-0.79	-0.97
AUYKFP		74.28	-1.07	-1.26	73.14	-0.55	-0.67
B2DLEY		76.30	0.95	1.11	74.40	0.71	0.87
BC87AW		74.30	-1.05	-1.23	72.75	-0.94	-1.15
BD834Z		74.90	-0.45	-0.53	73.00	-0.69	-0.84
BLJ2VP		74.70	-0.65	-0.76	72.90	-0.79	-0.97
BRBB43		75.70	0.34	0.40	74.25	0.56	0.69
BVMGF3		74.55	-0.80	-0.94	74.11	0.43	0.52
BZ2YUY		75.20	-0.15	-0.18	73.10	-0.59	-0.72
CBHZU7	M	No Data Reported			74.83	1.14	1.40
CBYAKL		75.71	0.36	0.42	74.18	0.50	0.61
CBZXCX		76.00	0.65	0.76	74.00	0.31	0.38
CLE7JX	X	73.71	-1.64	-1.92	71.08	-2.60	-3.19
D7KQ6P		73.84	-1.51	-1.77	72.52	-1.17	-1.43
DAZCZH		76.45	1.09	1.28	74.43	0.75	0.92
DEFWYQ		73.90	-1.45	-1.70	73.20	-0.49	-0.60
DPC6DM	X	72.37	-2.98	-3.48	71.50	-2.18	-2.68
E8QXLM		76.00	0.65	0.76	75.20	1.51	1.86
EAEAKT		75.69	0.33	0.39	73.62	-0.07	-0.08

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
EBVE6C		75.70	0.35	0.41	73.60	-0.09	-0.11
EEBWCV		74.91	-0.44	-0.52	73.46	-0.22	-0.28
EPM9HX		75.05	-0.30	-0.36	72.91	-0.78	-0.95
EXLTQL		75.90	0.55	0.64	74.00	0.31	0.38
FJGP7R		75.68	0.33	0.38	74.09	0.40	0.49
GDBFAH		74.55	-0.80	-0.94	73.10	-0.59	-0.72
GH3R4U		73.85	-1.50	-1.76	72.45	-1.24	-1.52
GJELMZ	X	78.00	2.65	3.10	73.80	0.11	0.14
GT46AL		76.10	0.75	0.87	74.80	1.11	1.36
GXUP6N		74.90	-0.45	-0.53	73.10	-0.59	-0.72
H2D669		75.00	-0.35	-0.41	73.00	-0.69	-0.84
H343MM		75.90	0.55	0.64	74.21	0.52	0.64
H8EF6L	X	74.40	-0.95	-1.12	60.00	-13.69	-16.78
HCA33G	X	74.30	-1.05	-1.23	70.00	-3.69	-4.52
HDZ9GL		75.70	0.35	0.41	74.30	0.61	0.75
HK48VH		74.45	-0.90	-1.06	72.62	-1.07	-1.31
HMRGAP		75.22	-0.14	-0.16	73.90	0.21	0.26
HPY2TJ		74.90	-0.45	-0.53	73.50	-0.19	-0.23
K7C6LN		73.90	-1.45	-1.70	73.20	-0.49	-0.60
KAX6NP		75.10	-0.25	-0.30	73.70	0.01	0.02
KJGMXN	X	74.55	-0.80	-0.94	71.21	-2.47	-3.03
KWRZEN		77.14	1.79	2.09	75.13	1.45	1.77
L87JFK		75.60	0.25	0.29	73.00	-0.69	-0.84
L9EKEC		76.50	1.15	1.34	74.00	0.31	0.38
LFD9PN		75.70	0.35	0.41	73.80	0.11	0.14
LMG7JM		75.30	-0.05	-0.06	73.50	-0.19	-0.23
LYTG8C	X	79.15	3.80	4.44	72.90	-0.79	-0.97
MG6PKH	X	1,848	1,773.03	2,074.01	1,817	1,742.84	2,137.19
ML4YVK		76.30	0.95	1.11	74.60	0.91	1.12
MV7YNR		74.63	-0.73	-0.85	74.37	0.68	0.83
MZFEVV		74.40	-0.95	-1.12	72.40	-1.29	-1.58
NCQ86M		74.70	-0.65	-0.76	73.50	-0.19	-0.23
NFB2XG		75.86	0.50	0.59	74.70	1.01	1.24
NTJTUM		76.25	0.89	1.05	74.13	0.44	0.54
NXT6HM		75.29	-0.07	-0.08	73.65	-0.04	-0.05
P3MCMG		74.30	-1.05	-1.23	72.40	-1.29	-1.58
P4R7VL		75.35	0.00	0.00	73.58	-0.11	-0.13
P8T8ZP		74.61	-0.74	-0.87	73.04	-0.65	-0.80
PBC33H		74.40	-0.95	-1.12	73.20	-0.49	-0.60
PDYL4F	X	72.35	-3.01	-3.52	70.26	-3.43	-4.21
PU2NGD		76.30	0.95	1.11	73.60	-0.09	-0.11
PXZYDD	X	78.80	3.45	4.03	73.00	-0.69	-0.84
PZF2NT		76.88	1.53	1.79	75.03	1.34	1.64
QJZFG8		75.31	-0.04	-0.05	73.82	0.14	0.17
QNV63L		75.30	-0.05	-0.06	73.80	0.11	0.14
QYXJNK	*	77.70	2.35	2.74	75.70	2.01	2.47
R46GNB		75.20	-0.15	-0.18	72.50	-1.19	-1.46

Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 132
4th Qtr 2020

WebCode	Data Flag	Sample F71 Lab Mean	Sample F71 Diff. from Grand Mean	Sample F71 CPV	Sample F72 Lab Mean	Sample F72 Diff. from Grand Mean	Sample F72 CPV
R7TTNG		75.70	0.35	0.41	73.94	0.26	0.31
R9XEH9		74.26	-1.10	-1.28	72.90	-0.78	-0.96
RBPDV8		75.71	0.36	0.42	73.97	0.28	0.35
RHM8MD	*	75.80	0.45	0.52	75.40	1.71	2.10
RU37N2	*	76.35	0.99	1.16	75.87	2.18	2.67
RV9HEP		75.40	0.05	0.05	73.70	0.01	0.02
TUBMBD		74.70	-0.66	-0.77	72.52	-1.17	-1.43
U4HLJE		75.60	0.25	0.29	73.80	0.11	0.14
U984V6		74.99	-0.36	-0.42	73.33	-0.36	-0.44
ULW3KM	X	70.70	-4.65	-5.44	69.20	-4.49	-5.50
UNJNDA		75.60	0.25	0.29	73.90	0.21	0.26
V284W4		74.84	-0.52	-0.61	73.52	-0.16	-0.20
V3H887		75.26	-0.09	-0.11	73.20	-0.49	-0.60
VC69JA	*	73.94	-1.41	-1.65	73.75	0.06	0.08
VLQCQA	*	77.45	2.10	2.45	75.53	1.84	2.26
VQB7YV		74.30	-1.05	-1.23	72.90	-0.79	-0.97
VWRV94		76.10	0.75	0.87	73.10	-0.59	-0.72
WHRBBD		75.90	0.55	0.64	73.74	0.05	0.06
WRDDT8		74.50	-0.85	-1.00	73.50	-0.19	-0.23
WZ7TD6		76.70	1.35	1.58	74.60	0.91	1.12
WZ7WN9		74.70	-0.65	-0.76	73.70	0.01	0.02
X7CL82		75.60	0.25	0.29	74.30	0.61	0.75
XKTLWE		75.67	0.32	0.37	74.23	0.54	0.67
XRBAC3		74.70	-0.65	-0.76	73.50	-0.19	-0.23
YFCQE9		75.60	0.25	0.29	73.50	-0.19	-0.23
YG6PPZ	X	72.20	-3.15	-3.69	71.20	-2.49	-3.05
YWJWLX		74.17	-1.18	-1.38	73.33	-0.35	-0.43
ZVQ87B		76.16	0.81	0.94	74.25	0.56	0.68
ZXDPNV		76.43	1.08	1.26	74.60	0.91	1.12

Summary Statistics

	Sample F71		Sample F72	
Grand Means	75.35	ksi	73.69	ksi
Stnd Dev Btwn Labs	0.85	ksi	0.82	ksi

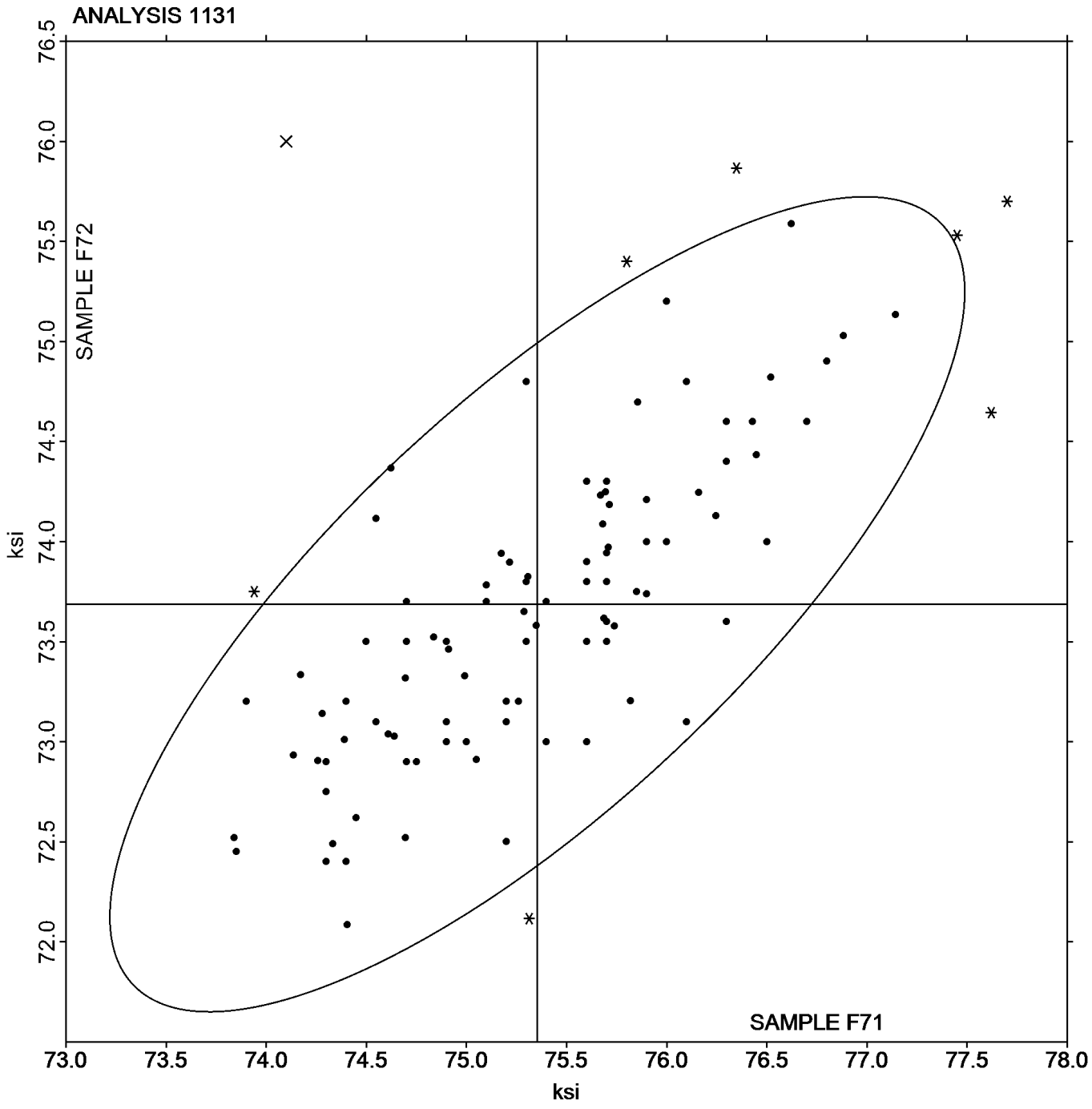
Samples F71, F72 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 104 of 123 reporting participants

Comments on Assigned Data Flags for Test #1131

4JVGLD (X) - Data for sample F71 are low.
73QH6N (X) - Data for both samples are low. Possible Systematic Error.
77PU2M (X) - Data for both samples are low. Possible Systematic Error.
8YW6M4 (X) - Inconsistent in testing between samples.
9FLWMU (X) - Data for sample F72 are high.
9MJM96 (X) - Data for sample F72 are high.
CBHZU7 (M) - Participant did not submit data for sample F71.
CLE7JX (X) - Data for sample F72 are low.
DPC6DM (X) - Data for sample F71 are low.
GJELMZ (X) - Data for sample F71 are high.
H8EF6L (X) - Data for sample F72 are low.
HCA33G (X) - Data for sample F72 are low.
KJGMXN (X) - Data for sample F72 are low.
LYTG8C (X) - Data for sample F71 are high.
MG6PKH (X) - Extreme data.
PDYL4F (X) - Data for both samples are low. Possible Systematic Error.
PXZYDD (X) - Data for sample F71 are high.
ULW3KM (X) - Data for both samples are low. Possible Systematic Error.
YG6PPZ (X) - Data for both samples are low. Possible Systematic Error.

SAMPLE F71	SAMPLE F72
75.35 ksi	73.69 ksi



		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2GJPN8		52.20	-1.79	-0.71	45.20	-0.78	-0.70
44QVDP		49.08	-4.91	-1.93	44.85	-1.13	-1.01
48LLP3		50.82	-3.18	-1.25	46.30	0.31	0.28
4C2XYQ		48.66	-5.33	-2.10	45.53	-0.46	-0.41
4DB8P3		53.07	-0.92	-0.36	45.82	-0.17	-0.15
4FW7QD		56.96	2.96	1.17	46.08	0.09	0.08
4KAN6A		49.60	-4.39	-1.73	46.50	0.52	0.46
4TR7U4		55.80	1.80	0.71	44.94	-1.04	-0.92
6UW6FV		55.90	1.91	0.75	45.70	-0.28	-0.25
73QH6N	X	39.10	-14.89	-5.86	32.60	-13.38	-11.88
77PU2M	X	37.90	-16.09	-6.34	33.00	-12.98	-11.52
7KPVEN		56.99	2.99	1.18	45.19	-0.79	-0.70
7WZEP6		55.60	1.61	0.63	47.80	1.82	1.61
83Y9C6		55.43	1.44	0.57	45.35	-0.63	-0.56
8PRAAQ		56.30	2.31	0.91	46.40	0.42	0.37
8UALDL		51.30	-2.69	-1.06	46.47	0.49	0.43
8XN6CU		52.10	-1.89	-0.75	45.90	-0.08	-0.08
8YW6M4		52.00	-1.99	-0.78	46.30	0.32	0.28
8ZAWDY		52.79	-1.20	-0.47	43.80	-2.18	-1.94
8ZCGBZ		53.15	-0.84	-0.33	45.94	-0.05	-0.04
9FLWMU	X	56.20	2.21	0.87	54.70	8.72	7.73
9MJM96	*	55.10	1.11	0.44	49.30	3.32	2.94
9Q64QQ		51.26	-2.74	-1.08	45.83	-0.15	-0.14
ATNDG3	*	53.75	-0.24	-0.10	49.40	3.42	3.03
ATNHR6		54.80	0.81	0.32	45.80	-0.18	-0.16
AUH9VY		49.67	-4.33	-1.70	45.87	-0.12	-0.10
AUYKFP		51.63	-2.37	-0.93	46.86	0.87	0.77
B2DLEY		55.70	1.71	0.67	45.00	-0.98	-0.87
BC87AW		57.30	3.31	1.30	47.80	1.82	1.61
BD834Z		55.80	1.81	0.71	44.80	-1.18	-1.05
BLJ2VP		52.70	-1.29	-0.51	45.70	-0.28	-0.25
BRBB43		56.21	2.22	0.87	45.15	-0.83	-0.74
BVMGF3		52.50	-1.49	-0.59	46.12	0.14	0.12
BZ2YUY		56.50	2.51	0.99	45.90	-0.08	-0.08
CBYAKL		55.69	1.70	0.67	46.06	0.07	0.06
CBZXCX		49.00	-4.99	-1.97	45.00	-0.98	-0.87
CLE7JX		53.95	-0.04	-0.01	45.09	-0.89	-0.79
D7KQ6P		49.72	-4.27	-1.68	44.86	-1.12	-1.00
DAZCZH		55.34	1.34	0.53	48.01	2.02	1.79
DEFWYQ		55.10	1.11	0.44	46.50	0.52	0.46
DPC6DM		50.18	-3.81	-1.50	46.41	0.43	0.38
E8QXLM		51.60	-2.39	-0.94	46.20	0.22	0.19
EAEAKT		56.92	2.93	1.15	48.17	2.19	1.94
EBVE6C		53.60	-0.39	-0.15	45.80	-0.18	-0.16
EEBWCV		54.67	0.68	0.27	45.86	-0.12	-0.11
EPM9HX		56.59	2.60	1.02	46.08	0.10	0.08
EXLTQL		56.20	2.21	0.87	46.70	0.72	0.63

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
FJGP7R		54.78	0.79	0.31	45.83	-0.15	-0.14
GDBFAH		52.21	-1.78	-0.70	45.83	-0.15	-0.14
GH3R4U		52.60	-1.39	-0.55	46.75	0.77	0.68
GJELMZ		53.20	-0.79	-0.31	46.10	0.12	0.10
GT46AL		49.40	-4.59	-1.81	46.80	0.82	0.72
GXUP6N		53.30	-0.69	-0.27	46.60	0.62	0.55
H2D669		54.00	0.01	0.00	46.00	0.02	0.01
H8EF6L	X	56.40	2.41	0.95	40.30	-5.68	-5.04
HCA33G		56.10	2.11	0.83	45.10	-0.88	-0.79
HDZ9GL	X	49.90	-4.09	-1.61	50.10	4.12	3.65
HK48VH		52.27	-1.72	-0.68	45.72	-0.27	-0.24
HMRGAP		56.03	2.04	0.80	45.50	-0.49	-0.43
HPY2TJ	X	51.90	-2.09	-0.82	50.00	4.02	3.56
K7C6LN		50.40	-3.59	-1.41	45.40	-0.58	-0.52
KAX6NP		55.20	1.21	0.48	45.80	-0.18	-0.16
KJGMXN		54.24	0.25	0.10	43.95	-2.04	-1.81
KWRZEN		56.96	2.96	1.17	45.16	-0.83	-0.74
L87JFK		53.70	-0.29	-0.12	44.90	-1.08	-0.96
L9EKEC		56.60	2.61	1.03	47.80	1.82	1.61
LFD9PN		53.70	-0.29	-0.12	46.10	0.12	0.10
LMG7JM		53.90	-0.09	-0.04	45.10	-0.88	-0.79
LYTG8C	*	60.45	6.46	2.54	44.50	-1.48	-1.32
MG6PKH	X	1,338	1,283.98	505.67	1,177	1,131.04	1,003.52
ML4YVK		57.60	3.61	1.42	46.10	0.12	0.10
MV7YNR		51.13	-2.86	-1.13	46.86	0.87	0.77
MZFEVV		55.50	1.51	0.59	45.20	-0.78	-0.70
NCQ86M		51.50	-2.49	-0.98	45.30	-0.68	-0.61
NFB2XG		56.71	2.72	1.07	45.69	-0.30	-0.26
NTJTUM		55.29	1.30	0.51	44.57	-1.41	-1.25
NXT6HM		54.66	0.67	0.26	45.57	-0.41	-0.37
P3MCMG		53.40	-0.59	-0.23	45.00	-0.98	-0.87
P4R7VL		53.84	-0.15	-0.06	46.85	0.87	0.77
P8T8ZP		56.11	2.12	0.84	45.27	-0.72	-0.64
PBC33H		54.40	0.41	0.16	46.40	0.42	0.37
PDYL4F		56.12	2.13	0.84	45.70	-0.28	-0.25
PU2NGD	X	55.80	1.81	0.71	49.70	3.72	3.30
PXZYDD	*	54.70	0.71	0.28	48.90	2.92	2.59
QJZFG8		52.69	-1.30	-0.51	45.45	-0.53	-0.47
QNV63L		50.20	-3.79	-1.49	45.60	-0.38	-0.34
QYXJNK		58.10	4.11	1.62	47.00	1.02	0.90
R46GNB		57.50	3.51	1.38	46.00	0.02	0.01
R7TTNG		56.00	2.01	0.79	44.30	-1.68	-1.49
R9XEH9		50.44	-3.55	-1.40	45.38	-0.61	-0.54
RBPDV8		52.36	-1.63	-0.64	44.82	-1.17	-1.04
RHM8MD		54.70	0.71	0.28	46.70	0.72	0.63
RU37N2		58.01	4.01	1.58	48.08	2.10	1.86
RV9HEP		50.20	-3.79	-1.49	46.60	0.62	0.55

Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
U4HLJE		55.90	1.91	0.75	45.70	-0.28	-0.25
U984V6		49.40	-4.59	-1.81	45.06	-0.92	-0.82
ULW3KM		52.10	-1.89	-0.75	44.30	-1.68	-1.49
UNJNDA	*	55.20	1.21	0.48	49.00	3.02	2.68
V284W4		53.31	-0.68	-0.27	46.06	0.07	0.07
V3H887		56.91	2.92	1.15	45.80	-0.18	-0.16
VC69JA		51.90	-2.09	-0.82	46.90	0.92	0.81
VQB7YV		50.10	-3.89	-1.53	46.00	0.02	0.01
VWRV94		57.10	3.11	1.22	47.10	1.12	0.99
WHRBBD		56.61	2.62	1.03	45.86	-0.12	-0.11
WRDDT8		52.30	-1.69	-0.67	46.20	0.22	0.19
WZ7TD6		57.40	3.41	1.34	46.30	0.32	0.28
WZ7WN9		56.30	2.31	0.91	45.90	-0.08	-0.08
X7CL82		53.50	-0.49	-0.19	46.80	0.82	0.72
XKTLWE	*	55.08	1.09	0.43	42.62	-3.36	-2.99
XRBAC3		54.90	0.91	0.36	47.10	1.12	0.99
YFCQE9		54.60	0.61	0.24	47.70	1.72	1.52
YG6PPZ		49.00	-4.99	-1.97	44.00	-1.98	-1.76
YWJWLX		53.42	-0.58	-0.23	46.32	0.34	0.30
ZVQ87B		56.35	2.36	0.93	46.11	0.12	0.11
ZXDPNV		56.35	2.36	0.93	44.92	-1.06	-0.94

Summary Statistics

	Sample F71		Sample F72	
Grand Means	53.99	ksi	45.98	ksi
Stnd Dev Btwn Labs	2.54	ksi	1.13	ksi

Samples F71, F72 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 107 of 115 reporting participants

Comments on Assigned Data Flags for Test #1132

73QH6N (X) - Data for both samples are low.

77PU2M (X) - Data for both samples are low.

9FLWMU (X) - Data for sample F72 are high.

H8EF6L (X) - Data for sample F72 are low.

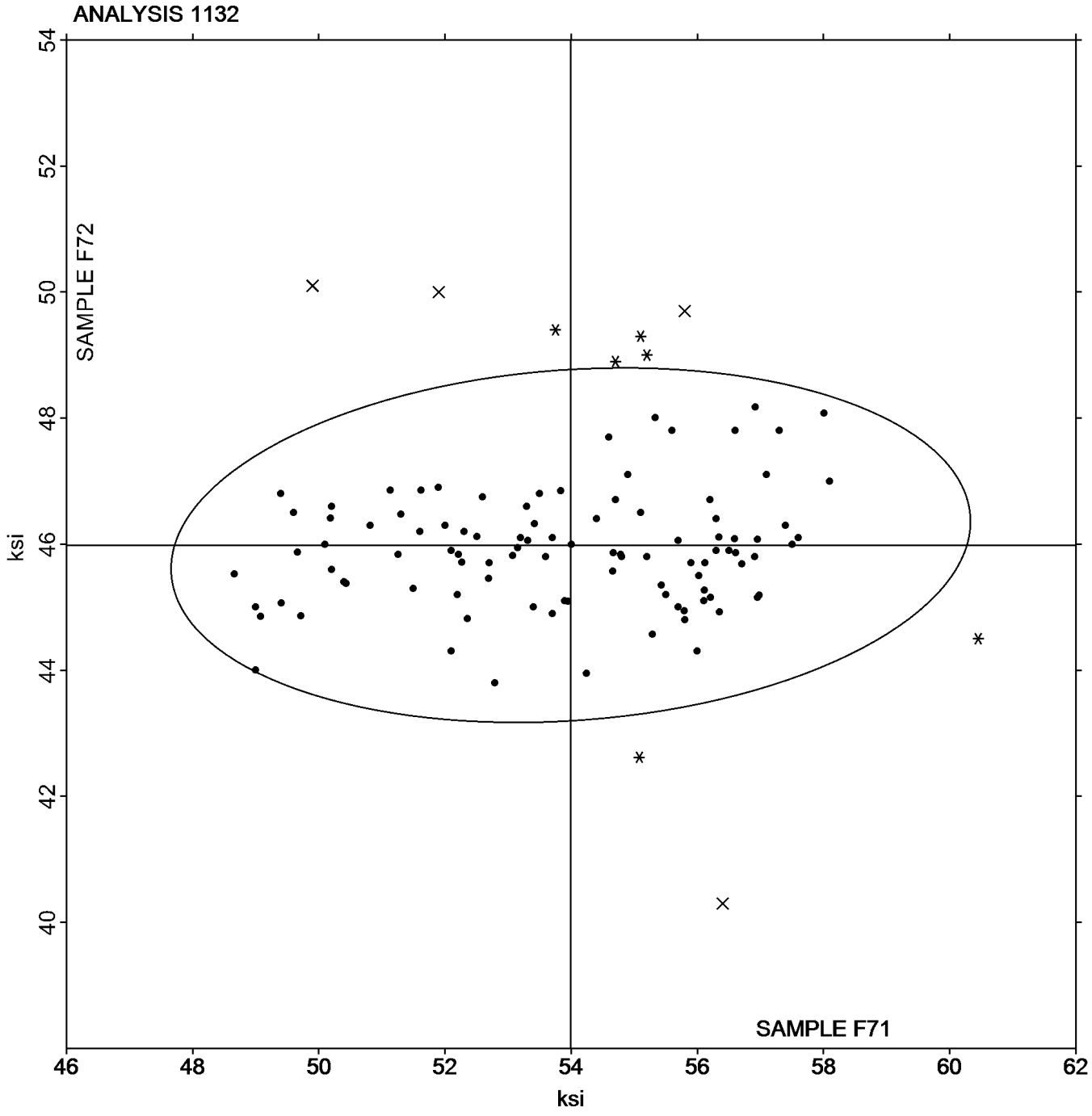
HDZ9GL (X) - Data for sample F72 are high.

HPY2TJ (X) - Data for sample F72 are high.

MG6PKH (X) - Extreme data.

PU2NGD (X) - Data for sample F72 are high.

SAMPLE F71	SAMPLE F72
53.99 ksi	45.98 ksi



Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 132
4th Qtr 2020

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2GJPN8		29.00	-0.43	-0.22	28.00	0.02	0.01
44QVDP		30.64	1.21	0.63	27.68	-0.30	-0.16
48LLP3		27.93	-1.50	-0.78	25.97	-2.01	-1.10
4C2XYQ		29.50	0.07	0.04	27.80	-0.18	-0.10
4DB8P3		31.50	2.07	1.08	30.00	2.02	1.11
4FW7QD		29.70	0.27	0.14	27.10	-0.88	-0.48
4KAN6A		30.70	1.27	0.67	30.40	2.42	1.33
4TR7U4		27.00	-2.43	-1.27	25.00	-2.98	-1.64
6UW6FV		30.10	0.67	0.35	28.30	0.32	0.18
73QH6N		30.10	0.67	0.35	29.00	1.02	0.56
77PU2M		30.00	0.57	0.30	29.20	1.22	0.67
7KPVEN		28.22	-1.21	-0.63	27.74	-0.24	-0.13
7WZEP6		29.40	-0.03	-0.02	29.40	1.42	0.78
83Y9C6		30.58	1.15	0.60	30.48	2.50	1.38
8PRAAQ		28.30	-1.13	-0.59	26.50	-1.48	-0.81
8UALDL		29.91	0.48	0.25	27.76	-0.22	-0.12
8XN6CU		30.00	0.57	0.30	28.00	0.02	0.01
8YW6M4	*	26.70	-2.73	-1.43	28.00	0.02	0.01
8ZAWDY	X	35.60	6.17	3.23	25.50	-2.48	-1.36
8ZCGBZ		29.30	-0.13	-0.07	27.50	-0.48	-0.26
9FLWMU	X	26.70	-2.73	-1.43	20.90	-7.08	-3.89
9MJM96	*	32.90	3.47	1.82	29.00	1.02	0.56
9Q64QQ		28.30	-1.13	-0.59	26.50	-1.48	-0.81
ATNDG3		24.78	-4.65	-2.43	24.02	-3.96	-2.18
ATNHR6		26.60	-2.83	-1.48	27.40	-0.58	-0.32
AUH9VY		29.60	0.17	0.09	26.90	-1.08	-0.59
AUYKFP		29.25	-0.18	-0.09	29.21	1.23	0.68
B2DLEY		29.00	-0.43	-0.22	28.00	0.02	0.01
BC87AW	X	34.00	4.57	2.39	28.00	0.02	0.01
BD834Z		27.40	-2.03	-1.06	27.00	-0.98	-0.54
BLJ2VP		27.50	-1.93	-1.01	25.30	-2.68	-1.47
BRBB43		28.10	-1.33	-0.70	26.80	-1.18	-0.65
BVMGF3		29.50	0.07	0.04	27.90	-0.08	-0.04
BZ2YUY		29.90	0.47	0.25	28.40	0.42	0.23
CBYAKL		28.03	-1.40	-0.73	26.95	-1.03	-0.56
CBZXCX		30.00	0.57	0.30	29.00	1.02	0.56
CLE7JX		29.50	0.07	0.04	27.50	-0.48	-0.26
D7KQ6P		30.90	1.47	0.77	30.40	2.42	1.33
DAZCZH		29.60	0.17	0.09	30.10	2.12	1.17
DEFWYQ		29.80	0.37	0.19	28.00	0.02	0.01
DPC6DM	X	30.00	0.57	0.30	25.00	-2.98	-1.64
E8QXLM		32.30	2.87	1.50	31.10	3.12	1.72
EAEAKT		28.94	-0.49	-0.26	26.86	-1.12	-0.61
EBVE6C		30.10	0.67	0.35	27.50	-0.48	-0.26
EEBWCV		29.20	-0.23	-0.12	25.95	-2.03	-1.12
EPM9HX		33.60	4.17	2.18	30.80	2.82	1.55
EXLTQL		27.30	-2.13	-1.11	26.60	-1.38	-0.76

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
FJGP7R		29.50	0.07	0.04	28.30	0.32	0.18
GDBFAH		30.10	0.67	0.35	28.10	0.12	0.07
GH3R4U		29.30	-0.13	-0.07	26.40	-1.58	-0.87
GJELMZ	*	32.00	2.57	1.35	28.00	0.02	0.01
GT46AL		30.50	1.07	0.56	27.80	-0.18	-0.10
GXUP6N		30.20	0.77	0.40	28.80	0.82	0.45
H2D669		28.30	-1.13	-0.59	26.20	-1.78	-0.98
H343MM		26.67	-2.76	-1.44	26.67	-1.31	-0.72
H8EF6L		25.00	-4.43	-2.32	25.00	-2.98	-1.64
HCA33G	*	35.00	5.57	2.92	32.00	4.02	2.21
HDZ9GL		29.00	-0.43	-0.22	26.60	-1.38	-0.76
HK48VH		29.20	-0.23	-0.12	28.60	0.62	0.34
HMRGAP		28.00	-1.43	-0.75	26.20	-1.78	-0.98
HPY2TJ		26.60	-2.83	-1.48	25.60	-2.38	-1.31
K7C6LN		28.10	-1.33	-0.70	25.50	-2.48	-1.36
KAX6NP		31.60	2.17	1.14	29.60	1.62	0.89
KJGMXN	*	34.00	4.57	2.39	32.80	4.82	2.65
KWRZEN		27.05	-2.38	-1.25	25.80	-2.18	-1.20
L87JFK		29.60	0.17	0.09	29.40	1.42	0.78
L9EKEC		28.20	-1.23	-0.64	28.00	0.02	0.01
LFD9PN		29.30	-0.13	-0.07	27.50	-0.48	-0.26
LMG7JM		31.30	1.87	0.98	30.00	2.02	1.11
LYTG8C	X	28.90	-0.53	-0.28	23.00	-4.98	-2.74
MG6PKH		30.83	1.40	0.73	29.61	1.63	0.90
ML4YVK		28.80	-0.63	-0.33	25.50	-2.48	-1.36
MV7YNR	*	34.61	5.18	2.71	32.33	4.35	2.40
MZFEVV		29.60	0.17	0.09	28.20	0.22	0.12
NCQ86M		28.00	-1.43	-0.75	26.00	-1.98	-1.09
NFB2XG		30.80	1.37	0.72	27.00	-0.98	-0.54
NTJTUM		30.00	0.57	0.30	28.50	0.52	0.29
NXT6HM		29.27	-0.16	-0.08	28.52	0.54	0.30
P3MCMG		33.70	4.27	2.24	32.10	4.12	2.27
P4R7VL		31.57	2.14	1.12	30.40	2.42	1.33
P8T8ZP	*	31.00	1.57	0.82	31.50	3.52	1.94
PBC33H		30.60	1.17	0.61	29.50	1.52	0.84
PDYL4F	X	21.60	-7.83	-4.10	21.50	-6.48	-3.56
PU2NGD	X	19.50	-9.93	-5.20	26.90	-1.08	-0.59
PXZYDD	X	26.60	-2.83	-1.48	22.70	-5.28	-2.90
QJZFG8		28.80	-0.63	-0.33	27.24	-0.74	-0.41
QNV63L		28.80	-0.63	-0.33	26.20	-1.78	-0.98
QYXJNK		30.60	1.17	0.61	29.20	1.22	0.67
R46GNB		25.40	-4.03	-2.11	24.10	-3.88	-2.13
R7TTNG		31.00	1.57	0.82	30.80	2.82	1.55
R9XEH9		28.50	-0.93	-0.49	26.50	-1.48	-0.81
RBPDV8		28.00	-1.43	-0.75	27.00	-0.98	-0.54
RHM8MD		31.80	2.37	1.24	30.20	2.22	1.22
RU37N2		27.70	-1.73	-0.91	27.20	-0.78	-0.43

Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RV9HEP		32.00	2.57	1.35	30.00	2.02	1.11
TUBMBD		29.00	-0.43	-0.22	29.00	1.02	0.56
U4HLJE	X	27.50	-1.93	-1.01	22.10	-5.88	-3.23
U984V6		30.00	0.57	0.30	28.00	0.02	0.01
ULW3KM	X	15.90	-13.53	-7.08	18.70	-9.28	-5.10
UNJNDA	X	26.80	-2.63	-1.38	20.30	-7.68	-4.22
V284W4		27.25	-2.18	-1.14	27.19	-0.79	-0.43
V3H887		30.10	0.67	0.35	27.70	-0.28	-0.15
VC69JA		29.00	-0.43	-0.22	28.50	0.52	0.29
VLQCQA	*	25.00	-4.43	-2.32	23.33	-4.65	-2.56
VQB7YV		29.90	0.47	0.25	26.90	-1.08	-0.59
VWRV94		27.70	-1.73	-0.91	26.60	-1.38	-0.76
WHRBBD		27.20	-2.23	-1.17	25.90	-2.08	-1.14
WRDDT8		31.27	1.84	0.96	30.10	2.12	1.17
WZ7TD6		30.40	0.97	0.51	28.10	0.12	0.07
WZ7WN9		29.50	0.07	0.04	27.50	-0.48	-0.26
X7CL82		29.60	0.17	0.09	28.10	0.12	0.07
XKTLWE		28.33	-1.10	-0.58	26.67	-1.31	-0.72
XRBAC3		30.00	0.57	0.30	28.50	0.52	0.29
YFCQE9		26.30	-3.13	-1.64	26.10	-1.88	-1.03
YG6PPZ		30.80	1.37	0.72	28.80	0.82	0.45
YWJWLX		29.26	-0.17	-0.09	29.32	1.34	0.74
ZVQ87B		28.10	-1.33	-0.70	27.40	-0.58	-0.32
ZXDPNV		29.60	0.17	0.09	28.30	0.32	0.18

Summary Statistics

	Sample F71		Sample F72	
Grand Means	29.43	Percent	27.98	Percent
Stnd Dev Btwn Labs	1.91	Percent	1.82	Percent

Samples F71, F72 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 107 of 118 reporting participants

Comments on Assigned Data Flags for Test #1133

8ZAWDY (X) - Data for sample F71 are high.

9FLWMU (X) - Data for sample F72 are low.

BC87AW (X) - Inconsistent in testing between samples.

DPC6DM (X) - Inconsistent in testing between samples.

LYTG8C (X) - Inconsistent in testing between samples.

PDYL4F (X) - Data for both samples are low. Possible Systematic Error.

PU2NGD (X) - Data for sample F71 are low.

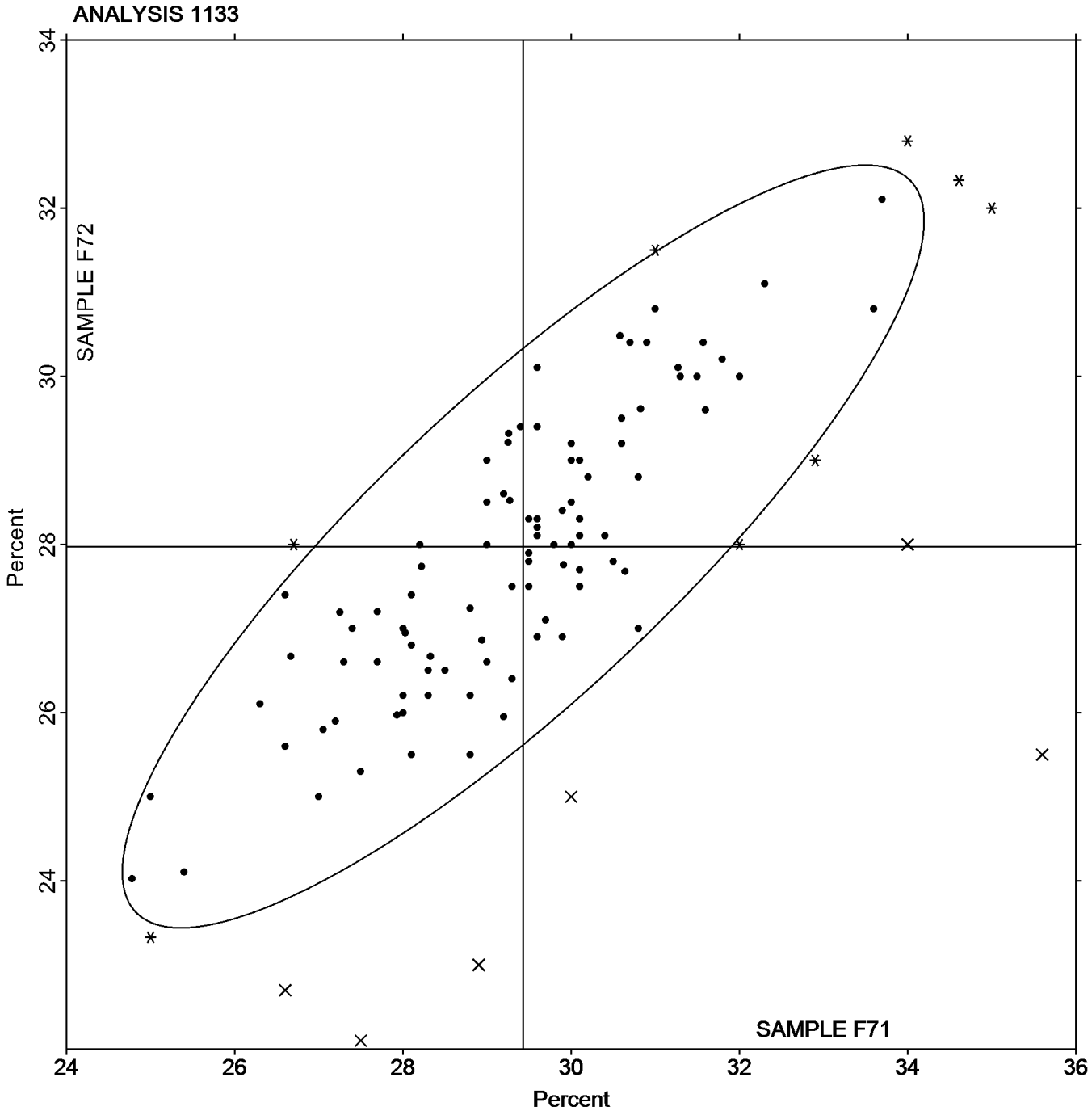
PXZYDD (X) - Data for sample F72 are low.

U4HLJE (X) - Data for sample F72 are low.

ULW3KM (X) - Data for both samples are low. Possible Systematic Error.

UNJNDA (X) - Data for sample F72 are low.

SAMPLE F71	SAMPLE F72
29.43 Percent	27.98 Percent



		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4C2XYQ	*	0.9870	0.2207	2.09	0.6940	-0.0537	-0.50
4DB8P3		0.8700	0.1037	0.98	0.7300	-0.0177	-0.17
4KAN6A	M	0.7300	-0.0363	-0.34	No Data Reported		
4TR7U4		0.6230	-0.1433	-1.36	0.6610	-0.0867	-0.81
6UW6FV		0.7820	0.0157	0.15	0.7280	-0.0197	-0.18
73QH6N		0.7700	0.0037	0.03	0.8600	0.1123	1.05
77PU2M		0.7800	0.0137	0.13	0.6800	-0.0677	-0.63
8UALDL		0.5960	-0.1703	-1.61	0.5750	-0.1727	-1.62
AUH9VY		0.7380	-0.0283	-0.27	0.7820	0.0343	0.32
B2DLEY		0.7800	0.0137	0.13	0.8880	0.1403	1.31
BVMGF3		0.7800	0.0137	0.13	0.7800	0.0323	0.30
BZ2YUY		0.7800	0.0137	0.13	0.7900	0.0423	0.40
CBYAKL		0.8100	0.0437	0.41	0.8200	0.0723	0.68
DAZCZH		0.7700	0.0037	0.03	0.7300	-0.0177	-0.17
EBVE6C		0.6700	-0.0963	-0.91	0.5400	-0.2077	-1.94
EEBWCV		0.7280	-0.0383	-0.36	0.7180	-0.0297	-0.28
GDBFAH		0.7770	0.0107	0.10	0.9140	0.1663	1.56
H8EF6L	*	0.5020	-0.2643	-2.50	0.5020	-0.2457	-2.30
HPY2TJ		0.8600	0.0937	0.89	0.8000	0.0523	0.49
K7C6LN		0.9620	0.1957	1.85	0.9460	0.1983	1.86
KAX6NP		0.7700	0.0037	0.03	0.7100	-0.0377	-0.35
L87JFK	X	57.50	56.7337	537.58	58.30	57.5523	538.66
MG6PKH		0.6300	-0.1363	-1.29	0.8070	0.0593	0.55
ML4YVK	X	1.457	0.6907	6.54	2.317	1.5693	14.69
NFB2XG		0.7400	-0.0263	-0.25	0.7300	-0.0177	-0.17
P3MCMG	X	0.3300	-0.4363	-4.13	0.2700	-0.4777	-4.47
QJZFG8		0.7850	0.0187	0.18	0.7100	-0.0377	-0.35
R9XEH9	*	1.000	0.2337	2.21	1.000	0.2523	2.36
U4HLJE		0.8500	0.0837	0.79	0.6860	-0.0617	-0.58
V284W4		0.6500	-0.1163	-1.10	0.7800	0.0323	0.30
V3H887		0.7500	-0.0163	-0.15	0.6800	-0.0677	-0.63
VC69JA		0.7720	0.0057	0.05	0.8560	0.1083	1.01
WHRBBD		0.8290	0.0627	0.59	0.7360	-0.0117	-0.11
WRDDT8		0.7000	-0.0663	-0.63	0.6700	-0.0777	-0.73
WZ7TD6		0.6500	-0.1163	-1.10	0.8200	0.0723	0.68
X7CL82		0.8240	0.0577	0.55	0.6530	-0.0947	-0.89
XRBAC3		0.8280	0.0617	0.58	0.7560	0.0083	0.08
ZXDPNV		0.7120	-0.0543	-0.51	0.6900	-0.0577	-0.54

Summary Statistics

	Sample F71	Sample F72
Grand Means	0.7663	0.7477
Stnd Dev Btwn Labs	0.1055	0.1068

Samples F71, F72 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 34 of 38 reporting participants

Comments on Assigned Data Flags for Test #1134

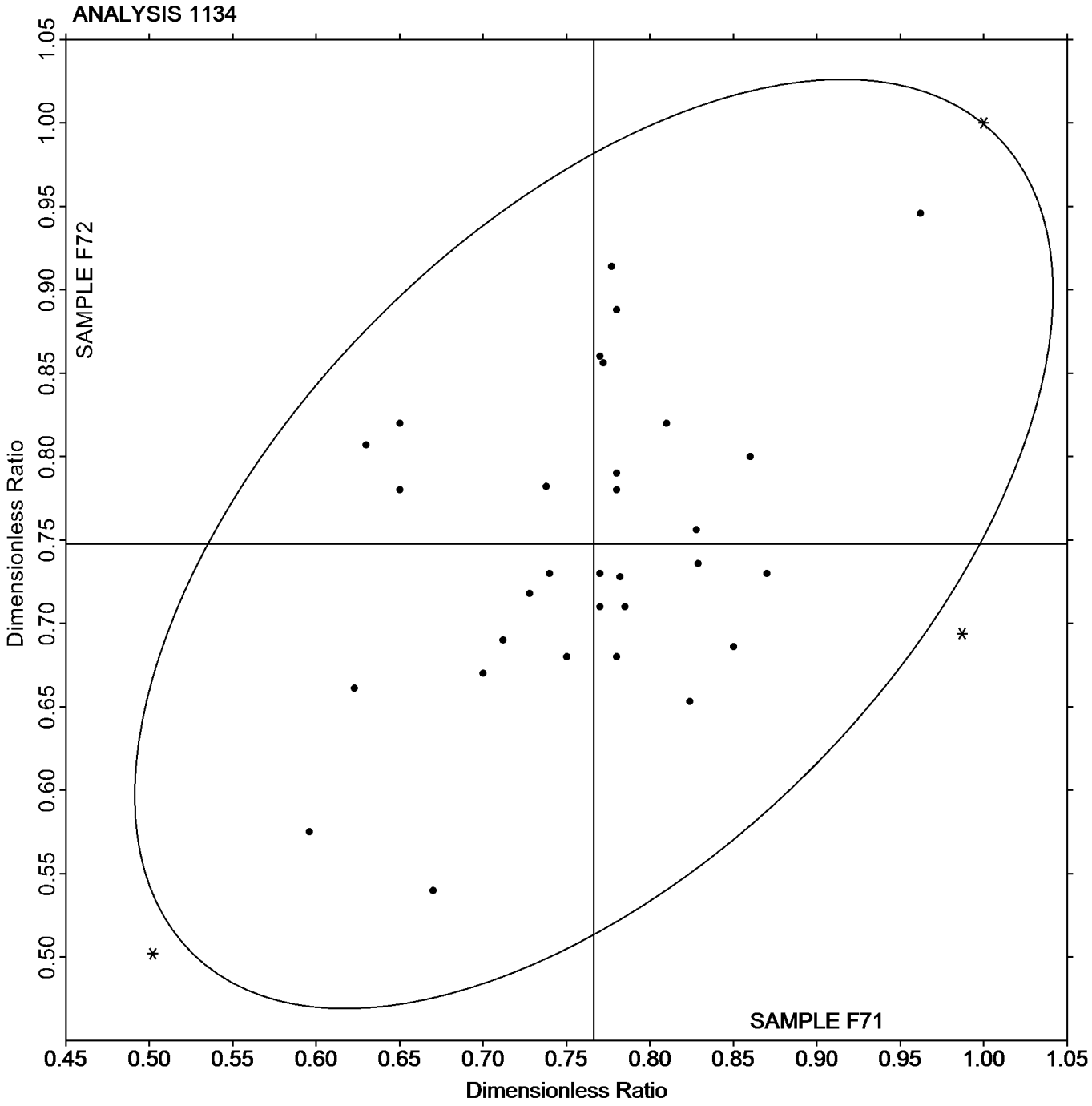
4KAN6A (M) - Participant did not submit data for sample F72.

L87JFK (X) - Extreme data.

ML4YVK (X) - Data for both samples are high.

P3MCMG (X) - Data for both samples are low.

SAMPLE F71	SAMPLE F72
0.7663	0.7477



Fasteners and Metals Interlaboratory Testing Program

Analysis 1135

n-Value: Lab-Machined Flat Steel
ASTM E646

Cycle 132
4th Qtr 2020

		Sample F71			Sample F72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4C2XYQ		0.1740	-0.0027	-0.13	0.1520	-0.0057	-0.39
4DB8P3		0.1760	-0.0007	-0.04	0.1590	0.0013	0.09
4FW7QD		0.2000	0.0233	1.16	0.1800	0.0223	1.51
4KAN6A		0.1700	-0.0067	-0.33	0.1510	-0.0067	-0.46
4TR7U4		0.1640	-0.0127	-0.63	0.1520	-0.0057	-0.39
6UW6FV		0.1640	-0.0127	-0.63	0.1530	-0.0047	-0.32
73QH6N		0.1880	0.0113	0.56	0.1650	0.0073	0.49
77PU2M	X	0.0188	-0.1579	-7.84	0.1670	0.0093	0.63
7KPVEN		0.1584	-0.0183	-0.91	0.1455	-0.0122	-0.83
8PRAAQ		0.1803	0.0036	0.18	0.1610	0.0033	0.22
8UALDL		0.1810	0.0043	0.21	0.1600	0.0023	0.15
AUH9VY		0.2110	0.0343	1.70	0.1840	0.0263	1.78
AUYKFP		0.1550	-0.0217	-1.08	0.1490	-0.0087	-0.59
B2DLEY		0.1680	-0.0087	-0.43	0.1510	-0.0067	-0.46
BD834Z		0.1984	0.0217	1.08	0.1782	0.0205	1.39
BVMGF3		0.1610	-0.0157	-0.78	0.1440	-0.0137	-0.93
BZ2YUY		0.1640	-0.0127	-0.63	0.1520	-0.0057	-0.39
CBYAKL	*	0.2290	0.0523	2.60	0.1860	0.0283	1.92
DAZCZH	X	0.1750	-0.0017	-0.09	0.1750	0.0173	1.17
E8QXLM		0.1771	0.0004	0.02	0.1555	-0.0022	-0.15
EAEAKT		0.1684	-0.0083	-0.41	0.1458	-0.0119	-0.81
EBVE6C		0.1610	-0.0157	-0.78	0.1410	-0.0167	-1.14
EEBWCV		0.1850	0.0083	0.41	0.1625	0.0048	0.32
EXLTQL		0.1770	0.0003	0.01	0.1610	0.0033	0.22
FJGP7R		0.1730	-0.0037	-0.18	0.1570	-0.0007	-0.05
GDBFAH		0.2230	0.0463	2.30	0.1920	0.0343	2.33
GT46AL	*	0.1611	-0.0156	-0.78	0.1331	-0.0246	-1.67
H8EF6L	X	0.5020	0.3253	16.15	0.5020	0.3443	23.40
HPY2TJ		0.1660	-0.0107	-0.53	0.1490	-0.0087	-0.59
K7C6LN		0.2050	0.0283	1.40	0.1840	0.0263	1.78
KAX6NP		0.1710	-0.0057	-0.28	0.1560	-0.0017	-0.12
L9EKEC		0.1817	0.0050	0.25	0.1620	0.0043	0.29
MG6PKH	X	0.1390	-0.0377	-1.87	0.1810	0.0233	1.58
ML4YVK		0.1600	-0.0167	-0.83	0.1450	-0.0127	-0.87
NFB2XG		0.1620	-0.0147	-0.73	0.1460	-0.0117	-0.80
P3MCMG		0.1760	-0.0007	-0.04	0.1610	0.0033	0.22
QJZFG8		0.1980	0.0213	1.06	0.1710	0.0133	0.90
QYXJNK		0.1600	-0.0167	-0.83	0.1500	-0.0077	-0.53
R9XEH9	X	1.000	0.8233	40.86	1.000	0.8423	57.25
RBPDV8		0.1900	0.0133	0.66	0.1650	0.0073	0.49
U4HLJE		0.1860	0.0093	0.46	0.1630	0.0053	0.36
V284W4		0.2020	0.0253	1.25	0.1690	0.0113	0.77
V3H887	*	0.2240	0.0473	2.35	0.1970	0.0393	2.67
VC69JA		0.1650	-0.0117	-0.58	0.1460	-0.0117	-0.80
VQB7YV		0.1890	0.0123	0.61	0.1560	-0.0017	-0.12
VWRV94		0.1750	-0.0017	-0.09	0.1590	0.0013	0.09
WHRBBD		0.1580	-0.0187	-0.93	0.1410	-0.0167	-1.14

WebCode	Data Flag	Sample F71 Lab Mean	Sample F71 Diff. from Grand Mean	Sample F71 CPV	Sample F72 Lab Mean	Sample F72 Diff. from Grand Mean	Sample F72 CPV
WRDDT8		0.1700	-0.0067	-0.33	0.1530	-0.0047	-0.32
WZ7TD6		0.1740	-0.0027	-0.13	0.1590	0.0013	0.09
X7CL82		0.1620	-0.0147	-0.73	0.1450	-0.0127	-0.87
XRBAC3		0.1550	-0.0217	-1.08	0.1520	-0.0057	-0.39
YFCQE9	*	0.1270	-0.0497	-2.47	0.1270	-0.0307	-2.09
ZXDPNV		0.1580	-0.0187	-0.93	0.1450	-0.0127	-0.87

Summary Statistics

	Sample F71	Sample F72
Grand Means	0.1767	0.1577
Stnd Dev Btwn Labs	0.0201	0.0147

Samples F71, F72 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 48 of 53 reporting participants

Comments on Assigned Data Flags for Test #1135

77PU2M (X) - Data for sample F71 are low.

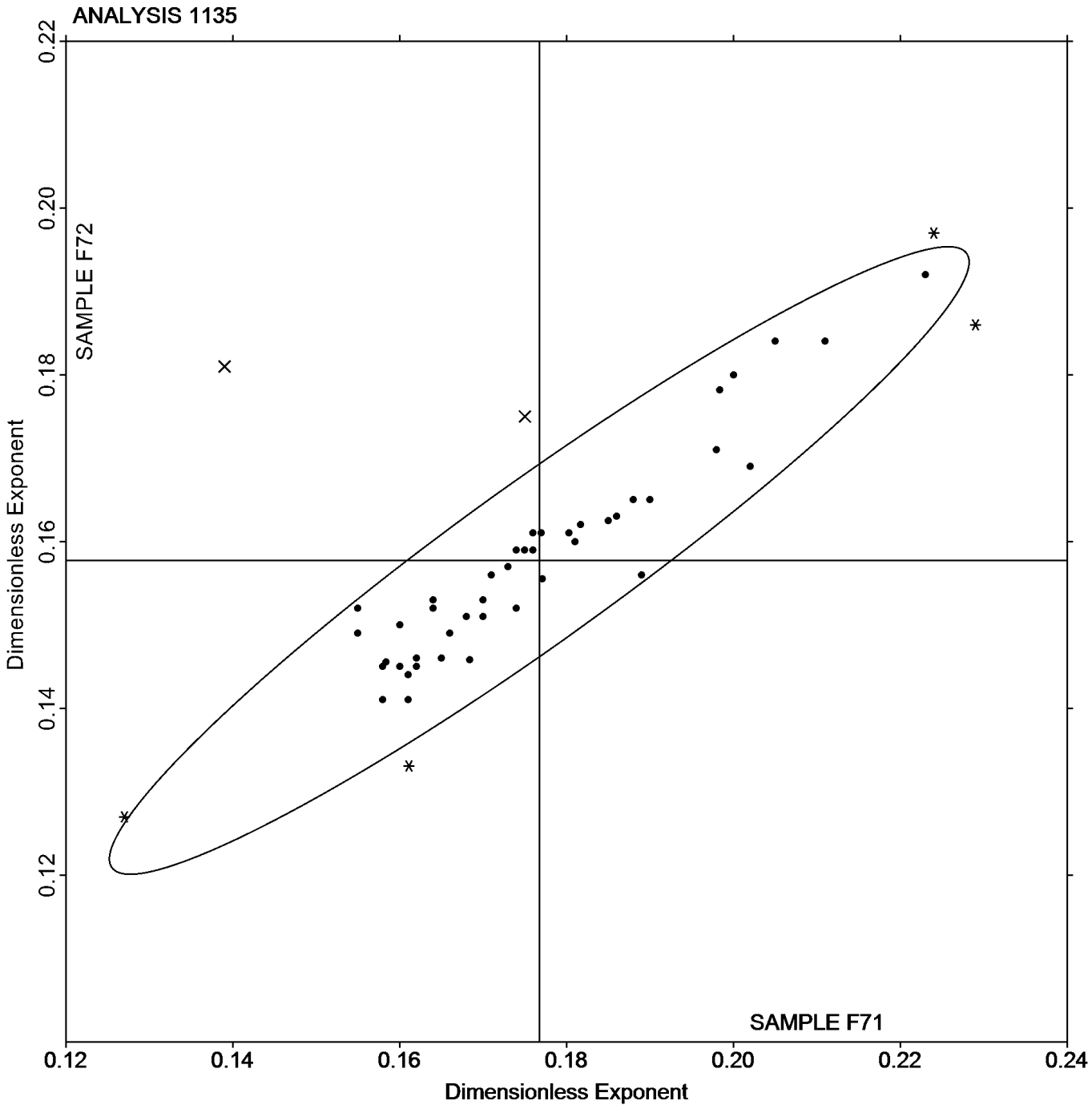
DAZCZH (X) - Inconsistent in testing between samples.

H8EF6L (X) - Data for both samples are high.

MG6PKH (X) - Inconsistent in testing between samples.

R9XEH9 (X) - Extreme data.

SAMPLE F71	SAMPLE F72
0.1767	0.1577



		Sample X71			Sample X72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
29TVZP		147.35	1.31	1.39	137.16	1.09	1.02
2PH7MR		145.60	-0.45	-0.47	136.30	0.22	0.21
2QT99Q		146.33	0.29	0.30	136.33	0.26	0.24
2U9PFA	*	147.99	1.95	2.07	136.64	0.56	0.53
36F4Q8		145.73	-0.31	-0.33	136.13	0.06	0.05
3ECKW6		144.01	-2.04	-2.17	134.23	-1.85	-1.73
47A2KZ		146.67	0.62	0.66	135.70	-0.38	-0.35
4W632Q		146.30	0.25	0.27	137.40	1.32	1.24
6CD4ME		145.99	-0.06	-0.06	135.09	-0.98	-0.92
6KPMHX		146.30	0.25	0.27	135.77	-0.31	-0.29
6PGPP4		145.00	-1.05	-1.11	135.33	-0.74	-0.70
6UJLJ6		146.84	0.79	0.84	136.02	-0.05	-0.05
7KA96M		145.53	-0.51	-0.55	135.23	-0.84	-0.79
7NQQB7	X	1,907,40(	1,907,254.2	026,978.(	1,764,99(	1,764,856.2	655,128.2
8G3DW4		146.80	0.75	0.80	137.00	0.92	0.87
8N34UZ		146.59	0.54	0.57	135.95	-0.13	-0.12
93GKK3		144.76	-1.29	-1.37	134.65	-1.42	-1.34
ALRWQX		145.87	-0.18	-0.19	136.17	0.09	0.09
AMHXVL		145.87	-0.18	-0.19	135.33	-0.74	-0.70
B4Z6FW		145.97	-0.08	-0.08	136.00	-0.08	-0.07
BRBB43		148.10	2.05	2.18	137.83	1.76	1.65
BVMFBW		146.68	0.63	0.67	136.81	0.73	0.69
DZF62T		145.71	-0.33	-0.36	135.57	-0.50	-0.47
EHPEQR		145.86	-0.19	-0.20	136.07	-0.01	-0.01
EYDUNW		145.62	-0.43	-0.46	134.65	-1.42	-1.33
EZURDF	*	147.94	1.89	2.01	139.04	2.97	2.78
FTR38V		145.87	-0.18	-0.19	135.87	-0.21	-0.20
FYANMT		146.00	-0.05	-0.05	136.67	0.59	0.55
GBJNWQ		146.10	0.06	0.06	135.85	-0.22	-0.21
GUV78W	X	160.10	14.05	14.94	150.17	14.09	13.21
GVQWBQ		146.34	0.29	0.31	136.46	0.38	0.36
GZMDRQ		147.53	1.49	1.58	137.70	1.62	1.52
H7JRRH	*	145.14	-0.91	-0.97	137.11	1.03	0.97
HCA33G		145.80	-0.25	-0.26	135.50	-0.58	-0.54
HDR3AC		145.09	-0.96	-1.02	134.84	-1.24	-1.16
HZWXVK		144.85	-1.20	-1.28	135.85	-0.22	-0.21
J36ADL		144.91	-1.14	-1.21	134.97	-1.11	-1.04
J3FGAM		146.80	0.75	0.80	136.47	0.39	0.37
JURCRN		147.37	1.33	1.41	137.05	0.97	0.91
KG22HN		146.64	0.60	0.63	136.58	0.50	0.47
KJMJZ9		146.07	0.02	0.02	135.27	-0.81	-0.76
L3V7YL		147.37	1.32	1.40	138.60	2.52	2.37
MYNEYJ		145.49	-0.55	-0.59	136.03	-0.04	-0.04
NCQ86M		146.47	0.42	0.45	135.87	-0.21	-0.20
NK2DXJ		145.15	-0.90	-0.96	136.16	0.08	0.08
NMARB6	*	148.48	2.44	2.59	138.35	2.28	2.14
P29ZRJ		145.57	-0.48	-0.51	134.77	-1.31	-1.22

		Sample X71			Sample X72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PAZKNJ	X	149.67	3.62	3.85	140.33	4.26	3.99
PC8PEL		146.12	0.07	0.08	135.23	-0.84	-0.79
PRHFMK		145.95	-0.10	-0.10	135.97	-0.10	-0.10
Q3C34F	*	146.03	-0.02	-0.02	137.89	1.82	1.70
Q4M4PE	X	11.31	-134.74	-143.20	10.55	-125.53	-117.72
QNZDGZ		144.21	-1.83	-1.95	134.14	-1.94	-1.82
QRZNDZ		146.07	0.02	0.02	136.50	0.42	0.40
RFLX3C		143.87	-2.18	-2.32	134.03	-2.04	-1.92
RJFWAF		145.98	-0.07	-0.07	136.22	0.15	0.14
RKXY8F		146.33	0.29	0.30	137.33	1.26	1.18
T88NXF		146.45	0.41	0.43	135.36	-0.72	-0.67
TNPUYE		145.98	-0.07	-0.07	136.19	0.12	0.11
TUHP7D	X	144.52	-1.53	-1.63	136.99	0.91	0.86
UD26TD	X	164.87	18.82	20.00	168.15	32.07	30.08
UPX7FF		145.00	-1.05	-1.11	136.00	-0.08	-0.07
V4VFV9		145.13	-0.91	-0.97	134.43	-1.64	-1.54
VUQM7E	X	160.86	14.81	15.74	151.91	15.84	14.85
WRY4ND		145.74	-0.30	-0.32	135.23	-0.85	-0.80
WVDNMM	X	136.45	-9.60	-10.20	146.02	9.94	9.32
YUE6V6		145.90	-0.15	-0.16	135.44	-0.64	-0.60
YUEB3R		146.29	0.25	0.26	135.86	-0.21	-0.20
YYNK39		145.05	-1.00	-1.06	135.53	-0.55	-0.51
ZGHHY9		146.37	0.32	0.34	136.93	0.86	0.80

Summary Statistics

	Sample X71		Sample X72	
Grand Means	146.05	ksi	136.08	ksi
Stnd Dev Btwn Labs	0.94	ksi	1.07	ksi

Samples X71, X72 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 62 of 70 reporting participants

Comments on Assigned Data Flags for Test #1201

7NQQB7 (X) - Extreme data.

GUV78W (X) - Data for both samples are high. Possible Systematic Error.

PAZKNJ (X) - Data for both samples are high. Possible Systematic Error.

Q4M4PE (X) - Extreme data.

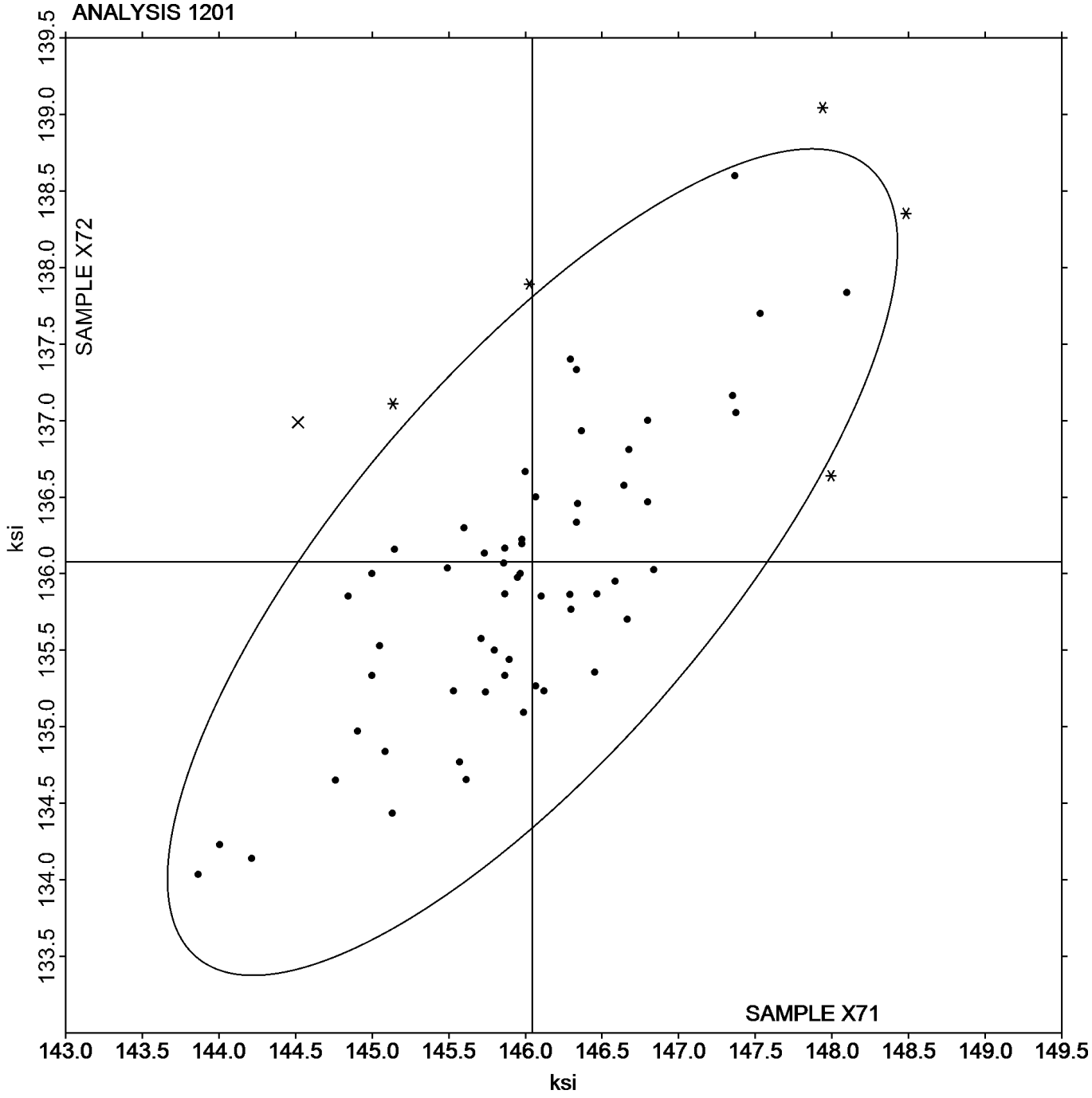
TUHP7D (X) - Inconsistent in testing between samples.

UD26TD (X) - Data for both samples are high. Possible Systematic Error.

VUQM7E (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

WVDNMM (X) - Data for sample X71 are low and data for sample X72 are high. Inconsistent in testing between samples.

SAMPLE X71	SAMPLE X72
146.05 ksi	136.08 ksi



		Sample Q71			Sample Q72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
29TVZP		145.68	1.58	1.00	138.49	2.20	1.73
2HAW6X		145.00	0.90	0.57	135.33	-0.96	-0.75
2JQ8M4		142.77	-1.33	-0.84	134.90	-1.40	-1.10
2PH7MR		143.53	-0.57	-0.36	136.57	0.27	0.21
2U9PFA		144.81	0.71	0.45	137.81	1.51	1.19
36F4Q8		146.17	2.07	1.31	136.13	-0.16	-0.13
422LBB		144.63	0.53	0.34	135.27	-1.02	-0.80
4W632Q	*	141.94	-2.15	-1.36	138.27	1.98	1.55
6KPMHX		142.77	-1.33	-0.84	134.93	-1.36	-1.07
6PGPP4		142.00	-2.10	-1.33	134.67	-1.63	-1.28
6YTNJF		146.86	2.76	1.75	136.49	0.19	0.15
7KA96M		143.37	-0.73	-0.46	135.47	-0.83	-0.65
7NQQB7	X	1,877,193	1,877,048.9	188,377.1	1,773,623	1,773,487.6	390,179.8
8G3DW4		144.83	0.73	0.47	137.47	1.17	0.92
8N34UZ		143.30	-0.80	-0.51	134.60	-1.70	-1.33
93GKK3		141.79	-2.31	-1.46	134.25	-2.04	-1.60
AELAMW		144.53	0.43	0.28	136.20	-0.09	-0.07
B38GTU	*	143.53	-0.57	-0.36	133.23	-3.06	-2.40
B4Z6FW		141.63	-2.47	-1.56	135.83	-0.46	-0.36
BRBB43	X	150.61	6.52	4.13	142.30	6.00	4.71
BVMFBW		146.65	2.55	1.62	136.56	0.27	0.21
BZ2YUY		145.13	1.03	0.65	136.70	0.41	0.32
CFT7CX		142.00	-2.10	-1.33	135.00	-1.29	-1.01
DEFWYQ		146.72	2.62	1.66	136.52	0.23	0.18
DMLXXW		145.33	1.23	0.78	135.03	-1.26	-0.99
EHPEQR		142.17	-1.92	-1.22	135.92	-0.37	-0.29
EJ7GQD		144.40	0.30	0.19	136.17	-0.13	-0.10
EZURDF		146.20	2.10	1.33	139.24	2.94	2.31
FTR38V		144.47	0.37	0.23	134.93	-1.36	-1.07
FYANMT		146.67	2.57	1.63	137.33	1.04	0.81
GBJNWQ		143.64	-0.46	-0.29	135.66	-0.63	-0.50
GH3MTR		145.51	1.41	0.89	138.60	2.30	1.81
HCA33G		141.87	-2.23	-1.41	136.33	0.04	0.03
HDR3AC		142.33	-1.77	-1.12	134.45	-1.84	-1.44
HM866P		143.79	-0.31	-0.20	137.02	0.73	0.57
HUPB4G	X	11.13	-132.97	-84.18	10.67	-125.63	-98.48
J36ADL		142.57	-1.53	-0.97	134.69	-1.60	-1.25
J3FGAM		144.50	0.40	0.25	135.40	-0.89	-0.70
JKJT6J		143.65	-0.44	-0.28	137.54	1.25	0.98
KG22HN		143.20	-0.90	-0.57	136.47	0.18	0.14
KJMJZ9		143.77	-0.33	-0.21	136.90	0.61	0.48
L8LTZK	X	159.40	15.30	9.69	150.40	14.11	11.06
M6B77D		143.20	-0.90	-0.57	136.10	-0.19	-0.15
MYNEYJ		143.66	-0.44	-0.28	136.31	0.01	0.01
MYVGVJ		143.03	-1.07	-0.67	135.00	-1.29	-1.01
NCQ86M		143.73	-0.37	-0.23	136.17	-0.13	-0.10
NMARB6		144.03	-0.07	-0.04	138.87	2.58	2.02

Fasteners and Metals Interlaboratory Testing Program

Analysis 1202

Fastener Axial Tensile
ASTM F606

		Sample Q71			Sample Q72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
P29ZRJ		142.27	-1.83	-1.16	134.76	-1.53	-1.20
PAZKNJ	X	151.67	7.57	4.79	144.67	8.37	6.56
PRHFMK		143.57	-0.53	-0.34	138.05	1.76	1.38
Q4QQ7T	X	153.87	9.77	6.18	144.97	8.67	6.80
QRZNDZ		143.53	-0.57	-0.36	135.90	-0.39	-0.31
RCGETH		144.96	0.86	0.55	134.90	-1.39	-1.09
RJFWAF		144.01	-0.09	-0.06	135.85	-0.44	-0.35
T88NXF		142.84	-1.26	-0.80	135.36	-0.94	-0.73
TUHP7D		143.23	-0.87	-0.55	136.34	0.05	0.04
TXYYAJ		143.62	-0.48	-0.31	137.44	1.15	0.90
U4VDAB		145.25	1.15	0.73	136.15	-0.14	-0.11
UD26TD	X	162.61	18.51	11.72	165.53	29.24	22.92
UPX7FF		144.00	-0.10	-0.06	138.00	1.71	1.34
VUQM7E	X	167.73	23.63	14.96	157.82	21.52	16.87
WJHJAF	X	150.90	6.80	4.31	144.64	8.35	6.54
WRY4ND		141.96	-2.14	-1.35	136.65	0.36	0.28
WVDNMM		145.75	1.65	1.05	137.00	0.70	0.55
X9FGQ4		145.48	1.38	0.87	138.50	2.21	1.73
XA8HNF	X	124.35	-19.75	-12.51	114.29	-22.00	-17.25
YPK4WC		143.36	-0.74	-0.47	136.39	0.10	0.08
YUE6V6		144.00	-0.10	-0.06	136.41	0.12	0.09
YUEB3R		144.48	0.38	0.24	136.00	-0.29	-0.23
YYNK39		142.36	-1.74	-1.10	135.49	-0.81	-0.63
Z8JKFF	*	148.63	4.53	2.87	138.08	1.79	1.40
ZE3WJ9		145.38	1.29	0.81	137.22	0.93	0.73
ZGHHY9	*	148.20	4.10	2.60	137.17	0.87	0.68

Summary Statistics

	Sample Q71		Sample Q72	
Grand Means	144.10	ksi	136.29	ksi
Stnd Dev Btwn Labs	1.58	ksi	1.28	ksi

Samples Q71, Q72 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 63 of 73 reporting participants

Comments on Assigned Data Flags for Test #1202

7NQQB7 (X) - Extreme data.

BRBB43 (X) - Data for both samples are high.

HUPB4G (X) - Extreme data.

L8LTZK (X) - Data for both samples are high. Inconsistent within the determinations of sample Q71.

PAZKNJ (X) - Data for both samples are high. Inconsistent within the determinations of sample Q71.

Q4QQ7T (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

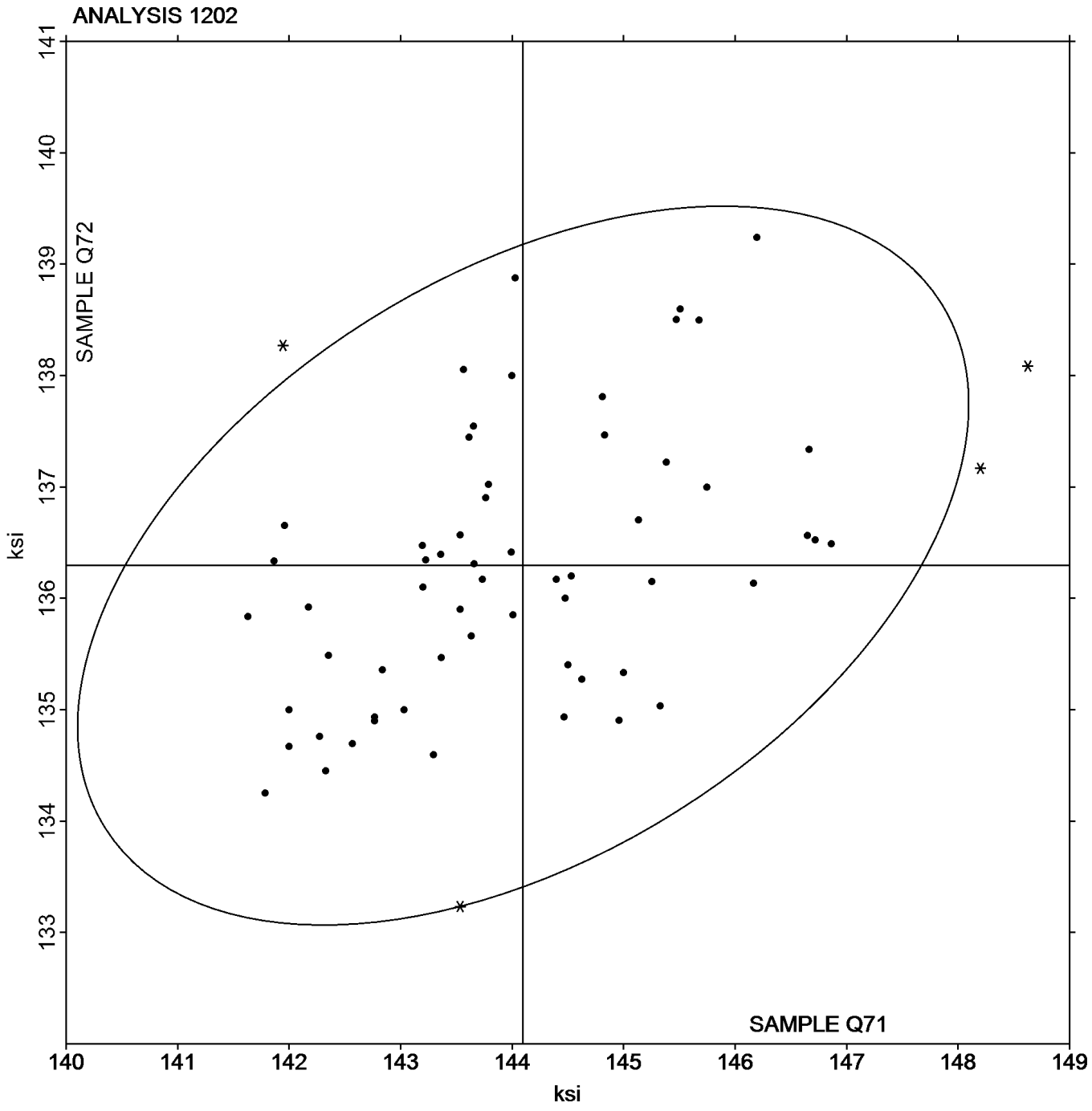
UD26TD (X) - Data for both samples are high. Inconsistent within the determinations of sample Q72.

VUQM7E (X) - Data for both samples are high. Inconsistent within the determinations of sample Q71.

WJHJAF (X) - Data for both samples are high. Inconsistent within the determinations of sample Q71.

XA8HNF (X) - Data for both samples are low.

SAMPLE Q71	SAMPLE Q72
144.10 ksi	136.29 ksi



Fasteners and Metals Interlaboratory Testing Program

Analysis 1203

Fastener Wedge Tensile (10 degree) - Metric
ASTM F606M

		Sample B71			Sample B72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
268DH6		1,101	-15	-0.94	1,114	-6	-0.52
2PH7MR		1,118	3	0.19	1,123	3	0.31
36F4Q8		1,100	-16	-1.01	1,116	-4	-0.34
4JZW2Z		1,118	3	0.16	1,126	7	0.62
6R49Q3		1,111	-4	-0.27	1,109	-10	-0.90
7J8V9D		1,108	-7	-0.47	1,110	-9	-0.85
7ZDW6Z		1,108	-8	-0.49	1,114	-5	-0.48
86NFQZ		1,136	20	1.31	1,142	22	1.99
8LDQD3		1,127	11	0.73	1,118	-2	-0.16
9D3NR2		1,150	34	2.21	1,145	26	2.28
ARWHUU		1,110	-5	-0.32	1,125	5	0.48
BRBB43	X	1,202	87	5.58	1,220	101	9.00
C78VBH	X	1,045	-70	-4.50	1,044	-75	-6.76
CCX7KG		1,099	-17	-1.07	1,097	-22	-1.98
DFLJ74		1,121	6	0.37	1,129	9	0.81
EGJY9T		1,100	-15	-0.98	1,097	-22	-1.98
ENV8LM		1,109	-7	-0.44	1,118	-1	-0.13
FE4BWR		1,112	-3	-0.19	1,124	5	0.43
FTR38V		1,133	18	1.13	1,125	6	0.52
H3JGWH		1,137	21	1.37	1,124	4	0.37
K9LHZA	*	1,081	-35	-2.24	1,114	-5	-0.47
Q4M4PE	X	102.04	-1,013	-65.19	100.97	-1,019	-91.20
RJFWAF		1,132	17	1.10	1,123	4	0.31
TFWA4E	X	64,580	63,465	4,082.84	64,668	63,549	5,690.45
U4VDAB		1,109	-6	-0.38	1,116	-4	-0.33
UZW4Y9		1,112	-4	-0.23	1,115	-5	-0.43
X42YC9		1,122	7	0.45	1,124	5	0.43

Summary Statistics

	Sample B71		Sample B72	
Grand Means	1,115	MPa	1,119	MPa
Stnd Dev Btwn Labs	16	MPa	11	MPa

Samples B71, B72 : M-10x1.5x70, M-10x1.5x75

Statistics based on 23 of 27 reporting participants

Comments on Assigned Data Flags for Test #1203

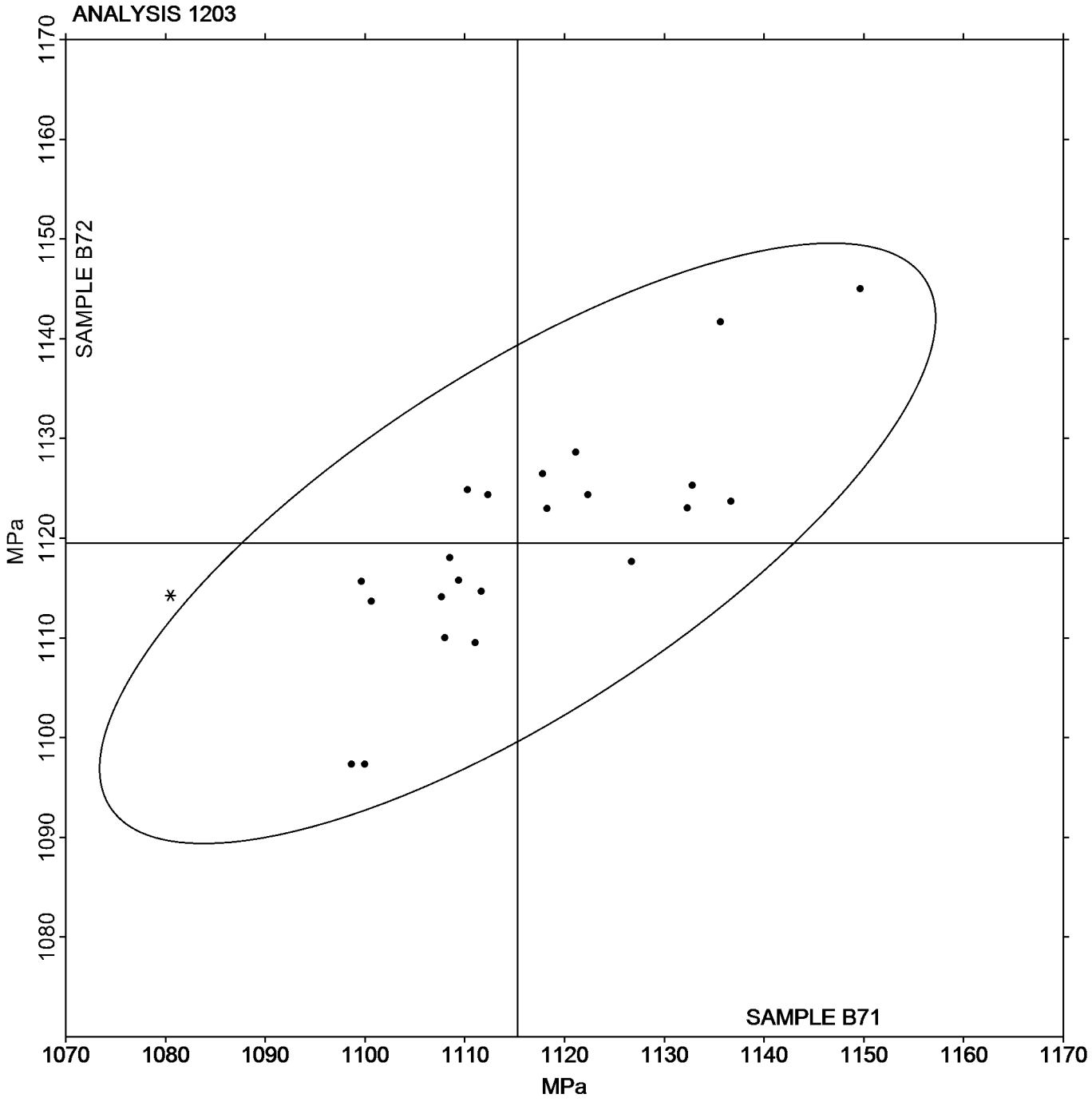
BRBB43 (X) - Data for both samples are high.

C78VBH (X) - Data for both samples are low.

Q4M4PE (X) - Extreme data.

TFWA4E (X) - Extreme data.

SAMPLE B71	SAMPLE B72
1,115 MPa	1,119 MPa



Fasteners and Metals Interlaboratory Testing Program

Analysis 1204

Fastener Axial Tensile - Metric
ASTM F606M

		Sample T71			Sample T72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
36F4Q8		1,117	-9	-0.53	1,119	-10	-0.54
6FDEJE		1,106	-20	-1.14	1,111	-18	-0.99
86NFQZ		1,146	20	1.17	1,137	9	0.49
8LDQD3		1,121	-5	-0.32	1,115	-13	-0.75
8TTE4X		1,133	7	0.38	1,138	9	0.51
9D3NR2		1,149	23	1.32	1,145	17	0.94
BRBB43	*	1,170	44	2.55	1,180	51	2.86
CJBBZU	*	1,119	-7	-0.43	1,154	25	1.40
DFLJ74		1,144	18	1.05	1,133	4	0.24
ENV8LM		1,117	-9	-0.55	1,117	-12	-0.65
FE4BWR		1,124	-2	-0.12	1,121	-8	-0.44
JGHPDW		1,119	-7	-0.39	1,121	-7	-0.42
KTBEYN		1,111	-15	-0.89	1,111	-18	-0.98
Q4M4PE	X	101.94	-1,024	-59.12	101.37	-1,027	-57.46
RJFWAF		1,131	5	0.26	1,125	-4	-0.22
TFWA4E	X	64,492	63,366	3,657.78	64,724	63,595	3,557.37
TNQEWF		1,109	-17	-1.01	1,116	-13	-0.72
U4VDAB		1,117	-9	-0.53	1,123	-6	-0.33
XUYLB8		1,112	-14	-0.82	1,122	-7	-0.40

Summary Statistics

	Sample T71		Sample T72	
Grand Means	1,126	MPa	1,129	MPa
Stnd Dev Btwn Labs	17	MPa	18	MPa

Samples T71, T72 : M-10x1.5x70, M-10x1.5x75

Statistics based on 17 of 19 reporting participants

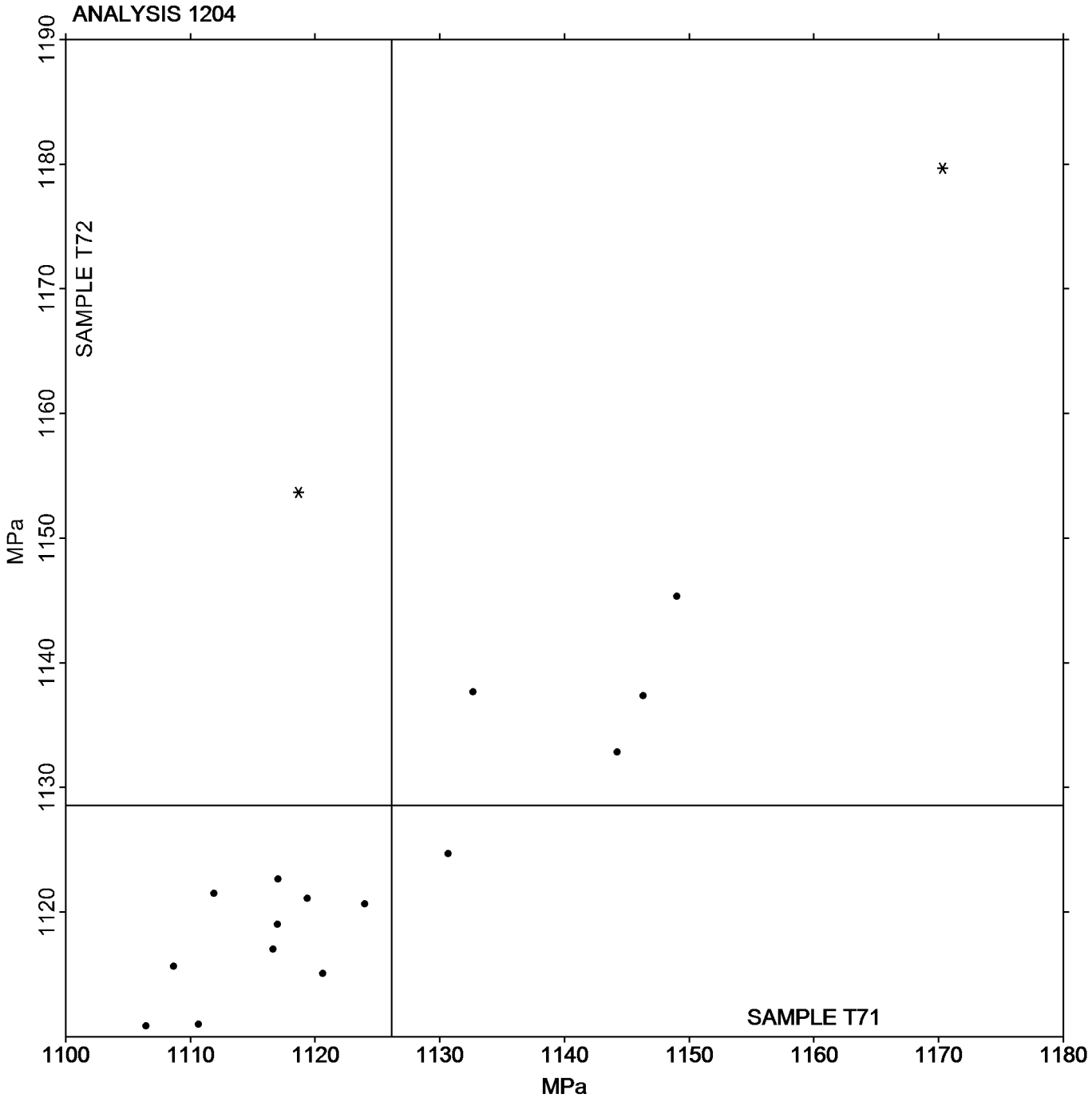
Comments on Assigned Data Flags for Test #1204

Q4M4PE (X) - Extreme data.

TFWA4E (X) - Extreme data.

SAMPLE T71
1,126 MPa

SAMPLE T72
1,129 MPa



		Sample G71			Sample G72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
29TVZP		30.12	1.22	1.45	28.74	-0.21	-0.29
2PH7MR	X	32.26	3.36	3.99	28.44	-0.51	-0.71
36F4Q8		27.94	-0.96	-1.14	27.89	-1.05	-1.47
3ECKW6		28.19	-0.71	-0.84	28.48	-0.47	-0.65
4JZW2Z		28.56	-0.33	-0.40	28.21	-0.74	-1.03
4W632Q		27.26	-1.64	-1.95	28.26	-0.69	-0.96
6KPMHX		28.26	-0.64	-0.76	28.14	-0.81	-1.13
6R49Q3		28.80	-0.10	-0.11	28.66	-0.29	-0.40
6UJLJ6		28.43	-0.47	-0.56	28.52	-0.43	-0.60
7J8V9D		28.81	-0.08	-0.10	29.06	0.12	0.16
7KA96M		28.59	-0.31	-0.37	28.83	-0.12	-0.17
7ZDW6Z	X	24.96	-3.94	-4.68	25.24	-3.71	-5.17
86NFQZ	X	25.41	-3.49	-4.15	29.19	0.25	0.35
8G3DW4		29.08	0.18	0.21	29.18	0.24	0.33
8LDQD3		29.09	0.20	0.23	29.99	1.04	1.45
8N34UZ	*	30.99	2.09	2.48	30.65	1.70	2.38
AELAMW	X	49.82	20.92	24.85	49.53	20.58	28.70
ARWHUU	*	28.97	0.07	0.09	30.43	1.48	2.06
B38GTU		28.85	-0.05	-0.06	29.06	0.11	0.15
B4Z6FW		29.74	0.84	1.00	28.87	-0.08	-0.11
BARCY6		29.49	0.59	0.70	28.46	-0.48	-0.67
BRBB43		28.85	-0.05	-0.06	29.41	0.46	0.64
C78VBH		29.06	0.16	0.19	29.58	0.63	0.88
CCX7KG		28.54	-0.36	-0.43	28.12	-0.83	-1.15
D9ABUU		29.05	0.15	0.18	28.06	-0.88	-1.23
EHPEQR		28.30	-0.60	-0.71	28.93	-0.01	-0.02
EJ7GQD		29.19	0.29	0.35	28.94	-0.01	-0.01
EUJVFT	X	26.36	-2.54	-3.02	25.28	-3.66	-5.11
EZURDF		28.91	0.01	0.01	29.16	0.21	0.29
FTR38V		28.97	0.07	0.09	29.61	0.67	0.93
FYANMT		27.86	-1.04	-1.24	28.28	-0.67	-0.93
GBJNWQ	*	31.03	2.13	2.54	29.94	0.99	1.38
GVQWBQ		28.76	-0.14	-0.17	29.13	0.18	0.25
GZMDRQ		27.61	-1.29	-1.53	28.98	0.04	0.05
HDR3AC		27.96	-0.94	-1.12	27.63	-1.32	-1.84
HM866P		29.41	0.52	0.61	28.69	-0.26	-0.36
HUPB4G		28.89	0.00	0.00	29.15	0.20	0.28
J3FGAM		29.09	0.20	0.23	28.01	-0.93	-1.30
K4QDKJ		27.49	-1.41	-1.67	28.02	-0.93	-1.29
K9LHZA		28.91	0.01	0.01	29.09	0.14	0.20
KJMJZ9		28.19	-0.71	-0.84	28.91	-0.04	-0.05
KTBEYN		29.19	0.29	0.35	28.82	-0.13	-0.18
L3V7YL		28.95	0.05	0.06	29.35	0.40	0.56
L8LTZK	X	31.34	2.44	2.90	28.75	-0.20	-0.28
LBMRJQ		29.08	0.18	0.21	28.61	-0.33	-0.46
LDDYYG		28.11	-0.78	-0.93	28.04	-0.90	-1.26
MYNEYJ		27.90	-1.00	-1.18	28.68	-0.27	-0.38

Fasteners and Metals Interlaboratory Testing Program

Analysis 1210

Rockwell Hardness: Externally Threaded Fasteners
ASTM F606/F606M AND ASTM E18

		Sample G71			Sample G72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
N8DLWF		29.29	0.40	0.47	29.44	0.50	0.69
NK2DXJ		28.17	-0.73	-0.86	29.00	0.05	0.08
NMARB6		28.69	-0.21	-0.25	29.13	0.19	0.26
P29ZRJ		30.76	1.86	2.21	29.88	0.93	1.30
Q4M4PE		28.21	-0.68	-0.81	28.88	-0.06	-0.09
QRVFXL		29.09	0.20	0.23	29.33	0.39	0.54
RJFWAF	X	30.28	1.38	1.64	24.56	-4.38	-6.11
RW47PX		28.18	-0.72	-0.86	28.95	0.00	0.01
T88NXF		27.81	-1.08	-1.29	27.31	-1.63	-2.28
TFWA4E		29.86	0.97	1.15	29.79	0.84	1.17
TNQEWF		28.75	-0.15	-0.17	29.58	0.64	0.89
U4VDAB	*	31.14	2.24	2.66	31.13	2.18	3.04
UD26TD		28.21	-0.69	-0.81	28.38	-0.57	-0.79
VUQM7E	X	24.66	-4.24	-5.04	28.73	-0.22	-0.31
WRY4ND		28.27	-0.63	-0.75	28.20	-0.75	-1.04
WVDNMM		30.06	1.17	1.39	29.04	0.10	0.14
X42YC9		29.25	0.35	0.42	29.15	0.20	0.29
X9FGQ4	X	26.84	-2.06	-2.45	29.26	0.32	0.44
XUYLB8		28.77	-0.13	-0.15	29.18	0.23	0.32
YYNK39		29.38	0.48	0.57	28.74	-0.20	-0.28
ZDKYZG		29.51	0.61	0.72	29.33	0.39	0.54
ZGHHY9		29.98	1.08	1.28	29.78	0.84	1.17
ZUA3MC	X	33.13	4.23	5.02	29.96	1.02	1.42

Summary Statistics

	Sample G71		Sample G72	
Grand Means	28.90	HRC	28.95	HRC
Stnd Dev Btwn Labs	0.84	HRC	0.72	HRC

Samples G71, G72 : 1/2-20 x 2 1/4, 1/2-20 x 2 3/4

Statistics based on 60 of 70 reporting participants

Comments on Assigned Data Flags for Test #1210

2PH7MR (X) - Data for sample G71 are high. Inconsistent within the determinations of sample G72.

7ZDW6Z (X) - Data for both samples are low. Inconsistent within the determinations of both samples.

86NFQZ (X) - Data for sample G71 are low. Inconsistent within the determinations of sample G71.

AELAMW (X) - Data for both samples are high.

EUJVFT (X) - Data for both samples are low. Inconsistent within the determinations of sample G72.

L8LTZK (X) - Data for sample G71 are high. Inconsistent within the determinations of sample G72.

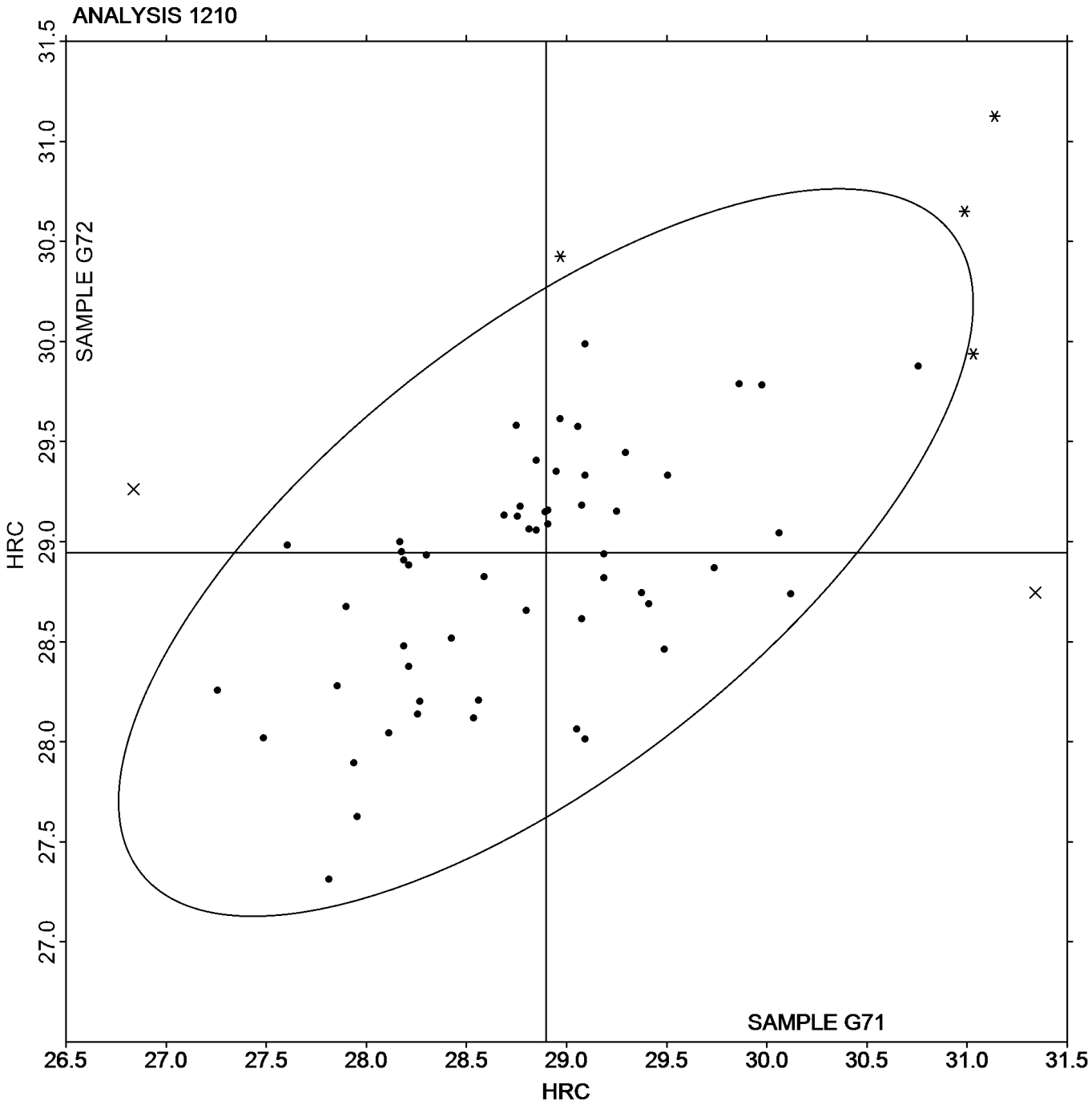
RJFWAF (X) - Data for sample G72 are low. Inconsistent within the determinations of sample G71.

VUQM7E (X) - Data for sample G71 are low.

X9FGQ4 (X) - Inconsistent in testing between samples.

ZUA3MC (X) - Data for sample G71 are high.

SAMPLE G71	SAMPLE G72
28.90 HRC	28.95 HRC



Fasteners and Metals Interlaboratory Testing Program

Analysis 1211

Vickers Hardness: Externally Threaded Fasteners
ASTM E92

WebCode	Data Flag	Sample V71 Lab Mean	Sample V71 Diff. from Grand Mean	Sample V71 CPV	Sample V72 Lab Mean	Sample V72 Diff. from Grand Mean	Sample V72 CPV
268DH6		298.50	-0.01	0.00	297.31	-0.90	-0.15
4TR7U4	*	302.26	3.75	0.47	315.13	16.91	2.89
7KA96M		292.50	-6.01	-0.75	292.81	-5.40	-0.92
9D3NR2		297.13	-1.38	-0.17	298.81	0.60	0.10
AYYHFH		305.81	7.30	0.91	291.31	-6.90	-1.18
B38GTU		297.34	-1.17	-0.15	301.06	2.84	0.49
B4Z6FW		295.94	-2.57	-0.32	296.63	-1.59	-0.27
BRBB43		300.61	2.10	0.26	298.78	0.56	0.10
C78VBH		292.14	-6.37	-0.79	296.10	-2.12	-0.36
CCRAHW		298.21	-0.30	-0.04	297.73	-0.49	-0.08
D3788G		298.11	-0.40	-0.05	305.34	7.12	1.22
D98H7U	*	276.71	-21.80	-2.72	295.24	-2.98	-0.51
DMLXXW		300.75	2.24	0.28	293.87	-4.35	-0.74
DPC6DM		305.38	6.87	0.86	302.44	4.22	0.72
ENV8LM		296.94	-1.57	-0.20	297.56	-0.65	-0.11
EUJVFT		287.25	-11.26	-1.40	291.94	-6.28	-1.07
EZURDF		296.94	-1.57	-0.20	299.86	1.64	0.28
GBJNWQ		305.44	6.93	0.86	298.06	-0.15	-0.03
GV4HPX		297.44	-1.07	-0.13	295.25	-2.97	-0.51
HDR3AC		298.19	-0.32	-0.04	296.13	-2.09	-0.36
HLW9TT		311.74	13.23	1.65	301.53	3.31	0.57
HM866P		301.31	2.80	0.35	296.06	-2.15	-0.37
HZWXVK		285.98	-12.53	-1.56	294.60	-3.62	-0.62
JGHPDW		302.14	3.63	0.45	296.76	-1.46	-0.25
P29ZRJ		303.63	5.12	0.64	296.00	-2.22	-0.38
QHAA2H		302.13	3.62	0.45	302.44	4.22	0.72
TFWA4E		296.75	-1.76	-0.22	297.00	-1.22	-0.21
WU2PRD		309.50	10.99	1.37	290.75	-7.47	-1.28
WVDNMM	*	319.53	21.02	2.62	293.68	-4.54	-0.78
X8KXMG		290.91	-7.60	-0.95	293.18	-5.04	-0.86
YUE6V6		287.89	-10.62	-1.32	302.61	4.40	0.75
ZGHHY9	*	297.25	-1.26	-0.16	317.00	18.78	3.21

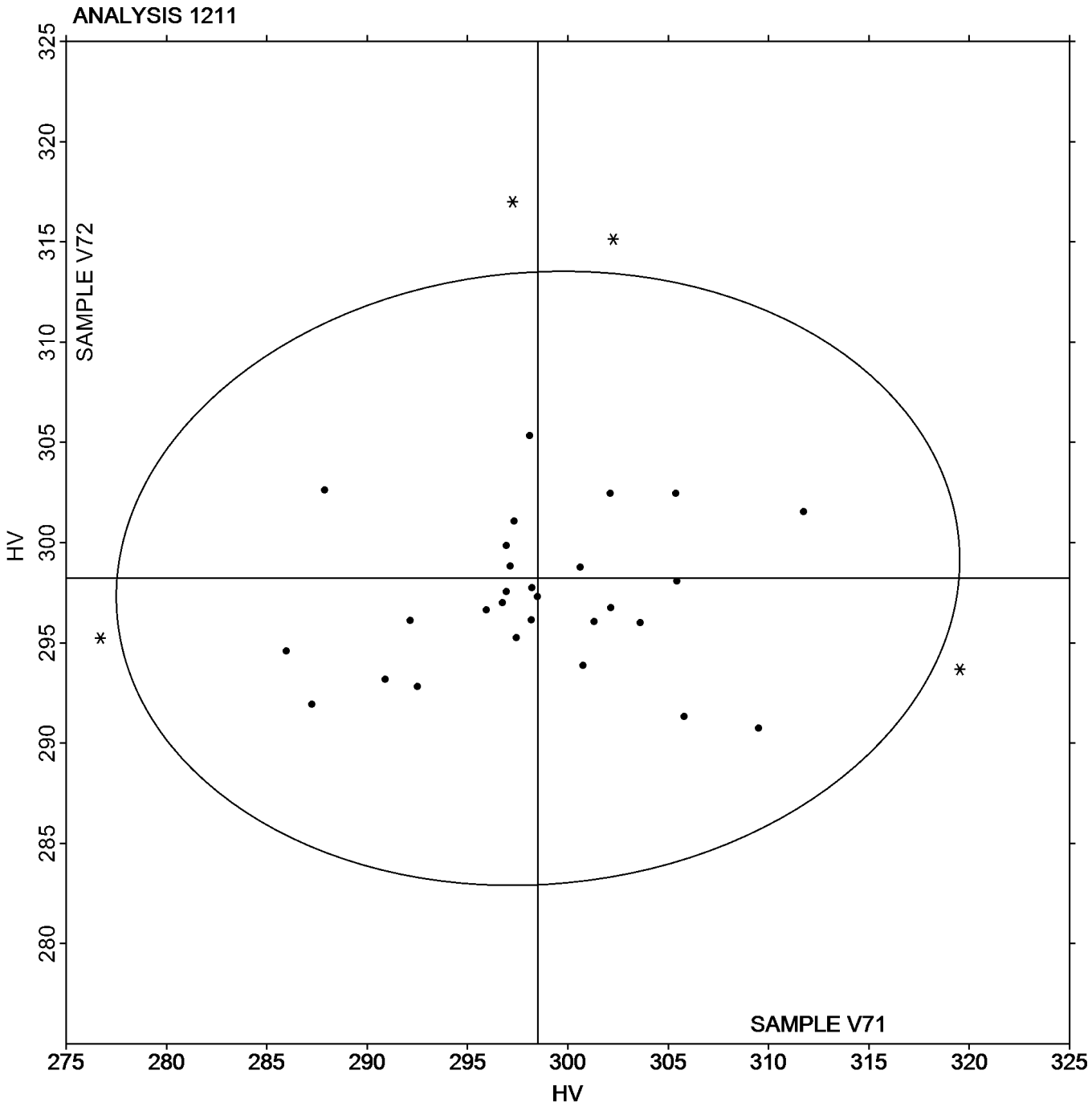
Summary Statistics

	Sample V71		Sample V72	
Grand Means	298.51	HV	298.22	HV
Stnd Dev Btwn Labs	8.03	HV	5.85	HV

Samples V71, V72 : 1/2-20 x 2 1/4, 1/2-20 x 2 3/4

Statistics based on 32 of 32 reporting participants

SAMPLE V71	SAMPLE V72
298.51 HV	298.22 HV



Fasteners and Metals Interlaboratory Testing Program

Analysis 1220

Fastener Double Shear
NASM 1312-13

		Sample Z71			Sample Z72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2QT99Q		18,733	-546	-1.31	17,667	-638	-1.42
47A2KZ		18,700	-580	-1.39	17,833	-471	-1.05
7NQQB7		19,219	-60	-0.15	18,313	8	0.02
8G3DW4		20,140	860	2.07	19,186	882	1.96
B4Z6FW		19,535	255	0.61	18,599	294	0.65
BRBB43	X	16,514	-2,766	-6.64	15,711	-2,593	-5.77
CCX7KG		19,283	4	0.01	18,287	-18	-0.04
EJ7GQD		18,897	-382	-0.92	18,103	-202	-0.45
GH3MTR		19,478	199	0.48	18,863	558	1.24
GTKJDP		19,345	66	0.16	18,288	-16	-0.04
HM866P		18,990	-289	-0.70	17,940	-365	-0.81
HUPB4G		19,517	237	0.57	18,783	479	1.06
L8LTZK		19,911	631	1.52	18,761	457	1.02
PAZKNJ		19,179	-101	-0.24	18,164	-141	-0.31
U4VDAB		19,554	274	0.66	18,280	-24	-0.05
UK62MB		19,276	-3	-0.01	18,207	-98	-0.22
UPX7FF		18,382	-898	-2.16	17,198	-1,107	-2.46
VUQM7E		19,425	145	0.35	18,288	-17	-0.04
X9FGQ4		19,281	2	0.00	18,178	-127	-0.28
YYNK39		19,685	405	0.97	18,631	326	0.73
ZCRY47		19,066	-214	-0.51	18,523	218	0.49

Summary Statistics

	Sample Z71		Sample Z72	
Grand Means	19,280	lb	18,305	lb
Stnd Dev Btwn Labs	416	lb	450	lb

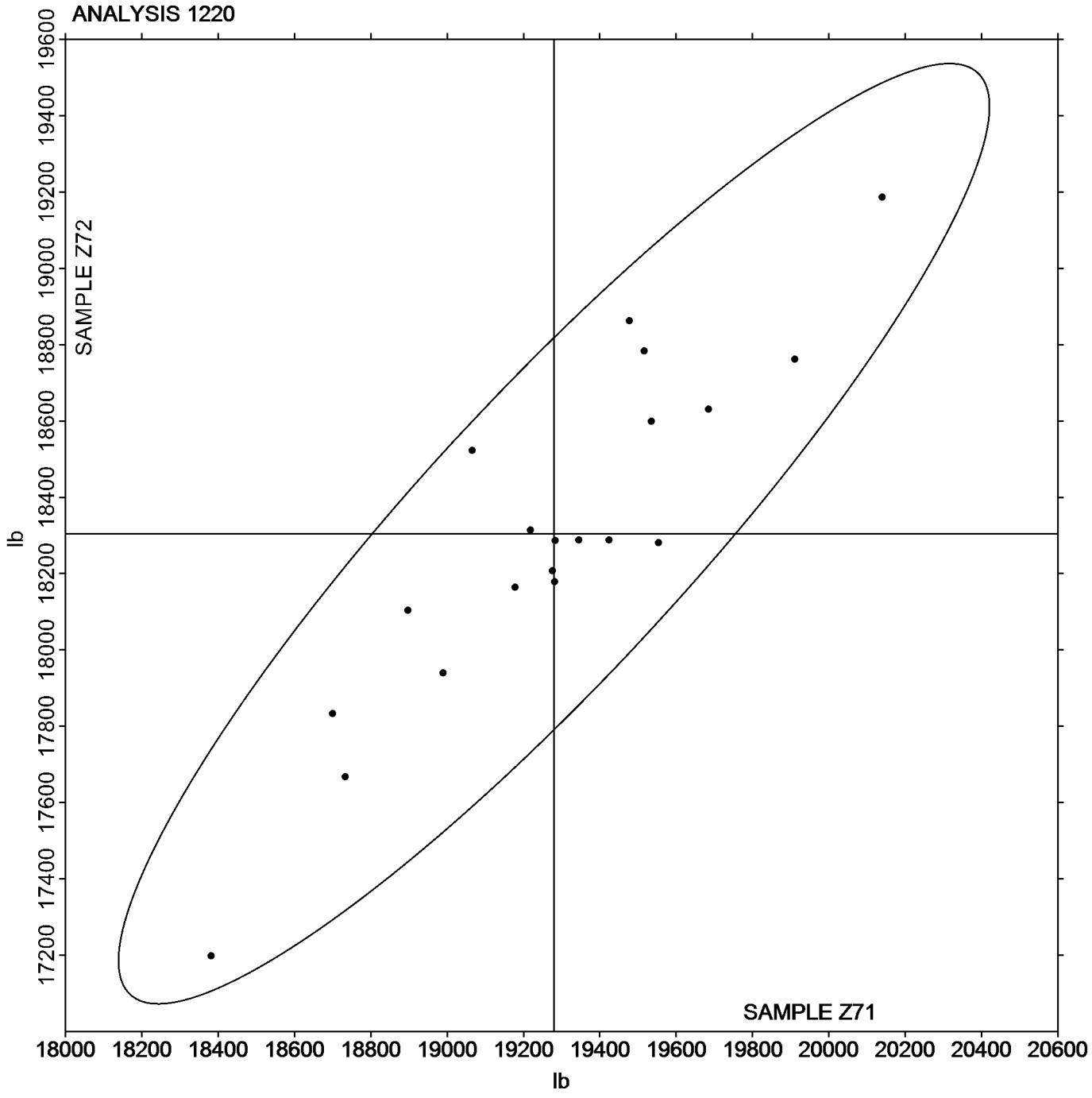
Samples Z71, Z72 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 20 of 21 reporting participants

Comments on Assigned Data Flags for Test #1220

BRBB43 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample Z72.

SAMPLE Z71	SAMPLE Z72
19,280 lb	18,305 lb



		Sample E71			Sample E72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
23YBL9		55.36	0.02	0.05	59.24	0.02	0.06
27H88D		55.00	-0.34	-1.02	59.00	-0.22	-0.64
2BGJA6		55.48	0.14	0.41	59.46	0.24	0.69
2KH9KE		55.04	-0.30	-0.90	59.06	-0.16	-0.47
2QT99Q		55.00	-0.34	-1.02	59.00	-0.22	-0.64
2TTB7E	X	54.20	-1.14	-3.41	59.38	0.16	0.46
2ZP8PB		55.42	0.08	0.23	58.98	-0.24	-0.70
34M4TW		54.66	-0.68	-2.04	58.84	-0.38	-1.10
4DPT47		55.30	-0.04	-0.13	59.20	-0.02	-0.06
4FW7QD	X	54.18	-1.16	-3.47	58.40	-0.82	-2.38
4GC3HD		55.90	0.56	1.66	59.88	0.66	1.91
4LN9Z6		55.64	0.30	0.89	59.52	0.30	0.87
4T8C88		55.14	-0.20	-0.60	59.04	-0.18	-0.52
69YJN7		55.26	-0.08	-0.25	59.18	-0.04	-0.12
6YTNJF	X	53.56	-1.78	-5.32	59.10	-0.12	-0.35
7FB433		55.22	-0.12	-0.37	59.18	-0.04	-0.12
7G2BHT		55.26	-0.08	-0.25	59.12	-0.10	-0.29
7NQQB7		55.50	0.16	0.47	59.56	0.34	0.98
8BUCCL		54.90	-0.44	-1.32	58.80	-0.42	-1.22
8LCPJ4		55.18	-0.16	-0.49	59.10	-0.12	-0.35
8PY9VM		55.14	-0.20	-0.60	59.06	-0.16	-0.47
8TTE4X		55.80	0.46	1.36	59.72	0.50	1.45
8UKE29		55.60	0.26	0.77	59.76	0.54	1.56
8XKQW9		55.36	0.02	0.05	59.26	0.04	0.11
9DG38X		55.68	0.34	1.01	59.48	0.26	0.75
9KERVU		55.84	0.50	1.48	59.52	0.30	0.87
9P7793		54.90	-0.44	-1.32	58.90	-0.32	-0.93
AQG9V2		55.12	-0.22	-0.66	58.90	-0.32	-0.93
BFX9KQ		55.48	0.14	0.41	59.14	-0.08	-0.23
CGL6J4		55.44	0.10	0.29	59.26	0.04	0.11
CJBBZU		55.68	0.34	1.01	59.70	0.48	1.39
D3788G		55.18	-0.16	-0.49	59.32	0.10	0.29
DQNLQZ		55.48	0.13	0.40	59.51	0.29	0.85
EAAWTQ		55.80	0.46	1.36	59.80	0.58	1.68
EMZPGZ		55.39	0.05	0.15	59.35	0.13	0.36
ENGLAZ		55.20	-0.14	-0.43	59.40	0.18	0.52
ETP7TQ		55.20	-0.14	-0.43	58.80	-0.42	-1.22
EYDUNW		55.46	0.12	0.35	59.16	-0.06	-0.18
EZURDF		55.34	0.00	-0.01	59.22	0.00	0.00
FXHNPH		55.54	0.20	0.59	59.56	0.34	0.98
GH3MTR		55.62	0.28	0.83	59.34	0.12	0.35
H3JGWH		55.04	-0.30	-0.90	58.96	-0.26	-0.76
H8VKMK	X	54.66	-0.68	-2.04	57.90	-1.32	-3.83
HHD9GJ		55.12	-0.22	-0.66	59.00	-0.22	-0.64
HR4UKW		55.06	-0.28	-0.84	59.30	0.08	0.23
HZWXVK		55.10	-0.24	-0.72	59.10	-0.12	-0.35
JZXYEX		55.36	0.02	0.05	59.16	-0.06	-0.18

Fasteners and Metals Interlaboratory Testing Program

Analysis 1303

Rockwell Hardness: C Scale
ASTM E18

Cycle 132
4th Qtr 2020

		Sample E71			Sample E72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
KELTZM		55.34	0.00	-0.01	59.28	0.06	0.17
L87JFK		55.18	-0.16	-0.49	58.82	-0.40	-1.16
LBRZY6	*	54.38	-0.96	-2.87	58.42	-0.80	-2.32
LE36HR		55.18	-0.17	-0.50	58.72	-0.50	-1.46
LMG7JM		54.98	-0.36	-1.08	59.12	-0.10	-0.29
LRGBK8	X	53.82	-1.52	-4.54	57.70	-1.52	-4.41
NABQX4		55.84	0.50	1.48	59.46	0.24	0.69
NCQ86M		54.92	-0.42	-1.26	58.66	-0.56	-1.63
NDK3JH		55.54	0.20	0.59	59.32	0.10	0.29
NFB2XG		55.60	0.26	0.77	59.60	0.38	1.10
PAZKNJ		55.08	-0.26	-0.78	59.02	-0.20	-0.58
PBC33H		55.78	0.44	1.30	59.46	0.24	0.69
PC8PEL		55.40	0.06	0.17	59.02	-0.20	-0.58
PRHFMK		55.66	0.32	0.95	59.22	0.00	0.00
PU8T3H		55.62	0.28	0.83	59.40	0.18	0.52
QAUF3E		55.40	0.06	0.17	59.40	0.18	0.52
QP74YF		55.28	-0.06	-0.19	59.28	0.06	0.17
QWBTWM		55.70	0.36	1.07	59.60	0.38	1.10
R83VDL		55.30	-0.04	-0.13	58.80	-0.42	-1.22
R9XEH9	*	54.52	-0.82	-2.45	58.20	-1.02	-2.96
RBPDV8		55.52	0.18	0.53	59.10	-0.12	-0.35
T88NXF	*	55.60	0.26	0.77	59.00	-0.22	-0.64
TUHP7D	X	54.66	-0.68	-2.04	59.36	0.14	0.40
V4VFV9		55.46	0.12	0.35	59.32	0.10	0.29
VLWHCD		54.73	-0.61	-1.83	58.41	-0.81	-2.36
VWCGY9		54.94	-0.40	-1.20	58.96	-0.26	-0.76
W7XW7A		55.80	0.46	1.36	59.68	0.46	1.33
WNE2W8		55.54	0.20	0.59	59.36	0.14	0.40
WU2PRD		54.86	-0.48	-1.44	58.96	-0.26	-0.76
WYVQPL		55.44	0.10	0.29	59.12	-0.10	-0.29
X2Y6BH		55.00	-0.34	-1.02	58.92	-0.30	-0.87
XA8HNF		55.30	-0.04	-0.13	59.56	0.34	0.98
XLP36V	X	54.70	-0.64	-1.92	57.88	-1.34	-3.89
XXFQ8H		55.92	0.58	1.72	59.72	0.50	1.45
YPZMF9		56.04	0.70	2.08	60.00	0.78	2.26
Z3NT8H	X	53.91	-1.43	-4.26	57.78	-1.44	-4.19
ZUA3MC		55.54	0.20	0.59	59.74	0.52	1.51
ZY7Q4J		55.81	0.46	1.38	59.49	0.27	0.78

Summary Statistics

	Sample E71		Sample E72	
Grand Means	55.34	HRC	59.22	HRC
Stnd Dev Btwn Labs	0.34	HRC	0.34	HRC

Samples E71, E72 : Steel, Steel

Statistics based on 77 of 85 reporting participants

Comments on Assigned Data Flags for Test #1303

2TTB7E (X) - Data for sample E71 are low.

4FW7QD (X) - Data for sample E71 are low. Inconsistent within the determinations of sample E71.

6YTNJF (X) - Data for sample E71 are low. Inconsistent within the determinations of sample E71.

H8VKMK (X) - Data for sample E72 are low.

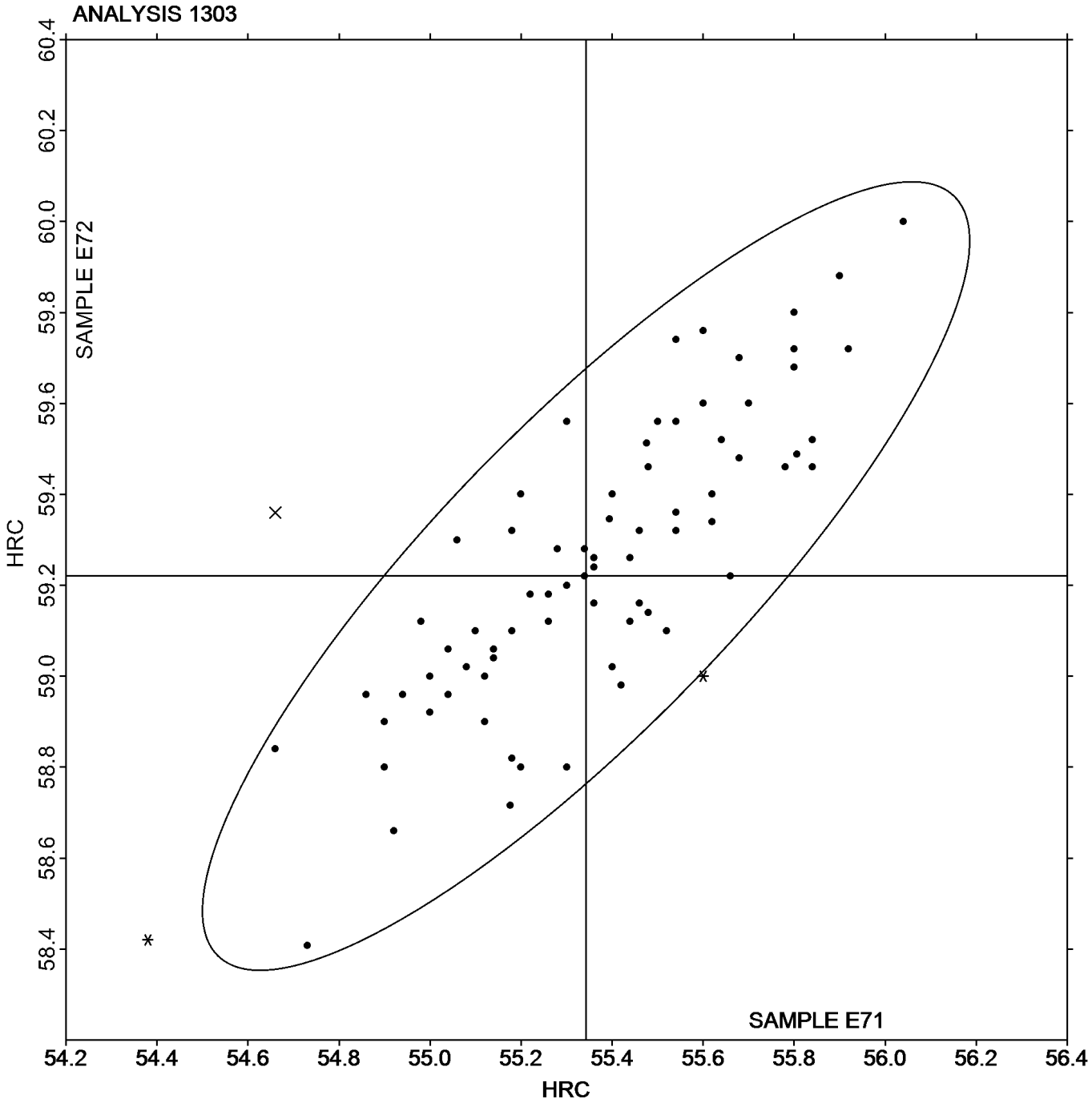
LRGBK8 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

TUHP7D (X) - Inconsistent in testing between samples.

XLP36V (X) - Data for sample E72 are low.

Z3NT8H (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample E71.

SAMPLE E71	SAMPLE E72
55.34 HRC	59.22 HRC



		Sample E71			Sample E72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2GJPN8	X	71.34	-2.13	-3.54	76.10	-0.60	-0.95
36F4Q8		73.80	0.33	0.54	76.02	-0.68	-1.08
3NUB9V		73.60	0.13	0.21	76.80	0.10	0.16
48LLP3		73.18	-0.30	-0.49	76.89	0.19	0.30
4DB8P3		74.30	0.83	1.37	78.00	1.30	2.06
4JZW2Z		73.78	0.31	0.51	77.86	1.16	1.84
6CYVK7		73.28	-0.19	-0.32	76.64	-0.06	-0.10
6KPMHX		72.58	-0.89	-1.48	75.46	-1.24	-1.97
7J8V9D		73.20	-0.27	-0.45	77.30	0.60	0.95
7KA96M		72.84	-0.63	-1.05	76.62	-0.08	-0.13
7TEHD8		73.70	0.23	0.38	76.92	0.22	0.35
8LCPJ4		73.28	-0.19	-0.32	76.56	-0.14	-0.22
8YW6M4		73.38	-0.09	-0.15	76.50	-0.20	-0.32
9ER39Y		74.08	0.61	1.01	77.10	0.40	0.63
ADB82X		73.78	0.31	0.51	76.88	0.18	0.28
ALRWQX		74.14	0.67	1.11	77.46	0.76	1.20
B4Z6FW		73.72	0.25	0.41	76.80	0.10	0.16
B99VEW		73.53	0.05	0.09	76.63	-0.07	-0.12
BD834Z		73.18	-0.29	-0.49	76.34	-0.36	-0.57
BLYMYZ		73.92	0.45	0.75	77.19	0.49	0.78
BRBB43		72.38	-1.09	-1.81	76.20	-0.50	-0.80
C4KETX		73.49	0.01	0.02	77.11	0.40	0.64
CCX7KG		74.08	0.61	1.01	77.16	0.46	0.73
CJBBZU		73.58	0.11	0.18	77.06	0.36	0.57
D9JECY		73.26	-0.21	-0.35	76.56	-0.14	-0.22
DZF62T		73.26	-0.21	-0.35	76.80	0.10	0.16
EAAWTQ		73.14	-0.33	-0.55	76.34	-0.36	-0.57
EHR296		73.34	-0.13	-0.22	76.54	-0.16	-0.26
EJ7GQD		73.42	-0.05	-0.09	76.52	-0.18	-0.29
EMZPGZ		73.31	-0.16	-0.27	76.75	0.05	0.08
GRTE6B		73.84	0.37	0.61	77.20	0.50	0.79
H7JRRH		73.76	0.29	0.48	76.36	-0.34	-0.54
H8VKMK		72.68	-0.79	-1.32	75.76	-0.94	-1.49
HZWXVK		73.54	0.07	0.11	76.60	-0.10	-0.16
JKJT6J		74.52	1.05	1.74	77.34	0.64	1.01
K8ATNK		73.98	0.51	0.84	76.76	0.06	0.09
K9LHZA	*	71.84	-1.63	-2.71	75.92	-0.78	-1.24
KJ8M89		73.34	-0.13	-0.22	76.40	-0.30	-0.48
M43WEF		74.04	0.57	0.94	77.02	0.32	0.50
MMT6BB	*	73.68	0.21	0.34	75.73	-0.97	-1.54
MUUK2H		72.80	-0.67	-1.12	75.42	-1.28	-2.03
N6UAED		74.14	0.67	1.11	77.52	0.82	1.30
NABQX4		74.24	0.77	1.27	77.46	0.76	1.20
NWZ6KC		73.40	-0.07	-0.12	76.14	-0.56	-0.89
PBC33H		73.46	-0.01	-0.02	76.78	0.08	0.12
QNV63L		73.14	-0.33	-0.55	75.96	-0.74	-1.18
RJFWAF		72.24	-1.23	-2.05	75.86	-0.84	-1.33

Analysis 1351

Rockwell Superficial Hardness (30N Scale)
ASTM E18

WebCode	Data Flag	Sample E71 Lab Mean	Sample E71 Diff. from Grand Mean	Sample E71 CPV	Sample E72 Lab Mean	Sample E72 Diff. from Grand Mean	Sample E72 CPV
TQBKZH		74.10	0.63	1.04	76.90	0.20	0.31
TUBMBD		73.56	0.09	0.14	76.56	-0.14	-0.22
TUHP7D	*	71.58	-1.89	-3.14	75.02	-1.68	-2.67
TXYYAJ		74.18	0.71	1.17	77.22	0.52	0.82
V4VFV9		74.20	0.73	1.21	78.00	1.30	2.06
VVHLKD		73.58	0.11	0.18	76.56	-0.14	-0.22
X42YC9		73.00	-0.47	-0.79	76.86	0.16	0.25
X7TXP7		73.64	0.17	0.28	76.68	-0.02	-0.03
YG6PPZ		74.34	0.87	1.44	77.86	1.16	1.84
ZUA3MC		73.16	-0.31	-0.52	76.40	-0.30	-0.48

Summary Statistics

	Sample E71		Sample E72	
Grand Means	73.47	HR30N	76.70	HR30N
Stnd Dev Btwn Labs	0.60	HR30N	0.63	HR30N

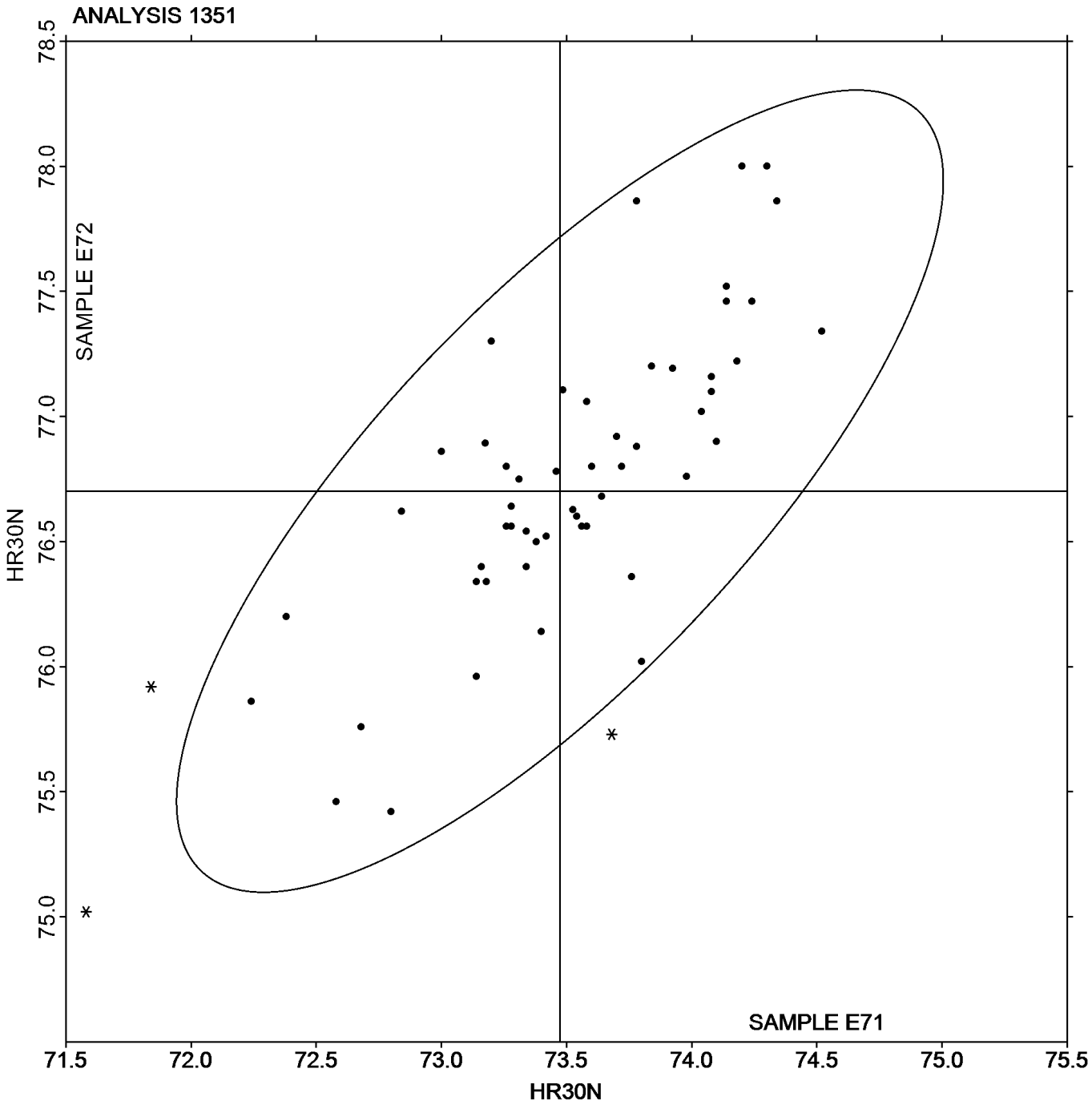
Samples E71, E72 : Steel, Steel

Statistics based on 56 of 57 reporting participants

Comments on Assigned Data Flags for Test #1351

2GJPN8 (X) - Data for sample E71 are low. Inconsistent within the determinations of both samples.

SAMPLE E71	SAMPLE E72
73.47 HR30N	76.70 HR30N



		Sample C71			Sample C72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2KH9KE		0.0307	0.0041	0.92	0.0374	0.0066	1.35
2PH7MR		0.0260	-0.0007	-0.15	0.0300	-0.0008	-0.16
36F4Q8		0.0274	0.0007	0.17	0.0338	0.0030	0.61
3ECKW6		0.0305	0.0038	0.87	0.0347	0.0039	0.79
3N2AUT		0.0219	-0.0048	-1.08	0.0255	-0.0053	-1.08
3NUB9V		0.0243	-0.0024	-0.54	0.0281	-0.0027	-0.56
4DB8P3		0.0249	-0.0018	-0.40	0.0298	-0.0010	-0.20
4TR7U4		0.0261	-0.0006	-0.13	0.0301	-0.0007	-0.14
6CYVK7		0.0284	0.0017	0.39	0.0316	0.0008	0.16
6VN6D8		0.0183	-0.0084	-1.90	0.0242	-0.0066	-1.34
7KA96M	*	0.0313	0.0046	1.05	0.0302	-0.0006	-0.13
7NZYXC		0.0369	0.0102	2.31	0.0415	0.0107	2.18
8G3DW4		0.0238	-0.0028	-0.64	0.0258	-0.0050	-1.01
ALRWQX		0.0265	-0.0002	-0.05	0.0294	-0.0013	-0.27
B2DLEY		0.0313	0.0046	1.05	0.0360	0.0052	1.06
BD834Z		0.0180	-0.0087	-1.97	0.0219	-0.0089	-1.81
BFX9KQ	X	0.0304	0.0037	0.85	0.0260	-0.0048	-0.98
BRBB43	X	0.00660	-0.0201	-4.54	0.0181	-0.0127	-2.59
BXCMVT		0.0266	-0.0001	-0.01	0.0324	0.0016	0.33
C2VYEV		0.0316	0.0049	1.11	0.0341	0.0033	0.67
C78VBH		0.0256	-0.0010	-0.23	0.0302	-0.0006	-0.13
CGL6J4		0.0230	-0.0037	-0.84	0.0256	-0.0052	-1.05
CJBBZU		0.0229	-0.0038	-0.86	0.0274	-0.0034	-0.68
DZF62T	X	0.0390	0.0124	2.80	0.0351	0.0043	0.88
EAAWTQ	X	0.0338	0.0072	1.62	0.0297	-0.0011	-0.22
EGJY9T		0.0272	0.0005	0.12	0.0324	0.0016	0.33
EGWP4P		0.0264	-0.0003	-0.06	0.0300	-0.0008	-0.16
EMZPGZ		0.0243	-0.0024	-0.54	0.0275	-0.0033	-0.68
EZURDF		0.0332	0.0065	1.47	0.0385	0.0077	1.57
FE4BWR		0.0243	-0.0023	-0.53	0.0271	-0.0037	-0.76
FNUUDK		0.0308	0.0041	0.94	0.0360	0.0052	1.06
FRT4NM		0.0326	0.0059	1.34	0.0412	0.0104	2.12
FTR38V		0.0272	0.0005	0.12	0.0330	0.0022	0.46
GH3MTR		0.0252	-0.0015	-0.33	0.0298	-0.0010	-0.20
GMYJ7P		0.0272	0.0005	0.11	0.0324	0.0016	0.32
H6NANV	*	0.0283	0.0016	0.36	0.0264	-0.0044	-0.90
H8VKMK		0.0229	-0.0037	-0.85	0.0251	-0.0057	-1.16
HDR3AC		0.0172	-0.0095	-2.14	0.0219	-0.0089	-1.82
HR4UKW		0.0279	0.0012	0.28	0.0328	0.0020	0.40
HZWXVK		0.0272	0.0005	0.12	0.0352	0.0044	0.90
JFQPFL		0.0312	0.0045	1.02	0.0335	0.0027	0.55
JX7YGL		0.0229	-0.0038	-0.86	0.0251	-0.0057	-1.16
K26W3Y		0.0278	0.0011	0.26	0.0352	0.0044	0.90
K9LHZA		0.0243	-0.0024	-0.54	0.0267	-0.0041	-0.84
KWRZEN		0.0216	-0.0051	-1.15	0.0265	-0.0043	-0.88
MUEYRG		0.0333	0.0067	1.51	0.0368	0.0060	1.23
MYNEYJ	*	0.0372	0.0105	2.39	0.0392	0.0084	1.71

WebCode	Data Flag	Sample C71 Lab Mean	Sample C71 Diff. from Grand Mean	Sample C71 CPV	Sample C72 Lab Mean	Sample C72 Diff. from Grand Mean	Sample C72 CPV
N6UAED		0.0292	0.0025	0.58	0.0318	0.0010	0.20
NCQ86M		0.0212	-0.0054	-1.23	0.0290	-0.0018	-0.36
NHFMWE		0.0243	-0.0024	-0.54	0.0261	-0.0047	-0.95
NWZ6KC		0.0283	0.0016	0.37	0.0337	0.0029	0.58
QP74YF		0.0242	-0.0025	-0.56	0.0278	-0.0030	-0.61
RXYNUF		0.0251	-0.0015	-0.35	0.0304	-0.0004	-0.09
TFWA4E		0.0289	0.0022	0.51	0.0348	0.0040	0.82
U8ZUTZ		0.0268	0.0001	0.03	0.0328	0.0020	0.41
UHHDDW		0.0246	-0.0021	-0.47	0.0317	0.0009	0.18
UURZDG		0.0213	-0.0054	-1.22	0.0240	-0.0068	-1.38
VVHLKD		0.0247	-0.0020	-0.45	0.0278	-0.0030	-0.61
VXKTFB		0.0302	0.0035	0.80	0.0382	0.0074	1.51
W3FN8A		0.0368	0.0101	2.30	0.0388	0.0080	1.63
WVG2HV		0.0263	-0.0004	-0.08	0.0268	-0.0040	-0.82
XZKJXA		0.0264	-0.0003	-0.06	0.0310	0.0002	0.04
ZUA3MC		0.0189	-0.0078	-1.76	0.0204	-0.0104	-2.11

Summary Statistics

	Sample C71		Sample C72	
Grand Means	0.0267	inches	0.0308	inches
Stnd Dev Btwn Labs	0.0044	inches	0.0049	inches

Samples C71, C72 : Steel, Steel

Statistics based on 59 of 63 reporting participants

Comments on Assigned Data Flags for Test #1401

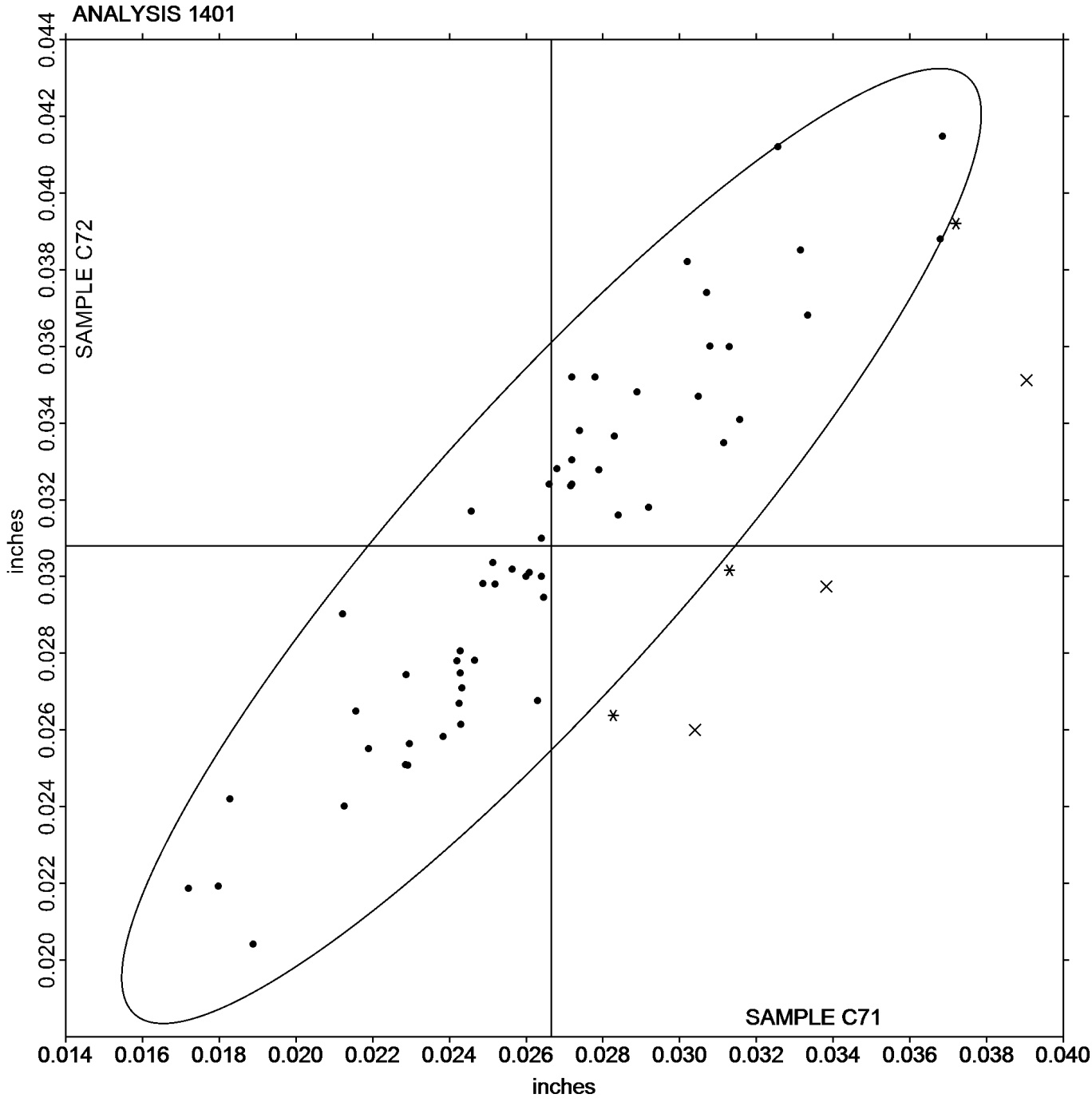
BFX9KQ (X) - Inconsistent in testing between samples.

BRBB43 (X) - Data for sample C71 are low. Inconsistent within the determinations of sample C72.

DZF62T (X) - Data for sample C71 are high.

EAAWTQ (X) - Data appear to be transposed between samples.

SAMPLE C71	SAMPLE C72
0.0267 inches	0.0308 inches



		Sample C71			Sample C72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2GJPN8		0.0225	-0.0022	-1.37	0.0255	-0.0037	-1.77
2HAW6X		0.0250	0.0003	0.19	0.0300	0.0008	0.39
2KH9KE		0.0234	-0.0013	-0.83	0.0318	0.0026	1.25
2PH7MR		0.0230	-0.0017	-1.08	0.0280	-0.0012	-0.58
36F4Q8		0.0248	0.0001	0.04	0.0306	0.0014	0.68
3ECKW6		0.0242	-0.0005	-0.32	0.0305	0.0013	0.62
3N2AUT		0.0250	0.0003	0.19	0.0296	0.0004	0.20
3NUB9V		0.0254	0.0007	0.42	0.0298	0.0006	0.30
4DB8P3		0.0241	-0.0006	-0.40	0.0294	0.0002	0.08
4FW7QD	X	0.0203	-0.0044	-2.75	0.0305	0.0013	0.61
4TR7U4		0.0253	0.0006	0.37	0.0294	0.0002	0.08
6CYVK7		0.0236	-0.0011	-0.70	0.0266	-0.0026	-1.25
6VN6D8		0.0253	0.0005	0.34	0.0278	-0.0014	-0.66
7KA96M		0.0228	-0.0019	-1.20	0.0288	-0.0004	-0.19
7NQQB7	X	0.0108	-0.0139	-8.62	0.0136	-0.0156	-7.52
7NZYXC		0.0257	0.0010	0.63	0.0287	-0.0005	-0.22
8FQQC4		0.0262	0.0015	0.91	0.0326	0.0034	1.64
8LDQD3		0.0275	0.0027	1.70	0.0330	0.0038	1.83
8N34UZ		0.0249	0.0001	0.09	0.0287	-0.0005	-0.22
ALRWQX		0.0257	0.0010	0.63	0.0303	0.0011	0.54
B2DLEY		0.0226	-0.0022	-1.34	0.0266	-0.0026	-1.26
BD834Z		0.0224	-0.0023	-1.45	0.0292	0.0000	0.00
BFX9KQ		0.0252	0.0005	0.29	0.0310	0.0018	0.87
BRBB43		0.0285	0.0038	2.33	0.0323	0.0031	1.49
BXCMVT		0.0244	-0.0003	-0.21	0.0304	0.0012	0.58
BZ2YUY		0.0261	0.0014	0.87	0.0317	0.0025	1.18
C2VYEV		0.0255	0.0008	0.48	0.0308	0.0016	0.77
C78VBH		0.0270	0.0023	1.40	0.0338	0.0046	2.22
CGL6J4	X	0.0270	0.0023	1.40	0.0224	-0.0068	-3.28
EAAWTQ	X	0.0308	0.0060	3.74	0.0261	-0.0031	-1.50
EGJY9T		0.0253	0.0006	0.36	0.0283	-0.0009	-0.44
EGWP4P		0.0244	-0.0003	-0.21	0.0280	-0.0012	-0.58
EKXLXQ		0.0244	-0.0004	-0.22	0.0293	0.0001	0.06
EMZPGZ		0.0252	0.0004	0.26	0.0303	0.0011	0.53
EZURDF		0.0260	0.0012	0.77	0.0305	0.0013	0.61
FE4BWR		0.0265	0.0018	1.11	0.0319	0.0027	1.30
FNUUDK		0.0248	0.0001	0.04	0.0290	-0.0002	-0.10
FRT4NM		0.0220	-0.0027	-1.70	0.0284	-0.0008	-0.38
FTR38V		0.0229	-0.0019	-1.16	0.0274	-0.0018	-0.88
GH3MTR		0.0220	-0.0027	-1.70	0.0252	-0.0040	-1.93
GMYJ7P		0.0254	0.0007	0.43	0.0309	0.0017	0.80
GZMDRQ		0.0258	0.0011	0.66	0.0310	0.0018	0.87
H6NANV	*	0.0256	0.0009	0.53	0.0251	-0.0041	-1.97
H7JRRH		0.0256	0.0009	0.53	0.0291	-0.0001	-0.03
H8VKMK		0.0225	-0.0022	-1.37	0.0263	-0.0029	-1.42
HDR3AC		0.0223	-0.0024	-1.51	0.0269	-0.0023	-1.11
HR4UKW		0.0218	-0.0029	-1.82	0.0278	-0.0014	-0.67

		Sample C71			Sample C72		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
HZWXVK		0.0270	0.0023	1.40	0.0306	0.0014	0.68
JFQPFL		0.0270	0.0023	1.40	0.0294	0.0002	0.10
K26W3Y		0.0244	-0.0003	-0.21	0.0289	-0.0003	-0.15
K8ATNK	*	0.0225	-0.0022	-1.37	0.0232	-0.0060	-2.91
K9LHZA		0.0266	0.0019	1.17	0.0292	0.0000	-0.02
KWRZEN		0.0272	0.0025	1.52	0.0318	0.0026	1.25
M6B77D		0.0264	0.0016	1.02	0.0280	-0.0012	-0.60
MJELEM		0.0237	-0.0010	-0.64	0.0303	0.0011	0.54
MUEYRG		0.0230	-0.0017	-1.06	0.0259	-0.0033	-1.57
N6BNLM		0.0240	-0.0007	-0.43	0.0287	-0.0004	-0.22
N6UAED		0.0228	-0.0019	-1.20	0.0272	-0.0020	-0.96
NCQ86M		0.0226	-0.0021	-1.32	0.0302	0.0010	0.48
NHFMWE		0.0252	0.0005	0.30	0.0268	-0.0024	-1.16
NWZ6KC		0.0253	0.0005	0.32	0.0264	-0.0028	-1.37
P29ZRJ		0.0239	-0.0009	-0.54	0.0284	-0.0008	-0.37
QNZDGZ		0.0259	0.0012	0.72	0.0294	0.0003	0.12
QP74YF		0.0214	-0.0033	-2.07	0.0264	-0.0028	-1.35
RXYNUF		0.0239	-0.0009	-0.54	0.0291	-0.0001	-0.07
TFWA4E		0.0265	0.0017	1.07	0.0306	0.0014	0.68
U8ZUTZ		0.0248	0.0001	0.04	0.0298	0.0006	0.29
UHHDDW		0.0216	-0.0031	-1.94	0.0280	-0.0012	-0.58
UQNEFJ		0.0250	0.0003	0.18	0.0291	-0.0001	-0.04
UURZDG		0.0260	0.0013	0.78	0.0300	0.0008	0.39
VVHLKD		0.0257	0.0009	0.58	0.0288	-0.0004	-0.18
VXKTFB		0.0254	0.0007	0.41	0.0306	0.0014	0.68
W3FN8A		0.0280	0.0033	2.02	0.0330	0.0038	1.83
W3U9MD		0.0250	0.0003	0.16	0.0332	0.0040	1.93
WVG2HV	*	0.0263	0.0016	0.97	0.0263	-0.0029	-1.40
X2X4T6		0.0250	0.0003	0.16	0.0300	0.0008	0.39
X2Y6BH		0.0235	-0.0012	-0.74	0.0289	-0.0003	-0.14
XZKJXA		0.0244	-0.0003	-0.21	0.0290	-0.0002	-0.10
YHWPLB		0.0249	0.0002	0.13	0.0313	0.0021	1.03
ZUA3MC		0.0263	0.0016	0.99	0.0283	-0.0009	-0.45

Summary Statistics

	Sample C71		Sample C72	
Grand Means	0.0247	inches	0.0292	inches
Stnd Dev Btwn Labs	0.0016	inches	0.0021	inches

Samples C71, C72 : Steel, Steel

Statistics based on 76 of 80 reporting participants

Comments on Assigned Data Flags for Test #1402

4FW7QD (X) - Data for sample C71 are low. Inconsistent within the determinations of sample C71.

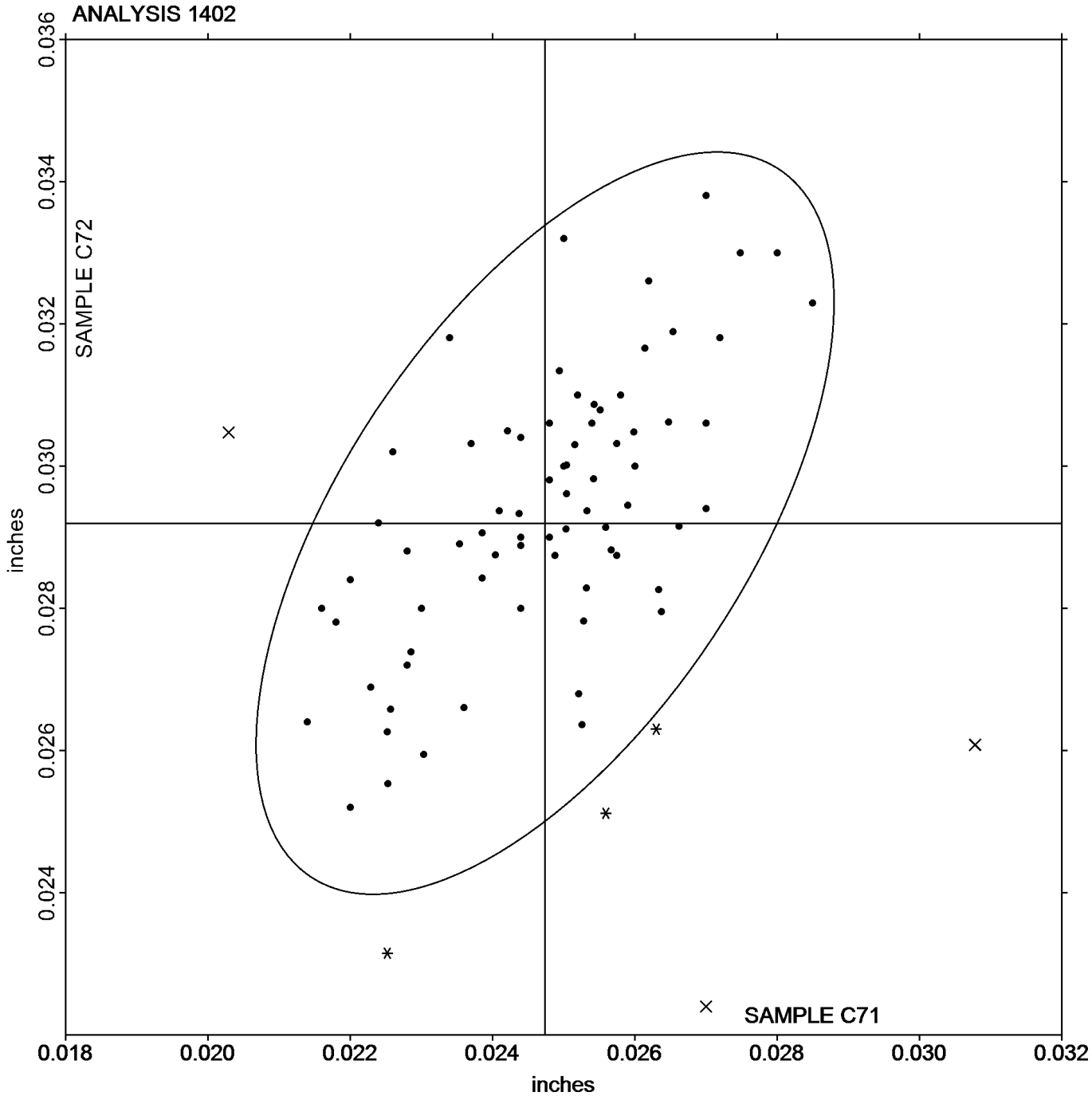
7NQQB7 (X) - Data for both samples are low.

CGL6J4 (X) - Data for sample C72 are low. Inconsistent within the determinations of sample C72.

EAAWTQ (X) - Data appear to be transposed between samples.

SAMPLE C71
0.0247 inches

SAMPLE C72
0.0292 inches



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2QT99Q		0.0460	-0.0005	-0.24	0.0530	0.0011	0.46	OE
36F4Q8		0.0510	0.0045	2.16	0.0560	0.0041	1.68	OE
3N2AUT		0.0490	0.0025	1.20	0.0543	0.0025	1.00	CI
4DB8P3		0.0449	-0.0016	-0.75	0.0513	-0.0005	-0.22	OE
4DPT47		0.0431	-0.0034	-1.63	0.0482	-0.0036	-1.48	OE
4FKC3Q		0.0440	-0.0025	-1.20	0.0540	0.0021	0.86	GD
4JHM9Y		0.0477	0.0012	0.56	0.0500	-0.0019	-0.76	OE
4LLM34		0.0456	-0.0009	-0.45	0.0509	-0.0010	-0.41	CI
4NAY2A		0.0423	-0.0042	-2.04	0.0474	-0.0045	-1.82	OE
6GMJW4		0.0521	0.0056	2.69	0.0526	0.0007	0.30	CI
6QAMXB	X	0.0538	0.0073	3.49	0.0546	0.0028	1.12	CI
6VN6D8		0.0505	0.0040	1.90	0.0529	0.0011	0.43	GD
6XX6FT		0.0437	-0.0028	-1.36	0.0453	-0.0065	-2.65	OE
8FQQC4		0.0477	0.0012	0.56	0.0513	-0.0005	-0.22	OE
8UALDL		0.0474	0.0009	0.43	0.0535	0.0016	0.66	OE
ABHHEV	X	0.0534	0.0069	3.32	0.0636	0.0117	4.74	OE
AR9EYY		0.0480	0.0015	0.72	0.0523	0.0005	0.19	CI
B2DLEY		0.0460	-0.0005	-0.24	0.0570	0.0051	2.08	GD
BRBB43		0.0485	0.0020	0.96	0.0498	-0.0021	-0.85	CO
CD6UCR		0.0477	0.0012	0.56	0.0534	0.0015	0.62	CI
DRZGCT		0.0447	-0.0018	-0.88	0.0487	-0.0032	-1.30	IR
EBVE6C		0.0445	-0.0020	-0.96	0.0488	-0.0031	-1.26	GD
EEBWCV		0.0446	-0.0019	-0.93	0.0516	-0.0002	-0.10	CI
EJ7GQD		0.0467	0.0002	0.08	0.0527	0.0008	0.32	OE
ENV8LM		0.0460	-0.0005	-0.24	0.0517	-0.0002	-0.08	OE
EZURDF		0.0483	0.0018	0.88	0.0537	0.0018	0.73	OE
FE4BWR		0.0497	0.0032	1.52	0.0527	0.0008	0.32	OE
H6TLCR		0.0457	-0.0008	-0.39	0.0523	0.0005	0.19	CO
H7JRRH		0.0478	0.0013	0.64	0.0546	0.0027	1.11	CO
H984RN		0.0449	-0.0016	-0.79	0.0499	-0.0020	-0.80	CI
HZEW7W		0.0469	0.0004	0.17	0.0570	0.0052	2.10	OE
J36ADL		0.0463	-0.0002	-0.10	0.0536	0.0018	0.72	OE
K8ATNK		0.0445	-0.0020	-0.96	0.0489	-0.0030	-1.20	CO
KAX6NP		0.0495	0.0030	1.44	0.0539	0.0021	0.84	OE
KBCGE8		0.0492	0.0027	1.31	0.0540	0.0021	0.86	GD
KTBEYN		0.0467	0.0002	0.08	0.0488	-0.0030	-1.23	XX
L87JFK		0.0454	-0.0011	-0.51	0.0488	-0.0031	-1.25	OE
M9YGKK		0.0460	-0.0005	-0.26	0.0528	0.0009	0.36	OE
MV7YNR		0.0456	-0.0009	-0.43	0.0508	-0.0011	-0.43	GD
MYVGVJ		0.0510	0.0045	2.16	0.0559	0.0040	1.62	CI
NCQ86M		0.0456	-0.0009	-0.42	0.0517	-0.0002	-0.08	OE
NHFMWE		0.0454	-0.0011	-0.53	0.0524	0.0005	0.22	CO
NTJTUM		0.0464	-0.0001	-0.07	0.0535	0.0016	0.65	CI
QDDMAE		0.0464	-0.0001	-0.03	0.0534	0.0015	0.61	OE
QZNQ4A		0.0449	-0.0016	-0.77	0.0513	-0.0006	-0.25	OE
R2EB9L		0.0450	-0.0015	-0.71	0.0502	-0.0017	-0.68	CI
R3D89G		0.0467	0.0002	0.08	0.0530	0.0011	0.46	CO

Fasteners and Metals Interlaboratory Testing Program

Analysis 1640

Corrosion Resistant Steel, CARBON (C)
CARBON (C)

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
R9XEH9		0.0466	0.0001	0.05	0.0512	-0.0006	-0.26	OE
RGXMBF		0.0446	-0.0019	-0.90	0.0489	-0.0029	-1.19	OE
U4VDAB		0.0452	-0.0013	-0.64	0.0525	0.0006	0.24	DR
UHD7YH		0.0453	-0.0012	-0.56	0.0523	0.0005	0.19	OE
V4A96H		0.0460	-0.0005	-0.24	0.0485	-0.0033	-1.36	OE
VX66LB		0.0447	-0.0018	-0.88	0.0487	-0.0032	-1.30	CI
VZ96FF		0.0443	-0.0022	-1.04	0.0505	-0.0014	-0.57	CI
WHRBBD		0.0471	0.0006	0.29	0.0545	0.0026	1.05	OE
X2X4T6		0.0480	0.0015	0.72	0.0540	0.0021	0.86	CO

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.0465	Percent	0.0519	Percent
Stnd Dev Btwn Labs	0.0021	Percent	0.0025	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 54 of 56 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IR	IR (Absorption / Detection)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

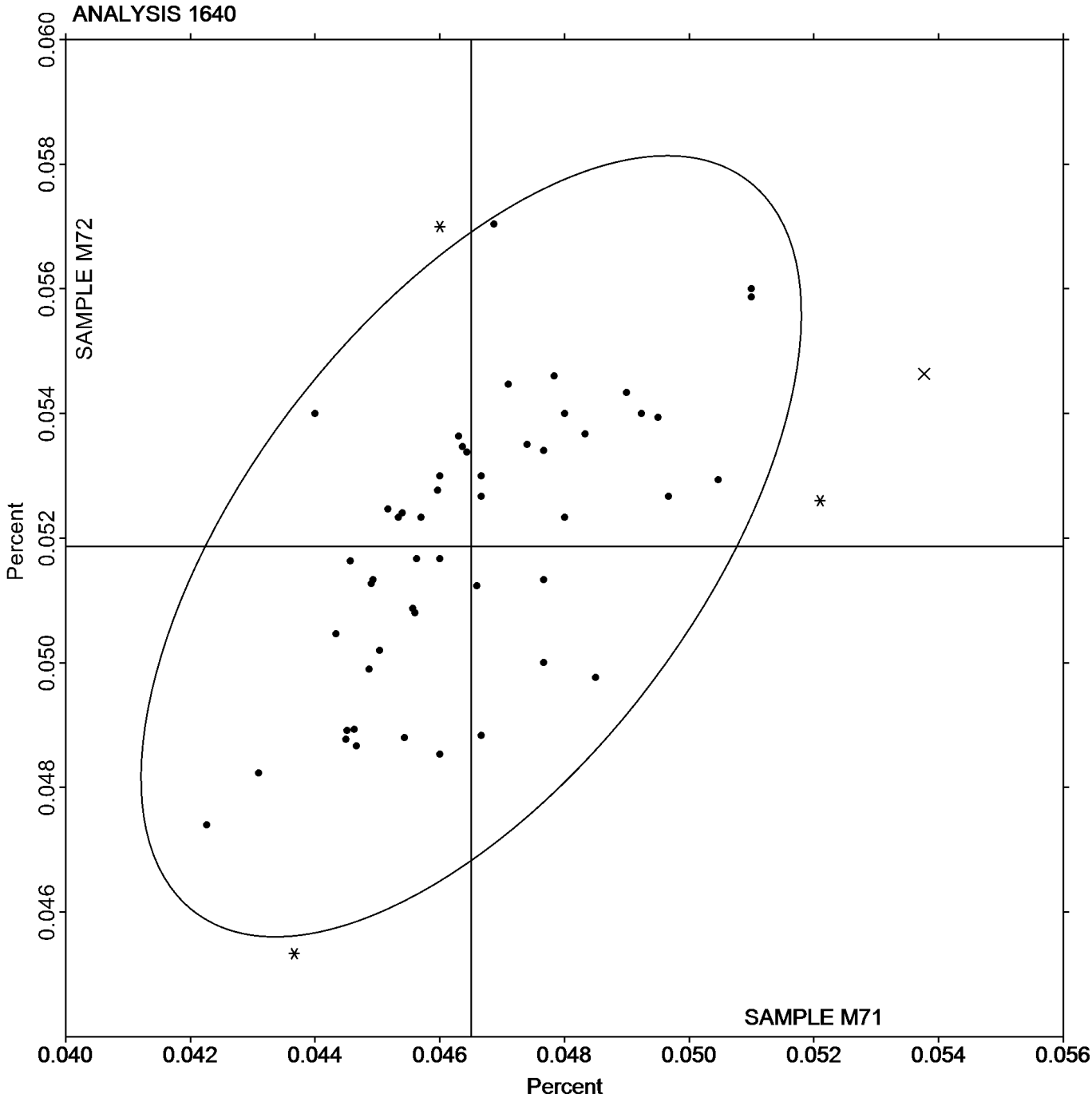
Comments on Assigned Data Flags for Test #1640

6QAMXB (X) - Data for sample M71 are high.

ABHHEV (X) - Data for both samples are high. Inconsistent within the determinations of sample M72.

SAMPLE M71
0.0465 Percent

SAMPLE M72
0.0519 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23YBL9		1.430	-0.003	-0.16	1.787	0.001	0.04	XR
2QT99Q		1.420	-0.013	-0.73	1.755	-0.030	-1.07	OE
36F4Q8		1.413	-0.020	-1.10	1.740	-0.045	-1.60	OE
3N2AUT		1.410	-0.023	-1.29	1.733	-0.052	-1.83	IC
4DB8P3		1.431	-0.002	-0.11	1.749	-0.036	-1.27	OE
4DPT47		1.417	-0.016	-0.91	1.777	-0.009	-0.31	OE
4FKC3Q		1.430	-0.003	-0.16	1.780	-0.005	-0.19	GD
4JHM9Y		1.410	-0.023	-1.27	1.761	-0.024	-0.86	OE
4LLM34		1.457	0.024	1.33	1.814	0.028	1.00	OE
4NAY2A		1.453	0.020	1.11	1.823	0.037	1.30	OE
6GMJW4		1.422	-0.011	-0.63	1.766	-0.020	-0.70	XR
6QAMXB		1.452	0.019	1.09	1.763	-0.022	-0.78	IC
6VN6D8		1.418	-0.015	-0.82	1.737	-0.048	-1.69	GD
6XX6FT		1.413	-0.020	-1.10	1.790	0.005	0.16	OE
8FQQC4		1.425	-0.008	-0.46	1.791	0.005	0.18	OE
8UALDL		1.445	0.012	0.70	1.800	0.015	0.51	OE
ABHHEV		1.428	-0.005	-0.27	1.760	-0.025	-0.89	OE
AR9EYY		1.402	-0.031	-1.74	1.787	0.002	0.07	OE
B2DLEY	*	1.484	0.051	2.88	1.834	0.049	1.71	GD
BRBB43	*	1.423	-0.010	-0.54	1.843	0.058	2.03	OE
CD6UCR		1.420	-0.013	-0.75	1.767	-0.018	-0.64	WD
DRZGCT		1.442	0.009	0.51	1.807	0.021	0.75	WD
EBVE6C		1.426	-0.007	-0.39	1.759	-0.027	-0.94	GD
EEBWCV		1.427	-0.006	-0.35	1.773	-0.012	-0.44	XR
EJ7GQD		1.423	-0.010	-0.54	1.787	0.001	0.04	OE
ENV8LM		1.437	0.004	0.21	1.807	0.021	0.75	OE
EZURDF		1.421	-0.012	-0.67	1.783	-0.002	-0.07	OE
FE4BWR		1.410	-0.023	-1.29	1.753	-0.032	-1.13	OE
H6TLCR		1.432	-0.001	-0.05	1.776	-0.009	-0.33	IC
H7JRRH		1.450	0.017	0.96	1.779	-0.006	-0.23	OE
H984RN		1.423	-0.010	-0.57	1.775	-0.010	-0.37	WD
HZEW7W		1.456	0.023	1.28	1.809	0.023	0.82	OE
J36ADL		1.442	0.009	0.49	1.817	0.032	1.12	OE
K8ATNK		1.412	-0.021	-1.21	1.765	-0.020	-0.72	WD
KAX6NP		1.447	0.014	0.78	1.827	0.041	1.45	OE
KBCGE8		1.440	0.007	0.40	1.810	0.025	0.86	GD
KTBEYN		1.427	-0.006	-0.35	1.753	-0.032	-1.13	XX
L7R3WR	X	1.555	0.122	6.88	1.930	0.145	5.08	IC
L87JFK		1.417	-0.016	-0.91	1.750	-0.035	-1.25	OE
M9YGKK		1.460	0.027	1.53	1.813	0.028	0.98	OE
MV7YNR		1.450	0.017	0.96	1.830	0.045	1.57	GD
MYVGVJ		1.430	-0.003	-0.16	1.780	-0.005	-0.19	OE
NCQ86M		1.428	-0.005	-0.28	1.782	-0.004	-0.13	OE
NHFMWE		1.433	0.000	0.02	1.796	0.011	0.37	IC
NTJTUM		1.433	0.000	-0.01	1.777	-0.008	-0.30	WD
QDDMAE		1.445	0.012	0.66	1.799	0.014	0.48	OE
QZNQ4A		1.427	-0.006	-0.35	1.787	0.001	0.04	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 1641

Corrosion Resistant Steel, MANGANESE (Mn)

MANGANESE (Mn)

Cycle 132
4th Qtr 2020

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
R2EB9L		1.440	0.007	0.42	1.789	0.003	0.12	WD
R3D89G		1.433	0.000	0.02	1.773	-0.012	-0.43	DR
R9XEH9		1.461	0.028	1.58	1.792	0.006	0.22	OE
RGXMBF		1.440	0.007	0.40	1.793	0.008	0.28	OE
U4VDAB		1.443	0.010	0.55	1.857	0.072	2.53	DR
UHD7YH	*	1.485	0.052	2.95	1.850	0.065	2.27	OE
V4A96H		1.397	-0.036	-2.04	1.733	-0.052	-1.83	OE
VX66LB		1.421	-0.012	-0.69	1.781	-0.004	-0.16	WD
VZ96FF		1.432	-0.001	-0.08	1.778	-0.007	-0.26	IC
WHRBBD		1.436	0.003	0.19	1.794	0.009	0.30	WD
X2X4T6		1.440	0.007	0.40	1.837	0.051	1.80	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	1.433	Percent	1.785	Percent
Stnd Dev Btwn Labs	0.018	Percent	0.028	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 56 of 58 reporting participants

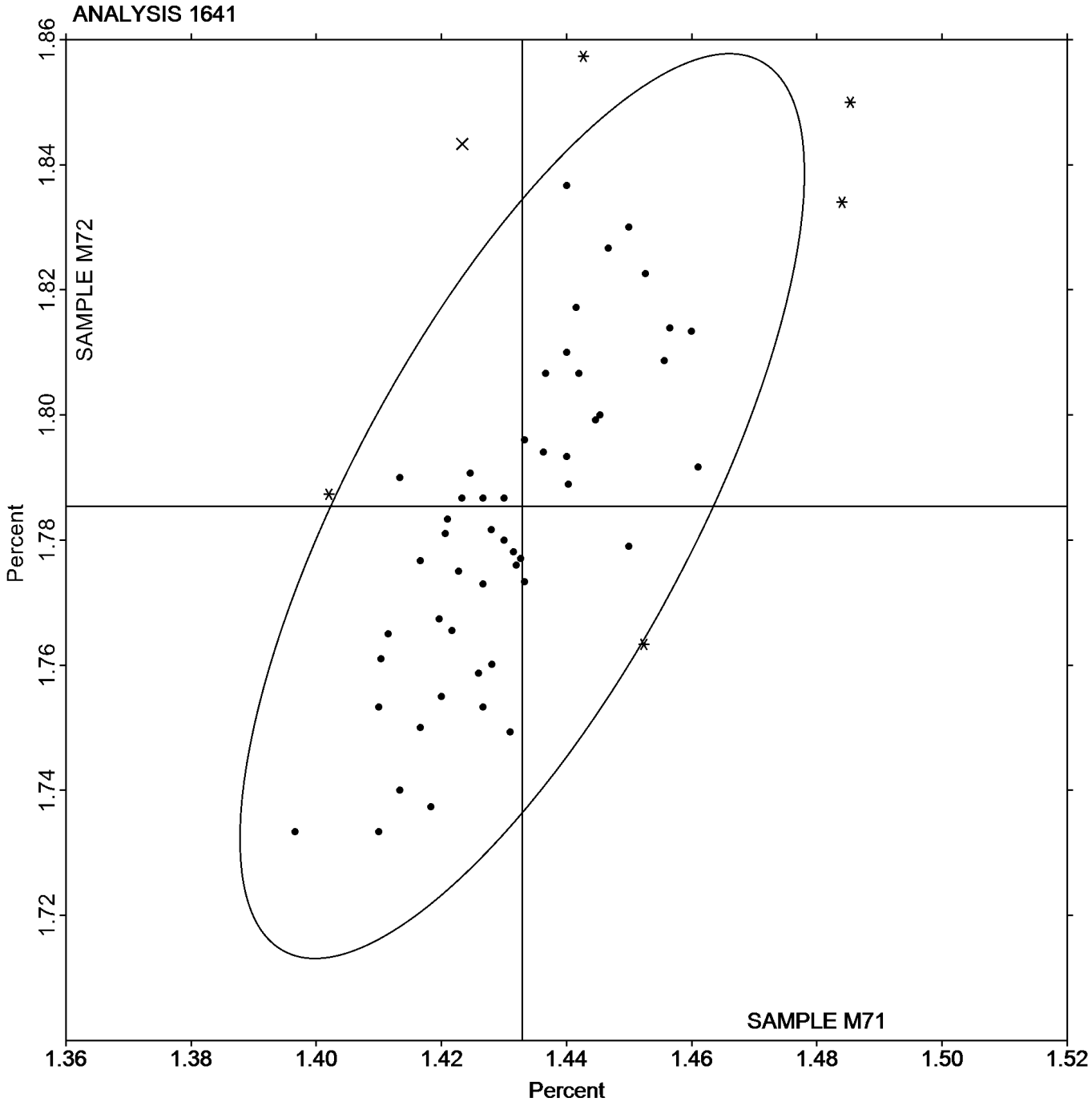
Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1641

L7R3WR (X) - Data for both samples are high.

SAMPLE M71	SAMPLE M72
1.433 Percent	1.785 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2QT99Q		0.0364	-0.0007	-0.27	0.0268	0.0008	0.38	OE
36F4Q8	*	0.0444	0.0073	3.04	0.0321	0.0061	2.82	OE
3N2AUT		0.0333	-0.0037	-1.54	0.0230	-0.0030	-1.38	IC
4DB8P3		0.0381	0.0010	0.42	0.0267	0.0007	0.34	OE
4DPT47	X	0.0466	0.0095	3.95	0.0325	0.0065	3.00	OE
4FKC3Q		0.0357	-0.0014	-0.58	0.0277	0.0017	0.78	GD
4JHM9Y		0.0363	-0.0007	-0.30	0.0247	-0.0013	-0.60	OE
4LLM34		0.0386	0.0016	0.66	0.0253	-0.0007	-0.33	OE
4NAY2A		0.0428	0.0057	2.37	0.0306	0.0046	2.13	OE
6GMJW4		0.0360	-0.0011	-0.44	0.0242	-0.0018	-0.82	XR
6QAMXB		0.0372	0.0002	0.07	0.0245	-0.0015	-0.68	IC
6VN6D8		0.0361	-0.0009	-0.39	0.0257	-0.0003	-0.12	GD
6XX6FT	X	0.0273	-0.0097	-4.04	0.0233	-0.0026	-1.22	OE
8FQQC4		0.0382	0.0012	0.49	0.0270	0.0010	0.48	OE
8UALDL		0.0346	-0.0025	-1.03	0.0231	-0.0028	-1.31	OE
ABHHEV		0.0397	0.0027	1.11	0.0287	0.0027	1.24	OE
AR9EYY	*	0.0420	0.0049	2.05	0.0260	0.0000	0.01	OE
B2DLEY		0.0410	0.0039	1.64	0.0310	0.0050	2.33	GD
BRBB43	*	0.0337	-0.0034	-1.41	0.0280	0.0020	0.94	OE
CD6UCR		0.0374	0.0003	0.14	0.0247	-0.0013	-0.59	WD
DRZGCT		0.0367	-0.0004	-0.16	0.0248	-0.0011	-0.53	WD
EBVE6C		0.0360	-0.0011	-0.45	0.0266	0.0006	0.29	GD
EEBWCV		0.0353	-0.0017	-0.71	0.0240	-0.0020	-0.91	XX
EJ7GQD		0.0353	-0.0017	-0.71	0.0253	-0.0006	-0.30	OE
ENV8LM		0.0383	0.0013	0.53	0.0260	0.0000	0.01	OE
EZURDF		0.0358	-0.0013	-0.53	0.0251	-0.0008	-0.39	OE
FE4BWR	X	0.0237	-0.0134	-5.56	0.0193	-0.0066	-3.07	OE
H6TLCR		0.0364	-0.0007	-0.29	0.0251	-0.0009	-0.42	IC
H7JRRH		0.0338	-0.0033	-1.35	0.0238	-0.0022	-1.01	OE
H984RN		0.0331	-0.0039	-1.63	0.0224	-0.0036	-1.65	WD
HZEW7W		0.0411	0.0040	1.68	0.0292	0.0032	1.49	OE
J36ADL		0.0363	-0.0008	-0.33	0.0263	0.0003	0.14	OE
K8ATNK		0.0339	-0.0031	-1.30	0.0244	-0.0015	-0.71	WD
KAX6NP		0.0371	0.0000	0.01	0.0247	-0.0012	-0.57	OE
KBCGE8		0.0401	0.0030	1.27	0.0295	0.0036	1.65	GD
KTBEYN		0.0365	-0.0006	-0.23	0.0253	-0.0006	-0.30	XX
L7R3WR		0.0400	0.0029	1.22	0.0275	0.0015	0.71	IC
L87JFK		0.0327	-0.0044	-1.81	0.0221	-0.0039	-1.81	OE
M9YGKK		0.0364	-0.0007	-0.29	0.0246	-0.0014	-0.65	OE
MV7YNR		0.0334	-0.0037	-1.52	0.0244	-0.0016	-0.73	GD
MYVGVJ		0.0374	0.0004	0.16	0.0282	0.0023	1.05	OE
NCQ86M		0.0362	-0.0009	-0.35	0.0256	-0.0003	-0.16	OE
NHFMWE		0.0377	0.0006	0.25	0.0247	-0.0013	-0.60	IC
NTJTUM		0.0362	-0.0009	-0.35	0.0257	-0.0003	-0.13	WD
QDDMAE		0.0354	-0.0016	-0.67	0.0241	-0.0018	-0.84	OE
QZNQ4A		0.0357	-0.0014	-0.58	0.0272	0.0012	0.55	OE
R2EB9L		0.0389	0.0018	0.77	0.0271	0.0011	0.51	WD

Fasteners and Metals Interlaboratory Testing Program

Analysis 1642

Corrosion Resistant Steel, PHOSPHORUS (P)

PHOSPHORUS (P)

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
R3D89G		0.0400	0.0029	1.22	0.0300	0.0040	1.86	DR
R9XEH9		0.0402	0.0031	1.29	0.0274	0.0014	0.66	OE
RGXMBF		0.0385	0.0014	0.59	0.0261	0.0001	0.04	OE
U4VDAB		0.0357	-0.0014	-0.56	0.0254	-0.0005	-0.25	DR
UHD7YH		0.0363	-0.0008	-0.33	0.0246	-0.0014	-0.65	OE
V4A96H		0.0367	-0.0004	-0.16	0.0262	0.0002	0.11	OE
VX66LB		0.0377	0.0006	0.25	0.0256	-0.0004	-0.17	WD
VZ96FF		0.0378	0.0007	0.31	0.0258	-0.0002	-0.10	IC
WHRBBD		0.0355	-0.0016	-0.66	0.0241	-0.0018	-0.85	WD

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.0371	Percent	0.0260	Percent
Stnd Dev Btwn Labs	0.0024	Percent	0.0022	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 51 of 56 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

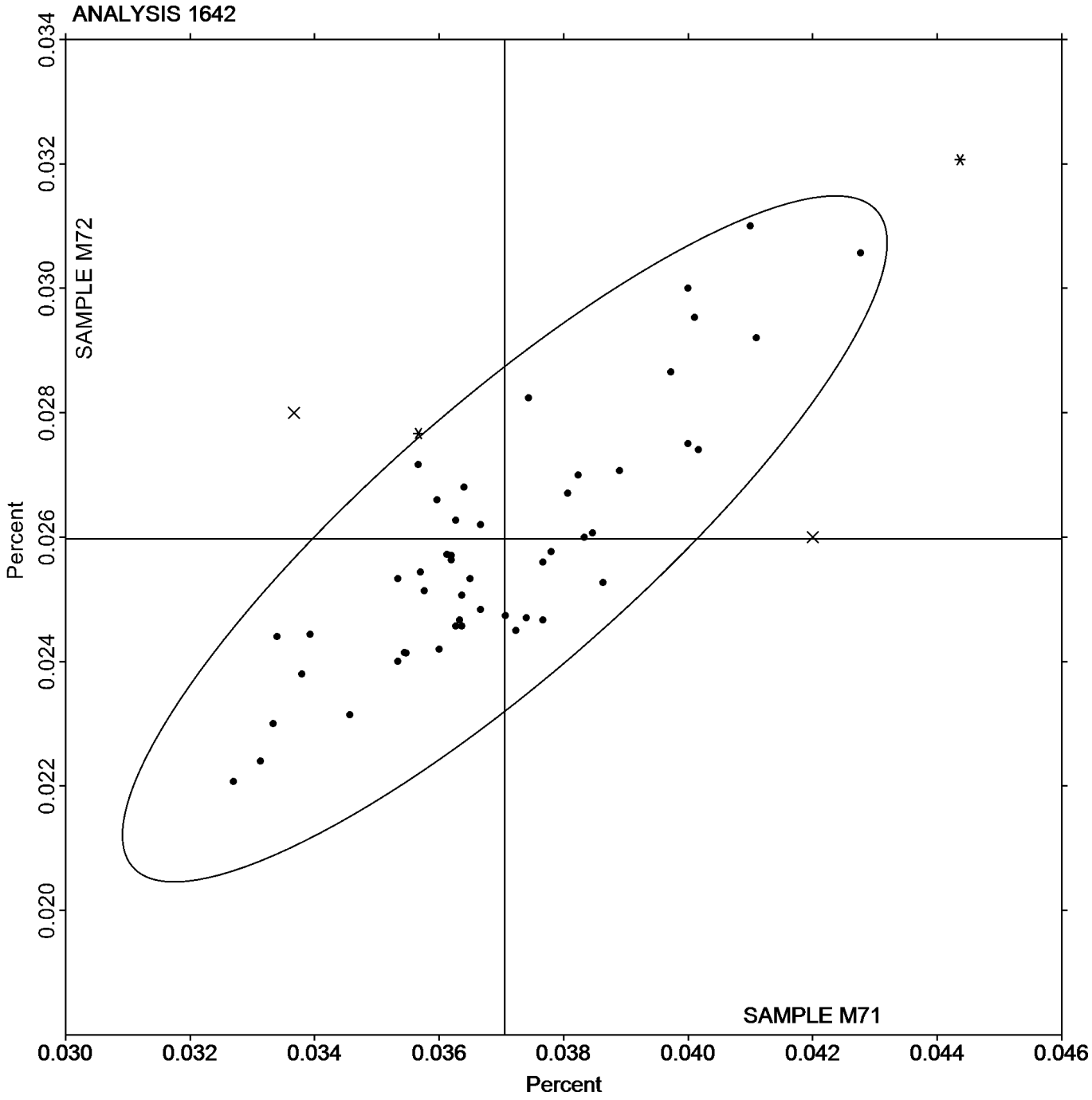
Comments on Assigned Data Flags for Test #1642

4DPT47 (X) - Data for both samples are high. Possible Systematic Error.

6XX6FT (X) - Data for sample M71 are low.

FE4BWR (X) - Data for both samples are low. Possible Systematic Error.

SAMPLE M71	SAMPLE M72
0.0371 Percent	0.0260 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2QT99Q		0.0104	-0.0001	-0.12	0.00620	0.00068	0.67	OE
36F4Q8		0.0112	0.0007	0.82	0.00673	0.00122	1.19	OE
3N2AUT		0.0103	-0.0002	-0.19	0.00500	-0.00052	-0.51	CI
4DB8P3		0.00993	-0.0006	-0.64	0.00493	-0.00058	-0.57	OE
4DPT47		0.0101	-0.0004	-0.42	0.00607	0.00055	0.54	OE
4FKC3Q		0.0117	0.0012	1.30	0.00667	0.00115	1.12	GD
4JHM9Y		0.0100	-0.0005	-0.57	0.00433	-0.00118	-1.16	OE
4LLM34		0.00990	-0.0006	-0.68	0.00503	-0.00048	-0.47	CI
4NAY2A		0.00973	-0.0008	-0.86	0.00587	0.00035	0.34	OE
6GMJW4		0.0101	-0.0004	-0.45	0.00523	-0.00028	-0.28	CI
6QAMXB		0.0110	0.0005	0.59	0.00517	-0.00035	-0.34	CI
6VN6D8	X	0.00433	-0.0062	-6.92	0.000090	-0.00543	-5.31	GD
6XX6FT		0.0103	-0.0002	-0.19	0.00567	0.00015	0.15	OE
8FQQC4		0.0100	-0.0005	-0.57	0.00580	0.00028	0.28	OE
8UALDL		0.0101	-0.0004	-0.48	0.00570	0.00019	0.18	OE
ABHHEV	X	0.00500	-0.0055	-6.17	0.00277	-0.00275	-2.69	OE
AR9EYY		0.0104	-0.0001	-0.15	0.00583	0.00032	0.31	CI
B2DLEY		0.0110	0.0005	0.56	0.00600	0.00048	0.47	GD
BRBB43		0.00920	-0.0013	-1.47	0.00428	-0.00124	-1.21	CO
CD6UCR		0.00933	-0.0012	-1.31	0.00463	-0.00088	-0.86	CI
DRZGCT		0.00963	-0.0009	-0.98	0.00483	-0.00068	-0.67	CI
EBVE6C	X	0.0175	0.0070	7.88	0.0132	0.00768	7.51	GD
EEBWCV		0.0120	0.0015	1.71	0.00580	0.00028	0.28	CI
EJ7GQD		0.00833	-0.0022	-2.43	0.00333	-0.00218	-2.14	OE
ENV8LM		0.0110	0.0005	0.56	0.00600	0.00048	0.47	OE
EZURDF		0.0101	-0.0004	-0.42	0.00507	-0.00045	-0.44	OE
FE4BWR		0.0113	0.0008	0.93	0.00560	0.00008	0.08	OE
H6TLCR		0.00983	-0.0007	-0.75	0.00460	-0.00092	-0.90	CO
H7JRRH		0.0104	-0.0001	-0.08	0.00470	-0.00082	-0.80	CO
H984RN		0.0101	-0.0004	-0.42	0.00517	-0.00035	-0.34	CI
HZEW7W		0.0127	0.0022	2.46	0.00750	0.00198	1.94	OE
J36ADL		0.0112	0.0007	0.78	0.00727	0.00175	1.71	OE
K8ATNK		0.0102	-0.0003	-0.34	0.00444	-0.00108	-1.05	CO
KAX6NP		0.00980	-0.0007	-0.79	0.00467	-0.00085	-0.83	OE
KBCGE8		0.0106	0.0001	0.11	0.00507	-0.00045	-0.44	GD
KTBEYN	*	0.0123	0.0018	2.05	0.00860	0.00308	3.01	XX
L7R3WR		0.0115	0.0010	1.12	0.00600	0.00048	0.47	IC
L87JFK		0.00900	-0.0015	-1.69	0.00443	-0.00108	-1.06	OE
M9YGKK	*	0.0126	0.0021	2.39	0.00863	0.00312	3.04	OE
MV7YNR		0.0106	0.0001	0.11	0.00565	0.00013	0.13	GD
MYVGVJ	*	0.0105	0.0000	-0.01	0.00784	0.00232	2.27	OE
NCQ86M		0.0104	-0.0001	-0.15	0.00513	-0.00038	-0.38	OE
NHFMWE		0.0110	0.0005	0.52	0.00527	-0.00025	-0.25	CO
NTJTUM		0.0109	0.0004	0.48	0.00550	-0.00002	-0.02	CI
QDDMAE		0.0108	0.0002	0.28	0.00631	0.00080	0.78	OE
QZNQ4A	X	0.0140	0.0035	3.95	0.00983	0.00432	4.22	OE
R2EB9L		0.0106	0.0001	0.06	0.00510	-0.00042	-0.41	CI

Fasteners and Metals Interlaboratory Testing Program

Analysis 1643

Corrosion Resistant Steel, SULFUR (S)
SULFUR (S)

		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
R3D89G	X	0.0100	-0.0005	-0.57	0.0100	0.00448	4.38	CO
R9XEH9	X	0.0125	0.0020	2.27	0.00510	-0.00042	-0.41	OE
RGXMBF	X	0.0148	0.0043	4.85	0.000300	-0.00522	-5.10	OE
U4VDAB		0.0106	0.0001	0.14	0.00503	-0.00048	-0.47	DR
UHD7YH		0.0104	-0.0001	-0.15	0.00530	-0.00022	-0.21	OE
V4A96H	X	0.0120	0.0015	1.68	0.00933	0.00382	3.73	OE
VX66LB		0.00963	-0.0009	-0.98	0.00483	-0.00068	-0.67	CI
VZ96FF		0.0113	0.0008	0.93	0.00543	-0.00008	-0.08	CI
WHRBBD		0.00997	-0.0005	-0.60	0.00493	-0.00058	-0.57	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.0105	Percent	0.00552	Percent
Stnd Dev Btwn Labs	0.0009	Percent	0.00102	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 47 of 56 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1643

6VN6D8 (X) - Data for both samples are low. Possible Systematic Error.

ABHHEV (X) - Data for sample M71 are low.

EBVE6C (X) - Data for both samples are high. Possible Systematic Error.

QZNQ4A (X) - Data for both samples are high. Possible Systematic Error.

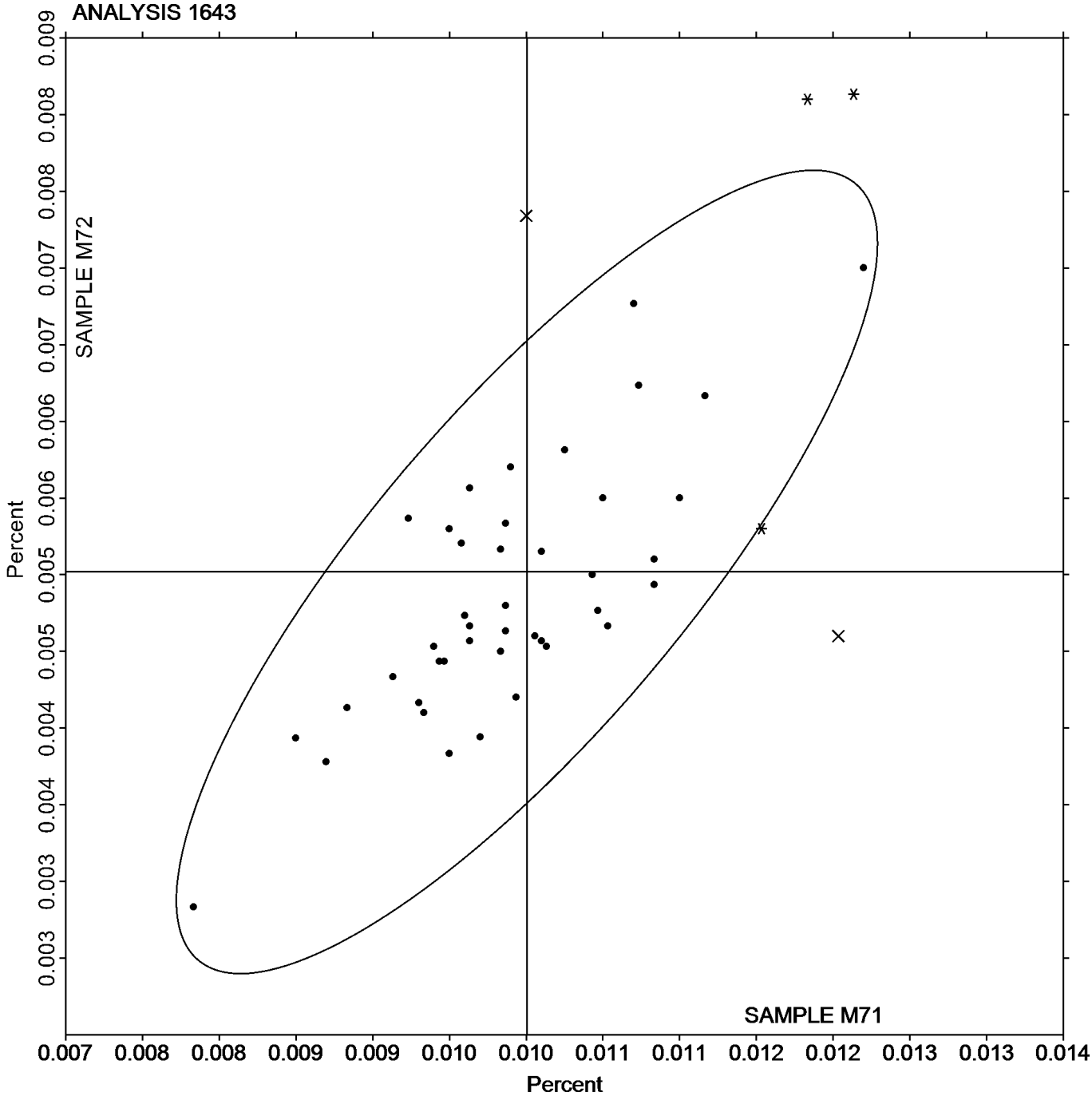
R3D89G (X) - Data for sample M72 are high.

R9XEH9 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample M71.

RGXMBF (X) - Data for sample M71 are high and data for sample M72 are low. Inconsistent in testing between samples.

V4A96H (X) - Data for sample M72 are high. Inconsistent within the determinations of sample M71.

SAMPLE M71	SAMPLE M72
0.0105 Percent	0.00552 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23YBL9	X	0.3557	0.0043	0.41	0.3423	0.0777	6.96	XR
2QT99Q		0.3550	0.0037	0.34	0.2730	0.0084	0.75	OE
36F4Q8		0.3567	0.0053	0.50	0.2690	0.0044	0.39	OE
3N2AUT		0.3463	-0.0050	-0.47	0.2540	-0.0106	-0.95	IC
4DB8P3		0.3677	0.0163	1.54	0.2903	0.0257	2.30	OE
4DPT47		0.3543	0.0030	0.28	0.2643	-0.0003	-0.03	OE
4FKC3Q		0.3443	-0.0070	-0.66	0.2557	-0.0090	-0.80	GD
4JHM9Y		0.3567	0.0053	0.50	0.2773	0.0127	1.14	OE
4LLM34		0.3504	-0.0010	-0.09	0.2680	0.0033	0.30	OE
4NAY2A	X	0.3088	-0.0425	-4.02	0.1917	-0.0730	-6.53	OE
6GMJW4		0.3627	0.0113	1.07	0.2720	0.0074	0.66	OE
6QAMXB		0.3397	-0.0117	-1.10	0.2593	-0.0053	-0.47	IC
6VN6D8		0.3517	0.0003	0.03	0.2760	0.0114	1.02	GD
6XX6FT		0.3300	-0.0213	-2.02	0.2527	-0.0120	-1.07	OE
8FQQC4		0.3500	-0.0013	-0.13	0.2570	-0.0076	-0.68	OE
8UALDL		0.3375	-0.0138	-1.31	0.2473	-0.0173	-1.55	OE
ABHHEV		0.3568	0.0055	0.52	0.2651	0.0005	0.04	OE
AR9EYY		0.3480	-0.0033	-0.32	0.2603	-0.0043	-0.38	OE
B2DLEY		0.3650	0.0137	1.29	0.2820	0.0174	1.56	GD
BRBB43		0.3573	0.0060	0.57	0.2693	0.0047	0.42	OE
CD6UCR		0.3403	-0.0110	-1.04	0.2493	-0.0153	-1.37	WD
DRZGCT		0.3367	-0.0147	-1.39	0.2507	-0.0140	-1.25	WD
EBVE6C		0.3400	-0.0113	-1.07	0.2527	-0.0120	-1.07	GD
EEBWCV		0.3483	-0.0030	-0.28	0.2590	-0.0056	-0.50	XR
EJ7GQD		0.3433	-0.0080	-0.76	0.2700	0.0054	0.48	OE
ENV8LM		0.3520	0.0007	0.06	0.2670	0.0024	0.21	OE
EZURDF		0.3523	0.0010	0.09	0.2650	0.0004	0.03	OE
FE4BWR		0.3477	-0.0037	-0.35	0.2580	-0.0066	-0.59	OE
H6TLCR		0.3423	-0.0090	-0.85	0.2543	-0.0103	-0.92	IC
H7JRRH		0.3690	0.0177	1.67	0.2760	0.0114	1.02	OE
H984RN		0.3465	-0.0048	-0.46	0.2580	-0.0067	-0.60	WD
HZEW7W		0.3570	0.0057	0.53	0.2813	0.0167	1.50	OE
J36ADL		0.3534	0.0021	0.20	0.2712	0.0066	0.59	OE
K8ATNK		0.3304	-0.0210	-1.98	0.2534	-0.0113	-1.01	WD
KAX6NP		0.3600	0.0087	0.82	0.2630	-0.0016	-0.15	OE
KBCGE8		0.3613	0.0100	0.94	0.2707	0.0060	0.54	GD
KTBEYN		0.3547	0.0033	0.31	0.2610	-0.0036	-0.32	XX
L7R3WR	X	0.3085	-0.0428	-4.05	0.2290	-0.0356	-3.19	IC
L87JFK		0.3447	-0.0067	-0.63	0.2613	-0.0033	-0.29	OE
M9YGKK		0.3673	0.0160	1.51	0.2893	0.0247	2.21	OE
MV7YNR		0.3550	0.0037	0.34	0.2660	0.0014	0.12	GD
MYVGVJ		0.3690	0.0177	1.67	0.2860	0.0214	1.92	OE
NCQ86M		0.3440	-0.0073	-0.69	0.2567	-0.0080	-0.71	OE
NHFMWE		0.3580	0.0067	0.63	0.2650	0.0004	0.03	GR
NTJTUM		0.3503	-0.0010	-0.10	0.2637	-0.0010	-0.09	WD
QDDMAE		0.3598	0.0084	0.80	0.2761	0.0115	1.03	OE
QZNQ4A		0.3567	0.0053	0.50	0.2750	0.0104	0.93	OE

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
R2EB9L		0.3446	-0.0067	-0.63	0.2561	-0.0085	-0.76	WD
R3D89G		0.3567	0.0053	0.50	0.2667	0.0020	0.18	DR
R9XEH9		0.3558	0.0045	0.42	0.2611	-0.0036	-0.32	OE
RGXMBF		0.3580	0.0067	0.63	0.2613	-0.0033	-0.29	OE
U4VDAB		0.3523	0.0010	0.09	0.2583	-0.0063	-0.56	DR
UHD7YH	*	0.3833	0.0320	3.02	0.2917	0.0270	2.42	OE
V4A96H		0.3427	-0.0087	-0.82	0.2607	-0.0040	-0.35	OE
VX66LB		0.3373	-0.0140	-1.32	0.2513	-0.0133	-1.19	WD
VZ96FF		0.3448	-0.0066	-0.62	0.2509	-0.0137	-1.23	IC
WHRBBD		0.3500	-0.0013	-0.13	0.2600	-0.0046	-0.41	WD
X2X4T6		0.3285	-0.0228	-2.16	0.2437	-0.0210	-1.88	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.3513	Percent	0.2646	Percent
Stnd Dev Btwn Labs	0.0106	Percent	0.0112	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 55 of 58 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
GR	Gravimetry	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified	XX	Please Indicate Method Used for Current Element

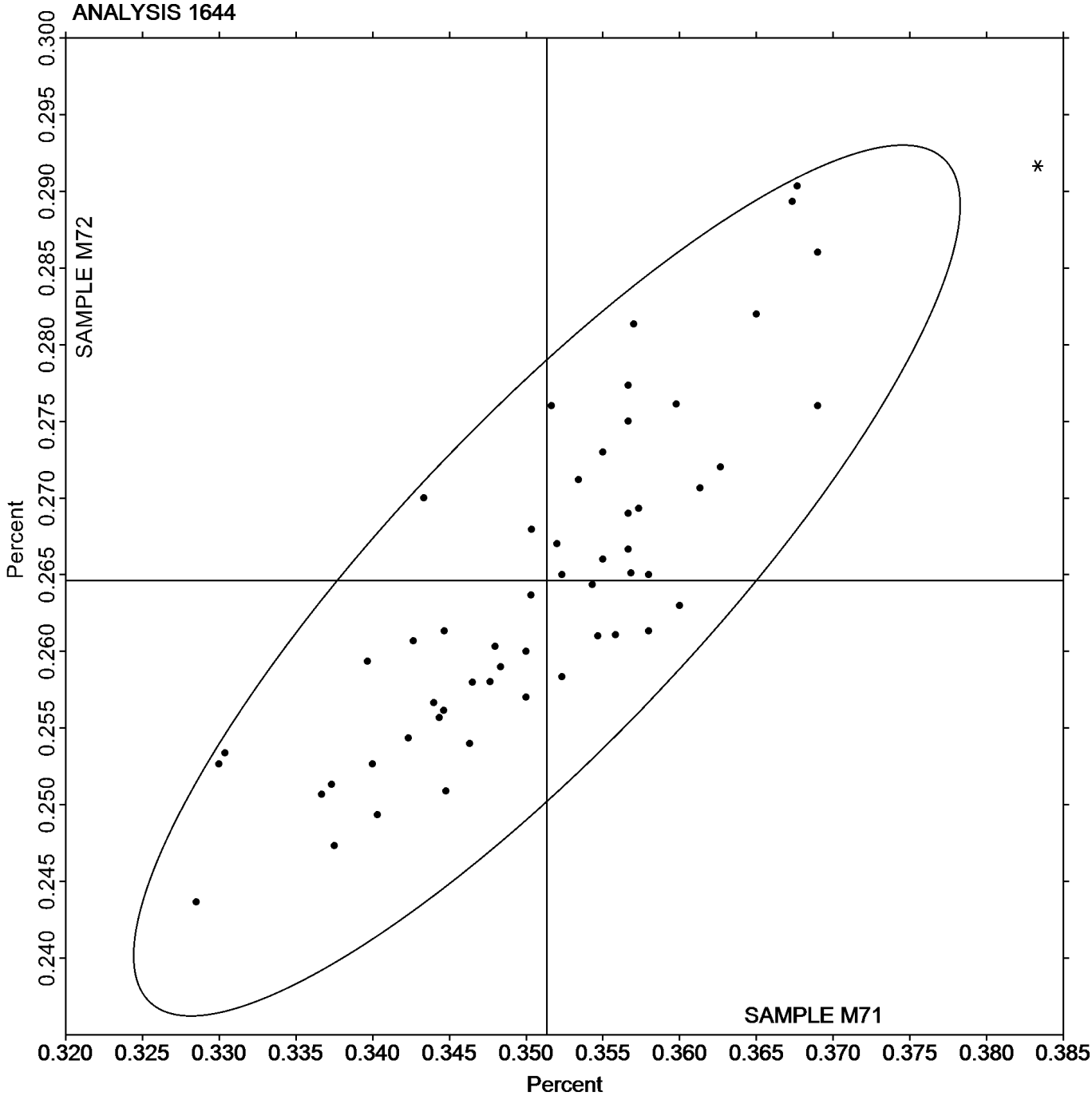
Comments on Assigned Data Flags for Test #1644

23YBL9 (X) - Data for sample M72 are high. Inconsistent within the determinations of sample M72.

4NAY2A (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

L7R3WR (X) - Data for both samples are low. Possible Systematic Error.

SAMPLE M71	SAMPLE M72
0.3513 Percent	0.2646 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2QT99Q		0.1760	0.0010	0.16	0.0950	0.0044	0.99	OE
36F4Q8		0.1597	-0.0153	-2.49	0.0840	-0.0066	-1.48	OE
3N2AUT		0.1743	-0.0007	-0.11	0.0890	-0.0016	-0.36	IC
4DB8P3		0.1737	-0.0013	-0.22	0.0907	0.0001	0.02	OE
4DPT47		0.1703	-0.0047	-0.76	0.0867	-0.0038	-0.86	OE
4FKC3Q	X	0.1550	-0.0200	-3.25	0.0877	-0.0029	-0.66	GD
4JHM9Y		0.1757	0.0007	0.11	0.0873	-0.0032	-0.73	OE
4LLM34		0.1755	0.0005	0.07	0.0897	-0.0009	-0.21	OE
4NAY2A		0.1701	-0.0049	-0.79	0.0928	0.0022	0.50	OE
6GMJW4		0.1766	0.0016	0.26	0.0906	0.0000	0.00	XR
6QAMXB		0.1696	-0.0054	-0.89	0.0860	-0.0046	-1.04	IC
6VN6D8	X	0.2267	0.0517	8.39	0.1127	0.0221	4.96	GD
6XX6FT		0.1680	-0.0070	-1.14	0.0900	-0.0006	-0.13	OE
8UALDL		0.1740	-0.0010	-0.16	0.0884	-0.0022	-0.49	OE
ABHHEV		0.1825	0.0075	1.21	0.0985	0.0080	1.79	OE
AR9EYY		0.1747	-0.0003	-0.06	0.0883	-0.0022	-0.51	OE
B2DLEY		0.1800	0.0050	0.81	0.1010	0.0104	2.34	GD
BRBB43		0.1820	0.0070	1.14	0.0967	0.0061	1.37	OE
CD6UCR		0.1757	0.0007	0.11	0.0890	-0.0016	-0.36	WD
DRZGCT		0.1780	0.0030	0.49	0.0910	0.0004	0.09	WD
EBVE6C		0.1743	-0.0007	-0.11	0.0970	0.0064	1.44	GD
EEBWCV		0.1763	0.0013	0.21	0.0893	-0.0012	-0.28	XR
EJ7GQD		0.1750	0.0000	0.00	0.0940	0.0034	0.77	OE
ENV8LM		0.1740	-0.0010	-0.16	0.0910	0.0004	0.09	OE
EZURDF		0.1770	0.0020	0.32	0.0910	0.0004	0.09	OE
FE4BWR		0.1880	0.0130	2.11	0.1007	0.0101	2.27	OE
H6TLCR		0.1783	0.0033	0.54	0.0937	0.0031	0.69	IC
H7JRRH		0.1700	-0.0050	-0.81	0.0870	-0.0036	-0.80	OE
H984RN		0.1639	-0.0111	-1.81	0.0850	-0.0056	-1.25	WD
HZEW7W		0.1797	0.0047	0.76	0.0917	0.0011	0.24	OE
J36ADL		0.1746	-0.0004	-0.07	0.0912	0.0006	0.13	OE
K8ATNK		0.1740	-0.0010	-0.17	0.0900	-0.0005	-0.12	WD
KAX6NP		0.1683	-0.0067	-1.09	0.0829	-0.0077	-1.73	OE
KBCGE8		0.1830	0.0080	1.30	0.0943	0.0038	0.84	GD
L7R3WR	*	0.1915	0.0165	2.68	0.1035	0.0129	2.90	IC
L87JFK		0.1600	-0.0150	-2.44	0.0853	-0.0052	-1.18	OE
M9YGKK		0.1697	-0.0053	-0.87	0.0862	-0.0044	-0.99	OE
MV7YNR	X	0.1960	0.0210	3.41	0.1130	0.0224	5.04	GD
MYVGVJ		0.1793	0.0043	0.70	0.0920	0.0015	0.33	OE
NCQ86M		0.1767	0.0017	0.27	0.0907	0.0001	0.02	OE
NHFMWE		0.1713	-0.0037	-0.60	0.0893	-0.0012	-0.28	IC
NTJTUM		0.1790	0.0040	0.65	0.0920	0.0014	0.32	WD
QDDMAE		0.1786	0.0035	0.58	0.0858	-0.0048	-1.07	OE
QZNQ4A		0.1620	-0.0130	-2.11	0.0857	-0.0048	-1.09	OE
R2EB9L		0.1781	0.0031	0.50	0.0913	0.0008	0.17	XX
R3D89G		0.1800	0.0050	0.81	0.0900	-0.0006	-0.13	DR
R9XEH9	X	0.1785	0.0035	0.57	0.0811	-0.0095	-2.13	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 1645

Corrosion Resistant Steel, COBALT (Co)
COBALT (Co)

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
RGXMBF		0.1753	0.0003	0.05	0.0823	-0.0082	-1.85	OE
UHD7YH		0.1790	0.0040	0.65	0.0903	-0.0002	-0.06	OE
V4A96H		0.1703	-0.0047	-0.76	0.0894	-0.0012	-0.27	OE
VX66LB		0.1750	0.0000	0.00	0.0890	-0.0016	-0.36	WD
VZ96FF		0.1739	-0.0011	-0.19	0.0930	0.0025	0.55	IC
W9ZX87		0.1820	0.0070	1.14	0.0893	-0.0012	-0.28	WD
WHRBBD		0.1763	0.0013	0.21	0.0903	-0.0002	-0.06	WD

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.1750	Percent	0.0906	Percent
Stnd Dev Btwn Labs	0.0062	Percent	0.0045	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 50 of 54 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1645

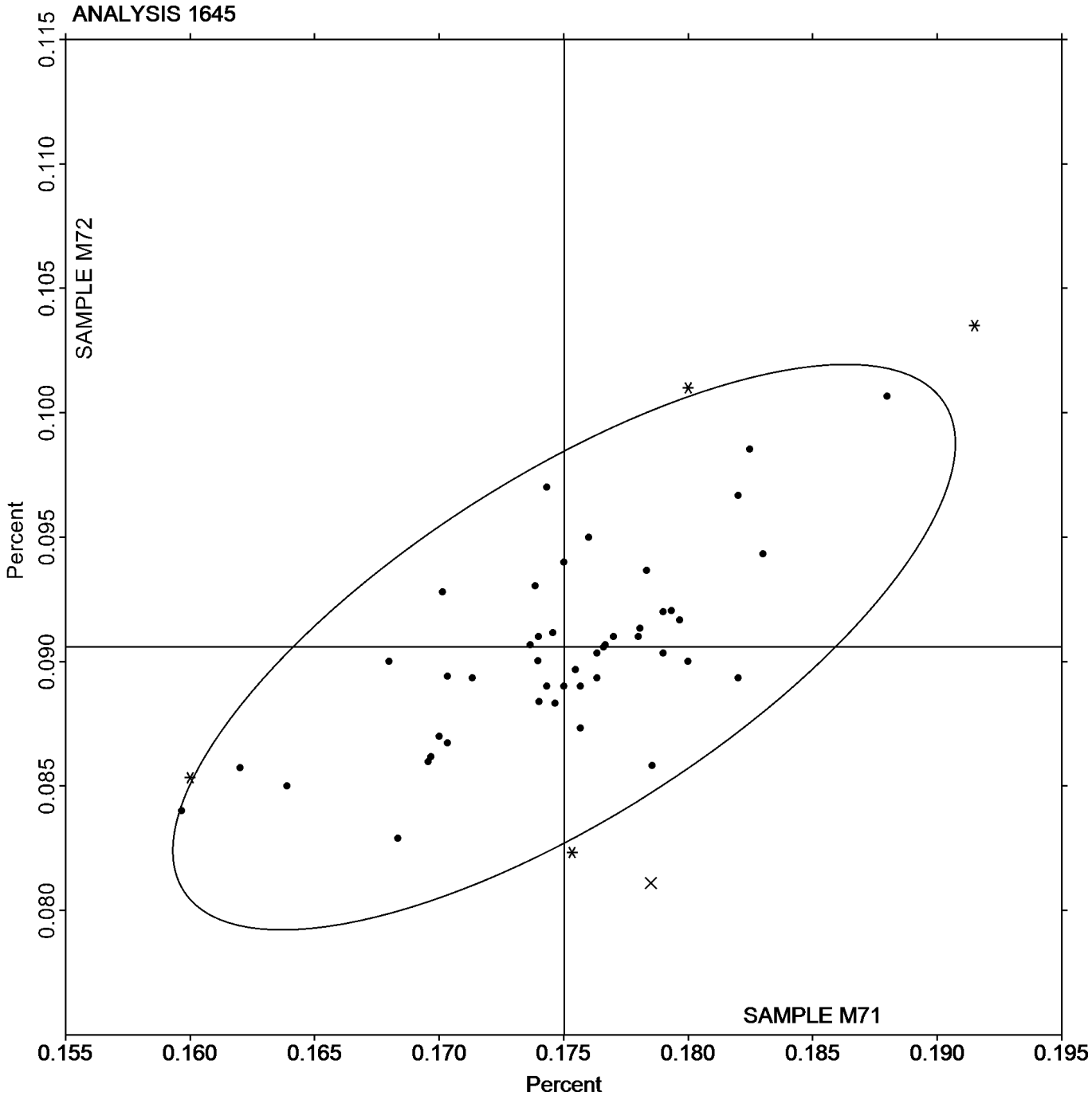
4FKC3Q (X) - Data for sample M71 are low.

6VN6D8 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

MV7YNR (X) - Data for both samples are high.

R9XEH9 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample M72.

SAMPLE M71	SAMPLE M72
0.1750 Percent	0.0906 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23YBL9		9.143	0.057	0.62	9.663	-0.061	-0.58	XR
2QT99Q		8.990	-0.096	-1.04	9.611	-0.114	-1.07	OE
36F4Q8		9.133	0.047	0.51	9.703	-0.021	-0.20	OE
3N2AUT		9.083	-0.003	-0.03	9.627	-0.098	-0.93	IC
4DB8P3		9.089	0.003	0.03	9.824	0.099	0.94	OE
4DPT47		9.123	0.037	0.40	9.787	0.062	0.59	OE
4FKC3Q		8.885	-0.201	-2.17	9.685	-0.039	-0.37	GD
4JHM9Y		9.094	0.008	0.08	9.687	-0.038	-0.36	OE
4LLM34		9.176	0.090	0.98	9.682	-0.043	-0.41	OE
4NAY2A		9.181	0.095	1.03	9.839	0.115	1.08	OE
6GMJW4		9.064	-0.022	-0.24	9.670	-0.054	-0.51	XR
6QAMXB		9.040	-0.046	-0.50	9.839	0.115	1.09	IC
6VN6D8		9.197	0.111	1.20	9.942	0.217	2.06	GD
6XX6FT		9.040	-0.046	-0.50	9.783	0.059	0.56	OE
8FQQC4		9.043	-0.043	-0.47	9.737	0.012	0.12	OE
8UALDL		9.099	0.013	0.14	9.795	0.071	0.67	OE
ABHHEV		9.298	0.212	2.29	9.992	0.267	2.53	OE
AR9EYY		9.090	0.004	0.04	9.753	0.029	0.27	OE
B2DLEY		9.160	0.074	0.80	9.630	-0.095	-0.89	GD
BRBB43		9.047	-0.039	-0.43	9.780	0.055	0.53	OE
CD6UCR		9.069	-0.017	-0.19	9.679	-0.046	-0.43	WD
DRZGCT		9.054	-0.032	-0.34	9.681	-0.044	-0.42	WD
EBVE6C		9.085	-0.001	-0.01	9.703	-0.022	-0.21	GD
EEBWCV		9.143	0.057	0.62	9.763	0.038	0.36	XX
EJ7GQD		9.067	-0.019	-0.21	9.737	0.012	0.12	OE
ENV8LM		9.137	0.051	0.55	9.760	0.035	0.34	OE
EZURDF		9.032	-0.054	-0.59	9.744	0.019	0.18	OE
FE4BWR		8.960	-0.126	-1.37	9.513	-0.211	-2.00	OE
H6TLCR		9.047	-0.039	-0.42	9.724	0.000	0.00	IC
H7JRRH	*	8.819	-0.267	-2.89	9.463	-0.262	-2.48	OE
H984RN		9.034	-0.052	-0.57	9.652	-0.072	-0.68	WD
HZEW7W		9.047	-0.039	-0.43	9.690	-0.035	-0.33	OE
J36ADL		8.970	-0.116	-1.25	9.649	-0.075	-0.71	OE
K8ATNK		9.006	-0.080	-0.87	9.560	-0.165	-1.56	WD
KAX6NP		9.047	-0.039	-0.43	9.690	-0.035	-0.33	OE
KBCGE8		9.163	0.077	0.84	9.923	0.199	1.88	GD
KTBEYN		9.290	0.204	2.21	9.867	0.142	1.35	XX
L7R3WR		9.005	-0.081	-0.88	9.755	0.030	0.29	IC
L87JFK		9.003	-0.083	-0.90	9.593	-0.131	-1.24	OE
M9YGKK		9.060	-0.026	-0.28	9.710	-0.015	-0.14	OE
MV7YNR		9.000	-0.086	-0.93	9.670	-0.055	-0.52	GD
MYVGVJ	*	9.323	0.237	2.57	9.820	0.095	0.90	OE
NCQ86M		9.043	-0.043	-0.46	9.706	-0.019	-0.18	OE
NHFMWE		9.033	-0.053	-0.57	9.633	-0.091	-0.86	GR
NTJTUM		9.074	-0.012	-0.14	9.707	-0.018	-0.17	WD
QDDMAE		9.067	-0.019	-0.20	9.777	0.052	0.50	OE
QMNRGD		9.105	0.019	0.20	9.804	0.079	0.75	WC

Fasteners and Metals Interlaboratory Testing Program

Analysis 1646

Corrosion Resistant Steel, NICKEL (Ni)
NICKEL (Ni)

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
QZNQ4A		9.037	-0.049	-0.54	9.790	0.065	0.62	OE
R2EB9L		9.096	0.010	0.11	9.726	0.002	0.02	WD
R3D89G		9.130	0.044	0.47	9.783	0.059	0.56	DR
R9XEH9		9.300	0.214	2.31	9.874	0.150	1.42	OE
RGXMBF		9.157	0.071	0.76	9.770	0.045	0.43	OE
U4VDAB		9.077	-0.009	-0.10	9.647	-0.078	-0.74	DR
UHD7YH		9.265	0.179	1.93	9.902	0.177	1.68	OE
V4A96H		9.030	-0.056	-0.61	9.520	-0.205	-1.94	OE
VX66LB		9.118	0.032	0.34	9.755	0.030	0.29	WD
VZ96FF		9.094	0.008	0.08	9.743	0.018	0.17	IC
WHRBBD		9.089	0.003	0.03	9.733	0.008	0.08	WD
X2X4T6		9.030	-0.056	-0.61	9.500	-0.225	-2.13	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	9.086	Percent	9.725	Percent
Stnd Dev Btwn Labs	0.092	Percent	0.106	Percent

Samples M71, M72 : AISI 347, AISI 347

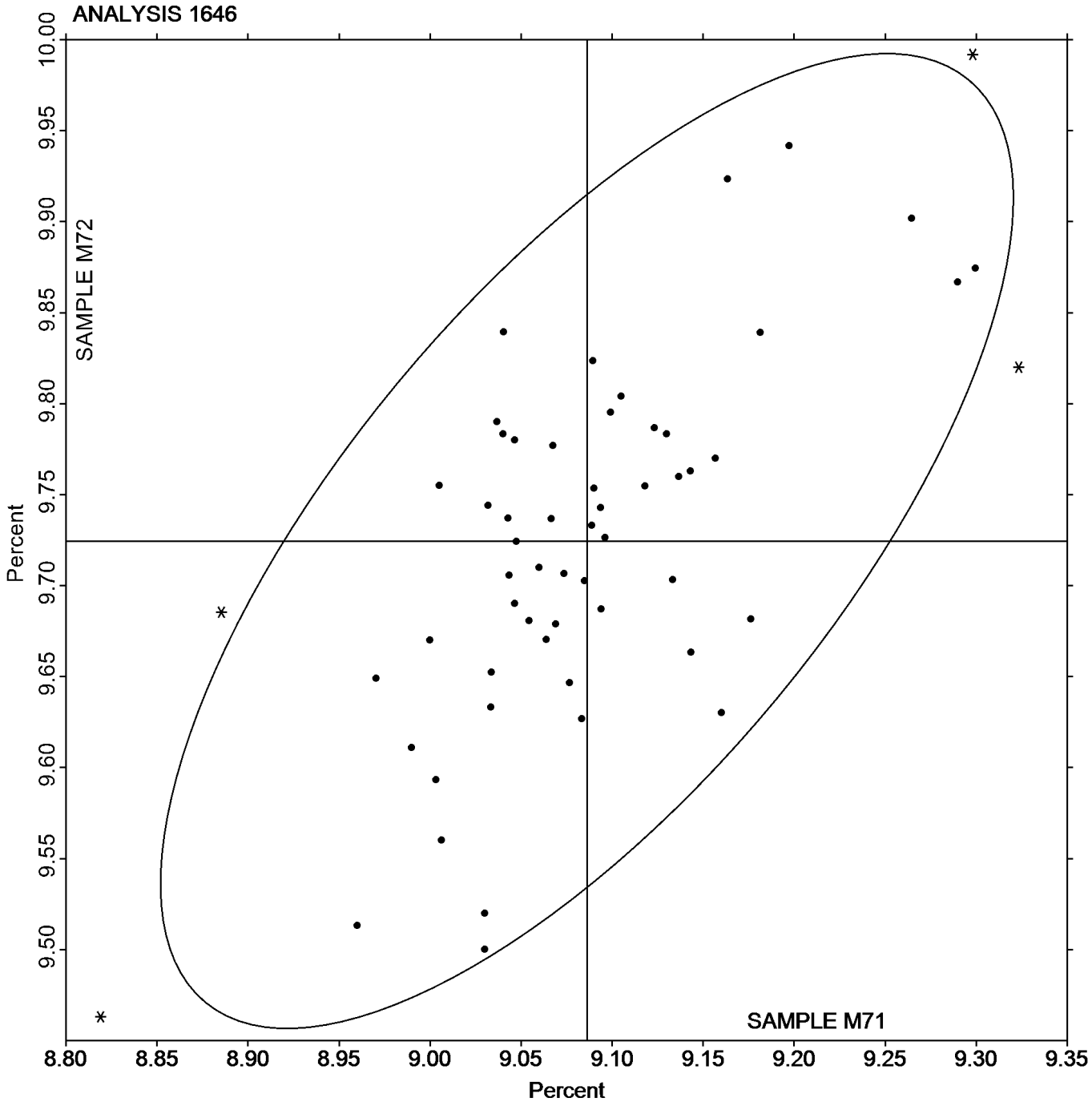
Statistics based on 59 of 59 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
GR	Gravimetry	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WC	Wet Chemistry
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

SAMPLE M71
9.086 Percent

SAMPLE M72
9.725 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23YBL9		17.44	0.10	1.10	18.46	0.15	1.40	XR
2QT99Q		17.51	0.16	1.87	18.58	0.27	2.46	OE
36F4Q8	X	17.57	0.22	2.56	18.83	0.52	4.73	OE
3N2AUT		17.33	-0.02	-0.25	18.16	-0.15	-1.35	IC
4DB8P3	*	17.43	0.09	0.98	18.19	-0.12	-1.08	OE
4DPT47		17.40	0.05	0.56	18.40	0.09	0.80	OE
4FKC3Q		17.29	-0.05	-0.63	18.35	0.04	0.37	GD
4JHM9Y		17.36	0.02	0.19	18.34	0.03	0.30	OE
4LLM34		17.26	-0.09	-1.02	18.28	-0.03	-0.28	OE
4NAY2A		17.43	0.08	0.94	18.28	-0.03	-0.28	OE
6GMJW4		17.43	0.08	0.93	18.42	0.11	1.00	XR
6QAMXB	X	16.86	-0.49	-5.63	18.06	-0.25	-2.28	IC
6VN6D8		17.40	0.06	0.64	18.20	-0.11	-0.95	GD
6XX6FT		17.31	-0.04	-0.44	18.08	-0.23	-2.04	OE
8FQQC4		17.31	-0.04	-0.45	18.27	-0.04	-0.33	OE
8UALDL		17.34	0.00	-0.05	18.25	-0.05	-0.50	OE
ABHHEV	*	17.11	-0.24	-2.80	18.05	-0.26	-2.32	OE
AR9EYY	*	17.48	0.14	1.56	18.09	-0.22	-2.01	OE
B2DLEY	X	16.90	-0.45	-5.17	18.30	-0.01	-0.08	GD
BRBB43		17.27	-0.08	-0.94	18.25	-0.06	-0.50	OE
CD6UCR		17.42	0.07	0.79	18.44	0.13	1.22	WD
DRZGCT		17.37	0.03	0.31	18.41	0.10	0.95	WD
EBVE6C		17.28	-0.07	-0.82	18.20	-0.11	-0.99	GD
EEBWCV		17.49	0.14	1.65	18.51	0.20	1.81	XR
EJ7GQD		17.28	-0.07	-0.79	18.25	-0.06	-0.53	OE
ENV8LM		17.38	0.04	0.41	18.33	0.02	0.16	OE
EZURDF		17.30	-0.04	-0.50	18.30	-0.01	-0.05	OE
FE4BWR		17.18	-0.17	-1.98	18.21	-0.10	-0.89	OE
H6TLCR		17.39	0.05	0.52	18.34	0.03	0.25	IC
H7JRRH		17.37	0.02	0.25	18.38	0.07	0.65	OE
H984RN		17.29	-0.06	-0.65	18.38	0.07	0.60	WD
HZEW7W		17.27	-0.08	-0.94	18.22	-0.09	-0.80	OE
J36ADL		17.26	-0.09	-1.04	18.11	-0.20	-1.80	OE
K8ATNK		17.13	-0.22	-2.49	18.09	-0.22	-1.98	WD
KAX6NP		17.34	0.00	-0.05	18.34	0.03	0.25	OE
KBCGE8		17.47	0.12	1.37	18.30	-0.01	-0.08	GD
KTBEYN		17.47	0.13	1.45	18.39	0.08	0.74	XX
L7R3WR	X	17.40	0.05	0.60	18.80	0.49	4.45	IC
L87JFK		17.35	0.00	-0.02	18.31	0.00	0.01	OE
M9YGKK		17.38	0.04	0.41	18.38	0.07	0.68	OE
MV7YNR		17.40	0.05	0.60	18.30	-0.01	-0.08	GD
MYVGVJ		17.34	-0.01	-0.09	18.24	-0.07	-0.65	OE
NCQ86M		17.40	0.05	0.56	18.33	0.02	0.19	OE
NHFMWE		17.27	-0.08	-0.94	18.23	-0.08	-0.68	TI
NTJTUM		17.34	-0.01	-0.11	18.31	0.00	-0.02	WD
QDDMAE		17.39	0.04	0.49	18.43	0.12	1.10	OE
QMNRGD		17.31	-0.04	-0.49	18.36	0.05	0.45	WC

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
QZNQ4A		17.32	-0.03	-0.36	18.22	-0.09	-0.80	OE
R2EB9L		17.31	-0.04	-0.47	18.32	0.02	0.14	WD
R3D89G		17.35	0.00	0.02	18.29	-0.02	-0.17	DR
R9XEH9	X	17.78	0.43	4.95	18.38	0.07	0.62	OE
RGXMBF		17.33	-0.02	-0.21	18.29	-0.02	-0.17	OE
U4VDAB		17.39	0.04	0.45	18.38	0.07	0.68	DR
UHD7YH		17.27	-0.08	-0.90	18.23	-0.08	-0.74	OE
V4A96H		17.25	-0.10	-1.13	18.23	-0.08	-0.71	OE
VX66LB		17.38	0.03	0.35	18.45	0.14	1.25	WD
VZ96FF		17.39	0.04	0.49	18.39	0.08	0.75	IC
WHRBBD		17.44	0.09	1.02	18.50	0.19	1.74	WD
X2X4T6		17.54	0.19	2.22	18.40	0.09	0.83	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	17.35	Percent	18.31	Percent
Stnd Dev Btwn Labs	0.09	Percent	0.11	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 53 of 59 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
TI	Titrimetry	WC	Wet Chemistry
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1647

36F4Q8 (X) - Data for sample M72 are high.

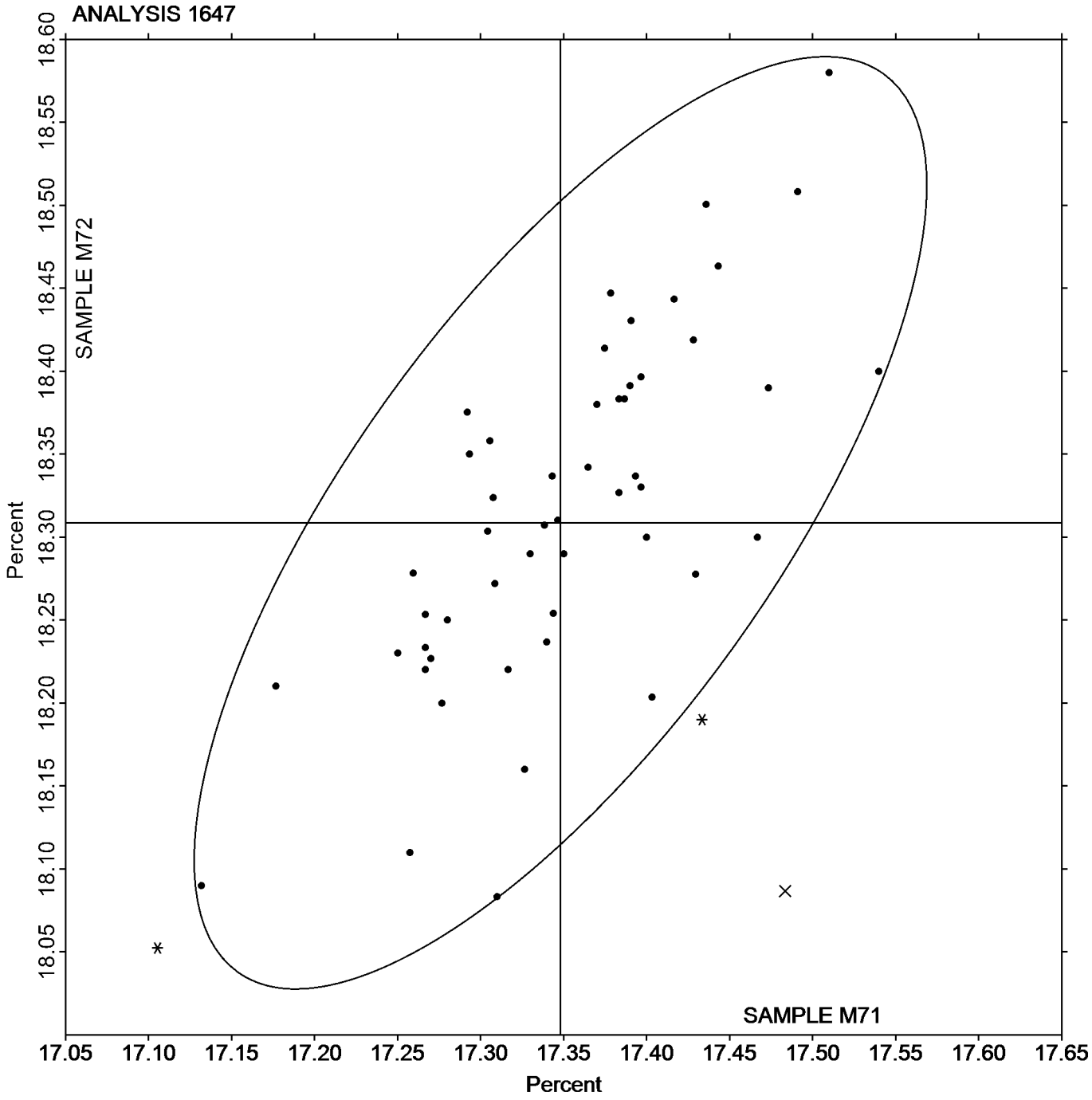
6QAMXB (X) - Data for sample M71 are low. Inconsistent within the determinations of sample M71.

B2DLEY (X) - Data for sample M71 are low.

L7R3WR (X) - Data for sample M72 are high. Inconsistent within the determinations of sample M71.

R9XEH9 (X) - Data for sample M71 are high. Inconsistent within the determinations of sample M71.

SAMPLE M71	SAMPLE M72
17.35 Percent	18.31 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23YBL9		0.3673	-0.0022	-0.24	0.2020	0.0002	0.02	XR
2QT99Q		0.3730	0.0035	0.38	0.2060	0.0042	0.44	OE
36F4Q8		0.3643	-0.0052	-0.57	0.2007	-0.0011	-0.11	OE
3N2AUT		0.3663	-0.0032	-0.35	0.1977	-0.0041	-0.43	IC
4DB8P3		0.3770	0.0075	0.81	0.2073	0.0056	0.58	OE
4DPT47		0.3663	-0.0032	-0.35	0.2017	-0.0001	-0.01	OE
4FKC3Q		0.3703	0.0008	0.09	0.1983	-0.0034	-0.36	GD
4JHM9Y		0.3880	0.0185	2.01	0.2240	0.0222	2.32	OE
4LLM34		0.3625	-0.0070	-0.76	0.2030	0.0012	0.13	OE
4NAY2A		0.3737	0.0042	0.46	0.2044	0.0026	0.27	OE
6GMJW4		0.3671	-0.0024	-0.26	0.1959	-0.0059	-0.61	XR
6QAMXB		0.3879	0.0184	2.00	0.1984	-0.0034	-0.35	IC
6VN6D8	*	0.3477	-0.0219	-2.38	0.1813	-0.0204	-2.14	GD
6XX6FT		0.3670	-0.0025	-0.28	0.2067	0.0049	0.51	OE
8FQQC4		0.3641	-0.0054	-0.59	0.1883	-0.0134	-1.40	OE
8UALDL		0.3518	-0.0177	-1.93	0.1962	-0.0055	-0.58	OE
ABHHEV		0.3617	-0.0079	-0.86	0.1982	-0.0036	-0.38	OE
AR9EYY		0.3650	-0.0045	-0.49	0.2047	0.0029	0.30	OE
B2DLEY		0.3750	0.0055	0.59	0.2100	0.0082	0.86	GD
BRBB43		0.3723	0.0028	0.30	0.1927	-0.0091	-0.95	XX
CD6UCR		0.3790	0.0095	1.03	0.1990	-0.0028	-0.29	WD
DRZGCT		0.3737	0.0041	0.45	0.2050	0.0032	0.34	WD
EBVE6C		0.3697	0.0001	0.01	0.2033	0.0016	0.16	GD
EEBWCV		0.3693	-0.0002	-0.02	0.1997	-0.0021	-0.22	XR
EJ7GQD	X	0.4290	0.0595	6.47	0.1983	-0.0034	-0.36	OE
ENV8LM		0.3657	-0.0039	-0.42	0.1993	-0.0024	-0.25	OE
EZURDF		0.3730	0.0035	0.38	0.2003	-0.0014	-0.15	OE
FE4BWR		0.3627	-0.0069	-0.75	0.1980	-0.0038	-0.39	OE
H6TLCR		0.3670	-0.0025	-0.28	0.2020	0.0002	0.02	IC
H7JRRH		0.3810	0.0115	1.25	0.2140	0.0122	1.28	OE
H984RN		0.3746	0.0050	0.55	0.2043	0.0026	0.27	WD
HZEW7W		0.3457	-0.0239	-2.59	0.1937	-0.0081	-0.85	OE
J36ADL		0.3755	0.0060	0.65	0.2092	0.0074	0.77	OE
K8ATNK		0.3671	-0.0024	-0.26	0.1987	-0.0031	-0.32	WD
KAX6NP		0.3697	0.0001	0.01	0.1997	-0.0021	-0.22	OE
KBCGE8		0.3743	0.0048	0.52	0.2083	0.0066	0.69	GD
KTBEYN		0.3597	-0.0099	-1.07	0.2000	-0.0018	-0.18	XX
L7R3WR		0.3740	0.0045	0.49	0.2060	0.0042	0.44	IC
L87JFK		0.3807	0.0111	1.21	0.1917	-0.0101	-1.06	OE
M9YGKK	*	0.3547	-0.0149	-1.62	0.1757	-0.0261	-2.73	OE
MV7YNR		0.3680	-0.0015	-0.17	0.2010	-0.0008	-0.08	GD
MYVGVJ		0.3660	-0.0035	-0.38	0.2190	0.0172	1.80	OE
NCQ86M		0.3603	-0.0092	-1.00	0.2097	0.0079	0.83	OE
NHFMWE		0.3670	-0.0025	-0.28	0.1987	-0.0031	-0.32	IC
NTJTUM		0.3657	-0.0039	-0.42	0.2000	-0.0018	-0.18	WD
QDDMAE		0.3715	0.0020	0.22	0.2046	0.0028	0.30	OE
QZNQ4A	X	0.3310	-0.0385	-4.19	0.2077	0.0059	0.62	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 1648

Corrosion Resistant Steel, MOLYBDENUM (Mo)

MOLYBDENUM (Mo)

		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
R2EB9L		0.3685	-0.0011	-0.12	0.1999	-0.0019	-0.19	WD
R3D89G		0.3733	0.0038	0.41	0.1933	-0.0084	-0.88	DR
R9XEH9		0.3849	0.0154	1.67	0.2242	0.0224	2.35	OE
RGXMBF		0.3720	0.0025	0.27	0.1807	-0.0211	-2.20	OE
UHD7YH	*	0.3983	0.0288	3.13	0.2160	0.0142	1.49	OE
V4A96H		0.3657	-0.0039	-0.42	0.2200	0.0182	1.91	OE
VX66LB		0.3693	-0.0002	-0.02	0.2007	-0.0011	-0.11	WD
VZ96FF		0.3626	-0.0069	-0.75	0.1876	-0.0141	-1.48	IC
WHRBBD		0.3707	0.0011	0.12	0.2017	-0.0001	-0.01	WD
X2X4T6		0.3750	0.0055	0.59	0.2147	0.0129	1.35	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.3695	Percent	0.2018	Percent
Stnd Dev Btwn Labs	0.0092	Percent	0.0096	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 55 of 57 reporting participants

Key to Method Codes Reported by Participants

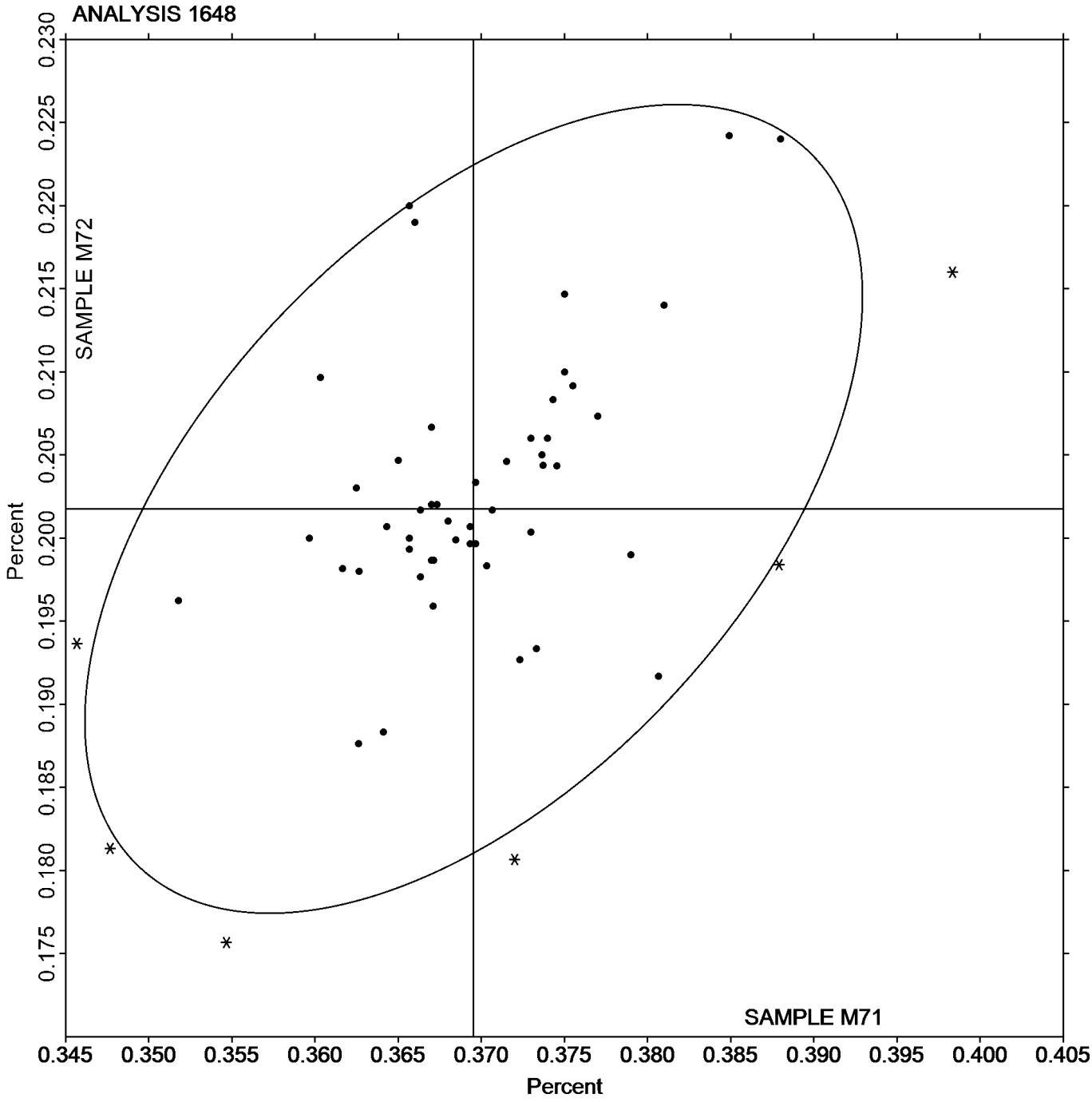
DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1648

EJ7GQD (X) - Data for sample M71 are high.

QZNQ4A (X) - Data for sample M71 are low.

SAMPLE M71	SAMPLE M72
0.3695 Percent	0.2018 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23YBL9		0.4693	-0.0020	-0.24	0.2860	-0.0173	-2.11	XR
2QT99Q		0.4860	0.0146	1.76	0.3220	0.0187	2.29	OE
36F4Q8		0.4700	-0.0014	-0.16	0.3037	0.0004	0.05	OE
3N2AUT		0.4790	0.0076	0.92	0.3097	0.0064	0.78	IC
4DB8P3		0.4730	0.0016	0.20	0.3113	0.0081	0.99	OE
4DPT47		0.4630	-0.0084	-1.00	0.2970	-0.0063	-0.77	OE
4FKC3Q		0.4640	-0.0074	-0.88	0.3007	-0.0026	-0.32	GD
4JHM9Y		0.4680	-0.0034	-0.40	0.3070	0.0037	0.46	OE
4LLM34		0.4618	-0.0095	-1.14	0.2935	-0.0097	-1.19	OE
4NAY2A		0.4613	-0.0101	-1.21	0.2915	-0.0117	-1.43	OE
6GMJW4		0.4718	0.0004	0.05	0.3001	-0.0031	-0.38	XR
6QAMXB		0.4693	-0.0021	-0.25	0.3089	0.0056	0.69	IC
6VN6D8	X	0.4673	-0.0040	-0.48	0.2757	-0.0276	-3.38	GD
6XX6FT		0.4720	0.0006	0.08	0.3137	0.0104	1.27	OE
8FQQC4		0.4843	0.0130	1.56	0.3033	0.0001	0.01	OE
8UALDL	X	0.4389	-0.0325	-3.90	0.3017	-0.0016	-0.20	OE
ABHHEV		0.4607	-0.0106	-1.28	0.2934	-0.0098	-1.20	OE
AR9EYY		0.4727	0.0013	0.16	0.3030	-0.0003	-0.03	OE
B2DLEY		0.4820	0.0106	1.28	0.2970	-0.0063	-0.77	GD
BRBB43		0.4660	-0.0054	-0.64	0.3150	0.0117	1.44	OE
CD6UCR		0.4733	0.0020	0.24	0.3020	-0.0013	-0.15	WD
DRZGCT		0.4703	-0.0010	-0.12	0.3013	-0.0019	-0.24	WD
EBVE6C		0.4673	-0.0040	-0.48	0.2950	-0.0083	-1.01	GD
EEBWCV		0.4753	0.0040	0.48	0.3037	0.0004	0.05	XR
EJ7GQD		0.4627	-0.0087	-1.04	0.3020	-0.0013	-0.15	OE
ENV8LM		0.4730	0.0016	0.20	0.3113	0.0081	0.99	OE
EZURDF		0.4687	-0.0027	-0.32	0.3030	-0.0003	-0.03	OE
FE4BWR		0.4600	-0.0114	-1.37	0.2980	-0.0053	-0.64	OE
H6TLCR		0.4730	0.0016	0.20	0.2980	-0.0053	-0.64	IC
H7JRRH		0.4570	-0.0144	-1.73	0.3010	-0.0023	-0.28	OE
H984RN		0.4758	0.0044	0.53	0.3034	0.0002	0.02	WD
HZEW7W		0.4773	0.0060	0.72	0.3067	0.0034	0.42	OE
J36ADL		0.4780	0.0066	0.80	0.3247	0.0215	2.63	OE
K8ATNK		0.4656	-0.0058	-0.70	0.2863	-0.0169	-2.07	WD
KAX6NP		0.4620	-0.0094	-1.12	0.3027	-0.0006	-0.07	OE
KBCGE8		0.4653	-0.0060	-0.72	0.3033	0.0001	0.01	GD
KTBEYN		0.4707	-0.0007	-0.08	0.2923	-0.0109	-1.34	XX
L7R3WR	X	0.5135	0.0421	5.06	0.3290	0.0257	3.15	IC
L87JFK	X	0.4290	-0.0424	-5.09	0.2700	-0.0333	-4.07	OE
M9YGKK		0.4797	0.0083	1.00	0.3080	0.0047	0.58	OE
MV7YNR		0.4880	0.0166	2.00	0.3110	0.0077	0.95	GD
MYVGVJ		0.4603	-0.0110	-1.33	0.3103	0.0071	0.87	OE
NCQ86M		0.4693	-0.0020	-0.24	0.2970	-0.0063	-0.77	OE
NHFMWE		0.4753	0.0040	0.48	0.3050	0.0017	0.21	IC
NTJTUM		0.4690	-0.0024	-0.28	0.3017	-0.0016	-0.19	WD
QDDMAE	*	0.4951	0.0237	2.85	0.3193	0.0160	1.96	OE
QZNQ4A		0.4810	0.0096	1.16	0.3127	0.0094	1.15	OE

Analysis 1649

Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
R2EB9L		0.4693	-0.0021	-0.25	0.2976	-0.0056	-0.69	WD
R3D89G		0.4733	0.0020	0.24	0.3000	-0.0033	-0.40	DR
R9XEH9		0.4551	-0.0162	-1.95	0.2930	-0.0102	-1.25	OE
RGXMBF		0.4740	0.0026	0.32	0.3030	-0.0003	-0.03	OE
UHD7YH		0.4857	0.0143	1.72	0.3147	0.0114	1.40	OE
V4A96H		0.4730	0.0016	0.20	0.3000	-0.0033	-0.40	OE
VX66LB		0.4687	-0.0027	-0.32	0.3010	-0.0023	-0.28	WD
VZ96FF		0.4647	-0.0067	-0.80	0.2957	-0.0076	-0.93	IC
W9ZX87		0.4677	-0.0037	-0.44	0.3010	-0.0023	-0.28	WD
WHRBBD		0.4833	0.0120	1.44	0.3100	0.0067	0.82	WD

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.4714	Percent	0.3033	Percent
Stnd Dev Btwn Labs	0.0083	Percent	0.0082	Percent

Samples M71, M72 : AISI 347, AISI 347

Statistics based on 53 of 57 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1649

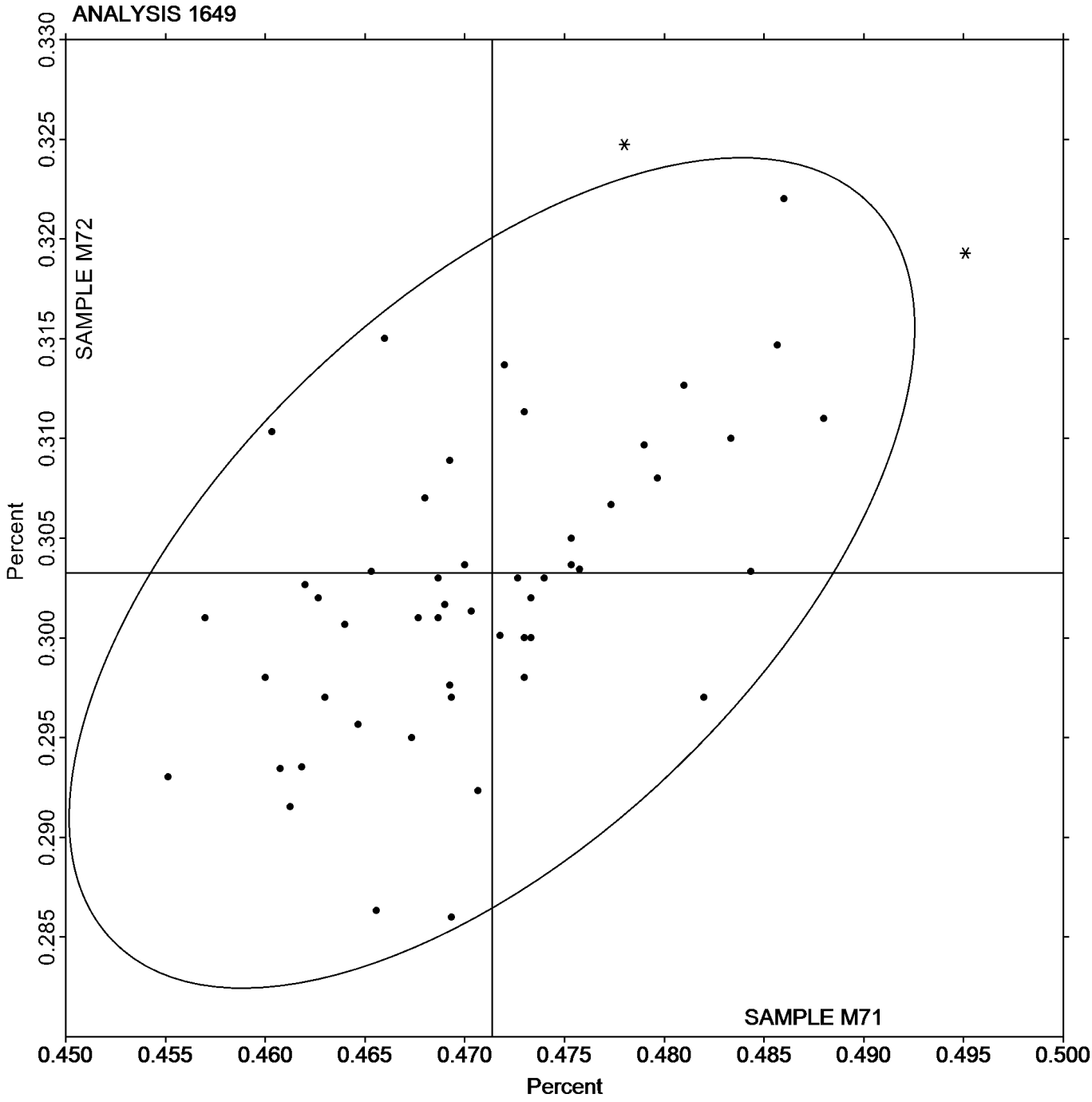
6VN6D8 (X) - Data for sample M72 are low.

8UALDL (X) - Data for sample M71 are low.

L7R3WR (X) - Data for both samples are high.

L87JFK (X) - Data for both samples are low.

SAMPLE M71	SAMPLE M72
0.4714 Percent	0.3033 Percent



		Sample M71			Sample M72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2QT99Q		0.6160	0.0510	2.39	0.7810	0.0563	1.98	OE
36F4Q8		0.5903	0.0253	1.19	0.7667	0.0419	1.48	OE
3N2AUT		0.5607	-0.0043	-0.20	0.7003	-0.0244	-0.86	IC
4DB8P3		0.6013	0.0363	1.70	0.7727	0.0479	1.69	OE
4DPT47		0.5500	-0.0150	-0.70	0.7007	-0.0241	-0.85	OE
4FKC3Q		0.5217	-0.0433	-2.03	0.7137	-0.0111	-0.39	GD
4JHM9Y		0.5840	0.0190	0.89	0.7280	0.0033	0.11	OE
4LLM34		0.5534	-0.0116	-0.54	0.7087	-0.0160	-0.56	OE
4NAY2A		0.5401	-0.0249	-1.17	0.6911	-0.0336	-1.18	OE
6GMJW4		0.5507	-0.0143	-0.67	0.6959	-0.0289	-1.02	XR
6QAMXB		0.5332	-0.0318	-1.49	0.7091	-0.0157	-0.55	IC
6VN6D8		0.5640	-0.0010	-0.05	0.7014	-0.0233	-0.82	GD
6XX6FT		0.5267	-0.0383	-1.80	0.6800	-0.0447	-1.57	OE
8FQQC4		0.5613	-0.0037	-0.17	0.7107	-0.0141	-0.50	OE
8UALDL		0.5336	-0.0314	-1.47	0.7058	-0.0189	-0.67	OE
ABHHEV		0.5770	0.0120	0.56	0.7643	0.0395	1.39	OE
AR9EYY		0.5510	-0.0140	-0.66	0.7573	0.0326	1.15	OE
B2DLEY		0.5870	0.0220	1.03	0.7390	0.0143	0.50	GD
BRBB43		0.5667	0.0017	0.08	0.7400	0.0153	0.54	OE
CD6UCR		0.5643	-0.0007	-0.03	0.7180	-0.0067	-0.24	WD
DRZGCT		0.5563	-0.0087	-0.41	0.7140	-0.0107	-0.38	WD
EBVE6C		0.5543	-0.0107	-0.50	0.7327	0.0079	0.28	GD
EEBWCV		0.5623	-0.0027	-0.13	0.7240	-0.0007	-0.03	XR
EJ7GQD		0.5567	-0.0083	-0.39	0.7400	0.0153	0.54	OE
ENV8LM		0.5693	0.0043	0.20	0.7377	0.0129	0.45	OE
EZURDF		0.5440	-0.0210	-0.98	0.6997	-0.0251	-0.88	OE
FE4BWR		0.5873	0.0223	1.05	0.7313	0.0066	0.23	OE
H6TLCR		0.5673	0.0023	0.11	0.7180	-0.0067	-0.24	IC
H7JRRH		0.5480	-0.0170	-0.80	0.7090	-0.0157	-0.55	OE
H984RN		0.5770	0.0120	0.56	0.7343	0.0096	0.34	WD
HZEW7W		0.5813	0.0163	0.77	0.7657	0.0409	1.44	OE
J36ADL		0.5667	0.0017	0.08	0.7461	0.0214	0.75	OE
K8ATNK		0.5664	0.0014	0.07	0.6987	-0.0261	-0.92	WD
KAX6NP		0.5493	-0.0157	-0.73	0.6900	-0.0347	-1.22	OE
KBCGE8		0.5837	0.0187	0.87	0.7453	0.0206	0.72	GD
L7R3WR		0.5880	0.0230	1.08	0.7475	0.0228	0.80	XX
L87JFK	*	0.5267	-0.0383	-1.80	0.6427	-0.0821	-2.89	OE
M9YGKK		0.5587	-0.0063	-0.30	0.7133	-0.0114	-0.40	OE
MV7YNR		0.5240	-0.0410	-1.92	0.6920	-0.0327	-1.15	GD
MYVGVJ		0.5703	0.0053	0.25	0.7267	0.0019	0.07	OE
NCQ86M		0.5687	0.0037	0.17	0.7167	-0.0081	-0.28	OE
NHFMWE		0.5643	-0.0007	-0.03	0.7257	0.0009	0.03	IC
NTJTUM		0.5651	0.0001	0.00	0.7234	-0.0014	-0.05	WD
QDDMAE		0.5857	0.0207	0.97	0.7585	0.0337	1.19	OE
QZNQ4A		0.5407	-0.0243	-1.14	0.7263	0.0016	0.06	OE
R2EB9L		0.5519	-0.0131	-0.61	0.6901	-0.0347	-1.22	WD
R3D89G		0.5800	0.0150	0.70	0.7400	0.0153	0.54	DR

WebCode	Data Flag	Sample M71 Lab Mean	Sample M71 Diff. from Grand Mean	Sample M71 CPV	Sample M72 Lab Mean	Sample M72 Diff. from Grand Mean	Sample M72 CPV	Method
R9XEH9		0.5857	0.0207	0.97	0.7291	0.0044	0.15	OE
RGXMBF		0.5713	0.0063	0.30	0.7793	0.0546	1.92	OE
UHD7YH		0.6213	0.0563	2.64	0.7927	0.0679	2.39	OE
V4A96H		0.5900	0.0250	1.17	0.7147	-0.0101	-0.35	OE
VX66LB		0.5580	-0.0070	-0.33	0.7140	-0.0107	-0.38	WD
VZ96FF		0.5748	0.0098	0.46	0.7335	0.0087	0.31	IC
WHRBBD		0.5770	0.0120	0.56	0.7343	0.0096	0.34	WD
X2X4T6		0.5700	0.0050	0.23	0.6900	-0.0347	-1.22	OE

Summary Statistics

	Sample M71		Sample M72	
Grand Means	0.5650	Percent	0.7247	Percent
Stnd Dev Btwn Labs	0.0213	Percent	0.0284	Percent

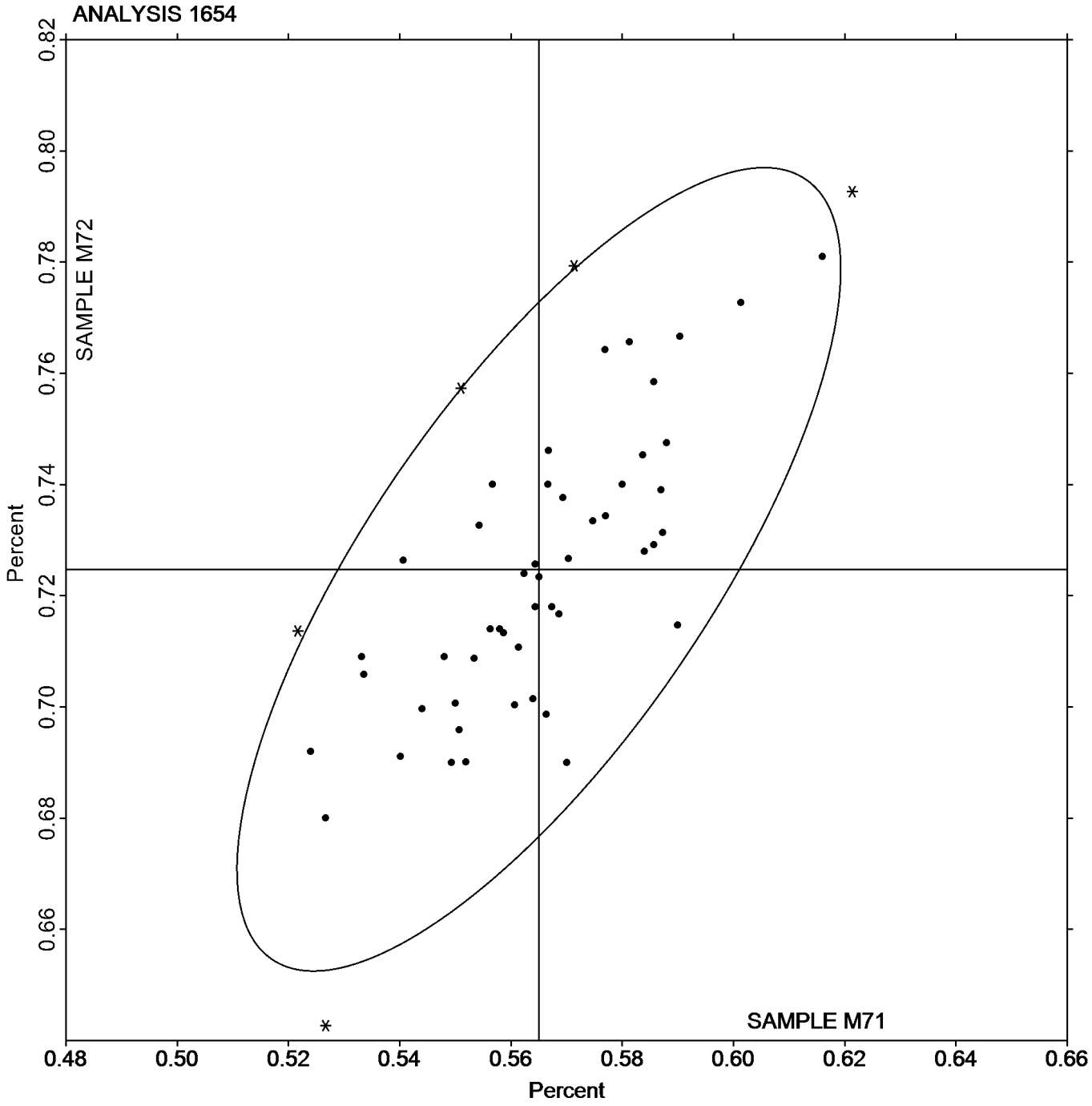
Samples M71, M72 : AISI 347, AISI 347

Statistics based on 55 of 55 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

SAMPLE M71	SAMPLE M72
0.5650 Percent	0.7247 Percent



		Sample K71			Sample K72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2JQ8M4		60.30	-0.17	-0.18	60.79	-0.41	-0.42	OE
393D6E		60.82	0.35	0.37	61.86	0.66	0.67	ED
6PGPP4		60.91	0.44	0.47	61.51	0.30	0.31	OE
B2DLEY		60.45	-0.02	-0.02	60.39	-0.81	-0.83	GD
BRBB43		60.51	0.04	0.04	61.23	0.02	0.03	OE
ENV8LM		60.64	0.17	0.18	61.55	0.35	0.36	OE
ERUJGM		60.65	0.18	0.19	61.46	0.26	0.26	XR
EZURDF		60.60	0.13	0.14	61.14	-0.06	-0.06	GR
H7JRRH		59.50	-0.97	-1.05	60.27	-0.93	-0.96	OE
J36ADL		61.16	0.69	0.75	61.65	0.44	0.45	OE
KBCGE8		60.54	0.07	0.08	61.63	0.43	0.44	EL
L7R3WR		59.10	-1.37	-1.48	60.60	-0.60	-0.62	IC
L87JFK		60.27	-0.20	-0.22	60.57	-0.64	-0.65	OE
PFTFVH		58.03	-2.44	-2.63	58.74	-2.47	-2.53	OE
R2EB9L	*	63.13	2.66	2.87	64.11	2.90	2.98	WD
R3D89G		60.55	0.08	0.09	61.49	0.28	0.29	BD
UHD7YH		59.61	-0.86	-0.93	60.08	-1.12	-1.15	OE
UM9UGA		60.82	0.35	0.38	61.79	0.59	0.60	OE
UPX7FF		60.98	0.51	0.55	61.53	0.32	0.33	OE
WX4PRB		60.75	0.28	0.30	61.52	0.32	0.33	IC
XCYDD9		60.42	-0.05	-0.05	61.28	0.08	0.08	OE
YZMCLA		60.61	0.14	0.15	61.29	0.08	0.09	OE

Summary Statistics

	Sample K71		Sample K72	
Grand Means	60.47	Percent	61.20	Percent
Stnd Dev Btwn Labs	0.93	Percent	0.98	Percent

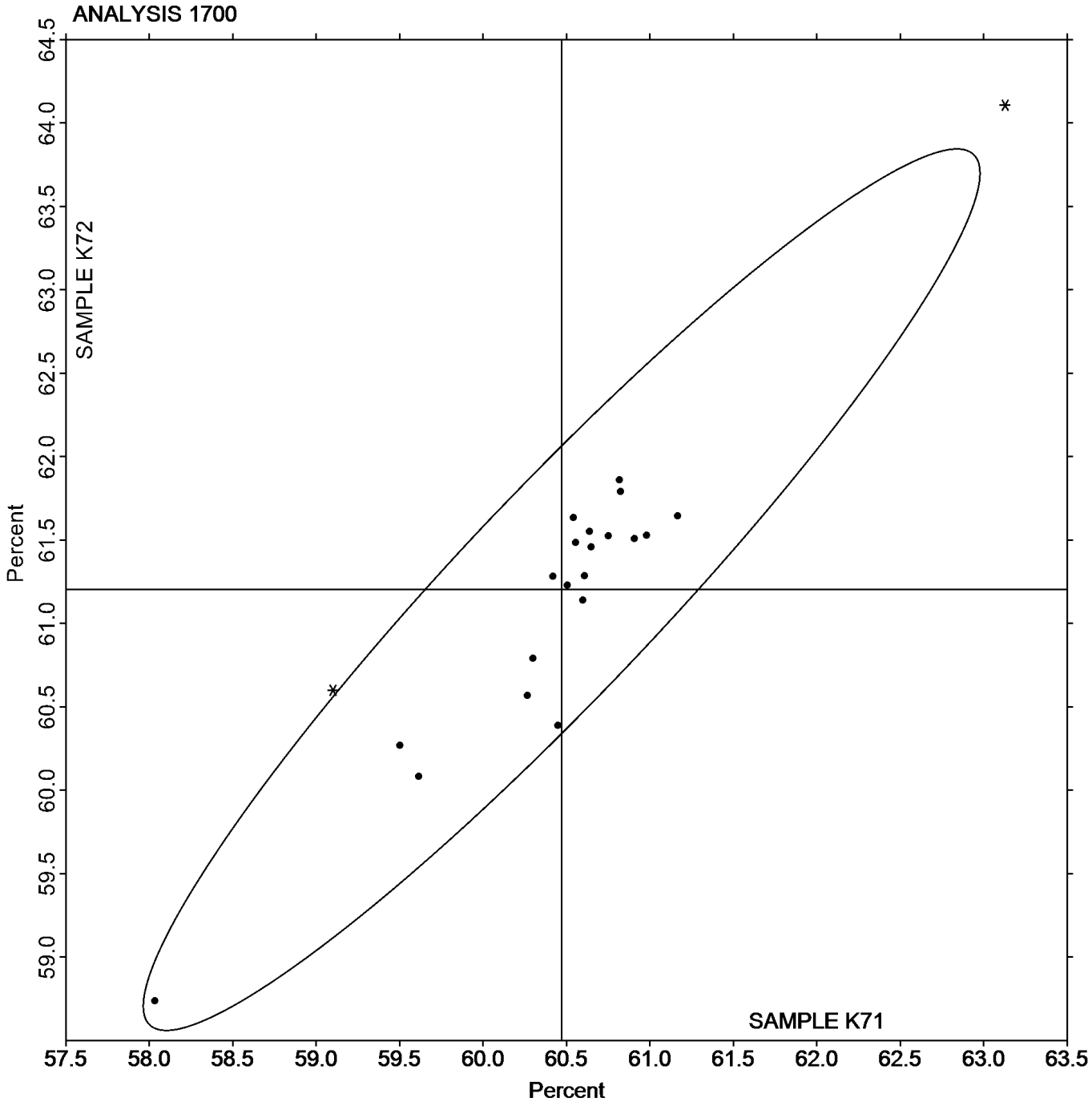
Samples K71, K72 : CDA 485, CDA 485

Statistics based on 22 of 22 reporting participants

Key to Method Codes Reported by Participants

BD	By Difference	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
EL	Electrochemistry	GD	Spectrometry - Glow Discharge (GDS)
GR	Gravimetry	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified		

SAMPLE K71	SAMPLE K72
60.47 Percent	61.20 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1701

Copper-based Alloy, TIN (Sn)
TIN (Sn)

WebCode	Data Flag	Sample K71 Lab Mean	Sample K71 Diff. from Grand Mean	Sample K71 CPV	Sample K72 Lab Mean	Sample K72 Diff. from Grand Mean	Sample K72 CPV	Method
2JQ8M4		0.7053	-0.0261	-0.91	0.5973	-0.0191	-0.59	OE
393D6E	M	0.000333	-0.7310	-25.62	No Data Reported			ED
6PGPP4		0.7263	-0.0050	-0.18	0.5990	-0.0174	-0.54	OE
B2DLEY		0.7140	-0.0173	-0.61	0.5610	-0.0554	-1.71	GD
BRBB43		0.7367	0.0053	0.19	0.6067	-0.0097	-0.30	OE
ENV8LM		0.7333	0.0020	0.07	0.6153	-0.0011	-0.03	OE
ERUJGM		0.7376	0.0063	0.22	0.6200	0.0036	0.11	XR
EZURDF		0.7170	-0.0143	-0.50	0.6057	-0.0107	-0.33	IC
H7JRRH		0.7110	-0.0203	-0.71	0.5990	-0.0174	-0.54	OE
J36ADL	*	0.8122	0.0809	2.84	0.7196	0.1032	3.19	OE
KBCGE8		0.7270	-0.0043	-0.15	0.6083	-0.0081	-0.25	IC
L7R3WR		0.7605	0.0292	1.02	0.6450	0.0286	0.88	IC
L87JFK		0.7120	-0.0193	-0.68	0.6013	-0.0151	-0.47	OE
PFTFVH		0.7563	0.0250	0.88	0.6490	0.0326	1.01	OE
R2EB9L		0.7680	0.0367	1.28	0.6439	0.0275	0.85	WD
R3D89G		0.7290	-0.0023	-0.08	0.6106	-0.0058	-0.18	DR
UHD7YH		0.6737	-0.0577	-2.02	0.5727	-0.0437	-1.35	OE
UM9UGA		0.6966	-0.0347	-1.22	0.5900	-0.0264	-0.82	IC
UPX7FF		0.7257	-0.0057	-0.20	0.6163	-0.0001	0.00	OE
WX4PRB		0.7320	0.0007	0.02	0.6240	0.0076	0.24	IC
XCYDD9		0.7460	0.0147	0.51	0.6323	0.0159	0.49	IC
YZMCLA		0.7380	0.0067	0.23	0.6270	0.0106	0.33	OE

Summary Statistics

	Sample K71		Sample K72	
Grand Means	0.7313	Percent	0.6164	Percent
Stnd Dev Btwn Labs	0.0285	Percent	0.0323	Percent

Samples K71, K72 : CDA 485, CDA 485

Statistics based on 21 of 22 reporting participants

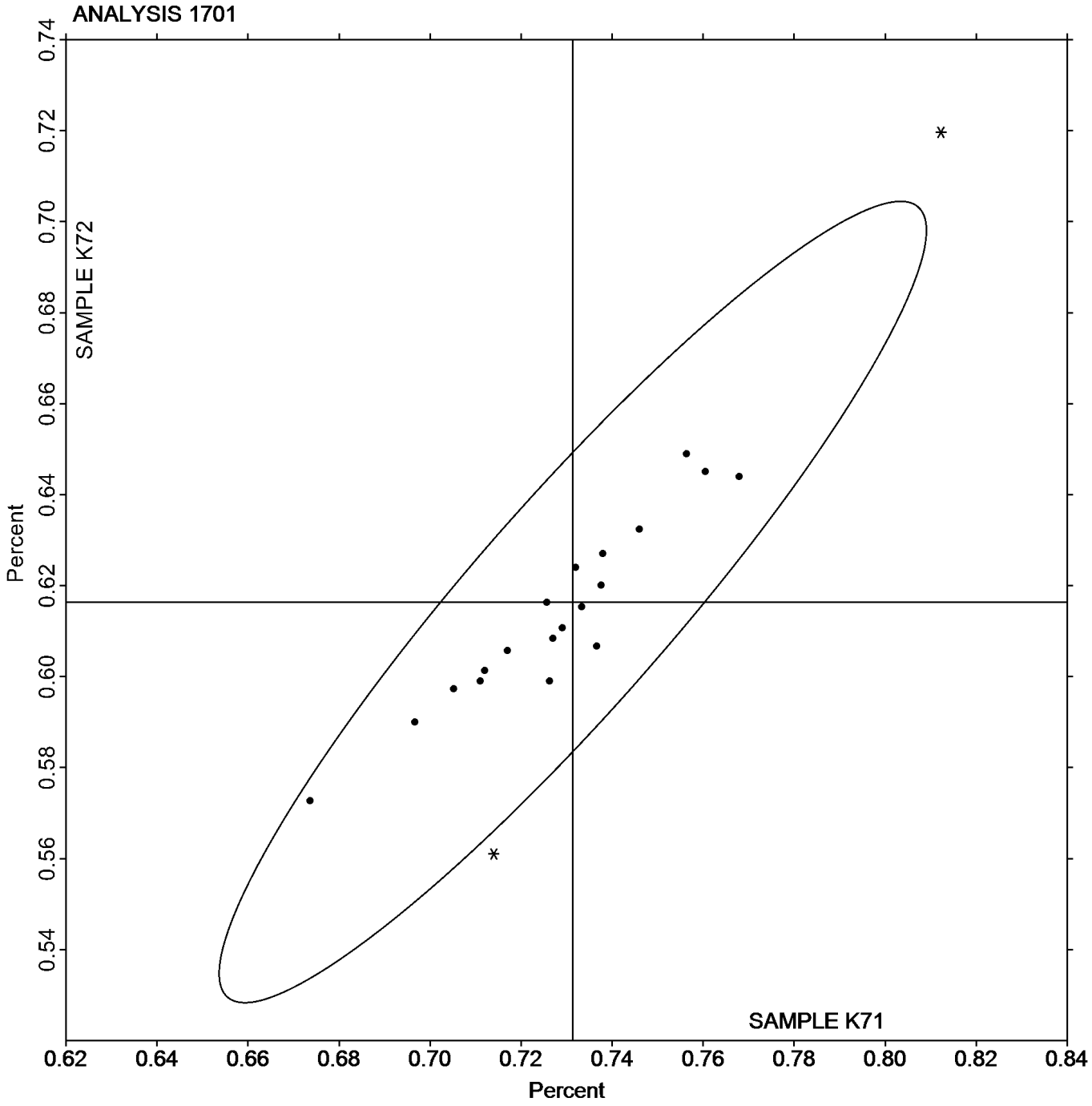
Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified		

Comments on Assigned Data Flags for Test #1701

393D6E (M) - Participant did not submit data for sample K72.

SAMPLE K71	SAMPLE K72
0.7313 Percent	0.6164 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1702

Copper-based Alloy, LEAD (Pb)
LEAD (Pb)

Cycle 132
4th Qtr 2020

		Sample K71			Sample K72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2JQ8M4		2.031	0.185	0.81	2.247	0.332	1.00	OE
393D6E	*	1.796	-0.051	-0.22	1.244	-0.671	-2.02	ED
6PGPP4		1.753	-0.094	-0.41	1.859	-0.056	-0.17	OE
B2DLEY		1.713	-0.134	-0.59	1.725	-0.191	-0.57	GD
BRBB43		1.847	0.000	0.00	2.020	0.104	0.31	OE
ENV8LM		1.740	-0.107	-0.47	1.769	-0.146	-0.44	OE
ERUJGM		1.808	-0.039	-0.17	1.715	-0.200	-0.60	XR
EZURDF		1.747	-0.100	-0.44	1.760	-0.155	-0.47	IC
H7JRRH	*	2.563	0.716	3.16	2.595	0.679	2.05	OE
J36ADL		2.335	0.488	2.15	2.688	0.773	2.33	OE
KBCGE8		1.690	-0.157	-0.69	1.697	-0.219	-0.66	IC
L7R3WR		1.740	-0.107	-0.47	1.790	-0.126	-0.38	IC
L87JFK		2.057	0.210	0.93	2.373	0.458	1.38	OE
PFTFVH		1.623	-0.224	-0.99	1.753	-0.162	-0.49	OE
R2EB9L		1.772	-0.074	-0.33	1.700	-0.216	-0.65	WD
R3D89G		1.731	-0.115	-0.51	1.785	-0.131	-0.39	DR
UHD7YH		1.998	0.151	0.67	2.181	0.265	0.80	OE
UM9UGA		1.698	-0.149	-0.66	1.727	-0.189	-0.57	IC
UPX7FF		1.752	-0.095	-0.42	1.913	-0.003	-0.01	OE
WX4PRB		1.678	-0.169	-0.75	1.717	-0.198	-0.60	IC
XCYDD9		1.750	-0.097	-0.43	1.779	-0.137	-0.41	IC
YZMCLA		1.806	-0.041	-0.18	2.104	0.188	0.57	OE

Summary Statistics

	Sample K71		Sample K72	
Grand Means	1.847	Percent	1.916	Percent
Stnd Dev Btwn Labs	0.227	Percent	0.332	Percent

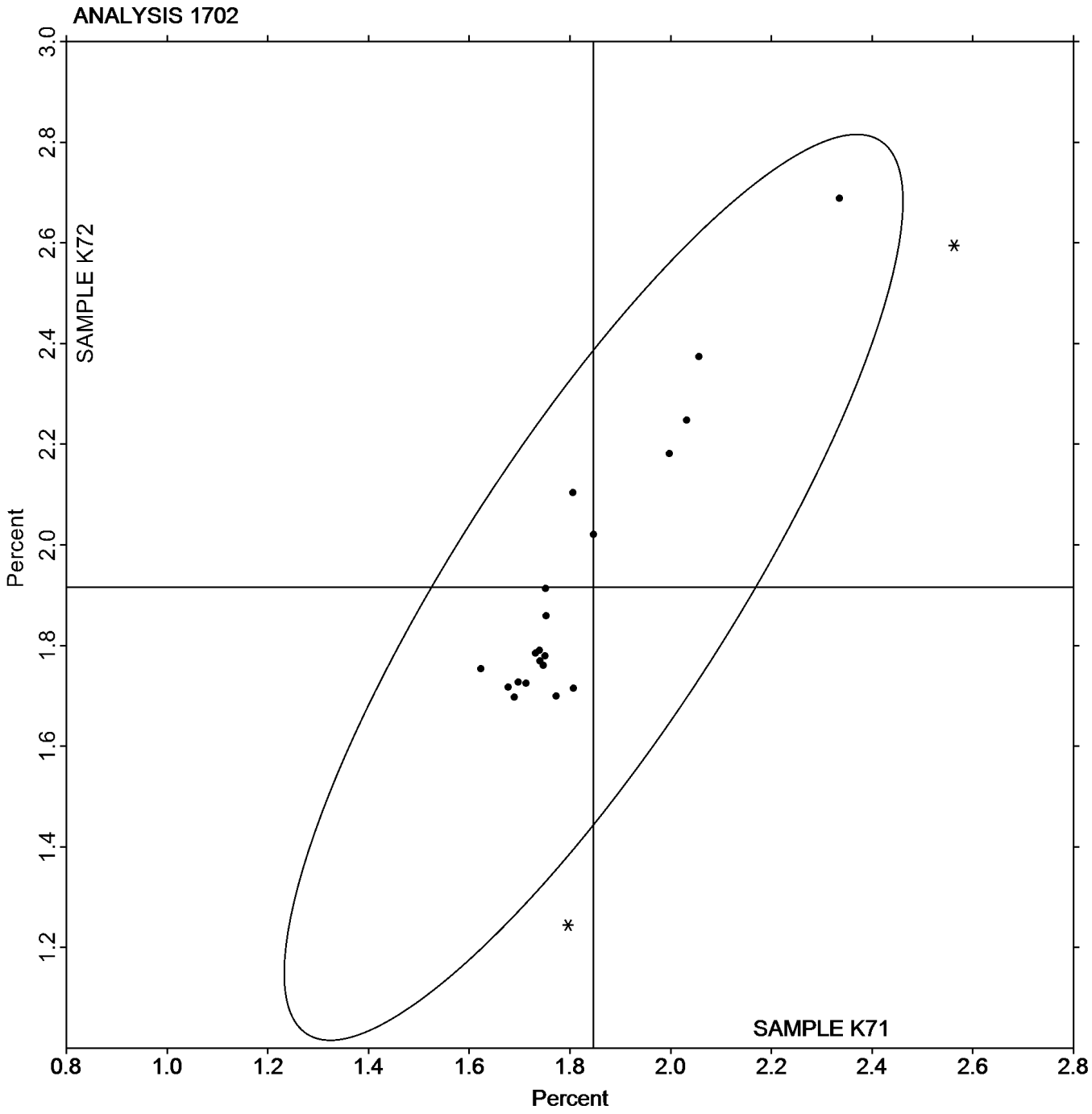
Samples K71, K72 : CDA 485, CDA 485

Statistics based on 22 of 22 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified		

SAMPLE K71	SAMPLE K72
1.847 Percent	1.916 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1703

Copper-based Alloy, ZINC (Zn)
ZINC (Zn)

Cycle 132
4th Qtr 2020

		Sample K71			Sample K72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2JQ8M4		36.94	0.17	0.32	36.29	0.26	0.47	OE
393D6E		37.29	0.51	0.97	36.77	0.75	1.36	ED
6PGPP4		36.54	-0.24	-0.45	35.92	-0.10	-0.19	OE
B2DLEY	X	36.64	-0.13	-0.25	34.36	-1.67	-3.04	GD
BRBB43		36.81	0.03	0.06	35.97	-0.05	-0.10	OE
ENV8LM		36.79	0.02	0.04	35.92	-0.11	-0.20	OE
ERUJGM		36.74	-0.03	-0.06	36.07	0.04	0.07	XR
EZURDF		36.68	-0.09	-0.18	35.88	-0.15	-0.27	IC
H7JRRH		37.18	0.41	0.77	36.44	0.41	0.75	OE
J36ADL		36.74	-0.04	-0.07	35.93	-0.09	-0.17	OE
KBCGE8	*	35.19	-1.58	-2.98	34.32	-1.71	-3.11	IC
L7R3WR		35.70	-1.07	-2.03	35.30	-0.73	-1.32	IC
L87JFK		36.87	0.09	0.18	36.30	0.28	0.50	OE
PFTFVH		37.31	0.53	1.01	36.51	0.48	0.87	OE
R2EB9L		37.17	0.39	0.74	36.35	0.32	0.58	WD
R3D89G		36.93	0.15	0.29	36.01	-0.01	-0.03	DR
UHD7YH		37.66	0.88	1.67	37.05	1.02	1.86	OE
UM9UGA		36.70	-0.08	-0.15	35.61	-0.41	-0.75	OE
UPX7FF		36.48	-0.30	-0.56	35.83	-0.20	-0.36	OE
WX4PRB		36.77	0.00	0.00	35.99	-0.03	-0.06	IC
XCYDD9		37.06	0.29	0.54	36.23	0.20	0.36	OE
YZMCLA		36.72	-0.05	-0.10	35.87	-0.16	-0.29	OE

Summary Statistics

	Sample K71		Sample K72	
Grand Means	36.77	Percent	36.03	Percent
Stnd Dev Btwn Labs	0.53	Percent	0.55	Percent

Samples K71, K72 : CDA 485, CDA 485

Statistics based on 21 of 22 reporting participants

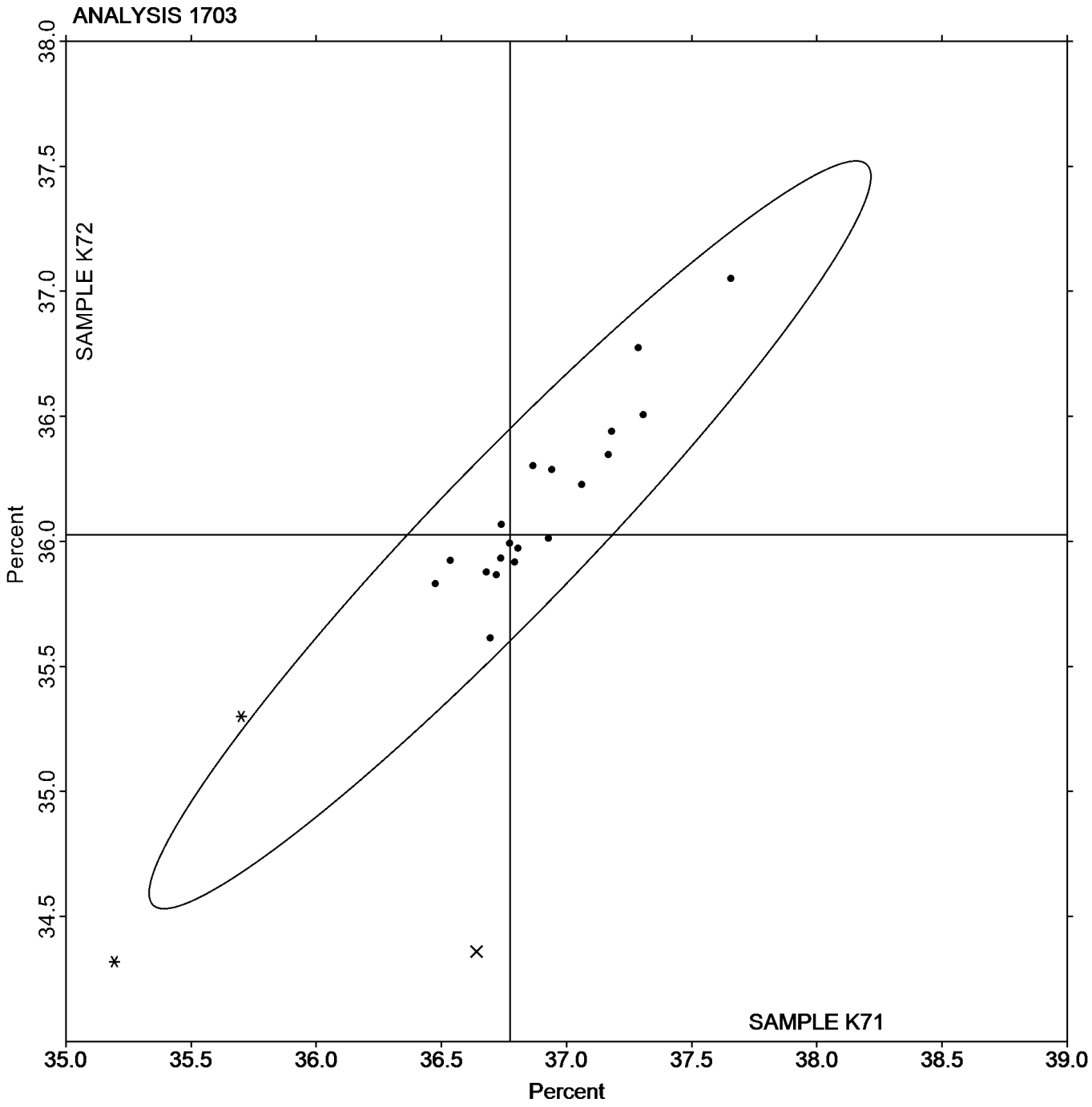
Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified		

Comments on Assigned Data Flags for Test #1703

B2DLEY (X) - Data for sample K72 are low.

SAMPLE K71	SAMPLE K72
36.77 Percent	36.03 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1704

Copper-based Alloy, IRON (Fe)
IRON (Fe)

Cycle 132
4th Qtr 2020

		Sample K71			Sample K72			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2JQ8M4		0.0221	-0.0033	-0.91	0.0645	-0.0027	-0.40	OE
393D6E	X	0.0940	0.0687	19.10	0.1297	0.0624	9.31	ED
6PGPP4		0.0270	0.0016	0.46	0.0710	0.0038	0.56	OE
B2DLEY		0.0270	0.0016	0.46	0.0710	0.0038	0.56	XX
BRBB43		0.0230	-0.0024	-0.65	0.0653	-0.0019	-0.28	OE
ENV8LM		0.0257	0.0003	0.09	0.0677	0.0004	0.06	OE
ERUJGM		0.0241	-0.0013	-0.35	0.0682	0.0010	0.14	XR
EZURDF		0.0235	-0.0018	-0.51	0.0651	-0.0022	-0.32	IC
H7JRRH		0.0212	-0.0042	-1.15	0.0610	-0.0062	-0.93	OE
J36ADL		0.0289	0.0035	0.98	0.0692	0.0020	0.29	OE
L7R3WR		0.0245	-0.0009	-0.24	0.0675	0.0003	0.04	IC
L87JFK		0.0242	-0.0012	-0.32	0.0592	-0.0081	-1.20	OE
PFTFVH		0.0258	0.0004	0.12	0.0747	0.0074	1.11	OE
R2EB9L	*	0.0370	0.0116	3.23	0.0844	0.0172	2.56	WD
R3D89G		0.0297	0.0043	1.21	0.0706	0.0034	0.51	DR
UHD7YH		0.0245	-0.0009	-0.25	0.0690	0.0018	0.26	OE
UM9UGA		0.0220	-0.0034	-0.93	0.0588	-0.0084	-1.25	IC
UPX7FF		0.0273	0.0020	0.55	0.0717	0.0044	0.66	OE
WX4PRB		0.0240	-0.0014	-0.38	0.0657	-0.0016	-0.23	IC
XCYDD9		0.0239	-0.0014	-0.39	0.0684	0.0012	0.17	IC
YZMCLA		0.0217	-0.0037	-1.02	0.0517	-0.0156	-2.32	OE

Summary Statistics

	Sample K71		Sample K72	
Grand Means	0.0254	Percent	0.0672	Percent
Stnd Dev Btwn Labs	0.0036	Percent	0.0067	Percent

Samples K71, K72 : CDA 485, CDA 485

Statistics based on 20 of 21 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

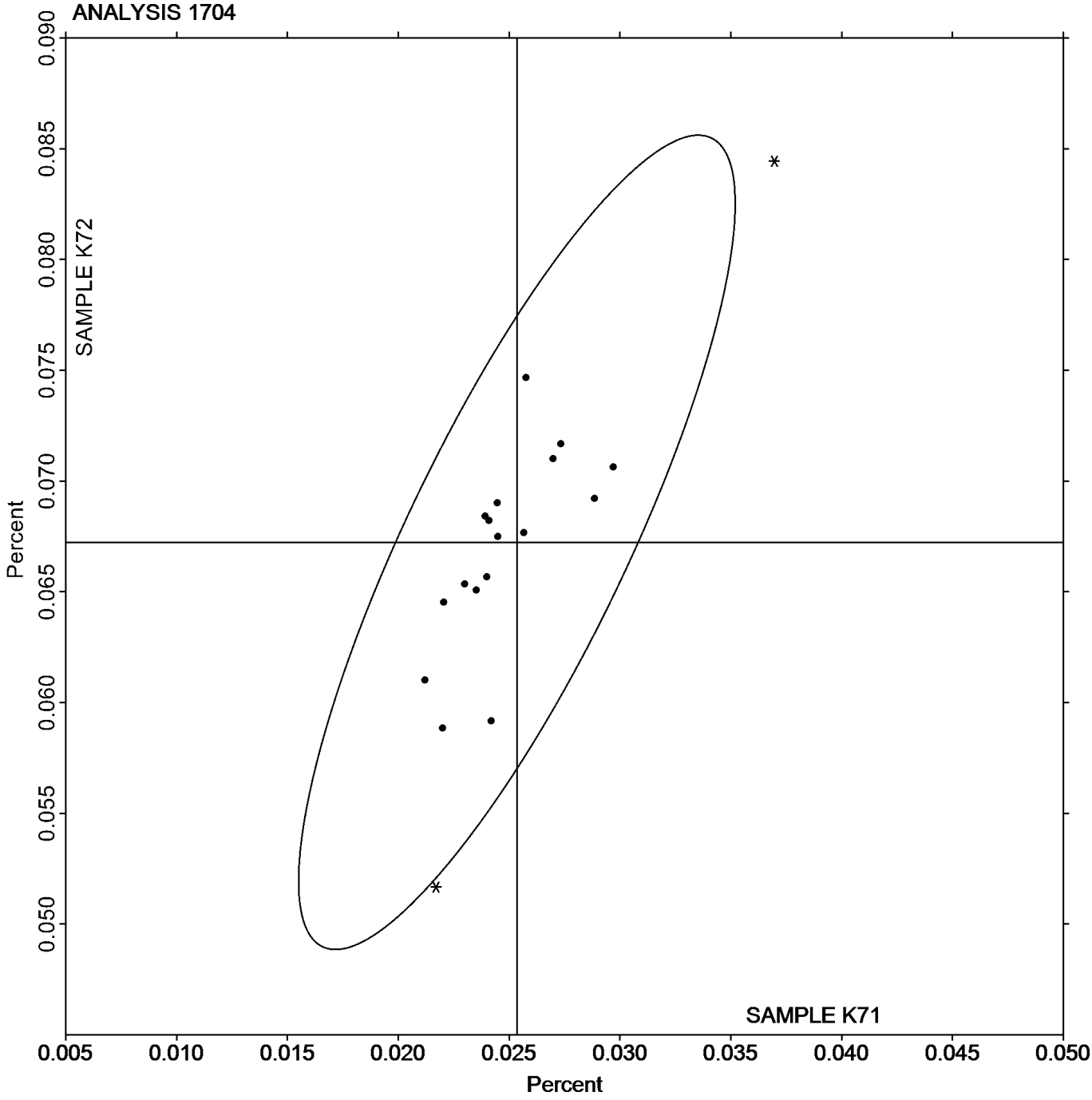
Comments on Assigned Data Flags for Test #1704

393D6E (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

Analysis 1704

Copper-based Alloy, IRON (Fe)
IRON (Fe)

SAMPLE K71	SAMPLE K72
0.0254 Percent	0.0672 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1705

Copper-based Alloy, NICKEL (Ni)
NICKEL (Ni)

WebCode	Data Flag	Sample K71 Lab Mean	Sample K71 Diff. from Grand Mean	Sample K71 CPV	Sample K72 Lab Mean	Sample K72 Diff. from Grand Mean	Sample K72 CPV	Method
2JQ8M4		0.00125	-0.00176	-1.46	0.00867	-0.00109	-0.49	OE
393D6E	M	No Data Reported			0.000967	-0.00879	-3.99	ED
B2DLEY		0.00300	-0.00001	-0.01	0.0100	0.00024	0.11	GD
BRBB43		0.00320	0.00019	0.16	0.00543	-0.00433	-1.96	OE
ENV8LM		0.00267	-0.00034	-0.28	0.0100	0.00024	0.11	OE
EZURDF		0.00210	-0.00091	-0.75	0.00780	-0.00196	-0.89	IC
H7JRRH		0.00260	-0.00041	-0.34	0.00820	-0.00156	-0.71	OE
J36ADL		0.00493	0.00192	1.60	0.0150	0.00527	2.40	OE
KBCGE8		0.00283	-0.00018	-0.15	0.00877	-0.00099	-0.45	IC
L7R3WR		0.00300	-0.00001	-0.01	0.0100	0.00024	0.11	XX
L87JFK		0.00533	0.00232	1.93	0.0119	0.00211	0.96	OE
PFTFVH		0.000967	-0.00204	-1.70	0.00767	-0.00209	-0.95	OE
R3D89G		0.00457	0.00156	1.29	0.0119	0.00214	0.97	DR
UHD7YH		0.00363	0.00062	0.52	0.0103	0.00054	0.25	OE
UM9UGA	M	No Data Reported			0.00857	-0.00119	-0.54	IC
WX4PRB		0.00187	-0.00114	-0.95	0.00867	-0.00109	-0.50	IC
XCYDD9		0.00290	-0.00011	-0.09	0.0109	0.00117	0.53	IC
YZMCLA		0.00330	0.00029	0.24	0.0109	0.00114	0.52	OE

Summary Statistics

	Sample K71		Sample K72	
Grand Means	0.00301	Percent	0.00976	Percent
Stnd Dev Btwn Labs	0.00120	Percent	0.00220	Percent

Samples K71, K72 : CDA 485, CDA 485

Statistics based on 16 of 18 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	XX	Please Indicate Method Used for Current Element

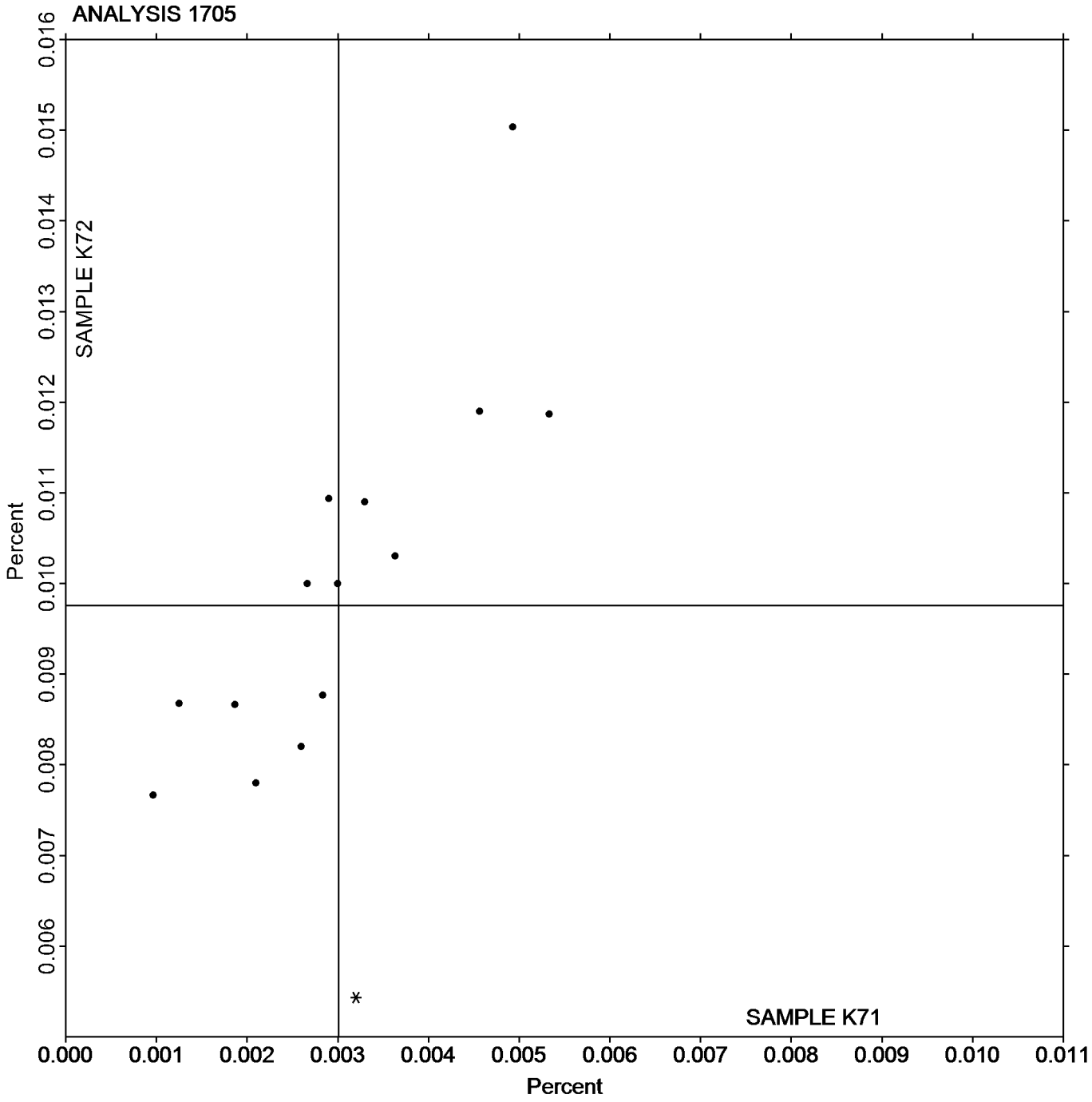
Comments on Assigned Data Flags for Test #1705

393D6E (M) - Participant did not submit data for sample K71.

UM9UGA (M) - Participant did not submit data for sample K71.

SAMPLE K71
0.00301 Percent

SAMPLE K72
0.00976 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1706

Copper-based Alloy, SULFUR (S)

SULFUR (S)

WebCode	Data Flag	Sample K71 Lab Mean	Sample K71 Diff. from Grand Mean	Sample K71 CPV	Sample K72 Lab Mean	Sample K72 Diff. from Grand Mean	Sample K72 CPV	Method
2JQ8M4		0.00144	-0.00004	-0.04	0.00218	-0.00061	-0.34	OE
B2DLEY	M	No Data Reported			0.00200	-0.00079	-0.44	GD
BRBB43		0.00110	-0.00038	-0.38	0.00160	-0.00119	-0.66	OE
ENV8LM		0.00100	-0.00048	-0.48	0.00267	-0.00013	-0.07	OE
ERUJGM		0.00213	0.00066	0.66	0.00320	0.00041	0.23	XR
EZURDF	M	No Data Reported			0.00137	-0.00143	-0.79	IC
H7JRRH		0.00330	0.00182	1.82	0.00740	0.00461	2.56	OE
J36ADL		0.000900	-0.00058	-0.58	0.00227	-0.00053	-0.29	OE
L87JFK		0.00283	0.00136	1.35	0.00390	0.00111	0.61	OE
UHD7YH		0.000100	-0.00138	-1.37	0.00143	-0.00136	-0.75	OE
UM9UGA		0.00140	-0.00008	-0.08	0.00173	-0.00106	-0.59	OE
XCYDD9		0.000563	-0.00091	-0.91	0.00154	-0.00126	-0.70	IC

Summary Statistics

	Sample K71		Sample K72	
Grand Means	0.00148	Percent	0.00279	Percent
Stnd Dev Btwn Labs	0.00100	Percent	0.00180	Percent

Samples K71, K72 : CDA 485, CDA 485

Statistics based on 10 of 12 reporting participants

Key to Method Codes Reported by Participants

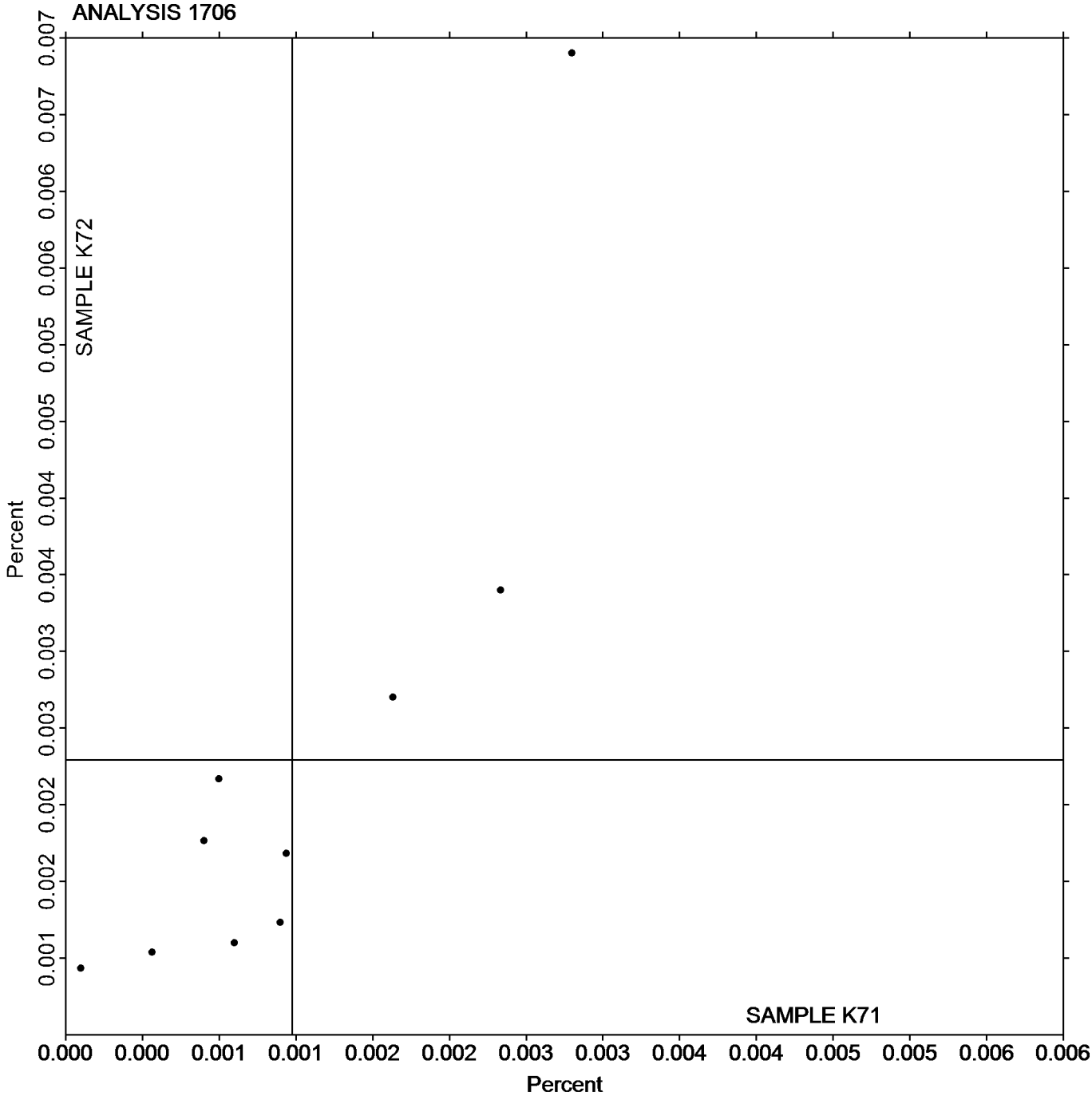
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	XR	X-Ray Fluorescence - ED or WD not specified

Comments on Assigned Data Flags for Test #1706

B2DLEY (M) - Participant did not submit data for sample K71.

EZURDF (M) - Participant did not submit data for sample K71.

SAMPLE K71	SAMPLE K72
0.00148 Percent	0.00279 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 1707

Copper-based Alloy, PHOSPHORUS (P)
PHOSPHORUS (P)

WebCode	Data Flag	Sample K71 Lab Mean	Sample K71 Diff. from Grand Mean	Sample K71 CPV	Sample K72 Lab Mean	Sample K72 Diff. from Grand Mean	Sample K72 CPV	Method
2JQ8M4		0.00107	-0.00085	-0.62	0.00113	-0.00081	-0.57	OE
B2DLEY	M	No Data Reported			0.00300	0.00107	0.75	GD
BRBB43		0.00180	-0.00012	-0.09	0.00180	-0.00013	-0.09	OE
ENV8LM		0.00200	0.00008	0.06	0.00200	0.00007	0.05	OE
H7JRRH		0.000100	-0.00182	-1.33	0.000100	-0.00183	-1.29	OE
L87JFK		0.00237	0.00045	0.33	0.00193	0.00000	0.00	OE
R2EB9L		0.00347	0.00155	1.13	0.00373	0.00180	1.27	WD
R3D89G		0.00403	0.00211	1.55	0.00417	0.00223	1.58	DR
UHD7YH	M	No Data Reported			0.000067	-0.00187	-1.32	OE
XCYDD9		0.000530	-0.00139	-1.02	0.000597	-0.00134	-0.94	IC

Summary Statistics

	Sample K71		Sample K72	
Grand Means	0.00192	Percent	0.00193	Percent
Stnd Dev Btwn Labs	0.00136	Percent	0.00142	Percent

Samples K71, K72 : CDA 485, CDA 485

Statistics based on 8 of 10 reporting participants

Key to Method Codes Reported by Participants

DR Spectrometry - Direct Reading OE (DROES)
GD Spectrometry - Glow Discharge (GDS)
IC Spectrometry - Inductively Coupled Plasma (ICP)
OE Spectrometry - Optical Emission (OES)
WD X-Ray Fluorescence - Wavelength Dispersive (WDX)

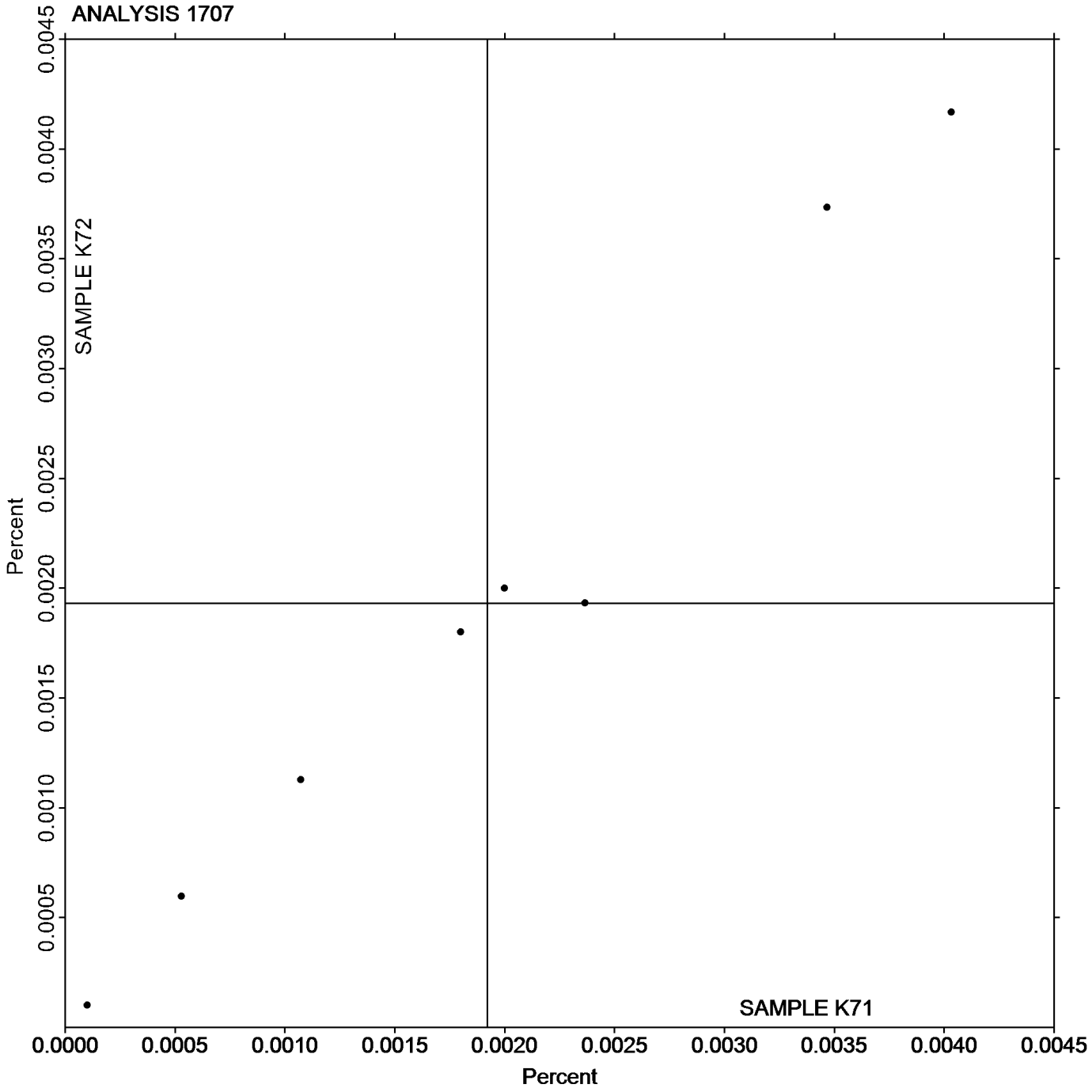
Comments on Assigned Data Flags for Test #1707

B2DLEY (M) - Participant did not submit data for sample K71.

UHD7YH (M) - Participant did not submit data for sample K71.

SAMPLE K71
0.00192 Percent

SAMPLE K72
0.00193 Percent



-End of Report-

