

Fasteners & Metals Testing Program

Summary Report Cycle 108, 4th Quarter - 2014

Collaborative Testing Services, Inc.

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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 except 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.

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 115

Fastener Wedge Tensile (10 deg) - ksi
ASTM F606

WebCode	Data Flag	Sample X23			Sample X24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3DA7NV		173.17	3.06	1.88	170.63	2.38	1.42	ZZ
3FEU4K		169.41	-0.69	-0.43	167.00	-1.25	-0.74	ZZ
44LL9P		169.51	-0.59	-0.37	166.59	-1.66	-0.98	ZZ
4CU3RH		170.93	0.83	0.51	165.47	-2.78	-1.65	ZZ
6MYEUW		171.07	0.96	0.59	167.53	-0.72	-0.43	ZZ
6VVK79		169.80	-0.30	-0.19	167.47	-0.78	-0.46	ZZ
6W97XD		168.52	-1.59	-0.98	167.08	-1.17	-0.70	ZZ
AC4ZVU		170.00	-0.10	-0.06	169.97	1.72	1.02	ZZ
AHRYNA		170.83	0.73	0.45	169.07	0.82	0.49	ZZ
AWXUHW		167.97	-2.14	-1.31	166.90	-1.35	-0.80	ZZ
AXNDN3		168.70	-1.41	-0.87	170.34	2.09	1.24	ZZ
B7VA8Z		168.53	-1.57	-0.97	169.43	1.18	0.70	ZZ
C44RPY	*	171.50	1.40	0.86	173.03	4.78	2.84	ZZ
CXHHG3		170.84	0.73	0.45	167.94	-0.31	-0.18	ZZ
DQEW6T		173.40	3.30	2.03	169.08	0.83	0.49	ZZ
DQFYMA		168.37	-1.74	-1.07	165.83	-2.42	-1.43	ZZ
EA934B		171.94	1.84	1.13	170.10	1.85	1.10	ZZ
EK8VAG		168.77	-1.34	-0.82	170.23	1.98	1.18	ZZ
EVFF34		173.21	3.11	1.91	167.04	-1.21	-0.72	ZZ
FZQN48		168.83	-1.28	-0.79	166.99	-1.26	-0.75	ZZ
G243GE		169.79	-0.32	-0.19	166.93	-1.32	-0.79	ZZ
G2L6YM		171.48	1.38	0.85	172.16	3.91	2.32	ZZ
GHQE3T		170.11	0.00	0.00	168.77	0.52	0.31	ZZ
H2AHJ8		171.37	1.26	0.78	167.20	-1.05	-0.62	ZZ
H8AXZE		167.33	-2.77	-1.70	168.33	0.08	0.05	TO
HGTLHU		170.62	0.52	0.32	169.82	1.57	0.93	ZZ
HH9UXA		171.00	0.90	0.55	167.43	-0.82	-0.48	ZZ
HXJN2J		172.13	2.03	1.25	168.77	0.52	0.31	ZZ
J2UYTD		169.33	-0.77	-0.47	166.10	-2.15	-1.28	ZZ
JN6YZP		167.10	-3.01	-1.85	168.73	0.48	0.29	ZZ
JVQKWX		169.22	-0.89	-0.54	166.04	-2.21	-1.31	ZZ
KTAUZX		172.33	2.23	1.37	168.67	0.42	0.25	ZZ
LG3RAF		171.21	1.11	0.68	168.50	0.25	0.15	ZZ
LPC6GB		168.17	-1.94	-1.19	166.60	-1.65	-0.98	ZZ
MEQCDT		170.22	0.11	0.07	167.47	-0.78	-0.46	ZZ
MERANP		169.43	-0.67	-0.41	170.33	2.08	1.24	ZZ
MKC8EX		170.90	0.80	0.49	169.91	1.66	0.99	ZZ
MM727Z		167.47	-2.64	-1.62	168.23	-0.02	-0.01	ZZ
PTKHKT		170.10	0.00	0.00	166.27	-1.98	-1.18	ZZ
PUN263		170.77	0.66	0.41	169.13	0.88	0.52	ZZ
Q2C9QL		170.63	0.53	0.33	169.40	1.15	0.68	ZZ
Q9HPV3		171.90	1.80	1.11	165.70	-2.55	-1.51	ZZ
QAPA4A		170.75	0.65	0.40	167.31	-0.94	-0.56	ZZ
QTZ8DX		170.60	0.50	0.31	172.00	3.75	2.23	ZZ
RJUK2R		171.55	1.44	0.89	167.58	-0.67	-0.40	ZZ
RQMNHN	X	151.90	-18.21	-11.20	154.14	-14.11	-8.38	ZZ
RWDE7Q		169.83	-0.27	-0.17	165.70	-2.55	-1.51	ZZ
T4PGPQ		167.30	-2.80	-1.72	167.30	-0.95	-0.56	ZZ
T6ERFJ		170.67	0.56	0.35	167.37	-0.88	-0.52	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 115

Fastener Wedge Tensile (10 deg) - ksi
ASTM F606

WebCode	Data Flag	Sample X23			Sample X24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
TEB4U8		169.87	-0.23	-0.14	166.65	-1.60	-0.95	ZZ
U2G4FA		168.43	-1.67	-1.03	169.40	1.15	0.68	ZZ
U372NV		169.51	-0.60	-0.37	168.17	-0.08	-0.05	ZZ
U3CP8F		166.73	-3.37	-2.07	165.00	-3.25	-1.93	ZZ
UCYNXK		171.21	1.10	0.68	165.18	-3.07	-1.82	ZZ
VMCNTY		171.67	1.56	0.96	170.20	1.95	1.16	ZZ
W8XEQF		168.73	-1.37	-0.85	168.73	0.48	0.28	ZZ
WBY69N		167.24	-2.86	-1.76	166.94	-1.31	-0.78	ZZ
WFVR3C		169.33	-0.77	-0.47	168.23	-0.02	-0.01	ZZ
WVURG		170.56	0.46	0.28	166.26	-1.99	-1.18	ZZ
WJ8Y3G		169.98	-0.13	-0.08	170.19	1.94	1.15	ZZ
WZDKP7		168.83	-1.27	-0.78	168.33	0.08	0.05	ZZ
WZEHZ3		172.57	2.46	1.52	168.39	0.14	0.08	ZZ
WZW6BB		169.47	-0.64	-0.39	169.50	1.25	0.74	ZZ
X9CXMK		171.37	1.26	0.78	169.33	1.08	0.64	ZZ
XKFTJW		169.87	-0.23	-0.14	168.43	0.18	0.11	ZZ
XKXHLU		172.04	1.94	1.19	170.11	1.86	1.10	TO
XNJ877		172.23	2.13	1.31	167.17	-1.08	-0.64	ZZ
YAUFC		168.93	-1.18	-0.72	169.39	1.14	0.68	ZZ
YRPQFE		172.53	2.43	1.49	169.37	1.12	0.66	ZZ
YU4MA4		170.03	-0.07	-0.04	168.33	0.08	0.05	ZZ
Z6FVAW		167.80	-2.30	-1.42	168.57	0.32	0.19	ZZ
ZF3BE6		167.27	-2.84	-1.75	166.13	-2.12	-1.26	ZZ
ZM9VY8		170.27	0.17	0.10	169.20	0.95	0.56	ZZ
ZYTE4J		172.50	2.40	1.47	169.55	1.30	0.77	ZZ

Summary Statistics

	Sample X23		Sample X24	
Grand Means	170.10	ksi	168.25	ksi
Stnd Dev Btwn Labs	1.63	ksi	1.68	ksi

Samples X23 , X24 : Fastener sizes: 3/8-16 x 2, 3/8-16 x 2 3/4

Statistics based on 73 of 74 reporting participants

Comments on assigned Data Flags for Analysis #115

WebCode Flag Analyst Comment

RQMNHN X Data for both samples are low.

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 115

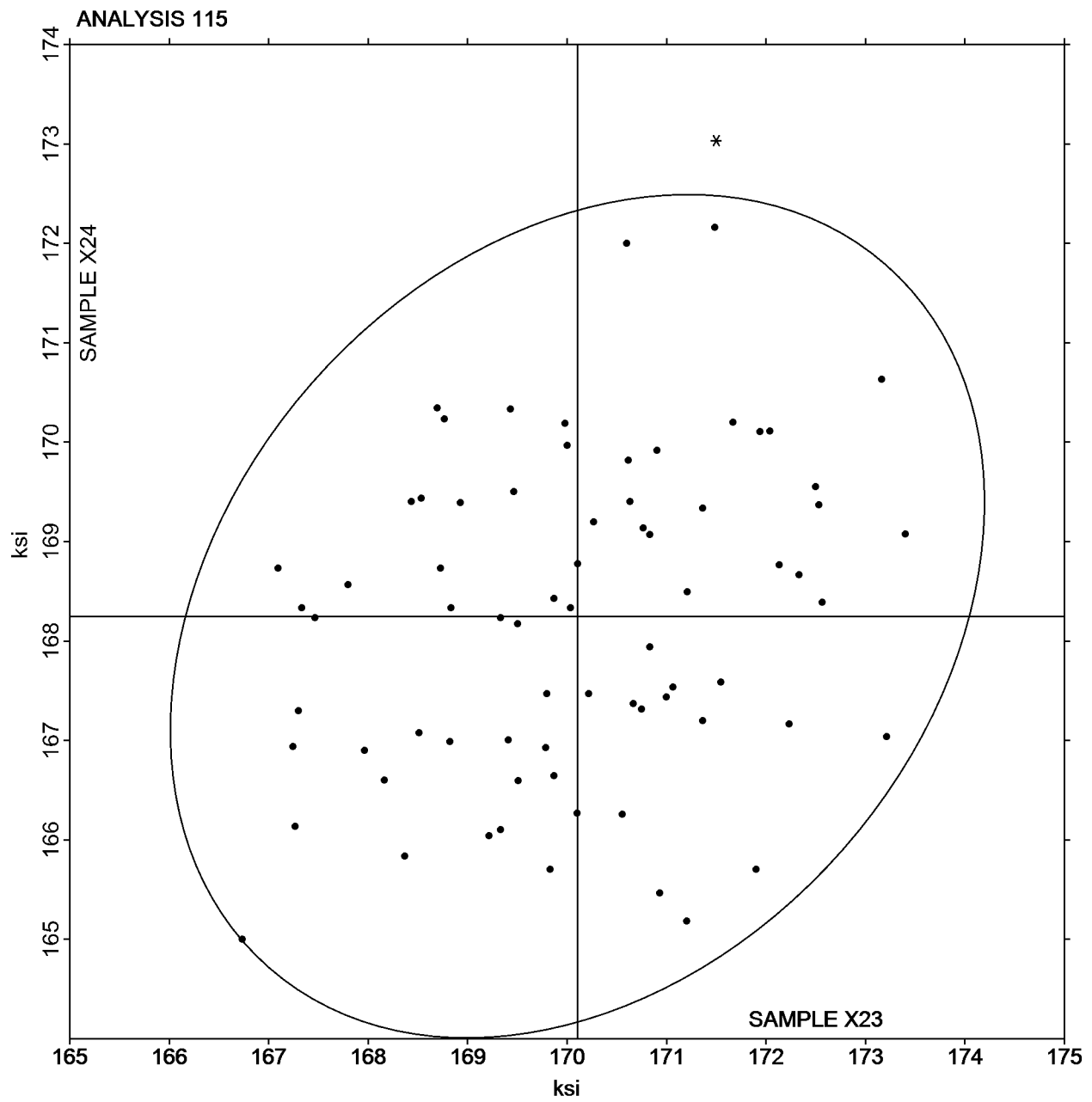
Fastener Wedge Tensile (10 deg) - ksi
ASTM F606

SAMPLE X23

170.10 ksi

SAMPLE X24

168.25 ksi



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 116

Fastener Axial Tensile - ksi
ASTM F606

WebCode	Data Flag	Sample Q23			Sample Q24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2VXWNW		168.41	-2.53	-1.48	165.56	-3.00	-1.57	ZZ
2ZGG2H		173.97	3.03	1.76	172.30	3.74	1.96	ZZ
4AUTYU		172.27	1.32	0.77	167.48	-1.08	-0.57	ZZ
4BUFL4		170.45	-0.49	-0.29	168.98	0.42	0.22	ZZ
6MYEUW		170.70	-0.24	-0.14	169.30	0.74	0.39	ZZ
6VD4UP		168.56	-2.39	-1.39	168.25	-0.31	-0.16	ZZ
6W97XD		168.92	-2.02	-1.18	166.97	-1.59	-0.83	ZZ
84MW4H		172.52	1.57	0.92	168.56	0.00	0.00	ZZ
8FRRUR	X	127.34	-43.60	-25.40	132.27	-36.29	-19.01	ZZ
97FVMZ		173.30	2.36	1.37	170.23	1.67	0.88	ZZ
9R4XJ7		172.64	1.69	0.99	172.07	3.51	1.84	ZZ
AC4ZVU		171.20	0.26	0.15	169.33	0.77	0.41	ZZ
AHRYNA		170.33	-0.61	-0.35	169.73	1.17	0.61	ZZ
AWXUHW		169.07	-1.87	-1.09	167.13	-1.43	-0.75	ZZ
AXNDN3		172.92	1.98	1.15	168.53	-0.03	-0.02	ZZ
B7VA8Z		169.17	-1.77	-1.03	168.67	0.11	0.06	ZZ
C44RPY	X	176.77	5.83	3.39	173.13	4.57	2.40	ZZ
C4KBCC		169.16	-1.78	-1.04	164.50	-4.06	-2.13	ZZ
CXHHG3		172.01	1.06	0.62	167.12	-1.44	-0.76	ZZ
DDMTJ9		169.52	-1.42	-0.83	168.06	-0.50	-0.26	ZZ
DQEW6T	*	175.35	4.41	2.57	171.36	2.80	1.47	ZZ
EA934B		173.74	2.80	1.63	166.89	-1.67	-0.87	ZZ
EEYQ8V		170.22	-0.72	-0.42	166.55	-2.01	-1.05	ZZ
EK8VAG		169.60	-1.34	-0.78	170.70	2.14	1.12	ZZ
EVFF34		171.30	0.36	0.21	167.79	-0.77	-0.40	ZZ
F7E9DF		171.24	0.30	0.17	170.92	2.36	1.24	ZZ
FGCANX		170.29	-0.66	-0.38	166.98	-1.58	-0.83	ZZ
FGV9P3	X	176.67	5.73	3.34	175.67	7.11	3.72	ZZ
FULPWN		173.30	2.36	1.37	171.13	2.57	1.35	ZZ
FZQN48		168.58	-2.36	-1.37	167.08	-1.48	-0.77	ZZ
FZRLE4		171.40	0.46	0.27	171.60	3.04	1.59	ZZ
G243GE		168.25	-2.69	-1.57	165.25	-3.31	-1.74	ZZ
G2L6YM		169.89	-1.05	-0.61	169.99	1.43	0.75	ZZ
GERHEG		173.00	2.06	1.20	171.00	2.44	1.28	ZZ
GHQE3T		171.23	0.29	0.17	170.19	1.63	0.86	ZZ
H8AXZE		169.67	-1.27	-0.74	167.67	-0.89	-0.47	ZZ
HH9UXA		173.90	2.96	1.72	170.77	2.21	1.16	ZZ
HQVCZQ		171.66	0.72	0.42	169.69	1.13	0.59	ZZ
HXJN2J		169.60	-1.34	-0.78	166.53	-2.03	-1.06	ZZ
J2UYTD		168.43	-2.51	-1.46	167.37	-1.19	-0.63	ZZ
JMQ7XP		170.67	-0.27	-0.16	167.00	-1.56	-0.82	ZZ
JN6YZP		170.70	-0.24	-0.14	170.39	1.83	0.96	ZZ
JVQKW X		168.79	-2.15	-1.25	164.05	-4.51	-2.36	ZZ
L66C7Q	X	174.66	3.72	2.17	177.33	8.77	4.60	ZZ
LG3RAF		170.24	-0.70	-0.41	169.24	0.68	0.36	ZZ
LPC6GB		167.77	-3.17	-1.85	168.97	0.41	0.21	ZZ
MEQCDT	*	170.91	-0.03	-0.02	163.82	-4.74	-2.49	ZZ
MERANP		169.63	-1.31	-0.76	167.77	-0.79	-0.42	ZZ
MKC8EX	X	176.50	5.56	3.24	175.81	7.25	3.80	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 116
Fastener Axial Tensile - ksi
ASTM F606

WebCode	Data Flag	Sample Q23			Sample Q24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
MM727Z		168.43	-2.51	-1.46	170.17	1.61	0.84	ZZ
MYAZLE	X	181.52	10.57	6.16	185.22	16.66	8.73	ZZ
MZ9UW7		172.37	1.43	0.83	168.38	-0.18	-0.09	ZZ
PJTZ97		172.14	1.20	0.70	169.08	0.52	0.27	ZZ
PTKHKT		170.97	0.03	0.01	171.63	3.07	1.61	ZZ
PUN263		169.37	-1.57	-0.92	167.23	-1.33	-0.70	ZZ
QTZ8DX		174.10	3.16	1.84	170.23	1.67	0.88	ZZ
QUKN78	X	157.75	-13.19	-7.68	157.21	-11.35	-5.95	ZZ
RJUK2R		171.82	0.88	0.51	168.84	0.28	0.15	ZZ
RQMNHN	X	154.41	-16.53	-9.63	152.41	-16.15	-8.46	ZZ
RWDE7Q		170.20	-0.74	-0.43	165.73	-2.83	-1.48	ZZ
RYW2EY		171.60	0.66	0.38	170.00	1.44	0.75	ZZ
T6ERFJ		169.83	-1.11	-0.65	166.20	-2.36	-1.24	ZZ
TEB4U8		170.25	-0.70	-0.41	168.56	0.00	0.00	ZZ
TXUNF4		172.67	1.73	1.01	168.67	0.11	0.06	ZZ
U372NV		171.48	0.54	0.32	169.98	1.42	0.74	ZZ
VFUBWL		168.33	-2.61	-1.52	165.13	-3.43	-1.80	ZZ
VMCNTY		170.80	-0.14	-0.08	168.10	-0.46	-0.24	ZZ
W8XEQF		174.29	3.35	1.95	167.62	-0.94	-0.49	ZZ
WBFQQU		170.67	-0.27	-0.16	168.10	-0.46	-0.24	ZZ
WBY69N		171.22	0.28	0.16	168.11	-0.45	-0.24	ZZ
WFVR3C		171.70	0.76	0.44	166.40	-2.16	-1.13	ZZ
WVVURG		172.50	1.55	0.91	168.62	0.06	0.03	ZZ
WJ8Y3G		170.22	-0.72	-0.42	168.85	0.29	0.15	ZZ
WZEHZ3		173.40	2.46	1.43	169.28	0.72	0.38	ZZ
XHX8WL		170.75	-0.19	-0.11	168.83	0.27	0.14	ZZ
XKXHLU		171.18	0.24	0.14	168.39	-0.17	-0.09	ZZ
YAUFC		169.16	-1.78	-1.04	169.49	0.93	0.49	ZZ
YAYGVQ		172.73	1.79	1.04	170.73	2.17	1.13	ZZ
YRPQFE		170.90	-0.04	-0.02	170.67	2.11	1.10	ZZ
Z6FVAW		170.00	-0.94	-0.55	169.60	1.04	0.54	ZZ
ZF3BE6		170.73	-0.21	-0.12	167.83	-0.73	-0.38	ZZ
ZPQCMR		173.17	2.23	1.30	166.93	-1.63	-0.85	ZZ
ZYTE4J		169.16	-1.78	-1.04	171.15	2.59	1.35	ZZ

Summary Statistics

	Sample Q23		Sample Q24	
Grand Means	170.94	ksi	168.56	ksi
Stnd Dev Btwn Labs	1.72	ksi	1.91	ksi

Samples Q23 , Q24 : Fastener sizes: 3/8-16 x 2, 3/8-16 x 2

Statistics based on 75 of 83 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 116
Fastener Axial Tensile - ksi
ASTM F606

Comments on assigned Data Flags for Analysis #116

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
8FRRUR	X	Data for both samples are low.
C44RPY	X	Data for sample Q23 are high.
FGV9P3	X	Data for both samples are high. Inconsistent within the determinations of sample Q23.
L66C7Q	X	Data for sample Q24 are high.
MKC8EX	X	Data for both samples are high.
MYAZLE	X	Data for both samples are high.
QUKN78	X	Data for both samples are low.
RQMNHN	X	Data for both samples are low.

Interlaboratory Testing Program for Metals

Analysis 116

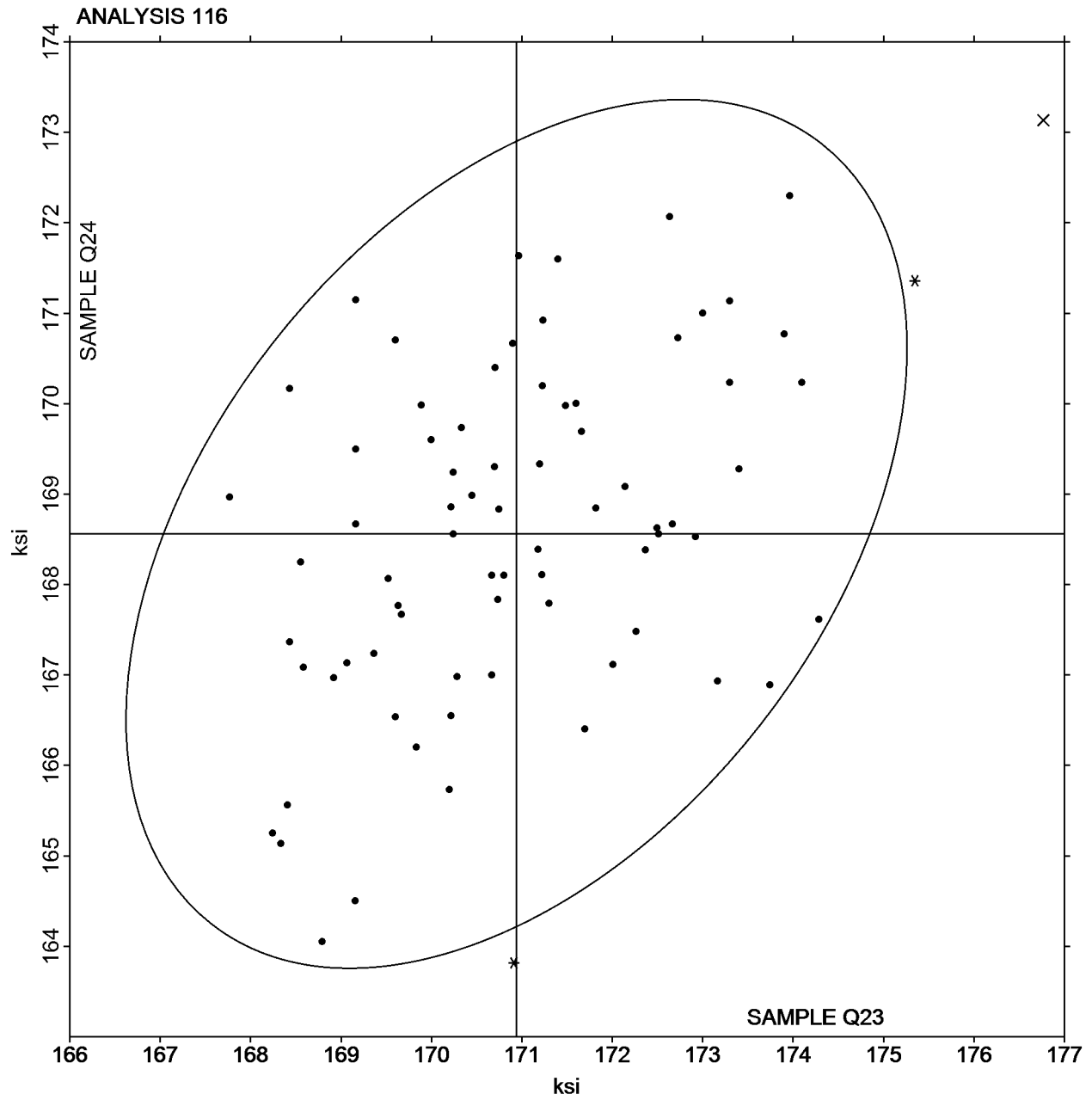
Fastener Axial Tensile - ksi
ASTM F606

SAMPLE Q23

170.94 ksi

SAMPLE Q24

168.56 ksi



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 120
Rockwell Hardness (C Scale) - HRC
ASTM E18

WebCode	Data Flag	Sample E23			Sample E24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2K4PW8		52.42	-0.10	-0.17	55.58	0.05	0.09	ZZ
2XDLHF		52.10	-0.42	-0.71	55.16	-0.37	-0.71	ZZ
3LVJDT		52.74	0.22	0.37	55.78	0.25	0.48	ZZ
3TKNZ4		52.34	-0.18	-0.31	55.28	-0.25	-0.48	ZZ
3W28PZ		51.60	-0.92	-1.56	54.88	-0.65	-1.25	ZZ
44LL9P		51.94	-0.58	-0.98	55.26	-0.27	-0.52	ZZ
684X3D		53.58	1.06	1.78	56.62	1.09	2.09	ZZ
6LQLGN	*	50.96	-1.56	-2.63	54.48	-1.05	-2.02	ZZ
6MYEUW		52.90	0.38	0.63	56.04	0.51	0.98	ZZ
6VD4UP		52.48	-0.04	-0.07	55.94	0.41	0.78	ZZ
6XU93U		53.00	0.48	0.80	56.40	0.87	1.67	ZZ
72F9YZ		52.30	-0.22	-0.38	55.30	-0.23	-0.45	ZZ
76JTDK		51.60	-0.92	-1.56	54.56	-0.97	-1.87	ZZ
7GQD9T		53.31	0.78	1.32	56.10	0.57	1.09	ZZ
7KVVWN		52.80	0.28	0.47	55.40	-0.13	-0.25	ZZ
8793KM		52.06	-0.46	-0.78	54.70	-0.83	-1.60	ZZ
8C8LTJ		51.98	-0.54	-0.92	55.19	-0.34	-0.66	ZZ
8RMW6D		51.76	-0.76	-1.29	54.76	-0.77	-1.48	ZZ
96UXNA		52.74	0.22	0.37	55.92	0.39	0.75	ZZ
9KELKX		52.40	-0.12	-0.21	55.10	-0.43	-0.83	ZZ
9KZDEH		52.46	-0.06	-0.11	55.62	0.09	0.17	ZZ
AKLM9P		52.20	-0.32	-0.54	55.00	-0.53	-1.02	ZZ
AN2MEC		53.28	0.76	1.28	55.92	0.39	0.75	ZZ
BXMLLE		52.10	-0.42	-0.71	55.50	-0.03	-0.06	ZZ
C4KBCC		52.34	-0.18	-0.31	55.62	0.09	0.17	ZZ
D8DURF		53.32	0.80	1.34	55.94	0.41	0.78	ZZ
D8T8ZK		52.30	-0.22	-0.38	55.68	0.15	0.28	ZZ
DDMTJ9		52.98	0.46	0.77	55.76	0.23	0.44	ZZ
DFTFWD		52.58	0.06	0.10	55.44	-0.09	-0.18	ZZ
DHVGWB		53.12	0.59	1.00	55.88	0.35	0.68	ZZ
DJ8ZYT		53.68	1.16	1.95	56.24	0.71	1.36	ZZ
E74JQB		51.76	-0.76	-1.29	55.38	-0.15	-0.29	ZZ
EBBTL6		52.50	-0.02	-0.04	55.52	-0.01	-0.02	ZZ
FLBND9		52.74	0.22	0.37	56.00	0.47	0.90	ZZ
FULPWN		53.80	1.28	2.15	56.60	1.07	2.05	ZZ
FZRLE4		52.12	-0.40	-0.68	55.22	-0.31	-0.60	ZZ
GL6T89		53.04	0.52	0.87	55.70	0.17	0.32	ZZ
GVVZGY		52.76	0.24	0.40	55.32	-0.21	-0.41	ZZ
H2AHJ8		52.14	-0.38	-0.65	55.40	-0.13	-0.25	ZZ
HJGJVL		52.16	-0.36	-0.61	55.44	-0.09	-0.18	ZZ
HT8JPJ		52.74	0.22	0.37	55.60	0.07	0.13	ZZ
HXHQQM		51.50	-1.02	-1.72	54.70	-0.83	-1.60	ZZ
HZZBW7		53.22	0.70	1.17	56.08	0.55	1.05	ZZ
JD8Q79		52.66	0.14	0.23	55.76	0.23	0.44	ZZ
JH3TKM		52.64	0.12	0.20	55.40	-0.13	-0.25	ZZ
JUT7JD		52.62	0.10	0.16	55.00	-0.53	-1.02	ZZ
JZZR8A		52.92	0.40	0.67	55.88	0.35	0.67	ZZ
K4YEQQ	*	53.78	1.26	2.12	57.06	1.53	2.93	ZZ
KBH68W		52.38	-0.14	-0.24	54.84	-0.69	-1.33	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 120

Rockwell Hardness (C Scale) - HRC
ASTM E18

WebCode	Data Flag	Sample E23			Sample E24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
KHCZLF		53.14	0.62	1.04	56.08	0.55	1.05	ZZ
KNBHQ2		52.20	-0.32	-0.54	54.68	-0.85	-1.64	ZZ
KVGYR2		52.64	0.12	0.20	55.70	0.17	0.32	ZZ
LD47QP		52.56	0.04	0.06	55.74	0.21	0.40	ZZ
LG3RAF		52.52	0.00	-0.01	55.34	-0.19	-0.37	ZZ
M9HADD	X	53.02	0.50	0.84	55.04	-0.49	-0.95	ZZ
MERANP		52.28	-0.24	-0.41	55.30	-0.23	-0.45	ZZ
MRAKYR		53.00	0.48	0.80	56.00	0.47	0.90	ZZ
NQKWLX		52.20	-0.32	-0.54	55.24	-0.29	-0.56	ZZ
P2B4QR		52.08	-0.44	-0.75	55.22	-0.31	-0.60	ZZ
PLYKV7		52.00	-0.52	-0.88	54.88	-0.65	-1.25	ZZ
PUN263		52.42	-0.10	-0.17	55.48	-0.05	-0.10	ZZ
QJZGA4		53.38	0.86	1.44	56.24	0.71	1.36	ZZ
R3W6D8		53.12	0.60	1.01	56.16	0.63	1.21	ZZ
R6826W		51.94	-0.58	-0.98	55.36	-0.17	-0.33	ZZ
RBR7TQ		52.42	-0.10	-0.17	55.40	-0.13	-0.25	ZZ
RPRVVH		52.06	-0.46	-0.78	54.86	-0.67	-1.29	ZZ
T6ERFJ		52.50	-0.02	-0.04	56.06	0.53	1.01	ZZ
T6J3FW		52.31	-0.21	-0.35	54.91	-0.62	-1.20	ZZ
T6PATQ		52.58	0.05	0.09	55.68	0.15	0.29	ZZ
T8AMJ2		51.98	-0.54	-0.92	55.28	-0.25	-0.48	ZZ
TEHVD3	X	52.26	-0.26	-0.44	54.28	-1.25	-2.40	ZZ
TH8RAE		52.32	-0.20	-0.34	55.16	-0.37	-0.71	ZZ
TWWBHQ		52.50	-0.02	-0.04	55.62	0.09	0.17	ZZ
TXUNF4		53.24	0.72	1.21	56.10	0.57	1.09	ZZ
U3CP8F		51.82	-0.70	-1.18	54.66	-0.87	-1.68	ZZ
UCVK9V		53.62	1.10	1.85	56.12	0.59	1.13	ZZ
URCWZA		51.48	-1.04	-1.76	54.78	-0.75	-1.44	ZZ
URLPBW		52.70	0.18	0.30	55.80	0.27	0.51	ZZ
UTPJHN		52.52	0.00	-0.01	55.46	-0.07	-0.14	ZZ
V4CQKC		53.86	1.34	2.25	56.38	0.85	1.63	ZZ
VVUGK4		52.50	-0.02	-0.04	55.26	-0.27	-0.52	ZZ
WBY69N	X	50.96	-1.56	-2.63	53.44	-2.09	-4.02	ZZ
WJ8Y3G		51.60	-0.92	-1.56	55.14	-0.39	-0.75	ZZ
WZDKP7		52.32	-0.20	-0.34	55.42	-0.11	-0.22	ZZ
X9CXMK	*	51.76	-0.76	-1.29	55.66	0.13	0.25	ZZ
XFRL3U		52.16	-0.36	-0.61	55.46	-0.07	-0.14	ZZ
XX28KA		53.18	0.66	1.11	56.10	0.57	1.09	ZZ
YG9B6Y		53.58	1.06	1.78	56.22	0.69	1.32	ZZ
Z6YBMJ		52.00	-0.52	-0.88	54.90	-0.63	-1.21	ZZ
Z9DBK6		51.80	-0.72	-1.22	55.00	-0.53	-1.02	ZZ
ZCBWAM		52.90	0.38	0.63	56.02	0.49	0.94	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 120
Rockwell Hardness (C Scale) - HRC
ASTM E18

Summary Statistics

	<u>Sample E23</u>		<u>Sample E24</u>	
Grand Means	52.52	HRC	55.53	HRC
Std Dev Btwn Labs	0.59	HRC	0.52	HRC

Samples E23 , E24 : Steel

Statistics based on 88 of 91 reporting participants

Comments on assigned Data Flags for Analysis #120

WebCode Flag Analyst Comment

M9HADD X Inconsistent in testing between samples.

TEHVD3 X Inconsistent in testing between samples.

WBY69N X Data for sample E24 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample E23.

Interlaboratory Testing Program for Metals

Analysis 120

Rockwell Hardness (C Scale) - HRC

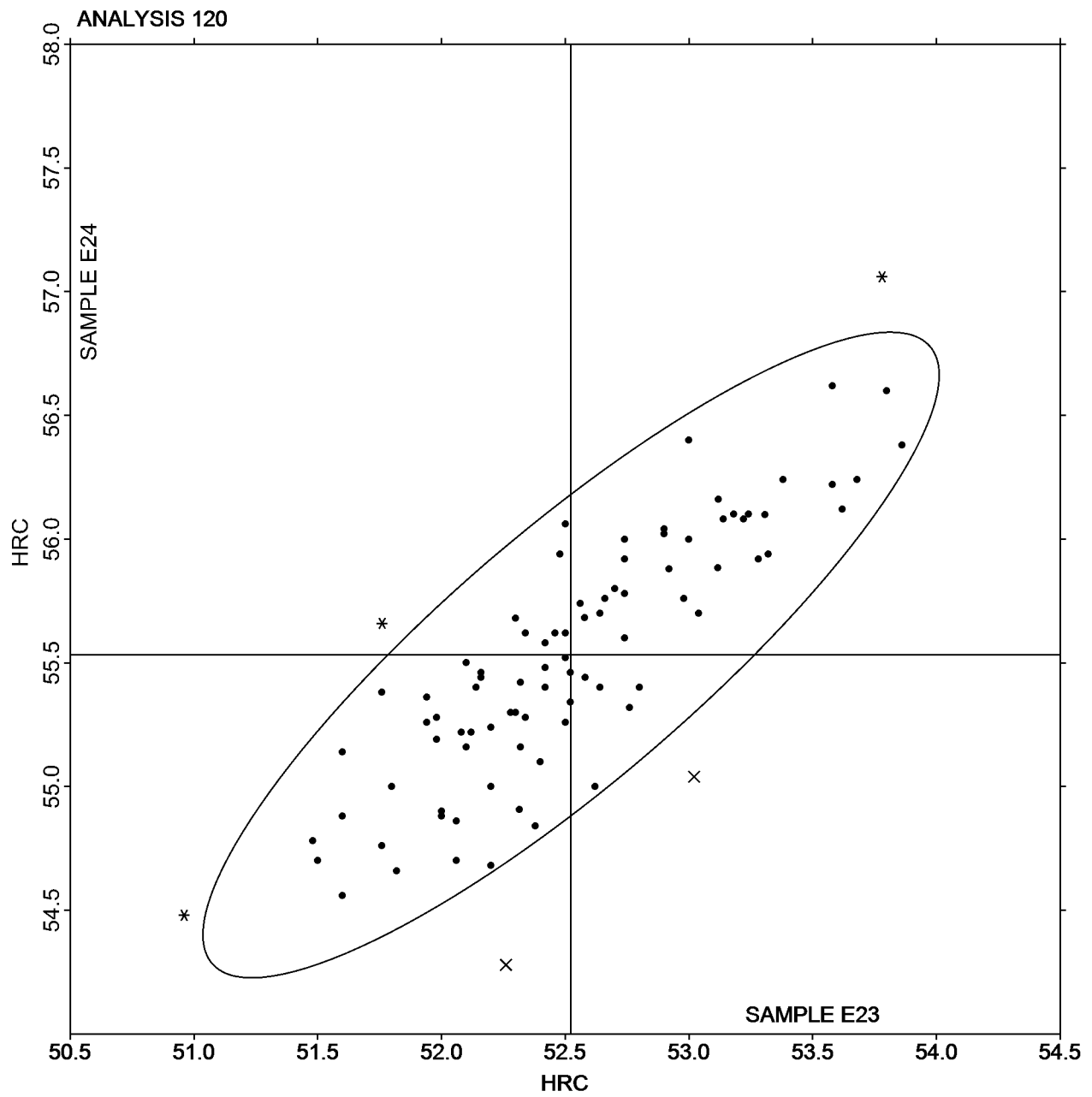
ASTM E18

SAMPLE E23

52.52 HRC

SAMPLE E24

55.53 HRC



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - HRC
ASTM F606/F606M AND ASTM E18

WebCode	Data Flag	Sample G23			Sample G24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3FEU4K		36.23	0.09	0.16	36.88	0.12	0.22	ZZ
4BUFL4		36.01	-0.13	-0.23	37.03	0.26	0.48	ZZ
4BVDWZ		36.79	0.66	1.15	37.58	0.81	1.50	ZZ
4CU3RH	X	35.08	-1.06	-1.85	34.68	-2.09	-3.88	ZZ
6MYEUW		35.85	-0.29	-0.50	36.56	-0.20	-0.38	ZZ
6W97XD		36.11	-0.03	-0.04	36.67	-0.10	-0.18	ZZ
7NP6CF		35.32	-0.82	-1.43	36.49	-0.27	-0.50	ZZ
84MW4H		36.37	0.23	0.40	37.05	0.29	0.53	ZZ
8AAMQC		36.72	0.58	1.01	37.29	0.52	0.97	ZZ
8V94L7		35.81	-0.33	-0.58	36.38	-0.38	-0.71	ZZ
93J3XB		36.54	0.40	0.70	37.46	0.69	1.28	ZZ
97ZET8	*	35.16	-0.98	-1.71	35.38	-1.39	-2.57	ZZ
9R4XJ7		36.48	0.34	0.59	36.86	0.10	0.18	ZZ
AC4ZVU		36.46	0.32	0.56	37.04	0.28	0.52	ZZ
AHRYNA		36.39	0.25	0.44	37.09	0.32	0.60	ZZ
AUHCNK		35.86	-0.28	-0.48	36.75	-0.01	-0.03	ZZ
AWXUHW		35.46	-0.68	-1.19	36.85	0.09	0.16	ZZ
AXNDN3	X	33.31	-2.83	-4.94	34.32	-2.45	-4.54	ZZ
AXTGRF		36.70	0.56	0.98	36.90	0.14	0.25	ZZ
B7VA8Z		36.01	-0.13	-0.23	36.96	0.19	0.36	ZZ
BKY4R6		36.09	-0.05	-0.09	37.53	0.77	1.42	ZZ
C44RPY		36.33	0.19	0.33	37.24	0.47	0.88	ZZ
CXHHG3		35.74	-0.40	-0.70	36.79	0.02	0.04	ZZ
DQEW6T		36.04	-0.10	-0.18	36.62	-0.15	-0.27	ZZ
DQFYMA		35.70	-0.44	-0.77	36.74	-0.02	-0.04	ZZ
DTTCWQ		36.43	0.29	0.50	36.91	0.14	0.26	ZZ
E6V9XD		36.18	0.04	0.08	37.06	0.29	0.54	ZZ
EA934B		37.04	0.90	1.57	36.82	0.05	0.10	ZZ
EK8VAG		36.66	0.52	0.91	36.14	-0.63	-1.16	ZZ
FGCANX		36.25	0.11	0.20	37.03	0.27	0.49	ZZ
FULPWN		36.94	0.80	1.40	37.13	0.36	0.67	ZZ
FZQN48		36.22	0.08	0.14	36.64	-0.12	-0.22	ZZ
G243GE		36.34	0.20	0.35	36.90	0.14	0.25	ZZ
G2L6YM		37.08	0.94	1.65	37.27	0.50	0.93	ZZ
GHQE3T		36.53	0.39	0.68	37.54	0.78	1.45	ZZ
HH9UXA		36.33	0.19	0.34	36.01	-0.76	-1.41	ZZ
HHN8AZ		36.44	0.31	0.53	37.16	0.40	0.74	ZZ
HJQN44		35.29	-0.84	-1.48	35.69	-1.08	-2.00	ZZ
HXJN2J		35.88	-0.26	-0.45	36.21	-0.56	-1.04	ZZ
J2UYTD		36.96	0.82	1.44	37.93	1.16	2.15	ZZ
L66C7Q	*	36.24	0.11	0.18	35.63	-1.13	-2.10	ZZ
LH3F6X		35.86	-0.28	-0.49	36.09	-0.68	-1.26	ZZ
LPC6GB		35.95	-0.19	-0.33	37.06	0.29	0.54	ZZ
M8PLTX		36.54	0.40	0.70	37.06	0.30	0.55	ZZ
MERANP		35.49	-0.64	-1.13	35.76	-1.01	-1.87	ZZ
MKC8EX		36.13	-0.01	-0.02	36.06	-0.70	-1.30	ZZ
ML94P8		35.72	-0.42	-0.73	35.91	-0.86	-1.59	ZZ
MM727Z		37.17	1.03	1.80	37.35	0.59	1.09	ZZ
NVQ8BC		36.39	0.25	0.44	36.74	-0.03	-0.05	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - HRC
ASTM F606/F606M AND ASTM E18

WebCode	Data Flag	Sample G23			Sample G24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P9FN8V		36.85	0.71	1.24	37.37	0.60	1.12	ZZ
PLY9UQ		36.79	0.65	1.14	37.13	0.36	0.67	ZZ
PTKHKT		34.74	-1.39	-2.44	35.83	-0.94	-1.74	ZZ
QTZ8DX		36.04	-0.09	-0.16	36.99	0.22	0.41	ZZ
RL9T3Q		36.26	0.12	0.22	37.33	0.56	1.04	ZZ
RNYEYB		35.99	-0.15	-0.26	36.86	0.10	0.18	ZZ
RWDE7Q		35.95	-0.19	-0.33	36.38	-0.39	-0.72	ZZ
RYW2EY		36.32	0.18	0.32	36.46	-0.30	-0.56	ZZ
TEB4U8		35.08	-1.06	-1.86	36.33	-0.44	-0.82	ZZ
TWXB6F		35.04	-1.10	-1.92	35.51	-1.25	-2.32	ZZ
TYXNVG		36.21	0.07	0.12	37.18	0.42	0.77	ZZ
U2G4FA		36.23	0.09	0.15	36.95	0.19	0.34	ZZ
U372NV		35.40	-0.74	-1.29	36.42	-0.35	-0.64	ZZ
V2DCCE		36.09	-0.05	-0.09	35.73	-1.03	-1.92	ZZ
VCDAA8		34.88	-1.26	-2.20	35.73	-1.04	-1.93	ZZ
VEZJAF		36.74	0.60	1.05	37.33	0.57	1.05	ZZ
VFUBWL		36.08	-0.06	-0.11	36.94	0.17	0.32	ZZ
VGMEGF		35.98	-0.16	-0.27	37.19	0.43	0.80	ZZ
VMCNTY		35.05	-1.09	-1.90	36.39	-0.38	-0.70	ZZ
W2BABU		36.33	0.19	0.33	37.05	0.29	0.53	ZZ
W8XEQF	*	35.12	-1.02	-1.78	37.07	0.30	0.56	ZZ
WBY69N		36.45	0.31	0.55	36.89	0.12	0.23	ZZ
WFVR3C		36.42	0.28	0.49	37.21	0.45	0.83	ZZ
WVURG		37.05	0.91	1.59	37.60	0.84	1.55	ZZ
WJ9WDC		37.36	1.22	2.14	37.34	0.58	1.07	ZZ
WZW6BB		35.55	-0.59	-1.03	36.18	-0.59	-1.09	ZZ
X7EX2Z	*	36.86	0.72	1.27	36.13	-0.64	-1.19	ZZ
X96X4H		35.48	-0.65	-1.14	36.84	0.08	0.15	ZZ
XHX8WL		36.76	0.62	1.08	36.96	0.20	0.37	ZZ
XKXHLU		35.60	-0.54	-0.94	36.40	-0.37	-0.69	ZZ
XNJ877		36.14	0.00	0.00	37.25	0.49	0.90	ZZ
XU9EFL		36.91	0.77	1.35	37.14	0.37	0.69	ZZ
XZBQMX		37.07	0.93	1.63	37.19	0.42	0.78	ZZ
YAUFC		36.62	0.48	0.85	36.63	-0.14	-0.26	ZZ
YAYGVQ		35.46	-0.68	-1.18	36.29	-0.47	-0.87	ZZ
YRPQFE		36.11	-0.03	-0.04	37.02	0.25	0.47	ZZ
YU4MA4	*	35.40	-0.74	-1.29	37.43	0.67	1.24	ZZ
Z3CG4W		36.11	-0.03	-0.06	36.88	0.11	0.20	ZZ
Z6FVAW	X	34.16	-1.98	-3.45	34.13	-2.63	-4.89	ZZ
ZF3BE6		36.38	0.24	0.41	37.08	0.31	0.58	ZZ
ZM9VY8		35.60	-0.54	-0.94	36.33	-0.44	-0.82	ZZ
ZPQCMR		35.61	-0.53	-0.93	36.38	-0.38	-0.71	ZZ
ZYTE4J		36.03	-0.11	-0.19	36.58	-0.18	-0.34	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - HRC
ASTM F606/F606M AND ASTM E18

Summary Statistics

	<u>Sample G23</u>		<u>Sample G24</u>	
Grand Means	36.14	HRC	36.76	HRC
Std Dev Btwn Labs	0.57	HRC	0.54	HRC

Samples G23 , G24 : Fastener sizes: 1/2-20 x 2 1/2 , 1/2-20 x 1/4

Statistics based on 89 of 92 reporting participants

Comments on assigned Data Flags for Analysis #125

WebCode Flag Analyst Comment

4CU3RH X Data for sample G24 are low.

AXNDN3 X Data for both samples are low. Inconsistent within the determinations of both samples.

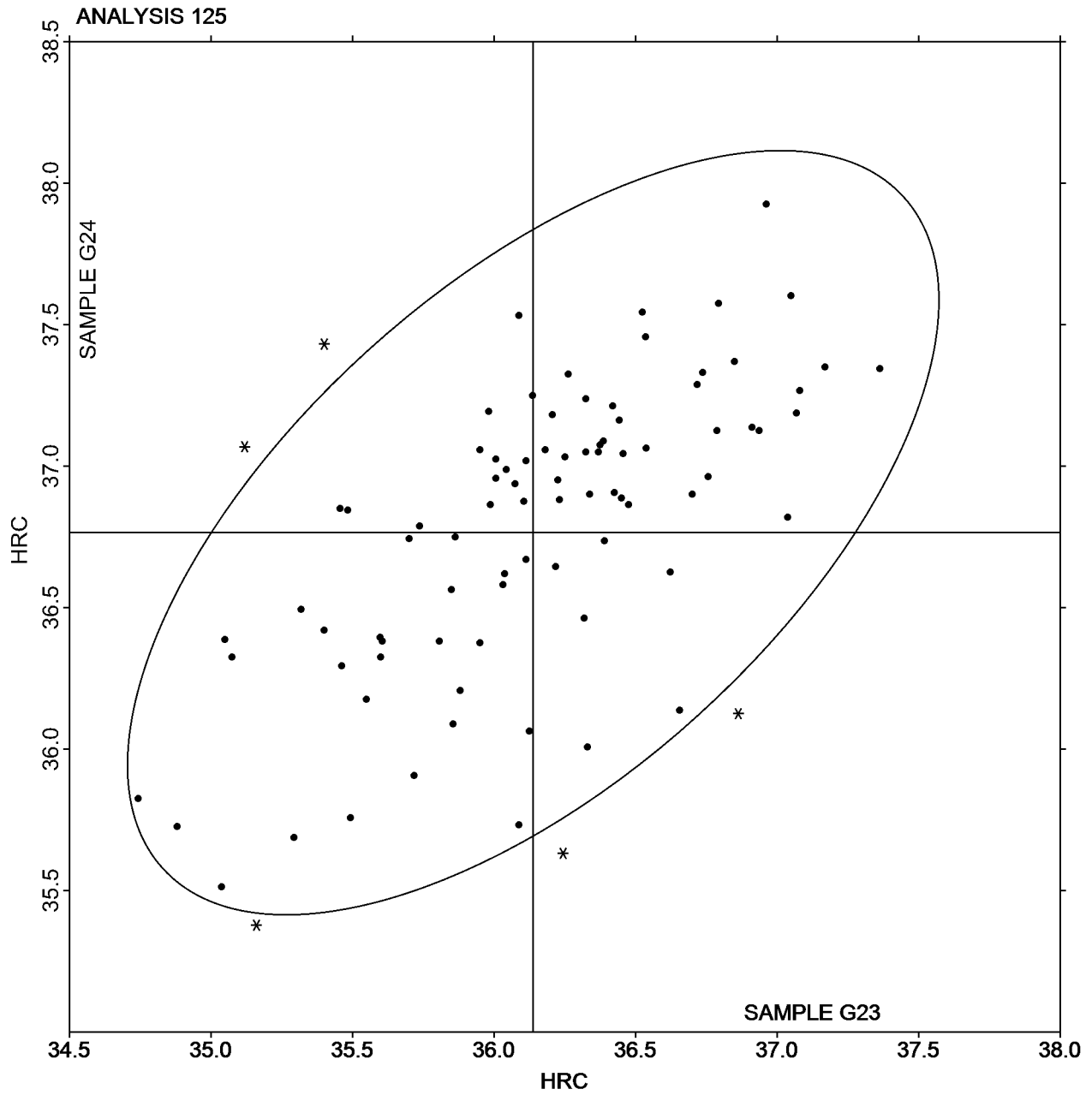
Z6FVAW X Data for both samples are low. Inconsistent within the determinations of sample G24.

Interlaboratory Testing Program for Metals
Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - HRC
ASTM F606/F606M AND ASTM E18

SAMPLE G23
36.14 HRC

SAMPLE G24
36.76 HRC



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 126

Vickers Hardness of Externally Threaded Fasteners - HV
ASTM E384

WebCode	Data Flag	Sample V23			Sample V24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2RVZ2H	*	346.74	-10.35	-2.63	359.89	-4.97	-1.09	ZZ
34A7XB		362.46	5.38	1.37	367.92	3.06	0.67	ZZ
38ATCK		356.15	-0.93	-0.24	361.86	-3.00	-0.66	ZZ
8D47DX		357.94	0.85	0.22	371.25	6.39	1.40	ZZ
9R4XJ7		360.68	3.60	0.92	370.25	5.39	1.18	ZZ
B2K36A		356.69	-0.40	-0.10	363.69	-1.18	-0.26	ZZ
EA3YYY		360.19	3.10	0.79	361.88	-2.99	-0.66	ZZ
EBBTL6		355.69	-1.40	-0.36	361.50	-3.36	-0.74	ZZ
EK8VAG		352.44	-4.65	-1.18	358.81	-6.05	-1.33	ZZ
EQJRJB		359.75	2.67	0.68	367.94	3.07	0.67	ZZ
GERHEG		357.63	0.54	0.14	360.31	-4.55	-1.00	ZZ
JEE72T		353.38	-3.71	-0.94	363.38	-1.49	-0.33	ZZ
LH3F6X		359.31	2.23	0.57	367.58	2.72	0.60	ZZ
LRKBRQ		363.91	6.83	1.74	372.83	7.97	1.75	ZZ
NVQ8BC		356.31	-0.77	-0.20	358.81	-6.05	-1.33	ZZ
PUTEQD		352.81	-4.27	-1.09	365.59	0.72	0.16	ZZ
RJUK2R		359.25	2.17	0.55	367.19	2.32	0.51	ZZ
TJKRHP		359.25	2.17	0.55	367.38	2.51	0.55	ZZ
UTPJHN		354.33	-2.76	-0.70	358.73	-6.13	-1.35	ZZ
V2DCBT		352.06	-5.02	-1.28	360.06	-4.80	-1.05	ZZ
WDL2EU		361.75	4.67	1.19	372.56	7.70	1.69	ZZ
YAUFC		357.05	-0.03	-0.01	368.45	3.59	0.79	ZZ
ZF3BE6		357.19	0.10	0.03	364.00	-0.86	-0.19	ZZ

Summary Statistics

	Sample V23		Sample V24	
Grand Means	357.08	HV	364.86	HV
Stnd Dev Btwn Labs	3.93	HV	4.56	HV

Samples V23 , V24 : Fastener sizes: 1/2-20 x 2 3/4 , 1/2-20 x 1/4

Statistics based on 23 of 23 reporting participants

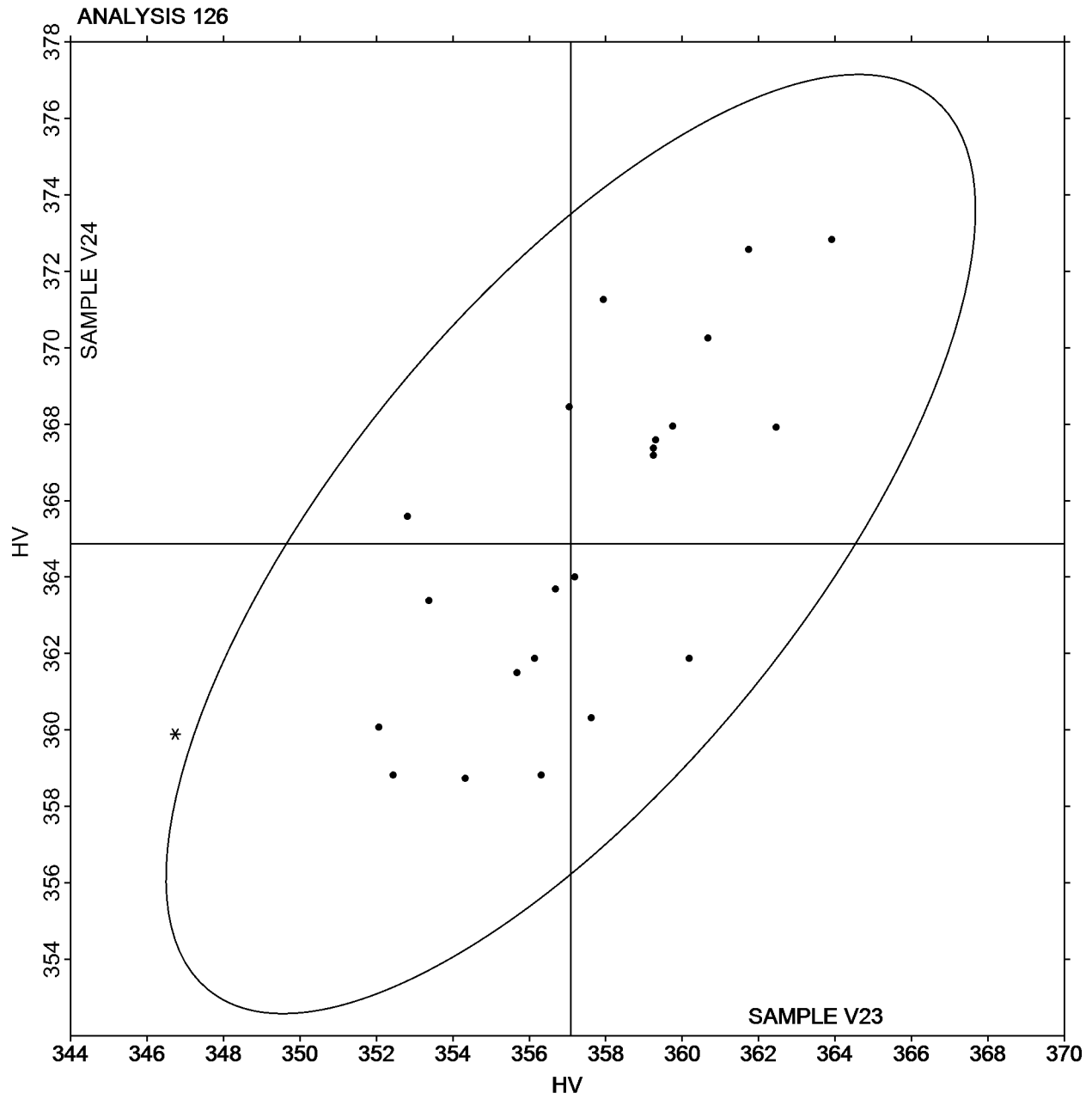
Interlaboratory Testing Program for Metals
Analysis 126
Vickers Hardness of Externally Threaded Fasteners - HV
ASTM E384

SAMPLE V23

357.08 HV

SAMPLE V24

364.86 HV



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 127

Fastener Wedge Tensile (10 deg) Metric - MPa
ASTM F606M

WebCode	Data Flag	Sample B23			Sample B24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2RVZ2H		1,161	31	2.19	1,150	17	1.36	ZZ
4BVDWZ		1,124	-7	-0.48	1,140	7	0.55	ZZ
8V94L7		1,116	-14	-1.01	1,125	-8	-0.68	ZZ
93J3XB		1,121	-10	-0.70	1,124	-9	-0.76	ZZ
96UXNA		1,141	10	0.74	1,142	8	0.66	ZZ
AUHCNK		1,116	-15	-1.03	1,123	-10	-0.81	ZZ
B2K36A		1,128	-3	-0.20	1,125	-8	-0.65	ZZ
BKY4R6		1,112	-18	-1.30	1,121	-12	-0.96	ZZ
BLQRYJ		1,132	2	0.11	1,137	4	0.32	ZZ
CY6WN7		1,117	-13	-0.94	1,123	-10	-0.81	ZZ
DTTCWQ		1,134	3	0.22	1,141	8	0.64	ZZ
EA3YYY		1,158	27	1.93	1,152	19	1.53	ZZ
LH3F6X		1,129	-2	-0.11	1,138	4	0.35	ZZ
P9FN8V		1,126	-5	-0.32	1,138	4	0.35	ZZ
PLY9UQ		1,119	-11	-0.81	1,117	-16	-1.29	ZZ
RL9T3Q		1,119	-12	-0.82	1,134	1	0.05	ZZ
RWDE7Q		1,133	2	0.16	1,148	15	1.22	ZZ
TWXB6		1,120	-10	-0.73	1,112	-22	-1.75	ZZ
V2DCBT		1,133	3	0.20	1,130	-3	-0.28	ZZ
W2BABU		1,128	-2	-0.15	1,124	-9	-0.76	ZZ
WFVR3C	*	1,156	25	1.78	1,126	-7	-0.57	ZZ
XDWPCT		1,155	25	1.75	1,164	31	2.51	ZZ
XU9EFL		1,125	-5	-0.37	1,129	-4	-0.35	ZZ
YU4MA4	X	1,136	6	0.41	1,461	328	26.46	ZZ
Z3CG4W		1,129	-2	-0.11	1,135	2	0.13	ZZ

Summary Statistics

	Sample B23		Sample B24	
Grand Means	1,131	MPa	1,133	MPa
Stnd Dev Btwn Labs	14	MPa	12	MPa

Samples B23 , B24 : Fastener sizes: M10 x 1.5 x 70, M10 x 1.5 x 80

Statistics based on 24 of 25 reporting participants

Comments on assigned Data Flags for Analysis #127

WebCode Flag Analyst Comment

YU4MA4 X Data for sample B24 are high.

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 127

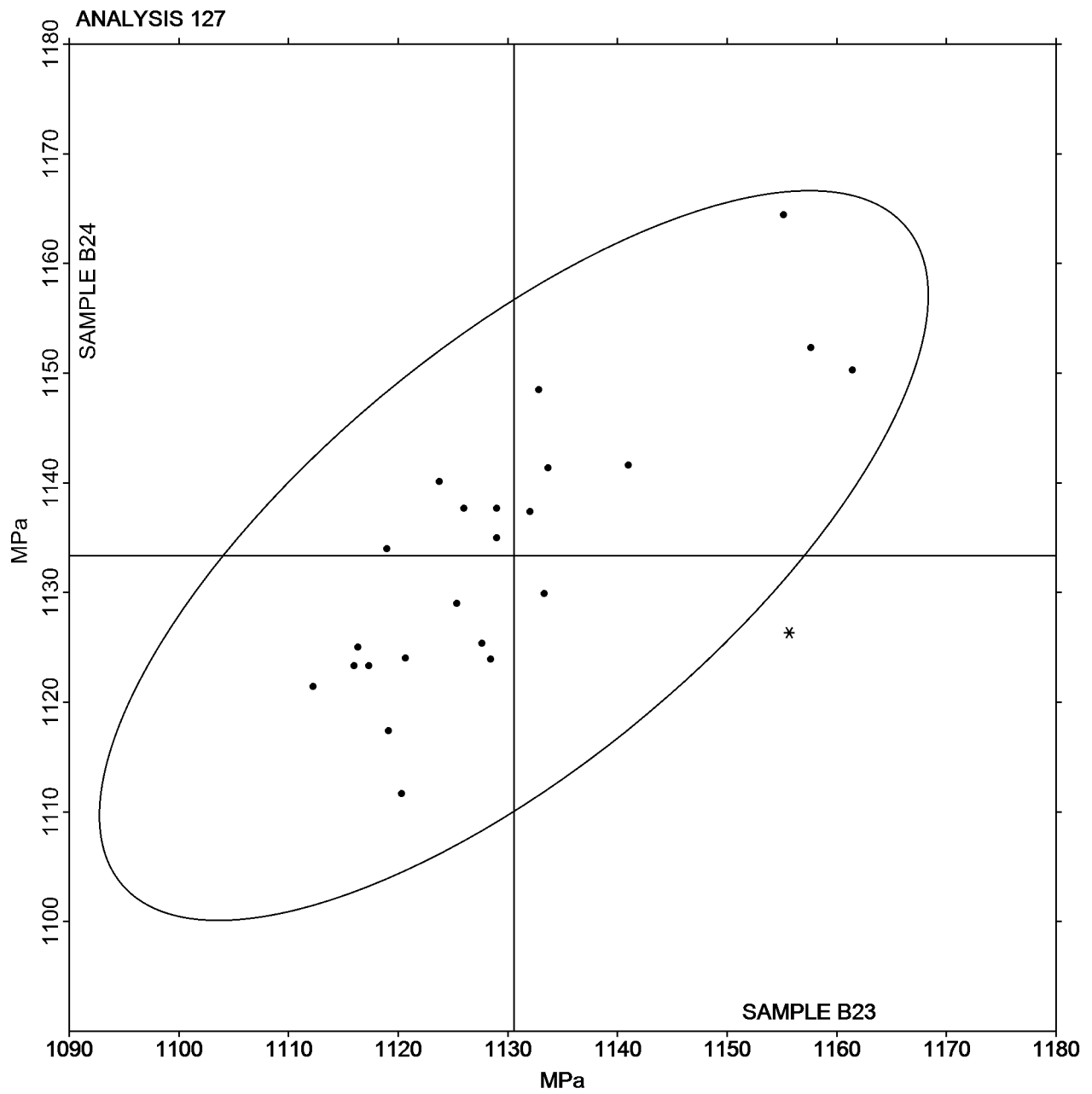
Fastener Wedge Tensile (10 deg) Metric - MPa
ASTM F606M

SAMPLE B23

1,131 MPa

SAMPLE B24

1,133 MPa



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 128

Fastener Axial Tensile Metric - MPa
ASTM F606M

WebCode	Data Flag	Sample T23			Sample T24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
8FRRUR	X	869.08	-262	-14.82	866.72	-269	-21.06	ZZ
8V94L7		1,127	-4	-0.24	1,140	4	0.28	ZZ
9Z6VYM		1,132	1	0.07	1,133	-3	-0.27	ZZ
BLQRYJ		1,131	0	0.01	1,135	-1	-0.08	ZZ
EA3YYY		1,166	35	1.96	1,163	27	2.07	ZZ
EJ94AH		1,130	-1	-0.07	1,129	-7	-0.58	ZZ
HHN8AZ		1,118	-13	-0.73	1,121	-15	-1.18	ZZ
JPT9FD		1,120	-12	-0.66	1,140	4	0.33	ZZ
ML94P8		1,103	-28	-1.60	1,118	-18	-1.42	ZZ
V2DCBT		1,140	9	0.51	1,141	4	0.35	ZZ
X96X4H		1,128	-4	-0.20	1,140	4	0.33	ZZ
XDWPCT		1,165	34	1.92	1,156	20	1.58	ZZ
XZBQMX		1,120	-12	-0.66	1,126	-10	-0.76	ZZ
Z3CG4W		1,126	-6	-0.32	1,128	-8	-0.64	ZZ

Summary Statistics

	Sample T23		Sample T24	
Grand Means	1,131	MPa	1,136	MPa
Stnd Dev Btwn Labs	18	MPa	13	MPa

Samples T23 , T24 : Fastener sizes: M10 x 1.5 x 70, M10 x 1.5 x 80

Statistics based on 13 of 14 reporting participants

Comments on assigned Data Flags for Analysis #128

WebCode Flag Analyst Comment

8FRRUR X Extreme Data.

Interlaboratory Testing Program for Metals

Analysis 128

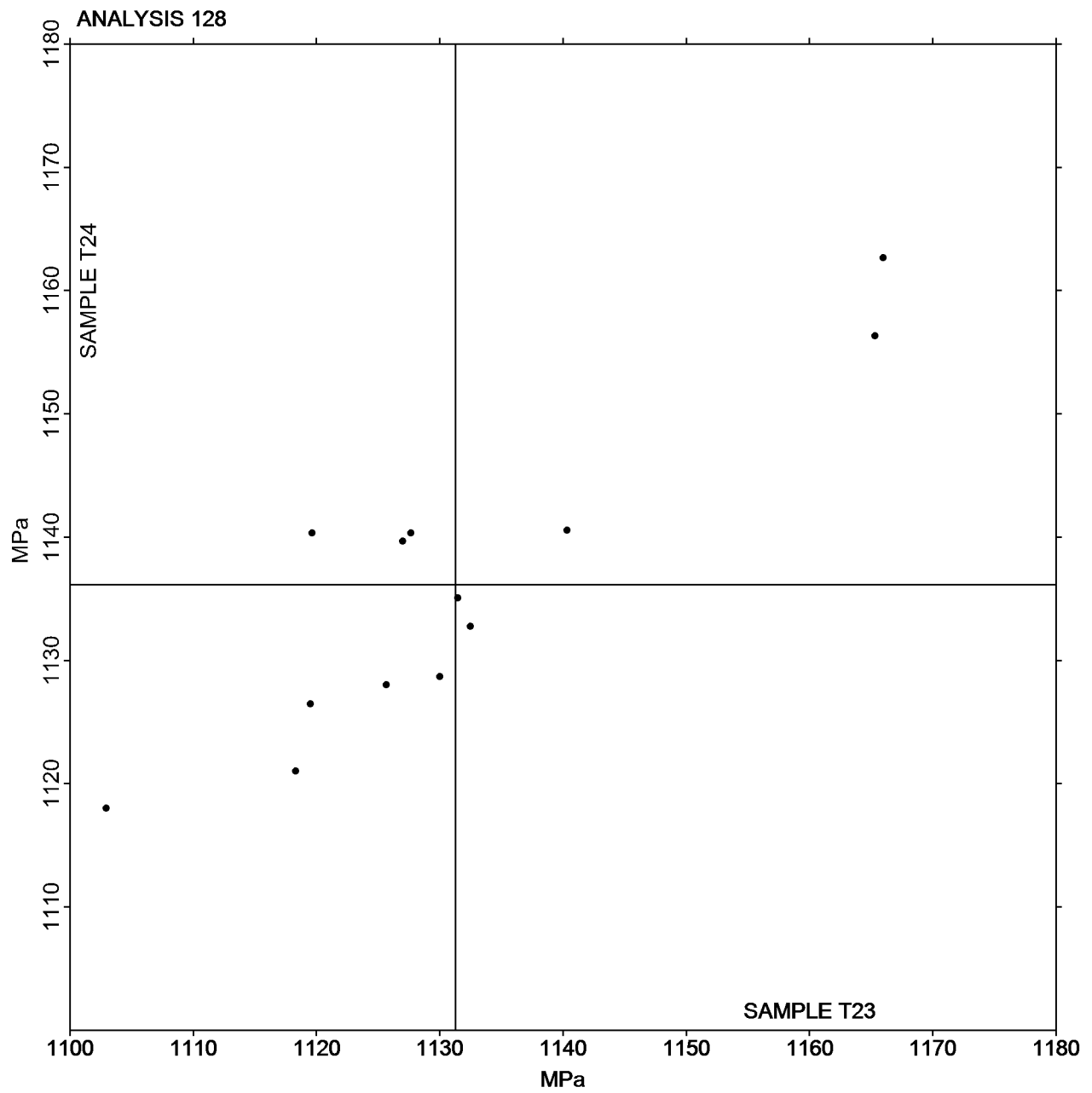
Fastener Axial Tensile Metric - MPa
ASTM F606M

SAMPLE T23

1,131 MPa

SAMPLE T24

1,136 MPa



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 129
Fastener Double Shear - lb
NASM 1312-13

WebCode	Data Flag	Sample Z23			Sample Z24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
24R672		19,154	-139	-0.43	21,349	-243	-0.81	ZZ
2EXV3B	*	19,211	-82	-0.25	22,074	483	1.61	ZZ
4BUFL4		19,421	128	0.40	22,094	503	1.67	ZZ
7F7QHX		19,120	-172	-0.54	21,671	80	0.26	ZZ
8FRRUR	X	20,033	740	2.30	23,175	1,584	5.27	ZZ
8RYM3V		19,351	58	0.18	21,601	9	0.03	ZZ
97FVMZ		19,161	-132	-0.41	21,417	-174	-0.58	ZZ
C44RPY		18,849	-444	-1.38	21,281	-310	-1.03	ZZ
DFTFWD		19,264	-29	-0.09	21,812	220	0.73	ZZ
FULPWN		18,785	-508	-1.58	20,892	-699	-2.33	ZZ
FZRLE4		19,188	-105	-0.33	21,414	-177	-0.59	ZZ
HQVCZQ		19,162	-131	-0.41	21,491	-101	-0.34	ZZ
J2UYTD		19,300	7	0.02	21,580	-11	-0.04	ZZ
L66C7Q		19,966	673	2.09	21,923	331	1.10	ZZ
MM727Z		19,209	-83	-0.26	21,475	-116	-0.39	ZZ
NVQ8BC		19,440	147	0.46	21,570	-21	-0.07	ZZ
QAPA4A		19,000	-293	-0.91	21,267	-325	-1.08	ZZ
RQMNHN		19,692	400	1.24	21,967	375	1.25	ZZ
RYW2EY		19,526	233	0.72	21,731	140	0.47	ZZ
TWXBF6		19,109	-184	-0.57	21,502	-89	-0.30	ZZ
WFVURG		19,233	-59	-0.18	21,600	9	0.03	ZZ
XKXHLU		19,200	-93	-0.29	21,333	-258	-0.86	ZZ
XX28KA		19,120	-173	-0.54	21,482	-109	-0.36	ZZ
YAYGVQ		19,500	208	0.65	21,660	69	0.23	ZZ
YRPQFE		19,346	54	0.17	21,409	-182	-0.61	ZZ
ZF3BE6	*	20,304	1,011	3.14	22,281	689	2.30	ZZ
ZPQCMR		19,000	-293	-0.91	21,500	-91	-0.30	ZZ

Summary Statistics

	Sample Z23		Sample Z24	
Grand Means	19,293	lb	21,591	lb
Stnd Dev Btwn Labs	322	lb	300	lb

Samples Z23 , Z24 : Fastener size 3/8-16 x 2 1/4, 3/8-16 x 2 3/4

Statistics based on 26 of 27 reporting participants

Comments on assigned Data Flags for Analysis #129

WebCode Flag Analyst Comment

8FRRUR X Data for sample Z24 are high. Inconsistent in testing between samples.

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 129

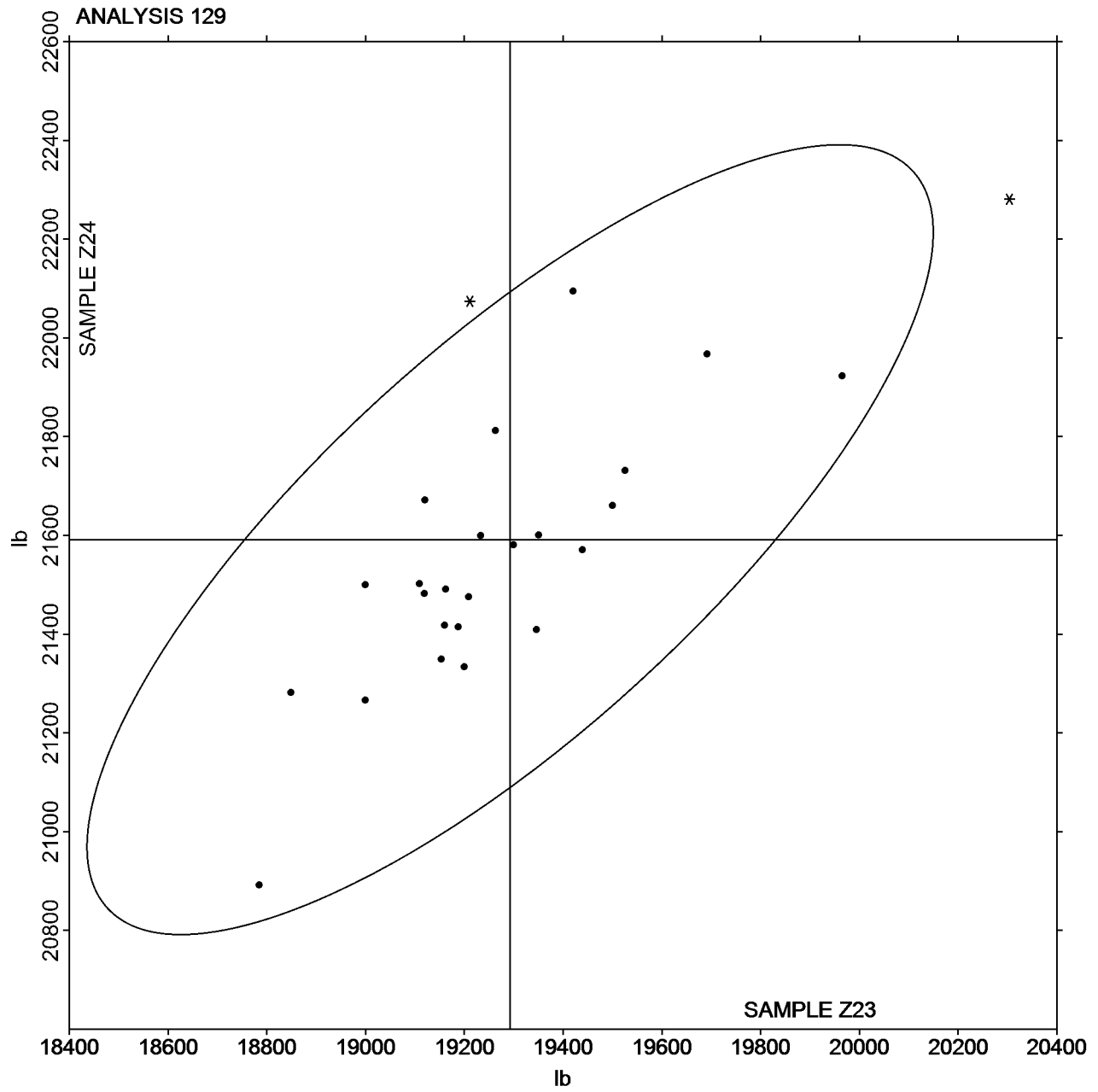
Fastener Double Shear - lb
NASM 1312-13

SAMPLE Z23

19,293 lb

SAMPLE Z24

21,591 lb



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 130

Tensile Strength (Flat Steel) - ksi
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23L6F9		102.40	-2.99	-2.33	92.90	-3.78	-1.70	ZZ
28L3HL	X	107.90	2.51	1.95	107.70	11.02	4.96	ZZ
2CF2UW		104.60	-0.79	-0.61	95.10	-1.58	-0.71	ZZ
2MAWFY		105.70	0.31	0.24	95.60	-1.08	-0.49	ZZ
2XDLHF		106.50	1.11	0.86	98.00	1.32	0.59	ZZ
2YLF XU		104.28	-1.11	-0.86	94.71	-1.97	-0.89	ZZ
34EU6G		105.00	-0.39	-0.30	97.40	0.72	0.32	ZZ
3DGYDW		107.41	2.02	1.57	96.49	-0.19	-0.09	ZZ
3WX7L8	*	108.10	2.71	2.11	95.60	-1.08	-0.49	ZZ
4474MW		106.60	1.21	0.94	98.05	1.37	0.61	ZZ
4DWPTU		103.10	-2.29	-1.78	93.10	-3.58	-1.61	ZZ
4GCAJG		105.42	0.03	0.02	97.72	1.04	0.47	ZZ
4HGGFJ		106.00	0.61	0.47	101.00	4.32	1.94	ZZ
4JK2R3		104.50	-0.89	-0.69	95.02	-1.66	-0.75	ZZ
4PEQJ8		106.60	1.21	0.94	96.00	-0.68	-0.31	ZZ
4QN624		103.00	-2.39	-1.86	94.00	-2.68	-1.21	ZZ
4V6WKN		105.00	-0.39	-0.30	95.50	-1.18	-0.53	ZZ
644RM8	M	105.14	-0.25	-0.20	No Data Reported			ZZ
663UDC		105.60	0.21	0.16	97.40	0.72	0.32	ZZ
6BNUMW	X	111.68	6.29	4.89	100.22	3.54	1.59	ZZ
6CM24G		106.72	1.33	1.03	99.54	2.86	1.29	ZZ
6D9Q6V		105.30	-0.09	-0.07	97.90	1.22	0.55	ZZ
6FWB2C	*	106.60	1.21	0.94	102.84	6.16	2.77	ZZ
6J4E7L		106.00	0.61	0.47	96.20	-0.48	-0.22	ZZ
6LQLGN	X	134.50	29.11	22.64	96.70	0.02	0.01	ZZ
738VD4		104.80	-0.59	-0.46	96.10	-0.58	-0.26	ZZ
76EWQM		104.43	-0.96	-0.75	93.84	-2.84	-1.28	ZZ
76ME4Y		105.10	-0.29	-0.23	95.30	-1.38	-0.62	ZZ
7CG7XF		106.34	0.95	0.74	96.29	-0.39	-0.17	ZZ
7WM6A3		104.82	-0.57	-0.44	95.29	-1.39	-0.62	ZZ
82VB8E	X	107.00	1.61	1.25	65.20	-31.48	-14.16	ZZ
8V3CTJ		105.26	-0.13	-0.10	97.64	0.96	0.43	ZZ
969JXC		106.37	0.98	0.76	95.67	-1.01	-0.46	ZZ
9EBXPC		105.20	-0.19	-0.15	96.40	-0.28	-0.13	ZZ
9GDRG2		105.80	0.41	0.32	96.00	-0.68	-0.31	ZZ
9RE7MT	X	110.66	5.27	4.10	97.90	1.22	0.55	ZZ
A3V4CX		105.41	0.02	0.02	99.28	2.60	1.17	ZZ
AHRYNA	*	108.30	2.91	2.26	97.00	0.32	0.14	ZZ
AJ4VWK		106.40	1.01	0.79	98.10	1.42	0.64	ZZ
AN2MEC		107.40	2.01	1.56	99.13	2.45	1.10	ZZ
ATMTHD	*	103.79	-1.60	-1.24	99.89	3.21	1.44	ZZ
B94XX7		104.20	-1.19	-0.93	94.50	-2.18	-0.98	ZZ
BEMCAQ		104.60	-0.79	-0.61	94.00	-2.68	-1.21	ZZ
BFXZPW		105.48	0.09	0.07	99.79	3.11	1.40	ZZ
BVWFDB		106.00	0.61	0.47	95.90	-0.78	-0.35	ZZ
CT2YYE		106.54	1.15	0.89	101.46	4.78	2.15	ZZ
DBDYCM		107.76	2.37	1.85	97.61	0.93	0.42	ZZ
DC9K3T		103.80	-1.59	-1.24	94.00	-2.68	-1.21	ZZ
DEFYM7		104.99	-0.40	-0.31	97.18	0.50	0.22	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 130

Tensile Strength (Flat Steel) - ksi
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DLZDFD		105.47	0.08	0.06	99.58	2.90	1.31	ZZ
DTAMFR		105.02	-0.37	-0.29	97.35	0.67	0.30	ZZ
DWNZ8E		104.90	-0.49	-0.38	95.60	-1.08	-0.49	ZZ
E3K29K		105.59	0.20	0.15	100.80	4.12	1.85	ZZ
EA9ZD8		105.60	0.21	0.16	100.30	3.62	1.63	ZZ
EFVYJL		104.97	-0.42	-0.33	96.43	-0.25	-0.11	ZZ
EK8VAG		103.40	-1.99	-1.55	94.20	-2.48	-1.12	ZZ
EZXU94		106.50	1.11	0.86	100.50	3.82	1.72	ZZ
FGCANX		107.50	2.11	1.64	99.60	2.92	1.31	ZZ
FGV9P3		104.28	-1.11	-0.86	95.15	-1.53	-0.69	ZZ
FXHHJR	X	102.95	-2.44	-1.90	110.11	13.43	6.04	ZZ
G7HY86		103.50	-1.89	-1.47	94.13	-2.55	-1.15	ZZ
GLJ4YL		104.20	-1.19	-0.93	94.30	-2.38	-1.07	ZZ
GPV4QT		105.00	-0.39	-0.30	94.80	-1.88	-0.85	ZZ
H2YLH2		106.30	0.91	0.71	97.93	1.25	0.56	ZZ
H3A7QB	*	101.82	-3.57	-2.78	92.85	-3.83	-1.73	ZZ
H8AXZE		106.00	0.61	0.47	96.00	-0.68	-0.31	ZZ
HBHUCW	X	104.94	-0.45	-0.35	87.82	-8.86	-3.99	ZZ
HH9UXA		105.70	0.31	0.24	95.00	-1.68	-0.76	ZZ
HTPW43		106.37	0.98	0.76	95.09	-1.59	-0.72	ZZ
J39VAY		106.40	1.01	0.79	96.67	-0.01	0.00	ZZ
KBDDRV		106.00	0.61	0.47	98.20	1.52	0.68	ZZ
KGG6CL		105.70	0.31	0.24	95.60	-1.08	-0.49	ZZ
KJAXMW		105.80	0.41	0.32	95.60	-1.08	-0.49	ZZ
KR84H4		104.50	-0.89	-0.69	95.40	-1.28	-0.58	ZZ
L7UJN3		106.26	0.87	0.67	97.58	0.90	0.41	ZZ
L8TRPY	X	109.35	3.96	3.08	96.25	-0.43	-0.19	ZZ
LNWEVE		107.60	2.21	1.72	97.30	0.62	0.28	ZZ
LRQBHK		104.80	-0.59	-0.46	95.82	-0.86	-0.38	ZZ
M72AP6		105.96	0.57	0.44	96.61	-0.07	-0.03	ZZ
MBCKGY		108.00	2.61	2.03	99.10	2.42	1.09	ZZ
MQJVW6		104.60	-0.79	-0.61	93.70	-2.98	-1.34	ZZ
MRPVKD		106.57	1.18	0.92	97.35	0.67	0.30	ZZ
MTKGCJ		103.67	-1.73	-1.34	93.34	-3.34	-1.50	ZZ
MWN6CT		105.01	-0.38	-0.30	95.44	-1.24	-0.56	ZZ
NBPEWY	*	108.40	3.01	2.34	97.00	0.32	0.14	ZZ
P2B4QR	*	104.60	-0.79	-0.61	101.30	4.62	2.08	ZZ
P78A8X		104.90	-0.49	-0.38	94.70	-1.98	-0.89	ZZ
PJUXH2		102.51	-2.88	-2.24	93.77	-2.91	-1.31	ZZ
PLCUCE		105.75	0.36	0.28	101.08	4.40	1.98	ZZ
PLYKV7		104.00	-1.39	-1.08	93.90	-2.78	-1.25	ZZ
PZ2WPK		106.73	1.34	1.05	95.73	-0.95	-0.43	ZZ
PZG2JX		105.02	-0.37	-0.29	96.38	-0.30	-0.13	ZZ
QGXYJB		103.90	-1.49	-1.16	94.60	-2.08	-0.94	ZZ
QKFPMX	X	114.00	8.61	6.70	106.00	9.32	4.19	ZZ
R4VPJQ		105.04	-0.35	-0.27	95.32	-1.36	-0.61	ZZ
R8MMKW		106.00	0.61	0.47	100.00	3.32	1.49	ZZ
RBR7TQ		103.70	-1.69	-1.31	96.20	-0.48	-0.22	ZZ
RFHMYP	*	104.20	-1.19	-0.93	100.80	4.12	1.85	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 130

Tensile Strength (Flat Steel) - ksi
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
RW8QJY		104.48	-0.91	-0.71	94.33	-2.35	-1.06	ZZ
T6PATQ	X	105.07	-0.32	-0.25	105.72	9.04	4.07	ZZ
T8JCB7		104.30	-1.09	-0.85	95.50	-1.18	-0.53	ZZ
T9EW3C		104.55	-0.84	-0.65	99.45	2.77	1.25	ZZ
TJKRHP		107.33	1.94	1.51	96.74	0.06	0.03	ZZ
TNAALE		104.40	-0.99	-0.77	94.80	-1.88	-0.85	ZZ
TREQ3H		106.20	0.81	0.63	98.00	1.32	0.59	ZZ
TXTQ79	*	107.57	2.18	1.70	103.14	6.46	2.91	ZZ
TXY4PN		105.10	-0.29	-0.23	97.60	0.92	0.41	ZZ
TYNBWE		105.89	0.50	0.39	95.60	-1.08	-0.49	ZZ
U6BF69		105.05	-0.34	-0.26	97.67	0.99	0.45	ZZ
U772WE		104.30	-1.09	-0.85	94.60	-2.08	-0.94	ZZ
UDYCT3		106.89	1.50	1.17	96.02	-0.66	-0.30	ZZ
UHLZVG		104.52	-0.88	-0.68	95.02	-1.66	-0.75	ZZ
UMUHUA		105.90	0.51	0.40	97.50	0.82	0.37	ZZ
V4CQKC		104.57	-0.82	-0.64	93.99	-2.69	-1.21	ZZ
V4WB7B		104.20	-1.19	-0.93	97.10	0.42	0.19	ZZ
VFUBWL		107.50	2.11	1.64	95.60	-1.08	-0.49	ZZ
VLA9A8	X	110.51	5.12	3.98	99.40	2.72	1.22	ZZ
WAYVT7		103.20	-2.19	-1.71	93.45	-3.23	-1.45	ZZ
WLEMUM		105.20	-0.19	-0.15	98.68	2.00	0.90	ZZ
WN6CAE	X	104.50	-0.89	-0.69	104.30	7.62	3.43	ZZ
X7CMXC		105.15	-0.24	-0.18	95.58	-1.10	-0.49	ZZ
XDXLHH		106.80	1.41	1.10	96.60	-0.08	-0.04	ZZ
XL2T76		106.02	0.63	0.49	98.05	1.37	0.61	ZZ
XPMLAK		105.01	-0.38	-0.30	100.08	3.40	1.53	ZZ
XZN3RB		104.20	-1.19	-0.93	96.00	-0.68	-0.31	ZZ
Y8PKXE		105.00	-0.39	-0.30	97.10	0.42	0.19	ZZ
YYE8AH		106.00	0.61	0.47	95.90	-0.78	-0.35	ZZ
ZCBWAM		105.10	-0.29	-0.23	95.60	-1.08	-0.49	ZZ
ZMZVPD		105.90	0.51	0.40	96.60	-0.08	-0.04	ZZ

Summary Statistics

	Sample F23		Sample F24	
Grand Means	105.39	ksi	96.68	ksi
Stnd Dev Btwn Labs	1.29	ksi	2.22	ksi

Samples F23 , F24 : AISI 1010 - 16G , AISI 1010 - 14G

Statistics based on 116 of 129 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 130
Tensile Strength (Flat Steel) - ksi
ASTM E8

Comments on assigned Data Flags for Analysis #130

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
28L3HL	X	Data for sample F24 are high.
644RM8	M	Laboratory did not submit data for sample F24.
6BNUMW	X	Data for sample F23 are high.
6LQLGN	X	Data for sample F23 are high.
82VB8E	X	Data for sample F24 are low.
9RE7MT	X	Data for sample F23 are high.
FXHHJR	X	Data for sample F24 are high.
HBHUCW	X	Data for sample F24 are low.
L8TRPY	X	Data for sample F23 are high.
QKFPMX	X	Data for both samples are high.
T6PATQ	X	Data for sample F24 are high.
VLA9A8	X	Data for sample F23 are high.
WN6CAE	X	Data for sample F24 are high.

Interlaboratory Testing Program for Metals

Analysis 130

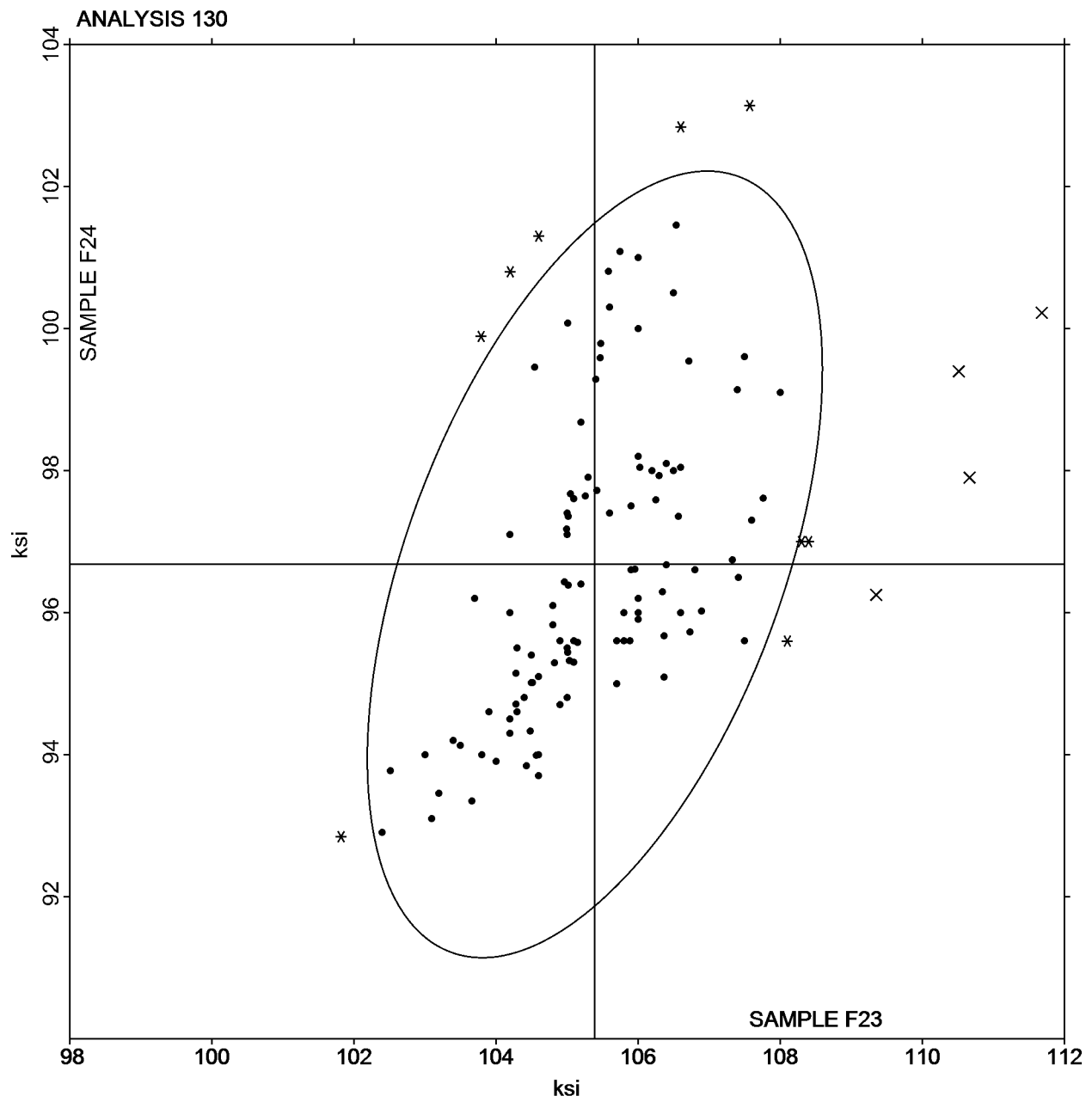
Tensile Strength (Flat Steel) - ksi
ASTM E8

SAMPLE F23

105.39 ksi

SAMPLE F24

96.68 ksi



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 131

Yield Strength (Flat Steel) - ksi
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23L6F9		71.90	-2.11	-1.22	63.80	-1.13	-0.73	ZZ
28L3HL	X	74.90	0.89	0.51	75.30	10.37	6.77	ZZ
2CF2UW		73.30	-0.71	-0.41	64.20	-0.73	-0.47	ZZ
2MAWFY		75.50	1.49	0.86	64.40	-0.53	-0.34	ZZ
2XDLHF		76.20	2.19	1.27	67.30	2.37	1.55	ZZ
2YLF XU		74.26	0.25	0.14	63.67	-1.25	-0.82	ZZ
34EU6G		72.60	-1.41	-0.82	66.30	1.37	0.90	ZZ
3DGYDW		74.08	0.06	0.04	64.12	-0.80	-0.52	ZZ
3WX7L8		73.70	-0.31	-0.18	63.80	-1.13	-0.73	ZZ
4474MW	*	77.74	3.73	2.16	68.17	3.24	2.12	ZZ
4DWPTU		73.70	-0.31	-0.18	63.20	-1.73	-1.13	ZZ
4GCAJG	*	74.28	0.27	0.16	68.55	3.62	2.37	ZZ
4HGGFJ		73.30	-0.71	-0.41	66.60	1.67	1.09	ZZ
4JK2R3		72.45	-1.56	-0.91	64.25	-0.67	-0.44	ZZ
4PEQJ8		74.50	0.49	0.28	64.60	-0.33	-0.21	ZZ
4QN624		70.50	-3.51	-2.03	64.00	-0.93	-0.60	ZZ
4V6WKN		75.50	1.49	0.86	64.00	-0.93	-0.60	ZZ
644RM8	M	75.54	1.53	0.89	No Data Reported			ZZ
663UDC		74.90	0.89	0.51	65.20	0.27	0.18	ZZ
6BNUMW	*	77.74	3.73	2.16	63.96	-0.96	-0.63	ZZ
6CM24G		75.86	1.84	1.07	67.27	2.34	1.53	ZZ
6D9Q6V		72.37	-1.64	-0.95	65.85	0.92	0.60	ZZ
6FWB2C		75.20	1.19	0.69	67.90	2.97	1.94	ZZ
6J4E7L		73.20	-0.81	-0.47	63.80	-1.13	-0.73	ZZ
6LQLGN	X	96.60	22.59	13.08	65.60	0.67	0.44	ZZ
738VD4	*	69.60	-4.41	-2.55	61.70	-3.23	-2.10	ZZ
76EWQM		72.08	-1.93	-1.12	63.82	-1.11	-0.72	ZZ
76ME4Y		73.20	-0.81	-0.47	64.60	-0.33	-0.21	ZZ
7CG7XF		75.74	1.73	1.00	64.60	-0.32	-0.21	ZZ
7WM6A3		72.68	-1.33	-0.77	63.43	-1.49	-0.97	ZZ
82VB8E		76.50	2.49	1.44	65.00	0.07	0.05	ZZ
8V3CTJ		75.35	1.34	0.78	64.96	0.04	0.02	ZZ
969JXC		71.52	-2.49	-1.44	64.69	-0.24	-0.16	ZZ
9EBXPC		73.40	-0.61	-0.35	65.00	0.07	0.05	ZZ
9GDRG2		74.60	0.59	0.34	64.30	-0.63	-0.41	ZZ
9RE7MT	*	78.76	4.75	2.75	65.70	0.78	0.51	ZZ
A3V4CX		74.00	-0.01	-0.01	66.44	1.51	0.99	ZZ
AHRYNA		74.50	0.49	0.28	64.80	-0.13	-0.08	ZZ
AJ4VWK		75.70	1.69	0.98	67.40	2.47	1.61	ZZ
ATMTHD	X	76.75	2.74	1.59	70.39	5.46	3.56	ZZ
B94XX7		70.50	-3.51	-2.03	62.90	-2.03	-1.32	ZZ
BEMCAQ		72.30	-1.71	-0.99	64.00	-0.93	-0.60	ZZ
BFXZPW	X	88.60	14.59	8.45	82.65	17.73	11.57	ZZ
BVWFDB		73.40	-0.61	-0.35	64.60	-0.33	-0.21	ZZ
CT2YYE		74.40	0.39	0.23	68.10	3.17	2.07	ZZ
DBDYCM		75.28	1.26	0.73	66.14	1.21	0.79	ZZ
DC9K3T		72.30	-1.71	-0.99	64.00	-0.93	-0.60	ZZ
DEFYM7		72.82	-1.19	-0.69	65.88	0.95	0.62	ZZ
DLZDFD		72.95	-1.06	-0.61	65.76	0.84	0.55	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 131

Yield Strength (Flat Steel) - ksi
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DTAMFR		75.42	1.41	0.82	66.47	1.54	1.01	ZZ
DWNZ8E		74.30	0.29	0.17	64.90	-0.03	-0.02	ZZ
E3K29K		71.94	-2.07	-1.20	66.28	1.36	0.89	ZZ
EA9ZD8		74.30	0.29	0.17	67.60	2.67	1.75	ZZ
EFVYJL	X	73.39	-0.62	-0.36	71.40	6.47	4.22	ZZ
EK8VAG		71.50	-2.51	-1.45	61.50	-3.43	-2.23	ZZ
EZXU94		74.20	0.19	0.11	65.30	0.37	0.24	ZZ
FGCANX	X	77.80	3.79	2.19	69.80	4.87	3.18	ZZ
FGV9P3		75.28	1.26	0.73	66.43	1.50	0.98	ZZ
FXHHJR	X	69.88	-4.13	-2.39	76.94	12.02	7.84	ZZ
G7HY86		74.39	0.38	0.22	65.12	0.20	0.13	ZZ
GLJ4YL		73.60	-0.41	-0.24	63.60	-1.33	-0.86	ZZ
GPV4QT		73.10	-0.91	-0.53	63.40	-1.53	-1.00	ZZ
H2YLH2		77.16	3.15	1.82	67.02	2.09	1.37	ZZ
H3A7QB	*	69.30	-4.71	-2.73	62.73	-2.20	-1.44	ZZ
H8AXZE		73.50	-0.51	-0.30	65.50	0.57	0.38	ZZ
HBHUCW		74.71	0.70	0.40	66.28	1.36	0.89	ZZ
HH9UXA		75.70	1.69	0.98	64.10	-0.83	-0.54	ZZ
HTPW43		75.59	1.58	0.92	63.25	-1.67	-1.09	ZZ
J39VAY		77.07	3.06	1.77	66.46	1.53	1.00	ZZ
KBDDRV		75.60	1.59	0.92	66.60	1.67	1.09	ZZ
KGG6CL		72.10	-1.91	-1.11	62.90	-2.03	-1.32	ZZ
KJAXMW		73.10	-0.91	-0.53	64.30	-0.63	-0.41	ZZ
KR84H4		73.50	-0.51	-0.30	66.00	1.07	0.70	ZZ
L7UJN3		74.07	0.06	0.04	63.73	-1.19	-0.78	ZZ
L8TRPY		73.20	-0.81	-0.47	61.60	-3.33	-2.17	ZZ
LNWEVE		74.40	0.39	0.23	65.60	0.67	0.44	ZZ
LRQBHK		74.21	0.20	0.11	66.17	1.25	0.81	ZZ
M72AP6		74.60	0.59	0.34	65.10	0.17	0.11	ZZ
MBCKGY		77.20	3.19	1.85	67.10	2.17	1.42	ZZ
MQJVW6		74.00	-0.01	-0.01	62.00	-2.93	-1.91	ZZ
MRPVKD		74.43	0.42	0.24	65.53	0.61	0.40	ZZ
MTKGCJ		71.29	-2.72	-1.58	63.94	-0.98	-0.64	ZZ
MWN6CT		73.53	-0.48	-0.28	64.40	-0.53	-0.34	ZZ
NBPEWY		74.30	0.29	0.17	65.20	0.27	0.18	ZZ
P2B4QR		72.10	-1.91	-1.11	65.40	0.47	0.31	ZZ
PJUXH2		73.83	-0.18	-0.11	64.62	-0.30	-0.20	ZZ
PLCUCE		73.43	-0.58	-0.34	66.14	1.22	0.80	ZZ
PLYKV7		72.70	-1.31	-0.76	63.20	-1.73	-1.13	ZZ
PZ2WPK		74.55	0.54	0.31	62.79	-2.14	-1.39	ZZ
PZG2JX		75.49	1.48	0.86	65.24	0.31	0.21	ZZ
QGXFYB		72.00	-2.01	-1.16	64.00	-0.93	-0.60	ZZ
QKFPMX	X	79.50	5.49	3.18	70.20	5.27	3.44	ZZ
R4VPJQ		73.91	-0.10	-0.06	64.15	-0.77	-0.51	ZZ
R8MMKW		75.00	0.99	0.57	66.60	1.67	1.09	ZZ
RBR7TQ		71.30	-2.71	-1.57	65.10	0.17	0.11	ZZ
RFHMYP		71.40	-2.61	-1.51	63.50	-1.43	-0.93	ZZ
RW8QJY		71.72	-2.29	-1.33	63.38	-1.54	-1.01	ZZ
T6PATQ	X	73.74	-0.27	-0.16	74.03	9.10	5.94	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 131

Yield Strength (Flat Steel) - ksi
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
T8JCB7		71.80	-2.21	-1.28	64.70	-0.23	-0.15	ZZ
T9EW3C		73.85	-0.16	-0.09	66.60	1.67	1.09	ZZ
TJKRHP		76.87	2.86	1.66	65.99	1.07	0.70	ZZ
TNAALE		73.30	-0.71	-0.41	64.80	-0.13	-0.08	ZZ
TREQ3H		75.40	1.39	0.80	63.10	-1.83	-1.19	ZZ
TXTQ79	X	74.42	0.41	0.24	74.03	9.11	5.94	ZZ
TXY4PN		72.80	-1.21	-0.70	66.70	1.77	1.16	ZZ
TYNBWE		73.10	-0.91	-0.53	64.40	-0.53	-0.34	ZZ
U6BF69		76.06	2.05	1.19	66.99	2.07	1.35	ZZ
U772WE		72.50	-1.51	-0.88	64.20	-0.73	-0.47	ZZ
UDYCT3		73.10	-0.91	-0.53	63.82	-1.11	-0.72	ZZ
UHLZVG		73.84	-0.17	-0.10	64.54	-0.38	-0.25	ZZ
UMUHUA		74.70	0.69	0.40	65.40	0.47	0.31	ZZ
V4CQKC		74.99	0.97	0.56	65.27	0.34	0.22	ZZ
V4WB7B		74.50	0.49	0.28	65.60	0.67	0.44	ZZ
VFUBWL		75.30	1.29	0.75	64.30	-0.63	-0.41	ZZ
VLA9A8		74.00	-0.01	-0.01	63.11	-1.81	-1.18	ZZ
WAYVT7		72.34	-1.67	-0.97	61.66	-3.27	-2.13	ZZ
WLEMUM		75.88	1.87	1.08	68.00	3.07	2.01	ZZ
WN6CAE	X	71.00	-3.01	-1.74	71.90	6.97	4.55	ZZ
X7CMXC	*	74.55	0.54	0.31	61.21	-3.72	-2.43	ZZ
XDXLHH		77.30	3.29	1.91	66.10	1.17	0.77	ZZ
XL2T76		75.28	1.26	0.73	65.99	1.07	0.70	ZZ
XPMLAK		72.52	-1.49	-0.86	65.99	1.07	0.70	ZZ
XZN3RB		74.00	-0.01	-0.01	65.30	0.37	0.24	ZZ
Y8PKXE		75.60	1.59	0.92	65.60	0.67	0.44	ZZ
YYE8AH		74.30	0.29	0.17	64.50	-0.43	-0.28	ZZ
ZCBWAM		75.30	1.29	0.75	64.70	-0.23	-0.15	ZZ
ZMZVPD		75.70	1.69	0.98	64.80	-0.13	-0.08	ZZ

Summary Statistics

	Sample F23		Sample F24	
Grand Means	74.01	ksi	64.93	ksi
Stnd Dev Btwn Labs	1.73	ksi	1.53	ksi

Samples F23 , F24 : AISI 1010 - 16G , AISI 1010 - 14G

Statistics based on 115 of 127 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 131
Yield Strength (Flat Steel) - ksi
ASTM E8

Comments on assigned Data Flags for Analysis #131

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
28L3HL	X	Data for sample F24 are high.
644RM8	M	Laboratory did not submit data for sample F24.
6LQLGN	X	Data for sample F23 are high.
ATMTHD	X	Data for sample F24 are high.
BFXZPW	X	Data for both samples are high.
EFVYJL	X	Data for sample F24 are high.
FGCANX	X	Data for sample F24 are high.
FXHHJR	X	Data for sample F24 are high.
QKFPMX	X	Data for both samples are high.
T6PATQ	X	Data for sample F24 are high.
TXTQ79	X	Data for sample F24 are high.
WN6CAE	X	Data for sample F24 are high.

Interlaboratory Testing Program for Metals

Analysis 131

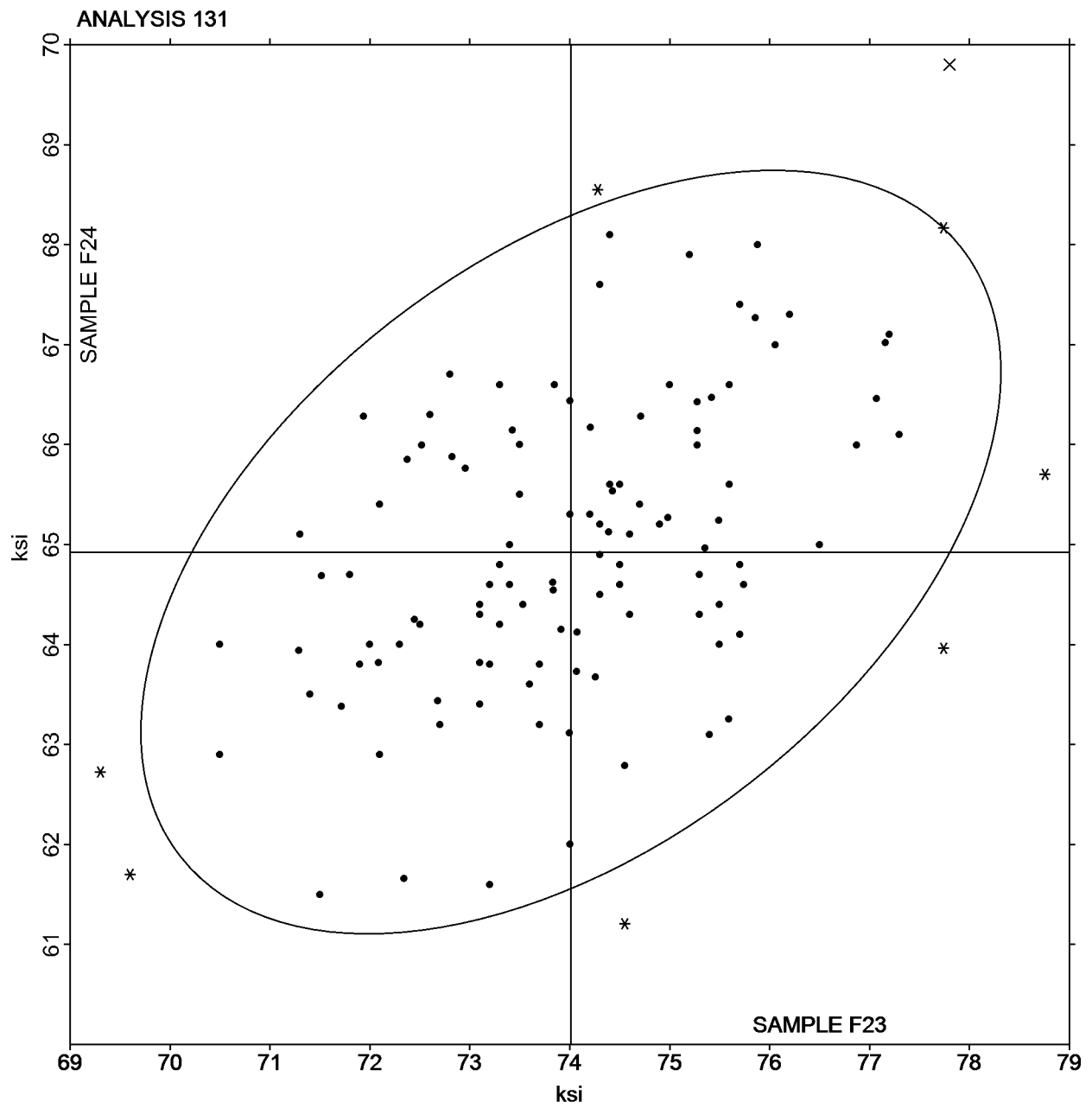
Yield Strength (Flat Steel) - ksi
ASTM E8

SAMPLE F23

74.01 ksi

SAMPLE F24

64.93 ksi



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 132

Elongation (Flat Steel) - Percent Increase
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23L6F9		19.50	-0.15	-0.11	23.00	1.55	1.27	ZZ
28L3HL		18.50	-1.15	-0.84	19.60	-1.85	-1.51	ZZ
2CF2UW		18.60	-1.05	-0.77	20.50	-0.95	-0.78	ZZ
2MAWFY		19.00	-0.65	-0.48	20.00	-1.45	-1.19	ZZ
2XDLHF		19.20	-0.45	-0.33	20.60	-0.85	-0.69	ZZ
2YLF XU		20.00	0.35	0.25	21.70	0.25	0.20	ZZ
34EU6G		17.50	-2.15	-1.58	19.60	-1.85	-1.51	ZZ
3DGYDW		19.35	-0.30	-0.22	21.10	-0.35	-0.29	ZZ
3WX7L8	*	19.60	-0.05	-0.04	18.90	-2.55	-2.08	ZZ
4474MW		21.40	1.75	1.28	22.40	0.95	0.78	ZZ
4DWPTU	X	10.80	-8.85	-6.48	12.00	-9.45	-7.72	ZZ
4GCAJG		22.15	2.50	1.83	21.75	0.30	0.24	ZZ
4HGGFJ		19.20	-0.45	-0.33	20.10	-1.35	-1.10	ZZ
4JK2R3		20.30	0.65	0.47	22.00	0.55	0.45	ZZ
4PEQJ8		18.84	-0.81	-0.60	21.08	-0.37	-0.30	ZZ
4QN624	*	16.00	-3.65	-2.68	20.00	-1.45	-1.19	ZZ
4V6WKN		18.50	-1.15	-0.84	20.50	-0.95	-0.78	ZZ
644RM8	M	21.25	1.60	1.17	No Data Reported			ZZ
663UDC		18.50	-1.15	-0.84	21.00	-0.45	-0.37	ZZ
6BNUMW	X	16.20	-3.45	-2.53	17.40	-4.05	-3.31	ZZ
6CM24G		20.00	0.35	0.25	22.00	0.55	0.45	ZZ
6D9Q6V		22.50	2.85	2.08	23.00	1.55	1.27	ZZ
6FWB2C	X	16.40	-3.25	-2.38	16.80	-4.65	-3.80	ZZ
6J4E7L		19.30	-0.35	-0.26	20.80	-0.65	-0.53	ZZ
6LQLGN		19.40	-0.25	-0.19	21.70	0.25	0.20	ZZ
738VD4		22.80	3.15	2.30	24.10	2.65	2.16	ZZ
76EWQM		19.00	-0.65	-0.48	22.00	0.55	0.45	ZZ
76ME4Y		20.50	0.85	0.62	21.50	0.05	0.04	ZZ
7CG7XF		20.20	0.55	0.40	22.00	0.55	0.45	ZZ
7WM6A3		18.60	-1.05	-0.77	21.60	0.15	0.12	ZZ
82VB8E		19.60	-0.05	-0.04	21.20	-0.25	-0.20	ZZ
8V3CTJ		18.20	-1.45	-1.06	20.80	-0.65	-0.53	ZZ
969JXC		18.88	-0.77	-0.57	20.95	-0.50	-0.41	ZZ
9EBXPC		18.40	-1.25	-0.92	20.40	-1.05	-0.86	ZZ
9GDRG2		20.10	0.45	0.33	21.80	0.35	0.29	ZZ
9RE7MT		19.50	-0.15	-0.11	22.50	1.05	0.86	ZZ
A3V4CX	*	23.30	3.65	2.67	23.30	1.85	1.51	ZZ
AHRYNA		18.50	-1.15	-0.84	19.50	-1.95	-1.59	ZZ
AJ4VWK		19.20	-0.45	-0.33	20.50	-0.95	-0.78	ZZ
AN2MEC		21.40	1.75	1.28	21.70	0.25	0.20	ZZ
ATMTHD		19.20	-0.45	-0.33	21.40	-0.05	-0.04	ZZ
B94XX7		21.70	2.05	1.50	23.90	2.45	2.00	ZZ
BEMCAQ		19.30	-0.35	-0.26	21.00	-0.45	-0.37	ZZ
BFXZPW		21.83	2.18	1.59	22.86	1.41	1.15	ZZ
BVWFDB	*	16.80	-2.85	-2.09	20.80	-0.65	-0.53	ZZ
CT2YYE		18.50	-1.15	-0.84	18.80	-2.65	-2.17	ZZ
DBDYCM		21.00	1.35	0.99	23.00	1.55	1.27	ZZ
DC9K3T		20.70	1.05	0.77	22.60	1.15	0.94	ZZ
DEFYM7		18.50	-1.15	-0.84	20.95	-0.50	-0.41	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 132

Elongation (Flat Steel) - Percent Increase
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DLZDFD		19.60	-0.05	-0.04	20.80	-0.65	-0.53	ZZ
DTAMFR		20.00	0.35	0.25	21.00	-0.45	-0.37	ZZ
DWNZ8E		18.50	-1.15	-0.84	21.30	-0.15	-0.12	ZZ
E3K29K		18.50	-1.15	-0.84	20.50	-0.95	-0.78	ZZ
EA9ZD8		19.30	-0.35	-0.26	19.80	-1.65	-1.35	ZZ
EFVYJL		19.10	-0.55	-0.41	20.30	-1.15	-0.94	ZZ
EK8VAG		19.00	-0.65	-0.48	22.00	0.55	0.45	ZZ
EZXU94		21.00	1.35	0.99	22.00	0.55	0.45	ZZ
FGCANX		19.70	0.05	0.03	22.20	0.75	0.61	ZZ
FGV9P3	*	18.75	-0.90	-0.66	18.69	-2.76	-2.26	ZZ
FXHHJR	X	24.59	4.94	3.61	20.09	-1.36	-1.11	ZZ
G7HY86		19.06	-0.59	-0.43	21.65	0.20	0.16	ZZ
GLJ4YL		20.00	0.35	0.25	22.00	0.55	0.45	ZZ
GPV4QT		17.70	-1.95	-1.43	20.40	-1.05	-0.86	ZZ
H2YLH2		19.50	-0.15	-0.11	22.50	1.05	0.86	ZZ
H3A7QB	*	22.90	3.25	2.38	25.10	3.65	2.98	ZZ
H8AXZE		19.00	-0.65	-0.48	21.00	-0.45	-0.37	ZZ
HBHUCW		17.90	-1.75	-1.28	19.30	-2.15	-1.76	ZZ
HH9UXA		21.00	1.35	0.99	22.00	0.55	0.45	ZZ
HTPW43		18.02	-1.63	-1.20	21.37	-0.08	-0.07	ZZ
J39VAY		21.00	1.35	0.99	22.50	1.05	0.86	ZZ
KBDDRV		18.10	-1.55	-1.14	21.80	0.35	0.29	ZZ
KGG6CL		17.60	-2.05	-1.50	20.70	-0.75	-0.61	ZZ
KJAXMW		20.30	0.65	0.47	22.50	1.05	0.86	ZZ
KR84H4		22.10	2.45	1.79	23.70	2.25	1.84	ZZ
L7UJN3		20.40	0.75	0.55	21.10	-0.35	-0.29	ZZ
L8TRPY		20.40	0.75	0.55	22.70	1.25	1.02	ZZ
LNWEVE		19.00	-0.65	-0.48	20.50	-0.95	-0.78	ZZ
LRQBHK		21.00	1.35	0.99	22.00	0.55	0.45	ZZ
M72AP6		19.00	-0.65	-0.48	22.00	0.55	0.45	ZZ
MBCKGY		19.00	-0.65	-0.48	20.90	-0.55	-0.45	ZZ
MQJVW6	X	23.20	3.55	2.60	26.00	4.55	3.72	ZZ
MRPVKD		20.00	0.35	0.25	21.90	0.45	0.37	ZZ
MTKGCJ		21.00	1.35	0.99	22.00	0.55	0.45	ZZ
MWN6CT		19.40	-0.25	-0.19	21.60	0.15	0.12	ZZ
NBPEWY		18.90	-0.75	-0.55	21.20	-0.25	-0.20	ZZ
P2B4QR		22.20	2.55	1.86	22.40	0.95	0.78	ZZ
P78A8X		18.70	-0.95	-0.70	20.30	-1.15	-0.94	ZZ
PJUXH2		17.83	-1.82	-1.34	21.21	-0.24	-0.20	ZZ
PLCUCE		21.00	1.35	0.99	22.00	0.55	0.45	ZZ
PLYKV7		19.40	-0.25	-0.19	21.50	0.05	0.04	ZZ
PZ2WPK		20.20	0.55	0.40	23.30	1.85	1.51	ZZ
PZG2JX		21.90	2.25	1.64	22.60	1.15	0.94	ZZ
QGXJYB		20.20	0.55	0.40	21.80	0.35	0.29	ZZ
QKFPMX		18.70	-0.95	-0.70	20.40	-1.05	-0.86	ZZ
R4VPJQ		17.10	-2.55	-1.87	19.70	-1.75	-1.43	ZZ
R8MMKW		19.10	-0.55	-0.41	19.60	-1.85	-1.51	ZZ
RBR7TQ		20.80	1.15	0.84	21.50	0.05	0.04	ZZ
RFHMYP		18.90	-0.75	-0.55	22.50	1.05	0.86	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 132

Elongation (Flat Steel) - Percent Increase
ASTM E8

WebCode	Data Flag	Sample F23			Sample F24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
RW8QJY		19.46	-0.19	-0.14	21.65	0.20	0.16	ZZ
T6PATQ		19.00	-0.65	-0.48	19.50	-1.95	-1.59	ZZ
T8JCB7		21.20	1.55	1.13	23.20	1.75	1.43	ZZ
T9EW3C		19.60	-0.05	-0.04	22.30	0.85	0.69	ZZ
TJKRHP	X	23.00	3.35	2.45	21.00	-0.45	-0.37	ZZ
TNAALE		19.50	-0.15	-0.11	22.40	0.95	0.78	ZZ
TREQ3H		20.40	0.75	0.55	20.50	-0.95	-0.78	ZZ
TXTQ79		20.56	0.91	0.66	23.24	1.79	1.46	ZZ
TXY4PN		19.40	-0.25	-0.19	21.40	-0.05	-0.04	ZZ
TYNBWE		20.60	0.95	0.69	21.50	0.05	0.04	ZZ
U6BF69		19.60	-0.05	-0.04	21.20	-0.25	-0.20	ZZ
U772WE		20.50	0.85	0.62	23.00	1.55	1.27	ZZ
UDYCT3		19.70	0.05	0.03	21.00	-0.45	-0.37	ZZ
UHLZVG		19.40	-0.25	-0.19	21.10	-0.35	-0.29	ZZ
V4CQKC		21.00	1.35	0.99	22.00	0.55	0.45	ZZ
V4WB7B		21.90	2.25	1.64	21.90	0.45	0.37	ZZ
VFUBWL		18.70	-0.95	-0.70	22.10	0.65	0.53	ZZ
VLA9A8		17.10	-2.55	-1.87	20.30	-1.15	-0.94	ZZ
WAYVT7		20.30	0.65	0.47	21.10	-0.35	-0.29	ZZ
WLEMUM		20.00	0.35	0.25	23.00	1.55	1.27	ZZ
WN6CAE	*	19.50	-0.15	-0.11	19.00	-2.45	-2.00	ZZ
X7CMXC		20.00	0.35	0.25	21.00	-0.45	-0.37	ZZ
XDXLHH		20.10	0.45	0.33	23.20	1.75	1.43	ZZ
XL2T76		22.50	2.85	2.08	24.10	2.65	2.16	ZZ
XPMLAK		18.00	-1.65	-1.21	20.00	-1.45	-1.19	ZZ
XZN3RB		20.00	0.35	0.25	21.70	0.25	0.20	ZZ
Y8PKXE		21.30	1.65	1.21	23.00	1.55	1.27	ZZ
YYE8AH		17.50	-2.15	-1.58	19.60	-1.85	-1.51	ZZ
ZCBWAM		19.00	-0.65	-0.48	21.70	0.25	0.20	ZZ
ZMZVPD		17.50	-2.15	-1.58	19.50	-1.95	-1.59	ZZ

Summary Statistics

	Sample F23		Sample F24	
Grand Means	19.65	Percent	21.45	Percent
Stnd Dev Btwn Labs	1.37	Percent	1.22	Percent

Samples F23 , F24 : AISI 1010 - 16G , AISI 1010 - 14G

Statistics based on 121 of 128 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 132
Elongation (Flat Steel) - Percent Increase
ASTM E8

Comments on assigned Data Flags for Analysis #132

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
4DWPTU	X	Data for both samples are low.
644RM8	M	Laboratory did not submit data for sample F24.
6BNUMW	X	Data for sample F24 are low.
6FWB2C	X	Data for sample F24 are low.
FXHHJR	X	Data for sample F23 are high.
MQJVW6	X	Data for sample F24 are high.
TJKRHP	X	Inconsistent in testing between samples.

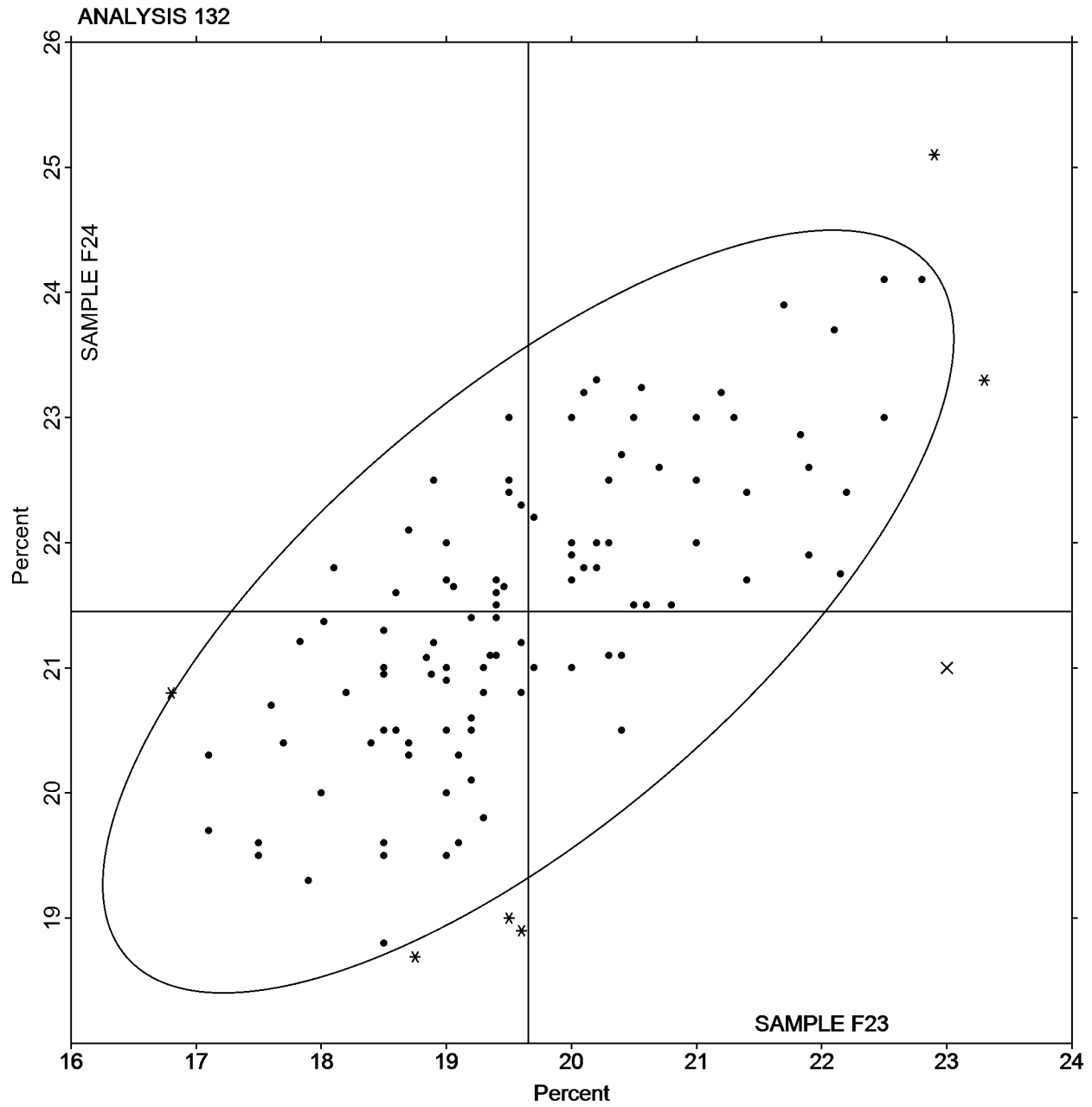
Interlaboratory Testing Program for Metals

Analysis 132

Elongation (Flat Steel) - Percent Increase
ASTM E8

SAMPLE F23
19.65 Percent

SAMPLE F24
21.45 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 136
Rockwell Superficial Hardness (30N Scale)
ASTM E18

WebCode	Data Flag	Sample E23			Sample E24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
34F4E7		69.72	-0.18	-0.30	72.72	-0.02	-0.03	ZZ
4V6WKN		69.48	-0.42	-0.69	72.10	-0.64	-1.17	ZZ
6MYEUW	*	71.22	1.32	2.18	74.24	1.50	2.75	ZZ
76JTDK		69.46	-0.44	-0.73	72.20	-0.54	-0.99	ZZ
82VB8E		69.54	-0.36	-0.60	72.18	-0.56	-1.02	ZZ
97FVMZ		69.76	-0.14	-0.23	73.04	0.30	0.55	ZZ
9EBXPC		70.26	0.36	0.60	72.90	0.16	0.30	ZZ
ANTYKC		69.72	-0.18	-0.30	72.58	-0.16	-0.29	ZZ
AUHCNK		68.96	-0.94	-1.55	72.62	-0.12	-0.22	ZZ
AW7NK6		69.62	-0.28	-0.46	72.72	-0.02	-0.03	ZZ
AXNDN3	*	68.42	-1.48	-2.44	71.27	-1.46	-2.68	ZZ
B7VA8Z		70.12	0.22	0.36	72.66	-0.08	-0.14	ZZ
BX6P4M	*	68.28	-1.62	-2.68	71.26	-1.48	-2.71	ZZ
C4KBCC		70.22	0.32	0.53	72.68	-0.06	-0.11	ZZ
DDMTJ9		69.80	-0.10	-0.17	72.38	-0.36	-0.66	ZZ
DTTCWQ		70.70	0.80	1.32	73.80	1.06	1.94	ZZ
E74JQB		69.76	-0.14	-0.23	72.38	-0.36	-0.66	ZZ
EV3JYJ	X	67.62	-2.28	-3.77	71.20	-1.54	-2.82	ZZ
EZXU94		70.50	0.60	0.99	73.00	0.26	0.48	ZZ
GB94RD		70.08	0.18	0.30	73.16	0.42	0.77	ZZ
GGA2WQ		69.40	-0.50	-0.83	72.80	0.06	0.11	ZZ
H6Y37A		70.74	0.84	1.39	72.78	0.04	0.08	ZZ
H8AXZE		69.84	-0.06	-0.10	72.14	-0.60	-1.10	ZZ
HJGJVL		70.14	0.24	0.40	72.50	-0.24	-0.44	ZZ
HXJN2J		69.00	-0.90	-1.49	72.00	-0.74	-1.35	ZZ
HZZBW7		70.16	0.26	0.43	72.80	0.06	0.11	ZZ
J4XDU7	X	69.44	-0.46	-0.76	71.20	-1.54	-2.82	ZZ
JH3TKM		70.80	0.90	1.49	73.64	0.90	1.65	ZZ
JUVY6R		70.30	0.40	0.66	73.26	0.52	0.95	ZZ
KBDDRV		69.78	-0.12	-0.20	72.36	-0.38	-0.69	ZZ
MM727Z		69.58	-0.32	-0.53	72.24	-0.50	-0.91	ZZ
MNXFMR		69.86	-0.04	-0.07	72.82	0.08	0.15	ZZ
NBQVUR		69.58	-0.32	-0.53	72.82	0.08	0.15	ZZ
P9FN8V		69.96	0.06	0.10	72.82	0.08	0.15	ZZ
PJTZ97		69.84	-0.06	-0.10	72.84	0.10	0.19	ZZ
PTKHKT		70.44	0.54	0.89	73.18	0.44	0.81	ZZ
PUN263		70.04	0.14	0.23	73.00	0.26	0.48	ZZ
Q6VBPE		70.56	0.66	1.09	73.32	0.58	1.06	ZZ
TWXB6F		69.92	0.02	0.03	72.70	-0.04	-0.07	ZZ
U372NV		70.74	0.84	1.39	73.54	0.80	1.47	ZZ
U3CP8F		69.50	-0.40	-0.66	72.70	-0.04	-0.07	ZZ
UHLZVG		70.98	1.08	1.79	73.24	0.50	0.92	ZZ
URLPBW		69.74	-0.16	-0.26	73.20	0.46	0.84	ZZ
VMCNTY		69.72	-0.18	-0.30	72.90	0.16	0.30	ZZ
WZDKP7		70.84	0.94	1.55	72.94	0.20	0.37	ZZ
XPW7CW		69.90	0.00	0.00	73.02	0.28	0.51	ZZ
YU4MA4		69.54	-0.36	-0.60	72.48	-0.26	-0.47	ZZ
Z6FVAW		70.02	0.12	0.20	72.78	0.04	0.08	ZZ
ZCBWAM		69.56	-0.34	-0.56	72.08	-0.66	-1.21	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 136
Rockwell Superficial Hardness (30N Scale)
ASTM E18

WebCode	Data Flag	Sample E23			Sample E24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZF3BE6		68.90	-1.00	-1.65	72.48	-0.26	-0.47	ZZ
ZPQCMR		70.10	0.20	0.33	72.92	0.18	0.33	ZZ

Summary Statistics				
	Sample E23		Sample E24	
Grand Means	69.90	HR30N	72.74	HR30N
Std Dev Btwn Labs	0.60	HR30N	0.55	HR30N

Samples E23 , E24 : Steel

Statistics based on 49 of 51 reporting participants

Comments on assigned Data Flags for Analysis #136

WebCode Flag Analyst Comment

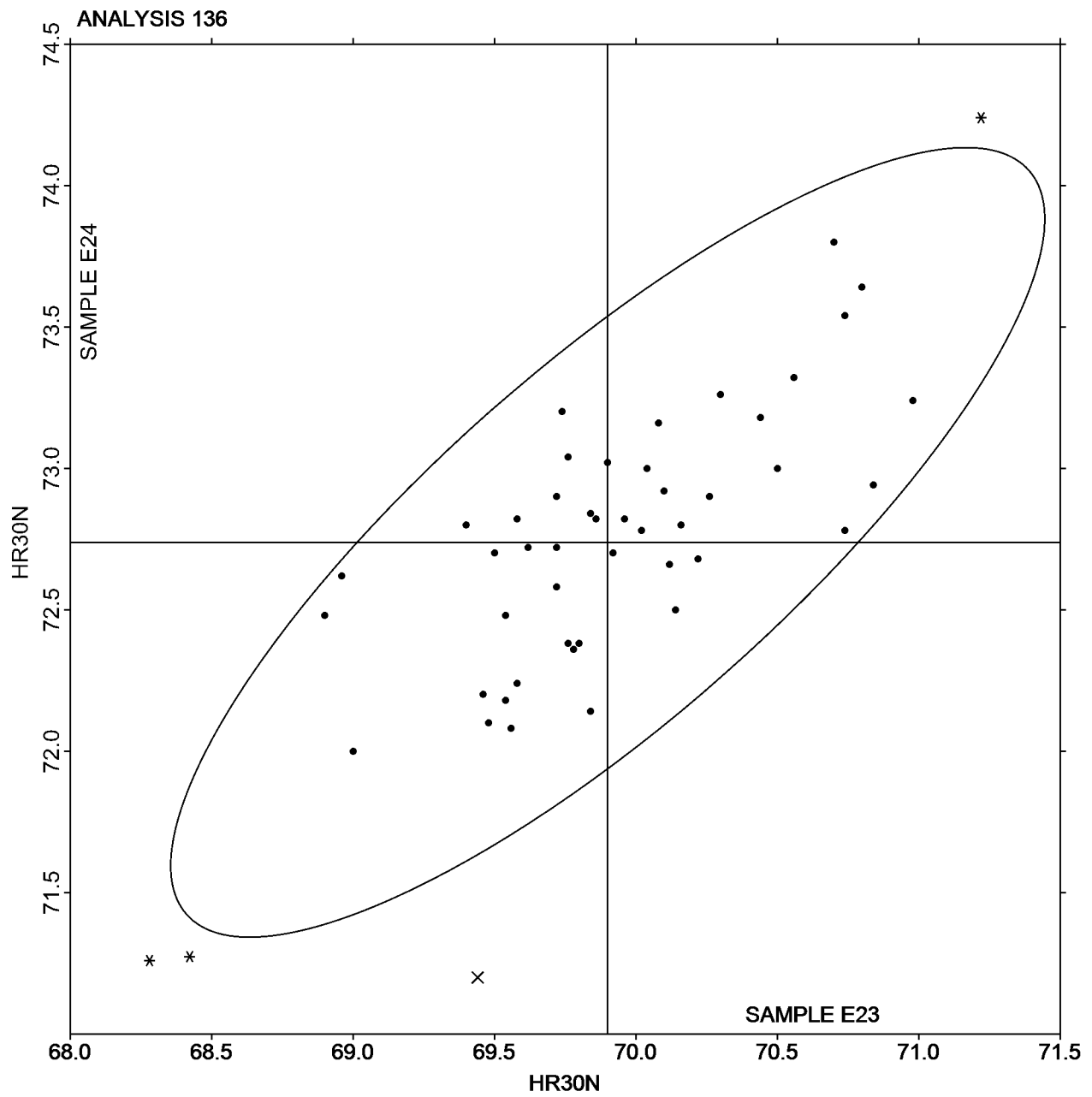
EV3JYJ X Data for both samples are low. Possible Systematic error.

J4XDU7 X Data for sample E24 are low. Inconsistent in testing between samples.

Interlaboratory Testing Program for Metals
Analysis 136
Rockwell Superficial Hardness (30N Scale)
ASTM E18

SAMPLE E23
69.90 HR30N

SAMPLE E24
72.74 HR30N



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 145

Total Case Depth - inches
SAE J423, SAE J78

WebCode	Data Flag	Sample C23			Sample C24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2EXV3B		0.0260	-0.0023	-0.52	0.0143	-0.0021	-0.59	ZZ
2XDLHF		0.0200	-0.0084	-1.86	0.00960	-0.0067	-1.94	ZZ
34EU6G		0.0376	0.0093	2.06	0.0224	0.0061	1.76	ZZ
4ULN33		0.0198	-0.0086	-1.90	0.0106	-0.0057	-1.65	ZZ
4V6WKN		0.0297	0.0014	0.30	0.0170	0.0007	0.19	ZZ
6H6KUA		0.0327	0.0044	0.97	0.0181	0.0018	0.52	ZZ
AHRYNA		0.0336	0.0052	1.15	0.0197	0.0034	0.97	ZZ
AKLM9P	X	0.0365	0.0081	1.81	0.0154	-0.0010	-0.28	ZZ
ANTYKC		0.0249	-0.0035	-0.77	0.0131	-0.0032	-0.92	ZZ
ANZKDR		0.0234	-0.0049	-1.10	0.0133	-0.0030	-0.86	ZZ
AW7NK6		0.0234	-0.0050	-1.11	0.0111	-0.0052	-1.50	ZZ
BLQRYJ		0.0313	0.0030	0.66	0.0191	0.0027	0.78	ZZ
C44RPY		0.0310	0.0026	0.58	0.0192	0.0029	0.82	ZZ
CT47GE		0.0319	0.0035	0.78	0.0162	-0.0001	-0.03	ZZ
DFTFWD		0.0204	-0.0080	-1.77	0.00996	-0.0064	-1.83	ZZ
EVHG9F		0.0320	0.0036	0.80	0.0189	0.0026	0.74	ZZ
EZXU94		0.0329	0.0045	1.01	0.0187	0.0024	0.68	ZZ
FLATRH		0.0190	-0.0094	-2.08	0.00900	-0.0073	-2.11	ZZ
FZRLE4		0.0216	-0.0068	-1.51	0.0124	-0.0039	-1.13	ZZ
G243GE		0.0334	0.0051	1.12	0.0200	0.0036	1.05	ZZ
GL6T89		0.0394	0.0110	2.45	0.0238	0.0075	2.15	ZZ
H8AXZE		0.0272	-0.0012	-0.26	0.0156	-0.0007	-0.21	ZZ
HXHQQM	X	0.0294	0.0011	0.24	0.0219	0.0056	1.60	ZZ
J4XDU7		0.0280	-0.0004	-0.08	0.0168	0.0005	0.13	ZZ
JH3TKM		0.0287	0.0004	0.08	0.0173	0.0010	0.29	ZZ
JUVY6R		0.0324	0.0040	0.89	0.0172	0.0009	0.25	ZZ
JZZR8A		0.0306	0.0022	0.49	0.0191	0.0027	0.79	ZZ
K6L9YQ		0.0284	0.0000	0.01	0.0148	-0.0015	-0.44	ZZ
KBDDRV	X	0.0324	0.0040	0.89	0.0258	0.0095	2.72	ZZ
KNBHQ2		0.0300	0.0016	0.36	0.0180	0.0017	0.48	ZZ
LRKBRQ		0.0300	0.0016	0.36	0.0163	0.0000	-0.01	ZZ
MERANP		0.0280	-0.0004	-0.09	0.0165	0.0002	0.06	ZZ
MM727Z		0.0236	-0.0048	-1.06	0.0130	-0.0033	-0.96	ZZ
P9FN8V		0.0254	-0.0030	-0.66	0.0137	-0.0026	-0.75	ZZ
PJTZ97		0.0264	-0.0020	-0.44	0.0154	-0.0009	-0.27	ZZ
Q2C9QL		0.0276	-0.0007	-0.17	0.0159	-0.0005	-0.14	ZZ
QBAV47		0.0300	0.0016	0.36	0.0174	0.0011	0.31	ZZ
RJUK2R		0.0272	-0.0011	-0.25	0.0152	-0.0011	-0.33	ZZ
RPRVVH		0.0272	-0.0012	-0.26	0.0168	0.0005	0.13	ZZ
RWDE7Q		0.0270	-0.0014	-0.30	0.0144	-0.0019	-0.56	ZZ
T6ERFJ		0.0296	0.0012	0.26	0.0172	0.0008	0.24	ZZ
TLQEVT		0.0269	-0.0015	-0.33	0.0173	0.0010	0.29	ZZ
TWWBHQ		0.0252	-0.0032	-0.71	0.0144	-0.0019	-0.54	ZZ
U3AA6V	*	0.0308	0.0024	0.54	0.0220	0.0057	1.64	ZZ
UCVK9V		0.0384	0.0100	2.23	0.0248	0.0085	2.44	ZZ
VLA9A8		0.0286	0.0002	0.05	0.0173	0.0010	0.28	ZZ
W4QMC3		0.0212	-0.0072	-1.59	0.0104	-0.0059	-1.71	ZZ
WBFQQU		0.0248	-0.0036	-0.79	0.0168	0.0005	0.13	ZZ
WBY69N		0.0288	0.0004	0.10	0.0172	0.0009	0.25	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 145

Total Case Depth - inches
SAE J423, SAE J78

WebCode	Data Flag	Sample C23			Sample C24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
WEEZNL		0.0309	0.0026	0.57	0.0185	0.0022	0.62	ZZ
WFVR3C		0.0276	-0.0008	-0.17	0.0175	0.0012	0.34	ZZ
WZDKP7		0.0266	-0.0018	-0.39	0.0128	-0.0035	-1.02	ZZ
XKZKKT		0.0319	0.0035	0.78	0.0172	0.0009	0.25	ZZ
YDEKJR		0.0274	-0.0010	-0.21	0.0132	-0.0031	-0.90	ZZ
ZMKRYR		0.0332	0.0048	1.06	0.0210	0.0047	1.35	ZZ
ZYTE4J		0.0300	0.0016	0.36	0.0179	0.0015	0.44	ZZ

Summary Statistics

	Sample C23		Sample C24	
Grand Means	0.0284	inches	0.0163	inches
Std Dev Btwn Labs	0.0045	inches	0.0035	inches

Samples C23 , C24 : Steel

Statistics based on 53 of 56 reporting participants

Comments on assigned Data Flags for Analysis #145

WebCode Flag Analyst Comment

AKLM9P X Inconsistent in testing between samples.

HXHQQM X Inconsistent in testing between samples.

KBDDRV X Data for sample C24 are high. Inconsistent within the determinations of both samples.

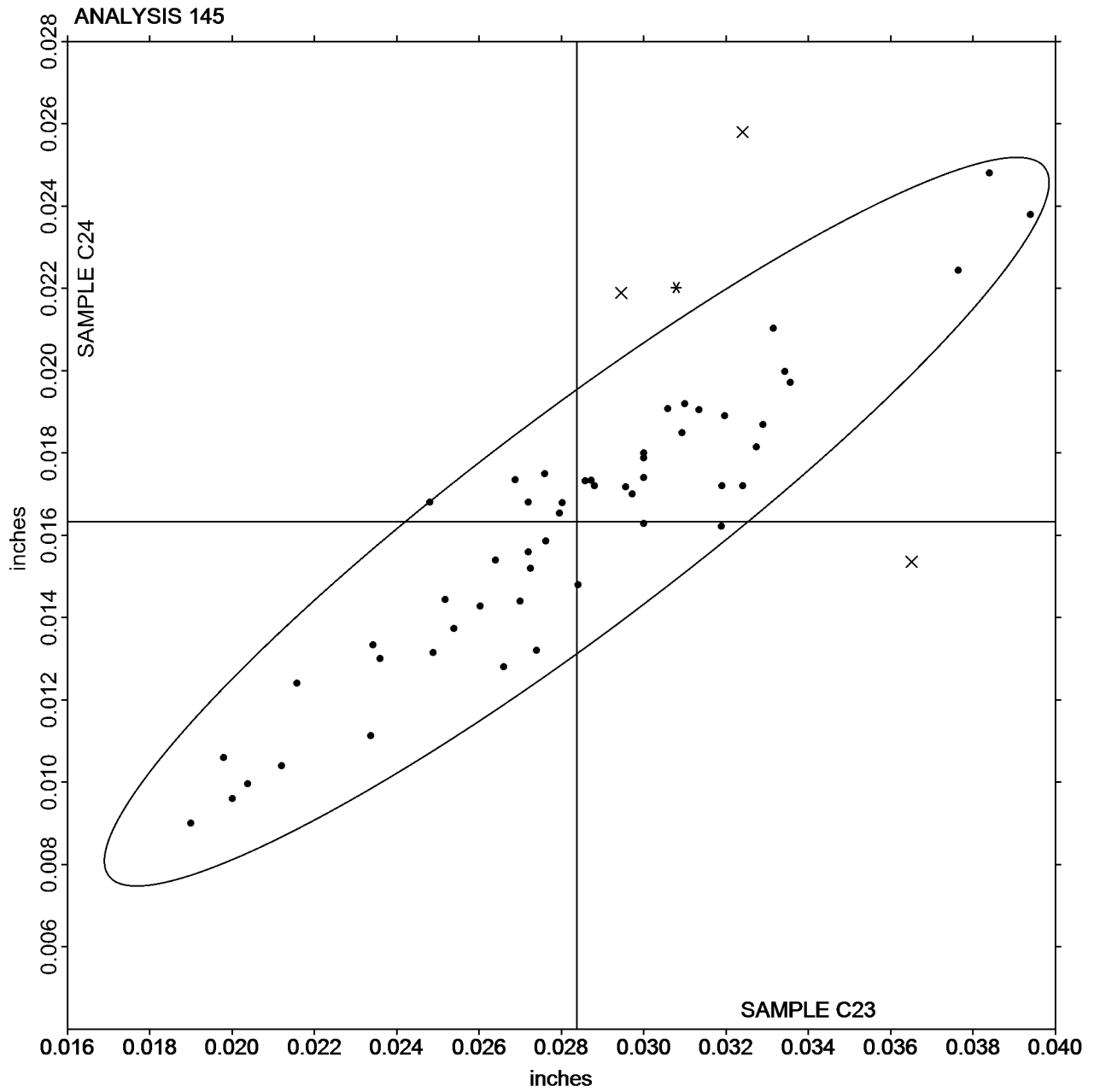
Interlaboratory Testing Program for Metals

Analysis 145

Total Case Depth - inches
SAE J423, SAE J78

SAMPLE C23
0.0284 inches

SAMPLE C24
0.0163 inches



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 146

Effective Case Depth - inches
SAE J423, SAE J78

WebCode	Data Flag	Sample C23			Sample C24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2EXV3B		0.0272	0.0005	0.33	0.0150	0.0002	0.23	ZZ
2XDLHF	X	0.0410	0.0143	9.44	0.0168	0.0020	2.25	ZZ
4ULN33	X	0.0198	-0.0069	-4.55	0.0100	-0.0048	-5.40	ZZ
4V6WKN		0.0252	-0.0015	-0.97	0.0142	-0.0006	-0.70	ZZ
6H6KUA		0.0289	0.0022	1.48	0.0157	0.0009	1.00	ZZ
6W97XD		0.0268	0.0001	0.05	0.0146	-0.0002	-0.17	ZZ
72F9YZ		0.0278	0.0011	0.71	0.0145	-0.0003	-0.36	ZZ
7X8NNZ		0.0276	0.0009	0.60	0.0154	0.0006	0.68	ZZ
AHRYNA		0.0276	0.0009	0.60	0.0154	0.0006	0.68	ZZ
AJ4VWK	*	0.0300	0.0033	2.18	0.0172	0.0024	2.70	ZZ
AKLM9P		0.0292	0.0025	1.63	0.0152	0.0004	0.40	ZZ
ANTYKC		0.0260	-0.0007	-0.47	0.0141	-0.0007	-0.79	ZZ
ANZKDR		0.0254	-0.0013	-0.86	0.0136	-0.0012	-1.35	ZZ
AW7NK6		0.0242	-0.0025	-1.67	0.0134	-0.0014	-1.58	ZZ
BKY4R6		0.0282	0.0015	0.96	0.0161	0.0013	1.48	ZZ
BLQRYJ		0.0257	-0.0009	-0.63	0.0146	-0.0002	-0.26	ZZ
C44RPY		0.0282	0.0015	0.99	0.0152	0.0004	0.45	ZZ
CT47GE		0.0253	-0.0014	-0.94	0.0131	-0.0016	-1.86	ZZ
DFTFWD		0.0243	-0.0024	-1.60	0.0135	-0.0013	-1.51	ZZ
EVHG9F		0.0274	0.0007	0.47	0.0165	0.0017	1.95	ZZ
EZXU94		0.0257	-0.0010	-0.68	0.0149	0.0001	0.09	ZZ
FLATRH	X	0.0196	-0.0071	-4.68	0.00920	-0.0056	-6.30	ZZ
FZQN48		0.0270	0.0003	0.21	0.0148	0.0000	0.00	ZZ
FZRLE4		0.0234	-0.0033	-2.18	0.0132	-0.0016	-1.80	ZZ
G243GE		0.0288	0.0021	1.40	0.0148	0.0000	0.05	ZZ
GL6T89		0.0260	-0.0007	-0.46	0.0138	-0.0010	-1.13	ZZ
H8AXZE		0.0272	0.0005	0.33	0.0160	0.0012	1.35	ZZ
H9LRFE		0.0280	0.0013	0.83	0.0150	0.0002	0.18	ZZ
HXHQQM	X	0.0261	-0.0006	-0.37	0.0174	0.0026	2.93	ZZ
J4XDU7		0.0275	0.0008	0.52	0.0150	0.0002	0.18	ZZ
JH3TKM		0.0262	-0.0005	-0.30	0.0144	-0.0004	-0.50	ZZ
JUVY6R		0.0300	0.0033	2.18	0.0162	0.0014	1.58	ZZ
JZZR8A		0.0278	0.0011	0.73	0.0162	0.0014	1.58	ZZ
K6L9YQ		0.0268	0.0001	0.07	0.0148	0.0000	0.00	ZZ
KBDDRV	X	0.0143	-0.0124	-8.17	0.00672	-0.0081	-9.09	ZZ
KNBHQ2		0.0282	0.0015	1.01	0.0152	0.0004	0.45	ZZ
LRKBRQ		0.0269	0.0002	0.12	0.0151	0.0003	0.37	ZZ
MERANP		0.0271	0.0004	0.29	0.0141	-0.0007	-0.77	ZZ
MM727Z		0.0280	0.0013	0.86	0.0148	0.0000	0.00	ZZ
P9FN8V		0.0258	-0.0009	-0.56	0.0143	-0.0005	-0.58	ZZ
PCRCBU		0.0256	-0.0011	-0.72	0.0148	0.0000	-0.05	ZZ
PJTZ97		0.0258	-0.0009	-0.59	0.0134	-0.0014	-1.58	ZZ
Q2C9QL	*	0.0254	-0.0013	-0.86	0.0160	0.0012	1.35	ZZ
QBAV47		0.0250	-0.0017	-1.12	0.0140	-0.0008	-0.90	ZZ
RJUK2R		0.0267	0.0000	0.02	0.0149	0.0001	0.11	ZZ
RPRVVH		0.0256	-0.0011	-0.72	0.0150	0.0002	0.23	ZZ
RWDE7Q		0.0274	0.0007	0.46	0.0138	-0.0010	-1.13	ZZ
T6ERFJ		0.0258	-0.0009	-0.59	0.0140	-0.0008	-0.90	ZZ
TLQEVT	X	0.0252	-0.0015	-0.97	0.0164	0.0016	1.83	ZZ

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 146

Effective Case Depth - inches
SAE J423, SAE J78

WebCode	Data Flag	Sample C23			Sample C24			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
TWWBHQ		0.0244	-0.0023	-1.52	0.0143	-0.0005	-0.59	ZZ
U3AA6V		0.0265	-0.0002	-0.12	0.0151	0.0003	0.28	ZZ
UCVK9V		0.0250	-0.0017	-1.12	0.0146	-0.0002	-0.22	ZZ
VFUBWL		0.0262	-0.0005	-0.33	0.0152	0.0004	0.45	ZZ
VLA9A8		0.0274	0.0007	0.48	0.0153	0.0005	0.62	ZZ
W4QMC3		0.0296	0.0029	1.89	0.0158	0.0010	1.10	ZZ
WFBGQU		0.0266	-0.0001	-0.06	0.0158	0.0010	1.13	ZZ
WBY69N		0.0256	-0.0011	-0.72	0.0136	-0.0012	-1.35	ZZ
WEEZNL		0.0276	0.0009	0.62	0.0146	-0.0002	-0.26	ZZ
WFVR3C	*	0.0231	-0.0036	-2.36	0.0141	-0.0007	-0.83	ZZ
WZDKP7		0.0268	0.0001	0.07	0.0146	-0.0002	-0.22	ZZ
XKZKKT		0.0256	-0.0011	-0.72	0.0138	-0.0010	-1.13	ZZ
XNJ877		0.0278	0.0011	0.73	0.0160	0.0012	1.35	ZZ
ZMKRYR		0.0260	-0.0007	-0.45	0.0146	-0.0002	-0.21	ZZ
ZYTE4J		0.0275	0.0008	0.52	0.0154	0.0006	0.71	ZZ

Summary Statistics

	Sample C23		Sample C24	
Grand Means	0.0267	inches	0.0148	inches
Std Dev Btwn Labs	0.0015	inches	0.0009	inches

Samples C23 , C24 : Steel

Statistics based on 58 of 64 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 146

Effective Case Depth - inches
SAE J423, SAE J78

Comments on assigned Data Flags for Analysis #146

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
2XDLHF	X	Data for sample C23 are high. Inconsistent within the determinations of both samples.
4ULN33	X	Data for both samples are low.
FLATRH	X	Data for both samples are low.
HXHQQM	X	Data for sample C24 are high.
KBDDR	X	Data for both samples are low.
TLQEV	X	Inconsistent in testing between samples.

Cycle 108
4th Q, 2014

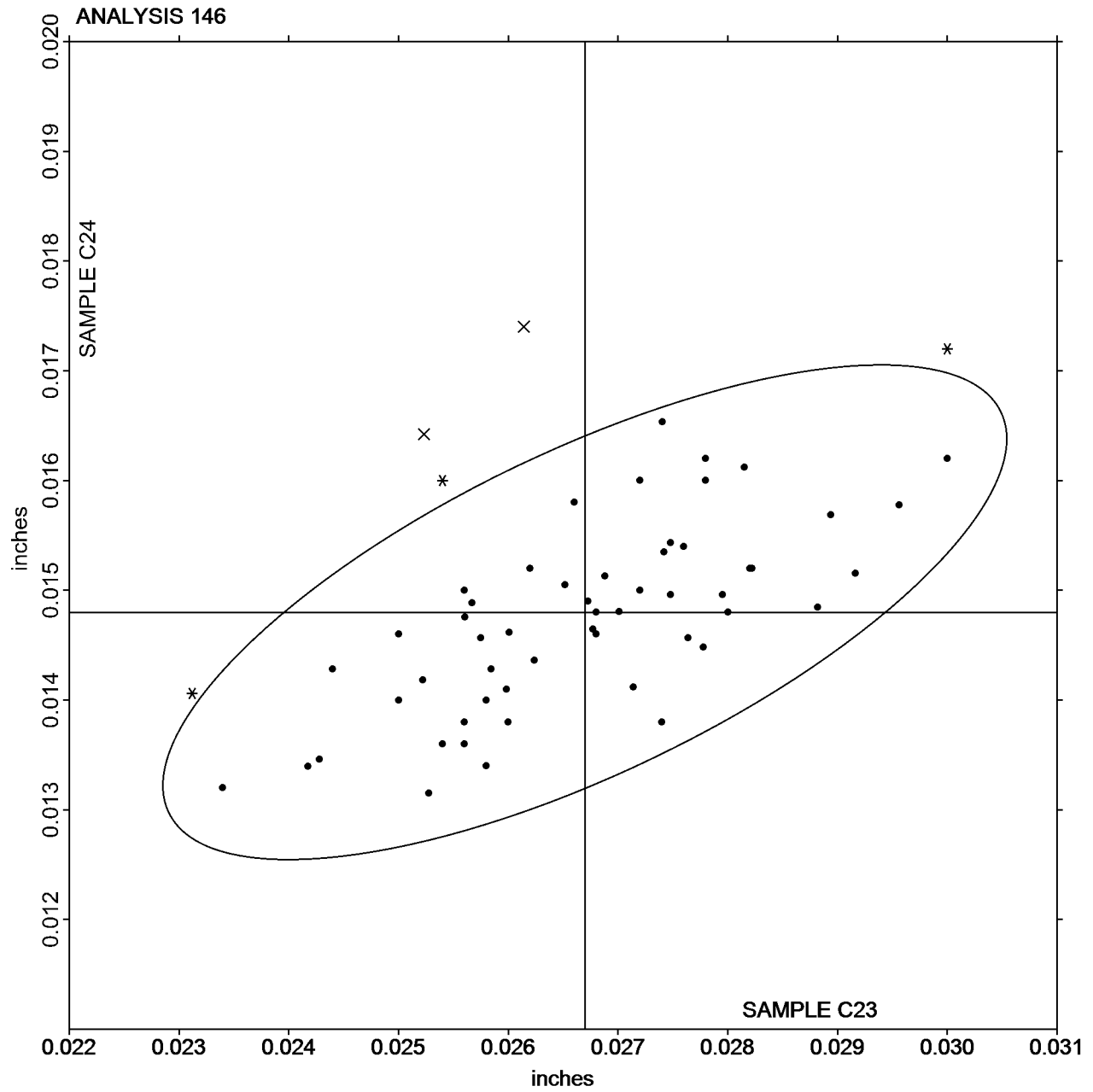
Interlaboratory Testing Program for Metals

Analysis 146

Effective Case Depth - inches
SAE J423, SAE J78

SAMPLE C23
0.0267 inches

SAMPLE C24
0.0148 inches



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 148

Grain Size (Inconel) - ASTM Grain Size Number (G)
ASTM E112, ASTM E1382

WebCode	Data Flag	Sample M1			Sample M2			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3GWUQ9		8.00	0.08	0.10	7.40	-0.18	-0.21	ZZ
3LVJDT		7.80	-0.12	-0.16	7.30	-0.28	-0.32	ZZ
4BUFL4		7.70	-0.22	-0.29	6.80	-0.78	-0.90	ZZ
6XF36H		8.24	0.32	0.42	7.24	-0.34	-0.39	ZZ
7X8NNZ		6.20	-1.72	-2.28	6.90	-0.68	-0.78	ZZ
9YKVBT		8.30	0.38	0.50	7.70	0.12	0.13	ZZ
BEMCAQ		7.68	-0.24	-0.32	8.82	1.23	1.42	ZZ
C4V8MH		7.00	-0.92	-1.22	7.00	-0.58	-0.67	ZZ
DDMTJ9		8.00	0.08	0.10	7.20	-0.38	-0.44	ZZ
DFTFWD		8.50	0.58	0.76	7.60	0.02	0.02	ZZ
EK8VAG		9.10	1.18	1.56	8.90	1.32	1.51	ZZ
FZRLE4		7.90	-0.02	-0.03	7.70	0.12	0.13	ZZ
KBDDRV		8.10	0.18	0.23	7.60	0.02	0.02	ZZ
TPFYFB		8.89	0.97	1.28	8.60	1.02	1.17	ZZ
TWWBHQ		8.34	0.42	0.55	8.70	1.12	1.28	ZZ
VHTTW9		8.00	0.08	0.10	7.00	-0.58	-0.67	ZZ
VVUGK4		6.80	-1.12	-1.49	7.00	-0.58	-0.67	ZZ
W4QP28		9.20	1.28	1.69	9.30	1.72	1.97	ZZ
WBFQQU		7.70	-0.22	-0.29	7.10	-0.48	-0.55	ZZ
XB6P4W		7.00	-0.92	-1.22	5.80	-1.78	-2.05	ZZ
XX28KA	M	No Data Reported			6.30	-1.28	-1.47	ZZ

Summary Statistics				
	Sample		Sample M2	
Grand Means	7.92	ASTM Grain Size N	7.58	ASTM Grain Size N
Stnd Dev Btwn Labs	0.76	ASTM Grain Size N	0.87	ASTM Grain Size N

Samples , M2 : Inconel

Statistics based on 20 of 21 reporting participants

Comments on assigned Data Flags for Analysis #148

WebCode Flag Analyst Comment

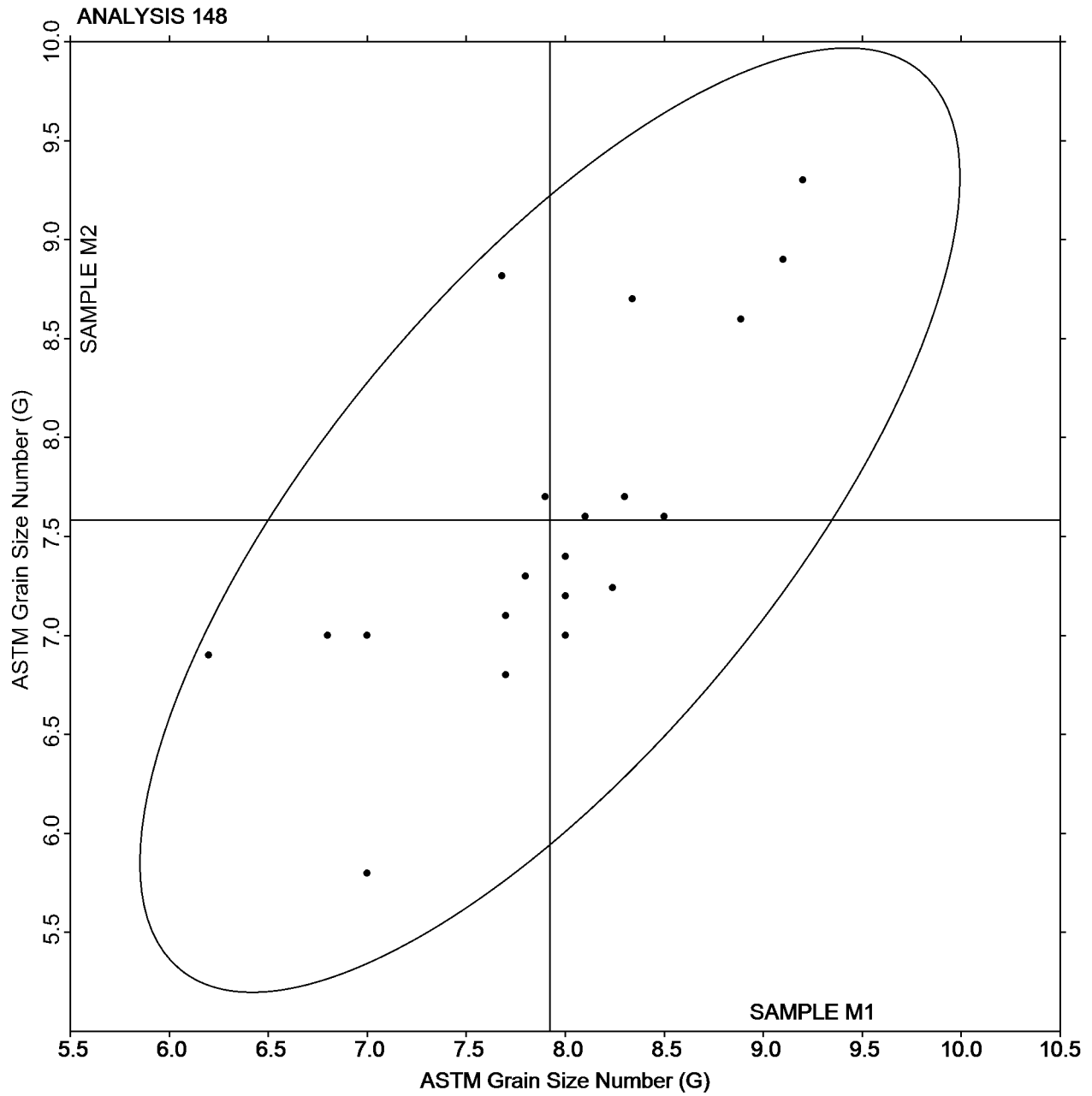
XX28KA M Laboratory did not submit data for sample M1.

Interlaboratory Testing Program for Metals
Analysis 148

Grain Size (Inconel) - ASTM Grain Size Number (G)
ASTM E112, ASTM E1382

SAMPLE
7.92 ASTM Grain Size Number (G)

SAMPLE M2
7.58 ASTM Grain Size Number (G)



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 160

Chemical Analysis Element #1: Copper-based Alloy - Percent
COPPER (Cu)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
44LL9P		60.87	0.15	0.36	60.63	-0.08	-0.18	OE
4F9TNC		60.77	0.05	0.12	60.90	0.18	0.40	OE
8D47DX		60.42	-0.29	-0.69	60.73	0.01	0.02	OE
9J7PZU		61.39	0.67	1.58	61.43	0.71	1.56	WD
9YKVB		60.82	0.11	0.26	61.01	0.30	0.65	IC
AHRYNA		60.63	-0.09	-0.21	60.77	0.05	0.12	OE
CRZ8LE		60.96	0.25	0.58	61.05	0.34	0.74	BD
FGCANX		60.20	-0.51	-1.21	60.43	-0.28	-0.62	OE
GJNTFD		60.81	0.09	0.22	60.83	0.12	0.26	EL
H2AHJ8		60.63	-0.08	-0.19	61.10	0.38	0.84	OE
H6BPY3		60.28	-0.43	-1.01	60.14	-0.58	-1.27	OE
JXRK6G		61.38	0.66	1.56	60.84	0.12	0.26	OE
P2B4QR		61.31	0.60	1.40	61.26	0.54	1.18	OE
PUN263		60.83	0.12	0.27	60.88	0.16	0.36	WD
Q9HPV3		59.88	-0.83	-1.96	59.87	-0.85	-1.85	OE
UDYCT3		60.14	-0.57	-1.34	60.25	-0.47	-1.03	OE
UT3JFD		60.47	-0.25	-0.58	60.43	-0.28	-0.62	XX
V2DCBT		60.78	0.06	0.15	60.72	0.01	0.02	OE
V4JWXT		60.77	0.06	0.13	60.82	0.10	0.23	WD
VRHE28		61.42	0.71	1.67	61.38	0.66	1.45	WD
WUHZDA		60.87	0.16	0.37	60.68	-0.03	-0.07	OE
X9CXMK	*	60.06	-0.66	-1.55	59.51	-1.21	-2.64	ED
ZYTE4J		60.74	0.03	0.07	60.80	0.08	0.18	GR

Summary Statistics

	Sample K21		Sample K22	
Grand Means	60.71	Percent	60.72	Percent
Stnd Dev Btwn Labs	0.42	Percent	0.46	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 23 of 23 reporting participants

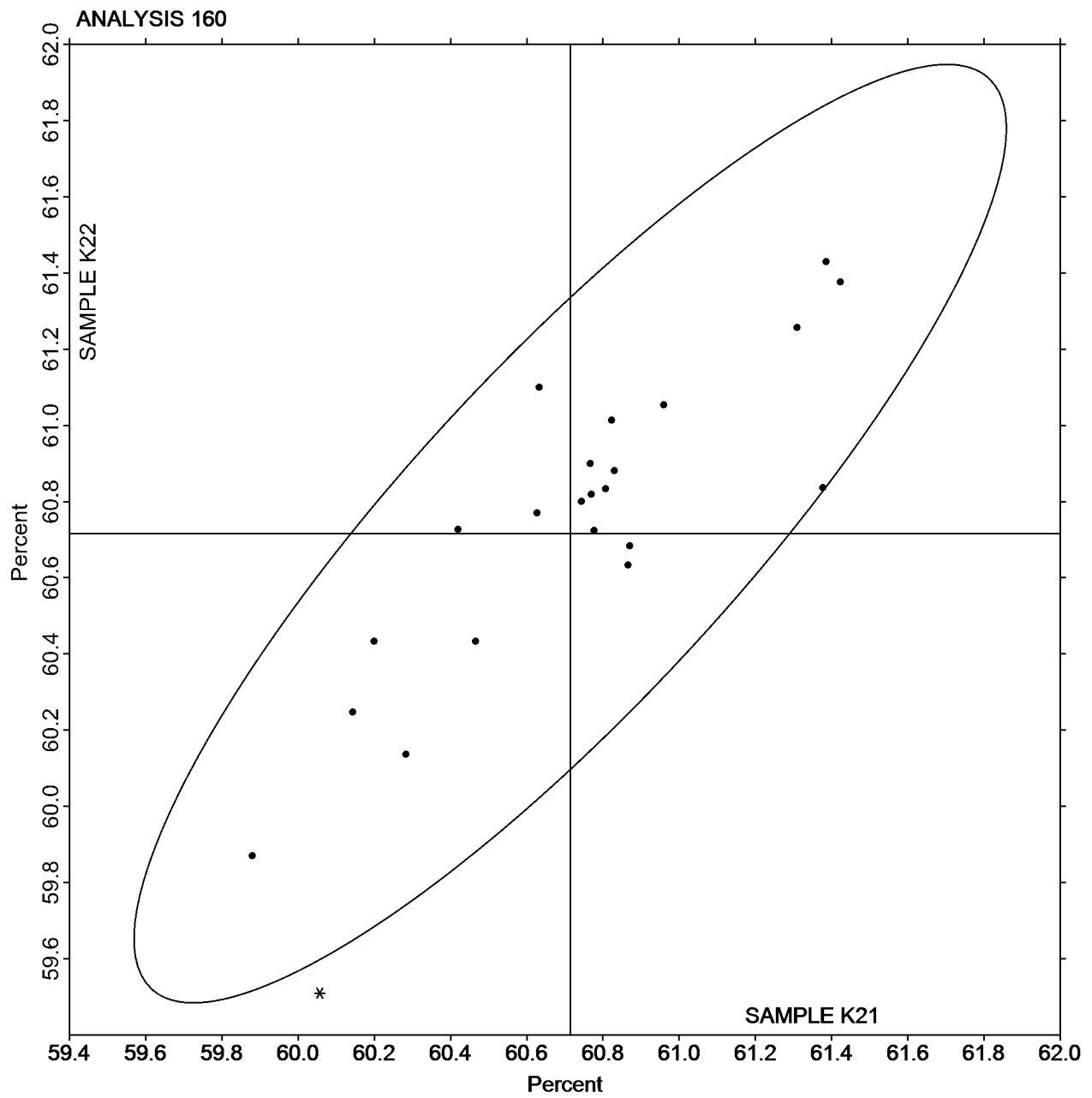
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 160

Chemical Analysis Element #1: Copper-based Alloy - Percent
COPPER (Cu)

SAMPLE K21
60.71 Percent

SAMPLE K22
60.72 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 161

Chemical Analysis Element #2: Copper-based Alloy - Percent
ANTIMONY (Sb)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
79E4WT		0.00100	-0.00443	-1.15	0.00100	-0.00571	-1.67	OE
8D47DX		0.00093	-0.00450	-1.17	0.00410	-0.00261	-0.76	OE
9YKVBT		0.00783	0.00240	0.63	0.00983	0.00313	0.91	OE
CRZ8LE		0.00563	0.00020	0.05	0.00530	-0.00141	-0.41	OE
FGCANX		0.0100	0.00457	1.19	0.0110	0.00429	1.25	OE
H6BPY3		0.00220	-0.00323	-0.84	0.00670	-0.00001	0.00	OE
JXRK6G		0.0100	0.00457	1.19	0.0100	0.00329	0.96	OE
PUN263		0.00453	-0.00090	-0.23	0.00603	-0.00067	-0.20	WD
PUTEQD		0.00047	-0.00496	-1.29	0.00187	-0.00484	-1.41	IC
Q9HPV3		0.00587	0.00044	0.11	0.00813	0.00143	0.42	OE
UDYCT3		0.0113	0.00584	1.52	0.0119	0.00523	1.53	OE
V2DCBT		0.00483	-0.00060	-0.16	0.00733	0.00063	0.18	XX
VRHE28		0.00367	-0.00176	-0.46	0.00557	-0.00114	-0.33	OE
WUHZDA		0.0112	0.00580	1.51	0.00960	0.00289	0.85	OE
ZYTE4J		0.00200	-0.00343	-0.89	0.00220	-0.00451	-1.32	IC

Summary Statistics

	<u>Sample K21</u>		<u>Sample K22</u>	
Grand Means	0.00543	Percent	0.00671	Percent
Std Dev Btwn Labs	0.00384	Percent	0.00342	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 15 of 15 reporting participants

Cycle 108
4th Q, 2014

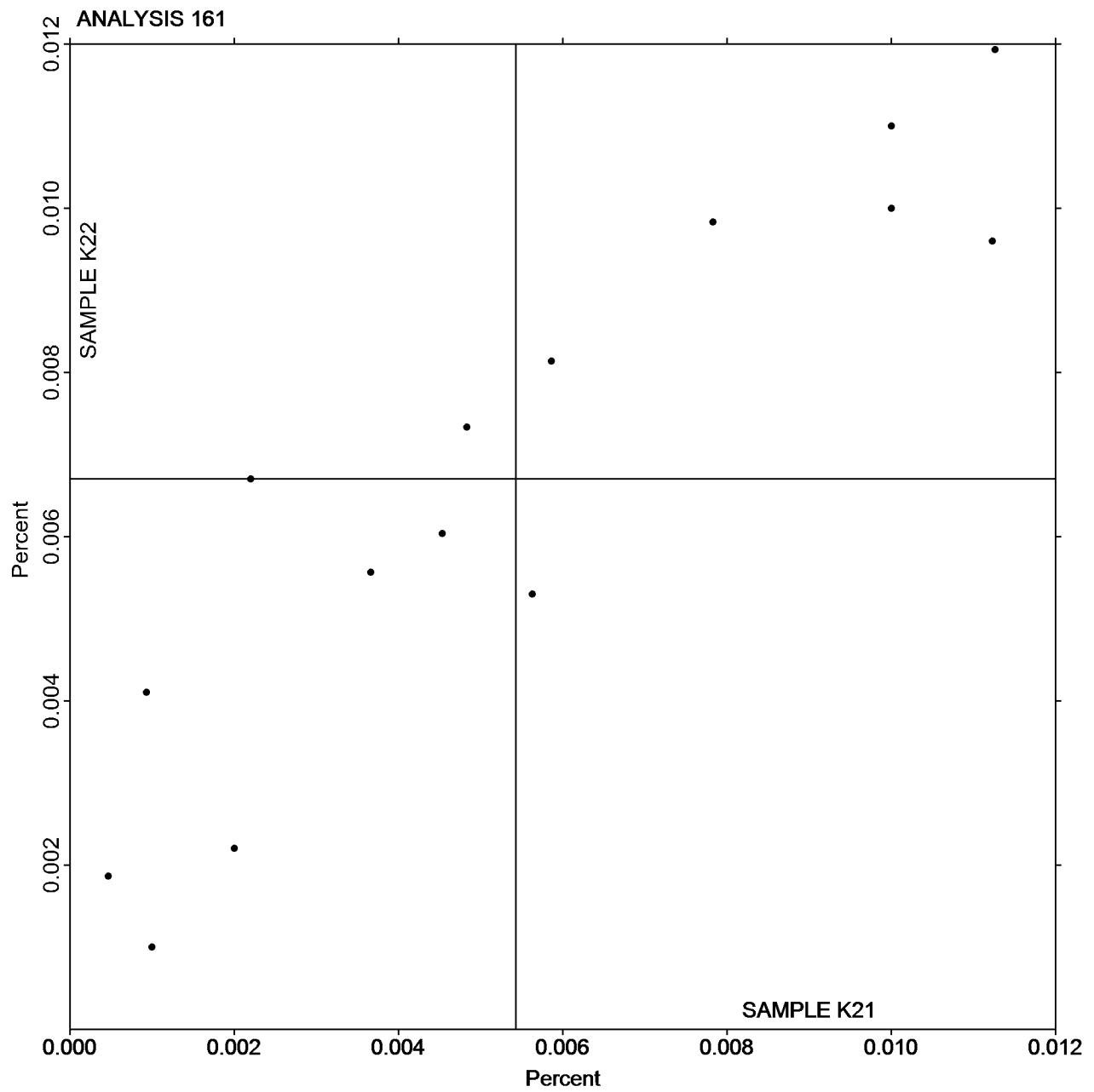
Interlaboratory Testing Program for Metals

Analysis 161

Chemical Analysis Element #2: Copper-based Alloy - Percent
ANTIMONY (Sb)

SAMPLE K21
0.00543 Percent

SAMPLE K22
0.00671 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 162

Chemical Analysis Element #3: Copper-based Alloy - Percent
IRON (Fe)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
44LL9P		0.0150	0.0014	0.35	0.0590	-0.0021	-0.28	OE
4F9TNC		0.0200	0.0064	1.60	0.0600	-0.0011	-0.14	OE
79E4WT	X	0.00500	-0.0086	-2.17	0.00500	-0.0561	-7.65	OE
8D47DX		0.0119	-0.0017	-0.43	0.0615	0.0004	0.06	OE
9J7PZU	*	0.0240	0.0104	2.61	0.0733	0.0123	1.68	WD
9YKVB		0.0123	-0.0013	-0.33	0.0600	-0.0011	-0.14	IC
AHRYNA		0.0135	-0.0001	-0.03	0.0586	-0.0025	-0.34	OE
CRZ8LE		0.0146	0.0010	0.25	0.0680	0.0069	0.95	OE
FGCANX		0.0113	-0.0023	-0.58	0.0590	-0.0021	-0.28	OE
GJNTFD		0.0151	0.0014	0.36	0.0672	0.0061	0.83	IC
H2AHJ8	M	No Data Reported			0.0542	-0.0069	-0.94	OE
H6BPY3		0.0136	0.0000	0.00	0.0620	0.0009	0.13	OE
JXRK6G	*	0.00500	-0.0086	-2.17	0.0433	-0.0177	-2.42	OE
P2B4QR		0.00853	-0.0051	-1.28	0.0533	-0.0077	-1.05	OE
PUN263		0.0153	0.0017	0.43	0.0600	-0.0011	-0.14	WD
PUTEQD		0.0196	0.0060	1.50	0.0536	-0.0075	-1.02	IC
Q9HPV3		0.0114	-0.0022	-0.56	0.0593	-0.0017	-0.23	OE
T6ERFJ		0.0143	0.0007	0.18	0.0627	0.0016	0.22	OE
UDYCT3		0.0123	-0.0013	-0.32	0.0538	-0.0072	-0.99	OE
URLPCH		0.0140	0.0004	0.09	0.0623	0.0013	0.17	IC
UT3JFD	X	0.0267	0.0130	3.28	0.0367	-0.0244	-3.33	XX
V2DCBT		0.0123	-0.0013	-0.32	0.0620	0.0009	0.13	XX
VRHE28		0.0116	-0.0020	-0.51	0.0614	0.0003	0.04	WD
WUHZDA	*	0.00963	-0.0040	-1.00	0.0806	0.0195	2.67	OE
ZYTE4J		0.0143	0.0006	0.16	0.0622	0.0012	0.16	IC

Summary Statistics

	Sample K21		Sample K22	
Grand Means	0.0136	Percent	0.0611	Percent
Std Dev Btwn Labs	0.0040	Percent	0.0073	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 22 of 25 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 162
Chemical Analysis Element #3: Copper-based Alloy - Percent
IRON (Fe)

Comments on assigned Data Flags for Analysis #162

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
79E4WT	X	Data for sample K22 are low.
H2AHJ8	M	Laboratory did not submit data for sample K21.
UT3JFD	X	Inconsistent within the determinations of both samples.

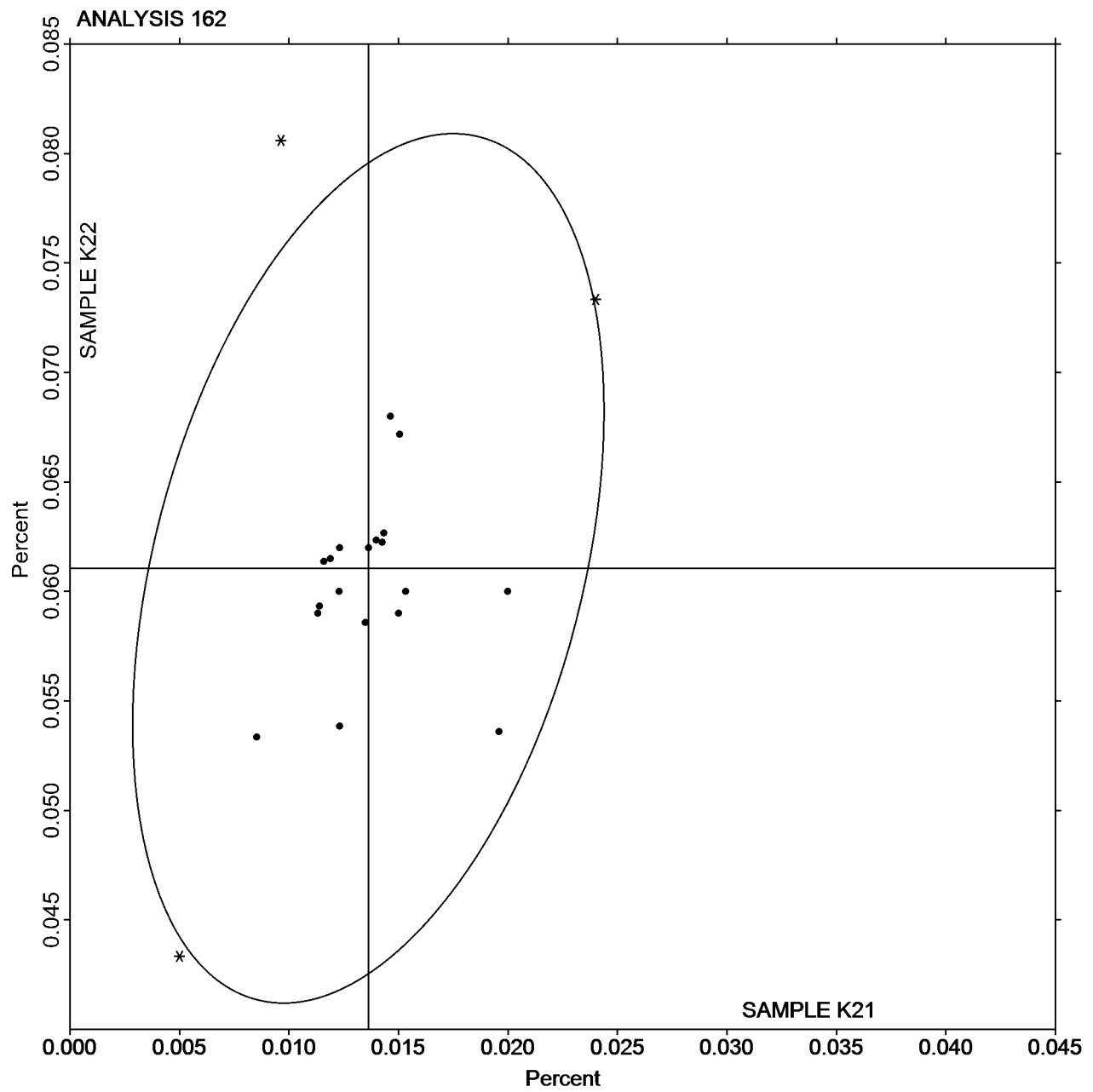
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 162

Chemical Analysis Element #3: Copper-based Alloy - Percent
IRON (Fe)

SAMPLE K21
0.0136 Percent

SAMPLE K22
0.0611 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 163

Chemical Analysis Element #4: Copper-based Alloy - Percent
PHOSPHORUS (P)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
4F9TNC		0.00100	-0.00065	-0.32	0.00100	-0.00071	-0.34	OE
79E4WT		0.00014	-0.00151	-0.74	0.00024	-0.00148	-0.71	OE
8D47DX		0.00010	-0.00155	-0.76	0.00017	-0.00155	-0.74	OE
9YKVB		0.00020	-0.00145	-0.71	0.00013	-0.00158	-0.76	IC
CRZ8LE		0.00240	0.00075	0.37	0.00247	0.00075	0.36	OE
FGCANX		0.00500	0.00335	1.64	0.00500	0.00329	1.58	OE
H6BPY3		0.00013	-0.00152	-0.74	0.00020	-0.00151	-0.73	OE
JXRK6G		0.00200	0.00035	0.17	0.00200	0.00029	0.14	OE
Q9HPV3		0.00037	-0.00129	-0.63	0.00043	-0.00128	-0.62	OE
T6ERFJ		0.00240	0.00075	0.37	0.00247	0.00075	0.36	OE
UDYCT3		0.00660	0.00495	2.42	0.00683	0.00512	2.46	OE
V2DCBT		0.00373	0.00208	1.02	0.00390	0.00219	1.05	XX
VRHE28		0.00040	-0.00125	-0.61	0.00053	-0.00118	-0.57	OE
WUHZDA		0.00004	-0.00161	-0.79	0.00012	-0.00160	-0.77	OE
ZYTE4J		0.00027	-0.00139	-0.68	0.00023	-0.00148	-0.71	IC

Summary Statistics

	<u>Sample K21</u>		<u>Sample K22</u>	
Grand Means	0.00165	Percent	0.00171	Percent
Std Dev Btwn Labs	0.00204	Percent	0.00208	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 15 of 15 reporting participants

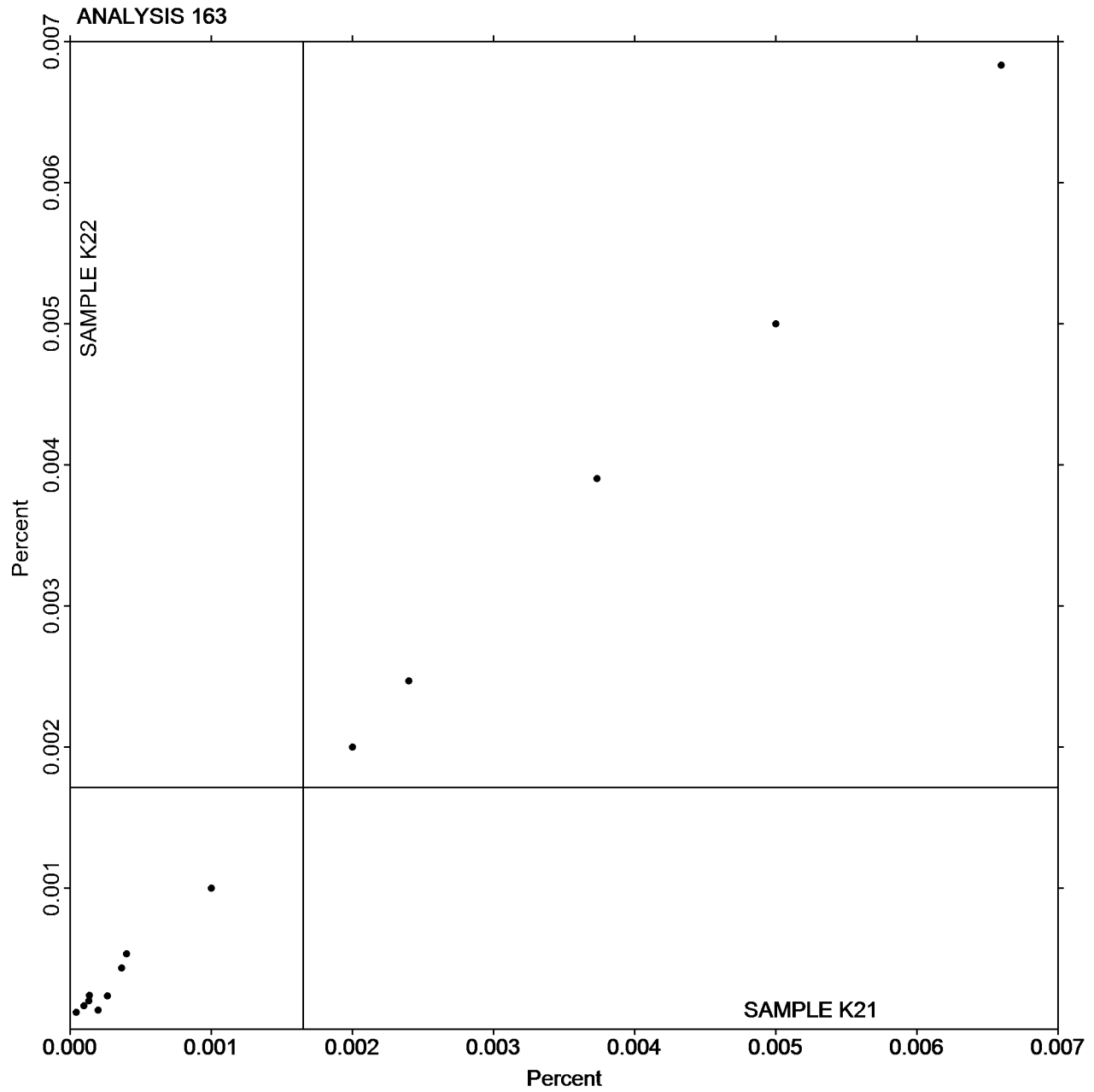
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 163

Chemical Analysis Element #4: Copper-based Alloy - Percent
PHOSPHORUS (P)

SAMPLE K21
0.00165 Percent

SAMPLE K22
0.00171 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 164

Chemical Analysis Element #5: Copper-based Alloy - Percent
ZINC (Zn)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
44LL9P		36.97	0.21	0.51	37.07	0.44	1.02	OE
4F9TNC		36.97	0.21	0.50	36.73	0.11	0.25	OE
79E4WT	X	0.00200	-36.76	-87.34	0.00200	-36.62	-83.85	OE
8D47DX		37.11	0.36	0.85	36.73	0.11	0.25	OE
8KNC3H		37.44	0.68	1.62	37.62	1.00	2.28	IC
9J7PZU		36.34	-0.42	-0.99	36.21	-0.42	-0.95	WD
9YKVB		36.52	-0.24	-0.57	36.32	-0.31	-0.70	IC
AHRYNA		36.84	0.09	0.20	36.56	-0.07	-0.16	OE
CRZ8LE		36.38	-0.38	-0.90	36.25	-0.38	-0.87	OE
FGCANX		37.27	0.51	1.21	36.90	0.27	0.63	OE
GJNTFD		37.29	0.54	1.27	37.18	0.55	1.27	IC
H2AHJ8		36.87	0.11	0.26	36.31	-0.32	-0.73	OE
H6BPY3		36.83	0.07	0.17	36.82	0.19	0.45	OE
JXRK6G		36.49	-0.26	-0.63	36.90	0.27	0.62	OE
P2B4QR	*	35.59	-1.17	-2.77	35.62	-1.00	-2.29	OE
PUN263		36.64	-0.12	-0.28	36.33	-0.29	-0.67	WD
PUTEQD	X	43.23	6.47	15.38	43.13	6.50	14.89	IC
Q9HPV3		37.55	0.79	1.88	37.35	0.73	1.67	OE
T6ERFJ		36.52	-0.23	-0.56	36.42	-0.21	-0.47	OE
UDYCT3		37.19	0.43	1.02	37.01	0.39	0.89	OE
URLPCH		36.52	-0.24	-0.56	36.47	-0.16	-0.36	IC
UT3JFD		36.93	0.18	0.42	37.07	0.44	1.01	XX
V2DCBT		36.65	-0.11	-0.26	36.52	-0.11	-0.25	XX
V4JWXT		36.79	0.03	0.08	36.44	-0.19	-0.42	WD
VRHE28		36.29	-0.47	-1.11	36.04	-0.58	-1.34	WD
WUHZDA		36.40	-0.36	-0.86	36.45	-0.17	-0.39	OE
X9CXMK		36.56	-0.19	-0.46	36.31	-0.31	-0.71	ED
ZYTE4J		36.74	-0.01	-0.03	36.62	-0.01	-0.02	IC

Summary Statistics

	Sample K21		Sample K22	
Grand Means	36.76	Percent	36.63	Percent
Stnd Dev Btwn Labs	0.42	Percent	0.44	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 26 of 28 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 164

Chemical Analysis Element #5: Copper-based Alloy - Percent
ZINC (Zn)

Comments on assigned Data Flags for Analysis #164

WebCode Flag Analyst Comment

79E4WT X Data for both samples are low. Possible Systematic error.

PUTEQD X Data for both samples are high. Possible Systematic error.

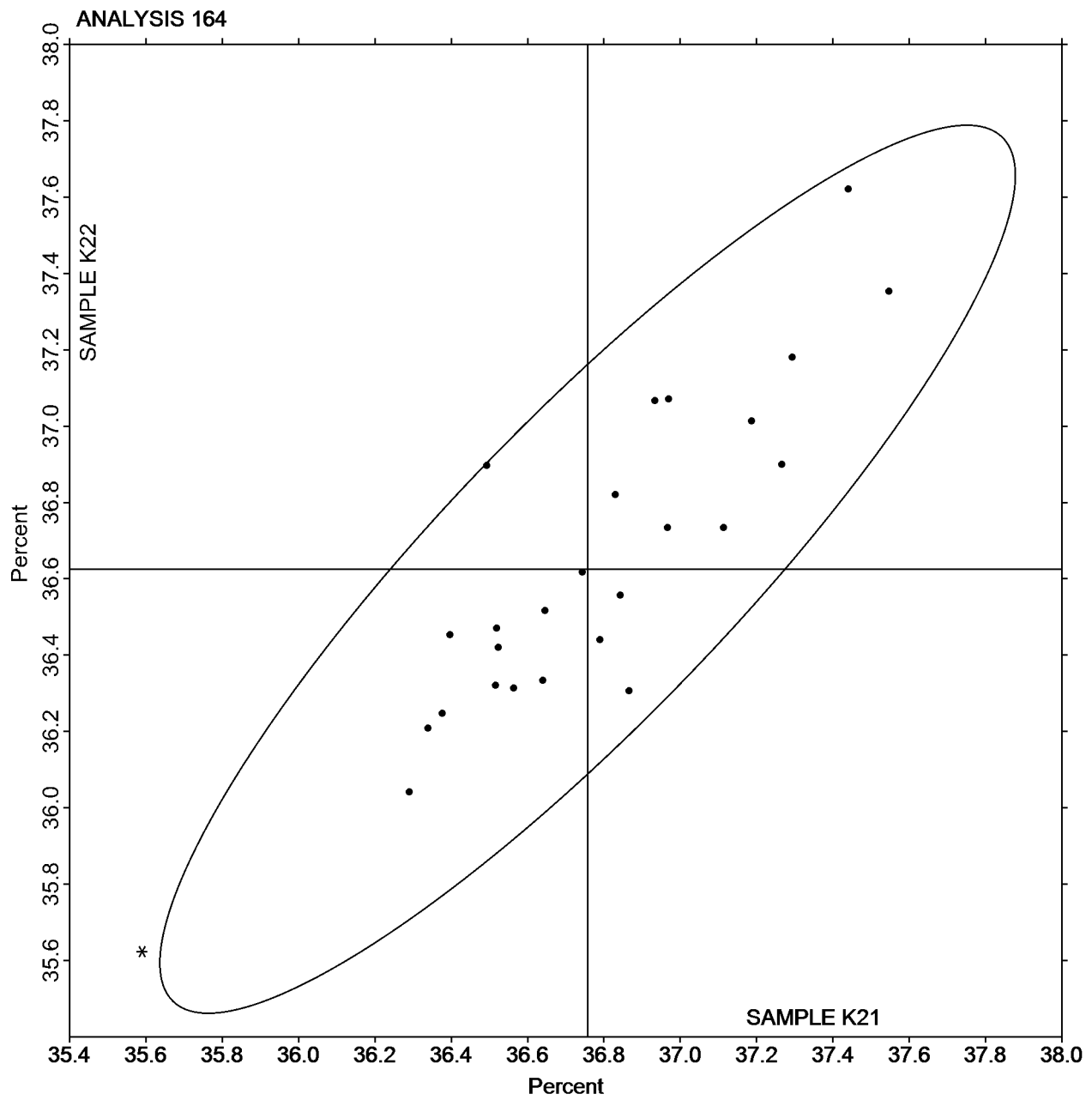
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 164

Chemical Analysis Element #5: Copper-based Alloy - Percent
ZINC (Zn)

SAMPLE K21
36.76 Percent

SAMPLE K22
36.63 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 165

Chemical Analysis Element #6: Copper-based Alloy - Percent
TIN (Sn)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
44LL9P		0.7073	-0.0209	-0.30	0.7297	-0.0191	-0.28	OE
4F9TNC		0.7267	-0.0016	-0.02	0.7367	-0.0121	-0.18	OE
79E4WT	X	0.00500	-0.7233	-10.26	0.00500	-0.7437	-10.81	OE
8D47DX		0.6400	-0.0883	-1.25	0.6667	-0.0821	-1.19	OE
8KNC3H		0.7315	0.0033	0.05	0.7626	0.0138	0.20	IC
9J7PZU		0.8627	0.1344	1.91	0.8737	0.1249	1.82	WD
9YKVB		0.7207	-0.0076	-0.11	0.7423	-0.0064	-0.09	IC
AHRYNA		0.7093	-0.0189	-0.27	0.7470	-0.0017	-0.03	OE
CRZ8LE		0.7283	0.0001	0.00	0.7410	-0.0077	-0.11	OE
FGCANX		0.7133	-0.0149	-0.21	0.7433	-0.0054	-0.08	OE
GJNTFD		0.7113	-0.0169	-0.24	0.7270	-0.0217	-0.32	IC
H2AHJ8		0.7077	-0.0206	-0.29	0.7230	-0.0257	-0.37	OE
H6BPY3	*	0.7647	0.0364	0.52	0.8110	0.0623	0.90	OE
JXRK6G		0.5647	-0.1636	-2.32	0.5837	-0.1651	-2.40	OE
PUN263		0.7223	-0.0059	-0.08	0.7477	-0.0011	-0.02	WD
PUTEQD		0.7047	-0.0236	-0.33	0.7294	-0.0193	-0.28	IC
Q9HPV3		0.7087	-0.0196	-0.28	0.7267	-0.0221	-0.32	OE
T6ERFJ		0.7203	-0.0079	-0.11	0.7337	-0.0151	-0.22	OE
UDYCT3		0.6560	-0.0723	-1.02	0.6747	-0.0741	-1.08	OE
URLPCH		0.7167	-0.0116	-0.16	0.7360	-0.0127	-0.19	IC
UT3JFD	*	0.9333	0.2051	2.91	0.9400	0.1913	2.78	XX
V2DCBT		0.7443	0.0161	0.23	0.7730	0.0243	0.35	XX
V4JWXT		0.7307	0.0024	0.03	0.7290	-0.0197	-0.29	WD
VRHE28		0.6926	-0.0357	-0.51	0.7230	-0.0258	-0.37	WD
WUHZDA		0.8580	0.1297	1.84	0.8781	0.1293	1.88	OE
X9CXMK		0.6997	-0.0286	-0.41	0.7193	-0.0294	-0.43	ED
ZYTE4J		0.7591	0.0308	0.44	0.7692	0.0205	0.30	IC

Summary Statistics

	Sample K21		Sample K22	
Grand Means	0.7283	Percent	0.7487	Percent
Std Dev Btw Labs	0.0705	Percent	0.0688	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 26 of 27 reporting participants

Comments on assigned Data Flags for Analysis #165

WebCode Flag Analyst Comment

79E4WT X Data for both samples are low. Possible Systematic error.

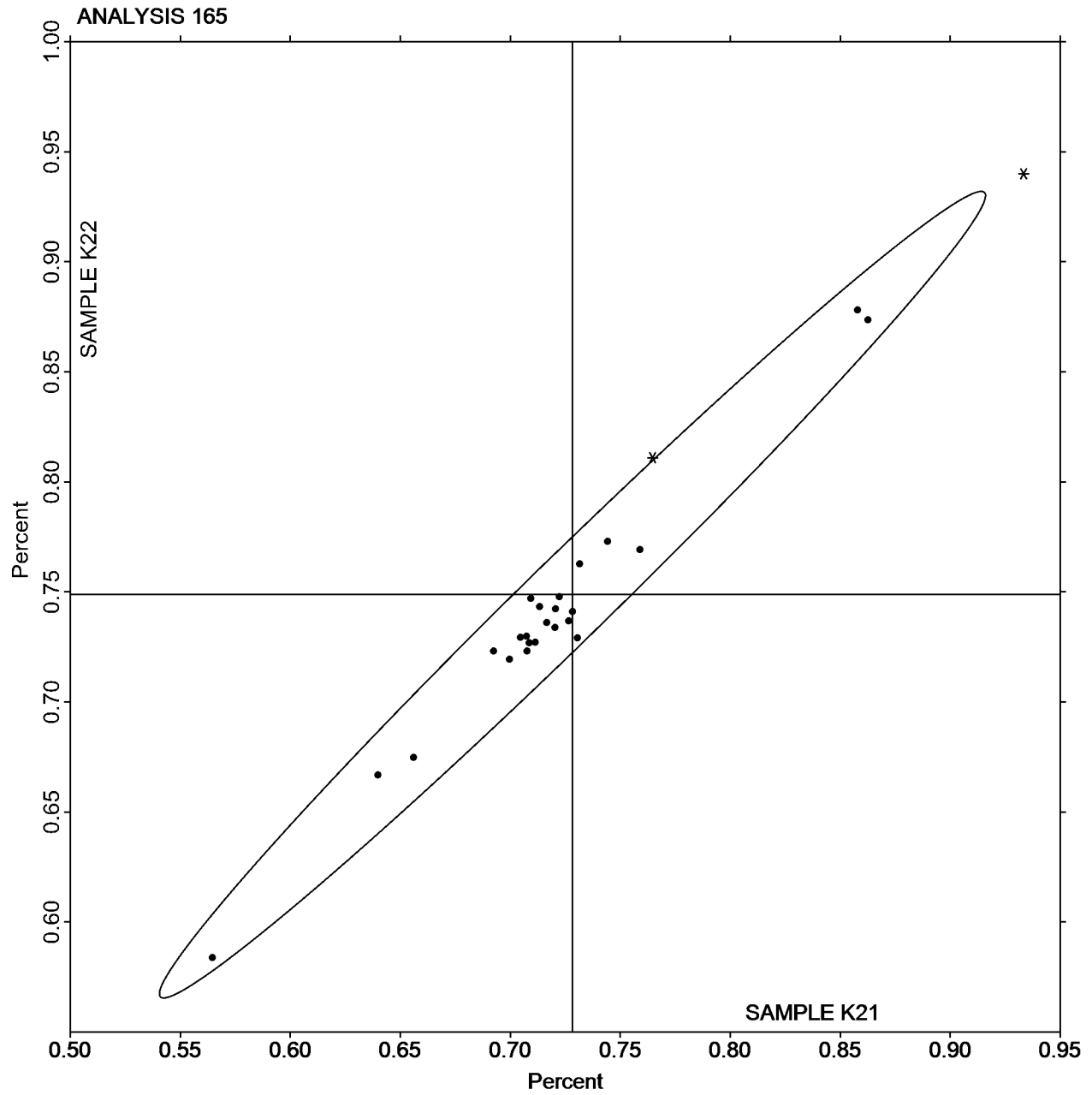
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 165

Chemical Analysis Element #6: Copper-based Alloy - Percent
TIN (Sn)

SAMPLE K21
0.7283 Percent

SAMPLE K22
0.7487 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 166

Chemical Analysis Element #7: Copper-based Alloy - Percent
LEAD (Pb)

WebCode	Data Flag	Sample K21			Sample K22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
44LL9P		1.613	-0.101	-0.71	1.663	-0.087	-0.54	OE
4F9TNC		1.477	-0.238	-1.68	1.440	-0.310	-1.92	OE
79E4WT	X	0.00400	-1.710	-12.07	0.00400	-1.746	-10.78	OE
8D47DX		1.802	0.088	0.62	1.731	-0.020	-0.12	OE
8KNC3H		1.692	-0.022	-0.16	1.728	-0.022	-0.14	IC
9J7PZU		1.396	-0.318	-2.25	1.415	-0.335	-2.07	WD
9YKVB		1.655	-0.060	-0.42	1.688	-0.062	-0.38	IC
AHRYNA		1.750	0.036	0.25	1.750	0.000	0.00	OE
CRZ8LE		1.830	0.116	0.82	1.734	-0.016	-0.10	OE
FGCANX		1.727	0.012	0.09	1.743	-0.007	-0.04	OE
GJNTFD		1.800	0.086	0.61	1.803	0.053	0.33	IC
H2AHJ8		1.787	0.073	0.51	1.717	-0.034	-0.21	OE
H6BPY3	*	2.103	0.389	2.74	2.148	0.397	2.45	OE
JXRK6G		1.495	-0.219	-1.55	1.522	-0.228	-1.41	OE
PUN263		1.685	-0.029	-0.21	1.835	0.085	0.52	WD
PUTEQD		1.752	0.038	0.26	1.701	-0.050	-0.31	IC
Q9HPV3		1.846	0.132	0.93	1.914	0.163	1.01	OE
T6ERFJ		1.704	-0.010	-0.07	1.648	-0.102	-0.63	OE
UDYCT3		1.872	0.157	1.11	1.853	0.102	0.63	OE
URLPCH		1.677	-0.038	-0.26	1.675	-0.075	-0.46	IC
UT3JFD		1.667	-0.048	-0.34	1.690	-0.060	-0.37	XX
V2DCBT		1.777	0.062	0.44	1.803	0.053	0.33	OE
V4JWXT		1.732	0.017	0.12	2.000	0.249	1.54	WD
VRHE28		1.534	-0.180	-1.27	1.738	-0.013	-0.08	WD
WUHZDA		1.801	0.087	0.61	1.778	0.027	0.17	OE
X9CXMK	*	1.661	-0.053	-0.38	2.047	0.297	1.83	ED
ZYTE4J		1.735	0.021	0.15	1.743	-0.007	-0.04	IC

Summary Statistics

	Sample K21		Sample K22	
Grand Means	1.714	Percent	1.750	Percent
Std Dev Btwn Labs	0.142	Percent	0.162	Percent

Samples K21 , K22 : CDA 485, two different heats

Statistics based on 26 of 27 reporting participants

Comments on assigned Data Flags for Analysis #166

WebCode Flag Analyst Comment

79E4WT X Data for both samples are low.

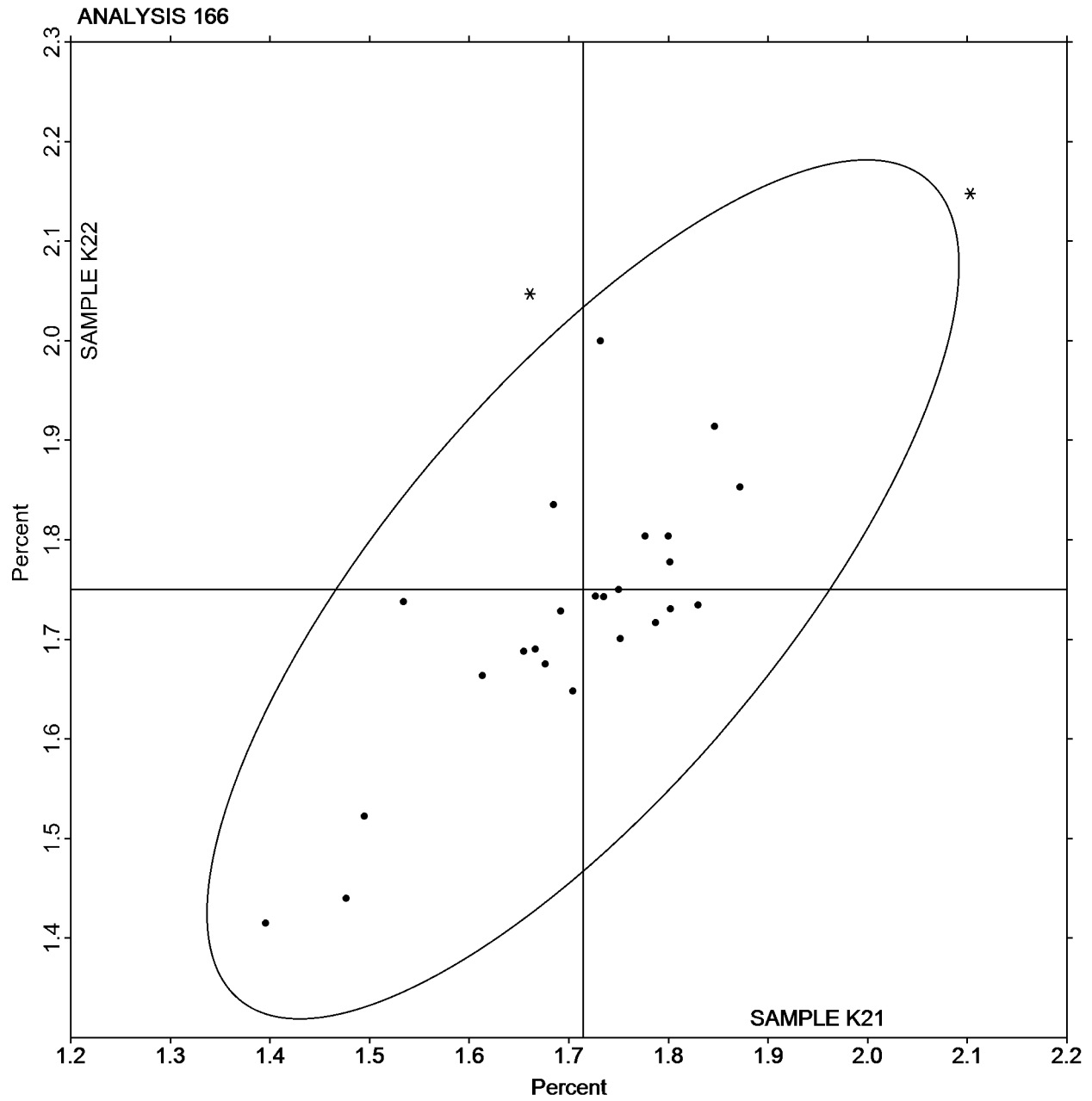
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 166

Chemical Analysis Element #7: Copper-based Alloy - Percent
LEAD (Pb)

SAMPLE K21
1.714 Percent

SAMPLE K22
1.750 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 180

Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent
CARBON (C)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.0428	0.0018	0.92	0.0434	0.0010	0.49	OE
2WD8TF		0.0412	0.0002	0.09	0.0425	0.0001	0.06	CI
2XDLHF		0.0420	0.0010	0.51	0.0440	0.0016	0.81	OE
3DA7NV		0.0407	-0.0003	-0.16	0.0420	-0.0004	-0.21	OE
3GWUQ9		0.0417	0.0007	0.34	0.0430	0.0006	0.30	OE
4474MW		0.0450	0.0040	2.01	0.0463	0.0039	2.01	OE
44LL9P		0.0418	0.0008	0.42	0.0442	0.0018	0.90	CO
4F9TNC		0.0410	0.0000	0.00	0.0423	-0.0001	-0.04	OE
6BNUMW	*	0.0410	0.0000	0.00	0.0400	-0.0024	-1.24	XX
6D9Q6V	X	0.0220	-0.0190	-9.55	0.0267	-0.0157	-8.07	OE
76ME4Y		0.0437	0.0027	1.36	0.0429	0.0005	0.25	OE
7KQ4TR		0.0373	-0.0037	-1.84	0.0393	-0.0031	-1.58	CO
8D47DX		0.0382	-0.0028	-1.42	0.0401	-0.0023	-1.19	OE
8KNC3H		0.0386	-0.0024	-1.22	0.0401	-0.0023	-1.17	OE
9GDRG2		0.0418	0.0008	0.39	0.0440	0.0016	0.83	OE
9RE7MT	X	0.0293	-0.0117	-5.86	0.0317	-0.0107	-5.51	XX
9YKVBT		0.0394	-0.0016	-0.80	0.0423	-0.0001	-0.06	CI
AHRYNA		0.0405	-0.0005	-0.25	0.0415	-0.0009	-0.45	OE
ANZKDR		0.0411	0.0001	0.04	0.0421	-0.0003	-0.16	CI
BLQRYJ		0.0387	-0.0023	-1.17	0.0407	-0.0017	-0.90	OE
C44RPY		0.0427	0.0017	0.84	0.0450	0.0026	1.32	CO
CRZ8LE		0.0406	-0.0004	-0.20	0.0432	0.0008	0.38	OE
DBDYCM		0.0405	-0.0005	-0.27	0.0414	-0.0010	-0.50	OE
DC9K3T		0.0430	0.0020	1.01	0.0431	0.0007	0.37	CI
DEFYM7		0.0437	0.0027	1.34	0.0457	0.0033	1.67	OE
DLZDFD		0.0437	0.0027	1.34	0.0443	0.0019	0.98	GD
DTAMFR		0.0411	0.0001	0.05	0.0424	-0.0001	-0.03	OE
E3K29K		0.0387	-0.0023	-1.17	0.0407	-0.0017	-0.90	XX
EZXU94	X	0.0562	0.0152	7.66	0.0442	0.0018	0.90	OE
FGCANX		0.0410	0.0000	0.00	0.0437	0.0013	0.64	OE
GJNTFD		0.0421	0.0011	0.57	0.0450	0.0026	1.32	GD
GLJ4YL		0.0381	-0.0029	-1.45	0.0398	-0.0026	-1.36	OE
H2AHJ8		0.0411	0.0001	0.04	0.0381	-0.0043	-2.21	OE
H6BPY3	X	0.0296	-0.0114	-5.71	0.0229	-0.0195	-10.02	OE
HBHUCW		0.0382	-0.0028	-1.40	0.0403	-0.0021	-1.10	CI
HH9UXA		0.0403	-0.0007	-0.33	0.0427	0.0003	0.13	CI
HHN8AZ		0.0457	0.0047	2.35	0.0463	0.0039	2.01	OE
JN89T6	X	0.0523	0.0113	5.70	0.0507	0.0083	4.23	OE
JXRK6G		0.0393	-0.0017	-0.83	0.0397	-0.0027	-1.41	OE
KM9B92		0.0448	0.0038	1.90	0.0461	0.0037	1.87	CO
L3ZJED		0.0440	0.0030	1.51	0.0453	0.0029	1.50	OE
LRQBHK		0.0407	-0.0003	-0.15	0.0425	0.0001	0.03	OE
M9YTVQ	X	0.0340	-0.0070	-3.52	0.0360	-0.0064	-3.29	OE
MRPVKD		0.0378	-0.0032	-1.61	0.0406	-0.0018	-0.91	CI
MTKGCJ		0.0409	-0.0001	-0.05	0.0429	0.0005	0.25	OE
NA4M8F		0.0445	0.0035	1.76	0.0465	0.0041	2.09	OE
NGXUEA		0.0400	-0.0010	-0.50	0.0413	-0.0011	-0.55	CI
P2B4QR		0.0411	0.0001	0.07	0.0433	0.0009	0.45	OE
PLCUCE		0.0413	0.0003	0.14	0.0437	0.0013	0.64	OE

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 180

Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent
CARBON (C)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
PUN263		0.0413	0.0003	0.15	0.0426	0.0002	0.09	CI
PZ2WPK		0.0393	-0.0017	-0.87	0.0416	-0.0008	-0.42	CI
Q4VW2F		0.0406	-0.0004	-0.20	0.0421	-0.0003	-0.16	OE
Q9HPV3		0.0411	0.0001	0.07	0.0424	0.0000	-0.03	OE
R4VPJQ		0.0414	0.0004	0.20	0.0426	0.0002	0.09	OE
R6KLJY		0.0444	0.0034	1.69	0.0451	0.0027	1.38	CI
RNG3UN	X	0.0419	0.0009	0.44	0.0488	0.0064	3.29	CI
T6ERFJ		0.0426	0.0016	0.81	0.0425	0.0001	0.03	OE
T8JCB7		0.0408	-0.0002	-0.10	0.0422	-0.0002	-0.11	OE
T9EW3C		0.0430	0.0020	1.01	0.0436	0.0012	0.61	CI
TWWBHQ	X	0.0500	0.0090	4.53	0.0507	0.0083	4.23	CI
TXTQ79	X	0.0512	0.0102	5.15	0.0520	0.0096	4.90	OE
TYNBWE		0.0409	-0.0001	-0.05	0.0437	0.0013	0.68	OE
U3AA6V	*	0.0374	-0.0036	-1.81	0.0374	-0.0050	-2.59	OE
U772WE		0.0409	-0.0001	-0.05	0.0415	-0.0009	-0.47	OE
UDYCT3		0.0410	0.0000	0.00	0.0432	0.0008	0.40	OE
URLPCH	*	0.0431	0.0021	1.07	0.0415	-0.0009	-0.49	CO
UZGTGE		0.0400	-0.0010	-0.50	0.0403	-0.0021	-1.07	CI
V2DCBT		0.0410	0.0000	0.00	0.0423	-0.0001	-0.04	XX
V2DCCE		0.0413	0.0003	0.17	0.0445	0.0021	1.05	OE
V4JWXT		0.0380	-0.0030	-1.50	0.0410	-0.0014	-0.73	CO
VCDAA8		0.0417	0.0007	0.34	0.0420	-0.0004	-0.21	OE
VFUBWL		0.0437	0.0027	1.38	0.0439	0.0015	0.76	CI
W4QP28		0.0387	-0.0023	-1.17	0.0400	-0.0024	-1.24	OE
W7NJDJ		0.0407	-0.0003	-0.16	0.0417	-0.0007	-0.38	CI
WAYVT7	*	0.0360	-0.0050	-2.51	0.0367	-0.0057	-2.95	OE
WBFQQU		0.0396	-0.0014	-0.68	0.0428	0.0004	0.21	CO
X7CMXC		0.0389	-0.0021	-1.04	0.0401	-0.0023	-1.20	OE
XL2T76	X	0.0652	0.0242	12.15	0.0648	0.0224	11.49	XX
XPUZ6F	X	0.0463	0.0053	2.68	0.0433	0.0009	0.47	OE
XY3GUZ		0.0390	-0.0020	-1.00	0.0410	-0.0014	-0.73	CI
XZN3RB		0.0427	0.0017	0.86	0.0434	0.0010	0.49	OE
Z6FVAW		0.0400	-0.0010	-0.50	0.0400	-0.0024	-1.24	OE
ZMKRYR		0.0391	-0.0019	-0.97	0.0420	-0.0004	-0.21	CO
ZMZVPD		0.0418	0.0008	0.42	0.0429	0.0005	0.23	CI
ZPQCMR		0.0422	0.0012	0.62	0.0439	0.0015	0.74	OE
ZYTE4J		0.0413	0.0003	0.17	0.0423	-0.0001	-0.04	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.0410	Percent	0.0424	Percent
Std Dev Btwn Labs	0.0020	Percent	0.0020	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 74 of 86 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 180
Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent
CARBON (C)

Comments on assigned Data Flags for Analysis #180

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
6D9Q6V	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of sample M22.
9RE7MT	X	Data for both samples are low. Possible Systematic error.
EZXU94	X	Data for sample M21 are high. Inconsistent in testing between samples.
H6BPY3	X	Data for both samples are low. Possible Systematic error.
JN89T6	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of both samples.
M9YTVQ	X	Data for both samples are low. Possible Systematic error.
RNG3UN	X	Data for sample M22 are high. Inconsistent in testing between samples. Inconsistent within the determinations of sample M22.
TWWBHQ	X	Data for both samples are high. Possible Systematic error.
TXTQ79	X	Data for both samples are high. Possible Systematic error.
XL2T76	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of both samples.
XPUZ6F	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample M21.

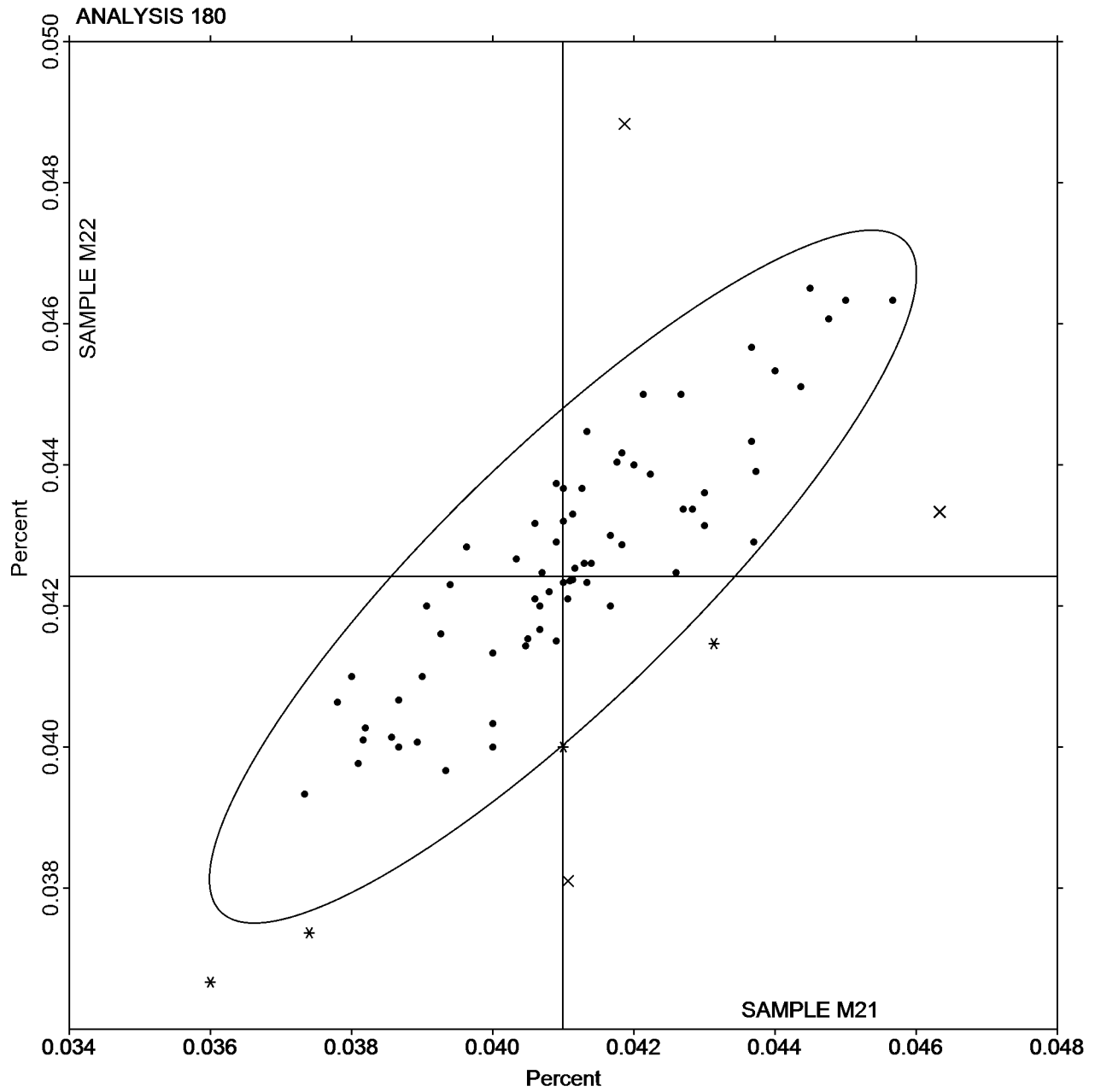
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 180

Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent
CARBON (C)

SAMPLE M21
0.0410 Percent

SAMPLE M22
0.0424 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 181

Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent
MANGANESE (Mn)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		1.474	0.004	0.24	1.392	-0.001	-0.05	OE
2WD8TF		1.473	0.003	0.18	1.398	0.005	0.25	WD
2XDLHF		1.499	0.029	1.66	1.418	0.025	1.33	OE
3DA7NV		1.443	-0.026	-1.50	1.367	-0.026	-1.38	WD
3GWUQ9		1.471	0.001	0.07	1.390	-0.003	-0.14	OE
4474MW		1.457	-0.013	-0.75	1.383	-0.010	-0.52	OE
44LL9P	*	1.443	-0.026	-1.50	1.350	-0.043	-2.31	OE
4F9TNC		1.457	-0.013	-0.75	1.383	-0.010	-0.52	OE
6BNUMW		1.450	-0.019	-1.10	1.375	-0.018	-0.95	XX
6D9Q6V		1.463	-0.006	-0.37	1.393	0.000	0.02	OE
76ME4Y		1.480	0.010	0.58	1.386	-0.007	-0.38	OE
7KQ4TR		1.480	0.010	0.58	1.400	0.007	0.38	XR
8D47DX		1.506	0.036	2.05	1.438	0.045	2.44	OE
8KNC3H		1.464	-0.006	-0.36	1.390	-0.003	-0.15	OE
8R6BNQ		1.500	0.030	1.71	1.390	-0.003	-0.16	ED
9GDRG2		1.457	-0.013	-0.75	1.377	-0.016	-0.88	OE
9RE7MT	X	1.529	0.059	3.36	1.440	0.047	2.55	XX
9YKVB		1.454	-0.016	-0.90	1.388	-0.005	-0.29	IC
AHRYNA		1.463	-0.006	-0.37	1.380	-0.013	-0.70	OE
ANZKDR		1.476	0.006	0.35	1.402	0.009	0.47	WD
BLQRYJ		1.497	0.027	1.52	1.427	0.034	1.81	OE
C44RPY		1.474	0.004	0.22	1.399	0.006	0.30	OE
C96PJQ		1.480	0.010	0.58	1.407	0.014	0.73	ED
CRZ8LE		1.488	0.019	1.05	1.407	0.014	0.73	OE
DBDYCM		1.464	-0.006	-0.35	1.388	-0.005	-0.27	OE
DC9K3T		1.477	0.007	0.39	1.400	0.007	0.38	OE
DEFYM7		1.467	-0.003	-0.18	1.390	-0.003	-0.16	WD
DLZDFD		1.455	-0.015	-0.84	1.378	-0.015	-0.83	GD
DTAMFR		1.486	0.016	0.94	1.413	0.020	1.07	OE
E3K29K		1.457	-0.013	-0.75	1.387	-0.006	-0.34	XX
EZXU94		1.469	-0.001	-0.06	1.403	0.010	0.52	OE
FGCANX		1.457	-0.013	-0.75	1.383	-0.010	-0.52	OE
GJNTFD		1.447	-0.023	-1.31	1.370	-0.023	-1.24	GD
GLJ4YL		1.481	0.011	0.64	1.410	0.017	0.90	OE
H2AHJ8		1.436	-0.033	-1.90	1.350	-0.043	-2.31	OE
H6BPY3		1.468	-0.001	-0.08	1.395	0.002	0.09	OE
HBHUCW		1.449	-0.021	-1.20	1.374	-0.019	-1.04	WD
HH9UXA		1.503	0.034	1.90	1.417	0.024	1.27	DR
HHN8AZ		1.465	-0.005	-0.27	1.389	-0.004	-0.20	OE
JN89T6		1.437	-0.033	-1.88	1.363	-0.030	-1.60	OE
JXRK6G	*	1.482	0.013	0.71	1.428	0.035	1.88	OE
KM9B92	*	1.486	0.016	0.92	1.431	0.038	2.04	OE
L3ZJED		1.443	-0.027	-1.52	1.363	-0.030	-1.61	OE
LRQBHK		1.472	0.002	0.12	1.393	0.000	-0.01	OE
M9YTVQ		1.486	0.017	0.94	1.422	0.029	1.58	OE
MRPVKD		1.460	-0.010	-0.58	1.378	-0.015	-0.80	OE
MTKGCJ		1.505	0.035	2.00	1.427	0.034	1.83	OE
NA4M8F		1.495	0.025	1.43	1.410	0.017	0.91	OE
NGXUEA		1.463	-0.007	-0.39	1.388	-0.005	-0.25	WD

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 181

Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent
MANGANESE (Mn)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P2B4QR		1.490	0.020	1.15	1.410	0.017	0.91	OE
PLCUCE		1.453	-0.017	-0.95	1.390	-0.003	-0.15	OE
PUN263		1.458	-0.011	-0.65	1.373	-0.020	-1.09	WD
PZ2WPK		1.467	-0.003	-0.16	1.394	0.001	0.04	WD
Q4VW2F		1.462	-0.008	-0.44	1.387	-0.006	-0.32	OE
Q9HPV3		1.449	-0.020	-1.16	1.375	-0.018	-0.97	OE
R4VPJQ		1.474	0.005	0.26	1.390	-0.003	-0.18	OE
R6KLJY		1.462	-0.008	-0.46	1.383	-0.010	-0.51	WD
RNG3UN		1.472	0.002	0.12	1.383	-0.010	-0.52	OE
T6ERFJ		1.460	-0.009	-0.54	1.392	-0.001	-0.07	OE
T8JCB7		1.480	0.011	0.60	1.402	0.009	0.48	OE
T9EW3C		1.470	0.000	0.01	1.380	-0.013	-0.70	OE
TWWBHQ	*	1.443	-0.026	-1.50	1.390	-0.003	-0.16	IC
TXTQ79		1.460	-0.010	-0.56	1.387	-0.006	-0.34	OE
TYNBWE		1.470	0.000	-0.01	1.395	0.002	0.11	OE
U3AA6V		1.470	0.001	0.03	1.395	0.002	0.09	OE
U772WE		1.480	0.010	0.58	1.400	0.007	0.38	OE
UDYCT3	X	1.502	0.033	1.85	1.462	0.069	3.73	OE
URLPCH		1.471	0.002	0.09	1.390	-0.003	-0.16	IC
UZGTGE		1.472	0.002	0.12	1.395	0.002	0.09	WD
V2DCBT		1.507	0.037	2.09	1.423	0.030	1.63	XX
V2DCCE		1.469	-0.001	-0.07	1.407	0.014	0.76	OE
V4JWXT		1.476	0.006	0.33	1.407	0.014	0.73	WD
VCDAA8	*	1.500	0.030	1.71	1.403	0.010	0.56	OE
W4QP28		1.470	0.000	0.01	1.383	-0.010	-0.52	OE
W7NJDJ		1.489	0.019	1.09	1.403	0.010	0.56	DR
WAYVT7	X	1.547	0.077	4.38	1.454	0.061	3.28	OE
WBFQQU		1.483	0.014	0.77	1.403	0.010	0.52	DR
X7CMXC	*	1.416	-0.054	-3.07	1.343	-0.050	-2.69	OE
XL2T76		1.483	0.013	0.75	1.388	-0.005	-0.25	XX
XPUZ6F		1.500	0.030	1.71	1.423	0.030	1.63	OE
XY3GUZ		1.462	-0.008	-0.44	1.383	-0.010	-0.52	WD
XZN3RB		1.450	-0.020	-1.14	1.356	-0.037	-2.01	OE
Z6FVAW		1.473	0.004	0.20	1.410	0.017	0.91	OE
ZMKRYR		1.486	0.017	0.94	1.409	0.016	0.86	GD
ZMZVPD		1.469	-0.001	-0.06	1.392	-0.001	-0.07	IC
ZPQCMR		1.460	-0.010	-0.56	1.383	-0.010	-0.52	OE
ZYTE4J		1.480	0.010	0.56	1.394	0.001	0.05	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	1.470	Percent	1.393	Percent
Stnd Dev Btwn Labs	0.018	Percent	0.019	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 83 of 87 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 181
Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent
MANGANESE (Mn)

Comments on assigned Data Flags for Analysis #181

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
9RE7MT	X	Data for sample M21 are high. Inconsistent in testing between samples.
UDYCT3	X	Data for sample M22 are high. Inconsistent in testing between samples.
WAYVT7	X	Data for both samples are high. Possible Systematic error.

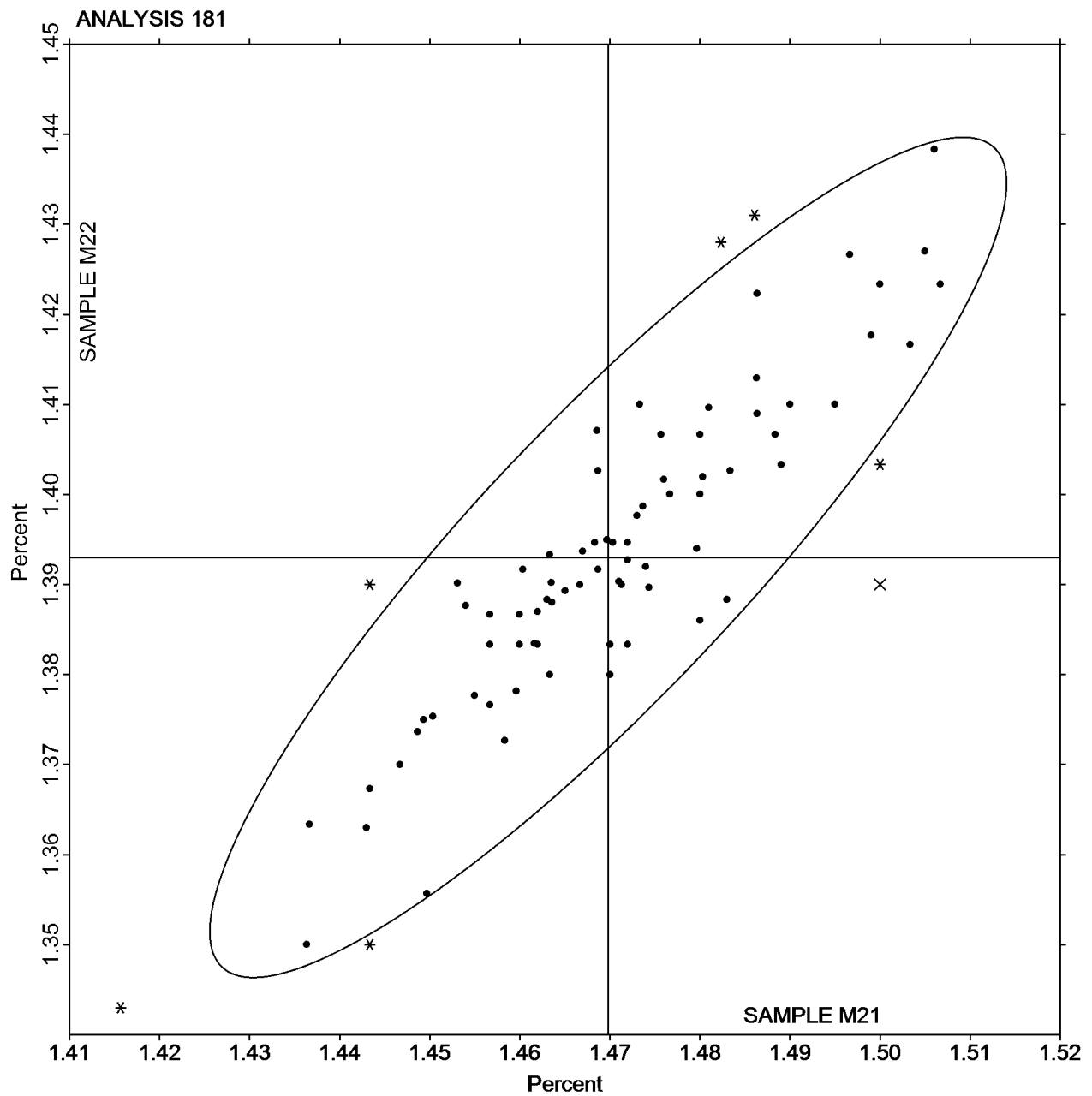
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 181

Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent
MANGANESE (Mn)

SAMPLE M21
1.470 Percent

SAMPLE M22
1.393 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 182

Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent
PHOSPHORUS (P)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.0334	0.0009	0.31	0.0352	0.0004	0.14	OE
2WD8TF		0.0327	0.0002	0.08	0.0344	-0.0003	-0.10	WD
2XDLHF	*	0.0247	-0.0078	-2.62	0.0263	-0.0084	-2.68	OE
3DA7NV		0.0350	0.0025	0.83	0.0380	0.0033	1.04	WD
3GWUQ9		0.0340	0.0015	0.50	0.0367	0.0019	0.62	OE
4474MW	*	0.0367	0.0042	1.39	0.0367	0.0019	0.62	OE
44LL9P		0.0390	0.0065	2.17	0.0423	0.0076	2.43	OE
4F9TNC		0.0343	0.0018	0.61	0.0370	0.0023	0.73	OE
6BNUMW		0.0350	0.0025	0.83	0.0370	0.0023	0.73	XX
6D9Q6V		0.0267	-0.0058	-1.95	0.0297	-0.0051	-1.61	OE
76ME4Y		0.0335	0.0010	0.33	0.0372	0.0025	0.79	OE
7KQ4TR		0.0327	0.0002	0.05	0.0357	0.0009	0.30	OE
8D47DX		0.0312	-0.0013	-0.44	0.0339	-0.0009	-0.27	OE
8KNC3H		0.0332	0.0007	0.22	0.0357	0.0009	0.30	OE
8R6BNQ	X	0.0220	-0.0105	-3.51	0.0297	-0.0050	-1.60	ED
9GDRG2		0.0334	0.0009	0.29	0.0360	0.0013	0.42	OE
9RE7MT	X	0.0217	-0.0108	-3.62	0.0210	-0.0137	-4.38	XX
9YKVBT		0.0351	0.0026	0.87	0.0330	-0.0017	-0.54	IC
AHRYNA		0.0330	0.0005	0.17	0.0340	-0.0008	-0.24	OE
ANZKDR		0.0313	-0.0012	-0.39	0.0330	-0.0017	-0.55	WD
BLQRYJ		0.0343	0.0018	0.61	0.0347	-0.0001	-0.02	OE
C44RPY		0.0313	-0.0012	-0.39	0.0323	-0.0024	-0.76	OE
C96PJQ	X	0.0200	-0.0125	-4.18	0.0300	-0.0047	-1.51	ED
CRZ8LE		0.0314	-0.0011	-0.36	0.0334	-0.0013	-0.41	OE
DBDYCM		0.0347	0.0022	0.73	0.0362	0.0015	0.48	OE
DC9K3T		0.0321	-0.0004	-0.12	0.0344	-0.0003	-0.09	OE
DEFYM7		0.0320	-0.0005	-0.17	0.0340	-0.0007	-0.23	WD
DLZFDL		0.0333	0.0008	0.28	0.0343	-0.0004	-0.12	GD
DTAMFR		0.0330	0.0005	0.17	0.0349	0.0002	0.05	OE
E3K29K		0.0297	-0.0028	-0.95	0.0320	-0.0027	-0.87	XX
EZXU94		0.0325	0.0000	0.01	0.0352	0.0004	0.14	OE
FGCANX		0.0290	-0.0035	-1.17	0.0310	-0.0037	-1.19	OE
GJNTFD		0.0345	0.0020	0.68	0.0378	0.0030	0.97	GD
GLJ4YL		0.0364	0.0039	1.29	0.0382	0.0034	1.10	OE
H2AHJ8		0.0390	0.0065	2.18	0.0422	0.0075	2.39	OE
H6BPY3	*	0.0333	0.0008	0.27	0.0331	-0.0016	-0.51	OE
HBHUCW		0.0321	-0.0004	-0.14	0.0347	-0.0001	-0.02	WD
HH9UXA		0.0340	0.0015	0.50	0.0360	0.0013	0.41	DR
HHN8AZ		0.0304	-0.0021	-0.71	0.0323	-0.0025	-0.78	OE
JN89T6		0.0267	-0.0058	-1.95	0.0293	-0.0054	-1.72	OE
JXRK6G		0.0337	0.0012	0.39	0.0370	0.0023	0.73	OE
KM9B92		0.0332	0.0007	0.24	0.0368	0.0020	0.65	OE
L3ZJED		0.0327	0.0002	0.05	0.0367	0.0019	0.62	OE
LRQBHK		0.0325	0.0000	0.00	0.0348	0.0000	0.01	OE
M9YTVQ		0.0333	0.0008	0.28	0.0363	0.0016	0.51	OE
MRPVKD		0.0332	0.0006	0.22	0.0345	-0.0002	-0.06	OE
MTKGCJ		0.0330	0.0005	0.18	0.0348	0.0000	0.01	OE
NA4M8F	*	0.0240	-0.0085	-2.84	0.0260	-0.0087	-2.78	OE
NGXUEA		0.0324	-0.0001	-0.04	0.0346	-0.0001	-0.04	WD

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 182

Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent
PHOSPHORUS (P)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P2B4QR		0.0306	-0.0019	-0.63	0.0316	-0.0031	-1.00	OE
PLCUCE		0.0308	-0.0017	-0.58	0.0333	-0.0015	-0.46	OE
PUN263		0.0323	-0.0002	-0.07	0.0344	-0.0003	-0.10	WD
PZ2WPK		0.0330	0.0005	0.18	0.0356	0.0009	0.29	WD
Q4VW2F		0.0336	0.0011	0.37	0.0357	0.0010	0.32	OE
Q9HPV3		0.0335	0.0010	0.32	0.0360	0.0013	0.41	OE
R4VPJQ		0.0334	0.0009	0.30	0.0349	0.0002	0.07	OE
R6KLJY		0.0341	0.0016	0.55	0.0367	0.0020	0.63	WD
RNG3UN		0.0323	-0.0002	-0.06	0.0337	-0.0010	-0.33	OE
T6ERFJ		0.0324	-0.0001	-0.02	0.0349	0.0002	0.06	OE
T8JCB7		0.0359	0.0034	1.13	0.0380	0.0033	1.04	OE
T9EW3C		0.0346	0.0021	0.70	0.0370	0.0023	0.73	OE
TWWBHQ		0.0283	-0.0042	-1.39	0.0303	-0.0044	-1.40	IC
TXTQ79		0.0393	0.0068	2.27	0.0411	0.0064	2.04	OE
TYNBWE		0.0363	0.0038	1.26	0.0386	0.0039	1.24	OE
U3AA6V		0.0296	-0.0029	-0.96	0.0329	-0.0018	-0.58	OE
U772WE		0.0346	0.0021	0.69	0.0383	0.0035	1.13	OE
UDYCT3		0.0317	-0.0008	-0.26	0.0359	0.0012	0.39	OE
URLPCH		0.0329	0.0004	0.12	0.0349	0.0002	0.07	IC
UZGTGE		0.0332	0.0007	0.22	0.0351	0.0003	0.11	WD
V2DCBT		0.0330	0.0005	0.17	0.0353	0.0006	0.19	XX
V2DCCE		0.0345	0.0020	0.67	0.0373	0.0025	0.81	OE
V4JWXT		0.0347	0.0022	0.72	0.0400	0.0053	1.68	OE
VCDAA8		0.0273	-0.0052	-1.73	0.0290	-0.0057	-1.82	OE
W4QP28		0.0290	-0.0035	-1.17	0.0313	-0.0034	-1.08	OE
W7NJDJ		0.0333	0.0008	0.28	0.0347	-0.0001	-0.02	DR
WAYVT7	*	0.0243	-0.0082	-2.73	0.0253	-0.0094	-2.99	OE
X7CMXC		0.0352	0.0027	0.89	0.0360	0.0012	0.40	OE
XL2T76	X	0.0180	-0.0145	-4.84	0.0197	-0.0151	-4.80	XX
XPUZ6F		0.0300	-0.0025	-0.84	0.0310	-0.0037	-1.19	OE
XY3GUZ		0.0350	0.0025	0.83	0.0380	0.0033	1.04	WD
XZN3RB		0.0339	0.0014	0.47	0.0367	0.0019	0.62	OE
Z6FVAW	X	0.0373	0.0048	1.61	0.0440	0.0093	2.96	OE
ZMKRYR		0.0278	-0.0047	-1.57	0.0309	-0.0038	-1.22	GD
ZMZVPD	*	0.0272	-0.0053	-1.77	0.0311	-0.0036	-1.14	IC
ZPQCMR		0.0323	-0.0002	-0.07	0.0347	0.0000	-0.01	OE
ZYTE4J		0.0350	0.0025	0.83	0.0367	0.0019	0.62	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.0325	Percent	0.0347	Percent
Std Dev Btwn Labs	0.0030	Percent	0.0031	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 79 of 86 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 182
Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent
PHOSPHORUS (P)

Comments on assigned Data Flags for Analysis #182

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
8R6BNQ	X	Data for sample M21 are low. Inconsistent in testing between samples.
9RE7MT	X	Data for both samples are low. Possible Systematic error.
C96PJQ	X	Data for sample M21 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample M22.
XL2T76	X	Data for both samples are low. Possible Systematic error.
Z6FVAW	X	Data for sample M22 are high. Inconsistent in testing between samples.

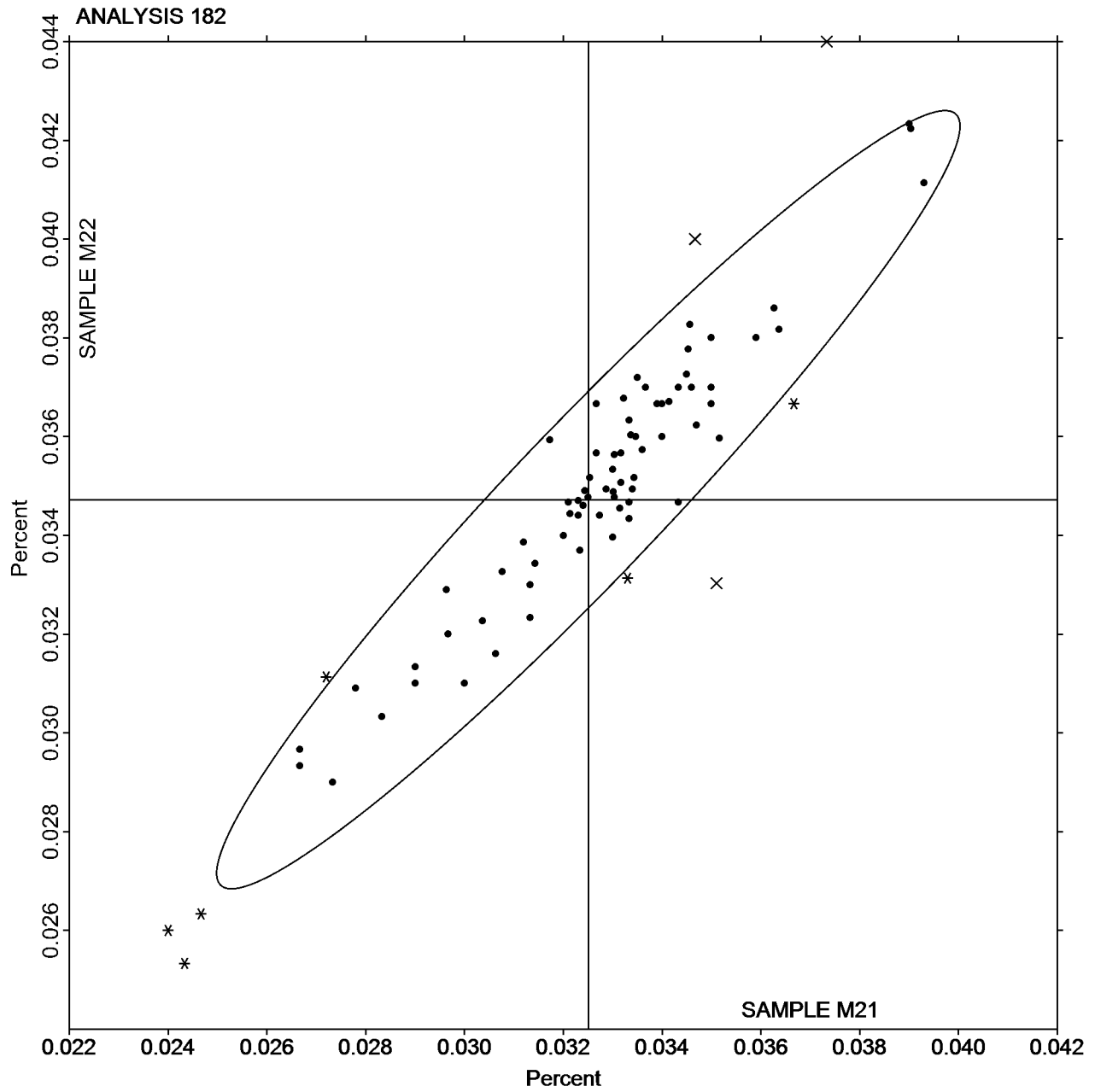
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 182

Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent
PHOSPHORUS (P)

SAMPLE M21
0.0325 Percent

SAMPLE M22
0.0347 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 183

Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent
SULFUR (S)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.0121	0.0003	0.24	0.0115	-0.0006	-0.51	OE
2WD8TF		0.0127	0.0009	0.73	0.0128	0.0007	0.68	CI
2XDLHF		0.0127	0.0008	0.70	0.0130	0.0009	0.84	OE
3DA7NV		0.0110	-0.0008	-0.73	0.0110	-0.0011	-1.00	OE
3GWUQ9		0.0120	0.0002	0.13	0.0120	-0.0001	-0.08	OE
4474MW		0.0133	0.0015	1.27	0.0127	0.0006	0.53	OE
44LL9P		0.0114	-0.0005	-0.41	0.0119	-0.0002	-0.17	CO
4F9TNC		0.0130	0.0012	0.99	0.0137	0.0016	1.45	OE
6BNUMW		0.0130	0.0012	0.99	0.0130	0.0009	0.84	XX
6D9Q6V	X	0.00767	-0.0042	-3.59	0.00867	-0.0034	-3.15	OE
76ME4Y		0.0120	0.0002	0.13	0.0126	0.0005	0.47	OE
7KQ4TR		0.0133	0.0014	1.21	0.0140	0.0019	1.76	CO
8D47DX		0.00973	-0.0021	-1.81	0.00970	-0.0024	-2.20	OE
8KNC3H		0.0103	-0.0015	-1.33	0.0105	-0.0016	-1.43	OE
8R6BNQ	X	0.0110	-0.0008	-0.73	0.0237	0.0116	10.67	ED
9GDRG2		0.0121	0.0002	0.19	0.0116	-0.0005	-0.42	OE
9RE7MT		0.0100	-0.0018	-1.59	0.0100	-0.0021	-1.92	XX
9YKVBT		0.0115	-0.0003	-0.27	0.0122	0.0001	0.07	CI
AHRYNA		0.0139	0.0020	1.73	0.0144	0.0023	2.15	OE
ANZKDR		0.0132	0.0013	1.13	0.0133	0.0012	1.08	CI
BLQRYJ		0.0120	0.0002	0.13	0.0120	-0.0001	-0.08	OE
C44RPY		0.0110	-0.0008	-0.73	0.0110	-0.0011	-1.00	CO
CRZ8LE		0.0127	0.0009	0.76	0.0125	0.0004	0.41	OE
DBDYCM	*	0.0101	-0.0017	-1.50	0.0116	-0.0005	-0.45	OE
DC9K3T		0.0138	0.0020	1.70	0.0132	0.0011	1.05	CI
DEFYM7		0.0144	0.0025	2.16	0.0139	0.0018	1.69	WD
DLZFDL		0.0113	-0.0006	-0.50	0.0124	0.0003	0.32	XX
DTAMFR		0.0128	0.0009	0.79	0.0131	0.0010	0.89	OE
E3K29K	*	0.00833	-0.0035	-3.01	0.00900	-0.0031	-2.84	XX
EZXU94		0.0121	0.0002	0.19	0.0125	0.0004	0.35	OE
FGCANX		0.0120	0.0002	0.13	0.0120	-0.0001	-0.08	OE
GJNTFD		0.0113	-0.0005	-0.44	0.0120	-0.0001	-0.08	GD
GLJ4YL		0.0119	0.0001	0.07	0.0122	0.0001	0.10	OE
H2AHJ8	X	0.0178	0.0059	5.07	0.0186	0.0065	5.95	OE
H6BPY3		0.0104	-0.0014	-1.24	0.0115	-0.0006	-0.54	OE
HBHUCW		0.0137	0.0019	1.59	0.0133	0.0012	1.11	CI
HH9UXA		0.0130	0.0012	0.99	0.0133	0.0012	1.14	CI
HHN8AZ		0.0121	0.0003	0.21	0.0123	0.0002	0.19	OE
JN89T6	*	0.0117	-0.0002	-0.16	0.0133	0.0012	1.14	OE
JXRK6G		0.0133	0.0015	1.27	0.0133	0.0012	1.14	OE
KM9B92		0.0116	-0.0002	-0.21	0.0125	0.0004	0.38	CO
L3ZJED		0.0113	-0.0005	-0.44	0.0113	-0.0008	-0.69	OE
LRQBHK		0.0115	-0.0004	-0.33	0.0116	-0.0005	-0.45	OE
M9YTVQ		0.0110	-0.0008	-0.73	0.0117	-0.0004	-0.39	OE
MRPVKD		0.00967	-0.0022	-1.87	0.0108	-0.0013	-1.18	CI
MTKGCJ		0.0118	0.0000	-0.01	0.0114	-0.0007	-0.63	OE
NA4M8F	X	0.00750	-0.0043	-3.73	0.00800	-0.0041	-3.76	OE
NGXUEA		0.0115	-0.0004	-0.33	0.0121	0.0000	-0.02	CI
P2B4QR	*	0.0141	0.0023	1.96	0.0130	0.0009	0.84	OE

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 183

Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent
SULFUR (S)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
PLCUCE		0.0114	-0.0004	-0.36	0.0116	-0.0005	-0.45	OE
PUN263		0.0115	-0.0003	-0.30	0.0114	-0.0007	-0.63	CI
PZ2WPK		0.0121	0.0002	0.19	0.0125	0.0004	0.41	CI
Q4VW2F		0.0120	0.0001	0.10	0.0120	-0.0001	-0.11	OE
Q9HPV3		0.0128	0.0010	0.81	0.0135	0.0014	1.33	OE
R6KLJY		0.0122	0.0003	0.27	0.0124	0.0003	0.25	CI
RNG3UN		0.0118	0.0000	-0.04	0.0125	0.0004	0.38	CI
T6ERFJ		0.0107	-0.0011	-0.99	0.0115	-0.0006	-0.54	OE
T8JCB7		0.0122	0.0003	0.27	0.0118	-0.0003	-0.24	OE
T9EW3C		0.0125	0.0007	0.56	0.0128	0.0007	0.65	CI
TWWBHQ		0.0123	0.0005	0.41	0.0130	0.0009	0.84	CI
TXTQ79	X	0.0237	0.0119	10.19	0.0229	0.0108	9.96	OE
TYNBWE		0.0118	0.0000	-0.04	0.0121	0.0000	0.04	OE
U3AA6V		0.0109	-0.0010	-0.84	0.0113	-0.0008	-0.73	OE
U772WE		0.0117	-0.0001	-0.13	0.0115	-0.0006	-0.51	OE
UDYCT3		0.0119	0.0001	0.04	0.0123	0.0002	0.22	OE
URLPCH		0.0113	-0.0005	-0.44	0.0113	-0.0008	-0.69	CO
UZGTGE		0.00950	-0.0023	-2.01	0.0102	-0.0019	-1.74	CI
V2DCBT		0.0120	0.0002	0.13	0.0123	0.0002	0.22	XX
V2DCCE		0.0109	-0.0010	-0.84	0.0119	-0.0002	-0.20	OE
V4JWXT		0.0107	-0.0012	-1.01	0.0110	-0.0011	-1.00	CO
VCDAA8	X	0.0220	0.0102	8.70	0.0217	0.0096	8.80	OE
VFUBWL		0.0116	-0.0003	-0.24	0.0118	-0.0003	-0.24	CI
W4QP28		0.0130	0.0012	0.99	0.0133	0.0012	1.14	OE
W7NJDJ		0.0110	-0.0008	-0.73	0.0110	-0.0011	-1.00	CI
WAYVT7		0.0120	0.0002	0.13	0.0117	-0.0004	-0.39	OE
X7CMXC		0.0113	-0.0005	-0.44	0.0105	-0.0016	-1.46	OE
XL2T76	X	0.00747	-0.0044	-3.76	0.00783	-0.0043	-3.91	XX
XPUZ6F	*	0.0147	0.0028	2.42	0.0150	0.0029	2.67	OE
XY3GUZ		0.0114	-0.0004	-0.36	0.0121	0.0000	-0.02	CI
XZN3RB		0.0127	0.0008	0.70	0.0124	0.0003	0.29	OE
Z6FVAW		0.0100	-0.0018	-1.59	0.0103	-0.0018	-1.61	OE
ZMKRYR		0.0122	0.0004	0.33	0.0127	0.0006	0.53	CO
ZMZVPD		0.0123	0.0005	0.41	0.0124	0.0003	0.25	CI
ZPQCMR		0.0121	0.0002	0.19	0.0119	-0.0002	-0.17	OE
ZYTE4J		0.0103	-0.0015	-1.30	0.0100	-0.0021	-1.92	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.0118	Percent	0.0121	Percent
Stnd Dev Btwn Labs	0.0012	Percent	0.0011	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 78 of 85 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 183
Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent
SULFUR (S)

Comments on assigned Data Flags for Analysis #183

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
6D9Q6V	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of sample M22.
8R6BNQ	X	Data for sample M22 are high. Inconsistent in testing between samples.
H2AHJ8	X	Data for both samples are high. Possible Systematic error.
NA4M8F	X	Data for both samples are low. Possible Systematic error.
TXTQ79	X	Data for both samples are high. Possible Systematic error.
VCDA88	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of both samples.
XL2T76	X	Data for both samples are low. Possible Systematic error.

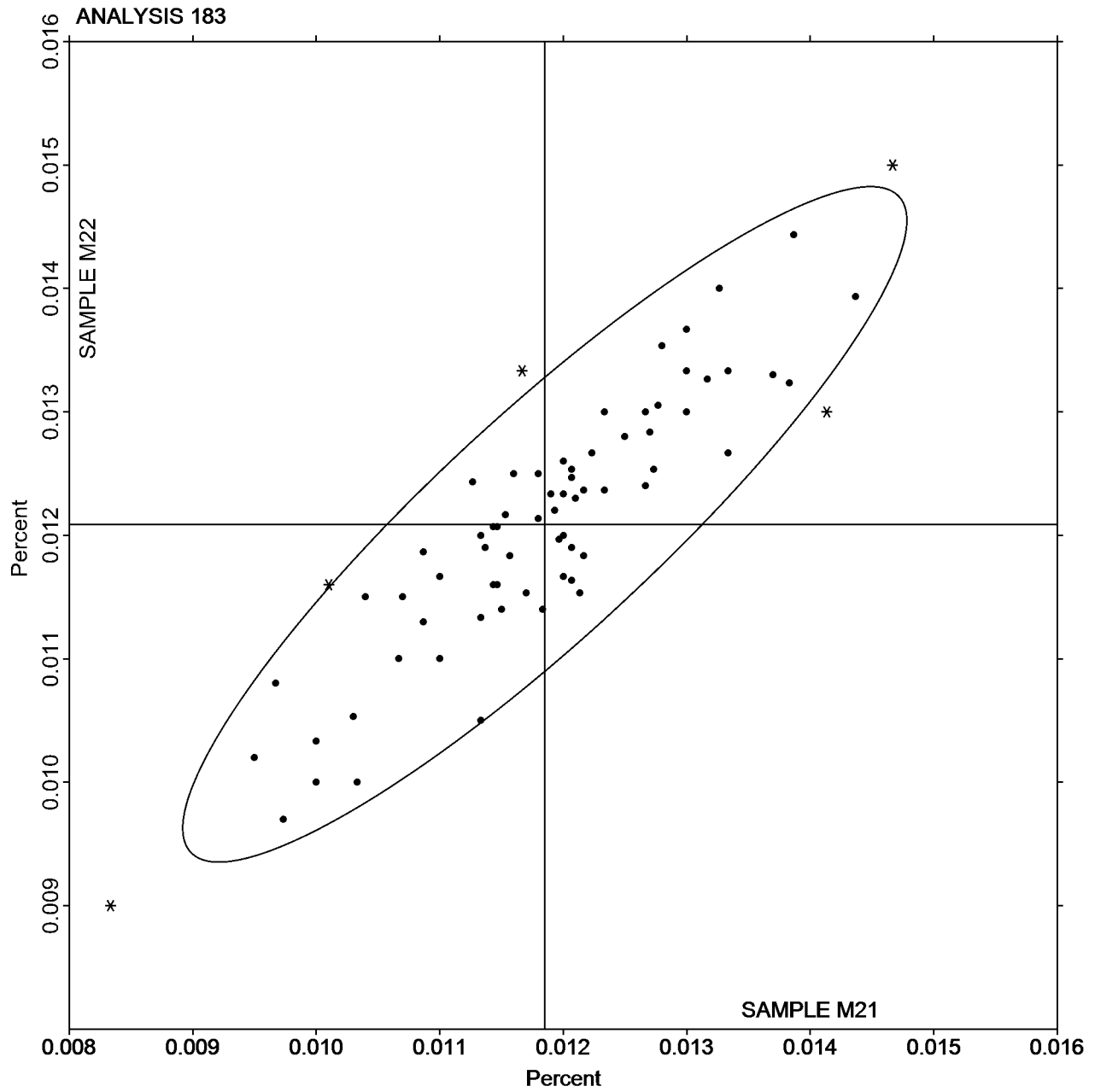
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 183

Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent
SULFUR (S)

SAMPLE M21
0.0118 Percent

SAMPLE M22
0.0121 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 184

Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent
SILICON (Si)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.3683	-0.0048	-0.44	0.3721	-0.0027	-0.24	OE
2WD8TF		0.3760	0.0029	0.27	0.3770	0.0023	0.20	WD
2XDLHF		0.3593	-0.0138	-1.27	0.3677	-0.0071	-0.63	OE
3DA7NV		0.3553	-0.0178	-1.64	0.3567	-0.0181	-1.62	WD
3GWUQ9		0.3737	0.0006	0.05	0.3757	0.0009	0.08	OE
4474MW		0.3680	-0.0051	-0.47	0.3660	-0.0087	-0.78	OE
44LL9P		0.3670	-0.0061	-0.56	0.3643	-0.0104	-0.93	OE
4F9TNC		0.3717	-0.0014	-0.13	0.3723	-0.0024	-0.22	OE
6BNUMW		0.3710	-0.0021	-0.19	0.3747	-0.0001	-0.01	XX
6D9Q6V		0.3600	-0.0131	-1.21	0.3667	-0.0081	-0.72	OE
76ME4Y		0.3740	0.0009	0.08	0.3730	-0.0017	-0.16	OE
7KQ4TR		0.3647	-0.0084	-0.78	0.3683	-0.0064	-0.57	XR
8D47DX		0.3887	0.0156	1.44	0.3923	0.0176	1.58	OE
8KNC3H		0.3837	0.0106	0.98	0.3872	0.0125	1.12	OE
8R6BNQ		0.3720	-0.0011	-0.10	0.3928	0.0181	1.63	ED
9GDRG2		0.3733	0.0002	0.02	0.3697	-0.0051	-0.46	OE
9RE7MT		0.3600	-0.0131	-1.21	0.3600	-0.0147	-1.32	XX
9YKVBT	X	0.3763	0.0032	0.30	0.3663	-0.0084	-0.75	IC
AHRYNA		0.3767	0.0036	0.33	0.3773	0.0026	0.23	OE
ANZKDR		0.3487	-0.0244	-2.26	0.3520	-0.0227	-2.04	WD
BLQRYJ		0.3710	-0.0021	-0.19	0.3653	-0.0094	-0.84	OE
C44RPY		0.3613	-0.0118	-1.09	0.3663	-0.0084	-0.75	OE
C96PJQ	X	0.5400	0.1669	15.42	0.5567	0.1819	16.36	ED
CRZ8LE		0.3890	0.0159	1.47	0.3893	0.0146	1.31	OE
DBDYCM		0.3911	0.0180	1.66	0.3978	0.0231	2.08	OE
DC9K3T		0.3657	-0.0074	-0.69	0.3650	-0.0097	-0.87	OE
DEFYM7		0.3800	0.0069	0.64	0.3800	0.0053	0.47	WD
DLZDFD		0.3823	0.0092	0.85	0.3763	0.0016	0.14	GD
DTAMFR		0.3747	0.0016	0.14	0.3784	0.0037	0.33	OE
E3K29K	*	0.3467	-0.0264	-2.44	0.3433	-0.0314	-2.82	XX
EZXU94		0.3853	0.0122	1.13	0.3810	0.0063	0.56	OE
FGCANX		0.3567	-0.0164	-1.52	0.3567	-0.0181	-1.62	OE
GJNTFD		0.3763	0.0032	0.30	0.3783	0.0036	0.32	GD
GLJ4YL		0.3837	0.0106	0.98	0.3853	0.0106	0.95	OE
H2AHJ8		0.3947	0.0216	2.00	0.3987	0.0240	2.16	OE
H6BPY3		0.3687	-0.0044	-0.41	0.3510	-0.0237	-2.13	OE
HBHUCW		0.3657	-0.0074	-0.69	0.3750	0.0003	0.02	WD
HH9UXA		0.3800	0.0069	0.64	0.3833	0.0086	0.77	DR
HHN8AZ		0.3770	0.0039	0.36	0.3763	0.0016	0.14	OE
JN89T6		0.3680	-0.0051	-0.47	0.3777	0.0029	0.26	OE
JXRK6G		0.3733	0.0002	0.02	0.3687	-0.0061	-0.54	OE
KM9B92		0.3876	0.0145	1.34	0.3928	0.0181	1.63	OE
L3ZJED		0.3883	0.0152	1.41	0.3940	0.0193	1.73	OE
LRQBHK		0.3725	-0.0006	-0.06	0.3769	0.0021	0.19	OE
M9YTVQ		0.3633	-0.0098	-0.90	0.3677	-0.0071	-0.63	OE
MRPVKD		0.3769	0.0038	0.35	0.3769	0.0022	0.20	OE
MTKGCJ		0.3657	-0.0074	-0.68	0.3703	-0.0044	-0.40	OE
NA4M8F		0.3700	-0.0031	-0.29	0.3700	-0.0047	-0.43	OE
NGXUEA		0.3593	-0.0138	-1.27	0.3633	-0.0114	-1.02	WD

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 184

Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent
SILICON (Si)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P2B4QR		0.3967	0.0236	2.18	0.3987	0.0239	2.15	OE
PLCUCE		0.3787	0.0056	0.52	0.3832	0.0085	0.76	OE
PUN263		0.3747	0.0016	0.14	0.3773	0.0026	0.23	WD
PZ2WPK		0.3650	-0.0081	-0.75	0.3687	-0.0061	-0.54	WD
Q4VW2F		0.3850	0.0119	1.10	0.3867	0.0119	1.07	OE
Q9HPV3		0.3777	0.0046	0.42	0.3803	0.0056	0.50	OE
R4VPJQ		0.3793	0.0062	0.58	0.3803	0.0056	0.50	OE
R6KLJY		0.3897	0.0166	1.53	0.3937	0.0189	1.70	OE
RNG3UN		0.3687	-0.0044	-0.41	0.3687	-0.0061	-0.54	OE
T6ERFJ		0.3641	-0.0090	-0.83	0.3651	-0.0097	-0.87	OE
T8JCB7		0.3710	-0.0021	-0.19	0.3727	-0.0021	-0.19	OE
T9EW3C		0.3640	-0.0091	-0.84	0.3700	-0.0047	-0.43	OE
TWWBHQ		0.3823	0.0092	0.85	0.3863	0.0116	1.04	IC
TXTQ79	X	0.2950	-0.0781	-7.21	0.2983	-0.0764	-6.87	OE
TYNBWE		0.3743	0.0012	0.11	0.3750	0.0003	0.02	OE
U3AA6V		0.3660	-0.0071	-0.66	0.3660	-0.0087	-0.78	OE
U772WE		0.3730	-0.0001	-0.01	0.3750	0.0003	0.02	OE
UDYCT3		0.3703	-0.0028	-0.26	0.3733	-0.0014	-0.13	OE
URLPCH		0.3657	-0.0074	-0.69	0.3683	-0.0064	-0.57	IC
UZGTGE		0.3630	-0.0101	-0.93	0.3643	-0.0104	-0.93	WD
V2DCBT		0.3613	-0.0118	-1.09	0.3610	-0.0137	-1.23	XX
V2DCCE		0.3665	-0.0066	-0.61	0.3812	0.0065	0.59	OE
V4JWXT		0.3697	-0.0034	-0.32	0.3677	-0.0071	-0.63	OE
VCDAA8		0.3767	0.0036	0.33	0.3733	-0.0014	-0.13	OE
W4QP28		0.3637	-0.0094	-0.87	0.3663	-0.0084	-0.75	OE
W7NJDJ		0.3740	0.0009	0.08	0.3757	0.0009	0.08	DR
WAYVT7		0.3480	-0.0251	-2.32	0.3497	-0.0251	-2.25	OE
WBFQQU		0.3757	0.0026	0.24	0.3774	0.0027	0.24	DR
X7CMXC		0.3805	0.0074	0.68	0.3759	0.0012	0.11	OE
XL2T76	X	0.4437	0.0706	6.52	0.4550	0.0803	7.22	XX
XPUZ6F		0.3767	0.0036	0.33	0.3767	0.0019	0.17	OE
XY3GUZ	*	0.3863	0.0132	1.22	0.3780	0.0033	0.29	WD
XZN3RB		0.3703	-0.0028	-0.26	0.3737	-0.0011	-0.10	OE
Z6FVAW		0.3667	-0.0064	-0.59	0.3733	-0.0014	-0.13	OE
ZMKRYR		0.3860	0.0129	1.19	0.3883	0.0136	1.22	GD
ZMZVPD		0.3807	0.0076	0.70	0.3793	0.0046	0.41	IC
ZPQCMR		0.3987	0.0256	2.36	0.4020	0.0273	2.45	OE
ZYTE4J		0.3780	0.0049	0.45	0.3783	0.0036	0.32	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.3731	Percent	0.3747	Percent
Stnd Dev Btwn Labs	0.0108	Percent	0.0111	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 80 of 87 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 184
Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent
SILICON (Si)

Comments on assigned Data Flags for Analysis #184

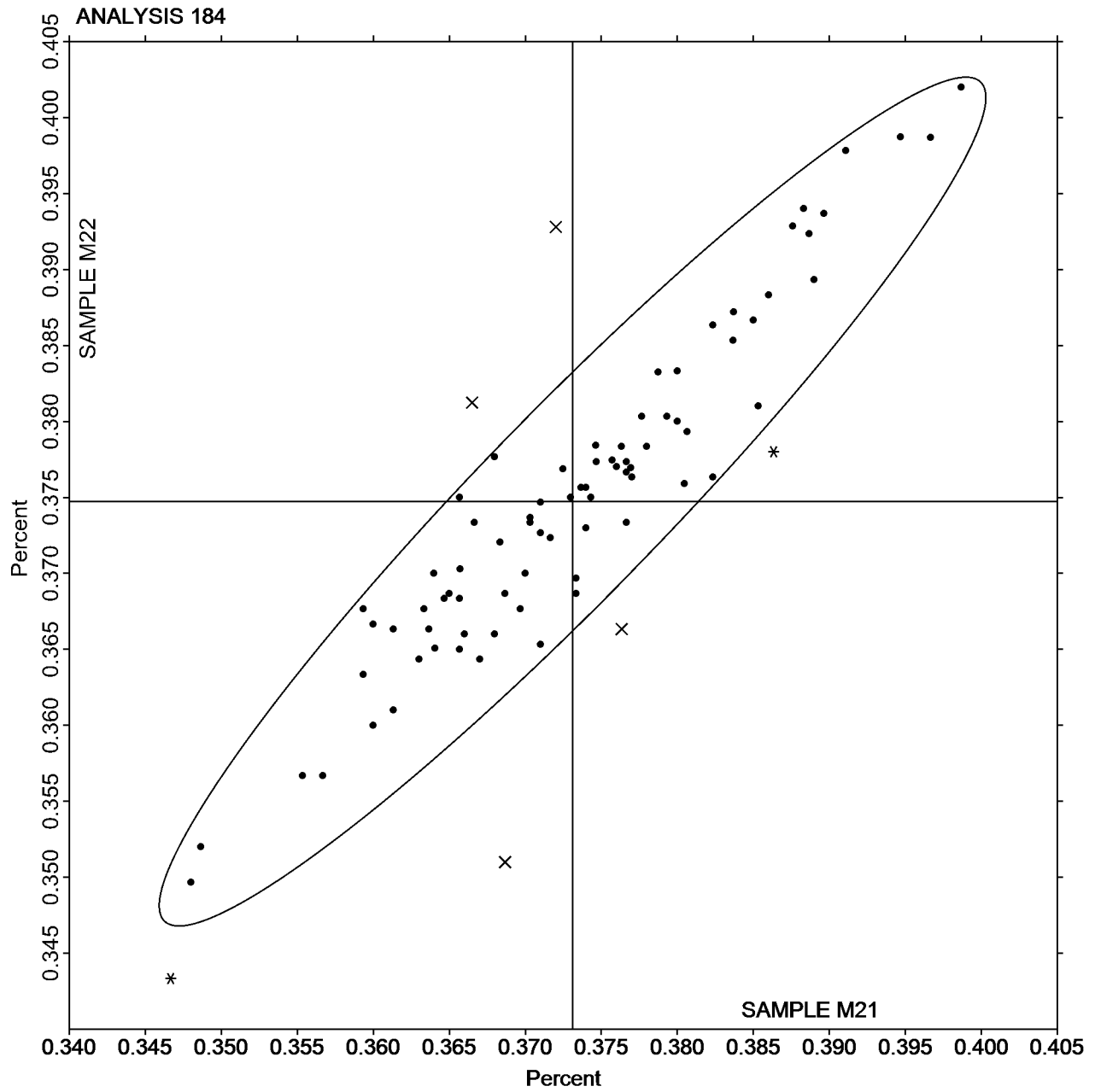
<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
9YKVB	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample M21.
C96PJQ	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample M21.
TXTQ79	X	Data for both samples are low. Possible Systematic error.
XL2T76	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample M22.

Interlaboratory Testing Program for Metals
Analysis 184

Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent
SILICON (Si)

SAMPLE M21
0.3731 Percent

SAMPLE M22
0.3747 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 185

Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent
COPPER (Cu)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.3976	0.0027	0.24	0.4431	-0.0011	-0.10	OE
2WD8TF		0.3917	-0.0032	-0.29	0.4397	-0.0046	-0.39	WD
2XDLHF		0.3913	-0.0036	-0.32	0.4390	-0.0052	-0.44	OE
3DA7NV	*	0.3663	-0.0286	-2.58	0.4177	-0.0266	-2.25	WD
3GWUQ9		0.3893	-0.0056	-0.50	0.4393	-0.0049	-0.42	OE
4474MW	*	0.4103	0.0154	1.39	0.4667	0.0224	1.90	OE
44LL9P		0.3903	-0.0046	-0.41	0.4363	-0.0079	-0.67	OE
4F9TNC		0.3800	-0.0149	-1.34	0.4300	-0.0142	-1.21	OE
6BNUMW		0.3943	-0.0006	-0.05	0.4400	-0.0042	-0.36	XX
6D9Q6V	X	0.4333	0.0384	3.46	0.4933	0.0491	4.16	OE
76ME4Y		0.3990	0.0041	0.37	0.4450	0.0008	0.06	OE
7KQ4TR		0.4013	0.0064	0.58	0.4530	0.0088	0.74	XR
8D47DX		0.3730	-0.0219	-1.98	0.4220	-0.0222	-1.88	OE
8KNC3H		0.3946	-0.0003	-0.03	0.4425	-0.0017	-0.14	OE
8R6BNQ		0.3850	-0.0099	-0.89	0.4530	0.0088	0.74	ED
9GDRG2		0.4150	0.0201	1.81	0.4440	-0.0002	-0.02	OE
9RE7MT	X	0.5403	0.1454	13.11	0.5833	0.1391	11.78	XX
9YKVB		0.4120	0.0171	1.54	0.4663	0.0221	1.87	IC
AHRYNA		0.3907	-0.0042	-0.38	0.4363	-0.0079	-0.67	OE
ANZKDR		0.3803	-0.0146	-1.31	0.4307	-0.0136	-1.15	WD
BLQRYJ		0.3877	-0.0072	-0.65	0.4367	-0.0076	-0.64	OE
C44RPY		0.3917	-0.0032	-0.29	0.4410	-0.0032	-0.27	OE
C96PJQ	X	0.4633	0.0684	6.17	0.4733	0.0291	2.46	ED
CRZ8LE		0.3963	0.0014	0.13	0.4503	0.0061	0.52	ED
DBDYCM		0.3939	-0.0010	-0.09	0.4574	0.0131	1.11	OE
DC9K3T		0.3977	0.0028	0.25	0.4337	-0.0106	-0.90	WC
DEFYM7		0.3900	-0.0049	-0.44	0.4400	-0.0042	-0.36	WD
DLZFD		0.4010	0.0061	0.55	0.4500	0.0058	0.49	GD
DTAMFR	*	0.4224	0.0275	2.48	0.4742	0.0299	2.54	OE
E3K29K		0.3900	-0.0049	-0.44	0.4400	-0.0042	-0.36	XX
EZXU94	X	0.4273	0.0324	2.92	0.4633	0.0191	1.62	OE
FGCANX		0.3867	-0.0082	-0.74	0.4333	-0.0109	-0.92	OE
GJNTFD		0.3883	-0.0066	-0.59	0.4400	-0.0042	-0.36	GD
GLJ4YL		0.3943	-0.0006	-0.05	0.4427	-0.0016	-0.13	OE
H2AHJ8		0.3842	-0.0107	-0.97	0.4354	-0.0088	-0.75	OE
H6BPY3	X	0.3817	-0.0132	-1.19	0.4860	0.0418	3.54	OE
HBHUCW		0.3913	-0.0036	-0.32	0.4427	-0.0016	-0.13	WD
HH9UXA		0.3900	-0.0049	-0.44	0.4400	-0.0042	-0.36	DR
HHN8AZ		0.4080	0.0131	1.18	0.4580	0.0138	1.17	OE
JN89T6		0.4053	0.0104	0.94	0.4517	0.0074	0.63	OE
JXRK6G	X	0.3587	-0.0362	-3.27	0.3947	-0.0496	-4.20	OE
KM9B92		0.3928	-0.0021	-0.19	0.4559	0.0116	0.99	OE
L3ZJED		0.4000	0.0051	0.46	0.4380	-0.0062	-0.53	OE
LRQBHK		0.4140	0.0191	1.72	0.4645	0.0203	1.72	OE
M9YTVQ		0.4167	0.0218	1.96	0.4673	0.0231	1.96	OE
MRPVKD		0.3853	-0.0096	-0.87	0.4343	-0.0100	-0.84	OE
MTKGCJ	*	0.4227	0.0278	2.51	0.4709	0.0266	2.26	OE
NA4M8F		0.4140	0.0191	1.72	0.4640	0.0198	1.67	OE
NGXUEA		0.3887	-0.0062	-0.56	0.4387	-0.0056	-0.47	WD

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 185

Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent
COPPER (Cu)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P2B4QR	X	0.3443	-0.0506	-4.56	0.3883	-0.0559	-4.74	OE
PLCUCE		0.4122	0.0173	1.56	0.4623	0.0181	1.53	OE
PUN263		0.3910	-0.0039	-0.35	0.4403	-0.0039	-0.33	WD
PZ2WPK		0.3947	-0.0002	-0.02	0.4433	-0.0009	-0.08	WD
Q4VW2F		0.3817	-0.0132	-1.19	0.4293	-0.0149	-1.26	OE
Q9HPV3		0.4193	0.0244	2.20	0.4703	0.0261	2.21	OE
R4VPJQ	*	0.4063	0.0114	1.03	0.4483	0.0041	0.35	OE
R6KLJY		0.3987	0.0038	0.34	0.4490	0.0048	0.41	WD
RNG3UN	X	0.3567	-0.0382	-3.45	0.4363	-0.0079	-0.67	OE
T6ERFJ		0.3954	0.0005	0.04	0.4467	0.0024	0.21	OE
T8JCB7		0.3950	0.0001	0.01	0.4490	0.0048	0.40	OE
T9EW3C		0.3900	-0.0049	-0.44	0.4410	-0.0032	-0.27	OE
TWWBHQ		0.3823	-0.0126	-1.13	0.4337	-0.0106	-0.90	IC
TXTQ79		0.3757	-0.0192	-1.73	0.4223	-0.0219	-1.86	OE
TYNBWE		0.3983	0.0034	0.31	0.4407	-0.0036	-0.30	OE
U3AA6V		0.4050	0.0101	0.91	0.4570	0.0128	1.08	OE
U772WE		0.3960	0.0011	0.10	0.4490	0.0048	0.40	OE
UDYCT3		0.3897	-0.0052	-0.47	0.4410	-0.0032	-0.27	OE
URLPCH		0.3987	0.0038	0.34	0.4443	0.0001	0.01	IC
UZGTGE		0.3927	-0.0022	-0.20	0.4467	0.0024	0.21	WD
V2DCBT		0.4013	0.0064	0.58	0.4217	-0.0226	-1.91	XX
V2DCCE		0.3936	-0.0013	-0.11	0.4385	-0.0057	-0.49	OE
V4JWXT		0.3963	0.0014	0.13	0.4453	0.0011	0.09	OE
VCDAA8		0.3933	-0.0016	-0.14	0.4400	-0.0042	-0.36	OE
W4QP28		0.3757	-0.0192	-1.73	0.4250	-0.0192	-1.63	OE
W7NJDJ		0.4007	0.0058	0.52	0.4453	0.0011	0.09	DR
WAYVT7	*	0.3920	-0.0029	-0.26	0.4320	-0.0122	-1.04	OE
WBFQQU		0.3966	0.0017	0.15	0.4487	0.0044	0.37	DR
X7CMXC		0.3969	0.0020	0.18	0.4481	0.0039	0.33	OE
XL2T76	X	0.3677	-0.0272	-2.45	0.3963	-0.0479	-4.06	XX
XPUZ6F		0.3897	-0.0052	-0.47	0.4380	-0.0062	-0.53	OE
XY3GUZ		0.3863	-0.0086	-0.77	0.4360	-0.0082	-0.70	WD
XZN3RB		0.3950	0.0001	0.01	0.4410	-0.0032	-0.27	OE
Z6FVAW		0.4000	0.0051	0.46	0.4567	0.0124	1.05	OE
ZMKRYR		0.3980	0.0031	0.28	0.4500	0.0058	0.49	GD
ZMZVPD		0.3840	-0.0109	-0.98	0.4343	-0.0099	-0.84	IC
ZPQCMR		0.3940	-0.0009	-0.08	0.4433	-0.0009	-0.08	OE
ZYTE4J		0.3927	-0.0022	-0.20	0.4413	-0.0029	-0.25	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.3949	Percent	0.4442	Percent
Std Dev Btwn Labs	0.0111	Percent	0.0118	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 71 of 87 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 185
Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent
COPPER (Cu)

Comments on assigned Data Flags for Analysis #185

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
6D9Q6V	X	Data for both samples are high. Possible Systematic error.
9RE7MT	X	Data for both samples are high. Possible Systematic error.
C96PJQ	X	Data for sample M21 are high. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
EZXU94	X	Data for sample M21 are high. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
H6BPY3	X	Data for sample M22 are high. Inconsistent in testing between samples.
JXRK6G	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of sample M21.
P2B4QR	X	Data for both samples are low. Possible Systematic error.
RNG3UN	X	Data for sample M21 are low. Inconsistent in testing between samples.
XL2T76	X	Data for sample M22 are low. Inconsistent in testing between samples.

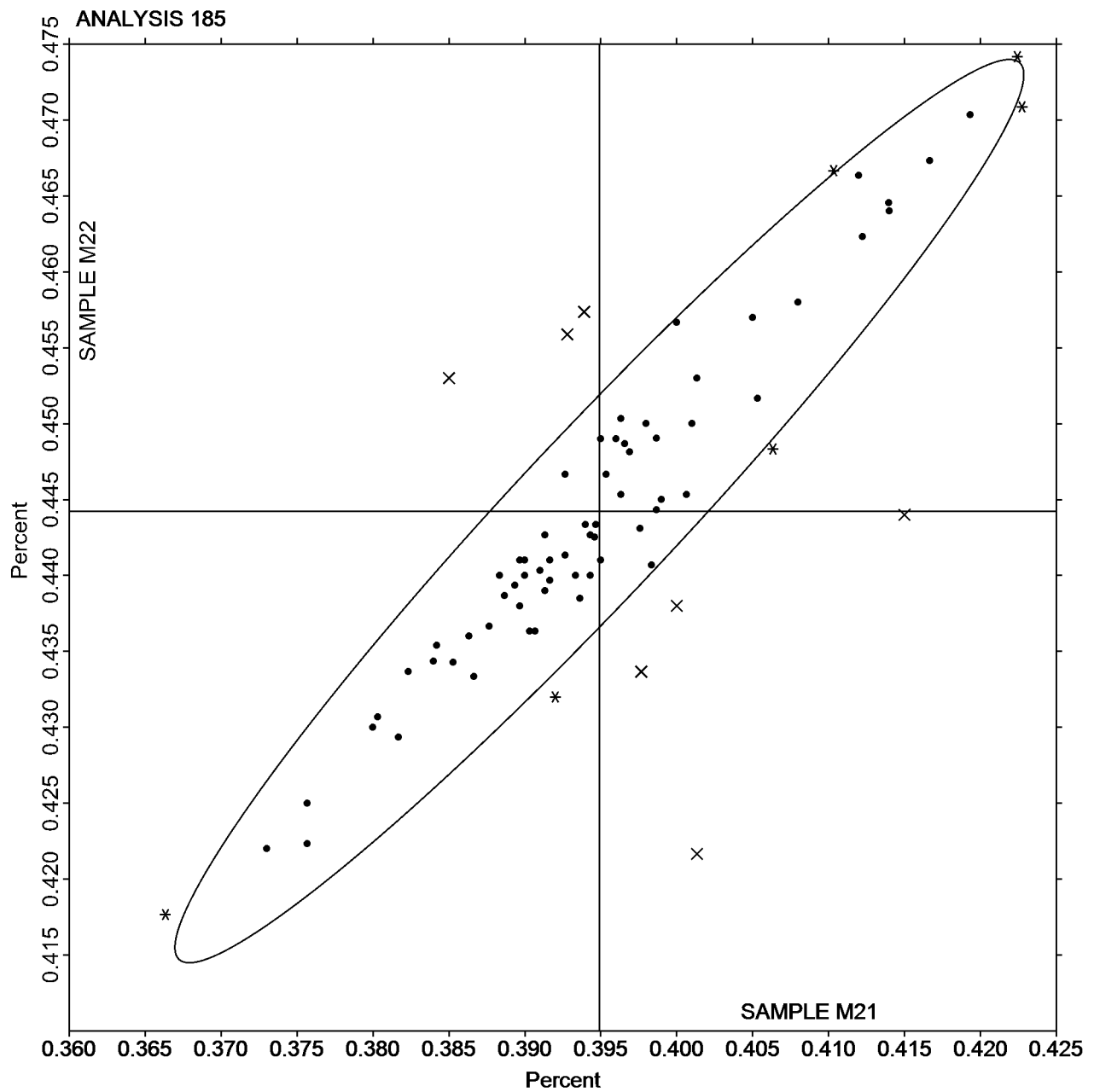
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 185

Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent
COPPER (Cu)

SAMPLE M21
0.3949 Percent

SAMPLE M22
0.4442 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 186

Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent
NICKEL (Ni)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		9.027	0.018	0.23	9.023	-0.002	-0.03	OE
2WD8TF		9.033	0.024	0.31	9.033	0.008	0.09	WD
2XDLHF		8.987	-0.022	-0.29	9.002	-0.023	-0.30	OE
3DA7NV		8.893	-0.116	-1.48	8.933	-0.092	-1.16	WD
3GWUQ9		9.047	0.038	0.48	9.047	0.021	0.27	OE
4474MW		9.117	0.108	1.38	9.140	0.115	1.44	OE
44LL9P		9.017	0.008	0.10	9.043	0.018	0.23	OE
4F9TNC		9.000	-0.009	-0.12	9.033	0.008	0.10	OE
6BNUMW		9.045	0.036	0.46	9.048	0.023	0.28	XX
6D9Q6V		9.083	0.074	0.95	9.143	0.118	1.49	OE
76ME4Y		8.953	-0.056	-0.72	8.973	-0.052	-0.66	OE
7KQ4TR		9.007	-0.002	-0.03	9.040	0.015	0.18	XR
8D47DX		9.116	0.107	1.37	9.169	0.144	1.81	OE
8KNC3H		9.038	0.029	0.37	9.048	0.023	0.28	OE
8R6BNQ		8.869	-0.140	-1.79	8.924	-0.101	-1.28	ED
9GDRG2		8.987	-0.022	-0.29	9.020	-0.005	-0.07	OE
9RE7MT	X	8.500	-0.509	-6.52	8.600	-0.425	-5.36	XX
9YKVB	X	9.033	0.024	0.31	8.817	-0.209	-2.63	IC
AHRYNA		9.087	0.078	0.99	9.050	0.025	0.31	IC
ANZKDR		9.010	0.001	0.01	9.155	0.129	1.63	IC
BLQRYJ		8.977	-0.032	-0.41	8.973	-0.052	-0.66	OE
C44RPY		9.029	0.020	0.25	9.068	0.043	0.54	OE
C96PJQ	X	8.750	-0.259	-3.32	8.760	-0.265	-3.35	OE
CRZ8LE	X	8.623	-0.386	-4.94	8.998	-0.028	-0.35	OE
DBDYCM	*	8.921	-0.088	-1.13	9.027	0.002	0.02	OE
DC9K3T		9.007	-0.002	-0.03	9.007	-0.019	-0.24	OE
DEFYM7		8.990	-0.019	-0.24	9.007	-0.019	-0.24	WD
DLZDFD	*	9.230	0.221	2.83	9.219	0.194	2.44	GD
DTAMFR		8.957	-0.052	-0.66	8.927	-0.098	-1.24	OE
E3K29K	*	8.813	-0.196	-2.51	8.897	-0.129	-1.62	XX
EZXU94		9.026	0.017	0.22	8.980	-0.045	-0.57	OE
FGCANX		9.050	0.041	0.52	9.067	0.041	0.52	OE
GJNTFD		9.047	0.038	0.48	9.080	0.055	0.69	GD
GLJ4YL		9.137	0.128	1.64	9.197	0.172	2.16	OE
H2AHJ8	*	9.227	0.218	2.78	9.260	0.235	2.96	OE
H6BPY3		8.965	-0.044	-0.56	9.029	0.004	0.05	OE
HBHUCW		8.944	-0.065	-0.83	8.967	-0.058	-0.73	WD
HH9UXA		8.950	-0.059	-0.76	9.000	-0.025	-0.32	WD
HHN8AZ		9.197	0.188	2.40	9.203	0.178	2.24	OE
JN89T6		9.027	0.018	0.23	9.037	0.011	0.14	OE
JXRK6G		9.103	0.094	1.21	9.155	0.130	1.64	OE
KH2DNF		9.042	0.033	0.42	9.041	0.016	0.20	WC
KM9B92		9.078	0.069	0.88	9.152	0.127	1.59	OE
L3ZJED	*	9.050	0.041	0.52	8.967	-0.059	-0.74	OE
LRQBHK		8.895	-0.114	-1.46	8.926	-0.100	-1.26	OE
M9YTVQ		8.984	-0.025	-0.32	9.029	0.004	0.04	OE
MRPVKD		9.020	0.011	0.14	9.017	-0.009	-0.11	OE
MTKGCJ		8.942	-0.067	-0.86	8.979	-0.047	-0.59	OE
NA4M8F	X	9.360	0.351	4.49	9.310	0.285	3.59	OE

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals

Analysis 186

Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent
NICKEL (Ni)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NGXUEA		9.013	0.004	0.05	9.025	0.000	0.00	WD
P2B4QR		9.003	-0.006	-0.07	9.050	0.025	0.31	OE
PLCUCE		8.898	-0.111	-1.42	8.934	-0.091	-1.15	OE
PUN263		8.956	-0.053	-0.68	8.935	-0.090	-1.14	WD
PZ2WPK		8.979	-0.030	-0.38	9.008	-0.017	-0.22	WD
Q4VW2F		8.945	-0.064	-0.82	8.950	-0.076	-0.96	OE
Q9HPV3		9.060	0.051	0.66	9.086	0.060	0.76	OE
R4VPJQ		9.007	-0.002	-0.02	9.026	0.001	0.01	OE
R6KLJY		8.951	-0.058	-0.74	8.956	-0.070	-0.88	WD
RNG3UN		8.957	-0.052	-0.66	8.974	-0.051	-0.65	OE
T6ERFJ	*	9.083	0.074	0.95	8.990	-0.035	-0.44	OE
T8JCB7		9.016	0.007	0.09	9.007	-0.018	-0.23	OE
T9EW3C		8.940	-0.069	-0.88	8.960	-0.065	-0.83	OE
TWWBHQ		8.897	-0.112	-1.44	9.047	0.021	0.27	IC
TXTQ79	X	9.310	0.301	3.85	9.373	0.348	4.39	OE
TYNBWE		9.034	0.025	0.31	9.035	0.010	0.12	OE
U3AA6V		9.047	0.038	0.48	9.037	0.011	0.14	OE
U772WE		8.911	-0.098	-1.26	8.929	-0.096	-1.22	OE
UDYCT3		8.992	-0.017	-0.22	8.970	-0.055	-0.70	OE
URLPCH		9.029	0.020	0.25	8.998	-0.028	-0.35	IC
UZGTGE		8.946	-0.063	-0.81	8.975	-0.050	-0.63	WD
V2DCBT		8.887	-0.122	-1.57	8.893	-0.132	-1.67	XX
V2DCCE		8.987	-0.022	-0.28	9.071	0.046	0.58	OE
V4JWXT		8.945	-0.064	-0.82	8.958	-0.067	-0.85	WD
VCDAA8		9.053	0.044	0.57	9.063	0.038	0.48	OE
W4QP28		8.967	-0.042	-0.54	9.017	-0.009	-0.11	OE
W7NJDJ		9.045	0.036	0.46	8.997	-0.028	-0.35	DR
WAYVT7	*	9.210	0.201	2.57	9.206	0.181	2.28	OE
WBFQQU		8.910	-0.099	-1.27	8.934	-0.092	-1.16	DR
X7CMXC		8.970	-0.039	-0.50	9.040	0.015	0.18	OE
XL2T76	*	8.900	-0.109	-1.40	8.853	-0.172	-2.17	XX
XPUZ6F		8.973	-0.036	-0.46	8.813	-0.212	-2.67	OE
XY3GUZ		9.060	0.051	0.66	9.108	0.083	1.04	WD
XZN3RB		9.016	0.007	0.08	8.993	-0.033	-0.41	OE
Z6FVAW		8.963	-0.046	-0.59	8.963	-0.062	-0.78	OE
ZMKRYR		9.044	0.035	0.44	9.096	0.071	0.89	GD
ZMZVPD		9.032	0.023	0.29	9.045	0.020	0.25	IC
ZPQCMR		8.987	-0.022	-0.29	8.983	-0.042	-0.53	OE
ZYTE4J		9.063	0.054	0.69	9.063	0.038	0.48	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	9.009	Percent	9.025	Percent
Stnd Dev Btwn Labs	0.078	Percent	0.079	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 79 of 88 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 186
Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent
NICKEL (Ni)

Comments on assigned Data Flags for Analysis #186

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
9RE7MT	X	Data for both samples are low. Possible Systematic error.
9YKVB	X	Data for sample M22 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample M21.
C96PJQ	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of both samples.
CRZ8LE	X	Data for sample M21 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample M21.
NA4M8F	X	Data for both samples are high. Possible Systematic error.
TWWBHQ	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample M21.
TXTQ79	X	Data for both samples are high. Possible Systematic error.
XPUZ6F	X	Data for sample M22 are low. Inconsistent in testing between samples.

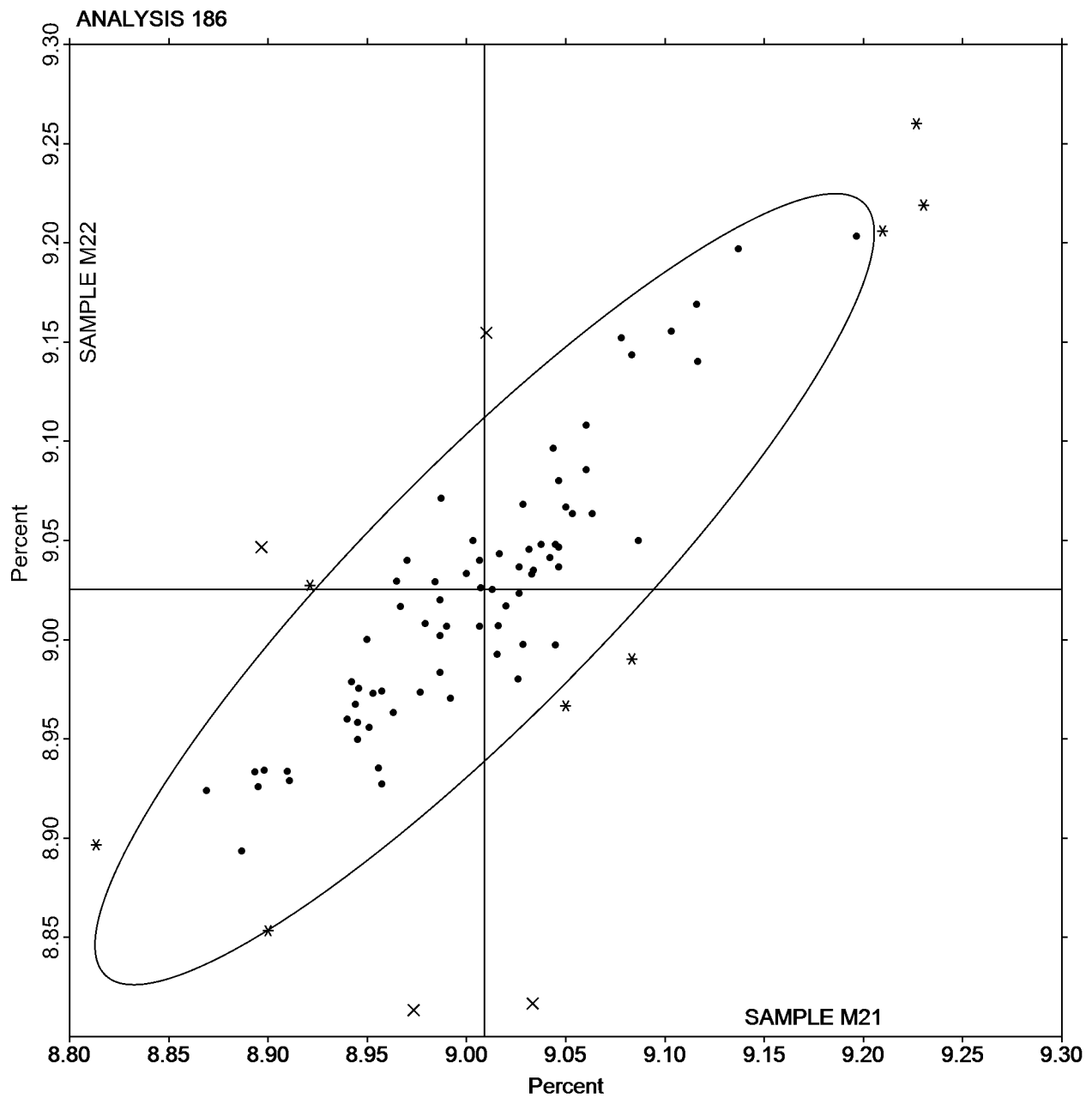
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 186

Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent
NICKEL (Ni)

SAMPLE M21
9.009 Percent

SAMPLE M22
9.025 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 187

Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent
CHROMIUM (Cr)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		17.16	-0.08	-0.85	16.99	-0.10	-0.99	OE
2WD8TF		17.25	0.01	0.14	17.09	0.00	-0.01	WD
2XDLHF		17.22	-0.02	-0.22	17.13	0.04	0.38	OE
3DA7NV	X	16.89	-0.35	-3.56	16.73	-0.36	-3.61	WD
3GWUQ9		17.27	0.03	0.29	17.11	0.02	0.16	OE
4474MW	X	17.52	0.28	2.86	17.45	0.36	3.65	OE
44LL9P		17.24	0.00	-0.01	17.05	-0.04	-0.38	OE
4F9TNC		17.00	-0.24	-2.44	17.03	-0.06	-0.58	OE
6BNUMW		17.25	0.01	0.06	17.15	0.06	0.56	XX
6D9Q6V		17.38	0.14	1.38	17.30	0.21	2.11	OE
76ME4Y		17.20	-0.04	-0.41	17.01	-0.08	-0.82	OE
7KQ4TR		17.30	0.06	0.56	17.13	0.04	0.36	XR
8D47DX		17.47	0.23	2.36	17.31	0.22	2.24	OE
8KNC3H		17.23	-0.01	-0.10	17.07	-0.02	-0.24	OE
8R6BNQ		17.29	0.04	0.45	17.15	0.06	0.56	ED
9GDRG2		17.16	-0.08	-0.82	17.10	0.01	0.09	OE
9RE7MT	*	17.50	0.26	2.63	17.40	0.31	3.12	XX
9YKVB	X	17.07	-0.17	-1.70	17.11	0.02	0.19	IC
AHRYNA		17.22	-0.02	-0.18	17.10	0.01	0.09	OE
ANZKDR		17.31	0.07	0.74	17.21	0.12	1.17	WD
BLQRYJ		17.34	0.10	1.04	17.24	0.15	1.50	OE
C44RPY		17.27	0.03	0.29	17.08	-0.01	-0.09	OE
C96PJQ	X	17.61	0.37	3.74	17.51	0.42	4.19	ED
CRZ8LE		17.15	-0.09	-0.96	16.99	-0.10	-1.02	OE
DBDYCM	X	17.58	0.34	3.46	17.35	0.26	2.62	OE
DC9K3T		17.28	0.04	0.43	17.15	0.06	0.63	OE
DEFYM7		17.21	-0.03	-0.28	17.05	-0.04	-0.38	WD
DLZDFD		17.29	0.05	0.50	17.13	0.04	0.43	GD
DTAMFR		17.19	-0.05	-0.48	16.98	-0.11	-1.09	OE
E3K29K	X	17.63	0.39	3.91	17.53	0.44	4.39	XX
EZXU94		17.08	-0.16	-1.60	16.99	-0.10	-1.02	OE
FGCANX		17.22	-0.02	-0.21	17.13	0.04	0.36	OE
GJNTFD		17.13	-0.11	-1.09	17.07	-0.02	-0.25	GD
GLJ4YL		17.34	0.10	0.97	17.13	0.04	0.36	OE
H2AHJ8	X	17.06	-0.18	-1.87	16.79	-0.30	-3.04	OE
H6BPY3	X	17.12	-0.12	-1.19	17.39	0.30	2.98	OE
HBHUCW		17.31	0.06	0.66	17.15	0.06	0.57	WD
HH9UXA		17.19	-0.05	-0.52	17.04	-0.05	-0.48	WD
HHN8AZ		17.19	-0.05	-0.48	17.05	-0.04	-0.38	OE
JN89T6		17.21	-0.03	-0.35	17.17	0.08	0.76	OE
JXRK6G		17.07	-0.17	-1.77	17.14	0.05	0.49	OE
KH2DNF		17.18	-0.06	-0.64	17.05	-0.05	-0.46	WC
KM9B92		17.23	-0.01	-0.14	17.09	0.00	-0.02	OE
L3ZJED		17.32	0.08	0.77	17.19	0.10	1.03	OE
LRQBHK		17.22	-0.02	-0.21	17.03	-0.06	-0.59	OE
M9YTVQ		17.34	0.10	0.97	17.15	0.06	0.56	OE
MRPVKD		17.21	-0.03	-0.27	17.07	-0.02	-0.21	OE
MTKGCJ		17.22	-0.02	-0.25	17.02	-0.07	-0.67	OE
NA4M8F		17.45	0.21	2.12	17.27	0.18	1.80	OE

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 187

Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent
CHROMIUM (Cr)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NGXUEA		17.24	0.00	-0.05	17.06	-0.03	-0.27	WD
P2B4QR	X	16.93	-0.31	-3.19	16.97	-0.12	-1.25	OE
PLCUCE		17.27	0.03	0.32	17.13	0.03	0.35	OE
PUN263		17.14	-0.10	-1.06	16.97	-0.12	-1.22	WD
PZ2WPK		17.19	-0.05	-0.52	17.03	-0.06	-0.62	WD
Q4VW2F		17.20	-0.04	-0.37	17.04	-0.05	-0.50	OE
Q9HPV3		17.31	0.07	0.73	17.18	0.09	0.93	OE
R4VPJQ		17.20	-0.04	-0.38	17.07	-0.02	-0.23	OE
R6KLJY		17.21	-0.03	-0.28	17.05	-0.05	-0.46	WD
RNG3UN		17.24	0.00	0.02	16.94	-0.15	-1.56	OE
T6ERFJ		17.24	0.00	-0.01	17.02	-0.07	-0.68	OE
T8JCB7		17.25	0.01	0.09	17.06	-0.03	-0.31	OE
T9EW3C		17.15	-0.09	-0.89	17.00	-0.09	-0.92	OE
TWWBHQ		17.25	0.01	0.13	17.11	0.02	0.16	TI
TXTQ79	*	16.98	-0.26	-2.64	16.81	-0.28	-2.80	OE
TYNBWE		17.22	-0.02	-0.21	17.10	0.01	0.06	OE
U3AA6V		17.24	0.00	-0.01	17.08	-0.01	-0.11	OE
U772WE		17.17	-0.07	-0.72	17.02	-0.07	-0.72	OE
UDYCT3		17.07	-0.17	-1.73	16.98	-0.11	-1.09	OE
URLPCH		17.17	-0.07	-0.69	16.98	-0.11	-1.15	IC
UZGTGE		17.24	0.00	-0.04	17.08	-0.01	-0.11	WD
V2DCBT		17.41	0.17	1.68	17.19	0.10	1.00	XX
V2DCCE	*	17.20	-0.04	-0.44	17.17	0.08	0.79	OE
V4JWXT		17.29	0.05	0.48	17.15	0.06	0.56	WD
VCDAA8		17.33	0.09	0.94	17.12	0.03	0.29	WD
W4QP28		17.36	0.12	1.17	17.21	0.12	1.17	OE
W7NJDJ	*	17.50	0.26	2.60	17.29	0.20	1.98	DR
WAYVT7		17.06	-0.18	-1.86	16.95	-0.14	-1.38	OE
WBFQQU		17.22	-0.02	-0.17	17.08	-0.01	-0.07	DR
X7CMXC	*	17.36	0.12	1.17	17.08	-0.01	-0.15	OE
XL2T76	X	17.71	0.47	4.79	17.53	0.44	4.43	XX
XPUZ6F	X	17.01	-0.23	-2.30	17.01	-0.08	-0.78	OE
XY3GUZ		17.23	-0.01	-0.08	17.08	-0.01	-0.15	WD
XZN3RB		17.18	-0.06	-0.65	17.05	-0.04	-0.45	OE
Z6FVAW		17.12	-0.12	-1.23	16.90	-0.19	-1.96	OE
ZMKRYR		17.01	-0.23	-2.31	16.86	-0.23	-2.33	GD
ZMZVPD		17.37	0.13	1.27	17.21	0.12	1.17	IC
ZPQCMR		17.18	-0.06	-0.58	17.04	-0.05	-0.55	OE
ZYTE4J		17.25	0.01	0.06	17.10	0.01	0.06	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	17.24	Percent	17.09	Percent
Stnd Dev Btwn Labs	0.10	Percent	0.10	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 74 of 88 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 187
Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent
CHROMIUM (Cr)

Comments on assigned Data Flags for Analysis #187

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
3DA7NV	X	Data for both samples are low. Possible Systematic error.
4474MW	X	Data for both samples are high. Possible Systematic error.
9YKVB	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample M21.
C96PJQ	X	Data for both samples are high. Possible Systematic error.
DBDYCM	X	Data for both samples are high. Possible Systematic error.
E3K29K	X	Data for both samples are high. Possible Systematic error.
H2AHJ8	X	Data for sample M22 are low. Inconsistent in testing between samples.
H6BPY3	X	Data for sample M22 are high. Inconsistent in testing between samples.
P2B4QR	X	Data for sample M21 are low. Inconsistent in testing between samples.
XL2T76	X	Data for both samples are high. Possible Systematic error.
XPUZ6F	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample M22.

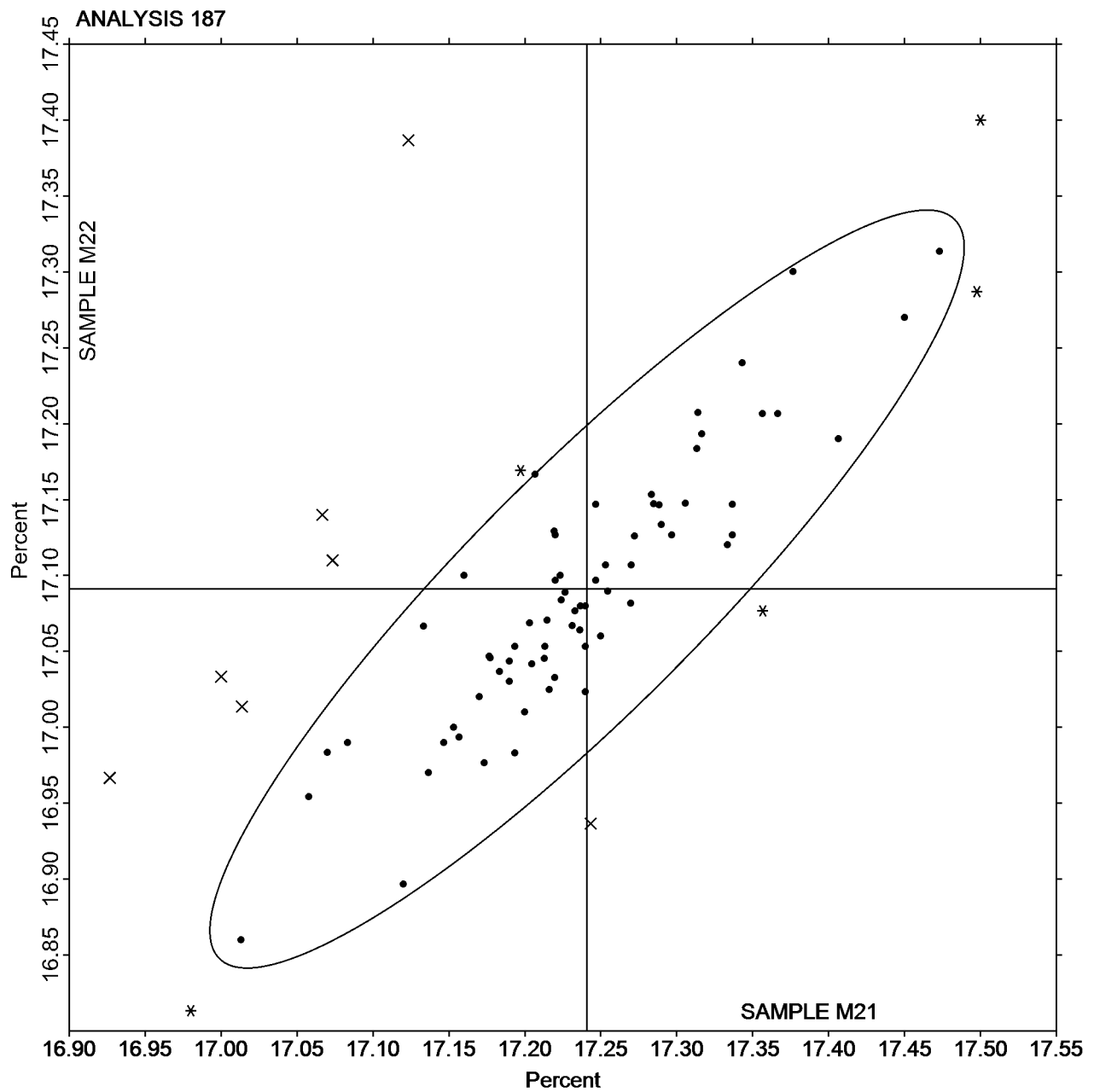
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 187

Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent
CHROMIUM (Cr)

SAMPLE M21
17.24 Percent

SAMPLE M22
17.09 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 188

Chemical Analysis Element #9 - Corrosion Resistant Steel - Percent
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.3496	-0.0044	-0.55	0.4055	-0.0080	-0.76	OE
2WD8TF		0.3553	0.0013	0.17	0.4143	0.0009	0.09	WD
2XDLHF		0.3517	-0.0023	-0.29	0.4233	0.0099	0.95	OE
3DA7NV		0.3547	0.0007	0.08	0.4137	0.0002	0.02	WD
3GWUQ9		0.3643	0.0103	1.29	0.4260	0.0126	1.21	OE
4474MW		0.3507	-0.0033	-0.41	0.3983	-0.0151	-1.45	OE
44LL9P		0.3553	0.0013	0.17	0.4180	0.0046	0.44	OE
4F9TNC	*	0.3300	-0.0240	-2.99	0.3833	-0.0301	-2.89	OE
6BNUMW		0.3590	0.0050	0.63	0.4100	-0.0034	-0.33	XX
6D9Q6V		0.3400	-0.0140	-1.75	0.3900	-0.0234	-2.25	OE
76ME4Y		0.3600	0.0060	0.75	0.4160	0.0026	0.25	OE
7KQ4TR		0.3597	0.0057	0.71	0.4217	0.0082	0.79	XR
8D47DX	X	0.3823	0.0283	3.54	0.4457	0.0322	3.10	OE
8KNC3H		0.3569	0.0029	0.37	0.4172	0.0037	0.36	OE
8R6BNQ		0.3590	0.0050	0.63	0.4250	0.0116	1.11	ED
9GDRG2		0.3547	0.0007	0.08	0.4097	-0.0038	-0.36	OE
9RE7MT		0.3600	0.0060	0.75	0.4200	0.0066	0.63	XX
9YKVBT	X	0.3257	-0.0283	-3.54	0.4210	0.0076	0.73	IC
AHRYNA		0.3533	-0.0007	-0.08	0.4097	-0.0038	-0.36	OE
ANZKDR		0.3523	-0.0017	-0.21	0.4130	-0.0004	-0.04	WD
BLQRYJ	*	0.3460	-0.0080	-1.00	0.3900	-0.0234	-2.25	OE
C44RPY		0.3503	-0.0037	-0.46	0.4130	-0.0004	-0.04	OE
C96PJQ	X	0.5467	0.1927	24.05	0.5900	0.1766	16.95	ED
CRZ8LE		0.3447	-0.0093	-1.16	0.4007	-0.0128	-1.22	OE
DBDYCM		0.3554	0.0014	0.18	0.4162	0.0028	0.27	OE
DC9K3T		0.3613	0.0073	0.92	0.4107	-0.0028	-0.26	WC
DEFYM7		0.3600	0.0060	0.75	0.4200	0.0066	0.63	WD
DLZFDF		0.3503	-0.0037	-0.46	0.4110	-0.0024	-0.23	GD
DTAMFR		0.3568	0.0028	0.35	0.4138	0.0004	0.03	OE
E3K29K		0.3600	0.0060	0.75	0.4267	0.0132	1.27	XX
EZXU94	X	0.3610	0.0070	0.88	0.4407	0.0272	2.62	OE
FGCANX		0.3533	-0.0007	-0.08	0.4133	-0.0001	-0.01	OE
GJNTFD		0.3573	0.0033	0.42	0.4183	0.0049	0.47	GD
GLJ4YL		0.3577	0.0037	0.46	0.4190	0.0056	0.54	OE
H2AHJ8		0.3542	0.0002	0.03	0.4168	0.0033	0.32	OE
H6BPY3		0.3583	0.0043	0.54	0.3960	-0.0174	-1.67	OE
HBHUCW		0.3540	0.0000	0.00	0.4133	-0.0001	-0.01	WD
HH9UXA		0.3533	-0.0007	-0.08	0.4200	0.0066	0.63	DR
HHN8AZ		0.3630	0.0090	1.12	0.4200	0.0066	0.63	OE
JN89T6		0.3660	0.0120	1.50	0.4220	0.0086	0.82	OE
JXRK6G		0.3700	0.0160	2.00	0.4313	0.0179	1.72	OE
KM9B92		0.3547	0.0007	0.09	0.4190	0.0056	0.54	OE
L3ZJED		0.3600	0.0060	0.75	0.4187	0.0052	0.50	OE
LRQBHK		0.3563	0.0023	0.29	0.4162	0.0028	0.27	OE
M9YTVQ		0.3570	0.0030	0.38	0.4210	0.0076	0.73	OE
MRPVKD		0.3699	0.0159	1.99	0.4294	0.0159	1.53	OE
MTKGCJ		0.3446	-0.0094	-1.17	0.4056	-0.0078	-0.75	OE
NA4M8F	X	0.3200	-0.0340	-4.24	0.3750	-0.0384	-3.69	OE
NGXUEA		0.3563	0.0023	0.29	0.4167	0.0032	0.31	WD

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 188

Chemical Analysis Element #9 - Corrosion Resistant Steel - Percent
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P2B4QR	*	0.3330	-0.0210	-2.62	0.3910	-0.0224	-2.15	OE
PLCUCE		0.3644	0.0104	1.30	0.4268	0.0133	1.28	OE
PUN263		0.3523	-0.0017	-0.21	0.4110	-0.0024	-0.23	WD
PZ2WPK		0.3533	-0.0007	-0.08	0.4140	0.0006	0.06	WD
Q4VW2F		0.3350	-0.0190	-2.37	0.3920	-0.0214	-2.06	OE
Q9HPV3		0.3637	0.0097	1.21	0.4250	0.0116	1.11	OE
R4VPJQ		0.3460	-0.0080	-1.00	0.4023	-0.0111	-1.06	OE
R6KLJY		0.3510	-0.0030	-0.37	0.4120	-0.0014	-0.14	WD
RNG3UN		0.3540	0.0000	0.00	0.4117	-0.0018	-0.17	OE
T6ERFJ		0.3480	-0.0060	-0.75	0.4063	-0.0071	-0.68	OE
T8JCB7		0.3620	0.0080	1.00	0.4210	0.0076	0.73	OE
T9EW3C	X	0.3760	0.0220	2.75	0.4250	0.0116	1.11	OE
TWWBHQ		0.3513	-0.0027	-0.33	0.4123	-0.0011	-0.10	IC
TXTQ79	X	0.3173	-0.0367	-4.58	0.3670	-0.0464	-4.46	OE
TYNBWE		0.3490	-0.0050	-0.62	0.4130	-0.0004	-0.04	OE
U3AA6V	*	0.3313	-0.0227	-2.83	0.3863	-0.0271	-2.60	OE
U772WE		0.3627	0.0087	1.08	0.4213	0.0079	0.76	OE
UDYCT3		0.3510	-0.0030	-0.37	0.4033	-0.0101	-0.97	OE
URLPCH		0.3487	-0.0053	-0.66	0.4063	-0.0071	-0.68	IC
UZGTGE	X	0.3560	0.0020	0.25	0.4467	0.0332	3.19	WD
V2DCBT	*	0.3513	-0.0027	-0.33	0.4257	0.0122	1.18	XX
V2DCCE		0.3503	-0.0037	-0.46	0.4218	0.0083	0.80	OE
V4JWXT		0.3563	0.0023	0.29	0.4163	0.0029	0.28	OE
VCDAA8		0.3567	0.0027	0.33	0.4233	0.0099	0.95	OE
W4QP28		0.3603	0.0063	0.79	0.4187	0.0052	0.50	OE
W7NJDJ		0.3617	0.0077	0.96	0.4210	0.0076	0.73	DR
WAYVT7		0.3480	-0.0060	-0.75	0.4093	-0.0041	-0.39	OE
WBFQQU		0.3627	0.0087	1.09	0.4129	-0.0006	-0.05	DR
X7CMXC		0.3408	-0.0132	-1.65	0.3973	-0.0162	-1.55	OE
XL2T76		0.3481	-0.0059	-0.74	0.3999	-0.0136	-1.30	XX
XPUZ6F	X	0.3913	0.0373	4.66	0.4433	0.0299	2.87	OE
XY3GUZ		0.3577	0.0037	0.46	0.4200	0.0066	0.63	WD
XZN3RB		0.3573	0.0033	0.42	0.4257	0.0122	1.18	OE
Z6FVAW	X	0.3500	-0.0040	-0.50	0.3400	-0.0734	-7.05	OE
ZMKRYR	X	0.3877	0.0337	4.20	0.4507	0.0372	3.58	GD
ZMZVPD		0.3540	0.0000	0.00	0.4153	0.0019	0.18	IC
ZPQCMR	X	0.3843	0.0303	3.79	0.3870	-0.0264	-2.54	OE
ZYTE4J	X	0.3820	0.0280	3.50	0.4270	0.0136	1.30	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.3540	Percent	0.4134	Percent
Stnd Dev Btwn Labs	0.0080	Percent	0.0104	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 73 of 87 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 188
Chemical Analysis Element #9 - Corrosion Resistant Steel - Percent
MOLYBDENUM (Mo)

Comments on assigned Data Flags for Analysis #188

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
8D47DX	X	Data for both samples are high.
9YKVBV	X	Data for sample M21 are low.
C96PJQ	X	Data for both samples are high. Inconsistent within the determinations of both samples.
EZXU94	X	Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
NA4M8F	X	Data for both samples are low. Inconsistent within the determinations of sample M22.
TXTQ79	X	Data for both samples are low.
UZGTGE	X	Data for sample M22 are high.
XPUZ6F	X	Data for both samples are high.
Z6FVAW	X	Data for sample M22 are low.
ZMKRYR	X	Data for both samples are high. Inconsistent within the determinations of both samples.
ZPQCMR	X	Data for sample M21 are high.
ZYTE4J	X	Data for sample M21 are high.

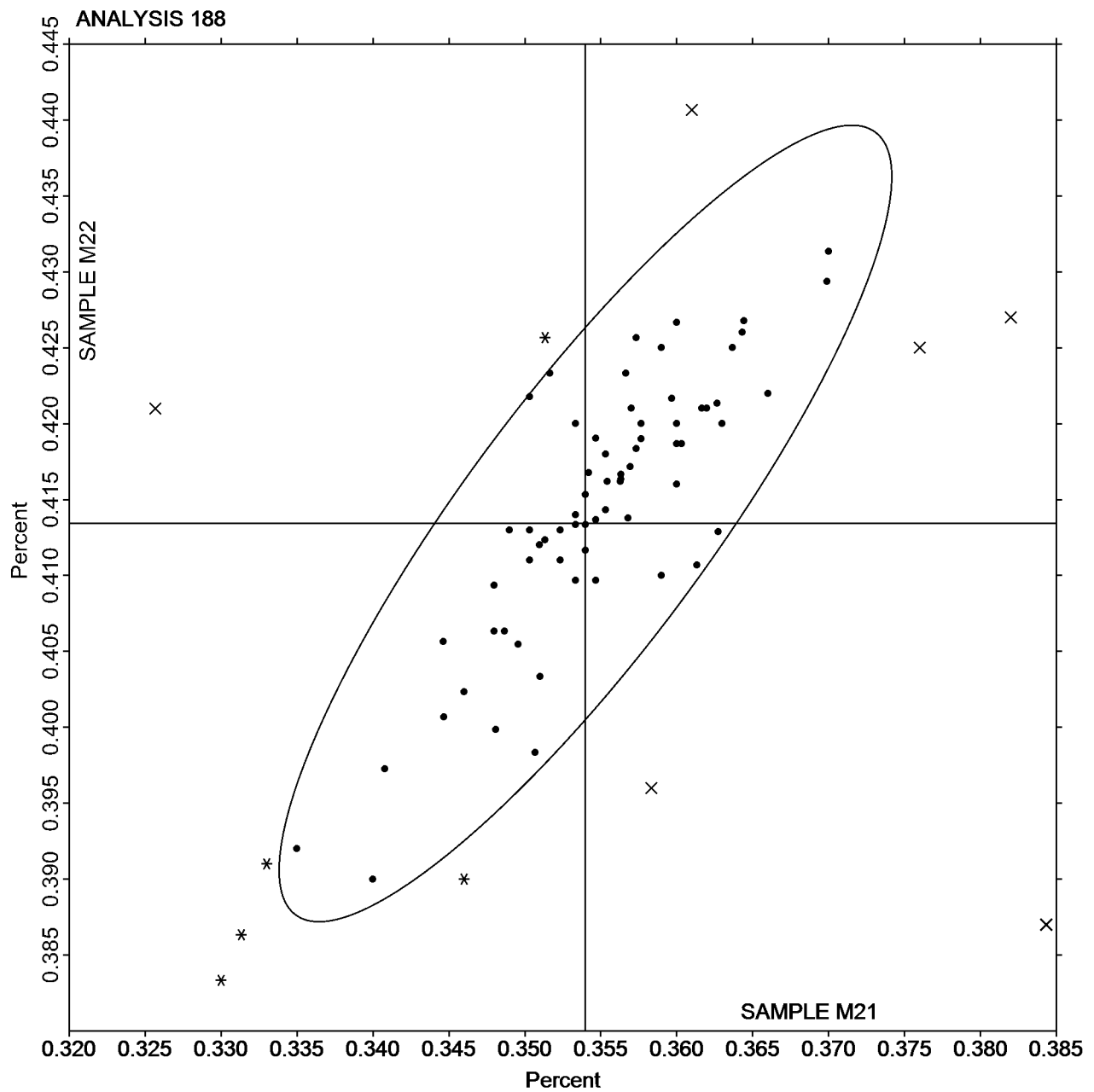
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 188

Chemical Analysis Element #9 - Corrosion Resistant Steel - Percent
MOLYBDENUM (Mo)

SAMPLE M21
0.3540 Percent

SAMPLE M22
0.4134 Percent



Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 189

Chemical Analysis Element #10 - Corrosion Resistant Steel - Percent
NIOBIUM (Nb)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2MAWFY		0.5230	-0.0151	-0.81	0.5847	-0.0116	-0.56	OE
2WD8TF		0.5303	-0.0079	-0.42	0.5890	-0.0073	-0.35	WD
2XDLHF		0.5493	0.0112	0.60	0.6080	0.0117	0.56	OE
3DA7NV	X	0.4820	-0.0561	-3.02	0.5003	-0.0960	-4.61	WD
3GWUQ9		0.5407	0.0025	0.14	0.5937	-0.0026	-0.13	OE
4474MW		0.5600	0.0219	1.18	0.6033	0.0070	0.34	OE
44LL9P		0.5200	-0.0181	-0.98	0.5740	-0.0223	-1.07	OE
4F9TNC		0.5467	0.0085	0.46	0.6033	0.0070	0.34	OE
6BNUMW		0.5190	-0.0191	-1.03	0.5770	-0.0193	-0.93	XX
6D9Q6V	*	0.4833	-0.0548	-2.95	0.5400	-0.0563	-2.70	OE
7KQ4TR		0.5383	0.0002	0.01	0.5960	-0.0003	-0.01	XR
8D47DX		0.5220	-0.0161	-0.87	0.5847	-0.0116	-0.56	OE
8KNC3H		0.5345	-0.0036	-0.20	0.5955	-0.0008	-0.04	OE
8R6BNQ		0.5330	-0.0051	-0.28	0.5960	-0.0003	-0.01	ED
9GDRG2		0.5390	0.0009	0.05	0.6117	0.0154	0.74	OE
9RE7MT	X	0.4600	-0.0781	-4.20	0.5033	-0.0930	-4.47	XX
9YKVB		0.5463	0.0082	0.44	0.5677	-0.0286	-1.38	IC
AHRYNA		0.5340	-0.0041	-0.22	0.5800	-0.0163	-0.78	OE
ANZKDR		0.5327	-0.0055	-0.29	0.5917	-0.0046	-0.22	WD
BLQRYJ		0.5347	-0.0035	-0.19	0.5867	-0.0096	-0.46	OE
C44RPY		0.5723	0.0342	1.84	0.6303	0.0340	1.64	OE
C96PJQ	X	0.5700	0.0319	1.72	0.6733	0.0770	3.70	ED
CRZ8LE		0.5733	0.0352	1.89	0.6347	0.0384	1.84	OE
DC9K3T		0.5410	0.0029	0.15	0.5997	0.0034	0.16	OE
DEFYM7		0.5297	-0.0085	-0.46	0.5857	-0.0106	-0.51	WD
DLZDFD		0.5460	0.0079	0.42	0.5963	0.0000	0.00	GD
DTAMFR		0.5309	-0.0073	-0.39	0.5877	-0.0086	-0.41	OE
E3K29K	X	0.4623	-0.0758	-4.08	0.5223	-0.0740	-3.55	XX
EZXU94		0.5440	0.0059	0.32	0.5973	0.0010	0.05	OE
FGCANX		0.5033	-0.0348	-1.87	0.5633	-0.0330	-1.58	OE
GJNTFD		0.5520	0.0139	0.75	0.6110	0.0147	0.71	GD
GLJ4YL		0.5510	0.0129	0.69	0.6073	0.0110	0.53	OE
H2AHJ8		0.5627	0.0245	1.32	0.6263	0.0300	1.44	OE
H6BPY3	X	0.5297	-0.0085	-0.46	0.6657	0.0694	3.33	OE
HBHUCW		0.5520	0.0139	0.75	0.6097	0.0134	0.64	WD
HH9UXA		0.5333	-0.0048	-0.26	0.6000	0.0037	0.18	WD
JN89T6		0.5500	0.0119	0.64	0.6033	0.0070	0.34	OE
JXRK6G		0.5163	-0.0218	-1.17	0.5877	-0.0086	-0.41	OE
KM9B92		0.5434	0.0053	0.29	0.6169	0.0206	0.99	OE
L3ZJED	X	0.3180	-0.2201	-11.85	0.3577	-0.2386	-11.47	OE
LRQBHK		0.5354	-0.0027	-0.14	0.5931	-0.0032	-0.15	OE
M9YTVQ		0.5187	-0.0195	-1.05	0.5817	-0.0146	-0.70	OE
MRPVKD		0.5398	0.0017	0.09	0.5844	-0.0119	-0.57	OE
MTKGCJ		0.5380	-0.0001	0.00	0.6067	0.0104	0.50	OE
NA4M8F	X	0.6050	0.0669	3.60	0.6480	0.0517	2.49	OE
NGXUEA		0.5410	0.0029	0.15	0.5990	0.0027	0.13	WD
P2B4QR	*	0.5007	-0.0375	-2.02	0.5713	-0.0250	-1.20	OE
PLCUCE		0.5742	0.0361	1.94	0.6414	0.0451	2.17	OE
PUN263		0.5323	-0.0058	-0.31	0.5870	-0.0093	-0.45	WD

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 189

Chemical Analysis Element #10 - Corrosion Resistant Steel - Percent
NIOBIUM (Nb)

WebCode	Data Flag	Sample M21			Sample M22			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
PZ2WPK		0.5363	-0.0018	-0.10	0.5920	-0.0043	-0.21	WD
Q4VW2F		0.5533	0.0152	0.82	0.6103	0.0140	0.68	OE
Q9HPV3		0.5033	-0.0348	-1.87	0.5590	-0.0373	-1.79	OE
R4VPJQ		0.5263	-0.0118	-0.63	0.5860	-0.0103	-0.49	OE
R6KLJY		0.5365	-0.0016	-0.09	0.5934	-0.0029	-0.14	WD
RNG3UN		0.5237	-0.0145	-0.78	0.5820	-0.0143	-0.69	OE
T6ERFJ		0.5293	-0.0088	-0.47	0.5753	-0.0210	-1.01	OE
T8JCB7		0.5437	0.0055	0.30	0.6050	0.0087	0.42	OE
T9EW3C		0.5400	0.0019	0.10	0.6100	0.0137	0.66	OE
TWWBHQ		0.5260	-0.0121	-0.65	0.5883	-0.0080	-0.38	IC
TXTQ79	*	0.5900	0.0519	2.79	0.6603	0.0640	3.08	OE
TYNBWE		0.5493	0.0112	0.60	0.6070	0.0107	0.51	OE
U772WE		0.5380	-0.0001	-0.01	0.5877	-0.0086	-0.41	OE
UDYCT3	*	0.5757	0.0375	2.02	0.6230	0.0267	1.28	OE
URLPCH		0.5197	-0.0185	-0.99	0.5760	-0.0203	-0.97	IC
UZGTGE		0.5270	-0.0111	-0.60	0.5870	-0.0093	-0.45	WD
V2DCBT	X	0.6140	0.0759	4.08	0.6730	0.0767	3.69	OE
V2DCCE	*	0.5465	0.0083	0.45	0.6273	0.0310	1.49	OE
V4JWXT		0.5443	0.0062	0.33	0.6053	0.0090	0.43	OE
VCDAA8		0.5233	-0.0148	-0.80	0.5667	-0.0296	-1.42	OE
W4QP28		0.5200	-0.0181	-0.98	0.5833	-0.0130	-0.62	OE
W7NJDJ		0.5417	0.0035	0.19	0.5863	-0.0100	-0.48	DR
WAYVT7	X	0.6547	0.1165	6.27	0.7220	0.1257	6.04	OE
WBFQQU		0.5620	0.0239	1.28	0.6237	0.0274	1.32	DR
X7CMXC		0.5200	-0.0181	-0.98	0.5603	-0.0360	-1.73	OE
XL2T76	X	0.4774	-0.0608	-3.27	0.5187	-0.0776	-3.73	XX
XPUZ6F		0.5433	0.0052	0.28	0.5833	-0.0130	-0.62	OE
XY3GUZ		0.5603	0.0222	1.20	0.6200	0.0237	1.14	WD
Z6FVAW		0.5567	0.0185	1.00	0.6200	0.0237	1.14	OE
ZMKRYR		0.5637	0.0255	1.37	0.6333	0.0370	1.78	GD
ZMZVPD		0.5390	0.0009	0.05	0.5967	0.0004	0.02	IC
ZPQCMR		0.5180	-0.0201	-1.08	0.5740	-0.0223	-1.07	OE
ZYTE4J		0.5280	-0.0101	-0.54	0.5767	-0.0196	-0.94	OE

Summary Statistics

	Sample M21		Sample M22	
Grand Means	0.5381	Percent	0.5963	Percent
Std Dev Btwn Labs	0.0186	Percent	0.0208	Percent

Samples M21 , M22 : AISI 347, two different heats

Statistics based on 71 of 82 reporting participants

Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 189
Chemical Analysis Element #10 - Corrosion Resistant Steel - Percent
NIOBIUM (Nb)

Comments on assigned Data Flags for Analysis #189

<u>WebCode</u>	<u>Flag</u>	<u>Analyst Comment</u>
3DA7NV	X	Data for both samples are low. Possible Systematic error.
9RE7MT	X	Data for both samples are low. Possible Systematic error.
C96PJQ	X	Data for sample M22 are high. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
E3K29K	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of sample M22.
H6BPY3	X	Data for sample M22 are high. Inconsistent in testing between samples.
L3ZJED	X	Data for both samples are low. Possible Systematic error.
NA4M8F	X	Data for sample M21 are high. Inconsistent in testing between samples.
V2DCBT	X	Data for both samples are high. Possible Systematic error.
WAYVT7	X	Data for both samples are high. Possible Systematic error.
XL2T76	X	Data for both samples are low. Possible Systematic error.

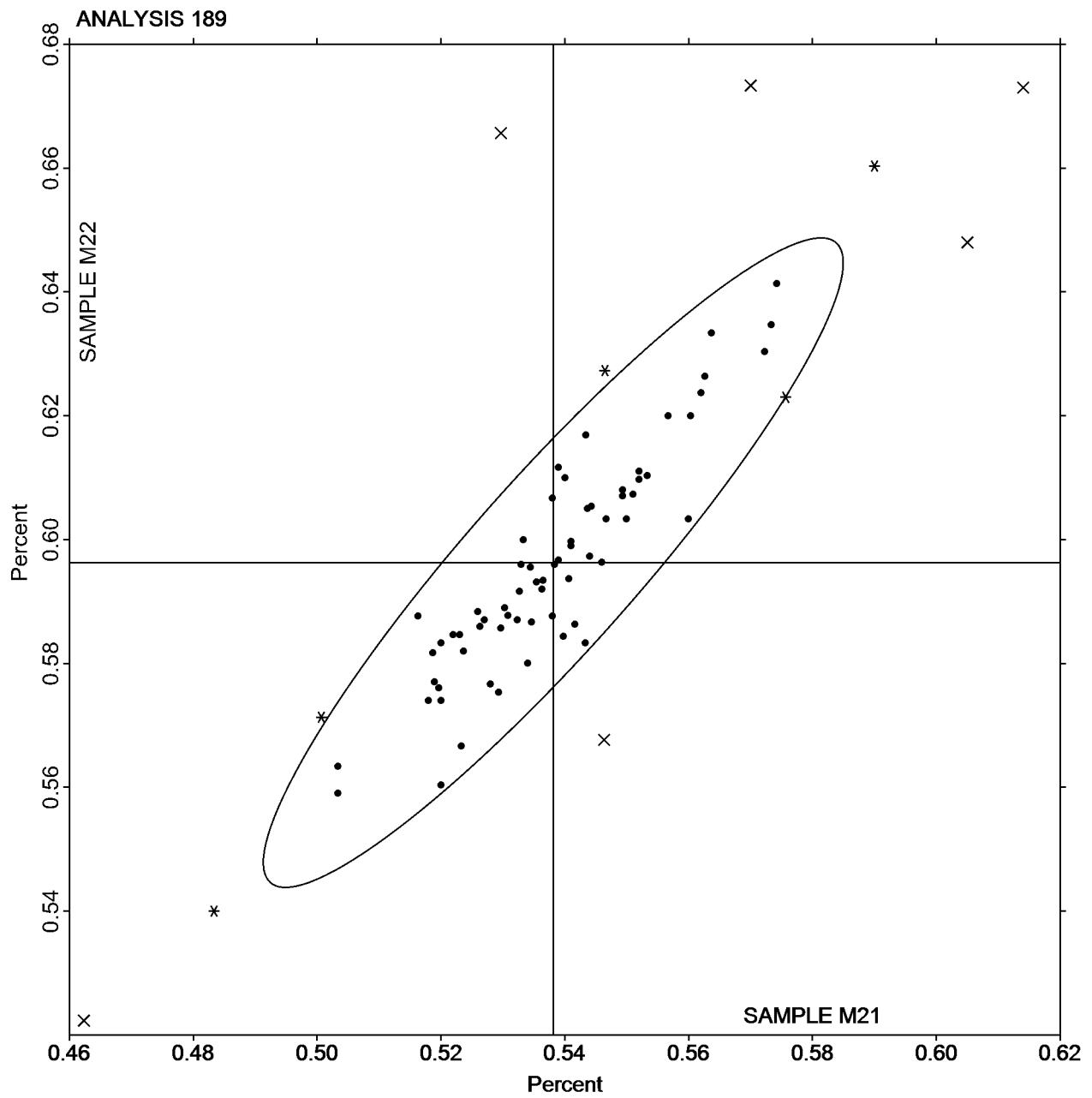
Cycle 108
4th Q, 2014

Interlaboratory Testing Program for Metals
Analysis 189

Chemical Analysis Element #10 - Corrosion Resistant Steel - Percent
NIOBIUM (Nb)

SAMPLE M21
0.5381 Percent

SAMPLE M22
0.5963 Percent



Instrument and Method Code List - Cycle 108

Instrument and Method information as provided by laboratories

Instruments are no longer tracked for analyses 105-148

160: Copper-based Alloy, Element #1 - COPPER (Cu)

<u>Instrument code</u>	<u>Description</u>
BD	By Difference
ED	X-Ray Fluorescence - Energy Dispersive (EDX)
EL	Electrochemistry
GR	Gravimetry
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element

161: Copper-based Alloy, Element #2 - ANTIMONY (Sb)

<u>Instrument code</u>	<u>Description</u>
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element

162: Copper-based Alloy, Element #3 - IRON (Fe)

<u>Instrument code</u>	<u>Description</u>
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element

163: Copper-based Alloy, Element #4 - PHOSPHORUS (P)

<u>Instrument code</u>	<u>Description</u>
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element

164: Copper-based Alloy, Element #5 - ZINC (Zn)

<u>Instrument code</u>	<u>Description</u>
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164: Copper-based Alloy, Element #5 - ZINC (Zn)

<u>Instrument code</u>	<u>Description</u>
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)
XX	Please Indicate Method Used for Current Element

165: Copper-based Alloy, Element #6 - TIN (Sn)

<u>Instrument code</u>	<u>Description</u>
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)
XX	Please Indicate Method Used for Current Element

166: Copper-based Alloy, Element #7 - LEAD (Pb)

<u>Instrument code</u>	<u>Description</u>
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)
XX	Please Indicate Method Used for Current Element

180: Corrosion Resistant Steel, Element #1 - CARBON (C)

<u>Method Code</u>	<u>Description</u>
CI	Combustion / IR
CO	Combustion
GD	Spectrometry - Glow Discharge (GDS)
OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element

181: Corrosion Resistant Steel, Element #2 - MANGANESE (Mn)

<u>Method Code</u>	<u>Description</u>
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)

181: Corrosion Resistant Steel, Element #2 - MANGANESE (Mn)

<u>Method Code</u>	<u>Description</u>
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

182: Corrosion Resistant Steel, Element #3 - PHOSPHORUS (P)

<u>Method Code</u>	<u>Description</u>
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)
XX	Please Indicate Method Used for Current Element

183: Corrosion Resistant Steel, Element #4 - SULFUR (S)

<u>Method Code</u>	<u>Description</u>
CI	Combustion / IR
CO	Combustion
ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)
OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element

184: Corrosion Resistant Steel, Element #5 - SILICON (Si)

<u>Method Code</u>	<u>Description</u>
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
XX	Please Indicate Method Used for Current Element

185: Corrosion Resistant Steel, Element #6 - COPPER (Cu)

<u>Method Code</u>	<u>Description</u>
DR	Spectrometry - Direct Reading OE (DROES)
ED	X-Ray Fluorescence - Energy Dispersive (EDX)

185: Corrosion Resistant Steel, Element #6 - COPPER (Cu)

<u>Method Code</u>	<u>Description</u>
GD	Spectrometry - Glow Discharge (GDS)
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

186: Corrosion Resistant Steel, Element #7 - NICKEL (Ni)

<u>Method Code</u>	<u>Description</u>
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)
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

187: Corrosion Resistant Steel, Element #8 - CHROMIUM (Cr)

<u>Method Code</u>	<u>Description</u>
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)
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

188: Corrosion Resistant Steel, Element #9 - MOLYBDENUM (Mo)

<u>Method Code</u>	<u>Description</u>
DR	Spectrometry - Direct Reading OE (DROES)
ED	X-Ray Fluorescence - Energy Dispersive (EDX)
GD	Spectrometry - Glow Discharge (GDS)

188: Corrosion Resistant Steel, Element #9 - MOLYBDENUM (Mo)

<u>Method Code</u>	<u>Description</u>
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

189: Corrosion Resistant Steel, Element #10 - NIOBIUM (Nb)

<u>Method Code</u>	<u>Description</u>
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
XX	Please Indicate Method Used for Current Element