Fasteners & Metals Testing Program

Summary Report Cycle 107, 3rd 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 exept Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data are excluded. For Chemical Analyses see an additional Memo.
M	EXCLUDED	**PROCEED** - lab was unable to report data for at least one sample. However, a lab receiving two or more M flags for a test may need to stop and review its testing procedures.

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

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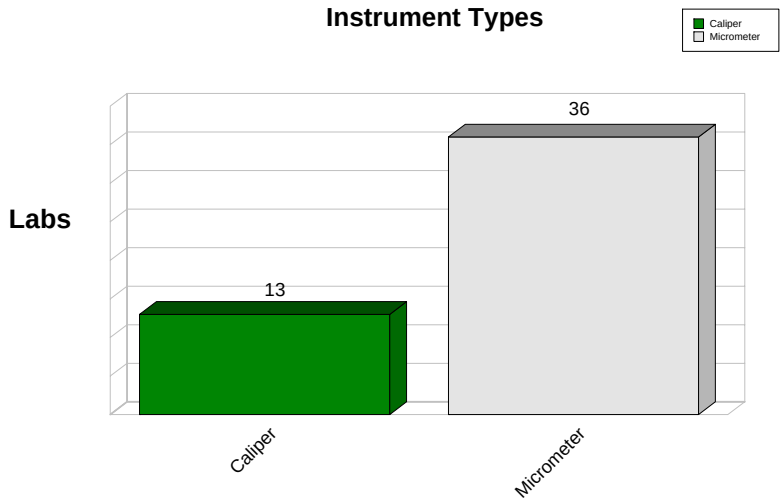
Interlaboratory Testing Program for Metals

Analysis 101

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM

During Cycle 107, CTS conducted the Analysis #101 - Round Dimensional. For this test all participants received two samples I21 and I22 with nominal diameters; 0.5000 in. and 0.5002 in. Each sample is an English Class X gage pin with 0.00002 in roundness limit made from 52100 bearing steel, hardened to 60-62 Rockwell C. Laboratories were asked to determine the outside diameter of the pins. 49 laboratories that subscribed for this test reported testing results. The graph below shows a breakdown of the types of instruments used.



Analysis of the Results

The most convenient and common method of judging the quality of measurement results is by calculating the performance statistic, En, calculated as:

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Where the assigned value, Xref, is determined in a reference laboratory, Uref is the expanded uncertainty of Xref, and Ulab is the **Expanded Uncertainty** of a participant's result, Xlab. En is not calculated for Labs who did not report their Expanded Uncertainty.

Absolute values of En less than **1.00** should be obtained for the measurements to be acceptable.

The following graph and the table represent the results reported by participants. All tests were conducted at room temperature (20-23C or 68-77F).

Xref and Uref were determined by the gage pin manufacturer. The manufacturer is ISO 9001:2000 Certified and an ISO 17025 Accredited company. All master gages used in checking the plug gages are calibrated with standards traceable to NIST.

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Interlaboratory Testing Program for Metals

Analysis 101

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xref1 = 0.5000 in.

Xref2 = 0.5002 in.

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)	Sample I21 Lab Mean (Xlab)	Sample I21 Performance Statistic (En1)	Sample I22 Lab Mean (Xlab)	Sample I22 Performance Statistic (En2)	Instrument
2VTMLX		0.00004	0.00015	0.50000	0.00	0.50020	0.00	Micrometer
4LJATD		0.00004	0.00015	0.49990	-0.64	0.50010	-0.64	Micrometer
4WWZ73		0.00004	0.00016	0.50000	0.00	0.50016	-0.26	Micrometer
8GTXVY		0.00004	0.00016	0.50000	0.00	0.50023	0.18	Micrometer
8ZMHQX		0.00004	0.00023	0.49996	-0.17	0.50020	-0.01	Micrometer
9R7E3V		0.00004	0.00030	0.49998	-0.07	0.49999	-0.69	Micrometer
A4NMTH		0.00004	0.00008	0.49998	-0.26	0.50021	0.15	Micrometer
A7PVTL		0.00004	0.00260	0.50000	0.00	0.50010	-0.04	Caliper
AE7898		0.00004	0.00040	0.49996	-0.10	0.50018	-0.05	Micrometer
AEUFPF	X	0.00004	0.00002	0.50000	0.01	0.50000	-4.48	Caliper
BBHMRP		0.00004	0.00015	0.50000	0.00	0.50020	0.00	Micrometer
C3UHYK		0.00004	0.00015	0.49996	-0.26	0.50012	-0.52	Micrometer
C8AJ7X		0.00004	0.00100	0.49990	-0.10	0.50010	-0.10	Micrometer
CNFDNE		0.00004	0.00014	0.49990	-0.69	0.50010	-0.69	Micrometer
E7AQ2H		0.00004	0.00009	0.49998	-0.24	0.50020	-0.03	Micrometer
EGQRYJ	N/A	0.00004	Not Reported	0.49987	0.00	0.50003	0.00	Micrometer
ER9LYJ	X	0.00004	0.00030	0.46540	-114.32	0.50020	0.00	Micrometer
EUXXV4		0.00004	0.00069	0.49980	-0.29	0.50030	0.14	Caliper
FUZZ69		0.00004	0.00035	0.50000	0.00	0.50000	-0.57	Micrometer
GEWZL4		0.00004	0.00058	0.49985	-0.26	0.50005	-0.26	Micrometer
HAVRKT	X	0.00004	0.00019	0.49976	-1.22	0.49969	-2.66	Caliper
HLEQMP		0.00004	0.00104	0.49980	-0.19	0.49990	-0.29	Caliper
HM4W62		0.00004	0.00130	0.49950	-0.38	0.50000	-0.15	Caliper
J2KCL6	X	0.00004	0.00010	0.49987	-1.21	0.50005	-1.39	Micrometer
K2HZN2		0.00004	0.00040	0.49973	-0.67	0.49995	-0.62	Micrometer
KL2HMD	X	0.00004	0.00050	0.49906	-1.87	0.50010	-0.20	Micrometer
KTZ2NN		0.00004	0.00030	0.49982	-0.59	0.49998	-0.73	Micrometer
L6U97X		0.00004	0.00004	0.50000	0.00	0.50020	-0.05	Micrometer
LDBMA3		0.00004	0.00100	0.49920	-0.80	0.49980	-0.40	Caliper
MGDVEP		0.00004	0.19600	0.49998	0.00	0.50010	0.00	Micrometer
MNJW8C		0.00004	0.00039	0.49992	-0.20	0.50015	-0.13	Micrometer
N2HQRD	X	0.00004	0.00050	0.49880	-2.39	0.49930	-1.79	Caliper

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 101

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xref1 = 0.5000 in.

Xref2 = 0.5002 in.

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)	Sample I21 Lab Mean (Xlab)	Sample I21 Performance Statistic (En1)	Sample I22 Lab Mean (Xlab)	Sample I22 Performance Statistic (En2)	Instrument
N3EQZX		0.00004	0.00050	0.50020	0.40	0.50020	0.00	Micrometer
NPTENM		0.00004	0.00083	0.49960	-0.48	0.50030	0.12	Caliper
PTRR87		0.00004	0.00020	0.49998	-0.10	0.50016	-0.20	Micrometer
QPQ7VU	X	0.00004	0.00009	0.49985	-1.52	0.50004	-1.62	Micrometer
R79MF3		0.00004	0.00050	0.49989	-0.22	0.50008	-0.24	Micrometer
RRACJ3	X	0.00004	0.00001	0.49976	-5.78	0.50001	-4.55	Micrometer
T2MWXP		0.00004	0.00017	0.49996	-0.23	0.50008	-0.68	Micrometer
TXPCDD		0.00004	0.00090	0.49992	-0.09	0.50008	-0.13	Micrometer
UPF7DW	X	0.00004	0.00006	0.50002	0.28	0.50010	-1.39	Micrometer
VAGB3U		0.00004	0.00070	0.49996	-0.06	0.50018	-0.03	Micrometer
W7HZAR		0.00004	0.00210	0.50000	0.00	0.49840	-0.86	Caliper
WJBFL8		0.00004	0.00118	0.49992	-0.07	0.50000	-0.17	Caliper
XCG2LE		0.00004	0.00094	0.49994	-0.06	0.50013	-0.07	Micrometer
YANRPH		0.00004	0.00047	0.49990	-0.21	0.50010	-0.21	Micrometer
YFHCG6		0.00004	0.00018	0.49995	-0.29	0.50019	-0.06	Micrometer
YFWTBM		0.00004	0.00156	0.49910	-0.58	0.50050	0.19	Caliper
ZTW9DT		0.00004	0.00060	0.50010	0.17	0.50000	-0.33	Caliper

Summary Statistics

		Sample I21		Sample I22	
Reference Uncertainty = 0.00004 in.	Reference Diameters:	0.5000	inch	0.5002	inch

Samples I21 , I22 : 52100 steel

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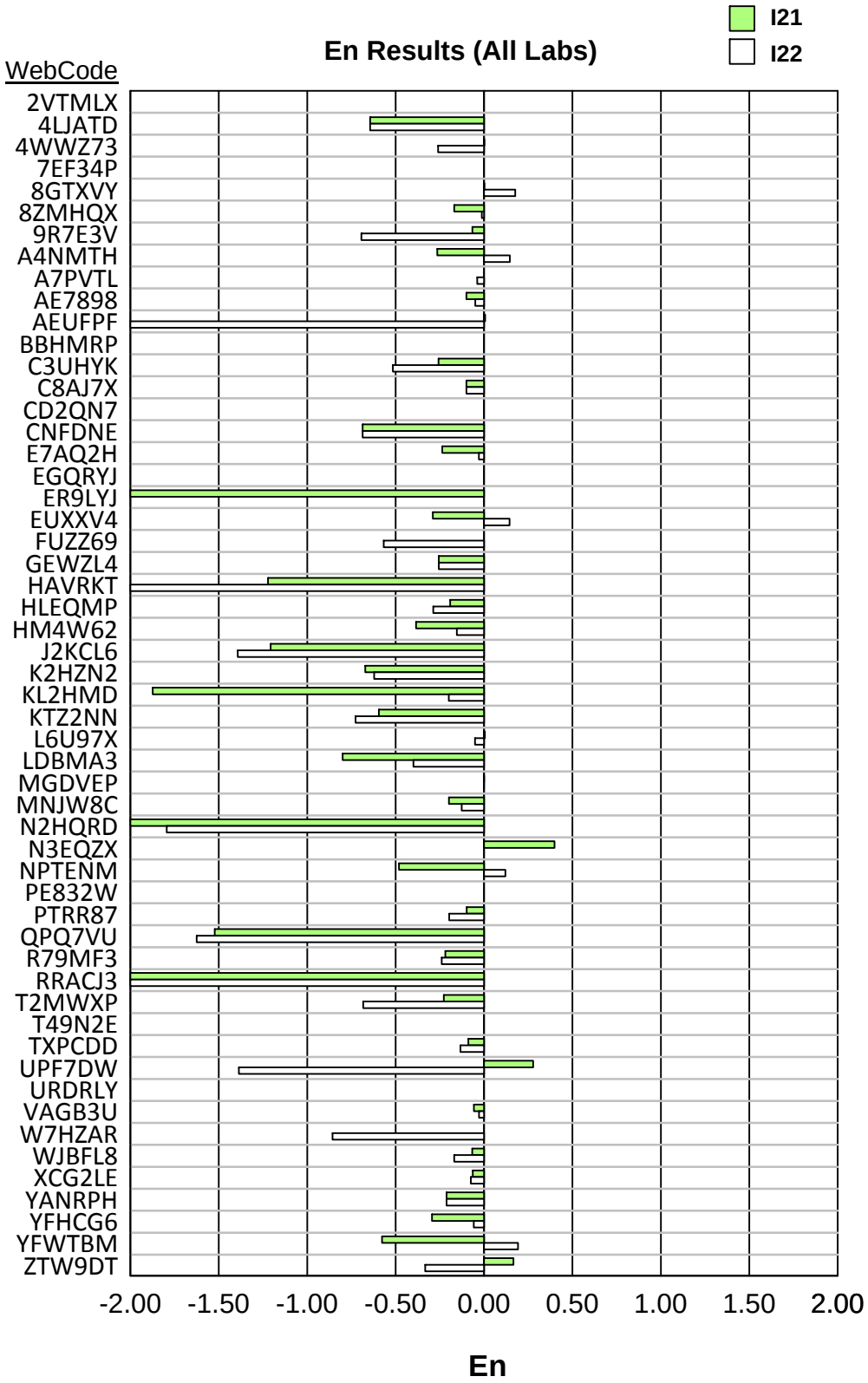
Interlaboratory Testing Program for Metals

Analysis 101

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM



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Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi
ASTM B557

		Sample R21			Sample R22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
279LUK		48.95	0.27	0.49	48.83	0.37	0.75	ZZ
7486RX		48.80	0.12	0.21	48.70	0.24	0.48	ZZ
9R7E3V		48.56	-0.12	-0.22	48.56	0.09	0.19	ZZ
C3D93D		48.40	-0.28	-0.50	48.30	-0.16	-0.32	ZZ
DNNZCQ		48.50	-0.18	-0.32	48.50	0.04	0.08	ZZ
DRM9K8		48.60	-0.08	-0.14	47.70	-0.76	-1.53	ZZ
DTYVCU	X	50.80	2.12	3.80	50.40	1.94	3.88	ZZ
EDJA69		47.90	-0.78	-1.40	48.50	0.04	0.08	ZZ
FGZURN		48.50	-0.18	-0.32	48.30	-0.16	-0.32	ZZ
FJBMWP		48.50	-0.18	-0.32	48.30	-0.16	-0.32	ZZ
FXLECE		47.90	-0.78	-1.40	48.00	-0.46	-0.92	ZZ
H66BGF		49.20	0.52	0.93	48.30	-0.16	-0.32	ZZ
HMBYBY		48.30	-0.38	-0.68	48.40	-0.06	-0.12	ZZ
HXXX4P	*	47.55	-1.13	-2.03	48.85	0.39	0.78	ZZ
JZJW2K		48.40	-0.28	-0.50	48.20	-0.26	-0.52	ZZ
LYEGGJ		48.40	-0.28	-0.50	48.30	-0.16	-0.32	ZZ
LZ8GDU		48.73	0.05	0.09	48.01	-0.45	-0.91	ZZ
MGDVEP		48.50	-0.18	-0.32	47.40	-1.06	-2.13	ZZ
MPEYV9		47.49	-1.19	-2.14	48.00	-0.46	-0.93	ZZ
N9J4PV		50.00	1.32	2.37	49.40	0.94	1.88	ZZ
P2DQ6H	*	49.20	0.52	0.93	47.60	-0.86	-1.73	ZZ
P6EQQ9		48.80	0.12	0.21	48.50	0.04	0.08	ZZ
Q8XDB8	*	49.80	1.12	2.01	49.90	1.44	2.88	ZZ
RAGPMH		48.62	-0.06	-0.11	48.52	0.05	0.11	ZZ
REBJNQ		49.50	0.82	1.47	49.10	0.64	1.28	ZZ
RLDVKM		48.80	0.12	0.21	48.10	-0.36	-0.72	ZZ
TUJ3RA		48.90	0.22	0.39	48.60	0.14	0.28	ZZ
TYDU7Y	X	50.90	2.22	3.98	48.60	0.14	0.28	ZZ
TYZDWR		49.30	0.62	1.11	49.10	0.64	1.28	ZZ
VZNBKN		48.90	0.22	0.39	48.60	0.14	0.28	ZZ
WHDCL6		48.58	-0.10	-0.19	48.71	0.25	0.50	ZZ
ZECZPV		48.60	-0.08	-0.14	48.50	0.04	0.08	ZZ
ZJ4CH7		49.20	0.52	0.93	48.70	0.24	0.48	ZZ
ZTK3X4		48.40	-0.28	-0.50	48.30	-0.16	-0.32	ZZ

Summary Statistics

	Sample R21		Sample R22	
Grand Means	48.68	ksi	48.46	ksi
Stnd Dev Btwn Labs	0.56	ksi	0.50	ksi

Samples R21 , R22 : 6061-T6

Statistics based on 32 of 34 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi
ASTM B557

Comments on assigned Data Flags for Analysis #105

WebCode	Flag	Analyst Comment
DTYVCU	X	Data for both samples are high.
TYDU7Y	X	Data for sample R21 are high.

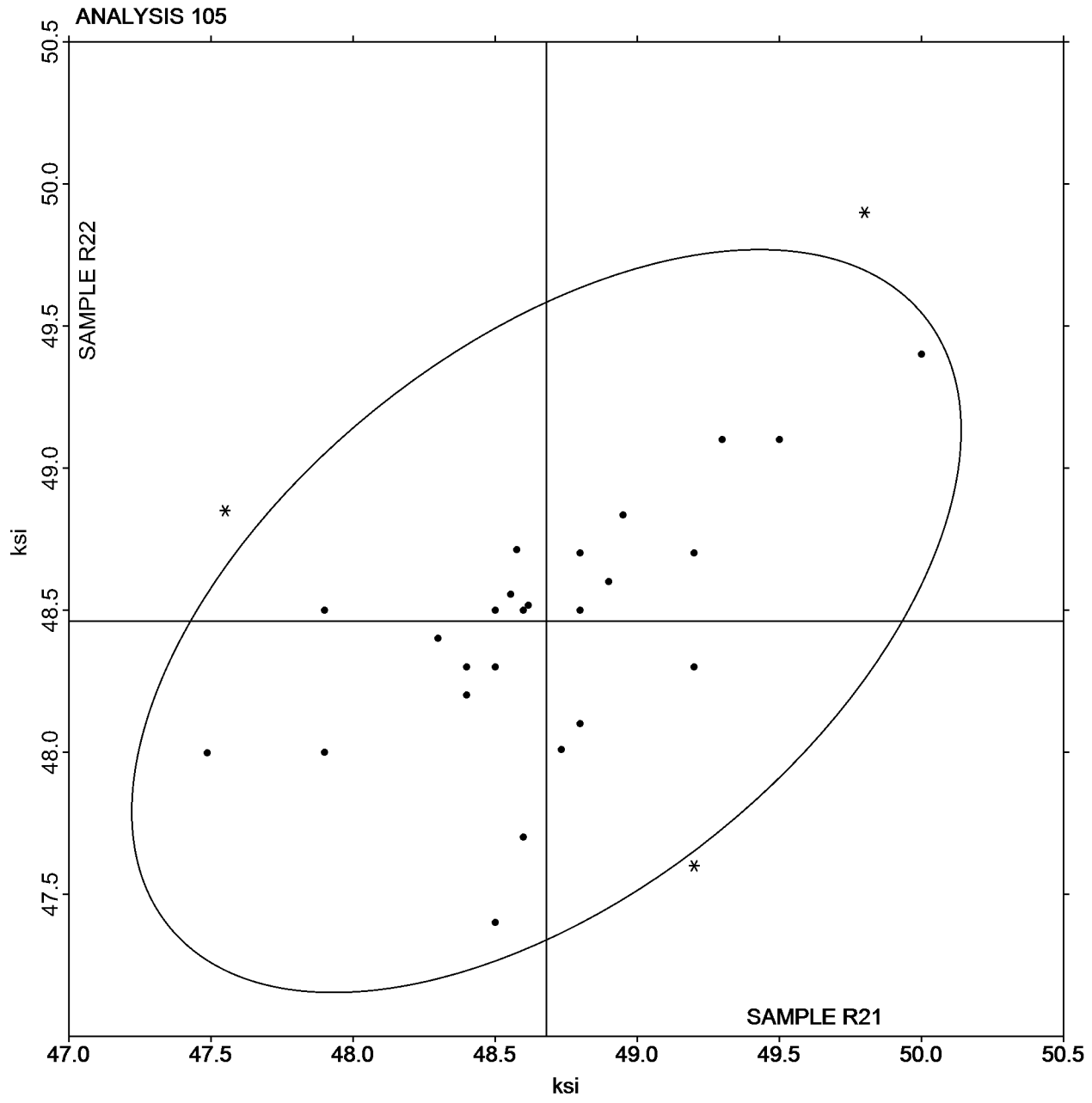
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi
ASTM B557

SAMPLE R21	**SAMPLE R22**
48.68 ksi	**48.46 ksi**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 106

Yield Strength (Flat Aluminum) - ksi
ASTM B557

		Sample R21			Sample R22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
279LUK		41.67	0.15	0.18	44.32	0.47	0.79	ZZ
7486RX		41.80	0.28	0.34	44.30	0.44	0.75	ZZ
9R7E3V		41.48	-0.04	-0.05	43.95	0.10	0.16	ZZ
C3D93D		41.10	-0.42	-0.52	43.70	-0.16	-0.27	ZZ
DNNZCQ		41.30	-0.22	-0.27	43.80	-0.06	-0.10	ZZ
DRM9K8		41.60	0.08	0.10	43.30	-0.56	-0.94	ZZ
DTYVCU	*	43.40	1.88	2.32	45.60	1.74	2.94	ZZ
EDJA69		40.70	-0.82	-1.02	43.40	-0.46	-0.77	ZZ
FGZURN		41.50	-0.02	-0.03	43.80	-0.06	-0.10	ZZ
FJBMWP		41.40	-0.12	-0.15	43.60	-0.26	-0.44	ZZ
FXLECE		40.60	-0.92	-1.14	43.30	-0.56	-0.94	ZZ
H66BGF		42.00	0.48	0.59	43.40	-0.46	-0.77	ZZ
HMBYBY		41.40	-0.12	-0.15	44.00	0.14	0.24	ZZ
HXXX4P		40.65	-0.87	-1.08	44.10	0.24	0.41	ZZ
JZJW2K		41.20	-0.32	-0.40	43.50	-0.36	-0.60	ZZ
LYEGGJ		41.40	-0.12	-0.15	43.80	-0.06	-0.10	ZZ
LZ8GDU		41.63	0.10	0.13	43.51	-0.35	-0.58	ZZ
MGDVEP		39.80	-1.72	-2.13	42.70	-1.16	-1.95	ZZ
MPEYV9		41.14	-0.38	-0.47	42.91	-0.95	-1.60	ZZ
N9J4PV		42.90	1.38	1.70	44.50	0.64	1.08	ZZ
P2DQ6H		41.50	-0.02	-0.03	42.80	-1.06	-1.78	ZZ
P6EQQ9		40.70	-0.82	-1.02	43.60	-0.26	-0.44	ZZ
Q8XDB8		43.00	1.48	1.83	45.30	1.44	2.43	ZZ
RAGPMH		41.58	0.06	0.07	44.12	0.26	0.44	ZZ
REBJNQ		42.45	0.93	1.15	44.46	0.60	1.01	ZZ
RLDVKM		41.35	-0.17	-0.21	43.60	-0.26	-0.44	ZZ
TUJ3RA		40.30	-1.22	-1.51	44.00	0.14	0.24	ZZ
TYDU7Y	*	43.60	2.08	2.57	44.10	0.24	0.41	ZZ
TYZDWR		41.40	-0.12	-0.15	44.20	0.34	0.58	ZZ
VZNBKN		41.20	-0.32	-0.40	43.90	0.04	0.07	ZZ
WHDCL6		41.21	-0.31	-0.38	43.99	0.13	0.22	ZZ
ZECZPV		41.70	0.18	0.22	44.00	0.14	0.24	ZZ
ZJ4CH7		41.90	0.38	0.47	43.90	0.04	0.07	ZZ
ZTK3X4		41.20	-0.32	-0.40	43.70	-0.16	-0.27	ZZ

Summary Statistics

	Sample R21		Sample R22	
Grand Means	41.52	ksi	43.86	ksi
Stnd Dev Btwn Labs	0.81	ksi	0.59	ksi

Samples R21 , R22 : 6061-T6

Statistics based on 34 of 34 reporting participants

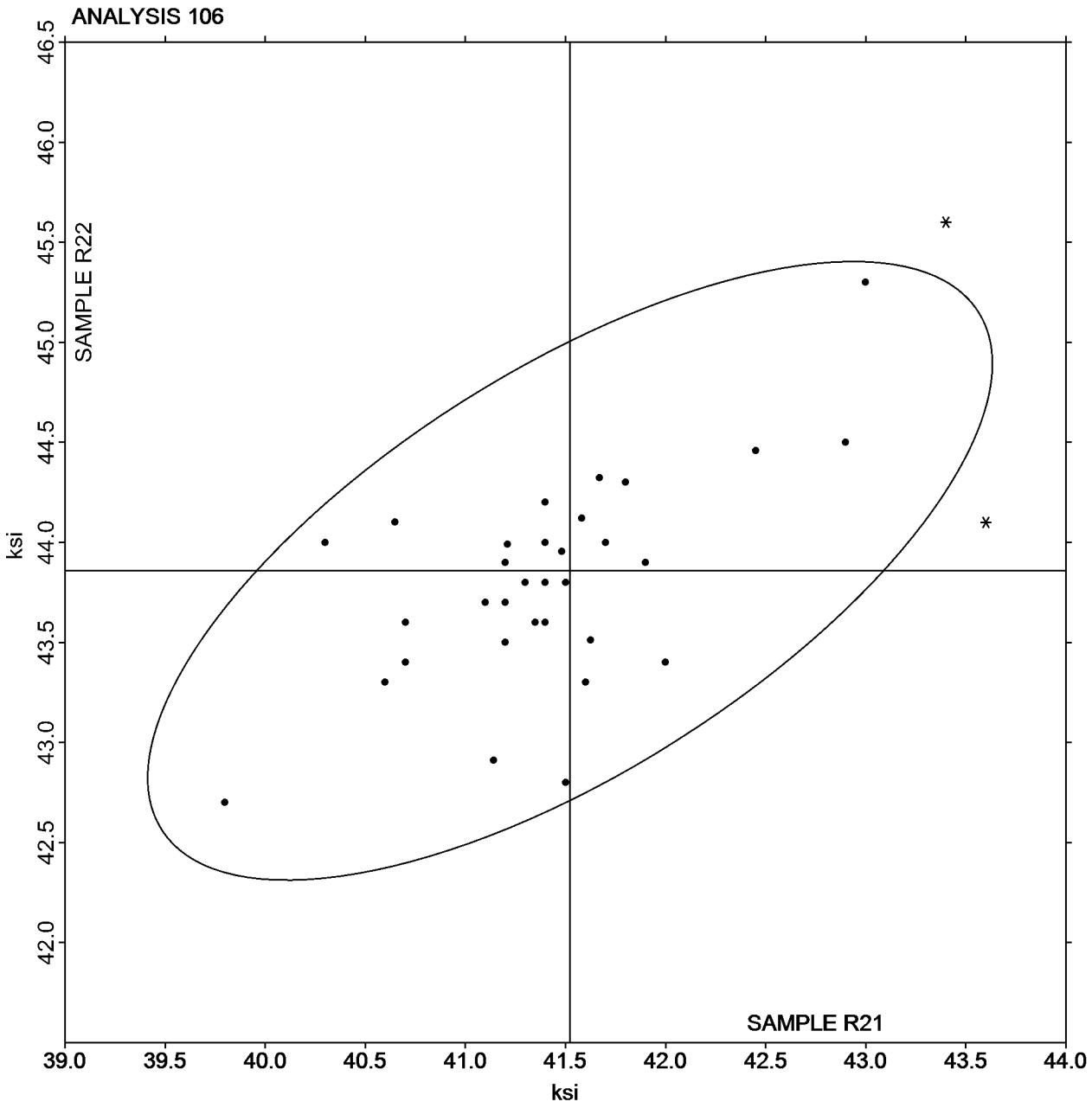
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 106

Yield Strength (Flat Aluminum) - ksi
ASTM B557

SAMPLE R21	**SAMPLE R22**
41.52 ksi	**43.86 ksi**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 107

Elongation (Flat Aluminum) - Percent
ASTM B557

		Sample R21			Sample R22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
279LUK		14.20	-0.87	-0.82	11.80	-1.21	-0.93	ZZ
7486RX		13.40	-1.67	-1.58	10.50	-2.51	-1.93	ZZ
9R7E3V		15.00	-0.07	-0.07	12.50	-0.51	-0.39	ZZ
C3D93D		15.50	0.43	0.40	14.00	0.99	0.76	ZZ
DNNZCQ		14.80	-0.27	-0.26	12.80	-0.21	-0.16	ZZ
DRM9K8		15.30	0.23	0.22	13.50	0.49	0.37	ZZ
DTYVCU		14.80	-0.27	-0.26	12.40	-0.61	-0.47	ZZ
EDJA69	X	20.40	5.33	5.04	15.90	2.89	2.22	ZZ
FGZURN		14.90	-0.17	-0.16	12.50	-0.51	-0.39	ZZ
FJBMWP		14.50	-0.57	-0.54	13.00	-0.01	-0.01	ZZ
FXLECE		15.80	0.73	0.69	12.90	-0.11	-0.09	ZZ
H66BGF		14.00	-1.07	-1.01	12.50	-0.51	-0.39	ZZ
HMBYBY		15.40	0.33	0.31	13.50	0.49	0.37	ZZ
HXXX4P		14.25	-0.82	-0.78	12.50	-0.51	-0.39	ZZ
JZJW2K		15.10	0.03	0.03	12.80	-0.21	-0.16	ZZ
LYEGGJ		14.30	-0.77	-0.73	12.60	-0.41	-0.32	ZZ
LZ8GDU		17.00	1.93	1.82	15.00	1.99	1.53	ZZ
MGDVEP		15.00	-0.07	-0.07	12.00	-1.01	-0.78	ZZ
MPEYV9		15.00	-0.07	-0.07	12.00	-1.01	-0.78	ZZ
N9J4PV		14.50	-0.57	-0.54	13.00	-0.01	-0.01	ZZ
P2DQ6H	*	16.30	1.23	1.16	16.30	3.29	2.53	ZZ
P6EQQ9		15.50	0.43	0.40	14.00	0.99	0.76	ZZ
Q8XDB8		12.40	-2.67	-2.53	10.00	-3.01	-2.31	ZZ
RAGPMH		14.60	-0.47	-0.45	12.31	-0.70	-0.54	ZZ
REBJNQ		13.57	-1.50	-1.42	12.12	-0.89	-0.69	ZZ
RLDVKM		17.60	2.53	2.39	15.10	2.09	1.60	ZZ
TUJ3RA		16.85	1.78	1.68	14.70	1.69	1.30	ZZ
TYDU7Y		15.50	0.43	0.40	12.50	-0.51	-0.39	ZZ
TYZDWR		15.60	0.53	0.50	12.70	-0.31	-0.24	ZZ
VZNBKN		16.00	0.93	0.88	14.50	1.49	1.14	ZZ
WHDCL6		16.00	0.93	0.88	15.00	1.99	1.53	ZZ
ZECZPV		15.30	0.23	0.22	13.60	0.59	0.45	ZZ
ZJ4CH7		14.00	-1.07	-1.01	12.00	-1.01	-0.78	ZZ
ZTK3X4		15.40	0.33	0.31	12.80	-0.21	-0.16	ZZ

Summary Statistics

	Sample R21		Sample R22	
Grand Means	15.07	Percent	13.01	Percent
Stnd Dev Btwn Labs	1.06	Percent	1.30	Percent

Samples R21 , R22 : 6061-T6

Statistics based on 33 of 34 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 107

Elongation (Flat Aluminum) - Percent
ASTM B557

Comments on assigned Data Flags for Analysis #107

WebCode	Flag	Analyst Comment
EDJA69	X	Data for sample R21 are high.

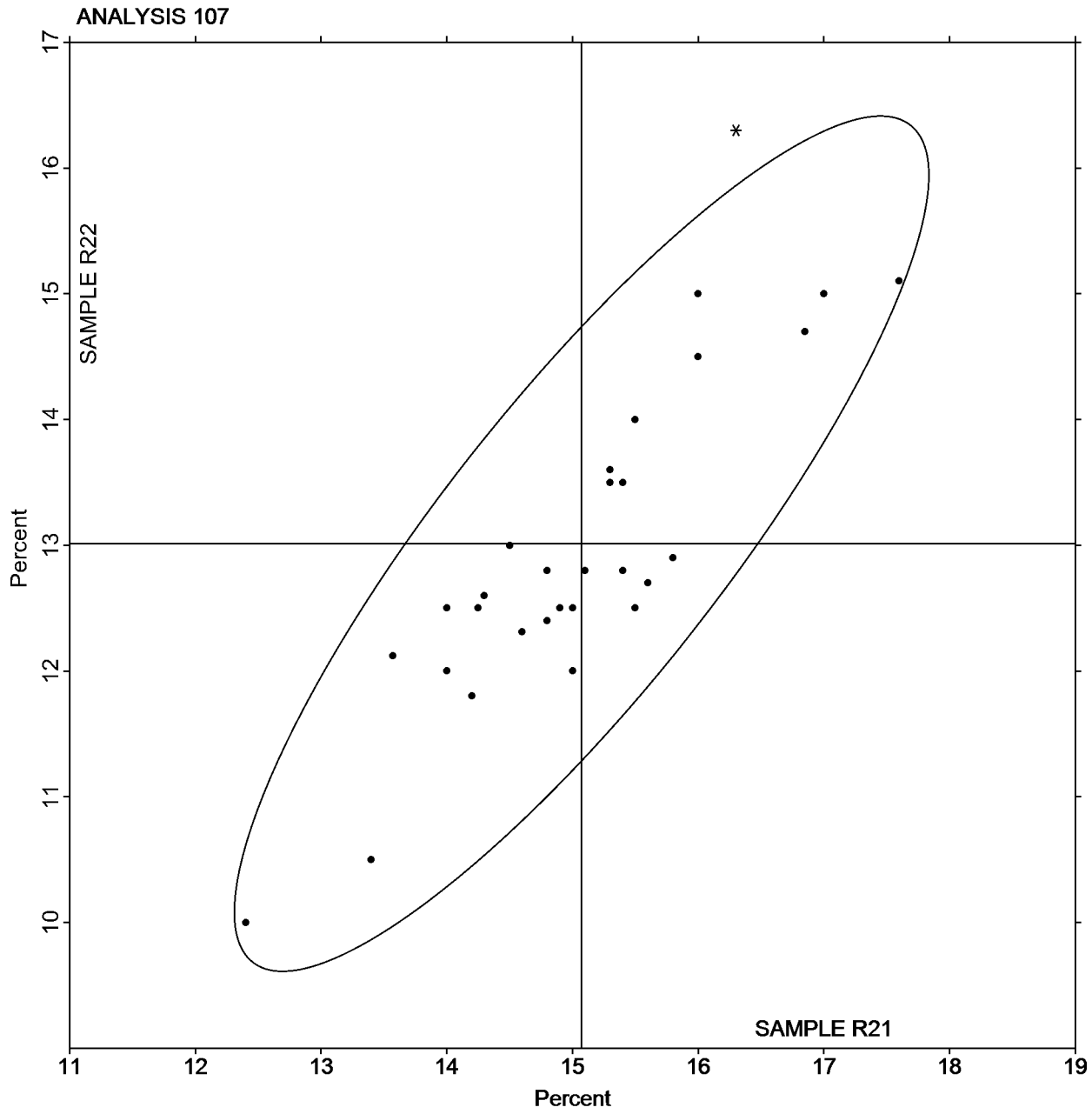
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 107

Elongation (Flat Aluminum) - Percent
ASTM B557

SAMPLE R21	**SAMPLE R22**
15.07 Percent	**13.01 Percent**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi
ASTM E8

		Sample A21			Sample A22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		182.50	2.42	1.35	169.90	1.65	0.57	ZZ
2E2W4F		178.12	-1.96	-1.09	167.84	-0.40	-0.14	ZZ
384H3E		182.70	2.62	1.46	172.10	3.85	1.32	ZZ
42MEMW		179.20	-0.88	-0.49	163.40	-4.85	-1.66	ZZ
4LCQH9		183.50	3.42	1.90	169.40	1.15	0.40	ZZ
4WRRRM		179.20	-0.88	-0.49	169.10	0.85	0.29	ZZ
6243DP		181.77	1.69	0.94	169.68	1.44	0.49	ZZ
6QF9Z8		181.10	1.02	0.57	170.97	2.73	0.94	ZZ
6X7LVU		178.70	-1.38	-0.77	163.70	-4.55	-1.56	ZZ
7GQXAD		177.51	-2.57	-1.43	167.39	-0.85	-0.29	ZZ
88L6KJ		177.00	-3.08	-1.71	162.00	-6.25	-2.14	ZZ
89D7GU	X	178.70	-1.38	-0.77	154.20	-14.05	-4.82	ZZ
8B2PB6		180.90	0.82	0.46	168.10	-0.15	-0.05	ZZ
8MU9PB		181.00	0.92	0.51	168.20	-0.05	-0.02	ZZ
BFHBLM		180.50	0.42	0.24	170.20	1.95	0.67	ZZ
CA8P43		179.60	-0.48	-0.26	169.80	1.55	0.53	ZZ
CF38TF		179.50	-0.58	-0.32	162.70	-5.55	-1.90	ZZ
CGV3CH		179.70	-0.38	-0.21	169.50	1.25	0.43	ZZ
CVN2U6		179.63	-0.44	-0.25	168.86	0.61	0.21	ZZ
D79GR7		181.80	1.72	0.96	170.40	2.15	0.74	ZZ
D9D68V		181.24	1.16	0.65	167.08	-1.17	-0.40	ZZ
DGLTTG		181.79	1.72	0.96	168.75	0.50	0.17	ZZ
E7AQ2H		176.82	-3.26	-1.81	162.63	-5.61	-1.93	ZZ
F3GDHX		181.88	1.80	1.00	171.29	3.05	1.05	ZZ
FUNWEM		179.63	-0.45	-0.25	166.14	-2.11	-0.72	ZZ
GKUBJ9		179.85	-0.23	-0.13	168.68	0.44	0.15	ZZ
HCFN4D		178.60	-1.48	-0.82	164.80	-3.45	-1.18	ZZ
HT447N		178.30	-1.78	-0.99	166.60	-1.65	-0.56	ZZ
KL2HMD		180.00	-0.08	-0.04	165.00	-3.25	-1.11	ZZ
KUCTNR		184.00	3.92	2.18	174.00	5.75	1.98	ZZ
LZ8GDU	X	170.00	-10.08	-5.61	180.00	11.75	4.04	ZZ
LZTPPJ		178.99	-1.08	-0.60	168.52	0.28	0.09	ZZ
MW8CPG		181.60	1.52	0.85	170.70	2.45	0.84	ZZ
PXFCHT		177.67	-2.40	-1.34	167.38	-0.87	-0.30	ZZ
PZNFEP		181.40	1.32	0.74	166.40	-1.85	-0.63	ZZ
QFRJ7U		182.17	2.09	1.16	170.71	2.47	0.85	ZZ
R3YA3L		182.55	2.47	1.37	172.29	4.05	1.39	ZZ
RX7CAN		180.30	0.22	0.12	169.50	1.25	0.43	ZZ
RX93HR		182.00	1.92	1.07	173.00	4.75	1.63	ZZ
RYX9Z4		179.50	-0.58	-0.32	163.30	-4.95	-1.70	ZZ
T234DE		181.30	1.22	0.68	170.57	2.32	0.80	ZZ
TXPCDD	*	177.30	-2.78	-1.54	170.10	1.85	0.64	ZZ
U6ZWTV		177.15	-2.93	-1.63	162.33	-5.92	-2.03	ZZ
WF7VBR		179.00	-1.08	-0.60	168.50	0.25	0.09	ZZ
WTZ2R6		179.10	-0.98	-0.54	164.80	-3.45	-1.18	ZZ
XAYW8F		179.49	-0.59	-0.33	170.28	2.03	0.70	ZZ
XDGZ9J		181.30	1.22	0.68	169.00	0.75	0.26	ZZ
YFHCG6		176.93	-3.14	-1.75	167.16	-1.09	-0.37	ZZ
YM4A8D		179.50	-0.58	-0.32	168.10	-0.15	-0.05	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi
ASTM E8

		Sample A21			Sample A22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
YPQT9B		180.30	0.22	0.12	169.90	1.65	0.57	ZZ
YZ9JX9		182.31	2.24	1.25	172.16	3.92	1.34	ZZ
Z7DJPP		179.28	-0.80	-0.44	169.20	0.95	0.33	ZZ
ZCXR6A		178.70	-1.38	-0.77	168.40	0.15	0.05	ZZ

Summary Statistics

	Sample A21		Sample A22	
Grand Means	180.08	ksi	168.25	ksi
Stnd Dev Btwn Labs	1.80	ksi	2.91	ksi

Samples A21 , A22 : AISI 4340

Statistics based on 51 of 53 reporting participants

Comments on assigned Data Flags for Analysis #110

WebCode	Flag	Analyst Comment
89D7GU	X	Data for sample A22 are low.
LZ8GDU	X	Data for sample A21 are low and data for sample A22 are high.

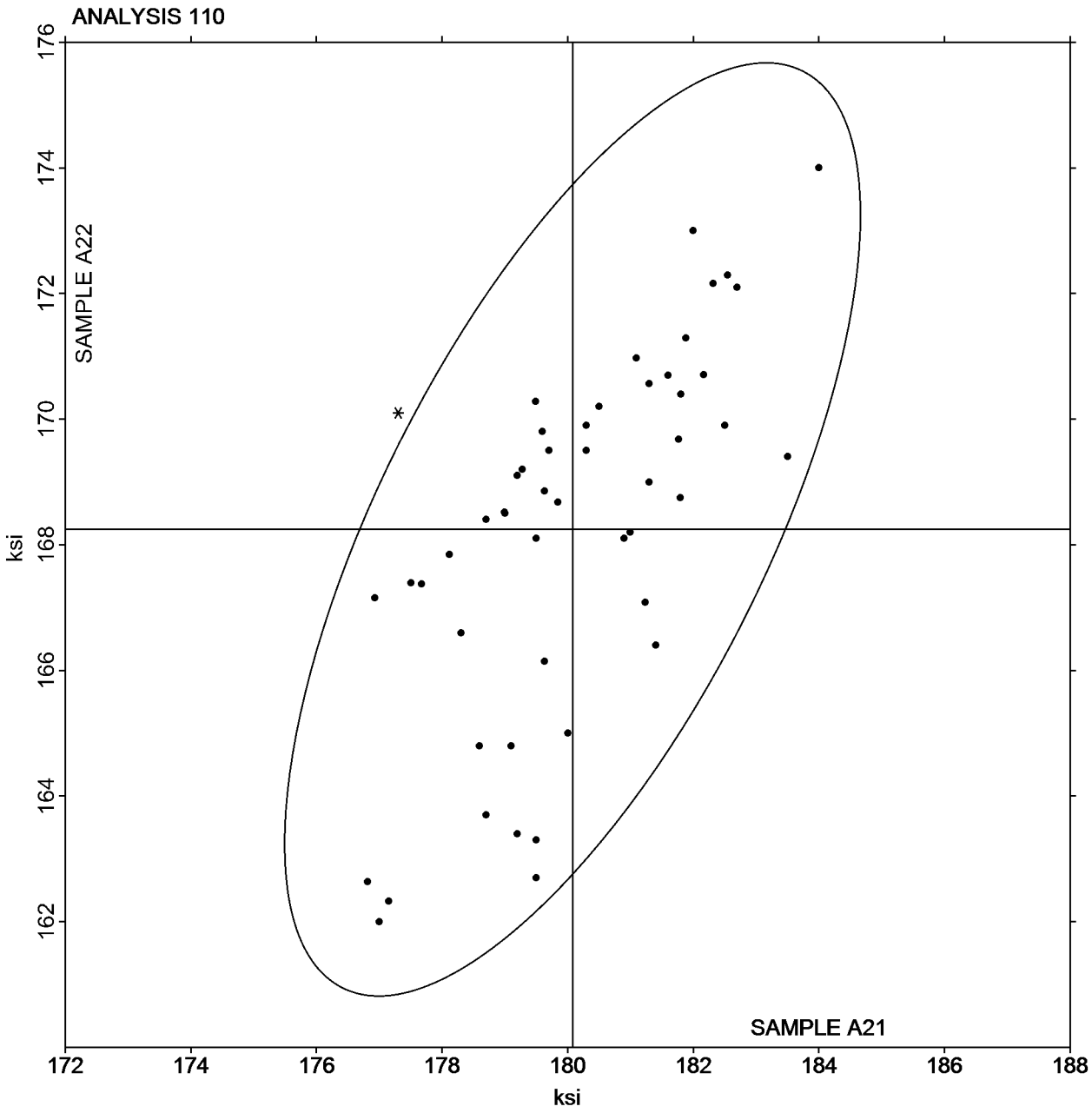
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi
ASTM E8

SAMPLE A21	**SAMPLE A22**
180.08 ksi	**168.25 ksi**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 111

Yield Strength (Pre-Machined Round Steel) - ksi
ASTM E8

		Sample A21			Sample A22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		165.40	4.07	1.41	156.20	3.34	0.85	ZZ
2E2W4F		155.99	-5.34	-1.86	150.39	-2.47	-0.63	ZZ
384H3E		166.60	5.27	1.83	158.80	5.94	1.52	ZZ
42MEMW		161.70	0.37	0.13	146.20	-6.66	-1.71	ZZ
4LCQH9	X	174.00	12.67	4.40	157.00	4.14	1.06	ZZ
4WRRRM		158.80	-2.53	-0.88	153.20	0.34	0.09	ZZ
6243DP		159.42	-1.92	-0.67	152.88	0.02	0.01	ZZ
6QF9Z8		159.18	-2.15	-0.75	156.87	4.01	1.03	ZZ
6X7LVU		162.20	0.87	0.30	148.20	-4.66	-1.20	ZZ
7GQXAD		158.07	-3.26	-1.13	150.37	-2.49	-0.64	ZZ
88L6KJ		159.00	-2.33	-0.81	145.00	-7.86	-2.02	ZZ
89D7GU	X	161.70	0.37	0.13	138.60	-14.26	-3.66	ZZ
8B2PB6		163.10	1.77	0.61	151.60	-1.26	-0.32	ZZ
8MU9PB		164.50	3.17	1.10	153.30	0.44	0.11	ZZ
BFHBLM		163.60	2.27	0.79	155.00	2.14	0.55	ZZ
CA8P43	X	178.30	16.97	5.89	169.80	16.94	4.34	ZZ
CF38TF		161.40	0.07	0.02	146.40	-6.46	-1.66	ZZ
CGV3CH		162.10	0.77	0.27	152.40	-0.46	-0.12	ZZ
CVN2U6	X	150.93	-10.40	-3.61	157.21	4.35	1.11	ZZ
D79GR7		165.20	3.87	1.34	156.10	3.24	0.83	ZZ
D9D68V		164.11	2.78	0.96	151.79	-1.07	-0.28	ZZ
DGLTTG		160.02	-1.31	-0.46	151.39	-1.48	-0.38	ZZ
E7AQ2H		158.82	-2.51	-0.87	146.92	-5.94	-1.52	ZZ
F3GDHX		160.27	-1.06	-0.37	158.24	5.37	1.38	ZZ
FUNWEM		158.75	-2.58	-0.90	148.76	-4.10	-1.05	ZZ
GKUBJ9		161.57	0.24	0.08	152.29	-0.57	-0.15	ZZ
HT447N		158.30	-3.03	-1.05	151.90	-0.96	-0.25	ZZ
KL2HMD		161.00	-0.33	-0.12	150.00	-2.86	-0.73	ZZ
KUCTNR	X	167.00	5.67	1.97	170.00	17.14	4.39	ZZ
LZ8GDU	*	156.00	-5.33	-1.85	158.00	5.14	1.32	ZZ
LZTPPJ		157.11	-4.23	-1.47	153.71	0.85	0.22	ZZ
MW8CPG		165.50	4.17	1.45	157.30	4.44	1.14	ZZ
PXFCHT		159.83	-1.50	-0.52	152.29	-0.57	-0.15	ZZ
PZNFEP		165.90	4.57	1.59	152.40	-0.46	-0.12	ZZ
QFRJ7U		159.54	-1.79	-0.62	151.42	-1.44	-0.37	ZZ
R3YA3L		164.72	3.39	1.18	158.15	5.29	1.35	ZZ
RX7CAN		157.70	-3.63	-1.26	156.30	3.44	0.88	ZZ
RX93HR		163.00	1.67	0.58	159.00	6.14	1.57	ZZ
RYX9Z4		160.80	-0.53	-0.18	145.33	-7.53	-1.93	ZZ
T234DE		167.67	6.33	2.20	156.93	4.07	1.04	ZZ
TXPCDD		159.40	-1.93	-0.67	153.80	0.94	0.24	ZZ
U6ZWTV		158.92	-2.42	-0.84	144.91	-7.95	-2.04	ZZ
WF7VBR		162.00	0.67	0.23	153.40	0.54	0.14	ZZ
WTZ2R6		161.60	0.27	0.09	148.50	-4.36	-1.12	ZZ
XAYW8F		164.24	2.91	1.01	157.26	4.40	1.13	ZZ
XDGZ9J		165.00	3.67	1.27	154.20	1.34	0.34	ZZ
YFHCG6		160.11	-1.22	-0.42	151.44	-1.43	-0.37	ZZ
YM4A8D		163.20	1.87	0.65	154.00	1.14	0.29	ZZ
YPQT9B		159.40	-1.93	-0.67	156.20	3.34	0.85	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 111

Yield Strength (Pre-Machined Round Steel) - ksi
ASTM E8

		Sample A21			Sample A22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
YZ9JX9		163.02	1.69	0.59	157.37	4.50	1.15	ZZ
Z7DJPP		160.24	-1.09	-0.38	153.41	0.55	0.14	ZZ
ZCXR6A		158.60	-2.73	-0.95	155.10	2.24	0.57	ZZ

Summary Statistics

	Sample A21		Sample A22	
Grand Means	161.33	ksi	152.86	ksi
Stnd Dev Btwn Labs	2.88	ksi	3.90	ksi

Samples A21 , A22 : AISI 4340

Statistics based on 47 of 52 reporting participants

Comments on assigned Data Flags for Analysis #111

WebCode	Flag	Analyst Comment
4LCQH9	X	Data for sample A21 are high.
89D7GU	X	Data for sample A22 are low.
CA8P43	X	Data for both samples are high.
CVN2U6	X	Data for sample A21 are low.
KUCTNR	X	Data for sample A22 are high.

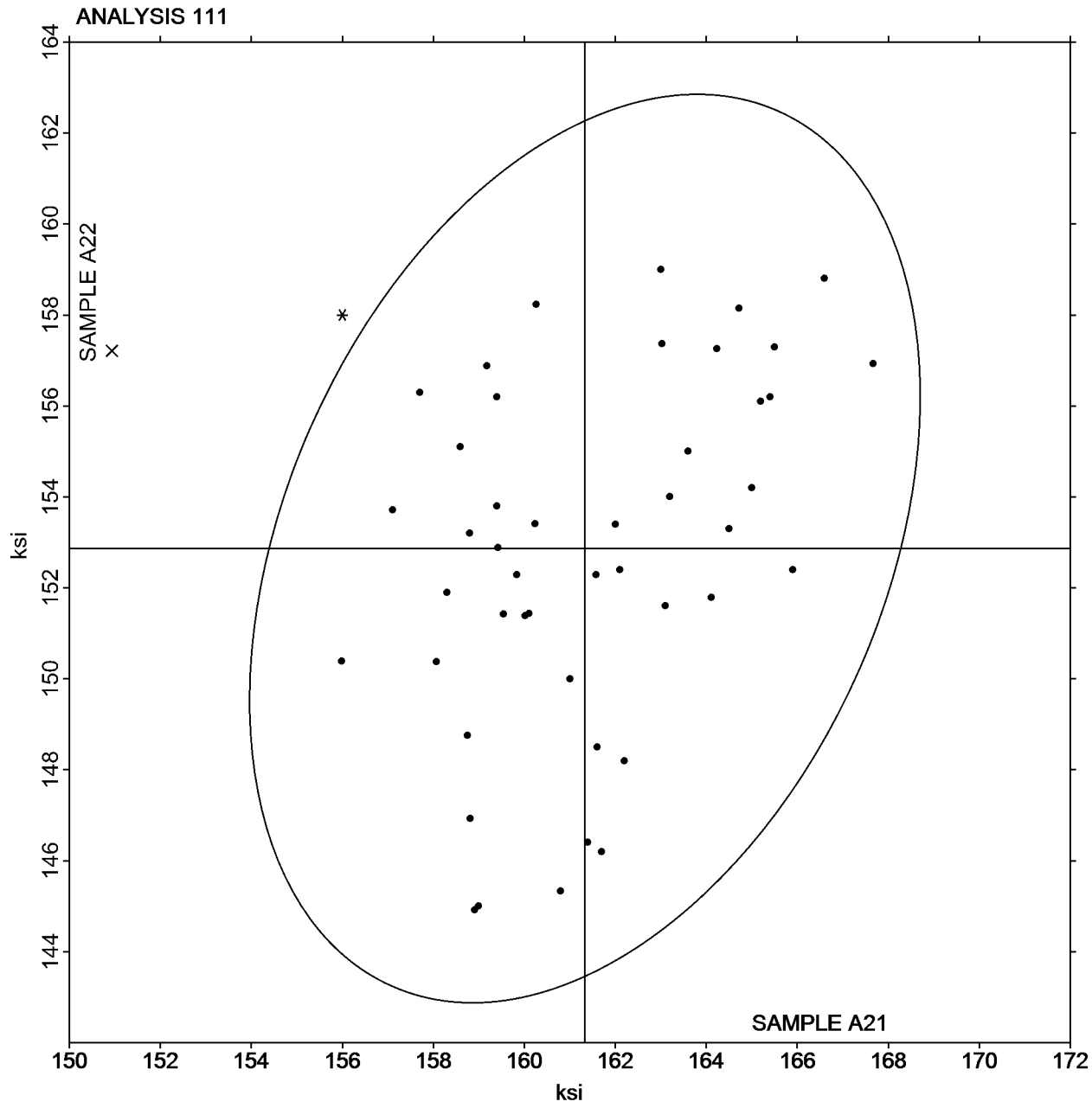
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 111

Yield Strength (Pre-Machined Round Steel) - ksi
ASTM E8

SAMPLE A21	**SAMPLE A22**
161.33 ksi	**152.86 ksi**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 112

Elongation - (Pre-Machined Round Steel) - Percent Increase
ASTM E8

		Sample A21			Sample A22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		16.50	-0.08	-0.11	19.50	1.27	1.10	ZZ
2E2W4F		16.40	-0.18	-0.25	17.20	-1.03	-0.89	ZZ
384H3E		16.10	-0.48	-0.68	17.20	-1.03	-0.89	ZZ
42MEMW		17.55	0.97	1.36	18.15	-0.08	-0.07	ZZ
4LCQH9		16.50	-0.08	-0.11	20.20	1.97	1.70	ZZ
4WRRRM	X	20.20	3.62	5.10	19.50	1.27	1.10	ZZ
6243DP		16.48	-0.10	-0.14	18.35	0.11	0.10	ZZ
6QF9Z8		16.70	0.12	0.17	18.60	0.37	0.32	ZZ
6X7LVU		17.20	0.62	0.87	17.70	-0.53	-0.46	ZZ
7GQXAD		16.60	0.02	0.03	17.50	-0.73	-0.63	ZZ
88L6KJ		17.00	0.42	0.59	19.00	0.77	0.66	ZZ
89D7GU		16.35	-0.23	-0.33	17.65	-0.58	-0.50	ZZ
8B2PB6		16.00	-0.58	-0.82	19.00	0.77	0.66	ZZ
8MU9PB		16.00	-0.58	-0.82	19.50	1.27	1.10	ZZ
BFHBLM		16.40	-0.18	-0.25	17.20	-1.03	-0.89	ZZ
CA8P43	X	18.20	1.62	2.28	16.80	-1.43	-1.24	ZZ
CF38TF		16.80	0.22	0.31	19.30	1.07	0.92	ZZ
CGV3CH		16.00	-0.58	-0.82	17.00	-1.23	-1.07	ZZ
CVN2U6		16.00	-0.58	-0.82	18.00	-0.23	-0.20	ZZ
D79GR7		16.50	-0.08	-0.11	19.00	0.77	0.66	ZZ
D9D68V		16.20	-0.38	-0.54	19.00	0.77	0.66	ZZ
DGLTTG		16.84	0.26	0.37	18.32	0.09	0.07	ZZ
E7AQ2H		15.91	-0.67	-0.94	17.18	-1.05	-0.91	ZZ
F3GDHX		16.00	-0.58	-0.82	17.00	-1.23	-1.07	ZZ
FUNWEM		17.22	0.64	0.90	19.61	1.38	1.19	ZZ
GKUBJ9		16.70	0.12	0.17	17.60	-0.63	-0.55	ZZ
HT447N		17.20	0.62	0.87	18.20	-0.03	-0.03	ZZ
KL2HMD		18.00	1.42	2.00	21.00	2.77	2.39	ZZ
KUCTNR		16.00	-0.58	-0.82	17.00	-1.23	-1.07	ZZ
LZ8GDU	X	18.00	1.42	2.00	16.00	-2.23	-1.93	ZZ
LZTPPJ		17.10	0.52	0.73	18.60	0.37	0.32	ZZ
MW8CPG		15.90	-0.68	-0.96	16.70	-1.53	-1.33	ZZ
PXFCHT		17.00	0.42	0.59	19.00	0.77	0.66	ZZ
PZNFEP		16.30	-0.28	-0.40	18.20	-0.03	-0.03	ZZ
QFRJ7U		15.50	-1.08	-1.52	16.76	-1.47	-1.27	ZZ
R3YA3L		15.70	-0.88	-1.24	17.50	-0.73	-0.63	ZZ
RX7CAN		16.70	0.12	0.17	18.90	0.67	0.58	ZZ
RX93HR		15.90	-0.68	-0.96	17.30	-0.93	-0.81	ZZ
RYX9Z4		18.20	1.62	2.28	19.30	1.07	0.92	ZZ
T234DE		16.40	-0.18	-0.25	16.80	-1.43	-1.24	ZZ
TXPCDD	*	18.60	2.02	2.84	21.30	3.07	2.65	ZZ
U6ZWTV		16.00	-0.58	-0.82	17.00	-1.23	-1.07	ZZ
WF7VBR		18.00	1.42	2.00	20.50	2.27	1.96	ZZ
WTZ2R6		17.20	0.62	0.87	19.40	1.17	1.01	ZZ
XAYW8F		16.00	-0.58	-0.82	18.50	0.27	0.23	ZZ
XDGZ9J		16.00	-0.58	-0.82	18.00	-0.23	-0.20	ZZ
YFHCG6		16.66	0.08	0.11	16.51	-1.72	-1.49	ZZ
YM4A8D		14.90	-1.68	-2.37	16.90	-1.33	-1.15	ZZ
YPQT9B		16.95	0.37	0.52	17.80	-0.43	-0.37	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 112

Elongation - (Pre-Machined Round Steel) - Percent Increase
ASTM E8

		Sample A21			Sample A22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
YZ9JX9		16.80	0.22	0.31	18.00	-0.23	-0.20	ZZ
Z7DJPP		16.50	-0.08	-0.11	17.50	-0.73	-0.63	ZZ
ZCXR6A		17.00	0.42	0.59	18.00	-0.23	-0.20	ZZ

Summary Statistics

	Sample A21		Sample A22	
Grand Means	16.58	Percent	18.23	Percent
Stnd Dev Btwn Labs	0.71	Percent	1.16	Percent

Samples A21 , A22 : AISI 4340

Statistics based on 49 of 52 reporting participants

Comments on assigned Data Flags for Analysis #112

WebCode	Flag	Analyst Comment
4WRRRM	X	Data for sample A21 are high.
CA8P43	X	Inconsistent in testing between samples.
LZ8GDU	X	Inconsistent in testing between samples.

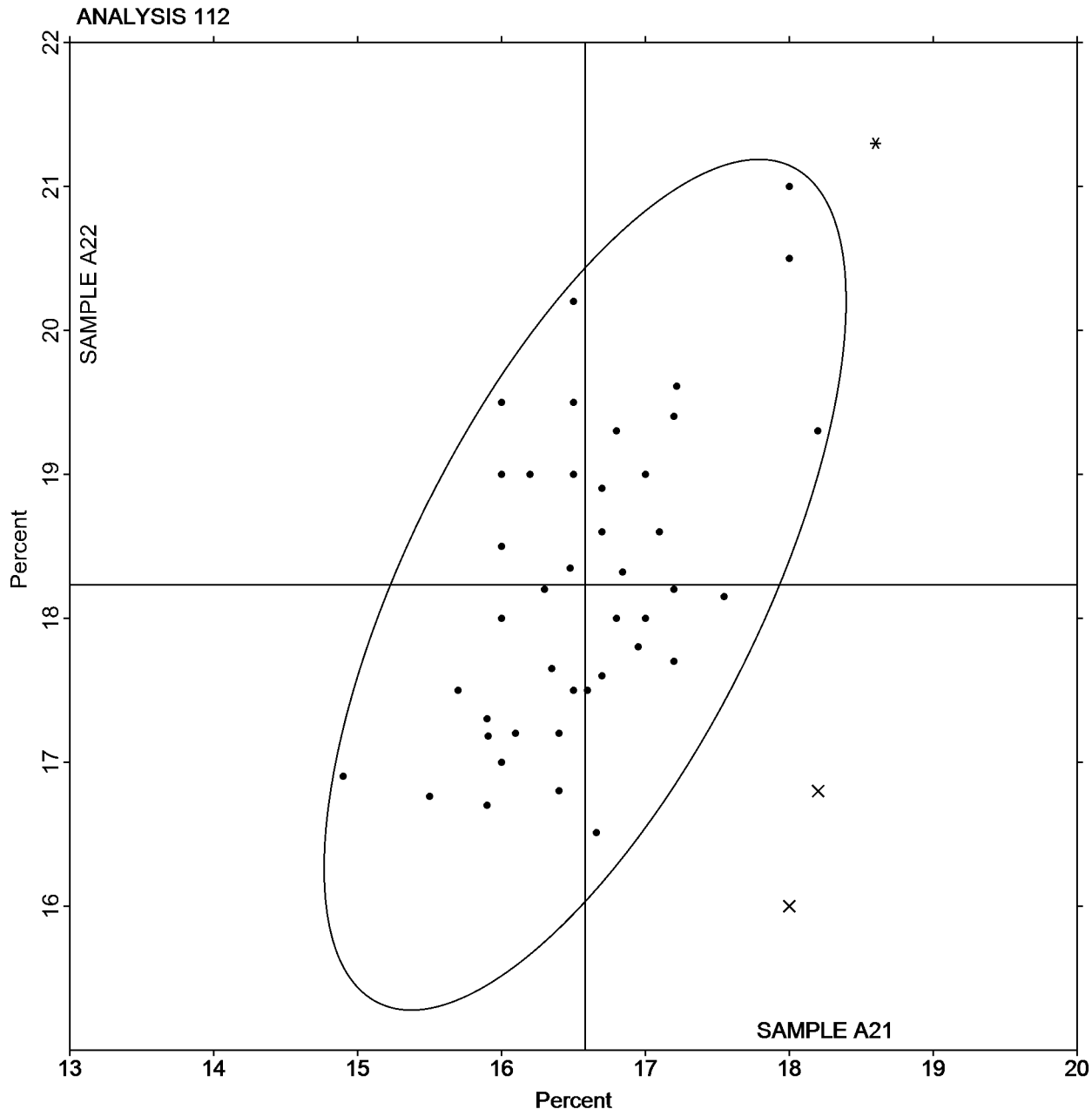
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 112

Elongation - (Pre-Machined Round Steel) - Percent Increase
ASTM E8

SAMPLE A21	**SAMPLE A22**
16.58 Percent	**18.23 Percent**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 113

Reduction of Area (Pre-Machined Round Steel) - Percent
ASTM E8

		Sample A21			Sample A22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		55.60	0.61	0.34	62.90	1.90	1.14	ZZ
384H3E		55.50	0.51	0.28	60.70	-0.30	-0.18	ZZ
42MEMW	*	50.70	-4.29	-2.39	57.40	-3.60	-2.16	ZZ
4LCQH9	*	51.20	-3.79	-2.11	62.70	1.70	1.02	ZZ
4WRRRM	*	58.90	3.91	2.18	59.60	-1.40	-0.84	ZZ
6243DP		54.72	-0.28	-0.15	63.59	2.59	1.55	ZZ
6QF9Z8		54.00	-0.99	-0.55	60.80	-0.20	-0.12	ZZ
6X7LVU		55.20	0.21	0.12	60.40	-0.60	-0.36	ZZ
88L6KJ		55.00	0.01	0.00	62.00	1.00	0.60	ZZ
89D7GU		54.60	-0.39	-0.22	59.50	-1.50	-0.90	ZZ
8B2PB6		55.90	0.91	0.51	62.50	1.50	0.90	ZZ
8MU9PB		54.70	-0.29	-0.16	62.70	1.70	1.02	ZZ
BFHBLM		55.60	0.61	0.34	58.90	-2.10	-1.26	ZZ
CA8P43		55.30	0.31	0.17	60.50	-0.50	-0.30	ZZ
CF38TF		56.80	1.81	1.01	62.60	1.60	0.96	ZZ
CGV3CH		56.70	1.71	0.95	60.30	-0.70	-0.42	ZZ
CVN2U6	X	33.00	-21.99	-12.25	38.00	-23.00	-13.78	ZZ
D79GR7		55.90	0.91	0.51	63.80	2.80	1.68	ZZ
D9D68V		54.20	-0.79	-0.44	63.00	2.00	1.20	ZZ
DGLTTG		56.60	1.61	0.89	60.59	-0.40	-0.24	ZZ
E7AQ2H		57.10	2.11	1.17	62.93	1.93	1.16	ZZ
F3GDHX		54.05	-0.94	-0.53	60.89	-0.11	-0.06	ZZ
FUNWEM		54.56	-0.43	-0.24	62.73	1.73	1.04	ZZ
GKUBJ9		56.47	1.48	0.82	59.43	-1.57	-0.94	ZZ
HT447N		56.10	1.11	0.62	60.80	-0.20	-0.12	ZZ
KL2HMD		55.00	0.01	0.00	62.00	1.00	0.60	ZZ
KUCTNR		54.00	-0.99	-0.55	60.00	-1.00	-0.60	ZZ
LZ8GDU	X	61.00	6.01	3.35	55.00	-6.00	-3.59	ZZ
LZTPPJ		56.90	1.91	1.06	62.10	1.10	0.66	ZZ
MW8CPG	*	55.80	0.81	0.45	56.40	-4.60	-2.76	ZZ
PXFCHT		58.00	3.01	1.68	61.00	0.00	0.00	ZZ
PZNFEP		50.70	-4.29	-2.39	58.90	-2.10	-1.26	ZZ
QFRJ7U		57.63	2.64	1.47	60.26	-0.74	-0.44	ZZ
R3YA3L		55.00	0.01	0.00	60.80	-0.20	-0.12	ZZ
RX7CAN		51.30	-3.69	-2.06	60.30	-0.70	-0.42	ZZ
RX93HR		53.70	-1.29	-0.72	59.80	-1.20	-0.72	ZZ
RYX9Z4		56.10	1.11	0.62	62.60	1.60	0.96	ZZ
T234DE		54.90	-0.09	-0.05	59.10	-1.90	-1.14	ZZ
TXPCDD		54.20	-0.79	-0.44	62.10	1.10	0.66	ZZ
U6ZWTV		54.00	-0.99	-0.55	62.00	1.00	0.60	ZZ
WF7VBR	X	56.90	1.91	1.06	68.10	7.10	4.26	ZZ
WTZ2R6		56.50	1.51	0.84	62.30	1.30	0.78	ZZ
XAYW8F		56.10	1.11	0.62	63.60	2.60	1.56	ZZ
XDGZ9J		53.00	-1.99	-1.11	61.00	0.00	0.00	ZZ
YFHCG6		56.56	1.57	0.87	61.40	0.40	0.24	ZZ
YM4A8D		55.00	0.01	0.00	61.80	0.80	0.48	ZZ
YPQT9B		53.87	-1.12	-0.63	59.85	-1.15	-0.69	ZZ
YZ9JX9		52.40	-2.59	-1.44	58.20	-2.80	-1.68	ZZ
Z7DJPP		55.00	0.01	0.00	59.00	-2.00	-1.20	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 113

Reduction of Area (Pre-Machined Round Steel) - Percent
ASTM E8

		Sample A21			Sample A22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
ZCXR6A		53.60	-1.39	-0.78	61.10	0.10	0.06	ZZ

Summary Statistics

	Sample A21		Sample A22	
Grand Means	54.99	Percent	61.00	Percent
Stnd Dev Btwn Labs	1.79	Percent	1.67	Percent

Samples A21 , A22 : AISI 4340

Statistics based on 47 of 50 reporting participants

Comments on assigned Data Flags for Analysis #113

WebCode	Flag	Analyst Comment
CVN2U6	X	Data for both samples are low.
LZ8GDU	X	Data for sample A21 are high and data for sample A22 are low.
WF7VBR	X	Data for sample A22 are high.

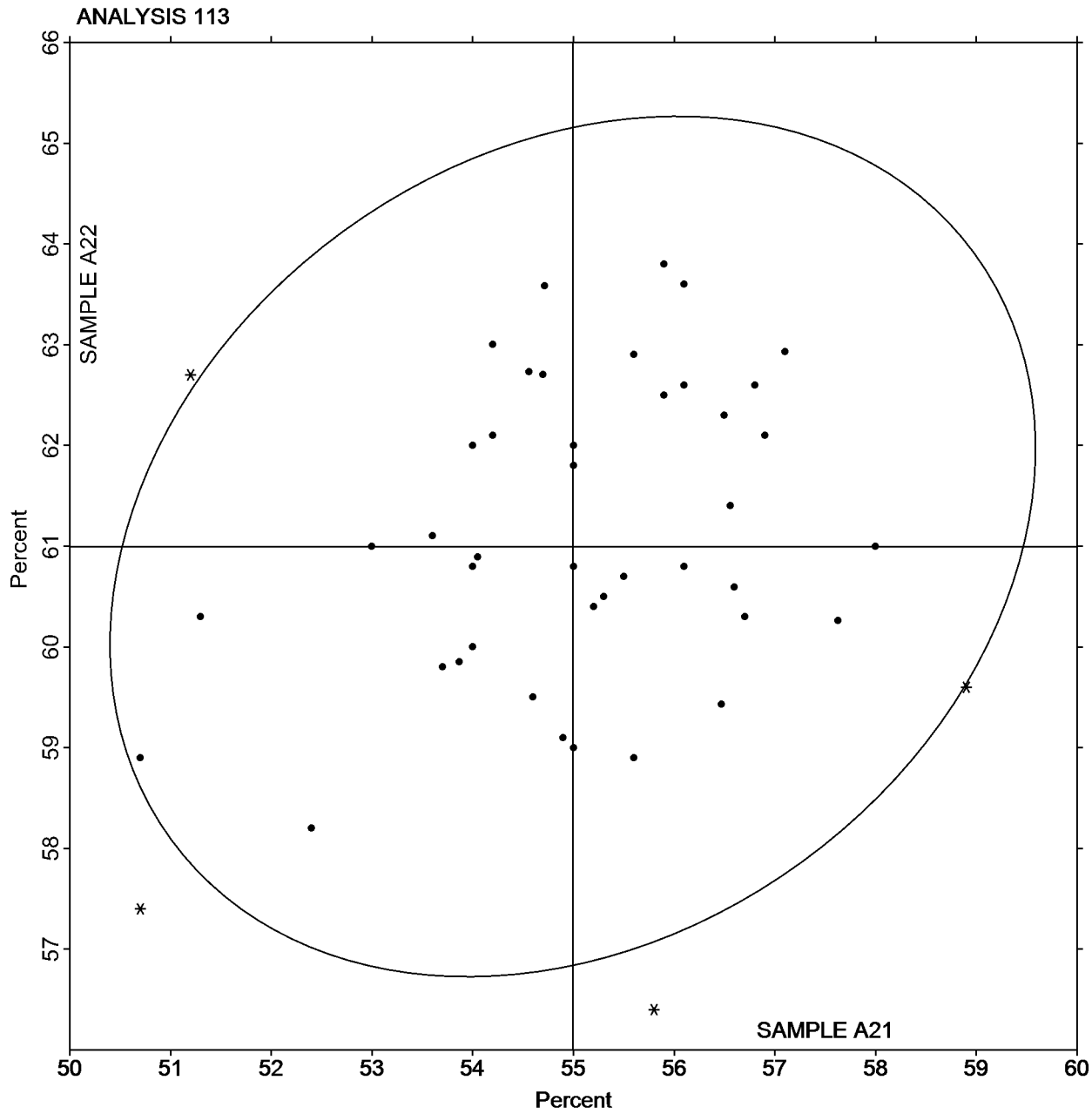
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 113

Reduction of Area (Pre-Machined Round Steel) - Percent
ASTM E8

SAMPLE A21	**SAMPLE A22**
54.99 Percent	**61.00 Percent**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 118

Rockwell Hardness: C & B Scales
ASTM E18

		Sample N21			Sample N22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		97.08	-0.41	-0.91	93.18	-0.43	-0.90	ZZ
264GPJ		97.64	0.15	0.34	93.84	0.23	0.49	ZZ
279LUK		97.12	-0.37	-0.82	93.24	-0.37	-0.77	ZZ
2DCJNH	X	96.50	-0.99	-2.21	92.08	-1.53	-3.21	ZZ
2NQL24		97.18	-0.31	-0.69	93.42	-0.19	-0.39	ZZ
2RTCGV		97.22	-0.27	-0.60	93.10	-0.51	-1.06	ZZ
4JUZJC		97.32	-0.17	-0.38	93.70	0.09	0.20	ZZ
4P4GUL		98.52	1.03	2.30	94.26	0.65	1.37	ZZ
7EKAUM		97.50	0.01	0.02	93.86	0.25	0.53	ZZ
7HRLY4		97.50	0.01	0.02	93.58	-0.03	-0.06	ZZ
7TEJ3H		97.50	0.01	0.02	94.24	0.63	1.33	ZZ
88L6KJ		98.16	0.67	1.50	94.30	0.69	1.45	ZZ
8B2PB6		97.26	-0.23	-0.51	93.50	-0.11	-0.22	ZZ
8EBZXG		97.20	-0.29	-0.65	93.18	-0.43	-0.90	ZZ
8MU9PB		97.02	-0.47	-1.05	92.80	-0.81	-1.69	ZZ
8XX47U		97.46	-0.03	-0.06	93.50	-0.11	-0.22	ZZ
9KE9UC		97.38	-0.11	-0.24	93.26	-0.35	-0.73	ZZ
9R7E3V		97.45	-0.04	-0.09	93.76	0.15	0.31	ZZ
A4CXQG		98.02	0.53	1.19	94.04	0.43	0.91	ZZ
A7PVTL		97.48	-0.01	-0.02	93.38	-0.23	-0.48	ZZ
AEUFPF		97.30	-0.19	-0.42	93.80	0.19	0.41	ZZ
AMF44L		97.78	0.29	0.65	93.78	0.17	0.36	ZZ
B7MKC9		97.88	0.39	0.87	94.30	0.69	1.45	ZZ
BCRTUQ		97.18	-0.31	-0.69	93.12	-0.49	-1.02	ZZ
BRX2LD		97.24	-0.25	-0.56	93.16	-0.45	-0.94	ZZ
C3D93D		96.80	-0.69	-1.54	93.18	-0.43	-0.90	ZZ
C3UHYK	X	95.80	-1.69	-3.77	93.00	-0.61	-1.27	ZZ
C9T63U		97.62	0.13	0.29	93.70	0.09	0.20	ZZ
CX77A4		97.98	0.49	1.10	93.76	0.15	0.32	ZZ
D67F6H		97.20	-0.29	-0.65	93.80	0.19	0.41	ZZ
E9BTUY		97.38	-0.11	-0.24	93.96	0.35	0.74	ZZ
EBMZET		97.98	0.49	1.10	93.46	-0.15	-0.31	ZZ
ER9LYJ		97.04	-0.45	-1.00	93.14	-0.47	-0.98	ZZ
ER9NNN		97.52	0.03	0.07	93.82	0.21	0.45	ZZ
ERRBHY		97.36	-0.13	-0.29	93.68	0.07	0.15	ZZ
EUXXV4		97.24	-0.25	-0.56	93.31	-0.29	-0.61	ZZ
EWM4DF		97.22	-0.27	-0.60	93.66	0.05	0.11	ZZ
FRZF3U		98.16	0.67	1.50	94.46	0.85	1.79	ZZ
FXLECE		97.36	-0.13	-0.29	93.60	-0.01	-0.01	ZZ
G2W4NC		97.12	-0.37	-0.82	93.56	-0.05	-0.10	ZZ
GALRKY		97.84	0.35	0.78	93.88	0.27	0.57	ZZ
GE8DYR		97.66	0.17	0.38	94.10	0.49	1.03	ZZ
GEWZL4		97.56	0.07	0.16	94.10	0.49	1.03	ZZ
GGLAV6		96.90	-0.59	-1.32	93.34	-0.27	-0.56	ZZ
GKUBJ9		97.88	0.39	0.87	93.80	0.19	0.41	ZZ
GRMR9T		97.70	0.21	0.47	94.30	0.69	1.45	ZZ
H66BGF		97.92	0.43	0.96	94.08	0.47	0.99	ZZ
HN3ZYC		98.20	0.71	1.59	94.40	0.79	1.66	ZZ
K842L7	X	98.80	1.31	2.92	95.44	1.83	3.84	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 118

Rockwell Hardness: C & B Scales
ASTM E18

		Sample N21			Sample N22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
KANJCH		97.64	0.15	0.34	94.04	0.43	0.91	ZZ
KL2HMD	X	43.44	-54.05	-120.74	49.30	-44.31	-93.00	ZZ
KTZ2NN		97.90	0.41	0.92	93.42	-0.19	-0.39	ZZ
KUCTNR		98.20	0.71	1.59	94.22	0.61	1.29	ZZ
KWYPWH		97.10	-0.39	-0.87	93.36	-0.25	-0.52	ZZ
L6UCV3		97.28	-0.21	-0.47	93.20	-0.41	-0.85	ZZ
L8D7Y9		97.70	0.21	0.47	93.86	0.25	0.53	ZZ
LDBMA3		96.54	-0.95	-2.12	92.92	-0.69	-1.44	ZZ
LVAZKP		97.64	0.15	0.34	93.48	-0.13	-0.27	ZZ
MJANQ9		97.30	-0.19	-0.43	93.80	0.19	0.40	ZZ
N2HQRD		97.32	-0.17	-0.38	93.54	-0.07	-0.14	ZZ
N33UWD		97.58	0.09	0.20	93.62	0.01	0.03	ZZ
N9J4PV		97.62	0.13	0.29	93.74	0.13	0.28	ZZ
NH9PXE		97.12	-0.37	-0.82	93.30	-0.31	-0.64	ZZ
NJAJYZ		97.74	0.25	0.56	93.96	0.35	0.74	ZZ
P6EQQ9	*	96.20	-1.29	-2.88	92.50	-1.11	-2.32	ZZ
PM46G8		97.50	0.01	0.02	93.58	-0.03	-0.06	ZZ
PQ8YGX		97.30	-0.19	-0.42	92.90	-0.71	-1.48	ZZ
PZNFEP		97.62	0.13	0.29	93.56	-0.05	-0.10	ZZ
QBMZHB		96.98	-0.51	-1.14	93.30	-0.31	-0.64	ZZ
QFRJ7U		97.96	0.47	1.05	93.96	0.35	0.74	ZZ
QM2WME	X	99.40	1.91	4.27	95.40	1.79	3.76	ZZ
QPQ7VU		97.14	-0.35	-0.78	92.92	-0.69	-1.44	ZZ
R9NYG4		97.58	0.09	0.20	93.56	-0.05	-0.10	ZZ
RRACJ3		97.98	0.49	1.10	94.12	0.51	1.08	ZZ
RT4XA9		97.80	0.31	0.69	93.80	0.19	0.41	ZZ
RV3DLB		96.68	-0.81	-1.81	92.78	-0.83	-1.74	ZZ
RWXTY8		97.66	0.17	0.38	93.18	-0.43	-0.90	ZZ
RYX9Z4		97.54	0.05	0.11	93.84	0.23	0.49	ZZ
RZ4N6C		98.08	0.59	1.32	94.68	1.07	2.25	ZZ
RZUTLG	*	97.74	0.25	0.56	93.04	-0.57	-1.19	ZZ
T2MWXP		97.08	-0.41	-0.91	93.30	-0.31	-0.64	ZZ
T49N2E		97.86	0.37	0.82	94.08	0.47	0.98	ZZ
TAP9MF		96.96	-0.53	-1.18	93.12	-0.49	-1.02	ZZ
TECU29		96.80	-0.69	-1.54	92.60	-1.01	-2.11	ZZ
TUDXVM		98.00	0.51	1.14	94.00	0.39	0.82	ZZ
U262CG		96.84	-0.65	-1.45	92.80	-0.81	-1.69	ZZ
U3A3ME		96.96	-0.53	-1.18	93.36	-0.25	-0.52	ZZ
UK3TL3		97.76	0.27	0.61	94.00	0.39	0.82	ZZ
V2WLE7		97.68	0.19	0.43	94.06	0.45	0.95	ZZ
VAGB3U		97.10	-0.39	-0.87	93.26	-0.35	-0.73	ZZ
VQ4YQQ		96.96	-0.53	-1.18	93.50	-0.11	-0.22	ZZ
VZJV63		97.90	0.41	0.92	94.42	0.81	1.71	ZZ
VZPTNL		97.28	-0.21	-0.47	93.34	-0.27	-0.56	ZZ
W48ALW	X	96.60	-0.89	-1.99	93.60	-0.01	-0.01	ZZ
W7HZAR		98.32	0.83	1.86	94.52	0.91	1.92	ZZ
WJBFL8		97.10	-0.39	-0.87	92.84	-0.77	-1.61	ZZ
WLZL6H		96.72	-0.77	-1.72	92.60	-1.01	-2.11	ZZ
WP3KFB		97.42	-0.07	-0.15	93.30	-0.31	-0.64	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 118

Rockwell Hardness: C & B Scales
ASTM E18

		Sample N21			Sample N22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
WT8GD7		97.52	0.03	0.07	93.76	0.15	0.32	ZZ
WTZ2R6		97.18	-0.31	-0.69	93.02	-0.59	-1.23	ZZ
X26L3C	*	98.46	0.97	2.17	94.04	0.43	0.91	ZZ
XJEQ64		97.40	-0.09	-0.20	93.26	-0.35	-0.73	ZZ
Y2BFYC		97.14	-0.35	-0.78	93.42	-0.19	-0.39	ZZ
YM4A8D		97.30	-0.19	-0.42	93.44	-0.17	-0.35	ZZ
YPQT9B		97.90	0.41	0.92	93.70	0.09	0.20	ZZ
YYV2NB		98.08	0.59	1.32	94.28	0.67	1.41	ZZ
YZAA7C		97.08	-0.41	-0.91	93.04	-0.57	-1.19	ZZ
ZJ4CH7	*	98.68	1.19	2.66	94.40	0.79	1.66	ZZ
ZPBWLX		98.30	0.81	1.81	94.30	0.69	1.45	ZZ
ZRB934		97.60	0.11	0.25	93.80	0.19	0.41	ZZ

Summary Statistics

	Sample N21		Sample N22	
Grand Means	97.49	HRB	93.61	HRB
Stnd Dev Btwn Labs	0.45	HRB	0.48	HRB

Samples N21 , N22 : Steel

Statistics based on 104 of 110 reporting participants

Comments on assigned Data Flags for Analysis #118

WebCode	Flag	Analyst Comment
2DCJNH	X	Data for sample N22 are low. Inconsistent in testing between samples.
C3UHYK	X	Data for sample N21 are low. Inconsistent in testing between samples.
K842L7	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of both samples.
KL2HMD	X	Extreme Data.
QM2WME	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of both samples.
W48ALW	X	Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

Cycle 107
3rd Q, 2014

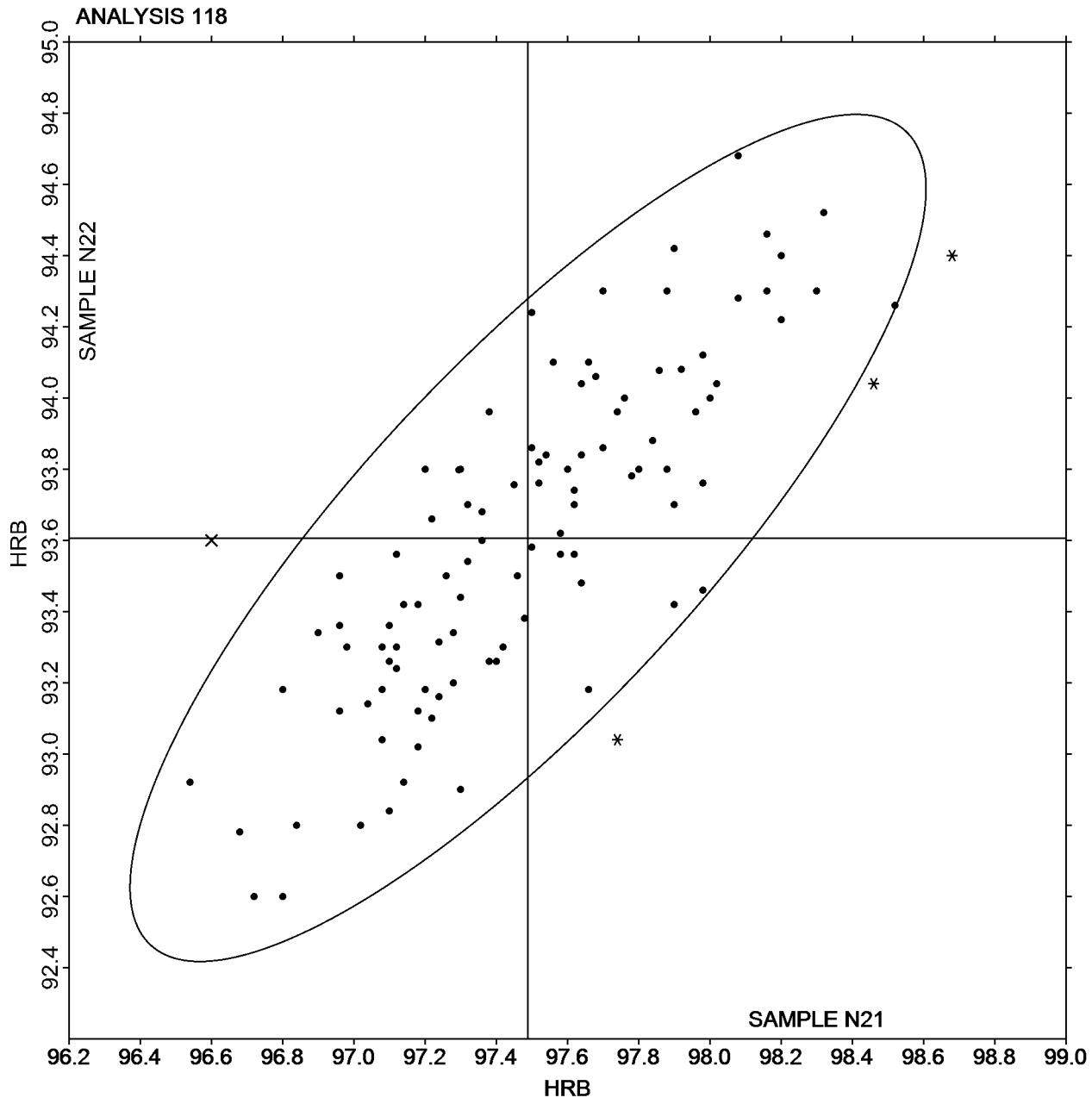
Interlaboratory Testing Program for Metals

Analysis 118

Rockwell Hardness: C & B Scales
ASTM E18

SAMPLE N21
97.49 HRB

SAMPLE N22
93.61 HRB



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - HRB
ASTM E18

		Sample N21			Sample N22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2ELF82		98.18	-0.16	-0.27	93.86	-0.48	-0.92	ZZ
2WH9NT		99.40	1.06	1.74	94.84	0.50	0.97	ZZ
3E28L4		97.92	-0.42	-0.69	94.10	-0.24	-0.46	ZZ
474WQY		97.92	-0.42	-0.69	94.48	0.14	0.28	ZZ
4CFEA9		97.74	-0.60	-0.99	93.84	-0.50	-0.96	ZZ
4LCQH9		97.64	-0.70	-1.15	93.78	-0.56	-1.07	ZZ
4LJATD		97.14	-1.20	-1.97	93.38	-0.96	-1.84	ZZ
6DJYLU		98.66	0.32	0.52	94.22	-0.12	-0.22	ZZ
6JUHW2		98.64	0.30	0.49	94.54	0.20	0.39	ZZ
6NLPCP		98.66	0.32	0.52	94.52	0.18	0.35	ZZ
6P3JG6		97.94	-0.40	-0.66	93.90	-0.44	-0.84	ZZ
7LWHUD		98.22	-0.12	-0.20	94.10	-0.24	-0.46	ZZ
84AJ3K		97.96	-0.38	-0.63	94.22	-0.12	-0.22	ZZ
89D7GU		97.70	-0.64	-1.05	93.80	-0.54	-1.03	ZZ
8CX7M2	*	99.40	1.06	1.74	95.62	1.28	2.47	ZZ
8HCBMP		98.30	-0.04	-0.07	94.36	0.02	0.04	ZZ
8K7L7V		98.20	-0.14	-0.23	94.10	-0.24	-0.46	ZZ
8ZQP4Y		98.20	-0.14	-0.23	94.04	-0.30	-0.57	ZZ
97VKMY		98.48	0.14	0.23	94.64	0.30	0.58	ZZ
9BJ4A2		98.14	-0.20	-0.33	94.22	-0.12	-0.22	ZZ
9HQWWR		97.82	-0.52	-0.86	93.76	-0.58	-1.11	ZZ
9VK4ER		98.07	-0.28	-0.45	93.94	-0.39	-0.76	ZZ
A7PVV8		98.24	-0.10	-0.17	94.48	0.14	0.28	ZZ
AE7898	X	97.80	-0.54	-0.89	94.90	0.56	1.08	ZZ
B7MM3D		97.86	-0.48	-0.79	94.36	0.02	0.04	ZZ
BCCZ7M		99.20	0.86	1.41	95.26	0.92	1.78	ZZ
BFHBLM		98.30	-0.04	-0.07	94.08	-0.26	-0.49	ZZ
BQ6BFY	*	100.12	1.78	2.92	95.86	1.52	2.93	ZZ
BQAHTR	X	97.36	-0.98	-1.61	94.56	0.22	0.43	ZZ
CFQW8H		98.04	-0.30	-0.50	94.28	-0.06	-0.11	ZZ
CGV3CH		98.26	-0.08	-0.13	94.14	-0.20	-0.38	ZZ
CNFDNE		98.84	0.50	0.82	94.58	0.24	0.47	ZZ
CQPVW3		98.64	0.30	0.49	94.14	-0.20	-0.38	ZZ
CVN2U6		99.68	1.34	2.20	95.16	0.82	1.58	ZZ
D79GR7		97.86	-0.48	-0.79	93.96	-0.38	-0.72	ZZ
D87RJ3		97.90	-0.44	-0.72	94.22	-0.12	-0.22	ZZ
D9D68V		98.46	0.12	0.19	94.80	0.46	0.89	ZZ
DPFZ92		98.16	-0.18	-0.30	94.54	0.20	0.39	ZZ
EP427D		97.40	-0.94	-1.55	93.76	-0.58	-1.11	ZZ
EXB7W2		97.30	-1.04	-1.71	93.70	-0.64	-1.22	ZZ
F46UDF		98.30	-0.04	-0.07	94.50	0.16	0.31	ZZ
FVCJ8Q		98.72	0.38	0.62	94.60	0.26	0.51	ZZ
GHPLXR		98.82	0.48	0.78	94.88	0.54	1.04	ZZ
HLEQMP		98.14	-0.20	-0.33	94.02	-0.32	-0.61	ZZ
HT447N		99.08	0.74	1.21	94.86	0.52	1.01	ZZ
J2KCL6		98.34	0.00	0.00	94.12	-0.22	-0.42	ZZ
J9LNJN		98.76	0.42	0.69	95.00	0.66	1.28	ZZ
JE8QJD		98.22	-0.12	-0.20	94.32	-0.02	-0.03	ZZ
JM6DG6		97.84	-0.50	-0.82	94.24	-0.10	-0.19	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - HRB
ASTM E18

		Sample N21			Sample N22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
KNTCLA		99.78	1.44	2.36	95.38	1.04	2.01	ZZ
KR7D8D		98.18	-0.16	-0.27	94.60	0.26	0.51	ZZ
KTREH4		97.12	-1.22	-2.00	93.38	-0.96	-1.84	ZZ
KVBB69		97.94	-0.40	-0.66	94.25	-0.09	-0.17	ZZ
L36ZYH		98.80	0.46	0.75	94.56	0.22	0.43	ZZ
LKB8DJ		99.44	1.10	1.80	95.34	1.00	1.93	ZZ
MT7EVF		98.42	0.08	0.13	94.52	0.18	0.35	ZZ
MTAUA2	*	96.88	-1.46	-2.40	92.92	-1.42	-2.73	ZZ
NJ4CEP		98.78	0.44	0.72	94.82	0.48	0.93	ZZ
NJALN6		98.30	-0.04	-0.07	94.12	-0.22	-0.42	ZZ
PQ8YGX		97.96	-0.38	-0.63	93.84	-0.50	-0.96	ZZ
PTNWDF		98.46	0.12	0.19	94.62	0.28	0.54	ZZ
Q8XDB8		98.78	0.44	0.72	94.52	0.18	0.35	ZZ
QL8A74		98.70	0.36	0.59	94.18	-0.16	-0.30	ZZ
QTMX27		97.78	-0.56	-0.92	93.96	-0.38	-0.72	ZZ
QY7VYK		98.84	0.50	0.82	94.58	0.24	0.47	ZZ
RCX4UD		98.22	-0.12	-0.20	94.28	-0.06	-0.11	ZZ
RH6T9Z		98.48	0.14	0.23	94.70	0.36	0.70	ZZ
RK2UZA		98.02	-0.32	-0.53	94.22	-0.12	-0.22	ZZ
RKPKHH		98.78	0.44	0.72	94.58	0.24	0.47	ZZ
RLDVKM		98.54	0.20	0.33	94.42	0.08	0.16	ZZ
RQD3YE		98.42	0.08	0.13	94.50	0.16	0.31	ZZ
RTGZ6Z		97.74	-0.60	-0.99	93.60	-0.74	-1.42	ZZ
RX7CAN		98.20	-0.14	-0.23	93.94	-0.40	-0.76	ZZ
RX93HR	X	96.68	-1.66	-2.73	93.62	-0.72	-1.38	ZZ
TYDU7Y		98.40	0.06	0.10	94.00	-0.34	-0.65	ZZ
U7B23D		98.80	0.46	0.75	95.15	0.81	1.56	ZZ
VJDRJB		98.00	-0.34	-0.56	94.00	-0.34	-0.65	ZZ
W63VC3		98.80	0.46	0.75	94.72	0.38	0.74	ZZ
W8R2VE		97.98	-0.36	-0.59	93.84	-0.50	-0.96	ZZ
WE2TVW		98.32	-0.02	-0.04	94.14	-0.20	-0.38	ZZ
WLQF64		98.16	-0.18	-0.30	94.22	-0.12	-0.22	ZZ
XDGZ9J		97.12	-1.22	-2.00	93.38	-0.96	-1.84	ZZ
Z32QXR		98.90	0.56	0.92	94.62	0.28	0.54	ZZ
Z4EQ7Z		98.66	0.32	0.52	94.36	0.02	0.04	ZZ
Z7FAXT		99.72	1.38	2.26	95.46	1.12	2.16	ZZ
ZECZPV		98.14	-0.20	-0.33	94.12	-0.22	-0.42	ZZ

Summary Statistics

	Sample N21		Sample N22	
Grand Means	98.34	HRB	94.34	HRB
Stnd Dev Btwn Labs	0.61	HRB	0.52	HRB

Samples N21 , N22 : Steel

Statistics based on 83 of 86 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - HRB
ASTM E18

Comments on assigned Data Flags for Analysis #119

WebCode	Flag	Analyst Comment
AE7898	X	Inconsistent in testing between samples.
BQAHTR	X	Inconsistent in testing between samples.
RX93HR	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample N21.

Cycle 107
3rd Q, 2014

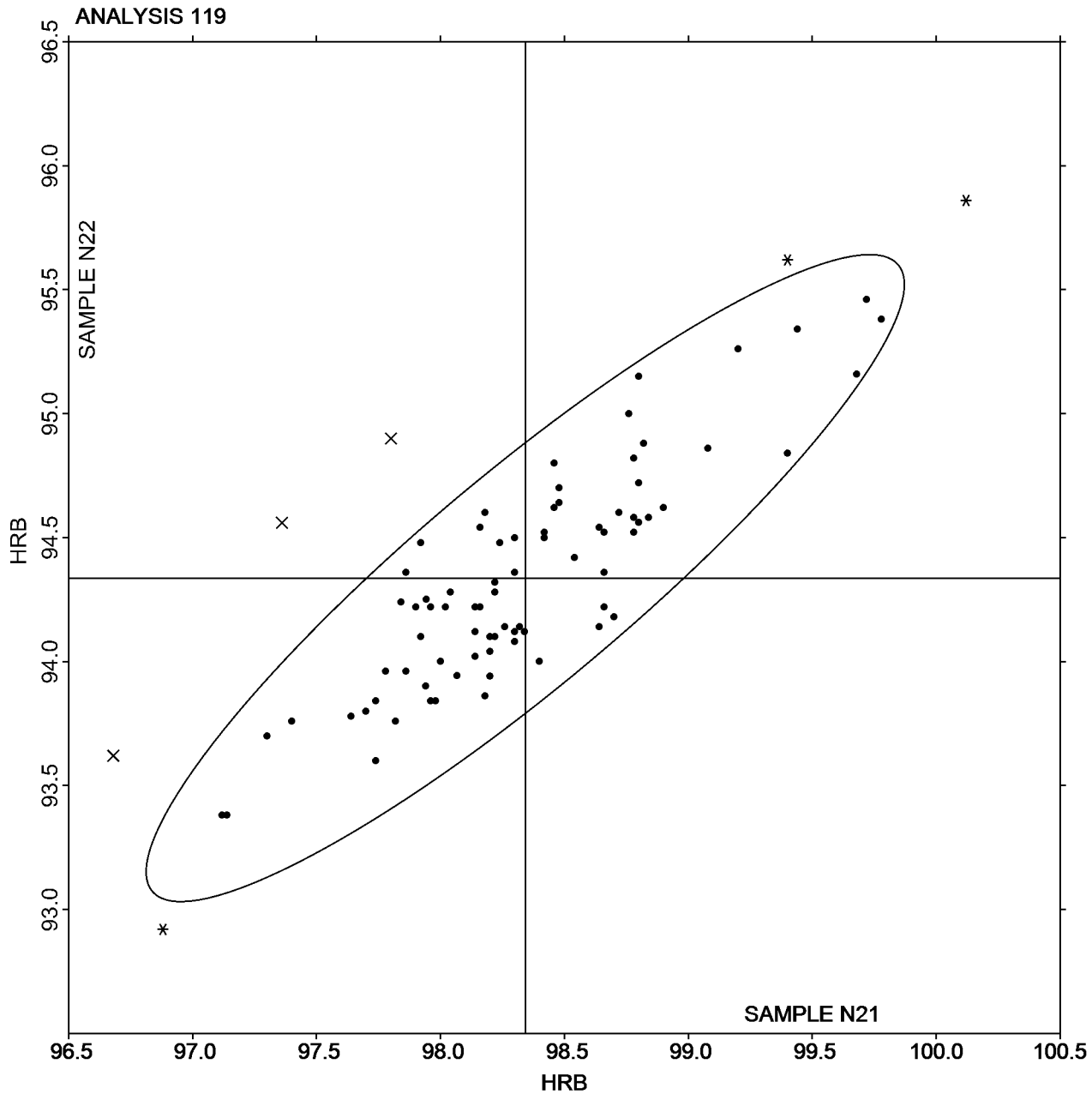
Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - HRB
ASTM E18

SAMPLE N21
98.34 HRB

SAMPLE N22
94.34 HRB



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
23GAHN		399.60	10.42	1.14	473.60	4.92	0.43	ZZ
2P8Y28		393.60	4.42	0.48	473.20	4.52	0.40	ZZ
2RTCGV		391.98	2.80	0.31	479.06	10.38	0.91	ZZ
2WH9NT		397.00	7.82	0.85	484.80	16.12	1.41	ZZ
2Y9XJ8		397.70	8.52	0.93	477.06	8.38	0.73	ZZ
37XU3J	*	411.66	22.48	2.45	467.28	-1.40	-0.12	ZZ
3E28L4		388.82	-0.36	-0.04	487.02	18.34	1.61	ZZ
4BHCWK		394.40	5.22	0.57	464.40	-4.28	-0.38	ZZ
4JUZJC		384.20	-4.98	-0.54	465.20	-3.48	-0.31	ZZ
4LCQH9		380.72	-8.46	-0.92	467.52	-1.16	-0.10	ZZ
4WRRRM		382.20	-6.98	-0.76	461.80	-6.88	-0.60	ZZ
4WWZ73		381.28	-7.90	-0.86	459.64	-9.04	-0.79	ZZ
66CMPH		383.20	-5.98	-0.65	481.80	13.12	1.15	ZZ
6FRJL9		388.06	-1.12	-0.12	463.74	-4.94	-0.43	ZZ
7XQWWV		396.40	7.22	0.79	470.80	2.12	0.19	ZZ
88L6KJ		407.00	17.82	1.95	471.60	2.92	0.26	ZZ
8F7PX4		394.00	4.82	0.53	482.60	13.92	1.22	ZZ
8MU9PB		376.40	-12.78	-1.39	463.00	-5.68	-0.50	ZZ
8XX47U		389.60	0.42	0.05	466.80	-1.88	-0.17	ZZ
92C4YF		389.20	0.02	0.00	454.60	-14.08	-1.24	ZZ
9R7E3V		400.00	10.82	1.18	468.40	-0.28	-0.02	ZZ
9UVNCW		378.60	-10.58	-1.15	471.60	2.92	0.26	ZZ
9WLFCU		388.58	-0.60	-0.07	468.62	-0.06	-0.01	ZZ
B2WHMB		391.40	2.22	0.24	457.00	-11.68	-1.02	ZZ
BDYAQZ		375.80	-13.38	-1.46	448.40	-20.28	-1.78	ZZ
C3UHYK		373.00	-16.18	-1.77	473.80	5.12	0.45	ZZ
C9T63U		404.86	15.68	1.71	484.76	16.08	1.41	ZZ
CGV3CH		384.40	-4.78	-0.52	461.20	-7.48	-0.66	ZZ
CP8JK4		371.20	-17.98	-1.96	460.80	-7.88	-0.69	ZZ
DRX6NZ		390.00	0.82	0.09	461.20	-7.48	-0.66	ZZ
E9BTUY		387.00	-2.18	-0.24	456.60	-12.08	-1.06	ZZ
ER9LYJ		402.00	12.82	1.40	474.00	5.32	0.47	ZZ
EUXXV4		389.04	-0.14	-0.02	490.76	22.08	1.94	ZZ
FCA2TF	*	365.20	-23.98	-2.62	452.20	-16.48	-1.45	ZZ
FQTP4Y		400.20	11.02	1.20	491.20	22.52	1.98	ZZ
FRZF3U		391.84	2.66	0.29	454.64	-14.04	-1.23	ZZ
FXDK8N		394.80	5.62	0.61	478.20	9.52	0.83	ZZ
G4YXLG		389.20	0.02	0.00	456.20	-12.48	-1.09	ZZ
GE8DYR		389.00	-0.18	-0.02	464.40	-4.28	-0.38	ZZ
H9JAA2		387.20	-1.98	-0.22	465.40	-3.28	-0.29	ZZ
HBV8C7		384.40	-4.78	-0.52	477.00	8.32	0.73	ZZ
J2KCL6		399.20	10.02	1.09	464.40	-4.28	-0.38	ZZ
KTZ2NN		393.60	4.42	0.48	482.00	13.32	1.17	ZZ
KWYPWH	X	349.80	-39.38	-4.30	447.20	-21.48	-1.88	ZZ
L6UCV3		385.60	-3.58	-0.39	462.00	-6.68	-0.59	ZZ
LMYJB4		376.40	-12.78	-1.39	446.04	-22.64	-1.99	ZZ
LVAZKP		387.60	-1.58	-0.17	451.20	-17.48	-1.53	ZZ
LZ8GDU		392.64	3.46	0.38	455.88	-12.80	-1.12	ZZ
MJANQ9		395.00	5.82	0.64	469.04	0.36	0.03	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
MQ9MAX		391.00	1.82	0.20	471.60	2.92	0.26	ZZ
MR36DR		390.60	1.42	0.16	480.40	11.72	1.03	ZZ
N2HQRD		395.60	6.42	0.70	481.60	12.92	1.13	ZZ
N9J4PV		378.00	-11.18	-1.22	465.20	-3.48	-0.31	ZZ
NPTEL3		372.50	-16.68	-1.82	473.26	4.58	0.40	ZZ
PM46G8		396.60	7.42	0.81	470.00	1.32	0.12	ZZ
PTRR87		380.90	-8.28	-0.90	461.20	-7.48	-0.66	ZZ
PZNFEP		383.60	-5.58	-0.61	456.60	-12.08	-1.06	ZZ
Q8XDB8		380.80	-8.38	-0.91	462.00	-6.68	-0.59	ZZ
QM2WME		378.20	-10.98	-1.20	460.40	-8.28	-0.73	ZZ
QM3UXA		396.00	6.82	0.74	465.60	-3.08	-0.27	ZZ
QTMX27		375.00	-14.18	-1.55	447.20	-21.48	-1.88	ZZ
QYC3M2		385.20	-3.98	-0.43	446.40	-22.28	-1.95	ZZ
R79MF3		392.20	3.02	0.33	480.80	12.12	1.06	ZZ
R9NYG4		403.60	14.42	1.57	463.40	-5.28	-0.46	ZZ
RATGEN		388.40	-0.78	-0.09	458.60	-10.08	-0.88	ZZ
RGBGK8		384.02	-5.16	-0.56	473.90	5.22	0.46	ZZ
RWXTY8		387.40	-1.78	-0.19	458.20	-10.48	-0.92	ZZ
RX93HR		391.00	1.82	0.20	460.60	-8.08	-0.71	ZZ
RYF3W8		401.26	12.08	1.32	483.14	14.46	1.27	ZZ
RYX9Z4		385.20	-3.98	-0.43	477.80	9.12	0.80	ZZ
RZ4N6C		377.20	-11.98	-1.31	463.60	-5.08	-0.45	ZZ
TCEHVV		405.58	16.40	1.79	484.04	15.36	1.35	ZZ
TD2GNK		387.64	-1.54	-0.17	459.20	-9.48	-0.83	ZZ
TD3EYF		388.60	-0.58	-0.06	468.40	-0.28	-0.02	ZZ
TYZDWR		398.80	9.62	1.05	479.60	10.92	0.96	ZZ
VMC9W6		397.60	8.42	0.92	494.60	25.92	2.27	ZZ
W48ALW		400.40	11.22	1.22	470.80	2.12	0.19	ZZ
W63VC3		396.20	7.02	0.77	481.80	13.12	1.15	ZZ
W7HZAR	X	429.20	40.02	4.37	516.60	47.92	4.20	ZZ
W8R2VE		383.62	-5.56	-0.61	480.20	11.52	1.01	ZZ
WF3TAX		403.36	14.18	1.55	468.76	0.08	0.01	ZZ
WLQF64		381.98	-7.20	-0.79	445.14	-23.54	-2.07	ZZ
WT8GD7	X	340.14	-49.04	-5.35	399.44	-69.24	-6.07	ZZ
XDGZ9J		377.60	-11.58	-1.26	464.00	-4.68	-0.41	ZZ
XJEQ64		383.28	-5.90	-0.64	473.28	4.60	0.40	ZZ
Y2BFYC		406.40	17.22	1.88	475.40	6.72	0.59	ZZ
YM4A8D		389.06	-0.12	-0.01	472.50	3.82	0.33	ZZ
YZAA7C		379.80	-9.38	-1.02	463.70	-4.98	-0.44	ZZ
Z4EQ7Z		380.40	-8.78	-0.96	462.00	-6.68	-0.59	ZZ
ZJ4CH7	*	386.40	-2.78	-0.30	496.00	27.32	2.40	ZZ
ZPBWLX		392.00	2.82	0.31	480.60	11.92	1.05	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)
ASTM E384

Summary Statistics

	Sample S21		Sample S22	
Grand Means	389.18	HK 500 gf	468.68	HK 500 gf
Stnd Dev Btwn Labs	9.16	HK 500 gf	11.40	HK 500 gf

Samples S21 , S22 : Steel

Statistics based on 88 of 91 reporting participants

Comments on assigned Data Flags for Analysis #121

WebCode	Flag	Analyst Comment
KWYPWH	X	Data for sample S21 are low.
W7HZAR	X	Data for both samples are high.
WT8GD7	X	Data for both samples are low.

Cycle 107
3rd Q, 2014

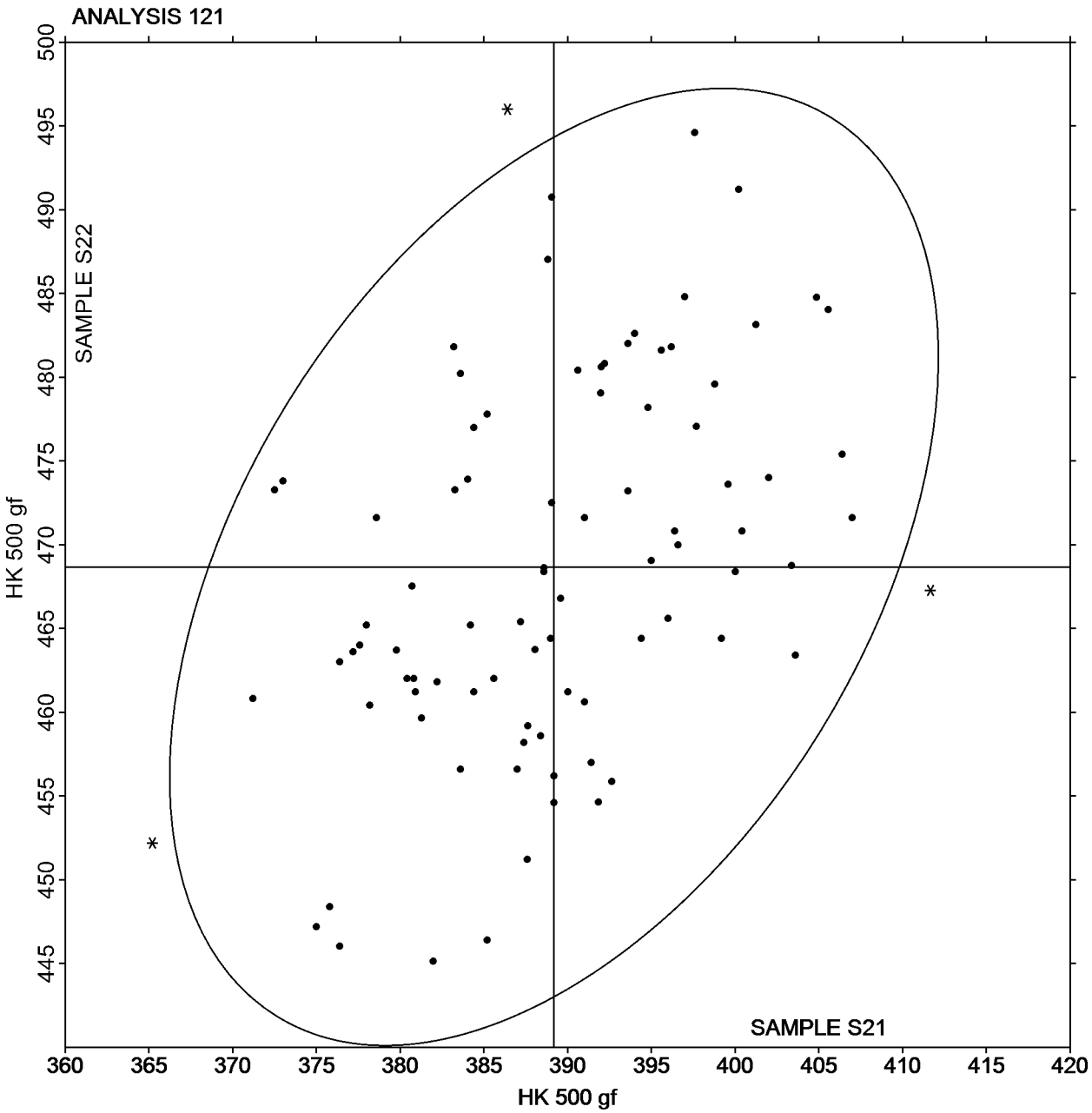
Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)
ASTM E384

SAMPLE S21
389.18 HK 500 gf

SAMPLE S22
468.68 HK 500 gf



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2RTCGV		401.48	2.85	0.21	492.04	11.88	0.72	ZZ
2Y9XJ8		418.46	19.83	1.48	507.20	27.04	1.64	ZZ
4JUZJC		393.00	-5.63	-0.42	472.60	-7.56	-0.46	ZZ
4LCQH9		390.00	-8.63	-0.64	479.50	-0.66	-0.04	ZZ
4WRRRM		406.20	7.57	0.56	495.60	15.44	0.94	ZZ
4WWZ73		383.34	-15.29	-1.14	465.16	-15.00	-0.91	ZZ
6FRJL9		400.30	1.67	0.12	476.14	-4.02	-0.24	ZZ
7XQWWV		382.20	-16.43	-1.23	465.20	-14.96	-0.91	ZZ
8MU9PB		389.00	-9.63	-0.72	485.80	5.64	0.34	ZZ
92C4YF		397.00	-1.63	-0.12	481.00	0.84	0.05	ZZ
9R7E3V		414.40	15.77	1.18	490.80	10.64	0.64	ZZ
9UVNCW		386.60	-12.03	-0.90	454.20	-25.96	-1.57	ZZ
9WLFCU		403.06	4.43	0.33	505.34	25.18	1.53	ZZ
B2WHMB		398.00	-0.63	-0.05	468.40	-11.76	-0.71	ZZ
BDYAQZ		383.80	-14.83	-1.11	465.20	-14.96	-0.91	ZZ
C9T63U		416.22	17.59	1.31	506.14	25.98	1.57	ZZ
DRX6NZ		396.60	-2.03	-0.15	470.00	-10.16	-0.62	ZZ
E9BTUY		400.20	1.57	0.12	479.60	-0.56	-0.03	ZZ
ER9LYJ		411.80	13.17	0.98	485.00	4.84	0.29	ZZ
EUXXV4		401.76	3.13	0.23	492.10	11.94	0.72	ZZ
FQTP4Y		369.00	-29.63	-2.21	446.20	-33.96	-2.06	ZZ
FRZF3U	*	397.74	-0.89	-0.07	452.30	-27.86	-1.69	ZZ
FXDK8N		404.80	6.17	0.46	479.80	-0.36	-0.02	ZZ
GE8DYR		399.60	0.97	0.07	472.40	-7.76	-0.47	ZZ
H9JAA2		402.80	4.17	0.31	472.80	-7.36	-0.45	ZZ
HBV8C7		386.60	-12.03	-0.90	480.80	0.64	0.04	ZZ
KTZ2NN		403.60	4.97	0.37	493.60	13.44	0.81	ZZ
L6UCV3		391.80	-6.83	-0.51	469.00	-11.16	-0.68	ZZ
LVAZKP		385.80	-12.83	-0.96	455.00	-25.16	-1.52	ZZ
LZ8GDU		401.20	2.57	0.19	469.92	-10.24	-0.62	ZZ
MJANQ9		391.82	-6.81	-0.51	478.26	-1.90	-0.11	ZZ
MQ9MAX		404.40	5.77	0.43	486.60	6.44	0.39	ZZ
N9J4PV		378.40	-20.23	-1.51	468.20	-11.96	-0.72	ZZ
PM46G8		398.60	-0.03	0.00	478.60	-1.56	-0.09	ZZ
PTRR87		380.46	-18.17	-1.35	462.86	-17.30	-1.05	ZZ
PZNFEP	X	967.40	568.77	42.41	1,184	703.84	42.65	ZZ
Q8XDB8		396.40	-2.23	-0.17	470.20	-9.96	-0.60	ZZ
QM3UXA		394.20	-4.43	-0.33	473.20	-6.96	-0.42	ZZ
QTMX27		380.40	-18.23	-1.36	452.40	-27.76	-1.68	ZZ
R79MF3		411.80	13.17	0.98	492.60	12.44	0.75	ZZ
R9NYG4		399.80	1.17	0.09	488.40	8.24	0.50	ZZ
RATGEN		411.80	13.17	0.98	489.80	9.64	0.58	ZZ
RGBGK8		396.62	-2.01	-0.15	482.20	2.04	0.12	ZZ
RWXTY8		410.80	12.17	0.91	497.40	17.24	1.04	ZZ
RX93HR		399.40	0.77	0.06	462.60	-17.56	-1.06	ZZ
RYX9Z4		406.80	8.17	0.61	486.60	6.44	0.39	ZZ
TD2GNK		393.56	-5.07	-0.38	462.88	-17.28	-1.05	ZZ
TD3EYF		380.60	-18.03	-1.34	464.00	-16.16	-0.98	ZZ
W63VC3		413.60	14.97	1.12	504.60	24.44	1.48	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
W7HZAR	*	435.20	36.57	2.73	519.60	39.44	2.39	ZZ
W8R2VE	*	425.88	27.25	2.03	524.82	44.66	2.71	ZZ
WF3TAX	*	435.12	36.49	2.72	502.28	22.12	1.34	ZZ
WLQF64		399.08	0.45	0.03	477.20	-2.96	-0.18	ZZ
XDGZ9J		376.60	-22.03	-1.64	475.80	-4.36	-0.26	ZZ
XJEQ64		393.34	-5.29	-0.39	473.98	-6.18	-0.37	ZZ
Y2BFYC		411.00	12.37	0.92	496.60	16.44	1.00	ZZ
YM4A8D		393.30	-5.33	-0.40	482.08	1.92	0.12	ZZ
YZAA7C		384.44	-14.19	-1.06	475.72	-4.44	-0.27	ZZ
ZPBWLX		400.80	2.17	0.16	490.80	10.64	0.64	ZZ

Summary Statistics

	Sample S21		Sample S22	
Grand Means	398.63	HK 200 gf	480.16	HK 200 gf
Stnd Dev Btwn Labs	13.41	HK 200 gf	16.50	HK 200 gf

Samples S21 , S22 : Steel

Statistics based on 58 of 59 reporting participants

Comments on assigned Data Flags for Analysis #122

WebCode	Flag	Analyst Comment
PZNFEP	X	Extreme Data.

Cycle 107
3rd Q, 2014

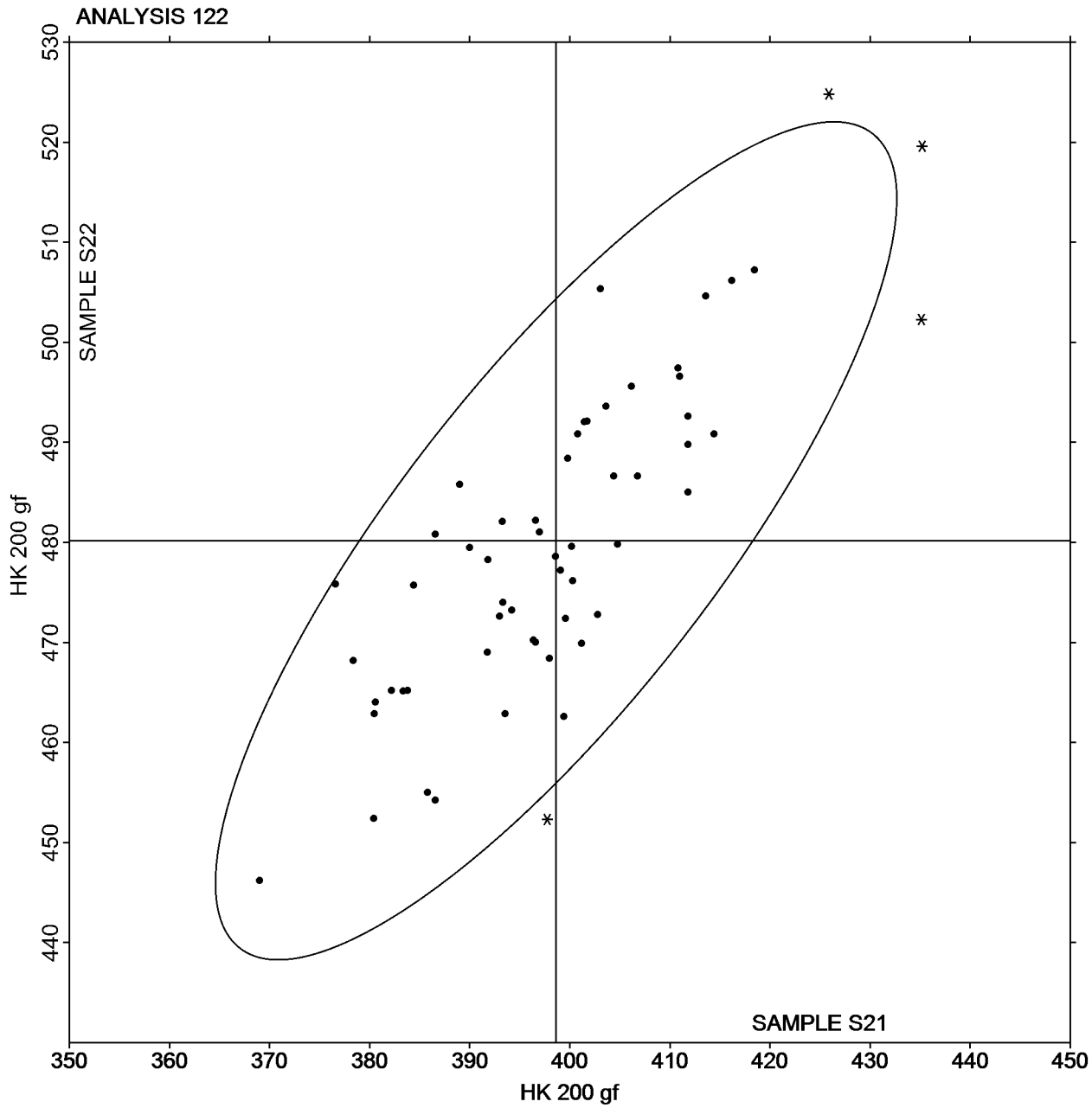
Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)
ASTM E384

SAMPLE S21
398.63 HK 200 gf

SAMPLE S22
480.16 HK 200 gf



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
23GAHN		379.20	8.70	1.09	458.40	3.91	0.32	ZZ
264GPJ		384.80	14.30	1.80	483.60	29.11	2.35	ZZ
2NQL24		370.80	0.30	0.04	475.00	20.51	1.65	ZZ
2P8Y28		371.20	0.70	0.09	447.00	-7.49	-0.60	ZZ
2RTCGV		382.26	11.76	1.48	457.90	3.41	0.27	ZZ
2VTMLX		373.92	3.42	0.43	448.82	-5.67	-0.46	ZZ
2WH9NT		370.60	0.10	0.01	458.80	4.31	0.35	ZZ
2Y9XJ8	X	343.28	-27.22	-3.42	427.96	-26.53	-2.14	ZZ
3E28L4	*	373.80	3.30	0.41	482.86	28.37	2.29	ZZ
3W747V		376.12	5.62	0.71	453.00	-1.49	-0.12	ZZ
4CFEA9		365.00	-5.50	-0.69	449.20	-5.29	-0.43	ZZ
4JUZJC		367.40	-3.10	-0.39	443.20	-11.29	-0.91	ZZ
4LCQH9		360.00	-10.50	-1.32	458.80	4.31	0.35	ZZ
4QHJ2U		383.66	13.16	1.65	469.62	15.13	1.22	ZZ
4WRRRM		364.00	-6.50	-0.82	449.60	-4.89	-0.39	ZZ
4WWZ73		358.98	-11.52	-1.45	438.96	-15.53	-1.25	ZZ
6FRJL9		362.14	-8.36	-1.05	445.30	-9.19	-0.74	ZZ
6THB9X		381.00	10.50	1.32	472.00	17.51	1.41	ZZ
7486RX		366.98	-3.52	-0.44	446.68	-7.81	-0.63	ZZ
7EKAUM		382.20	11.70	1.47	468.00	13.51	1.09	ZZ
7XQWWV		366.00	-4.50	-0.57	445.80	-8.69	-0.70	ZZ
88L6KJ		381.60	11.10	1.39	454.20	-0.29	-0.02	ZZ
8B2PB6		363.20	-7.30	-0.92	456.40	1.91	0.15	ZZ
8GTXVY		380.40	9.90	1.24	468.60	14.11	1.14	ZZ
8MU9PB		371.40	0.90	0.11	449.40	-5.09	-0.41	ZZ
8RHTJ2		366.20	-4.30	-0.54	462.20	7.71	0.62	ZZ
8UEG6U		358.22	-12.28	-1.54	447.18	-7.31	-0.59	ZZ
8XX47U		366.00	-4.50	-0.57	451.60	-2.89	-0.23	ZZ
8ZMHQX		376.40	5.90	0.74	465.20	10.71	0.86	ZZ
9R7E3V		372.20	1.70	0.21	451.80	-2.69	-0.22	ZZ
9UVNCW		370.80	0.30	0.04	451.20	-3.29	-0.27	ZZ
AE7898		372.00	1.50	0.19	466.60	12.11	0.98	ZZ
AQDCYZ		367.90	-2.60	-0.33	454.00	-0.49	-0.04	ZZ
B2WHMB		365.40	-5.10	-0.64	441.60	-12.89	-1.04	ZZ
BBHMRP		381.20	10.70	1.34	465.24	10.75	0.87	ZZ
BDYAQZ	*	350.00	-20.50	-2.58	430.20	-24.29	-1.96	ZZ
C3D93D		369.00	-1.50	-0.19	462.80	8.31	0.67	ZZ
C3UHYK		362.00	-8.50	-1.07	449.60	-4.89	-0.39	ZZ
C4XEUX		370.20	-0.30	-0.04	454.40	-0.09	-0.01	ZZ
C8AJ7X		367.14	-3.36	-0.42	451.22	-3.27	-0.26	ZZ
C9T63U		372.32	1.82	0.23	463.16	8.67	0.70	ZZ
CA8P43		372.80	2.30	0.29	450.00	-4.49	-0.36	ZZ
CGV3CH		368.40	-2.10	-0.26	450.20	-4.29	-0.35	ZZ
CVN2U6	*	378.50	8.00	1.01	483.56	29.07	2.34	ZZ
D87RJ3		358.60	-11.90	-1.50	437.00	-17.49	-1.41	ZZ
DKEZUE		385.42	14.92	1.87	460.18	5.69	0.46	ZZ
DQKTJ4		366.12	-4.38	-0.55	445.50	-8.99	-0.72	ZZ
DRX6NZ		368.00	-2.50	-0.31	442.80	-11.69	-0.94	ZZ
ELNJX9		377.60	7.10	0.89	450.60	-3.89	-0.31	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
ER9LYJ	X	390.00	19.50	2.45	453.60	-0.89	-0.07	ZZ
FCA2TF		361.20	-9.30	-1.17	450.20	-4.29	-0.35	ZZ
FQTP4Y		366.40	-4.10	-0.52	452.00	-2.49	-0.20	ZZ
FRZF3U		371.30	0.80	0.10	439.24	-15.25	-1.23	ZZ
FU8Q2H		375.20	4.70	0.59	461.80	7.31	0.59	ZZ
GALRKY		359.40	-11.10	-1.40	443.60	-10.89	-0.88	ZZ
GE8DYR		356.40	-14.10	-1.77	437.20	-17.29	-1.39	ZZ
GGLAV6		375.80	5.30	0.67	464.40	9.91	0.80	ZZ
GJP6E9		366.00	-4.50	-0.57	464.00	9.51	0.77	ZZ
GWPGFR		368.60	-1.90	-0.24	446.80	-7.69	-0.62	ZZ
H3P3YF		378.28	7.78	0.98	463.82	9.33	0.75	ZZ
H66BGF		370.80	0.30	0.04	456.20	1.71	0.14	ZZ
H9JAA2		374.20	3.70	0.46	462.40	7.91	0.64	ZZ
HDF4U6		367.80	-2.70	-0.34	440.60	-13.89	-1.12	ZZ
HF7WHF		369.00	-1.50	-0.19	455.20	0.71	0.06	ZZ
HLEQMP		372.80	2.30	0.29	448.40	-6.09	-0.49	ZZ
HP962R		374.80	4.30	0.54	458.40	3.91	0.32	ZZ
HXXX4P		366.40	-4.10	-0.52	444.80	-9.69	-0.78	ZZ
JM6DG6		366.50	-4.00	-0.50	466.10	11.61	0.94	ZZ
K842L7		379.00	8.50	1.07	467.60	13.11	1.06	ZZ
KTREH4		370.20	-0.30	-0.04	457.00	2.51	0.20	ZZ
KTZ2NN		383.20	12.70	1.60	454.00	-0.49	-0.04	ZZ
KWYPWH	X	344.80	-25.70	-3.23	439.80	-14.69	-1.18	ZZ
L68LC9		368.80	-1.70	-0.21	459.60	5.11	0.41	ZZ
L6U97X		370.14	-0.36	-0.05	456.05	1.56	0.13	ZZ
L6UCV3		371.80	1.30	0.16	453.20	-1.29	-0.10	ZZ
L8D7Y9		373.60	3.10	0.39	452.80	-1.69	-0.14	ZZ
LZ8GDU		369.44	-1.06	-0.13	452.46	-2.03	-0.16	ZZ
MJANQ9	*	384.84	14.34	1.80	454.98	0.49	0.04	ZZ
MNJW8C		367.32	-3.18	-0.40	465.60	11.11	0.90	ZZ
MQ9MAX		368.00	-2.50	-0.31	451.80	-2.69	-0.22	ZZ
MZGH84		376.60	6.10	0.77	472.40	17.91	1.44	ZZ
N2HQRD		386.80	16.30	2.05	481.80	27.31	2.20	ZZ
N9J4PV		371.00	0.50	0.06	458.00	3.51	0.28	ZZ
NPTEL3		372.50	2.00	0.25	473.26	18.77	1.51	ZZ
P6EQQ9		371.60	1.10	0.14	445.20	-9.29	-0.75	ZZ
PEA3AP		368.00	-2.50	-0.31	465.40	10.91	0.88	ZZ
PM46G8		366.20	-4.30	-0.54	438.40	-16.09	-1.30	ZZ
PXFCHT		380.20	9.70	1.22	460.40	5.91	0.48	ZZ
PZNFEP		362.80	-7.70	-0.97	434.60	-19.89	-1.60	ZZ
Q3TWCT		378.42	7.92	0.99	454.18	-0.31	-0.03	ZZ
Q8XDB8		374.40	3.90	0.49	455.80	1.31	0.11	ZZ
QH6F38		376.20	5.70	0.72	461.20	6.71	0.54	ZZ
QM2WME		367.60	-2.90	-0.36	444.00	-10.49	-0.85	ZZ
QT9V8Y		372.10	1.60	0.20	458.40	3.91	0.32	ZZ
QTMX27		356.80	-13.70	-1.72	428.80	-25.69	-2.07	ZZ
R3PPTW		360.80	-9.70	-1.22	436.40	-18.09	-1.46	ZZ
R9NYG4		365.80	-4.70	-0.59	443.00	-11.49	-0.93	ZZ
RF783E		366.00	-4.50	-0.57	441.20	-13.29	-1.07	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)
ASTM E384

		Sample S21			Sample S22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
RGBGK8		369.08	-1.42	-0.18	458.24	3.75	0.30	ZZ
RRACJ3		374.80	4.30	0.54	464.20	9.71	0.78	ZZ
RWXTY8		357.60	-12.90	-1.62	436.60	-17.89	-1.44	ZZ
RX93HR		363.60	-6.90	-0.87	438.20	-16.29	-1.31	ZZ
RXVVP4		367.14	-3.36	-0.42	445.88	-8.61	-0.69	ZZ
RYX9Z4		371.60	1.10	0.14	461.80	7.31	0.59	ZZ
TD3EYF		367.40	-3.10	-0.39	446.00	-8.49	-0.68	ZZ
TYZDWR	*	350.20	-20.30	-2.55	429.60	-24.89	-2.01	ZZ
UKPCQZ		385.80	15.30	1.92	485.00	30.51	2.46	ZZ
UPF7DW	X	393.80	23.30	2.93	468.80	14.31	1.15	ZZ
VFZCKR		362.00	-8.50	-1.07	439.00	-15.49	-1.25	ZZ
VJDRJB		372.60	2.10	0.26	449.76	-4.73	-0.38	ZZ
VQ4YQQ		383.94	13.44	1.69	472.26	17.77	1.43	ZZ
W48ALW		372.80	2.30	0.29	440.00	-14.49	-1.17	ZZ
W63VC3		378.26	7.76	0.97	470.50	16.01	1.29	ZZ
W7HZAR		386.20	15.70	1.97	475.60	21.11	1.70	ZZ
W8R2VE		374.80	4.30	0.54	459.00	4.51	0.36	ZZ
WJBFL8		381.80	11.30	1.42	463.20	8.71	0.70	ZZ
WP3KFB		370.40	-0.10	-0.01	461.80	7.31	0.59	ZZ
XCG2LE		370.80	0.30	0.04	454.80	0.31	0.02	ZZ
XJEQ64		366.06	-4.44	-0.56	457.66	3.17	0.26	ZZ
XWTNGB	*	355.20	-15.30	-1.92	418.60	-35.89	-2.89	ZZ
Y2BFYC		369.40	-1.10	-0.14	455.80	1.31	0.11	ZZ
YM4A8D		365.62	-4.88	-0.61	459.48	4.99	0.40	ZZ
YUEJAN		366.20	-4.30	-0.54	443.00	-11.49	-0.93	ZZ
YWBZTP		371.40	0.90	0.11	446.60	-7.89	-0.64	ZZ
YZAA7C		351.72	-18.78	-2.36	437.02	-17.47	-1.41	ZZ
Z3J6EU		389.58	19.08	2.40	476.16	21.67	1.75	ZZ
ZJ4CH7		364.80	-5.70	-0.72	460.80	6.31	0.51	ZZ
ZPBWLX		361.40	-9.10	-1.14	448.60	-5.89	-0.47	ZZ

Summary Statistics

	Sample S21		Sample S22	
Grand Means	370.50	HV 500 gf	454.49	HV 500 gf
Stnd Dev Btwn Labs	7.96	HV 500 gf	12.40	HV 500 gf

Samples S21 , S22 : Steel

Statistics based on 124 of 128 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)
ASTM E384

Comments on assigned Data Flags for Analysis #123

WebCode	Flag	Analyst Comment
2Y9XJ8	X	Data for sample S21 are low.
ER9LYJ	X	Inconsistent in testing between samples.
KWYPWH	X	Data for sample S21 are low.
UPF7DW	X	Data for sample S21 are high.

Cycle 107
3rd Q, 2014

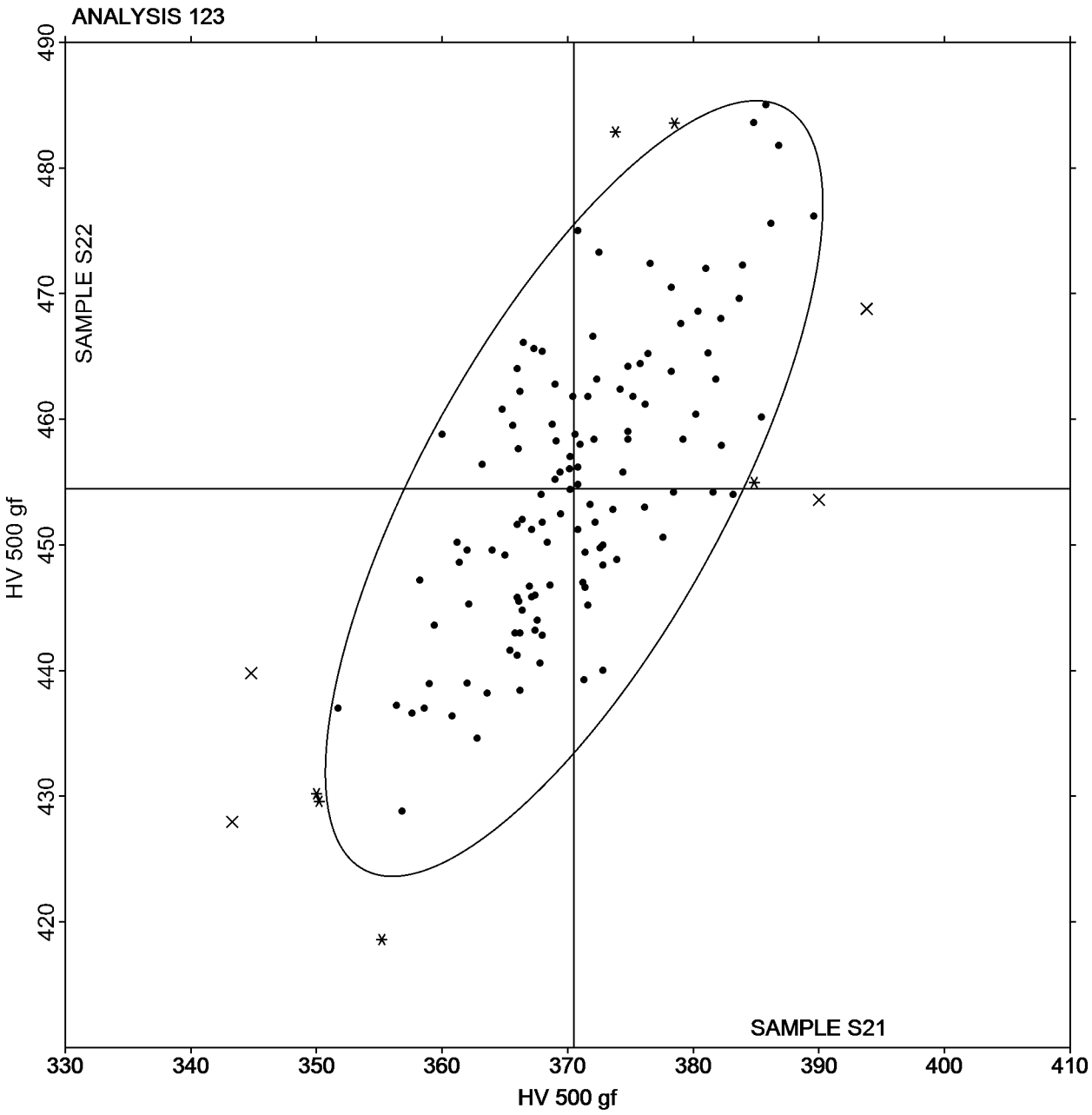
Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)
ASTM E384

SAMPLE S21
370.50 HV 500 gf

SAMPLE S22
454.49 HV 500 gf



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW
ASTM E10

		Sample D21			Sample D22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		301.20	-3.58	-0.55	346.20	-6.38	-0.90	ZZ
2ELF82		307.20	2.42	0.37	357.60	5.02	0.71	ZZ
2NQL24		310.40	5.62	0.86	361.80	9.22	1.30	ZZ
2WH9NT		318.40	13.62	2.10	360.60	8.02	1.13	ZZ
37XU3J		311.40	6.62	1.02	361.00	8.42	1.18	ZZ
3E28L4		304.00	-0.78	-0.12	356.20	3.62	0.51	ZZ
42MEMW		306.00	1.22	0.19	352.20	-0.38	-0.05	ZZ
474WQY		302.00	-2.78	-0.43	352.00	-0.58	-0.08	ZZ
4946ZB		309.00	4.22	0.65	355.40	2.82	0.40	ZZ
4LCQH9		292.40	-12.38	-1.91	344.60	-7.98	-1.12	ZZ
69VKBM		311.00	6.22	0.96	356.00	3.42	0.48	ZZ
6DJYLU		306.20	1.42	0.22	353.20	0.62	0.09	ZZ
88L6KJ		310.60	5.82	0.90	363.00	10.42	1.47	ZZ
89D7GU		306.40	1.62	0.25	352.40	-0.18	-0.03	ZZ
8GTXVY		290.40	-14.38	-2.21	340.80	-11.78	-1.66	ZZ
8K7L7V		298.40	-6.38	-0.98	346.00	-6.58	-0.93	ZZ
8MU9PB		302.00	-2.78	-0.43	351.80	-0.78	-0.11	ZZ
8XX47U		308.80	4.02	0.62	355.80	3.22	0.45	ZZ
9BJ4A2		302.40	-2.38	-0.37	354.40	1.82	0.26	ZZ
9R7E3V		299.00	-5.78	-0.89	345.40	-7.18	-1.01	ZZ
9UVNCW		298.40	-6.38	-0.98	347.60	-4.98	-0.70	ZZ
9VCABL		307.80	3.02	0.46	356.00	3.42	0.48	ZZ
BCCZ7M		311.00	6.22	0.96	362.20	9.62	1.35	ZZ
BCRTUQ		300.00	-4.78	-0.74	351.60	-0.98	-0.14	ZZ
BDYAQZ		302.00	-2.78	-0.43	352.00	-0.58	-0.08	ZZ
BFHBLM		299.80	-4.98	-0.77	345.20	-7.38	-1.04	ZZ
C3D93D		293.40	-11.38	-1.75	337.00	-15.58	-2.19	ZZ
C9T63U	X	322.12	17.34	2.67	386.92	34.34	4.83	ZZ
CAV2T4		306.60	1.82	0.28	355.20	2.62	0.37	ZZ
CGV3CH		312.20	7.42	1.14	357.40	4.82	0.68	ZZ
D87RJ3		303.80	-0.98	-0.15	357.60	5.02	0.71	ZZ
D9D68V		293.00	-11.78	-1.81	341.00	-11.58	-1.63	ZZ
DLJA3P		310.60	5.82	0.90	353.20	0.62	0.09	ZZ
EHAPGB		300.00	-4.78	-0.74	354.00	1.42	0.20	ZZ
ELNJX9	*	321.00	16.22	2.50	363.00	10.42	1.47	ZZ
ENWGMJ		302.00	-2.78	-0.43	341.00	-11.58	-1.63	ZZ
F3GDHX		310.00	5.22	0.80	352.00	-0.58	-0.08	ZZ
F6JCH7		293.20	-11.58	-1.78	345.20	-7.38	-1.04	ZZ
FCKYLM	*	319.00	14.22	2.19	372.20	19.62	2.76	ZZ
FJBMWP		306.00	1.22	0.19	353.60	1.02	0.14	ZZ
G2W4NC		302.60	-2.18	-0.34	349.60	-2.98	-0.42	ZZ
GRMR9T		309.00	4.22	0.65	350.00	-2.58	-0.36	ZZ
H66BGF		309.40	4.62	0.71	362.60	10.02	1.41	ZZ
HPXKQH		302.00	-2.78	-0.43	341.00	-11.58	-1.63	ZZ
HT447N	X	310.60	5.82	0.90	333.60	-18.98	-2.67	ZZ
J9LNJN		306.40	1.62	0.25	354.80	2.22	0.31	ZZ
KHXX4L		318.45	13.67	2.10	365.33	12.75	1.79	ZZ
KTZ2NN		302.20	-2.58	-0.40	344.40	-8.18	-1.15	ZZ
L8D7Y9		305.00	0.22	0.03	355.80	3.22	0.45	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW
ASTM E10

		Sample D21			Sample D22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
LBMBCH		302.00	-2.78	-0.43	349.80	-2.78	-0.39	ZZ
LJ866T		311.80	7.02	1.08	361.80	9.22	1.30	ZZ
M7PJT8		306.00	1.22	0.19	350.20	-2.38	-0.33	ZZ
MQ9MAX		302.00	-2.78	-0.43	352.00	-0.58	-0.08	ZZ
MT7EVF	*	321.00	16.22	2.50	363.00	10.42	1.47	ZZ
MTAUA2		297.80	-6.98	-1.07	346.00	-6.58	-0.93	ZZ
MW7TCD		315.40	10.62	1.63	363.00	10.42	1.47	ZZ
N2HQRD		304.00	-0.78	-0.12	354.80	2.22	0.31	ZZ
N9J4PV	X	303.20	-1.58	-0.24	262.40	-90.18	-12.69	ZZ
NH9PXE		302.40	-2.38	-0.37	352.40	-0.18	-0.03	ZZ
NJ4CEP		308.40	3.62	0.56	356.80	4.22	0.59	ZZ
P2CX8A		303.80	-0.98	-0.15	345.40	-7.18	-1.01	ZZ
P6EQQ9		302.00	-2.78	-0.43	352.00	-0.58	-0.08	ZZ
PM46G8		306.22	1.44	0.22	353.66	1.08	0.15	ZZ
PTNWDF	*	302.00	-2.78	-0.43	363.00	10.42	1.47	ZZ
PXFCHT	X	341.60	36.82	5.67	299.80	-52.78	-7.43	ZZ
QZQY4K		309.20	4.42	0.68	359.40	6.82	0.96	ZZ
R9NYG4		303.40	-1.38	-0.21	350.80	-1.78	-0.25	ZZ
RV3DLB		302.00	-2.78	-0.43	341.00	-11.58	-1.63	ZZ
RWXTY8		300.80	-3.98	-0.61	342.20	-10.38	-1.46	ZZ
RX7CAN		300.80	-3.98	-0.61	345.40	-7.18	-1.01	ZZ
RYX9Z4		302.00	-2.78	-0.43	352.00	-0.58	-0.08	ZZ
T3LKRT		295.60	-9.18	-1.41	349.20	-3.38	-0.48	ZZ
TPG9CU		302.60	-2.18	-0.34	355.00	2.42	0.34	ZZ
TYZDWR	*	293.00	-11.78	-1.81	352.00	-0.58	-0.08	ZZ
UK3TL3		302.80	-1.98	-0.30	349.20	-3.38	-0.48	ZZ
VJDRJB	X	321.00	16.22	2.50	388.00	35.42	4.98	ZZ
W7HZAR		306.20	1.42	0.22	353.60	1.02	0.14	ZZ
WJBFL8		292.80	-11.98	-1.84	338.20	-14.38	-2.02	ZZ
WLZL6H		304.80	0.02	0.00	357.00	4.42	0.62	ZZ
WYRADR		312.00	7.22	1.11	360.80	8.22	1.16	ZZ
XJEQ64		305.20	0.42	0.06	350.40	-2.18	-0.31	ZZ
Y2BFYC		310.60	5.82	0.90	360.00	7.42	1.04	ZZ
YDVV6C		309.00	4.22	0.65	353.20	0.62	0.09	ZZ
YM4A8D		302.00	-2.78	-0.43	340.80	-11.78	-1.66	ZZ
YYV2NB		300.08	-4.70	-0.72	345.72	-6.86	-0.97	ZZ
ZCMRGM		310.20	5.42	0.83	359.40	6.82	0.96	ZZ
ZRB934		300.00	-4.78	-0.74	345.40	-7.18	-1.01	ZZ

Summary Statistics

	Sample D21		Sample D22	
Grand Means	304.78	HBW	352.58	HBW
Stnd Dev Btwn Labs	6.50	HBW	7.11	HBW

Samples D21 , D22 : Steel

Statistics based on 82 of 87 reporting participants

Samples D21 , D22 are hardness test blocks made from steel. The blocks are heat treated to hardness levels specified by CTS.

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW
ASTM E10

Comments on assigned Data Flags for Analysis #135

WebCode	Flag	Analyst Comment
C9T63U	X	Data for sample D22 are high. Inconsistent in testing between samples.
HT447N	X	Inconsistent in testing between samples.
N9J4PV	X	Data for sample D22 are low. Inconsistent in testing between samples.
PXFCHT	X	Extreme Data.
VJDRJB	X	Data for sample D22 are high. Inconsistent in testing between samples.

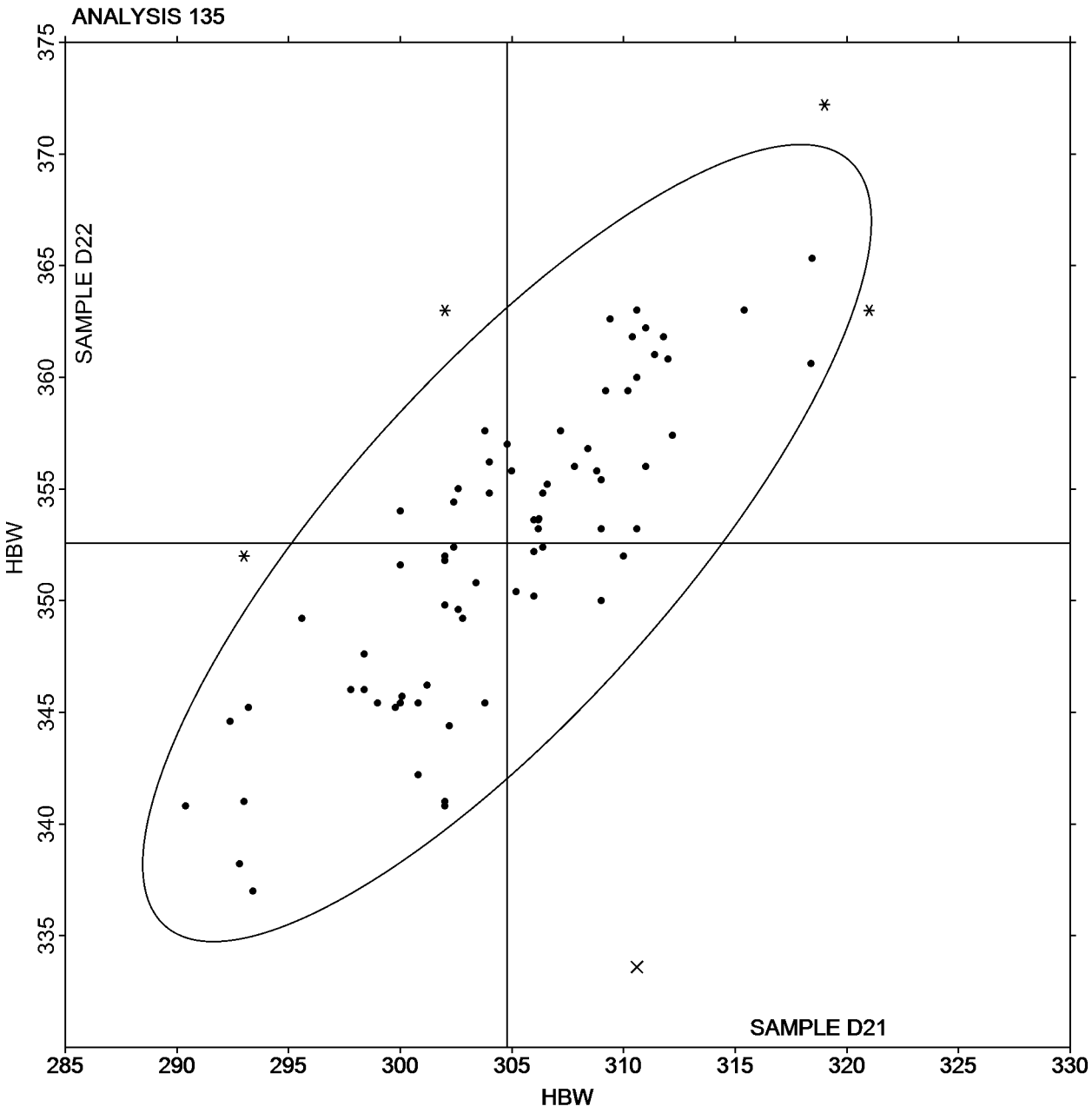
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 135

Brinell Hardness - HBW
ASTM E10

SAMPLE D21	**SAMPLE D22**
304.78 HBW	**352.58 HBW**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		182.30	3.90	1.80	170.40	3.02	0.94	ZZ
2ELF82		179.70	1.30	0.60	171.44	4.05	1.26	ZZ
2NQL24	M	No Data Reported			178.54	11.16	3.47	ZZ
2RTCGV		176.28	-2.12	-0.98	164.28	-3.11	-0.97	ZZ
2WH9NT	*	182.09	3.68	1.70	175.06	7.67	2.39	ZZ
42MEMW		177.20	-1.20	-0.56	167.00	-0.38	-0.12	ZZ
474WQY		176.10	-2.30	-1.06	163.00	-4.38	-1.36	ZZ
4946ZB		180.90	2.50	1.16	167.90	0.52	0.16	ZZ
6AVH3U		176.98	-1.42	-0.66	162.82	-4.56	-1.42	ZZ
7EKAUM		178.00	-0.40	-0.19	169.70	2.32	0.72	ZZ
88L6KJ		176.00	-2.40	-1.11	164.00	-3.38	-1.05	ZZ
8B2PB6		178.80	0.40	0.18	166.10	-1.28	-0.40	ZZ
8UEG6U		178.19	-0.21	-0.10	168.03	0.64	0.20	ZZ
8XX47U		176.51	-1.89	-0.87	165.49	-1.89	-0.59	ZZ
92C4YF		174.50	-3.90	-1.80	163.60	-3.78	-1.18	ZZ
9BJ4A2		176.73	-1.67	-0.77	164.69	-2.69	-0.84	ZZ
9MTKZJ		177.82	-0.58	-0.27	169.70	2.31	0.72	ZZ
9MVB73		174.10	-4.30	-1.99	166.20	-1.18	-0.37	ZZ
9R7E3V		176.76	-1.64	-0.76	163.89	-3.49	-1.09	ZZ
9UVNCW		179.63	1.23	0.57	164.54	-2.84	-0.88	ZZ
AEUBDR		175.90	-2.50	-1.16	165.40	-1.98	-0.62	ZZ
AY4D8Q		177.64	-0.76	-0.35	168.26	0.88	0.27	ZZ
B9JM74		181.90	3.50	1.62	171.10	3.72	1.16	ZZ
BDYAQZ		180.40	2.00	0.92	167.80	0.42	0.13	ZZ
BH9H4X		180.20	1.80	0.83	165.63	-1.75	-0.54	ZZ
BRX2LD		176.80	-1.60	-0.74	165.50	-1.88	-0.59	ZZ
C3D93D		176.00	-2.40	-1.11	163.10	-4.28	-1.33	ZZ
CAV2T4		181.01	2.61	1.21	163.17	-4.21	-1.31	ZZ
CP8JK4		178.00	-0.40	-0.19	172.00	4.62	1.44	ZZ
D79GR7		180.30	1.90	0.88	168.10	0.72	0.22	ZZ
D87RJ3		181.30	2.90	1.34	170.42	3.04	0.95	ZZ
D9D68V		179.80	1.40	0.65	166.09	-1.29	-0.40	ZZ
DWLM8W		178.40	0.00	0.00	174.05	6.66	2.07	ZZ
E9BTUY		176.00	-2.40	-1.11	170.00	2.62	0.81	ZZ
EDJA69		177.50	-0.90	-0.42	171.00	3.62	1.13	ZZ
FRZF3U		178.75	0.35	0.16	169.82	2.44	0.76	ZZ
FXLECE		182.30	3.90	1.80	170.20	2.82	0.88	ZZ
GE8DYR		176.80	-1.60	-0.74	168.40	1.02	0.32	ZZ
GF7K46		175.40	-3.00	-1.39	164.80	-2.58	-0.80	ZZ
H66BGF		175.50	-2.90	-1.34	164.60	-2.78	-0.87	ZZ
H9JAA2		179.70	1.30	0.60	165.60	-1.78	-0.56	ZZ
J2CXXV	X	172.20	-6.20	-2.87	171.00	3.62	1.13	ZZ
JCAVMG		179.72	1.32	0.61	166.03	-1.35	-0.42	ZZ
KHXX4L		176.84	-1.56	-0.72	164.54	-2.84	-0.88	ZZ
KR7D8D		180.20	1.80	0.83	170.90	3.52	1.09	ZZ
KTZ2NN		176.30	-2.10	-0.97	162.30	-5.08	-1.58	ZZ
L68LC9		175.37	-3.03	-1.40	166.99	-0.40	-0.12	ZZ
LDHPH8		177.29	-1.11	-0.51	170.16	2.78	0.86	ZZ
LJ866T		176.80	-1.60	-0.74	168.70	1.32	0.41	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
MGDVEP		181.00	2.60	1.20	173.00	5.62	1.75	ZZ
MQ9MAX		181.70	3.30	1.53	168.60	1.22	0.38	ZZ
MT7EVF		179.78	1.38	0.64	172.45	5.07	1.58	ZZ
MTAUA2		174.60	-3.80	-1.76	163.40	-3.98	-1.24	ZZ
MYBE9Q		178.69	0.29	0.13	166.21	-1.17	-0.36	ZZ
N2HQRD		178.20	-0.20	-0.09	168.40	1.02	0.32	ZZ
N9J4PV		181.00	2.60	1.20	163.00	-4.38	-1.36	ZZ
NH9PXE		177.50	-0.90	-0.42	166.50	-0.88	-0.27	ZZ
NH9UB3		175.20	-3.20	-1.48	162.90	-4.48	-1.40	ZZ
NJ4CEP		179.85	1.45	0.67	169.70	2.31	0.72	ZZ
P2CX8A		179.90	1.50	0.69	170.60	3.22	1.00	ZZ
PTNWDF		175.10	-3.30	-1.53	162.60	-4.78	-1.49	ZZ
Q8XDB8		177.70	-0.70	-0.32	170.10	2.72	0.85	ZZ
R9NYG4		178.74	0.34	0.16	165.93	-1.46	-0.45	ZZ
RV3DLB		176.32	-2.08	-0.96	163.62	-3.76	-1.17	ZZ
RWXTY8		179.10	0.70	0.32	168.40	1.02	0.32	ZZ
RX93HR	*	182.00	3.60	1.67	163.00	-4.38	-1.36	ZZ
RYF3W8		177.00	-1.40	-0.65	169.00	1.62	0.50	ZZ
TTNGZ4	M	No Data Reported			163.60	-3.78	-1.18	ZZ
TYZDWR		181.90	3.50	1.62	169.60	2.22	0.69	ZZ
U3A3ME		179.00	0.60	0.28	163.90	-3.48	-1.08	ZZ
U7B23D		181.00	2.60	1.20	174.00	6.62	2.06	ZZ
U7VFWH		180.20	1.80	0.83	170.80	3.42	1.06	ZZ
UGV7HP		181.70	3.30	1.53	170.40	3.02	0.94	ZZ
UKPCQZ	X	160.85	-17.55	-8.12	165.49	-1.89	-0.59	ZZ
URDRLY		174.40	-4.00	-1.85	163.40	-3.98	-1.24	ZZ
VDNCV4		178.47	0.07	0.03	168.64	1.25	0.39	ZZ
VMC9W6		176.10	-2.30	-1.06	165.80	-1.58	-0.49	ZZ
VZJV63		178.60	0.20	0.09	171.20	3.82	1.19	ZZ
VZNBKN		180.90	2.50	1.16	171.20	3.82	1.19	ZZ
W348ER		179.08	0.68	0.31	172.80	5.41	1.69	ZZ
W7HZAR		178.90	0.50	0.23	166.60	-0.78	-0.24	ZZ
WJBFL8		177.38	-1.02	-0.47	163.02	-4.36	-1.36	ZZ
WLZL6H		179.00	0.60	0.28	164.00	-3.38	-1.05	ZZ
WTFCFC		175.61	-2.79	-1.29	165.80	-1.59	-0.49	ZZ
X26L3C		182.40	4.00	1.85	165.10	-2.28	-0.71	ZZ
X729WZ		178.40	0.00	0.00	171.40	4.02	1.25	ZZ
XAYW8F		176.20	-2.20	-1.02	169.57	2.19	0.68	ZZ
XDGZ9J		181.40	3.00	1.39	168.70	1.32	0.41	ZZ
XKZ9RA		178.40	0.00	0.00	169.40	2.02	0.63	ZZ
XLEEAK		179.38	0.98	0.45	167.47	0.09	0.03	ZZ
XUMBPB		179.98	1.58	0.73	161.96	-5.42	-1.69	ZZ
YDVV6C		177.50	-0.90	-0.42	170.85	3.47	1.08	ZZ
YYV2NB		179.50	1.10	0.51	165.30	-2.08	-0.65	ZZ
Z384A8		180.00	1.60	0.74	165.40	-1.98	-0.62	ZZ
Z7FAXT		176.30	-2.10	-0.97	167.50	0.12	0.04	ZZ
ZCXR6A		179.30	0.90	0.42	164.50	-2.88	-0.90	ZZ
ZJ4CH7		179.00	0.60	0.28	171.00	3.62	1.13	ZZ
ZRB934		175.60	-2.80	-1.30	164.80	-2.58	-0.80	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi
ASTM E8

Summary Statistics

	Sample P21		Sample P22	
Grand Means	178.40	ksi	167.38	ksi
Stnd Dev Btwn Labs	2.16	ksi	3.21	ksi

Samples P21 , P22 : AISI 4340

Statistics based on 94 of 98 reporting participants

Comments on assigned Data Flags for Analysis #140

WebCode	Flag	Analyst Comment
2NQL24	M	Laboratory did not submit data for sample P21.
J2CXXV	X	Data for sample P21 are low.
TTNGZ4	M	Laboratory did not submit data for sample P21.
UKPCQZ	X	Data for sample P21 are low.

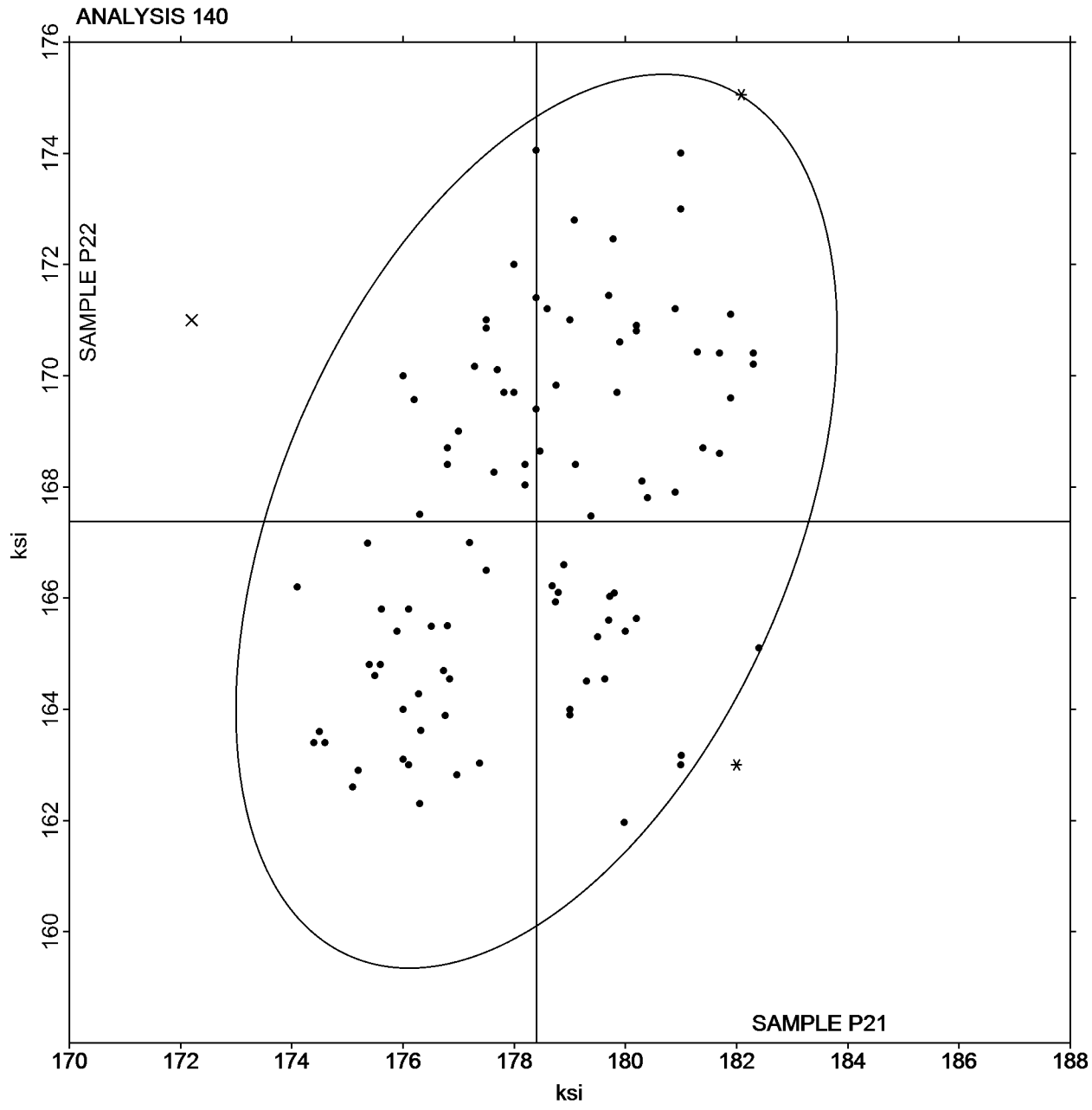
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi
ASTM E8

SAMPLE P21	**SAMPLE P22**
178.40 ksi	**167.38 ksi**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength (Lab-Machined Round Steel) - ksi
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		165.00	4.42	1.50	156.20	4.10	1.03	ZZ
2ELF82		161.14	0.56	0.19	155.92	3.81	0.96	ZZ
2NQL24	M	No Data Reported			157.51	5.41	1.36	ZZ
2RTCGV		158.48	-2.10	-0.71	148.33	-3.77	-0.95	ZZ
2WH9NT		163.79	3.21	1.09	160.85	8.75	2.19	ZZ
42MEMW		158.60	-1.98	-0.67	151.80	-0.30	-0.08	ZZ
474WQY		157.50	-3.08	-1.04	146.90	-5.20	-1.31	ZZ
4946ZB		162.00	1.42	0.48	150.70	-1.40	-0.35	ZZ
6AVH3U		159.11	-1.47	-0.50	147.03	-5.08	-1.27	ZZ
7EKAUM		159.70	-0.88	-0.30	153.50	1.40	0.35	ZZ
88L6KJ		159.00	-1.58	-0.54	147.00	-5.10	-1.28	ZZ
8B2PB6		159.60	-0.98	-0.33	149.70	-2.40	-0.60	ZZ
8UEG6U		160.33	-0.25	-0.09	155.96	3.86	0.97	ZZ
8XX47U		158.53	-2.05	-0.70	150.70	-1.41	-0.35	ZZ
92C4YF		154.90	-5.68	-1.93	147.70	-4.40	-1.10	ZZ
9BJ4A2		158.24	-2.34	-0.79	149.14	-2.96	-0.74	ZZ
9MTKZJ	X	159.83	-0.74	-0.25	136.77	-15.33	-3.85	ZZ
9MVB73	X	129.40	-31.18	-10.59	150.10	-2.00	-0.50	ZZ
9R7E3V		158.06	-2.52	-0.85	147.57	-4.54	-1.14	ZZ
9UVNCW		161.39	0.82	0.28	149.41	-2.70	-0.68	ZZ
AEUBDR		158.90	-1.68	-0.57	150.30	-1.80	-0.45	ZZ
AY4D8Q		159.77	-0.80	-0.27	154.13	2.03	0.51	ZZ
B9JM74		158.17	-2.41	-0.82	147.81	-4.29	-1.08	ZZ
BDYAQZ		163.50	2.92	0.99	152.40	0.30	0.07	ZZ
BH9H4X		163.08	2.50	0.85	149.23	-2.87	-0.72	ZZ
BRX2LD		160.50	-0.08	-0.03	150.00	-2.10	-0.53	ZZ
C3D93D		156.40	-4.18	-1.42	145.80	-6.30	-1.58	ZZ
CAV2T4		164.18	3.61	1.22	146.49	-5.61	-1.41	ZZ
CP8JK4	*	157.00	-3.58	-1.21	159.00	6.90	1.73	ZZ
D79GR7		163.90	3.32	1.13	154.00	1.90	0.48	ZZ
D87RJ3		162.44	1.87	0.63	155.19	3.09	0.77	ZZ
D9D68V		162.45	1.87	0.64	150.79	-1.31	-0.33	ZZ
DWLM8W	*	165.34	4.77	1.62	162.44	10.34	2.59	ZZ
E9BTUY		158.00	-2.58	-0.87	155.00	2.90	0.73	ZZ
EDJA69		157.10	-3.48	-1.18	154.60	2.50	0.63	ZZ
FRZF3U		161.78	1.20	0.41	155.21	3.10	0.78	ZZ
FXLECE		166.30	5.72	1.94	154.30	2.20	0.55	ZZ
GE8DYR		158.50	-2.08	-0.71	152.30	0.20	0.05	ZZ
GF7K46		156.40	-4.18	-1.42	148.90	-3.20	-0.80	ZZ
H66BGF		158.50	-2.08	-0.71	151.40	-0.70	-0.18	ZZ
H9JAA2		163.40	2.82	0.96	151.10	-1.00	-0.25	ZZ
J2CXXV	*	154.10	-6.48	-2.20	155.90	3.80	0.95	ZZ
JCAVMG		163.82	3.24	1.10	150.73	-1.37	-0.34	ZZ
KHXX4L		159.53	-1.05	-0.36	147.82	-4.28	-1.07	ZZ
KR7D8D		162.00	1.42	0.48	157.50	5.40	1.35	ZZ
KTZ2NN		158.60	-1.98	-0.67	146.00	-6.10	-1.53	ZZ
L68LC9		157.15	-3.43	-1.16	152.08	-0.02	0.00	ZZ
LDHPH8		159.74	-0.84	-0.28	156.81	4.71	1.18	ZZ
LJ866T		157.10	-3.48	-1.18	153.30	1.20	0.30	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength (Lab-Machined Round Steel) - ksi
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
MGDVEP		163.00	2.42	0.82	158.00	5.90	1.48	ZZ
MQ9MAX		166.30	5.72	1.94	154.20	2.10	0.53	ZZ
MT7EVF		162.67	2.09	0.71	157.55	5.44	1.37	ZZ
MTAUA2		155.10	-5.48	-1.86	146.80	-5.30	-1.33	ZZ
MYBE9Q		162.15	1.58	0.54	151.42	-0.68	-0.17	ZZ
N2HQRD		160.00	-0.58	-0.20	153.80	1.70	0.43	ZZ
N9J4PV		164.00	3.42	1.16	147.00	-5.10	-1.28	ZZ
NH9PXE		159.20	-1.38	-0.47	150.80	-1.30	-0.33	ZZ
NH9UB3		156.10	-4.48	-1.52	146.60	-5.50	-1.38	ZZ
NJ4CEP		165.34	4.77	1.62	156.64	4.54	1.14	ZZ
P2CX8A		162.70	2.12	0.72	154.60	2.50	0.63	ZZ
PTNWDF	X	141.40	-19.18	-6.51	136.40	-15.70	-3.94	ZZ
Q8XDB8		159.50	-1.08	-0.37	155.80	3.70	0.93	ZZ
R9NYG4		161.88	1.31	0.44	151.09	-1.01	-0.25	ZZ
RV3DLB		155.10	-5.48	-1.86	146.15	-5.95	-1.49	ZZ
RWXTY8		156.40	-4.18	-1.42	149.20	-2.90	-0.73	ZZ
RX93HR	*	166.00	5.42	1.84	147.00	-5.10	-1.28	ZZ
RYF3W8		159.00	-1.58	-0.54	154.00	1.90	0.48	ZZ
TTNGZ4		161.43	0.85	0.29	148.81	-3.29	-0.83	ZZ
TYZDWR		164.80	4.22	1.43	155.00	2.90	0.73	ZZ
U3A3ME	X	168.80	8.22	2.79	147.80	-4.30	-1.08	ZZ
U7B23D		164.00	3.42	1.16	159.00	6.90	1.73	ZZ
U7VFWH		162.40	1.82	0.62	156.80	4.70	1.18	ZZ
UGV7HP		165.40	4.82	1.64	158.10	6.00	1.50	ZZ
UKPCQZ	X	141.85	-18.73	-6.36	150.99	-1.12	-0.28	ZZ
URDRLY		156.70	-3.88	-1.32	148.10	-4.00	-1.00	ZZ
VDNCV4		159.91	-0.67	-0.23	153.48	1.38	0.35	ZZ
VMC9W6		156.20	-4.38	-1.49	151.20	-0.90	-0.23	ZZ
VZJV63		159.10	-1.48	-0.50	154.90	2.80	0.70	ZZ
VZNBKN		164.80	4.22	1.43	157.50	5.40	1.35	ZZ
W348ER		161.47	0.89	0.30	158.52	6.42	1.61	ZZ
W7HZAR		159.20	-1.38	-0.47	150.00	-2.10	-0.53	ZZ
WJBFL8		162.73	2.16	0.73	147.36	-4.74	-1.19	ZZ
WLZL6H		163.00	2.42	0.82	149.00	-3.10	-0.78	ZZ
WTFCFC		160.58	0.00	0.00	148.67	-3.43	-0.86	ZZ
X26L3C		162.80	2.22	0.75	148.10	-4.00	-1.00	ZZ
X729WZ		160.50	-0.08	-0.03	156.80	4.70	1.18	ZZ
XAYW8F		158.12	-2.46	-0.83	156.77	4.67	1.17	ZZ
XDGZ9J		164.60	4.02	1.37	154.10	2.00	0.50	ZZ
XKZ9RA		160.90	0.32	0.11	154.50	2.40	0.60	ZZ
XLEEAK		161.54	0.97	0.33	151.89	-0.21	-0.05	ZZ
XUMBPB		160.96	0.38	0.13	145.61	-6.49	-1.63	ZZ
YDVV6C		157.79	-2.79	-0.95	154.84	2.74	0.69	ZZ
YYV2NB		162.30	1.72	0.58	149.40	-2.70	-0.68	ZZ
Z384A8		162.80	2.22	0.75	149.10	-3.00	-0.75	ZZ
Z7FAXT		158.40	-2.18	-0.74	152.90	0.80	0.20	ZZ
ZCXR6A		162.90	2.32	0.79	148.90	-3.20	-0.80	ZZ
ZJ4CH7		162.00	1.42	0.48	156.00	3.90	0.98	ZZ
ZRB934		158.30	-2.28	-0.77	148.50	-3.60	-0.90	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength (Lab-Machined Round Steel) - ksi
ASTM E8

Summary Statistics

	Sample P21		Sample P22	
Grand Means	160.58	ksi	152.10	ksi
Stnd Dev Btwn Labs	2.95	ksi	3.99	ksi

Samples P21 , P22 : AISI 4340

Statistics based on 92 of 98 reporting participants

Comments on assigned Data Flags for Analysis #141

WebCode	Flag	Analyst Comment
2NQL24	M	Laboratory did not submit data for sample P21.
9MTKZJ	X	Data for sample P22 are low.
9MVB73	X	Data for sample P21 are low.
PTNWDF	X	Data for both samples are low.
U3A3ME	X	Data for sample P21 are high.
UKPCQZ	X	Data for sample P21 are low.

Cycle 107
3rd Q, 2014

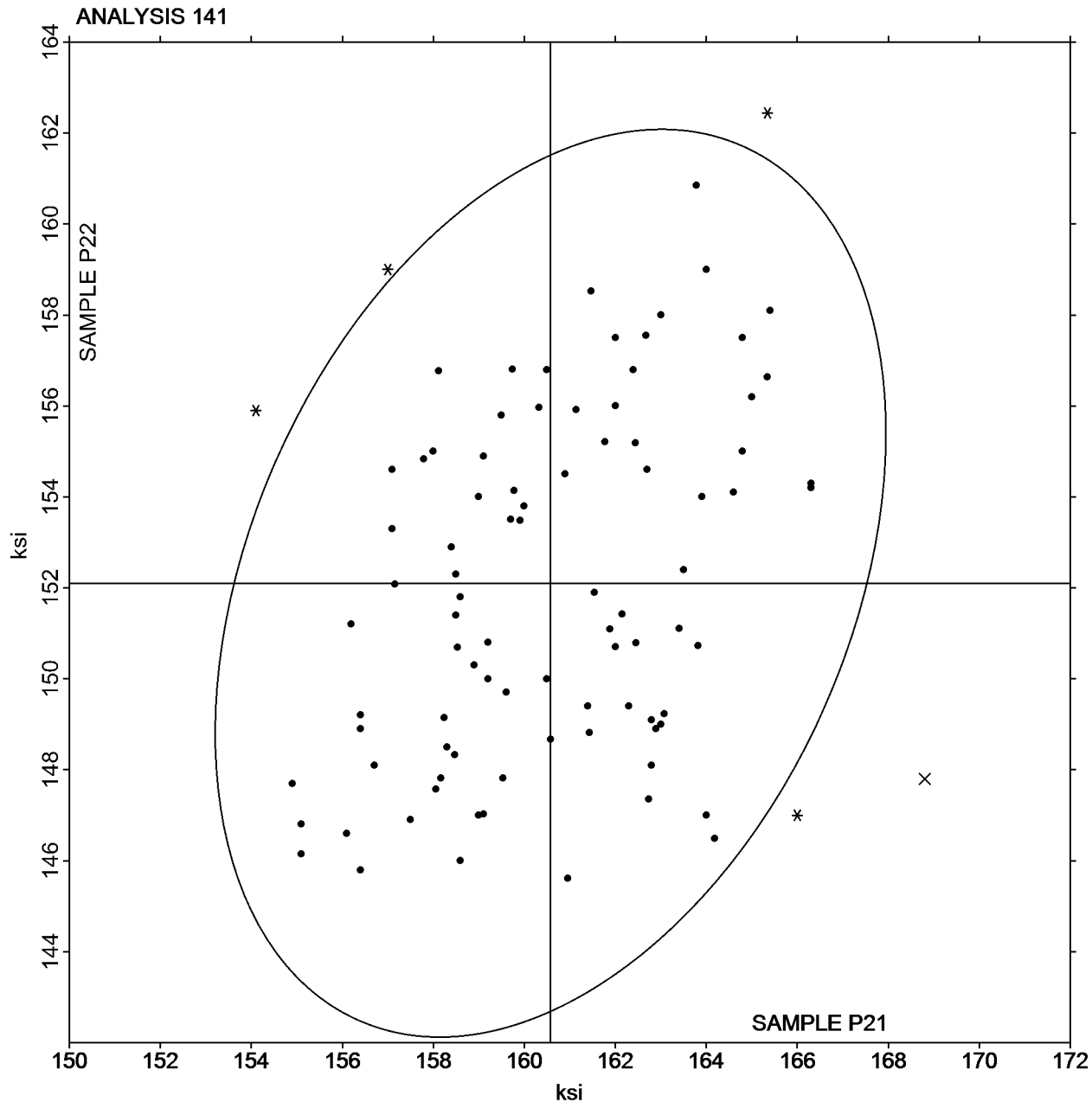
Interlaboratory Testing Program for Metals

Analysis 141

Yield Strength (Lab-Machined Round Steel) - ksi
ASTM E8

SAMPLE P21
160.58 ksi

SAMPLE P22
152.10 ksi



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - (Lab-Machined Round Steel) - Percent Increase
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		16.50	-1.18	-0.97	19.50	0.43	0.35	ZZ
2ELF82		18.00	0.32	0.27	17.00	-2.07	-1.69	ZZ
2NQL24	M	No Data Reported			19.30	0.23	0.19	ZZ
2RTCGV		16.00	-1.68	-1.38	18.00	-1.07	-0.87	ZZ
2WH9NT		16.20	-1.48	-1.22	17.85	-1.22	-0.99	ZZ
42MEMW	*	17.10	-0.58	-0.47	21.60	2.53	2.07	ZZ
474WQY		17.86	0.18	0.15	19.36	0.29	0.24	ZZ
4946ZB		18.60	0.92	0.76	20.10	1.03	0.84	ZZ
6AVH3U		16.50	-1.18	-0.97	18.00	-1.07	-0.87	ZZ
7EKAUM		16.30	-1.38	-1.13	17.10	-1.97	-1.61	ZZ
88L6KJ		16.00	-1.68	-1.38	19.00	-0.07	-0.05	ZZ
8B2PB6		17.00	-0.68	-0.56	17.00	-2.07	-1.69	ZZ
8UEG6U		18.50	0.82	0.68	18.40	-0.67	-0.55	ZZ
8XX47U		19.80	2.12	1.75	20.10	1.03	0.84	ZZ
92C4YF	*	21.10	3.42	2.82	20.50	1.43	1.17	ZZ
9BJ4A2		19.00	1.32	1.09	20.00	0.93	0.76	ZZ
9MTKZJ		18.80	1.12	0.92	18.80	-0.27	-0.22	ZZ
9MVB73		17.30	-0.38	-0.31	17.80	-1.27	-1.04	ZZ
9R7E3V		17.00	-0.68	-0.56	20.00	0.93	0.76	ZZ
9UVNCW		17.20	-0.48	-0.39	20.10	1.03	0.84	ZZ
AEUBDR		18.90	1.22	1.01	21.30	2.23	1.83	ZZ
AY4D8Q		18.10	0.42	0.35	18.50	-0.57	-0.46	ZZ
B9JM74	X	12.25	-5.43	-4.47	17.50	-1.57	-1.28	ZZ
BDYAQZ		16.40	-1.28	-1.05	18.30	-0.77	-0.63	ZZ
BH9H4X		17.60	-0.08	-0.06	18.30	-0.77	-0.63	ZZ
BRX2LD		16.70	-0.98	-0.80	19.10	0.03	0.03	ZZ
C3D93D		18.00	0.32	0.27	19.30	0.23	0.19	ZZ
CAV2T4		17.00	-0.68	-0.56	19.60	0.53	0.44	ZZ
CP8JK4		17.00	-0.68	-0.56	17.00	-2.07	-1.69	ZZ
D79GR7		17.50	-0.18	-0.15	18.00	-1.07	-0.87	ZZ
D87RJ3		19.50	1.82	1.50	19.80	0.73	0.60	ZZ
D9D68V		16.90	-0.78	-0.64	19.20	0.13	0.11	ZZ
DWLM8W	X	17.00	-0.68	-0.56	15.00	-4.07	-3.32	ZZ
E9BTUY		18.30	0.62	0.51	18.40	-0.67	-0.55	ZZ
EDJA69		19.80	2.12	1.75	20.10	1.03	0.84	ZZ
FRZF3U		16.20	-1.48	-1.22	17.80	-1.27	-1.04	ZZ
FXLECE		16.30	-1.38	-1.13	18.80	-0.27	-0.22	ZZ
GE8DYR	*	18.40	0.72	0.60	22.20	3.13	2.56	ZZ
GF7K46		17.50	-0.18	-0.15	18.20	-0.87	-0.71	ZZ
H66BGF		16.50	-1.18	-0.97	19.00	-0.07	-0.05	ZZ
H9JAA2		17.70	0.02	0.02	21.40	2.33	1.91	ZZ
J2CXXV		17.55	-0.13	-0.10	19.20	0.13	0.11	ZZ
JCAVMG		17.00	-0.68	-0.56	20.00	0.93	0.76	ZZ
KHXX4L		15.80	-1.88	-1.54	18.30	-0.77	-0.63	ZZ
KR7D8D		17.90	0.22	0.18	18.10	-0.97	-0.79	ZZ
KTZ2NN		17.20	-0.48	-0.39	18.00	-1.07	-0.87	ZZ
L68LC9		17.00	-0.68	-0.56	21.00	1.93	1.58	ZZ
LDHPH8		17.50	-0.18	-0.15	18.00	-1.07	-0.87	ZZ
LJ866T		18.60	0.92	0.76	19.30	0.23	0.19	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - (Lab-Machined Round Steel) - Percent Increase
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
MGDVEP		17.00	-0.68	-0.56	18.00	-1.07	-0.87	ZZ
MQ9MAX		16.20	-1.48	-1.22	18.20	-0.87	-0.71	ZZ
MT7EVF		18.00	0.32	0.27	19.00	-0.07	-0.05	ZZ
MTAUA2		19.60	1.92	1.58	19.80	0.73	0.60	ZZ
MYBE9Q		18.70	1.02	0.84	19.40	0.33	0.27	ZZ
N2HQRD		20.70	3.02	2.49	20.80	1.73	1.42	ZZ
N9J4PV		17.00	-0.68	-0.56	19.00	-0.07	-0.05	ZZ
NH9PXE		18.00	0.32	0.27	19.00	-0.07	-0.05	ZZ
NH9UB3		18.20	0.52	0.43	19.90	0.83	0.68	ZZ
NJ4CEP		17.00	-0.68	-0.56	17.00	-2.07	-1.69	ZZ
P2CX8A		20.50	2.82	2.32	20.00	0.93	0.76	ZZ
PTNWDF		20.00	2.32	1.91	22.00	2.93	2.40	ZZ
Q8XDB8	X	13.80	-3.88	-3.19	14.80	-4.27	-3.49	ZZ
R9NYG4	X	23.77	6.09	5.02	26.34	7.27	5.94	ZZ
RV3DLB		17.67	-0.01	-0.01	18.85	-0.22	-0.18	ZZ
RWXTY8		18.40	0.72	0.60	20.60	1.53	1.25	ZZ
RX93HR		16.40	-1.28	-1.05	18.10	-0.97	-0.79	ZZ
RYF3W8		18.70	1.02	0.84	18.40	-0.67	-0.55	ZZ
TTNGZ4	X	14.00	-3.68	-3.03	20.00	0.93	0.76	ZZ
TYZDWR		18.00	0.32	0.27	19.00	-0.07	-0.05	ZZ
U3A3ME		15.50	-2.18	-1.79	18.50	-0.57	-0.46	ZZ
U7B23D		19.00	1.32	1.09	20.00	0.93	0.76	ZZ
U7VFWH		19.00	1.32	1.09	20.00	0.93	0.76	ZZ
UGV7HP		16.00	-1.68	-1.38	17.20	-1.87	-1.53	ZZ
UKPCQZ		19.00	1.32	1.09	20.00	0.93	0.76	ZZ
URDRLY		17.30	-0.38	-0.31	18.00	-1.07	-0.87	ZZ
VDNCV4		17.70	0.02	0.02	18.90	-0.17	-0.14	ZZ
VMC9W6		17.80	0.12	0.10	18.70	-0.37	-0.30	ZZ
VZJV63		18.50	0.82	0.68	19.00	-0.07	-0.05	ZZ
VZNBKN		15.50	-2.18	-1.79	19.00	-0.07	-0.05	ZZ
W348ER		17.50	-0.18	-0.15	18.40	-0.67	-0.55	ZZ
W7HZAR		17.00	-0.68	-0.56	18.00	-1.07	-0.87	ZZ
WJBFL8		17.50	-0.18	-0.15	18.40	-0.67	-0.55	ZZ
WLZL6H		17.00	-0.68	-0.56	18.50	-0.57	-0.46	ZZ
WTFCFC		18.00	0.32	0.27	19.00	-0.07	-0.05	ZZ
X26L3C	X	17.80	0.12	0.10	15.10	-3.97	-3.24	ZZ
X729WZ		17.20	-0.48	-0.39	19.00	-0.07	-0.05	ZZ
XAYW8F		19.50	1.82	1.50	21.50	2.43	1.99	ZZ
XDGZ9J		17.00	-0.68	-0.56	19.00	-0.07	-0.05	ZZ
XKZ9RA		19.00	1.32	1.09	20.00	0.93	0.76	ZZ
XLEEAK		16.30	-1.38	-1.13	18.70	-0.37	-0.30	ZZ
XUMBPB		18.00	0.32	0.27	21.50	2.43	1.99	ZZ
YDVV6C		15.82	-1.86	-1.53	16.12	-2.95	-2.41	ZZ
YYV2NB		16.40	-1.28	-1.05	18.60	-0.47	-0.38	ZZ
Z384A8		16.40	-1.28	-1.05	18.90	-0.17	-0.14	ZZ
Z7FAXT		18.65	0.97	0.80	19.50	0.43	0.35	ZZ
ZCXR6A		19.00	1.32	1.09	20.00	0.93	0.76	ZZ
ZJ4CH7		17.00	-0.68	-0.56	17.00	-2.07	-1.69	ZZ
ZRB934		18.30	0.62	0.51	20.20	1.13	0.93	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - (Lab-Machined Round Steel) - Percent Increase
ASTM E8

Summary Statistics

	Sample P21		Sample P22	
Grand Means	17.68	Percent	19.07	Percent
Stnd Dev Btwn Labs	1.21	Percent	1.22	Percent

Samples P21 , P22 : AISI 4340

Statistics based on 91 of 98 reporting participants

Comments on assigned Data Flags for Analysis #142

WebCode	Flag	Analyst Comment
2NQL24	M	Laboratory did not submit data for sample P21.
B9JM74	X	Data for sample P21 are low.
DWLM8W	X	Data for sample P22 are low.
Q8XDB8	X	Data for both samples are low.
R9NYG4	X	Data for both samples are high.
TTNGZ4	X	Data for sample P21 are low.
X26L3C	X	Data for sample P22 are low.

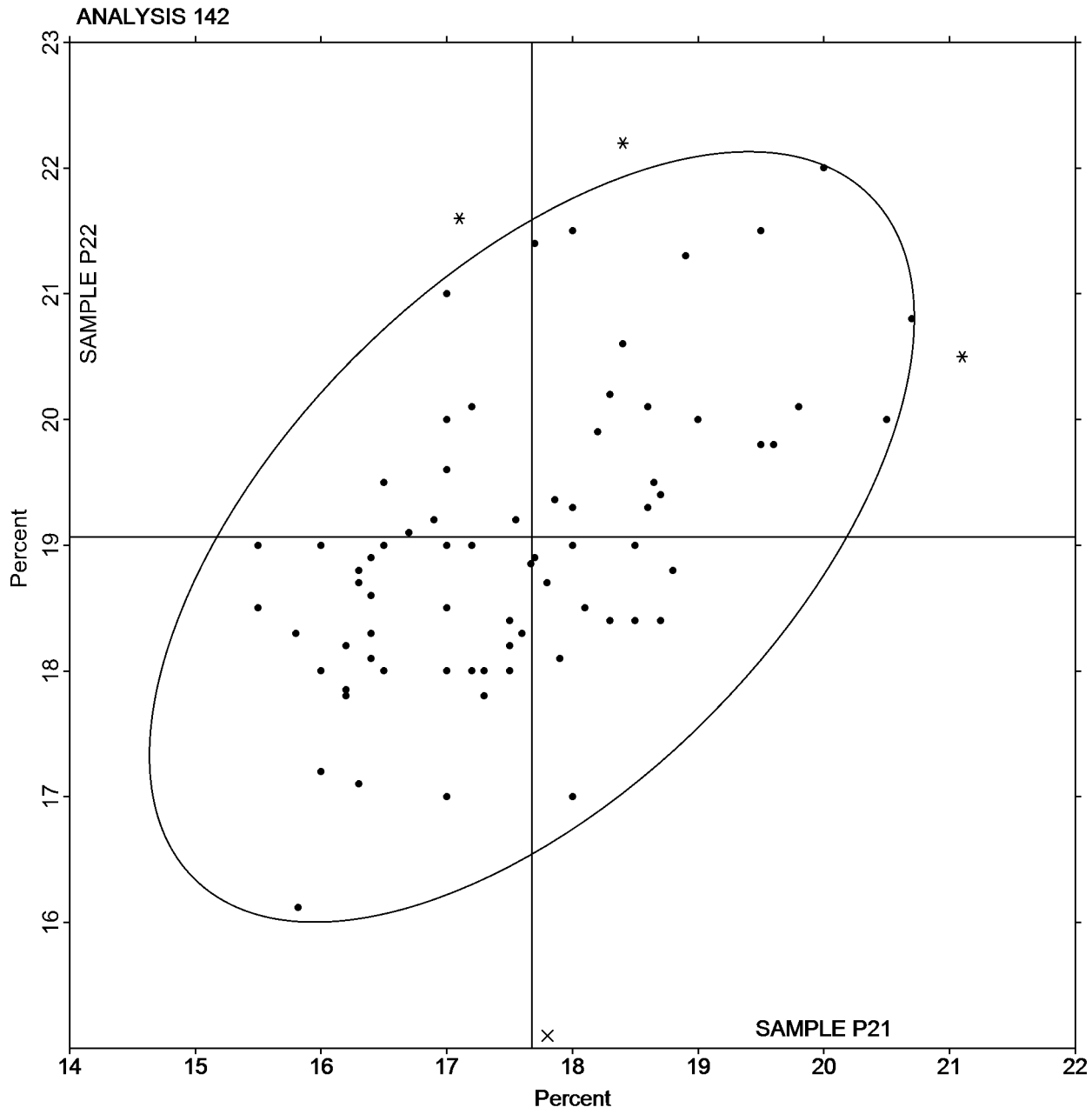
Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - (Lab-Machined Round Steel) - Percent Increase
ASTM E8

SAMPLE P21	**SAMPLE P22**
17.68 Percent	**19.07 Percent**



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area (Lab-Machined Round Steel) - Percent
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG	*	51.40	-4.62	-2.97	62.00	0.31	0.18	ZZ
2ELF82		57.00	0.98	0.63	59.00	-2.69	-1.55	ZZ
2NQL24	M	No Data Reported			60.20	-1.49	-0.86	ZZ
2RTCGV		55.60	-0.42	-0.27	62.50	0.81	0.47	ZZ
2WH9NT		55.11	-0.91	-0.58	58.99	-2.70	-1.56	ZZ
42MEMW		55.00	-1.02	-0.66	61.60	-0.09	-0.05	ZZ
474WQY		57.39	1.37	0.88	64.38	2.69	1.56	ZZ
4946ZB		56.50	0.48	0.31	62.30	0.61	0.36	ZZ
6AVH3U		52.80	-3.22	-2.07	60.00	-1.69	-0.97	ZZ
7EKAUM	X	63.60	7.58	4.87	61.30	-0.39	-0.22	ZZ
88L6KJ		54.00	-2.02	-1.30	61.00	-0.69	-0.40	ZZ
8B2PB6		56.80	0.78	0.50	62.40	0.71	0.41	ZZ
8UEG6U		55.90	-0.12	-0.08	64.10	2.41	1.39	ZZ
8XX47U		57.00	0.98	0.63	61.00	-0.69	-0.40	ZZ
92C4YF		55.10	-0.92	-0.59	63.40	1.71	0.99	ZZ
9BJ4A2		58.00	1.98	1.27	63.00	1.31	0.76	ZZ
9MTKZJ		58.00	1.98	1.27	60.00	-1.69	-0.97	ZZ
9MVB73		56.80	0.78	0.50	60.70	-0.99	-0.57	ZZ
9R7E3V		55.30	-0.72	-0.46	62.20	0.51	0.30	ZZ
9UVNCW		54.70	-1.32	-0.85	62.30	0.61	0.36	ZZ
AEUBDR		57.20	1.18	0.76	65.30	3.61	2.09	ZZ
AY4D8Q		57.60	1.58	1.02	62.30	0.61	0.36	ZZ
B9JM74	X	32.18	-23.84	-15.33	48.58	-13.11	-7.57	ZZ
BDYAQZ		54.70	-1.32	-0.85	61.20	-0.49	-0.28	ZZ
BH9H4X		56.50	0.48	0.31	62.50	0.81	0.47	ZZ
BRX2LD		55.60	-0.42	-0.27	59.80	-1.89	-1.09	ZZ
C3D93D		56.90	0.88	0.57	63.50	1.81	1.05	ZZ
CAV2T4	*	52.90	-3.12	-2.01	58.10	-3.59	-2.07	ZZ
CP8JK4		58.80	2.78	1.79	60.20	-1.49	-0.86	ZZ
D79GR7		54.10	-1.92	-1.23	61.70	0.01	0.01	ZZ
D87RJ3	M	No Data Reported			62.05	0.36	0.21	ZZ
D9D68V		58.80	2.78	1.79	64.30	2.61	1.51	ZZ
DWLM8W	X	64.00	7.98	5.13	65.00	3.31	1.91	ZZ
E9BTUY		54.00	-2.02	-1.30	60.00	-1.69	-0.97	ZZ
EDJA69		58.34	2.32	1.49	62.24	0.56	0.32	ZZ
FRZF3U		55.50	-0.52	-0.33	59.40	-2.29	-1.32	ZZ
FXLECE		55.80	-0.22	-0.14	62.00	0.31	0.18	ZZ
GE8DYR		55.40	-0.62	-0.40	61.80	0.11	0.07	ZZ
GF7K46		57.10	1.08	0.69	63.80	2.11	1.22	ZZ
H66BGF		55.70	-0.32	-0.21	57.80	-3.89	-2.24	ZZ
H9JAA2		56.70	0.68	0.44	62.80	1.11	0.64	ZZ
J2CXXV		56.30	0.28	0.18	58.20	-3.49	-2.01	ZZ
JCAVMG		55.00	-1.02	-0.66	64.00	2.31	1.34	ZZ
KHXX4L	X	56.62	0.60	0.39	53.56	-8.13	-4.69	ZZ
KR7D8D		55.30	-0.72	-0.46	61.80	0.11	0.07	ZZ
KTZ2NN		55.40	-0.62	-0.40	60.80	-0.89	-0.51	ZZ
L68LC9		59.00	2.98	1.92	65.00	3.31	1.91	ZZ
LDHPH8		55.50	-0.52	-0.33	59.60	-2.09	-1.20	ZZ
MGDVEP	*	53.00	-3.02	-1.94	58.00	-3.69	-2.13	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area (Lab-Machined Round Steel) - Percent
ASTM E8

		Sample P21			Sample P22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
MQ9MAX		55.40	-0.62	-0.40	62.40	0.71	0.41	ZZ
MT7EVF		55.00	-1.02	-0.66	61.00	-0.69	-0.40	ZZ
MTAUA2		56.70	0.68	0.44	61.80	0.11	0.07	ZZ
MYBE9Q		55.91	-0.11	-0.07	62.02	0.33	0.19	ZZ
N2HQRD		55.10	-0.92	-0.59	61.80	0.11	0.07	ZZ
N9J4PV		56.90	0.88	0.57	63.90	2.21	1.28	ZZ
NH9PXE		56.50	0.48	0.31	61.10	-0.59	-0.34	ZZ
NH9UB3		56.70	0.68	0.44	64.40	2.71	1.57	ZZ
NJ4CEP		56.00	-0.02	-0.01	59.00	-2.69	-1.55	ZZ
P2CX8A		55.90	-0.12	-0.08	61.00	-0.69	-0.40	ZZ
PTNWDF		56.52	0.50	0.32	63.34	1.65	0.96	ZZ
Q8XDB8		57.80	1.78	1.14	59.80	-1.89	-1.09	ZZ
R9NYG4		56.12	0.10	0.07	62.47	0.78	0.45	ZZ
RV3DLB		57.83	1.81	1.16	63.57	1.88	1.09	ZZ
RWXTY8		56.40	0.38	0.24	62.40	0.71	0.41	ZZ
RX93HR		54.20	-1.82	-1.17	60.90	-0.79	-0.45	ZZ
RYF3W8		56.90	0.88	0.57	59.80	-1.89	-1.09	ZZ
TTNGZ4	X	36.00	-20.02	-12.87	61.00	-0.69	-0.40	ZZ
TYZDWR		53.10	-2.92	-1.88	62.50	0.81	0.47	ZZ
U3A3ME		55.90	-0.12	-0.08	64.40	2.71	1.57	ZZ
U7B23D		58.00	1.98	1.27	62.00	0.31	0.18	ZZ
U7VFWH		55.90	-0.12	-0.08	60.00	-1.69	-0.97	ZZ
UGV7HP		53.30	-2.72	-1.75	60.90	-0.79	-0.45	ZZ
UKPCQZ		57.00	0.98	0.63	62.00	0.31	0.18	ZZ
URDRLY		56.40	0.38	0.24	62.30	0.61	0.36	ZZ
VDNCV4		57.60	1.58	1.02	61.10	-0.59	-0.34	ZZ
VMC9W6		57.50	1.48	0.95	60.80	-0.89	-0.51	ZZ
VZJV63		58.30	2.28	1.47	60.30	-1.39	-0.80	ZZ
VZNBKN		58.00	1.98	1.27	59.40	-2.29	-1.32	ZZ
W348ER		55.38	-0.64	-0.41	60.02	-1.67	-0.96	ZZ
W7HZAR		57.00	0.98	0.63	61.00	-0.69	-0.40	ZZ
WJBFL8		57.00	0.98	0.63	64.00	2.31	1.34	ZZ
WLZL6H	*	55.00	-1.02	-0.66	66.00	4.31	2.49	ZZ
WTFCFC		57.00	0.98	0.63	62.00	0.31	0.18	ZZ
X26L3C		54.80	-1.22	-0.78	61.10	-0.59	-0.34	ZZ
X729WZ		57.30	1.28	0.82	60.60	-1.09	-0.63	ZZ
XAYW8F		58.60	2.58	1.66	61.80	0.11	0.07	ZZ
XDGZ9J		55.00	-1.02	-0.66	63.00	1.31	0.76	ZZ
XKZ9RA		54.00	-2.02	-1.30	60.50	-1.19	-0.68	ZZ
XUMBPB		53.93	-2.09	-1.34	62.48	0.79	0.46	ZZ
YDVV6C		58.91	2.89	1.86	61.56	-0.13	-0.07	ZZ
YYV2NB		53.50	-2.52	-1.62	60.40	-1.29	-0.74	ZZ
Z384A8		56.30	0.28	0.18	62.40	0.71	0.41	ZZ
Z7FAXT		54.80	-1.22	-0.78	62.70	1.01	0.59	ZZ
ZCXR6A		55.80	-0.22	-0.14	63.60	1.91	1.11	ZZ
ZJ4CH7		55.00	-1.02	-0.66	60.00	-1.69	-0.97	ZZ
ZRB934		56.00	-0.02	-0.01	63.40	1.71	0.99	ZZ

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area (Lab-Machined Round Steel) - Percent
ASTM E8

Summary Statistics

	Sample P21		Sample P22	
Grand Means	56.02	Percent	61.69	Percent
Stnd Dev Btwn Labs	1.56	Percent	1.73	Percent

Samples P21 , P22 : AISI 4340

Statistics based on 89 of 96 reporting participants

Comments on assigned Data Flags for Analysis #143

WebCode	Flag	Analyst Comment
2NQL24	M	Laboratory did not submit data for sample P21.
7EKAUM	X	Data for sample P21 are high.
B9JM74	X	Data for both samples are low.
D87RJ3	M	Laboratory did not submit data for sample P21.
DWLM8W	X	Data for sample P21 are high.
KHXX4L	X	Data for sample P22 are low.
TTNGZ4	X	Data for sample P21 are low.

Cycle 107
3rd Q, 2014

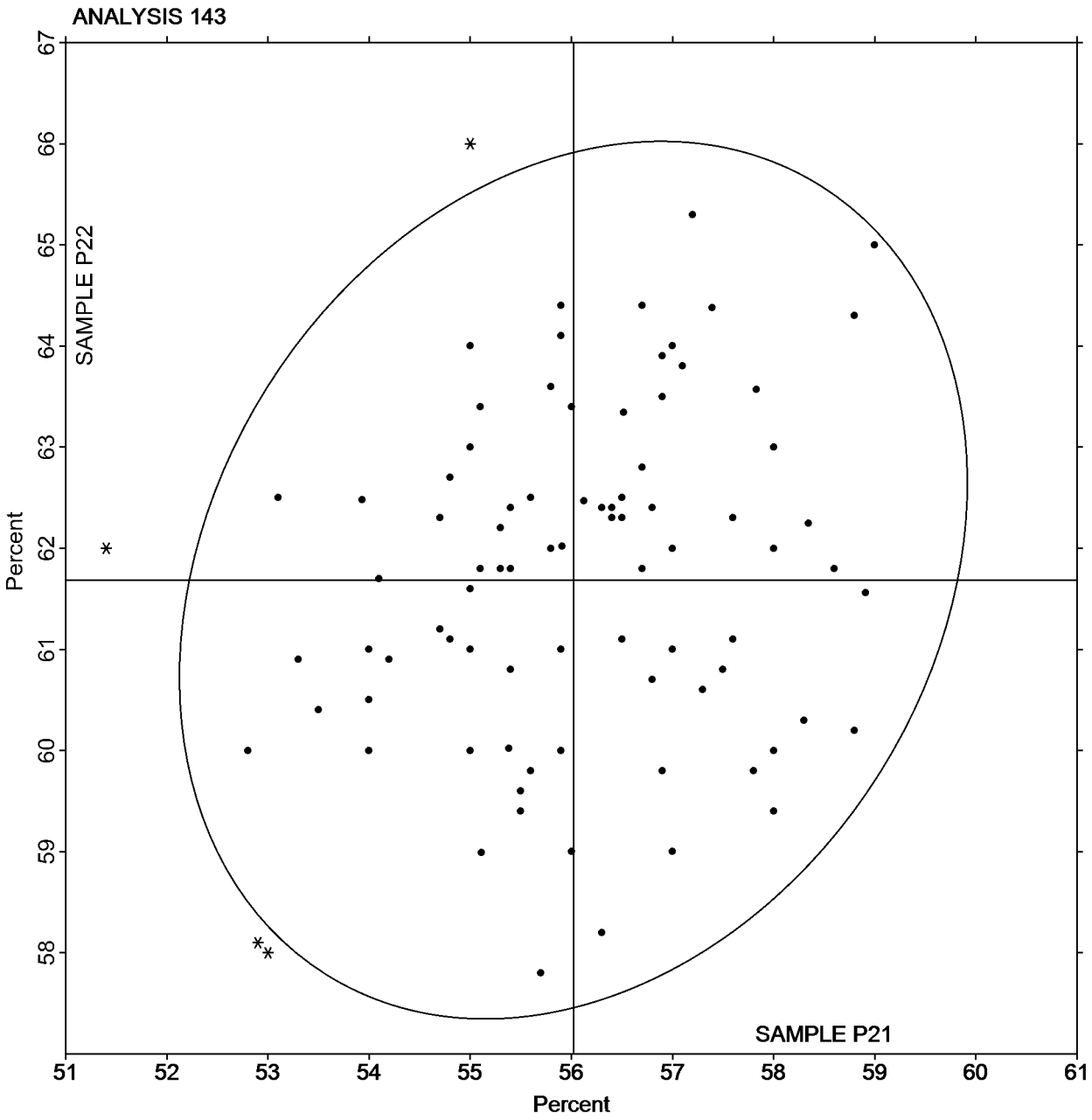
Interlaboratory Testing Program for Metals

Analysis 143

Reduction of Area (Lab-Machined Round Steel) - Percent
ASTM E8

SAMPLE P21
56.02 Percent

SAMPLE P22
61.69 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent
CARBON (C)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.4170	-0.0034	-0.30	0.4387	-0.0192	-1.85	OE
2DCJNH		0.4270	0.0066	0.59	0.4577	-0.0002	-0.02	OE
2E2W4F		0.4258	0.0054	0.48	0.4594	0.0015	0.15	CL
2NQL24		0.4247	0.0044	0.39	0.4662	0.0083	0.80	OE
2QW7P4		0.4247	0.0043	0.38	0.4563	-0.0015	-0.15	CI
2RTCGV		0.4200	-0.0004	-0.03	0.4567	-0.0012	-0.12	DR
2Y9XJ8	*	0.4406	0.0202	1.80	0.4831	0.0252	2.43	OE
34JHW8		0.4233	0.0030	0.26	0.4617	0.0038	0.37	CI
384H3E		0.4237	0.0033	0.29	0.4580	0.0001	0.01	OE
3E28L4		0.4020	-0.0184	-1.64	0.4523	-0.0055	-0.53	OE
3ZV2KD		0.4252	0.0049	0.43	0.4458	-0.0120	-1.16	OE
42MEMW		0.4179	-0.0025	-0.22	0.4692	0.0113	1.09	CO
4946ZB		0.4084	-0.0120	-1.07	0.4580	0.0002	0.02	CI
49QGRW		0.4151	-0.0053	-0.47	0.4630	0.0052	0.50	OE
4LCQH9		0.4227	0.0023	0.20	0.4670	0.0091	0.88	OE
4LCZ2R		0.4213	0.0010	0.09	0.4533	-0.0045	-0.44	CO
4WWZ73		0.4290	0.0086	0.77	0.4787	0.0208	2.01	OE
667TQW		0.3997	-0.0207	-1.85	0.4592	0.0014	0.13	OE
6CYDLW		0.4370	0.0166	1.48	0.4640	0.0061	0.59	OE
6QF9Z8		0.4080	-0.0124	-1.11	0.4547	-0.0032	-0.31	OE
6TTVJ8	*	0.4060	-0.0144	-1.28	0.4317	-0.0262	-2.53	OE
7GQXAD		0.4255	0.0051	0.45	0.4600	0.0021	0.21	OE
7HRLY4		0.4240	0.0036	0.32	0.4693	0.0115	1.11	OE
88HH36		0.4103	-0.0100	-0.90	0.4473	-0.0105	-1.02	CO
8CX7M2		0.4233	0.0030	0.26	0.4563	-0.0015	-0.15	CI
8D4HCQ		0.4112	-0.0092	-0.82	0.4552	-0.0027	-0.26	OE
8GTXVY		0.4256	0.0052	0.46	0.4597	0.0019	0.18	OE
8K7L7V		0.4272	0.0068	0.61	0.4645	0.0066	0.64	OE
8MU9PB		0.4390	0.0186	1.66	0.4690	0.0111	1.07	OE
8XX47U		0.4253	0.0050	0.44	0.4607	0.0028	0.27	OE
8ZMHQX		0.4323	0.0120	1.07	0.4687	0.0108	1.04	OE
99AV6N		0.4196	-0.0008	-0.07	0.4555	-0.0024	-0.23	CO
9BJ4A2		0.4227	0.0023	0.20	0.4633	0.0055	0.53	CI
9D7KLV		0.3989	-0.0215	-1.92	0.4599	0.0021	0.20	OE
9UVNCW	*	0.4087	-0.0117	-1.05	0.4273	-0.0305	-2.94	CI
A4CXQG		0.4173	-0.0030	-0.27	0.4593	0.0015	0.14	OE
AEUFPF		0.4430	0.0226	2.02	0.4750	0.0171	1.65	GD
ATET4A		0.4223	0.0020	0.17	0.4607	0.0028	0.27	IR
B9JM74	X	0.3880	-0.0324	-2.89	0.4587	0.0008	0.08	OE
BCRTUQ		0.4127	-0.0077	-0.69	0.4517	-0.0062	-0.60	OE
BFHBLM		0.4150	-0.0054	-0.48	0.4590	0.0011	0.11	CI
BQAHTR		0.4023	-0.0180	-1.61	0.4630	0.0051	0.50	OE
C3D93D		0.4113	-0.0090	-0.81	0.4637	0.0058	0.56	DR
C3UHYK		0.4233	0.0030	0.26	0.4600	0.0021	0.21	OE
CAV2T4		0.4077	-0.0127	-1.13	0.4553	-0.0025	-0.24	CI
CE7WT8		0.4223	0.0020	0.17	0.4523	-0.0055	-0.53	OE
CGV3CH		0.4260	0.0056	0.50	0.4560	-0.0019	-0.18	OE
CT6ZZJ		0.4095	-0.0109	-0.97	0.4496	-0.0083	-0.80	OE
CVN2U6		0.4133	-0.0070	-0.63	0.4467	-0.0112	-1.08	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent
CARBON (C)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
D87RJ3	X	0.4143	-0.0061	-0.55	0.0288	-0.4291	-41.37	CI
D9ZHPG		0.4284	0.0081	0.72	0.4578	-0.0001	-0.01	OE
DDRW6B		0.4226	0.0022	0.20	0.4533	-0.0046	-0.44	OE
DHZ994		0.4150	-0.0054	-0.48	0.4586	0.0007	0.07	OE
DKPGFJ		0.4245	0.0041	0.37	0.4565	-0.0014	-0.13	CO
DLJA3P		0.4170	-0.0034	-0.30	0.4480	-0.0099	-0.95	OE
E7AQ2H		0.4249	0.0045	0.40	0.4427	-0.0152	-1.47	DR
EVNJ8U		0.4081	-0.0123	-1.10	0.4658	0.0079	0.76	OE
EXB7W2		0.4337	0.0133	1.19	0.4600	0.0021	0.21	OE
FRZF3U		0.4333	0.0130	1.16	0.4593	0.0015	0.14	DR
FU8Q2H		0.4383	0.0180	1.60	0.4697	0.0118	1.14	OE
GE8DYR		0.4398	0.0194	1.73	0.4689	0.0110	1.06	GD
GKUBJ9		0.4303	0.0100	0.89	0.4630	0.0051	0.50	OE
GP9P8E		0.4440	0.0236	2.11	0.4740	0.0161	1.56	OE
GWPGFR	X	0.7337	0.3133	27.97	0.7477	0.2898	27.94	CI
H3P3YF		0.4420	0.0216	1.93	0.4607	0.0028	0.27	AE
H66BGF		0.4150	-0.0054	-0.48	0.4557	-0.0022	-0.21	OE
HAVRKT	X	0.3567	-0.0637	-5.69	0.4620	0.0041	0.40	OE
HEK9Y6		0.4210	0.0006	0.06	0.4580	0.0001	0.01	OE
HP962R		0.4317	0.0113	1.01	0.4737	0.0158	1.52	DR
HVEW94		0.4183	-0.0020	-0.18	0.4673	0.0095	0.91	OE
HXXX4P		0.4090	-0.0114	-1.02	0.4460	-0.0119	-1.14	OE
J2CXXV		0.4173	-0.0030	-0.27	0.4650	0.0071	0.69	OE
J38QGL		0.4303	0.0100	0.89	0.4527	-0.0052	-0.50	OE
JBKFKZ		0.4060	-0.0144	-1.29	0.4481	-0.0098	-0.94	CI
K8Y39C		0.4220	0.0016	0.15	0.4637	0.0058	0.56	OE
KANJCH		0.4167	-0.0037	-0.33	0.4593	0.0015	0.14	OE
KEVYTT		0.4107	-0.0097	-0.87	0.4523	-0.0055	-0.53	GD
KR7D8D	*	0.3883	-0.0320	-2.86	0.4313	-0.0265	-2.56	OE
KWYPWH		0.4187	-0.0017	-0.15	0.4690	0.0111	1.07	GD
L68LC9		0.4213	0.0010	0.09	0.4467	-0.0112	-1.08	OE
L8D7Y9		0.4313	0.0110	0.98	0.4700	0.0121	1.17	OE
LZ8GDU		0.4243	0.0040	0.35	0.4487	-0.0092	-0.89	CI
M3W6BF		0.4240	0.0036	0.32	0.4680	0.0101	0.98	OE
MEBVGD		0.4160	-0.0044	-0.39	0.4570	-0.0009	-0.08	OE
MGDVEP		0.4180	-0.0023	-0.21	0.4636	0.0057	0.55	CO
MW7TCD	*	0.4006	-0.0197	-1.76	0.4643	0.0064	0.62	CO
MZ9KTQ	*	0.4100	-0.0104	-0.93	0.4313	-0.0265	-2.56	CO
N3MQFQ		0.4334	0.0130	1.16	0.4667	0.0089	0.86	OE
N6JW8J		0.4283	0.0080	0.71	0.4533	-0.0045	-0.44	OE
NACWLE		0.4272	0.0068	0.61	0.4545	-0.0033	-0.32	OE
NJ4CEP		0.4205	0.0002	0.01	0.4492	-0.0087	-0.84	OE
NT6Z4Z		0.4260	0.0056	0.50	0.4590	0.0011	0.11	OE
NUYH8M		0.4272	0.0068	0.61	0.4644	0.0065	0.63	OE
P6EQQ9		0.4027	-0.0177	-1.58	0.4353	-0.0225	-2.17	OE
PD88UJ		0.4343	0.0140	1.25	0.4637	0.0058	0.56	OE
PJVMPH		0.4080	-0.0124	-1.11	0.4417	-0.0162	-1.56	CO
PTNWDF		0.4307	0.0103	0.92	0.4710	0.0131	1.27	OE
PZNFEP		0.4213	0.0010	0.09	0.4490	-0.0089	-0.85	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent
CARBON (C)

		Sample L21			Sample L22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
QEV3UX		0.4079	-0.0125	-1.12	0.4548	-0.0030	-0.29	OE
QKM4EK		0.4108	-0.0096	-0.86	0.4529	-0.0049	-0.48	OE
QM88YB		0.4303	0.0100	0.89	0.4630	0.0051	0.50	OE
QY7VYK	X	0.3890	-0.0314	-2.80	0.4113	-0.0465	-4.49	OE
RF783E		0.4210	0.0006	0.06	0.4430	-0.0149	-1.43	CI
RK2UZA	X	0.3833	-0.0370	-3.31	0.4400	-0.0179	-1.72	GD
RX7CAN		0.4293	0.0090	0.80	0.4520	-0.0059	-0.57	OE
RZUTLG		0.4280	0.0076	0.68	0.4700	0.0121	1.17	CI
T234DE		0.4203	-0.0001	-0.01	0.4605	0.0026	0.25	OE
TE8GFX		0.4293	0.0090	0.80	0.4693	0.0114	1.10	OE
TECU29	*	0.4496	0.0292	2.61	0.4850	0.0272	2.62	OE
TF2ZKJ		0.3957	-0.0247	-2.21	0.4463	-0.0115	-1.11	CI
TNGVC8		0.4246	0.0042	0.37	0.4557	-0.0021	-0.21	OE
TTNGZ4		0.4057	-0.0147	-1.31	0.4350	-0.0229	-2.20	OE
TUGAZU		0.4273	0.0069	0.62	0.4638	0.0059	0.57	OE
TWUTAR		0.4070	-0.0134	-1.19	0.4537	-0.0042	-0.40	GD
U262CG		0.4200	-0.0004	-0.03	0.4473	-0.0105	-1.02	CO
UGV7HP		0.4177	-0.0027	-0.24	0.4400	-0.0179	-1.72	OE
UKPCQZ		0.4213	0.0010	0.09	0.4547	-0.0032	-0.31	OE
V2U324		0.4233	0.0029	0.26	0.4742	0.0163	1.57	OE
VDNCV4		0.4327	0.0123	1.10	0.4590	0.0011	0.11	CI
VJDRJB	X	0.3910	-0.0294	-2.62	0.4133	-0.0445	-4.29	OE
VMEZNL		0.4237	0.0033	0.29	0.4680	0.0101	0.98	CI
WF7VBR		0.4043	-0.0160	-1.43	0.4500	-0.0079	-0.76	OE
WF9LJV		0.4110	-0.0094	-0.84	0.4500	-0.0079	-0.76	OE
WJBFL8		0.4280	0.0076	0.68	0.4670	0.0091	0.88	OE
WP3KFB	X	0.4700	0.0496	4.43	0.5093	0.0515	4.96	OE
WPEBFE		0.4152	-0.0052	-0.47	0.4635	0.0057	0.55	OE
WTFCFC	X	0.4083	-0.0120	-1.08	0.4783	0.0205	1.97	OE
XDGZ9J		0.4040	-0.0164	-1.46	0.4563	-0.0015	-0.15	CI
XWTNGB		0.4437	0.0233	2.08	0.4717	0.0138	1.33	OE
YDVV6C		0.4030	-0.0174	-1.55	0.4587	0.0008	0.08	DR
YFHCG6		0.4227	0.0023	0.20	0.4451	-0.0128	-1.23	DR
YM4A8D		0.4250	0.0046	0.41	0.4570	-0.0009	-0.08	OE
YPQT9B		0.4300	0.0096	0.86	0.4500	-0.0079	-0.76	OE
YWBZTP		0.4283	0.0080	0.71	0.4613	0.0035	0.33	OE
YXLZWB		0.4034	-0.0170	-1.52	0.4548	-0.0031	-0.30	OE
YZAA7C		0.4100	-0.0104	-0.93	0.4600	0.0021	0.21	OE
ZC3YH3		0.4300	0.0096	0.86	0.4657	0.0078	0.75	CO
ZECZPV		0.4030	-0.0174	-1.55	0.4497	-0.0082	-0.79	OE
ZJ4CH7	*	0.4133	-0.0070	-0.63	0.4770	0.0191	1.85	GD
ZQ27AD		0.4180	-0.0024	-0.22	0.4525	-0.0054	-0.52	AE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent
CARBON (C)

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.4204	Percent	0.4579	Percent
Stnd Dev Btwn Labs	0.0112	Percent	0.0104	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 131 of 140 reporting participants

Comments on assigned Data Flags for Analysis #170

WebCode	Flag	Analyst Comment
B9JM74	X	Data for sample L21 are low.
D87RJ3	X	Data for sample L22 are low.
GWPGFR	X	Data for both samples are high.
HAVRKT	X	Data for sample L21 are low. Inconsistent within the determinations of both samples.
QY7VYK	X	Data for both samples are low.
RK2UZA	X	Data for sample L21 are low.
VJDRJB	X	Data for sample L22 are low.
WP3KFB	X	Data for both samples are high.
WTFCFC	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.

Cycle 107
3rd Q, 2014

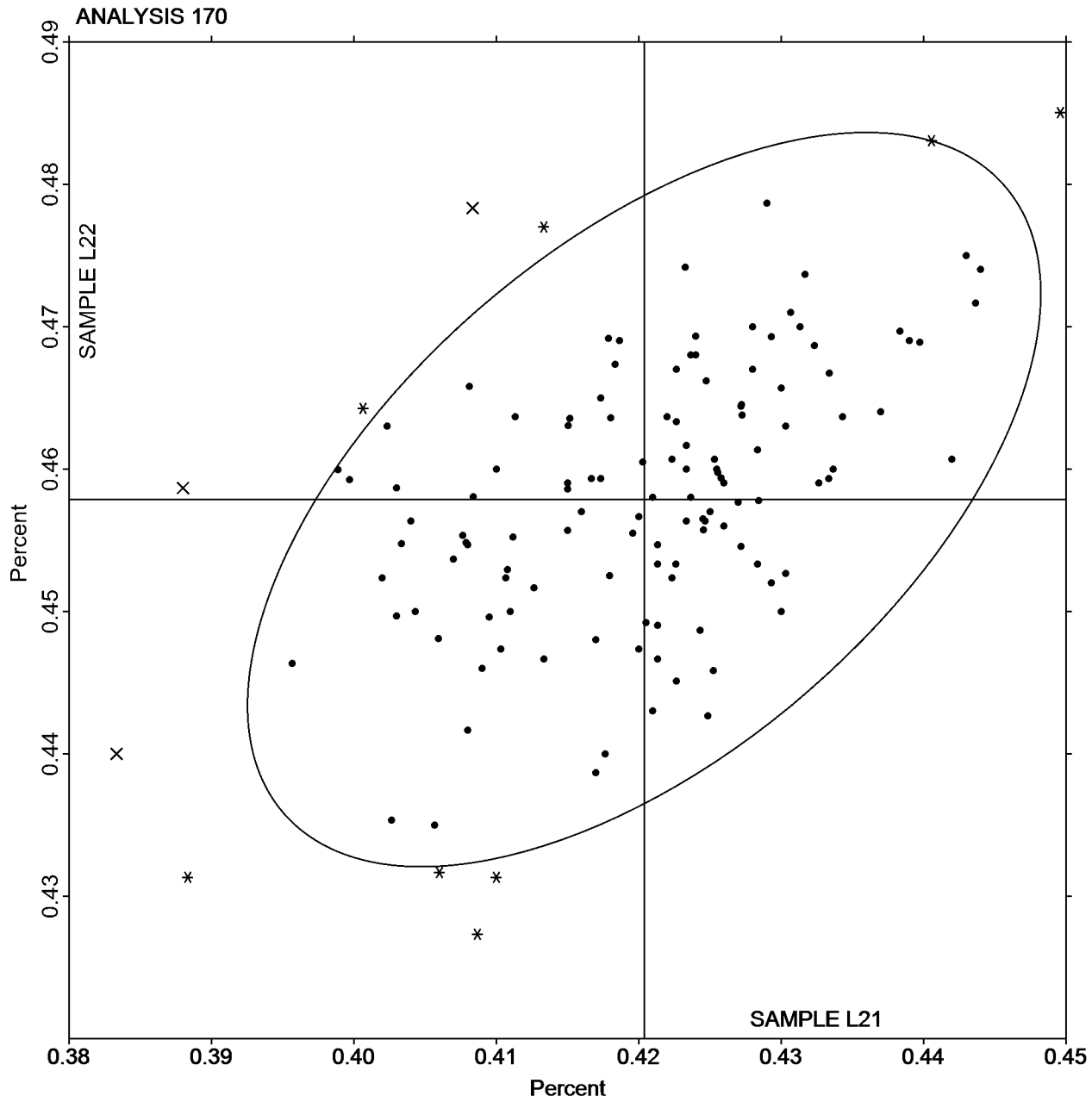
Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent
CARBON (C)

SAMPLE L21
0.4204 Percent

SAMPLE L22
0.4579 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent
MANGANESE (Mn)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.7447	0.0079	0.94	0.7513	0.0004	0.05	OE
2DCJNH		0.7433	0.0066	0.78	0.7553	0.0044	0.54	OE
2E2W4F		0.7279	-0.0088	-1.06	0.7382	-0.0127	-1.55	IC
2NQL24		0.7349	-0.0019	-0.23	0.7517	0.0008	0.10	OE
2QW7P4		0.7397	0.0029	0.35	0.7477	-0.0032	-0.40	OE
2RTCGV		0.7300	-0.0068	-0.81	0.7533	0.0024	0.30	DR
2Y9XJ8		0.7449	0.0082	0.97	0.7642	0.0133	1.63	OE
34JHW8		0.7543	0.0176	2.10	0.7617	0.0108	1.31	OE
384H3E		0.7380	0.0012	0.15	0.7483	-0.0026	-0.31	OE
3E28L4		0.7303	-0.0064	-0.77	0.7500	-0.0009	-0.11	OE
3ZV2KD		0.7395	0.0028	0.33	0.7439	-0.0070	-0.85	OE
42MEMW		0.7300	-0.0068	-0.81	0.7463	-0.0046	-0.56	OE
49QGRW		0.7272	-0.0095	-1.14	0.7534	0.0025	0.31	OE
4LCQH9		0.7440	0.0072	0.86	0.7613	0.0104	1.27	OE
4LCZ2R		0.7330	-0.0038	-0.45	0.7543	0.0034	0.42	IC
4WWZ73		0.7363	-0.0004	-0.05	0.7600	0.0091	1.11	OE
667TQW		0.7322	-0.0046	-0.55	0.7506	-0.0003	-0.03	OE
6CYDLW	*	0.7177	-0.0191	-2.28	0.7283	-0.0226	-2.76	OE
6QF9Z8		0.7280	-0.0088	-1.05	0.7477	-0.0032	-0.40	OE
6TTVJ8		0.7300	-0.0068	-0.81	0.7467	-0.0042	-0.52	OE
7GQXAD		0.7369	0.0001	0.02	0.7505	-0.0004	-0.05	OE
7HRLY4		0.7433	0.0066	0.78	0.7600	0.0091	1.11	OE
88HH36		0.7443	0.0076	0.90	0.7567	0.0058	0.70	OE
8CX7M2		0.7391	0.0023	0.28	0.7529	0.0020	0.24	OE
8D4HCQ		0.7476	0.0108	1.29	0.7526	0.0017	0.20	OE
8GTXVY		0.7256	-0.0112	-1.33	0.7365	-0.0144	-1.76	OE
8K7L7V		0.7337	-0.0030	-0.36	0.7471	-0.0038	-0.47	OE
8MU9PB		0.7370	0.0002	0.03	0.7467	-0.0042	-0.52	OE
8XX47U		0.7443	0.0076	0.90	0.7537	0.0028	0.34	OE
8ZMHQX		0.7477	0.0109	1.30	0.7597	0.0088	1.07	OE
99AV6N		0.7472	0.0105	1.25	0.7564	0.0055	0.67	OE
9BJ4A2		0.7403	0.0036	0.43	0.7483	-0.0026	-0.31	DR
9D7KLV		0.7336	-0.0032	-0.38	0.7502	-0.0007	-0.08	OE
9UVNCW		0.7250	-0.0118	-1.41	0.7507	-0.0002	-0.03	IC
A4CXQG		0.7433	0.0066	0.78	0.7557	0.0048	0.58	OE
AEUFPF		0.7487	0.0119	1.42	0.7580	0.0071	0.87	GD
ATET4A		0.7347	-0.0021	-0.25	0.7423	-0.0086	-1.05	OE
B9JM74		0.7373	0.0006	0.07	0.7453	-0.0056	-0.68	OE
BCRTUQ		0.7417	0.0049	0.58	0.7577	0.0068	0.83	OE
BFHBLM		0.7500	0.0132	1.58	0.7547	0.0038	0.46	OE
BQ6BFY		0.7477	0.0109	1.30	0.7583	0.0074	0.91	OE
BQAHTR		0.7193	-0.0174	-2.08	0.7347	-0.0162	-1.98	OE
C3D93D		0.7327	-0.0041	-0.49	0.7523	0.0014	0.17	DR
C3UHYK		0.7400	0.0032	0.39	0.7533	0.0024	0.30	OE
CAV2T4		0.7433	0.0066	0.78	0.7547	0.0038	0.46	OE
CE7WT8		0.7393	0.0026	0.31	0.7490	-0.0019	-0.23	OE
CGV3CH		0.7370	0.0002	0.03	0.7537	0.0028	0.34	OE
CH9PTW		0.7267	-0.0101	-1.21	0.7367	-0.0142	-1.74	AA
CT6ZZJ		0.7373	0.0005	0.06	0.7466	-0.0043	-0.52	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent
MANGANESE (Mn)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
CVN2U6		0.7427	0.0059	0.70	0.7597	0.0088	1.07	XX
D87RJ3		0.7400	0.0032	0.39	0.7541	0.0032	0.39	OE
D9ZHPG		0.7391	0.0023	0.27	0.7498	-0.0011	-0.13	OE
DDRW6B		0.7275	-0.0093	-1.11	0.7401	-0.0108	-1.32	OE
DHZ994		0.7430	0.0062	0.74	0.7570	0.0061	0.74	OE
DKPGFJ		0.7493	0.0125	1.50	0.7552	0.0043	0.53	OE
DLJA3P		0.7460	0.0092	1.10	0.7570	0.0061	0.74	OE
E7AQ2H		0.7301	-0.0066	-0.79	0.7446	-0.0063	-0.77	DR
EVNJ8U		0.7216	-0.0151	-1.81	0.7471	-0.0038	-0.47	OE
EXB7W2		0.7557	0.0189	2.26	0.7663	0.0154	1.88	OE
FRZF3U		0.7483	0.0116	1.38	0.7570	0.0061	0.74	DR
FU8Q2H		0.7520	0.0152	1.82	0.7613	0.0104	1.27	OE
GE8DYR		0.7396	0.0029	0.34	0.7544	0.0035	0.43	GD
GKUBJ9		0.7453	0.0086	1.02	0.7550	0.0041	0.50	IC
GP9P8E		0.7363	-0.0004	-0.05	0.7477	-0.0032	-0.40	OE
GWPGFR		0.7337	-0.0031	-0.37	0.7477	-0.0032	-0.40	OE
H3P3YF		0.7470	0.0102	1.22	0.7523	0.0014	0.17	AE
H66BGF		0.7373	0.0006	0.07	0.7493	-0.0016	-0.19	OE
HAVRKT		0.7430	0.0062	0.74	0.7537	0.0028	0.34	OE
HEK9Y6		0.7303	-0.0064	-0.77	0.7460	-0.0049	-0.60	OE
HP962R		0.7210	-0.0158	-1.88	0.7377	-0.0132	-1.62	DR
HVEW94		0.7317	-0.0051	-0.61	0.7537	0.0028	0.34	OE
HXXX4P		0.7387	0.0019	0.23	0.7547	0.0038	0.46	OE
J2CXXV		0.7490	0.0122	1.46	0.7697	0.0188	2.29	OE
J38QGL	*	0.7200	-0.0168	-2.00	0.7277	-0.0232	-2.84	OE
JBKFKZ		0.7235	-0.0132	-1.58	0.7463	-0.0046	-0.57	OE
K8Y39C		0.7517	0.0149	1.78	0.7657	0.0148	1.80	OE
KANJCH		0.7427	0.0059	0.70	0.7443	-0.0066	-0.80	OE
KEVYTT		0.7480	0.0112	1.34	0.7683	0.0174	2.13	GD
KR7D8D		0.7257	-0.0111	-1.33	0.7483	-0.0026	-0.31	OE
KWYPWH		0.7443	0.0076	0.90	0.7647	0.0138	1.68	GD
L68LC9		0.7330	-0.0038	-0.45	0.7440	-0.0069	-0.84	OE
L8D7Y9		0.7449	0.0081	0.97	0.7595	0.0086	1.05	OE
LZ8GDU		0.7417	0.0049	0.58	0.7600	0.0091	1.11	IC
M3W6BF		0.7380	0.0012	0.15	0.7537	0.0028	0.34	OE
MEBVGD		0.7365	-0.0003	-0.03	0.7478	-0.0031	-0.38	OE
MGDVEP		0.7243	-0.0124	-1.49	0.7457	-0.0052	-0.64	OE
MW7TCD	X	0.8090	0.0722	8.62	0.7923	0.0414	5.06	OE
MZ9KTQ		0.7402	0.0034	0.41	0.7537	0.0028	0.34	OE
N3MQFQ	*	0.7276	-0.0092	-1.10	0.7317	-0.0192	-2.35	OE
N6JW8J		0.7517	0.0149	1.78	0.7550	0.0041	0.50	OE
NACWLE		0.7344	-0.0024	-0.28	0.7440	-0.0069	-0.84	OE
NJ4CEP		0.7345	-0.0022	-0.27	0.7452	-0.0057	-0.70	OE
NT6Z4Z		0.7433	0.0066	0.78	0.7433	-0.0076	-0.93	OE
NUYH8M		0.7306	-0.0062	-0.74	0.7456	-0.0053	-0.65	OE
P6EQQ9	X	0.7013	-0.0354	-4.23	0.7527	0.0018	0.22	OE
PD88UJ		0.7387	0.0019	0.23	0.7507	-0.0002	-0.03	OE
PJVMPH		0.7350	-0.0018	-0.21	0.7510	0.0001	0.01	OE
PTNWDF		0.7327	-0.0041	-0.49	0.7563	0.0054	0.66	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent
MANGANESE (Mn)

		Sample L21			Sample L22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
PZNFEP		0.7317	-0.0051	-0.61	0.7387	-0.0122	-1.50	OE
QEV3UX		0.7285	-0.0083	-0.99	0.7498	-0.0011	-0.14	OE
QKM4EK		0.7260	-0.0108	-1.29	0.7421	-0.0088	-1.07	OE
QM88YB		0.7417	0.0049	0.58	0.7670	0.0161	1.97	OE
QY7VYK		0.7440	0.0072	0.86	0.7603	0.0094	1.15	OE
RF783E		0.7333	-0.0034	-0.41	0.7520	0.0011	0.13	IC
RK2UZA	X	0.7600	0.0232	2.77	0.8000	0.0491	6.00	GD
RX7CAN		0.7293	-0.0074	-0.89	0.7400	-0.0109	-1.33	OE
T234DE		0.7314	-0.0053	-0.64	0.7464	-0.0045	-0.55	OE
TE8GFX		0.7365	-0.0003	-0.03	0.7482	-0.0027	-0.33	OE
TECU29		0.7328	-0.0040	-0.48	0.7469	-0.0040	-0.49	OE
TF2ZKJ		0.7353	-0.0014	-0.17	0.7413	-0.0096	-1.17	OE
TNGVC8		0.7285	-0.0083	-0.99	0.7423	-0.0086	-1.05	OE
TTNGZ4		0.7273	-0.0094	-1.13	0.7407	-0.0102	-1.25	OE
TUGAZU		0.7256	-0.0112	-1.34	0.7470	-0.0040	-0.48	OE
TWUTAR		0.7360	-0.0008	-0.09	0.7620	0.0111	1.36	GD
U262CG	*	0.7420	0.0052	0.62	0.7703	0.0194	2.37	XR
UGV7HP		0.7393	0.0026	0.31	0.7427	-0.0082	-1.01	OE
UKPCQZ		0.7180	-0.0188	-2.24	0.7353	-0.0156	-1.90	OE
V2U324	X	0.7651	0.0283	3.38	0.7876	0.0367	4.49	OE
V2WLE7		0.7320	-0.0048	-0.57	0.7427	-0.0082	-1.01	OE
VDNCV4		0.7380	0.0012	0.15	0.7480	-0.0029	-0.36	OE
VJDRJB	X	0.8233	0.0866	10.34	0.8183	0.0674	8.24	OE
VMEZNL		0.7427	0.0059	0.70	0.7573	0.0064	0.79	OE
WF7VBR		0.7290	-0.0078	-0.93	0.7503	-0.0006	-0.07	OE
WF9LJV		0.7380	0.0012	0.15	0.7500	-0.0009	-0.11	OE
WJBFL8		0.7273	-0.0094	-1.13	0.7430	-0.0079	-0.97	OE
WP3KFB	X	0.7703	0.0336	4.01	0.7807	0.0298	3.64	OE
WPEBFE		0.7334	-0.0034	-0.41	0.7499	-0.0010	-0.12	OE
WTFCFC	*	0.7417	0.0049	0.58	0.7677	0.0168	2.05	XX
XDGZ9J	M	0.7163	-0.0204	-2.44	No Data Reported			OE
XWTNGB		0.7457	0.0089	1.06	0.7567	0.0058	0.70	OE
YDVV6C		0.7347	-0.0021	-0.25	0.7587	0.0078	0.95	DR
YFHCG6		0.7310	-0.0058	-0.69	0.7452	-0.0057	-0.70	DR
YM4A8D		0.7470	0.0102	1.22	0.7580	0.0071	0.87	OE
YPQT9B		0.7500	0.0132	1.58	0.7600	0.0091	1.11	OE
YWBZTP		0.7247	-0.0121	-1.45	0.7430	-0.0079	-0.97	OE
YXLZWB		0.7258	-0.0109	-1.31	0.7511	0.0002	0.03	OE
YZAA7C		0.7300	-0.0068	-0.81	0.7500	-0.0009	-0.11	OE
ZC3YH3		0.7487	0.0119	1.42	0.7577	0.0068	0.83	OE
ZECZPV		0.7277	-0.0091	-1.09	0.7507	-0.0002	-0.03	OE
ZJ4CH7	X	0.7583	0.0216	2.57	0.7993	0.0484	5.92	GD
ZQ27AD		0.7346	-0.0022	-0.26	0.7449	-0.0060	-0.73	AE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent
MANGANESE (Mn)

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.7368	Percent	0.7509	Percent
Stnd Dev Btwn Labs	0.0084	Percent	0.0082	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 133 of 141 reporting participants

Comments on assigned Data Flags for Analysis #171

WebCode	Flag	Analyst Comment
MW7TCD	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample L22.
P6EQQ9	X	Data for sample L21 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample L22.
RK2UZA	X	Data for both samples are high. Possible Systematic error.
V2U324	X	Data for both samples are high. Possible Systematic error.
VJDRJB	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample L21.
WP3KFB	X	Data for both samples are high. Possible Systematic error.
XDGZ9J	M	Laboratory did not submit data for sample L22.Inconsistent within the determinations of sample L21.
ZJ4CH7	X	Data for sample L22 are high. Inconsistent in testing between samples.

Cycle 107
3rd Q, 2014

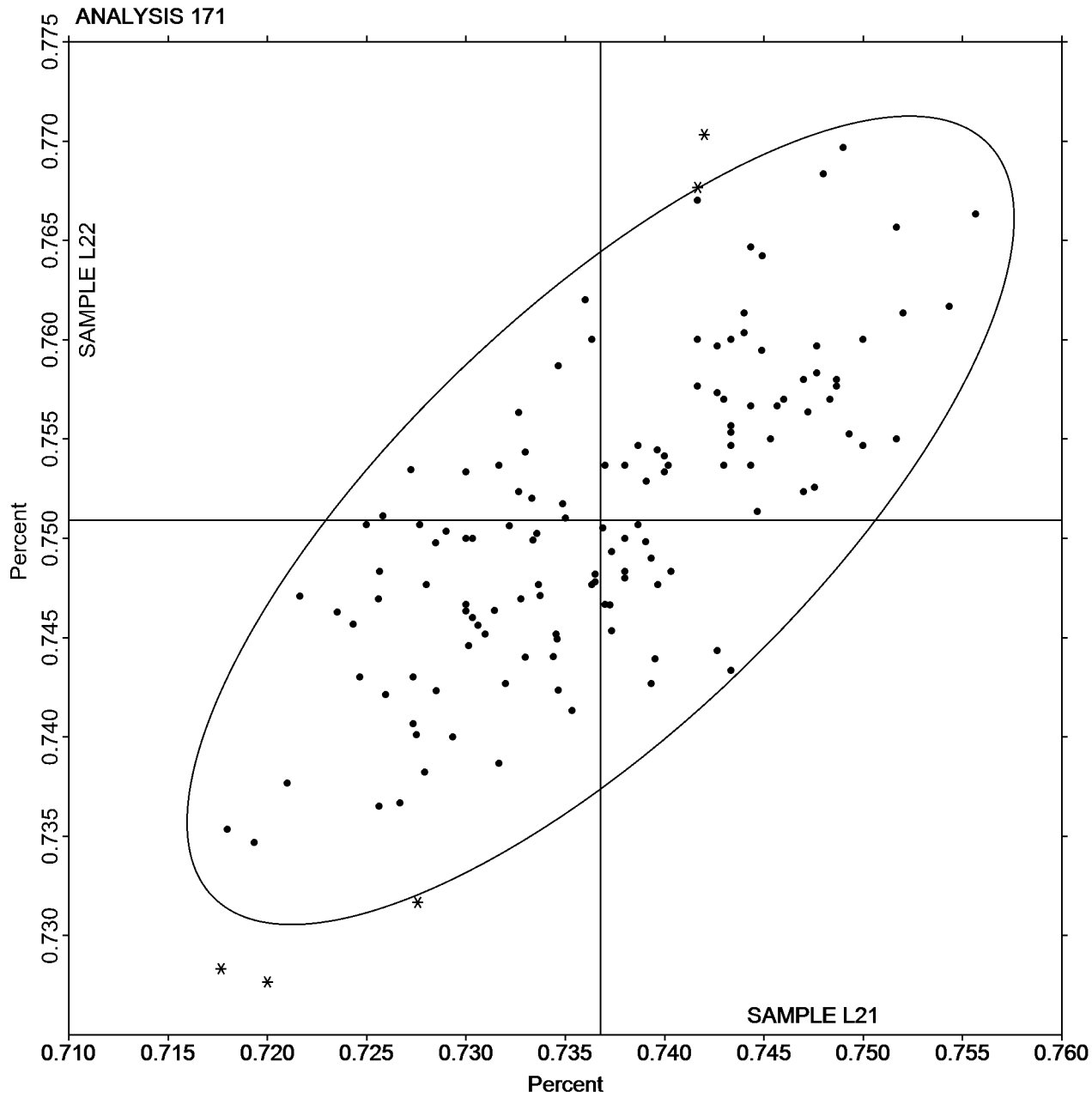
Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent
MANGANESE (Mn)

SAMPLE L21
0.7368 Percent

SAMPLE L22
0.7509 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent
PHOSPHORUS (P)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG	*	0.00757	0.00213	1.90	0.0113	0.0003	0.27	OE
2DCJNH	*	0.00793	0.00250	2.23	0.0140	0.0031	2.72	OE
2E2W4F		0.00517	-0.00027	-0.24	0.0107	-0.0002	-0.20	IC
2NQL24		0.00497	-0.00047	-0.41	0.0109	-0.0001	-0.05	OE
2QW7P4		0.00590	0.00047	0.42	0.0106	-0.0004	-0.32	OE
2RTCGV		0.00600	0.00057	0.51	0.0100	-0.0010	-0.85	CI
2Y9XJ8		0.00521	-0.00022	-0.20	0.0114	0.0004	0.38	OE
34JHW8		0.00643	0.00100	0.89	0.0115	0.0005	0.45	OE
384H3E		0.00490	-0.00053	-0.47	0.00960	-0.0014	-1.20	OE
3E28L4		0.00423	-0.00120	-1.07	0.0107	-0.0003	-0.26	OE
3ZV2KD		0.00493	-0.00050	-0.44	0.0101	-0.0009	-0.76	OE
42MEMW		0.00667	0.00123	1.10	0.0120	0.0010	0.92	OE
49QGRW		0.00523	-0.00020	-0.18	0.0107	-0.0002	-0.20	OE
4LCQH9		0.00490	-0.00053	-0.47	0.0106	-0.0004	-0.32	OE
4LCZ2R		0.00500	-0.00043	-0.38	0.0117	0.0007	0.66	IC
4WWZ73	X	0.00673	0.00130	1.16	0.0163	0.0054	4.76	OE
667TQW		0.00467	-0.00077	-0.68	0.0109	0.0000	-0.02	OE
6CYDLW	X	0.00100	-0.00443	-3.95	0.00500	-0.0060	-5.28	OE
6QF9Z8		0.00380	-0.00163	-1.45	0.00940	-0.0016	-1.38	OE
6TTVJ8	*	0.00673	0.00130	1.16	0.0100	-0.0010	-0.85	OE
7GQXAD		0.00483	-0.00060	-0.53	0.0101	-0.0009	-0.79	OE
7HRLY4		0.00467	-0.00077	-0.68	0.0107	-0.0003	-0.26	OE
88HH36		0.00540	-0.00003	-0.03	0.0110	0.0000	0.04	OE
8CX7M2		0.00584	0.00041	0.37	0.0127	0.0017	1.53	OE
8D4HCQ		0.00353	-0.00190	-1.69	0.00893	-0.0020	-1.80	OE
8GTXVY		0.00693	0.00149	1.33	0.0119	0.0009	0.81	OE
8K7L7V		0.00658	0.00114	1.02	0.0120	0.0011	0.96	OE
8MU9PB		0.00537	-0.00007	-0.06	0.0112	0.0002	0.21	OE
8XX47U		0.00657	0.00113	1.01	0.0121	0.0011	0.98	OE
8ZMHQX		0.00763	0.00220	1.96	0.0126	0.0016	1.42	OE
99AV6N		0.00557	0.00013	0.12	0.0107	-0.0003	-0.23	OE
9BJ4A2		0.00600	0.00057	0.51	0.0120	0.0010	0.92	DR
9D7KLV		0.00447	-0.00097	-0.86	0.0109	-0.0001	-0.05	OE
9UVNCW		0.00667	0.00123	1.10	0.0120	0.0010	0.92	IC
A4CXQG		0.00480	-0.00063	-0.56	0.0110	0.0000	0.01	OE
AEUFPF		0.00467	-0.00077	-0.68	0.0103	-0.0006	-0.55	GD
ATET4A		0.00610	0.00067	0.59	0.0109	-0.0001	-0.05	OE
B9JM74		0.00490	-0.00053	-0.47	0.00900	-0.0020	-1.74	OE
BCRTUQ		0.00403	-0.00140	-1.25	0.00853	-0.0024	-2.15	OE
BFHBLM		0.00603	0.00060	0.54	0.0121	0.0012	1.04	OE
BQ6BFY		0.00500	-0.00043	-0.38	0.0100	-0.0010	-0.85	OE
BQAHTR		0.00533	-0.00010	-0.09	0.0120	0.0010	0.92	OE
C3UHYK		0.00600	0.00057	0.51	0.0110	0.0000	0.04	OE
CAV2T4		0.00557	0.00013	0.12	0.0109	-0.0001	-0.05	OE
CE7WT8		0.00463	-0.00080	-0.71	0.0108	-0.0002	-0.14	OE
CGV3CH		0.00520	-0.00023	-0.21	0.0113	0.0003	0.30	OE
CT6ZZJ		0.00753	0.00210	1.87	0.0129	0.0020	1.75	OE
CVN2U6	X	0.0127	0.00723	6.44	0.00933	-0.0016	-1.44	XX
D87RJ3		0.00443	-0.00100	-0.89	0.0102	-0.0008	-0.70	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent
PHOSPHORUS (P)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
D9ZHPG		0.00333	-0.00210	-1.87	0.00917	-0.0018	-1.59	OE
DDRW6B		0.00460	-0.00083	-0.74	0.0106	-0.0004	-0.32	OE
DHZ994		0.00600	0.00057	0.51	0.0117	0.0007	0.63	OE
DKPGFJ		0.00567	0.00023	0.21	0.0108	-0.0002	-0.17	OE
DLJA3P		0.00543	0.00000	0.00	0.0118	0.0008	0.72	OE
EVNJ8U		0.00368	-0.00176	-1.56	0.00943	-0.0015	-1.36	OE
EXB7W2		0.00500	-0.00043	-0.38	0.0110	0.0000	0.04	OE
FRZF3U		0.00533	-0.00010	-0.09	0.0103	-0.0006	-0.55	DR
FU8Q2H		0.00713	0.00170	1.51	0.0115	0.0006	0.51	OE
GE8DYR	*	0.00870	0.00327	2.91	0.0133	0.0023	2.07	GD
GKUBJ9		0.00570	0.00027	0.24	0.0122	0.0013	1.13	OE
GP9P8E		0.00573	0.00030	0.27	0.0110	0.0000	0.04	OE
GWPGFR		0.00447	-0.00097	-0.86	0.0103	-0.0006	-0.55	OE
H3P3YF	*	0.00383	-0.00160	-1.42	0.00807	-0.0029	-2.56	AE
H66BGF		0.00504	-0.00039	-0.35	0.0111	0.0002	0.15	OE
HAVRKT	X	0.00733	0.00190	1.69	0.00933	-0.0016	-1.44	OE
HEK9Y6		0.00600	0.00057	0.51	0.0117	0.0007	0.63	OE
HP962R		0.00640	0.00097	0.86	0.0118	0.0009	0.77	DR
HVEW94		0.00500	-0.00043	-0.38	0.0110	0.0000	0.04	OE
HXXX4P		0.00633	0.00090	0.80	0.0110	0.0000	0.04	OE
J2CXXV	X	0.0140	0.00857	7.63	0.0187	0.0077	6.83	OE
J38QGL		0.00497	-0.00047	-0.41	0.0107	-0.0003	-0.23	OE
JBKFKZ		0.00483	-0.00060	-0.53	0.0104	-0.0006	-0.50	OE
K8Y39C		0.00533	-0.00010	-0.09	0.0113	0.0004	0.33	OE
KANJCH	*	0.00357	-0.00187	-1.66	0.0113	0.0004	0.33	OE
KEVYTT		0.00683	0.00140	1.25	0.0128	0.0018	1.60	GD
KR7D8D		0.00457	-0.00087	-0.77	0.0114	0.0005	0.42	OE
KWYPWH		0.00633	0.00090	0.80	0.0107	-0.0003	-0.26	GD
L68LC9	X	0.00437	-0.00107	-0.95	0.00433	-0.0066	-5.87	OE
L8D7Y9		0.00680	0.00137	1.22	0.0122	0.0012	1.10	OE
LZ8GDU		0.00442	-0.00102	-0.90	0.00985	-0.0011	-0.99	CL
M3W6BF		0.00700	0.00157	1.40	0.0110	0.0000	0.04	OE
M7YWNM		0.00600	0.00057	0.51	0.0117	0.0007	0.63	GD
MEBVGD		0.00557	0.00013	0.12	0.0116	0.0006	0.57	OE
MGDVEP		0.00523	-0.00020	-0.18	0.0101	-0.0009	-0.76	OE
MW7TCD	X	0.00050	-0.00493	-4.39	0.00413	-0.0068	-6.05	OE
MZ9KTQ		0.00530	-0.00013	-0.11	0.0113	0.0004	0.31	OE
N3MQFQ		0.00517	-0.00027	-0.24	0.0107	-0.0003	-0.23	OE
N6JW8J	X	0.00967	0.00423	3.77	0.0117	0.0007	0.63	OE
NACWLE	*	0.00479	-0.00064	-0.57	0.0124	0.0015	1.31	XX
NJ4CEP		0.00556	0.00013	0.12	0.0116	0.0006	0.57	OE
NT6Z4Z		0.00800	0.00257	2.29	0.0110	0.0000	0.04	OE
NUYH8M		0.00500	-0.00043	-0.38	0.0114	0.0004	0.39	OE
P6EQQ9		0.00600	0.00057	0.51	0.0113	0.0004	0.33	OE
PD88UJ		0.00523	-0.00020	-0.18	0.0110	0.0000	0.04	OE
PJVMPH		0.00700	0.00157	1.40	0.0113	0.0004	0.33	OE
PTNWDF		0.00603	0.00060	0.54	0.0110	0.0000	0.04	OE
PZNFEP		0.00567	0.00023	0.21	0.0130	0.0020	1.81	OE
QEV3UX		0.00469	-0.00074	-0.66	0.0109	0.0000	-0.04	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent
PHOSPHORUS (P)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
QKM4EK		0.00333	-0.00210	-1.87	0.00920	-0.0018	-1.56	OE
QM88YB		0.00310	-0.00233	-2.08	0.00830	-0.0027	-2.36	OE
QY7VYK	X	0.0108	0.00537	4.78	0.0181	0.0072	6.36	OE
RF783E		0.00440	-0.00103	-0.92	0.0103	-0.0007	-0.61	CI
RK2UZA		0.00600	0.00057	0.51	0.0110	0.0000	0.04	GD
RX7CAN		0.00633	0.00090	0.80	0.0110	0.0000	0.04	OE
T234DE		0.00587	0.00043	0.39	0.0116	0.0006	0.54	OE
TE8GFX		0.00457	-0.00087	-0.77	0.0111	0.0002	0.15	OE
TECU29	*	0.00240	-0.00304	-2.70	0.00778	-0.0032	-2.82	OE
TF2ZKJ		0.00500	-0.00043	-0.38	0.0110	0.0000	0.04	OE
TNGVC8		0.00568	0.00025	0.22	0.0115	0.0005	0.48	OE
TTNGZ4		0.00503	-0.00040	-0.35	0.0114	0.0004	0.39	OE
TUGAZU		0.00426	-0.00117	-1.04	0.0104	-0.0006	-0.53	OE
TWUTAR	*	0.00847	0.00303	2.70	0.0137	0.0028	2.46	GD
U262CG		0.00567	0.00023	0.21	0.0127	0.0017	1.51	XR
UGV7HP		0.00620	0.00077	0.68	0.0115	0.0005	0.48	OE
UKPCQZ		0.00540	-0.00003	-0.03	0.0114	0.0004	0.36	OE
V2U324		0.00443	-0.00100	-0.89	0.0103	-0.0007	-0.61	OE
V2WLE7	*	0.00367	-0.00177	-1.57	0.00800	-0.0030	-2.62	OE
VDNCV4		0.00547	0.00003	0.03	0.0101	-0.0008	-0.73	OE
VJDRJB		0.00780	0.00237	2.11	0.0131	0.0021	1.90	OE
VMEZNL		0.00497	-0.00047	-0.41	0.0109	-0.0001	-0.05	OE
WF7VBR		0.00533	-0.00010	-0.09	0.00967	-0.0013	-1.15	OE
WF9LJV		0.00600	0.00057	0.51	0.0104	-0.0006	-0.50	OE
WJBFL8	*	0.00433	-0.00110	-0.98	0.0120	0.0010	0.92	OE
WP3KFB		0.00493	-0.00050	-0.44	0.00990	-0.0011	-0.94	OE
WPEBFE		0.00463	-0.00080	-0.71	0.0106	-0.0004	-0.32	OE
WTFCFC		0.00533	-0.00010	-0.09	0.0109	-0.0001	-0.08	XX
XDGZ9J		0.00593	0.00050	0.45	0.00977	-0.0012	-1.06	OE
XWTNGB		0.00700	0.00157	1.40	0.0120	0.0010	0.92	OE
YDVV6C		0.00467	-0.00077	-0.68	0.0100	-0.0010	-0.85	DR
YM4A8D		0.00700	0.00157	1.40	0.0117	0.0007	0.63	OE
YPQT9B		0.00500	-0.00043	-0.38	0.0100	-0.0010	-0.85	OE
YWBZTP		0.00523	-0.00020	-0.18	0.0110	0.0000	0.04	OE
YXLZWB		0.00487	-0.00057	-0.50	0.0110	0.0001	0.07	OE
YZAA7C		0.00643	0.00100	0.89	0.0104	-0.0006	-0.50	OE
ZC3YH3		0.00500	-0.00043	-0.38	0.0110	0.0000	0.04	OE
ZECZPV		0.00500	-0.00043	-0.38	0.0100	-0.0010	-0.85	OE
ZJ4CH7		0.00767	0.00223	1.99	0.0130	0.0020	1.81	GD
ZQ27AD		0.00306	-0.00238	-2.11	0.00862	-0.0023	-2.08	AE

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.00543	Percent	0.0110	Percent
Stnd Dev Btwn Labs	0.00112	Percent	0.0011	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 128 of 138 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent
PHOSPHORUS (P)

Comments on assigned Data Flags for Analysis #172

WebCode	Flag	Analyst Comment
4WWZ73	X	Data for sample L22 are high. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
6CYDLW	X	Data for both samples are low. Possible Systematic error.
CVN2U6	X	Data for sample L21 are high. Inconsistent in testing between samples.
HAVRKT	X	Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
J2CXXV	X	Data for both samples are high. Possible Systematic error.
L68LC9	X	Data for sample L22 are low. Inconsistent in testing between samples.
MW7TCD	X	Data for both samples are low. Possible Systematic error.
N6JW8J	X	Data for sample L21 are high. Inconsistent in testing between samples.
QY7VYK	X	Data for both samples are high. Possible Systematic error.

Cycle 107
3rd Q, 2014

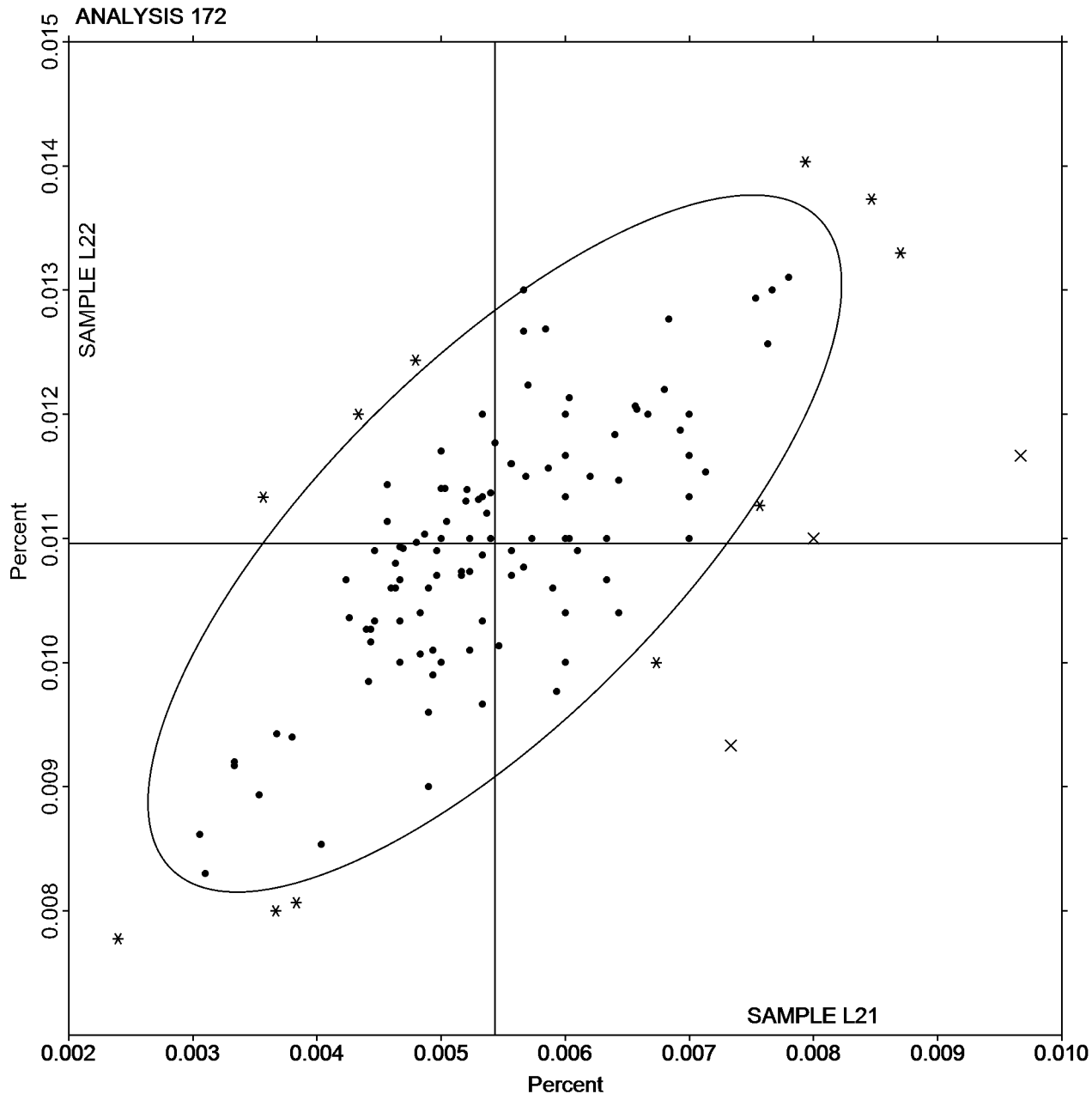
Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent
PHOSPHORUS (P)

SAMPLE L21
0.00543 Percent

SAMPLE L22
0.0110 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent
SULFUR (S)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.0353	0.0036	1.57	0.0265	0.0022	1.27	OE
2DCJNH		0.0339	0.0022	0.97	0.0239	-0.0004	-0.25	OE
2E2W4F		0.0306	-0.0010	-0.45	0.0246	0.0003	0.16	CL
2NQL24		0.0342	0.0025	1.10	0.0257	0.0014	0.79	OE
2QW7P4		0.0319	0.0003	0.12	0.0244	0.0001	0.04	CI
2RTCGV		0.0283	-0.0033	-1.45	0.0223	-0.0020	-1.13	CI
2Y9XJ8		0.0363	0.0047	2.03	0.0283	0.0040	2.31	OE
34JHW8		0.0300	-0.0017	-0.73	0.0278	0.0035	2.03	CI
384H3E		0.0338	0.0021	0.93	0.0235	-0.0008	-0.44	OE
3E28L4		0.0314	-0.0003	-0.13	0.0234	-0.0009	-0.54	OE
3ZV2KD		0.0305	-0.0012	-0.52	0.0244	0.0001	0.06	OE
42MEMW		0.0300	-0.0017	-0.74	0.0224	-0.0019	-1.11	CO
4946ZB		0.0315	-0.0002	-0.07	0.0228	-0.0015	-0.88	CI
49QGRW		0.0306	-0.0011	-0.48	0.0244	0.0001	0.04	OE
4LCQH9		0.0339	0.0023	0.99	0.0272	0.0029	1.70	OE
4LCZ2R		0.0314	-0.0003	-0.12	0.0249	0.0006	0.35	CO
4WWZ73		0.0340	0.0023	1.02	0.0280	0.0037	2.14	OE
667TQW		0.0334	0.0017	0.76	0.0254	0.0011	0.66	OE
6CYDLW		0.0300	-0.0017	-0.73	0.0230	-0.0013	-0.75	OE
6QF9Z8		0.0307	-0.0010	-0.44	0.0240	-0.0003	-0.17	OE
6TTVJ8		0.0347	0.0030	1.31	0.0253	0.0010	0.60	OE
7GQXAD		0.0300	-0.0017	-0.73	0.0232	-0.0011	-0.65	OE
7HRLY4		0.0320	0.0003	0.15	0.0247	0.0004	0.21	OE
88HH36		0.0309	-0.0008	-0.33	0.0232	-0.0011	-0.61	CO
8CX7M2		0.0306	-0.0011	-0.47	0.0233	-0.0010	-0.56	CI
8D4HCQ		0.0336	0.0019	0.84	0.0250	0.0007	0.41	OE
8GTXVY		0.0332	0.0016	0.68	0.0248	0.0006	0.32	OE
8K7L7V		0.0332	0.0015	0.66	0.0253	0.0011	0.61	OE
8MU9PB		0.0337	0.0020	0.87	0.0244	0.0001	0.04	OE
8XX47U		0.0359	0.0043	1.86	0.0259	0.0016	0.91	OE
8ZMHQX		0.0332	0.0016	0.68	0.0273	0.0030	1.74	OE
99AV6N		0.0335	0.0018	0.78	0.0247	0.0004	0.25	CO
9BJ4A2		0.0307	-0.0010	-0.44	0.0253	0.0010	0.60	CI
9D7KLV		0.0334	0.0017	0.76	0.0255	0.0012	0.68	OE
9UVNCW		0.0317	0.0000	0.00	0.0247	0.0004	0.21	CI
A4CXQG		0.0287	-0.0029	-1.28	0.0205	-0.0038	-2.19	OE
AEUFPF		0.0287	-0.0030	-1.31	0.0223	-0.0020	-1.13	GD
ATET4A		0.0325	0.0008	0.36	0.0245	0.0002	0.10	IR
B9JM74		0.0263	-0.0054	-2.34	0.0218	-0.0025	-1.42	OE
BCRTUQ		0.0319	0.0002	0.09	0.0247	0.0004	0.21	OE
BFHBLM		0.0309	-0.0008	-0.35	0.0246	0.0003	0.20	CI
BQ6BFY	M	No Data Reported			0.0230	-0.0013	-0.75	OE
BQAHTR		0.0330	0.0013	0.58	0.0273	0.0030	1.76	OE
C3UHYK		0.0290	-0.0027	-1.16	0.0227	-0.0016	-0.94	OE
CAV2T4		0.0318	0.0002	0.07	0.0246	0.0003	0.16	CI
CE7WT8		0.0305	-0.0012	-0.51	0.0230	-0.0013	-0.75	OE
CGV3CH		0.0321	0.0005	0.20	0.0239	-0.0004	-0.25	OE
CT6ZZJ		0.0347	0.0030	1.32	0.0255	0.0012	0.68	OE
CVN2U6	*	0.0267	-0.0050	-2.18	0.0233	-0.0010	-0.56	XX

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent
SULFUR (S)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
D87RJ3		0.0288	-0.0029	-1.25	0.0207	-0.0036	-2.10	CI
D9ZHPG		0.0327	0.0011	0.47	0.0235	-0.0008	-0.48	OE
DDRW6B		0.0338	0.0021	0.93	0.0250	0.0007	0.39	OE
DHZ994		0.0335	0.0018	0.78	0.0250	0.0007	0.39	OE
DKPGFJ		0.0335	0.0018	0.80	0.0252	0.0009	0.50	CO
DLJA3P		0.0321	0.0005	0.20	0.0240	-0.0003	-0.17	OE
E7AQ2H		0.0320	0.0003	0.15	0.0246	0.0003	0.18	DR
EVNJ8U		0.0315	-0.0002	-0.07	0.0282	0.0039	2.28	OE
EXB7W2	*	0.0367	0.0050	2.18	0.0257	0.0014	0.79	OE
FRZF3U		0.0301	-0.0016	-0.70	0.0231	-0.0012	-0.71	DR
FU8Q2H	*	0.0379	0.0062	2.70	0.0292	0.0049	2.83	OE
GE8DYR		0.0313	-0.0004	-0.16	0.0240	-0.0003	-0.15	GD
GKUBJ9		0.0349	0.0032	1.41	0.0247	0.0004	0.25	OE
GP9P8E	X	0.0310	-0.0007	-0.29	0.0347	0.0104	5.99	OE
GWPGFR		0.0300	-0.0017	-0.73	0.0223	-0.0020	-1.13	CI
H3P3YF		0.0291	-0.0026	-1.13	0.0214	-0.0029	-1.69	AE
H66BGF		0.0323	0.0006	0.26	0.0246	0.0003	0.18	OE
HAVRKT	X	0.0220	-0.0097	-4.21	0.0163	-0.0080	-4.60	OE
HEK9Y6		0.0290	-0.0027	-1.16	0.0220	-0.0023	-1.33	OE
HP962R		0.0319	0.0002	0.09	0.0249	0.0006	0.35	DR
HVEW94		0.0320	0.0003	0.15	0.0257	0.0014	0.79	OE
HXXX4P	X	0.0230	-0.0087	-3.78	0.0203	-0.0040	-2.29	OE
J2CXXV	*	0.0353	0.0037	1.60	0.0290	0.0047	2.72	OE
J38QGL		0.0299	-0.0017	-0.76	0.0224	-0.0019	-1.08	OE
JBKFKZ		0.0305	-0.0012	-0.50	0.0230	-0.0013	-0.74	CI
K8Y39C		0.0363	0.0047	2.03	0.0277	0.0034	1.95	OE
KANJCH		0.0323	0.0007	0.29	0.0243	0.0000	0.02	OE
KEVYTT		0.0279	-0.0038	-1.64	0.0230	-0.0013	-0.75	GD
KR7D8D		0.0283	-0.0033	-1.45	0.0233	-0.0010	-0.56	OE
KWYPWH		0.0320	0.0003	0.15	0.0247	0.0004	0.21	GD
L68LC9		0.0349	0.0032	1.41	0.0267	0.0024	1.39	OE
L8D7Y9		0.0301	-0.0016	-0.68	0.0224	-0.0019	-1.11	OE
LZ8GDU		0.0300	-0.0017	-0.74	0.0236	-0.0007	-0.40	CI
M3W6BF		0.0273	-0.0043	-1.89	0.0210	-0.0033	-1.90	OE
MEBVGD		0.0315	-0.0001	-0.06	0.0238	-0.0005	-0.29	OE
MGDVEP		0.0321	0.0005	0.20	0.0244	0.0001	0.07	CO
MW7TCD	X	0.0357	0.0040	1.74	0.0297	0.0054	3.14	CO
MZ9KTQ		0.0296	-0.0021	-0.92	0.0221	-0.0022	-1.27	CO
N3MQFQ		0.0345	0.0028	1.24	0.0257	0.0014	0.79	OE
N6JW8J		0.0280	-0.0037	-1.60	0.0220	-0.0023	-1.33	OE
NACWLE		0.0327	0.0010	0.44	0.0246	0.0003	0.17	OE
NJ4CEP		0.0322	0.0005	0.23	0.0243	0.0000	0.00	OE
NT6Z4Z		0.0290	-0.0027	-1.16	0.0240	-0.0003	-0.17	OE
NUYH8M		0.0321	0.0004	0.19	0.0253	0.0010	0.58	OE
P6EQQ9	X	0.0240	-0.0077	-3.34	0.0260	0.0017	0.99	OE
PD88UJ	*	0.0340	0.0023	1.02	0.0230	-0.0013	-0.75	OE
PJVMPH		0.0290	-0.0027	-1.16	0.0227	-0.0016	-0.94	CO
PTNWDF		0.0263	-0.0053	-2.33	0.0257	0.0014	0.79	OE
PZNFEP		0.0323	0.0007	0.29	0.0257	0.0014	0.79	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent
SULFUR (S)

		Sample L21			Sample L22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
QEV3UX		0.0353	0.0036	1.57	0.0267	0.0024	1.41	OE
QKM4EK		0.0332	0.0015	0.65	0.0269	0.0026	1.51	OE
QM88YB		0.0329	0.0012	0.52	0.0246	0.0003	0.16	OE
QY7VYK		0.0334	0.0017	0.76	0.0271	0.0028	1.60	OE
RF783E		0.0300	-0.0017	-0.73	0.0230	-0.0013	-0.75	CI
RK2UZA		0.0287	-0.0030	-1.31	0.0223	-0.0020	-1.13	GD
RX7CAN		0.0320	0.0003	0.15	0.0250	0.0007	0.41	OE
RZUTLG		0.0286	-0.0031	-1.34	0.0213	-0.0030	-1.71	CI
T234DE		0.0296	-0.0020	-0.89	0.0243	0.0000	-0.02	OE
TE8GFX		0.0326	0.0009	0.39	0.0247	0.0004	0.23	OE
TECU29		0.0293	-0.0023	-1.02	0.0244	0.0001	0.05	OE
TF2ZKJ		0.0340	0.0023	1.02	0.0257	0.0014	0.79	CI
TNGVC8		0.0340	0.0024	1.02	0.0257	0.0014	0.78	OE
TTNGZ4		0.0290	-0.0027	-1.16	0.0227	-0.0016	-0.94	OE
TUGAZU		0.0306	-0.0011	-0.46	0.0242	0.0000	-0.03	OE
TWUTAR		0.0332	0.0016	0.68	0.0238	-0.0005	-0.27	GD
U262CG		0.0307	-0.0010	-0.44	0.0237	-0.0006	-0.36	CO
UGV7HP	*	0.0335	0.0018	0.78	0.0229	-0.0014	-0.83	OE
UKPCQZ		0.0321	0.0004	0.17	0.0253	0.0010	0.60	OE
V2U324	X	0.0372	0.0055	2.41	0.0313	0.0070	4.05	OE
V2WLE7		0.0310	-0.0007	-0.29	0.0250	0.0007	0.41	OE
VDNCV4		0.0323	0.0007	0.29	0.0235	-0.0008	-0.44	CL
VJDRJB	*	0.0322	0.0005	0.23	0.0273	0.0030	1.74	OE
VMEZNL		0.0305	-0.0012	-0.51	0.0229	-0.0014	-0.79	CI
WF7VBR		0.0285	-0.0031	-1.37	0.0237	-0.0006	-0.36	OE
WF9LJV		0.0270	-0.0047	-2.03	0.0210	-0.0033	-1.90	OE
WJBFL8		0.0325	0.0009	0.38	0.0250	0.0007	0.41	OE
WP3KFB	X	0.0142	-0.0175	-7.62	0.0110	-0.0133	-7.66	OE
WPEBFE		0.0313	-0.0003	-0.15	0.0247	0.0004	0.21	OE
WTFCFC	X	0.0365	0.0049	2.12	0.0314	0.0071	4.09	XX
XDGZ9J		0.0313	-0.0003	-0.15	0.0230	-0.0013	-0.75	CI
XWTNGB		0.0323	0.0007	0.29	0.0233	-0.0010	-0.56	OE
YDVV6C		0.0280	-0.0037	-1.60	0.0217	-0.0026	-1.52	DR
YFHCG6		0.0325	0.0008	0.35	0.0256	0.0013	0.75	DR
YM4A8D		0.0347	0.0030	1.31	0.0277	0.0034	1.95	OE
YPQT9B		0.0293	-0.0023	-1.02	0.0197	-0.0046	-2.67	OE
YWBZTP		0.0287	-0.0030	-1.31	0.0223	-0.0020	-1.13	OE
YXLZWB		0.0322	0.0005	0.23	0.0260	0.0017	1.00	OE
YZAA7C		0.0292	-0.0025	-1.08	0.0242	-0.0001	-0.04	OE
ZC3YH3		0.0340	0.0023	1.02	0.0243	0.0000	0.02	CO
ZECZPV		0.0307	-0.0010	-0.44	0.0240	-0.0003	-0.17	OE
ZJ4CH7		0.0320	0.0003	0.15	0.0253	0.0010	0.60	GD
ZQ27AD		0.0277	-0.0039	-1.72	0.0206	-0.0037	-2.13	AE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent
SULFUR (S)

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.0317	Percent	0.0243	Percent
Stnd Dev Btwn Labs	0.0023	Percent	0.0017	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 128 of 141 reporting participants

Comments on assigned Data Flags for Analysis #173

WebCode	Flag	Analyst Comment
BQ6BFY	M	Laboratory did not submit data for sample L21.
GP9P8E	X	Data for sample L22 are high.
HAVRKT	X	Data for both samples are low. Inconsistent within the determinations of both samples.
HXXX4P	X	Data for sample L21 are low.
MW7TCD	X	Data for sample L22 are high.
P6EQQ9	X	Data for sample L21 are low.
V2U324	X	Data for sample L22 are high.
WP3KFB	X	Data for both samples are low.
WTFCFC	X	Data for sample L22 are high.

Cycle 107
3rd Q, 2014

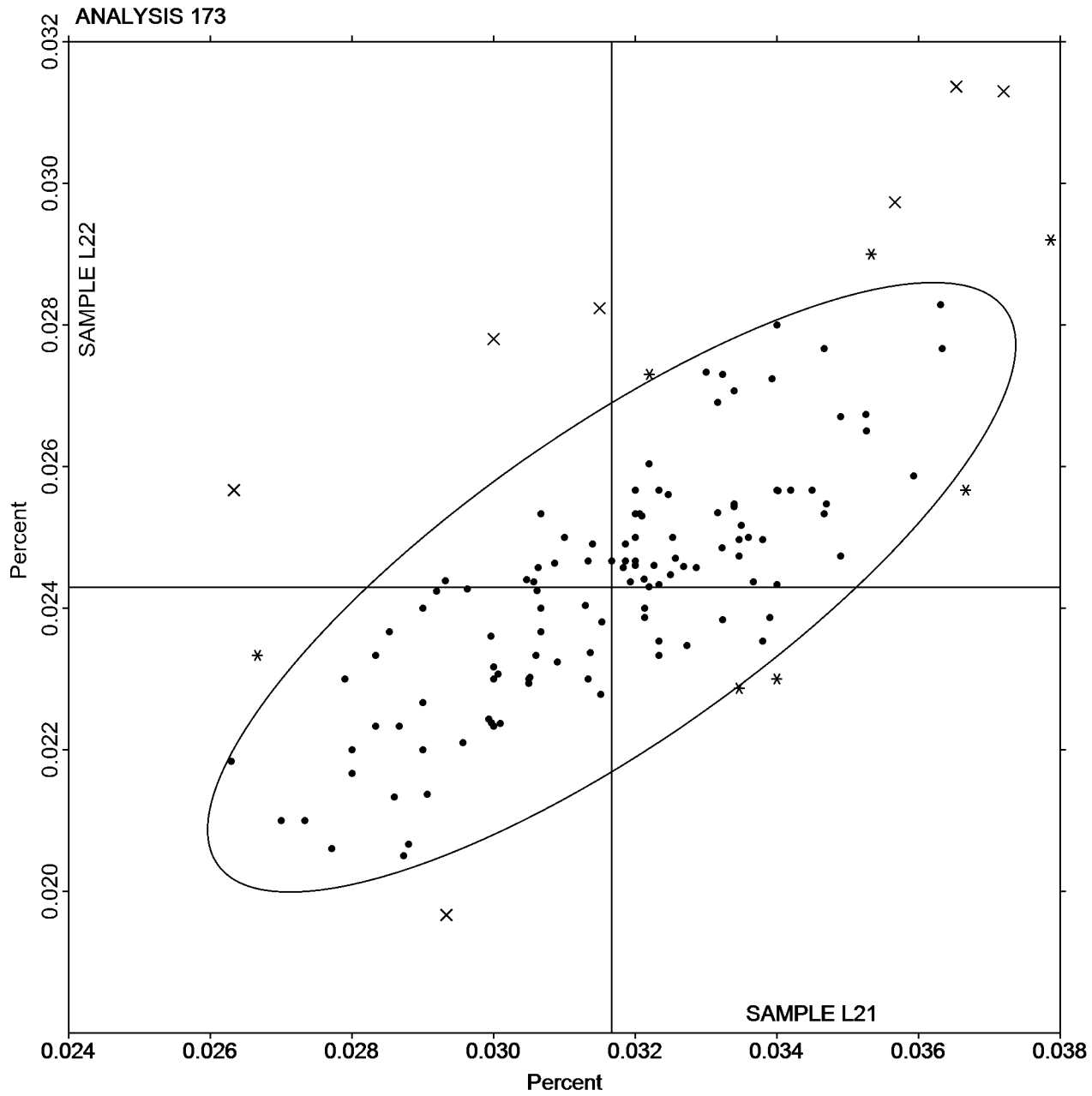
Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent
SULFUR (S)

SAMPLE L21
0.0317 Percent

SAMPLE L22
0.0243 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.2270	-0.0033	-0.82	0.2190	-0.0052	-1.30	OE
2DCJNH		0.2279	-0.0024	-0.60	0.2225	-0.0017	-0.43	OE
2E2W4F		0.2330	0.0027	0.65	0.2248	0.0006	0.15	IC
2NQL24		0.2325	0.0022	0.53	0.2258	0.0016	0.40	OE
2QW7P4		0.2263	-0.0040	-0.98	0.2203	-0.0039	-0.97	OE
2RTCGV	*	0.2267	-0.0037	-0.90	0.2267	0.0024	0.60	DR
2Y9XJ8	*	0.2407	0.0104	2.54	0.2348	0.0106	2.63	OE
34JHW8		0.2297	-0.0007	-0.17	0.2250	0.0008	0.19	OE
384H3E		0.2283	-0.0020	-0.49	0.2220	-0.0022	-0.55	OE
3E28L4		0.2247	-0.0057	-1.39	0.2187	-0.0056	-1.38	OE
3ZV2KD	X	0.2513	0.0209	5.13	0.2415	0.0173	4.29	OE
42MEMW		0.2323	0.0020	0.49	0.2247	0.0004	0.11	OE
4946ZB	X	0.2057	-0.0247	-6.05	0.2130	-0.0112	-2.78	GR
49QGRW		0.2298	-0.0006	-0.14	0.2266	0.0023	0.58	OE
4LCQH9		0.2330	0.0027	0.65	0.2287	0.0044	1.10	OE
4LCZ2R		0.2327	0.0023	0.57	0.2277	0.0034	0.85	IC
4WWZ73	X	0.2603	0.0300	7.36	0.2560	0.0318	7.87	OE
667TQW		0.2283	-0.0020	-0.49	0.2256	0.0014	0.35	OE
6CYDLW	X	0.2230	-0.0073	-1.80	0.2110	-0.0132	-3.28	OE
6QF9Z8		0.2367	0.0063	1.55	0.2280	0.0038	0.93	OE
6TTVJ8		0.2270	-0.0033	-0.82	0.2210	-0.0032	-0.80	OE
7GQXAD		0.2295	-0.0008	-0.21	0.2227	-0.0016	-0.39	OE
7HRLY4	*	0.2300	-0.0003	-0.08	0.2300	0.0058	1.43	OE
88HH36		0.2297	-0.0007	-0.17	0.2210	-0.0032	-0.80	OE
8CX7M2		0.2296	-0.0008	-0.19	0.2275	0.0033	0.81	OE
8D4HCQ		0.2366	0.0063	1.54	0.2285	0.0043	1.06	OE
8GTXVY		0.2331	0.0028	0.68	0.2259	0.0017	0.41	OE
8K7L7V		0.2323	0.0020	0.49	0.2262	0.0019	0.48	OE
8MU9PB		0.2283	-0.0020	-0.49	0.2207	-0.0036	-0.88	OE
8XX47U		0.2370	0.0067	1.63	0.2297	0.0054	1.35	OE
8ZMHQX	X	0.2493	0.0190	4.66	0.2237	-0.0006	-0.14	OE
99AV6N		0.2321	0.0018	0.44	0.2237	-0.0005	-0.13	OE
9BJ4A2		0.2327	0.0023	0.57	0.2247	0.0004	0.11	DR
9D7KLV		0.2289	-0.0015	-0.36	0.2260	0.0017	0.43	OE
9UVNCW		0.2273	-0.0030	-0.74	0.2213	-0.0029	-0.72	IC
A4CXQG		0.2313	0.0010	0.24	0.2230	-0.0012	-0.31	OE
AEUFPF		0.2300	-0.0003	-0.08	0.2217	-0.0026	-0.64	GD
ATET4A		0.2290	-0.0013	-0.33	0.2237	-0.0006	-0.14	OE
B9JM74	X	0.2240	-0.0063	-1.56	0.2117	-0.0126	-3.11	OE
BCRTUQ	X	0.2153	-0.0150	-3.68	0.2123	-0.0119	-2.95	OE
BFHBLM		0.2313	0.0010	0.24	0.2267	0.0024	0.60	OE
BQ6BFY	X	0.2440	0.0137	3.35	0.2337	0.0094	2.34	OE
BQAHTR	*	0.2363	0.0060	1.47	0.2337	0.0094	2.34	OE
C3D93D		0.2347	0.0043	1.06	0.2270	0.0028	0.68	DR
C3UHYK	X	0.2333	0.0030	0.73	0.2200	-0.0042	-1.05	OE
CAV2T4		0.2317	0.0013	0.32	0.2223	-0.0019	-0.47	OE
CE7WT8		0.2317	0.0013	0.32	0.2243	0.0001	0.02	OE
CGV3CH		0.2303	0.0000	0.00	0.2237	-0.0006	-0.14	OE
CT6ZZJ		0.2295	-0.0009	-0.22	0.2228	-0.0014	-0.35	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
CVN2U6	X	0.2140	-0.0163	-4.01	0.2153	-0.0089	-2.21	XX
D87RJ3		0.2256	-0.0048	-1.17	0.2188	-0.0054	-1.35	OE
D9ZHPG		0.2286	-0.0017	-0.42	0.2213	-0.0029	-0.73	OE
DDRW6B		0.2295	-0.0008	-0.21	0.2210	-0.0032	-0.80	OE
DHZ994		0.2283	-0.0020	-0.49	0.2217	-0.0025	-0.62	OE
DKPGFJ		0.2328	0.0025	0.60	0.2241	-0.0002	-0.04	OE
DLJA3P		0.2320	0.0017	0.41	0.2280	0.0038	0.93	OE
E7AQ2H		0.2338	0.0035	0.86	0.2257	0.0014	0.35	DR
EVNJ8U		0.2358	0.0055	1.35	0.2309	0.0066	1.64	OE
EXB7W2		0.2310	0.0007	0.16	0.2230	-0.0012	-0.31	OE
FRZF3U		0.2327	0.0023	0.57	0.2247	0.0004	0.11	DR
FU8Q2H		0.2357	0.0053	1.31	0.2280	0.0038	0.93	OE
GE8DYR		0.2362	0.0059	1.44	0.2277	0.0034	0.85	GD
GKUBJ9		0.2333	0.0030	0.73	0.2247	0.0004	0.11	OE
GP9P8E	X	0.2397	0.0093	2.29	0.2383	0.0141	3.49	OE
GWPGFR		0.2303	0.0000	0.00	0.2257	0.0014	0.35	OE
H3P3YF		0.2323	0.0020	0.49	0.2260	0.0018	0.44	OE
H66BGF		0.2290	-0.0013	-0.33	0.2220	-0.0022	-0.55	OE
HAVRKT	X	0.2220	-0.0083	-2.05	0.2090	-0.0152	-3.77	OE
HEK9Y6		0.2237	-0.0067	-1.64	0.2210	-0.0032	-0.80	OE
HP962R		0.2297	-0.0007	-0.17	0.2247	0.0004	0.11	DR
HVEW94	*	0.2420	0.0117	2.86	0.2363	0.0121	3.00	OE
HXXX4P		0.2263	-0.0040	-0.98	0.2190	-0.0052	-1.30	OE
J2CXXV		0.2267	-0.0037	-0.90	0.2220	-0.0022	-0.55	OE
J38QGL		0.2270	-0.0033	-0.82	0.2203	-0.0039	-0.97	OE
JBKFKZ		0.2314	0.0011	0.26	0.2267	0.0024	0.60	OE
K8Y39C		0.2307	0.0003	0.08	0.2250	0.0008	0.19	OE
KANJCH		0.2370	0.0067	1.63	0.2277	0.0034	0.85	OE
KEVYTT		0.2347	0.0043	1.06	0.2260	0.0018	0.44	GD
KR7D8D		0.2310	0.0007	0.16	0.2267	0.0024	0.60	OE
L68LC9		0.2293	-0.0010	-0.25	0.2220	-0.0022	-0.55	OE
L8D7Y9		0.2357	0.0054	1.31	0.2273	0.0030	0.75	OE
LZ8GDU		0.2340	0.0037	0.90	0.2313	0.0071	1.76	IC
M3W6BF		0.2367	0.0063	1.55	0.2300	0.0058	1.43	OE
MEBVGD		0.2301	-0.0002	-0.06	0.2244	0.0002	0.05	OE
MGDVEP		0.2287	-0.0017	-0.41	0.2250	0.0008	0.19	OE
MW7TCD		0.2290	-0.0013	-0.33	0.2187	-0.0056	-1.38	OE
MZ9KTQ		0.2293	-0.0010	-0.26	0.2229	-0.0013	-0.32	OE
N3MQFQ		0.2283	-0.0021	-0.51	0.2218	-0.0024	-0.60	OE
N6JW8J	X	0.2493	0.0190	4.66	0.2310	0.0068	1.68	OE
NACWLE		0.2313	0.0010	0.23	0.2276	0.0034	0.84	OE
NJ4CEP		0.2287	-0.0016	-0.40	0.2230	-0.0012	-0.31	OE
NT6Z4Z	X	0.2203	-0.0100	-2.46	0.2397	0.0154	3.82	OE
NUYH8M		0.2309	0.0006	0.14	0.2245	0.0003	0.07	OE
P6EQQ9	X	0.2457	0.0153	3.76	0.2023	-0.0219	-5.43	OE
PD88UJ		0.2313	0.0010	0.24	0.2243	0.0001	0.02	OE
PJVMPH		0.2353	0.0050	1.22	0.2320	0.0078	1.92	OE
PTNWDF		0.2250	-0.0053	-1.31	0.2197	-0.0046	-1.13	OE
PZNFEP	X	0.2453	0.0150	3.68	0.2377	0.0134	3.33	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

		Sample L21			Sample L22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
QEV3UX		0.2338	0.0035	0.85	0.2276	0.0034	0.84	OE
QKM4EK		0.2302	-0.0001	-0.03	0.2244	0.0001	0.03	OE
QM88YB		0.2247	-0.0057	-1.39	0.2200	-0.0042	-1.05	OE
QY7VYK	X	0.2097	-0.0207	-5.07	0.2047	-0.0196	-4.85	OE
RF783E		0.2323	0.0020	0.49	0.2270	0.0028	0.68	GR
RK2UZA	X	0.2533	0.0230	5.64	0.2500	0.0258	6.38	GD
RX7CAN	X	0.2473	0.0170	4.17	0.2373	0.0131	3.24	OE
T234DE		0.2279	-0.0025	-0.61	0.2223	-0.0019	-0.47	OE
TE8GFX		0.2349	0.0046	1.12	0.2314	0.0072	1.78	OE
TECU29		0.2217	-0.0087	-2.13	0.2167	-0.0075	-1.87	OE
TF2ZKJ		0.2250	-0.0053	-1.31	0.2183	-0.0059	-1.46	OE
TNGVC8		0.2317	0.0013	0.32	0.2245	0.0002	0.05	OE
TTNGZ4		0.2290	-0.0013	-0.33	0.2203	-0.0039	-0.97	OE
TUGAZU		0.2284	-0.0019	-0.48	0.2207	-0.0036	-0.88	OE
TWUTAR		0.2273	-0.0030	-0.74	0.2243	0.0001	0.02	GD
U262CG		0.2327	0.0023	0.57	0.2277	0.0034	0.85	XR
UGV7HP		0.2283	-0.0020	-0.49	0.2200	-0.0042	-1.05	OE
UKPCQZ		0.2223	-0.0080	-1.96	0.2173	-0.0069	-1.71	OE
V2U324		0.2277	-0.0026	-0.64	0.2228	-0.0014	-0.35	OE
V2WLE7	*	0.2213	-0.0090	-2.21	0.2140	-0.0102	-2.54	OE
VDNCV4	*	0.2220	-0.0083	-2.05	0.2210	-0.0032	-0.80	OE
VJDRJB	X	0.1790	-0.0513	-12.59	0.1680	-0.0562	-13.93	OE
VMEZNL		0.2263	-0.0040	-0.98	0.2197	-0.0046	-1.13	OE
WF7VBR		0.2237	-0.0067	-1.64	0.2207	-0.0036	-0.88	OE
WF9LJV		0.2280	-0.0023	-0.57	0.2200	-0.0042	-1.05	OE
WJBFL8		0.2340	0.0037	0.90	0.2287	0.0044	1.10	OE
WP3KFB	*	0.2197	-0.0107	-2.62	0.2153	-0.0089	-2.21	OE
WPEBFE	*	0.2373	0.0069	1.70	0.2248	0.0006	0.15	OE
WTFCFC	*	0.2330	0.0027	0.65	0.2317	0.0074	1.84	XX
XDGZ9J		0.2263	-0.0040	-0.98	0.2197	-0.0046	-1.13	OE
XWTNGB		0.2307	0.0003	0.08	0.2233	-0.0009	-0.22	OE
YDVV6C		0.2247	-0.0057	-1.39	0.2193	-0.0049	-1.21	DR
YFHCG6		0.2311	0.0008	0.19	0.2239	-0.0003	-0.08	DR
YM4A8D		0.2280	-0.0023	-0.57	0.2213	-0.0029	-0.72	OE
YPQT9B	*	0.2400	0.0097	2.37	0.2300	0.0058	1.43	OE
YWBZTP		0.2337	0.0033	0.81	0.2267	0.0024	0.60	OE
YXLZWB		0.2315	0.0011	0.28	0.2297	0.0055	1.36	OE
YZAA7C		0.2267	-0.0037	-0.90	0.2200	-0.0042	-1.05	OE
ZC3YH3		0.2333	0.0030	0.73	0.2263	0.0021	0.52	OE
ZECZPV		0.2250	-0.0053	-1.31	0.2207	-0.0036	-0.88	OE
ZJ4CH7	X	0.2367	0.0063	1.55	0.2403	0.0161	3.99	GD
ZQ27AD		0.2266	-0.0038	-0.93	0.2204	-0.0039	-0.96	AE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.2303	Percent	0.2242	Percent
Stnd Dev Btwn Labs	0.0041	Percent	0.0040	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 119 of 140 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

Comments on assigned Data Flags for Analysis #174

WebCode	Flag	Analyst Comment
3ZV2KD	X	Data for both samples are high. Possible Systematic error.
4946ZB	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of sample L22.
4WWZ73	X	Data for both samples are high. Possible Systematic error.
6CYDLW	X	Data for sample L22 are low. Inconsistent in testing between samples.
8ZMHQX	X	Data for sample L21 are high. Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
B9JM74	X	Data for sample L22 are low. Inconsistent in testing between samples.
BCRTUQ	X	Data for both samples are low. Possible Systematic error.
BQ6BFY	X	Data for sample L21 are high. Inconsistent in testing between samples.
C3UHYK	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
CVN2U6	X	Data for sample L21 are low. Inconsistent in testing between samples.
GP9P8E	X	Data for sample L22 are high. Inconsistent in testing between samples.
HAVRKT	X	Data for sample L22 are low. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
N6JW8J	X	Data for sample L21 are high. Inconsistent in testing between samples.
NT6Z4Z	X	Data for sample L22 are high. Inconsistent in testing between samples.
P6EQQ9	X	Data for sample L21 are high and data for sample L22 are low.

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

PZNFEP	X	Data for both samples are high. Possible Systematic error.
QY7VYK	X	Data for both samples are low. Possible Systematic error.
RK2UZA	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample L21.
RX7CAN	X	Data for both samples are high. Possible Systematic error.
VJDRJB	X	Data for both samples are low. Possible Systematic error. Inconsistent within the determinations of sample L21.
ZJ4CH7	X	Data for sample L22 are high. Inconsistent in testing between samples.

Cycle 107
3rd Q, 2014

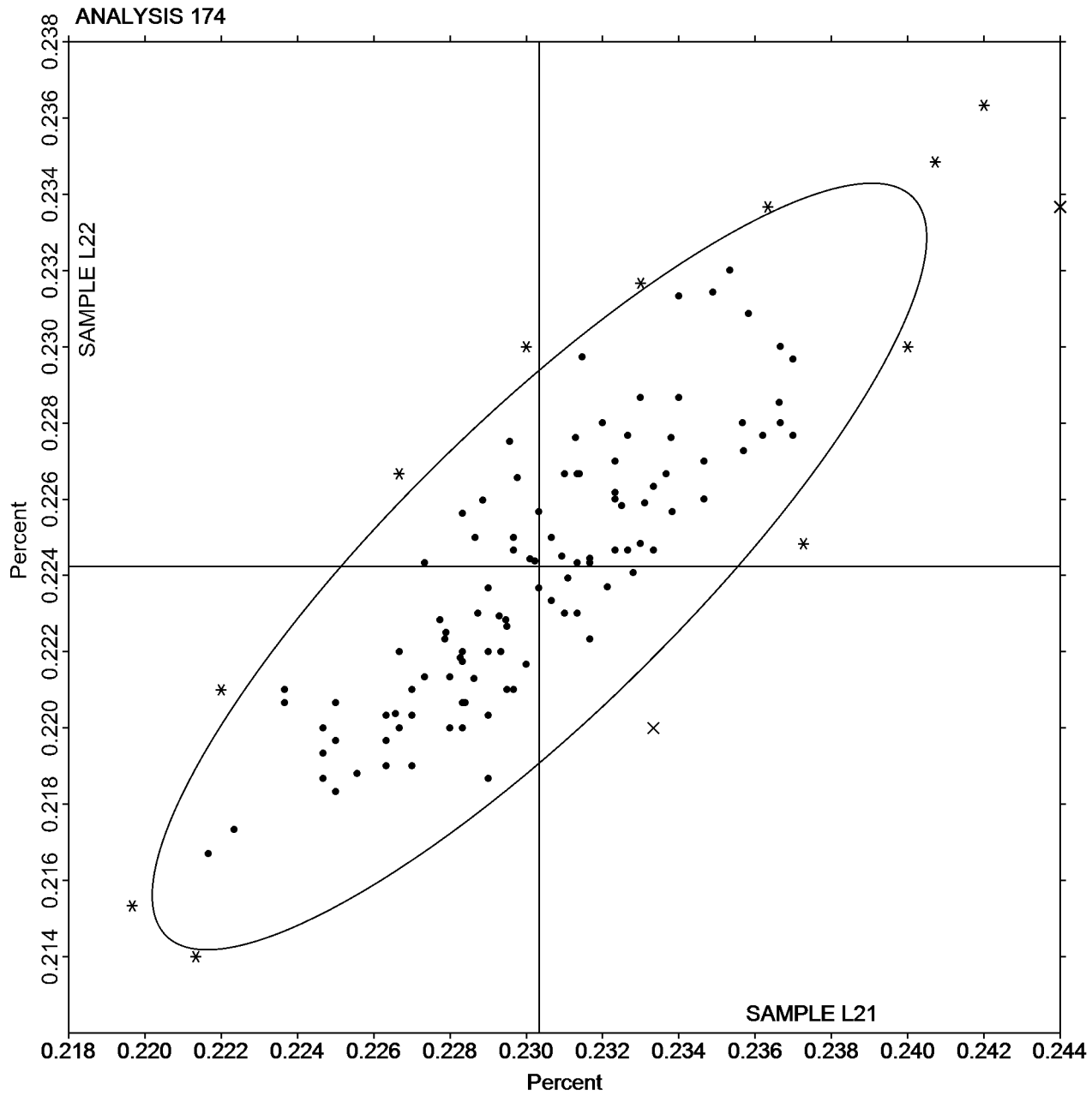
Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent
SILICON (Si)

SAMPLE L21
0.2303 Percent

SAMPLE L22
0.2242 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent
COPPER (Cu)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.2793	0.0023	0.28	0.2343	0.0010	0.14	OE
2DCJNH		0.2743	-0.0027	-0.32	0.2283	-0.0050	-0.74	OE
2E2W4F		0.2765	-0.0005	-0.06	0.2339	0.0006	0.08	IC
2NQL24		0.2738	-0.0032	-0.39	0.2299	-0.0035	-0.51	OE
2QW7P4		0.2790	0.0020	0.24	0.2333	0.0000	-0.01	OE
2RTCGV	X	0.2833	0.0063	0.77	0.2200	-0.0134	-1.96	DR
2Y9XJ8		0.2903	0.0133	1.61	0.2440	0.0106	1.55	OE
34JHW8		0.2763	-0.0007	-0.08	0.2350	0.0016	0.24	OE
384H3E		0.2603	-0.0167	-2.02	0.2187	-0.0147	-2.16	OE
3E28L4		0.2863	0.0093	1.13	0.2423	0.0090	1.31	OE
3ZV2KD		0.2744	-0.0026	-0.31	0.2315	-0.0018	-0.27	OE
42MEMW	X	0.2837	0.0067	0.81	0.2610	0.0276	4.05	OE
49QGRW		0.2734	-0.0036	-0.44	0.2330	-0.0004	-0.05	OE
4LCQH9		0.2733	-0.0037	-0.44	0.2313	-0.0020	-0.30	OE
4LCZ2R		0.2800	0.0030	0.36	0.2370	0.0036	0.53	IC
4WWZ73	*	0.2910	0.0140	1.69	0.2500	0.0166	2.44	OE
667TQW		0.2794	0.0024	0.29	0.2338	0.0004	0.06	OE
6QF9Z8		0.2690	-0.0080	-0.97	0.2220	-0.0114	-1.67	OE
6TTVJ8		0.2797	0.0027	0.32	0.2360	0.0026	0.39	OE
7GQXAD		0.2822	0.0052	0.63	0.2346	0.0012	0.18	OE
7HRLY4	*	0.2567	-0.0203	-2.46	0.2200	-0.0134	-1.96	OE
88HH36		0.2670	-0.0100	-1.21	0.2243	-0.0090	-1.33	OE
8CX7M2		0.2648	-0.0122	-1.47	0.2271	-0.0062	-0.92	OE
8D4HCQ	*	0.2866	0.0096	1.17	0.2329	-0.0004	-0.06	OE
8GTXVY		0.2833	0.0063	0.76	0.2359	0.0025	0.37	OE
8K7L7V		0.2699	-0.0071	-0.86	0.2275	-0.0059	-0.87	OE
8MU9PB		0.2863	0.0093	1.13	0.2400	0.0066	0.97	OE
8XX47U		0.2770	0.0000	0.00	0.2310	-0.0024	-0.35	OE
8ZMHQX		0.2713	-0.0057	-0.69	0.2283	-0.0050	-0.74	OE
99AV6N		0.2769	-0.0001	-0.01	0.2361	0.0027	0.40	OE
9BJ4A2		0.2787	0.0017	0.20	0.2333	0.0000	-0.01	DR
9D7KLV		0.2816	0.0046	0.55	0.2395	0.0061	0.90	OE
9UVNCW		0.2780	0.0010	0.12	0.2377	0.0043	0.63	IC
A4CXQG	*	0.2583	-0.0187	-2.26	0.2160	-0.0174	-2.55	OE
AEUFPF	*	0.2707	-0.0063	-0.77	0.2363	0.0030	0.43	GD
ATET4A		0.2770	0.0000	0.00	0.2317	-0.0017	-0.25	OE
B9JM74		0.2800	0.0030	0.36	0.2243	-0.0090	-1.33	OE
BCRTUQ		0.2703	-0.0067	-0.81	0.2240	-0.0094	-1.37	OE
BFHBLM		0.2813	0.0043	0.52	0.2337	0.0003	0.04	OE
BQAHTR		0.2757	-0.0013	-0.16	0.2360	0.0026	0.39	OE
C3D93D		0.2883	0.0113	1.37	0.2471	0.0137	2.01	IC
C3UHYK		0.2700	-0.0070	-0.85	0.2267	-0.0067	-0.98	OE
CAV2T4		0.2767	-0.0003	-0.04	0.2297	-0.0037	-0.54	OE
CE7WT8		0.2730	-0.0040	-0.48	0.2287	-0.0047	-0.69	OE
CGV3CH		0.2793	0.0023	0.28	0.2340	0.0006	0.09	OE
CH9PTW		0.2733	-0.0037	-0.44	0.2300	-0.0034	-0.49	AA
CT6ZZJ	*	0.2532	-0.0238	-2.88	0.2158	-0.0176	-2.58	OE
D87RJ3		0.2804	0.0034	0.41	0.2360	0.0026	0.38	OE
D9ZHPG		0.2763	-0.0007	-0.08	0.2202	-0.0131	-1.93	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent
COPPER (Cu)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
DDRW6B		0.2768	-0.0002	-0.02	0.2319	-0.0014	-0.21	OE
DHZ994		0.2759	-0.0011	-0.14	0.2306	-0.0027	-0.40	OE
DKPGFJ		0.2775	0.0005	0.06	0.2364	0.0030	0.44	OE
DLJA3P		0.2773	0.0003	0.04	0.2317	-0.0017	-0.25	OE
E7AQ2H		0.2783	0.0013	0.16	0.2341	0.0007	0.10	DR
EVNJ8U		0.2894	0.0124	1.50	0.2439	0.0106	1.55	OE
EXB7W2		0.2837	0.0067	0.81	0.2373	0.0040	0.58	OE
FRZF3U		0.2803	0.0033	0.40	0.2327	-0.0007	-0.10	DR
FU8Q2H		0.2860	0.0090	1.09	0.2410	0.0076	1.12	OE
GE8DYR		0.2863	0.0093	1.12	0.2403	0.0069	1.01	GD
GKUBJ9		0.2900	0.0130	1.57	0.2427	0.0093	1.36	OE
GP9P8E		0.2763	-0.0007	-0.08	0.2360	0.0026	0.39	OE
GWPGFR		0.2797	0.0027	0.32	0.2347	0.0013	0.19	OE
H3P3YF		0.2777	0.0007	0.08	0.2300	-0.0034	-0.49	AE
H66BGF		0.2753	-0.0017	-0.20	0.2303	-0.0030	-0.45	OE
HAVRKT		0.2750	-0.0020	-0.24	0.2370	0.0036	0.53	OE
HEK9Y6	*	0.2537	-0.0233	-2.82	0.2147	-0.0187	-2.74	OE
HP962R		0.2660	-0.0110	-1.33	0.2270	-0.0064	-0.93	DR
HVEW94		0.2927	0.0157	1.90	0.2473	0.0140	2.05	OE
HXXX4P		0.2737	-0.0033	-0.40	0.2290	-0.0044	-0.64	OE
J2CXXV		0.2737	-0.0033	-0.40	0.2317	-0.0017	-0.25	OE
J38QGL		0.2790	0.0020	0.24	0.2317	-0.0017	-0.25	OE
JBKFKZ		0.2837	0.0067	0.81	0.2399	0.0065	0.96	OE
K8Y39C		0.2767	-0.0003	-0.04	0.2310	-0.0024	-0.35	OE
KANJCH		0.2733	-0.0037	-0.44	0.2307	-0.0027	-0.40	OE
KEVYTT		0.2783	0.0013	0.16	0.2373	0.0040	0.58	GD
KR7D8D	*	0.2540	-0.0230	-2.78	0.2160	-0.0174	-2.55	OE
L68LC9		0.2803	0.0033	0.40	0.2340	0.0006	0.09	OE
L8D7Y9		0.2824	0.0054	0.65	0.2341	0.0007	0.10	OE
LZ8GDU		0.2720	-0.0050	-0.61	0.2277	-0.0057	-0.84	IC
M3W6BF		0.2610	-0.0160	-1.94	0.2337	0.0003	0.04	OE
MEBVGD		0.2770	0.0000	0.00	0.2333	-0.0001	-0.01	OE
MGDVEP	*	0.2713	-0.0057	-0.69	0.2370	0.0036	0.53	OE
MW7TCD	X	0.2553	-0.0217	-2.62	0.2083	-0.0250	-3.67	OE
MZ9KTQ		0.2774	0.0004	0.04	0.2335	0.0001	0.02	OE
N3MQFQ		0.2744	-0.0026	-0.31	0.2267	-0.0067	-0.98	OE
NACWLE		0.2767	-0.0003	-0.04	0.2326	-0.0008	-0.12	OE
NJ4CEP		0.2770	0.0000	0.00	0.2336	0.0002	0.03	OE
NUYH8M		0.2898	0.0128	1.55	0.2434	0.0101	1.48	OE
P6EQQ9	X	0.2487	-0.0283	-3.43	0.1977	-0.0357	-5.24	OE
PD88UJ		0.2737	-0.0033	-0.40	0.2310	-0.0024	-0.35	OE
PJVMPH		0.2617	-0.0153	-1.86	0.2223	-0.0110	-1.62	OE
PTNWDF		0.2800	0.0030	0.36	0.2383	0.0050	0.73	OE
QEV3UX		0.2835	0.0065	0.79	0.2402	0.0068	1.00	OE
QKM4EK		0.2756	-0.0014	-0.17	0.2324	-0.0010	-0.14	OE
QM88YB		0.2700	-0.0070	-0.85	0.2300	-0.0034	-0.49	OE
QY7VYK		0.2770	0.0000	0.00	0.2343	0.0010	0.14	OE
RF783E		0.2740	-0.0030	-0.36	0.2327	-0.0007	-0.10	IC
RK2UZA	*	0.3000	0.0230	2.78	0.2533	0.0200	2.93	GD

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent
COPPER (Cu)

		Sample L21			Sample L22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
RX7CAN		0.2830	0.0060	0.73	0.2353	0.0020	0.29	OE
T234DE		0.2748	-0.0022	-0.26	0.2318	-0.0016	-0.23	OE
TE8GFX		0.2889	0.0119	1.44	0.2410	0.0076	1.12	OE
TECU29	*	0.2665	-0.0105	-1.27	0.2327	-0.0007	-0.10	OE
TF2ZKJ		0.2833	0.0063	0.77	0.2333	0.0000	-0.01	OE
TNGVC8		0.2814	0.0044	0.54	0.2364	0.0030	0.44	OE
TTNGZ4		0.2770	0.0000	0.00	0.2333	0.0000	-0.01	OE
TUGAZU		0.2898	0.0128	1.55	0.2433	0.0100	1.46	OE
TWUTAR		0.2737	-0.0033	-0.40	0.2310	-0.0024	-0.35	GD
U262CG		0.2763	-0.0007	-0.08	0.2353	0.0020	0.29	XR
UGV7HP		0.2793	0.0023	0.28	0.2320	-0.0014	-0.20	OE
UKPCQZ		0.2873	0.0103	1.25	0.2410	0.0076	1.12	OE
V2U324		0.2798	0.0028	0.33	0.2393	0.0059	0.87	OE
V2WLE7		0.2603	-0.0167	-2.02	0.2200	-0.0134	-1.96	OE
VDNCV4		0.2713	-0.0057	-0.69	0.2300	-0.0034	-0.49	OE
VJDRJB	X	0.2620	-0.0150	-1.82	0.2127	-0.0207	-3.04	OE
VMEZNL		0.2810	0.0040	0.48	0.2367	0.0033	0.48	OE
WF9LJV		0.2600	-0.0170	-2.06	0.2180	-0.0154	-2.25	OE
WJBFL8		0.2913	0.0143	1.73	0.2430	0.0096	1.41	OE
WP3KFB	X	0.2450	-0.0320	-3.87	0.2177	-0.0157	-2.30	OE
WPEBFE		0.2826	0.0056	0.67	0.2412	0.0078	1.15	OE
WTFCFC		0.2800	0.0030	0.36	0.2417	0.0083	1.22	XX
XDGZ9J		0.2747	-0.0023	-0.28	0.2423	0.0090	1.31	OE
XWTNGB		0.2813	0.0043	0.52	0.2303	-0.0030	-0.45	OE
YDVV6C		0.2783	0.0013	0.16	0.2367	0.0033	0.48	DR
YFHCG6		0.2773	0.0003	0.04	0.2338	0.0004	0.06	DR
YM4A8D		0.2893	0.0123	1.49	0.2393	0.0060	0.87	OE
YPQT9B		0.2700	-0.0070	-0.85	0.2300	-0.0034	-0.49	OE
YWBZTP		0.2790	0.0020	0.24	0.2367	0.0033	0.48	OE
YXLZWB		0.2742	-0.0028	-0.34	0.2340	0.0006	0.09	OE
YZAA7C	X	0.2133	-0.0637	-7.71	0.2400	0.0066	0.97	OE
ZC3YH3		0.2820	0.0050	0.61	0.2350	0.0016	0.24	OE
ZECZPV		0.2710	-0.0060	-0.73	0.2303	-0.0030	-0.45	OE
ZJ4CH7		0.2817	0.0047	0.56	0.2510	0.0176	2.59	GD
ZQ27AD		0.2786	0.0016	0.19	0.2300	-0.0034	-0.49	AE

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.2770	Percent	0.2334	Percent
Stnd Dev Btwn Labs	0.0083	Percent	0.0068	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 121 of 133 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent
COPPER (Cu)

Comments on assigned Data Flags for Analysis #175

WebCode	Flag	Analyst Comment
2RTCGV	X	Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
42MEMW	X	Data for sample L22 are high. Inconsistent in testing between samples.
MW7TCD	X	Data for sample L22 are low. Inconsistent in testing between samples.
P6EQQ9	X	Data for both samples are low. Possible Systematic error.
VJDRJB	X	Data for sample L22 are low. Inconsistent in testing between samples.
WP3KFB	X	Data for sample L21 are low. Inconsistent in testing between samples.
YZAA7C	X	Data for sample L21 are low. Inconsistent in testing between samples.

Cycle 107
3rd Q, 2014

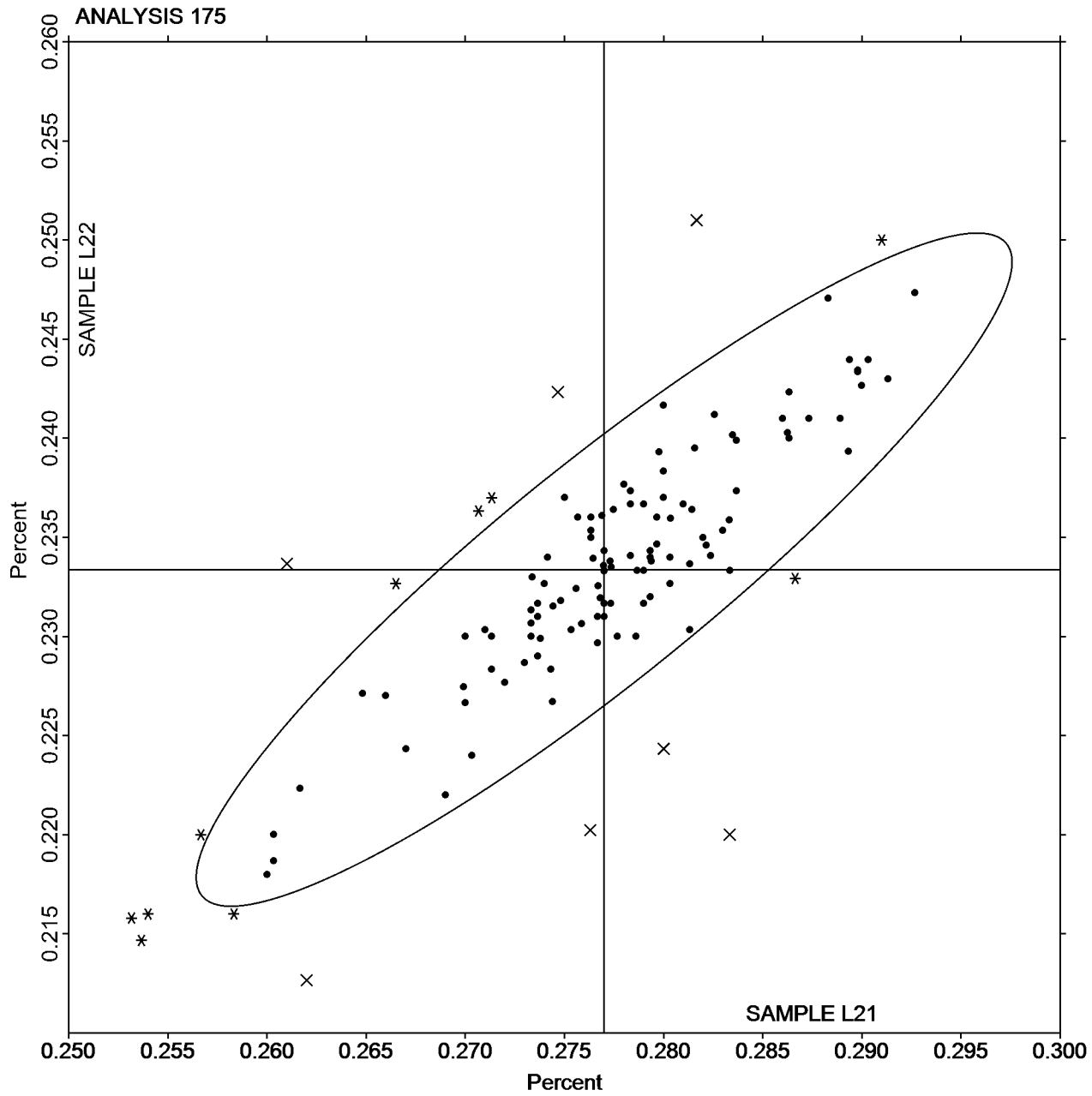
Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent
COPPER (Cu)

SAMPLE L21
0.2770 Percent

SAMPLE L22
0.2334 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent
NICKEL (Ni)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.1267	0.0024	0.61	0.1000	0.0020	0.63	OE
2DCJNH		0.1247	0.0004	0.10	0.0990	0.0010	0.32	OE
2E2W4F		0.1221	-0.0022	-0.56	0.0958	-0.0022	-0.69	IC
2NQL24		0.1253	0.0010	0.25	0.0967	-0.0013	-0.39	OE
2QW7P4		0.1187	-0.0056	-1.43	0.0930	-0.0050	-1.57	OE
2RTCGV		0.1267	0.0024	0.61	0.0967	-0.0013	-0.41	DR
2Y9XJ8		0.1310	0.0067	1.72	0.1025	0.0045	1.41	OE
34JHW8		0.1233	-0.0010	-0.24	0.0973	-0.0007	-0.20	OE
384H3E		0.1273	0.0030	0.78	0.1007	0.0027	0.84	OE
3E28L4		0.1250	0.0007	0.18	0.0997	0.0017	0.53	OE
3ZV2KD		0.1229	-0.0014	-0.35	0.0957	-0.0023	-0.73	OE
42MEMW		0.1223	-0.0020	-0.50	0.0973	-0.0007	-0.20	OE
49QGRW		0.1180	-0.0063	-1.60	0.0947	-0.0033	-1.04	OE
4LCQH9		0.1280	0.0037	0.95	0.1017	0.0037	1.16	OE
4LCZ2R		0.1253	0.0010	0.27	0.0973	-0.0007	-0.20	IC
4WWZ73		0.1210	-0.0033	-0.84	0.0987	0.0007	0.21	OE
667TQW		0.1278	0.0035	0.91	0.0993	0.0013	0.40	OE
6CYDLW		0.1217	-0.0026	-0.67	0.0940	-0.0040	-1.25	OE
6QF9Z8		0.1240	-0.0003	-0.07	0.0980	0.0000	0.00	OE
6TTVJ8	*	0.1137	-0.0106	-2.71	0.0897	-0.0083	-2.61	OE
7GQXAD		0.1261	0.0018	0.45	0.0991	0.0011	0.36	OE
7HRLY4		0.1233	-0.0010	-0.24	0.1000	0.0020	0.63	OE
88HH36		0.1210	-0.0033	-0.84	0.0950	-0.0030	-0.94	OE
8CX7M2		0.1225	-0.0018	-0.45	0.0984	0.0004	0.14	OE
8D4HCQ		0.1174	-0.0069	-1.75	0.0942	-0.0038	-1.19	OE
8GTXVY		0.1307	0.0064	1.63	0.1038	0.0058	1.82	OE
8K7L7V		0.1265	0.0022	0.57	0.1000	0.0020	0.62	OE
8MU9PB		0.1320	0.0077	1.97	0.1027	0.0047	1.47	OE
8XX47U		0.1187	-0.0056	-1.43	0.0927	-0.0053	-1.67	OE
8ZMHQX	*	0.1347	0.0104	2.65	0.1057	0.0077	2.41	OE
99AV6N		0.1237	-0.0006	-0.16	0.0973	-0.0007	-0.23	OE
9BJ4A2		0.1250	0.0007	0.18	0.0980	0.0000	0.00	DR
9D7KLV		0.1266	0.0023	0.60	0.0998	0.0018	0.58	OE
9UVNCW		0.1220	-0.0023	-0.58	0.0970	-0.0010	-0.31	IC
A4CXQG		0.1187	-0.0056	-1.43	0.0937	-0.0043	-1.36	OE
AEUFPF	*	0.1227	-0.0016	-0.41	0.0933	-0.0047	-1.46	GD
ATET4A		0.1243	0.0000	0.01	0.0997	0.0017	0.53	OE
B9JM74		0.1247	0.0004	0.10	0.0982	0.0002	0.06	OE
BCRTUQ		0.1170	-0.0073	-1.86	0.0923	-0.0057	-1.77	OE
BFHBLM		0.1190	-0.0053	-1.35	0.0953	-0.0027	-0.83	OE
BQ6BFY		0.1230	-0.0013	-0.33	0.0973	-0.0007	-0.20	OE
BQAHTR		0.1203	-0.0040	-1.01	0.0953	-0.0027	-0.83	OE
C3D93D	X	0.1427	0.0184	4.69	0.1128	0.0148	4.64	IC
C3UHYK		0.1200	-0.0043	-1.09	0.1000	0.0020	0.63	OE
CAV2T4		0.1263	0.0020	0.52	0.0983	0.0003	0.11	OE
CE7WT8		0.1260	0.0017	0.44	0.0987	0.0007	0.21	OE
CGV3CH		0.1253	0.0010	0.27	0.0970	-0.0010	-0.31	OE
CH9PTW		0.1300	0.0057	1.46	0.1000	0.0020	0.63	AA
CT6ZZJ	X	0.1013	-0.0230	-5.86	0.0717	-0.0263	-8.26	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent
NICKEL (Ni)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
CVN2U6		0.1193	-0.0050	-1.26	0.0917	-0.0063	-1.98	XX
D87RJ3		0.1242	-0.0001	-0.02	0.0978	-0.0002	-0.07	OE
DDRW6B		0.1262	0.0019	0.49	0.0995	0.0015	0.48	OE
DHZ994		0.1262	0.0019	0.48	0.1008	0.0028	0.88	OE
DKPGFJ		0.1243	0.0000	0.01	0.0975	-0.0005	-0.14	OE
DLJA3P		0.1220	-0.0023	-0.58	0.0933	-0.0047	-1.46	OE
E7AQ2H		0.1241	-0.0002	-0.05	0.0950	-0.0030	-0.94	DR
EVNJ8U		0.1217	-0.0026	-0.67	0.0967	-0.0013	-0.40	OE
EXB7W2		0.1220	-0.0023	-0.58	0.0960	-0.0020	-0.62	OE
FRZF3U		0.1260	0.0017	0.44	0.0980	0.0000	0.00	DR
FU8Q2H		0.1277	0.0034	0.86	0.0997	0.0017	0.53	OE
GE8DYR		0.1179	-0.0064	-1.63	0.0955	-0.0025	-0.78	GD
GKUBJ9		0.1277	0.0034	0.86	0.1010	0.0030	0.95	IC
GP9P8E		0.1220	-0.0023	-0.58	0.0970	-0.0010	-0.31	OE
GWPGFR		0.1250	0.0007	0.18	0.0980	0.0000	0.00	OE
H3P3YF		0.1263	0.0020	0.52	0.0986	0.0006	0.20	AE
H66BGF		0.1237	-0.0006	-0.16	0.0957	-0.0023	-0.71	OE
HAVRKT		0.1170	-0.0073	-1.86	0.0927	-0.0053	-1.67	OE
HEK9Y6		0.1230	-0.0013	-0.33	0.0980	0.0000	0.00	OE
HP962R		0.1250	0.0007	0.18	0.0976	-0.0004	-0.12	DR
HVEW94		0.1200	-0.0043	-1.09	0.0937	-0.0043	-1.36	OE
HXXX4P		0.1193	-0.0050	-1.26	0.0947	-0.0033	-1.04	OE
J2CXXV		0.1207	-0.0036	-0.92	0.0947	-0.0033	-1.04	OE
J38QGL		0.1210	-0.0033	-0.84	0.0947	-0.0033	-1.04	OE
JBKFKZ		0.1252	0.0009	0.24	0.0991	0.0011	0.34	OE
K8Y39C		0.1213	-0.0030	-0.75	0.0967	-0.0013	-0.41	OE
KANJCH		0.1273	0.0030	0.78	0.1013	0.0033	1.05	XX
KEVYTT		0.1257	0.0014	0.35	0.1010	0.0030	0.95	GD
KR7D8D		0.1277	0.0034	0.86	0.1013	0.0033	1.05	OE
L68LC9		0.1270	0.0027	0.69	0.0993	0.0013	0.42	OE
L8D7Y9		0.1232	-0.0011	-0.28	0.0977	-0.0003	-0.08	OE
LZ8GDU		0.1227	-0.0016	-0.41	0.0983	0.0003	0.11	IC
M3W6BF	X	0.1100	-0.0143	-3.65	0.0900	-0.0080	-2.51	OE
MEBVGD		0.1241	-0.0002	-0.06	0.0984	0.0004	0.14	OE
MGDVEP		0.1207	-0.0036	-0.92	0.0977	-0.0003	-0.10	OE
MW7TCD	X	0.1400	0.0157	4.01	0.1170	0.0190	5.97	OE
MZ9KTQ		0.1232	-0.0011	-0.28	0.0976	-0.0004	-0.12	OE
N3MQFQ		0.1321	0.0078	2.00	0.1030	0.0050	1.59	OE
N6JW8J		0.1220	-0.0023	-0.58	0.0940	-0.0040	-1.25	OE
NACWLE		0.1250	0.0007	0.18	0.1065	0.0085	2.67	OE
NJ4CEP		0.1235	-0.0008	-0.20	0.0979	-0.0001	-0.04	OE
NUYH8M		0.1272	0.0029	0.75	0.0998	0.0018	0.57	OE
P6EQQ9	X	0.0970	-0.0273	-6.96	0.1020	0.0040	1.26	OE
PD88UJ	*	0.1267	0.0024	0.61	0.0963	-0.0017	-0.52	OE
PTNWDF		0.1240	-0.0003	-0.07	0.0977	-0.0003	-0.10	OE
PZNFEP		0.1297	0.0054	1.37	0.1010	0.0030	0.95	OE
QEV3UX		0.1234	-0.0009	-0.22	0.0985	0.0005	0.15	OE
QKM4EK		0.1223	-0.0020	-0.52	0.0968	-0.0012	-0.38	OE
QM88YB		0.1290	0.0047	1.20	0.1013	0.0033	1.05	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent
NICKEL (Ni)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
QY7VYK		0.1153	-0.0090	-2.28	0.0919	-0.0061	-1.91	OE
RF783E		0.1237	-0.0006	-0.16	0.0980	0.0000	0.00	IC
RK2UZA		0.1300	0.0057	1.46	0.1000	0.0020	0.63	GD
RX7CAN		0.1223	-0.0020	-0.50	0.0963	-0.0017	-0.52	OE
T234DE		0.1241	-0.0002	-0.05	0.0994	0.0014	0.45	OE
TE8GFX		0.1223	-0.0020	-0.51	0.0979	-0.0001	-0.02	OE
TECU29		0.1265	0.0022	0.56	0.1011	0.0031	0.99	OE
TF2ZKJ		0.1273	0.0030	0.78	0.0990	0.0010	0.32	OE
TNGVC8		0.1249	0.0006	0.15	0.0981	0.0001	0.04	OE
TTNGZ4		0.1187	-0.0056	-1.43	0.0930	-0.0050	-1.57	OE
TUGAZU		0.1246	0.0003	0.08	0.0985	0.0005	0.15	OE
TWUTAR		0.1307	0.0064	1.63	0.1017	0.0037	1.16	GD
U262CG	*	0.1347	0.0104	2.65	0.1060	0.0080	2.52	XR
UGV7HP		0.1243	0.0000	0.01	0.0993	0.0013	0.42	OE
UKPCQZ		0.1240	-0.0003	-0.07	0.0980	0.0000	0.00	OE
V2U324	*	0.1303	0.0060	1.53	0.1052	0.0072	2.26	OE
V2WLE7		0.1247	0.0004	0.10	0.0990	0.0010	0.32	OE
VDNCV4		0.1230	-0.0013	-0.33	0.0960	-0.0020	-0.62	OE
VJDRJB	X	0.1370	0.0127	3.24	0.1103	0.0123	3.88	OE
VMEZNL		0.1297	0.0054	1.37	0.1027	0.0047	1.47	OE
WF7VBR		0.1177	-0.0066	-1.69	0.0933	-0.0047	-1.46	OE
WF9LJV		0.1270	0.0027	0.69	0.1000	0.0020	0.63	OE
WJBFL8		0.1237	-0.0006	-0.16	0.0983	0.0003	0.11	OE
WP3KFB	*	0.1323	0.0080	2.05	0.1063	0.0083	2.62	OE
WPEBFE		0.1257	0.0014	0.36	0.1019	0.0039	1.24	OE
WTFCFC		0.1287	0.0044	1.12	0.1007	0.0027	0.84	XX
XDGZ9J		0.1237	-0.0006	-0.16	0.1003	0.0023	0.74	OE
XWTNGB		0.1240	-0.0003	-0.07	0.0967	-0.0013	-0.41	OE
YDVV6C		0.1310	0.0067	1.71	0.1040	0.0060	1.89	DR
YFHCG6		0.1248	0.0005	0.13	0.0982	0.0002	0.07	DR
YM4A8D		0.1187	-0.0056	-1.43	0.0940	-0.0040	-1.25	OE
YPQT9B	X	0.1300	0.0057	1.46	0.0967	-0.0013	-0.41	OE
YWBZTP	*	0.1180	-0.0063	-1.60	0.0900	-0.0080	-2.51	OE
YXLZWB		0.1261	0.0018	0.45	0.1010	0.0030	0.96	OE
YZAA7C		0.1300	0.0057	1.46	0.0977	-0.0003	-0.10	OE
ZC3YH3		0.1253	0.0010	0.27	0.0993	0.0013	0.42	OE
ZECZPV		0.1207	-0.0036	-0.92	0.0963	-0.0017	-0.52	OE
ZJ4CH7	X	0.1100	-0.0143	-3.65	0.0850	-0.0130	-4.08	GD
ZQ27AD		0.1287	0.0044	1.13	0.1016	0.0036	1.12	AE

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.1243	Percent	0.0980	Percent
Stnd Dev Btwn Labs	0.0039	Percent	0.0032	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 126 of 137 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent
NICKEL (Ni)

Comments on assigned Data Flags for Analysis #176

WebCode	Flag	Analyst Comment
C3D93D	X	Data for both samples are high. Inconsistent within the determinations of both samples.
CT6ZZJ	X	Data for both samples are low.
M3W6BF	X	Data for sample L21 are low.
MW7TCD	X	Data for both samples are high.
P6EQQ9	X	Data for sample L21 are low.
VJDRJB	X	Data for both samples are high. Inconsistent within the determinations of sample L22.
YPQT9B	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample L22.
ZJ4CH7	X	Data for both samples are low.

Cycle 107
3rd Q, 2014

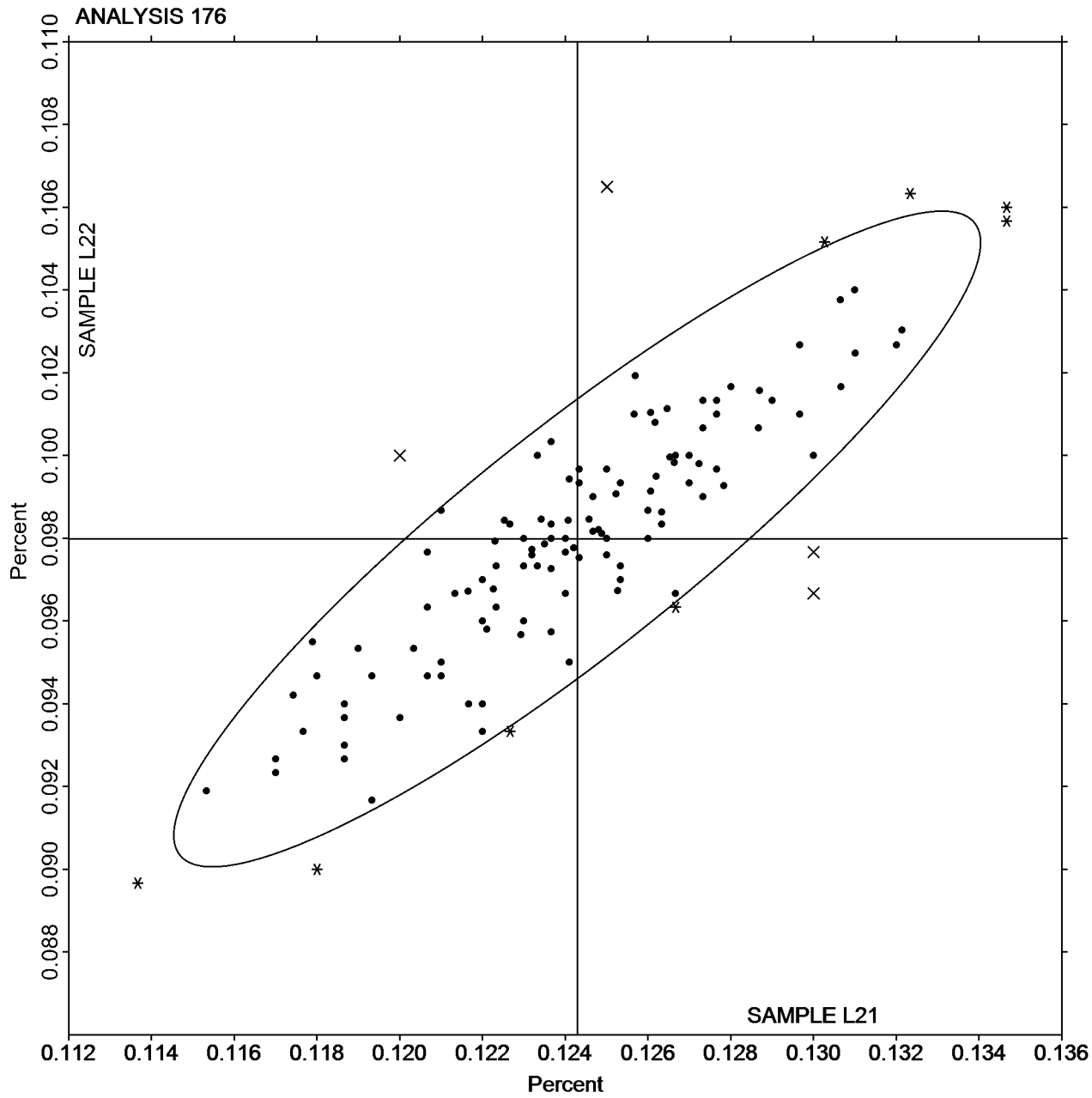
Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent
NICKEL (Ni)

SAMPLE L21
0.1243 Percent

SAMPLE L22
0.0980 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent
CHROMIUM (Cr)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.0983	0.0027	0.82	0.1107	0.0028	0.85	OE
2DCJNH		0.0973	0.0017	0.52	0.1093	0.0015	0.45	OE
2E2W4F		0.0951	-0.0005	-0.17	0.1071	-0.0008	-0.23	IC
2NQL24		0.0948	-0.0008	-0.26	0.1074	-0.0004	-0.12	OE
2QW7P4		0.0970	0.0014	0.41	0.1083	0.0005	0.15	OE
2RTCGV		0.1000	0.0044	1.33	0.1100	0.0022	0.65	DR
2Y9XJ8	X	0.1049	0.0093	2.84	0.1188	0.0110	3.29	OE
34JHW8		0.0907	-0.0050	-1.52	0.1030	-0.0048	-1.45	OE
384H3E		0.1010	0.0054	1.64	0.1127	0.0048	1.45	OE
3E28L4		0.0977	0.0020	0.62	0.1120	0.0042	1.25	OE
3ZV2KD		0.0965	0.0009	0.26	0.1066	-0.0013	-0.38	OE
42MEMW		0.0923	-0.0033	-1.01	0.1040	-0.0038	-1.15	OE
49QGRW		0.1009	0.0052	1.59	0.1146	0.0067	2.02	OE
4LCQH9		0.1006	0.0049	1.50	0.1121	0.0043	1.29	OE
4LCZ2R		0.0950	-0.0006	-0.20	0.1090	0.0012	0.35	IC
4WWZ73		0.0920	-0.0036	-1.11	0.1040	-0.0038	-1.15	OE
667TQW		0.0957	0.0000	0.01	0.1075	-0.0004	-0.11	OE
6CYDLW		0.0977	0.0020	0.62	0.1093	0.0015	0.45	OE
6QF9Z8		0.0920	-0.0036	-1.11	0.1030	-0.0048	-1.45	OE
6TTVJ8		0.0930	-0.0026	-0.81	0.1050	-0.0028	-0.85	OE
7GQXAD	*	0.0949	-0.0007	-0.22	0.1044	-0.0035	-1.04	OE
7HRLY4		0.0933	-0.0023	-0.70	0.1067	-0.0012	-0.35	OE
88HH36		0.0923	-0.0033	-1.01	0.1053	-0.0025	-0.75	OE
8CX7M2		0.0898	-0.0058	-1.77	0.1028	-0.0050	-1.51	OE
8D4HCQ		0.0910	-0.0046	-1.42	0.1086	0.0008	0.23	OE
8GTXVY		0.0937	-0.0020	-0.60	0.1061	-0.0018	-0.53	OE
8K7L7V		0.0941	-0.0015	-0.46	0.1063	-0.0015	-0.45	OE
8MU9PB		0.0960	0.0004	0.11	0.1083	0.0005	0.15	OE
8XX47U		0.0967	0.0010	0.31	0.1093	0.0015	0.45	OE
8ZMHQX		0.0977	0.0020	0.62	0.1090	0.0012	0.35	OE
99AV6N		0.0962	0.0005	0.16	0.1067	-0.0011	-0.34	OE
9BJ4A2		0.0940	-0.0016	-0.50	0.1060	-0.0018	-0.55	DR
9D7KLV		0.0961	0.0004	0.13	0.1089	0.0011	0.33	OE
9UVNCW		0.0970	0.0014	0.41	0.1110	0.0032	0.95	IC
A4CXQG	X	0.4173	0.3217	98.18	0.1093	0.0015	0.45	OE
AEUFPF		0.0950	-0.0006	-0.20	0.1083	0.0005	0.15	GD
ATET4A		0.0960	0.0004	0.11	0.1080	0.0002	0.05	OE
B9JM74		0.1007	0.0050	1.53	0.1110	0.0032	0.95	OE
BCRTUQ		0.0917	-0.0040	-1.21	0.1027	-0.0052	-1.55	OE
BFHBLM		0.0953	-0.0003	-0.09	0.1070	-0.0008	-0.25	OE
BQ6BFY		0.1017	0.0060	1.84	0.1140	0.0062	1.85	OE
BQAHTR	*	0.1007	0.0050	1.53	0.1150	0.0072	2.14	OE
C3D93D		0.0970	0.0014	0.41	0.1100	0.0022	0.65	DR
C3UHYK		0.1000	0.0044	1.33	0.1100	0.0022	0.65	OE
CAV2T4		0.0970	0.0014	0.41	0.1090	0.0012	0.35	OE
CE7WT8		0.0960	0.0004	0.11	0.1080	0.0002	0.05	OE
CGV3CH		0.0977	0.0020	0.62	0.1107	0.0028	0.85	OE
CH9PTW	X	0.0967	0.0010	0.31	0.1000	-0.0078	-2.34	AA
CT6ZZJ		0.0893	-0.0063	-1.94	0.1019	-0.0059	-1.76	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent
CHROMIUM (Cr)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
CVN2U6	X	0.1087	0.0130	3.97	0.1150	0.0072	2.14	XX
D87RJ3		0.0955	-0.0001	-0.03	0.1083	0.0005	0.14	OE
DDRW6B		0.0944	-0.0012	-0.38	0.1067	-0.0011	-0.34	OE
DHZ994		0.0922	-0.0034	-1.05	0.1045	-0.0033	-0.99	OE
DKPGFJ		0.0968	0.0012	0.35	0.1080	0.0001	0.04	OE
DLJA3P		0.0980	0.0024	0.72	0.1103	0.0025	0.75	OE
E7AQ2H		0.0936	-0.0020	-0.61	0.1061	-0.0018	-0.53	DR
EVNJ8U		0.0957	0.0001	0.03	0.1097	0.0019	0.56	OE
EXB7W2		0.0893	-0.0063	-1.93	0.1007	-0.0072	-2.14	OE
FRZF3U		0.0987	0.0030	0.92	0.1093	0.0015	0.45	DR
FU8Q2H		0.0953	-0.0003	-0.09	0.1080	0.0002	0.05	OE
GE8DYR	*	0.0945	-0.0011	-0.35	0.1095	0.0017	0.50	GD
GKUBJ9		0.0967	0.0010	0.31	0.1090	0.0012	0.35	IC
GP9P8E		0.0950	-0.0006	-0.20	0.1150	0.0072	2.14	OE
GWPGFR		0.0970	0.0014	0.41	0.1073	-0.0005	-0.15	OE
H3P3YF		0.0950	-0.0006	-0.20	0.1070	-0.0008	-0.25	AE
H66BGF		0.0958	0.0001	0.04	0.1083	0.0005	0.15	OE
HAVRKT	*	0.1047	0.0090	2.75	0.1160	0.0082	2.44	OE
HEK9Y6	X	0.0860	-0.0096	-2.94	0.1047	-0.0032	-0.95	OE
HP962R		0.0921	-0.0035	-1.07	0.1047	-0.0032	-0.95	DR
HVEW94		0.0940	-0.0016	-0.50	0.1067	-0.0012	-0.35	OE
HXXX4P		0.0957	0.0000	0.01	0.1067	-0.0012	-0.35	OE
J2CXXV	*	0.0860	-0.0096	-2.94	0.0983	-0.0095	-2.84	OE
J38QGL		0.0930	-0.0026	-0.81	0.1053	-0.0025	-0.75	OE
JBKFKZ		0.0932	-0.0025	-0.76	0.1039	-0.0040	-1.19	OE
K8Y39C		0.1007	0.0050	1.53	0.1140	0.0062	1.85	OE
KANJCH		0.0977	0.0020	0.62	0.1097	0.0018	0.55	OE
KEVYTT		0.0987	0.0030	0.92	0.1120	0.0042	1.25	GD
KR7D8D		0.0927	-0.0030	-0.91	0.1043	-0.0035	-1.05	OE
L68LC9		0.0943	-0.0013	-0.40	0.1060	-0.0018	-0.55	OE
L8D7Y9		0.1020	0.0063	1.93	0.1145	0.0067	2.00	OE
LZ8GDU		0.0990	0.0034	1.02	0.1153	0.0075	2.24	IC
M3W6BF	X	0.1033	0.0077	2.35	0.1200	0.0122	3.64	OE
MEBVGD		0.0953	-0.0003	-0.09	0.1077	-0.0002	-0.05	OE
MGDVEP		0.0937	-0.0020	-0.60	0.1067	-0.0012	-0.35	OE
MW7TCD		0.1000	0.0044	1.33	0.1103	0.0025	0.75	OE
MZ9KTQ		0.0963	0.0007	0.21	0.1090	0.0012	0.36	OE
N3MQFQ		0.0924	-0.0032	-0.99	0.1035	-0.0044	-1.31	OE
N6JW8J		0.0963	0.0007	0.21	0.1047	-0.0032	-0.95	OE
NACWLE		0.0962	0.0006	0.17	0.1040	-0.0038	-1.15	OE
NJ4CEP		0.0957	0.0001	0.02	0.1079	0.0000	0.01	OE
NUYH8M		0.0928	-0.0028	-0.87	0.1053	-0.0025	-0.76	OE
P6EQQ9	X	0.0957	0.0000	0.01	0.0947	-0.0132	-3.94	OE
PD88UJ		0.1010	0.0054	1.64	0.1133	0.0055	1.65	OE
PJVMPH		0.0973	0.0017	0.52	0.1087	0.0008	0.25	OE
PTNWDF		0.0963	0.0007	0.21	0.1107	0.0028	0.85	OE
PZNFEP	X	0.1080	0.0124	3.77	0.1207	0.0128	3.84	OE
QEV3UX		0.0933	-0.0024	-0.72	0.1060	-0.0018	-0.54	OE
QKM4EK		0.0945	-0.0011	-0.35	0.1066	-0.0012	-0.36	OE

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Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent
CHROMIUM (Cr)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
QM88YB		0.0923	-0.0034	-1.03	0.1030	-0.0048	-1.45	OE
QY7VYK		0.0991	0.0034	1.05	0.1010	-0.0068	-2.04	OE
RF783E		0.0970	0.0014	0.41	0.1103	0.0025	0.75	IC
RK2UZA	X	0.1000	0.0044	1.33	0.1200	0.0122	3.64	GD
RX7CAN		0.0953	-0.0003	-0.09	0.1077	-0.0002	-0.05	OE
T234DE		0.0937	-0.0019	-0.59	0.1061	-0.0018	-0.53	OE
TE8GFX		0.0916	-0.0040	-1.22	0.1046	-0.0032	-0.96	OE
TECU29		0.0942	-0.0014	-0.44	0.1079	0.0000	0.01	OE
TF2ZKJ		0.0940	-0.0016	-0.50	0.1050	-0.0028	-0.85	OE
TNGVC8		0.0933	-0.0024	-0.72	0.1056	-0.0022	-0.66	OE
TTNGZ4		0.0940	-0.0016	-0.50	0.1057	-0.0022	-0.65	OE
TUGAZU		0.0898	-0.0058	-1.77	0.1023	-0.0056	-1.67	OE
TWUTAR		0.0987	0.0030	0.92	0.1107	0.0028	0.85	GD
U262CG		0.0937	-0.0020	-0.60	0.1073	-0.0005	-0.15	XR
UGV7HP		0.0963	0.0007	0.21	0.1077	-0.0002	-0.05	OE
UKPCQZ		0.0920	-0.0036	-1.11	0.1050	-0.0028	-0.85	OE
V2U324		0.0982	0.0026	0.79	0.1107	0.0028	0.85	OE
V2WLE7	*	0.1040	0.0084	2.55	0.1163	0.0085	2.54	OE
VDNCV4		0.0960	0.0004	0.11	0.1090	0.0012	0.35	OE
VJDRJB	X	0.1140	0.0184	5.60	0.1213	0.0135	4.04	OE
VMEZNL		0.0943	-0.0013	-0.40	0.1070	-0.0008	-0.25	OE
WF7VBR		0.0923	-0.0033	-1.01	0.1070	-0.0008	-0.25	OE
WF9LJV		0.0950	-0.0006	-0.20	0.1060	-0.0018	-0.55	OE
WJBFL8		0.0907	-0.0050	-1.52	0.1017	-0.0062	-1.84	OE
WP3KFB		0.1000	0.0044	1.33	0.1117	0.0038	1.15	OE
WPEBFE		0.0937	-0.0019	-0.59	0.1057	-0.0021	-0.64	OE
WTFCFC		0.0983	0.0027	0.82	0.1097	0.0018	0.55	XX
XDGZ9J		0.0950	-0.0006	-0.20	0.1080	0.0002	0.05	OE
XWTNGB		0.0980	0.0024	0.72	0.1090	0.0012	0.35	OE
YDVV6C		0.0887	-0.0070	-2.13	0.1007	-0.0072	-2.14	DR
YFHCG6		0.0947	-0.0009	-0.28	0.1064	-0.0014	-0.42	DR
YM4A8D	*	0.1040	0.0084	2.55	0.1157	0.0078	2.34	OE
YPQT9B		0.1000	0.0044	1.33	0.1100	0.0022	0.65	OE
YWBZTP		0.0953	-0.0003	-0.09	0.1087	0.0008	0.25	OE
YXLZWB		0.0969	0.0013	0.38	0.1111	0.0033	0.98	OE
YZAA7C		0.0960	0.0004	0.11	0.1100	0.0022	0.65	OE
ZC3YH3		0.0963	0.0007	0.21	0.1083	0.0005	0.15	OE
ZECZPV		0.0883	-0.0073	-2.23	0.1100	0.0022	0.65	OE
ZJ4CH7	X	0.1010	0.0054	1.64	0.1200	0.0122	3.64	GD
ZQ27AD		0.0944	-0.0012	-0.38	0.1059	-0.0019	-0.58	AE

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.0956	Percent	0.1078	Percent
Stnd Dev Btwn Labs	0.0033	Percent	0.0033	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 120 of 138 reporting participants

Cycle 107
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Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent
CHROMIUM (Cr)

Comments on assigned Data Flags for Analysis #177

WebCode	Flag	Analyst Comment
2Y9XJ8	X	Data for both samples are high. Possible Systematic error.
A4CXQG	X	Data for sample L21 are high. Inconsistent in testing between samples.
CH9PTW	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
CVN2U6	X	Data for sample L21 are high. Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
HEK9Y6	X	Data for sample L21 are low. Inconsistent in testing between samples.
M3W6BF	X	Data for sample L22 are high. Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
P6EQQ9	X	Data for sample L22 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
PZNFEP	X	Data for both samples are high. Possible Systematic error.
RK2UZA	X	Data for sample L22 are high. Inconsistent in testing between samples.
VJDRJB	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample L21.
ZJ4CH7	X	Data for sample L22 are high. Inconsistent in testing between samples.

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3rd Q, 2014

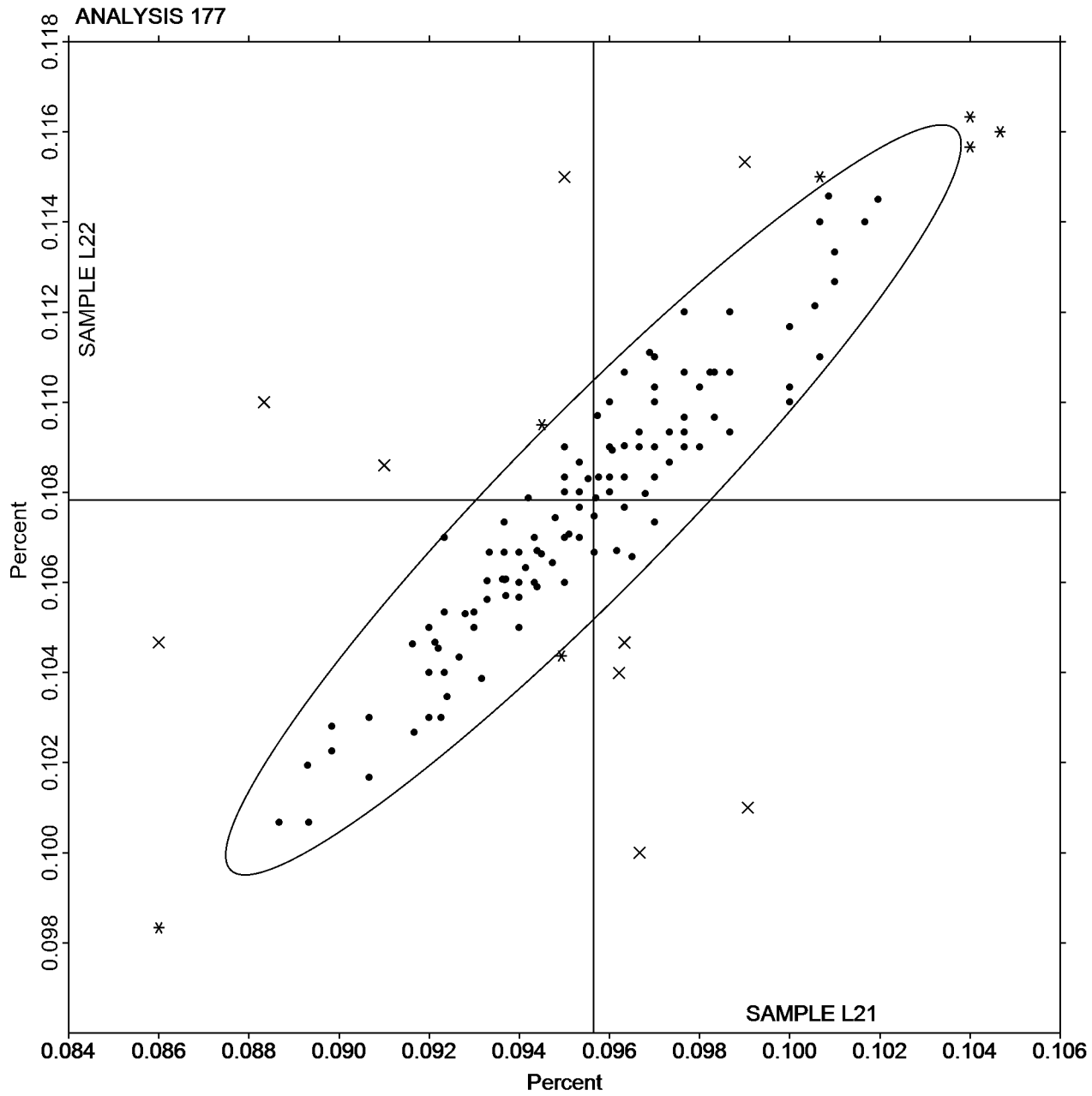
Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent
CHROMIUM (Cr)

SAMPLE L21
0.0956 Percent

SAMPLE L22
0.1078 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent
MOLYBDENUM (Mo)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.0352	0.0012	0.66	0.0226	0.0009	0.55	OE
2DCJNH		0.0344	0.0004	0.21	0.0223	0.0005	0.32	OE
2E2W4F		0.0337	-0.0003	-0.18	0.0216	-0.0001	-0.09	IC
2NQL24		0.0343	0.0003	0.17	0.0224	0.0007	0.41	OE
2QW7P4		0.0341	0.0001	0.03	0.0219	0.0002	0.09	OE
2RTCGV	X	0.0367	0.0026	1.50	0.0200	-0.0017	-1.09	DR
2Y9XJ8	X	0.0287	-0.0054	-3.06	0.0161	-0.0057	-3.53	OE
34JHW8		0.0313	-0.0027	-1.55	0.0197	-0.0021	-1.30	OE
384H3E	X	0.0734	0.0394	22.49	0.0623	0.0406	25.29	OE
3E28L4		0.0316	-0.0025	-1.41	0.0192	-0.0025	-1.59	OE
3ZV2KD		0.0346	0.0006	0.32	0.0204	-0.0013	-0.84	OE
42MEMW		0.0320	-0.0020	-1.17	0.0190	-0.0027	-1.71	OE
49QGRW		0.0316	-0.0024	-1.37	0.0196	-0.0021	-1.32	OE
4LCQH9		0.0340	0.0000	-0.02	0.0211	-0.0006	-0.38	OE
4LCZ2R		0.0350	0.0010	0.57	0.0220	0.0003	0.16	IC
4WWZ73		0.0343	0.0003	0.17	0.0230	0.0013	0.78	OE
667TQW		0.0344	0.0004	0.21	0.0220	0.0003	0.16	OE
6CYDLW	X	0.0227	-0.0114	-6.50	0.0113	-0.0104	-6.49	OE
6QF9Z8		0.0330	-0.0010	-0.59	0.0210	-0.0007	-0.47	OE
6TTVJ8		0.0340	0.0000	-0.02	0.0200	-0.0017	-1.09	OE
7GQXAD		0.0340	-0.0001	-0.04	0.0216	-0.0002	-0.11	OE
7HRLY4		0.0353	0.0013	0.74	0.0227	0.0009	0.57	OE
88HH36		0.0364	0.0024	1.35	0.0243	0.0026	1.61	OE
8CX7M2		0.0325	-0.0016	-0.90	0.0200	-0.0017	-1.07	OE
8D4HCQ		0.0383	0.0042	2.41	0.0251	0.0034	2.11	OE
8GTXVY		0.0351	0.0011	0.61	0.0227	0.0010	0.61	OE
8K7L7V	*	0.0389	0.0048	2.76	0.0265	0.0047	2.94	OE
8MU9PB		0.0347	0.0007	0.40	0.0218	0.0001	0.03	OE
8XX47U		0.0313	-0.0028	-1.58	0.0200	-0.0017	-1.07	OE
8ZMHQX	*	0.0389	0.0048	2.76	0.0264	0.0047	2.90	OE
99AV6N		0.0350	0.0009	0.53	0.0216	-0.0001	-0.09	OE
9BJ4A2		0.0350	0.0010	0.55	0.0220	0.0003	0.16	DR
9D7KLV		0.0337	-0.0003	-0.19	0.0218	0.0000	0.01	OE
9UVNCW		0.0340	0.0000	-0.02	0.0220	0.0003	0.16	IC
A4CXQG	*	0.0377	0.0036	2.07	0.0263	0.0046	2.86	OE
AEUFPF		0.0350	0.0010	0.55	0.0220	0.0003	0.16	GD
ATET4A		0.0343	0.0002	0.13	0.0223	0.0006	0.34	OE
B9JM74	X	0.0535	0.0194	11.10	0.0389	0.0172	10.71	OE
BCRTUQ		0.0340	0.0000	-0.02	0.0220	0.0003	0.16	OE
BFHBLM		0.0358	0.0017	0.99	0.0234	0.0017	1.03	OE
BQ6BFY		0.0360	0.0020	1.12	0.0250	0.0033	2.03	OE
BQAHTR		0.0347	0.0006	0.36	0.0230	0.0013	0.78	OE
C3D93D	X	0.0410	0.0070	3.98	0.0265	0.0048	2.96	IC
C3UHYK	X	0.0400	0.0060	3.40	0.0200	-0.0017	-1.09	OE
CAV2T4		0.0341	0.0001	0.05	0.0212	-0.0005	-0.34	OE
CE7WT8		0.0340	0.0000	-0.02	0.0220	0.0003	0.16	OE
CGV3CH		0.0351	0.0011	0.61	0.0224	0.0006	0.38	OE
CH9PTW	X	0.0423	0.0083	4.74	0.0263	0.0046	2.86	AA
CT6ZZJ		0.0346	0.0006	0.32	0.0219	0.0002	0.09	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent
MOLYBDENUM (Mo)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
D87RJ3		0.0349	0.0008	0.47	0.0224	0.0007	0.43	OE
DDRW6B		0.0324	-0.0016	-0.94	0.0202	-0.0015	-0.97	OE
DHZ994		0.0325	-0.0016	-0.90	0.0193	-0.0024	-1.53	OE
DKPGFJ		0.0354	0.0013	0.76	0.0218	0.0000	0.01	OE
DLJA3P		0.0336	-0.0005	-0.27	0.0201	-0.0016	-1.03	OE
EVNJ8U		0.0348	0.0008	0.45	0.0227	0.0009	0.58	OE
EXB7W2		0.0333	-0.0007	-0.40	0.0210	-0.0007	-0.47	OE
FRZF3U		0.0347	0.0006	0.36	0.0220	0.0003	0.16	DR
FU8Q2H		0.0377	0.0037	2.09	0.0243	0.0026	1.59	OE
GE8DYR		0.0317	-0.0024	-1.36	0.0197	-0.0021	-1.30	GD
GKUBJ9		0.0331	-0.0009	-0.52	0.0203	-0.0015	-0.92	IC
GP9P8E	X	0.00120	-0.0328	-18.76	0.00140	-0.0203	-12.68	OE
GWPGFR		0.0337	-0.0004	-0.21	0.0220	0.0003	0.16	OE
H3P3YF	*	0.0291	-0.0049	-2.80	0.0185	-0.0033	-2.05	AE
H66BGF		0.0346	0.0006	0.32	0.0233	0.0015	0.95	OE
HAVRKT	*	0.0300	-0.0040	-2.31	0.0170	-0.0047	-2.96	OE
HEK9Y6	*	0.0320	-0.0020	-1.17	0.0220	0.0003	0.16	OE
HP962R		0.0356	0.0016	0.91	0.0233	0.0016	0.97	DR
HVEW94		0.0330	-0.0010	-0.59	0.0210	-0.0007	-0.47	OE
HXXX4P		0.0303	-0.0037	-2.12	0.0210	-0.0007	-0.47	OE
J2CXXV		0.0320	-0.0020	-1.17	0.0217	-0.0001	-0.05	OE
J38QGL		0.0343	0.0003	0.17	0.0220	0.0003	0.16	OE
JBKFKZ		0.0319	-0.0022	-1.24	0.0197	-0.0020	-1.26	OE
K8Y39C		0.0357	0.0016	0.93	0.0227	0.0009	0.57	OE
KANJCH		0.0350	0.0010	0.55	0.0210	-0.0007	-0.47	OE
KEVYTT		0.0342	0.0002	0.09	0.0225	0.0008	0.49	GD
KR7D8D	X	0.0403	0.0063	3.58	0.0305	0.0087	5.43	OE
L68LC9		0.0318	-0.0023	-1.30	0.0198	-0.0020	-1.24	OE
L8D7Y9		0.0358	0.0017	0.99	0.0237	0.0020	1.22	OE
LZ8GDU		0.0343	0.0003	0.17	0.0223	0.0006	0.36	IC
M3W6BF	X	0.0270	-0.0070	-4.02	0.0157	-0.0061	-3.79	OE
MEBVGD		0.0346	0.0005	0.30	0.0223	0.0005	0.32	OE
MGDVEP		0.0343	0.0003	0.17	0.0230	0.0013	0.78	OE
MW7TCD	*	0.0310	-0.0030	-1.74	0.0210	-0.0007	-0.47	OE
MZ9KTQ		0.0340	0.0000	-0.02	0.0217	0.0000	-0.03	OE
N3MQFQ		0.0329	-0.0012	-0.67	0.0211	-0.0006	-0.40	OE
NACWLE		0.0371	0.0030	1.73	0.0219	0.0002	0.12	OE
NJ4CEP		0.0344	0.0004	0.22	0.0227	0.0009	0.57	OE
NUYH8M		0.0355	0.0014	0.82	0.0218	0.0001	0.03	OE
P6EQQ9	X	0.0400	0.0060	3.40	0.0223	0.0006	0.36	OE
PD88UJ		0.0340	0.0000	-0.02	0.0213	-0.0004	-0.26	OE
PJVMPH	*	0.0320	-0.0020	-1.17	0.0220	0.0003	0.16	GD
PTNWDF		0.0340	0.0000	-0.02	0.0220	0.0003	0.16	OE
PZNFEP		0.0347	0.0006	0.36	0.0220	0.0003	0.16	OE
QEV3UX		0.0343	0.0003	0.17	0.0220	0.0003	0.16	OE
QKM4EK		0.0326	-0.0014	-0.80	0.0202	-0.0015	-0.97	OE
QM88YB		0.0335	-0.0005	-0.31	0.0207	-0.0011	-0.67	OE
QY7VYK		0.0343	0.0002	0.13	0.0222	0.0005	0.30	OE
RF783E		0.0340	0.0000	-0.02	0.0220	0.0003	0.16	IC

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3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent
MOLYBDENUM (Mo)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
RK2UZA		0.0353	0.0013	0.74	0.0230	0.0013	0.78	GD
RX7CAN		0.0303	-0.0037	-2.12	0.0187	-0.0031	-1.92	OE
T234DE		0.0335	-0.0005	-0.29	0.0207	-0.0011	-0.67	OE
TE8GFX		0.0354	0.0014	0.78	0.0223	0.0006	0.34	OE
TECU29		0.0332	-0.0008	-0.46	0.0208	-0.0010	-0.61	OE
TF2ZKJ		0.0320	-0.0020	-1.17	0.0190	-0.0027	-1.71	OE
TNGVC8		0.0346	0.0006	0.32	0.0219	0.0002	0.11	OE
TTNGZ4		0.0333	-0.0007	-0.40	0.0210	-0.0007	-0.47	OE
TUGAZU		0.0305	-0.0036	-2.04	0.0194	-0.0023	-1.44	OE
TWUTAR		0.0342	0.0002	0.09	0.0219	0.0002	0.11	GD
U262CG		0.0333	-0.0007	-0.40	0.0230	0.0013	0.78	XR
UGV7HP		0.0346	0.0005	0.30	0.0208	-0.0009	-0.59	OE
UKPCQZ		0.0321	-0.0019	-1.09	0.0207	-0.0010	-0.63	OE
V2U324	X	0.0418	0.0077	4.41	0.0288	0.0071	4.39	OE
V2WLE7		0.0367	0.0026	1.50	0.0223	0.0006	0.36	OE
VDNCV4		0.0345	0.0004	0.24	0.0223	0.0006	0.36	OE
VJDRJB	X	0.0610	0.0270	15.40	0.0360	0.0143	8.88	OE
VMEZNL		0.0340	-0.0001	-0.04	0.0216	-0.0001	-0.07	OE
WF7VBR		0.0360	0.0020	1.12	0.0250	0.0033	2.03	OE
WF9LJV		0.0367	0.0027	1.52	0.0225	0.0008	0.47	OE
WJBFL8		0.0350	0.0010	0.55	0.0220	0.0003	0.16	OE
WP3KFB		0.0335	-0.0005	-0.31	0.0219	0.0002	0.11	OE
WPEBFE		0.0341	0.0001	0.03	0.0216	-0.0001	-0.09	OE
WTFCFC		0.0317	-0.0024	-1.36	0.0207	-0.0011	-0.67	XX
XDGZ9J		0.0347	0.0006	0.36	0.0210	-0.0007	-0.47	OE
XWTNGB		0.0347	0.0006	0.36	0.0220	0.0003	0.16	OE
YDVV6C		0.0370	0.0030	1.69	0.0237	0.0019	1.19	DR
YM4A8D		0.0363	0.0023	1.31	0.0240	0.0023	1.40	OE
YPQT9B	X	0.0400	0.0060	3.40	0.0200	-0.0017	-1.09	OE
YWBZTP		0.0340	0.0000	-0.02	0.0220	0.0003	0.16	OE
YXLZWB		0.0338	-0.0002	-0.14	0.0225	0.0008	0.49	OE
YZAA7C	X	0.0390	0.0050	2.85	0.0216	-0.0001	-0.09	OE
ZC3YH3		0.0333	-0.0007	-0.40	0.0217	-0.0001	-0.05	OE
ZECZPV		0.0330	-0.0010	-0.59	0.0210	-0.0007	-0.47	OE
ZJ4CH7	X	0.0450	0.0110	6.26	0.0340	0.0123	7.64	GD
ZQ27AD		0.0304	-0.0036	-2.06	0.0181	-0.0036	-2.27	AE

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.0340	Percent	0.0217	Percent
Stnd Dev Btwn Labs	0.0018	Percent	0.0016	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 115 of 134 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent
MOLYBDENUM (Mo)

Comments on assigned Data Flags for Analysis #178

WebCode	Flag	Analyst Comment
2RTCGV	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample L21.
2Y9XJ8	X	Data for both samples are low. Possible Systematic error.
384H3E	X	Data for both samples are high. Possible Systematic error.
6CYDLW	X	Data for both samples are low. Possible Systematic error.
B9JM74	X	Data for both samples are high. Possible Systematic error.
C3D93D	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of both samples.
C3UHYK	X	Data for sample L21 are high. Inconsistent in testing between samples.
CH9PTW	X	Data for both samples are high. Possible Systematic error.
GP9P8E	X	Data for both samples are low. Possible Systematic error.
KR7D8D	X	Data for both samples are high. Possible Systematic error.
M3W6BF	X	Data for both samples are low. Possible Systematic error.
P6EQQ9	X	Data for sample L21 are high. Inconsistent in testing between samples.
V2U324	X	Data for both samples are high. Possible Systematic error.
VJDRJB	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample L22.
YPQT9B	X	Data for sample L21 are high. Inconsistent in testing between samples.

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent
MOLYBDENUM (Mo)

YZAA7C	X	Data for sample L21 are high. Inconsistent in testing between samples.
ZJ4CH7	X	Data for both samples are high. Possible Systematic error.

Cycle 107
3rd Q, 2014

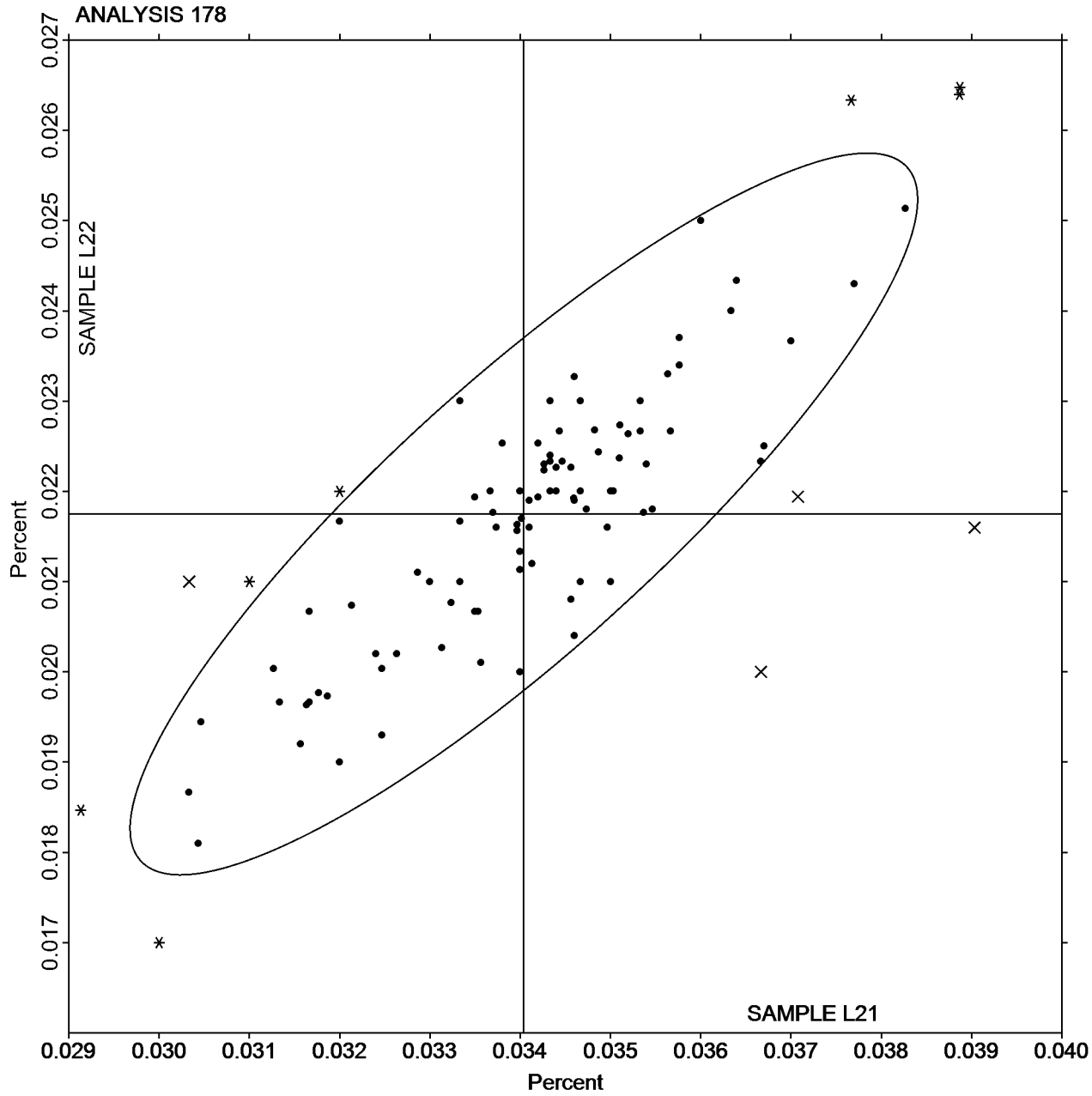
Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent
MOLYBDENUM (Mo)

SAMPLE L21
0.0340 Percent

SAMPLE L22
0.0217 Percent



Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent
VANADIUM (V)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
22H3YG		0.0217	-0.0019	-1.27	0.0216	-0.0023	-1.53	OE
2DCJNH		0.0206	-0.0030	-2.02	0.0206	-0.0033	-2.17	OE
2E2W4F		0.0232	-0.0003	-0.23	0.0244	0.0005	0.33	IC
2NQL24		0.0227	-0.0009	-0.61	0.0226	-0.0013	-0.84	OE
2QW7P4		0.0228	-0.0008	-0.54	0.0232	-0.0007	-0.49	OE
2RTCGV	*	0.0200	-0.0036	-2.42	0.0200	-0.0039	-2.59	DR
2Y9XJ8		0.0244	0.0009	0.58	0.0249	0.0010	0.68	OE
34JHW8		0.0247	0.0011	0.75	0.0270	0.0031	2.06	OE
384H3E		0.0228	-0.0007	-0.50	0.0233	-0.0006	-0.42	OE
3E28L4		0.0240	0.0004	0.29	0.0247	0.0008	0.51	OE
3ZV2KD		0.0223	-0.0013	-0.88	0.0219	-0.0020	-1.31	XX
42MEMW		0.0237	0.0001	0.07	0.0240	0.0001	0.07	OE
49QGRW		0.0232	-0.0004	-0.25	0.0240	0.0001	0.07	OE
4LCQH9		0.0237	0.0001	0.07	0.0241	0.0002	0.13	OE
4LCZ2R	*	0.0230	-0.0006	-0.41	0.0243	0.0004	0.29	IC
4WWZ73		0.0267	0.0031	2.11	0.0273	0.0034	2.28	OE
667TQW		0.0244	0.0008	0.54	0.0243	0.0004	0.24	OE
6QF9Z8		0.0240	0.0004	0.29	0.0240	0.0001	0.07	OE
6TTVJ8		0.0240	0.0004	0.29	0.0250	0.0011	0.73	OE
7GQXAD		0.0237	0.0002	0.11	0.0241	0.0002	0.13	OE
7HRLY4		0.0227	-0.0009	-0.61	0.0227	-0.0012	-0.82	OE
88HH36		0.0235	-0.0001	-0.05	0.0235	-0.0004	-0.24	OE
8CX7M2		0.0237	0.0001	0.07	0.0238	-0.0001	-0.07	OE
8D4HCQ		0.0241	0.0005	0.36	0.0251	0.0012	0.80	OE
8GTXVY		0.0221	-0.0015	-1.00	0.0221	-0.0018	-1.20	OE
8K7L7V		0.0237	0.0002	0.10	0.0240	0.0001	0.07	OE
8MU9PB		0.0245	0.0010	0.66	0.0246	0.0007	0.44	OE
8XX47U		0.0239	0.0003	0.23	0.0245	0.0006	0.38	OE
8ZMHQX		0.0264	0.0028	1.90	0.0263	0.0024	1.62	OE
99AV6N		0.0245	0.0009	0.61	0.0245	0.0006	0.42	OE
9BJ4A2		0.0250	0.0014	0.97	0.0237	-0.0002	-0.15	DR
9D7KLV		0.0238	0.0002	0.14	0.0236	-0.0003	-0.20	OE
9UVNCW		0.0240	0.0004	0.29	0.0250	0.0011	0.73	IC
AEUFPF	X	0.0150	-0.0086	-5.82	0.0147	-0.0092	-6.13	GD
ATET4A		0.0240	0.0004	0.29	0.0242	0.0003	0.18	OE
B9JM74		0.0253	0.0018	1.20	0.0263	0.0024	1.59	OE
BCRTUQ		0.0240	0.0004	0.29	0.0247	0.0008	0.51	OE
BFHBLM		0.0229	-0.0006	-0.43	0.0237	-0.0002	-0.13	OE
BQ6BFY		0.0243	0.0008	0.52	0.0243	0.0004	0.29	OE
BQAHTR		0.0230	-0.0006	-0.39	0.0237	-0.0002	-0.15	OE
C3UHYK	*	0.0200	-0.0036	-2.42	0.0200	-0.0039	-2.59	OE
CAV2T4		0.0235	-0.0001	-0.07	0.0235	-0.0004	-0.26	OE
CE7WT8		0.0232	-0.0004	-0.27	0.0232	-0.0007	-0.46	OE
CGV3CH		0.0245	0.0009	0.63	0.0248	0.0009	0.58	OE
CT6ZZJ		0.0236	0.0001	0.04	0.0237	-0.0002	-0.15	OE
D87RJ3		0.0233	-0.0003	-0.20	0.0238	-0.0001	-0.09	OE
DDRW6B		0.0257	0.0021	1.43	0.0258	0.0019	1.28	OE
DHZ994		0.0248	0.0012	0.82	0.0251	0.0012	0.80	OE
DKPGFJ		0.0247	0.0011	0.75	0.0246	0.0007	0.47	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent
VANADIUM (V)

		Sample L21			Sample L22			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
DLJA3P		0.0233	-0.0002	-0.16	0.0234	-0.0005	-0.35	OE
EVNJ8U		0.0237	0.0001	0.08	0.0244	0.0005	0.31	OE
EXB7W2		0.0240	0.0004	0.29	0.0240	0.0001	0.07	OE
FRZF3U		0.0267	0.0031	2.13	0.0266	0.0027	1.82	IC
FU8Q2H	X	0.0296	0.0061	4.12	0.0299	0.0060	3.96	XX
GE8DYR	*	0.0193	-0.0043	-2.90	0.0196	-0.0043	-2.85	GD
GKUBJ9		0.0237	0.0001	0.07	0.0237	-0.0002	-0.15	OE
GP9P8E		0.0247	0.0011	0.75	0.0250	0.0011	0.73	OE
GWPGFR		0.0240	0.0004	0.29	0.0240	0.0001	0.07	OE
H3P3YF		0.0232	-0.0004	-0.27	0.0236	-0.0003	-0.22	AE
H66BGF	X	0.0164	-0.0072	-4.89	0.0164	-0.0075	-4.98	OE
HAVRKT		0.0223	-0.0012	-0.84	0.0203	-0.0036	-2.37	OE
HEK9Y6		0.0240	0.0004	0.29	0.0250	0.0011	0.73	OE
HP962R		0.0248	0.0012	0.84	0.0251	0.0012	0.82	DR
HVEW94	X	0.0260	0.0024	1.65	0.0240	0.0001	0.07	OE
HXXX4P		0.0230	-0.0006	-0.39	0.0233	-0.0006	-0.38	OE
J2CXXV	X	0.0173	-0.0062	-4.24	0.0180	-0.0059	-3.92	OE
J38QGL		0.0220	-0.0016	-1.07	0.0220	-0.0019	-1.26	OE
JBKFKZ		0.0240	0.0004	0.27	0.0244	0.0005	0.35	OE
K8Y39C		0.0240	0.0004	0.29	0.0240	0.0001	0.07	OE
KANJCH		0.0247	0.0011	0.75	0.0247	0.0008	0.51	OE
KEVYTT		0.0228	-0.0008	-0.52	0.0234	-0.0005	-0.33	GD
KR7D8D		0.0202	-0.0033	-2.27	0.0206	-0.0033	-2.19	OE
L68LC9		0.0234	-0.0001	-0.09	0.0238	-0.0001	-0.07	OE
L8D7Y9		0.0226	-0.0010	-0.66	0.0232	-0.0007	-0.44	OE
LZ8GDU	*	0.0220	-0.0016	-1.07	0.0233	-0.0006	-0.38	IC
M3W6BF		0.0230	-0.0006	-0.39	0.0233	-0.0006	-0.38	OE
MEBVGD		0.0243	0.0007	0.50	0.0246	0.0007	0.44	OE
MGDVEP		0.0240	0.0004	0.29	0.0240	0.0001	0.07	OE
MW7TCD	X	0.00200	-0.0216	-14.66	0.00300	-0.0209	-13.88	OE
MZ9KTQ		0.0241	0.0005	0.33	0.0241	0.0002	0.15	OE
N3MQFQ		0.0228	-0.0007	-0.50	0.0227	-0.0012	-0.80	OE
NACWLE		0.0231	-0.0005	-0.34	0.0238	-0.0001	-0.10	OE
NJ4CEP		0.0245	0.0009	0.63	0.0251	0.0012	0.82	OE
P6EQQ9		0.0237	0.0001	0.07	0.0240	0.0001	0.07	OE
PD88UJ	X	0.0467	0.0231	15.70	0.0460	0.0221	14.67	OE
PJVMPH		0.0230	-0.0006	-0.39	0.0230	-0.0009	-0.60	OE
PTNWDF		0.0250	0.0014	0.97	0.0260	0.0021	1.40	OE
QEV3UX		0.0236	0.0000	0.00	0.0241	0.0002	0.16	OE
QKM4EK		0.0253	0.0018	1.20	0.0252	0.0013	0.89	OE
QM88YB		0.0230	-0.0005	-0.36	0.0232	-0.0007	-0.49	OE
QY7VYK		0.0214	-0.0022	-1.47	0.0225	-0.0014	-0.95	OE
RF783E		0.0240	0.0004	0.29	0.0250	0.0011	0.73	IC
RK2UZA		0.0240	0.0004	0.29	0.0250	0.0011	0.73	GD
RX7CAN		0.0260	0.0024	1.65	0.0260	0.0021	1.40	OE
T234DE		0.0226	-0.0009	-0.63	0.0229	-0.0010	-0.64	OE
TE8GFX		0.0238	0.0002	0.16	0.0245	0.0006	0.42	OE
TECU29		0.0208	-0.0028	-1.90	0.0212	-0.0027	-1.79	XX
TF2ZKJ		0.0230	-0.0006	-0.39	0.0230	-0.0009	-0.60	OE

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent
VANADIUM (V)

		Sample L21			Sample L22			
WebCode	**Data Flag**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Lab Mean**	**Diff. from Grand Mean**	**CPV**	**Instr Code**
TNGVC8		0.0247	0.0012	0.79	0.0253	0.0014	0.90	OE
TTNGZ4		0.0240	0.0004	0.29	0.0240	0.0001	0.07	OE
TUGAZU		0.0221	-0.0015	-1.02	0.0226	-0.0013	-0.87	OE
TWUTAR		0.0261	0.0025	1.72	0.0267	0.0028	1.88	GD
U262CG		0.0240	0.0004	0.29	0.0247	0.0008	0.51	XR
UGV7HP		0.0235	-0.0001	-0.05	0.0234	-0.0005	-0.35	OE
UKPCQZ		0.0233	-0.0003	-0.20	0.0239	0.0000	0.02	OE
V2U324		0.0222	-0.0014	-0.93	0.0224	-0.0015	-0.97	OE
V2WLE7	*	0.0250	0.0014	0.97	0.0243	0.0004	0.29	OE
VDNCV4	*	0.0251	0.0015	1.04	0.0243	0.0004	0.24	OE
VJDRJB	X	0.0405	0.0169	11.49	0.0385	0.0146	9.69	OE
VMEZNL		0.0254	0.0018	1.22	0.0259	0.0020	1.31	OE
WF7VBR		0.0227	-0.0009	-0.61	0.0227	-0.0012	-0.82	OE
WF9LJV		0.0238	0.0002	0.16	0.0237	-0.0002	-0.13	OE
WJBFL8		0.0230	-0.0006	-0.39	0.0240	0.0001	0.07	OE
WP3KFB		0.0267	0.0031	2.11	0.0271	0.0032	2.15	OE
WPEBFE		0.0232	-0.0004	-0.27	0.0227	-0.0012	-0.80	OE
WTFCFC		0.0230	-0.0006	-0.39	0.0233	-0.0006	-0.38	XX
XDGZ9J		0.0223	-0.0012	-0.84	0.0230	-0.0009	-0.60	OE
XWTNGB		0.0253	0.0018	1.20	0.0253	0.0014	0.95	OE
YDVV6C		0.0240	0.0004	0.29	0.0250	0.0011	0.73	DR
YM4A8D		0.0267	0.0031	2.11	0.0270	0.0031	2.06	OE
YPQT9B	*	0.0200	-0.0036	-2.42	0.0200	-0.0039	-2.59	OE
YWBZTP	*	0.0203	-0.0032	-2.20	0.0213	-0.0026	-1.70	OE
YXLZWB		0.0215	-0.0021	-1.43	0.0222	-0.0017	-1.13	OE
YZAA7C	X	0.00577	-0.0178	-12.10	0.0266	0.0027	1.77	OE
ZC3YH3		0.0230	-0.0006	-0.39	0.0230	-0.0009	-0.60	OE
ZECZPV		0.0230	-0.0006	-0.39	0.0233	-0.0006	-0.38	OE
ZJ4CH7		0.0220	-0.0016	-1.07	0.0243	0.0004	0.29	GD
ZQ27AD		0.0272	0.0036	2.47	0.0275	0.0036	2.37	AE

Summary Statistics

	Sample L21		Sample L22	
Grand Means	0.0236	Percent	0.0239	Percent
Stnd Dev Btwn Labs	0.0015	Percent	0.0015	Percent

Samples L21 , L22 : AISI 1040, 1045

Statistics based on 115 of 128 reporting participants

Cycle 107
3rd Q, 2014

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent
VANADIUM (V)

Comments on assigned Data Flags for Analysis #179

WebCode	Flag	Analyst Comment
AEUFPF	X	Data for both samples are low. Possible Systematic error.
FU8Q2H	X	Data for both samples are high. Possible Systematic error.
H66BGF	X	Data for both samples are low. Possible Systematic error.
HVEW94	X	Inconsistent in testing between samples. Inconsistent within the determinations of sample L22.
J2CXXV	X	Data for both samples are low. Possible Systematic error.
MW7TCD	X	Data for both samples are low. Possible Systematic error.
PD88UJ	X	Data for both samples are high. Possible Systematic error.
VJDRJB	X	Data for both samples are high. Possible Systematic error. Inconsistent within the determinations of sample L21.
YZAA7C	X	Data for sample L21 are low. Inconsistent in testing between samples.

Cycle 107
3rd Q, 2014

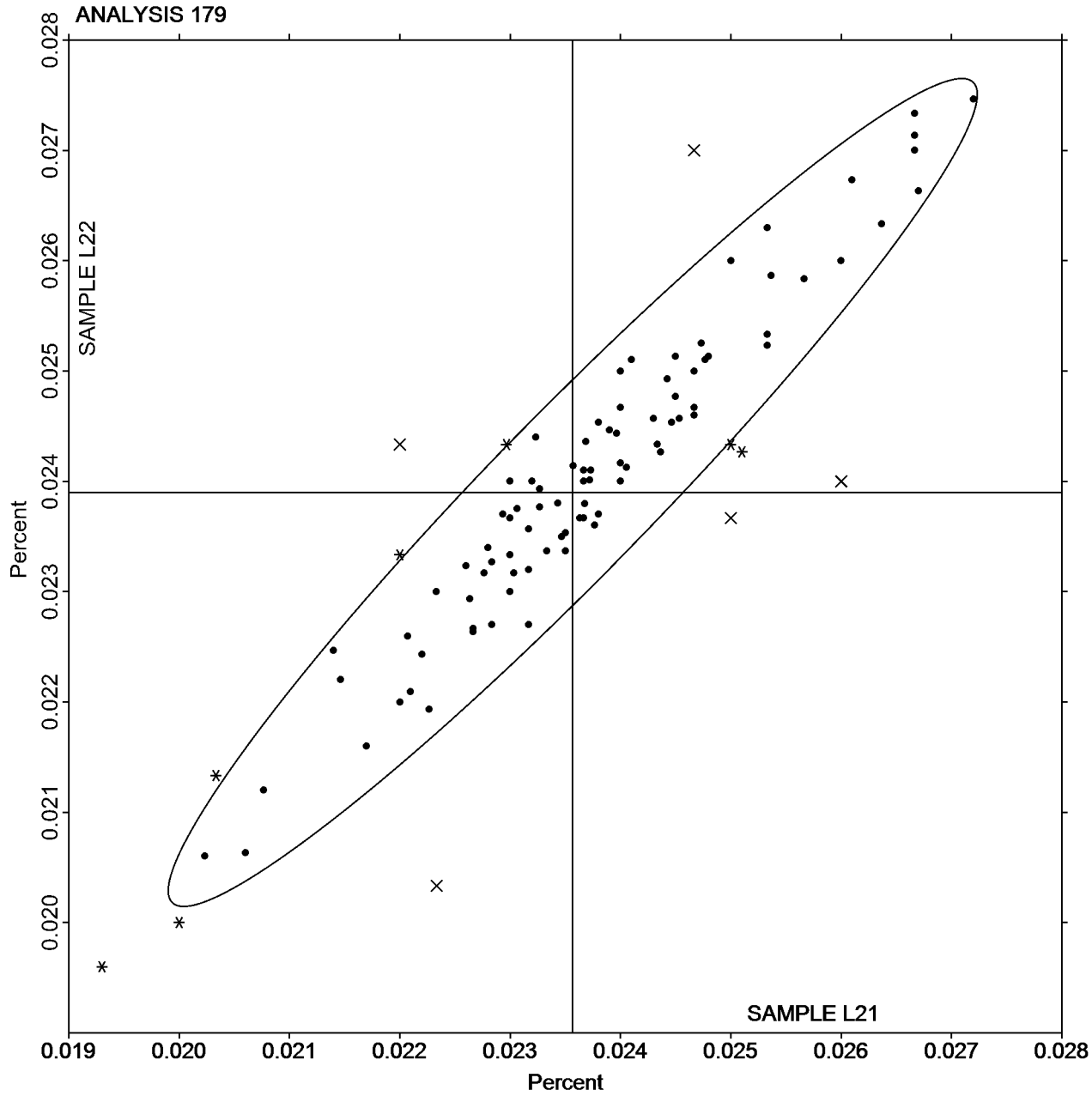
Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent
VANADIUM (V)

SAMPLE L21
0.0236 Percent

SAMPLE L22
0.0239 Percent



Instrument and Method Code List - Cycle 107

Instrument and Method information as provided by laboratories

Instruments are no longer tracked for analyses 105-148

170: Carbon & Low Alloy Steel, Element #1 - CARBON (C)

Method Code	Description
AE	Spectrometry - Atomic Emission (AES)
CI	Combustion / IR
CL	Colorimetry
CO	Combustion
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IR	IR (Absorbstion / Detection)
OE	Spectrometry - Optical Emission (OES)

171: Carbon & Low Alloy Steel, Element #2 - MANGANESE (Mn)

Method Code	Description
AA	Spectrometry - Atomic Absorption (AAS)
AE	Spectrometry - Atomic Emission (AES)
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

172: Carbon & Low Alloy Steel, Element #3 - PHOSPHORUS (P)

Method Code	Description
AE	Spectrometry - Atomic Emission (AES)
CI	Combustion / IR
CL	Colorimetry
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

173: Carbon & Low Alloy Steel, Element #4 - SULFUR (S)

Method Code	Description
AE	Spectrometry - Atomic Emission (AES)
CI	Combustion / IR
CL	Colorimetry
CO	Combustion
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IR	IR (Absorbstion / Detection)
OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element

174: Carbon & Low Alloy Steel, Element #5 - SILICON (Si)

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

175: Carbon & Low Alloy Steel, Element #6 - COPPER (Cu)

Method Code	Description
AA	Spectrometry - Atomic Absorption (AAS)
AE	Spectrometry - Atomic Emission (AES)
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

176: Carbon & Low Alloy Steel, Element #7 - NICKEL (Ni)

Method Code	Description
AA	Spectrometry - Atomic Absorption (AAS)
AE	Spectrometry - Atomic Emission (AES)
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

177: Carbon & Low Alloy Steel, Element #8 - CHROMIUM (Cr)

Method Code	Description
AA	Spectrometry - Atomic Absorption (AAS)
AE	Spectrometry - Atomic Emission (AES)
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

178: Carbon & Low Alloy Steel, Element #9 - MOLYBDENUM (Mo)

Method Code	Description
AA	Spectrometry - Atomic Absorption (AAS)
AE	Spectrometry - Atomic Emission (AES)
DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)
XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element

179: Carbon & Low Alloy Steel, Element #10 - VANADIUM (V)

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