UNITED STATES STEEL CORPORATION
MON VALLEY COMPLEX
CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

Relative Accuracy Test Audit of the Continuous Emissions Monitoring Systems at United States Steel Corporation – Mon Valley Complex Clairton Plant – Boiler No. 1 and Boiler No. 2 per Pennsylvania Department of Environmental Protection - Continuous Source Monitoring Manual and Code of Federal Regulations, Title 40, Part 75 (Continuous Emission Monitoring) Requirements

March 17 and 18, 2010

MAY 2010

APPENDIX A

Correspondence with the PA DEP and U.S. Steel CEMS Data

CHESTER ENGINEERS

"Tradition in Engineering Excellence Since 1910"

UNTRAL 3-1-10
cc: HUT

Rachel Carson State Office Building
Post Office Box 8468
Harrisburg, Pennsylvania 17105-8468
Bureau of Air Quality
February 17, 2010

Coleen M. Davis
Senior Environmental Engineer
U. S. Steel - Mon Valley Works
Clairton Plant, MS 71
400 State Street
Clairton, PA 15025

Re: Assignment Received

Dear Ms. Davis

We have received your 2010 Level IV Test Protocol Submittal and Test Notification for USS, USS Clairton Coke Works involving the following CEMSs:

2404	-- Boiler 1	NOx	lbs/MBtu	P 3
2405	-- Boiler 2	NOx	lbs/MBtu	P 3

The protocol review has been assigned to John S. Pitulski who can be contacted at 717-783-9468 (Email: jpitulski@state.pa.us). You should receive a response (approval, disapproval, request for information, assignment not yet complete, etc.) by March 10, 2010.

Sincerely,

Charles J. Zadakis, Chief
Continuous Source Monitoring Section
Division of Source Testing and Monitoring
Bureau of Air Quality

Cc: Hudson Tiffany
Senior Field Technician
Chester Engineers, Inc.
260 Airside Drive
Moon Township, PA 15108

UNTRIC 3-1-10

Pennsylvania Department of Environmental Protection

Post Office Box 8468
Harrisburg, Pennsylvania 17105-8468
Bureau of Air Quality
February 24, 2010

Coleen M. Davis
Senior Environmental Engineer
U.S. Steel – Mon Valley Works
400 State Street MS # 71
Clairton, PA 15025-1885

Re: 2010 Relative Accuracy Test Audit (RATA) Protocol Review
USS – Clairton Coke Works
CEMS 2404 (0070910), Boiler 1, NOx lbs/MBtu
CEMS 2405 (0080910), Boiler 2, NOx lbs/MBtu

Dear Ms. Davis:

I have reviewed the test protocol regarding the annual relative accuracy test audit (RATA) of the referenced Continuous Emission Monitoring Systems (CEMSs) at the Clairton facility for 2010. The proposed test procedures are acceptable to the Department.

Acceptance of the final test report will be contingent upon fulfillment of all applicable requirements of the Pennsylvania Department of Environmental Protections' Rules and Regulations and the Continuous Source Monitoring Manual.

If you have any questions, or there is a change to the current test dates (3/17-18/10), please contact me at 717-783-9468 or e-mail at jpitulski@state.pa.us.

Sincerely,

John S. Pitulski

John S. Pitulski, AQPS
Continuous Emission Monitoring Section
Division of Source Testing and Monitoring

Cc: Hudson Tiffany
Chester Engineers, Inc.
260 Airside Drive
Moon Township, PA 15108

Boiler 1 Averages

Run	BLR1 Fd Value	BLR1 GASFLOW Value	BLR1 GHEATIN Value	BLR1 PNOX#/MM Value	BLR1 NOXPPM Value	BLR1 O2 Value	BLR1 STMLOAD Value
1	7756.7	6194.7	313.2	0.243	121.9	11.2	248
2	7,667.0	6,448.5	305.3	0.229	117.1	11.1	248
3	7,907.0	5,661.0	293.8	0.235	116.9	11.1	250
4	7,906.9	5,508.5	282.1	0.250	123.2	11.2	249
5	7,755.7	6,531.3	323.6	0.244	122.2	11.2	248
6	7,707.5	6,616.2	319.2	0.240	120.7	11.2	249
7	7,724.7	6,285.6	301.8	0.228	115.7	11.1	248
8	7,800.1	6,158.2	306.1	0.232	120.5	10.8	249
9	7,798.8	6,162.7	304.2	0.246	126.7	10.9	248

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US Steel Clairton Average Data
3/18/2010 0829 to 0849
BLR 1 RUN 1

Date/Time	BLR1 Fd Value	BLR1 GASFLOW Value	BLR1 GHEATIN Value	BLR1 NOX#/MM Value	BLR1 NOXPPM Value	BLR1 O2 Value	BLR1 STMLOAD Value
03/18/2010 08:29	7762.51394	6197.72558	314.657229	0.256920741	125.998283	11.4056949	253.292309
03/18/2010 08:30	7762.48683	6515.06192	330.771627	0.248191043	123.044525	11.3429276	251.287794
03/18/2010 08:31	7762.47728	6168.80968	313.189976	0.239887435	122.630458	10.9812381	248.624435
03/18/2010 08:32	7762.51816	6098.15391	309.605614	0.249805293	123.785853	11.3154626	252.178881
03/18/2010 08:33	7762.55209	5734.81268	291.155796	0.245435833	122.939844	11.1725339	250.95314
03/18/2010 08:34	7762.52678	5844.34782	296.715111	0.243125919	123.001757	11.0638669	249.424578
03/18/2010 08:35	7762.58016	6052.81342	307.300656	0.23871651	121.967362	11.0340617	241.164629
03/18/2010 08:36	7762.58327	6166.6972	313.083359	0.251214627	123.182929	11.414929	244.983944
03/18/2010 08:37	7762.57918	6178.78493	313.697676	0.244836722	122.644907	11.2411685	249.368173
03/18/2010 08:38	7762.56637	6299.76671	319.840846	0.243838203	122.116774	11.2478641	243.70173
03/18/2010 08:39	7762.59872	6369.62951	323.384592	0.253681046	123.123568	11.5038677	246.063196
03/18/2010 08:40	7762.63036	6413.55511	325.618472	0.244512713	123.661019	11.1414747	246.525815
03/18/2010 08:41	7762.65147	6486.87849	329.339913	0.247995651	122.893494	11.3002599	246.271565
03/18/2010 08:42	7762.64927	6403.06346	325.085387	0.248156007	121.67398	11.375012	247.724566
03/18/2010 08:43	7762.68549	6344.52978	322.110265	0.241045457	120.698483	11.2188246	252.094325
03/18/2010 08:44	7762.64018	6375.02975	323.65875	0.23838507	120.571105	11.0598832	245.523961
03/18/2010 08:45	7762.64854	6086.28668	309.001451	0.240443241	120.362865	11.2425501	254.898402
03/18/2010 08:46	7762.60104	5951.38168	302.152578	0.239571065	121.24713	11.0996451	251.124302
03/18/2010 08:47	7762.62327	5933.51861	301.243795	0.231868085	118.529214	11.0451435	251.891139
03/18/2010 08:48	7735.53182	6081.05903	302.83878	0.231052642	117.341055	11.1477998	248.467141
03/18/2010 08:49	7667.05378	6386.54019	302.33691	0.233304744	119.530948	11.1312282	242.555554
	7756.7	6194.7	313.2	0.243	121.9	11.2	248.5

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 09:02 Through 03/18/2010 09:22
Time Online Criteria: 1 minute(s)

Source	BLR1						
Parameter (Unit)	Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10 09:02	7,667.0	6,581.0	311.5	0.232	117.4	11.2	243
03/18/10 09:03	7,667.0	6,519.7	313.4	0.228	116.6	11.1	243
03/18/10 09:04	7,667.0	6,770.6	320.5	0.240	119.0	11.4	250
03/18/10 09:05	7,667.0	6,547.1	309.9	0.233	119.4	11.1	249
03/18/10 09:06	7,667.0	6,298.4	298.2	0.231	119.3	11.0	249
03/18/10 09:07	7,667.1	6,310.9	298.8	0.236	117.3	11.4	252
03/18/10 09:08	7,667.1	6,279.6	297.3	0.225	115.1	11.1	250
03/18/10 09:09	7,667.0	6,247.6	295.8	0.217	113.6	10.9	251
03/18/10 09:10	7,667.0	6,230.2	294.9	0.218	113.9	10.9	248
03/18/10 09:11	7,667.0	6,203.5	293.7	0.223	114.3	11.1	250
03/18/10 09:12	7,667.0	6,377.0	301.9	0.222	115.1	11.0	245
03/18/10 09:13	7,667.0	6,416.8	303.8	0.224	115.7	11.0	245
03/18/10 09:14	7,667.0	6,667.1	315.6	0.233	116.8	11.3	247
03/18/10 09:15	7,667.0	6,622.8	313.5	0.232	118.8	11.1	245
03/18/10 09:16	7,667.1	6,568.6	311.0	0.232	118.7	11.1	249
03/18/10 09:17	7,667.0	6,553.6	310.2	0.235	120.3	11.1	247
03/18/10 09:18	7,667.0	6,567.4	310.9	0.237	119.0	11.3	249
03/18/10 09:19	7,667.0	6,245.5	295.7	0.228	119.3	10.9	252
03/18/10 09:20	7,667.0	6,530.1	309.1	0.237	118.7	11.3	249
03/18/10 09:21	7,667.0	6,503.8	307.9	0.225	115.3	11.1	246
03/18/10 09:22	7,667.0	6,276.5	297.1	0.223	116.5	10.9	252
Average	7,667.0	6,448.5	305.3	0.229	117.1	11.1	248
Minimum	7,667.0	6,203.5	293.7	0.217	113.6	10.9	243
Maximum	7,667.1	6,770.6	320.5	0.240	120.3	11.4	252
Summation	161,007.3	135,417.8	6,410.7	4.811	2,460.1	233.3	5,211
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/18/10 10:58 Report Version 2.0.0215

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ED_002508A_00000577-00006

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 09:35 Through 03/18/2010 09:55
Time Online Criteria: 1 minute(s)

Source	BLR1						
Parameter (Unit)	Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10 09:35	7,906.9	5,737.3	297.7	0.232	116.4	11.0	248
03/18/10 09:36	7,906.9	5,699.9	295.8	0.239	117.6	11.2	252
03/18/10 09:37	7,906.9	5,526.1	286.8	0.233	116.9	11.0	248
03/18/10 09:38	7,907.0	5,553.7	288.2	0.233	115.8	11.1	251
03/18/10 09:39	7,907.0	5,552.1	288.2	0.234	115.0	11.2	250
03/18/10 09:40	7,907.0	5,651.0	293.3	0.228	114.2	11.0	244
03/18/10 09:41	7,907.0	5,701.5	295.9	0.227	113.7	11.0	249
03/18/10 09:42	7,907.0	5,832.6	302.7	0.237	116.3	11.2	245
03/18/10 09:43	7,907.1	5,491.3	285.0	0.234	117.5	11.0	247
03/18/10 09:44	7,907.0	5,633.2	292.3	0.242	118.9	11.2	252
03/18/10 09:45	7,907.0	5,717.3	296.7	0.238	117.2	11.2	250
03/18/10 09:46	7,907.0	5,559.0	288.5	0.226	115.6	10.8	246
03/18/10 09:47	7,907.0	5,532.6	287.1	0.236	117.2	11.1	252
03/18/10 09:48	7,907.0	5,723.6	297.0	0.235	117.9	11.0	245
03/18/10 09:49	7,907.0	5,768.3	299.3	0.235	116.5	11.1	247
03/18/10 09:50	7,906.9	5,750.8	298.4	0.237	116.5	11.2	247
03/18/10 09:51	7,906.9	5,536.2	287.3	0.230	116.7	10.9	252
03/18/10 09:52	7,906.9	5,667.9	294.1	0.239	117.6	11.2	250
03/18/10 09:53	7,906.9	5,795.2	300.7	0.232	116.3	11.0	256
03/18/10 09:54	7,906.9	5,721.9	296.9	0.235	118.9	10.9	258
03/18/10 09:55	7,906.9	5,729.3	297.3	0.246	122.3	11.1	260
Average	7,907.0	5,661.0	293.8	0.239	116.9	11.1	250
Minimum	7,906.9	5,491.3	285.0	0.226	113.7	10.8	244
Maximum	7,907.1	5,832.6	302.7	0.246	122.3	11.2	260
Summation	166,046.2	118,880.8	6,169.2	4.928	2,455.0	232.4	5,249
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/18/10 11:01 Report Version 2.0.0215

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ED_002508A_00000577-00007

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 10:14 Through 03/18/2010 10:34
Time Online Criteria: 1 minute(s)

Source	BLR1						
Parameter (Unit)	Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10 10:14	7,907.0	5,528.2	283.1	0.241	120.7	11.0	250
03/18/10 10:15	7,907.0	5,452.2	279.2	0.253	124.4	11.2	252
03/18/10 10:16	7,906.9	5,585.6	286.0	0.248	123.2	11.1	247
03/18/10 10:17	7,907.0	5,506.2	282.0	0.243	121.7	11.0	247
03/18/10 10:18	7,906.9	5,499.6	281.6	0.255	122.9	11.4	251
03/18/10 10:19	7,906.9	5,748.4	294.4	0.253	124.4	11.2	243
03/18/10 10:20	7,906.9	5,628.3	288.2	0.252	123.8	11.2	243
03/18/10 10:21	7,907.0	5,863.0	300.2	0.256	124.2	11.4	248
03/18/10 10:22	7,907.0	5,515.0	282.4	0.254	124.7	11.2	252
03/18/10 10:23	7,907.0	5,535.9	283.5	0.258	126.9	11.2	251
03/18/10 10:24	7,906.9	5,661.3	289.9	0.249	122.4	11.2	246
03/18/10 10:25	7,906.9	5,482.9	280.8	0.249	122.4	11.2	253
03/18/10 10:26	7,906.9	5,662.8	290.0	0.251	123.4	11.2	250
03/18/10 10:27	7,906.9	5,528.1	283.1	0.240	121.4	10.9	246
03/18/10 10:28	7,906.9	5,411.2	277.1	0.253	123.0	11.3	254
03/18/10 10:29	7,906.9	5,433.0	278.2	0.249	123.7	11.1	251
03/18/10 10:30	7,906.8	5,201.3	266.4	0.241	122.1	10.9	248
03/18/10 10:31	7,906.8	5,246.0	268.6	0.253	123.0	11.3	251
03/18/10 10:32	7,906.7	5,442.5	278.7	0.250	122.7	11.2	248
03/18/10 10:33	7,906.8	5,319.8	272.4	0.242	122.5	10.9	245
03/18/10 10:34	7,906.8	5,426.7	277.9	0.255	124.0	11.3	248
Average	7,906.9	5,508.5	282.1	0.250	123.2	11.2	249
Minimum	7,906.7	5,201.3	266.4	0.240	120.7	10.9	243
Maximum	7,907.0	5,863.0	300.2	0.258	126.9	11.4	254
Summation	166,044.9	115,678.0	5,923.7	5.247	2,587.5	234.4	5,224
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/18/10 12:22 Report Version 2.0.0215

CLT\das

ED_002508A_00000577-00008

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 10:47 Through 03/18/2010 11:07
Time Online Criteria: 1 minute(s)

Source	BLR1						
Parameter (Unit)	Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10 10:47	7,907.0	5,831.6	298.6	0.250	121.8	11.3	243
03/18/10 10:48	7,906.9	5,758.3	294.9	0.251	122.0	11.3	253
03/18/10 10:49	7,906.9	5,552.2	284.3	0.247	123.9	11.0	251
03/18/10 10:50	7,854.8	5,665.7	287.0	0.249	123.4	11.2	249
03/18/10 10:51	7,723.2	6,702.6	330.1	0.249	121.3	11.5	245
03/18/10 10:52	7,723.2	6,602.8	325.1	0.236	119.9	11.1	250
03/18/10 10:53	7,723.1	6,847.7	337.2	0.240	121.0	11.2	244
03/18/10 10:54	7,723.2	6,892.8	339.4	0.235	119.4	11.1	243
03/18/10 10:55	7,723.2	6,698.0	329.8	0.246	122.4	11.3	254
03/18/10 10:56	7,723.2	6,660.2	327.9	0.246	124.0	11.2	252
03/18/10 10:57	7,723.1	6,761.6	332.9	0.242	122.0	11.2	244
03/18/10 10:58	7,723.1	6,751.8	333.0	0.246	122.6	11.3	252
03/18/10 10:59	7,723.1	6,543.4	322.2	0.239	122.6	11.0	251
03/18/10 11:00	7,723.1	6,576.7	323.9	0.241	122.6	11.1	247
03/18/10 11:01	7,723.2	6,726.1	331.3	0.245	121.9	11.3	253
03/18/10 11:02	7,723.1	6,692.3	329.6	0.237	121.9	11.0	246
03/18/10 11:03	7,723.1	6,734.6	331.7	0.242	122.0	11.2	246
03/18/10 11:04	7,723.1	6,886.8	339.2	0.247	121.7	11.4	251
03/18/10 11:05	7,723.1	6,649.1	327.5	0.240	123.1	11.0	247
03/18/10 11:06	7,723.2	6,653.9	327.7	0.250	124.6	11.3	246
03/18/10 11:07	7,723.1	6,958.4	342.7	0.250	123.1	11.4	245
Average	7,755.7	6,531.3	323.6	0.244	122.2	11.2	248
Minimum	7,723.1	5,552.2	284.3	0.235	119.4	11.0	243
Maximum	7,907.0	6,958.4	342.7	0.251	124.6	11.5	254
Summation	162,869.0	137,156.6	6,796.0	5.128	2,567.2	235.4	5,212
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration **S = Substituted I = Invalid** **M = Maintenance O = Out Of Control**

Report Generated: 03/18/10 12:23 Report Version 2.0.0215 CLT\\das

ED_002508A_00000577-00009

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 11:22 Through 03/18/2010 11:42
Time Online Criteria: 1 minute(s)

Source		BLR1						
Parameter (Unit)		Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10	11:22	7,723.2	6,779.3	333.8	0.251	122.3	11.5	250
03/18/10	11:23	7,723.2	7,002.5	344.8	0.243	122.2	11.2	248
03/18/10	11:24	7,723.1	7,003.9	344.9	0.235	120.6	11.0	242
03/18/10	11:25	7,723.1	6,764.4	333.1	0.245	120.9	11.4	255
03/18/10	11:26	7,723.1	6,746.1	332.2	0.248	123.4	11.3	253
03/18/10	11:27	7,723.1	6,684.8	329.2	0.235	123.4	10.8	240
03/18/10	11:28	7,723.1	7,225.2	355.8	0.243	120.8	11.3	246
03/18/10	11:29	7,723.1	6,915.3	340.5	0.265	120.9	12.1	250
03/18/10	11:30	7,723.1	6,943.9	341.9	0.266	132.4	11.3	250
03/18/10	11:31	7,705.7	6,427.5	309.1	0.247	128.4	10.9	251
03/18/10	11:32	7,694.8	5,745.3	272.2	0.237	125.7	10.7	235
03/18/10	11:33	7,694.9	7,064.4	334.7	0.201	108.0	10.6	240
03/18/10	11:34	7,694.8	7,030.6	333.1	0.216	113.6	10.8	253
03/18/10	11:35	7,694.8	6,576.4	311.6	0.240	119.8	11.3	253
03/18/10	11:36	7,694.8	6,434.1	304.8	0.269	122.0	12.2	262
03/18/10	11:37	7,694.8	6,357.3	301.2	0.249	125.9	11.2	254
03/18/10	11:38	7,694.9	6,102.8	289.2	0.215	115.1	10.6	252
03/18/10	11:39	7,694.8	6,450.0	305.6	0.223	112.5	11.2	247
03/18/10	11:40	7,694.8	6,079.3	288.0	0.239	115.7	11.6	252
03/18/10	11:41	7,694.8	6,269.2	297.0	0.245	121.3	11.4	249
03/18/10	11:42	7,694.8	6,338.8	300.3	0.233	118.9	11.1	244
Average		7,707.5	6,616.2	319.2	0.240	120.7	11.2	249
Minimum		7,694.8	5,745.3	272.2	0.201	108.0	10.6	235
Maximum		7,723.2	7,225.2	355.8	0.269	132.4	12.2	262
Summation		161,856.8	138,941.1	6,703.0	5.045	2,533.8	235.5	5,226
Included Data		21	21	21	21	21	21	21
Total number of		21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/18/10 14:41 Report Version 2.0.0215

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ED_002508A_00000577-00010

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 11:57 Through 03/18/2010 12:17
Time Online Criteria: 1 minute(s)

Source	BLR1						
Parameter (Unit)	Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10 11:57	7,694.8	6,244.5	296.9	0.219	112.8	11.0	248
03/18/10 11:58	7,694.9	6,605.9	313.0	0.217	111.8	11.0	242
03/18/10 11:59	7,694.9	6,339.3	300.4	0.216	112.6	10.9	249
03/18/10 12:00	7,694.9	6,303.6	298.7	0.228	115.0	11.2	251
03/18/10 12:01	7,694.9	6,707.3	317.8	0.223	113.9	11.1	242
03/18/10 12:02	7,694.9	6,460.9	306.1	0.221	113.7	11.0	251
03/18/10 12:03	7,694.9	6,250.0	296.1	0.224	116.8	10.9	251
03/18/10 12:04	7,694.9	6,587.2	312.1	0.223	113.6	11.1	245
03/18/10 12:05	7,694.9	6,371.1	301.9	0.216	112.5	10.9	252
03/18/10 12:06	7,694.9	6,252.7	296.3	0.221	115.0	10.9	251
03/18/10 12:07	7,694.9	6,311.6	299.0	0.218	113.7	10.9	247
03/18/10 12:08	7,694.9	6,237.1	295.5	0.222	114.4	11.0	254
03/18/10 12:09	7,694.8	6,147.3	291.3	0.224	116.5	10.9	248
03/18/10 12:10	7,694.8	6,296.4	298.3	0.221	115.1	10.9	245
03/18/10 12:11	7,694.8	6,549.2	310.3	0.228	115.2	11.2	248
03/18/10 12:12	7,794.8	6,119.9	303.5	0.223	115.8	10.8	248
03/18/10 12:13	7,800.1	5,807.4	288.7	0.236	118.9	11.1	249
03/18/10 12:14	7,800.1	5,866.6	291.6	0.214	117.6	10.2	236
03/18/10 12:15	7,800.1	6,152.1	305.8	0.216	114.4	10.6	246
03/18/10 12:16	7,800.1	6,621.5	329.2	0.297	122.0	12.9	263
03/18/10 12:17	7,800.1	5,766.7	286.7	0.274	128.3	11.8	245
Average	7,724.7	6,285.6	301.8	0.228	115.7	11.1	248
Minimum	7,694.8	5,766.7	286.7	0.214	111.8	10.2	236
Maximum	7,800.1	6,707.3	329.2	0.297	128.3	12.9	263
Summation	162,218.4	131,998.3	6,338.2	4.781	2,429.6	232.3	5,211
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration
Report Generated: 03/18/10 14:44 Report Version 2.0.0215

S = Substituted I = Invalid
CLT\\das

M = Maintenance O = Out Of Control

ED_002508A_00000577-00011

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 12:29 Through 03/18/2010 12:49
Time Online Criteria: 1 minute(s)

Source	BLR1						
Parameter (Unit)	Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10 12:29	7,800.2	6,301.1	313.2	0.246	122.4	11.2	248
03/18/10 12:30	7,800.1	6,474.8	321.9	0.230	118.1	10.9	246
03/18/10 12:31	7,800.2	6,191.0	307.8	0.223	118.1	10.6	249
03/18/10 12:32	7,800.1	6,288.5	312.6	0.239	119.1	11.2	253
03/18/10 12:33	7,800.2	6,275.8	312.0	0.221	116.0	10.7	248
03/18/10 12:34	7,800.1	5,981.4	297.3	0.224	118.3	10.6	250
03/18/10 12:35	7,800.1	6,385.1	317.4	0.229	116.7	11.0	246
03/18/10 12:36	7,800.1	6,299.2	313.1	0.224	116.1	10.8	247
03/18/10 12:37	7,800.1	6,222.7	309.3	0.232	120.2	10.8	251
03/18/10 12:38	7,800.2	6,142.7	305.4	0.227	119.2	10.7	249
03/18/10 12:39	7,800.1	6,417.6	319.0	0.248	127.4	10.9	244
03/18/10 12:40	7,800.1	6,273.2	311.8	0.241	126.1	10.7	253
03/18/10 12:41	7,800.1	6,282.0	312.2	0.244	127.6	10.7	247
03/18/10 12:42	7,800.1	6,197.2	308.0	0.234	120.3	10.9	251
03/18/10 12:43	7,800.2	6,070.0	301.7	0.233	119.8	10.9	253
03/18/10 12:44	7,800.2	5,872.8	291.9	0.229	119.8	10.7	250
03/18/10 12:45	7,800.1	5,935.7	295.1	0.233	119.6	10.9	252
03/18/10 12:46	7,800.2	5,894.0	293.0	0.224	119.5	10.5	248
03/18/10 12:47	7,800.2	5,725.3	284.6	0.228	120.7	10.6	249
03/18/10 12:48	7,800.1	6,097.0	303.1	0.240	122.3	11.0	248
03/18/10 12:49	7,800.1	5,995.4	298.0	0.232	123.0	10.6	245
Average	7,800.1	6,158.2	306.1	0.232	120.5	10.8	249
Minimum	7,800.1	5,725.3	284.6	0.221	116.0	10.5	244
Maximum	7,800.2	6,474.8	321.9	0.248	127.6	11.2	253
Summation	163,802.9	129,322.5	6,428.4	4.881	2,530.3	226.9	5,227
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration
Report Generated: 03/18/10 14:45 Report Version 2.0.0215

S = Substituted I = Invalid
CLT\\das

M = Maintenance O = Out Of Control

ED_002508A_00000577-00012

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/18/2010 13:02 Through 03/18/2010 13:22
Time Online Criteria: 1 minute(s)

Source		BLR1						
Parameter (Unit)		Fd (Fd)	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/18/10	13:02	7,798.8	6,279.1	309.9	0.237	121.9	10.9	238
03/18/10	13:03	7,798.8	6,049.1	298.6	0.232	120.2	10.8	253
03/18/10	13:04	7,798.9	6,245.1	308.3	0.248	125.1	11.1	252
03/18/10	13:05	7,798.8	6,303.9	311.2	0.234	121.6	10.8	238
03/18/10	13:06	7,798.8	6,191.3	305.6	0.241	122.8	11.0	253
03/18/10	13:07	7,798.8	6,106.7	301.5	0.252	129.3	10.9	253
03/18/10	13:08	7,798.9	6,185.2	305.3	0.237	124.4	10.7	244
03/18/10	13:09	7,798.9	5,957.4	294.1	0.243	126.0	10.8	253
03/18/10	13:10	7,798.9	6,048.9	298.6	0.245	126.1	10.9	253
03/18/10	13:11	7,798.9	6,056.2	298.9	0.244	127.8	10.7	244
03/18/10	13:12	7,798.9	5,822.2	287.4	0.243	125.9	10.8	253
03/18/10	13:13	7,798.8	5,892.6	290.9	0.244	125.6	10.9	252
03/18/10	13:14	7,798.8	5,953.8	293.9	0.241	125.1	10.8	246
03/18/10	13:15	7,798.8	5,951.0	293.7	0.252	128.1	11.0	245
03/18/10	13:16	7,798.8	6,150.8	303.6	0.257	130.9	11.0	248
03/18/10	13:17	7,798.8	6,507.9	321.2	0.263	132.2	11.1	242
03/18/10	13:18	7,798.8	6,290.5	310.5	0.264	134.4	11.0	245
03/18/10	13:19	7,798.8	6,296.7	310.8	0.260	133.6	10.9	249
03/18/10	13:20	7,798.9	6,593.3	325.4	0.252	128.9	11.1	248
03/18/10	13:21	7,798.9	6,362.6	314.1	0.239	125.1	10.7	246
03/18/10	13:22	7,798.9	6,171.4	304.6	0.247	128.2	10.8	251
Average		7,798.8	6,162.7	304.2	0.246	126.7	10.9	248
Minimum		7,798.8	5,822.2	287.4	0.232	120.2	10.7	238
Maximum		7,798.9	6,593.3	325.4	0.264	134.4	11.1	253
Summation		163,775.7	129,415.7	6,388.1	5.175	2,661.2	228.7	5,206
Included Data		21	21	21	21	21	21	21
Total number of		21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/18/10 14:46 Report Version 2.0.0215

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ED_002508A_00000577-00013

Boiler 2 Averages

Run	BLR2 Fd Value	BLR2 GASFLOW Value	BLR2 GHEATIN Value	BLR2 PNOX#/MM Value	BLR2 NOXPPM Value	BLR2 O2 Value	BLR2 STMLOAD Value
1	7,710.8	6,509.2	320.9	0.223	132.4	9.5	209
2	7,764.7	6,564.4	321.5	0.234	137.8	9.5	216
3	7,773.7	6,628.9	323.7	0.233	137.6	9.4	215
4	7,747.6	7,154.8	342.3	0.232	138.5	9.3	221
5	7,717.8	7,205.5	340.5	0.233	138.4	9.4	219
6	7,722.9	7,249.0	343.9	0.233	137.6	9.5	216
7	7,733.8	6,823.9	325.4	0.227	135.7	9.3	211
8	7,754.3	6,175.1	297.4	0.220	129.8	9.5	201
9	7,713.8	6,325.6	313.8	0.221	131.1	9.5	202

ED_002508A_00000577-00014

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 08:52 Through 03/17/2010 09:12
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 08:52	7,710.9	6,626.6	326.6	0.226	133.9	9.5	211
03/17/10 08:53	7,710.9	6,630.5	326.9	0.230	134.9	9.6	211
03/17/10 08:54	7,711.0	6,538.3	322.3	0.224	133.8	9.4	211
03/17/10 08:55	7,710.9	6,521.0	321.5	0.219	132.3	9.3	208
03/17/10 08:56	7,710.9	6,510.1	320.9	0.223	133.2	9.4	207
03/17/10 08:57	7,710.9	6,586.0	324.7	0.223	132.3	9.5	206
03/17/10 08:58	7,710.9	6,628.2	326.8	0.222	131.4	9.5	205
03/17/10 08:59	7,710.9	6,599.8	325.4	0.229	134.4	9.6	208
03/17/10 09:00	7,710.8	6,576.0	324.2	0.224	133.6	9.4	206
03/17/10 09:01	7,710.8	6,379.0	314.5	0.215	129.8	9.3	209
03/17/10 09:02	7,710.8	6,278.8	309.5	0.212	129.9	9.1	206
03/17/10 09:03	7,710.6	6,281.6	309.7	0.215	129.6	9.3	204
03/17/10 09:04	7,710.7	6,328.9	312.0	0.214	129.3	9.3	205
03/17/10 09:05	7,710.6	6,331.5	312.1	0.215	129.4	9.3	205
03/17/10 09:06	7,710.8	6,288.7	310.0	0.220	130.2	9.5	208
03/17/10 09:07	7,710.6	6,301.3	310.7	0.224	133.0	9.5	208
03/17/10 09:08	7,710.6	6,442.6	317.6	0.221	131.2	9.5	209
03/17/10 09:09	7,710.6	6,607.5	325.7	0.224	131.7	9.6	210
03/17/10 09:10	7,710.8	6,624.1	326.6	0.232	134.9	9.7	216
03/17/10 09:11	7,710.7	6,739.3	332.2	0.230	136.0	9.5	213
03/17/10 09:12	7,710.7	6,874.3	338.9	0.233	135.6	9.7	217
Average	7,710.8	6,509.2	320.9	0.223	132.4	9.5	209
Minimum	7,710.6	6,278.8	309.5	0.212	129.3	9.1	204
Maximum	7,711.0	6,874.3	338.9	0.233	136.0	9.7	217
Summation	161,926.2	136,694.1	6,738.8	4.675	2,780.6	198.5	4,383
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 12:43 Report Version 2.0.0215

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ED_002508A_00000577-00015

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 09:25 Through 03/17/2010 09:45
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 09:25	7,764.7	6,333.2	310.1	0.233	136.9	9.5	213
03/17/10 09:26	7,764.8	6,389.1	312.9	0.229	135.8	9.4	214
03/17/10 09:27	7,764.7	6,222.1	304.7	0.226	134.2	9.4	216
03/17/10 09:28	7,764.7	6,229.2	305.0	0.225	134.7	9.3	215
03/17/10 09:29	7,764.7	6,280.2	307.5	0.228	135.6	9.4	216
03/17/10 09:30	7,764.8	6,288.6	308.0	0.228	135.3	9.4	218
03/17/10 09:31	7,764.7	6,347.7	310.9	0.237	138.4	9.6	218
03/17/10 09:32	7,764.8	6,480.0	317.4	0.242	141.3	9.6	218
03/17/10 09:33	7,764.7	6,608.3	323.7	0.242	140.0	9.7	217
03/17/10 09:34	7,764.8	7,052.8	345.4	0.248	141.0	9.9	214
03/17/10 09:35	7,764.8	7,018.9	343.8	0.250	139.3	10.1	223
03/17/10 09:36	7,764.7	6,986.0	342.2	0.250	144.5	9.7	221
03/17/10 09:37	7,764.7	6,967.2	341.3	0.245	144.4	9.5	221
03/17/10 09:38	7,764.7	6,786.0	332.5	0.240	142.3	9.4	219
03/17/10 09:39	7,764.7	6,772.2	331.7	0.232	140.1	9.2	217
03/17/10 09:40	7,764.7	6,565.4	321.6	0.229	138.0	9.2	217
03/17/10 09:41	7,764.7	6,502.9	318.5	0.223	134.9	9.2	212
03/17/10 09:42	7,764.7	6,369.8	312.0	0.221	133.6	9.2	213
03/17/10 09:43	7,764.6	6,393.8	313.2	0.220	131.6	9.3	208
03/17/10 09:44	7,764.5	6,621.4	324.3	0.227	133.7	9.5	209
03/17/10 09:45	7,764.5	6,635.4	325.0	0.235	137.6	9.6	212
Average	7,764.7	6,564.4	321.5	0.234	137.8	9.5	216
Minimum	7,764.5	6,222.1	304.7	0.220	131.6	9.2	208
Maximum	7,764.8	7,052.8	345.4	0.250	144.5	10.1	223
Summation	163,058.7	137,852.2	6,751.7	4.911	2,893.2	199.1	4,531
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 12:46 Report Version 2.0.0215

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ED_002508A_00000577-00016

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 10:00 Through 03/17/2010 10:20
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 10:00	7,764.8	6,449.4	315.9	0.224	133.9	9.3	208
03/17/10 10:01	7,764.8	6,321.1	309.6	0.224	134.1	9.3	209
03/17/10 10:02	7,764.8	6,342.3	310.6	0.220	132.7	9.2	205
03/17/10 10:03	7,766.1	6,397.0	313.2	0.223	132.3	9.4	209
03/17/10 10:04	7,775.7	6,408.7	312.7	0.225	134.4	9.3	211
03/17/10 10:05	7,775.7	6,384.7	311.6	0.228	135.1	9.4	211
03/17/10 10:06	7,775.6	6,773.0	330.5	0.230	136.3	9.4	209
03/17/10 10:07	7,775.8	6,578.2	321.0	0.234	135.3	9.7	218
03/17/10 10:08	7,775.8	6,571.0	320.7	0.232	138.7	9.3	218
03/17/10 10:09	7,775.6	6,663.8	325.2	0.226	136.3	9.2	213
03/17/10 10:10	7,775.6	6,647.7	324.4	0.231	136.0	9.5	221
03/17/10 10:11	7,775.8	6,528.1	318.6	0.235	140.4	9.3	219
03/17/10 10:12	7,775.7	6,547.2	319.5	0.231	139.4	9.2	218
03/17/10 10:13	7,775.7	6,541.2	319.2	0.233	138.1	9.4	218
03/17/10 10:14	7,775.7	6,487.3	316.6	0.233	139.1	9.3	217
03/17/10 10:15	7,775.7	6,721.3	328.0	0.238	138.6	9.5	215
03/17/10 10:16	7,775.7	6,789.0	331.4	0.245	141.3	9.7	213
03/17/10 10:17	7,775.7	7,117.9	347.4	0.246	140.8	9.8	214
03/17/10 10:18	7,775.6	7,082.8	345.6	0.247	141.2	9.8	220
03/17/10 10:19	7,775.6	6,902.5	336.8	0.244	143.1	9.5	221
03/17/10 10:20	7,775.6	6,952.4	339.3	0.236	142.4	9.2	218
Average	7,773.7	6,628.9	323.7	0.233	137.6	9.4	215
Minimum	7,764.8	6,321.1	309.6	0.220	132.3	9.2	205
Maximum	7,775.8	7,117.9	347.4	0.247	143.1	9.8	221
Summation	163,247.1	139,206.6	6,797.8	4.883	2,889.5	197.7	4,505
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 12:48 Report Version 2.0.0215

CLT\\das

ED_002508A_00000577-00017

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 10:39 Through 03/17/2010 10:59
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 10:39	7,775.7	7,312.6	356.9	0.235	138.0	9.5	220
03/17/10 10:40	7,775.7	7,218.1	352.2	0.225	135.5	9.2	217
03/17/10 10:41	7,775.8	7,341.6	358.3	0.230	136.3	9.4	217
03/17/10 10:42	7,775.7	7,332.2	357.8	0.237	139.0	9.5	220
03/17/10 10:43	7,775.7	7,359.3	359.1	0.237	140.5	9.4	221
03/17/10 10:44	7,758.6	7,349.7	354.3	0.232	139.1	9.3	222
03/17/10 10:45	7,737.6	7,472.1	354.8	0.233	138.6	9.4	223
03/17/10 10:46	7,737.6	7,531.0	357.6	0.236	140.4	9.4	226
03/17/10 10:47	7,737.5	7,362.0	349.5	0.235	139.7	9.4	227
03/17/10 10:48	7,737.6	7,274.0	345.4	0.237	142.2	9.3	227
03/17/10 10:49	7,737.5	7,214.4	342.5	0.234	141.8	9.2	226
03/17/10 10:50	7,737.5	7,170.6	340.5	0.232	140.6	9.2	224
03/17/10 10:51	7,737.6	7,084.1	336.4	0.232	139.6	9.3	222
03/17/10 10:52	7,737.6	7,244.6	344.0	0.229	137.8	9.3	219
03/17/10 10:53	7,737.5	7,132.0	338.6	0.230	135.7	9.5	224
03/17/10 10:54	7,737.5	7,033.7	334.0	0.231	138.7	9.3	220
03/17/10 10:55	7,737.5	6,939.7	329.5	0.233	138.6	9.4	219
03/17/10 10:56	7,737.5	6,936.2	329.3	0.230	136.8	9.4	216
03/17/10 10:57	7,737.6	6,756.4	320.8	0.228	136.7	9.3	219
03/17/10 10:58	7,737.5	6,603.6	313.5	0.227	137.6	9.2	213
03/17/10 10:59	7,737.5	6,582.0	312.5	0.226	135.7	9.3	213
Average	7,747.6	7,154.8	342.3	0.232	138.5	9.3	221
Minimum	7,737.5	6,582.0	312.5	0.225	135.5	9.2	213
Maximum	7,775.8	7,531.0	359.1	0.237	142.2	9.5	227
Summation	162,700.3	150,249.9	7,187.5	4.869	2,908.9	196.2	4,635
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 12:49 Report Version 2.0.0215

CLT\\das

ED_002508A_00000577-00018

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 11:23 Through 03/17/2010 11:43
Time Online Criteria: 1 minute(s)

Source		BLR2						
Parameter (Unit)		Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10	11:23	7,737.5	6,978.2	331.3	0.237	137.3	9.7	214
03/17/10	11:24	7,737.6	7,019.1	333.3	0.243	142.0	9.6	217
03/17/10	11:25	7,720.2	7,034.5	332.7	0.242	142.2	9.6	217
03/17/10	11:26	7,715.4	7,269.6	343.3	0.238	139.5	9.6	218
03/17/10	11:27	7,715.4	7,132.4	336.9	0.238	139.7	9.6	222
03/17/10	11:28	7,715.4	7,263.8	343.1	0.235	140.1	9.4	220
03/17/10	11:29	7,715.4	7,352.4	347.3	0.234	137.5	9.6	221
03/17/10	11:30	7,715.4	7,413.7	350.1	0.236	139.7	9.5	222
03/17/10	11:31	7,715.4	7,421.9	350.5	0.234	138.4	9.5	221
03/17/10	11:32	7,715.5	7,681.0	362.8	0.232	137.6	9.5	219
03/17/10	11:33	7,715.4	7,602.0	359.0	0.237	139.3	9.6	222
03/17/10	11:34	7,715.4	7,639.9	360.8	0.234	138.7	9.5	223
03/17/10	11:35	7,715.5	7,484.9	353.5	0.228	137.4	9.3	221
03/17/10	11:36	7,715.5	7,371.1	348.1	0.234	141.2	9.3	221
03/17/10	11:37	7,715.4	7,248.7	342.4	0.228	138.7	9.2	218
03/17/10	11:38	7,715.5	7,202.6	340.2	0.227	136.5	9.3	216
03/17/10	11:39	7,715.4	7,097.5	335.2	0.227	135.3	9.4	219
03/17/10	11:40	7,715.4	6,870.7	324.5	0.228	138.7	9.2	218
03/17/10	11:41	7,715.4	6,848.2	323.4	0.225	135.5	9.3	214
03/17/10	11:42	7,715.4	6,743.2	318.5	0.224	134.7	9.3	214
03/17/10	11:43	7,715.4	6,640.6	313.6	0.226	136.2	9.3	216
Average		7,717.8	7,205.5	340.5	0.233	138.4	9.4	219
Minimum		7,715.4	6,640.6	313.6	0.224	134.7	9.2	214
Maximum		7,737.6	7,681.0	362.8	0.243	142.2	9.7	223
Summation		162,072.9	151,316.0	7,150.5	4.887	2,906.2	198.3	4,593
Included Data		21	21	21	21	21	21	21
Total number of		21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration
Report Generated: 03/17/10 13:26 Report Version 2.0.0215

S = Substituted I = Invalid
CLT\\das

M = Maintenance O = Out Of Control

ED_002508A_00000577-00019

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 11:55 Through 03/17/2010 12:15
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 11:55	7,715.2	6,758.7	319.3	0.231	136.9	9.5	216
03/17/10 11:56	7,715.2	6,793.0	320.9	0.231	136.8	9.5	216
03/17/10 11:57	7,715.3	6,682.5	315.7	0.227	135.3	9.4	210
03/17/10 11:58	7,715.3	6,658.9	314.6	0.232	136.4	9.6	214
03/17/10 11:59	7,715.2	6,443.0	304.4	0.228	135.9	9.4	211
03/17/10 12:00	7,715.3	6,357.7	300.3	0.224	134.8	9.3	210
03/17/10 12:01	7,715.3	6,282.2	296.8	0.219	131.9	9.3	208
03/17/10 12:02	7,715.3	6,463.6	305.3	0.218	131.6	9.3	204
03/17/10 12:03	7,715.4	6,524.7	308.2	0.227	131.8	9.7	208
03/17/10 12:04	7,715.3	7,041.3	332.6	0.229	134.4	9.6	200
03/17/10 12:05	7,716.8	7,289.9	344.6	0.243	133.6	10.3	211
03/17/10 12:06	7,731.1	7,913.6	376.9	0.243	138.7	9.9	215
03/17/10 12:07	7,731.1	7,861.1	374.4	0.244	141.6	9.7	220
03/17/10 12:08	7,731.0	8,069.3	384.3	0.243	142.5	9.6	224
03/17/10 12:09	7,731.1	8,047.6	383.3	0.236	140.4	9.4	226
03/17/10 12:10	7,731.1	8,061.3	384.0	0.237	142.5	9.3	227
03/17/10 12:11	7,731.1	8,049.8	383.4	0.235	141.3	9.3	227
03/17/10 12:12	7,731.1	7,992.3	380.7	0.236	140.7	9.4	228
03/17/10 12:13	7,731.2	7,774.2	370.3	0.232	139.5	9.3	225
03/17/10 12:14	7,731.2	7,675.0	365.6	0.235	141.3	9.3	225
03/17/10 12:15	7,731.2	7,489.3	356.7	0.233	141.0	9.2	218
Average	7,722.9	7,249.0	343.9	0.233	137.6	9.5	216
Minimum	7,715.2	6,282.2	296.8	0.218	131.6	9.2	200
Maximum	7,731.2	8,069.3	384.3	0.244	142.5	10.3	228
Summation	162,180.8	152,229.0	7,222.3	4.883	2,888.9	199.3	4,543
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 13:27 Report Version 2.0.0215

CLT\\das

ED_002508A_00000577-00020

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 12:28 Through 03/17/2010 12:48
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 12:28	7,731.1	6,712.2	319.7	0.224	134.7	9.3	209
03/17/10 12:29	7,731.2	6,813.9	324.5	0.221	132.8	9.3	211
03/17/10 12:30	7,731.2	7,016.6	334.1	0.223	133.8	9.3	212
03/17/10 12:31	7,731.1	6,942.4	330.6	0.229	133.9	9.6	220
03/17/10 12:32	7,731.1	6,953.6	331.1	0.227	137.4	9.2	220
03/17/10 12:33	7,731.2	6,980.9	332.4	0.229	137.5	9.3	220
03/17/10 12:34	7,731.2	7,109.1	338.5	0.233	140.2	9.3	218
03/17/10 12:35	7,731.2	7,154.7	340.7	0.231	136.3	9.5	218
03/17/10 12:36	7,731.1	7,067.7	336.6	0.237	140.0	9.5	220
03/17/10 12:37	7,731.2	6,833.1	325.4	0.231	139.0	9.3	216
03/17/10 12:38	7,731.2	6,935.8	330.3	0.230	138.4	9.3	212
03/17/10 12:39	7,731.2	6,843.9	325.9	0.226	135.8	9.3	208
03/17/10 12:40	7,731.1	6,756.5	321.7	0.231	137.5	9.4	209
03/17/10 12:41	7,731.1	6,714.9	319.8	0.228	138.5	9.2	204
03/17/10 12:42	7,731.1	6,686.5	318.4	0.225	135.4	9.3	202
03/17/10 12:43	7,731.1	6,866.7	327.0	0.224	133.5	9.4	203
03/17/10 12:44	7,731.1	6,889.8	328.2	0.230	136.2	9.5	203
03/17/10 12:45	7,731.1	6,709.2	319.6	0.227	135.4	9.4	209
03/17/10 12:46	7,741.6	6,551.6	313.6	0.220	133.0	9.2	210
03/17/10 12:47	7,754.3	6,398.7	308.2	0.217	131.5	9.2	208
03/17/10 12:48	7,754.3	6,362.6	306.4	0.216	129.4	9.3	209
Average	7,733.8	6,823.9	325.4	0.227	135.7	9.3	211
Minimum	7,731.1	6,362.6	306.4	0.216	129.4	9.2	202
Maximum	7,754.3	7,154.7	340.7	0.237	140.2	9.6	220
Summation	162,410.8	143,301.4	6,832.7	4.759	2,850.2	196.1	4,441
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 13:49 Report Version 2.0.0215

CLT\das

ED_002508A_00000577-00021

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 13:01 Through 03/17/2010 13:21
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 13:01	7,754.3	5,574.5	268.5	0.207	124.1	9.3	193
03/17/10 13:02	7,754.3	5,570.7	268.3	0.208	124.9	9.3	193
03/17/10 13:03	7,754.3	5,399.3	260.1	0.213	126.4	9.4	196
03/17/10 13:04	7,754.3	5,437.1	261.9	0.212	126.8	9.3	195
03/17/10 13:05	7,754.3	5,607.0	270.0	0.213	126.7	9.4	191
03/17/10 13:06	7,754.3	6,174.7	297.4	0.220	126.4	9.8	191
03/17/10 13:07	7,754.2	6,247.6	300.9	0.230	127.3	10.2	202
03/17/10 13:08	7,754.2	6,498.3	313.0	0.229	132.8	9.7	199
03/17/10 13:09	7,754.2	6,807.6	327.9	0.235	132.1	10.0	206
03/17/10 13:10	7,754.2	6,718.9	323.6	0.231	131.6	9.9	213
03/17/10 13:11	7,754.2	6,748.8	325.0	0.226	134.6	9.4	210
03/17/10 13:12	7,754.3	6,875.5	331.1	0.226	134.6	9.4	210
03/17/10 13:13	7,754.2	6,650.8	320.3	0.225	133.5	9.4	214
03/17/10 13:14	7,754.4	6,585.4	317.2	0.221	132.5	9.3	209
03/17/10 13:15	7,754.3	6,410.1	308.7	0.222	131.7	9.4	209
03/17/10 13:16	7,754.3	6,249.6	301.0	0.220	131.7	9.3	206
03/17/10 13:17	7,754.3	6,084.5	293.0	0.220	132.0	9.3	204
03/17/10 13:18	7,754.4	6,055.9	291.7	0.211	127.5	9.2	199
03/17/10 13:19	7,754.4	6,054.6	291.6	0.215	127.7	9.4	196
03/17/10 13:20	7,754.3	6,003.9	289.1	0.220	129.4	9.5	197
03/17/10 13:21	7,754.4	5,921.4	285.2	0.221	131.2	9.4	193
Average	7,754.3	6,176.1	297.4	0.220	129.8	9.5	201
Minimum	7,754.2	5,399.3	260.1	0.207	124.1	9.2	191
Maximum	7,754.4	6,875.5	331.1	0.235	134.6	10.2	214
Summation	162,840.1	129,676.2	6,245.5	4.625	2,729.5	199.3	4,226
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

Report Generated: 03/17/10 15:01 Report Version 2.0.0215

S = Substituted I = Invalid

CLT\\das

M = Maintenance O = Out Of Control

ED_002508A_00000577-00022

Average Data

Plant: U.S. STEEL CLAIRTON
Interval: 1 Minute
Report Period: 03/17/2010 13:35 Through 03/17/2010 13:55
Time Online Criteria: 1 minute(s)

Source	BLR2						
Parameter (Unit)	Fd ()	GASFLOW (HSCFH)	GHEATIN (MMBTU/HR)	NOX#/MM (LB/MMBTU)	NOXPPM (PPM)	O2 (PERCENT)	STMLOAD (KLB/HR)
03/17/10 13:35	7,713.8	6,095.6	302.4	0.216	125.6	9.7	196
03/17/10 13:36	7,713.8	6,117.0	303.5	0.219	126.6	9.6	197
03/17/10 13:37	7,713.8	6,293.5	312.2	0.220	130.0	9.5	198
03/17/10 13:38	7,713.9	6,412.7	318.1	0.222	130.3	9.6	202
03/17/10 13:39	7,713.9	6,280.8	311.6	0.220	128.9	9.6	205
03/17/10 13:40	7,713.9	6,388.1	316.9	0.221	130.8	9.5	202
03/17/10 13:41	7,713.9	6,389.4	317.0	0.222	131.4	9.5	205
03/17/10 13:42	7,713.9	6,380.0	316.5	0.218	130.1	9.4	204
03/17/10 13:43	7,713.9	6,421.4	318.6	0.217	129.5	9.4	204
03/17/10 13:44	7,713.9	6,473.1	321.1	0.222	131.7	9.5	202
03/17/10 13:45	7,713.8	6,461.0	320.5	0.226	132.8	9.6	205
03/17/10 13:46	7,713.8	6,360.6	315.5	0.220	132.6	9.3	204
03/17/10 13:47	7,713.8	6,366.2	315.8	0.226	133.9	9.5	203
03/17/10 13:48	7,713.7	6,271.3	311.1	0.223	133.4	9.4	203
03/17/10 13:49	7,713.8	6,289.6	312.0	0.219	130.7	9.4	203
03/17/10 13:50	7,713.7	6,262.0	310.7	0.218	131.6	9.3	201
03/17/10 13:51	7,713.8	6,373.9	316.2	0.223	132.1	9.5	199
03/17/10 13:52	7,713.8	6,431.3	319.1	0.225	132.3	9.6	201
03/17/10 13:53	7,713.7	6,296.6	312.4	0.226	132.8	9.6	201
03/17/10 13:54	7,713.8	6,285.4	311.8	0.224	132.5	9.5	199
03/17/10 13:55	7,713.8	6,187.4	307.0	0.219	130.6	9.4	199
Average	7,713.8	6,325.6	313.8	0.221	131.1	9.5	202
Minimum	7,713.7	6,095.6	302.4	0.216	125.6	9.3	196
Maximum	7,713.9	6,473.1	321.1	0.226	133.9	9.7	205
Summation	161,990.2	132,836.9	6,590.0	4.646	2,752.2	199.4	4,233
Included Data	21	21	21	21	21	21	21
Total number of	21	21	21	21	21	21	21

F = Unit Offline E = Exceedance C = Calibration

S = Substituted I = Invalid

M = Maintenance O = Out Of Control

Report Generated: 03/17/10 15:02 Report Version 2.0.0215

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ED_002508A_00000577-00023

UNITED STATES STEEL CORPORATION
MON VALLEY COMPLEX
CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

Relative Accuracy Test Audit of the Continuous Emissions Monitoring Systems at United States Steel Corporation – Mon Valley Complex Clairton Plant – Boiler No. 1 and Boiler No. 2 per Pennsylvania Department of Environmental Protection - Continuous Source Monitoring Manual and Code of Federal Regulations, Title 40, Part 75 (Continuous Emission Monitoring) Requirements

March 17 and 18, 2010

MAY 2010

APPENDIX B

Chester Reference Method Comparison Data

CHESTER ENGINEERS

"Tradition in Engineering Excellence Since 1910"

U.S. Steel Corporation - Mon Valley Complex
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 1
STRATIFICATION TEST RESULTS using Chester data
MARCH 18, 2010

TIME OF TEST (EST)	NO_x (ppm)	O_2 (%)	TRAVERSE POINT	Chester NO_x (ppm, avg.)	Chester O_2 (%, avg.)	ABSOLUTE NO_X DELTA	ABSOLUTE O_2 DELTA
7:12	107.5	11.5	1				
7:13	106.3	11.7	1	106.9	11.6	1.15	0.02
7:14	107.5	11.7	2				
7:15	106.4	11.6	2	106.95	11.65	1.10	0.03
7:16	106	11.6	3				
7:17	106.5	11.6	3	106.25	11.6	1.80	0.02
7:18	106.3	11.6	4				
7:19	106.6	11.6	4	106.45	11.6	1.60	0.02
7:20	107.3	11.5	5				
7:21	107.5	11.6	5	107.4	11.55	0.65	0.07
7:22	108.3	11.5	6				
7:23	108.3	11.6	6	108.3	11.55	0.25	0.07
7:24	108.2	11.7	7				
7:25	108.5	11.6	7	108.35	11.65	0.30	0.03
7:26	109.1	11.7	8				
7:27	108.9	11.7	8	109	11.7	0.95	0.08
7:28	107.4	11.5	9				
7:29	106.8	11.8	9	107.1	11.65	0.95	0.03
7:30	109.4	11.7	10				
7:31	112.2	11.7	10	110.8	11.7	2.75	0.08
7:32	111.1	11.7	11				
7:33	108.6	11.5	11	109.85	11.6	1.80	0.02
7:34	107.8	11.5	12				
7:35	110.6	11.8	12	109.2	11.65	1.15	0.03

Average of all TRAVERSE POINTS, $(NO_X)_{AVG}$ AND $(O_2)_{AVG}$ 108.05 11.63

MAXIMUM ppm DIFFERENCE OF $(NO_X)_I$ and $(NO_X)_{AVG}$ 2.75 OK
WHERE, I IS THE TRAVERSE POINT LOCATION

MAXIMUM DIFFERENCE OF $(NO_X)_I$ and $(NO_X)_{AVG}$ AS A PERCENT 2.55 OK
WHERE, I IS THE TRAVERSE POINT LOCATION

MAXIMUM % DIFFERENCE OF $(O_2)_I$ and $(O_2)_{AVG}$ 0.08 OK
WHERE, I IS THE TRAVERSE POINT LOCATION

MAXIMUM DIFFERENCE OF $(O_2)_I$ and $(O_2)_{AVG}$ AS A PERCENT 0.65 OK
WHERE, I IS THE TRAVERSE POINT LOCATION

not necessary per prot

RESULTS INDICATE THAT 1 SAMPLING POINT IS NEEDED.

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel - Mon Valley Complex	Page 1 of	2
PLANT SITE	Clairton Plant - Clairton, PA	ANALYZER	Advanced Pollution Instrumentation, Inc.
TEST UNIT	Exhaust Stack, Boiler No. 1	INSTRUMENT	Chemiluminescent NOx Analyzer-Model 200AH
TEST DATE	March 16 2010 OPERATOR H Tiffany	Serial No.	258
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	437.1 (ppmv, dry)

Time (~~EDT~~ EST)	Certified Cylinder Value (A) (ppmv, dry)	Analyzer Calibration Response (B) (ppmv, dry)	Absolute Arithmetic Difference (A - B) (ppmv, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0805	0	0.0	0	0	X	Zero Gas is 100% N2
0757	437.1	439.0	1.9	0.43	X	
0801	226.5	226.1	0.4	0.09	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Cal. Error < = 2% of Calibrated Span = 8.7 ppm NO
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 226.5 (ppmv, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (ppmv, dry)	System Response (C) (ppmv, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = 155 Notes
0821	Zero	0.0	0.3	0.07		
0825	Upscale	226.1	220.0	1.40		
0859	Zero	0.0	0.3	0.07	0	Run No. 1: 0830
0854	Upscale	226.1	218.9	1.65	0.25	0850
0927	Zero	0.0	0.3	0.07	0	Run No. 2: 0903
0931	Upscale	226.1	217.8	1.90	0.25	0923
1010	Zero	0.0	0.5	0.11	0.05	Run No. 3: 0936
1005	Upscale	226.1	218.0	1.85	0.05	0956
1039	Zero	0.0	0.3	0.07	0.05	Run No. 4: 1015
1044	Upscale	226.1	216.9	2.10	0.25	1035
1118	Zero	0.0	0.4	0.09	0.02	Run No. 5: 1048
1114	Upscale	226.1	216.3	2.24	0.14	1108
1148	Zero	0.0	0.0	0	0.09	Run No. 6: 1123
1154	Upscale	226.1	216.0	2.31	0.07	1143

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 21.9 ppm NO
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 13.1

USS Time (0829) = Chester Time (0830) − 1

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel - Mon Valley Complex	Page 2 of	2
PLANT SITE	Clairton Plant - Clairton, PA	ANALYZER	Advanced Pollution Instrumentation, Inc.
TEST UNIT	Exhaust Stack, Boiler No. 1	INSTRUMENT	Chemiluminescent NOx Analyzer-Model 200AH
TEST DATE	March 18, 2010 OPERATOR H Tiffany	Serial No.	258
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	437.1 (ppmv, dry)

Time (~~EDT~~)	Certified Cylinder Value (A) (ppmv, dry)	Analyzer Calibration Response (B) (ppmv, dry)	Absolute Arithmetic Difference (A - B) (ppmv, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
	0				X	Zero Gas is 100% N2
	437.1				X	
	226.5				X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Cal. Error < = 2% of Calibrated Span = 8.7 ppm NO
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 226.5 (ppmv, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~) EST	Calibration Gas	Analyzer Response (B) (ppmv, dry)	System Response (C) (ppmv, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1226	Zero	0.0	0.4	0.09	0.09	Run No. 7: 1158
1222	Upscale	226.1	216.5	2.20	0.11	1218
1254	Zero	0.0	0.3	0.07	0.02	Run No. 8: 1230
1258	Upscale	226.1	216.0	2.31	0.11	1250
1335	Zero	0.0	0.3	0.07	0	Run No. 9: 1303
1330	Upscale	226.1	216.3	2.24	0.07	1323
	Zero					Run No. 10:
	Upscale					
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					Run No. 13:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 21.9 ppm NO
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 13.1

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel-Mon Valley Complex	Page 1 of 2	
PLANT SITE	Clairton Plant-Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 1	INSTRUMENT	Carbon Dioxide Analyzer - Model 100
TEST DATE	March 18 , 2010 OPERATOR HTiffany	Serial No.	5J06007
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	24.88 (%, dry)

Time (~~EDT~~ EST)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0757	0.0	0.0	0	0	X	Zero Gas is 100% N2
0805	24.88	24.9	0.02	0.08	X	
0808	11.97	12.0	0.03	0.12	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.39% CO2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 11.97 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = 5.5 sec Notes
0825	Zero	0.0	0.1	0.40		
0821	Upscale	12.0	11.9	0.40		
0854	Zero	0.0	0.1	0.40	0	Run No. 1: 0830
0859	Upscale	12.0	11.9	0.40	0	0850
0931	Zero	0.0	0.1	0.4	0	Run No. 2: 0903
0927	Upscale	12.0	11.9	0.4	0	0923
1005	Zero	0.0	0.1	0.4	0	Run No. 3: 0936
1010	Upscale	12.0	11.9	0.4	0	0956
1044	Zero	0.0	0.1	0.4	0	Run No. 4: 1015
1039	Upscale	12.0	11.9	0.4	0	1035
1114	Zero	0.0	0.1	0.4	0	Run No. 5: 1048
1110	Upscale	12.0	11.9	0.4	0	1108
1154	Zero	0.0	0.1	0.4	0	Run No. 6: 1123
1148	Upscale	12.0	11.9	0.4	0	1143

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 0.98% CO2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.59% CO2

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel-Mon Valley Complex	Page 2 of 2	
PLANT SITE	Clairton Plant-Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 1	INSTRUMENT	Carbon Dioxide Analyzer - Model 100
TEST DATE	March 18 , 2010 OPERATOR HTiffany	Serial No.	5J06007
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	24.88 (%, dry)

Time (~~EDT~~)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
	0.0				X	Zero Gas is 100% N2
	24.88				X	
	11.97				X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.39% CO2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: _____ (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1222	Zero	0.0	0.1	0.4	0	Run No. 7: 1158
1226	Upscale	12.0	11.9	0.4	0	1218
1258	Zero	0.0	0.1	0.4	0	Run No. 8: 1230
1254	Upscale	12.0	11.9	0.4	0	1250
1330	Zero	0.0	0.1	0.4	0	Run No. 9: 1303
1335	Upscale	12.0	11.9	0.4	0	1323
	Zero					Run No. 10:
	Upscale					
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					Run No. 13:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 0.98% CO2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.59% CO2

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel-Mon Valley Complex	Page 1 of 2	
PLANT SITE	Clairton Plant-Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 1	INSTRUMENT	Carbon Dioxide Analyzer - Model 100
TEST DATE	March 18, 2010 OPERATOR HTiffany	Serial No.	5J06007
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	19.78 (%, dry)

Time (~~EDT~~ EST)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0757	0.0	0.0	0	0	X	Zero Gas is 100% N2
0805	19.78	19.8	0.02	0.10	X	
0808	9.978	10.0	0.022	0.11	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.39% CO2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 9.978 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
0825	Zero	0.0	0.1	0.51		
0821	Upscale	10.0	9.9	0.51		
0854	Zero	0.0	0.2	1.01	0.51	Run No. 1: 0830
0859	Upscale	10.0	10.0	0	0.51	0850
0931	Zero	0.0	0.2	1.01	0	Run No. 2: 0903
0927	Upscale	10.0	9.9	0.51	0.51	0923
1005	Zero	0.0	0.2	1.01	0	Run No. 3: 0936
1010	Upscale	10.0	9.9	0.51	0	0956
1044	Zero	0.0	0.3	1.52	0.51	Run No. 4: 1015
1039	Upscale	10.0	9.9	0.51	0	1035
1114	Zero	0.0	0.3	1.52	0	Run No. 5: 1048
1118	Upscale	10.0	9.9	0.51	0	1108
1159	Zero	0.0	0.4	2.02	0.51	Run No. 6: 1123
1148	Upscale	10.0	10.0	0	0.51	1143

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 0.98% CO2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.59% CO2

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel-Mon Valley Complex	Page 2 of 2	
PLANT SITE	Clairton Plant-Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 1	INSTRUMENT	Carbon Dioxide Analyzer - Model 100
TEST DATE	March 18, 2010 OPERATOR HTiffany	Serial No.	5J06007
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	19.78 (%, dry)

Time (~~EDT~~)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
	0.0				X	Zero Gas is 100% N2
	19.78				X	
	9.978				X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.39% CO2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 9.978 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~) EST	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1222	Zero	0.0	0.3	1.52	0.51	Run No. 7: 1158
1226	Upscale	10.0	9.9	0.51	0.51	1218
1258	Zero	0.0	0.3	1.52	0	Run No. 8: 1230
1254	Upscale	10.0	9.9	0.51	0	1250
1330	Zero	0.0	0.3	1.52	0	Run No. 9: 1303
1335	Upscale	10.0	9.8	1.01	0.51	1323
	Zero					Run No. 10:
	Upscale					
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					Run No. 13:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 0.98% CO2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.59% CO2

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 1
Chester Mobile Air Quality Laboratory Data

MARCH 18, 2010

Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
7:41	106.6	11.7	4.7	243	250	Ambient Air
7:42	108	11.7	4.6	243	250	Ambient Air
7:43	110.5	11.7	4.6	243	250	Ambient Air
7:44	105	11.4	4.9	243	250	Pre-Test Calibrations
7:45	85.6	3.4	1.7	243	250	Pre-Test Calibrations
7:46	3.3	0.1	0.1	243	250	Pre-Test Calibrations
7:47	0	0.1	0.1	243	250	Pre-Test Calibrations
7:48	0	0.1	0.1	243	250	Pre-Test Calibrations
7:49	0	0.1	0.1	243	250	**Zero Gas**
7:50	0	0.1	0.1	243	250	Pre-Test Calibrations
7:51	0	0.1	0.1	243	250	Pre-Test Calibrations
7:52	0	0	0.1	243	250	Pre-Test Calibrations
7:53	63.7	0.1	0.1	243	250	Pre-Test Calibrations
7:54	405.4	0.1	0.1	243	250	Pre-Test Calibrations
7:55	437.3	0.1	0.1	243	250	Pre-Test Calibrations
7:56	437.8	0.1	0.1	243	250	Pre-Test Calibrations
7:57	**439.1**	**0.1**	**0.1**	243	250	**High NOx Span Gas**
7:58	437.5	0.1	0.1	243	250	Pre-Test Calibrations
7:59	265.7	0	0.1	242	250	Pre-Test Calibrations
8:00	226.3	0	0.1	242	250	Pre-Test Calibrations
8:01	**226.2**	0	0.1	242	250	**Mid NOx Span Gas**
8:02	203.4	14.1	10.5	242	250	Pre-Test Calibrations
8:03	28.5	24.8	19.8	242	250	Pre-Test Calibrations
8:04	0.3	24.8	19.9	242	250	Pre-Test Calibrations
8:05	**0**	**25**	**19.9**	242	250	**High O2/CO2 Span Gas**
8:06	0	17.3	14.2	242	250	Pre-Test Calibrations
8:07	0	12.1	10.1	242	250	Pre-Test Calibrations
8:08	0	**12.1**	**10.1**	242	250	**Mid O2/CO2 Span Gas**
8:09	10.3	12.1	6.7	242	250	Pre-Test Calibrations
8:10	105.3	11.6	4.6	242	250	Stack Gas
8:11	111.1	12	4.4	242	250	Stack Gas
8:12	108.2	11.9	4.5	242	250	Stack Gas
8:13	115.6	11.2	4.8	242	250	Stack Gas
8:14	117.3	11.3	4.8	242	250	Stack Gas
8:15	115.7	11.2	4.9	242	250	Stack Gas
8:16	114.4	11.1	4.9	242	250	Stack Gas
8:17	114.4	11.2	5	242	250	Bias Checks
8:18	112.8	14.2	3.9	242	250	Bias Checks
8:19	12.4	12	9.8	242	250	Bias Checks
8:20	0.3	12	9.9	240	250	Bias Checks
8:21	**0.3**	**12**	**10**	238	250	**Mid NOx Span Gas**
8:22	0.1	9.5	8.3	237	250	Bias Checks
8:23	143.5	0.2	0.3	235	250	Bias Checks
8:24	219.8	0.2	0.2	233	250	Bias Checks
8:25	**220**	**0.2**	**0.2**	232	250	**Mid O2/CO2 Span Gas**
8:26	220.1	0.1	0.2	231	250	Bias Checks
8:27	189	10	4.1	230	250	Stack Gas
8:28	119.5	11.4	4.7	230	250	Stack Gas
8:29	118.8	11.1	4.9	230	250	Stack Gas
8:30	118.7	11.3	4.8	231	250	**Run #1**
8:31	116.7	11.4	4.8	232	250	**Run #1**
8:32	116.2	11.1	5	233	250	**Run #1**
8:33	116.7	11.1	4.9	234	250	**Run #1**
8:34	116.1	11.2	4.9	235	250	**Run #1**

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 1
Chester Mobile Air Quality Laboratory Data

MARCH 18, 2010

Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
8:35	116.1	11	5	236	250	Run #1
8:36	115.6	11.3	4.9	237	250	Run #1
8:37	116.6	11.2	4.9	238	250	Run #1
8:38	116.2	11.1	4.9	238	250	Run #1
8:39	116.6	11.4	4.8	239	250	Run #1
8:40	117.1	11.3	4.9	239	250	Run #1
8:41	117.4	11.1	5	240	250	Run #1
8:42	116.2	11.4	4.8	240	250	Run #1
8:43	114.8	11.3	4.8	241	250	Run #1
8:44	113.9	11.1	5	241	250	Run #1
8:45	113.3	11.3	5	241	250	Run #1
8:46	113.3	11	5	242	250	Run #1
8:47	113.5	11.1	5	242	250	Run #1
8:48	111.6	11	5	242	250	Run #1
8:49	110.9	11.2	5	242	250	Run #1
8:50	112.5	11.1	5	243	250	Run #1
	115.2	11.2	4.9	238.4	250.0	21 Min. Analyzer Average, Ca
	0.30	0.15	0.20			Avg. Zero Bias Check, Co
	219.45	12.00	10.00			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	118.8	11.2	4.8			Corrected Conc., Cstack
	0.236 (lb/MMBtu)		Fd	7757.0		NOx Emission Factor
8:51	118.1	5.8	2.9	243	250	Bias Checks
8:52	213.1	0.1	0.2	242	250	Bias Checks
8:53	218.9	0.1	0.2	241	250	Bias Checks
8:54	**218.9**	**0.1**	**0.2**	239	250	Bias Checks
8:55	193.1	7.1	5.5	237	250	Bias Checks
8:56	2.3	11.9	10	236	250	Mid NOx Span Gas
8:57	0.7	11.9	10	234	250	Bias Checks
8:58	0.5	12	10	233	250	Bias Checks
8:59	**0.3**	**12**	**10**	232	250	Mid O2/CO2 Span Gas
9:00	3.1	11.6	8	231	250	Bias Checks
9:01	102.8	11	5.1	231	250	Stack Gas
9:02	114.1	11.2	5.1	232	250	Stack Gas
9:03	110	11.2	5.1	233	250	Run #2
9:04	109.8	11.1	5.2	234	250	Run #2
9:05	111.7	11.3	5.1	235	250	Run #2
9:06	111.9	11.2	5.2	236	250	Run #2
9:07	112.3	11	5.2	237	250	Run #2
9:08	110.1	11.2	5	238	250	Run #2
9:09	108.4	11.1	5.2	239	250	Run #2
9:10	106.7	10.9	5.2	239	250	Run #2
9:11	106.5	11.1	5.1	240	250	Run #2
9:12	107.3	10.9	5.2	241	250	Run #2
9:13	107.8	11	5.2	242	250	Run #2
9:14	108.6	11	5.2	242	250	Run #2
9:15	109.5	11.2	5.1	243	250	Run #2
9:16	111.2	11.2	5.1	243	250	Run #2
9:17	111.4	11	5.2	244	250	Run #2
9:18	112.2	11.3	5.1	244	250	Run #2
9:19	112.1	11.1	5.1	245	250	Run #2

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 1
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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
9:20	111.8	10.9	5.3	245	250	Run #2
9:21	111.2	11.3	5	245	250	Run #2
9:22	108.6	11.1	5.1	245	250	Run #2
9:23	109	10.8	5.3	246	250	Run #2
	109.9	11.1	5.2	240.8	250.0	21 Min. Analyzer Average, Ca
	0.30	0.10	0.25			Avg. Zero Bias Check, Co
	218.35	12.00	9.95			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	113.9	11.1	5.0			Corrected Conc., Cstack
	0.221 (lb/MMBtu)		Fd	7667.0		NOx Emission Factor
9:24	100.4	11.8	7.2	246	250	Stack Gas
9:25	3.4	12	9.9	245	250	Stack Gas
9:26	0.3	12	9.9	244	250	Bias Checks
9:27	**0.3**	**12**	**9.9**	243	250	Mid O2/CO2 Span Gas
9:28	0.3	7.7	6.9	241	250	Bias Checks
9:29	169.2	0.2	0.4	239	250	Bias Checks
9:30	217.6	0.1	0.3	238	250	Bias Checks
9:31	**217.8**	**0.1**	**0.3**	236	250	Mid NOx Span Gas
9:32	218.1	0.8	0.4	235	250	Bias Checks
9:33	167.7	11	4.9	234	250	Stack Gas
9:34	110.2	11	5.1	234	250	Stack Gas
9:35	110.6	11.2	5	235	250	Stack Gas
9:36	109.6	11	5.1	236	250	Run #3
9:37	110.2	11.1	5.1	237	250	Run #3
9:38	109.6	11.1	5.1	238	250	Run #3
9:39	108.6	11	5.2	239	250	Run #3
9:40	107.5	11.2	5.1	240	250	Run #3
9:41	107.1	11	5.1	240	250	Run #3
9:42	106.7	10.9	5.2	241	250	Run #3
9:43	108.4	11.3	5	242	250	Run #3
9:44	110.1	11	5.2	243	250	Run #3
9:45	111	11.1	5.1	243	250	Run #3
9:46	109.3	11.3	5.1	243	250	Run #3
9:47	108.2	10.9	5.3	244	250	Run #3
9:48	109.2	10.8	5.4	244	250	Run #3
9:49	110.3	11.1	5.3	245	250	Run #3
9:50	108.5	11.1	5.2	245	250	Run #3
9:51	109.2	11	5.2	245	250	Run #3
9:52	109.6	10.8	5.3	245	250	Run #3
9:53	110.1	11.3	5.1	245	250	Run #3
9:54	109.7	11	5.2	246	250	Run #3
9:55	112.1	10.9	5.3	246	250	Run #3
9:56	114.9	11.2	5.1	246	250	Run #3
	109.5	11.1	5.2	242.5	250.0	21 Min. Analyzer Average, Ca
	0.45	0.10	0.30			Avg. Zero Bias Check, Co
	217.90	11.95	9.95			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	113.6	11.1	5.0			Corrected Conc., Cstack
	0.228 (lb/MMBtu)		Fd	7907.0		NOx Emission Factor

U.S. Steel Corporation - Mon Valley Works
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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
9:57	119.6	11.1	5.1	246	250	Stack Gas
9:58	121.9	11.2	5.1	246	250	Stack Gas
9:59	119.4	11	5.2	246	250	Stack Gas
10:00	117.3	11	5.2	246	250	Stack Gas
10:01	116.8	10	4.9	246	250	Stack Gas
10:02	178.4	0.4	0.5	246	250	Stack Gas
10:03	217.9	0.1	0.3	245	250	Bias Checks
10:04	217.8	0.1	0.3	243	250	Bias Checks
10:05	**218**	**0.1**	**0.3**	242	250	**Mid NOx Span Gas**
10:06	218.1	0.1	0.3	240	250	Bias Checks
10:07	210	4.6	3.4	238	250	Bias Checks
10:08	60.5	11.9	9.9	236	250	Bias Checks
10:09	0.8	11.9	9.9	235	250	Bias Checks
10:10	**0.6**	**11.9**	**10**	234	250	**Mid O2/CO2 Span Gas**
10:11	9.3	11.6	7.8	233	250	Bias Checks
10:12	96.7	11.1	5	233	250	Bias Checks
10:13	114.4	11.1	5	234	250	Stack Gas
10:14	113.1	11.1	4.9	235	250	Stack Gas
10:15	113	11.1	5	236	250	**Run #4**
10:16	115.6	11	5	237	250	**Run #4**
10:17	115.1	11.2	5	238	250	**Run #4**
10:18	113.7	11.1	5	239	250	**Run #4**
10:19	114.6	11.2	4.9	239	250	**Run #4**
10:20	116.9	11.3	4.9	240	250	**Run #4**
10:21	116.1	11.1	5	241	250	**Run #4**
10:22	116.2	11.4	4.9	242	250	**Run #4**
10:23	119.3	11.1	5	242	250	**Run #4**
10:24	118.9	11.1	5	243	250	**Run #4**
10:25	115.3	11.3	4.9	243	250	**Run #4**
10:26	114.5	11	5	244	250	**Run #4**
10:27	114.9	11.3	4.8	244	250	**Run #4**
10:28	113.7	11.1	4.9	244	250	**Run #4**
10:29	114.6	11.1	4.9	245	250	**Run #4**
10:30	115.5	11.2	5	245	250	**Run #4**
10:31	114.1	11	5	245	250	**Run #4**
10:32	115.3	11.1	5	246	250	**Run #4**
10:33	114.4	11.2	4.9	246	250	**Run #4**
10:34	115	11.1	5.1	246	250	**Run #4**
10:35	116.3	11.2	4.9	246	250	**Run #4**
	115.4	11.2	5.0	242.4	250.0	**21 Min. Analyzer Average, Ca**
	0.45	0.10	0.30			**Avg. Zero Bias Check, Co**
	217.45	11.95	9.95			**Avg. Mid Span Bias Check, Cm**
	226.5	11.97	9.98			**Actual Mid Span Value, Cma**
	120.0	11.2	4.8			**Corrected Conc., Cstack**
	0.243 (lb/MMBtu)		Fd	7907.0		**NOx Emission Factor**
10:36	103.6	11.8	7.2	246	250	Stack Gas
10:37	14.1	12	9.9	246	250	Bias Checks
10:38	0.3	12	9.9	244	250	Bias Checks
10:39	**0.3**	**12**	**9.9**	243	250	**Mid O2/CO2 Span Gas**
10:40	34.8	4.3	4.2	241	250	Bias Checks

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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
10:41	204	0.2	0.4	240	250	Bias Checks
10:42	216.5	0.1	0.3	238	250	Bias Checks
10:43	216.7	0.1	0.3	237	250	Bias Checks
10:44	**216.9**	**0.1**	**0.3**	235	250	**Mid NOx Span Gas**
10:45	173.3	9.4	4	235	250	Bias Checks
10:46	114.8	11.1	5	235	250	Bias Checks
10:47	114.5	11.2	5	235	250	Stack Gas
10:48	113.8	11.3	4.9	236	250	**Run #5**
10:49	113.8	11.1	4.9	237	250	**Run #5**
10:50	116.1	11.2	5	238	250	**Run #5**
10:51	115.7	11.2	4.9	239	250	**Run #5**
10:52	113.3	11.3	4.8	240	250	**Run #5**
10:53	112.2	11	5	241	250	**Run #5**
10:54	112.7	11.3	4.9	242	250	**Run #5**
10:55	112.3	11.2	5	243	250	**Run #5**
10:56	114.3	11	5	243	250	**Run #5**
10:57	115.4	11.4	4.9	244	250	**Run #5**
10:58	114.4	11.4	5	244	250	**Run #5**
10:59	114	11	5.1	245	250	**Run #5**
11:00	114.1	11.1	5	245	250	**Run #5**
11:01	114.1	11.1	5.1	246	250	**Run #5**
11:02	113.2	11.2	5	246	250	**Run #5**
11:03	113.9	11.2	5	246	250	**Run #5**
11:04	113.6	11.1	5	246	250	**Run #5**
11:05	113.6	11.2	4.9	247	250	**Run #5**
11:06	115.4	11.2	5	247	250	**Run #5**
11:07	116.4	11.3	4.9	247	250	**Run #5**
11:08	115.2	11.3	4.9	247	250	**Run #5**
	114.2	11.2	5.0	243.3	250.0	**21 Min. Analyzer Average, Ca**
	0.40	0.10	0.30			**Avg. Zero Bias Check, Co**
	216.60	12.00	9.95			**Avg. Mid Span Bias Check, Cm**
	226.5	11.97	9.98			**Actual Mid Span Value, Cma**
	119.2	11.2	4.8			**Corrected Conc., Cstack**
	0.237 (lb/MMBtu)		Fd	7756.0		**NOx Emission Factor**
11:09	130.1	4.5	2.4	247	250	Stack Gas
11:10	203.9	0.1	0.4	247	250	Bias Checks
11:11	216.3	0.1	0.4	245	250	Bias Checks
11:12	216.3	0.1	0.4	244	250	Bias Checks
11:13	216.4	0.1	0.4	242	250	Bias Checks
11:14	**216.3**	**0.1**	**0.3**	240	250	**Mid NOx Span Gas**
11:15	154.3	10	7.8	239	250	Bias Checks
11:16	1.2	11.9	9.9	238	250	Bias Checks
11:17	0.7	12	10	237	250	Bias Checks
11:18	**0.5**	**12**	**10**	236	250	**Mid O2/CO2 Span Gas**
11:19	3.1	11.7	7.9	235	250	Bias Checks
11:20	103.7	11.1	5.1	235	250	Bias Checks
11:21	116.5	11.3	5	236	250	Bias Checks
11:22	114.3	11.3	5	237	250	Stack Gas
11:23	114.2	11.2	5	238	250	**Run #6**
11:24	113.7	11.3	5	239	250	**Run #6**
11:25	112.8	11.2	5.1	240	250	**Run #6**

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Chester Mobile Air Quality Laboratory Data

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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
11:26	113.1	11.2	5.1	241	250	Run #6
11:27	116.5	11.3	4.9	242	250	Run #6
11:28	114.5	10.8	5.2	243	250	Run #6
11:29	112.4	11.9	4.7	243	250	Run #6
11:30	118.7	11.5	4.8	244	250	Run #6
11:31	123	11.2	5	245	250	Run #6
11:32	119.5	11	5.1	245	250	Run #6
11:33	115.9	10.2	5.5	246	250	Run #6
11:34	100.5	11.1	5.2	246	250	Run #6
11:35	107.7	10.8	5.2	246	250	Run #6
11:36	112	11.4	5	247	250	Run #6
11:37	116	12.1	4.6	247	250	Run #6
11:38	115.7	11	5.2	247	250	Run #6
11:39	105.1	10.8	5.3	248	250	Run #6
11:40	104.6	11.4	4.9	248	250	Run #6
11:41	112.8	11.3	4.9	248	250	Run #6
11:42	113.7	11.4	5	248	250	Run #6
11:43	111.4	11.1	5.1	248	250	Run #6
	113.0	11.2	5.0	244.7	250.0	21 Min. Analyzer Average, Ca
	0.25	0.10	0.35			Avg. Zero Bias Check, Co
	216.15	12.00	10.00			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	118.3	11.2	4.8			Corrected Conc., Cstack
	0.234 (lb/MMBtu)		Fd	7708.0		NOx Emission Factor
11:44	107.3	11.7	7.1	249	250	Bias Checks
11:45	7.1	12	10	248	250	Bias Checks
11:46	0.3	12	10	247	250	Bias Checks
11:47	0.3	12	10	246	250	Bias Checks
11:48	**0**	**12**	**10**	244	250	Mid O2/CO2 Span Gas
11:49	0	12	10	242	250	Bias Checks
11:50	46	3.4	3.6	241	250	Bias Checks
11:51	204.5	0.1	0.5	239	250	Bias Checks
11:52	215.3	0.1	0.5	238	250	Bias Checks
11:53	215.6	0.1	0.4	236	250	Bias Checks
11:54	**216**	**0.1**	**0.4**	234	250	Mid NOx Span Gas
11:55	209.1	5.5	2.4	233	250	Bias Checks
11:56	109.8	10.8	5.2	232	250	Bias Checks
11:57	106.5	11	5.1	232	250	Stack Gas
11:58	105.7	11	5.1	233	250	Run #7
11:59	104.4	11.1	5.1	233	250	Run #7
12:00	105.1	10.8	5.2	234	250	Run #7
12:01	106.7	11.1	5.1	235	250	Run #7
12:02	105.9	11.2	5	236	250	Run #7
12:03	106.2	10.9	5.2	236	250	Run #7
12:04	108.1	10.9	5.2	237	250	Run #7
12:05	106.1	11.1	5	238	250	Run #7
12:06	104.6	10.8	5.1	238	250	Run #7
12:07	106.1	11	5.2	239	250	Run #7
12:08	105.9	10.9	5.2	239	250	Run #7
12:09	106.4	10.8	5.2	240	250	Run #7
12:10	108.6	11	5.1	240	250	Run #7

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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
12:11	107.7	10.9	5.2	241	250	Run #7
12:12	107.2	11	5.1	241	250	Run #7
12:13	108.7	11	5.2	242	250	Run #7
12:14	111.1	11	5.2	242	250	Run #7
12:15	109.7	9.9	5.6	242	250	Run #7
12:16	113.3	10.7	5.3	242	250	Run #7
12:17	117.7	13.6	3.8	242	250	Run #7
12:18	124.1	11.7	4.9	242	250	Run #7
	108.5	11.1	5.1	238.7	250.0	21 Min. Analyzer Average, Ca
	0.25	0.10	0.40			Avg. Zero Bias Check, Co
	216.30	12.00	9.95			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	113.5	11.0	4.9			Corrected Conc., Cstack
	0.222 (lb/MMBtu)		Fd	7725.0		NOx Emission Factor
12:19	107.6	6.7	3.2	243	250	Bias Checks
12:20	204.4	0.1	0.4	242	250	Bias Checks
12:21	216.4	0.1	0.4	241	250	Bias Checks
12:22	**216.6**	**0.1**	**0.4**	239	250	Mid NOx Span Gas
12:23	188.1	7.4	5.8	238	250	Bias Checks
12:24	19.8	11.9	9.9	236	250	Bias Checks
12:25	0.7	11.9	9.9	234	250	Bias Checks
12:26	**0.5**	**12**	**9.9**	233	250	Mid O2/CO2 Span Gas
12:27	0.3	11.7	8.7	232	250	Bias Checks
12:28	101.1	11	5.1	231	250	Stack Gas
12:29	118.4	10.9	5.2	231	250	Stack Gas
12:30	114.3	11.2	5	232	250	Run #8
12:31	110.1	10.8	5.1	233	250	Run #8
12:32	109.3	10.7	5.3	234	250	Run #8
12:33	110.4	11	5.1	235	250	Run #8
12:34	109.1	10.9	5.3	236	250	Run #8
12:35	108.7	10.6	5.4	237	250	Run #8
12:36	109.8	11	5.2	238	250	Run #8
12:37	109	10.8	5.3	238	250	Run #8
12:38	110.4	10.7	5.4	239	250	Run #8
12:39	115.9	10.8	5.4	240	250	Run #8
12:40	119.6	10.9	5.3	240	250	Run #8
12:41	118.2	10.6	5.5	241	250	Run #8
12:42	117	10.9	5.3	241	250	Run #8
12:43	111.6	10.9	5.3	242	250	Run #8
12:44	111.9	10.8	5.2	242	250	Run #8
12:45	111.3	10.8	5.2	242	250	Run #8
12:46	111	10.7	5.3	242	250	Run #8
12:47	110.8	10.6	5.3	242	250	Run #8
12:48	111.9	10.5	5.4	242	250	Run #8
12:49	113.6	11	5.3	243	250	Run #8
12:50	113.9	10.8	5.3	243	250	Run #8
	112.3	10.8	5.3	239.1	250.0	21 Min. Analyzer Average, Ca
	0.40	0.10	0.40			Avg. Zero Bias Check, Co
	216.30	12.00	9.90			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma

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U.S. Steel Corporation - Mon Valley Works
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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
	117.4	10.8	5.1			**Corrected Conc., Cstack**
	0.226 (lb/MMBtu)		Fd	7800.0		**NOx Emission Factor**
12:51	115.1	11.2	6.4	243	250	Bias Checks
12:52	15	12	9.9	242	250	Bias Checks
12:53	0.3	12	9.9	241	250	Bias Checks
12:54	**0.3**	**12**	**9.9**	240	250	**Mid O2/CO2 Span Gas**
12:55	31.1	4.7	4.6	238	250	Bias Checks
12:56	199.5	0.2	0.4	237	250	Bias Checks
12:57	215.9	0.1	0.4	235	250	Bias Checks
12:58	**216**	**0.1**	**0.4**	234	250	**Mid NOx Span Gas**
12:59	208.6	4.9	2.1	233	250	Bias Checks
13:00	130.3	10.6	5.3	232	250	Bias Checks
13:01	115	10.8	5.3	233	250	Stack Gas
13:02	113.5	10.7	5.4	233	250	Stack Gas
13:03	113.1	11	5.2	234	250	**Run #9**
13:04	112.8	10.6	5.4	235	250	**Run #9**
13:05	116.7	11.1	5.1	236	250	**Run #9**
13:06	113.8	11.1	5.2	237	250	**Run #9**
13:07	114.3	10.6	5.5	238	250	**Run #9**
13:08	121.5	10.9	5.2	239	250	**Run #9**
13:09	114.9	11	5.2	239	250	**Run #9**
13:10	116.9	10.6	5.4	240	250	**Run #9**
13:11	116.6	10.9	5.3	240	250	**Run #9**
13:12	118.2	11	5.3	240	250	**Run #9**
13:13	117	10.5	5.5	241	250	**Run #9**
13:14	116.1	10.9	5.2	241	250	**Run #9**
13:15	116.1	11	5.1	242	250	**Run #9**
13:16	119.1	10.8	5.2	242	250	**Run #9**
13:17	121.5	11	5.1	243	250	**Run #9**
13:18	123.4	11.3	5	243	250	**Run #9**
13:19	125.5	10.9	5.1	243	250	**Run #9**
13:20	120.7	10.8	5.2	243	250	**Run #9**
13:21	117.5	11.2	5.1	244	250	**Run #9**
13:22	116.3	10.9	5.2	244	250	**Run #9**
13:23	118.5	10.6	5.3	244	250	**Run #9**
	117.6	10.9	5.2	240.4	250.0	**21 Min. Analyzer Average, Ca**
	0.35	0.10	0.35			**Avg. Zero Bias Check, Co**
	216.15	11.95	9.90			**Avg. Mid Span Bias Check, Cm**
	226.5	11.97	9.98			**Actual Mid Span Value, Cma**
	123.1	10.9	5.1			**Corrected Conc., Cstack**
	0.240 (lb/MMBtu)		Fd	7799.0		**NOx Emission Factor**
13:24	116.9	11.1	5	244	250	Stack Gas
13:25	120.8	11	5.1	244	250	Stack Gas
13:26	127	4.7	2.9	244	250	Bias Checks
13:27	198.2	0.1	0.3	244	250	Bias Checks
13:28	216	0.1	0.3	243	250	Bias Checks
13:29	216.1	0.1	0.3	241	250	Bias Checks
13:30	**216.3**	**0.1**	**0.3**	239	250	**Mid NOx Span Gas**
13:31	216.4	2.2	1.5	237	250	Bias Checks

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 1
Chester Mobile Air Quality Laboratory Data

MARCH 18, 2010

Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
13:32	79.5	11.9	9.8	235	250	Bias Checks
13:33	0.9	11.9	9.9	234	250	Bias Checks
13:34	0.6	11.9	9.9	205	230	Bias Checks
13:35	**0.4**	**11.9**	**9.9**	-100	0	**Mid O2/CO2 Span Gas**
13:36	0.3	11.4	8.5	-100	0	Bias Checks
13:37	99.8	10.9	5.3	-100	0	Bias Checks

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U.S. STEEL CORPORATION - MON VALLEY COMPLEX
CLAIRTON PLANT - UTILITIES POWERHOUSE
CLAIRTON, PENNSYLVANIA

TABLE 1a

BOILER NO. 1
O2 CEM PART 75 RATA RESULTS
MARCH 18, 2010

All Test Runs

Test Run No.	Test Date	Start Time (EST)	Stop Time (EST)	RM Test Run Avg. O2 (%)	USS CEM Test Run Avg. O2 (%)	Arithmetic Difference (%)	
1	3/18/2010	8:30	8:50	11.2	11.2	0.0	<<<
2	3/18/2010	9:03	9:23	11.1	11.1	0.0	<<<
3	3/18/2010	9:36	9:56	11.1	11.1	0.0	<<<
4	3/18/2010	10:15	10:35	11.2	11.2	0.0	<<<
5	3/18/2010	10:48	11:08	11.2	11.2	0.0	<<<
6	3/18/2010	11:23	11:43	11.2	11.2	0.0	<<<
7	3/18/2010	11:58	12:18	11.0	11.1	-0.1	<<<
8	3/18/2010	12:30	12:50	10.8	10.8	0.0	<<<
9	3/18/2010	13:03	13:23	10.9	10.9	0.0	<<<
10							
11							
12							

Results:			
	Data Points (n)		9
	Arithmetic Mean Difference (d)		-0.037
	Standard Deviation (Sd)		0.018
	Confidence Coefficient (CC)		0.014
	Average RM Value (ARM)		11.1
For Semiannual RATAs	Relative Accuracy (RA - 1)	passed	0.5% < = 10%
or	Relative Accuracy (RA - 3)	passed	0.037 < = 1
For Annual RATAS	Relative Accuracy (RA - 1)	passed	0.5% < = 7.5%
or	Relative Accuracy (RA - 3)	passed	0.037 < = 0.7

Notes:

<<< = Test run included in statistical analysis
RM = Reference Method
USS CEM = U.S. Steel Clairton Plant's Continuous Emission Monitor
CC = (t value) x (Sd / n^0.5) where t value = 2.306 for n = 9
RA - 1 = (Abs(d) + Abs(CC)) / ARM
RA - 3 = Average Absolute Arithmetic Difference

Calculations according to U.S. EPA Performance Specification 2 and
PA DEP Continuous Source Monitoring Manual (Revision No. 6), Table II

U.S. Steel Corporation - Mon Valley Complex
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 2
STRATIFICATION TEST RESULTS using Chester data
MARCH 16, 2010

TIME OF TEST (EST)	NO_x (ppm)	O_2 (%)	TRAVERSE POINT	ATS-Chester NO_x (ppm, avg.)	ATS-Chester O_2 (%, avg.)	ABSOLUTE NO_X DELTA	ABSOLUTE O_2 DELTA
12:42	104.9	11	1				
12:43	103	11.4	1	103.95	11.2	1.81	0.17
12:44	104.2	11.4	2				
12:45	104.9	11.5	2	104.55	11.45	2.41	0.08
12:46	105.2	11.6	3				
12:47	107.3	11.7	3	106.25	11.65	4.11	0.28
12:48	108.7	11.5	4				
12:49	105.2	11.2	4	106.95	11.35	4.81	0.02
12:50	104	11.5	5				
12:51	103.9	11.4	5	103.95	11.45	1.81	0.08
12:52	99.1	11.2	6				
12:53	97.7	11.5	6	98.4	11.35	3.74	0.02
12:54	99.2	11.3	7				
12:55	99.7	11.2	7	99.45	11.25	2.69	0.12
12:56	98.4	11.2	8				
12:57	99.8	11.3	8	99.1	11.25	3.04	0.12
12:58	100.6	11.1	9				
12:59	97.3	11.2	9	98.95	11.15	3.19	0.22
13:00	98.6	11.6	10				
13:01	103.2	11.6	10	100.9	11.6	1.24	0.23
13:02	103.5	11.4	11				
13:03	100.4	11.5	11	101.95	11.45	0.19	0.08
13:04	103.2	11.5	12				
13:05	99.4	11.1	12	101.3	11.3	0.84	0.07

Average of all TRAVERSE POINTS, $(NO_X)_{AVG}$ AND $(O_2)_{AVG}$ — 102.14 — 11.37

MAXIMUM ppm DIFFERENCE OF $(NO_X)_I$ and $(NO_X)_{AVG}$
WHERE, I IS THE TRAVERSE POINT LOCATION — 4.81

MAXIMUM DIFFERENCE OF $(NO_X)_I$ and $(NO_X)_{AVG}$ AS A PERCENT
WHERE, I IS THE TRAVERSE POINT LOCATION — 4.71 OK

MAXIMUM % DIFFERENCE OF $(O_2)_I$ and $(O_2)_{AVG}$
WHERE, I IS THE TRAVERSE POINT LOCATION — 0.28 OK

MAXIMUM DIFFERENCE OF $(O_2)_I$ and $(O_2)_{AVG}$ AS A PERCENT
WHERE, I IS THE TRAVERSE POINT LOCATION — 2.46 OK

RESULTS INDICATE THAT 1 SAMPLING POINT IS NEEDED.

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel - Mon Valley Complex	Page 1 of	2
PLANT SITE	Clairton Plant - Clairton, PA	ANALYZER	Advanced Pollution Instrumentation, Inc.
TEST UNIT	Exhaust Stack, Boiler No. 2	INSTRUMENT	Chemiluminescent NOx Analyzer-Model 200AH
TEST DATE	March 17, 2010 OPERATOR H Tiffany	Serial No.	258
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	437.1 (ppmv, dry)

Time (~~EDT~~ EST)	Certified Cylinder Value (A) (ppmv, dry)	Analyzer Calibration Response (B) (ppmv, dry)	Absolute Arithmetic Difference (A - B) (ppmv, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0811	0	0.0	0	0	X	Zero Gas is 100% N2
0823	437.1	437.9	0.8	0.18	X	
0827	226.5	223.8	2.7	0.62	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Cal. Error <= 2% of Calibrated Span = 8.7 ppm NO
For THC the Allowable Calibration Error <= 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 226.5 (ppmv, dry)
(Use the one closest to the actual stack gas concentration)

	Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (ppmv, dry)	System Response (C) (ppmv, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = 75 sec Notes
SO2 B2-R1	0845	Zero	0.0	0.2	0.05		
	0849	Upscale	223.8	218.8	1.14		
	0922	Zero	0.0	0.4	0.09	0.05	Run No. 1: 0853 0913
	0918	Upscale	223.8	218.6	1.19	0.05	
SO2 B2-R2	0950	Zero	0.0	0.6	0.14	0.05	Run No. 2: 0926 0946
	0956	Upscale	223.8	212.2	1.28	0.09	
	1030	Zero	0.0	0.5	0.11	0.02	Run No. 3: 1001 1021
	1025	Upscale	223.8	217.8	1.37	0.09	
	1115	Zero	0.0	0.3	0.07	0.05	Run No. 4: 1040 1100
	1120	Upscale	223.8	216.8	1.60	0.23	
SO2 B2-R3	1152	Zero	0.0	0.4	0.09	0.02	Run No. 5: 1124 1144
	1148	Upscale	223.8	217.4	1.46	0.14	
	1220	Zero	0.0	0.3	0.07	0.02	Run No. 6: 1156 1216
	1224	Upscale	223.8	217.1	1.53	0.07	

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias <= 5% of the Calibrated Span = 21.9 ppm NO
For THC the System Cal. Bias <= 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift <= 3% of the Calibrated Span = 13.1

USS time (1258) ~~32~~ Chester time (1258) -1

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel - Mon Valley Complex	Page 2 of	2
PLANT SITE	Clairton Plant - Clairton, PA	ANALYZER	Advanced Pollution Instrumentation, Inc.
TEST UNIT	Exhaust Stack, Boiler No. 2	INSTRUMENT	Chemiluminescent NOx Analyzer-Model 200AH
TEST DATE	March 17, 2010 OPERATOR H Tiffany	Serial No.	258
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	437.1 (ppmv, dry)

Time (~~EDT~~)	Certified Cylinder Value (A) (ppmv, dry)	Analyzer Calibration Response (B) (ppmv, dry)	Absolute Arithmetic Difference (A - B) (ppmv, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
	0				X	Zero Gas is 100% N2
	437.1				X	
	226.5				X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Cal. Error < = 2% of Calibrated Span = 8.7 ppm NO
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 226.5 (ppmv, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (ppmv, dry)	System Response (C) (ppmv, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1257	Zero	0.0	0.5	0.11	0.05	Run No. 7: 1229
1253	Upscale	223.8	216.9	1.58	0.05	1249
1327	Zero	0.0	0.3	0.07	0.02	Run No. 8: 1302
1331	Upscale	223.8	216.4	1.69	0.11	1322
1421	Zero	0.0	0.8			Run No. 9: 1336
1417	Upscale	223.8	215.0			1356
	Zero					Run No. 10:
	Upscale					
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					Run No. 13:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 21.9 ppm NO
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 13.1

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel - Mon Valley Complex	Page 1 of	2
PLANT SITE	Clairton Plant - Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 2	INSTRUMENT	Paramagnetic Oxygen Analyzer - Model 100P
TEST DATE	March 17, 2010 OPERATOR H Tiffany	Serial No.	4J06002
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	24.88 (%, dry)

Time ~~(EDT)~~ EST	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0823	0.0	0.0	0	0	X	Zero Gas is 100% N2
0811	24.88	24.9	0.02	0.08	X	
0816	11.97	11.9	0.07	0.28	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.49 %O2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 11.97 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time ~~(EDT)~~ EST	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = 50 sec Notes
0849	Zero	0.0	0.1	0.40		
0845	Upscale	11.9	11.9	0		
0918	Zero	0.0	0.0	0	0.40	Run No. 1: 0853 - 0913
0922	Upscale	11.9	11.9	0	0	
0956	Zero	0.0	0.1	0.40	0.40	Run No. 2: 0926 0946
0950	Upscale	11.9	11.9	0	0	
1025	Zero	0.0	0.1	0.40	0	Run No. 3: 1001 1021
1030	Upscale	11.9	11.9	0	0	
1120	Zero	0.0	0.1	0.40	0	Run No. 4: 1040 1100
1115	Upscale	11.9	11.9	0	0	
1148	Zero	0.0	0.1	0.40	0	Run No. 5: 1124 1144
1152	Upscale	11.9	11.9	0	0	
1224	Zero	0.0	0.1	0.40	0	Run No. 6: 1156 1216
1220	Upscale	11.9	11.9	0	0	

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 1.24 %O2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.74 %O2

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel - Mon Valley Complex	Page 2 of	2
PLANT SITE	Clairton Plant - Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 2	INSTRUMENT	Paramagnetic Oxygen Analyzer - Model 100P
TEST DATE	March 17, 2010 OPERATOR H Tiffany	Serial No.	4J06002
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	24.88 (%, dry)

Time (~~EDT~~)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
	0.0				X	Zero Gas is 100% N2
	24.88				X	
	11.97				X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.49 %O2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 11.97 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~) EST	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1253	Zero	0.0	0.1	0.40	0	Run No. 7: 1229
1257	Upscale	11.9	11.9	0	0	1249
1331	Zero	0.0	0.1	0.40	0	Run No. 8: 1302
1327	Upscale	11.9	11.9	0	0	1322
1417	Zero	0.0	0.0	0	0.40	Run No. 9: 1336
1421	Upscale	11.9	11.8			1356
	Zero					Run No. 10:
	Upscale					
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					Run No. 13:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 1.24 %O2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.74 %O2

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel-Mon Valley Complex	Page 1 of	
PLANT SITE	Clairton Plant-Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 2	INSTRUMENT	Carbon Dioxide Analyzer - Model 100
TEST DATE	March 17, 2010 OPERATOR HTiffany	Serial No.	5J06007
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	19.78 (%, dry)

Time (~~EDT~~ EST)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0823	0.0	0.1	0.1	0.51	X	Zero Gas is 100% N2
0811	19.78	19.9	0.12		X	
0816	9.978	10.1	0.122		X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.39% CO2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 9.978 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (~~EDT~~ EST)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = 55 sec Notes
0849	Zero	0.1	0.2	0.51		
0845	Upscale	10.1	9.9	1.01		
0918	Zero	0.1	0.2	0.51	0	Run No. 1:
0922	Upscale	10.1	10.0	0.51	0.51	
0956	Zero	0.1	0.2	0.51	0	Run No. 2:
0950	Upscale	10.1	10.1	0	0.51	
1025	Zero	0.1	0.3	1.01	0.51	Run No. 3:
1030	Upscale	10.1	10.1	0	0	
1120	Zero	0.1	0.4	1.52	0.51	Run No. 4:
1115	Upscale	10.1	10.1	0	0	
1148	Zero	0.1	0.3	1.01	0.51	Run No. 5:
1152	Upscale	10.1	10.1	0	0	
1224	Zero	0.1	0.4	1.52	0.51	Run No. 6:
1220	Upscale	10.1	10.1	0	0	

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 0.98% CO2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.59% CO2

CEM CALIBRATION ERROR TEST DATA

CLIENT	U.S. Steel-Mon Valley Complex	Page 2 of	
PLANT SITE	Clairton Plant-Clairton, PA	ANALYZER	California Analytical Instruments
TEST UNIT	Exhaust Stack, Boiler No. 2	INSTRUMENT	Carbon Dioxide Analyzer - Model 100
TEST DATE	March 12 2010 OPERATOR HTiffany	Serial No.	5J06007
PROJECT NO.	10-6296-ENV, Task 109	Calibrated Span	19.78 (%, dry)

Time ~~(EDT)~~	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
	0.0				X	Zero Gas is 100% N2
	19.78				X	
	9.978				X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error < = 2% of Calibrated Span = 0.39% CO2
For THC the Allowable Calibration Error < = 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 9.978 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time ~~(EDT)~~ EST	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1253	Zero	0.1	0.4	1.52	0	Run No. 7:
1257	Upscale	10.1	10.1	0	0	
1331	Zero	0.1	0.4	1.52	0	Run No. 8:
1327	Upscale	10.1	10.1	0	0	
1417	Zero	0.1	0.4			Run No. 9:
	Upscale	10.1	10.2			
	Zero					Run No. 10:
	Upscale					
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					Run No. 13:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias < = 5% of the Calibrated Span = 0.98% CO2
For THC the System Cal. Bias < = 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift < = 3% of the Calibrated Span = 0.59% CO2

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 2
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Minute Data Averages

Hour (EST)	NOx (ppm dry)	O2 (ppm dry)	CO2 (ppm dry)	Line #1 (248+/-25F)	Line #2 (248+/-25F)	Notes
8:00	111.1	10.4	5.5	245	250	Stack Gas
8:01	110.5	10.5	5.5	245	250	Stack Gas
8:02	111.5	10.6	5.6	245	250	Stack Gas
8:03	111.9	10.7	5.5	245	250	Stack Gas
8:04	113.2	10.4	5.5	245	250	Stack Gas
8:05	116.2	10.1	5.7	245	250	Stack Gas
8:06	118.7	10.1	5.8	245	250	Stack Gas
8:07	111.3	17.1	12.2	245	250	Stack Gas
8:08	6.3	25	20.5	245	250	Pre-Test Calibrations
8:09	0	25	20.3	245	250	Pre-Test Calibrations
8:10	0	25	19.9	245	250	Pre-Test Calibrations
8:11	**0**	**25**	**19.9**	245	250	**High O2/CO2 Span Gas**
8:12	0	24.8	19.9	245	250	Pre-Test Calibrations
8:13	0.6	18.6	15.1	245	250	Pre-Test Calibrations
8:14	0.4	12	10.2	244	250	Pre-Test Calibrations
8:15	0	11.9	10.1	244	250	Pre-Test Calibrations
8:16	0	**11.9**	**10.1**	244	250	**Mid O2/CO2 Span Gas**
8:17	141.4	0.8	1.1	243	250	Pre-Test Calibrations
8:18	448.9	0	0.2	243	250	Pre-Test Calibrations
8:19	451.9	0	0.2	243	250	Pre-Test Calibrations
8:20	452.3	0	0.1	243	250	Pre-Test Calibrations
8:21	442.6	0	0.2	242	250	Pre-Test Calibrations
8:22	437.9	0	0.1	242	250	Pre-Test Calibrations
8:23	**438**	**0**	**0.1**	242	250	**High NOx Span Gas**
8:24	407.1	0.2	0.2	242	250	Pre-Test Calibrations
8:25	237.8	0	0.2	241	250	Pre-Test Calibrations
8:26	223.6	0	0.2	241	250	Pre-Test Calibrations
8:27	**223.9**	0	0.2	241	250	**Mid NOx Span Gas**
8:28	218	4.7	2.6	241	250	Pre-Test Calibrations
8:29	127.8	10	5.7	241	250	Pre-Test Calibrations
8:30	118.6	10.1	5.6	241	250	Stack Gas
8:31	121	10.2	5.5	241	250	Stack Gas
8:32	120	10	5.7	241	250	Stack Gas
8:33	118.4	10	5.6	241	250	Stack Gas
8:34	116.7	9.9	5.7	241	250	Stack Gas
8:35	115.7	9.9	5.7	242	250	Stack Gas
8:36	116.1	9.9	5.7	242	250	Stack Gas
8:37	115.6	10	5.5	243	251	Stack Gas
8:38	121.6	9.3	5.9	243	302	Stack Gas
8:39	124.9	9.3	6.1	243	408	Stack Gas
8:40	124.7	9.4	5.9	244	408	Stack Gas
8:41	126.2	9.5	5.9	244	408	Stack Gas
8:42	126.5	9.2	6.1	245	408	Bias Checks
8:43	107	13.5	5.4	245	408	Bias Checks
8:44	**17.7**	**12**	**9.9**	244	408	**Mid O2/CO2 Span Gas**
8:45	0.3	11.9	10	243	408	Bias Checks
8:46	0.3	8.8	7.8	241	408	Bias Checks
8:47	163.5	0.2	0.3	239	408	Bias Checks
8:48	218.6	0.1	0.2	238	408	Bias Checks
8:49	**218.8**	**0.1**	**0.2**	236	408	**Mid NOx Span Gas**
8:50	219.2	4.2	2.7	235	408	Bias Checks
8:51	143.6	9.1	6.1	234	408	Stack Gas
8:52	127.2	9.4	6	235	408	Stack Gas
8:53	128	9.2	6	236	408	**Run #1**

U.S. Steel Corporation - Mon Valley Works
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Minute Data Averages

Hour	NOx	O2	CO2	Line #1	Line #2	Notes
8:54	127.6	9.3	6	236	408	Run #1
8:55	126.5	9	6.2	238	408	Run #1
8:56	125.4	9.2	6	239	408	Run #1
8:57	126.6	9.2	5.8	240	408	Run #1
8:58	125.1	9.2	6	241	408	Run #1
8:59	125	9.3	6.1	241	408	Run #1
9:00	126.8	9.3	5.9	242	408	Run #1
9:01	124.5	9.2	6	243	408	Run #1
9:02	121.7	8.9	6.2	243	408	Run #1
9:03	121	9	6.4	244	408	Run #1
9:04	120.8	9.1	6.1	245	408	Run #1
9:05	120.2	9.1	6.2	245	408	Run #1
9:06	121	9	6.3	245	408	Run #1
9:07	123.1	9.3	6.2	246	408	Run #1
9:08	124.8	9.2	6.1	246	408	Run #1
9:09	123.6	9.2	6.1	247	408	Run #1
9:10	125.5	9.4	6	247	408	Run #1
9:11	128	9.3	5.9	247	408	Run #1
9:12	129.4	9.3	5.9	247	408	Run #1
9:13	128.8	9.3	5.9	248	408	Run #1
	124.9	9.2	6.1	243.1	408.0	24 Min. Analyzer Average, Ca
	0.35	0.10	0.20			Avg. Zero Bias Check, Co
	218.75	11.90	10.00			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	129.2	9.2	6.0			Corrected Conc., Cstack
	0.213 (lb/MMBtu)		Fd	7711.0		NOx Emission Factor
9:14	128.9	9.2	6.1	248	408	Stack Gas
9:15	165.7	1.3	1.3	248	408	Bias Checks
9:16	218.5	0.1	0.2	246	408	Bias Checks
9:17	218.7	0.1	0.2	245	408	Bias Checks
9:18	**218.7**	**0.1**	**0.2**	243	408	Mid NOx Span Gas
9:19	196.1	7.1	5.5	241	408	Bias Checks
9:20	2.4	11.9	10	239	408	Bias Checks
9:21	0.7	11.9	10	238	408	Bias Checks
9:22	**0.4**	**11.9**	**10**	237	408	Mid O2/CO2 Span Gas
9:23	5.3	10.8	8.7	236	408	Bias Checks
9:24	103.6	9.3	6	235	408	Stack Gas
9:25	128.9	9.1	6.1	236	408	Stack Gas
9:26	129.3	9.1	6.1	237	408	Run #2
9:27	127.8	9	6.3	238	408	Run #2
9:28	127.7	9	6.3	239	408	Run #2
9:29	127	9	6.4	240	408	Run #2
9:30	126.9	9	6.4	241	408	Run #2
9:31	127.6	9.1	6.2	242	408	Run #2
9:32	130.5	9.4	6	243	408	Run #2
9:33	133.3	9.2	6	243	408	Run #2
9:34	131.5	9.3	6.1	244	408	Run #2
9:35	132.3	9.8	5.7	245	408	Run #2
9:36	132.3	9.5	5.8	245	408	Run #2
9:37	136	9.3	5.8	246	408	Run #2
9:38	135.1	9.1	6.1	246	408	Run #2
9:39	133.2	9	6.1	247	408	Run #2

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Hour	NOx	O2	CO2	Line #1	Line #2	Notes
9:40	130.1	9	6.1	247	408	Run #2
9:41	128.3	8.9	6.3	247	408	Run #2
9:42	125.9	8.9	6.4	248	408	Run #2
9:43	124	9	6.2	248	408	Run #2
9:44	122.7	9.1	6.1	248	408	Run #2
9:45	126.1	9.4	6	248	408	Run #2
9:46	128.5	9.3	6	248	408	Run #2
	129.3	9.2	6.1	244.3	408.0	21 Min. Analyzer Average, Ca
	0.55	0.10	0.25			Avg. Zero Bias Check, Co
	218.45	11.90	10.05			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	133.9	9.2	6.0			Corrected Conc., Cstack
	0.222 (lb/MMBtu)		Fd	7765.0		NOx Emission Factor
9:47	125	10.3	7.4	248	408	Stack Gas
9:48	13.3	11.9	10	248	204	Bias Checks
9:49	0.9	11.9	10.1	246	131	Bias Checks
9:50	**0.7**	**11.9**	**10.1**	244	170	Mid O2/CO2 Span Gas
9:51	0.6	11.6	10	242	195	Bias Checks
9:52	81.2	0.5	1	240	213	Bias Checks
9:53	217.2	0.1	0.3	239	225	Bias Checks
9:54	217.8	0.1	0.3	237	233	Bias Checks
9:55	218	0.1	0.3	236	239	Bias Checks
9:56	**218.2**	**0.1**	**0.3**	234	245	Mid NOx Span Gas
9:57	218.4	0.1	0.3	233	246	Bias Checks
9:58	211.2	5.5	3.7	233	247	Stack Gas
9:59	130.9	9	6.2	233	248	Stack Gas
10:00	126.3	9	6.1	233	249	Stack Gas
10:01	124.8	9	6.1	234	249	Run #3
10:02	124.6	9	6.2	236	250	Run #3
10:03	123.4	9	6.2	237	248	Run #3
10:04	123.4	9.1	6	238	249	Run #3
10:05	124.8	9.1	6	239	250	Run #3
10:06	126.1	9	6.1	240	250	Run #3
10:07	125.9	9.5	5.8	241	250	Run #3
10:08	125.6	9.2	6	241	250	Run #3
10:09	127	9	6.2	242	251	Run #3
10:10	124.9	9.1	6.2	243	251	Run #3
10:11	126	9.2	6	243	251	Run #3
10:12	128.7	8.9	6.2	244	251	Run #3
10:13	126.7	9	6.1	244	251	Run #3
10:14	126.5	9.1	6	245	251	Run #3
10:15	126.5	9.1	5.9	245	251	Run #3
10:16	128.2	9.4	5.9	246	251	Run #3
10:17	131.2	9.3	5.7	246	251	Run #3
10:18	128.3	9.6	5.9	246	251	Run #3
10:19	130.5	9.5	5.8	246	251	Run #3
10:20	130.9	9	6.1	246	251	Run #3
10:21	128.2	9	6.1	247	251	Run #3
	126.8	9.1	6.0	242.3	250.4	21 Min. Analyzer Average, Ca
	0.60	0.10	0.30			Avg. Zero Bias Check, Co
	218.00	11.90	10.10			Avg. Mid Span Bias Check, Cm

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Minute Data Averages

Hour	NOx	O2	CO2	Line #1	Line #2	Notes
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	131.5	9.2	5.8			Corrected Conc., Cstack
	0.218 (lb/MMBtu)		Fd	7774.0		NOx Emission Factor
10:22	128.1	8.1	5.9	247	251	Stack Gas
10:23	178.1	0.4	0.6	247	251	Bias Checks
10:24	217.8	0.1	0.3	246	250	Bias Checks
10:25	**217.8**	**0.1**	**0.3**	244	250	**Mid NOx Span Gas**
10:26	217.8	0.1	0.3	242	250	Bias Checks
10:27	170.7	8.5	6.8	240	250	Bias Checks
10:28	1.7	11.9	10.1	238	250	Bias Checks
10:29	0.7	11.9	10.1	237	250	Bias Checks
10:30	**0.5**	**11.9**	**10.1**	236	250	**Mid O2/CO2 Span Gas**
10:31	12.8	10.6	8.2	235	250	Bias Checks
10:32	114.4	9.3	6.1	235	250	Bias Checks
10:33	133.4	9.1	6	235	250	Stack Gas
10:34	129.1	9.2	6.1	236	250	Stack Gas
10:35	128.7	9.2	6	237	250	Stack Gas
10:36	129.4	9.4	6	238	250	Stack Gas
10:37	132.6	9.1	5.9	239	250	Stack Gas
10:38	130.5	8.8	6.4	240	250	Stack Gas
10:39	128.2	9.3	5.9	241	250	Stack Gas
10:40	128.8	9.1	6.1	242	250	**Run #4**
10:41	126.9	8.9	6.2	243	250	**Run #4**
10:42	127.8	9.2	6.1	244	250	**Run #4**
10:43	131.8	9.2	5.9	244	250	**Run #4**
10:44	130.7	9	6.3	245	250	**Run #4**
10:45	129.9	9	6.2	245	250	**Run #4**
10:46	129.5	9.1	6.2	246	250	**Run #4**
10:47	130.7	9.3	5.9	246	250	**Run #4**
10:48	131.1	9	6.2	246	250	**Run #4**
10:49	133.4	8.9	6.4	247	250	**Run #4**
10:50	132.6	8.9	6.3	247	250	**Run #4**
10:51	131.1	9.1	6	247	250	**Run #4**
10:52	131.1	9	6.2	248	250	**Run #4**
10:53	126.3	9.1	6.1	248	250	**Run #4**
10:54	130	9.2	6.1	248	250	**Run #4**
10:55	130.4	9.1	6	248	250	**Run #4**
10:56	128.5	9	6.2	248	250	**Run #4**
10:57	127.2	9.1	6	248	250	**Run #4**
10:58	126.9	9	6.4	248	250	**Run #4**
10:59	127.2	9	6.3	249	250	**Run #4**
11:00	125.7	9.2	6.1	249	250	**Run #4**
	129.4	9.1	6.2	246.5	250.0	**21 Min. Analyzer Average, Ca**
	0.40	0.10	0.35			**Avg. Zero Bias Check, Co**
	217.30	11.90	10.15			**Avg. Mid Span Bias Check, Cm**
	226.5	11.97	9.98			**Actual Mid Span Value, Cma**
	134.7	9.1	5.9			**Corrected Conc., Cstack**
	0.221 (lb/MMBtu)		Fd	7748.0		**NOx Emission Factor**
11:01	128.3	9.2	6.1	249	250	Stack Gas
11:02	130.6	9	6.4	249	250	Stack Gas

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Minute Data Averages

Hour	NOx	O2	CO2	Line #1	Line #2	Notes
11:03	127.3	9.2	6.2	249	250	Stack Gas
11:04	126	9.3	6.1	249	250	Stack Gas
11:05	129.6	9	6.3	249	250	Stack Gas
11:06	123.8	9	6.2	249	250	Stack Gas
11:07	123.1	9.2	6	249	250	Stack Gas
11:08	124	9.1	6.1	250	250	Stack Gas
11:09	123.9	8.9	6.3	250	250	Stack Gas
11:10	122.6	8.9	6.4	250	250	Stack Gas
11:11	122.7	9.2	6.2	250	250	Stack Gas
11:12	124.2	9.4	6.1	250	250	Stack Gas
11:13	88	11.5	8.8	250	250	Bias Checks
11:14	0.8	11.9	10.2	249	250	Bias Checks
11:15	**0.3**	**11.9**	**10.2**	247	250	**Mid O2/CO2 Span Gas**
11:16	0.3	7.7	7.1	245	250	Bias Checks
11:17	176.8	0.2	0.5	244	250	Bias Checks
11:18	216.2	0.1	0.4	242	250	Bias Checks
11:19	216.4	0.1	0.4	240	250	Bias Checks
11:20	**216.8**	**0.1**	**0.4**	239	250	**Mid NOx Span Gas**
11:21	211.6	4.4	2.8	237	250	Bias Checks
11:22	135.7	9.1	6.2	236	250	Stack Gas
11:23	129.4	9.2	6.2	236	250	Stack Gas
11:24	130.4	9.5	6	236	250	**Run #5**
11:25	134	9.2	6.1	236	250	**Run #5**
11:26	132.9	9.1	6.1	237	250	**Run #5**
11:27	130.7	9.5	5.8	237	250	**Run #5**
11:28	131.3	9	6.2	238	250	**Run #5**
11:29	131.2	9.1	6.1	238	250	**Run #5**
11:30	129.8	9.3	6	239	250	**Run #5**
11:31	131.5	9.2	6	239	250	**Run #5**
11:32	130.9	9.2	6.1	239	250	**Run #5**
11:33	130.3	9.4	5.9	240	250	**Run #5**
11:34	131.6	9.3	6	240	250	**Run #5**
11:35	130.3	9.2	6.1	240	250	**Run #5**
11:36	130.5	9	6.3	241	250	**Run #5**
11:37	132.4	9	6.2	241	250	**Run #5**
11:38	129.6	8.9	6.4	241	250	**Run #5**
11:39	128.8	8.9	6.2	241	250	**Run #5**
11:40	130.3	9	6.3	242	250	**Run #5**
11:41	129.7	8.8	6.4	242	250	**Run #5**
11:42	125.9	8.9	6.4	242	250	**Run #5**
11:43	127.3	9	6.2	242	250	**Run #5**
11:44	127.1	8.9	6.3	242	250	**Run #5**
	130.3	9.1	6.1	239.7	250.0	**21 Min. Analyzer Average, Ca**
	0.35	0.10	0.40			**Avg. Zero Bias Check, Co**
	217.10	11.90	10.20			**Avg. Mid Span Bias Check, Cm**
	226.5	11.97	9.98			**Actual Mid Span Value, Cma**
	135.8	9.1	5.9			**Corrected Conc., Cstack**
	0.222 (lb/MMBtu)		Fd	7718.0		**NOx Emission Factor**
11:45	134.1	4.6	3.6	243	250	Stack Gas
11:46	213.9	0.1	0.4	242	250	Stack Gas
11:47	217.4	0.1	0.4	241	250	Bias Checks
11:48	**217.4**	**0.1**	**0.4**	239	250	**Mid NOx Span Gas**

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Hour	NOx	O2	CO2	Line #1	Line #2	Notes
11:49	188.7	7.6	6.1	237	250	Bias Checks
11:50	19.8	11.9	10.1	235	250	Bias Checks
11:51	0.6	11.9	10.1	234	250	Bias Checks
11:52	**0.4**	**11.9**	**10.2**	232	250	**Mid O2/CO2 Span Gas**
11:53	0.3	11.8	10.1	231	250	Bias Checks
11:54	63.5	9.3	6.4	230	250	Stack Gas
11:55	130.6	9.2	6.1	230	250	Stack Gas
11:56	129.5	9	6.2	230	250	**Run #6**
11:57	128.4	9.1	6	231	250	**Run #6**
11:58	128.5	9	6.4	232	250	**Run #6**
11:59	127.8	9.2	6.1	233	250	**Run #6**
12:00	128.5	8.9	6.2	234	250	**Run #6**
12:01	125.8	8.9	6.3	235	250	**Run #6**
12:02	124.4	8.9	6.5	236	250	**Run #6**
12:03	124.3	9.2	6.2	237	250	**Run #6**
12:04	125.3	9.3	6.1	238	250	**Run #6**
12:05	127.4	9.7	5.9	238	250	**Run #6**
12:06	129.8	9.8	5.8	239	250	**Run #6**
12:07	133.5	9.6	5.7	239	250	**Run #6**
12:08	135.5	9.3	6.1	240	250	**Run #6**
12:09	133.8	9.2	6.1	240	250	**Run #6**
12:10	132.5	9.1	6.1	241	250	**Run #6**
12:11	134.1	9	6.1	241	250	**Run #6**
12:12	132.5	9	6.2	242	250	**Run #6**
12:13	131.8	8.9	6.2	242	250	**Run #6**
12:14	131.1	8.9	6.3	242	250	**Run #6**
12:15	133.1	9.1	6.1	242	250	**Run #6**
12:16	131.6	8.8	6.4	242	250	**Run #6**
	130.0	9.1	6.1	237.8	250.0	**21 Min. Analyzer Average, Ca**
	0.35	0.10	0.40			**Avg. Zero Bias Check, Co**
	217.30	11.90	10.20			**Avg. Mid Span Bias Check, Cm**
	226.5	11.97	9.98			**Actual Mid Span Value, Cma**
	135.3	9.2	5.8			**Corrected Conc., Cstack**
	0.222 (lb/MMBtu)		Fd	7723.0		**NOx Emission Factor**
12:17	130.4	10.4	7.3	242	250	Stack Gas
12:18	18.4	11.9	10.1	242	250	Bias Checks
12:19	0.3	11.9	10.2	240	250	Bias Checks
12:20	**0.3**	**11.9**	**10.2**	239	250	**Mid O2/CO2 Span Gas**
12:21	37.3	4	4	237	250	Bias Checks
12:22	215.8	0.1	0.5	235	250	Bias Checks
12:23	217	0.1	0.4	233	250	Bias Checks
12:24	**217.2**	**0.1**	**0.4**	232	250	**Mid NOx Span Gas**
12:25	211.5	3.8	2.6	231	250	Bias Checks
12:26	138.2	9.2	6.1	231	250	Stack Gas
12:27	123.1	9.5	6	231	250	Stack Gas
12:28	125.7	9.3	6	232	250	Stack Gas
12:29	124.9	9	6.3	233	250	**Run #7**
12:30	123.5	9.1	6.3	234	250	**Run #7**
12:31	124.7	9.2	6.2	235	250	**Run #7**
12:32	127.3	9	6.3	236	250	**Run #7**
12:33	129	8.9	6.2	237	250	**Run #7**
12:34	129	9	6.2	238	250	**Run #7**

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 2
Chester Mobile Air Quality Laboratory Data

MARCH 17, 2010

Minute Data Averages

Hour	NOx	O2	CO2	Line #1	Line #2	Notes
12:35	130.5	9.1	6.2	239	250	Run #7
12:36	128.5	9.3	6.1	240	250	Run #7
12:37	131	9.2	5.9	240	250	Run #7
12:38	130.7	8.9	6.4	241	250	Run #7
12:39	128.1	9.2	6.2	241	250	Run #7
12:40	128.4	9.1	6.2	242	250	Run #7
12:41	128.9	9.1	6.2	242	250	Run #7
12:42	127.8	9	6.4	242	250	Run #7
12:43	125.2	9	6.3	242	250	Run #7
12:44	124.3	9.4	6.1	242	250	Run #7
12:45	127.3	9.2	6.3	242	250	Run #7
12:46	125	9	6.3	242	250	Run #7
12:47	122.8	8.9	6.2	243	250	Run #7
12:48	121.5	9	6.2	243	250	Run #7
12:49	120.4	9	6.4	243	250	Run #7
	126.6	9.1	6.2	239.9	250.0	21 Min. Analyzer Average, Ca
	0.45	0.10	0.40			Avg. Zero Bias Check, Co
	217.05	11.90	10.20			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	131.9	9.1	5.9			Corrected Conc., Cstack
	0.216 (lb/MMBtu)		Fd	7734.0		NOx Emission Factor
12:50	124.9	4	3.3	244	250	Stack Gas
12:51	208	0.1	0.4	243	250	Bias Checks
12:52	217	0.1	0.4	242	250	Bias Checks
12:53	**216.9**	**0.1**	**0.4**	240	250	Mid NOx Span Gas
12:54	216.9	4.5	3.6	238	250	Bias Checks
12:55	38.2	11.9	10.1	236	250	Bias Checks
12:56	0.7	11.9	10.1	235	250	Bias Checks
12:57	**0.6**	**11.9**	**10.2**	234	250	Mid O2/CO2 Span Gas
12:58	5.1	10.7	8.7	233	250	Bias Checks
12:59	109.7	9	6.4	233	250	Bias Checks
13:00	116.5	9	6.2	233	250	Stack Gas
13:01	115.5	8.9	6.3	234	250	Stack Gas
13:02	114.8	8.9	6.4	235	250	Run #8
13:03	116	9	6.4	236	250	Run #8
13:04	117.9	9	6.2	237	250	Run #8
13:05	117.9	9	6.3	237	250	Run #8
13:06	118.4	9.2	6.2	238	250	Run #8
13:07	118.5	9.7	5.9	239	250	Run #8
13:08	121.8	9.6	5.8	239	250	Run #8
13:09	126.5	9.3	6.1	240	250	Run #8
13:10	124.9	9.6	6	241	250	Run #8
13:11	125	9.3	6	241	250	Run #8
13:12	126.8	8.9	6.3	242	250	Run #8
13:13	125.7	9	6.2	242	250	Run #8
13:14	124.1	8.9	6.3	243	250	Run #8
13:15	123.6	8.9	6.3	243	250	Run #8
13:16	122.6	9	6.2	243	250	Run #8
13:17	122.8	9	6.1	244	250	Run #8
13:18	121.7	8.9	6.4	244	250	Run #8
13:19	117.4	9	6.5	244	250	Run #8
13:20	118.6	9.2	6.2	245	250	Run #8

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U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 2
Chester Mobile Air Quality Laboratory Data

MARCH 17, 2010

Minute Data Averages

Hour	NOx	O2	CO2	Line #1	Line #2	Notes
13:21	120.1	9.3	6.1	245	250	Run #8
13:22	121.9	9.1	6.3	245	250	Run #8
	121.3	9.1	6.2	241.1	250.0	21 Min. Analyzer Average, Ca
	0.45	0.10	0.45			Avg. Zero Bias Check, Co
	216.70	11.90	10.20			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	126.6	9.2	5.9			Corrected Conc., Cstack
	0.209 (lb/MMBtu)		Fd	7754.0		NOx Emission Factor
13:23	119.4	9.4	6.2	245	250	Bias Checks
13:24	95.9	11.4	8.8	245	250	Bias Checks
13:25	5	11.9	10.2	244	250	Bias Checks
13:26	0.3	11.9	10.2	243	250	Bias Checks
13:27	**0.3**	**11.9**	**10.2**	241	250	Mid O2/CO2 Span Gas
13:28	0.1	8.5	7.8	239	250	Bias Checks
13:29	179.1	0.2	0.6	237	250	Bias Checks
13:30	216.2	0.1	0.5	235	250	Bias Checks
13:31	**216.5**	**0.1**	**0.5**	234	250	Mid NOx Span Gas
13:32	216.6	0.1	0.4	233	250	Bias Checks
13:33	209.9	5.1	3.3	232	250	Bias Checks
13:34	127.5	9	6.2	232	250	Stack Gas
13:35	117.1	9	6.4	232	250	Stack Gas
13:36	116.8	9.3	6.2	233	250	Run #9
13:37	119.2	9.2	6.1	234	250	Run #9
13:38	120.4	9.1	6.2	235	250	Run #9
13:39	120	9.2	6.3	236	250	Run #9
13:40	119.6	9.2	6.1	237	250	Run #9
13:41	121.7	9.2	6.1	238	250	Run #9
13:42	121.8	9.1	6.3	239	250	Run #9
13:43	120.5	9.1	6.3	240	250	Run #9
13:44	120.8	9.1	6.3	241	250	Run #9
13:45	121.7	9.3	6.2	241	250	Run #9
13:46	122.4	9.1	6.3	242	250	Run #9
13:47	121.8	9	6.3	242	250	Run #9
13:48	122.8	9.3	6.2	242	250	Run #9
13:49	121.7	9	6.4	242	250	Run #9
13:50	120.1	9	6.4	242	250	Run #9
13:51	121	9.1	6.2	243	250	Run #9
13:52	121.8	9.3	6.1	243	250	Run #9
13:53	122.6	9.3	6.1	243	250	Run #9
13:54	123.2	9.1	6.2	244	250	Run #9
13:55	123	9.2	6.2	244	250	Run #9
13:56	121.2	9	6.3	244	250	Run #9
	121.1	9.2	6.2	240.2	250.0	21 Min. Analyzer Average, Ca
	0.60	0.10	0.45			Avg. Zero Bias Check, Co
	215.75	11.90	10.20			Avg. Mid Span Bias Check, Cm
	226.5	11.97	9.98			Actual Mid Span Value, Cma
	126.9	9.2	5.9			Corrected Conc., Cstack
	0.208 (lb/MMBtu)		Fd	7714.0		NOx Emission Factor
13:57	124.9	5	3.9	244	250	Bias Checks

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
PART 75 RATA - Utilities Powerhouse - Boiler No. 2
Chester Mobile Air Quality Laboratory Data

MARCH 17, 2010

Minute Data Averages

Hour	NOx	O2	CO2	Line #1	Line #2	Notes
13:58	208.8	0.1	0.5	244	250	Bias Checks
13:59	216	0.1	0.4	243	250	Bias Checks
14:00	-999	-999	-999	-999	-999	Lost Power
14:01	-999	-999	-999	-999	-999	Lost Power
14:02	-999	-999	-999	-999	-999	Lost Power
14:03	-999	-999	-999	-999	-999	Lost Power
14:04	-999	-999	-999	-999	-999	Lost Power
14:05	-999	-999	-999	-999	-999	Lost Power
14:06	147.3	0.2	1.3	181	212	Reboot
14:07	201.2	0.1	0.4	181	237	Reboot
14:08	212	0	0.3	183	247	Reboot
14:09	200	-0.3	0	179	242	Reboot
14:10	212.9	0.1	0.4	188	248	Bias Checks
14:11	213.4	0.1	0.4	191	249	Bias Checks
14:12	213.8	0.1	0.4	193	250	Bias Checks
14:13	214	0.1	0.4	196	250	Bias Checks
14:14	214.4	0.1	0.4	198	250	Bias Checks
14:15	214.7	0.1	0.4	201	250	Bias Checks
14:16	214.9	0.1	0.4	203	250	Bias Checks
14:17	**215**	**0.1**	**0.4**	206	250	**Mid NOx Span Gas**
14:18	150.3	10.1	8.3	208	250	Bias Checks
14:19	1.4	11.9	10.2	210	250	Bias Checks
14:20	1.1	11.9	10.2	213	250	Bias Checks
14:21	**0.9**	**11.9**	**10.2**	215	250	**Mid O2/CO2 Span Gas**

U.S. STEEL CORPORATION - MON VALLEY COMPLEX
CLAIRTON PLANT - UTILITIES POWERHOUSE
CLAIRTON, PENNSYLVANIA

TABLE 2a

BOILER NO. 2
O2 CEM PART 75 RATA RESULTS
MARCH 17, 2010

All Test Runs

Test Run No.	Test Date	Start Time (EST)	Stop Time (EST)	RM Test Run Avg. O2 (%)	USS CEM Test Run Avg. O2 (%)	Arithmetic Difference (%)	
1	3/17/2010	8:53	9:13	9.2	9.5	-0.3	<<<
2	3/17/2010	9:26	9:46	9.2	9.5	-0.3	<<<
3	3/17/2010	10:01	10:21	9.2	9.4	-0.2	<<<
4	3/17/2010	10:40	11:00	9.1	9.3	-0.2	<<<
5	3/17/2010	11:24	11:44	9.1	9.4	-0.3	<<<
6	3/17/2010	11:56	12:16	9.2	9.5	-0.3	<<<
7	3/17/2010	12:29	12:49	9.1	9.3	-0.2	<<<
8	3/17/2010	13:02	13:22	9.2	9.5	-0.3	<<<
9	3/17/2010	13:36	13:56	9.2	9.5	-0.3	<<<
10							
11							
12							

Results:			
	Data Points (n)		9
	Arithmetic Mean Difference (d)		-0.267
	Standard Deviation (Sd)		0.050
	Confidence Coefficient (CC)		0.038
	Average RM Value (ARM)		9.2
For Semiannual RATAs	Relative Accuracy (RA - 1)	passed	3.3% <= 10%
or	Relative Accuracy (RA - 3)	passed	0.267 <= 1
For Annual RATAS	Relative Accuracy (RA - 1)	passed	3.3% <= 7.5%
or	Relative Accuracy (RA - 3)	passed	0.267 <= 0.7

Notes:

<<< = Test run included in statistical analysis
RM = Reference Method
USS CEM = U.S. Steel Clairton Plant's Continuous Emission Monitor
CC = (t value) x (Sd / n^0.5) where t value = 2.306 for n = 9
RA - 1 = (Abs(d) + Abs(CC)) / ARM
RA - 3 = Average Absolute Arithmetic Difference

Calculations according to U.S. EPA Performance Specification 2 and
PA DEP Continuous Source Monitoring Manual (Revision No. 6), Table II

CEM CALIBRATION GAS REQUIREMENTS

Analyte	Chester Analyzer	Calibration Gases (% of Span)					Interference Check
		Zero	Low - Level	Mid - Level	High Level (C.S.)	Approved Mixtures	
O_2	California Analytical Instruments - Paramagnetic Oxygen Analyzer - Model 100P	< 10% or N_2	N/A	40% - 60 % of Calibrated Span	100%	O_2 in N_2	Interference Response Test - Vendor Data (M20, S5.4)
CO_2	California Analytical Instruments - CO_2 Analyzer - Model 100	purified ambient air or N_2	N/A	40% - 60 %	100%	CO_2 in N_2 CO_2 in air	Ibid.
NO_x	Advanced Pollution Instrumentation, Inc. - Chemiluminescent NO_x Analyzer Model - 200AH	purified ambient air or N_2	N/A	40% - 60 %	100%	NO in N_2	Ibid. + NO_2 to NO Converter Test (M20, S5.6)
CO	Advanced Pollution Instrumentation, Inc. - Gas Filter Correlation CO Analyzer Model - 300	N_2	N/A	40% - 60 %	100%	CO in N_2	Ibid.
SO_2	Advanced Pollution Instrumentation, Inc. - Fluorescent SO_2 Analyzer Model - 100AH	< 0.25% or purified ambient air or N_2	N/A	40% - 60 %	100%	SO_2 in N_2 SO_2 in air SO_2/CO_2 in N_2 SO_2/O_2 in N_2 $SO_2/CO_2/O_2$ in N_2	Ibid or Comparison with M6
THC	J.U.M. Engineering Heated F.I.D. Analyzer - Model 3 - 300A	purified ambient air or N_2	25% - 35%	45% - 55%	100%	C_3H_8 in N_2 C_3H_8 in air	N/A

C.S. = Calibrated Span (equal to the High Level calibration gas certified value)

C - stack gas = (C-analyzer - Co) * Cma / (Cm - Co)
C - stack gas = Stack gas concentration
C - analyzer = Average analyzer gas concentration
Co = Average of initial and final calibration bias check response for the zero calibration gas
Cm = Average of initial and final calibration bias check response for the upscale calibration gas
Cma = Actual upscale calibration gas concentration

Airgas

Airgas Great Lakes, Inc.
2009 Bellaire Ave.
Royal Oak, MI 48067
Ph: (248) 399-9150
Fax: (248) 584-2540
http://www.airgas.com

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Customer:	PITTSBURG		
Part Number:	E02NI99E15A0167	Reference Number:	32-112889269-1
Cylinder Number:	XC008302B	Cylinder Volume:	144 Cu.Ft.
Laboratory:	MIC - Royal Oak-32 - MI	Cylinder Pressure:	2015 PSIG
Analysis Date:	Aug 24, 2009	Valve Outlet:	660

Expiration Date: Aug 24, 2011

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which Affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
NITRIC OXIDE	450.0 PPM	437.1 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			
Total oxides of nitrogen		438.3 PPM		For Reference Only

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	06060302	CC207431	490PPM NITRIC OXIDE/NITROGEN	Jan 01, 2010

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
E/N 54, 1000 ppmFS NO, Nicolet 6700	Fourier Transform Infrared (FTIR)	Jul 30, 2009

Triad Data Available Upon Request

Notes:

QA Approval

Airgas

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Airgas Great Lakes, Inc.
2009 Bolaire Ave.
Royal Oak, MI 48067
Ph: (248) 399-9150
Fax: (248) 584-2540
http://www.airgas.com

Customer:	PITTSBURG		
Part Number:	E02NI99E15A0528	Reference Number:	32-112756875-1
Cylinder Number:	CC82323A	Cylinder Volume:	144 Cu.Ft.
Laboratory:	MIC - Royal Oak - MI	Cylinder Pressure:	2015 PSIG
Analysis Date:	Oct 20, 2008	Valve Outlet:	660

Expiration Date: Oct 20, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
NITRIC OXIDE	225.0 PPM	226.5 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			
Total oxides of nitrogen		226.8 PPM		For Reference Only

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	06060221	CC208161	257PPM NITRIC OXIDE/NITROGEN	Jan 01, 2010
SRM	46-E-18	FF20605	1487PPM NITRIC OXIDE/NITROGEN	May 01, 2010

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
E/N 54, 250ppmFS NO, Nicolet 6700	Fourier Transform Infrared (FTIR)	Sep 24, 2008

Triad Data Available Upon Request

Notes:

AFM

QA Approval

Airgas

Airgas Specialty Gases
[illegible]
Maumee, OH [illegible]
[illegible]
Fax [illegible]
[illegible]

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Part Number:	E03NI55E15A6572	Reference Number:	113-124123139-3
Cylinder Number:	CC239967	Cylinder Volume:	160 Cu.Ft.
Laboratory:	ASG - Maumee - OH	Cylinder Pressure:	2014 PSIG
Analysis Date:	Jan 24, 2008	Valve Outlet:	296

Expiration Date: Jan 24, 2011

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainity
CARBON DIOXIDE	20.00 %	19.78 %	G1	+/- 1% NIST Traceable
OXYGEN	25.00 %	24.88 %	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	061204	CC184889	19.66% CARBON DIOXIDE/NITROGEN	May 01, 2010
NTRM	36660826	CC287980	22.51% OXYGEN/NITROGEN	May 01, 2010

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
030-Horiba VIA-510	NDIR	Jan 09, 2008
050-Rosemount 755R O2 Analyzer	Paramagnetic	Jan 11, 2008

Triad Data Available Upon Request

Notes:

QA Approval

Airgas

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Airgas Great Lakes, Inc.
2009 Bellaire Ave.
Royal Oak, MI 48067
Ph: (248) 399-9150
Fax: (248) 584-2540
http://www.airgas.com

Customer:	PITTSBURGH/CRAFTON		
Part Number:	E03NI78E15A1066	Reference Number:	32-112810648-1
Cylinder Number:	CC239807	Cylinder Volume:	151 Cu.Ft.
Laboratory:	MIC - Royal Oak - MI	Cylinder Pressure:	2015 PSIG
Analysis Date:	Feb 24, 2009	Valve Outlet:	590

Expiration Date: Feb 24, 2012

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
CARBON DIOXIDE	10.00 %	9.978 %	G1	+/- 1% NIST Traceable
OXYGEN	12.00 %	11.97 %	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	970511	SG9166458BAL	13.837% CARBON DIOXIDE/NITROGEN	May 01, 2010
NTRM	98051108	SG9168330BAL	9.507% OXYGEN/NITROGEN	Jan 01, 2010

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
E/N 136, 20%FS CO2, Horiba VIA-510	Nondispersive Infrared (NDIR)	Feb 23, 2009
E/N 51, 25%FS O2, Rosemont 755R	Paramagnetic (Para)	Feb 09, 2009

Triad Data Available Upon Request

Notes:ORDER#551900

QA Approval

CHESTER MOBILE AIR QUALITY LABORATORY
NOX Analyzer Converter Efficiency Test Results
Test Performed on March 14, 2010
Test Performed by Hudson Tiffany using the Tedlar bag technique

Date	Hour	500 ppm NO_x	500 ppm NO_2	Trailer Temp (F)	<<<RANGE <<<UNITS
3/14/2010	15:26	0	0.1	76	Ambient Air
3/14/2010	15:27	0	0.1	76	Ambient Air
3/14/2010	15:28	70.2	0.1	77	Bag On
3/14/2010	15:29	131.2	0.1	77	Bag On
3/14/2010	15:30	130.9	0.1	77	**Test**
3/14/2010	15:31	130.9	0.1	78	**Test**
3/14/2010	15:32	130.9	0.7	77	**Test**
3/14/2010	15:33	130.9	0.9	77	**Test**
3/14/2010	15:34	130.9	1	78	**Test**
3/14/2010	15:35	130.8	1.9	78	**Test**
3/14/2010	15:36	130.9	3.4	79	**Test**
3/14/2010	15:37	130.8	5.5	79	**Test**
3/14/2010	15:38	130.8	7.3	78	**Test**
3/14/2010	15:39	130.7	8.9	78	**Test**
3/14/2010	15:40	130.7	10.5	77	**Test**
3/14/2010	15:41	130.6	12.3	77	**Test**
3/14/2010	15:42	130.7	14	78	**Test**
3/14/2010	15:43	130.6	15.7	79	**Test**
3/14/2010	15:44	130.6	17.3	78	**Test**
3/14/2010	15:45	130.6	18.6	78	**Test**
3/14/2010	15:46	130.6	20.1	77	**Test**
3/14/2010	15:47	130.6	21.4	77	**Test**
3/14/2010	15:48	130.5	22.7	78	**Test**
3/14/2010	15:49	130.5	24	78	**Test**
3/14/2010	15:50	130.5	25.3	78	**Test**
3/14/2010	15:51	130.4	26.9	79	**Test**
3/14/2010	15:52	130.4	28.2	79	**Test**
3/14/2010	15:53	130.4	29.1	80	**Test**
3/14/2010	15:54	130.3	30.3	80	**Test**
3/14/2010	15:55	130.3	31.4	80	**Test**
3/14/2010	15:56	130.2	32.3	81	**Test**
3/14/2010	15:57	130.3	33.3	80	**Test**
3/14/2010	15:58	130.3	34.5	81	**Test**
3/14/2010	15:59	130.2	35.3	81	**Test**
3/14/2010	16:00	130.1	36.4	82	post
3/14/2010	16:01	130.1	37.4	82	post
		130.9			**Maximum**
		130.2			**Minimum**
		128.3			**Allowable Minimum**

Converter Efficiency Test is ACCEPTABLE

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Test Notes
API Chemiluminescent NOx Analyzer Model 200AH S/N 258
API Fluorescent SO2 Analyzer Model 100AH S/N 064
API Gas Filter Correlation CO Analyzer Model 300 S/N 905
California Analytical Instruments O2 Analyzer Model 100-P S/N 4J06002
California Analytical Instruments CO2 Analyzer Model 100 S/N 5J06007
Test Performed on March 4, 2010 by Hudson Tiffany

These interference tests demonstrate that the Chester Engineers CEMS are within the U.S. EPA specifications allowed for analyzer interference. Each analyzer was operated at the lowest typical range. Protocol 1 calibration Gases were used.

The following CALIBRATION worksheet demonstrates that the analyzers were in calibration (+/- 2.0% of the calibrated span) prior to the interference testing. The data is the response of each analyzer to the CALIBRATION SPAN gas. All gases were introduced through a common manifold.

The following INTERFERENCE worksheet demonstrates two things. One is that the analyzers have a linear response as verified by the acceptable response (+/- 2.0% of the calibrated span) to a mid level calibration gas. The second is the response of each analyzer to the interferent test gas.

The SO2 analyzer response test was performed by blending a mixture of interferent test gases. The purpose of mixing the gases was to determine the least amount of oxygen necessary to reduce the NO interference (note the unacceptable SO2 response to the Protocol 1 NO gases, which are balance nitrogen) to acceptable levels. The analyzer manufacturer suggested at least 3% would be necessary, yet it was found that 1.7% oxygen would be acceptable.

Each analyzer's Interference Response is summarized on the RESULTS worksheet.

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Test Calibrations
API Chemiluminescent NOx Analyzer Model 200AH S/N 258
API Fluorescent SO2 Analyzer Model 100AH S/N 064
API Gas Filter Correlation CO Analyzer Model 300 S/N 905
California Analytical Instruments O2 Analyzer Model 100-P S/N 4J06002
California Analytical Instruments CO2 Analyzer Model 100 S/N 5J06007
Test Performed on March 4, 2010 by Hudson Tiffany

Hour	533.5 ppm CO	119.5 ppm SO_2	91.6 ppm NO_x	24.88 % O_2	19.78 % CO_2	91.6 ppm NO_2	deg F Trailer	<<<CALIBRATION SPAN <<<UNITS
15:00	0.3	4.6	0	0	0	0.1	83	Zero Gas
15:01	0.3	4.6	0	0	0.1	0.1	84	Zero Gas
15:02	0.3	4.6	0	0	0	0.1	84	Zero Gas
15:03	0.3	4.6	0	0	0	0.1	84	Zero Gas
15:04	0.3	4.3	0	0	0	0.1	84	Zero Gas
15:05	0.3	4.2	0	0	-0.2	0.1	85	Zero Gas
15:06	0	2.3	0	0	-0.4	0.1	84	Zero Gas
15:07	-0.3	0	0	0	-0.1	0.1	85	Zero Gas
15:08	-0.3	0	0	0	-0.6	0.1	84	Zero Gas
15:09	-0.3	0	0	0	-0.2	0.1	85	Zero Gas
15:10	-0.3	0	0	0	-0.1	0.1	85	Zero Gas
15:11	-0.3	0	0	0	0	0.1	85	Zero Gas
15:12	**-0.3**	**0**	**0**	**0**	**0**	**0.1**	**85**	**Zero Gas - Zeroed**
15:13	-0.2	0	0	0.3	-0.3	0.1	85	Hi CO
15:14	170.7	0	0	0	-0.5	0.1	85	Hi CO
15:15	286.8	0	0	0	0	0.1	85	Hi CO
15:16	287.1	0	0	0	0.1	0.1	85	Hi CO
15:17	370	0	0	0.5	0.1	0.1	85	Hi CO
15:18	528.8	0	0	0	0.1	0.1	85	Hi CO
15:19	540.2	0	0	0	0.1	0.1	85	Hi CO
15:20	541.7	0	0	0	0.2	0.1	86	Hi CO
15:21	536.2	0	0	0	0.1	0.1	85	Hi CO
15:22	535.4	0	0	0	0	0.1	85	Hi CO
15:23	528.4	0	0	0	0.1	0.1	86	Hi CO
15:24	538.7	0	0	0	0.1	0.1	85	Hi CO
15:25	**541.1**	0	0	0	0.1	0.1	85	**Hi CO Span Gas**
15:26	538.2	-0.1	0	0	0.1	0.1	85	Hi SO2
15:27	490.7	17.5	0	0.9	0.1	0.1	85	Hi SO2
15:28	78.1	103	0	0	0.1	0.1	86	Hi SO2
15:29	4.7	114.3	0	0	0.1	0.1	86	Hi SO2
15:30	0.4	115.8	0	0	0.1	0.1	86	Hi SO2
15:31	0.3	116.2	0	0	0.2	0.1	85	Hi SO2
15:32	-0.1	117.3	0	0	0.1	0.1	85	Hi SO2
15:33	-0.3	119.6	0	0	0.1	0.1	86	Hi SO2
15:34	-0.3	120.2	0	0	0.1	0.1	86	Hi SO2
15:35	-0.3	**120**	0	0	0.1	0.1	86	**Hi SO2 Span Gas**
15:36	-0.3	119.9	0	0	0.1	0.1	86	Hi NOx
15:37	-0.3	86.8	3.3	0.4	0.1	0.1	86	Hi NOx
15:38	-0.3	32.6	82.6	0	0.2	0.1	86	Hi NOx
15:39	-0.3	31.7	89.2	0	0.1	0.2	86	Hi NOx
15:40	-0.3	30.3	88.9	0	0.1	-0.1	86	Hi NOx
15:41	-0.3	29.9	90.8	0	0.2	0.1	86	Hi NOx
15:42	-0.3	30.2	91.1	0	0	0.1	86	Hi NOx
15:43	-0.3	30.5	91.3	0	-0.1	0.1	86	Hi NOx
15:44	-0.3	30.8	91.4	0	0.1	0.2	86	Hi NOx
15:45	-0.3	30.8	**91.6**	0	0.2	-0.2	86	**Hi NOx Span Gas**
15:46	-0.3	31	91.7	0	0.3	-0.2	86	Hi O2/CO2
15:47	-0.3	19.2	89.7	10.8	7.3	-0.1	86	Hi O2/CO2
15:48	-0.9	0.1	8.3	24.9	19.1	0.4	86	Hi O2/CO2
15:49	-0.9	0	0	24.9	19.2	0.1	86	Hi O2/CO2
15:50	-1.1	0	0	24.9	19.4	0.1	86	Hi O2/CO2
15:51	-1.4	0	0	24.9	19.8	0.1	86	Hi O2/CO2
15:52	-1.4	0	0	**24.9**	**19.7**	0.1	86	**Hi O2/CO2 Span Gas**
15:53	-1.4	0	0	24.9	19	0.1	86	Ambient Air
15:54	-0.5	0.3	0	20.3	4.5	0.1	84	Ambient Air

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Tests
API Chemiluminescent NOx Analyzer Model 200AH S/N 266
API Fluorescent SO2 Analyzer Model 100AH S/N 064
API Gas Filter Correlation CO Analyzer Model 300 S/N 905
California Analytical Instruments O2 Analyzer Model 100-P S/N 4J09002
California Analytical Instruments CO2 Analyzer Model 100 S/N 5J08007
Test Performed on March 4, 2010 by Hudson Tiffany

Hour	533.5 ppm CO	119.5 ppm SO_2	91.6 ppm NO_x	24.88 % O_2	19.78 % CO_2	91.6 ppm H2S	deg F Trailer	<<<CALIBRATION SPAN <<<UNITS
16:00	-0.3	0.2	0	20.6	0.3	0.1	82	Ambient Air
16:01	-0.3	0.1	0	1.7	0.3	0.1	82	Zero Gas
16:02	-0.3	0	0	0	0.1	0.1	82	Zero Gas
16:03	-0.3	-0.1	0	0	-0.1	0.1	81	Zero Gas
16:04	-0.3	-0.1	0	0	0.2	0.1	81	Zero Gas
16:05	**-0.3**	**-0.1**	**0**	**0**	**0.1**	0.1	82	**Zero Gas**
16:06	120.6	0.2	0	0	0.1	0.1	82	Low CO
16:07	281.3	-0.1	0	0	0.2	0.1	81	Low CO
16:08	289.7	-0.1	0	0	0.1	0.1	81	Low CO
16:09	290.9	-0.1	0	0	0.1	0.1	81	Low CO
16:10	291.2	-0.1	0	0	0.1	0.1	81	Low CO (302)
16:11	**291.4**	-0.1	0	0	0.2	0.1	81	**Low CO Interference**
16:12	256.4	9.7	0	0.2	0.2	0.1	82	Low SO2
16:13	45.7	49.4	0.2	0	0.1	0.1	81	Low SO2
16:14	2.9	50.6	0.3	0	0.1	0.1	81	Low SO2
16:15	0.3	51	0.3	0	0.1	0.1	81	Low SO2
16:16	0.1	91.3	0.3	0	0.1	0.1	81	Low SO2
16:17	-0.3	91.3	0.3	0	0.1	0.1	80	Low SO2 (91.93)
16:18	-0.3	**91.3**	0.3	0	0.1	0.1	80	**Low SO2 Interference**
16:19	-0.3	51.5	0.3	0	0.1	0.1	80	Low SO2
16:20	-0.3	35.9	5.1	0.2	0.1	0.1	81	Low NOx
16:21	-0.3	17.5	48.9	0	0.1	0.1	81	Low NOx
16:22	-0.3	17.3	49.8	0	0.2	-0.1	80	Low NOx
16:23	-0.3	17.3	49.8	0	0.1	-0.2	78	Low NOx
16:24	-0.3	17.3	49.8	0	0	-0.2	80	Low NOx
16:25	-0.3	17.3	49.8	0	0.1	-0.2	80	Low NOx
16:26	-0.3	17.1	50	0	0	-0.2	80	Low NOx (50.96)
16:27	-0.6	17.1	**50.2**	0	0	-0.2	79	**Low NOx Interference**
16:28	-0.8	17.1	50.1	0	0	-0.2	79	Low O2/CO2
16:29	-0.8	8.6	41.5	7.6	5.5	0.1	80	Low O2/CO2
16:30	-0.9	-0.1	0.3	11.9	9.9	0.2	81	Low O2/CO2
16:31	-0.9	-0.1	0	11.9	9.8	0.1	79	Low O2/CO2
16:32	-1.3	-0.1	0	11.9	9.8	0.1	79	Low O2/CO2
16:33	-1.4	-0.1	0	11.9	9.7	0.1	79	Low O2/CO2 (11.979 9.78)
16:34	-1.4	-0.1	0	**11.9**	**9.7**	0.1	79	**Low O2/CO2 Interference**
16:35	-1.4	-0.2	0	11.9	9.7	0.1	79	Ambient Air
16:36	-0.9	-0.1	0	17.2	4.4	0.1	79	Ambient Air
16:37	-0.5	0.2	0	20.7	0.2	0.1	80	Ambient Air
16:38	-0.3	0	0	20.7	0.3	0.1	79	Ambient Air
16:39	-0.3	-0.2	0	20.7	0.3	0.1	79	Ambient Air
16:40	-0.3	-0.3	0	20.7	0.3	0.1	79	Ambient Air
16:41	-0.3	-0.2	0	20.7	0.3	0.1	79	Ambient Air
16:42	-0.3	-0.3	0	20.7	0.2	0.1	79	Ambient Air
16:43	-0.3	-0.3	0	20.7	0.1	0.1	79	**Ambient Air Interference**
16:44	-0.3	0.1	4.1	10.8	0.1	0.1	79	Mixed Gas
16:45	-0.3	5.1	47.2	0.6	0.5	0.5	79	Mixed Gas
16:46	-0.5	4.1	46.9	1	0.8	0.1	79	Mixed Gas
16:47	-0.9	4	46.9	0.9	0.7	-0.2	79	Mixed Gas
16:48	-0.9	4.3	46	0.8	0.8	-0.2	79	Mixed Gas
16:49	**-0.9**	**4.8**	**46.5**	**0.2**	**0.6**	-0.4	78	Mixed Gas (@ 0.7 % O2)
16:50	-0.9	5.3	47.1	0.6	0.5	-0.3	78	Mixed Gas
16:51	-0.9	4.6	46.8	1.2	1.1	0	78	Mixed Gas
16:52	-0.9	2.2	43.6	1.9	1.6	0	78	Mixed Gas
16:53	-0.9	2.1	41.8	1.8	1.7	-0.2	78	Mixed Gas
16:54	-0.9	2.2	41.9	1.8	1.6	-0.2	78	Mixed Gas
16:55	**-0.9**	**2.2**	**42.2**	**1.7**	**1.4**	-0.2	78	Mixed Gas (@ 1.7 % O2)
16:56	-0.9	2.2	42.4	1.7	1.5	-0.2	78	Mixed Gas
16:57	-0.9	1.9	40	3.3	2.7	1.5	78	Mixed Gas
16:58	-0.9	0.7	33.6	3.8	3.1	0.1	78	Mixed Gas
16:59	**-0.9**	**0.6**	**33.2**	**3.8**	**3.1**	-0.2	78	Mixed Gas (@ 3.8 % O2)
17:00	-0.9	0.6	33	3.9	3.2	-0.2	78	Mixed Gas
17:01	-0.9	0.5	30.5	5.2	4.2	0.4	78	Mixed Gas
17:02	-0.9	0.1	24.8	5.8	4.9	0.1	78	Mixed Gas
17:03	-1.1	0.1	24.3	5.9	5	-0.2	78	Mixed Gas
17:04	**-1.4**	**0.1**	**24.2**	**5.9**	**4.9**	-0.1	78	Mixed Gas (@ 5.9 % O2)
17:05	-1.4	0.1	23.9	6	4.9	-0.2	78	Mixed Gas
17:06	-1.4	0.1	24.2	5.2	4.3	-0.6	78	Mixed Gas
17:07	-1.4	0.4	30.5	4.3	3.5	0	78	Mixed Gas
17:08	-1.1	0.5	31.8	4.1	3.3	-0.2	78	Mixed Gas
17:09	-0.9	0.5	32.3	3.9	3.2	-0.2	78	Mixed Gas
17:10	-0.9	0.6	32.9	3.8	3.1	-0.2	78	Mixed Gas
17:11	-0.9	0.6	34.1	2.8	2.4	-0.4	77	Mixed Gas
17:12	-0.9	1.4	38.4	2.2	1.8	-0.6	78	Mixed Gas
17:13	-0.9	1.6	40.3	2.1	1.8	-0.2	77	Mixed Gas
17:14	-0.9	1.6	40.7	2.2	1.9	-0.2	77	Mixed Gas
17:15	**-0.9**	**1.5**	**40.4**	**2.2**	**1.5**	-0.3	77	Mixed Gas (@ 2.2 % O2)
17:16	-0.9	1.6	40.6	2.1	1.5	-0.2	77	Mixed Gas
17:17	-0.9	1.6	40.9	6.3	1.4	-0.2	77	Mixed Gas
17:18	-0.9	0	10.6	20.7	0.1	0.4	78	Ambient Air
17:19	-0.9	-0.4	0	20.7	0.1	0.1	77	Ambient Air
17:20	-0.9	-0.5	0	20.7	0.2	0.1	77	Ambient Air

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Test Results
Test Performed on March 4, 2010 by Hudson Tiffany

API Gas Filter Correlation CO Analyzer Model 300 S/N 905		
Calibration Span (C.S.) (ppmv, dry) = 533.5		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (ppm)
N_2	100%	-0.3
$O_2/CO_2/N_2$	11.97% / 9.978% / balance	-1.4
SO_2/N_2	51.93 ppm / balance	-0.3
NO/N_2	50.96 ppm / balance	-0.5
Ambient Air	20.9%O_2 / 79.1%N_2	-0.3
	Sum of absolute Response	2.8
	Sum as a percent of Calibration Span	0.52%
	Meets criteria of <= 2.5% of C.S.	YES

API Fluorescent SO_2 Analyzer Model 100AH S/N 094		
Calibration Span (C.S.) (ppmv, dry) = 119.5		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (ppm)
N_2	100%	-0.1
$O_2/CO_2/N_2$	11.97% / 9.978% / balance	-0.1
CO/N_2	302 ppm / balance	-0.1
$NO_x/O_2/CO_2/N_2$	42.2ppm / 1.7% / 1.4% / balance	2.2
Ambient Air	20.9%O_2 / 79.1%N_2	-0.3
	Sum of absolute Response	2.8
	Sum as a percent of Calibration Span	2.3%
	Meets criteria of <= 2.5% of C.S.	YES

API Chemiluminescent NO_x Analyzer Model 200AH S/N 258		
Calibration Span (C.S.) (ppmv, dry) = 91.6		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (ppm)
N_2	100%	0
$O_2/CO_2/N_2$	11.97% / 9.978% / balance	0
SO_2/N_2	51.93 ppm / balance	0.3
CO/N_2	302 ppm / balance	0
Ambient Air	20.9%O_2 / 79.1%N_2	0
	Sum of absolute Response	0.3
	Sum as a percent of Calibration Span	0.3%
	Meets criteria of <= 2.5% of C.S.	YES

California Analytical Instruments O_2 Analyzer Model 100-P S/N 4J06002		
Calibration Span (C.S.) (%, dry) = 24.9		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (%)
N_2	100%	0
SO_2/N_2	51.93 ppm / balance	0
NO/N_2	50.96 ppm / balance	0
CO/N_2	302 ppm / balance	0
	Sum of absolute Response	0
	Sum as a percent of Calibration Span	0.0%
	Meets criteria of <= 2.5% of C.S.	YES

California Analytical Instruments CO_2 Analyzer Model 100 S/N 5J06007		
Calibration Span (C.S.) (%, dry) = 19.8		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (%)
N_2	100%	0.1
SO_2/N_2	51.93 ppm / balance	0.1
NO/N_2	50.96 ppm / balance	0
CO/N_2	302 ppm / balance	0.2
Ambient Air	20.9%O_2 / 79.1%N_2	0.1
	Sum of absolute Response	0.5
	Sum as a percent of Calibration Span	2.5%
	Meets criteria of <= 2.5% of C.S.	YES

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