

## *Parameters*

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	7/27/2011	7/27/2011	7/27/2011
Start Time	7:53	11:16	14:08
Stop Time	10:15	13:35	13:35
Dimensions of Sample Location, $D_s$ (in)	162 X 198	162 X 198	162 X 198
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$ )	0.508	0.499	0.477
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
Static Pressure, $P_s$ (Inches $H_2O$ )	-16.0	-16.0	-16.0
Pitot Coefficient, $C_p$	0.84	0.84	0.84
Sample Location Temperature, $T_s$ ( $^{\circ}F$ )	301	306	307
Volume Metered, $V_m$ ( $ft^3$ )	73.34	72.56	70.02
Meter Temperature, $T_m$ ( $^{\circ}F$ )	104	109	108
Average Sample Pressure, $\Delta H_{avg}$ (in. $H_2O$ )	1.11	1.04	0.936
Gas Meter Correction Factor, $Y_d$	0.9907	0.9907	0.9907
Carbon Dioxide (% dry)	11.1	11.0	11.1
Oxygen (% dry)	8.17	8.31	8.25
Weight of Water Collected, $V_{wc}$ (g)	103.4	101.4	87.9
Silica Gel Net Weight, $V_{wsg}$ (g)	28.0	35.2	22.7
Diameter of Nozzle, $D_n$ (in)	0.275	0.275	0.275
Run Time, $\theta$ (minutes)	130	130	130

**EPA METHODS 1-4 RESULTS**

Area of Sample Location, $A_s$ ( $ft^2$ )	223	223	223
Stack Pressure Absolute (inches Hg)	28.27	28.27	28.27
Volume Metered Standard, $V_{m(std)}$ ( $ft^3$ )	67.06	65.80	63.64
Volume of Water Vapor, $V_{w(std)}$ ( $ft^3$ )	6.20	6.44	5.21
Percent Moisture, $B_{ws}$ (%)	8.46	8.92	7.57
Moisture Saturation Point, $B_{wsat}$ (%)	100	100	100
Dry Molecular Weight, $M_d$ (lbs/lb mole)	30.10	30.09	30.11
Wet Molecular Weight, $M_s$ (lbs/lb mole)	29.08	29.01	29.19
Gas Velocity, $V_s$ (ft/sec)	35.1	34.6	33.0
Average Flowrate, $Q_a$ (acfm)	468,970	463,057	441,372
Standard Flowrate, $Q_{std}$ (scfm)	307,401	301,589	286,932
Dry Standard Flowrate, $Q_{dstd}$ (dscfm)	281,516	274,811	265,308
Area of Nozzle, $A_n$ ( $ft^2$ )	0.000412	0.000412	0.000412
Hydrogen Chloride (mg)	39.9	44.2	61.0
Concentration (lb/dscf)	1.31E-06	1.48E-06	2.11E-06
Concentration (ppmdv)	13.9	15.7	22.3
Emission Rate (lb/mmBtu)	0.0219	0.0244	0.0345
Emission Rate (lb/hr)	22.2	24.4	33.6
Hydrogen Fluoride (mg)	7.32	9.48	13.0
Concentration (lb/dscf)	2.41E-07	3.18E-07	4.50E-07
Concentration (ppmdv)	4.63	6.12	8.67
Emission Rate (lb/mmBtu)	0.00402	0.00523	0.00734
Emission Rate (lb/hr)	4.06	5.24	7.17

Parameters	Run 1	Run 2	Run 3
Date	7/27/11	7/27/11	7/27/11
Start Time	7:53	11:16	14:08
Stop Time	9:26	12:48	15:41
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
<b>Un-Spiked</b>			
Volume Metered, $V_m$ (L)	36.90	36.72	36.39
Meter Temperature, $T_m$ (°F)	113	113	119
Gas Meter Correction Factor, $Y_d$	1.0072	1.0072	1.0072
Run Time, $\theta$ (minutes)	90	90	90
<b>Spiked/Paired</b>			
Volume Metered, $V_m$ (L)	36.65	36.48	36.84
Meter Temperature, $T_m$ (°F)	113	114	119
Gas Meter Correction Factor, $Y_d$	0.9985	0.9985	0.9985
Run Time, $\theta$ (minutes)	90	90	90
Ash Bonded Mercury Collected Un-Spiked, m (ng)	76.3	93.0	130
Oxidized Mercury Collected Un-Spiked, m (ng)	76.8	89.2	47.6
Elemental Mercury Collected Un-Spiked, m (ng)	75.0	97.1	182
Total Mercury Collected Un-Spiked, m (ng)	228	279	359
Total Mercury Collected Spiked/Paired, m (ng)	427	438	501
Mass of Mercury Spiked, S (ng)	175	175	175

**RESULTS**

Volume Metered Un-Spiked, $V_{m(std)}$ (L)	33.69	33.51	32.89
Ash Bound Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	2.26	2.78	3.95
Oxidized Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	2.28	2.66	1.45
Elemental Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	2.23	2.90	5.53
Total Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	6.77	8.33	10.9
Volume Metered Spiked/Paired, $V_{m(std)}$ (L)	33.2	33.0	33.0
Concentration Spiked/Paired Train, ( $\mu\text{g/dscm}$ )	12.9	13.3	15.2
Concentration Spiked Train Less Spike, ( $\mu\text{g/dscm}$ )	7.60	7.97	9.88
Concentration Recovered Spike, ( $\mu\text{g/dscm}$ )	6.10	4.95	4.26
Recovery, R (%)	116	93.3	80.4
Relative Deviation, RD (%)	5.8	2.2	5.0
Difference ( $\mu\text{g/dscm}$ )	0.829	0.355	1.04
Average Result ( $\mu\text{g/dscm}$ )	7.18	8.15	10.4
Average Recovery (%)	96.5		

<b>EPA Methods 1-4 Parameters</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>
Date	7/27/2011	7/27/2011	7/27/2011
Start Time	7:53	11:16	14:08
Stop Time	10:08	13:34	16:16
Dimensions of Sample Location, $D_s$ (in)	162 X 198	162 X 198	162 X 198
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$ )	0.534	0.534	0.536
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
Static Pressure, $P_s$ (Inches $H_2O$ )	-12.0	-12.0	-12.0
Pitot Coefficient, $C_p$	0.84	0.84	0.84
Sample Location Temperature, $T_s$ ( $^{\circ}F$ )	304	302	302
Volume Metered, $V_m$ ( $ft^3$ )	77.08	79.49	79.56
Meter Temperature, $T_m$ ( $^{\circ}F$ )	98.6	109	114
Average Sample Pressure, $\Delta H_{avg}$ (in. $H_2O$ )	1.13	1.13	1.16
Gas Meter Correction Factor, $Y_d$	1.0141	1.0141	1.0141
Carbon Dioxide (% dry)	11.1	11.0	11.1
Oxygen (% dry)	8.17	8.31	8.25
Weight of Water Collected, $V_{wc}$ (g)	68.4	-3.8	160.3
Silica Gel Net Weight, $V_{wsg}$ (g)	30.7	23.9	9.1
Diameter of Nozzle, $D_n$ (in)	0.275	0.275	0.275
Run Time, $\theta$ (minutes)	130	130	130

**EPA METHODS 1-4 RESULTS**

Area of Sample Location, $A_s$ ( $ft^2$ )	223	223	223
Stack Pressure Absolute (inches Hg)	28.57	28.57	28.57
Volume Metered Standard, $V_{m(std)}$ ( $ft^3$ )	72.90	73.85	73.22
Volume of Water Vapor, $V_{w(std)}$ ( $ft^3$ )	4.67	0.948	7.99
Percent Moisture, $B_{ws}$ (%)	6.02	1.27	9.84
Moisture Saturation Point, $B_{wsat}$ (%)	100	100	100
Dry Molecular Weight, $M_d$ (lbs/lb mole)	30.10	30.09	30.11
Wet Molecular Weight, $M_w$ (lbs/lb mole)	29.37	29.94	28.92
Gas Velocity, $V_s$ (ft/sec)	36.6	36.2	37.0
Average Flowrate, $Q_a$ (acfm)	489,356	483,564	494,292
Standard Flowrate, $Q_{std}$ (scfm)	322,746	319,682	326,890
Dry Standard Flowrate, $Q_{dstd}$ (dscfm)	303,427	315,758	294,856
Area of Nozzle, $A_n$ ( $ft^2$ )	0.000412	0.000412	0.000412
Isokinetics (%)	99.9	97.2	103.2
Hydrogen Chloride (mg)	46.2	51.6	52.8
Concentration (lb/dscf)	1.40E-06	1.54E-06	1.59E-06
Concentration (ppmdv)	14.8	16.3	16.8
Emission Rate (lb/mmBtu)	0.0234	0.0254	0.0259
Emission Rate (lb/hr)	25.4	29.2	28.1
Hydrogen Fluoride (mg)	8.53	7.52	6.96
Concentration (lb/dscf)	2.58E-07	2.24E-07	2.10E-07
Concentration (ppmdv)	4.97	4.32	4.04
Emission Rate (lb/mmBtu)	0.00431	0.00370	0.00342
Emission Rate (lb/hr)	4.70	4.25	3.71

Parameters	Run 1	Run 2	Run 3
Date	7/27/11	7/27/11	7/27/11
Start Time	7:53	11:16	14:08
Stop Time	9:36	12:54	15:49
Barometric Pressure, P <sub>b</sub> (Inches Hg)	29.45	29.45	29.45
<b>Un-Spiked</b>			
Volume Metered, V <sub>m</sub> (L)	36.16	36.02	36.11
Meter Temperature, T <sub>m</sub> (°F)	109	116	120
Gas Meter Correction Factor, Y <sub>d</sub>	0.9958	0.9958	0.9958
Run Time, θ (minutes)	90	90	90
<b>Spiked/Paired</b>			
Volume Metered, V <sub>m</sub> (L)	36.24	36.03	36.04
Meter Temperature, T <sub>m</sub> (°F)	111	117	121
Gas Meter Correction Factor, Y <sub>d</sub>	0.9902	0.9902	0.9902
Run Time, θ (minutes)	90	90	90
Ash Bonded Mercury Collected Un-Spiked, m (ng)	98.4	7.72	70.8
Oxidized Mercury Collected Un-Spiked, m (ng)	39.0	70.4	81.5
Elemental Mercury Collected Un-Spiked, m (ng)	73.1	120	147
Total Mercury Collected Un-Spiked, m (ng)	210	198	299
Total Mercury Collected Spiked/Paired, m (ng)	363	369	465
Mass of Mercury Spiked, S (ng)	175	175	175

**RESULTS**

Volume Metered Un-Spiked, V <sub>m(std)</sub> (L)	32.89	32.36	32.21
Ash Bound Mercury Concentration Un-spiked Train, (µg/dscm)	2.99	0.239	2.20
Oxidized Mercury Concentration Un-spiked Train, (µg/dscm)	1.19	2.18	2.53
Elemental Mercury Concentration Un-spiked Train, (µg/dscm)	2.22	3.71	4.56
Total Mercury Concentration Un-spiked Train, (µg/dscm)	6.39	6.12	9.28
Volume Metered Spiked/Paired, V <sub>m(std)</sub> (L)	32.67	32.14	31.91
Concentration Spiked/Paired Train, (µg/dscm)	11.1	11.5	14.6
Concentration Spiked Train Less Spike, (µg/dscm)	5.75	6.04	9.09
Concentration Recovered Spike, (µg/dscm)	4.727	5.363	5.288
Recovery, R (%)	88.2	98.5	96.4
Relative Deviation, RD (%)	5.19	0.7	1.1
Difference (µg/dscm)	0.630	0.0821	0.195
Average Result (ug/dscm)	6.07	6.08	9.18
Average Recovery (%)	94.4		

EPA Methods 1-5B/202 Parameters	Run 1	Run 2	Run 3
Date	7/27/2011	7/27/2011	7/27/2011
Start Time	7:53	11:16	14:08
Stop Time	10:15	14:00	16:20
Dimensions of Sample Location, $D_s$ (in)	180	180	180
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$ )	1.45	1.47	1.47
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
Static Pressure, $P_s$ (Inches $H_2O$ )	-0.2	-0.2	-0.2
Pitot Coefficient, $C_p$	0.84	0.84	0.84
Sample Location Temperature, $T_s$ ( $^{\circ}F$ )	130	130	128
Volume Metered, $V_m$ ( $ft^3$ )	63.56	64.30	65.44
Meter Temperature, $T_m$ ( $^{\circ}F$ )	92.0	98.5	102
Average Sample Pressure, $\Delta H_{avg}$ (in. $H_2O$ )	1.64	1.73	1.76
Gas Meter Correction Factor, $Y_d$	1.0034	1.0034	1.0034
Carbon Dioxide (% dry)	11.1	11.0	11.1
Oxygen (% dry)	8.17	8.31	8.25
Weight of Water Collected, $V_{wc}$ (g)	186.4	174.1	180.0
Silica Gel Net Weight, $V_{wsg}$ (g)	18.4	21.7	16.0
Diameter of Nozzle, $D_n$ (in)	0.175	0.175	0.175
Run Time, $\theta$ (minutes)	90	90	90

**EPA METHODS 1-5B/202 RESULTS**

Area of Sample Location, $A_s$ ( $ft^2$ )	177	177	177
Stack Pressure Absolute (inches Hg)	29.44	29.44	29.44
Volume Metered Standard, $V_{m(std)}$ ( $ft^3$ )	60.27	60.27	61.02
Volume of Water Vapor, $V_{w(std)}$ ( $ft^3$ )	9.66	9.23	9.24
Percent Moisture, $B_{ws}$ (%)	13.8	13.3	13.2
Moisture Saturation Point, $B_{wsat}$ (%)	15.3	15.2	14.7
Dry Molecular Weight, $M_d$ (lbs/lb mole)	30.10	30.09	30.11
Wet Molecular Weight, $M_s$ (lbs/lb mole)	28.43	28.49	28.51
Gas Velocity, $V_s$ (ft/sec)	87.1	88.2	88.3
Average Flowrate, $Q_a$ (acfm)	923,684	935,544	935,788
Standard Flowrate, $Q_{std}$ (scfm)	813,132	823,806	825,888
Dry Standard Flowrate, $Q_{dstd}$ (dscfm)	701,128	714,668	717,543
Area of Nozzle, $A_n$ ( $ft^2$ )	0.000167	0.000167	0.000167
Isokinetics (%)	101.1	99.2	100.0
Front-Half Particulate (g)	0.0159	0.0145	0.0117
Concentration (grains/dscf)	0.00407	0.00370	0.00295
Emission Rate, $F_d$ (lb/mmBtu)	0.00973	0.00871	0.00686
Emission Rate (lb/hr)	24.5	22.7	18.1
Condensible Particulate (g)	0.0132	0.0186	0.0238
Concentration (grains/dscf)	0.00339	0.00475	0.00601
Emission Rate, $F_d$ (lb/mmBtu)	0.00810	0.0112	0.0140
Emission Rate (lb/hr)	20.4	29.1	36.9

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	7/27/2011	7/27/2011	7/27/2011
Start Time	7:53	11:16	14:08
Stop Time	10:15	13:35	16:20
Dimensions of Sample Location, $D_s$ (in)	180	180	180
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$ )	1.43	1.45	1.46
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
Static Pressure, $P_s$ (Inches $H_2O$ )	-0.2	-0.2	-0.2
Pitot Coefficient, $C_p$	0.84	0.84	0.84
Sample Location Temperature, $T_s$ ( $^{\circ}F$ )	132	131	130
Volume Metered, $V_m$ ( $ft^3$ )	106.87	108.43	108.92
Meter Temperature, $T_m$ ( $^{\circ}F$ )	101	106	113
Average Sample Pressure, $\Delta H_{avg}$ (in. $H_2O$ )	2.45	2.52	2.53
Gas Meter Correction Factor, $Y_d$	0.9976	0.9976	0.9976
Carbon Dioxide (% dry)	11.1	11.0	11.1
Oxygen (% dry)	8.17	8.31	8.25
Weight of Water Collected, $V_{wc}$ (g)	257.8	150.7	308.5
Silica Gel Net Weight, $V_{wsg}$ (g)	50.9	74.3	12.2
Diameter of Nozzle, $D_n$ (in)	0.194	0.194	0.194
Run Time, $\theta$ (minutes)	120	120	120

**EPA METHODS 1-4 RESULTS**

Area of Sample Location, $A_s$ ( $ft^2$ )	177	177	177
Stack Pressure Absolute (inches Hg)	29.44	29.44	29.44
Volume Metered Standard, $V_{m(std)}$ ( $ft^3$ )	99.30	99.83	99.14
Volume of Water Vapor, $V_{w(std)}$ ( $ft^3$ )	14.56	10.61	15.12
Percent Moisture, $B_{ws}$ (%)	12.8	9.61	13.2
Moisture Saturation Point, $B_{wsat}$ (%)	16.0	15.6	15.3
Dry Molecular Weight, $M_d$ (lbs/lb mole)	30.10	30.09	30.11
Wet Molecular Weight, $M_s$ (lbs/lb mole)	28.56	28.93	28.50
Gas Velocity, $V_s$ (ft/sec)	86.3	86.7	88.0
Average Flowrate, $Q_a$ (acfm)	915,020	918,889	933,208
Standard Flowrate, $Q_{std}$ (scfm)	803,122	807,998	821,516
Dry Standard Flowrate, $Q_{dstd}$ (dscfm)	700,731	730,671	713,081
Area of Nozzle, $A_n$ ( $ft^2$ )	0.000205	0.000205	0.000205
Hydrogen Chloride (mg)	0.866	0.669	0.770
Concentration (lb/dscf)	1.92E-08	1.48E-08	1.71E-08
Concentration (ppmdv)	0.203	0.156	0.181
Emission Rate (lb/mmBtu)	0.000322	0.000243	0.000279
Emission Rate (lb/hr)	0.808	0.648	0.733
Hydrogen Fluoride (mg)	0.0914	0.0758	0.0356
Concentration (lb/dscf)	2.03E-09	1.67E-09	7.92E-10
Concentration (ppmdv)	0.0391	0.0322	0.0152
Emission Rate (lb/mmBtu)	0.0000339	0.0000276	0.0000129
Emission Rate (lb/hr)	0.0853	0.0734	0.0339

<b>EPA Methods 1-4 Parameters</b>	<b>Run 1</b>	<b>Run 2</b>	<b>Run 3</b>
Date	7/27/2011	7/27/2011	7/27/2011
Start Time	7:53	11:16	14:08
Stop Time	10:13	13:35	16:20
Dimensions of Sample Location, $D_s$ (in)	180	180	180
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$ )	1.52	1.56	1.48
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
Static Pressure, $P_s$ (Inches $H_2O$ )	-0.2	-0.2	-0.2
Pitot Coefficient, $C_p$	0.84	0.84	0.84
Sample Location Temperature, $T_s$ ( $^{\circ}F$ )	131	130	129
Volume Metered, $V_m$ ( $ft^3$ )	74.71	77.06	75.21
Meter Temperature, $T_m$ ( $^{\circ}F$ )	99.3	103	108
Average Sample Pressure, $\Delta H_{avg}$ (in. $H_2O$ )	1.20	1.31	1.16
Gas Meter Correction Factor, $Y_d$	0.9952	0.9952	0.9952
Carbon Dioxide (% dry)	11.1	11.0	11.1
Oxygen (% dry)	8.17	8.31	8.25
Weight of Water Collected, $V_{wc}$ (g)	252.2	247.4	230.9
Silica Gel Net Weight, $V_{wsg}$ (g)	18.1	18.7	16.5
Diameter of Nozzle, $D_n$ (in)	0.160	0.160	0.160
Run Time, $\theta$ (minutes)	120	120	120

**EPA METHODS 1-4 RESULTS**

Area of Sample Location, $A_s$ ( $ft^2$ )	177	177	177
Stack Pressure Absolute (inches Hg)	29.44	29.44	29.44
Volume Metered Standard, $V_{m(std)}$ ( $ft^3$ )	69.26	71.05	68.70
Volume of Water Vapor, $V_{w(std)}$ ( $ft^3$ )	12.74	12.55	11.66
Percent Moisture, $B_{ws}$ (%)	15.5	15.0	14.5
Moisture Saturation Point, $B_{wsat}$ (%)	15.7	15.2	14.9
Dry Molecular Weight, $M_d$ (lbs/lb mole)	30.10	30.09	30.11
Wet Molecular Weight, $M_s$ (lbs/lb mole)	28.22	28.28	28.35
Gas Velocity, $V_s$ (ft/sec)	91.8	94.5	89.2
Average Flowrate, $Q_a$ (acfm)	973,339	1,001,807	946,139
Standard Flowrate, $Q_{std}$ (scfm)	855,515	882,404	834,196
Dry Standard Flowrate, $Q_{dstd}$ (dscfm)	722,850	750,273	713,392
Area of Nozzle, $A_n$ ( $ft^2$ )	0.000140	0.000140	0.000140
Isokinetics (%)	101.1	99.9	101.6



Metals Lab Data Entry ( $\mu\text{g}$ )	Blank	Run 1	Run 2	Run 3
Front Half (ug)	<0.1	0.409	0.359	0.595
Back Half (ug)	<0.1	<0.1	<0.1	<0.1
Antimony - Sb		0.509	0.459	0.695
Concentration (ug/dscm)		0.259	0.228	0.357
Emission Rate (lb/mmBtu)		2.71E-07	2.35E-07	3.64E-07
Emission Rate (lb/hr)		0.000703	0.000641	0.000955
Front Half (ug)	<0.1	5.81	7.76	11.0
Back Half (ug)	<0.1	1.92	0.973	1.05
Arsenic - As		7.73	8.73	12.1
Concentration (ug/dscm)		3.94	4.34	6.19
Emission Rate (lb/mmBtu)		4.11E-06	4.46E-06	6.30E-06
Emission Rate (lb/hr)		0.0107	0.0122	0.0166
Front Half (ug)	<0.1	0.087	0.107	0.054
Back Half (ug)	<0.025	<0.025	<0.025	<0.025
Beryllium - Be		0.112	0.132	0.0790
Concentration (ug/dscm)		0.0571	0.0656	0.0406
Emission Rate (lb/mmBtu)		5.96E-08	6.75E-08	4.13E-08
Emission Rate (lb/hr)		0.000155	0.000184	0.000109
Front Half (ug)	<0.1	0.386	0.359	0.212
Back Half (ug)	<0.1	<0.1	0.710	<0.1
Cadmium - Cd		0.486	1.07	0.312
Concentration (ug/dscm)		0.248	0.531	0.160
Emission Rate (lb/mmBtu)		2.59E-07	5.46E-07	1.63E-07
Emission Rate (lb/hr)		0.000671	0.00149	0.000429
Front Half (ug)	2.02	3.65	198	3.39
Back Half (ug)	0.522	2.33	2.97	2.74
Chromium - Cr		5.98	201	6.13
Concentration (ug/dscm)		3.05	99.9	3.15
Emission Rate (lb/mmBtu)		3.18E-06	1.03E-04	3.21E-06
Emission Rate (lb/hr)		0.00826	0.281	0.00842
Front Half (ug)	<0.1	0.28	0.44	0.19
Back Half (ug)	0.151	<0.1	<0.1	<0.1
Cobalt - Co		0.383	0.545	0.290
Concentration (ug/dscm)		0.195	0.271	0.149
Emission Rate (lb/mmBtu)		2.04E-07	2.78E-07	1.52E-07
Emission Rate (lb/hr)		0.000529	0.000761	0.000398

Metals Lab Data Entry (µg)	Blank	Run 1	Run 2	Run 3
Front Half (ug)	0.216	3.80	4.23	4.24
Back Half (ug)	0.434	1.20	1.17	0.897
Lead - Pb		5.00	5.39	5.14
Concentration (ug/dscm)		2.55	2.68	2.64
Emission Rate (lb/mmBtu)		2.66E-06	2.76E-06	2.69E-06
Emission Rate (lb/hr)		0.00690	0.00753	0.00706
Front Half (ug)	4.72	9.79	11.2	7.70
Back Half (ug)	1.244	4.34	2.85	4.35
Manganese - Mn		14.1	14.0	12.1
Concentration (ug/dscm)		7.20	6.98	6.19
Emission Rate (lb/mmBtu)		7.52E-06	7.18E-06	6.30E-06
Emission Rate (lb/hr)		0.0195	0.0196	0.0166
Front Half (ug)	1.13	3.08	12.8	2.45
Back Half (ug)	0.699	1.46	1.97	1.76
Nickel - Ni		4.54	14.8	4.21
Concentration (ug/dscm)		2.31	7.34	2.16
Emission Rate (lb/mmBtu)		2.42E-06	7.55E-06	2.20E-06
Emission Rate (lb/hr)		0.00627	0.0206	0.00578
Front Half (ug)	<0.1	36.7	29.5	34.6
Back Half (ug)	<0.1	47.8	25.5	24.2
Selenium - Se		84.5	55.0	58.8
Concentration (ug/dscm)		43.1	27.3	30.2
Emission Rate (lb/mmBtu)		4.50E-05	2.81E-05	3.08E-05
Emission Rate (lb/hr)		0.117	0.0768	0.0808

Parameters	Run 1	Run 2	Run 3
Date	7/27/11	7/27/11	7/27/11
Start Time	7:53	11:16	14:08
Stop Time	10:13	13:35	15:41
Barometric Pressure, $P_b$ (Inches Hg)	29.45	29.45	29.45
<b>Un-Spiked</b>			
Volume Metered, $V_m$ (L)	40.50	41.85	41.66
Meter Temperature, $T_m$ (°F)	104	108	117
Gas Meter Correction Factor, $Y_d$	0.9994	0.9994	0.9994
Run Time, $\theta$ (minutes)	90	90	90
<b>Spiked/Paired</b>			
Volume Metered, $V_m$ (L)	40.43	42.18	41.78
Meter Temperature, $T_m$ (°F)	105	110	119
Gas Meter Correction Factor, $Y_d$	1.0017	1.0017	1.0017
Run Time, $\theta$ (minutes)	90	90	90
Ash Bonded Mercury Collected Un-Spiked, m (ng)	0	0	0
Oxidized Mercury Collected Un-Spiked, m (ng)	16.7	12.8	9.30
Elemental Mercury Collected Un-Spiked, m (ng)	76.2	103	121
Total Mercury Collected Un-Spiked, m (ng)	92.9	116	130
Total Mercury Collected Spiked/Paired, m (ng)	175	224	223
Mass of Mercury Spiked, S (ng)	100	100	100

**RESULTS**

Volume Metered Un-Spiked, $V_{m(std)}$ (L)	37.29	38.23	37.49
Ash Bound Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	0	0	0
Oxidized Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	0.448	0.335	0.248
Elemental Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	2.04	2.69	3.23
Total Mercury Concentration Un-spiked Train, ( $\mu\text{g/dscm}$ )	2.49	3.03	3.47
Volume Metered Spiked/Paired, $V_{m(std)}$ (L)	37.22	38.53	37.56
Concentration Spiked/Paired Train, ( $\mu\text{g/dscm}$ )	4.70	5.81	5.94
Concentration Spiked Train Less Spike, ( $\mu\text{g/dscm}$ )	2.01	3.22	3.27
Concentration Recovered Spike, ( $\mu\text{g/dscm}$ )	2.21	2.78	2.47
Recovery, R (%)	82.3	107	92.7
Relative Deviation, RD (%)	10.6	2.94	2.87
Difference ( $\mu\text{g/dscm}$ )	0.476	0.184	0.194
Average Result ( $\mu\text{g/dscm}$ )	2.25	3.13	3.37
Average Recovery (%)	94.0		

<b>Fd Parameters</b>	<b>Sample 1</b>	<b>Sample 2</b>	<b>Sample 3</b>
Hydrogen (%)	4.76	4.79	4.97
Carbon (%)	74.64	68.40	69.58
Sulfur (%)	3.87	3.96	2.89
Nitrogen (%)	1.56	1.44	1.5
Oxygen (%)	6.41	8.22	8.94
Heating Value (Btu/lb)	12,862	12,166	12,393

  

<b>Result</b>	<b>Sample 1</b>	<b>Sample 2</b>	<b>Sample 3</b>
Fd (dscf/mmBtu)	10,185	9,926	9,868
Fc (dscf/mmBtu)	1,863	1,805	1,802
Fo	1.143	1.150	1.144