ROTARY FURNACE 2 Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK ACFM	NAF DP In. H_2O
9/19/2013	10:58:26	0.00	7.09	256.00	201.00	183.00	15.70	62,120	0.87
9/19/2013	10:59:26	0.00	7.19	255.00	201.00	183.00	7.50	61,577	1.01
9/19/2013	11:00:26	0.00	7.03	255.00	201.00	184.00	15.50	61,628	1.03
9/19/2013	11:01:26	0.00	7.27	255.00	201.00	184.00	15.21	62,172	1.08
9/19/2013	11:02:26	0.00	7.06	251.00	201.00	184.00	11.11	62,511	1.08
9/19/2013	11:03:26	0.00	7.05	249.00	201.00	184.00	8.89	62,240	1.00
9/19/2013	11:04:26	0.00	7.20	253.00	200.00	184.00	11.25	62,012	0.99
9/19/2013	11:05:26	0.00	7.11	253.00	200.00	183.00	15.07	61,056	1.06
9/19/2013	11:06:26	0.00	7.14	252.00	199.00	183.00	9.43	61,735	1.08
9/19/2013	11:07:26	0.00	7.02	253.00	199.00	183.00	16.00	62,279	0.99
9/19/2013	11:08:26	0.00	6.91	255.00	198.00	183.00	11.15	62,052	1.11
9/19/2013	11:09:26	0.00	6.95	256.00	198.00	182.00	7.51	61,798	1.14
9/19/2013	11:10:26	0.00	7.09	257.00	197.00	182.00	16.28	61,730	1.18
9/19/2013	11:11:26	0.00	7.00	256.00	196.00	181.00	14.88	62,311	1.01
9/19/2013	11:12:26	0.00	6.89	254.00	196.00	181.00	14.69	62,446	1.13
9/19/2013	11:13:26	0.00	6.88	253.00	196.00	181.00	7.65	62,852	1.02
Run 1 Average		0.00	5.87	268.24	155.17	149.87	15.07	63,013	1.03
Begin Run 2 South Baghouse									
9/19/2013	12:05:26	0.00	5.08	268.00	155.00	152.00	13.80	63,605	1.24
9/19/2013	12:06:26	0.00	5.22	264.00	154.00	151.00	18.47	64,233	0.95
9/19/2013	12:07:26	0.00	5.39	270.00	152.00	150.00	17.46	63,248	0.96
9/19/2013	12:08:26	0.00	5.14	267.00	151.00	149.00	9.31	64,666	1.18
9/19/2013	12:09:26	0.00	5.25	272.00	150.00	148.00	18.18	63,618	1.03
9/19/2013	12:10:26	0.00	5.29	269.00	148.00	147.00	28.58	63,961	0.80
9/19/2013	12:11:26	0.00	5.23	268.00	147.00	146.00	10.19	63,814	1.07
9/19/2013	12:12:26	0.00	5.18	267.00	146.00	145.00	19.05	63,772	1.10
9/19/2013	12:13:26	0.00	5.33	273.00	145.00	145.00	19.18	62,345	1.15
9/19/2013	12:14:26	0.00	5.35	271.00	145.00	144.00	12.37	62,562	1.10
9/19/2013	12:15:26	0.00	5.22	274.00	144.00	143.00	15.02	62,522	1.00
9/19/2013	12:16:26	0.00	5.09	273.00	143.00	143.00	23.61	62,776	0.84
9/19/2013	12:17:26	0.00	5.19	270.00	143.00	142.00	21.22	63,562	1.07
9/19/2013	12:18:26	0.00	5.51	275.00	142.00	142.00	19.56	63,604	0.96
9/19/2013	12:19:26	0.00	5.31	275.00	142.00	141.00	14.95	63,351	0.90
9/19/2013	12:20:26	0.00	5.33	273.00	141.00	141.00	10.42	63,498	1.22
9/19/2013	12:21:26	0.00	5.30	270.00	141.00	140.00	15.80	63,583	0.99
9/19/2013	12:22:26	0.00	5.19	274.00	140.00	140.00	12.39	63,182	0.98
9/19/2013	12:23:26	0.00	5.03	271.00	140.00	140.00	17.61	64,153	1.04
9/19/2013	12:24:26	0.00	5.33	271.00	140.00	139.00	16.30	63,856	0.98
9/19/2013	12:25:26	0.00	5.37	275.00	139.00	139.00	11.90	62,528	1.27
9/19/2013	12:26:26	0.00	5.28	271.00	139.00	139.00	20.43	63,267	1.15
9/19/2013	12:27:26	0.00	5.16	271.00	139.00	139.00	14.55	63,350	0.88
9/19/2013	12:28:26	0.00	5.07	270.00	139.00	138.00	25.14	63,813	1.02
9/19/2013	12:29:26	0.00	5.02	274.00	138.00	138.00	14.20	63,539	1.25
9/19/2013	12:30:26	0.00	5.39	270.00	138.00	138.00	17.62	62,550	1.00
9/19/2013	12:31:26	0.00	5.35	271.00	138.00	138.00	12.01	63,434	0.98
9/19/2013	12:32:26	0.00	5.40	271.00	138.00	138.00	22.84	63,181	1.25
9/19/2013	12:33:26	0.00	5.18	272.00	138.00	138.00	11.14	62,150	1.05
9/19/2013	12:34:26	0.00	5.05	271.00	138.00	137.00	25.36	62,676	0.89
9/19/2013	12:35:26	0.00	5.28	274.00	138.00	137.00	14.11	61,920	1.23
9/19/2013	12:36:26	0.00	5.44	269.00	137.00	137.00	23.25	62,572	1.02
9/19/2013	12:37:26	0.00	5.38	271.00	137.00	137.00	10.49	63,202	1.07
9/19/2013	12:38:26	0.00	5.15	275.00	137.00	137.00	22.64	62,824	0.91
9/19/2013	12:39:26	0.00	5.12	271.00	137.00	137.00	21.11	63,706	1.05
9/19/2013	12:40:26	0.00	5.27	270.00	137.00	137.00	14.21	62,887	1.13
9/19/2013	12:41:26	0.00	5.41	273.00	137.00	137.00	17.44	62,362	1.05
9/19/2013	12:42:26	0.00	5.29	271.00	137.00	136.00	15.97	62,236	0.98
9/19/2013	12:43:26	0.00	5.05	266.00	137.00	136.00	15.14	62,488	0.99
9/19/2013	12:44:26	0.00	5.17	270.00	137.00	136.00	15.13	62,572	0.99

ROTARY FURNACE 2 Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK ACFM	NAF DP In. H_2O
9/19/2013	12:45:26	0.00	5.42	274.00	137.00	136.00	15.84	63,096	0.91
9/19/2013	12:46:26	0.00	5.32	275.00	137.00	136.00	23.19	62,970	0.95
9/19/2013	12:47:26	0.00	5.19	271.00	137.00	136.00	14.29	62,299	1.13
9/19/2013	12:48:26	0.00	5.47	271.00	137.00	136.00	14.43	62,844	1.10
9/19/2013	12:49:26	0.00	5.22	275.00	137.00	136.00	15.81	62,341	1.14
9/19/2013	12:50:26	0.00	5.13	273.00	136.00	136.00	22.54	63,180	0.96
9/19/2013	12:51:26	0.00	5.31	271.00	136.00	136.00	22.74	63,054	1.03
9/19/2013	12:52:26	0.00	5.34	271.00	136.00	136.00	23.42	63,096	1.33
9/19/2013	12:53:26	0.00	5.26	274.00	136.00	136.00	13.76	63,348	0.86
9/19/2013	12:54:26	0.00	5.06	272.00	137.00	136.00	19.90	62,887	1.13
9/19/2013	12:55:26	0.00	5.44	273.00	137.00	136.00	30.34	62,425	1.39
9/19/2013	12:56:26	0.00	5.29	275.00	137.00	136.00	25.31	62,404	1.18
9/19/2013	12:57:26	0.00	5.07	277.00	136.00	136.00	14.66	62,508	1.25
9/19/2013	12:58:26	0.00	5.35	275.00	136.00	136.00	13.04	62,698	1.12
9/19/2013	12:59:26	0.00	5.28	275.00	136.00	136.00	17.97	62,865	1.07
9/19/2013	13:00:26	0.00	5.29	273.00	136.00	136.00	19.22	62,970	0.89
9/19/2013	13:01:26	0.00	5.21	273.00	136.00	135.00	19.42	62,886	0.75
9/19/2013	13:02:26	0.00	5.47	276.00	135.00	135.00	11.63	63,451	0.95
9/19/2013	13:03:26	0.00	5.32	278.00	135.00	135.00	19.91	62,969	1.13
9/19/2013	13:04:26	0.00	5.13	278.00	135.00	135.00	20.70	63,074	1.39
9/19/2013	13:05:26	0.00	5.09	278.00	135.00	135.00	12.66	63,032	1.01
9/19/2013	13:06:26	0.00	5.27	279.00	135.00	135.00	15.03	62,153	1.04
9/19/2013	13:07:26	0.00	5.26	273.00	135.00	135.00	17.46	62,677	1.09
9/19/2013	13:08:26	0.00	5.08	279.00	135.00	135.00	14.38	62,697	1.01
9/19/2013	13:09:26	0.00	5.45	276.00	135.00	135.00	21.24	61,964	0.92
9/19/2013	13:10:26	0.00	5.27	276.00	135.00	135.00	16.89	63,032	1.13
9/19/2013	13:11:26	0.00	5.03	278.00	135.00	135.00	9.25	62,990	1.11
9/19/2013	13:12:26	0.00	5.40	276.00	136.00	135.00	10.11	62,677	1.10
9/19/2013	13:13:26	0.00	5.39	275.00	136.00	135.00	19.32	63,493	1.16
9/19/2013	13:14:26	0.00	5.12	273.00	136.00	136.00	11.61	62,907	1.26
9/19/2013	13:15:26	0.00	5.38	276.00	136.00	136.00	14.96	63,285	0.98
9/19/2013	13:16:26	0.00	5.13	273.00	137.00	136.00	18.21	63,368	1.09
9/19/2013	13:17:26	0.00	5.05	262.00	137.00	136.00	13.56	62,320	1.19
9/19/2013	13:18:26	0.00	5.63	264.00	137.00	137.00	15.98	63,181	0.84
9/19/2013	13:19:26	0.00	5.27	259.00	137.00	137.00	9.54	63,328	1.02
9/19/2013	13:20:26	0.00	5.43	261.00	138.00	137.00	10.58	62,257	1.24
9/19/2013	13:21:26	0.00	5.24	259.00	138.00	137.00	12.68	61,963	0.81
9/19/2013	13:22:26	0.00	5.09	261.00	138.00	137.00	10.95	62,257	1.11
9/19/2013	13:23:26	0.00	5.15	266.00	138.00	138.00	13.36	62,929	0.92
9/19/2013	13:24:26	0.00	5.37	262.00	138.00	138.00	15.92	62,803	0.89
9/19/2013	13:25:26	0.00	5.24	263.00	138.00	138.00	11.08	63,666	0.90
9/19/2013	13:26:26	0.00	5.43	262.00	139.00	138.00	9.30	62,971	1.12
9/19/2013	13:27:26	0.00	5.32	260.00	139.00	138.00	17.69	62,740	0.84
9/19/2013	13:28:26	0.00	5.05	262.00	139.00	138.00	22.26	63,392	1.08
9/19/2013	13:29:26	0.00	5.37	257.00	139.00	139.00	11.18	62,127	0.98
9/19/2013	13:30:26	0.00	5.13	265.00	139.00	139.00	18.91	62,655	0.82
9/19/2013	13:31:26	0.00	5.26	264.00	139.00	139.00	18.12	62,823	1.06
9/19/2013	13:32:26	0.00	5.17	267.00	139.00	139.00	11.16	63,730	1.24
9/19/2013	13:33:26	0.00	5.39	260.00	139.00	139.00	15.18	61,748	1.09
9/19/2013	13:34:26	0.00	5.35	260.00	139.00	139.00	11.68	62,845	1.07
9/19/2013	13:35:26	0.00	5.15	262.00	139.00	139.00	10.44	62,002	0.89
9/19/2013	13:36:26	0.00	5.17	272.00	139.00	139.00	15.70	62,803	0.90
9/19/2013	13:37:26	0.00	5.35	272.00	139.00	139.00	16.05	62,928	0.96
9/19/2013	13:38:26	0.00	5.13	274.00	139.00	139.00	13.99	63,498	1.13
9/19/2013	13:39:26	0.00	5.39	270.00	139.00	139.00	9.82	63,035	0.93
9/19/2013	13:40:26	0.00	5.20	267.00	139.00	139.00	10.68	63,519	0.83
9/19/2013	13:41:26	0.00	5.24	272.00	139.00	139.00	14.87	62,296	0.92
9/19/2013	13:42:26	0.00	5.34	271.00	139.00	139.00	15.09	63,182	0.84

ROTARY FURNACE 2

Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK ACFM	NAF DP In. H_2O
9/19/2013	13:43:26	0.00	5.22	271.00	139.00	139.00	7.67	62,866	0.88
9/19/2013	13:44:26	0.00	5.35	267.00	139.00	139.00	13.31	62,845	1.11
9/19/2013	13:45:26	0.00	5.35	273.00	139.00	139.00	8.18	63,224	0.72
9/19/2013	13:46:26	0.00	5.45	273.00	139.00	138.00	14.97	62,950	1.01
9/19/2013	13:47:26	0.00	5.23	275.00	139.00	138.00	17.97	62,845	0.93
9/19/2013	13:48:26	0.00	5.34	279.00	139.00	138.00	15.87	63,224	1.16
9/19/2013	13:49:26	0.00	5.03	275.00	139.00	138.00	14.62	62,340	1.03
9/19/2013	13:50:26	0.00	5.47	277.00	139.00	138.00	21.26	62,929	0.86
9/19/2013	13:51:26	0.00	5.26	281.00	139.00	138.00	15.09	62,698	1.10
9/19/2013	13:52:26	0.00	5.42	278.00	138.00	138.00	17.61	63,013	1.25
9/19/2013	13:53:26	0.00	5.28	274.00	138.00	138.00	18.71	62,130	1.08
9/19/2013	13:54:26	0.00	5.07	276.00	138.00	138.00	9.40	63,729	1.04
9/19/2013	13:55:26	0.00	5.33	283.00	138.00	138.00	17.10	62,781	1.00
9/19/2013	13:56:26	0.00	5.26	276.00	138.00	138.00	14.23	62,781	1.00
9/19/2013	13:57:26	0.00	5.37	276.00	137.00	138.00	14.31	62,003	1.03
9/19/2013	13:58:26	0.00	5.19	276.00	137.00	137.00	18.55	62,992	1.20
9/19/2013	13:59:26	0.00	5.40	281.00	137.00	137.00	13.66	62,046	0.87
9/19/2013	14:00:26	0.00	5.15	274.00	137.00	137.00	20.34	63,433	1.07
9/19/2013	14:01:26	0.00	5.46	278.00	137.00	137.00	9.19	62,844	1.10
9/19/2013	14:02:26	0.00	5.19	281.00	137.00	137.00	16.47	62,382	1.25
9/19/2013	14:03:26	0.00	5.34	281.00	137.00	137.00	11.17	62,572	1.11
9/19/2013	14:04:26	0.00	5.01	282.00	136.00	137.00	13.16	62,887	1.02
9/19/2013	14:05:26	0.00	5.33	276.00	136.00	137.00	18.88	63,055	1.10
9/19/2013	14:06:26	0.00	5.44	283.00	136.00	137.00	12.99	62,236	0.98
9/19/2013	14:07:26	0.00	5.25	278.00	136.00	137.00	9.55	63,518	0.80
9/19/2013	14:08:26	0.00	5.49	278.00	136.00	137.00	17.44	62,929	0.90
9/19/2013	14:09:26	0.00	5.24	277.00	136.00	136.00	13.60	62,782	1.18
9/19/2013	14:10:26	0.00	5.37	280.00	136.00	136.00	26.25	61,922	1.09
9/19/2013	14:11:26	0.00	5.16	285.00	137.00	137.00	17.46	63,328	1.17
9/19/2013	14:12:26	0.00	5.23	281.00	137.00	137.00	13.63	62,698	1.33
9/19/2013	14:13:26	0.00	5.30	276.00	138.00	137.00	10.79	63,391	1.11
9/19/2013	14:14:26	0.00	5.46	278.00	138.00	138.00	11.83	62,929	0.96
9/19/2013	14:15:26	0.00	5.23	278.00	138.00	138.00	9.62	63,708	1.02
9/19/2013	14:16:26	0.00	5.32	279.00	138.00	138.00	13.54	63,181	0.96
9/19/2013	14:17:26	0.00	5.12	279.00	138.00	138.00	13.60	63,624	1.00
9/19/2013	14:18:26	0.00	5.30	276.00	138.00	138.00	11.09	62,676	0.75
9/19/2013	14:19:26	0.00	5.07	281.00	138.00	138.00	9.67	63,098	1.40
9/19/2013	14:20:26	0.00	5.43	278.00	138.00	138.00	12.66	63,624	0.89
9/19/2013	14:21:26	0.00	5.12	279.00	138.00	138.00	15.37	63,434	0.95
9/19/2013	14:22:26	0.00	5.37	280.00	138.00	138.00	11.16	62,781	0.95
9/19/2013	14:23:26	0.00	5.15	280.00	137.00	138.00	20.64	63,771	1.04
9/19/2013	14:24:26	0.00	5.26	277.00	138.00	137.00	18.59	62,425	1.08
9/19/2013	14:25:26	0.00	5.09	282.00	138.00	138.00	18.65	63,224	0.89
9/19/2013	14:26:26	0.00	5.47	280.00	138.00	138.00	18.72	62,361	0.90
9/19/2013	14:27:26	0.00	5.33	280.00	138.00	138.00	13.61	62,950	0.92
9/19/2013	14:28:26	0.00	5.49	277.00	139.00	138.00	14.88	62,466	1.17
9/19/2013	14:29:26	0.00	5.47	273.00	141.00	139.00	17.60	62,212	0.99
9/19/2013	14:30:26	0.00	5.50	275.00	142.00	140.00	9.81	62,421	0.92
9/19/2013	14:31:26	0.00	5.49	278.00	144.00	141.00	23.33	62,441	0.91
9/19/2013	14:32:26	0.00	5.50	271.00	146.00	142.00	21.95	61,549	1.08
9/19/2013	14:33:26	0.00	5.80	279.00	147.00	143.00	19.49	61,715	1.25
9/19/2013	14:34:26	0.00	5.50	274.00	148.00	144.00	12.56	61,541	1.10
9/19/2013	14:35:26	0.00	5.66	275.00	150.00	145.00	12.86	63,176	0.94
9/19/2013	14:36:26	0.00	5.58	271.00	151.00	146.00	9.78	61,979	1.13
9/19/2013	14:37:26	0.00	5.62	268.00	152.00	147.00	10.77	61,996	0.79
9/19/2013	14:38:26	0.00	5.61	261.00	154.00	148.00	9.80	62,526	0.93
9/19/2013	14:39:26	0.00	5.56	259.00	155.00	149.00	12.92	62,007	1.05
9/19/2013	14:40:26	0.00	5.90	263.00	156.00	150.00	10.98	63,355	0.89

ROTARY FURNACE 2									
Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK ACFM	NAF DP In. H_2O
9/19/2013	14:41:26	0.00	5.68	260.00	157.00	151.00	6.47	61,609	1.07
9/19/2013	14:42:26	0.00	5.77	262.00	158.00	152.00	7.35	62,830	1.09
9/19/2013	14:43:26	0.00	5.76	259.00	159.00	152.00	13.20	62,400	0.89
9/19/2013	14:44:26	0.00	5.76	257.00	159.00	153.00	14.90	62,867	1.09
9/19/2013	14:45:26	0.00	5.77	261.00	160.00	154.00	7.08	63,014	1.24
9/19/2013	14:46:26	0.00	5.72	257.00	161.00	154.00	8.90	62,106	1.18
9/19/2013	14:47:26	0.00	5.81	262.00	161.00	155.00	17.51	62,294	1.06
9/19/2013	14:48:26	0.00	5.73	258.00	162.00	155.00	9.79	62,987	1.08
9/19/2013	14:49:26	0.00	5.84	251.00	162.00	155.00	11.17	62,445	0.95
9/19/2013	14:50:26	0.00	5.74	252.00	163.00	156.00	14.09	62,590	0.91
9/19/2013	14:51:26	0.00	5.77	252.00	163.00	156.00	9.74	62,981	1.16
9/19/2013	14:52:26	0.00	5.91	256.00	163.00	157.00	11.27	62,996	0.97
9/19/2013	14:53:26	0.00	5.91	255.00	164.00	157.00	14.96	62,236	1.23
9/19/2013	14:54:26	0.00	6.01	255.00	165.00	157.00	11.58	62,692	1.23
9/19/2013	14:55:26	0.00	5.76	256.00	165.00	158.00	8.29	63,337	0.87
9/19/2013	14:56:26	0.00	5.96	250.00	166.00	159.00	16.74	63,091	0.97
9/19/2013	14:57:26	0.00	5.81	259.00	166.00	159.00	11.02	62,176	1.17
9/19/2013	14:58:26	0.00	5.90	259.00	167.00	160.00	16.27	62,756	0.98
9/19/2013	14:59:26	0.00	5.67	259.00	167.00	160.00	9.32	63,215	1.03
9/19/2013	15:00:26	0.00	5.73	264.00	167.00	160.00	15.65	62,953	1.27
9/19/2013	15:01:26	0.00	6.07	260.00	166.00	160.00	14.09	63,236	0.89
9/19/2013	15:02:26	0.00	5.76	264.00	165.00	160.00	5.86	62,996	1.16
9/19/2013	15:03:26	0.00	5.89	264.00	164.00	159.00	9.81	63,157	1.05
9/19/2013	15:04:26	0.00	5.79	265.00	163.00	158.00	16.36	62,728	1.02
9/19/2013	15:05:26	0.00	5.80	259.00	163.00	158.00	11.48	63,032	0.98
9/19/2013	15:06:26	0.00	5.73	262.00	162.00	157.00	11.98	63,800	1.07
9/19/2013	15:07:26	0.00	5.84	264.00	161.00	157.00	10.77	62,930	0.90
9/19/2013	15:08:26	0.00	5.93	264.00	160.00	156.00	20.08	63,305	1.05
9/19/2013	15:09:26	0.00	5.81	265.00	160.00	156.00	11.23	63,067	1.16
9/19/2013	15:10:26	0.00	6.22	266.00	159.00	156.00	13.53	62,785	0.93
9/19/2013	15:11:26	0.00	5.89	266.00	159.00	155.00	13.51	62,445	0.99
9/19/2013	15:12:26	0.00	5.88	265.00	158.00	155.00	14.33	62,164	0.87
9/19/2013	15:13:26	0.00	5.84	264.00	158.00	155.00	9.34	62,770	1.13
9/19/2013	15:14:26	0.00	5.80	268.00	158.00	154.00	16.90	62,495	1.10
Run 2 Average		0.00	5.39	270.42	143.41	141.86	15.03	62,878	1.04

K004033
C123 (81-3-7-9)
ROTARY FURNACE 2

Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN AMPS Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK CFM ACFM	NAF DP In. H_2O
Begin Run 3 South Baghouse									
9/20/2013	7:30:26	0.00	5.39	275.00	139.00	135.00	15.33	63,346.00	1.01
9/20/2013	7:31:26	0.00	5.04	273.00	140.00	136.00	22.41	62,950.00	1.14
9/20/2013	7:32:26	0.00	5.20	274.00	141.00	137.00	10.21	62,929.00	0.90
9/20/2013	7:33:26	0.00	5.31	273.00	142.00	138.00	11.79	62,530.00	1.50
9/20/2013	7:34:26	0.00	5.37	269.00	143.00	138.00	11.11	63,139.00	1.02
9/20/2013	7:35:26	0.00	5.36	273.00	144.00	139.00	12.25	63,414.00	1.04
9/20/2013	7:36:26	0.00	5.12	271.00	144.00	140.00	11.81	63,372.00	1.04
9/20/2013	7:37:26	0.00	5.30	268.00	145.00	141.00	16.28	63,012.00	0.97
9/20/2013	7:38:26	0.00	5.42	269.00	146.00	141.00	16.13	63,076.00	1.03
9/20/2013	7:39:26	0.00	5.12	267.00	146.00	142.00	8.72	64,516.00	0.98
9/20/2013	7:40:26	0.00	5.21	272.00	147.00	143.00	12.96	63,922.00	0.95
9/20/2013	7:41:26	0.00	5.25	269.00	147.00	143.00	11.47	62,967.00	1.14
9/20/2013	7:42:26	0.00	5.34	273.00	148.00	144.00	11.71	63,475.00	1.09
9/20/2013	7:43:26	0.00	5.38	273.00	148.00	144.00	9.58	63,241.00	1.16
9/20/2013	7:44:26	0.00	5.10	269.00	149.00	144.00	6.96	63,965.00	1.04
9/20/2013	7:45:26	0.00	5.22	267.00	149.00	145.00	16.95	64,305.00	1.35
9/20/2013	7:46:26	0.00	5.25	270.00	149.00	145.00	16.52	63,580.00	1.05
9/20/2013	7:47:26	0.00	5.31	266.00	149.00	145.00	12.28	62,963.00	1.23
9/20/2013	7:48:26	0.00	5.42	273.00	150.00	145.00	11.80	63,516.00	1.07
9/20/2013	7:49:26	0.00	5.07	265.00	150.00	146.00	13.52	64,347.00	1.10
9/20/2013	7:50:26	0.00	5.11	272.00	150.00	146.00	12.52	64,070.00	1.07
9/20/2013	7:51:26	0.00	5.41	268.00	150.00	146.00	17.26	63,771.00	0.85
9/20/2013	7:52:26	0.00	5.05	269.00	150.00	146.00	8.57	64,389.00	0.88
9/20/2013	7:53:26	0.00	5.16	269.00	150.00	146.00	5.56	63,110.00	1.25
9/20/2013	7:54:26	0.00	5.31	269.00	150.00	146.00	7.80	63,856.00	0.88
9/20/2013	7:55:26	0.00	5.60	264.00	150.00	146.00	15.24	63,664.00	0.86
9/20/2013	7:56:26	0.00	5.82	268.00	151.00	147.00	13.22	63,043.00	0.89
9/20/2013	7:57:26	0.00	5.85	267.00	152.00	147.00	11.25	61,740.00	0.98
9/20/2013	7:58:26	0.00	5.96	267.00	154.00	148.00	14.49	61,606.00	1.08
9/20/2013	7:59:26	0.00	6.04	264.00	156.00	150.00	9.54	62,260.00	0.93
9/20/2013	8:00:26	0.00	6.16	258.00	157.00	151.00	9.76	62,017.00	1.05
9/20/2013	8:01:26	0.00	6.19	258.00	158.00	152.00	13.48	62,420.00	0.98
9/20/2013	8:02:26	0.00	6.27	253.00	159.00	152.00	23.15	61,667.00	0.96
9/20/2013	8:03:26	0.00	6.45	261.00	160.00	153.00	11.90	62,997.00	1.09
9/20/2013	8:04:26	0.00	6.36	254.00	161.00	154.00	7.96	62,301.00	1.11
9/20/2013	8:05:26	0.00	6.53	253.00	162.00	154.00	9.69	61,781.00	1.30
9/20/2013	8:06:26	0.00	5.94	254.00	162.00	155.00	15.68	62,618.00	1.15
9/20/2013	8:07:26	0.00	5.56	256.00	163.00	155.00	11.07	63,008.00	1.15
9/20/2013	8:08:26	0.00	5.33	256.00	163.00	155.00	12.36	63,420.00	1.06
9/20/2013	8:09:26	0.00	6.40	256.00	163.00	156.00	9.38	62,396.00	1.38
9/20/2013	8:10:26	0.00	6.13	249.00	164.00	156.00	12.50	62,330.00	1.17
9/20/2013	8:11:26	0.00	5.74	254.00	165.00	157.00	9.17	63,778.00	1.10
9/20/2013	8:12:26	0.00	6.26	256.00	164.00	157.00	12.72	63,212.00	0.81
9/20/2013	8:13:26	0.00	6.25	259.00	162.00	156.00	8.87	62,763.00	0.94
9/20/2013	8:14:26	0.00	6.51	257.00	160.00	154.00	12.37	62,322.00	1.10
9/20/2013	8:15:26	0.00	6.61	261.00	159.00	153.00	5.65	62,587.00	1.02
9/20/2013	8:16:26	0.00	6.74	259.00	159.00	153.00	10.47	62,264.00	0.93
9/20/2013	8:17:26	0.00	6.81	262.00	159.00	153.00	8.19	62,177.00	0.99
9/20/2013	8:18:26	0.00	6.86	258.00	159.00	153.00	6.37	61,638.00	1.02
9/20/2013	8:19:26	0.00	7.13	259.00	160.00	153.00	9.01	61,854.00	1.08
9/20/2013	8:20:26	0.00	6.93	259.00	160.00	154.00	7.84	62,214.00	0.99
9/20/2013	8:21:26	0.00	7.05	267.00	161.00	154.00	8.41	62,041.00	0.92
9/20/2013	8:22:26	0.00	7.03	268.00	161.00	154.00	6.41	62,193.00	0.81
9/20/2013	8:23:26	0.00	7.07	266.00	162.00	155.00	5.91	61,104.00	1.05
9/20/2013	8:24:26	0.00	7.05	270.00	162.00	155.00	7.32	60,952.00	1.07

ROTARY FURNACE 2

Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN AMPS Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK CFM ACFM	NAF DP In. H_2O
9/20/2013	8:25:26	0.00	7.17	264.00	162.00	155.00	13.96	61,017.00	0.76
9/20/2013	8:26:26	0.00	7.32	266.00	163.00	156.00	7.49	61,289.00	1.12
9/20/2013	8:27:26	0.00	7.17	261.00	163.00	156.00	8.17	61,094.00	0.91
9/20/2013	8:28:26	0.00	7.30	262.00	163.00	156.00	6.75	61,701.00	1.02
9/20/2013	8:29:26	0.00	7.30	264.00	164.00	157.00	7.51	61,215.00	0.97
9/20/2013	8:30:26	0.00	7.34	262.00	164.00	157.00	6.88	60,347.00	1.03
9/20/2013	8:31:26	0.00	7.39	261.00	164.00	157.00	17.71	61,215.00	0.86
9/20/2013	8:32:26	0.00	7.39	268.00	165.00	157.00	10.27	61,193.00	0.88
9/20/2013	8:33:26	0.00	7.47	268.00	165.00	157.00	11.03	61,932.00	0.95
9/20/2013	8:34:26	0.00	7.43	265.00	165.00	158.00	8.45	61,793.00	1.26
9/20/2013	8:35:26	0.00	7.47	263.00	165.00	158.00	10.58	61,010.00	1.16
9/20/2013	8:36:26	0.00	7.43	263.00	166.00	158.00	9.21	61,793.00	0.92
9/20/2013	8:37:26	0.00	7.49	265.00	166.00	158.00	11.56	60,553.00	1.21
9/20/2013	8:38:26	0.00	7.50	268.00	166.00	158.00	7.50	60,379.00	1.17
9/20/2013	8:39:26	0.00	7.50	263.00	166.00	158.00	11.88	60,749.00	1.18
9/20/2013	8:40:26	0.00	7.48	261.00	166.00	158.00	8.92	60,749.00	1.15
9/20/2013	8:41:26	0.00	7.55	259.00	167.00	159.00	7.03	61,391.00	1.11
9/20/2013	8:42:26	0.00	7.63	261.00	167.00	159.00	10.25	60,672.00	1.14
9/20/2013	8:43:26	0.00	7.44	263.00	167.00	159.00	10.68	60,215.00	1.14
9/20/2013	8:44:26	0.00	7.64	264.00	167.00	159.00	7.55	61,348.00	0.91
9/20/2013	8:45:26	0.00	7.51	260.00	167.00	159.00	10.95	62,241.00	0.95
9/20/2013	8:46:26	0.00	7.62	261.00	166.00	159.00	8.98	61,391.00	1.30
9/20/2013	8:47:26	0.00	7.78	264.00	165.00	158.00	12.06	61,292.00	1.04
9/20/2013	8:48:26	0.00	7.46	264.00	164.00	158.00	14.85	60,814.00	1.18
9/20/2013	8:49:26	0.00	7.92	265.00	163.00	157.00	9.52	60,825.00	1.27
9/20/2013	8:50:26	0.00	7.53	262.00	162.00	156.00	12.11	60,965.00	1.18
9/20/2013	8:51:26	0.00	7.61	266.00	161.00	156.00	11.92	61,420.00	0.82
9/20/2013	8:52:26	0.00	7.61	266.00	161.00	155.00	6.59	60,562.00	1.15
9/20/2013	8:53:26	0.00	7.61	261.00	160.00	155.00	6.85	60,259.00	0.91
9/20/2013	8:54:26	0.00	7.75	265.00	160.00	155.00	11.12	61,298.00	1.04
9/20/2013	8:55:26	0.00	7.68	267.00	159.00	154.00	13.86	60,334.00	1.04
9/20/2013	8:56:26	0.00	7.69	268.00	159.00	154.00	5.94	60,464.00	0.92
9/20/2013	8:57:26	0.00	7.63	267.00	159.00	154.00	15.62	60,594.00	0.95
9/20/2013	8:58:26	0.00	7.70	261.00	159.00	154.00	11.80	60,118.00	0.93
9/20/2013	8:59:26	0.00	7.60	261.00	158.00	154.00	8.38	60,269.00	0.98
9/20/2013	9:00:26	0.00	7.73	263.00	158.00	153.00	6.48	59,783.00	1.04
9/20/2013	9:01:26	0.00	7.69	265.00	158.00	153.00	6.16	61,163.00	1.06
9/20/2013	9:02:26	0.00	7.74	264.00	158.00	153.00	6.66	60,128.00	1.07
9/20/2013	9:03:26	0.00	8.44	265.00	158.00	153.00	9.04	60,149.00	1.34
9/20/2013	9:04:26	0.00	7.77	266.00	157.00	153.00	13.86	61,078.00	1.02
9/20/2013	9:05:26	0.00	7.78	258.00	157.00	153.00	10.20	60,646.00	0.96
9/20/2013	9:06:26	0.00	7.76	257.00	157.00	152.00	11.46	60,633.00	1.00
9/20/2013	9:07:26	0.00	7.76	257.00	156.00	152.00	13.40	60,870.00	0.97
9/20/2013	9:08:26	0.00	7.87	259.00	156.00	152.00	14.34	60,223.00	1.06
9/20/2013	9:09:26	0.00	7.74	254.00	156.00	151.00	12.79	60,727.00	0.97
9/20/2013	9:10:26	0.00	8.13	250.00	155.00	151.00	6.92	59,588.00	1.25
9/20/2013	9:11:26	0.00	7.76	255.00	155.00	151.00	7.69	60,512.00	1.16
9/20/2013	9:12:26	0.00	7.72	259.00	155.00	151.00	9.37	60,061.00	1.06
9/20/2013	9:13:26	0.00	7.72	255.00	154.00	151.00	5.77	60,620.00	1.09
9/20/2013	9:14:26	0.00	7.78	258.00	154.00	150.00	6.15	60,928.00	1.07
9/20/2013	9:15:26	0.00	7.80	263.00	154.00	150.00	5.40	60,306.00	1.07
9/20/2013	9:16:26	0.00	7.78	257.00	154.00	150.00	8.95	60,006.00	0.87
9/20/2013	9:17:26	0.00	7.91	256.00	154.00	150.00	12.89	60,542.00	1.06
9/20/2013	9:18:26	0.00	7.71	256.00	154.00	150.00	7.05	60,692.00	0.90
9/20/2013	9:19:26	0.00	7.78	253.00	154.00	150.00	6.15	60,048.00	1.12
9/20/2013	9:20:26	0.00	7.77	257.00	154.00	150.00	7.08	60,392.00	0.78
9/20/2013	9:21:26	0.00	7.81	257.00	154.00	150.00	10.09	59,769.00	1.02
9/20/2013	9:22:26	0.00	7.83	254.00	154.00	150.00	11.20	60,113.00	1.08

ROTARY FURNACE 2

Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN AMPS Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK CFM ACFM	NAF DP In. H_2O
9/20/2013	9:23:26	0.00	7.86	257.00	154.00	150.00	11.96	60,692.00	1.00
9/20/2013	9:24:26	0.00	7.86	256.00	154.00	150.00	10.38	61,015.00	0.97
9/20/2013	9:25:26	0.00	7.86	258.00	154.00	150.00	8.57	60,542.00	0.87
9/20/2013	9:26:26	0.00	8.05	257.00	154.00	150.00	11.36	60,026.00	1.01
9/20/2013	9:27:26	0.00	7.78	254.00	154.00	150.00	8.25	59,919.00	1.06
9/20/2013	9:28:26	0.00	7.86	266.00	154.00	150.00	12.08	60,242.00	1.10
9/20/2013	9:29:26	0.00	7.84	268.00	154.00	150.00	7.23	60,542.00	0.90
9/20/2013	9:30:26	0.00	7.94	265.00	154.00	150.00	12.16	60,650.00	0.90
9/20/2013	9:31:26	0.00	7.95	261.00	154.00	150.00	10.17	60,091.00	0.91
9/20/2013	9:32:26	0.00	7.95	266.00	154.00	150.00	18.83	59,790.00	0.99
9/20/2013	9:33:26	0.00	8.06	262.00	155.00	150.00	11.04	59,275.00	0.83
9/20/2013	9:34:26	0.00	8.12	262.00	156.00	151.00	10.01	59,222.00	0.93
9/20/2013	9:35:26	0.00	8.26	261.00	157.00	152.00	10.48	58,264.00	0.93
9/20/2013	9:36:26	0.00	8.36	265.00	161.00	153.00	11.56	58,467.00	1.04
9/20/2013	9:37:26	0.00	8.57	261.00	165.00	156.00	10.59	58,341.00	0.86
9/20/2013	9:38:26	0.00	8.66	260.00	169.00	158.00	11.70	58,704.00	0.91
9/20/2013	9:39:26	0.00	8.59	256.00	173.00	161.00	12.02	58,312.00	1.20
9/20/2013	9:40:26	0.00	9.18	257.00	178.00	164.00	6.26	58,089.00	1.09
9/20/2013	9:41:26	0.00	8.64	252.00	181.00	167.00	10.03	58,346.00	0.89
9/20/2013	9:42:26	0.00	8.60	253.00	185.00	169.00	12.62	59,041.00	0.99
9/20/2013	9:43:26	0.00	8.45	254.00	187.00	171.00	8.73	59,473.00	1.22
9/20/2013	9:44:26	0.00	8.59	255.00	188.00	173.00	8.71	59,126.00	1.06
9/20/2013	9:45:26	0.00	8.71	256.00	188.00	173.00	12.48	59,059.00	0.82
9/20/2013	9:46:26	0.00	8.69	255.00	189.00	174.00	6.16	60,224.00	0.93
9/20/2013	9:47:26	0.00	8.98	253.00	189.00	174.00	7.10	58,617.00	1.00
9/20/2013	9:48:26	0.00	8.63	253.00	189.00	175.00	7.91	58,621.00	0.99
9/20/2013	9:49:26	0.00	8.66	257.00	190.00	175.00	4.12	58,978.00	0.93
9/20/2013	9:50:26	0.00	8.58	257.00	190.00	176.00	16.16	60,526.00	0.77
9/20/2013	9:51:26	0.00	8.55	256.00	190.00	176.00	6.73	60,078.00	0.97
9/20/2013	9:52:26	0.00	8.55	256.00	191.00	176.00	9.81	59,183.00	1.04
9/20/2013	9:53:26	0.00	8.49	254.00	191.00	177.00	10.19	58,827.00	0.94
9/20/2013	9:54:26	0.00	8.59	252.00	191.00	177.00	7.91	58,918.00	1.02
9/20/2013	9:55:26	0.00	8.30	256.00	191.00	177.00	9.23	60,016.00	0.85
9/20/2013	9:56:26	0.00	8.35	261.00	190.00	177.00	15.75	59,725.00	1.11
9/20/2013	9:57:26	0.00	8.12	257.00	188.00	176.00	6.39	59,899.00	0.97
9/20/2013	9:58:26	0.00	8.14	258.00	187.00	175.00	20.68	60,923.00	1.08
9/20/2013	9:59:26	0.00	8.04	254.00	185.00	174.00	8.30	60,671.00	1.25
9/20/2013	10:00:26	0.00	7.91	262.00	183.00	173.00	5.69	60,352.00	1.03
9/20/2013	10:01:26	0.00	8.18	260.00	181.00	172.00	14.31	60,012.00	1.19
9/20/2013	10:02:26	0.00	7.90	257.00	179.00	170.00	12.53	60,222.00	1.24
9/20/2013	10:03:26	0.00	7.91	259.00	177.00	169.00	12.65	61,011.00	0.96
9/20/2013	10:04:26	0.00	7.81	257.00	175.00	168.00	6.84	59,787.00	1.00
9/20/2013	10:05:26	0.00	7.82	259.00	173.00	166.00	10.25	60,191.00	1.37
9/20/2013	10:06:26	0.00	7.91	263.00	171.00	165.00	8.77	61,481.00	0.99
9/20/2013	10:07:26	0.00	7.66	262.00	170.00	164.00	7.10	61,098.00	1.17
9/20/2013	10:08:26	0.00	7.76	262.00	168.00	162.00	6.56	60,923.00	1.02
9/20/2013	10:09:26	0.00	7.66	252.00	167.00	161.00	5.49	59,842.00	1.13
9/20/2013	10:10:26	0.00	7.70	252.00	166.00	160.00	10.74	60,924.00	1.15
9/20/2013	10:11:26	0.00	7.67	252.00	164.00	160.00	11.53	60,400.00	1.08
9/20/2013	10:12:26	0.00	7.65	254.00	163.00	159.00	7.52	60,738.00	0.99
9/20/2013	10:13:26	0.00	7.60	256.00	162.00	158.00	7.83	60,140.00	1.09
9/20/2013	10:14:26	0.00	7.60	257.00	162.00	157.00	10.64	60,476.00	1.03
9/20/2013	10:15:26	0.00	7.65	255.00	161.00	157.00	14.65	60,325.00	1.12
9/20/2013	10:16:26	0.00	7.52	253.00	160.00	156.00	9.09	60,596.00	1.20
9/20/2013	10:17:26	0.00	7.56	251.00	160.00	156.00	7.20	59,750.00	1.04
9/20/2013	10:18:26	0.00	7.47	252.00	160.00	155.00	8.29	60,736.00	1.30
9/20/2013	10:19:26	0.00	7.56	253.00	159.00	155.00	11.82	60,475.00	1.23
9/20/2013	10:20:26	0.00	7.40	258.00	159.00	155.00	10.74	60,801.00	1.14

ROTARY FURNACE 2									
Date	Time	DC1 DP In. H_2O	DC2 DP In. H_2O	FAN AMPS Amps	INLET TEMP Deg F.	OUTLET TEMP Deg F.	PARTICULATE Picoamps	STACK CFM ACFM	NAF DP In. H_2O
9/20/2013	10:21:26	0.00	7.46	256.00	158.00	154.00	12.31	60,702.00	0.99
9/20/2013	10:22:26	0.00	7.49	250.00	158.00	154.00	9.12	61,415.00	1.01
9/20/2013	10:23:26	0.00	7.43	248.00	157.00	153.00	13.05	60,236.00	0.84
9/20/2013	10:24:26	0.00	7.39	259.00	157.00	153.00	12.25	60,366.00	1.18
9/20/2013	10:25:26	0.00	7.25	256.00	157.00	153.00	11.04	60,581.00	1.26
9/20/2013	10:26:26	0.00	7.37	249.00	156.00	152.00	10.58	60,956.00	1.04
9/20/2013	10:27:26	0.00	7.27	254.00	156.00	152.00	9.70	60,978.00	0.91
9/20/2013	10:28:26	0.00	7.35	256.00	156.00	152.00	8.73	60,590.00	1.12
9/20/2013	10:29:26	0.00	7.31	256.00	156.00	152.00	6.45	61,300.00	0.82
9/20/2013	10:30:26	0.00	7.17	266.00	155.00	152.00	10.65	60,353.00	1.38
9/20/2013	10:31:26	0.00	7.29	262.00	155.00	151.00	10.37	60,986.00	0.88
9/20/2013	10:32:26	0.00	7.27	265.00	155.00	151.00	10.47	59,609.00	1.24
9/20/2013	10:33:26	0.00	7.24	265.00	155.00	151.00	9.88	60,943.00	0.97
9/20/2013	10:34:26	0.00	7.13	262.00	154.00	151.00	20.56	60,899.00	1.41
9/20/2013	10:35:26	0.00	7.19	267.00	154.00	150.00	8.55	60,435.00	1.09
9/20/2013	10:36:26	0.00	7.11	264.00	154.00	150.00	12.31	60,735.00	1.30
9/20/2013	10:37:26	0.00	7.09	263.00	154.00	150.00	14.01	60,714.00	1.22
9/20/2013	10:38:26	0.00	7.48	266.00	154.00	150.00	14.53	60,714.00	0.81
9/20/2013	10:39:26	0.00	7.01	261.00	154.00	150.00	8.75	60,435.00	1.07
Run 3 Average		0.00	7.25	260.74	161.62	155.24	10.39	61,069	1.04

Heat No.: R007149 Charged On: 09/16/2013 Furnace: Poured On: 09/17/2013
P-Number: 58275 Melter: 0165 PACHECO Pourer: 0338 NAVA Tuesday
Series: 81 FE.65 Sample Temp.: 2102 Pour Temp.: 2026

Scrap Inspected ?Y F/C Cleaned ?N Molds Cleaned ?N Ladle Cleaned ?Y Hopper OK ?Y

Charge Start: 09/16/2013 04:15:00 PM Finish: 09/16/2013 12:00:00 AM Supv: AP Knockout OK ?Y
Refine/Phos'z Start: 09/17/2013 03:45:00 AM Finish: 09/17/2013 04:05:00 AM Supv: SC Conveyor OK ?Y
Pour Start: 09/17/2013 08:50:00 AM Finish: 09/17/2013 01:00:00 PM Supv: SR

Notes: 81-3-7-9 Avg. Charge Rate: 3,368 lb/hr.
Soda Ash: 500
Borate: 1000
Pea Coal: 500 + 200

*** INGOT - OUT ***

Ingot#	Classif.	Description	Quantity
123	1200-1	81-3-7-9 INGOT	69,270
		Total ---->	69,270

*** Other - OUT ***

Total ----> 0

*** BY-PRODUCTS - OUT ***

Classif.	Description	Cu%	Metal%	Weight
17R	RED BRASS SKIMMINGS/SPATTERS	915		
16A	O.O. FURNACE SLAG	3,492		

*** MATERIALS CHARGED ***

1000-2	B102245	BD	UNSHIPABLE PHOSPHOR COPPER			150	CUT
				1000-2	TOTAL =>	150	
12B	111036	01	HEATER CORE RADIATORS			1,143	
12B	111036	01	HEATER CORE RADIATORS			368	
				12B	TOTAL =>	1,511	
12BRX	111071	01	RADIATOR BRICKS			4,943	
12BRX	111071	01	RADIATOR BRICKS			4,661	
12BRX	111071	01	RADIATOR BRICKS			5,258	
12BRX	111071	01	RADIATOR BRICKS			4,353	
12BRX	111071	01	RADIATOR BRICKS			4,843	
12BRX	111071	01	RADIATOR BRICKS			4,894	
12BRX	111071	01	RADIATOR BRICKS			4,581	
12BRX	111071	01	RADIATOR BRICKS			4,779	
12BRX	111071	01	RADIATOR BRICKS			4,941	
				12BRX	TOTAL =>	43,253	
17R	K004029	BY	81-3-7-9 SKIMMINGS/SPATTERS			1,375	
				17R	TOTAL =>	1,375	
18	110503	06	RANGE LEAD			209	CUT
18	110877	01	LEAD SCRAP			337	CUT
				18	TOTAL =>	546	
2	111024	01	#2 COPPER			2,718	
2	111024	01	#2 COPPER			2,516	

**** S U M M A R Y I N F O R M A T I O N ****

Ingot Out :		
Other Out :	Total Out :	Recovery%: %

Heat No.: R007149 Charged On: 09/16/2013 Furnace: Poured On: 09/17/2013 Tuesday

P-Number: 58275 Melter: 0165 PACHECO Pourer: 0338 NAVA

Series: 81 FE.65 Sample Temp.: 2102 Pour Temp.: 2026

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/16/2013 04:15:00 PM Finish: 09/16/2013 12:00:00 AM Supv: AP Knockout OK ? Y

Refine/Phos'z Start: 09/17/2013 03:45:00 AM Finish: 09/17/2013 04:05:00 AM Supv: SC Conveyor OK ? Y

Pour Start: 09/17/2013 08:50:00 AM Finish: 09/17/2013 01:00:00 PM Supv: SR

Notes: 81-3-7-9 Avg. Charge Rate: 3,368 lb/hr.

Soda Ash: 500

Borate: 1000

Pea Coal: 500 + 200

Total ----> 69,270

Total ----> 0

***** BY-PRODUCTS - OUT *****

Classif.			Description			Cu%	Metal%	Weight	
17R			RED BRASS SKIMMINGS/SPATTERS			915			
16A			O.O. FURNACE SLAG			3,492			
2	111024	01	#2 COPPER					2,568	
				2	TOTAL =>			7,802	
21P	111023	01	COPPER CLAD ZINC PENNIES					403	CUT
				21P	TOTAL =>			403	
4B	110817	01	MIX BRASS SOLIDS S/A RED					5,803	
4B	110817	01	MIX BRASS SOLIDS S/A RED					1,638	
4B	110599	02	MIXED SEMI & RED BRASS S/A RB					3,745	
4B	111077	03	SEMI RED BRASS SOLIDS					2,548	CUT
				4B	TOTAL =>			13,734	
4D	110774	05	ELEC BRASS W/ FE ATT. S/A SIL					3,837	
				4D	TOTAL =>			3,837	
8D	110478	01	CONTAMINATED BRASS					4,152	
8D	111048	03	60%70/30 AND 40% 9010 BRASS C					2,167	CUT
				8D	TOTAL =>			6,319	
8E	111059	04	HEAT EXCHANGERS					327	
				8E	TOTAL =>			327	
9A	110624	12	YLW BORS S/A COMP TURNS					1,578	
				9A	TOTAL =>			1,578	
					Total ---->			80,835	

****** SUMMARY INFORMATION ******

Ingot Out :	69,270				
Other Out :	0	Total Out :	69,270	Recovery%:	85.69 %

Heat No.: R007150 Charged On: 09/17/2013 Furnace: Poured On: 09/18/2013 Wednesday

P-Number: 58276 Melter: 0165 PACHECO Pourer: 0338 NAVA

Series: 81 FE.65 Sample Temp.: 2028 Pour Temp.: 1967

Scrap Inspected ? Y F/C Cleaned ? Y Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/17/2013 01:20:00 PM Finish: 09/18/2013 12:15:00 AM Supv: AP Knockout OK ? Y

Refine/Phos'z Start: 09/18/2013 02:55:00 AM Finish: 09/18/2013 02:55:00 AM Supv: SC Conveyor OK ? Y

Pour Start: 09/18/2013 08:10:00 AM Finish: 09/18/2013 12:00:00 AM Supv: SR

Notes: 81-3-7-9 (Fe<0.65) Avg. Charge Rate: 3,745 lb/hr.

Borate: 1700

Soda Ash: 500

Pea Coal: 500

***** INGOT - OUT *****

Ingot#	Classif.	Description	Quantity
123	1200-1	81-3-7-9 INGOT	81,700
		Total ---->	81,700

***** Other - OUT *****

17C	17C	FURNACE RUN-OUT	5,428
		Total ---->	5,428

***** BY-PRODUCTS - OUT *****

Classif.	Description	Cu%	Metal%	Weight
17R	RED BRASS SKIMMINGS/SPATTERS	1,161		
16A	O.O. FURNACE SLAG	5,093		

***** MATERIALS CHARGED *****

1000-2	B102245	BD	UNSHIPABLE PHOSPHOR COPPER			97	CUT
				1000-2	TOTAL =>	97	
1010-1	111090	01	SPECIAL HIGH GRADE ZINC SLABS			1,234	CUT
				1010-1	TOTAL =>	1,234	
12	111063	02	RADIATORS BALES			6,702	
12	111063	02	RADIATORS BALES			6,364	
12	111063	02	RADIATORS BALES			954	
12	111062	01	RADIATORS BALES			5,086	
12	111076	01	RADIATORS BALES			5,080	
12	111076	01	RADIATORS BALES			6,438	
12	111011	08	RADIATORS BALES			428	
12	111011	08	RADIATORS BALES			534	
12	111058	01	RADIATORS BALES			2,940	
				12	TOTAL =>	34,526	
12B	111036	01	HEATER CORE RADIATORS			697	
12B	111036	01	HEATER CORE RADIATORS			950	
				12B	TOTAL =>	1,647	
12BRX	111083	01	RADIATOR BRICKS			1,763	
12BRX	111083	01	RADIATOR BRICKS			718	
12BRX	111083	01	RADIATOR BRICKS			558	
12BRX	111083	01	RADIATOR BRICKS			382	

****** S U M M A R Y I N F O R M A T I O N ******

Ingot Out :		
D-26 Other Out :	Total Out :	Recovery%: %

Heat No.: R007150 Charged On: 09/17/2013 Furnace: Poured On: 09/18/2013 Wednesday
P-Number: 58276 Melter: 0165 PACHECO Pourer: 0338 NAVA
Series: 81 FE.65 Sample Temp.: 2028 Pour Temp.: 1967
Scrap Inspected ? Y F/C Cleaned ? Y Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y
Charge Start: 09/17/2013 01:20:00 PM Finish: 09/18/2013 12:15:00 AM Supv: AP Knockout OK ? Y
Refine/Phos'z Start: 09/18/2013 02:55:00 AM Finish: 09/18/2013 02:55:00 AM Supv: SC Conveyor OK ? Y
Pour Start: 09/18/2013 08:10:00 AM Finish: 09/18/2013 12:00:00 AM Supv: SR

Notes: 81-3-7-9 (Fe<0.65) Avg. Charge Rate: 3,745 lb/hr.
Borate: 1700
Soda Ash: 500
Pea Coal: 500

Total ----> 81,700

***** BY-PRODUCTS - OUT ***** Total ----> 5,428

Classif.			Description			Cu%	Metal#	Weight	
17R			RED BRASS SKIMMINGS/SPATTERS			1,161			
16A			O.O. FURNACE SLAG			5,093			
12BRX	111083	01	RADIATOR BRICKS					1,075	
12BRX	111083	01	RADIATOR BRICKS					1,082	
				12BRX	TOTAL =>			5,578	
17R	R007149	BY	81-3-7-9 SKIMMINGS/SPATTERS					915	
				17R	TOTAL =>			915	
2	111057	03	#2 COPPER					1,650	
2	111024	01	#2 COPPER					2,548	
2	111024	01	#2 COPPER					2,306	
2	111057	03	#2 COPPER					2,475	
				2	TOTAL =>			8,979	
4B	111082	01	SEMI RED BRASS SOLIDS					2,315	CUT
4B	111082	01	SEMI RED BRASS SOLIDS					3,032	CUT
				4B	TOTAL =>			5,347	
4D	111076	05	ELECTRICAL BRASS					444	
				4D	TOTAL =>			444	
4M	111076	06	CLEAN METER BRASS SHELLS					175	
4M	110614	01	CLEAN METER BRASS SHELLS					3,430	
4M	110614	01	CLEAN METER BRASS SHELLS					4,431	
4M	110614	01	CLEAN METER BRASS SHELLS					3,380	
4M	110614	01	CLEAN METER BRASS SHELLS					3,953	
4M	110614	01	CLEAN METER BRASS SHELLS					1,398	
4M	111082	02	CLEAN METER BRASS SHELLS					3,049	
4M	111074	15	CLEAN METER BRASS SHELLS					1,497	CUT
				4M	TOTAL =>			21,313	
8D	110917	09	CONTAMINATED BRASS HIGH GRADE					4,963	

****** S U M M A R Y I N F O R M A T I O N ******

Ingot Out : Other Out :	Total Out :	Recovery%: %

Heat No.: R007150 Charged On: 09/17/2013 Furnace: Poured On: 09/18/2013 Wednesday

P-Number: 58276 Melter: 0165 PACHECO Pourer: 0338 NAVA

Series: 81 FE.65 Sample Temp.: 2028 Pour Temp.: 1967

Scrap Inspected ? Y F/C Cleaned ? Y Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/17/2013 01:20:00 PM Finish: 09/18/2013 12:15:00 AM Supv: AP Knockout OK ? Y

Refine/Phos'z Start: 09/18/2013 02:55:00 AM Finish: 09/18/2013 02:55:00 AM Supv: SC Conveyor OK ? Y

Pour Start: 09/18/2013 08:10:00 AM Finish: 09/18/2013 12:00:00 AM Supv: SR

Notes: 81-3-7-9 (Fe<0.65) Avg. Charge Rate: 3,745 lb/hr.

Borate: 1700

Soda Ash: 500

Pea Coal: 500

Total ----> 81,700

***** BY-PRODUCTS - OUT ***** Total ----> 5,428

Classif.			Description		Cu%	Metal%	Weight	
17R			RED BRASS SKIMMINGS/SPATTERS		1,161			
16A			O.O. FURNACE SLAG		5,093			
8D	111054	02	MXD BRASS AND ZINCY BRZ PUNCHI				3,486	CUT
				8D TOTAL =>			8,449	
9A	110664	02	CONTAMINATED RED AND YELLOW BO				1,352	
				9A TOTAL =>			1,352	
				Total ---->			89,881	

****** SUMMARY INFORMATION ******

Ingot Out : 81,700			
Other Out : 5,428	Total Out : 87,128	Recovery%:	96.93 %

Heat No.: K004032 Charged On: 09/18/2013 Furnace: Poured On: 09/19/2013 Thursday

P-Number: 58279 Melter: 0200 HUGHES Pourer: 0250 CRISLER

Series: 81 .65FE Sample Temp.: 0 Pour Temp.: 0

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/18/2013 08:00:00 PM Finish: 09/19/2013 03:45:00 AM Supv: AP Knockout OK ? Y

Refine/Phos'z Start: 09/19/2013 06:25:00 AM Finish: 09/19/2013 08:25:00 AM Supv: SC Conveyor OK ? Y

Pour Start: 09/19/2013 10:55:00 AM Finish: 09/19/2013 03:35:00 PM Supv: SK

Notes: 81-3-7-9 Avg. Charge Rate: 5,349 lb/hr.

Soda Ash: 600

Borate1000

Pea Coal: 700

Approx 7500# surplus of ingots.

(R7151: approx 7500# deficit of ingots)

*** INGOT - OUT ***

Ingot#	Classif.	Description	Quantity
123	1200-1	81-3-7-9 INGOT	122,918
		Total ---->	122,918

*** Other - OUT ***

Total ----> 0

*** BY-PRODUCTS - OUT ***

Classif.	Description	Cu%	Metal%	Weight
17R	RED BRASS SKIMMINGS/SPATTERS	1,459		
16A	O.O. FURNACE SLAG	7,915		

*** MATERIALS CHARGED ***

1000-2	B102245	BD	UNSHIPABLE PHOSPHOR COPPER		335	CUT
				1000-2 TOTAL =>	335	
11D	111087	03	SILICON BRONZE SOLIDS		1,186	
11D	111087	03	SILICON BRONZE SOLIDS		1,508	
				11D TOTAL =>	2,694	
12	111004	04	RADIATORS BALES		6,523	
12	111074	04	RADIATORS BALES		572	
12	111092	01	RADIATORS BALES		3,309	
12	111087	04	RADIATORS BALES		7,436	
12	111087	04	RADIATORS BALES		2,183	
12	111087	04	RADIATORS BALES		3,588	
12	111087	04	RADIATORS BALES		5,032	
12	111087	04	RADIATORS BALES		1,102	
12	111074	04	RADIATORS BALES		917	
12	111017	01	RADIATORS BALES		7,895	
12	111033	01	RADIATORS BALES		4,531	
12	111077	07	RADIATORS BALES		3,448	
12	111018	02	RADIATORS BALES		5,581	
12	111025	01	RADIATORS BALES		4,636	
12	111025	01	RADIATORS BALES		4,411	
12	111025	01	RADIATORS BALES		3,534	
12	111025	01	RADIATORS BALES		5,500	

**** SUMMARY INFORMATION ****

Ingot Out :	Total Out :	Recovery%: %
Other Out :		

Heat No.: K004032 Charged On: 09/18/2013 Furnace: Poured On: 09/19/2013
P-Number: 58279 Melter: 0200 HUGHES Pourer: 0250 CRISLER Thursday
Series: 81 .65FE Sample Temp.: 0 Pour Temp.: 0

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/18/2013 08:00:00 PM Finish: 09/19/2013 03:45:00 AM Supv: AP Knockout OK ? Y
Refine/Phos'z Start: 09/19/2013 06:25:00 AM Finish: 09/19/2013 08:25:00 AM Supv: SC Conveyor OK ? Y
Pour Start: 09/19/2013 10:55:00 AM Finish: 09/19/2013 03:35:00 PM Supv: SK

Notes: 81-3-7-9 Avg. Charge Rate: 5,349 lb/hr.
Soda Ash: 600
Borate1000
Pea Coal: 700
Approx 7500# surplus of ingots.
(R7151: approx 7500# deficit of ingots)

Total ----> 122,918

***** BY-PRODUCTS - OUT ***** Total ----> 0

Classif.			Description			Cu%	Metal%	Weight	
17R			RED BRASS SKIMMINGS/SPATTERS			1,459			
16A			O.O. FURNACE SLAG			7,915			
12	111025	01	RADIATORS BALES					4,980	
				12	TOTAL =>			75,178	
12B	111078	01	HEATER CORE RADIATORS					2,993	
				12B	TOTAL =>			2,993	
12D	110839	03	70/30 SOLDERED RADIATOR TUBES					2,650	
				12D	TOTAL =>			2,650	
17C	R007150	RO	OUR OWN LARGE UNCUT SPILLS					1,570	
17C	R007150	RO	OUR OWN LARGE UNCUT SPILLS					3,858	
				17C	TOTAL =>			5,428	
17R	R007150	BY	81-3-7-9 SKIMMINGS/SPATTERS					1,161	
17R	K004031	BY	85-5-5-5 SKIMMINGS/SPATTERS					1,527	
				17R	TOTAL =>			2,688	
18	111089	03	LEAD SCRAP					886	CUT
				18	TOTAL =>			886	
2	111055	09	#2 COPPER					2,913	
2	111055	08	ENAMEL STRIP WIRE					1,318	
				2	TOTAL =>			4,231	
28R	T001266	TR	RED BRASS TRIMS, SAMPLES, BARS					2,893	
				28R	TOTAL =>			2,893	
28Z	T001269	TR	LADLE CLEAN UP					94	
				28Z	TOTAL =>			94	
2D	111059	01	COPPER TURNINGS					1,854	

****** SUMMARY INFORMATION ******

Ingot Out :	Total Out :	Recovery%: %
Other Out :		

Heat No.: K004032 Charged On: 09/18/2013 Furnace: Poured On: 09/19/2013
P-Number: 58279 Melter: 0200 HUGHES Pourer: 0250 CRISLER Thursday
Series: 81 .65FE Sample Temp.: 0 Pour Temp.: 0

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/18/2013 08:00:00 PM Finish: 09/19/2013 03:45:00 AM Supv: AP Knockout OK ? Y
Refine/Phos'z Start: 09/19/2013 06:25:00 AM Finish: 09/19/2013 08:25:00 AM Supv: SC Conveyor OK ? Y
Pour Start: 09/19/2013 10:55:00 AM Finish: 09/19/2013 03:35:00 PM Supv: SK

Notes: 81-3-7-9 Avg. Charge Rate: 5,349 lb/hr.
Soda Ash: 600
Borate1000
Pea Coal: 700
Approx 7500# surplus of ingots.
(R7151: approx 7500# deficit of ingots)

Total ----> 122,918

***** BY-PRODUCTS - OUT ***** Total ----> 0

Classif.			Description			Cu%	Metal%	Weight
17R			RED BRASS SKIMMINGS/SPATTERS			1,459		
16A			O.O. FURNACE SLAG			7,915		
2D	111059	01	COPPER TURNINGS					1,132
				2D	TOTAL =>			2,986
4B	111089	01	SEMI RED BRASS SOLIDS					3,613
4B	111085	03	SEMI RED BRASS SOLIDS					6,099
4B	111089	01	SEMI RED BRASS SOLIDS					3,611
4B	111089	01	SEMI RED BRASS SOLIDS					3,667
				4B	TOTAL =>			16,990
4M	111082	02	CLEAN METER BRASS SHELLS					2,479
4M	111082	02	CLEAN METER BRASS SHELLS					2,286
				4M	TOTAL =>			4,765
8D	109848	02	90/10 & 70/30 BRASS SHELLS W/					3,582
				8D	TOTAL =>			3,582
					Total ---->			128,393

****** SUMMARY INFORMATION ******

Ingot Out :	122,918		
Other Out :	0	Total Out : 122,918	Recovery%: 95.73 %

09/23/2013 H. KRAMER & CO. Page: 1 Of 3
10:51:31 Furnace Charge Report FCHARGE1B

Heat No.: K004033 Charged On: 09/19/2013 Furnace: Poured On: 09/20/2013 Friday
P-Number: 58280 Melter: 0200 HUGHES Pourer:
Series: 81 .65FE Sample Temp.: 0 Pour Temp.: 0

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/19/2013 04:10:00 PM Finish: 09/20/2013 01:45:00 AM Supv: APSC Knockout OK ? Y
Refine/Phos'z Start: 09/20/2013 04:35:00 AM Finish: 09/20/2013 05:45:00 AM Supv: SC Conveyor OK ? Y
Pour Start: 09/20/2013 09:40:00 AM Finish: 09/20/2013 02:20:00 PM Supv: SK

Notes: ACTUATOR FAILED TO TURN OFF WHILE POURING S/T, HAD TO MOVE LEVER BY HAND AND THIS CAUSED US TO POUR A LITTLE MORE THAN 5K S/T REQUIRED.

Avg. Charge Rate: 4,759 lb/hr.

Soda Ash: 600
Borate: 1200
Pea Coal:

***** INGOT - OUT *****

Ingot#	Classif.	Description	Quantity
123	1200-1	81-3-7-9 INGOT	104,817
123S	1200-1	81-3-7-9 INGOT	8,026
		Total ---->	112,843

***** Other - OUT *****

Total ----> 0

***** BY-PRODUCTS - OUT *****

Classif.	Description	Cu%	Metal%	Weight
17R	RED BRASS SKIMMINGS/SPATTERS	1,815		
16A	O.O. FURNACE SLAG	7,737		

***** MATERIALS CHARGED *****

1000-2	B102245	BD	UNSHIPABLE PHOSPHOR COPPER		300	CUT
				1000-2 TOTAL =>	300	
11D	111087	03	SILICON BRONZE SOLIDS		998	
				11D TOTAL =>	998	
11P	110866	01	876 SILICON BRASS BORINGS		675	
11P	110866	01	876 SILICON BRASS BORINGS		677	
				11P TOTAL =>	1,352	
12	111094	04	RADIATORS BALES		1,792	
12	111062	01	RADIATORS BALES		4,248	
12	111062	01	RADIATORS BALES		3,048	
12	111062	01	RADIATORS BALES		4,582	
12	111062	01	RADIATORS BALES		5,302	
12	111062	01	RADIATORS BALES		3,867	
12	111062	01	RADIATORS BALES		3,639	
12	111062	01	RADIATORS BALES		4,183	
12	111033	01	RADIATORS BALES		3,824	
12	111017	01	RADIATORS BALES		7,567	
12	111017	01	RADIATORS BALES		7,027	
12	111017	01	RADIATORS BALES		3,851	
12	111017	01	RADIATORS BALES		7,610	

****** S U M M A R Y I N F O R M A T I O N ******

Ingot Out :	Total Out :	Recovery%: %
Other Out :		

Heat No.: K004033 Charged On: 09/19/2013 Furnace: Poured On: 09/20/2013 Friday

P-Number: 58280 Melter: 0200 HUGHES Pourer:

Series: 81 .65FE Sample Temp.: 0 Pour Temp.: 0

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/19/2013 04:10:00 PM Finish: 09/20/2013 01:45:00 AM Supv: APSC Knockout OK ? Y

Refine/Phos'z Start: 09/20/2013 04:35:00 AM Finish: 09/20/2013 05:45:00 AM Supv: SC Conveyor OK ? Y

Pour Start: 09/20/2013 09:40:00 AM Finish: 09/20/2013 02:20:00 PM Supv: SK

Notes: ACTUATOR FAILED TO TURN OFF WHILE POURING S/T, HAD TO MOVE LEVER BY HAND AND THIS CAUSED US TO POUR A LITTLE MORE THAN 5K S/T REQUIRED.

Avg. Charge Rate: 4,759 lb/hr.

Soda Ash: 600
Borate: 1200
Pea Coal:

Total ----> 112,843

Total ----> 0

***** BY-PRODUCTS - OUT *****

Classif.			Description			Cu%	Metal%	Weight
17R			RED BRASS SKIMMINGS/SPATTERS			1,815		
16A			O.O. FURNACE SLAG			7,737		
12	111097	01	RADIATORS BALES					3,854
12	111033	01	RADIATORS BALES					7,140
12	111005	03	RADIATORS BALES					2,385
				12	TOTAL =>			73,919
12B	111000	01	HEATER CORE RADIATORS					1,846
12B	111092	03	HEATER CORE RADIATORS					643
				12B	TOTAL =>			2,489
17R	K004032	BY	81-3-7-9 SKIMMINGS/SPATTERS					1,459
				17R	TOTAL =>			1,459
2	111055	09	#2 COPPER					2,477
				2	TOTAL =>			2,477
2B	111006	03	LITE COPPER					355
2B	111006	03	LITE COPPER					806
2B	111006	03	LITE COPPER					1,198
2B	111006	03	LITE COPPER					903
				2B	TOTAL =>			3,262
2J	111040	03	7026 CU NI TINNED PLTD)					3,110
				2J	TOTAL =>			3,110
4B	111077	03	SEMI RED BRASS SOLIDS					2,487
4B	111092	07	SEMI RED BRASS SOLIDS					3,143
4B	111074	05	MXD SEMI AND METER BRASSS SOLI					2,704
4B	111100	06	MIXED CU AND BRASS					2,876

****** SUMMARY INFORMATION ******

Ingot Out : Other Out :	Total Out :	Recovery%:

Heat No.: K004033 Charged On: 09/19/2013 Furnace: Poured On: 09/20/2013 Friday

P-Number: 58280 Melter: 0200 HUGHES Pourer:

Series: 81 .65FE Sample Temp.: 0 Pour Temp.: 0

Scrap Inspected ? Y F/C Cleaned ? N Molds Cleaned ? N Ladle Cleaned ? Y Hopper OK ? Y

Charge Start: 09/19/2013 04:10:00 PM Finish: 09/20/2013 01:45:00 AM Supv: APSC Knockout OK ? Y

Refine/Phos'z Start: 09/20/2013 04:35:00 AM Finish: 09/20/2013 05:45:00 AM Supv: SC Conveyor OK ? Y

Pour Start: 09/20/2013 09:40:00 AM Finish: 09/20/2013 02:20:00 PM Supv: SK

Notes: ACTUATOR FAILED TO TURN OFF WHILE POURING S/T, HAD TO MOVE LEVER BY HAND AND THIS CAUSED US TO POUR A LITTLE MORE THAN 5K S/T REQUIRED.

Avg. Charge Rate: 4,759 lb/hr.

Soda Ash: 600
Borate: 1200
Pea Coal:

Total ----> 112,843

Total ----> 0

***** BY-PRODUCTS - OUT *****

Classif.			Description			Cu%	Metal%	Weight
17R			RED BRASS SKIMMINGS/SPATTERS			1,815		
16A			O.O. FURNACE SLAG			7,737		
				4B	TOTAL =>			11,210
4D	111094	10	ELECTRICAL BRASS					1,842
				4D	TOTAL =>			1,842
4M	111094	03	CLEAN METER BRASS SHELLS					1,872
4M	111094	03	CLEAN METER BRASS SHELLS					1,237
4M	111082	02	CLEAN METER BRASS SHELLS					2,302
4M	111094	03	CLEAN METER BRASS SHELLS					2,580
				4M	TOTAL =>			7,991
8	111057	05	YELLOW BRASS SOLIDS					3,829
				8	TOTAL =>			3,829
					Total ---->			114,238

****** SUMMARY INFORMATION ******

Ingot Out : 112,843 Other Out : 0	Total Out : 112,843	Recovery%: 98.77 %

3016								
Class Chemistry	1	1A	1E	1S	2	2A	2B	2D
Copper	100.00	100.00	100.00	100.00	100.00	95.00	100.00	99.00
Tin								0.50
Lead								0.50
Zinc						5.00		
Nickel								
Manganese								
Aluminum								
Silicon								
Phosphorus								0.50
Antimony								
Cobalt								
Bismuth								
Selenium								
Lithium								
Magnesium								
Chromium								

Class Chemistry	2GB	2E	2F	2G	2H	2J	2K
Copper	97.00	99.00	98.00	98.00	95.25	95.75	97.00
Tin	3.00				0.50		
Lead					2.50		
Zinc						0.50	
Nickel					0.50	3.00	1.00
Manganese					0.25		
Aluminum							
Silicon						0.75	
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	2L	2F	2T	2W	2X	3	4
Copper	99.20	94.00	99.00	99.00	99.50	100.00	92.00
Tin					3.50		3.25
Lead	0.80						5.00
Zinc							0.50
Nickel							0.35
Manganese							
Aluminum							
Silicon							
Phosphorus		6.00					
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Cass Chemistry	4A	4B	4C	4D	4E	4F	4G
Copper	84.15	77.50	77.50	87.50	88.70	88.70	89.50
Tin	4.50	2.50	3.00	2.00	3.50	3.50	6.00
Lead	5.00	7.50	8.00	3.00	3.75	3.75	
Zinc	6.50	10.00	10.00	7.00	3.75	3.75	3.50
Nickel	0.35	0.40	0.50	0.50	0.30	0.30	0.50
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	4H	4J	4K	4M	4S	5	5A
Copper	60.50	90.50	90.50	82.50	65.50	63.50	83.50
Tin	5.00	5.00	5.00	3.00	3.00	7.00	7.00
Lead				6.00	6.00	7.00	7.00
Zinc	4.00	4.00	4.00	8.00	7.00	2.00	2.00
Nickel	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth	2.00	2.00	2.00	1.50			
Selenium	0.80	0.95	0.80				
Lithium							
Magnesium							
Chromium							

Class Chemistry	6B	5C	5D	6	6A	6B	7
Copper	75.00	75.00	82.70	75.25	84.00	74.00	88.50
Tin	9.00	9.00	9.00	4.50	5.00	4.50	7.50
Lead	11.00	11.00	7.00	18.00	28.00	19.00	1.00
Zinc	1.50	1.50	1.50	1.00	1.00	1.00	2.50
Nickel	0.50	0.50	0.50	1.00	1.00	1.00	0.50
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	7A	7B	7B510	7B511	7B519	7B521	7B524
Copper	90.00	94.95	94.70	94.40	93.90	91.90	89.90
Tin	6.00	5.00	5.25	4.50	6.00	8.00	10.00
Lead	1.00	0.00	0.00	0.00	0.00	0.00	0.00
Zinc	2.50	0.00	0.00	0.00	0.00	0.00	0.00
Nickel	0.50	0.05	0.05	0.05	0.05	0.05	0.05
Manganese							
Aluminum							
Silicon							
Phosphorus		0.05	0.05	0.05	0.05	0.05	0.05
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	7C	7D	7E	7F	7G	7H	8
Copper	92.50	90.70	91.80	91.80	85.95	80.00	64.00
Tin	4.00	5.00	18.00	18.00	11.00	20.00	0.75
Lead	1.00	1.25			0.50		2.00
Zinc	2.00	3.00			2.00		33.00
Nickel	0.05	0.50	0.10	0.10	0.50		0.25
Manganese							
Aluminum							
Silicon							
Phosphorus	0.05	0.05	0.02	0.02	0.05		
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	8A	8B	8C	8D	8E	8F	8G
Copper	75.50	70.00	69.50	51.50	85.00	95.00	71.25
Tin	2.00		0.50	1.00			
Lead	7.00						
Zinc	15.00	30.00	30.00	17.00	15.00	15.00	28.50
Nickel	0.50			0.50			0.25
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

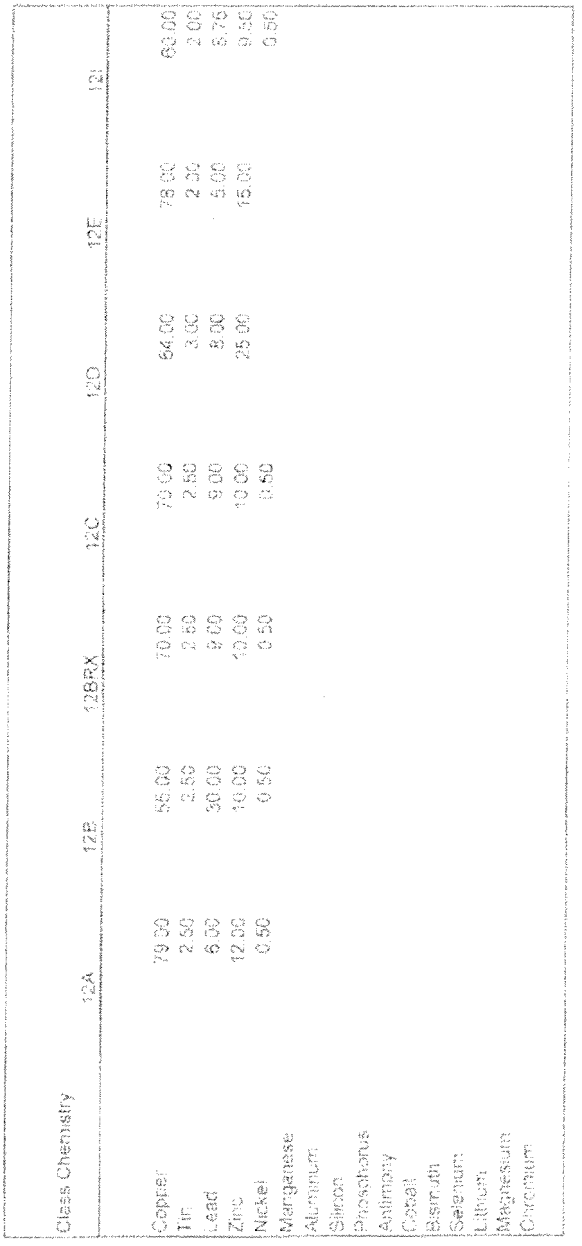
Class Chemistry	8H	8J	8K	8L	8M	8N	8P
Copper	54.00	61.00	81.50	87.00	87.50	84.00	79.00
Tin	1.00	0.25	0.50	3.50	1.00	0.50	1.00
Lead	3.00	3.00	3.00		1.00	0.50	
Zinc	22.00	35.75	15.00	9.50	10.00		29.00
Nickel	0.05				0.50		
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	8Q	8R	8S	8T	8U	8V/N	9
Copper	82.50	64.00	72.00	65.00	59.00	70.00	55.00
Tin		1.00	1.00		0.25		0.70
Lead		2.00	2.00				2.00
Zinc		32.00	24.00	35.00	29.00	29.00	22.00
Nickel	3.50	0.50	0.50		0.25	1.00	0.50
Manganese	14.00						
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	9A	9C	10	10A	10B	10C	11
Copper	60.00	62.00	68.00	73.00	60.00	72.70	88.00
Tin	0.70	0.75	1.00		0.75		
Lead	2.00	2.50			0.20		
Zinc	30.00	35.00	29.50	25.00	39.00	24.00	
Nickel	0.50	0.25					2.50
Manganese							0.50
Aluminum		0.25		2.00		3.00	9.00
Silicon							
Phosphorus							
Antimony							
Cobalt						0.30	
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	11A	11B	11C	11D	11E	11F	11G
Copper	89.00	62.00	68.00	95.00	99.00	61.50	51.50
Tin		0.50	0.50			0.25	0.25
Lead		0.10	0.10			1.25	1.25
Zinc		35.00	35.00		8.00	33.25	33.00
Nickel	2.50	0.20	0.50			0.25	0.25
Manganese	0.50	0.50	0.50	1.00	0.50	2.00	3.00
Aluminum	8.00	1.50	1.00				
Silicon				4.00	3.50	1.50	1.00
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	11H	11J	11K	11M	11N	11P	12
Copper	91.00	68.50	68.50	81.50	84.00	82.00	71.00
Tin							2.50
Lead							8.00
Zinc		9.00	9.00			14.00	10.00
Nickel		15.00	15.00	3.50	3.50		3.50
Manganese				1.00	0.50		
Aluminum	6.00	7.50	7.50	8.00	8.00		
Silicon	2.50					4.00	
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							



Class Chemistry	12A	12B	12BRX	12C	12O	12E	12
Copper	79.00	55.00	70.00	70.00	64.00	78.80	60.00
Tin	2.50	2.50	2.50	2.50	3.00	2.30	2.00
Lead	6.00	30.00	9.00	9.00	8.00	4.00	6.75
Zinc	12.50	10.00	10.00	10.00	25.00	15.00	9.50
Nickel	0.50	0.50	0.50	0.50			0.50
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	14	14A	14B	14D	14E	14F w/Ni	15
Copper	31.00		31.50	30	38.50	15.75	58.00
Tin							2.50
Lead							4.50
Zinc							10.00
Nickel	65.00	99.00	65.00	45	65.00	99.00	15.00
Manganese	0.75		0.50	0.5	1.00	0.50	
Aluminum					2.00		
Silicon			0.25	0.25			
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	15A	15B	15C	15CT	15D	15DT	15E
Copper	52.00	55.00	69.50	69.50	79.50	79.50	89.25
Tin		2.50					
Lead	2.00	2.50					
Zinc	25.00	13.00					
Nickel	15.00	15.00	30.00	30.00	20.00	20.00	10.00
Manganese			0.50	0.50	0.50	0.50	0.75
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	15ET	15F	15H	15O	15S	16	16P
Copper	99.90	88.00	94.75	89.25	80.00	17.50	94.00
Tin		2.50			5.00	0.90	3.25
Lead						1.25	5.00
Zinc						2.45	8.00
Nickel	10.00	9.50	5.00	10.00	15.00	0.13	0.50
Manganese	0.50		0.25	0.75		0.03	
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	17	17C	17L	17LF	18	18J	19
Copper	58.53	92.70	88.70	68.70		31.0	60.60
Tin	3.00	3.50	3.50	3.50	1.00	22.0	
Lead	4.32	3.75	3.75	3.75	97.00	19.0	30.00
Zinc	8.21	3.75	3.75	3.75		3.0	
Nickel	0.44	0.30	0.30	0.30			
Manganese	0.10						
Aluminum							
Silicon							
Phosphorus							
Antimony					2.00		
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	20	21	22	23	24	25	25A
Copper			25.00	3.50			25.00
Tin		2.00		89.00	99.00		
Lead		3.00	75.00				
Zinc	96.00	95.00					
Nickel							
Manganese							
Aluminum	4.00					99.00	75.00
Silicon							
Phosphorus							
Antimony				7.50			
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	26	27	27A	28A	28B	28C	28H
Copper				95.00	93.00	90.00	90.00
Tin	53.00			4.50	1.00		6.00
Lead	37.00			0.50	4.00		1.00
Zinc					4.00		2.50
Nickel							0.50
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	28I	28M	28N	28R	28S	28X	28Y
Copper	83.50	62.50	58.60	83.00	87.50	17.60	17.60
Tin	7.00	0.50	2.50	4.00		0.50	0.50
Lead	7.00	0.15	4.50	6.00		1.79	1.79
Zinc	2.00	35.35	16.00	7.00	8.00	2.45	2.45
Nickel	0.50	0.20	15.00			0.13	0.13
Manganese		0.52			0.50	0.03	0.03
Aluminum		1.50					
Silicon					4.00		
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	28Z	30	30A	30B	30C	30L	31
Copper	17.60	88.00	82.00	81.00	61.00	82.90	90.00
Tin	0.90	4.00	3.75	2.75	2.75	3.25	10.00
Lead	1.29	5.00	6.00	7.25	7.25	5.00	
Zinc	2.45	3.00	7.00	8.50	8.50	8.50	
Nickel	0.13		0.50	0.50	0.50	0.35	
Manganese	0.03						
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	1000-1	1000-2	1000-6	1000-7	1000-9	1000-12	1000-16
Copper		85.00	85.00	85.00	85.00	70.00	
Tin							
Lead							
Zinc							
Nickel							
Manganese						30.00	100.00
Aluminum							
Silicon							
Phosphorus	100.00	15.00	15.00	15.00	15.00		
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	1000-23	1000-25	1060-38A	1000-29	1060-30	1000-32	1060-45
Copper	100.00	99.00	95.00	80.00	70.00		
Tin							
Lead							
Zinc							
Nickel							100.00
Manganese							
Aluminum							
Silicon		1.00	5.00	20.00	30.00	100.00	
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	1000-45	1000-47	1000-49	1000-54	1000-56	1000-64	1000-65
Copper	50.00	50.00	30.00		80.00	79.50	79.50
Tin							
Lead							
Zinc							
Nickel	50.00	50.00	70.00				
Manganese						7.50	4.50
Aluminum							13.75
Silicon						3.50	
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium				182.00	20.00	10.00	5.25
Chromium							

Class Chemistry	1000-69	1000-69A	1000-70	1000-72	1000-73	1000-74	1000-74A
Copper	95.00	98.50					98.00
Tin							
Lead							
Zinc							
Nickel							
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt				100.00			
Bismuth					100.00	66.00	
Selenium						34.00	2.00
Lithium							
Magnesium							
Chromium	5.00	1.50	100.00				

Class Chemistry	1060-74B	1060-76	1010-1	1010-2	1010-6	1010-6A	1010-6B
Copper							
Tin							
Lead			100.00	100.00	100.00	100.00	100.00
Zinc							
Nickel							
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony							
Cobalt							
Bismuth							
Selenium	100.00						
Lithium		100.00					
Magnesium							
Chromium							

Class Chemistry	1030-7	1030-1	1030-2	1050-1	1050.3	1110-10	1110.20
Copper				3.50	3.50		
Tin	100.00			89.00	89.00		
Lead		100.00	100.00				
Zinc							
Nickel							
Manganese							
Aluminum						100.00	100.00
Silicon							
Phosphorus							
Antimony				7.50	7.50		
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

Class Chemistry	1120-1	1120-1A	1120-1B	1260-1
Copper	100.00	100.00	100.00	VARIES
Tin				
Lead				
Zinc				
Nickel				
Manganese				
Aluminum				
Silicon				
Phosphorus				
Antimony				
Cobalt				
Bismuth				
Selenium				
Lithium				
Magnesium				
Chromium				

Class Chemistry	1010-9	1010-11	1020-1	1020-2	1020-3	1020-5	1020-6
Copper					5.00		
Tin			100.00	100.00	95.00		100.00
Lead							
Zinc	100.00	100.00					
Nickel							
Manganese							
Aluminum							
Silicon							
Phosphorus							
Antimony						100	
Cobalt							
Bismuth							
Selenium							
Lithium							
Magnesium							
Chromium							

APPENDIX E

Calibration Data

APEX INSTRUMENTS METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	MC522
Console Serial Number	806024
DGM Model Number	MS4
DGM Serial Number	DGM 1502218

Calibration Conditions			
Date	Time	11-Dec-12	11:00
Barometric Pressure		29.3	in Hg
Theoretical Critical Vacuum[1]		13.8	in Hg
Calibration Technician		B. Crane	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_4	17.647	°R/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3{}^\circ R^{1/2})/(in.Hg{*}min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(θ)	($\Delta H_{@}$)	($V_{m(i)}$)	($V_{m(f)}$)	($t_{m(i)}$)	($t_{m(f)}$)		K	($t_{a(i)}$)	($t_{a(f)}$)	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above[2]	°F	°F	in Hg
23.0	3.3	976.500	999.930	74	76	OX73	0.7780	74	74	14
10.0	1.9	954.220	961.870	70	72	OX63	0.5905	72	73	15
18.0	1.1	5.500	15.990	76	75	OX55	0.4455	74	75	17
12.0	0.7	19.700	25.100	76	76	OX48	0.3451	75	75	18
32.0	0.3	31.600	41.390	76	76	OX40	0.2303	75	76	20

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH@	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($V_{cr(std)}$)	($Q_{cr(std)}$)	(Y)	(dY)	($Q_{m(std)corr}$)	($\Delta H@$)	($d\Delta H@$)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
22.793	0.991	22.650	0.985	0.994	-0.008	0.985	1.879	-0.016
7.472	0.747	7.485	0.748	1.002	0.000	0.748	1.874	-0.022
10.130	0.563	10.145	0.564	1.002	-0.001	0.564	1.888	-0.008
5.209	0.434	5.237	0.436	1.005	0.003	0.436	1.914	0.018
9.242	0.289	9.315	0.291	1.008	0.006	0.291	1.922	0.027
CAL-MASTERMETER-WORKBOOK-2001-REV1				1.002	Y Average		1.895	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +/-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR Title 40, Part 60, Appendix A-3, Method 5, 16.2.3.

Signature B. Crane Date 12-11-12

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
Pre -Test

Meter Box: 808024
Calibrator: B. Crane
Date: 12/11/2012
Barometric: 29.25
Ambient Temp: 70
Reference Thermometer: Altek Thermocouple Source CAL-MASTERMETER-WORKBOOK-203T-REV1

Reference Temperature Altek	Thermometer Temperature Inlet	Difference (%) mean Inlet	Thermometer Temperature Oulet	Difference (%) mean Oulet	Thermometer Temperature Probe	Difference (%) mean Probe
0	NA		0	0.00	0	0.00
100			99	-0.18	99	-0.18
200			201	0.15	200	0.00
300			301	0.13	301	0.13
400			397	-0.35	397	-0.35
500			498	-0.21	498	-0.21

Temperature Altek	Temperature Filter	(%) mean Filter	Temperature Exit	(%) mean Exit	Temperature Aux	(%) mean Aux
0	0	0.00	0	0.00	0	0.00
100	99	-0.18	99	-0.18	99	-0.18
200	201	0.15	200	0.00	201	0.15
300	300	0.00	301	0.13	301	0.13
400	397	-0.35	397	-0.35	397	-0.35
500	498	-0.21	498	-0.21	498	-0.21

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
0	0	0.00
200	201	0.15
400	397	-0.35
600	599	-0.09
800	801	0.08
1000	1000	0.00

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
1200	1198	-0.12
1400	1396	-0.22
1600	1599	-0.05
1800	1797	-0.13

Revised 10/03

APEX INSTRUMENTS METHOD 5 POST-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
3-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	MC522
Console Serial Number	808024
DGM Model Number	MS-4
DGM Serial Number	1502218.00

Calibration Conditions			
Date	Time	23-Sep-13	3:30
Barometric Pressure		29.4	in Hg
Theoretical Critical Vacuum[1]		13.9	in Hg
Calibration Technician		B. Crane	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3 \cdot {}^oR^{1/2})/(in.Hg \cdot min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
12.0	1.9	0.700	9.930	74	75	OX63	0.5894	75	75	16
10.0	1.9	9.930	17.670	75	76	OX63	0.5894	75	73	16
17.0	1.9	17.670	30.840	76	77	OX63	0.5894	73	76	16

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
9.002	0.750	8.990	0.749	0.999	0.002	0.749	1.867	0.005
7.535	0.753	7.499	0.750	0.995	-0.001	0.750	1.860	-0.002
12.797	0.753	12.742	0.750	0.996	-0.001	0.750	1.859	-0.003
Pretest Gamma	1.002	% Deviation	0.5	0.997	Y Average		1.862	ΔH@ Average

CAL-MASTERMETER-WORKBOOK-203T-REV1

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR Title 40, Part 60, Appendix A-3, Method 5, 16.2.3

Signature B. Crane Date 9.23.13

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
Post-Test

Meter Box: 808024
Calibrator: B.Crane
Date: 9/23/2013
Barometric: 29.4
Ambient Temp: 74
Reference Thermometer: Altek Thermocouple Source CAL-MASTERMETER-WORKBOOK-203T-REV1

Reference Temperature Altek	Thermometer Temperature Inlet	Difference (%) mean Inlet	Thermometer Temperature Oulet	Difference (%) mean Oulet	Thermometer Temperature Probe	Difference (%) mean Probe
0	NA		2	0.43	2	0.43
100			99	-0.18	99	-0.18
200			203	0.45	203	0.45
300			301	0.13	301	0.13
400			399	-0.12	399	-0.12
500			498	-0.21	498	-0.21

Reference Temperature Altek	Thermometer Temperature Filter	Difference (%) mean Filter	Thermometer Temperature Exit	Difference (%) mean Exit	Thermometer Temperature Aux	Difference (%) mean Aux
0	2	0.43	2	0.43	2	0.43
100	99	-0.18	99	-0.18	99	-0.18
200	203	0.45	203	0.45	203	0.45
300	301	0.13	301	0.13	301	0.13
400	399	-0.12	399	-0.12	399	-0.12
500	498	-0.21	498	-0.21	498	-0.21

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
0	2	0.43
200	203	0.45
400	399	-0.12
600	601	0.09
800	802	0.16
1000	1002	0.14

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
1200	1199	-0.06
1400	1397	-0.16
1600	1600	0.00
1800	1798	-0.09

APEX INSTRUMENTS METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	MC522
Console Serial Number	611209
DGM Model Number	MS4
DGM Serial Number	DGM971831

Calibration Conditions			
Date	Time	26-Nov-12	4:00
Barometric Pressure		29.5	in Hg
Theoretical Critical Vacuum[1]		13.9	in Hg
Calibration Technician		B. Crane	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	°R/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3*°R^{1/2})/(in.Hg*min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
10.0	3.4	260.700	271.130	78	79	OX73	0.7780	73	73	15
12.0	1.9	230.400	239.850	75	76	OX63	0.5905	73	74	18
10.0	1.1	280.100	286.020	78	78	OX58	0.4455	74	74	20
14.0	0.6	307.310	313.670	74	74	OX48	0.3451	74	74	22
18.0	0.3	339.400	344.850	77	78	OX40	0.2303	76	76	23

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std,corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
10.179	1.018	9.951	0.995	0.978	-0.011	0.995	1.902	0.082
9.240	0.770	9.059	0.755	0.980	-0.008	0.755	1.844	0.023
5.750	0.575	5.693	0.569	0.990	0.002	0.569	1.861	0.040
6.216	0.444	6.174	0.441	0.993	0.005	0.441	1.785	-0.035
5.287	0.294	5.287	0.294	1.000	0.012	0.294	1.710	-0.110
CAL-MASTERMETER-WORKBOOK-203T-REV1				0.988	Y Average		1.820	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR Title 40, Part 60, Appendix A-3, Method 5, 16.2.3

Signature B Crane Date 11-26-12

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
Pre -Test

Meter Box: 611209
Calibrator: B. Crane
Date: 11/26/2012
Barometric: 29.53
Ambient Temp: 73
Reference Thermometer: Altek Thermocouple Source CAL-MASTERMETER-WORKBOOK-203T-REV1

Reference Temperature Altek	Thermometer Temperature Inlet	Difference (%) mean Inlet	Thermometer Temperature Oulet	Difference (%) mean Oulet	Thermometer Temperature Probe	Difference (%) mean Probe
0	0	0.00	0	0.00	0	0.00
100	98	-0.36	98	-0.36	98	-0.36
200	200	0.00	200	0.00	200	0.00
300	300	0.00	300	0.00	300	0.00
400	396	-0.47	396	-0.47	396	-0.47
500	497	-0.31	497	-0.31	497	-0.31

Temperature Altek	Temperature Filter	(%) mean Filter	Temperature Exit	(%) mean Exit	Temperature Aux	(%) mean Aux
0	0	0.00	0	0.00	0	0.00
100	98	-0.36	98	-0.36	98	-0.36
200	200	0.00	200	0.00	200	0.00
300	300	0.00	300	0.00	300	0.00
400	396	-0.47	396	-0.47	396	-0.47
500	497	-0.31	497	-0.31	497	-0.31

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
0	0	0.00
200	200	0.00
400	396	-0.47
600	599	-0.09
800	800	0.00
1000	1000	0.00

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
1200	1197	-0.18
1400	1396	-0.22
1600	1599	-0.05
1800	1797	-0.13

Revised 10/03

APEX INSTRUMENTS METHOD 5 POST-TEST CONSOLE CALIBRATION

USING CALIBRATED CRITICAL ORIFICES

3-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	MC522
Console Serial Number	611209
DGM Model Number	MS-4
DGM Serial Number	971831.00

Calibration Conditions			
Date	Time	24-Sep-13	9:30
Barometric Pressure		29.3	in Hg
Theoretical Critical Vacuum[1]		13.8	in Hg
Calibration Technician		B. Crane	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3*°R^{1/2})/(in.Hg*min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
11.0	1.9	231.200	239.810	66	69	OX63	0.5894	70	71	18
13.0	1.9	239.810	250.020	69	71	OX63	0.5894	71	72	18
10.0	1.9	250.020	257.880	71	72	OX63	0.5894	72	72	18

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
8.488	0.772	8.256	0.751	0.973	-0.001	0.751	1.881	0.005
10.018	0.771	9.748	0.750	0.973	0.000	0.750	1.875	-0.001
7.691	0.769	7.495	0.749	0.975	0.001	0.749	1.872	-0.004
Pretest Gamma	0.988	% Deviation	1.5	0.973	Y Average		1.876	ΔH@ Average

CAL-MASTERMETER-WORKBOOK-203T-REV1

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR Title 40, Part 60, Appendix A-3, Method 5, 16.2.3

Signature C. Crane Date 9.24.13

E-7

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
Post-Test

Meter Box: 611209
Calibrator: B. Crane
Date: 9/24/2013
Barometric: 29.33
Ambient Temp: 70
Reference Thermometer: Altek Thermocouple Source CAL-MASTERMETER-WORKBOOK-203T-REV1

Reference Temperature Altek	Thermometer Temperature Inlet	Difference (%) mean Inlet	Thermometer Temperature Oulet	Difference (%) mean Oulet	Thermometer Temperature Probe	Difference (%) mean Probe
0	1	0.22	1	0.22	1	0.22
100	98	-0.36	98	-0.36	98	-0.36
200	202	0.30	202	0.30	202	0.30
300	300	0.00	300	0.00	300	0.00
400	398	-0.23	398	-0.23	398	-0.23
500	497	-0.31	497	-0.31	497	-0.31

Reference Temperature Altek	Thermometer Temperature Filter	Difference (%) mean Filter	Thermometer Temperature Exit	Difference (%) mean Exit	Thermometer Temperature Aux	Difference (%) mean Aux
0	1	0.22	1	0.22	1	0.22
100	97	-0.54	98	-0.36	97	-0.54
200	201	0.15	201	0.15	201	0.15
300	300	0.00	299	-0.13	300	0.00
400	397	-0.35	397	-0.35	397	-0.35
500	497	-0.31	497	-0.31	497	-0.31

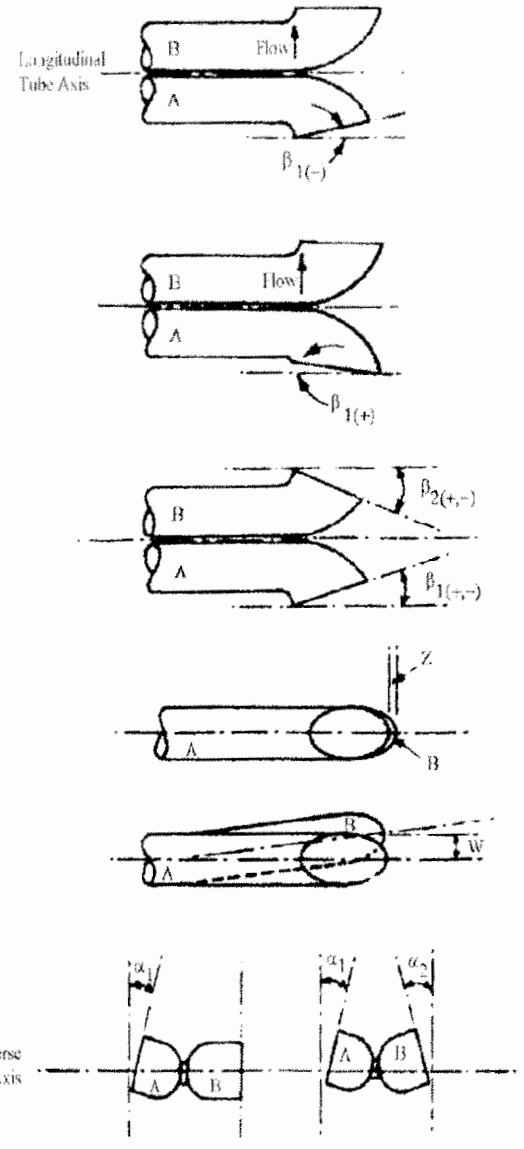
Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
0	1	0.22
200	202	0.30
400	398	-0.23
600	601	0.09
800	802	0.16
1000	1001	0.07

Reference Temperature Altek	Thermometer Temperature Stack	Difference (%) mean Stack
1200	1199	-0.06
1400	1397	-0.16
1600	1601	0.05
1800	1798	-0.09

Revised 10/03

Pitot Tube Inspection Data

Client Name: _____ **Date:** **Pre-Sample** 10/27/2012 **Date:** **Post-Sample** 10/4/2013



Y	level?	Y
N	obstructions?	N
N	damaged?	N
0	$-10° < \alpha_1 < +10°$	0
1	$-10° < \alpha_2 < +10°$	1
2	$-5° < \beta_1 < +5°$	2
1	$-5° < \beta_2 < +5°$	0
0	γ	1
0	θ	0
0.940	A	0.94
0.470	$0.39375 < P_A < 0.5625$	0.470
0.470	$0.39375 < P_B < 0.5625$	0.470
0.375	$0.1875 \leq D_t \leq 0.375$	0.375
0.000	A tan γ < 0.125"	0.016
0.00000	A tan θ < 0.03125"	0.00000
TRUE	$P_A = P_B$ +/- 0.063	TRUE
PASS	**PASS/FAIL**	PASS

Comments: 5' effective length s-type pitot tube with 3/8" tips and K-type thermocouple attached to heated M5 probe.

Pitot tube/probe number 654 meets or exceeds all specifications and criteria and/or applicable design features (per 40CFR60 Appendix A; Method 2) and is hereby assigned a pitot tube calibration factor of 0.84.

Signature: _____

Date: 10·4·13

ARI Environmental Inc.
Thermocouple Calibration Data Form

Calibrator: B. Crane
Thermocouple ID. 654

	pretest	posttest
Date:	10/27/2012	10/4/2013
Barometric:	29.48	29.27

Reference Thermometer = Mercury in glass

	Reference Point Number	Source	Reference Thermometer Temperature	Meter Readout Temperature	Difference (%)
Pre-Test	T.C	Ice Water	32.0	32.1	-0.02
		Ambient	67.3	68.3	-0.19
		Heat Source	300.0	296.5	0.46
Post-Test	T.C	Ice Water	32.0	32.0	0.00
		Ambient	72.2	72.6	-0.08
		Heat Source	294.5	295.0	-0.07

a (temp. diff.) = (ref.temp + 460) - (Thermo. temp. + 460) / (ref. temp. +460) x 100

Where $-1.5 < a < 1.5$

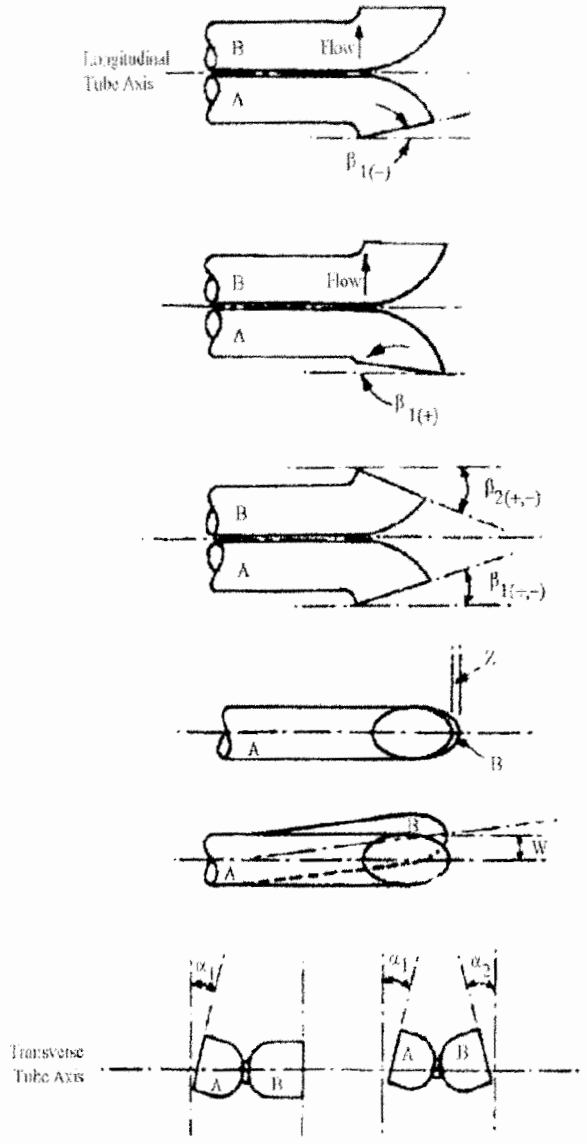
pitot calibration

Pitot Tube Inspection Data

Client Name: _____

Pre-Sample Date: 1/9/2013

Post-Sample Date: 10/4/2013



Y	level?	Y
N	obstructions?	N
N	damaged?	N
1	$-10^\circ < \alpha_1 < +10^\circ$	0
0	$-10^\circ < \alpha_2 < +10^\circ$	0
1	$-5^\circ < \beta_1 < +5^\circ$	0
1	$-5^\circ < \beta_2 < +5^\circ$	1
0	γ	1
1	θ	1
0.940	A	0.93
0.470	$0.39375 < P_A < 0.5625$	0.470
0.470	$0.39375 < P_B < 0.5625$	0.460
0.375	$0.1875 \leq D_t \leq 0.375$	0.375
0.000	A tan γ < 0.125"	0.016
0.01641	A tan θ < 0.03125"	0.01623
TRUE	$P_A = P_B$ +/- 0.063	TRUE
PASS	PASS/FAIL	PASS

Comments: 5' effective length pitot tube assembly, 3/8" tips, K-type thermocouple, attached to heated M5 probe.

Pitot tube/probe number 655 meets or exceeds all specifications and criteria and/or applicable design features (per 40CFR60 Appendix A; Method 2) and is heareby assigned a pitot tube calibration factor of 0.84.

Signature: _____

Date: 10.4.13

ARI Environmental Inc.
Thermocouple Calibration Data Form

Calibrator: B. Crane
Thermocouple ID. 655

	pretest	posttest
Date:	1/9/2013	10/4/2013
Barometric:	29.41	29.27

Reference Thermometer = Mercury in glass

	Reference Point Number	Source	Reference Thermometer Temperature	Meter Readout Temperature	
Pre-Test	T.C	Ice Water	32.0	32.1	-0.02
		Ambient	67.0	65.7	0.25
		Heat Source	300.0	298.1	0.25
Post-Test	T.C	Ice Water	32.0	32.1	-0.02
		Ambient	71.9	72.4	-0.09
		Heat Source	292.8	290.9	0.25

a (temp. diff.) = (ref.temp + 460) - (Thermo. temp. + 460) / (ref. temp. +460) x 100

Where -1.5 < a < 1.5

SAMPLING NOZZLE INSPECTION AND MEASUREMENT

Date: 9/17/13

Nozzle ID: (2) ~0.188 glass new

Nozzle Type: glass

Inspected By: RS

Nozzle Clean: (Y) N

Nozzle Undamaged: (Y) N

Absent of Nicks or Dents: (Y) N

Leading Edge Sharp: (Y) N

Nozzle Diameter			ΔD	D_{avg}
D_1 (inches)	D_2 (inches)	D_3 (inches)	(inches)	(inches)
0.187	0.187	0.187	0.000	0.187
0.188	0.188	0.188	0.000	0.188

where:

$D_{1, 2, 3}$ = three different nozzle diameter measurements , (inches) ; each diameter must be measured to within 0.001 inches

ΔD = maximum difference between any two diameters, (inches) ; $\Delta D \leq 0.004$ inches

D_{avg} = average of D_1, D_2, and D_3, (inches)

Form FDF 4004.00

APPENDIX F Test Program Qualifications

Test Program Qualifications

ARI Environmental's offices in Wauconda, Illinois; Newport, Delaware and Pasadena, Texas specialize in conducting stack emission, fugitive leak detection, ambient air and in-plant OSHA type testing for industrial clients.

ARI is organized so that its facilities and resources meet the requirements of ASTM D7036, Standard Practice for Competence of Air Emission Testing Bodies. ARI's laboratories in Wauconda, Illinois and Pasadena, Texas hold NELAP primary accreditation with the Texas Commission on Environmental Quality (Certificate No. T104704428-12-4), NELAP accreditation with the New Jersey Department of Environmental Protection (Certificate No. IL007), and NELAP/State accreditation with the Louisiana Department of Environmental Quality (Certificate No. 02010). ARI is also registered with the Pennsylvania Laboratory Accreditation Program (Registration No. 68-05220).

During the past 30 years, ARI personnel have conducted over 5,000 separate stack emission tests for a variety of industrial clients throughout North America for the determination of degree of source compliance and to yield emissions data and control equipment performance data for in-house engineering purposes.

ARI presently has over 80 trained personnel for conducting source emission sampling, fugitive leak detection monitoring, ambient air monitoring and OSHA sampling programs. All test programs are supervised and conducted by onsite Qualified Individuals (QI) and/or Qualified Source Testing Individuals (QSTI) pursuant to ASTM D7036.

The key personnel involved in the test program were as follows:

Larry Goldfine
Mr. Goldfine is President of ARI Environmental, Inc. Mr. Goldfine has accumulated extensive experience since 1973 in stack emission testing, continuous emission monitor certification testing and quality assurance programs, RCRA trial burn tests, fugitive VOC monitoring, ambient air monitoring, PSD modeling, OSHA monitoring, sampling and analyses for toxic pollutants, and regulatory policy and enforcement activities.

His extensive source sampling experience includes personally conducting over 2,500 source tests for refineries, bulk gasoline terminals, chemical plants, hazardous waste incinerators, toxic waste landfills, power plants, cement plants, pharmaceutical production facilities, iron and steel mills, etc. He is also certified by the Source Evaluation Society (SES) as a QSTI pursuant to the requirements of ASTM D7036-04.

Steven Flaherty
Mr. Flaherty is a Senior Project Manager with ARI. His 11 years of experience includes emission compliance and CEM certification testing for a wide variety of industries including petrochemical, steel mills, electric utilities, cement plants, asphalt plants and general manufacturing plants. Mr. Flaherty is presently certified as a QSTI by the SES pursuant to the requirements of ASTM D7036-04.

Jeff Goldfine
Mr. Goldfine is a Project Manager with ARI. His 7 years of experience includes emission compliance and CEM certification testing for a wide variety of industries including petrochemical, steel mills, electric utilities, cement plants, asphalt plants and general manufacturing plants. Mr. Goldfine is presently certified as a QSTI by the SES pursuant to the requirements of ASTM D7036-04.

ENVIRONMENTAL INC.

Test Program Qualifications

Robert Burton

Mr. Burton is a field technician specializing in sampling equipment preparation, maintenance and calibration, equipment setup, field sampling, sample recovery and post-test equipment clean up. Mr. Burton has 6 years of experience in conducting various source emission test programs. Mr. Burton is presently certified as a QI by the SES pursuant to the requirements of ASTM D7036-04.

Tim Martch

Mr. Martch is a field technician specializing in sampling equipment preparation, maintenance and calibration, equipment setup, field sampling, sample recovery and post-test equipment clean up.

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

LARRY GOLDFINE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 30TH DAY OF SEPTEMBER 2008 AND EFFECTIVE UNTIL SEPTEMBER 29TH, 2013

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

John R. Smith, QSTI/QSTO Review Board

APPLICATION NO. 2008-198

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

LARRY GOLDFINE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GASEOUS POLLUTANTS SOURCE SAMPLING METHODS

ISSUED THIS 30TH DAY OF SEPTEMBER 2008 AND EFFECTIVE UNTIL SEPTEMBER 29TH, 2013

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

John R. Smith, QSTI/QSTO Review Board

APPLICATION NO. 2008-198

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

LARRY GOLDFINE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

GASEOUS POLLUTANTS INSTRUMENTAL SAMPLING METHODS

ISSUED THIS 30TH DAY OF SEPTEMBER 2008 AND EFFECTIVE UNTIL SEPTEMBER 29TH, 2013

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pekalnis, QSTI/QSTO Review Board

John R. Smith, QSTI/QSTO Review Board

APPLICATION NO. 2008-198

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

STEVEN M. FLAHERTY

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 26TH DAY OF NOVEMBER 2008 AND EFFECTIVE UNTIL NOVEMBER 25TH, 2013

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

John R. Smith, QSTI/QSTO Review Board

APPLICATION NO. 2008-237

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

STEVEN M. FLAHERTY

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GASEOUS POLLUTANTS SOURCE SAMPLING METHODS

ISSUED THIS 26TH DAY OF NOVEMBER 2008 AND EFFECTIVE UNTIL NOVEMBER 25TH, 2013

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

John R. Smith, QSTI/QSTO Review Board

APPLICATION NO. 2008-237

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

STEVEN M. FLAHERTY

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

GASEOUS POLLUTANTS INSTRUMENTAL SAMPLING METHODS

ISSUED THIS 26TH DAY OF NOVEMBER 2008 AND EFFECTIVE UNTIL NOVEMBER 25H, 2013

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

John R. Smith, QSTI/QSTO Review Board

APPLICATION NO. 2008-237

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

STEVEN M. FLAHERTY

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

HAZARDOUS METALS MEASUREMENT SAMPLING METHODS

ISSUED THIS 18TH DAY OF OCTOBER 2011 AND EFFECTIVE UNTIL OCTOBER 17TH , 2016

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

LeRoy Owens, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Glenn C. England, QSTI/QSTO Review Board

APPLICATION NO. 2008-237

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

JEFF S. GOLDFINE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 16TH OF NOVEMBER 2010 AND EFFECTIVE UNTIL NOVEMBER 15TH, 2015

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

LeRoy Owens, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Karen D. Kajiya-Mills, QSTI/QSTO Review Board

Glenn C. England, QSTI/QSTO Review Board

APPLICATION NO. 2010-489

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

JEFF S. GOLDFINE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GASEOUS POLLUTANTS SOURCE SAMPLING METHODS

ISSUED THIS 16TH DAY OF NOVEMBER 2010 AND EFFECTIVE UNTIL NOVEMBER 15TH, 2015

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

LeRoy Owens, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Glenn C. England, QSTI/QSTO Review Board

APPLICATION NO. 2010-489

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

JEFF S. GOLDFINE

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

HAZARDOUS METALS MEASUREMENT SAMPLING METHODS

ISSUED THIS 29TH DAY OF NOVEMBER 2011 AND EFFECTIVE UNTIL NOVEMBER 28TH , 2016

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

LeRoy Owens, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Glenn C. England, QSTI/QSTO Review Board

APPLICATION NO. 2010-489