Alton Coal Development, LLC.

Summary of PM_{10} Data
Collected at Coal Hollow Mine, Utah
Annual Report, 2014

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Alton Coal Development
Coal Hollow
Project

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1.0 INTRODUCTION

This report summarizes measurements of Particulate Matter less than 10 microns nominal aerodynamic diameter (PM_{10}) collected and processed by Alton Coal Development, LLC, from the three monitoring stations located at the Coal Hollow Mine Facility in Alton, Utah. Monitoring for PM_{10} is a condition of the mines operating permit.

PM_{10} monitoring at the site consists of three BGI PQ200 PM_{10} monitors run by solar power. Figure 2 of this report shows the approximate locations of the monitoring locations. The BGI PQ200 monitors are EPA Reference Method monitors and are operated on the National Particulate 1-in-6 Monitoring Schedule. The data summarized herein covers the data collected during the year of 2014.

2.0 SITE LOCATION

The Coal Hollow Mine is located in Kane County, Utah, approximately three miles southeast of the town of Alton, Utah. Figure I on the following page gives an overview of the site location. Specifically the Coal Hollow Mine is located in Sections 19, 20, 29, and 30 of Township 39S, Range 5W; with an approximate facility location of:

Northing: 41401699 meters

Easting: 371534 meters

Universal Transverse Mercator (UTM) Datum NAD27, Zone 12

The two monitoring locations as depicted in Figure 2, are located in positions to collect both background and maximum PM10 concentrations. The background monitor has a manufactures serial #962, therefore this monitor will be referred as monitor 962A. The compliance monitor has a manufactures serial #963, therefore this monitor will be referred as monitor 963B. The co-located monitor has a manufactures serial #964, therefore this monitor will be referred as monitor 964C. The compliance monitor and the co-located monitor coordinates are 37° 24' 5.04" North Latitude, 112° 27' 20.91" West Longitude, WGS84 Datum. The background monitor coordinates are 37° 24' 21.96" North Latitude, 112° 25' 59.97" West Longitude, WGS84 Datum.

Figure 1 - Site Location Map

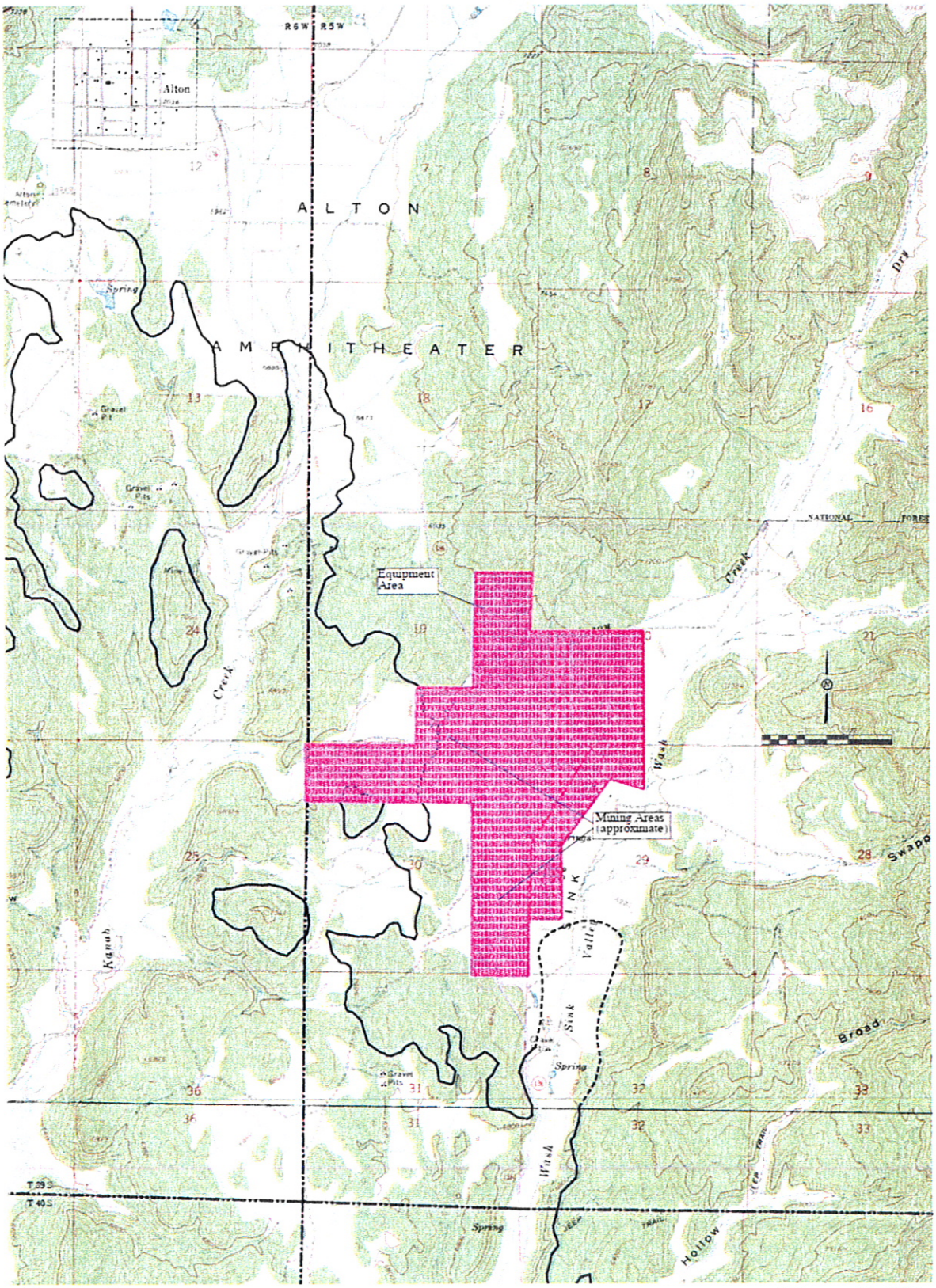


Figure 2 - Satellite View of Monitoring Locations

3.0 AIR QUALITY DATA SUMMARIES

A summary of the measured PM_{10} concentrations for the year are presented in Appendix B, and Field Data Sheets generated during the collection of each sample are presented in Appendix D. Measurements were collected during a 24-hour periods and represent the average PM10 concentration during the midnight to midnight data collection cycle. As required by the operating permit, duplicate measurements were made with Sampler #963B (designated as a compliance monitor) and Sampler #964C (designated as a co-located sampler). The quarterly mean PM_{10} concentration and the comparison of measured concentrations to standards are based on measurements from the primary Sampler #963B. If a measurement from Sampler #963B was missing or invalid, the measurement from the secondary Sampler #964C was used.

The highest 24-hour mean PM_{10} concentrations measured during the year from the two monitoring locations are summarized in Table I, Table II, and Table III. The three highest concentrations, # of valid samples, and the arithmetic mean concentrations from each of the sites are listed. All measured PM_{10} concentrations were below the 24-hour National Ambient Air Quality Standard (NAAQS) of 150 $\mu g/m^3$ with the exception of the sample date of June 10th. On June the 10th final reclamation (placement of subsoil and topsoil) was being completed in the near vicinity of the collocated monitors, the 963 B monitor had a PM_{10} concentration of 217.9 $\mu g/m^3$ and the 964 C monitor had a concentration of 172.8 $\mu g/m^3$. Data

for each monitor has been graphed and analyzed for 2014. These graphs are presented in Appendix B. PM10 pollution from an active mine site relies greatly on current weather conditions and the persistence of the operator to control particulate matter.

At this time no changes for future monitoring are recommended. The location of the compliance and collocated monitors are and will remain in the area of highest PM10 concentrations for the next year of mining.

Table I - Summary of Measured PM_{10} Concentrations ($\mu g/m^3$)
Background Monitor - 962A

RANK	DATE	PM_{10} CONCENTRATION
Highest	4/23/2014	38.0
2nd Highest	7/04/2014	23.9
Annual Mean	1/1/14-12/31/14 (60 valid samples)	4.0

Table II - Summary of Measured PM_{10} Concentrations ($\mu g/m^3$)
Compliance Monitor - 963B

RANK	DATE	PM_{10} CONCENTRATION
Highest	6/10/2014	217.9
2nd Highest	7/22/2014	135.8
Annual Mean	1/1/14-12/31/14 (57 valid samples)	23.1

Table IIII - Summary of Measured PM_{10} Concentrations ($\mu g/m^3$)
Compliance Monitor – 964C

RANK	DATE	PM_{10} CONCENTRATION
Highest	6/10/2014	172.8
2nd Highest	10/20/2014	137.1
Annual Mean	1/1/14-12/31/14 (49 valid samples)	29.6

Table IV – Mean Annual Wind Speed

	Annual 2013
Mean Wind Speed (m/s)	2.61

4.0 DATA RECOVERY AND QUALITY ASSURANCE

4.1 Data Recovery

Monitor 962A

Monitor 962A collected 60 of the 61 samples during the year. The percent recovery for 2014 is 98%. The monitor, for the sample date of June 3rd, overran the stop time programed. For the sample date of July 28th the monitor was programed for the wrong stop date and continued to run until halted by the operator.

Monitor 963B

Monitor 963B collected 57 of the 61 samples during the year. The percent recovery for 2014 is 93%. For the sample date of Mar. 24th the monitor was programed for the wrong run date and did not run. For the sample date of Jun. 4th the monitor was programed for the wrong stop date and continued to run until halted by the operator. For the sample date of July 4th the monitor filter chamber was closed improperly and the sample was voided. For the sample date of Sept. 8th the monitor was not programed, therefore it did not run.

Monitor 964C

Monitor 964C collected 49 of the 61 samples during the year. The percent recovery 2013 is 80%. For the sample date of July 22nd the monitor ran for 22 hours and shut down. For the sample date of Aug. 3rd the monitor ran twice. For the sample date of Aug. 9th the monitor did not run. For the sample date of Aug. 21st the monitor overran the stop time and was halted by the operator. For the sample date of Oct 2nd the monitor ran 5 minutes and shut down with Q and T errors. For the sample date of Oct 15th the monitor ran 3 seconds and shut down with Q and T errors. For the sample date of Nov 7th the monitor ran 3 seconds and shut down with Q and T errors. For the sample date of Nov 19nd the monitor ran 3 seconds and shut down with Q and T errors. For the sample date of Nov 25th the monitor ran 3 seconds. For the sample date of Dec 2nd the monitor ran for 3 seconds and shut down with Q and T errors. For the sample date of Dec 25th the monitor ran for 12:24 hours and shut down with "Max Load

Exceeded". For the sample date of Dec 31st the monitor ran 3 seconds and shut down with Q and T errors.

The PM_{10} data recoveries for the three monitoring stations are presented below:

Table V - Summary of Data Recovery

SAMPLER	POSSIBLE SAMPLES	VALID SAMPLES	PERCENT DATA RECOVERY
962A	61	60	98%
963B	61	57	93%
964C	61	49	80%

4.2 Quality Assurance

Quality assurance procedures utilized to verify the integrity of the measured PM_{10} data included the following:

1. Review of PM_{10} precision measurements based upon duplicate, collocated measurements.
2. Independent quarterly audits of the PM_{10} samplers.
3. Monthly zero and single point flow rate checks of the PM_{10} samplers.

4.2.1 Precision of PM_{10} Measurements

The precision of the PM_{10} measurements was determined from the duplicate samples collected from the collocated BGI PQ200 Monitors 963B and 964C. As recommended in *40 CFR, Part 58*, Appendix A, Section 5.3.1, PM_{10} precision checks are reported for instances when the concentrations for duplicate samples both exceed 3 $\mu g/m^3$. Duplicate samples that did not meet this condition were omitted for the purposes of the precision checks. Appendix C, of this report summarizes precision calculations between the compliance monitor and the co-located monitor. Monthly flow rate verification data is also summarized in Appendix C.

Precision calculations were developed based on 38 valid pairs of co-located monitoring data during the year. Single point precision based on *40 CFR, Part 58*, Appendix A Equation 10 ranged from 33.6% to -55.1% with the half of precision values occurring in the 10% to -10% range. The aggregate coefficient of variability (CV) calculated in accordance with *40 CFR, Part 58*, Appendix A Equation 11 is 13.77%. This value is above the 10% goal for aggregate CV. The value for the year CV was significantly impacted by the three outlier values of -26.0%, 55.1% and 33.6%.

4.2.2 Audit Results

The accuracy of the PM_{10} sampler flows for each Quarter was verified by performance audits conducted by Air Resource Specialist on February 5, 2014, May 6, 2014, August 13, 2014 and November 11, 2014. A copy of the audit reports are presented in Appendix E and are summarized in Table VI. The audit results indicate that the three samplers were operating properly throughout the year.

Table VI - Audit Summary

	SAMPLER	AUDIT % DIFFERENCE	LIMIT*	DESIGN % DIFFERENCE	LIMIT*
1st Quarter	962A	-5.7	±4%	6.2	± 5%
	963B	-1.4	±4%	1.3	± 5%
	964C	1.6	±4%	-1.4	± 5%
2nd Quarter	962A	-5.4	±4%	6.0	± 5%
	963B	-0.2	±4%	0.2	± 5%
	964C	4.7	±4%	-4.3	± 5%
3rd Quarter	962A	5.1	±4%	-4.7	± 5%
	963B	-0.2	±4%	0.5	± 5%
	964C	1.3	±4%	-1.1	± 5%
4th Quarter	962A	4.4	±4%	-4.0	± 5%
	963B	-0.1	±4%	0.5	± 5%

	964C	-3.4	±4%	3.7	± 5%
	*Values between ± 7% and ± 10% require recalibration but no data are invalidated.				

4.2.3 Zero and Single Point Flow Rate Checks

Zero and single-point flow rate verifications are performed by a site technician on a monthly basis. The data was then input into a statistical calculator to calculate percent difference and bias between each of the monitors and the monthly single point flow rate measured by a NIST traceable calibration orifice. The calculator used is called the "Data Assessment Statistical Calculator" DASC Tool. DASC was developed for the data user community and can be found in the Precision and Accuracy Reporting System within the Quality Assurance section of EPA's Ambient Monitoring Technology Information System. This data is presented in Appendix C of this report.

APPENDIX A

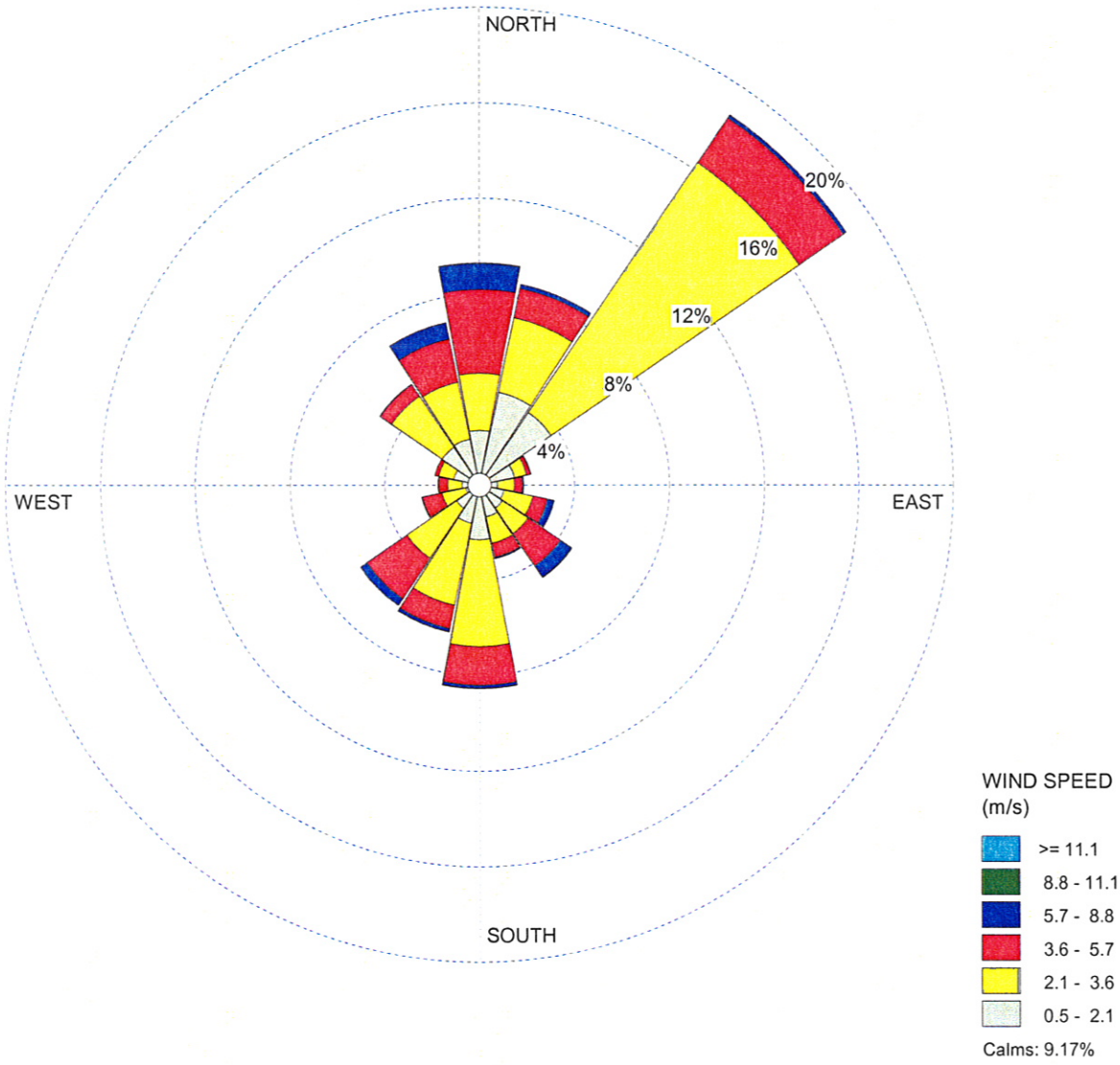
Windrose

WIND ROSE PLOT:

Alton Coal Development , Alton, Utah
2014 Annual

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 1/1/2014 - 00:00 **End Date: 12/31/2014 - 23:00**	**Alton Coal Development, LLC - Coal Hollow Mine**	
		MODELER: **K. Nicholes**	
	CALM WINDS: **9.17%**	TOTAL COUNT: **8760 hrs.**	
	AVG. WIND SPEED: **2.61 m/s**	DATE: **1/8/2015**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Station ID: 1 Run ID:
Start Date: 1/1/2014 - 00:00
End Date: 12/31/2014 - 23:00

Frequency Distribution
(Count)

Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	200	209	307	95	2	0	813
11.25-33.75	347	278	108	17	0	0	750
33.75-56.25	320	1106	198	13	0	0	1637
56.25-78.75	133	45	14	3	0	0	195
78.75-101.25	66	62	30	6	0	0	164
101.25-123.75	93	109	54	25	0	0	281
123.75-146.25	103	114	143	51	1	0	412
146.25-168.75	121	99	51	6	0	0	277
168.75-191.25	201	392	140	12	1	0	746
191.25-213.75	144	307	88	13	0	0	552
213.75-236.25	104	222	179	29	0	0	534
236.25-258.75	53	89	75	3	0	0	220
258.75-281.25	65	53	34	2	0	0	154
281.25-303.75	98	56	15	0	0	0	169
303.75-326.25	168	226	50	3	0	0	447
326.25-348.75	172	213	161	60	0	0	606
Total	2388	3580	1647	338	4	0	8760

Frequency of Calm Winds: 803
Average Wind Speed: 2.61 m/s

Station ID: 1
Start Date: 1/1/2014 - 00:00
End Date: 12/31/2014 - 23:00

Run ID:

Frequency Distribution
(Normalized)

Wind Direction (Blowing From) / Wind Speed (m/s)

	0.5 - 2.1	2.1 - 3.6	3.6 - 5.7	5.7 - 8.8	8.8 - 11.1	>= 11.1	Total
348.75-11.25	0.022831	0.023858	0.035046	0.010845	0.000228	0.000000	0.092808
11.25-33.75	0.039612	0.031735	0.012329	0.001941	0.000000	0.000000	0.085616
33.75-56.25	0.036530	0.126256	0.022603	0.001484	0.000000	0.000000	0.186872
56.25-78.75	0.015183	0.005137	0.001598	0.000342	0.000000	0.000000	0.022260
78.75-101.25	0.007534	0.007078	0.003425	0.000685	0.000000	0.000000	0.018721
101.25-123.75	0.010616	0.012443	0.006164	0.002854	0.000000	0.000000	0.032078
123.75-146.25	0.011758	0.013014	0.016324	0.005822	0.000114	0.000000	0.047032
146.25-168.75	0.013813	0.011301	0.005822	0.000685	0.000000	0.000000	0.031621
168.75-191.25	0.022945	0.044749	0.015982	0.001370	0.000114	0.000000	0.085160
191.25-213.75	0.016438	0.035046	0.010046	0.001484	0.000000	0.000000	0.063014
213.75-236.25	0.011872	0.025342	0.020434	0.003311	0.000000	0.000000	0.060959
236.25-258.75	0.006050	0.010160	0.008562	0.000342	0.000000	0.000000	0.025114
258.75-281.25	0.007420	0.006050	0.003881	0.000228	0.000000	0.000000	0.017580
281.25-303.75	0.011187	0.006393	0.001712	0.000000	0.000000	0.000000	0.019292
303.75-326.25	0.019178	0.025799	0.005708	0.000342	0.000000	0.000000	0.051027
326.25-348.75	0.019635	0.024315	0.018379	0.006849	0.000000	0.000000	0.069178
Total	0.272603	0.408676	0.188014	0.038584	0.000457	0.000000	0.908333

Frequency of Calm Winds: 9.17%
Average Wind Speed: 2.61 m/s

APPENDIX B

Listing of PM_{10} Concentrations

Background Monitor 962A

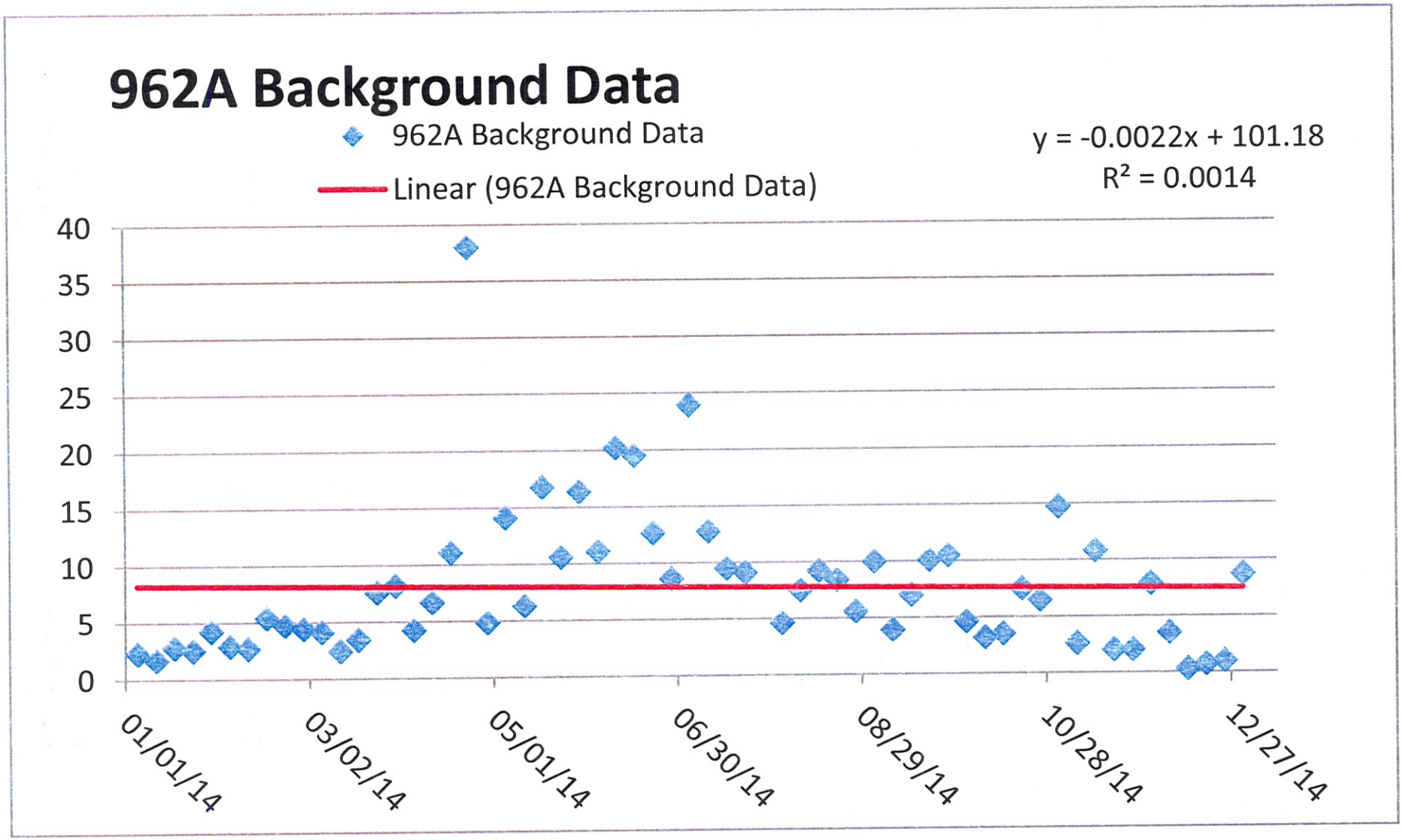
PM_{10} Sampler Summary

January 1, 2014 - December 31, 2014

Network: Alton Coal Development, LLC
Site: Coal Hollow Mine
Sampler ID: 962A **AQS ID:**
Sampler Type: BGI FRM Single

Date	Filter ID	Concentration (µg/m3) LTP	Concentration (µg/m3) STP	Sample Period (hr:min)	Sample Volume (m3)	Std Volume (m3)	Mass (mg) Tare	Mass (mg) Gross	Mass (mg) Net	Flag	Comments
01/05/14	P0805414	2.0	2.3	23:59	24.0	20.5	139.519	139.566	0.047		
01/11/14	P0805417	1.4	1.7	23:59	24.0	20.0	139.703	139.737	0.034		
01/17/14	P0807313	2.4	2.8	23:59	24.0	20.2	141.860	141.917	0.057		
01/23/14	P0807316	2.1	2.5	23:59	24.0	20.2	140.232	140.283	0.051		
01/29/14	P0807432	3.5	4.2	23:59	24.0	20.0	137.444	137.527	0.083		
02/04/14	P0807435	2.5	2.9	23:59	24.0	20.6	138.789	138.849	0.060		
02/10/14	P0807867	2.2	2.7	24:00	24.0	20.0	139.646	139.699	0.053		
02/16/14	P0807870	4.5	5.4	23:59	24.0	19.7	140.629	140.736	0.107		
02/22/14	P0807873	3.9	4.7	23:59	24.0	19.9	142.897	142.990	0.093		
02/28/14	P0840031	3.7	4.4	23:59	24.0	19.9	139.917	140.005	0.088		
03/06/14	P0840034	3.4	4.1	23:59	24.0	19.8	140.064	140.146	0.082		
03/12/14	P0840383	2.0	2.4	23:59	24.0	20.1	141.604	141.652	0.048		
03/18/14	P0840386	2.8	3.4	23:59	24.0	20.1	141.484	141.552	0.068		
03/24/14	P0840389	6.2	7.6	23:59	24.0	19.8	142.120	142.270	0.150		
03/30/14	P0840710	6.7	8.2	23:59	24.0	19.8	140.692	140.854	0.162		
04/05/14	P0840712	3.5	4.2	23:59	24.0	19.8	142.265	142.349	0.084		
04/11/14	P0840715	5.4	6.7	23:59	24.0	19.4	140.516	140.645	0.129		
04/17/14	P0841221	9.0	11.1	23:59	24.0	19.5	143.625	143.841	0.216		
04/23/14	P0989468	31.1	38.0	23:59	24.0	19.6	144.223	144.970	0.747		
04/29/14	P0989472	4.0	4.8	23:59	24.0	20.1	143.753	143.849	0.096		
05/05/14	P0795335	11.3	14.1	23:59	24.0	19.2	142.218	142.490	0.272		
05/11/14	P0795338	5.2	6.3	23:59	24.0	19.8	141.607	141.732	0.125		
05/17/14	P0795341	13.4	16.8	23:59	24.0	19.1	141.612	141.933	0.321		
05/23/14	P0796223	8.7	10.6	23:59	24.0	19.6	140.382	140.590	0.208		
05/29/14	P0796226	13.0	16.4	23:59	24.0	19.1	140.459	140.772	0.313		
06/04/14	P0796584	8.8	11.1	23:59	24.0	19.0	140.158	140.369	0.211		
06/10/14	P0796588	15.9	20.2	23:59	24.0	18.8	140.502	140.883	0.381		
06/16/14	P0989779	15.3	19.5	23:59	24.0	18.9	138.300	138.669	0.369		
06/22/14	P0989782	9.9	12.7	23:59	24.0	18.9	137.910	138.149	0.239		
06/28/14	P0989785	6.7	8.6	23:59	24.0	18.9	139.230	139.392	0.162		
07/04/14	P0901507	19.0	23.9	23:59	24.0	19.1	143.545	144.002	0.457		
07/10/14	P0901510	10.1	12.8	23:59	24.0	19.1	145.495	145.739	0.244		
07/16/14	P0994214	7.4	9.5	23:59	24.0	18.8	141.008	141.187	0.179		
07/22/14	P0994217	7.2	9.1	23:59	24.0	18.9	143.841	144.013	0.172		
07/28/14	P0995490	Invalid - AG	Invalid - AG	37:26	37.5	29.9	141.441	141.784	0.343	SP	
08/03/14	P0995493	3.7	4.6	23:59	24.0	19.3	138.942	139.031	0.089		
08/09/14	P0995496	5.9	7.5	23:59	24.0	19.0	142.684	142.826	0.142		
08/15/14	P0995946	7.3	9.2	24:00	24.0	19.1	142.631	142.807	0.176		
08/21/14	P0995950	6.7	8.4	23:59	24.0	19.3	144.511	144.673	0.162		
08/27/14	P2913151	4.5	5.6	23:59	24.0	19.4	360.068	360.177	0.109		
09/02/14	P2913154	7.9	10.0	23:59	24.0	18.9	360.128	360.318	0.190		
09/08/14	P2913467	3.1	3.9	23:59	24.0	19.2	363.659	363.733	0.074		
09/14/14	P2913470	5.6	7.0	23:59	24.0	19.1	366.431	366.565	0.134		
09/20/14	P2913473	7.9	10.1	23:59	24.0	19.0	356.389	356.580	0.191		
09/26/14	P2913809	8.3	10.5	23:59	24.0	19.1	375.586	375.786	0.200		
10/02/14	P2913813	3.8	4.6	23:59	24.0	19.8	362.660	362.752	0.092		
10/08/14	P2914807	2.6	3.2	23:59	24.0	19.3	363.345	363.408	0.063		
10/14/14	P2914810	2.8	3.5	23:59	24.0	19.5	364.271	364.340	0.069		
10/20/14	P2914813	6.0	7.5	23:59	24.0	19.4	375.581	375.727	0.146		
10/26/14	P2912834	5.3	6.5	23:59	24.0	19.5	378.433	378.561	0.128		
11/01/14	P2912837	11.8	14.7	23:59	24.0	19.4	372.076	372.362	0.286		
11/07/14	P2912839	2.2	2.6	23:59	24.0	19.7	371.390	371.443	0.053		
11/13/14	P2915181	8.9	10.8	24:00	24.0	19.8	370.710	370.926	0.216		
11/19/14	P2915185	1.7	2.0	23:59	24.0	20.1	363.247	363.289	0.042		
11/25/14	P2915501	1.7	2.0	23:59	24.0	20.5	359.657	359.698	0.041		
12/01/14	P2915504	6.6	7.9	23:59	24.0	20.2	363.763	363.924	0.161		
12/07/14	P2915814	2.9	3.5	23:59	24.0	20.2	367.760	367.831	0.071		
12/13/14	P2915817	0.2	0.3	23:59	24.0	20.2	365.081	365.088	0.007		
12/19/14	P2915822	0.6	0.7	23:59	24.0	20.5	364.551	364.567	0.016		
12/25/14	P2916173	0.8	1.0	23:59	24.0	20.1	367.120	367.141	0.021		
12/31/14	P2916176	7.4	8.7	23:59	24.0	20.6	365.826	366.006	0.180		
01/20/14	P0807319		Field Blank				141.534	141.548	0.014		
03/07/14	P0840037		Field Blank				139.907	139.911	0.004		
04/18/14	P0841224		Field Blank				142.995	143.010	0.015		
06/05/14	P0796587		Field Blank				138.465	138.476	0.011		
07/24/14	P0994220		Field Blank				143.904	143.916	0.012		
09/04/14	P2913157		Field Blank				370.105	370.110	0.005		
09/29/14	P2913812		Field Blank				373.513	373.517	0.004		
11/15/14	P2915184		Field Blank				365.040	365.044	0.004		

# Valid	Recovery	Average	St. Dev.	Max	Min
60	98%	4.0	1.9	8.2	1.7


962A Background Data
962A Background Data
Linear (962A Background Data)
y = -0.0022x + 101.18
R² = 0.0014
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35
30
25
20
15
10
5
0
01/01/14
03/02/14
05/01/14
06/30/14
08/29/14
10/28/14
12/27/14

Compliance Monitor 963B

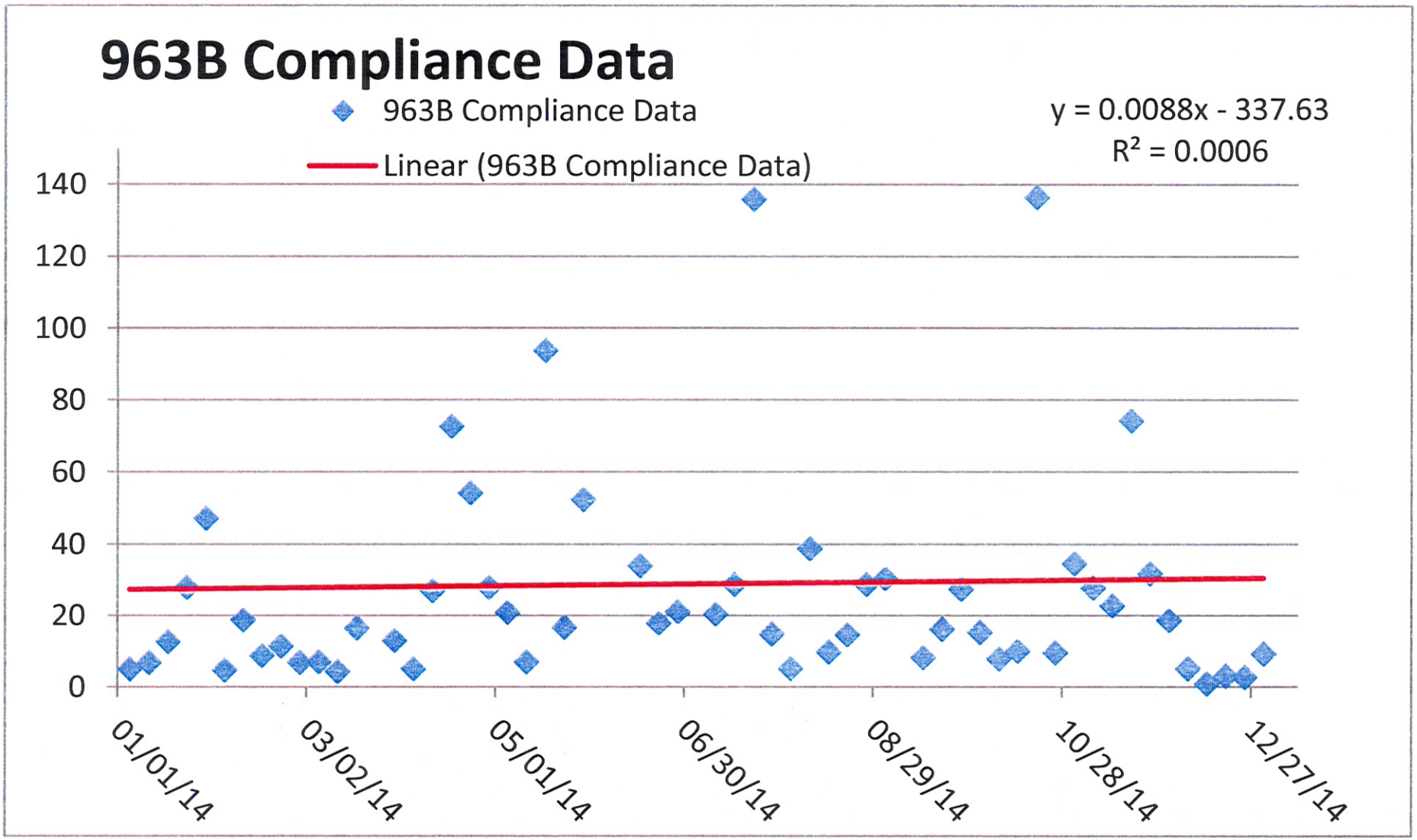
PM_{10} Sampler Summary

January 1, 2014 - December 31, 2014

Network: Alton Coal Development, LLC
Site: Coal Hollow Mine
Sampler ID: 963B **AQS ID:**
Sampler Type: BGI FRM Single

Date	Filter ID	Concentration (µg/m3) LTP	Concentration (µg/m3) STP	Sample Period (hr:min)	Sample Volume (m3)	Std Volume (m3)	Mass (mg) Tare	Gross	Net	Flag	Comments
01/05/14	P0805415	4.2	4.9	23:59	24.0	20.7	141.285	141.387	0.102		
01/11/14	P0805418	5.7	6.8	23:59	24.0	20.2	137.752	137.890	0.138		
01/17/14	P0807314	10.7	12.6	23:59	24.0	20.3	139.747	140.004	0.257		
01/23/14	P0807317	23.6	27.8	23:59	24.0	20.4	140.490	141.057	0.567		
01/29/14	P0807433	39.6	47.2	23:59	24.0	20.2	137.486	138.437	0.951		
02/04/14	P0807436	4.0	4.7	23:59	24.0	20.7	137.788	137.885	0.097		
02/10/14	P0807868	15.7	18.7	24:00	24.0	20.1	141.852	142.229	0.377		
02/16/14	P0807871	7.2	8.7	23:59	24.0	19.9	139.215	139.387	0.172		
02/22/14	P0807874	9.5	11.4	23:59	24.0	20.0	138.812	139.041	0.229		
02/28/14	P0840032	5.7	6.8	23:59	24.0	20.1	141.091	141.228	0.137		
03/06/14	P0840035	5.8	7.0	23:59	24.0	19.9	139.584	139.724	0.140		
03/12/14	P0840384	3.6	4.2	23:59	24.0	20.3	142.600	142.686	0.086		
03/18/14	P0840387	13.9	16.4	23:59	24.0	20.3	140.680	141.013	0.333		
03/24/14		Invalid - AF	Invalid - AF								
03/30/14	P0840708	10.8	13.0	23:59	24.0	19.9	139.722	139.982	0.260		
04/05/14	P0840713	4.3	5.1	23:59	24.0	20.0	141.369	141.472	0.103		
04/11/14	P0841219	21.9	26.9	23:59	24.0	19.6	141.163	141.690	0.527		
04/17/14	P0841222	59.5	72.7	23:59	24.0	19.6	144.787	146.216	1.429		
04/23/14	P0989470	44.6	54.2	23:59	24.0	19.8	146.052	147.123	1.071		
04/29/14	P0989473	23.4	27.8	23:59	24.0	20.2	145.029	145.591	0.562		
05/05/14	P0795336	16.8	20.8	23:59	24.0	19.3	141.442	141.845	0.403		
05/11/14	P0795339	5.7	6.9	23:59	24.0	19.9	142.880	143.017	0.137		
05/17/14	P0795342	75.0	93.7	23:59	24.0	19.2	141.113	142.916	1.803		
05/23/14	P0796224	13.6	16.6	23:59	24.0	19.7	140.994	141.322	0.328		
05/29/14	P0796228	41.7	52.3	23:59	24.0	19.2	140.408	141.410	1.002		
06/04/14	P0796585	Invalid - AG	Invalid - AG	35:16	35.3	28.4	140.803	143.843	3.040	SP	
06/10/14	P0796589	172.0	217.9	23:59	24.0	19.0	142.690	146.823	4.133		
06/16/14	P0989780	26.9	34.0	23:59	24.0	19.0	137.532	138.178	0.646		
06/22/14	P0989783	14.1	17.8	23:59	24.0	19.0	138.333	138.671	0.338		
06/28/14	P0989786	16.6	21.0	23:59	24.0	19.0	139.812	140.212	0.400		
07/04/14	P0901508	Invalid - AL	Invalid - AL	23:59	24.0	19.2	143.308	143.332	0.024		Did not run
07/10/14	P0901511	16.3	20.4	23:59	24.0	19.2	146.183	146.574	0.391		
07/16/14	P0994215	22.7	28.8	23:59	24.0	19.0	143.110	143.656	0.546		
07/22/14	P0994218	107.8	135.8	23:59	24.0	19.1	140.933	143.523	2.590		
07/28/14	P0995491	11.8	14.7	23:59	24.0	19.2	140.617	140.900	0.283		
08/03/14	P0995494	4.1	5.0	23:59	24.0	19.5	141.641	141.739	0.098		
08/09/14	P0995497	30.9	38.8	23:59	24.0	19.2	143.624	144.368	0.744		
08/15/14	P0995948	7.8	9.7	24:00	24.0	19.2	143.354	143.541	0.187		
08/21/14	P0996001	11.7	14.5	23:59	24.0	19.4	136.942	137.223	0.281		
08/27/14	P2913152	23.4	28.8	23:59	24.0	19.6	359.672	360.235	0.563		
09/02/14	P2913155	24.1	30.3	23:59	24.0	19.1	360.410	360.989	0.579		
09/08/14	P2913468	Invalid - BJ	Invalid - BJ	23:59	24.0		365.715	365.731	0.016		Did not run
09/14/14	P2913471	6.5	8.1	23:59	24.0	19.2	366.741	366.897	0.156		
09/20/14	P2913474	12.8	16.0	23:59	24.0	19.2	360.811	361.118	0.307		
09/26/14	P2913810	21.9	27.4	23:59	24.0	19.2	365.158	365.684	0.526		
10/02/14	P2913814	12.5	15.1	23:59	24.0	20.0	359.098	359.400	0.302		
10/08/14	P2914808	6.3	7.8	23:59	24.0	19.4	369.660	369.813	0.153		
10/14/14	P2914811	8.1	9.9	23:59	24.0	19.8	371.964	372.161	0.197		
10/20/14	P2914814	111.0	136.3	23:59	24.0	19.6	371.031	373.700	2.669		
10/26/14	P2912835	7.7	9.5	23:59	24.0	19.6	383.195	383.382	0.187		
11/01/14	P2912838	28.1	34.5	23:59	24.0	19.6	371.772	372.449	0.677		
11/07/14	P2912840	22.8	27.7	23:59	24.0	19.8	380.153	380.703	0.550		
11/13/14	P2915182	18.9	22.8	24:00	24.0	20.0	368.474	368.930	0.456		
11/19/14	P2915186	62.6	74.1	23:59	24.0	20.3	372.355	373.860	1.505		
11/25/14	P2915502	27.3	31.7	23:59	24.0	20.7	358.394	359.051	0.657		
12/01/14	P2915505	15.7	18.6	23:59	24.0	20.3	364.204	364.583	0.379		
12/07/14	P2915815	4.2	5.0	23:59	24.0	20.4	365.986	366.088	0.102		
12/13/14	P2915818	0.7	0.8	23:59	24.0	20.4	370.238	370.255	0.017		
12/19/14	P2915820	2.6	3.0	23:59	24.0	20.7	369.334	369.397	0.063		
12/25/14	P2916171	2.2	2.7	23:59	24.0	20.3	363.726	363.781	0.055		
12/31/14	P2916174	7.9	9.1	23:59	24.0	20.9	369.106	369.297	0.191		
01/30/14	P0807438		Field Blank				137.526	137.537	0.011		
03/21/14	P0840707		Field Blank				139.707	139.707	0.000		
04/07/14	P0841218		Field Blank				143.416	143.423	0.007		
04/18/14	P0989469		Field Blank				142.886	142.896	0.010		
05/27/14	P0796227		Field Blank				142.112	142.136	0.024		
08/11/14	P0995947		Field Blank				143.305	143.325	0.020		
11/26/14	P2915507		Field Blank				363.951	363.967	0.016		

# Valid	Recovery	Average	St. Dev.	Max	Min
57	93%	28.9	38.1	217.9	0.8


963B Compliance Data
963B Compliance Data
Linear (963B Compliance Data)
y = 0.0088x - 337.63
R² = 0.0006
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120
100
80
60
40
20
0
01/01/14
03/02/14
05/01/14
06/30/14
08/29/14
10/28/14
12/27/14

Collocated Monitor 964C

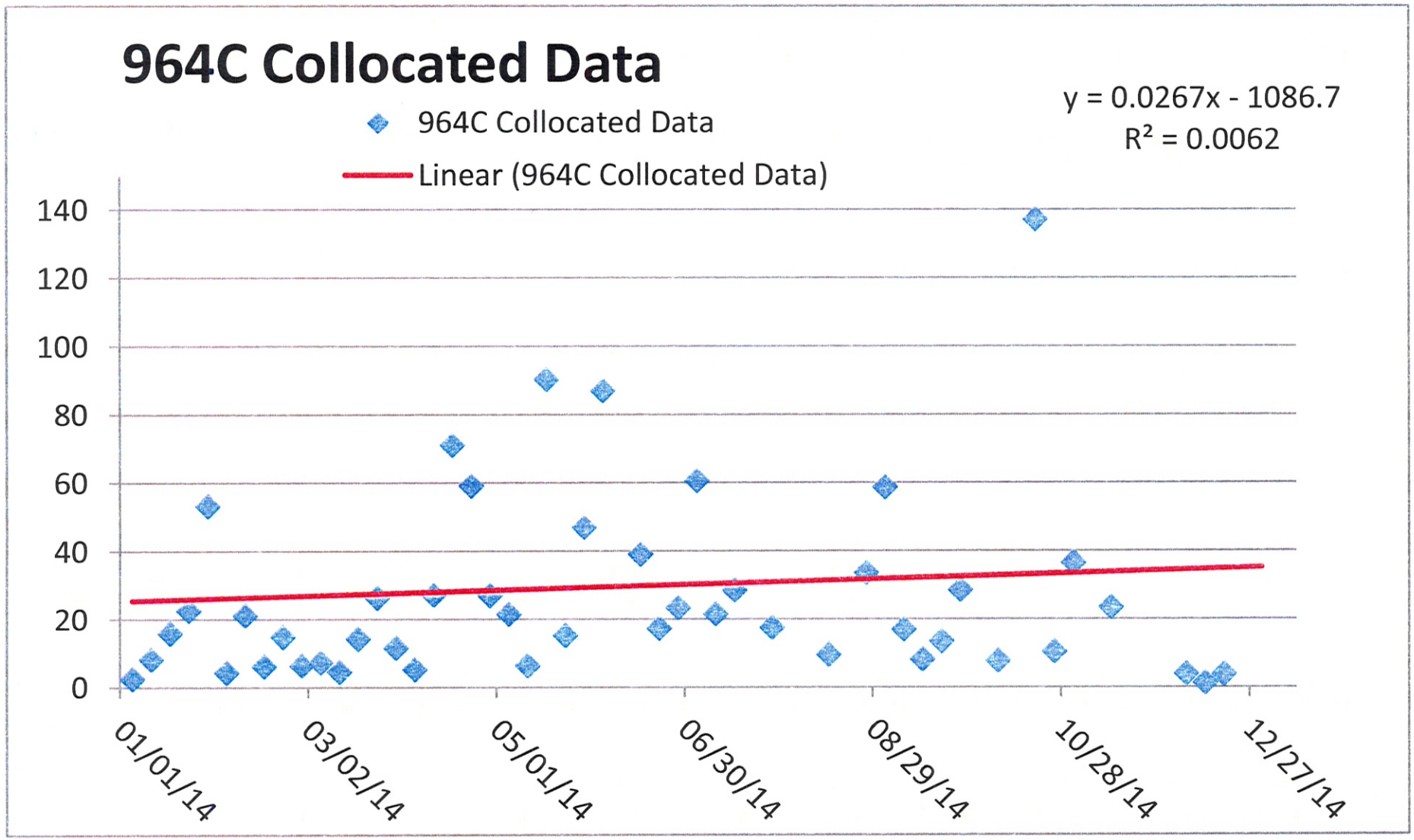
PM_{10} Sampler Summary

January 1, 2014 - December 31, 2014

Network: Alton Coal Development, LLC
Site: Coal Hollow Mine
Sampler ID: 964C **AQS ID:**
Sampler Type: BGI FRM Single

Date	Filter ID	Concentration (µg/m3) LTP	Concentration (µg/m3) STP	Sample Period (hr:min)	Sample Volume (m3)	Std Volume (m3)	Mass (mg) Tare	Gross	Net	Flag	Comments
01/05/14	P0805416	2.2	2.5	23:59	24.0	20.8	144.493	144.545	0.052		
01/11/14	P0805419	6.9	8.2	23:59	24.0	20.3	138.601	138.767	0.166		
01/17/14	P0807315	13.5	15.9	23:59	24.0	20.4	139.788	140.112	0.324		
01/23/14	P0807318	19.2	22.5	23:59	24.0	20.5	142.054	142.515	0.461		
01/29/14	P0807434	44.8	53.2	23:59	24.0	20.2	137.187	138.263	1.076		
02/04/14	P0807437	3.7	4.3	24:00	24.0	20.8	139.321	139.410	0.089		
02/10/14	P0807869	17.7	21.1	24:00	24.0	20.2	140.565	140.991	0.426		
02/16/14	P0807872	5.2	6.2	24:00	24.0	19.9	140.494	140.618	0.124		
02/22/14	P0807875	12.4	14.8	23:59	24.0	20.1	139.659	139.957	0.298		
02/28/14	P0840033	5.4	6.5	23:59	24.0	20.1	141.316	141.446	0.130		
03/06/14	P0840036	6.1	7.3	23:59	24.0	20.0	141.481	141.628	0.147		
03/12/14	P0840385	3.9	4.6	23:59	24.0	20.4	141.624	141.717	0.093		
03/18/14	P0840388	12.1	14.2	23:59	24.0	20.4	142.471	142.761	0.290		
03/24/14	P0840709	21.9	26.3	23:59	24.0	20.0	140.010	140.536	0.526		
03/30/14	P0840711	9.6	11.6	23:59	24.0	20.0	139.234	139.465	0.231		
04/05/14	P0840714	4.5	5.3	23:59	24.0	20.1	140.727	140.834	0.107		
04/11/14	P0841220	22.3	27.2	23:59	24.0	19.6	145.101	145.636	0.535		
04/17/14	P0841223	58.3	71.1	23:59	24.0	19.7	145.115	146.515	1.400		
04/23/14	P0989471	48.6	59.0	23:59	24.0	19.8	146.305	147.474	1.169		
04/29/14	P0989474	22.7	26.9	23:59	24.0	20.3	146.855	147.400	0.545		
05/05/14	P0795337	17.3	21.5	23:59	24.0	19.4	142.747	143.163	0.416		
05/11/14	P0795340	5.3	6.3	23:59	24.0	20.0	142.297	142.424	0.127		
05/17/14	P0795343	72.5	90.3	23:59	24.0	19.3	141.833	143.576	1.743		
05/23/14	P0796225	12.4	15.1	23:59	24.0	19.7	141.634	141.933	0.299		
05/29/14	P0796229	37.5	46.9	23:59	24.0	19.2	142.421	143.321	0.900		
06/04/14	P0796586	69.6	87.0	23:59	24.0	19.2	142.246	143.920	1.674		
06/10/14	P0796590	136.8	172.8	23:59	24.0	19.0	139.801	143.089	3.288		
06/16/14	P0989781	31.0	39.0	23:59	24.0	19.1	140.016	140.761	0.745		
06/22/14	P0989784	13.6	17.2	23:59	24.0	19.1	139.794	140.121	0.327		
06/28/14	P0989787	18.5	23.3	23:59	24.0	19.1	140.948	141.393	0.445		
07/04/14	P0901509	48.5	60.5	23:59	24.0	19.3	140.808	141.974	1.166		
07/10/14	P0901513	17.1	21.4	23:59	24.0	19.2	144.822	145.234	0.412		
07/16/14	P0994216	22.6	28.5	23:59	24.0	19.0	141.754	142.297	0.543		
07/22/14	P0994219	Invalid - AG	Invalid - AG	22:30	22.5	17.9	143.636	145.989	2.353	SP	
07/28/14	P0995492	13.9	17.4	23:59	24.0	19.3	143.268	143.603	0.335		
08/03/14	P0995495	Invalid - AG	Invalid - AG				139.612	140.345	0.733	SP	Ran twice
08/09/14	P0995498	Invalid - AG	Invalid - AG				144.713	144.716	0.003	SP	Did not run
08/15/14	P0995949	7.7	9.6	24:00	24.0	19.2	141.498	141.683	0.185		
08/21/14	P0996002	Invalid - AG	Invalid - AG	39:07	39.2	31.8	139.981	140.322	0.341	SP	Over ran sample time
08/27/14	P2913153	27.4	33.6	23:59	24.0	19.6	366.675	367.333	0.658		
09/02/14	P2913156	46.7	58.6	23:59	24.0	19.2	364.507	365.629	1.122		
09/08/14	P2913469	13.6	16.8	23:59	24.0	19.4	363.487	363.813	0.326		
09/14/14	P2913472	6.5	8.1	23:59	24.0	19.3	367.482	367.638	0.156		
09/20/14	P2913475	10.8	13.5	23:59	24.0	19.2	363.358	363.617	0.259		
09/26/14	P2913811	22.8	28.5	23:59	24.0	19.3	369.364	369.913	0.549		
10/02/14	P2913815	Invalid - AG	Invalid - AG	5:07	5.1	4.3	363.901	363.965	0.064	SP	Max load exceeded
10/08/14	P2914809	6.3	7.8	23:59	24.0	19.5	361.361	361.513	0.152		
10/14/14	P2914812	Invalid - AG	Invalid - AG	0:03	0.0	0.0	374.665	374.671	0.006	SP	
10/20/14	P2914815	112.0	137.1	23:59	24.0	19.6	367.542	370.236	2.694		
10/26/14	P2912836	8.5	10.4	23:59	24.0	19.6	372.915	373.120	0.205		
11/01/14	P2912842	29.7	36.4	23:59	24.0	19.6	372.053	372.769	0.716		
11/07/14	P2912841	Invalid - AN	Invalid - AN	0:03	0.0	0.0	368.165	368.173	0.008	SP	
11/13/14	P2915183	19.5	23.4	24:00	24.0	20.0	371.151	371.621	0.470		
11/19/14	P2915187	Invalid - AN	Invalid - AN	0:03	0.0	0.0	368.213	368.238	0.025	SP	
11/25/14	P2915503	Invalid - AN	Invalid - AN	0:03	0.0	0.0	367.079	367.108	0.029	SP	
12/01/14	P2915506	Invalid - AN	Invalid - AN	0:03	0.0	0.0	366.620	366.638	0.018	SP	
12/07/14	P2915816	3.3	3.9	23:59	24.0	20.4	368.889	368.970	0.081		
12/13/14	P2915819	1.0	1.2	23:59	24.0	20.5	363.522	363.548	0.026		
12/19/14	P2916170	3.2	3.7	23:59	24.0	20.8	368.401	368.478	0.077		
12/25/14	P2916172	Invalid - AG	Invalid - AG	12:24	12.4	10.5	364.148	364.198	0.050	SP	
12/31/14	P2916175	Invalid - AN	Invalid - AN	0:03	0.0	0.0	362.780	362.794	0.014	SP	Error QT
07/07/14	P0901512		Field Blank				145.705	145.722	0.017		
12/15/14	P2915821		Field Blank				372.941	372.946	0.005		

# Valid	Recovery	Average	St. Dev.	Max	Min
49	80%	29.6	34.1	172.8	1.2


964C Collocated Data
964C Collocated Data
Linear (964C Collocated Data)
y = 0.0267x - 1086.7
R² = 0.0062
140
120
100
80
60
40
20
0
01/01/14
03/02/14
05/01/14
06/30/14
08/29/14
10/28/14
12/27/14

APPENDIX C

Precision and Single-Point Flow Rate Checks

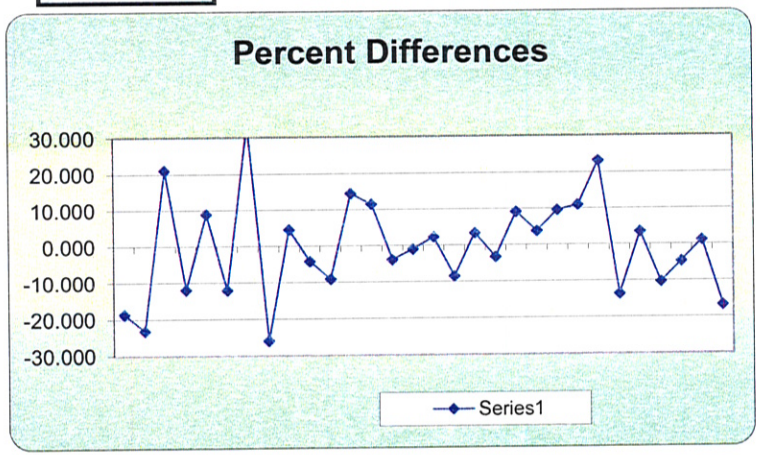
Alton Coal Development, LLC - Coal Hollow Mine

Precision Estimate (From Collocated Samples)

Monitors 963B & 964C		Pollutant type:					CV_{ub} (%)
Meas Val (Y)	Audit Val (X)	d (Eqn 10)	25th Percentile	d^2	|d|	$\|d\|^2$	
6.8	8.2	-18.667	-11.560	348.444	18.667	348.444	
12.6	15.9	-23.158	75th Percentile	536.288	23.158	536.288	
27.8	22.5	21.074	9.040	444.095	21.074	444.095	
47.2	53.2	-11.952		142.855	11.952	142.855	
4.7	4.3	8.889		79.012	8.889	79.012	
18.7	21.1	-12.060		145.451	12.060	145.451	
8.7	6.2	33.557		1126.075	33.557	1126.075	
11.4	14.8	-25.954		673.620	25.954	673.620	
6.8	6.5	4.511		20.352	4.511	20.352	
7	7.3	-4.196		17.605	4.196	17.605	
4.2	4.6	-9.091		82.645	9.091	82.645	
16.4	14.2	14.379		206.758	14.379	206.758	
13	11.6	11.382		129.553	11.382	129.553	
5.1	5.3	-3.846		14.793	3.846	14.793	
26.9	27.2	-1.109		1.230	1.109	1.230	
72.7	71.1	2.225		4.952	2.225	4.952	
54.2	59	-8.481		71.920	8.481	71.920	
27.8	26.9	3.291		10.829	3.291	10.829	
20.8	21.5	-3.310		10.954	3.310	10.954	
6.9	6.3	9.091		82.645	9.091	82.645	
93.7	90.3	3.696		13.658	3.696	13.658	
16.6	15.1	9.464		89.562	9.464	89.562	
52.3	46.9	10.887		118.529	10.887	118.529	
217.9	172.8	23.087		532.999	23.087	532.999	
34	39	-13.699		187.652	13.699	187.652	
17.8	17.2	3.429		11.755	3.429	11.755	
21	23.3	-10.384		107.822	10.384	107.822	
20.4	21.4	-4.785		22.893	4.785	22.893	
28.8	28.5	1.047		1.096	1.047	1.096	
14.7	17.4	-16.822		282.994	16.822	282.994	
9.7	9.6	1.036		1.074	1.036	1.074	

n	$\Sigma\|d\|$	$\Sigma\|d\|^2$
38	465.501	10138.803
n-1	Σd	Σd^2
37	-60.076	10138.803

CV (%) (Eqn 11)
13.77

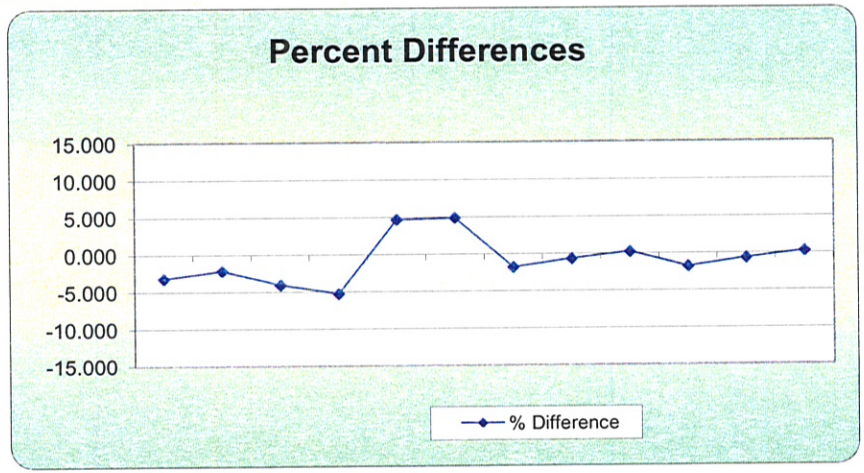


Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

Site ID: Monitor 962A		Pollutant type:					Bias (%)		
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d^2	|d|	$\|d\|^2$			
16.7	17.25	-3.188	-2.423	10.166	3.188	10.166			
16.7	17.07	-2.168	75th Percentile	4.698	2.168	4.698	n	$\Sigma\|d\|$	"AB" (Eqn 4)
16.72	17.43	-4.073	0.180	16.593	4.073	16.593	12	29.606	2.467
16.7	17.63	-5.275		27.827	5.275	27.827	n-1	$\Sigma\|d\|^2$	"AS" (Eqn 5)
16.7	15.96	4.637		21.498	4.637	21.498	11	111.871	1.879
16.7	15.93	4.834		23.364	4.834	23.364			
16.7	17.01	-1.822		3.321	1.822	3.321			
16.7	16.82	-0.713		0.509	0.713	0.509			
16.7	16.67	0.180		0.032	0.180	0.032			
16.7	17.01	-1.822		3.321	1.822	3.321			
16.7	16.82	-0.713		0.509	0.713	0.509			
16.7	16.67	0.180		0.032	0.180	0.032			

Bias (%) (Eqn 3)	Both Signs Positive
3.44	FALSE
Signed Bias (%)	Both Signs Negative
+/-3.44	FALSE



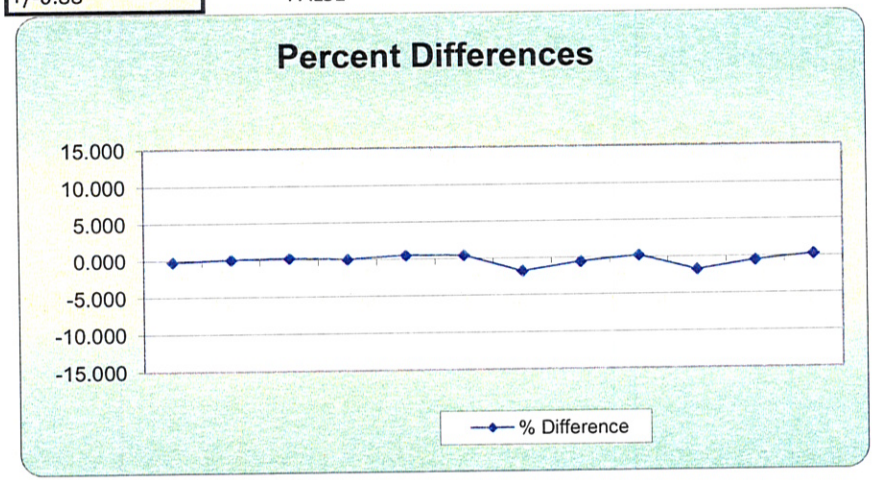
Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

Site ID: Monitor 963B		Pollutant type:					Bias (%)
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d^2	|d|	$\|d\|^2$	
16.7	16.74	-0.239	-0.595	0.057	0.239	0.057	
16.7	16.69	0.060	75th Percentile	0.004	0.060	0.004	
16.7	16.66	0.240	0.195	0.058	0.240	0.058	
16.7	16.7	0.000		0.000	0.000	0.000	
16.72	16.64	0.481		0.231	0.481	0.231	
16.7	16.63	0.421		0.177	0.421	0.177	
16.7	17.01	-1.822		3.321	1.822	3.321	
16.72	16.82	-0.595		0.353	0.595	0.353	
16.7	16.67	0.180		0.032	0.180	0.032	
16.7	17.01	-1.822		3.321	1.822	3.321	
16.72	16.82	-0.595		0.353	0.595	0.353	
16.7	16.67	0.180		0.032	0.180	0.032	

n	$\Sigma\|d\|$	"AB" (Eqn 4)
12	6.635	0.553
n-1	$\Sigma\|d\|^2$	"AS" (Eqn 5)
11	7.941	0.623

Bias (%) (Eqn 3)	Both Signs Positive
0.88	FALSE
Signed Bias (%)	Both Signs Negative
+/-0.88	FALSE

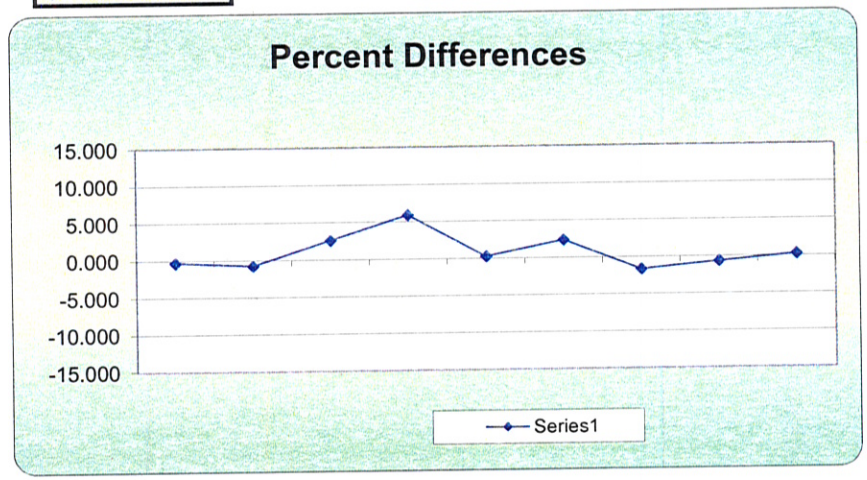


Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

Site ID: Monitor 964C		Pollutant type:					Bias (%)		
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d^2	|d|	$\|d\|^2$			
16.7	16.75	-0.299	-0.728	0.089	0.299	0.089			
16.72	16.85	-0.772	75th Percentile	0.595	0.772	0.595	n	$\Sigma\|d\|$	"AB" (Eqn 4)
16.72	16.3	2.577	0.762	6.639	2.577	6.639	12	17.302	1.442
16.72	15.79	5.890		34.690	5.890	34.690	n-1	$\Sigma\|d\|^2$	"AS" (Eqn 5)
16.7	16.66	0.240		0.058	0.240	0.058	11	54.389	1.636
16.7	16.32	2.328		5.422	2.328	5.422			
16.72	17.01	-1.705		2.907	1.705	2.907			
16.7	16.82	-0.713		0.509	0.713	0.509			
16.7	16.67	0.180		0.032	0.180	0.032			
16.72	17.01	-1.705		2.907	1.705	2.907			
16.7	16.82	-0.713		0.509	0.713	0.509			
16.7	16.67	0.180		0.032	0.180	0.032			

Bias (%) (Eqn 3)	Both Signs Positive
2.29	FALSE
Signed Bias (%)	Both Signs Negative
+/-2.29	FALSE



APPENDIX D

Field Data Sheets

Background Monitor 962A

Background Monitor 962A

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
01-06-14	1109	01-06-14	1109	IML-9	IML-12	M-M	01-11-14	JKSR	
01-14-14	1046	01-14-14	1046	IML 12	4	M-M	01-17-14	JKSR	
01-20-14	0949	01-20-14	0949	10	10	0949	Blank	JKSR	Blank
01-20-14	0950	01-20-14	0950	4	7	M-M	01-23-14	JKSR	
01-24-14	1112	01-24-14	1112	7	11	M-M	01-29-14	JKSR	
01-30-14	1326	01-30-14	1326	11	14	M-M	02-04-14	JKSR	
02-05-14	1041	02-05-14	1041	14	4	M-M	02-10-14	JKSR	
02-12-14	[illegible]	02-11-14	[illegible]	4	7	M-M	02-16-14	JKSR/KN	
2-12-14	9:17am	2/12/14	9:14	4	7	M-M	2-16-14	KN	
02-17-14	1001	02-17-14	1001	7	18	M-M	02-22-14	JKSR	
02-24-14	1541	02-24-14	1541	18	12	M-M	02-28-14	JKSR	
03-03-14	1138	03-03-14	1138	12	14	M-M	03-06-14	JKSR	
03-07-14	8:42	03-07-14	8:39	14	17	8:44am	03-07-14	KN	Blank
03-07-14	8:46	03-07-14	8:43	17	4	M-M	03-12-14	KN	
03-14-14	0959	03-14-14	0959	4	7	M-M	03-18-14	JKSR	
03-21-14	10:07am	03-21-14	7:57	7	20	M-M	03-24-14	KN	
03-26-14	10:10am	03-26-14	10:10am	20	13	M-M	03-30-14	KN	
04-01-14	9:47am	04-01-14	9:46am	13	15	M-M	04-05-14	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
01-06-14	11:01	95	95	Pass	KN	Cleaned Manifold, etc
02-12-14	9:09	97	97	Pass	KN	Cleaned Manifold, etc
03-07-14	8:50am	98	98	Pass	KN	Cleaned Manifold, etc

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
01-06-14	11:04am	16.7	580	590	11.5	12.7	15.97	17.25	-3.4	KN
02-12-14	9:12	16.70	580	582	-0.3°C	0.2	14.24	17.07	-2.17	KN
03-07-14	9:22am	16.72	582	585	3.1°C	3.2°C	14.47	17.43	-4.1	KN

Background Monitor 962A

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
~~12/12/2013~~	~~12:30 AM~~								
04-01-14	~~10:30am~~ 9:42	04-01-14	~~11:16am~~ 9:46	13	15	M-M	04-05-14	KN	
04-07-14	12:15am	04-07-14	12:15am	15	18	M-M	04-11-14	KN	
04-14-14	1108	04-14-14	1108	18	7	M-M	04-17-14	JKSR/KN	
04-18-14	11:27am	04-18-14	11:27	7	10	~~M-M~~	~~04-18~~-14	KN	Field Blank
04-18-14	11:30am	04-18-14	11:29am	10	11	M-M	04-23-14	KN	
04-24-14	1310	04-24-14	1310	11	15	M-M	~~04-29~~-14	JKSR/KN	
05-01-14	1539	05-01-14	1539	15	4	M-M	05-05-14	JKSR	
05-06-14	1022	05-06-14	1022	4	7	M-M	05-11-14	JKSR	
05-13-14	1355	05-13-14	1355	7	10	M-M	05-17-14	JKSR	
05-20-14	09:06	05-20-14	09:05	10	13	M-M	05-23-14	KN/JKSR	
05-27-14	09:47	05-27-14	09:46	13	16	M-M	05-29-14	KN	
05-30-14	10:11am	05-30-14	10:10am	16	4	M-M	06-04-14	KN	
06-05-14	10:50am	06-05-14	10:50am	4	7	10:50am	06-05-14	KN	Field Blank
06-05-14	10:54am	06-05-14	10:53am	7	8	M-M	06-10-14	KN	
06-13-14	1030	06-13-14	1030	8	10	M-M	06-16-14	JKSR	
06-18-14	10:20am	06-18-14	10:19am	10	14	M-M	06-22-14	KN	
06-23-14	10:24am	06-23-14	10:23am	14	17	M-M	06-28-14	KN	
06-30-14	14:49am	06-30-14	14:48	17	4	M-M	07-04-14	KN	
07-7-14	13:50	07-07-14	13:49	4	7	M-M	07-10-14	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
04-07-14	12:18	96	9.5	Pass	KN	Cleaned Manifold etc.
05-30-14	10:15	95	95	Pass	KN	Cleaned Manifold etc.
06-30-14	14:54	96	96	Pass	KN	Cleaned Manifold etc.

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
04-07-14	12:24	16.70	589	591	13.2	13.0	14.26	17.63	5.3 ~~KN~~	KN
05-30-14	10:18	16.70	586	588	19.5	19.5	12.80	15.96	4.6	KN
06-30-14	14:57	16.70	586	588	28.8	29.1	12.16	15.93	4.8	KN

Background Monitor 962A

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
07-07-14	13:50	07-07-14	13:49	4	7	M-M	07-10-14	KN	
07-11-14	0907	07-11-14	0907	7	14	M-M	07-16-14	JKSR/KN	
07-17-14	0950	07-17-14	0950	14	17	M-M	07-22-14	JKSR/KN	
07-24-14	10:15am	07-17-14	10:14am	17	20	10:15	07-24-14	KN	Field Blank
07-29-14	10:18	07-17-14	10:17am	20	4	M-M	07-28-14	KN	stop time same as start
07-29-14	13:35	07-29-14	13:34	4	7	M-M	08-03-14	KN	
08-4-14	14:06	08-04-14	14:05	7	10	M-M	08-09-14	KN	
08-11-14	10:34	08-11-14	10:33am	10	13	M-M	08-15-14	KN	
08-18-14	13:02	08-18-14	13:01	13	17	M-M	08-21-14	KN	
08-22-14	14:53	08-22-14	14:53	17	4	M-M	08-27-14	KN	
08-28-14	0830	08-28-14	0830	4	7	M-M	09-02-14	JKSR	
09-04-14	12:55	09-04-14	12:55	7	20	12:56	09-04-14	KN	Field Blank
09-04-14	12:59	09-04-14	12:58	20	9	M-M	09-08-14	KN	
09-11-14	1521	09-11-14	1521	9	13	M-M	09-14-14	JKSR	
09-15-14	1202	09-15-14	1202	13	16	M-M	09-20-14	JKSR/KN	
09-22-14	12:58	09-22-14	12:57	16	4	M-M	09-26-14	KN	
09-29-14	9:54	09-29-14	9:53	4	7	9:55am	09-29-14	KN	
09-29-14	9:57	09-29-14	9:56	7	8	M-M	10-2-14	KN	
10-03-14	10:09	10-03-14	10:09	8	9	M-M	10-8-14	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
7-29-14	13:39	99	98	Pass	KN	cleaned Manifold + flow tube
8-22-14	14:47	99	98	Pass	KN	cleaned Manifold + flow tube
09-29-14	9:58	97	96	Pass	KN	Cleaned Manifold + flow tube

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
7-29-14	13:51	16.70	589	591.0	29.6	26.7	12.31	15.91	4.9	KAN
8-22-14	14:48	16.70	590	591.0	26.6	26.9	12.29	15.87	5.2	KN
09-29-14	10:07	16.70	584	586	7.0	9.8	13.14	16.14	3.4	KN

Background Monitor 962A

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
09-29-14	9:57	09-29-14	9:56	7	8	M-M	10-02-14	KN	
10-03-14	10:09	10-03-14	10:09	8	9	M-M	10-08-14	KN	
10-09-14	1409	10-09-14	1409	9	13	M-M	10-14-14	JKSR	
10-15-14	1345	10-15-14	1345	13	16	M-M	10-20-14	JKSR	
10-22-14	9:52	10-22-14	9:53	16	4	M-M	10-26-14	KN	
10-27-14	1446	10-27-14	1446	4	7	M-M	11-01-14	JKSR	
11-03-14	1455	11-03-14	1455	7	12	M-M	11-07-14	JKSR	
11-10-14	1325	11-10-14	1325	12	9	M-M	11-13-14	JKSR	
11-15-14	9:15	11-15-14	10:14	9	13	9:16	11-15-14	KN	Field Blank
11-15-14	9:18	11-15-14	9:19	13	14	M-M	11-19-14	KN	
11-21-14	1440	11-21-14	1440	14	4	M-M	11-25-14	JKSR	
11-26-14	1016	11-26-14	1016	4	7	M-M	12-01-14	JKSR	
12-02-14	10:25	12/2/14	10:24	7	9	M-M	12-07-14	KN	
12-08-14	14:48	12/8/14	14:47	9	12	M-M	12-13-14	KN	
12-15-14	12:04	12/15/14	12:03	12	IML 1	M-M	12-19-14	KN	
12-21-14	6:59am	12/21/14	6:58am	IML 1	14	M-M	12-25-14	KN	
12-26-14	1328	12-26-14	1328	14	IML 11	M-M	12-31-14	JKSR	
1-2-15	10:25	1-2-15	10:24	IML 11	7	M-M	1-6-15	KN	
1-7-15	13:16	1-7-15	13:14	7	10	M-M	1-12-15	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
10-31-14	12:33	95	95	Pass	KN	cleaned venturi and downtub
11-28-14	13:31	98	97	Pass	KN	cleaned venturi and downtub
12-29-14	12:14	95	95	Pass	KN	cleaned venturi and downtub

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
10-31-14	12:36	16.71	589	591.5	15.8	16.5	13.25	16.59	0.723	KN
11-28-14	13:34	16.70	585	587	6.4	7.4	13.69	16.69	0.060	KN
12-29-14	12:17	16.70	580	~~[illegible]~~ 582	~~[illegible]~~ -6.4	~~[illegible]~~	14.4 ~~[illegible]~~	16.87	-1.00	KN

Compliance Monitor 963B

Compliance Monitor 963B

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
01-06-14	1129	01-06-14	1129	IML 12	IML 13	M-M	01-11-14	JKSR	
01-14-14	1102	01-14-14	1102	IML 13	5	M-M	01-17-14	JKSR	
01-20-14	1145	01-20-14	1145	5	8	M-M	01-23-14	JKSR	
01-24-14	1127	01-24-14	1127	8	12	M-M	01-29-14	JKSR	
01-30-14	1344	01-30-14	1344	12	15	M-M	02-04-14	JKSR	
01-30-14	1344	01-30-14	1344	17 Blank	1344		01-30-14	JKSR	Blank
02-05-14	1111	02-05-14	1111	15	5	M-M	02-10-14	JKSR	
02-12-14	10:07	02-11-14	10:24	5	8	M-M	02-16-14	JKSR/KN	
02-17-14	1004	02-18-14	1004	8	19	M-M	02-22-14	JKSR	
02-24-14	1543	02-24-14	1543	19	13	M-M	02-28-14	JKSR	
03-03-14	1140	03-03-14	1140	13	~~16~~ 15	M-M	03-06-14	JKSR	
03-07-14	9:45am	03-07-14	942	15	5	M-M	03-12-14	KN	
03-14-14	1024	03-14-14	1024	5	8	M-M	03-18-14	JKSR	
03-21-14	10:26	03-21-14	9:27	8	10	10:26	03-24-14	KN	Blank
03-26-14	10:45	03-29-14	9:41	10	11	M-M	03-30-14	KN	Date was set wrong did not run
04-01-14	10:25am	04-01-14	10:26	11	16	M-M	04-05-14	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
01-06-14	[illegible]	98	96	Pass	KN	Cleaned Manifold etc
02-12-14	9:59	97	97	Pass	KN	Cleaned Manifold
03-07-14	9:47	102	101	Pass	KN	Cleaned Manifold, etc

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
01-06-14	11:23	16.70	594	596	12.8	13.0	13.65	16.74	-0.24	KN
02-12-14	10:04am	16.70	586	588	0.5	12	14.00	16.65	0.06	KN
03-07-14	9:51	16.70	589	591	4.49	5.03	13.89	16.66	0.24	KN

Compliance Monitor 963B

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
04-01-14	10:25am	04-01-14	10:26	11	16	M-M	04-05-14	KN	
04-07-14	1:30pm	04-01-14	1:30pm	16	4	1:30pm	04-07-14	KN	
04-07-14	1:34pm	04-01-14	13:35pm	4	5	M-M	04-11-14	KN	
04-14-14	1132	04-14-14	1132	5	8	M-M	04-17-14	JKSR/KN	
04-18-14	13:14	04-18-14	13:14	8	12	~~M-M~~ 13:14	04-23-14	KN	Field Blank
04-18-14	13:19	04-18-14	13:19	12	13	M-M	04-23-14	KN	
04-24-14	1340	04-24-14	1340	13	16	M-M	04-29-14	JKSR/KN	
05-01-14	1556	05-01-14	1556	16	5	M-M	05-05-14	JKSR	
05-06-14	0944	05-06-14	0944	5	8	M-M	05-11-14	JKSR	
05-13-14	1417	05-13-14	1417	8	12	M-M	05-17-14	JKSR	
05-20-14	09:41	05-20-14	09:41	12	14	M-M	05-23-14	KN/JKSR	
05-27-14	10:06	05-27-14	10:06	14	17	10:07am	05-27-14	KN	Field Blank
05-27-14	10:09	05-27-14	10:09	17	19	M-M	05-29-14	KN	
05-30-14	10:56	05-30-14	10:56	19	5	M-M	06-04-14	KN	op error wrong stop date
06-05-14	11:19am	06-05-14	11:19am	5	9	M-M	06-10-14	KN	
06-13-14	1048	06-13-14	1048	9	12	M-M	06-16-14	JKSR	
06-18-14	10:37am	06-18-14	10:37am	12	15	M-M	06-22-14	KN	
06-23-14	10:48am	06-23-14	10:48am	15	18	M-M	06-28-14	KN	
06-30-14	15:20	06-30-14	15:20	18	5	M-M	07-4-14	KN	
07-07-14	14:10	07-07-14	14:10	5	8	M-M	07-10-14	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
04-07-14	1:35pm	103	102	Pass	KN	Cleaned Manifold, etc
05-30-14	11:02am	103	100	Pass	KN	Cleaned Manifold etc
06-30-14	15:21	108	107	Pass	KN	Cleaned Manifold etc

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
04-07-14	2:06pm	16.70	594	596	16.8°C	16.5°C	13.44	16.70	0.00	KN
05-30-14	11:06am	16.72	593	594	21.3	21.6	13.16	16.64	0.48	KN
06-30-14	15:31	16.70	592	594	32.9	32.5	12.67	16.63	0.42	KN

Compliance Monitor 963B

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
07-07-14	14:10	07-07-14	14:10	5	8	M-M	07-10-14	KN	
07-11-14	0934	07-11-14	0934	8	15	M-M	07-16-14	JKSR/KN	
07-17-14	10:17am	07-17-14	10:17am	15	18	M-M	07-22-14	JKSR/KN	
07-24-14	10:49am	07-24-14	10:49am	18	5	M-M	07-28-14	KN	
07-29-14	14:14	07-29-14	14:15	5	8	M-M	08-03-14	KN	
08-04-14	14:33	08-04-14	14:33	8	11	M-M	08-09-14	KN	
08-11-14	10:31	08-11-14	10:52	14	14	M-M	08-11-14	KN	Field Blank
08-11-14	10:59	08-11-14	10:59	14	15	M-M	08-15-14	KN	
08-18-14	13:26	08-18-14	13:26	15	18	M-M	08-21-14	KN	
08-22-14	13:13	08-22-14	13:13	18	5	M-M	08-27-14	KN	
08-28-14	0853	08-28-14	0853	5	8	M-M	09-02-14	JKSR	
09-04-14	13:43	09-04-14	13:44	8	10	M-M	09-08-14	KN	
09-11-14	1600	09-11-14	1600	10	14	M-M	09-14-14	JKSR	
09-15-14	1222	09-15-14	1222	14	12	M-M	09-20-14	JKSR/KN	
09-22-14	13:19	09-22-14	13:19	17	5	M-M	09-26-14	KN	
09-29-14	13:05	09-29-14	13:05	5	12	M-M	10/2/14	KN	
10-3-14	12:10	10-03-14	12:10	12	10	M-M	10/8/14	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
07-29-14	14:23	97	95	Pass	KN	cleaned manifold & Rotameter
08-22-14	13:31	98	97	Pass	KN	cleaned Man. & Rotameter
09-29-14	13:08	98	96	Pass	KN	cleaned manifold & Rotameter

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
07-29-14	14:26	16.70	595	596	28.2	28.9	17.06	16.82	-0.7	KN
08-22-14	13:33	16.70	589	591	29.7	30.0	18.18	16.89	-1.0	KN
09-29-14	13:14	16.70	590	591	11.4	11.9	13.64	16.78	-0.5	KN

Compliance Monitor 963B

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
09-29-14	13:05	09-29-14	13:05	5	12	M-M	10-02-14	KN	
10-03-14	12:10	10-03-14	12:10	12	10	M-M	10-08-14	KN	
10-09-14	1433	10-09-14	1433	10	14	M-M	10-14-14	JKSR	
10-15-14	1444	10-15-14	1444	14	17	M-M	10-20-14	JKSR	
10-22-14	10:11	10-22-14	10:12	17	5	M-M	10-26-14	KN	
10-27-14	1508	10-27-14	1508	5	8	M-M	11-01-14	JKSR	
11-03-14	1512	11-03-14	1512	8	19	M-M	11-07-14	JKSR	
11-10-14	1340	11-10-14	1340	19	10	M-M	11-13-14	JKSR	
11-15-14	9:39	11-15-14	10:39	10	15	M-M	11-19-14	KN	
11-21-14	1456	11-21-14	1456	15	5	M-M	11-25-14	JKSR	
11-26-14	1042	11-26-14	1042	5	8	M-M	12-01-14	JKSR	
11-26-14	1042	11-26-14	1042	17	Blank	~~[illegible]~~	11-26-14	JKSR	Blank
12-02-14	10:42	12-2-14	10:41	8	10	M-M	12-07-14	KN	
12-08-14	15:08	12-08-14	15:07	10	13	M-M	12-13-14	KN	
12-15-14	12:26	12-15-14	12:26	13	19	M-M	12-19-14	KN	
12-21-14	7:15	12-21-14	7:14	19	5	M-M	12-25-14	KN	
12-26-14	1342	12-26-14	1342	5	15	M-M	12-31-14	JKSR	
1-2-15	10:55	1-2-2015	10:54	15	8	M-M	1-6-15	KN	
1-7-15	13:38	1-7-15	13:36	8	11	13:~~[illegible]~~	1-7-15	KN	Blank
1-7-15	13:41	1-7-15	13:39	11	16	M-M	1-12-15	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
10-31-14	12:45	98	96	Pass	KN	Cleaned downtube, venturi
11-28-14	13:48	95	95	Pass	KN	Cleaned downtube, + venturi
12-29-14	12:40	96	96	Pass	KN	Cleaned downtube + venturi

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
10-31-14	12:50	16.67	595	597	17.0	17.5	13.12	16.30	2.21	KN
11-28-14	13:52	16.70	591	592	7.1	7.8	13:30	16.18	3.21	KN
12-29-14	12:43	16.76	587	588	-3.5	-4.2	14.14	16.54	0.97	KN

Collocated Monitor 964C

Co-located Monitor 964C

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials
01-06-14	1133	01-06-14	1133	TML 11	TML 15	M-M	01-11-14	JKSR
01-14-14	1104	01-14-14	1104	TML 15	6	M-M	01-17-14	JKSR
01-20-14	1148	01-20-14	1148	6	9	M-M	01-23-14	JKSR
01-24-14	1130	01-24-14	1130	9	13	M-M	01-29-14	JKSR
01-30-14	1346	01-30-14	1346	13	16	M-M	02-04-14	JKSR
02-05-14	1113	02-05-14	1113	16	6	M-M	02-10-14	JKSR
02-12-14	10:12	02-12-14	10:08	6	9	M-M	02-16-14	JKSR/KN
02-17-14	0947	02-17-14	0947	9	20	M-M	02-22-14	JKSR
02-24-14	1508	02-24-14	1508	10	11	M-M	02-28-14	JKSR
03-03-14	1115	03-03-14	1115	11	14 16	M-M	03-06-14	JKSR
03-07-14	10:00	03-07-14	9:55	16	6	M-M	03-12-14	KN
03-14-14	[illegible]	03-14-14	[illegible]	6	9	M-M	03-18-14	JKSR
03-21-14	10:09	03-21-14	9:34am	9	12	M-M	03-24-14	KN
03-26-14	10:49am	03-26-14	10:49am	12	14	M-M	03-30-14	KN
04-01-14	10:30am	04-01-14	10:30am	14	17	M-M	04-05-14	KN

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
01-06-14	11:20	[illegible]	105	Pass	KN	Cleaned Manifold, etc
02-12-14	10:05	98	97	Pass	KN	Cleaned Manifold, etc
03-07-14	9:51	95	95	Pass	KN	Cleaned Manifold, etc

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
01-06-14	11:24	16.70	594	595	12.6	13.2	13.66	16.75	-0.[illegible]	KN
02-12-14	10:09	16.72	587	588	1.2	1.6	14.12	16.85	-0.77	KN
03-07-14	9:58	16.72	591	590.5	4.62	4.89	13.58	16.30	2.58	KN

Co-located Monitor 964C

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials
04-01-14	10:30am	04-01-14	10:30am	14	17	M-M	04-05-14	KN
04-07-14	14:00	04-01-14	14:00am	17	6	M-M	04-11-14	KN
04-14-14	11:33	04-14-14	11:33	6	9	M-M	04-17-14	JKSR/KN
04-18-14	13:23	04-18-14	13:22	9	14	M-M	04-23-14	KN
04-24-14	1344	04-24-14	1344	14	17	M-M	04-29-14	JKSR/KN
05-01-14	1559	05-01-14	1559	17	6	M-M	05-05-14	JKSR
05-06-14	0940	05-06-14	0940	6	9	M-M	05-11-14	JKSR
05-14-14	1419	05-13-14	1418	9	18	M-M	05-17-14	JKSR
05-20-14	09:44	05-20-14	09:43	18	15	M-M	05-23-14	KN/JKSR
05-27-14	10:16am	05-27-14	10:14am	15	20	M-M	05-29-14	KN
05-30-14	11:11am	05-30-14	11:10am	20	6	M-M	06-04-14	KN
06-05-14	11:27am	06-05-14	11:25am	6	11	M-M	06-10-14	KN
06-13-14	1050	06-13-14	1050	11	13	M-M	06-16-14	JKSR
06-18-14	10:43am	06-18-14	10:42am	13	16	M-M	06-22-14	KN
06-23-14	10:55am	06-23-14	10:53am	16	19	M-M	06-25-14	KN
06-30-14	15:37	06-30-14	15:35	19	6	M-M	07-04-14	KN
07-07-14	14:15	07-07-14	14:16	6	9	14:15	07-07-14	KN
07-07-14	14:19	07-07-14	14:19	9	11	M-M	07-10-14	KN

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
04-07-14	2:04	99	99	Pass	KN	Cleaned Manifold, etc
05-30-14	11:12	99	97	Pass	KN	Cleaned Manifold, etc
06-30-14	15:41	97	96	Pass	KN	Cleaned Manifold, etc

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
04-07-14	14:11	16.72	596	596	16.8°C	16.7°C	12.74	15.79		KN
05-30-14	11:18	16.70	594	595	22.2	22.3	13.13	16.66		KN
06-30-14	15:45	16.70	593	593	22.9	23.0	12.42	16.32		KN

Co-located Monitor 964C

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials
07-07-14	14:19	07-07-14	14:19	9	11	M-M	07-10-14	KN
07-11-14	0936	07-11-14	0934	11	16	M-M	07-16-14	JKSR/KN
07-17-14	10:19am	07-17-14	10:17am	16	19	M-M	07-22-14	JKSR/KN
07-24-14	10:54am	07-24-14	10:52am	19	6	M-M	07-28-14	KN
07-29-14	14:30	07-29-14	14:28	6	9	M-M	08-03-14	KN
08-04-14	14:39	08-04-14	14:36	9	12	M-M	08-06-14	KN
08-11-14	11:08am	08-11-14	11:06	12	16	M-M	08-15-14	KN
08-18-14	13:32	08-18-14	13:29	16	19	M-M	08-21-14	KN
08-22-14	15:24	08-22-14	15:22	19	6	M-M	08-27-14	KN
08-28-14	0856	08-28-14	0853	6	22	M-M	09-02-14	JKSR
09-04-14	13:54	09-04-14	13:51	12	11	M-M	09-08-14	KN
09-11-14	1603	09-11-14	1600	11	15	M-M	09-14-14	JKSR
09-15-14	1225	09-15-14	1222	15	18	M-M	09-20-14	JKSR/KN
09-22-14	13:21	09-22-14	13:22	18	6	M-M	09-26-14	KN
09-29-14	13:18	09-29-14	13:18	6	19	M-M	10/2/14	KN
10-03-14	12:17	10-03-14	12:17	19	11	M-M	10/08/14	KN

over ran sample time w/ wrong date

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
07-29-14	14:33	97	96	Pass	KN	Cleaned Manifold + Downtube
08-22-14	13:40	95	94	Pass	KN	Cleaned Manifold + Downtube
09-29-14	13:19	100	98	Pass	KN	Cleaned Manifold + Downtube

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
07-29-14	14:37	16.76	597	596.5	25.3	25.2	13.34	17.01	-1.7	KN
08-22-14	13:42	16.70	589	591	29.8	30.1	13.06	16.82	-0.7	KN
09-29-14	13:24	17.30	592	591	12.4	13.8	13.53	16.67	0.2	KN

Co-located Monitor 964C

Table I - Every 6th Day Sampling

Date	Time	Displayed Date	Displayed Time	Collected Filter ID#	New Filter ID#	Sample Start Time	Sample Start Date	Sampler Initials	
09-29-14	13:18	09-29-14	13:18	6	19	M-M	10/02/14	KN	
10-03-14	12:17	10-03-14	12:17	19	11	M-M	10/08/14	KN	
10-09-14	1435	10-09-14	1435	11	15	M-M	10-14-14	JKSR	
10-15-14	1446	10-15-14	1446	15	18	M-M	10-20-14	JKSR	QT didn't complete
10-22-14	10:20	10-22-14	10:20	18	6	M-M	10-26-14	KN	
10-27-14	1510	10-27-14	1510	6	10	M-M	11-01-14	JKSR	
11-03-14	1514	11-03-14	1514	10	20	M-M	11-07-14	JKSR	
11-10-14	1344	11-10-14	1344	20	11	M-M	11-13-14	JKSR	
11-15-14	9:44	11-15-14	10:43	11	TML 11	M-M	11-19-14	KN	
11-21-14	1459	11-21-14	1459	TML 11	6	M-M	11-25-14	JKSR	QT
11-26-14	1044	11-26-14	1044	6	18	M-M	12-01-14	JKSR	QT
12-07-14	10:50	12-07-14	10:47	16	11	M-M	12-07-14	KN	
12-08-14	15:12	12-08-14	15:09	11	18	M-M	12-13-14	KN	
12-15-14	12:33	12-15-14	12:30	18	20	12:35	12-15-14	KN	Field Blank
12-15-14	12:37	12-15-14	12:34	20	4	M-M	12-19-14	KN	
12-21-14	7:21	12-21-14	7:08	4	6	M-M	12-25-14	KN	
12-26-14	1344	12-26-14	1342	6	17	M-M	12-31-14	JKSR	QT
1-2-15	11:01	1-2-15	10:57	17	9	M-M	1-6-15	KN	QT
1-7-15	13:47	1-7-15	13:47	9	TML-	M-M	1-12-15	KN	QT, Max Load

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
10-31-14	12:52	98	98	Pass	KN	cleaned down tube & vent
11-28-14	13:55	98	97	Pass	KN	cleaned down tube & vent
12-29-14	12:45	100	99	Pass	KN	cleaned down tube & vent

Table III - Monthly Flow Rate Verification

Date	Time	Monitor Flow (Q Lpm)	Monitor Baro Pressure (mmHg)	Delta Cal Baro Pressure (mmHg)	Monitor Temp (A)	Delta Cal Temp (Ta)	Delta Cal Flow (Qs)	Delta Cal Flow (Qa)	Accuracy	Initials
10-31-14	12:55	16.71	595	596	17.5	17.8	17.67	16.99	-1.65	KN
11-28-14	13:58	16.70	591	592	7.5	8.0	14.13	17.12	-2.45	KN
12-29-14	12:48	16.70	587	589	-3.7	-3.2	14.99	17.43	-4.74	KN