Alton Coal Development, LLC.

Summary of PM_{10} Data
Collected at Coal Hollow Mine, Utah
During the Fourth Quarter, 2015

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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, (ACD) 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 forth quarter of 2015.

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

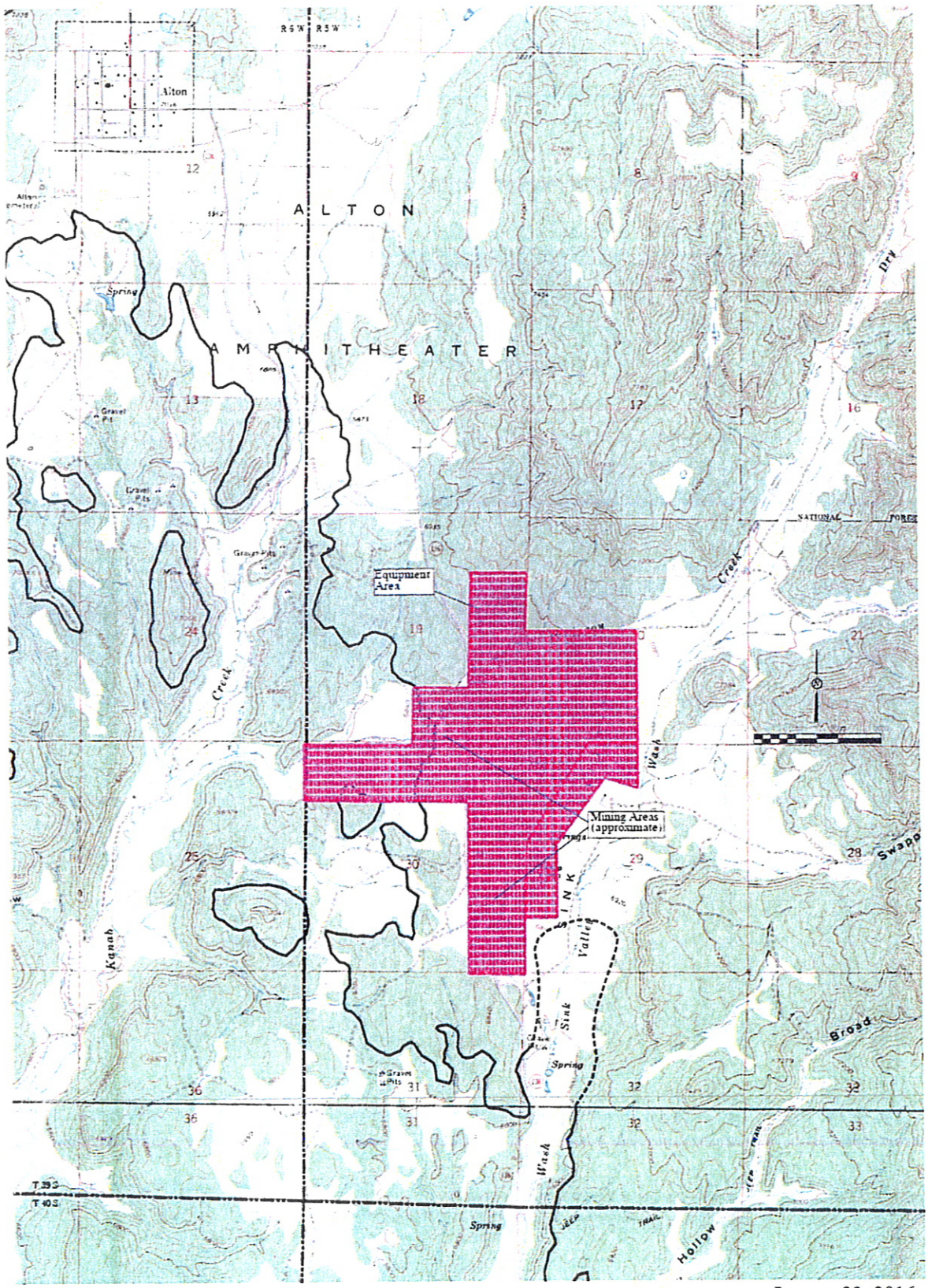
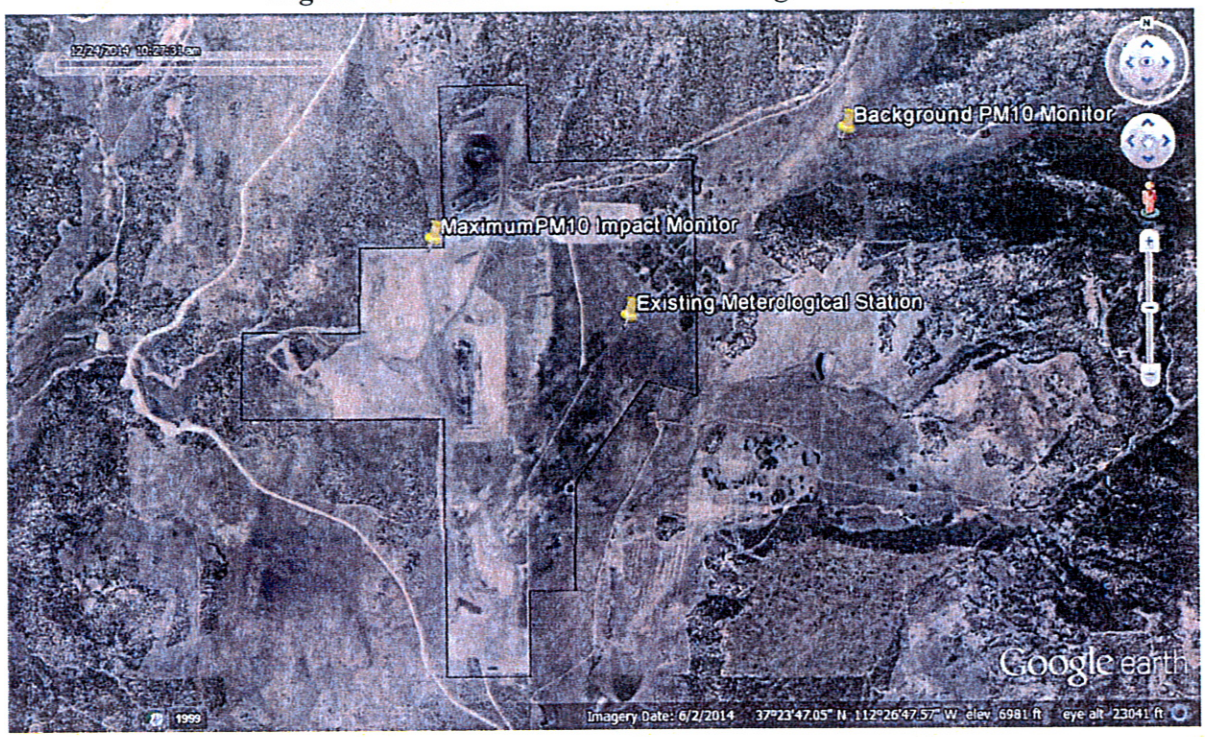


Figure 2 - Satellite View of Monitoring Locations



3.0 AIR QUALITY DATA SUMMARIES

A listing of the measured PM_{10} concentrations for the quarter are presented in Appendix B (individual data sheets are provided on the enclosed disk in the PDF version of 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 PM_{10} 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) to the extent possible. 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 would be used.

The highest 24-hour mean PM_{10} concentrations measured during the quarter 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 $\mu g/m^3$.

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

RANK	DATE	PM_{10} CONCENTRATION
Highest	12/20/2015	5.3
2nd Highest	10/15/2015	5.2
Monthly Mean	10/1/15-10/31/15	4.1
Monthly Mean	11/1/15-11/30/15	3.5
Monthly Mean	12/1/15-12/31/15	2.9
Quarterly Mean	10/1/15-12/31/15 (15 valid samples)	3.5

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

RANK	DATE	PM_{10} CONCENTRATION
Highest	11/14/2015	17.1
2nd Highest	10/15/2015	14.5
Monthly Mean	10/1/15-10/31/15	8.2
Monthly Mean	11/1/15-11/30/15	8.0
Monthly Mean	12/1/15-12/31/15	6.6
Quarterly Mean	10/1/15-12/31/15 (15 valid samples)	7.7

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

RANK	DATE	PM_{10} CONCENTRATION
Highest	10/09/2015 & 12/26/2015	7.3
2nd Highest	12/20/2015	5.7
Monthly Mean	10/1/15-10/31/15	6.5
Monthly Mean	11/1/15-11/30/15	No Valid Runs
Monthly Mean	12/1/15-12/31/15	4.9
Quarterly Mean	10/1/15-12/31/15 (6 valid samples)	5.7

Table IV – Mean Quarterly and Monthly Wind Speed

	4th Quarter 2015	Oct.	Nov.	Dec.
Mean Wind Speed (m/s)	2.61	2.56	2.68	2.60

4.0 DATA RECOVERY AND QUALITY ASSURANCE

4.1 Data Recovery

Monitor 962A

Monitor 962A collected 15 of the 15 samples during the quarter. The percent recovery for this quarter is 100%.

Monitor 963B

Monitor 963B collected 15 of the 15 samples during the quarter. The percent recovery for this quarter is 100%.

Monitor 964C

Monitor 964C collected 6 of the 15 samples during the quarter. The percent recovery for this quarter is 40%. For the sample date of Oct. 21st the monitor ran 04:49 hours and shut down with Q and T errors. For the sample date of Oct. 27th the monitor ran 00:02 hours and shut down with Q and T errors. For the sample date of Nov. 2nd the monitor ran 00:02 hours and shut down with Q and T errors. For the sample date of Nov. 8th the monitor ran 00:02 hours and shut down with Q and T errors. For the sample date of Nov. 14th the monitor ran 00:02 hours and shut down with Q and T errors. For the sample date of Nov. 20th the monitor ran 00:02 hours and shut down with Q and T errors. For the sample date of Nov. 26th the monitor ran 00:02 hours and shut down with Q and T errors. For the sample date of Dec. 2nd the monitor was taken out of service for repairs. A new mass flow sensor was installed. For the sample date of Dec. 8th the monitor ran 01:52 hours and shut down with T errors due to the operator not reconnecting the back-up power supply. The 964C has run all successive date without a problem since replacement of mass flow sensor.

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	15	15	100%
963B	15	15	100%
964C	15	6	40%

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 5 valid pairs of co-located monitoring data during the quarter. Single point precision based on *40 CFR, Part 58*, Appendix A Equation 2 results were 7.5% to 68.5%. The aggregate coefficient of variability (CV) calculated in accordance with *40 CFR, Part 58*, Appendix A Equation 11 is 35.4%. This value is not within the 10% goal for aggregate CV. Due to the 964C monitors failing to operate properly, the number of valid point did not generate any useful information.

4.2.2 Audit Results

The accuracy of the PM_{10} sampler flows was verified by a performance audit conducted by Air Resource Specialist on July 22, 2015. A copy of the audit report is presented in Appendix E and is summarized in Table VI. The audit results indicate that the three samplers were operating properly.

Table VI - Audit Summary

SAMPLER	AUDIT % DIFFERENCE	LIMIT*	DESIGN % DIFFERENCE	LIMIT*
962A	-2.1	±4%	2.2	± 5%
963B	-0.8	±4%	0.8	± 5%
964C	4.5	±4%	0.3	± 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

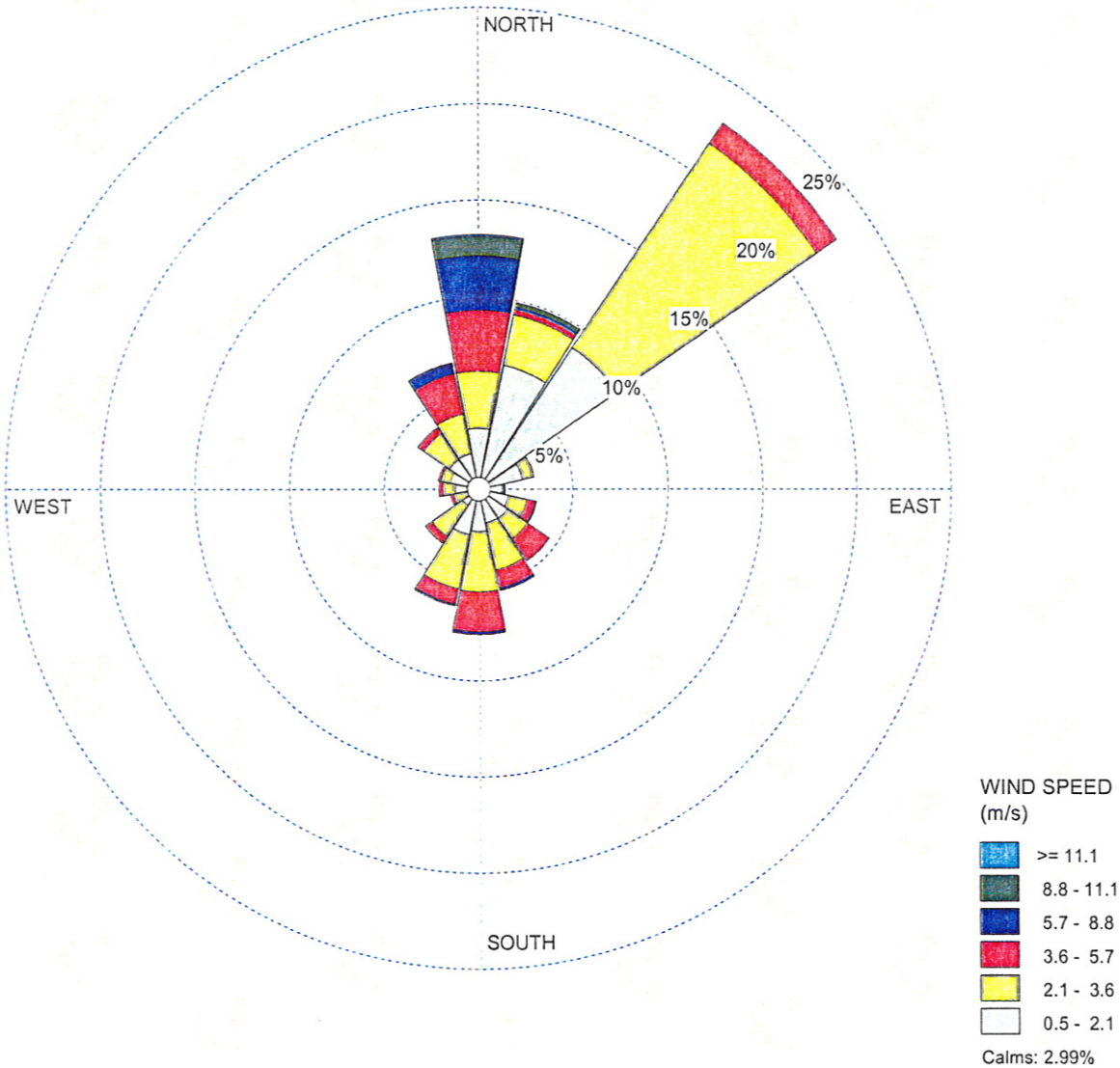
Windrose

WIND ROSE PLOT:

Alton Coal Development , Alton, Utah
2015 4th QT

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 10/1/2015 - 00:00 **End Date: 12/31/2015 - 23:00**	**Alton Coal Development, LLC - Coal Hollow Mine**	
		MODELER: **K. Nicholes**	
	CALM WINDS: **2.99%**	TOTAL COUNT: **2208 hrs.**	
	AVG. WIND SPEED: **2.61 m/s**	DATE: **1/23/2016**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Station ID: 1 Run ID:
Start Date: 10/1/2015 - 00:00
End Date: 12/31/2015 - 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	70	65	70	62	22	2	291
11.25-33.75	145	59	6	3	5	0	218
33.75-56.25	196	282	28	0	0	0	506
56.25-78.75	53	14	0	0	0	0	67
78.75-101.25	27	2	2	0	0	0	31
101.25-123.75	36	22	10	2	0	0	70
123.75-146.25	41	28	31	0	0	0	100
146.25-168.75	40	55	21	3	0	0	119
168.75-191.25	49	69	46	3	0	0	167
191.25-213.75	54	63	18	2	0	0	137
213.75-236.25	23	43	9	0	0	0	75
236.25-258.75	17	13	4	0	0	0	34
258.75-281.25	27	15	4	0	0	0	46
281.25-303.75	34	11	3	0	0	0	48
303.75-326.25	41	36	8	0	0	0	85
326.25-348.75	42	46	47	12	1	0	148
Total	895	823	307	87	28	2	2208

Frequency of Calm Winds: 66
Average Wind Speed: 2.61 m/s

Station ID: 1
Start Date: 10/1/2015 - 00:00
End Date: 12/31/2015 - 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	0.031703	0.029438	0.031703	0.028080	0.009964	0.000906	0.131793
11.25-33.75	0.065670	0.026721	0.002717	0.001359	0.002264	0.000000	0.098732
33.75-56.25	0.088768	0.127717	0.012681	0.000000	0.000000	0.000000	0.229167
56.25-78.75	0.024004	0.006341	0.000000	0.000000	0.000000	0.000000	0.030344
78.75-101.25	0.012228	0.000906	0.000906	0.000000	0.000000	0.000000	0.014040
101.25-123.75	0.016304	0.009964	0.004529	0.000906	0.000000	0.000000	0.031703
123.75-146.25	0.018569	0.012681	0.014040	0.000000	0.000000	0.000000	0.045290
146.25-168.75	0.018116	0.024909	0.009511	0.001359	0.000000	0.000000	0.053895
168.75-191.25	0.022192	0.031250	0.020833	0.001359	0.000000	0.000000	0.075634
191.25-213.75	0.024457	0.028533	0.008152	0.000906	0.000000	0.000000	0.062047
213.75-236.25	0.010417	0.019475	0.004076	0.000000	0.000000	0.000000	0.033967
236.25-258.75	0.007699	0.005888	0.001812	0.000000	0.000000	0.000000	0.015399
258.75-281.25	0.012228	0.006793	0.001812	0.000000	0.000000	0.000000	0.020833
281.25-303.75	0.015399	0.004982	0.001359	0.000000	0.000000	0.000000	0.021739
303.75-326.25	0.018569	0.016304	0.003623	0.000000	0.000000	0.000000	0.038496
326.25-348.75	0.019022	0.020833	0.021286	0.005435	0.000453	0.000000	0.067029
Total	0.405344	0.372736	0.139040	0.039402	0.012681	0.000906	0.970109

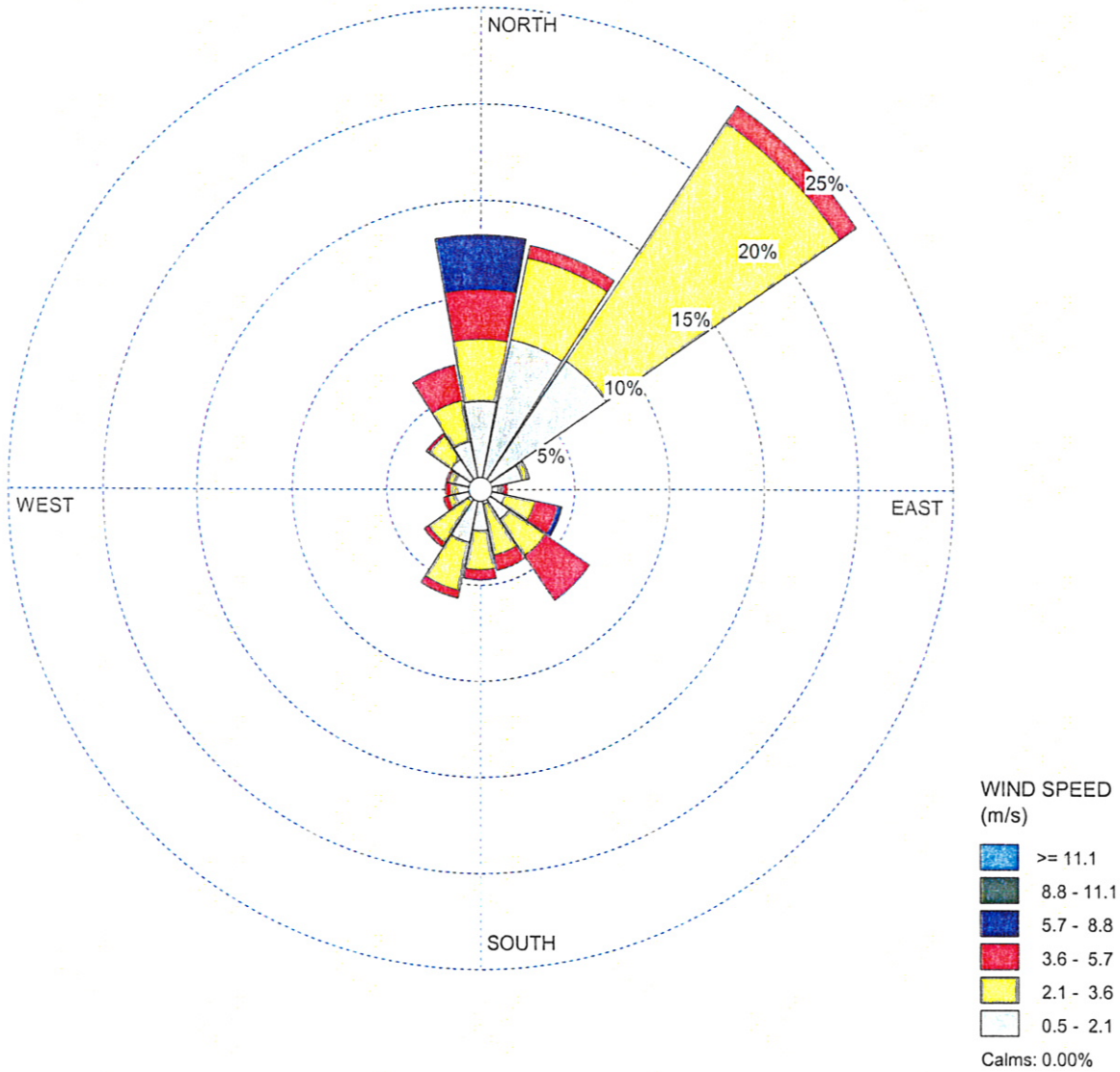
Frequency of Calm Winds: 2.99%
Average Wind Speed: 2.61 m/s

WIND ROSE PLOT:

Alton Coal Development , Alton, Utah
2015 October

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 10/1/2015 - 00:00 **End Date: 10/31/2015 - 23:00**	**Alton Coal Development, LLC - Coal Hollow Mine**	
		MODELER: **K. Nicholes**	
	CALM WINDS: **0.00%**	TOTAL COUNT: **744 hrs.**	
	AVG. WIND SPEED: **2.56 m/s**	DATE: **1/23/2016**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Station ID: 1 Run ID:
Start Date: 10/1/2015 - 00:00
End Date: 10/31/2015 - 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	34	24	19	21	0	0	98
11.25-33.75	59	32	5	0	0	0	96
33.75-56.25	60	111	8	0	0	0	179
56.25-78.75	17	3	0	0	0	0	20
78.75-101.25	7	2	2	0	0	0	11
101.25-123.75	10	12	9	2	0	0	33
123.75-146.25	14	17	21	0	0	0	52
146.25-168.75	6	20	6	0	0	0	32
168.75-191.25	16	15	4	0	0	0	35
191.25-213.75	21	19	3	0	0	0	43
213.75-236.25	6	19	2	0	0	0	27
236.25-258.75	10	3	2	0	0	0	15
258.75-281.25	9	3	2	0	0	0	14
281.25-303.75	10	3	1	0	0	0	14
303.75-326.25	14	11	1	0	0	0	26
326.25-348.75	19	16	14	0	0	0	49
Total	312	310	99	23	0	0	744

Frequency of Calm Winds: 0
Average Wind Speed: 2.56 m/s

Station ID: 1
Start Date: 10/1/2015 - 00:00
End Date: 10/31/2015 - 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	0.045699	0.032258	0.025538	0.028226	0.000000	0.000000	0.131720
11.25-33.75	0.079301	0.043011	0.006720	0.000000	0.000000	0.000000	0.129032
33.75-56.25	0.080645	0.149194	0.010753	0.000000	0.000000	0.000000	0.240591
56.25-78.75	0.022849	0.004032	0.000000	0.000000	0.000000	0.000000	0.026882
78.75-101.25	0.009409	0.002688	0.002688	0.000000	0.000000	0.000000	0.014785
101.25-123.75	0.013441	0.016129	0.012097	0.002688	0.000000	0.000000	0.044355
123.75-146.25	0.018817	0.022849	0.028226	0.000000	0.000000	0.000000	0.069892
146.25-168.75	0.008065	0.026882	0.008065	0.000000	0.000000	0.000000	0.043011
168.75-191.25	0.021505	0.020161	0.005376	0.000000	0.000000	0.000000	0.047043
191.25-213.75	0.028226	0.025538	0.004032	0.000000	0.000000	0.000000	0.057796
213.75-236.25	0.008065	0.025538	0.002688	0.000000	0.000000	0.000000	0.036290
236.25-258.75	0.013441	0.004032	0.002688	0.000000	0.000000	0.000000	0.020161
258.75-281.25	0.012097	0.004032	0.002688	0.000000	0.000000	0.000000	0.018817
281.25-303.75	0.013441	0.004032	0.001344	0.000000	0.000000	0.000000	0.018817
303.75-326.25	0.018817	0.014785	0.001344	0.000000	0.000000	0.000000	0.034946
326.25-348.75	0.025538	0.021505	0.018817	0.000000	0.000000	0.000000	0.065860
Total	0.419355	0.416667	0.133065	0.030914	0.000000	0.000000	1.000000

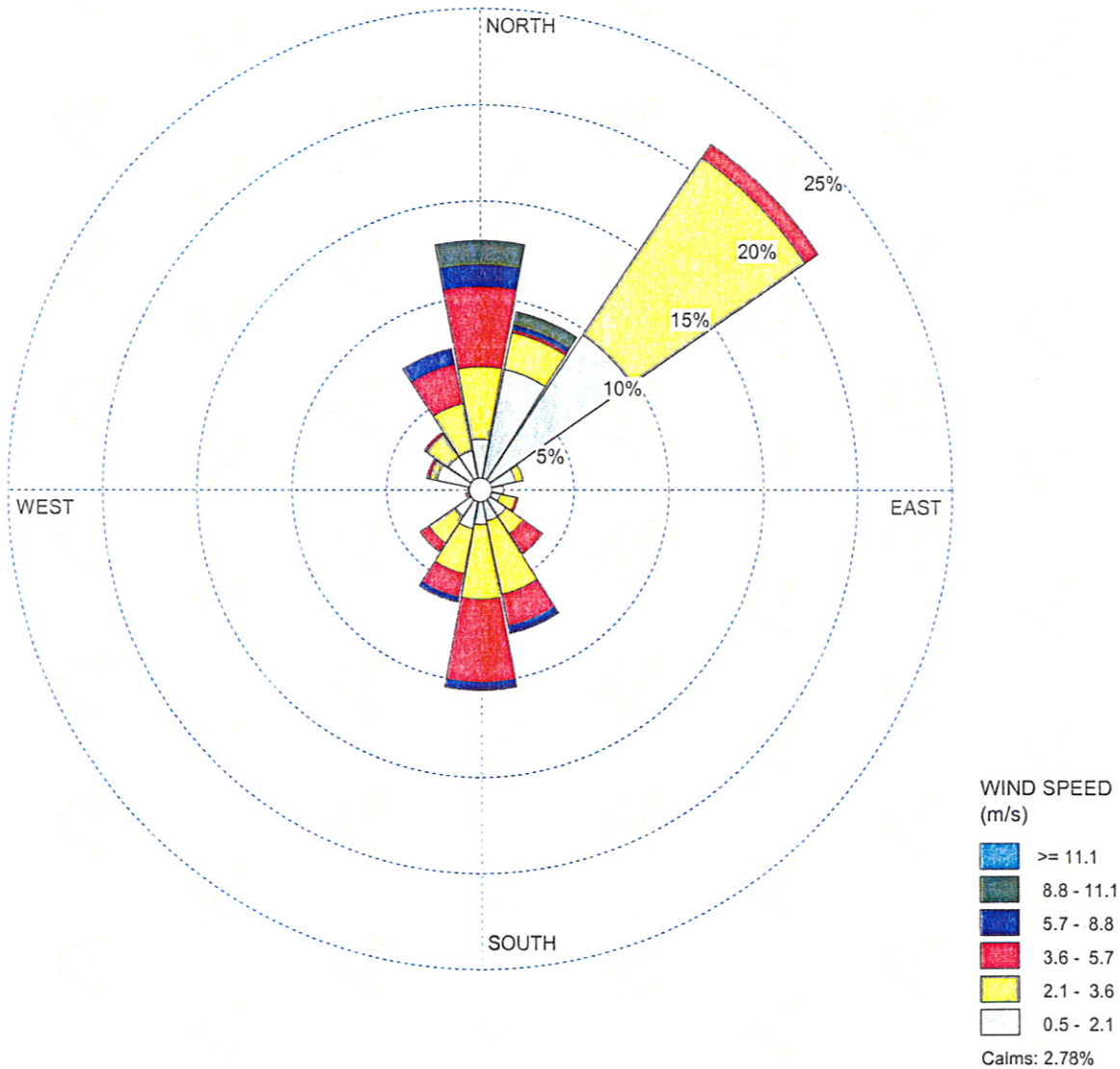
Frequency of Calm Winds: 0.00%
Average Wind Speed: 2.56 m/s

WIND ROSE PLOT:

Alton Coal Development , Alton, Utah
2015 November

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 11/1/2015 - 00:00 **End Date: 11/30/2015 - 23:00**	**Alton Coal Development, LLC - Coal Hollow Mine**	
		MODELER: **K. Nicholes**	
	CALM WINDS: **2.78%**	TOTAL COUNT: **720 hrs.**	
	AVG. WIND SPEED: **2.68 m/s**	DATE: **1/23/2016**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Station ID: 1
Start Date: 11/1/2015 - 00:00
End Date: 11/30/2015 - 23:00

Run ID:

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	19	27	30	8	9	0	93
11.25-33.75	46	14	1	2	5	0	68
33.75-56.25	70	80	6	0	0	0	156
56.25-78.75	14	3	0	0	0	0	17
78.75-101.25	9	0	0	0	0	0	9
101.25-123.75	8	6	1	0	0	0	15
123.75-146.25	12	8	9	0	0	0	29
146.25-168.75	12	28	12	3	0	0	55
168.75-191.25	13	28	31	3	0	0	75
191.25-213.75	15	17	9	2	0	0	43
213.75-236.25	12	12	4	0	0	0	28
236.25-258.75	2	3	1	0	0	0	6
258.75-281.25	4	1	0	0	0	0	5
281.25-303.75	17	3	1	0	0	0	21
303.75-326.25	15	10	1	0	0	0	26
326.25-348.75	15	18	15	6	0	0	54
Total	283	258	121	24	14	0	720

Frequency of Calm Winds: 20
Average Wind Speed: 2.68 m/s

Station ID: 1 Run ID:
Start Date: 11/1/2015 - 00:00
End Date: 11/30/2015 - 23:00

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	0.026389	0.037500	0.041667	0.011111	0.012500	0.000000	0.129167
11.25-33.75	0.063889	0.019444	0.001389	0.002778	0.006944	0.000000	0.094444
33.75-56.25	0.097222	0.111111	0.008333	0.000000	0.000000	0.000000	0.216667
56.25-78.75	0.019444	0.004167	0.000000	0.000000	0.000000	0.000000	0.023611
78.75-101.25	0.012500	0.000000	0.000000	0.000000	0.000000	0.000000	0.012500
101.25-123.75	0.011111	0.008333	0.001389	0.000000	0.000000	0.000000	0.020833
123.75-146.25	0.016667	0.011111	0.012500	0.000000	0.000000	0.000000	0.040278
146.25-168.75	0.016667	0.038889	0.016667	0.004167	0.000000	0.000000	0.076389
168.75-191.25	0.018056	0.038889	0.043056	0.004167	0.000000	0.000000	0.104167
191.25-213.75	0.020833	0.023611	0.012500	0.002778	0.000000	0.000000	0.059722
213.75-236.25	0.016667	0.016667	0.005556	0.000000	0.000000	0.000000	0.038889
236.25-258.75	0.002778	0.004167	0.001389	0.000000	0.000000	0.000000	0.008333
258.75-281.25	0.005556	0.001389	0.000000	0.000000	0.000000	0.000000	0.006944
281.25-303.75	0.023611	0.004167	0.001389	0.000000	0.000000	0.000000	0.029167
303.75-326.25	0.020833	0.013889	0.001389	0.000000	0.000000	0.000000	0.036111
326.25-348.75	0.020833	0.025000	0.020833	0.008333	0.000000	0.000000	0.075000
Total	0.393056	0.358333	0.168056	0.033333	0.019444	0.000000	0.972222

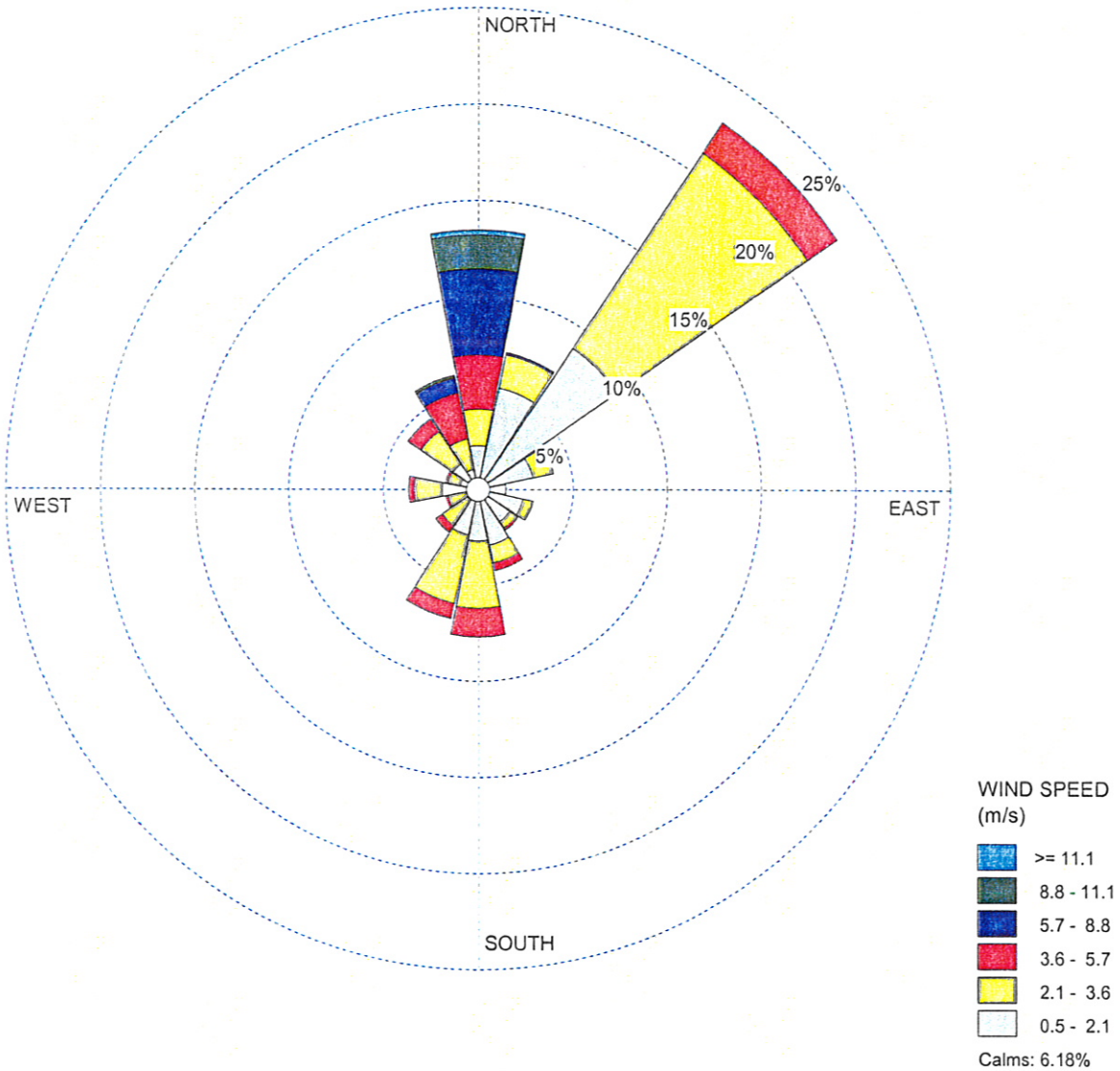
Frequency of Calm Winds: 2.78%
Average Wind Speed: 2.68 m/s

WIND ROSE PLOT:

Alton Coal Development , Alton, Utah
2015 December

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD:	COMPANY NAME:	
	Start Date: 12/1/2015 - 00:00 **End Date: 12/31/2015 - 23:00**	**Alton Coal Development, LLC - Coal Hollow Mine**	
		MODELER: **K. Nicholes**	
	CALM WINDS: **6.18%**	TOTAL COUNT: **744 hrs.**	
	AVG. WIND SPEED: **2.60 m/s**	DATE: **1/23/2016**	PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Station ID: 1
Start Date: 12/1/2015 - 00:00
End Date: 12/31/2015 - 23:00

Run ID:

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	17	14	21	33	13	2	100
11.25-33.75	40	13	0	1	0	0	54
33.75-56.25	66	91	14	0	0	0	171
56.25-78.75	22	8	0	0	0	0	30
78.75-101.25	11	0	0	0	0	0	11
101.25-123.75	18	4	0	0	0	0	22
123.75-146.25	15	3	1	0	0	0	19
146.25-168.75	22	7	3	0	0	0	32
168.75-191.25	20	26	11	0	0	0	57
191.25-213.75	18	27	6	0	0	0	51
213.75-236.25	5	12	3	0	0	0	20
236.25-258.75	5	7	1	0	0	0	13
258.75-281.25	14	11	2	0	0	0	27
281.25-303.75	7	5	1	0	0	0	13
303.75-326.25	12	15	6	0	0	0	33
326.25-348.75	8	12	18	6	1	0	45
Total	300	255	87	40	14	2	744

Frequency of Calm Winds: 46
Average Wind Speed: 2.60 m/s

Station ID: 1
Start Date: 12/1/2015 - 00:00
End Date: 12/31/2015 - 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	0.022849	0.018817	0.028226	0.044355	0.017473	0.002688	0.134409
11.25-33.75	0.053763	0.017473	0.000000	0.001344	0.000000	0.000000	0.072581
33.75-56.25	0.088710	0.122312	0.018817	0.000000	0.000000	0.000000	0.229839
56.25-78.75	0.029570	0.010753	0.000000	0.000000	0.000000	0.000000	0.040323
78.75-101.25	0.014785	0.000000	0.000000	0.000000	0.000000	0.000000	0.014785
101.25-123.75	0.024194	0.005376	0.000000	0.000000	0.000000	0.000000	0.029570
123.75-146.25	0.020161	0.004032	0.001344	0.000000	0.000000	0.000000	0.025538
146.25-168.75	0.029570	0.009409	0.004032	0.000000	0.000000	0.000000	0.043011
168.75-191.25	0.026882	0.034946	0.014785	0.000000	0.000000	0.000000	0.076613
191.25-213.75	0.024194	0.036290	0.008065	0.000000	0.000000	0.000000	0.068548
213.75-236.25	0.006720	0.016129	0.004032	0.000000	0.000000	0.000000	0.026882
236.25-258.75	0.006720	0.009409	0.001344	0.000000	0.000000	0.000000	0.017473
258.75-281.25	0.018817	0.014785	0.002688	0.000000	0.000000	0.000000	0.036290
281.25-303.75	0.009409	0.006720	0.001344	0.000000	0.000000	0.000000	0.017473
303.75-326.25	0.016129	0.020161	0.008065	0.000000	0.000000	0.000000	0.044355
326.25-348.75	0.010753	0.016129	0.024194	0.008065	0.001344	0.000000	0.060484
Total	0.403226	0.342742	0.116935	0.053763	0.018817	0.002688	0.938172

Frequency of Calm Winds: 6.18%
Average Wind Speed: 2.60 m/s

APPENDIX B

Listing of PM_{10} Concentrations

Background Monitor 962A

PM_{10} Sampler Summary

October 1, 2015 - December 31, 2015

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

AQS ID:

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
10/03/15	P2925402	**3.4**	**4.3**	23:59	24.0	19.3	383.774	383.858	0.084		
10/09/15	P2925405	**3.9**	**4.8**	23:59	24.0	19.4	378.354	378.448	0.094		
10/15/15	P2925673	**4.2**	**5.2**	23:59	24.0	19.2	380.279	380.380	0.101		
10/21/15	P2925676	**1.7**	**2.1**	23:59	24.0	19.7	385.623	385.666	0.043		
10/27/15	P2925821	**3.2**	**4.0**	23:59	24.0	19.7	381.088	381.167	0.079		
11/02/15	P2925818	**2.9**	**3.7**	24:00	24.0	19.5	383.707	383.779	0.072		
11/08/15	P2925997	**3.4**	**4.2**	23:59	24.0	19.8	378.045	378.129	0.084		
11/14/15	P2926001	**3.0**	**3.6**	23:59	24.0	20.1	380.767	380.841	0.074		
11/20/15	P2925823	**1.2**	**1.5**	23:59	24.0	20.0	385.435	385.466	0.031	XT,TD	
11/26/15	P2926218	**3.8**	**4.5**	23:59	24.0	20.3	372.823	372.915	0.092		
12/02/15	P2926221	**1.4**	**1.7**	23:59	24.0	20.4	374.032	374.068	0.036		
12/08/15	P2926451	**1.1**	**1.3**	23:59	24.0	19.9	381.167	381.194	0.027		
12/14/15	P2926454	**1.0**	**1.2**	23:59	24.0	20.2	381.989	382.015	0.026		
12/20/15	P2926659	**4.5**	**5.3**	23:59	24.0	20.2	381.298	381.407	0.109		
12/26/15	P2926665	**4.3**	**4.9**	23:59	24.0	20.9	378.735	378.839	0.104	TD	
11/17/15	P2925822		**Field Blank**				379.095	379.110	0.015	XT	

# Valid	Recovery	Average	St. Dev.	Max	Min
15	**100%**	**3.5**	**1.5**	**5.3**	**1.2**

BGI PQ200 Air Sampling System Downloaded 2015 05 oct 09:51:14

Job Details:

Job Name: 15Oct05A.JOB
Version: 5.62
Serial No: 962
Pump Time: 6868:18
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	581	577	578	mmHg
TA	17.8	0.3	9.3	°C
Q	---	---	16.7	Lpm

QCV 0.36 %

Max overheat 3.4 °C
occured 03-oct 11:01:09

Timer Information:

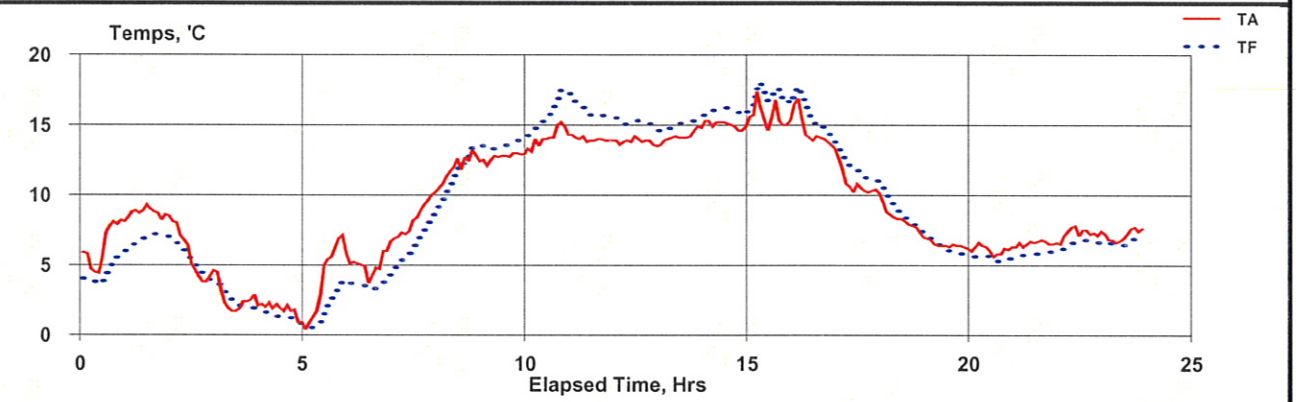
	Date dd-mmm	Time hh:mm:ss
Start:	15-03-oct	0:00:08
Stop:	15-04-oct	0:00:05

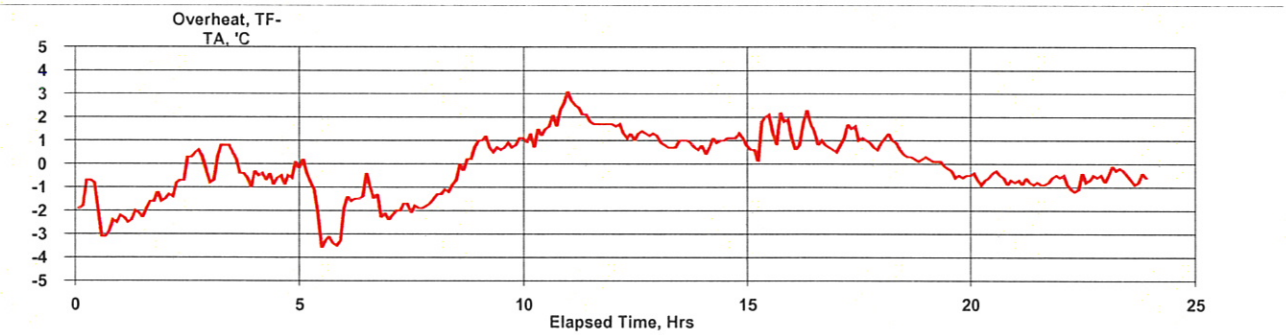
ET: 23:59

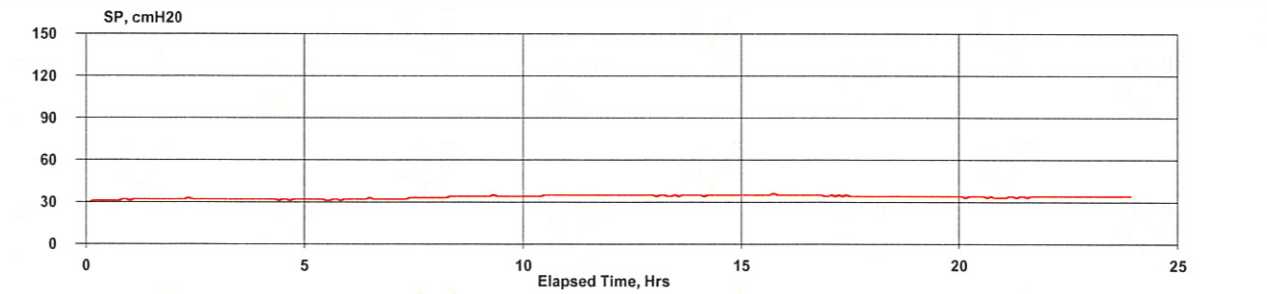
Mass Concentration Data:

Filter ID:	11	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.034	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-03-oct	0:05:08	581	6.5	4.5	-2.0	31	16.71
15-03-oct	1:05:08	581	8.7	6.8	-1.9	32	16.71
15-03-oct	2:05:08	580	5.6	5.2	-0.3	32	16.72
15-03-oct	3:05:08	580	2.5	2.5	0.0	32	16.70
15-03-oct	4:05:08	580	1.8	1.3	-0.5	32	16.70
15-03-oct	5:05:08	579	4.1	1.9	-2.2	32	16.71
15-03-oct	6:05:08	579	5.1	3.6	-1.5	32	16.71
15-03-oct	7:05:08	580	8.4	6.5	-1.9	33	16.72
15-03-oct	8:05:08	580	12.0	11.6	-0.4	34	16.71
15-03-oct	9:05:08	580	12.7	13.6	0.8	34	16.72
15-03-oct	10:05:08	579	14.1	15.8	1.7	35	16.71
15-03-oct	11:05:08	579	14.0	16.0	2.0	35	16.70
15-03-oct	12:05:08	579	13.8	15.1	1.3	35	16.69
15-03-oct	13:05:08	578	14.2	15.0	0.8	35	16.70
15-03-oct	14:05:08	578	15.0	16.0	1.0	35	16.72
15-03-oct	15:05:08	578	15.7	17.0	1.4	35	16.72
15-03-oct	16:05:08	578	14.5	15.6	1.1	35	16.70
15-03-oct	17:05:08	578	10.7	11.8	1.1	34	16.70
15-03-oct	18:05:08	578	8.1	8.7	0.6	34	16.72
15-03-oct	19:05:08	578	6.5	6.2	-0.2	34	16.72
15-03-oct	20:05:08	578	6.1	5.5	-0.6	34	16.70
15-03-oct	21:05:08	578	6.6	5.8	-0.8	34	16.71
15-03-oct	22:05:08	579	7.3	6.5	-0.8	34	16.71
15-03-oct	23:05:08	579	7.1	6.7	-0.5	34	16.71

BGI PQ200 Air Sampling System Downloaded 2015 12 oct 08:51:49

Job Details:

Job Name:	15Oct12A.JOB
Version:	5.62
Serial No:	962
Pump Time:	6892:17
Flags:	

Job Code:	
Site Name:	
Station Code:	
Operators:	
User1:	
User2:	

	Max	Min	Avg	Units
BP	591	588	590	mmHg
TA	21.7	5.5	13.2	°C
Q	---	---	16.7	Lpm
QCV			0.48	%
Max overheat			6.2	°C
occured 11-oct 18:12:25				

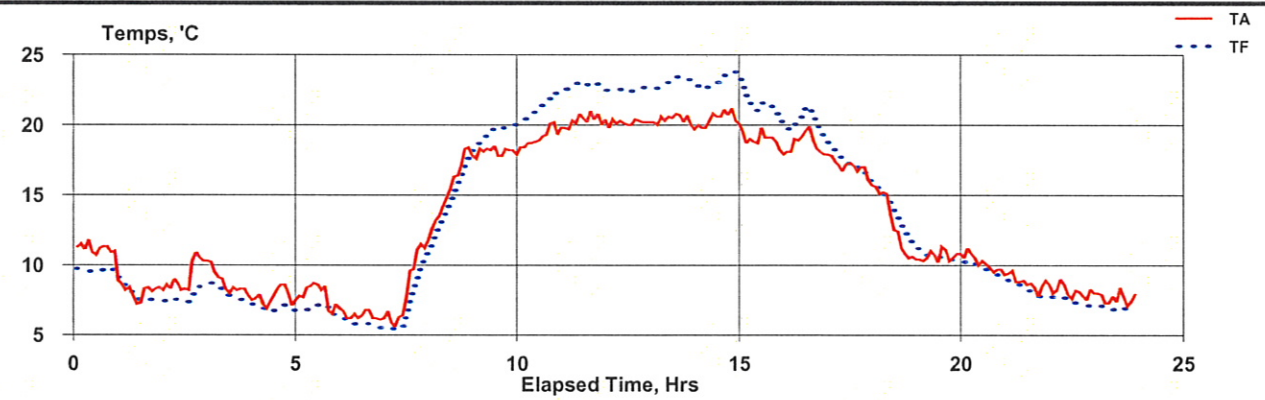
Timer Information:

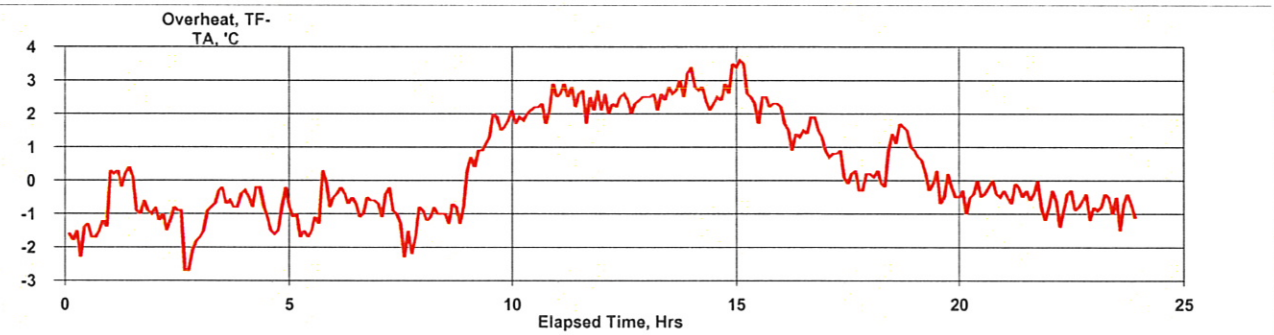
	Date dd-mmm	Time hh:mm:ss
Start:	15-09-oct	0:00:08
Stop:	15-10-oct	0:00:05
ET:	23:59	

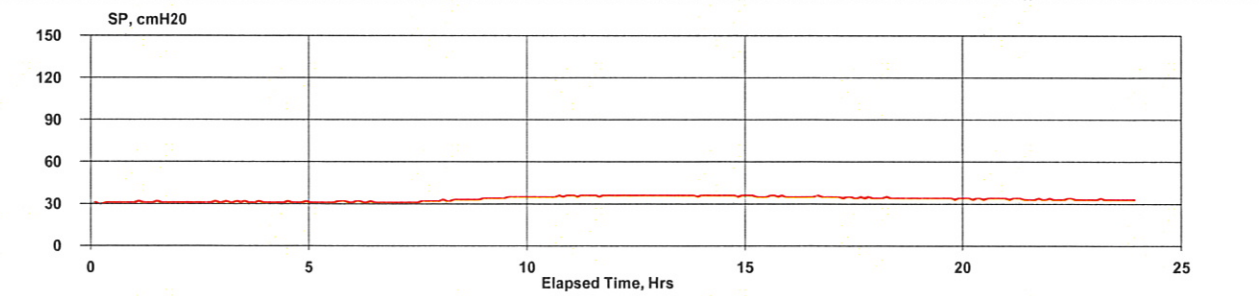
Mass Concentration Data:

Filter ID:	14	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.036	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-09-oct	0:05:08	589	11.0	9.6	-1.4	31	16.71
15-09-oct	1:05:08	590	8.1	7.8	-0.3	31	16.71
15-09-oct	2:05:08	589	9.3	7.8	-1.5	31	16.70
15-09-oct	3:05:08	589	8.6	7.9	-0.7	31	16.70
15-09-oct	4:05:08	590	7.7	6.9	-0.8	31	16.70
15-09-oct	5:05:08	590	7.8	6.8	-1.0	31	16.71
15-09-oct	6:05:08	590	6.4	5.8	-0.6	31	16.71
15-09-oct	7:05:08	590	8.6	7.4	-1.2	32	16.72
15-09-oct	8:05:08	591	15.7	14.8	-0.9	33	16.71
15-09-oct	9:05:08	591	18.1	19.5	1.4	35	16.72
15-09-oct	10:05:08	591	19.2	21.3	2.1	35	16.70
15-09-oct	11:05:08	591	20.3	22.8	2.5	36	16.70
15-09-oct	12:05:08	591	20.2	22.5	2.4	36	16.70
15-09-oct	13:05:08	590	20.4	23.1	2.7	36	16.69
15-09-oct	14:05:08	590	20.4	23.1	2.7	36	16.71
15-09-oct	15:05:08	590	18.9	21.4	2.5	35	16.70
15-09-oct	16:05:08	590	18.7	20.1	1.4	35	16.72
15-09-oct	17:05:08	590	16.9	17.2	0.3	35	16.73
15-09-oct	18:05:08	590	12.8	13.6	0.8	34	16.71
15-09-oct	19:05:08	590	10.7	10.6	-0.1	34	16.71
15-09-oct	20:05:08	590	10.1	9.7	-0.4	34	16.71
15-09-oct	21:05:08	591	8.8	8.2	-0.5	33	16.69
15-09-oct	22:05:08	591	8.1	7.4	-0.7	33	16.71
15-09-oct	23:05:08	591	7.7	6.9	-0.8	33	16.70

BGI PQ200 Air Sampling System

Downloaded 2015 16 oct 09:17:18

Job Details:

Job Name: 15Oct16A.JOB
Version: 5.62
Serial No: 962
Pump Time: 6916:16
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	589	586	587	mmHg
TA	25.2	4.8	15.8	°C
Q	---	---	16.7	Lpm

QCV 0.53 %

Max overheat 4.4 °C
occured 15-oct 13:00:54

Timer Information:

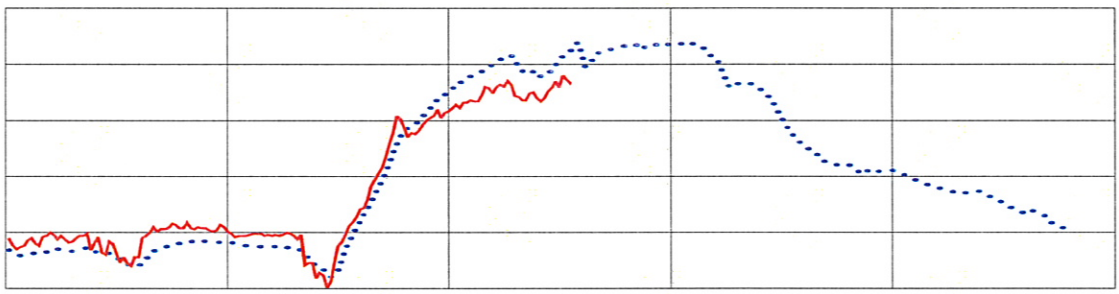
	Date dd-mmm	Time hh:mm:ss
Start:	15-15-oct	0:00:08
Stop:	15-16-oct	0:00:05

ET: 23:59

Mass Concentration Data:

Filter ID:	4	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.039	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:



Overheat, TF-

15-15-oct	0:05:08	588	9.2	8.1	-1.1	32	16.72
15-15-oct	1:05:08	588	9.4	8.4	-1.0	32	16.71
15-15-oct	2:05:08	588	8.1	7.6	-0.5	32	16.71
15-15-oct	3:05:08	588	10.3	8.5	-1.8	32	16.72
15-15-oct	4:05:08	588	10.4	9.2	-1.2	33	16.71
15-15-oct	5:05:08	587	9.8	8.8	-0.9	33	16.71
15-15-oct	6:05:08	588	8.8	8.2	-0.6	33	16.71
15-15-oct	7:05:08	588	8.6	7.9	-0.8	33	16.71
15-15-oct	8:05:08	589	16.5	15.1	-1.4	34	16.71
15-15-oct	9:05:08	589	19.9	20.9	1.0	35	16.71
15-15-oct	10:05:08	589	21.9	23.9	2.0	36	16.71
15-15-oct	11:05:08	588	22.6	24.9	2.4	37	16.71
15-15-oct	12:05:08	588	23.0	25.3	2.3	37	16.71
15-15-oct	13:05:08	587	23.3	26.0	2.7	37	16.71
15-15-oct	14:05:08	587	23.5	26.6	3.1	37	16.71
15-15-oct	15:05:08	587	23.5	26.5	3.1	37	16.70
15-15-oct	16:05:08	587	21.7	23.4	1.7	37	16.71
15-15-oct	17:05:08	587	19.3	20.1	0.8	36	16.71
15-15-oct	18:05:08	587	17.1	16.5	-0.6	36	16.71
15-15-oct	19:05:08	587	16.6	15.5	-1.2	35	16.71
15-15-oct	20:05:08	587	15.6	14.7	-0.9	35	16.71
15-15-oct	21:05:08	587	15.0	13.6	-1.4	35	16.71
15-15-oct	22:05:08	587	13.5	12.5	-1.0	35	16.71
15-15-oct	23:05:08	587	11.6	11.1	-0.5	35	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 22 oct 11:39:28

Job Details:

Job Name: 15Oct22A.JOB
Version: 5.62
Serial No: 962
Pump Time: 6940:15
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	585	582	583	mmHg
TA	13.1	0.6	5.9	°C
Q	---	---	16.7	Lpm

QCV 0.54 %

Max overheat 3.4 °C
occured 21-oct 12:51:27

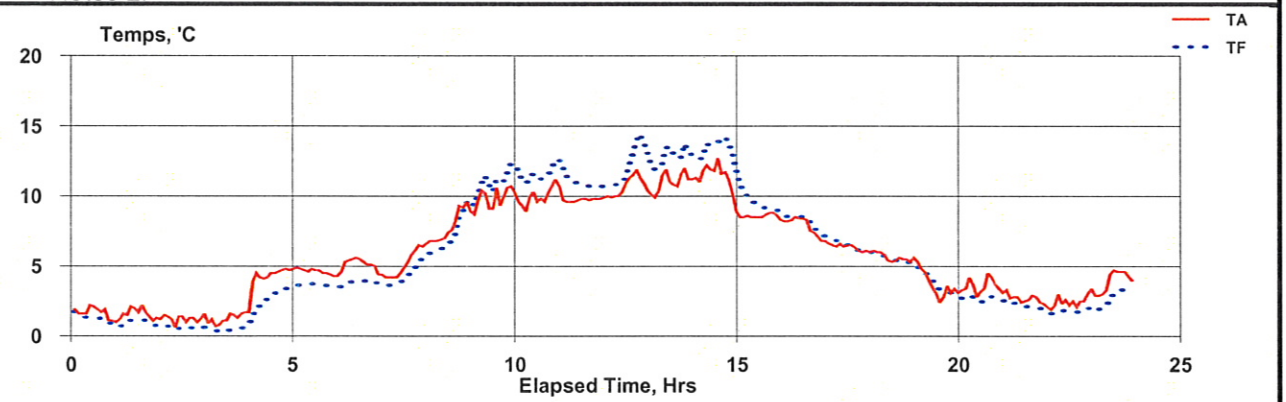
Timer Information:

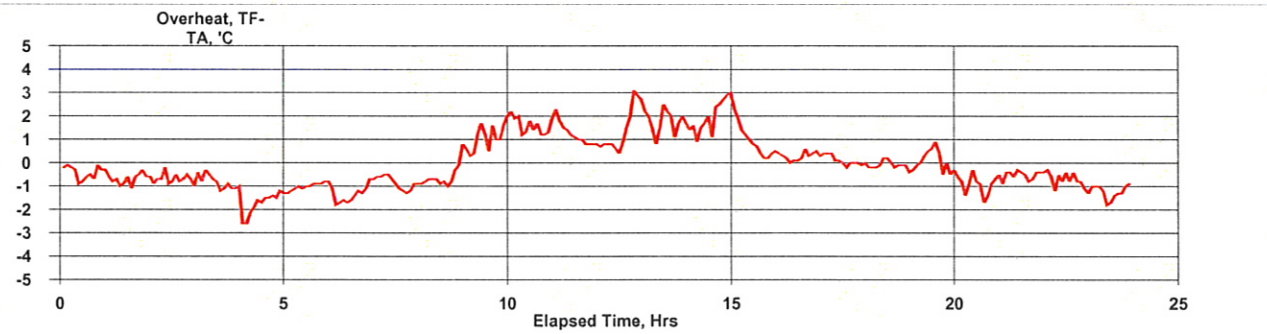
	Date dd-mmm	Time hh:mm:ss
Start:	15-21-oct	0:00:08
Stop:	15-22-oct	0:00:05
ET:	23:59	

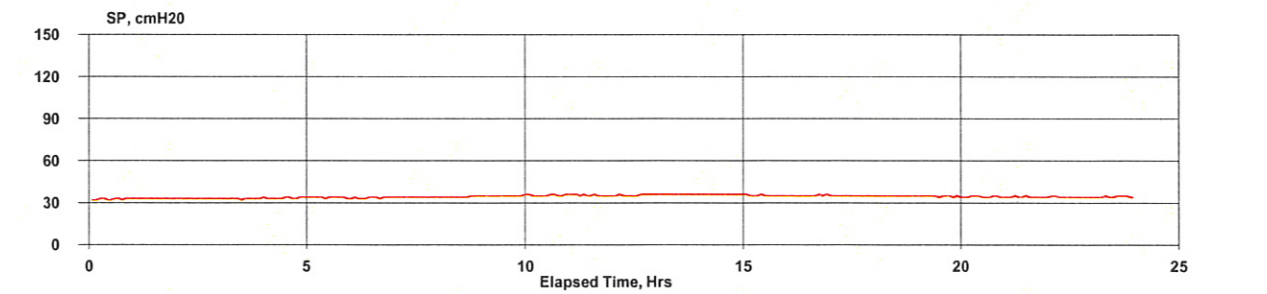
Mass Concentration Data:

Filter ID:	7	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.04	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-21-oct	0:05:08	583	1.6	1.2	-0.4	33	16.70
15-21-oct	1:05:08	583	1.6	0.9	-0.7	33	16.71
15-21-oct	2:05:08	583	1.2	0.5	-0.7	33	16.71
15-21-oct	3:05:08	583	1.3	0.4	-0.8	33	16.71
15-21-oct	4:05:08	583	4.5	2.7	-1.7	33	16.71
15-21-oct	5:05:08	583	4.6	3.6	-1.0	34	16.71
15-21-oct	6:05:08	584	5.1	3.8	-1.3	34	16.71
15-21-oct	7:05:08	584	5.2	4.4	-0.9	34	16.71
15-21-oct	8:05:08	584	7.9	7.3	-0.6	34	16.70
15-21-oct	9:05:08	584	9.9	11.0	1.1	35	16.71
15-21-oct	10:05:08	584	10.0	11.6	1.6	35	16.70
15-21-oct	11:05:08	584	9.7	10.9	1.2	35	16.70
15-21-oct	12:05:08	584	10.7	12.1	1.4	36	16.71
15-21-oct	13:05:08	583	11.0	12.8	1.8	36	16.71
15-21-oct	14:05:08	583	11.3	13.3	2.0	36	16.71
15-21-oct	15:05:08	583	8.6	9.5	0.9	35	16.71
15-21-oct	16:05:08	583	7.8	8.1	0.3	35	16.71
15-21-oct	17:05:08	584	6.3	6.4	0.1	35	16.71
15-21-oct	18:05:08	584	5.6	5.5	-0.1	35	16.71
15-21-oct	19:05:08	584	3.6	3.7	0.1	35	16.71
15-21-oct	20:05:08	584	3.6	2.7	-0.9	34	16.73
15-21-oct	21:05:08	584	2.6	2.1	-0.5	34	16.71
15-21-oct	22:05:08	584	2.5	1.8	-0.8	34	16.70
15-21-oct	23:05:08	584	3.9	2.7	-1.2	34	16.71

BGI PQ200 Air Sampling System Downloaded 2015 29 oct 09:50:06

Job Details:

Job Name: 15Oct29A.JOB
Version: 5.62
Serial No: 962
Pump Time: 6964:14
Flags:

Job Code:
Site Name: 962A
Station Code:
Operators: kn
User1:
User2:

	Max	Min	Avg	Units
BP	586	583	585	mmHg
TA	16.6	0.1	6.9	°C
Q	---	---	16.7	Lpm

QCV 0.56 %
Max overheat 2.9 °C
occured 27-oct 17:39:29

Timer Information:

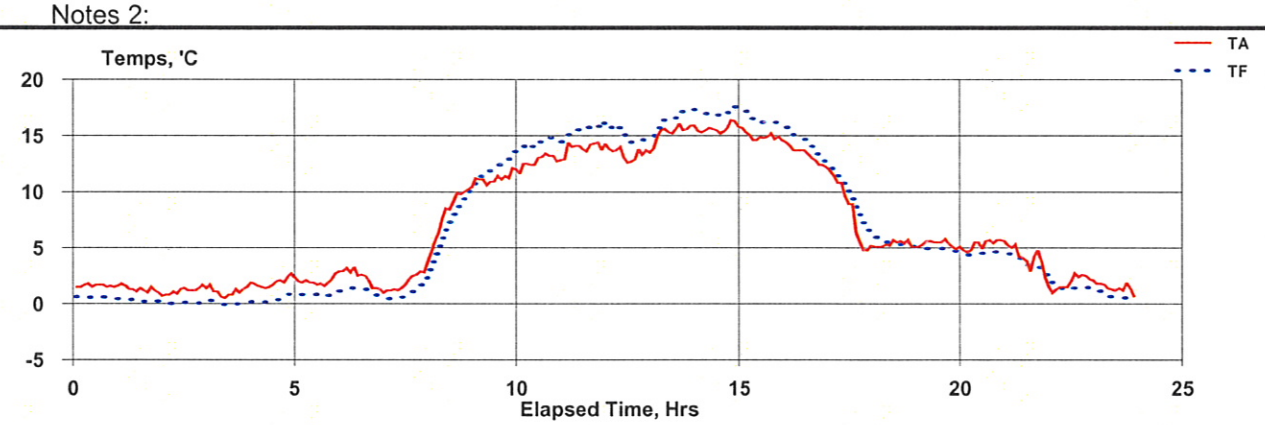
	Date dd-mmm	Time hh:mm:ss
Start:	15-27-oct	0:00:08
Stop:	15-28-oct	0:00:05

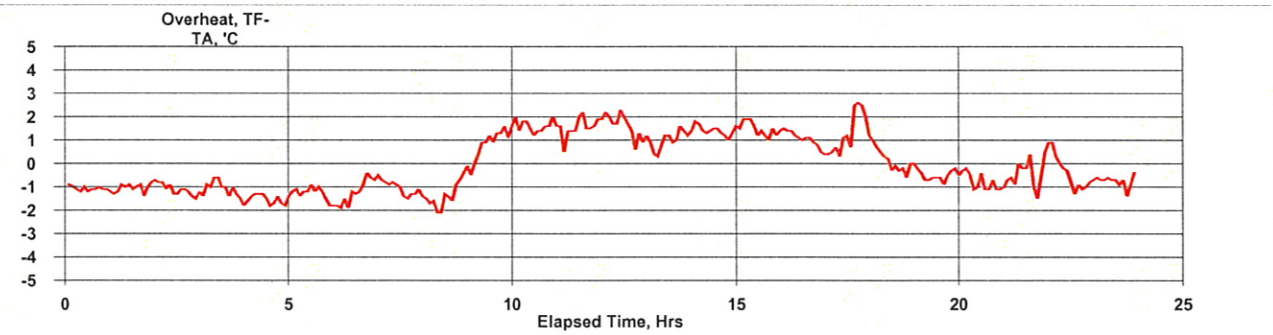
ET: 23:59

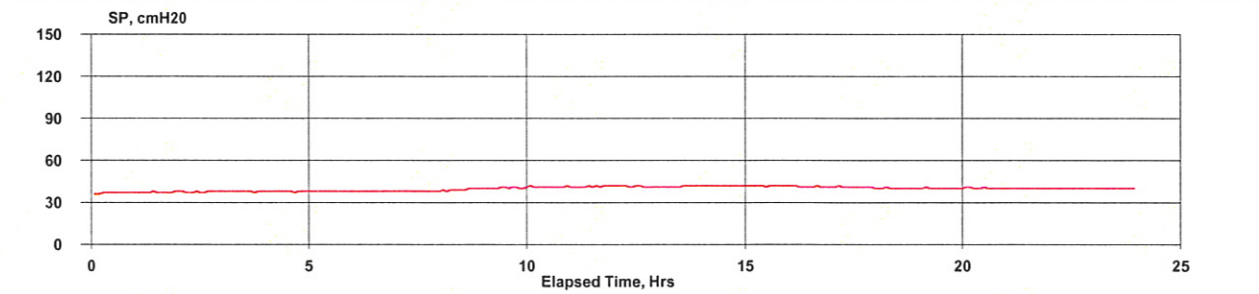
Mass Concentration Data:

Filter ID:	IML 1	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.041	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-27-oct	0:05:08	585	1.6	0.5	-1.1	37	16.70
15-27-oct	1:05:08	585	1.3	0.2	-1.0	37	16.71
15-27-oct	2:05:08	585	1.2	0.1	-1.1	38	16.71
15-27-oct	3:05:08	585	1.1	0.0	-1.1	38	16.71
15-27-oct	4:05:08	585	1.9	0.4	-1.5	38	16.71
15-27-oct	5:05:08	585	2.1	0.8	-1.3	38	16.69
15-27-oct	6:05:08	585	2.3	1.1	-1.2	38	16.71
15-27-oct	7:05:08	585	2.1	1.0	-1.1	38	16.70
15-27-oct	8:05:08	585	8.4	7.1	-1.3	39	16.72
15-27-oct	9:05:08	586	11.3	12.1	0.9	40	16.72
15-27-oct	10:05:08	585	12.7	14.3	1.6	41	16.72
15-27-oct	11:05:08	585	14.0	15.6	1.6	42	16.70
15-27-oct	12:05:08	585	13.4	15.0	1.6	41	16.71
15-27-oct	13:05:08	585	15.4	16.4	1.0	42	16.71
15-27-oct	14:05:08	585	15.7	17.1	1.4	42	16.71
15-27-oct	15:05:08	585	14.9	16.4	1.5	42	16.71
15-27-oct	16:05:08	585	13.3	14.3	1.0	41	16.71
15-27-oct	17:05:08	585	8.2	9.6	1.3	41	16.71
15-27-oct	18:05:08	585	5.3	5.4	0.1	40	16.71
15-27-oct	19:05:08	585	5.4	4.9	-0.5	40	16.72
15-27-oct	20:05:08	585	5.3	4.5	-0.8	40	16.71
15-27-oct	21:05:08	585	3.9	3.6	-0.3	40	16.71
15-27-oct	22:05:08	586	1.9	1.5	-0.5	40	16.71
15-27-oct	23:05:08	586	1.4	0.7	-0.8	40	16.71

BGI PQ200 Air Sampling System Downloaded 2015 03 nov 09:21:22

Job Details:

Job Name: 15Nov03A.JOB
Version: 5.62
Serial No: 962
Pump Time: 6988:14
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	584	577	580	mmHg
TA	15.3	-0.5	7.9	°C
Q	---	---	16.7	Lpm

QCV 0.47 %
Max overheat 2.8 °C
occured 02-nov 12:13:35

Timer Information:

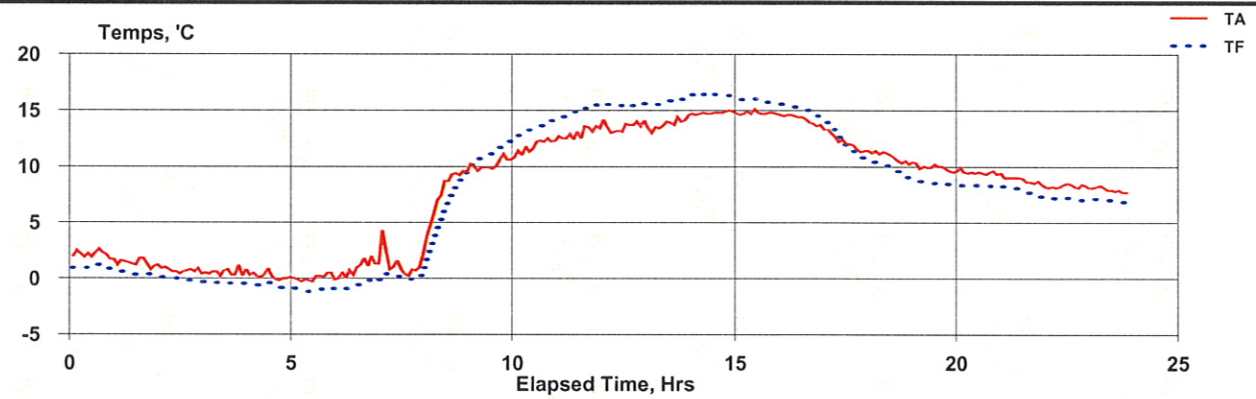
	Date dd-mmm	Time hh:mm:ss
Start:	15-02-nov	0:00:00
Stop:	15-03-nov	0:00:05

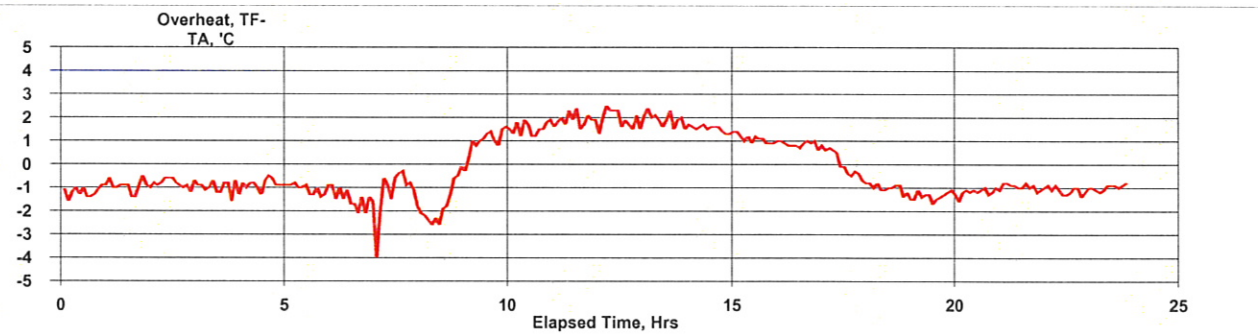
ET: 24:00:00

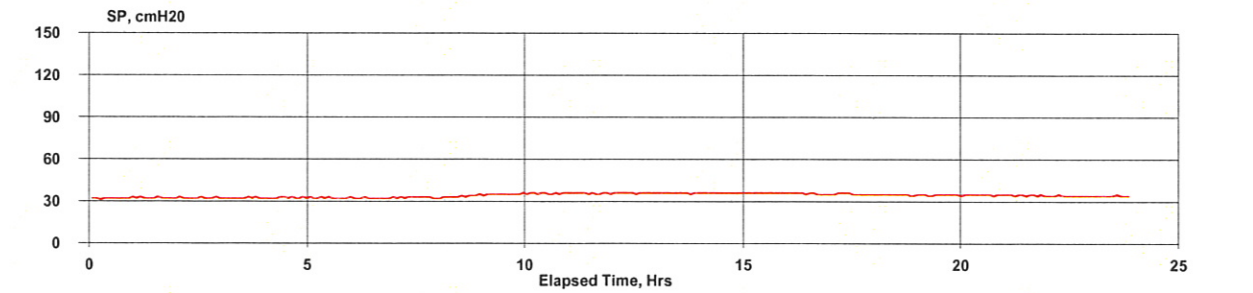
Mass Concentration Data:

Filter ID:	11	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.034	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-02-nov	0:05:00	584	2.1	0.9	-1.2	32	16.71
15-02-nov	1:05:00	583	1.4	0.4	-1.0	32	16.70
15-02-nov	2:05:00	583	0.7	-0.1	-0.8	32	16.71
15-02-nov	3:05:00	583	0.6	-0.5	-1.0	32	16.70
15-02-nov	4:05:00	582	0.2	-0.7	-0.8	32	16.71
15-02-nov	5:05:00	582	0.0	-1.0	-1.1	32	16.71
15-02-nov	6:05:00	582	0.9	-0.6	-1.5	32	16.71
15-02-nov	7:05:00	582	1.4	0.1	-1.2	33	16.71
15-02-nov	8:05:00	582	7.8	6.1	-1.7	33	16.71
15-02-nov	9:05:00	582	10.2	11.1	1.0	35	16.71
15-02-nov	10:05:00	582	11.8	13.3	1.5	36	16.71
15-02-nov	11:05:00	581	13.0	14.9	1.9	36	16.69
15-02-nov	12:05:00	581	13.6	15.5	1.9	36	16.70
15-02-nov	13:05:00	580	13.8	15.7	1.9	36	16.70
15-02-nov	14:05:00	579	14.8	16.3	1.5	36	16.71
15-02-nov	15:05:00	579	14.8	15.9	1.1	36	16.71
15-02-nov	16:05:00	578	14.2	15.1	0.9	36	16.71
15-02-nov	17:05:00	578	12.2	12.3	0.1	35	16.70
15-02-nov	18:05:00	578	10.9	9.9	-1.0	35	16.71
15-02-nov	19:05:00	578	10.0	8.6	-1.4	35	16.70
15-02-nov	20:05:00	578	9.5	8.3	-1.2	35	16.70
15-02-nov	21:05:00	578	8.8	7.9	-1.0	35	16.70
15-02-nov	22:05:00	577	8.3	7.1	-1.1	34	16.71
15-02-nov	23:05:00	577	8.0	7.0	-1.0	34	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 09 nov 13:20:11

Job Details:

Job Name:	15Nov09A.JOB
Version:	5.62
Serial No:	962
Pump Time:	7012:13
Flags:	

Job Code:	
Site Name:	962A
Station Code:	
Operators:	KN
User1:	
User2:	

	Max	Min	Avg	Units
BP	587	583	584	mmHg
TA	11	-5.8	4.5	°C
Q	---	---	16.71	Lpm

QCV	0.54 %
Max overheat	3.5 °C
occured	08-nov 13:10:55

Timer Information:

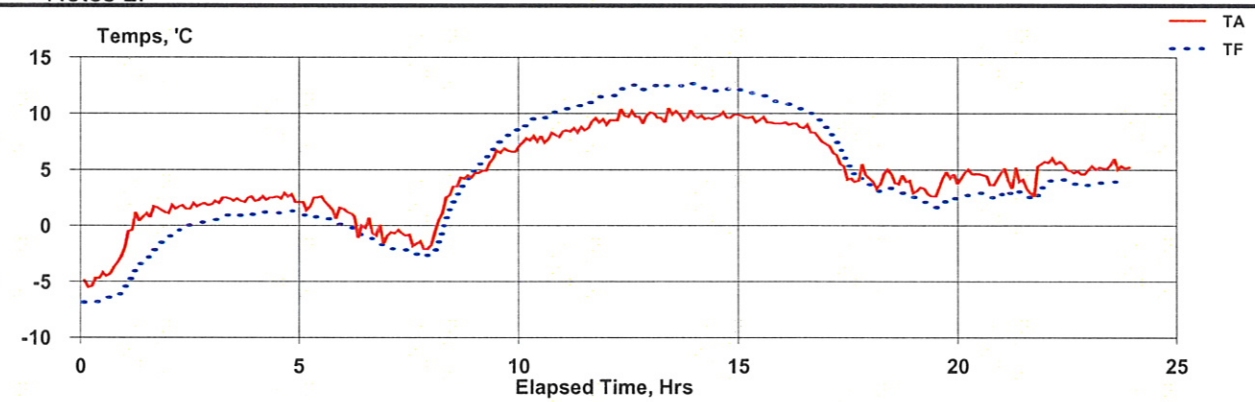
	Date dd-mmm	Time hh:mm:ss
Start:	15-08-nov	0:00:08
Stop:	15-09-nov	0:00:04
ET:	23:59	

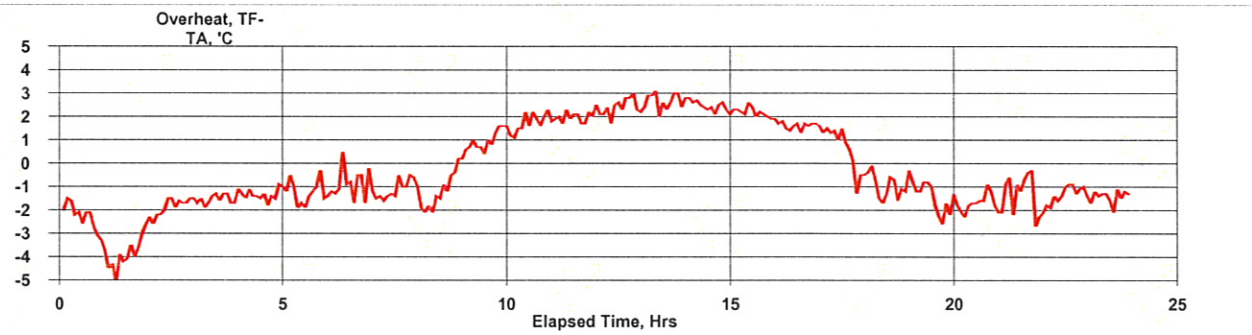
Mass Concentration Data:

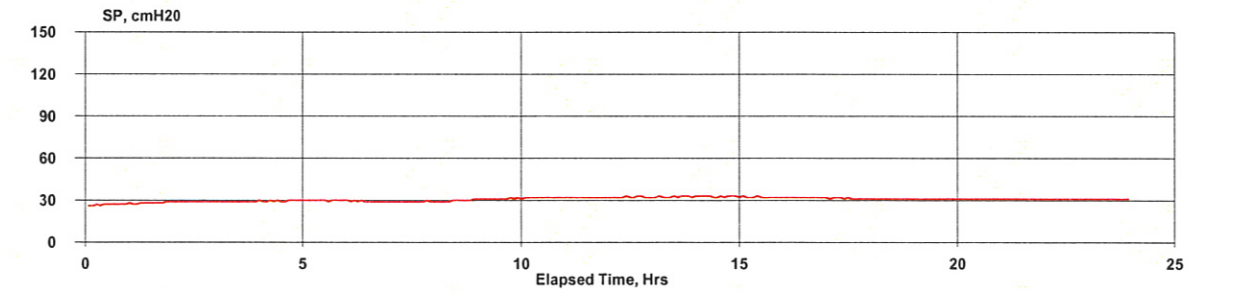
Filter ID:	17	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.042	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:







15-08-nov	0:05:08	586	-4.2	-6.6	-2.4	27	16.72
15-08-nov	1:05:08	586	0.9	-2.9	-3.8	28	16.72
15-08-nov	2:05:08	586	1.8	-0.1	-1.8	29	16.70
15-08-nov	3:05:08	585	2.3	0.8	-1.5	29	16.71
15-08-nov	4:05:08	585	2.5	1.1	-1.3	30	16.70
15-08-nov	5:05:08	585	1.8	0.6	-1.3	30	16.71
15-08-nov	6:05:08	585	-0.1	-1.0	-0.9	29	16.71
15-08-nov	7:05:08	585	-1.2	-2.3	-1.1	29	16.71
15-08-nov	8:05:08	586	2.9	1.8	-1.1	30	16.71
15-08-nov	9:05:08	586	6.1	7.1	1.0	31	16.71
15-08-nov	10:05:08	586	7.8	9.6	1.7	32	16.71
15-08-nov	11:05:08	585	8.9	10.9	2.0	32	16.71
15-08-nov	12:05:08	585	9.7	12.1	2.4	32	16.72
15-08-nov	13:05:08	584	9.8	12.5	2.7	33	16.71
15-08-nov	14:05:08	584	9.7	12.2	2.4	33	16.72
15-08-nov	15:05:08	584	9.4	11.6	2.2	32	16.71
15-08-nov	16:05:08	584	8.5	10.1	1.6	32	16.71
15-08-nov	17:05:08	584	5.1	5.7	0.6	31	16.71
15-08-nov	18:05:08	583	4.0	3.1	-0.9	31	16.72
15-08-nov	19:05:08	583	3.6	2.1	-1.5	31	16.71
15-08-nov	20:05:08	583	4.4	2.7	-1.7	31	16.70
15-08-nov	21:05:08	583	4.2	2.9	-1.4	31	16.71
15-08-nov	22:05:08	583	5.2	3.9	-1.3	31	16.71
15-08-nov	23:05:08	583	5.2	3.8	-1.4	31	16.72

BGI PQ200 Air Sampling System Downloaded 2015 17 nov 13:21:52

Job Details:

Job Name:	15Nov17A.JOB	Job Code:	
Version:	5.62	Site Name:	962A
Serial No:	962	Station Code:	
Pump Time:	7036:12	Operators:	KN
Flags:		User1:	
		User2:	

	Max	Min	Avg	Units
BP	586	582	584	mmHg
TA	11.5	-8.1	1.3	°C
Q	---	---	16.7	Lpm

QCV	0.52 %
Max overheat	3.2 °C
occured	14-nov 13:16:00

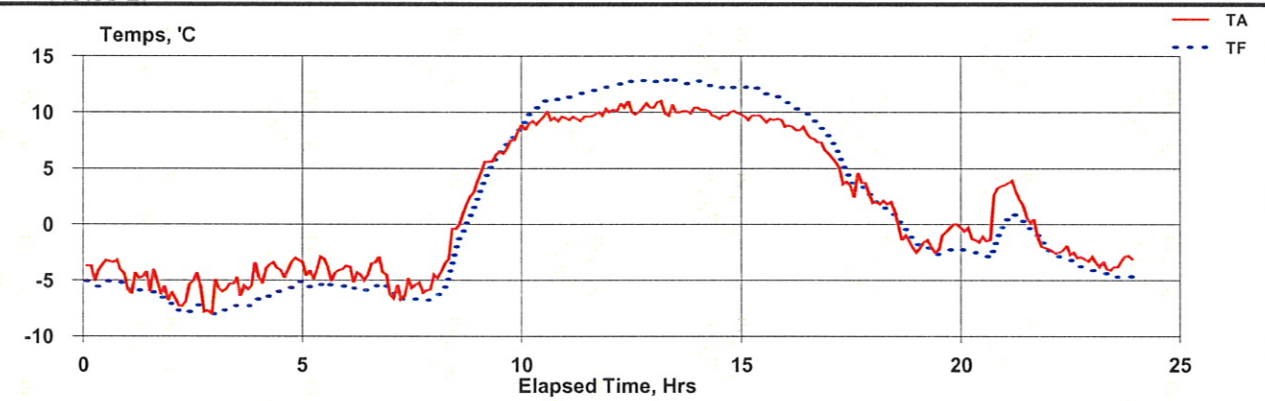
Timer Information:

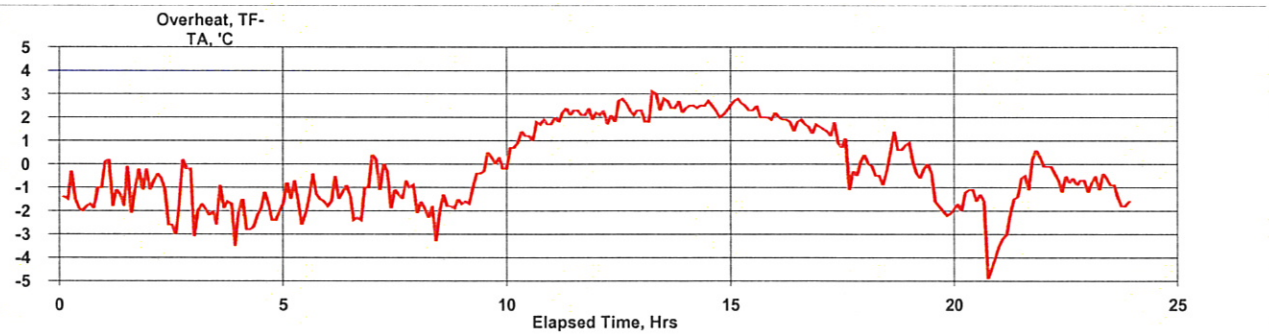
	Date dd-mmm	Time hh:mm:ss
Start:	15-14-nov	0:00:08
Stop:	15-15-nov	0:00:05
ET:	23:59	

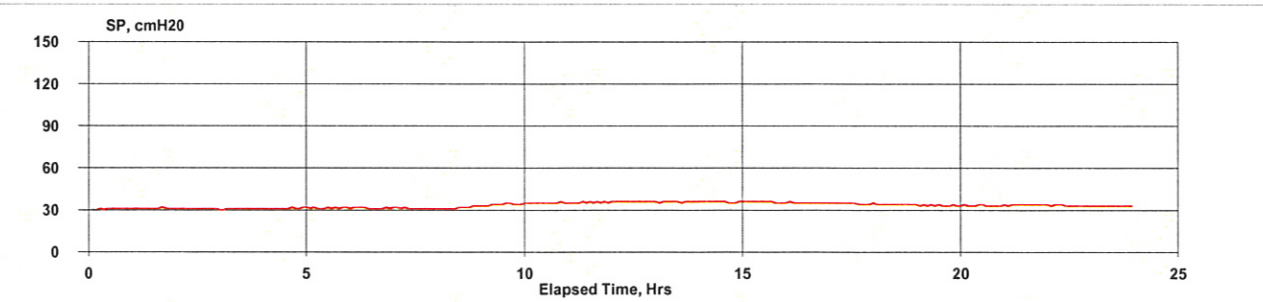
Mass Concentration Data:

Filter ID:	7	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.035	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-14-nov	0:05:08	586	-4.0	-5.3	-1.3	31	16.71
15-14-nov	1:05:08	585	-5.3	-6.3	-1.0	31	16.71
15-14-nov	2:05:08	585	-6.4	-7.7	-1.3	31	16.72
15-14-nov	3:05:08	585	-5.3	-7.3	-2.0	31	16.71
15-14-nov	4:05:08	585	-3.8	-5.9	-2.1	31	16.72
15-14-nov	5:05:08	585	-4.1	-5.5	-1.4	31	16.71
15-14-nov	6:05:08	585	-4.4	-5.7	-1.3	32	16.71
15-14-nov	7:05:08	585	-5.7	-6.7	-1.0	31	16.72
15-14-nov	8:05:08	585	-0.4	-2.3	-1.9	32	16.71
15-14-nov	9:05:08	585	6.6	6.2	-0.4	34	16.71
15-14-nov	10:05:08	585	9.3	10.6	1.3	35	16.72
15-14-nov	11:05:08	585	9.7	11.8	2.2	35	16.71
15-14-nov	12:05:08	584	10.4	12.6	2.3	36	16.71
15-14-nov	13:05:08	584	10.3	12.7	2.5	36	16.70
15-14-nov	14:05:08	584	9.9	12.3	2.4	36	16.70
15-14-nov	15:05:08	584	9.4	11.7	2.3	36	16.70
15-14-nov	16:05:08	584	7.8	9.5	1.7	35	16.71
15-14-nov	17:05:08	583	3.9	4.5	0.6	35	16.71
15-14-nov	18:05:08	583	0.2	0.4	0.2	34	16.71
15-14-nov	19:05:08	584	-1.2	-2.3	-1.1	33	16.72
15-14-nov	20:05:08	583	0.3	-2.1	-2.4	33	16.71
15-14-nov	21:05:08	584	0.7	-0.4	-1.0	34	16.70
15-14-nov	22:05:08	583	-2.7	-3.3	-0.7	33	16.71
15-14-nov	23:05:08	583	-3.5	-4.6	-1.1	33	16.71

BGI PQ200 Air Sampling System Downloaded 2015 23 nov 09:55:00

Job Details:

Job Name:	15Nov23A.JOB	Job Code:	
Version:	5.62	Site Name:	962A
Serial No:	962	Station Code:	
Pump Time:	7060:11	Operators:	KN
Flags:	F	User1:	
		User2:	

	Max	Min	Avg	Units
BP	589	583	585	mmHg
TA	11.4	-7.1	2.5	°C
Q	---	---	16.7	Lpm

QCV	0.42 %
Max overheat	8.4 °C
occured	21-nov 17:19:34

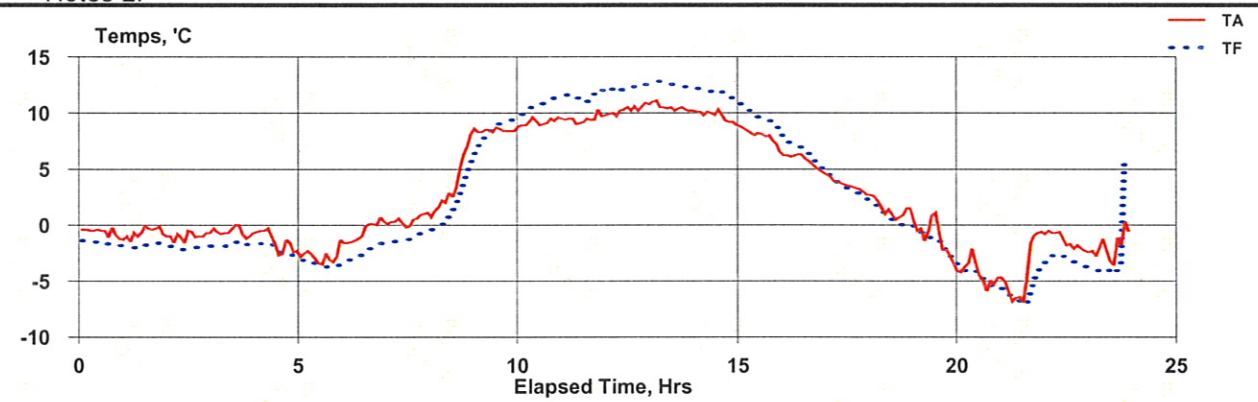
Timer Information:

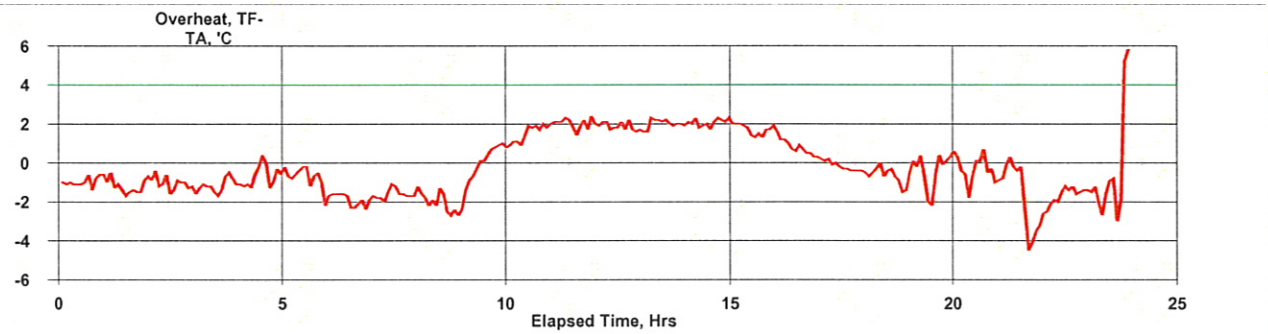
	Date dd-mmm	Time hh:mm:ss
Start:	15-20-nov	0:00:08
Stop:	15-21-nov	0:00:05
ET:	23:59	

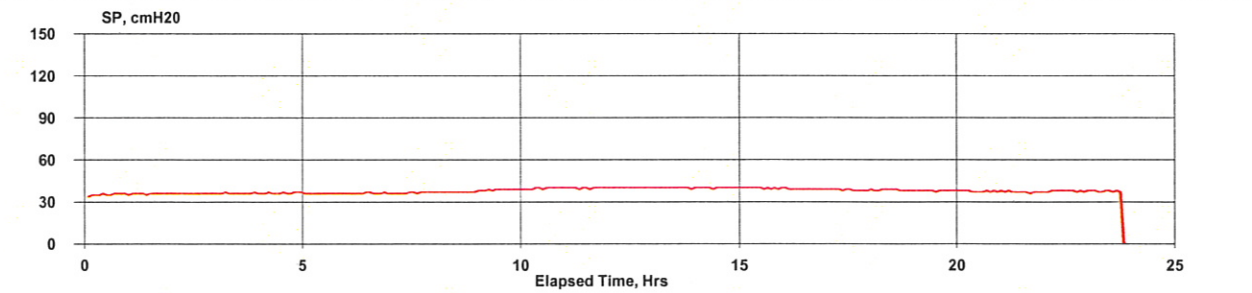
Mass Concentration Data:

Filter ID:	5	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.038	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-20-nov	0:05:08	585	-0.7	-1.6	-1.0	35	16.71
15-20-nov	1:05:08	585	-0.7	-1.9	-1.2	36	16.71
15-20-nov	2:05:08	584	-1.0	-2.0	-1.1	36	16.72
15-20-nov	3:05:08	584	-0.6	-1.8	-1.2	36	16.71
15-20-nov	4:05:08	584	-1.5	-2.2	-0.7	36	16.70
15-20-nov	5:05:08	584	-2.8	-3.5	-0.7	36	16.71
15-20-nov	6:05:08	584	-0.6	-2.5	-1.9	36	16.70
15-20-nov	7:05:08	584	0.4	-1.2	-1.6	37	16.71
15-20-nov	8:05:08	585	3.6	1.6	-2.0	37	16.71
15-20-nov	9:05:08	585	8.5	8.3	-0.1	39	16.71
15-20-nov	10:05:08	586	9.2	10.6	1.4	40	16.72
15-20-nov	11:05:08	586	9.5	11.5	2.0	40	16.71
15-20-nov	12:05:08	585	10.2	12.1	1.9	40	16.71
15-20-nov	13:05:08	585	10.5	12.5	2.0	40	16.71
15-20-nov	14:05:08	586	9.8	11.9	2.0	40	16.71
15-20-nov	15:05:08	586	8.2	9.9	1.7	40	16.71
15-20-nov	16:05:08	587	5.9	6.8	0.9	39	16.71
15-20-nov	17:05:08	587	3.8	3.6	-0.1	39	16.71
15-20-nov	18:05:08	587	1.6	1.0	-0.6	39	16.71
15-20-nov	19:05:08	588	-0.6	-1.1	-0.6	38	16.71
15-20-nov	20:05:08	588	-4.2	-4.3	-0.2	38	16.72
15-20-nov	21:05:08	588	-4.6	-6.1	-1.5	37	16.70
15-20-nov	22:05:08	588	-1.2	-3.1	-1.9	38	16.70
15-20-nov	23:05:08	588	-2.3	-4.0	-1.7	38	16.72
15-21-nov	17:37:09	587	-0.1	5.4	5.5		0.00

BGI PQ200 Air Sampling System Downloaded 2015 30 nov 09:56:32

Job Details:

Job Name: 15Nov30A.JOB
Version: 5.62
Serial No: 962
Pump Time: 7084:10
Flags:

Job Code:
Site Name: 962A
Station Code:
Operators: KN
User1:
User2:

	Max	Min	Avg	Units
BP	580	576	578	mmHg
TA	1.1	-11.1	-4.8	°C
Q	---	---	16.7	Lpm

QCV 0.42 %

Max overheat 5.3 °C
occured 27-nov 20:41:27

Timer Information:

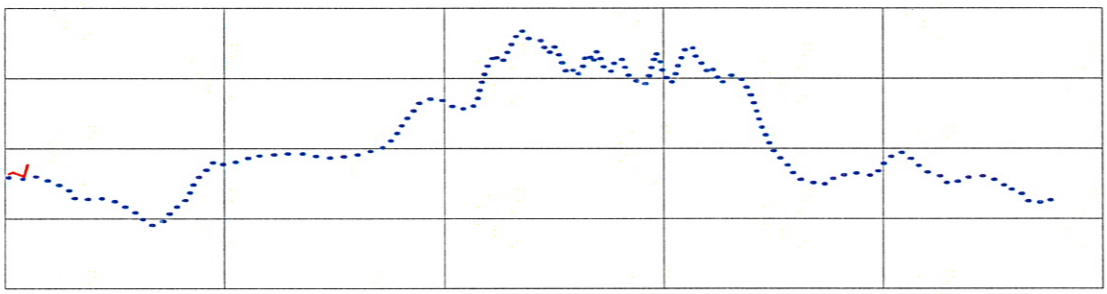
	Date dd-mmm	Time hh:mm:ss
Start:	15-26-nov	0:00:08
Stop:	15-27-nov	0:00:05

ET: 23:59

Mass Concentration Data:

Filter ID:	5	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.022	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:



Overheat, TF-

15-26-nov	0:05:08	577	-6.8	-7.1	-0.3	32	16.72
15-26-nov	1:05:08	577	-8.3	-8.2	0.1	33	16.72
15-26-nov	2:05:08	578	-8.9	-9.0	-0.1	33	16.70
15-26-nov	3:05:08	578	-9.6	-10.0	-0.4	32	16.69
15-26-nov	4:05:08	578	-5.4	-7.0	-1.6	33	16.74
15-26-nov	5:05:08	578	-5.5	-5.8	-0.3	34	16.71
15-26-nov	6:05:08	578	-5.5	-5.4	0.1	34	16.71
15-26-nov	7:05:08	579	-5.9	-5.6	0.2	34	16.71
15-26-nov	8:05:08	579	-4.8	-4.8	0.0	34	16.71
15-26-nov	9:05:08	579	-3.4	-2.0	1.4	35	16.70
15-26-nov	10:05:08	580	-3.3	-1.5	1.8	35	16.71
15-26-nov	11:05:08	580	-1.2	2.2	3.4	35	16.71
15-26-nov	12:05:08	579	-1.2	1.6	2.8	35	16.71
15-26-nov	13:05:08	579	-0.9	1.1	1.9	35	16.71
15-26-nov	14:05:08	579	-1.0	0.4	1.5	35	16.71
15-26-nov	15:05:08	579	-0.3	1.0	1.3	35	16.72
15-26-nov	16:05:08	579	-1.0	-0.1	0.9	35	16.69
15-26-nov	17:05:08	579	-5.9	-4.9	1.0	34	16.71
15-26-nov	18:05:08	579	-6.5	-7.3	-0.8	34	16.74
15-26-nov	19:05:08	579	-5.9	-6.8	-0.9	34	16.71
15-26-nov	20:05:08	580	-5.0	-5.8	-0.8	34	16.71
15-26-nov	21:05:08	580	-6.4	-7.2	-0.8	34	16.71
15-26-nov	22:05:08	580	-6.8	-7.4	-0.6	34	16.69
15-26-nov	23:05:08	580	-7.9	-8.7	-0.7	33	16.60

BGI PQ200 Air Sampling System Downloaded 2015 04 dec 10:57:38

Job Details:

Job Name: 15Dec04A.JOB
Version: 5.62
Serial No: 962
Pump Time: 7108:09
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	589	585	587	mmHg
TA	9.3	-10.5	-1.3	°C
Q	---	---	16.71	Lpm

QCV 0.94 %

Max overheat 4.2 °C
occured 02-dec 16:53:31

Timer Information:

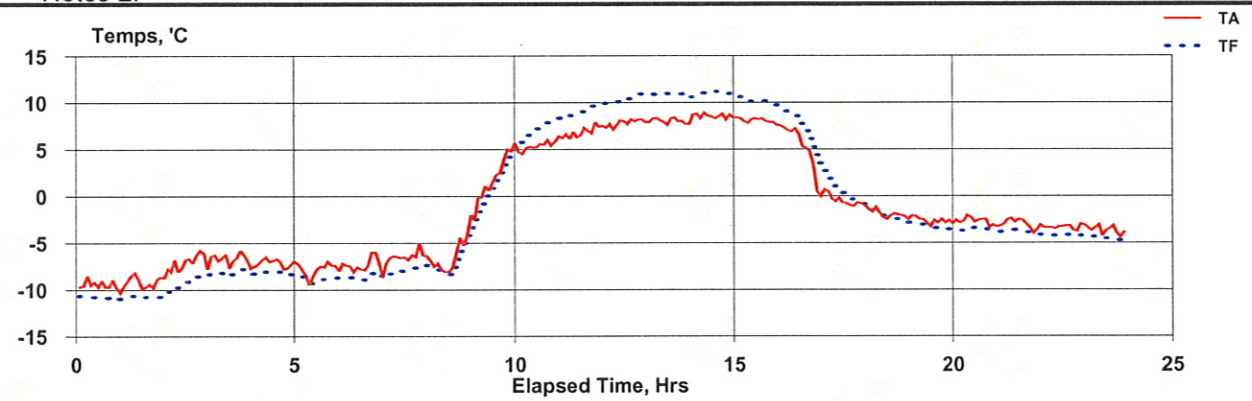
	Date dd-mmm	Time hh:mm:ss
Start:	15-02-dec	0:00:08
Stop:	15-03-dec	0:00:05

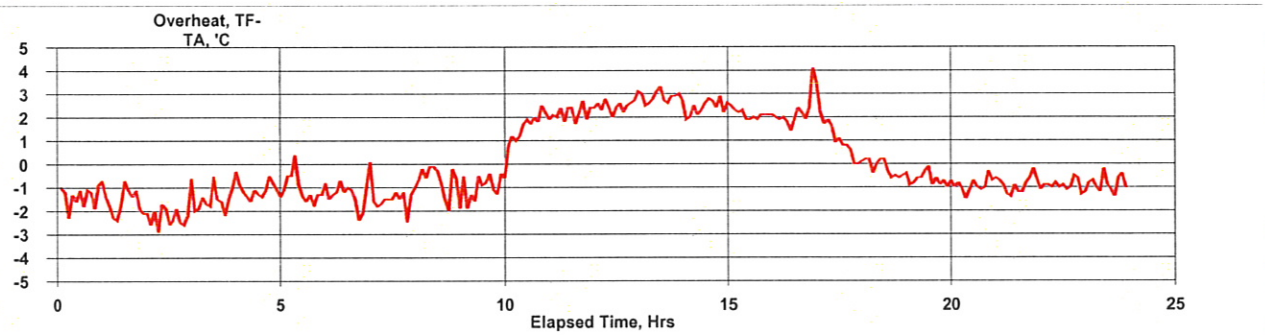
ET: 23:59

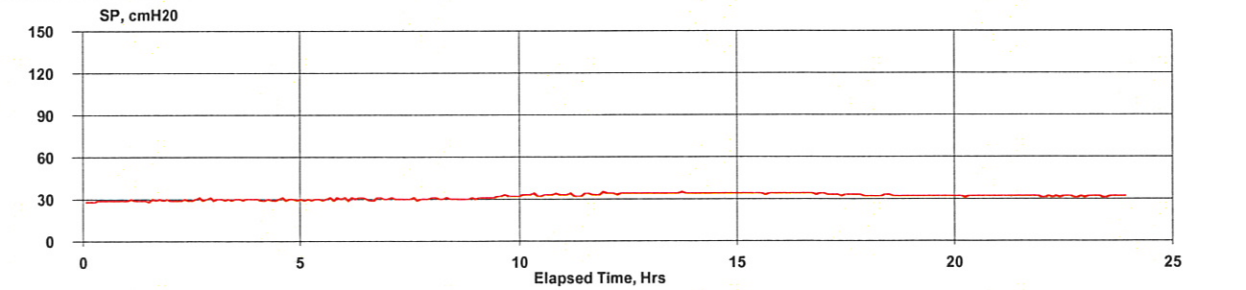
Mass Concentration Data:

Filter ID:	8	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.034	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-02-dec	0:05:08	586	-9.5	-10.8	-1.3	29	16.71
15-02-dec	1:05:08	586	-9.1	-10.8	-1.7	29	16.79
15-02-dec	2:05:08	586	-7.1	-9.3	-2.2	30	16.78
15-02-dec	3:05:08	586	-6.7	-8.1	-1.5	30	16.76
15-02-dec	4:05:08	586	-7.1	-8.3	-1.2	30	16.63
15-02-dec	5:05:08	587	-7.9	-8.9	-1.0	30	16.74
15-02-dec	6:05:08	587	-7.4	-8.6	-1.2	30	16.79
15-02-dec	7:05:08	587	-6.4	-8.0	-1.5	30	16.73
15-02-dec	8:05:08	587	-6.3	-7.0	-0.7	30	16.75
15-02-dec	9:05:08	588	2.1	1.1	-0.9	32	16.71
15-02-dec	10:05:08	588	5.4	7.1	1.7	33	16.67
15-02-dec	11:05:08	588	6.9	9.1	2.2	33	16.51
15-02-dec	12:05:08	588	7.8	10.4	2.5	34	16.69
15-02-dec	13:05:08	587	8.0	10.9	2.8	34	16.70
15-02-dec	14:05:08	587	8.6	11.0	2.4	34	16.72
15-02-dec	15:05:08	587	8.1	10.2	2.1	34	16.72
15-02-dec	16:05:08	587	5.1	7.4	2.3	34	16.71
15-02-dec	17:05:08	587	-0.5	0.5	1.0	33	16.71
15-02-dec	18:05:08	587	-2.0	-2.2	-0.2	32	16.71
15-02-dec	19:05:08	588	-2.7	-3.3	-0.7	32	16.71
15-02-dec	20:05:08	588	-2.7	-3.6	-0.9	32	16.71
15-02-dec	21:05:08	588	-3.0	-3.9	-0.9	32	16.71
15-02-dec	22:05:08	588	-3.4	-4.3	-0.9	32	16.71
15-02-dec	23:05:08	588	-3.7	-4.5	-0.8	32	16.71

BGI PQ200 Air Sampling System Downloaded 2015 10 dec 12:16:19

Job Details:

Job Name: 15Dec10A.JOB
Version: 5.62
Serial No: 962
Pump Time: 7132:08
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	588	586	586	mmHg
TA	14.2	-1.3	4.5	°C
Q	---	---	16.7	Lpm

QCV 0.47 %
Max overheat 3.8 °C
occured 09-dec 16:58:51

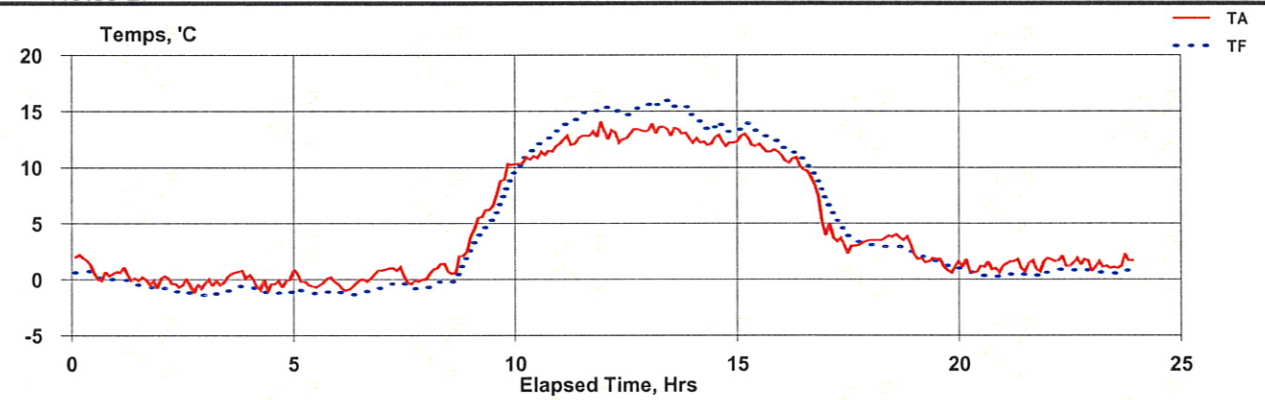
Timer Information:

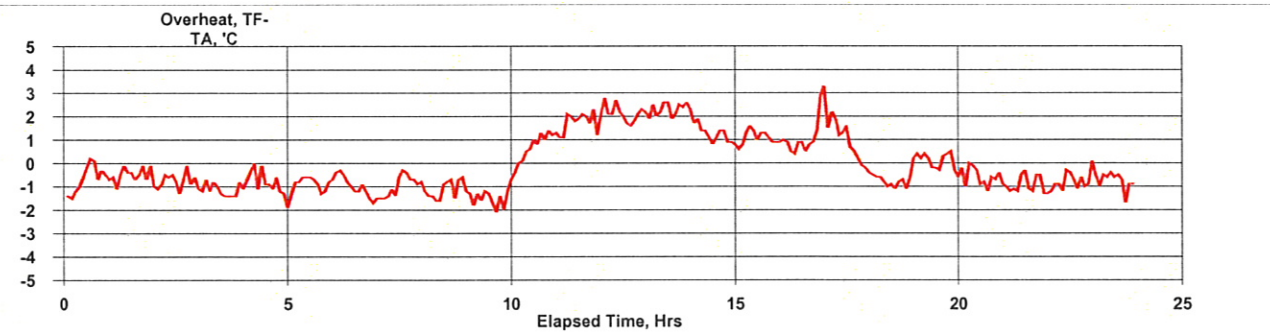
	Date dd-mmm	Time hh:mm:ss
Start:	15-08-dec	0:00:08
Stop:	15-09-dec	0:00:04
ET:	23:59	

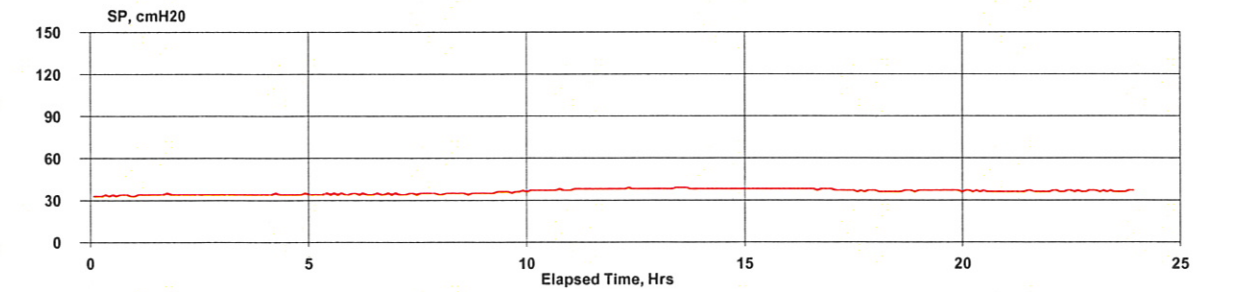
Mass Concentration Data:

Filter ID:	10	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.035	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-08-dec	0:05:08	586	1.0	0.3	-0.7	33	16.71
15-08-dec	1:05:08	586	0.1	-0.4	-0.5	34	16.72
15-08-dec	2:05:08	586	-0.4	-1.2	-0.8	34	16.72
15-08-dec	3:05:08	586	0.2	-1.0	-1.1	34	16.72
15-08-dec	4:05:08	586	-0.3	-1.1	-0.8	34	16.71
15-08-dec	5:05:08	586	-0.2	-1.1	-0.9	34	16.70
15-08-dec	6:05:08	586	-0.1	-1.2	-1.0	34	16.72
15-08-dec	7:05:08	587	0.3	-0.6	-0.9	35	16.70
15-08-dec	8:05:08	587	1.5	0.3	-1.1	35	16.71
15-08-dec	9:05:08	587	7.6	6.1	-1.5	36	16.72
15-08-dec	10:05:08	587	11.1	11.9	0.7	37	16.71
15-08-dec	11:05:08	587	12.8	14.6	1.8	38	16.70
15-08-dec	12:05:08	587	13.0	15.1	2.1	38	16.70
15-08-dec	13:05:08	586	13.2	15.5	2.3	38	16.71
15-08-dec	14:05:08	586	12.3	13.5	1.2	38	16.70
15-08-dec	15:05:08	586	11.9	13.0	1.1	38	16.72
15-08-dec	16:05:08	587	8.8	10.1	1.2	38	16.71
15-08-dec	17:05:08	587	3.4	4.2	0.9	37	16.71
15-08-dec	18:05:08	587	3.5	2.8	-0.7	36	16.71
15-08-dec	19:05:08	587	1.5	1.5	0.1	37	16.71
15-08-dec	20:05:08	587	1.0	0.5	-0.6	36	16.70
15-08-dec	21:05:08	587	1.4	0.4	-0.9	36	16.70
15-08-dec	22:05:08	587	1.5	0.8	-0.8	37	16.71
15-08-dec	23:05:08	587	1.4	0.6	-0.8	36	16.70

BGI PQ200 Air Sampling System Downloaded 2015 15 dec 11:05:16

Job Details:

Job Name: 15Dec15A.JOB
Version: 5.62
Serial No: 962
Pump Time: 7156:07
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	574	570	571	mmHg
TA	-1	-15.8	-6.1	°C
Q	---	---	16.7	Lpm

QCV 0.5 %

Max overheat 5 °C
occured 14-dec 12:22:25

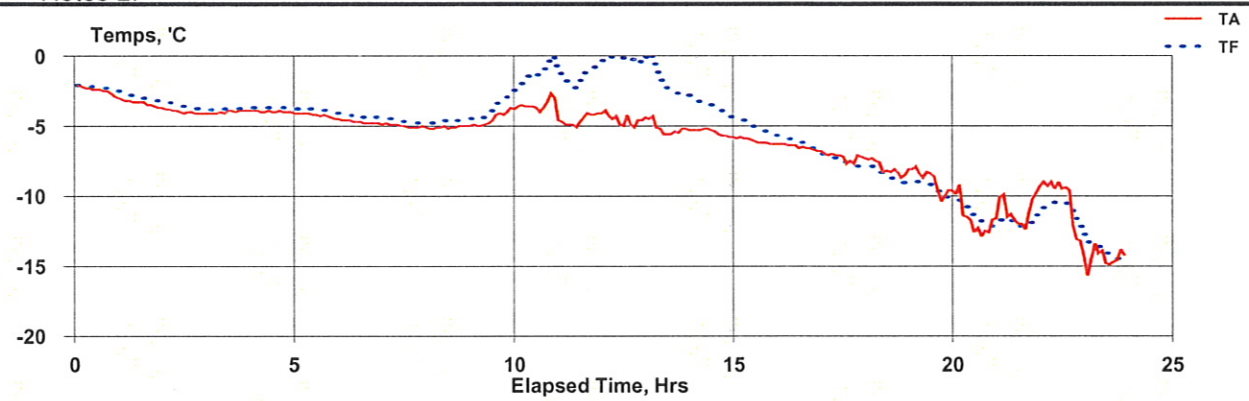
Timer Information:

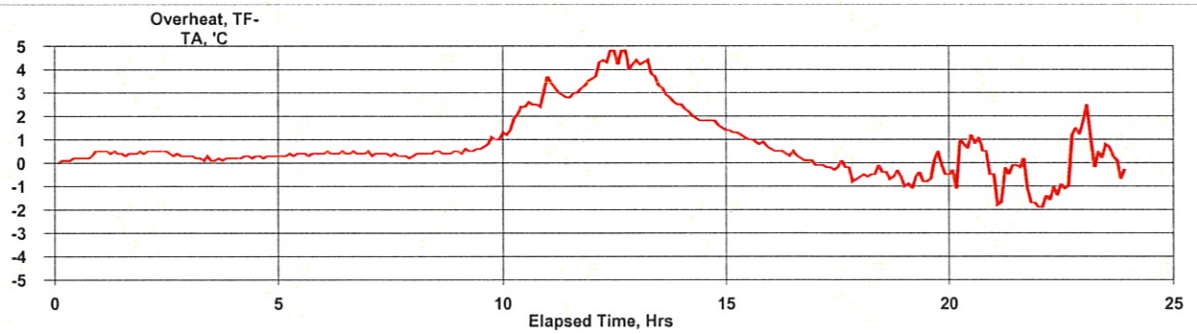
	Date dd-mmm	Time hh:mm:ss
Start:	15-14-dec	0:00:08
Stop:	15-15-dec	0:00:05
ET:	23:59	

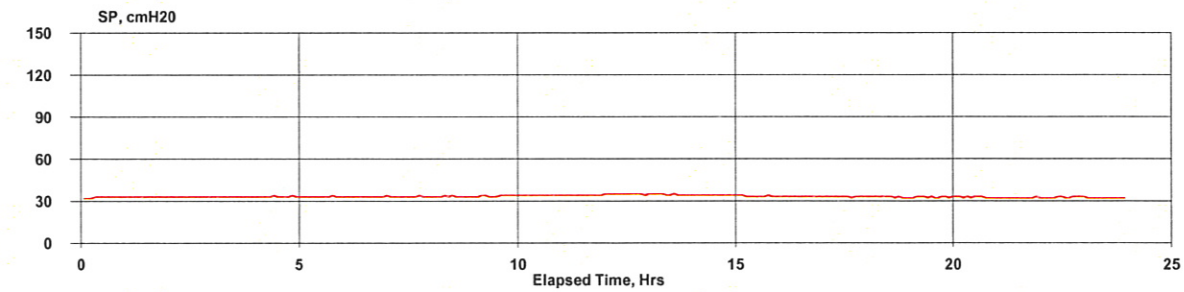
Mass Concentration Data:

Filter ID:	4	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.033	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-14-dec	0:05:08	573	-2.5	-2.3	0.2	33	16.71
15-14-dec	1:05:08	573	-3.4	-3.0	0.4	33	16.70
15-14-dec	2:05:08	573	-4.0	-3.6	0.4	33	16.70
15-14-dec	3:05:08	572	-4.0	-3.8	0.2	33	16.72
15-14-dec	4:05:08	571	-4.0	-3.7	0.3	33	16.71
15-14-dec	5:05:08	571	-4.3	-3.9	0.4	33	16.69
15-14-dec	6:05:08	571	-4.7	-4.3	0.4	33	16.71
15-14-dec	7:05:08	571	-5.0	-4.7	0.3	33	16.71
15-14-dec	8:05:08	571	-5.1	-4.7	0.4	33	16.71
15-14-dec	9:05:08	570	-4.4	-3.7	0.8	34	16.72
15-14-dec	10:05:08	571	-3.6	-1.2	2.3	34	16.70
15-14-dec	11:05:08	571	-4.5	-1.4	3.1	34	16.71
15-14-dec	12:05:08	570	-4.6	-0.2	4.4	35	16.71
15-14-dec	13:05:08	571	-5.2	-1.9	3.4	34	16.71
15-14-dec	14:05:08	571	-5.5	-3.6	1.8	34	16.70
15-14-dec	15:05:08	572	-6.1	-5.1	1.0	33	16.69
15-14-dec	16:05:08	572	-6.5	-6.3	0.3	33	16.71
15-14-dec	17:05:08	572	-7.3	-7.5	-0.3	33	16.70
15-14-dec	18:05:08	572	-8.0	-8.5	-0.5	33	16.71
15-14-dec	19:05:08	573	-9.0	-9.5	-0.5	33	16.71
15-14-dec	20:05:08	573	-11.7	-11.3	0.3	33	16.70
15-14-dec	21:05:08	573	-10.9	-11.8	-0.9	32	16.70
15-14-dec	22:05:08	573	-10.6	-11.0	-0.4	33	16.72
15-14-dec	23:05:08	573	-14.4	-14.0	0.4	32	16.71

BGI PQ200 Air Sampling System Downloaded 2015 21 dec 13:48:22

Job Details:

Job Name: 15Dec21A.JOB
Version: 5.62
Serial No: 962
Pump Time: 7180:06
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	583	578	580	mmHg
TA	1.1	-8.7	-3	°C
Q	---	---	16.7	Lpm

QCV 0.39 %

Max overheat 2.2 °C
occured 21-dec 13:18:39

Timer Information:

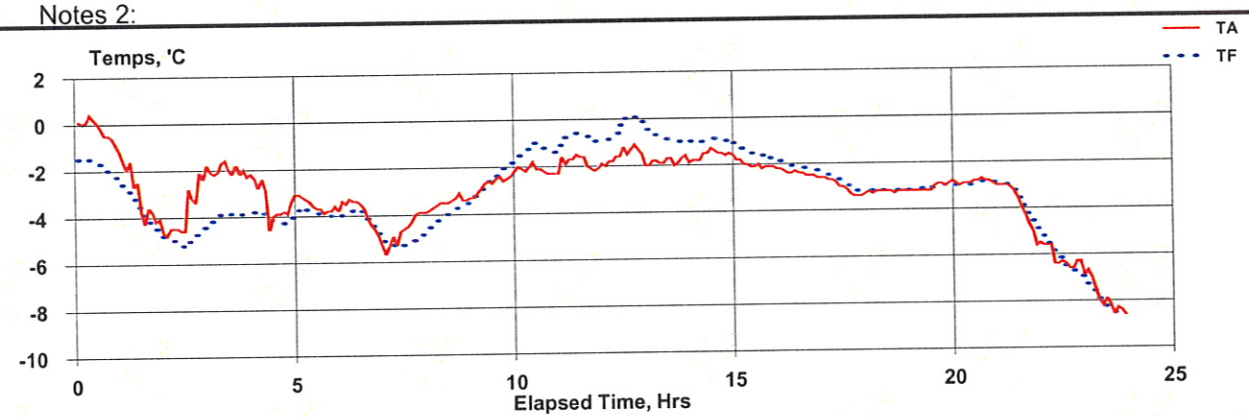
	Date dd-mmm	Time hh:mm:ss
Start:	15-20-dec	0:00:08
Stop:	15-21-dec	0:00:05

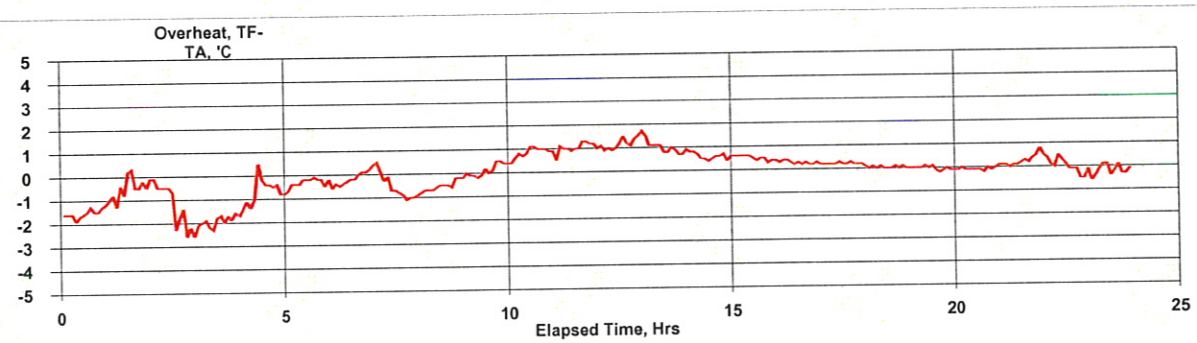
ET: 23:59

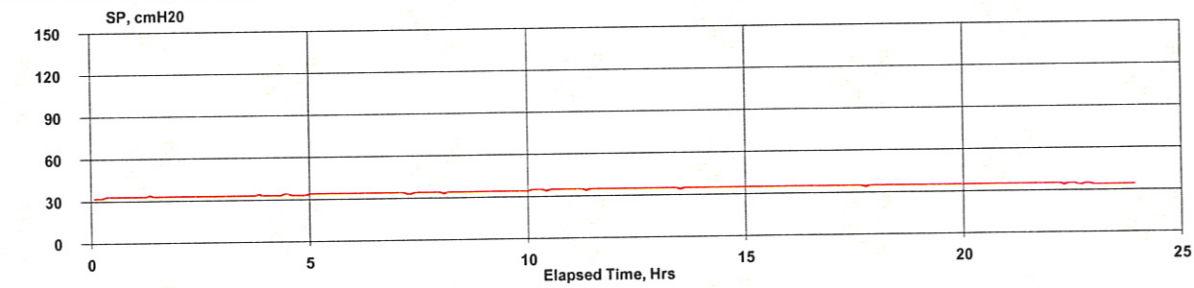
Mass Concentration Data:

Filter ID:	4	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.034	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-20-dec	0:05:08	579	-0.3	-1.8	-1.5	33	16.71
15-20-dec	1:05:08	579	-3.2	-3.7	-0.5	33	16.71
15-20-dec	2:05:08	579	-3.6	-4.9	-1.3	33	16.72
15-20-dec	3:05:08	579	-2.0	-3.9	-1.9	33	16.71
15-20-dec	4:05:08	579	-3.4	-4.1	-0.7	33	16.71
15-20-dec	5:05:08	579	-3.6	-3.9	-0.3	34	16.71
15-20-dec	6:05:08	579	-4.0	-4.1	-0.2	34	16.71
15-20-dec	7:05:08	580	-4.6	-5.2	-0.6	34	16.72
15-20-dec	8:05:08	580	-3.5	-4.0	-0.5	34	16.72
15-20-dec	9:05:08	581	-2.7	-2.5	0.1	34	16.72
15-20-dec	10:05:08	581	-2.1	-1.3	0.9	35	16.70
15-20-dec	11:05:08	581	-1.8	-0.8	1.0	35	16.71
15-20-dec	12:05:08	581	-1.6	-0.4	1.2	35	16.71
15-20-dec	13:05:08	581	-1.8	-0.9	1.0	35	16.71
15-20-dec	14:05:08	581	-1.6	-1.0	0.6	35	16.71
15-20-dec	15:05:08	581	-2.0	-1.5	0.5	35	16.73
15-20-dec	16:05:08	582	-2.4	-2.2	0.3	35	16.71
15-20-dec	17:05:08	581	-3.1	-2.9	0.2	35	16.72
15-20-dec	18:05:08	582	-3.2	-3.2	0.0	35	16.71
15-20-dec	19:05:08	582	-3.1	-3.1	0.0	35	16.70
15-20-dec	20:05:08	582	-2.9	-2.9	-0.1	35	16.71
15-20-dec	21:05:08	582	-4.0	-3.7	0.3	35	16.70
15-20-dec	22:05:08	582	-6.3	-6.3	0.0	35	16.72
15-20-dec	23:05:08	582	-7.9	-8.1	-0.2	34	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 28 dec 10:39:45

Job Details:

Job Name:	15Dec28A.JOB
Version:	5.62
Serial No:	962
Pump Time:	7204:05
Flags:	F

Job Code:	
Site Name:	962A
Station Code:	
Operators:	KN
User1:	
User2:	

	Max	Min	Avg	Units
BP	585	578	582	mmHg
TA	-7.7	-13.6	-10.9	°C
Q	---	---	16.71	Lpm

QCV 0.59 %

Max overheat 7.3 °C

occured 27-dec 17:23:17

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-26-dec	0:00:08
Stop:	15-27-dec	0:00:04

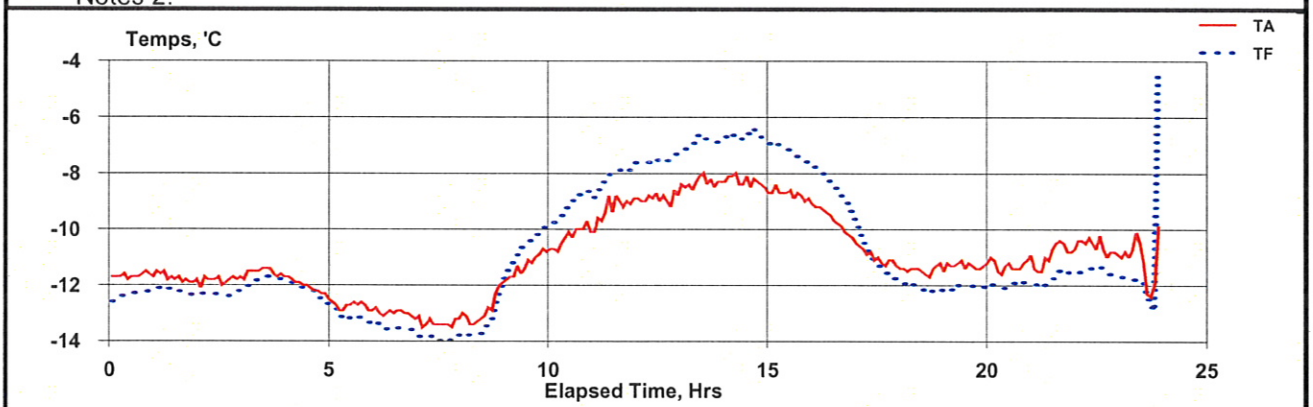
ET: 23:59

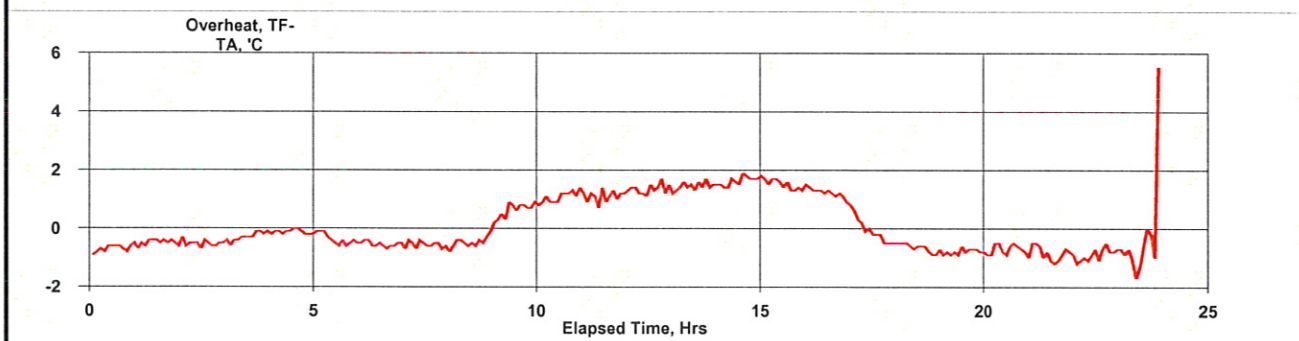
Mass Concentration Data:

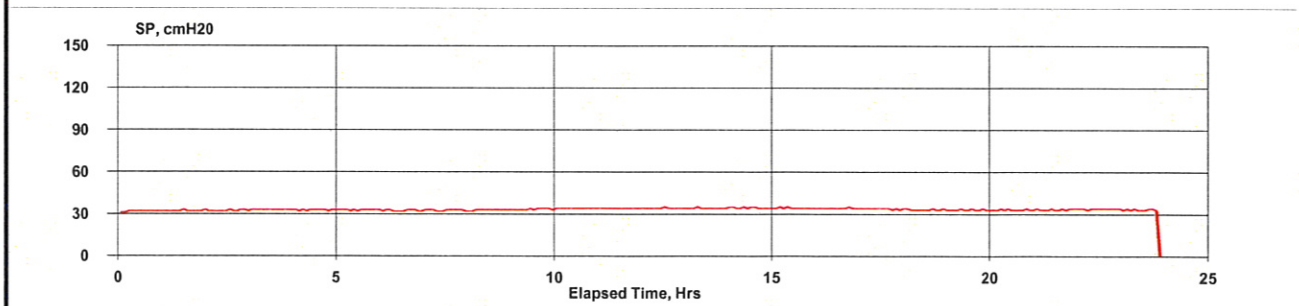
Filter ID:	7	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.043	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:







15-26-dec	0:05:08	579	-11.7	-12.4	-0.7	32	16.71
15-26-dec	1:05:08	579	-11.7	-12.2	-0.5	32	16.71
15-26-dec	2:05:08	579	-11.8	-12.3	-0.5	32	16.71
15-26-dec	3:05:08	580	-11.6	-11.8	-0.3	33	16.71
15-26-dec	4:05:08	580	-12.1	-12.2	-0.1	33	16.71
15-26-dec	5:05:08	580	-12.7	-13.1	-0.4	33	16.71
15-26-dec	6:05:08	581	-13.0	-13.5	-0.5	32	16.72
15-26-dec	7:05:08	582	-13.3	-13.9	-0.6	33	16.70
15-26-dec	8:05:08	582	-12.9	-13.3	-0.5	33	16.72
15-26-dec	9:05:08	583	-11.3	-10.6	0.6	33	16.72
15-26-dec	10:05:08	583	-10.3	-9.2	1.1	34	16.71
15-26-dec	11:05:08	583	-9.3	-8.2	1.1	34	16.71
15-26-dec	12:05:08	582	-8.9	-7.5	1.4	34	16.72
15-26-dec	13:05:08	583	-8.3	-6.9	1.4	34	16.72
15-26-dec	14:05:08	583	-8.3	-6.7	1.6	34	16.72
15-26-dec	15:05:08	583	-8.7	-7.2	1.5	34	16.72
15-26-dec	16:05:08	584	-9.6	-8.4	1.2	34	16.72
15-26-dec	17:05:08	584	-11.0	-11.0	0.0	34	16.72
15-26-dec	18:05:08	584	-11.4	-12.1	-0.6	33	16.72
15-26-dec	19:05:08	584	-11.3	-12.1	-0.8	33	16.72
15-26-dec	20:05:08	584	-11.3	-12.0	-0.7	33	16.71
15-26-dec	21:05:08	584	-10.9	-11.8	-0.9	33	16.72
15-26-dec	22:05:08	584	-10.6	-11.5	-0.9	34	16.72
15-26-dec	23:05:08	584	-11.2	-12.0	-0.8	33	16.72
15-27-dec	17:43:08	582	-9.9	-4.4	5.5		0.00

Compliance Monitor 963B

PM_{10} Sampler Summary

October 1, 2015 - December 31, 2015

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

AQS ID:

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
10/03/15	P2925403	**4.4**	**5.5**	23:59	24.0	19.4	379.956	380.063	0.107		
10/09/15	P2925406	**8.6**	**10.6**	23:59	24.0	19.6	376.825	377.034	0.209		
10/15/15	P2925674	**11.7**	**14.5**	23:59	24.0	19.4	376.384	376.667	0.283		
10/21/15	P2925677	**3.0**	**3.6**	23:59	24.0	19.8	386.751	386.824	0.073		
10/27/15	P2925679	**6.9**	**8.4**	23:59	24.0	19.9	388.633	388.801	0.168		
11/02/15	P2925819	**9.4**	**11.5**	23:59	24.0	19.6	384.758	384.984	0.226		
11/08/15	P2925999	**3.9**	**4.7**	23:59	24.0	20.2	372.040	372.136	0.096		
11/14/15	P2926002	**14.4**	**17.1**	23:59	24.0	20.3	377.862	378.210	0.348		
11/20/15	P2925824	**2.0**	**2.4**	23:59	24.0	20.2	380.344	380.393	0.049	XT	
11/26/15	P2926219	**3.5**	**4.2**	23:59	24.0	20.5	374.047	374.133	0.086		
12/02/15	P2926222	**5.2**	**6.1**	23:59	24.0	20.6	382.626	382.753	0.127		
12/08/15	P2926452	**5.1**	**6.1**	23:59	24.0	20.1	382.075	382.199	0.124		
12/14/15	P2926455	**2.4**	**2.9**	23:59	24.0	20.3	379.891	379.950	0.059		
12/20/15	P2926664	**5.2**	**6.2**	23:59	24.0	20.4	384.095	384.222	0.127		
12/26/15	P2926666	**10.1**	**11.5**	23:59	24.0	21.1	381.019	381.262	0.243		

# Valid	Recovery	Average	St. Dev.	Max	Min
15	**100%**	**7.7**	**4.4**	**17.1**	**2.4**

BGI PQ200 Air Sampling System Downloaded 2015 05 oct 10:16:22

Job Details:

Job Name: 15Oct05B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2390:25
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	587	583	585	mmHg
TA	17.9	4.5	10.4	°C
Q	---	---	16.7	Lpm

QCV	0.5 %
Max overheat	2.2 °C
occured	04-oct 14:27:23

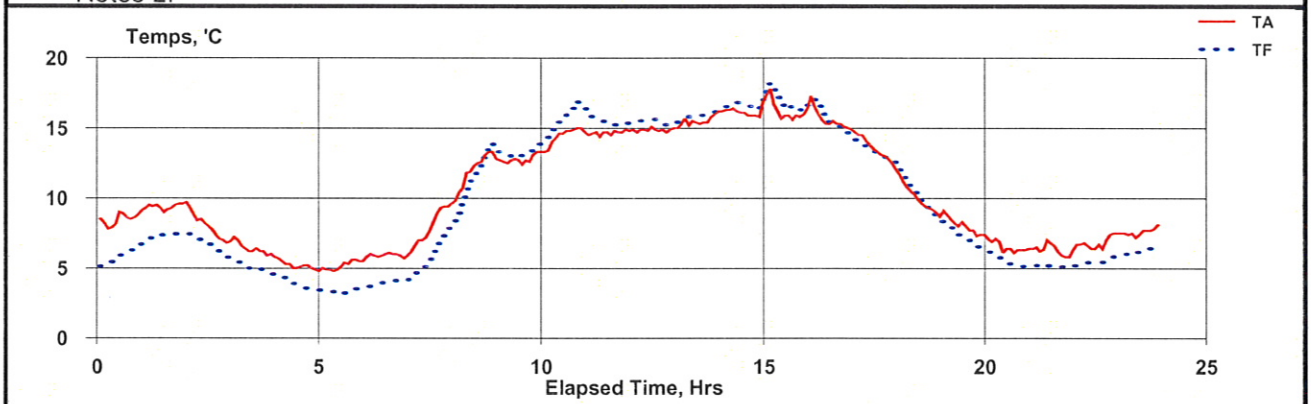
Timer Information:

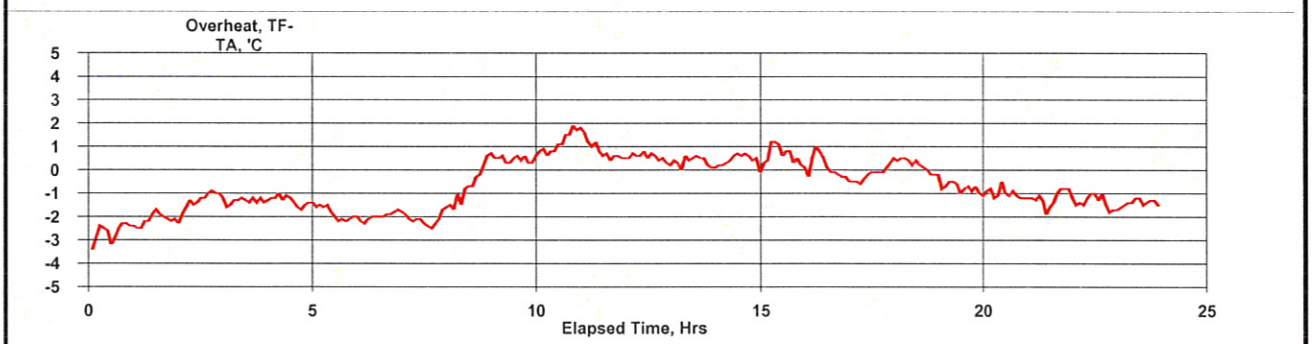
	Date dd-mmm	Time hh:mm:ss
Start:	15-03-oct	0:00:08
Stop:	15-04-oct	0:00:05
ET:	23:59	

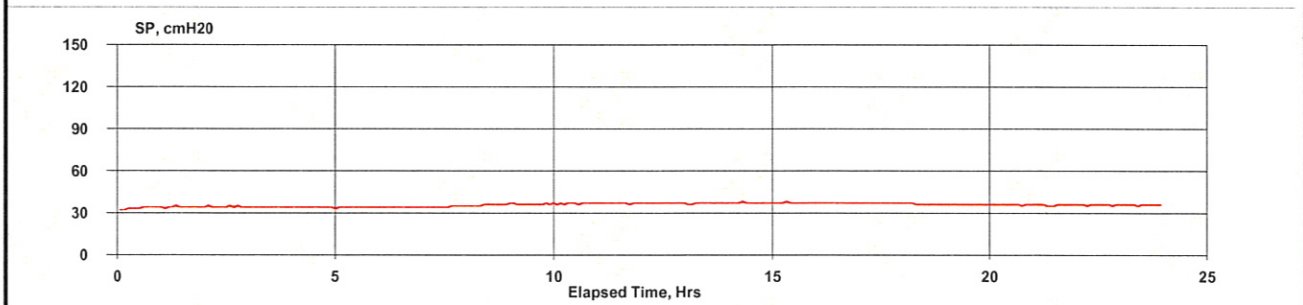
Mass Concentration Data:

Filter ID:	12	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.03	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-03-oct	0:05:08	587	8.5	5.9	-2.7	33	16.72
15-03-oct	1:05:08	587	9.4	7.3	-2.1	34	16.70
15-03-oct	2:05:08	587	7.9	6.6	-1.3	34	16.70
15-03-oct	3:05:08	586	6.3	5.0	-1.3	34	16.69
15-03-oct	4:05:08	586	5.2	3.8	-1.3	34	16.71
15-03-oct	5:05:08	586	5.2	3.3	-1.9	34	16.70
15-03-oct	6:05:08	586	5.9	3.9	-2.0	34	16.71
15-03-oct	7:05:08	586	8.1	5.9	-2.1	34	16.71
15-03-oct	8:05:08	586	12.0	11.5	-0.6	36	16.71
15-03-oct	9:05:08	586	12.8	13.2	0.5	36	16.71
15-03-oct	10:05:08	586	14.5	15.7	1.2	37	16.70
15-03-oct	11:05:08	585	14.7	15.5	0.8	37	16.71
15-03-oct	12:05:08	585	14.9	15.4	0.5	37	16.72
15-03-oct	13:05:08	584	15.5	15.9	0.3	37	16.71
15-03-oct	14:05:08	584	16.2	16.6	0.4	37	16.71
15-03-oct	15:05:08	584	16.3	16.9	0.6	37	16.71
15-03-oct	16:05:08	584	15.6	15.7	0.1	37	16.71
15-03-oct	17:05:08	584	13.5	13.4	-0.1	37	16.71
15-03-oct	18:05:08	584	10.0	10.1	0.2	36	16.70
15-03-oct	19:05:08	584	8.0	7.3	-0.8	36	16.69
15-03-oct	20:05:08	584	6.5	5.5	-1.0	36	16.71
15-03-oct	21:05:08	585	6.3	5.1	-1.2	36	16.71
15-03-oct	22:05:08	585	6.8	5.5	-1.4	36	16.73
15-03-oct	23:05:08	585	7.6	6.2	-1.4	36	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 12 oct 09:08:03

Job Details:

Job Name: 15Oct12B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2414:24
Flags:

Job Code:
Site Name:
Station Code:
Operators: 15
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	598	593	596	mmHg
TA	21.6	7.1	14.2	°C
Q	---	---	16.72	Lpm

QCV 0.52 %

Max overheat 2.6 °C
occured 11-oct 18:41:21

Timer Information:

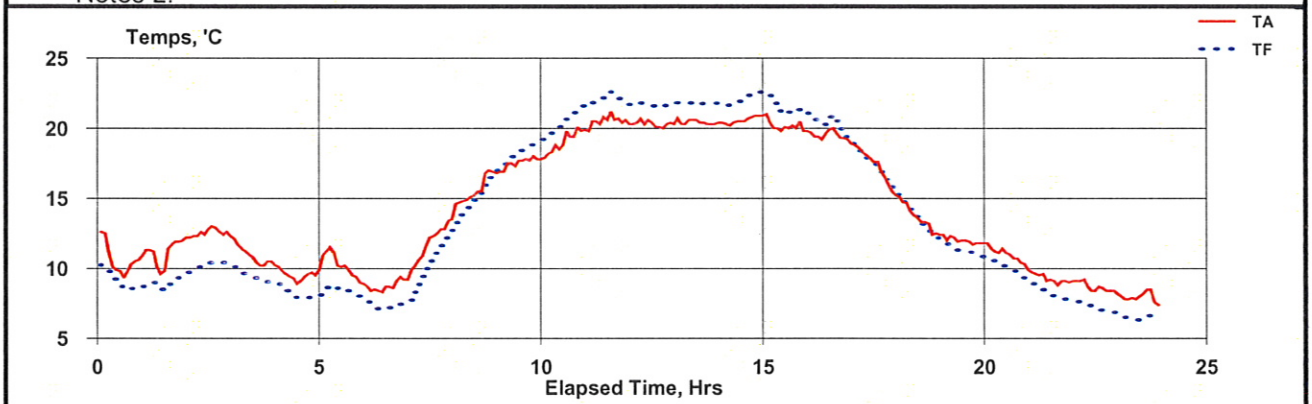
	Date dd-mmm	Time hh:mm:ss
Start:	15-09-oct	0:00:08
Stop:	15-10-oct	0:00:05

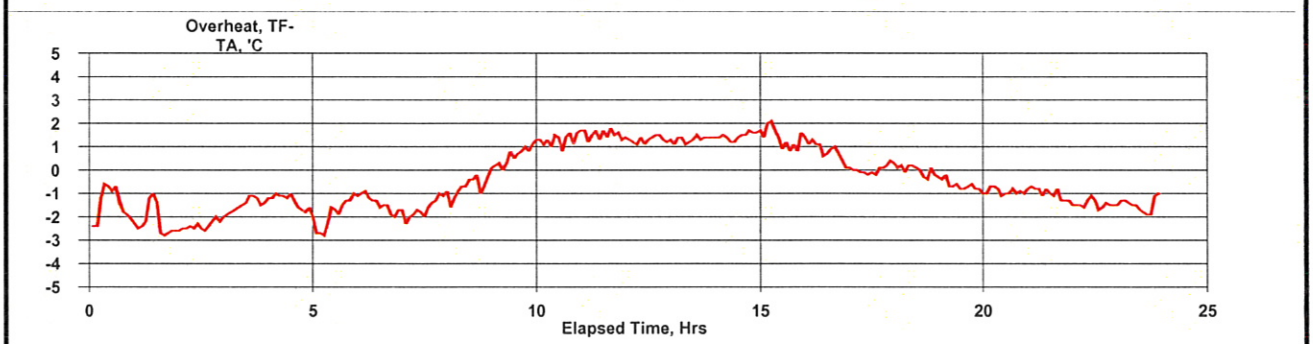
ET: 23:59

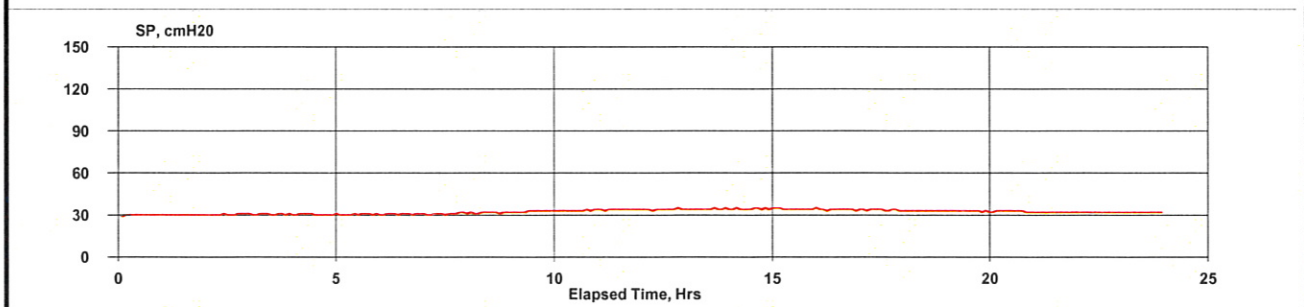
Mass Concentration Data:

Filter ID:		
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.045	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-09-oct	0:05:08	596	10.6	9.1	-1.5	30	16.73
15-09-oct	1:05:08	596	11.2	9.0	-2.2	30	16.71
15-09-oct	2:05:08	596	12.5	10.2	-2.3	30	16.72
15-09-oct	3:05:08	596	10.9	9.4	-1.5	31	16.72
15-09-oct	4:05:08	596	9.5	8.1	-1.4	30	16.70
15-09-oct	5:05:08	596	10.2	8.3	-1.8	30	16.73
15-09-oct	6:05:08	596	8.8	7.3	-1.5	31	16.72
15-09-oct	7:05:08	597	11.9	10.3	-1.6	31	16.71
15-09-oct	8:05:08	597	15.7	15.0	-0.7	32	16.71
15-09-oct	9:05:08	597	17.6	18.2	0.7	33	16.70
15-09-oct	10:05:08	597	19.1	20.4	1.3	33	16.72
15-09-oct	11:05:08	597	20.5	22.0	1.5	34	16.72
15-09-oct	12:05:08	597	20.3	21.6	1.3	34	16.80
15-09-oct	13:05:08	597	20.4	21.8	1.3	34	16.80
15-09-oct	14:05:08	596	20.6	22.1	1.5	34	16.79
15-09-oct	15:05:08	596	20.1	21.5	1.4	34	16.77
15-09-oct	16:05:08	596	19.5	20.2	0.8	34	16.75
15-09-oct	17:05:08	596	17.3	17.3	0.0	34	16.72
15-09-oct	18:05:08	596	13.6	13.6	0.0	33	16.70
15-09-oct	19:05:08	596	12.0	11.3	-0.7	33	16.73
15-09-oct	20:05:08	597	10.9	10.0	-0.9	33	16.73
15-09-oct	21:05:08	597	9.2	8.2	-1.0	32	16.73
15-09-oct	22:05:08	597	8.6	7.2	-1.5	32	16.74
15-09-oct	23:05:08	597	8.0	6.5	-1.5	32	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 16 oct 09:31:52

Job Details:

Job Name: 15Oct16B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2438:23
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	595	592	593	mmHg
TA	25.3	5.7	15	°C
Q	---	---	16.7	Lpm

QCV 0.4 %

Max overheat 2.7 °C
occured 15-oct 12:56:45

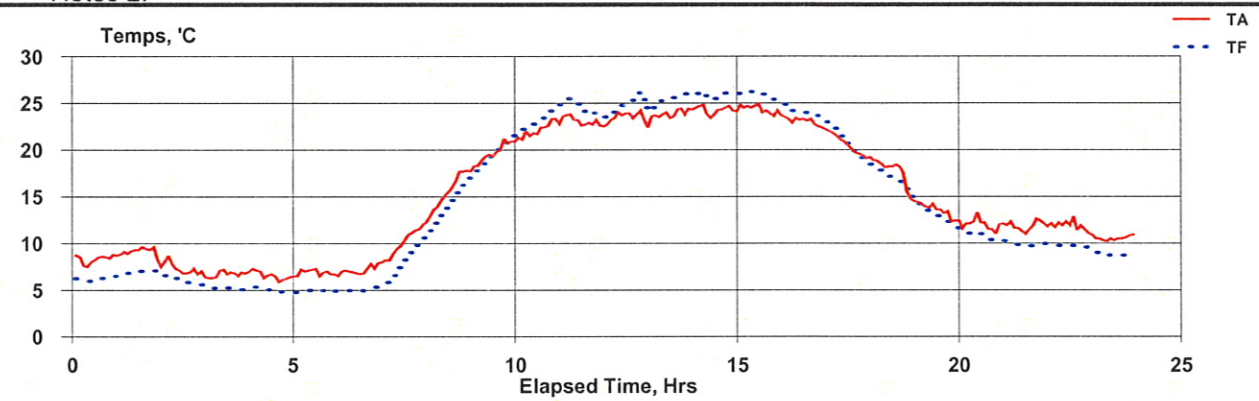
Timer Information:

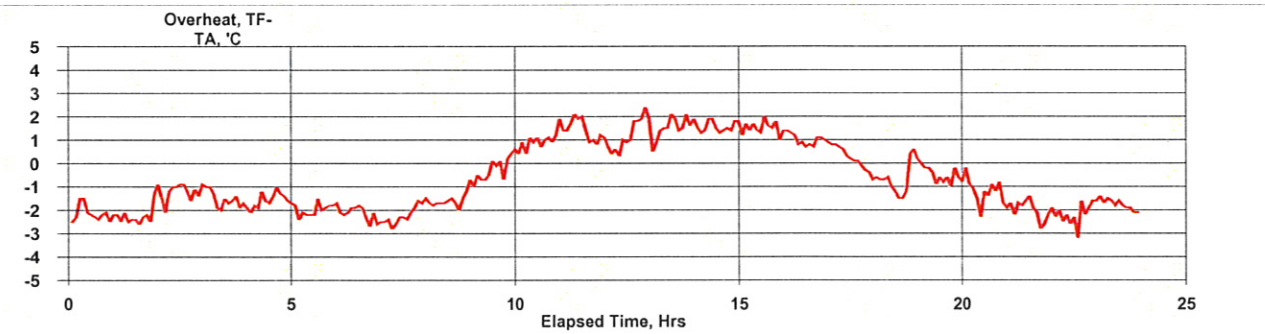
	Date dd-mmm	Time hh:mm:ss
Start:	15-15-oct	0:00:08
Stop:	15-16-oct	0:00:05
ET:	23:59	

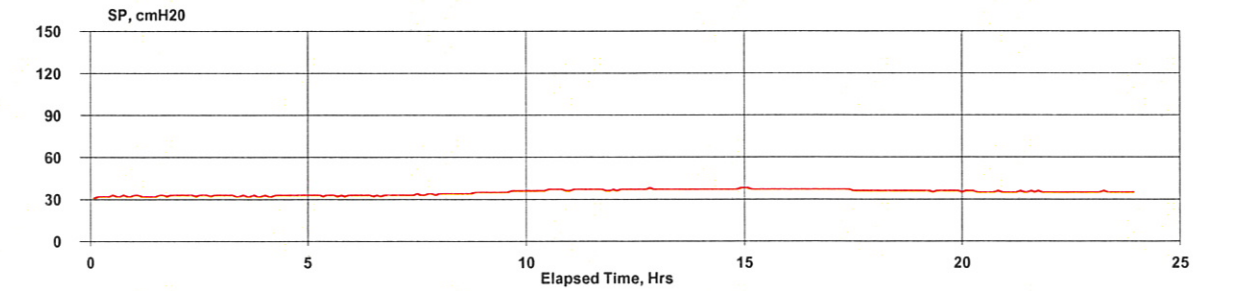
Mass Concentration Data:

Filter ID:	5	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.015	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-15-oct	0:05:08	594	8.3	6.2	-2.2	32	16.71
15-15-oct	1:05:08	594	9.0	6.9	-2.2	33	16.67
15-15-oct	2:05:08	594	7.2	6.0	-1.2	33	16.71
15-15-oct	3:05:08	594	6.7	5.2	-1.6	33	16.71
15-15-oct	4:05:08	594	6.6	5.0	-1.6	33	16.73
15-15-oct	5:05:08	594	6.9	4.9	-2.0	33	16.70
15-15-oct	6:05:08	594	7.2	5.0	-2.2	33	16.69
15-15-oct	7:05:08	594	10.3	8.2	-2.2	33	16.71
15-15-oct	8:05:08	595	15.8	14.2	-1.6	34	16.70
15-15-oct	9:05:08	595	19.8	19.5	-0.2	35	16.70
15-15-oct	10:05:08	595	22.2	23.2	1.0	36	16.70
15-15-oct	11:05:08	594	23.1	24.5	1.4	37	16.71
15-15-oct	12:05:08	594	23.5	24.7	1.2	37	16.70
15-15-oct	13:05:08	594	23.9	25.4	1.5	37	16.70
15-15-oct	14:05:08	593	24.3	25.8	1.6	37	16.70
15-15-oct	15:05:08	593	24.3	25.8	1.5	37	16.67
15-15-oct	16:05:08	593	23.0	24.0	1.0	37	16.70
15-15-oct	17:05:08	593	20.4	20.6	0.2	36	16.70
15-15-oct	18:05:08	593	17.5	16.8	-0.7	36	16.69
15-15-oct	19:05:08	593	13.5	12.9	-0.5	36	16.70
15-15-oct	20:05:08	593	12.0	10.7	-1.3	35	16.70
15-15-oct	21:05:08	593	11.8	9.8	-2.0	35	16.71
15-15-oct	22:05:08	593	11.8	9.7	-2.2	35	16.71
15-15-oct	23:05:08	594	10.5	8.7	-1.8	35	16.69

BGI PQ200 Air Sampling System Downloaded 2015 22 oct 12:02:42

Job Details:

Job Name: 15Oct22B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2462:22
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	591	587	589	mmHg
TA	13.1	3.1	7	°C
Q	---	---	16.7	Lpm

QCV	0.54 %
Max overheat	2.2 °C
occured	21-oct 12:57:01

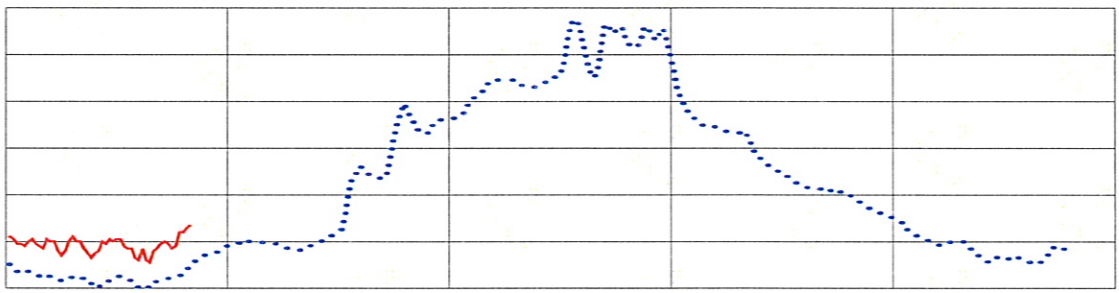
Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-21-oct	0:00:08
Stop:	15-22-oct	0:00:05
ET:	23:59	

Mass Concentration Data:

Filter ID:	8	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.036	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:



Overheat, TF-

15-21-oct	0:05:08	590	4.0	2.7	-1.3	36	16.72
15-21-oct	1:05:08	590	3.7	2.3	-1.4	37	16.71
15-21-oct	2:05:08	590	3.8	2.3	-1.5	37	16.70
15-21-oct	3:05:08	589	3.8	2.3	-1.5	37	16.72
15-21-oct	4:05:08	589	5.0	3.4	-1.6	37	16.71
15-21-oct	5:05:08	590	5.3	3.9	-1.4	37	16.72
15-21-oct	6:05:08	590	5.1	3.8	-1.4	37	16.70
15-21-oct	7:05:08	590	6.3	5.1	-1.2	38	16.70
15-21-oct	8:05:08	590	8.2	7.7	-0.5	38	16.71
15-21-oct	9:05:08	591	8.6	9.0	0.4	39	16.72
15-21-oct	10:05:08	591	10.0	10.1	0.0	39	16.70
15-21-oct	11:05:08	590	10.4	10.8	0.3	39	16.70
15-21-oct	12:05:08	590	11.3	11.9	0.6	39	16.71
15-21-oct	13:05:08	590	11.5	12.4	0.9	39	16.71
15-21-oct	14:05:08	589	11.9	12.7	0.7	39	16.72
15-21-oct	15:05:08	590	9.2	9.5	0.4	39	16.71
15-21-oct	16:05:08	590	8.9	8.5	-0.5	39	16.70
15-21-oct	17:05:08	590	7.1	6.9	-0.2	38	16.71
15-21-oct	18:05:08	590	6.9	6.2	-0.7	38	16.70
15-21-oct	19:05:08	590	6.5	5.4	-1.1	38	16.71
15-21-oct	20:05:08	590	5.5	4.3	-1.1	38	16.71
15-21-oct	21:05:08	590	5.0	3.8	-1.2	38	16.71
15-21-oct	22:05:08	590	4.6	3.2	-1.4	38	16.70
15-21-oct	23:05:08	590	4.8	3.4	-1.4	38	16.70

BGI PQ200 Air Sampling System

Downloaded 2015 29 oct 10:21:06

Job Details:

Job Name: 15Oct29B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2486:21
Flags:

Job Code:
Site Name: 963B
Station Code:
Operators: KN
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	592	589	591	mmHg
TA	17.3	-0.4	7.4	°C
Q	---	---	16.71	Lpm

QCV 0.51 %

Max overheat 1.6 °C
occured 27-oct 12:04:39

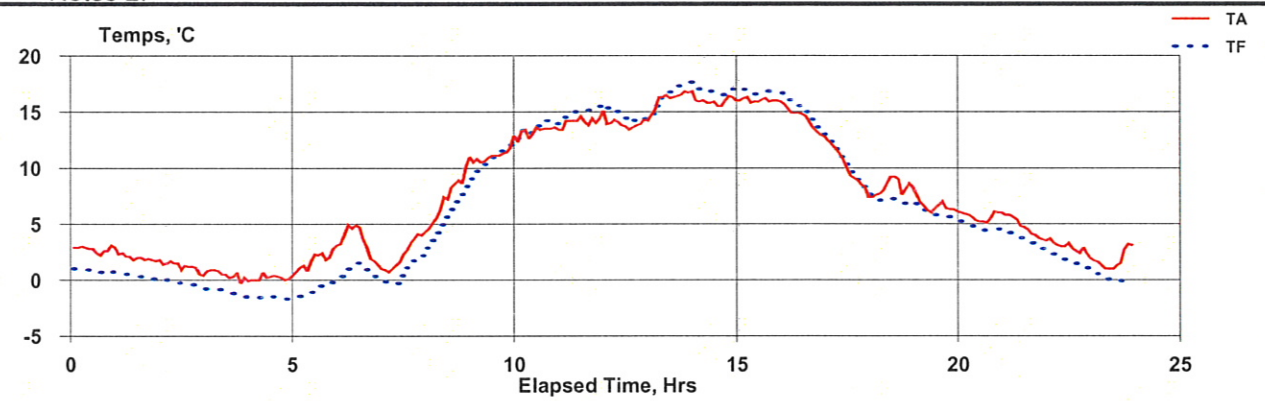
Timer Information:

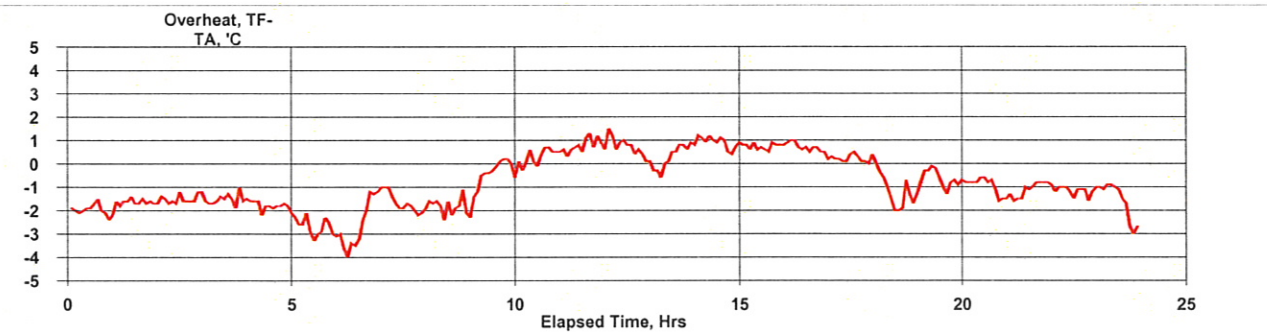
	Date dd-mmm	Time hh:mm:ss
Start:	15-27-oct	0:00:08
Stop:	15-28-oct	0:00:05
ET:	23:59	

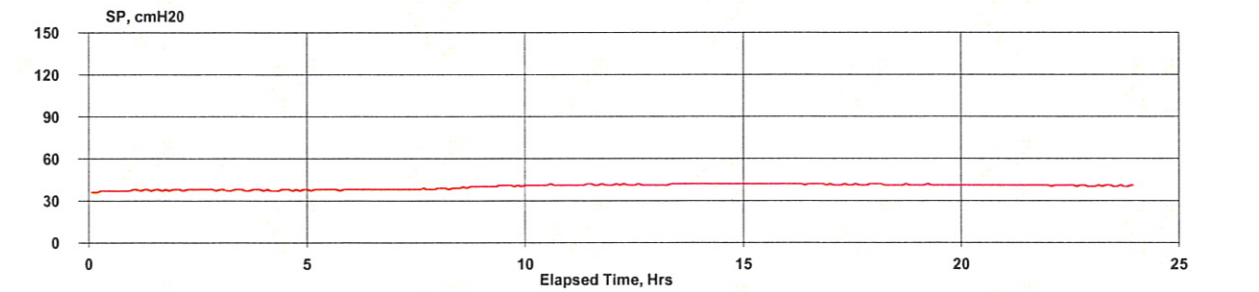
Mass Concentration Data:

Filter ID:	10	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.029	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-27-oct	0:05:08	591	2.8	0.8	-2.0	37	16.71
15-27-oct	1:05:08	591	2.0	0.3	-1.6	38	16.70
15-27-oct	2:05:08	591	1.2	-0.3	-1.5	38	16.71
15-27-oct	3:05:08	591	0.4	-1.1	-1.5	38	16.70
15-27-oct	4:05:08	591	0.2	-1.6	-1.8	38	16.71
15-27-oct	5:05:08	591	1.9	-0.9	-2.7	38	16.71
15-27-oct	6:05:08	591	3.3	0.8	-2.5	38	16.71
15-27-oct	7:05:08	591	2.5	0.8	-1.7	38	16.71
15-27-oct	8:05:08	591	7.6	5.8	-1.8	39	16.70
15-27-oct	9:05:08	592	11.2	10.8	-0.4	41	16.72
15-27-oct	10:05:08	592	13.3	13.6	0.3	41	16.70
15-27-oct	11:05:08	591	14.2	15.0	0.8	41	16.71
15-27-oct	12:05:08	591	13.9	14.6	0.7	41	16.72
15-27-oct	13:05:08	591	16.2	16.5	0.3	42	16.73
15-27-oct	14:05:08	591	15.9	16.8	0.9	42	16.72
15-27-oct	15:05:08	591	16.0	16.8	0.7	42	16.71
15-27-oct	16:05:08	591	14.3	15.0	0.7	42	16.71
15-27-oct	17:05:08	591	10.0	10.2	0.2	41	16.70
15-27-oct	18:05:08	591	8.3	7.1	-1.2	41	16.71
15-27-oct	19:05:08	591	6.5	5.9	-0.6	41	16.71
15-27-oct	20:05:08	592	5.6	4.7	-1.0	41	16.72
15-27-oct	21:05:08	592	4.6	3.5	-1.1	41	16.71
15-27-oct	22:05:08	592	2.9	1.7	-1.2	41	16.72
15-27-oct	23:05:08	592	1.8	0.2	-1.6	40	16.71

BGI PQ200 Air Sampling System Downloaded 2015 03 nov 09:37:27

Job Details:

Job Name: 15Nov03B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2510:20
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	590	583	586	mmHg
TA	16.2	0.8	8.7	°C
Q	---	---	16.7	Lpm

QCV 0.35 %

Max overheat 1.5 °C
occured 02-nov 11:32:17

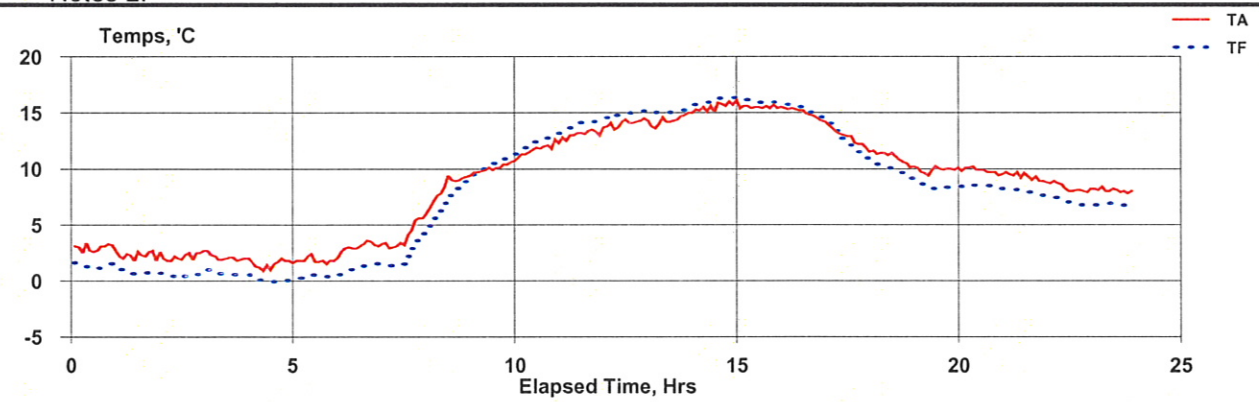
Timer Information:

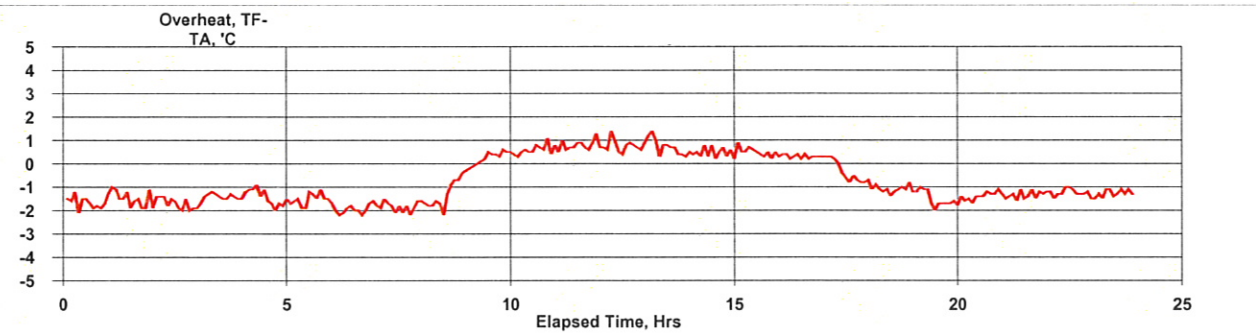
	Date dd-mmm	Time hh:mm:ss
Start:	15-02-nov	0:00:08
Stop:	15-03-nov	0:00:05
ET:	23:59	

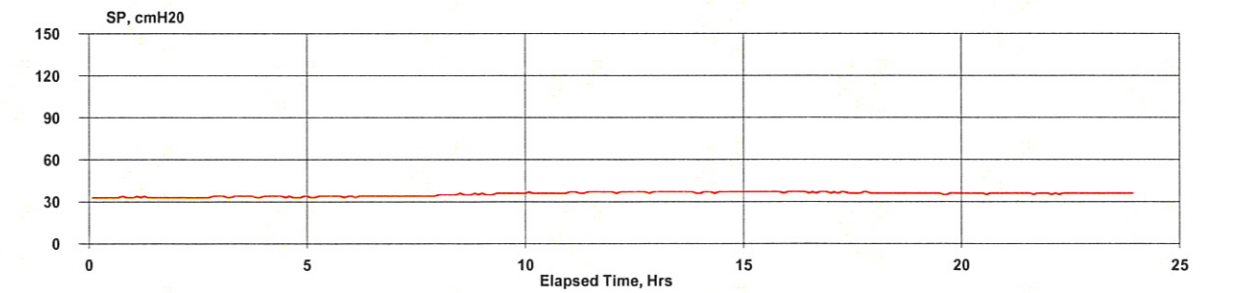
Mass Concentration Data:

Filter ID:	12	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.014	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-02-nov	0:05:08	590	3.0	1.3	-1.6	33	16.71
15-02-nov	1:05:08	590	2.3	0.8	-1.5	33	16.70
15-02-nov	2:05:08	589	2.2	0.5	-1.7	33	16.72
15-02-nov	3:05:08	589	2.1	0.7	-1.4	34	16.70
15-02-nov	4:05:08	589	1.5	0.1	-1.4	34	16.71
15-02-nov	5:05:08	589	1.9	0.3	-1.5	34	16.72
15-02-nov	6:05:08	588	3.1	1.2	-1.9	34	16.71
15-02-nov	7:05:08	588	4.2	2.4	-1.8	34	16.71
15-02-nov	8:05:08	588	8.5	7.2	-1.3	35	16.72
15-02-nov	9:05:08	589	10.1	10.4	0.3	36	16.71
15-02-nov	10:05:08	588	11.8	12.4	0.6	36	16.70
15-02-nov	11:05:08	588	13.1	13.9	0.8	37	16.71
15-02-nov	12:05:08	587	14.1	14.9	0.8	37	16.68
15-02-nov	13:05:08	586	14.4	15.1	0.7	37	16.69
15-02-nov	14:05:08	585	15.6	16.0	0.5	37	16.71
15-02-nov	15:05:08	585	15.5	16.0	0.5	37	16.69
15-02-nov	16:05:08	585	14.9	15.2	0.3	37	16.71
15-02-nov	17:05:08	584	12.7	12.4	-0.4	36	16.70
15-02-nov	18:05:08	584	11.0	9.9	-1.1	36	16.71
15-02-nov	19:05:08	584	9.9	8.4	-1.5	36	16.70
15-02-nov	20:05:08	584	9.8	8.4	-1.4	36	16.73
15-02-nov	21:05:08	584	9.3	7.9	-1.3	36	16.72
15-02-nov	22:05:08	584	8.3	7.0	-1.3	36	16.71
15-02-nov	23:05:08	583	8.1	6.8	-1.3	36	16.71

BGI PQ200 Air Sampling System Downloaded 2015 09 nov 13:39:43

Job Details:

Job Name: 15Nov09B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2534:19
Flags:

Job Code:
Site Name: 963B
Station Code:
Operators: KN
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	593	589	590	mmHg
TA	10.8	-5.1	2	°C
Q	---	---	16.7	Lpm

QCV 0.4 %

Max overheat 2.1 °C
occured 08-nov 13:29:38

Timer Information:

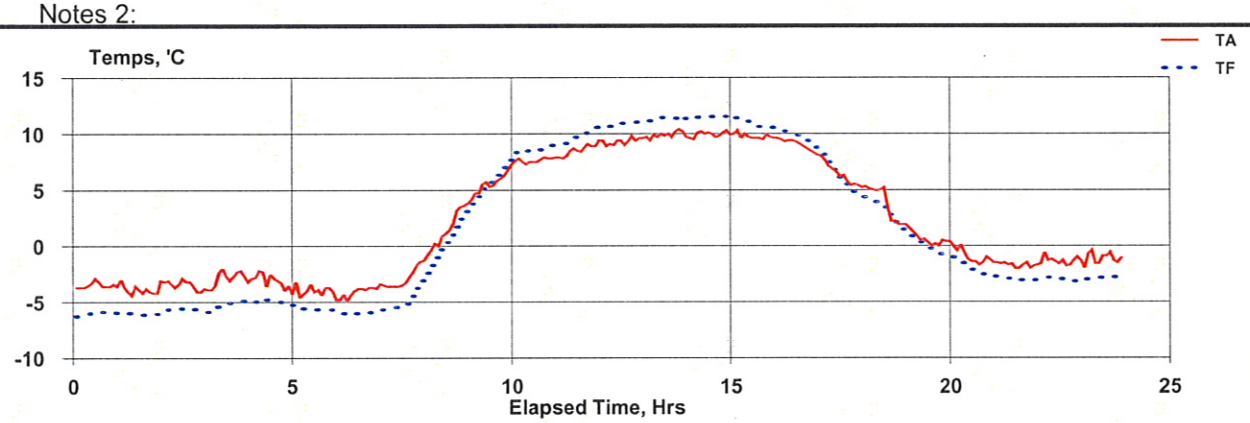
	Date dd-mmm	Time hh:mm:ss
Start:	15-08-nov	0:00:08
Stop:	15-09-nov	0:00:05

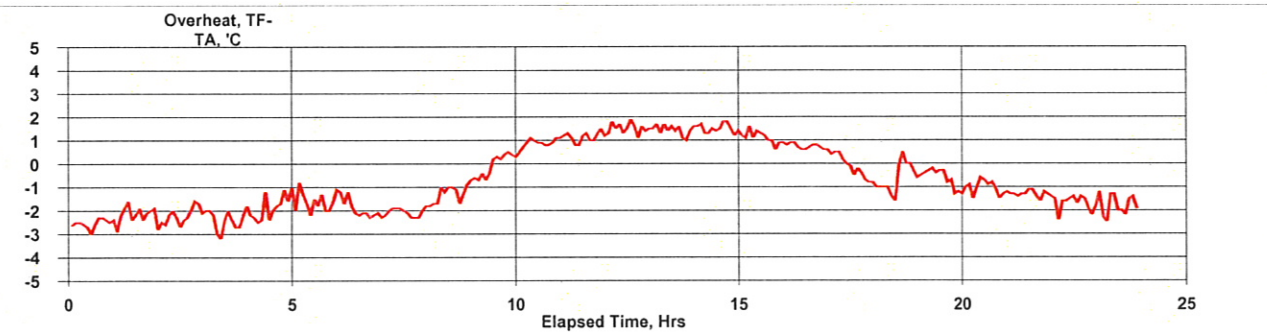
ET: 23:59

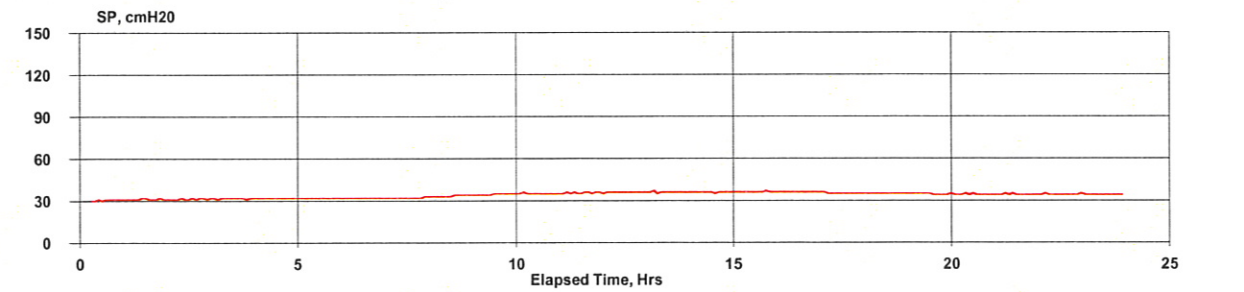
Mass Concentration Data:

Filter ID:	19	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.015	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-08-nov	0:05:08	593	-3.5	-6.0	-2.5	31	16.71
15-08-nov	1:05:08	593	-3.9	-6.1	-2.2	31	16.73
15-08-nov	2:05:08	592	-3.5	-5.7	-2.2	31	16.71
15-08-nov	3:05:08	592	-2.9	-5.3	-2.4	32	16.72
15-08-nov	4:05:08	592	-3.1	-5.0	-1.9	32	16.70
15-08-nov	5:05:08	592	-4.0	-5.6	-1.6	32	16.69
15-08-nov	6:05:08	592	-4.0	-6.0	-1.9	32	16.70
15-08-nov	7:05:08	592	-2.9	-4.9	-2.1	32	16.70
15-08-nov	8:05:08	592	1.5	0.3	-1.3	34	16.70
15-08-nov	9:05:08	592	5.6	5.6	0.0	35	16.71
15-08-nov	10:05:08	592	7.7	8.5	0.9	35	16.71
15-08-nov	11:05:08	591	8.6	9.7	1.1	36	16.71
15-08-nov	12:05:08	591	9.3	10.8	1.5	36	16.70
15-08-nov	13:05:08	590	9.9	11.3	1.4	36	16.70
15-08-nov	14:05:08	590	9.9	11.4	1.5	36	16.70
15-08-nov	15:05:08	590	9.8	10.9	1.1	36	16.70
15-08-nov	16:05:08	590	9.0	9.7	0.7	36	16.71
15-08-nov	17:05:08	590	6.3	6.2	-0.2	35	16.69
15-08-nov	18:05:08	590	3.7	3.0	-0.6	35	16.72
15-08-nov	19:05:08	590	0.6	-0.1	-0.6	35	16.71
15-08-nov	20:05:08	590	-1.0	-2.0	-1.0	34	16.70
15-08-nov	21:05:08	590	-1.7	-3.0	-1.3	34	16.70
15-08-nov	22:05:08	590	-1.3	-3.1	-1.7	34	16.71
15-08-nov	23:05:08	589	-1.1	-2.9	-1.8	34	16.70

BGI PQ200 Air Sampling System Downloaded 2015 17 nov 13:51:27

Job Details:

Job Name: 15Nov17B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2558:18
Flags:

Job Code:
Site Name: 963B
Station Code:
Operators: KN
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	592	589	590	mmHg
TA	11	-6.3	1.4	°C
Q	---	---	16.7	Lpm

QCV 0.51 %

Max overheat 2 °C
occured 14-nov 17:22:14

Timer Information:

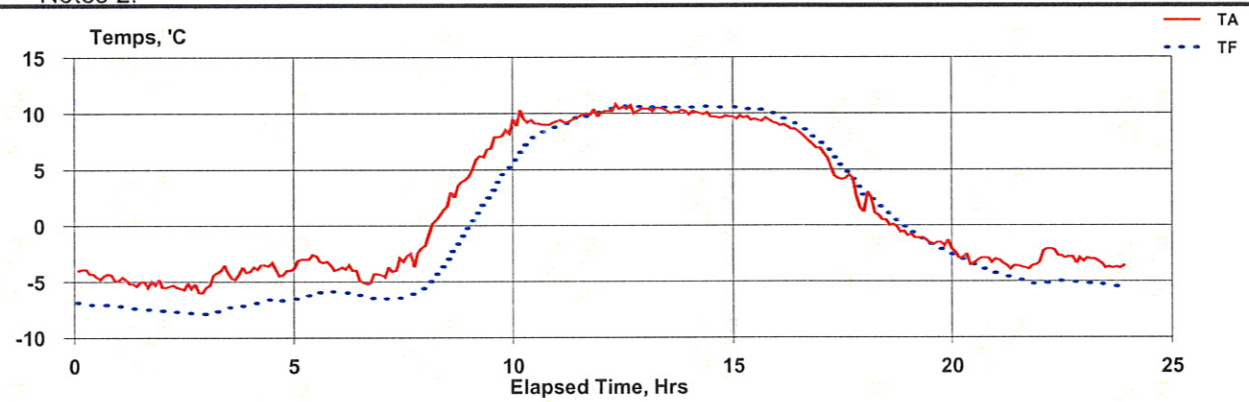
	Date dd-mmm	Time hh:mm:ss
Start:	15-14-nov	0:00:08
Stop:	15-15-nov	0:00:05

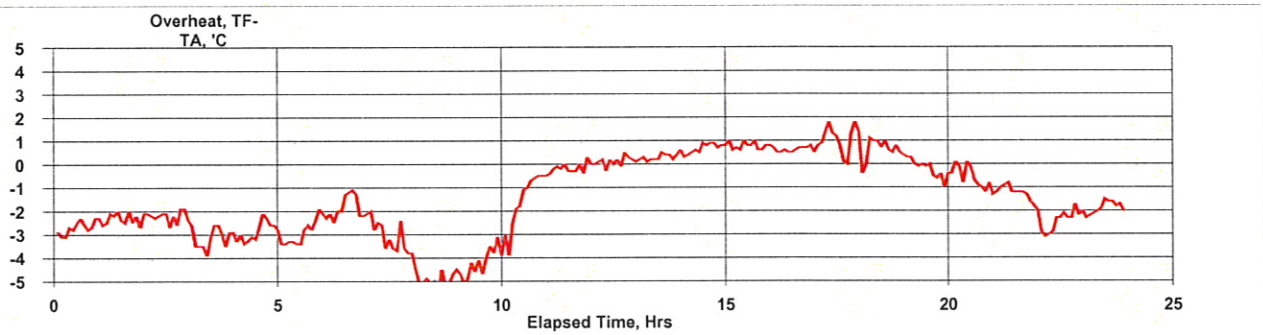
ET: 23:59

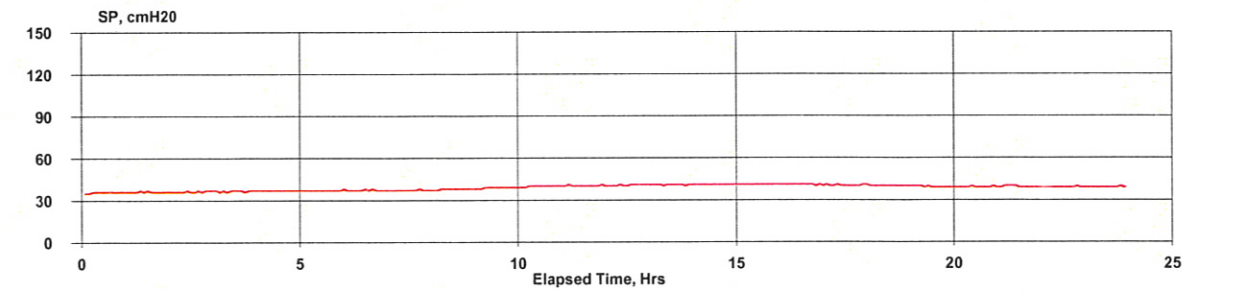
Mass Concentration Data:

Filter ID:	8	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.035	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-14-nov	0:05:08	592	-4.4	-7.1	-2.7	36	16.71
15-14-nov	1:05:08	592	-5.1	-7.4	-2.3	36	16.72
15-14-nov	2:05:08	592	-5.5	-7.8	-2.2	36	16.70
15-14-nov	3:05:08	592	-4.3	-7.4	-3.1	37	16.71
15-14-nov	4:05:08	591	-3.8	-6.7	-2.9	37	16.71
15-14-nov	5:05:08	591	-3.2	-6.1	-2.9	37	16.71
15-14-nov	6:05:08	591	-4.4	-6.2	-1.9	37	16.72
15-14-nov	7:05:08	591	-3.1	-6.3	-3.1	37	16.71
15-14-nov	8:05:08	592	2.1	-2.9	-5.0	38	16.71
15-14-nov	9:05:08	592	7.2	3.0	-4.2	39	16.71
15-14-nov	10:05:08	592	9.3	7.8	-1.5	40	16.72
15-14-nov	11:05:08	591	9.7	9.6	-0.2	40	16.71
15-14-nov	12:05:08	591	10.4	10.5	0.1	41	16.70
15-14-nov	13:05:08	590	10.2	10.5	0.3	41	16.71
15-14-nov	14:05:08	590	9.8	10.5	0.7	41	16.72
15-14-nov	15:05:08	590	9.5	10.2	0.8	41	16.71
15-14-nov	16:05:08	590	8.1	8.7	0.6	41	16.71
15-14-nov	17:05:08	590	4.0	5.1	1.1	40	16.71
15-14-nov	18:05:08	590	0.5	1.1	0.6	40	16.71
15-14-nov	19:05:08	590	-1.4	-1.6	-0.2	39	16.71
15-14-nov	20:05:08	590	-3.0	-3.6	-0.6	39	16.71
15-14-nov	21:05:08	590	-3.6	-4.9	-1.3	39	16.71
15-14-nov	22:05:08	590	-2.7	-5.1	-2.4	39	16.72
15-14-nov	23:05:08	589	-3.4	-5.3	-1.9	39	16.71

BGI PQ200 Air Sampling System Downloaded 2015 23 nov 10:17:53

Job Details:

Job Name: 15Nov23B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2582:17
Flags:

Job Code:
Site Name: 963B
Station Code:
Operators: KN
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	595	589	592	mmHg
TA	12.2	-2.7	3.6	°C
Q	---	---	16.7	Lpm

QCV 0.56 %
Max overheat 2.5 °C
occured 21-nov 17:11:55

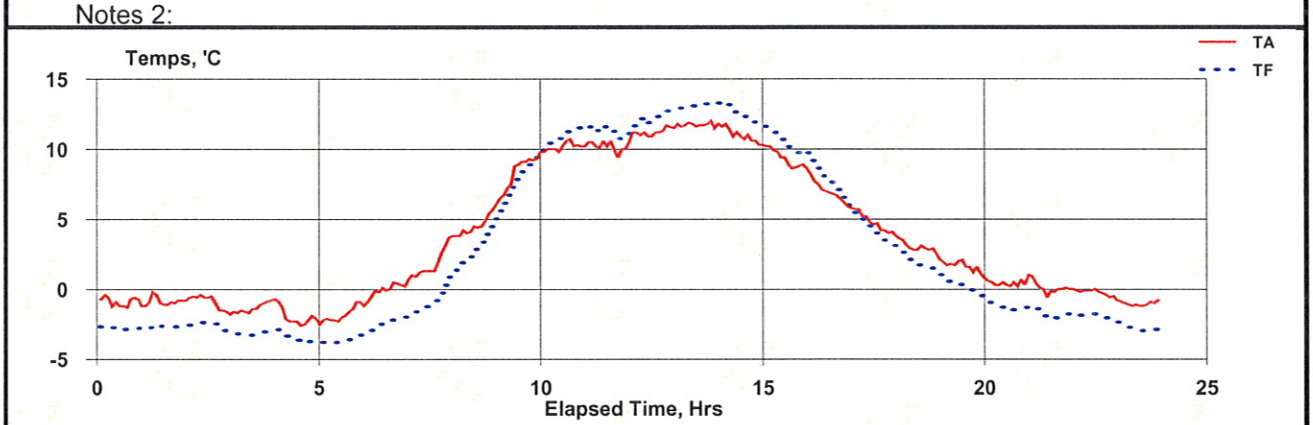
Timer Information:

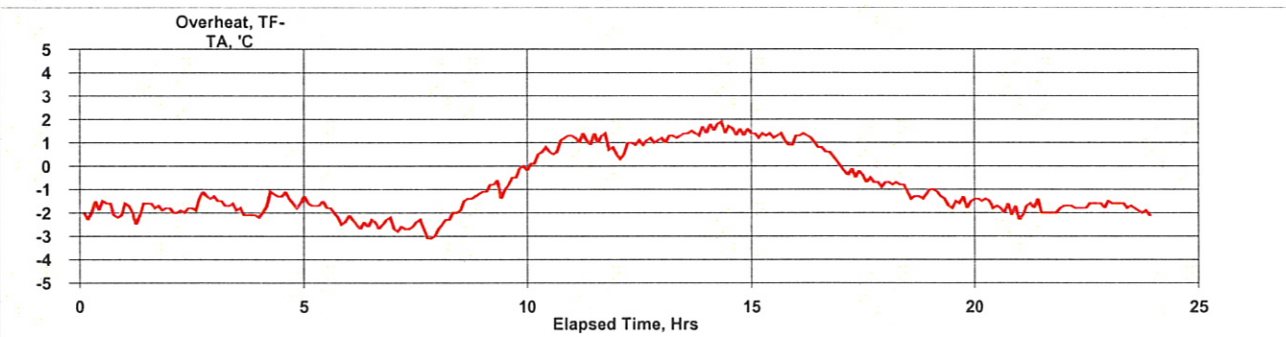
	Date dd-mmm	Time hh:mm:ss
Start:	15-20-nov	0:00:08
Stop:	15-21-nov	0:00:04
ET:	23:59	

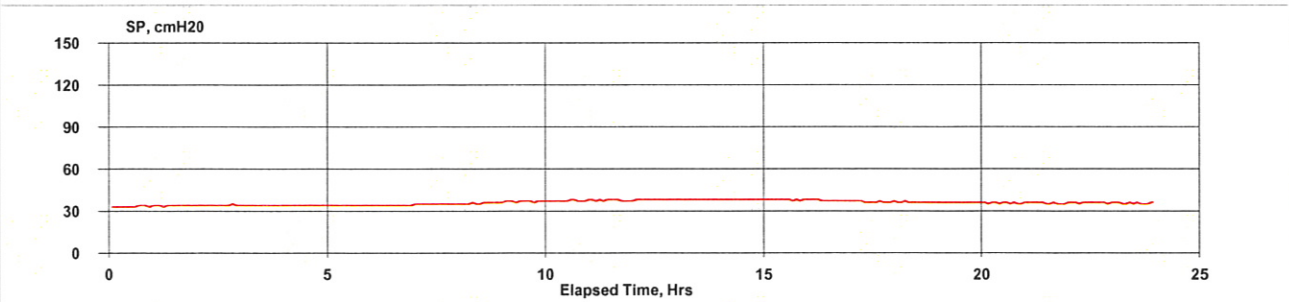
Mass Concentration Data:

Filter ID:	IML 8	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.032	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-20-nov	0:05:08	591	-0.9	-2.8	-1.9	33	16.72
15-20-nov	1:05:08	591	-0.9	-2.7	-1.8	34	16.71
15-20-nov	2:05:08	590	-0.9	-2.6	-1.7	34	16.71
15-20-nov	3:05:08	590	-1.3	-3.1	-1.9	34	16.71
15-20-nov	4:05:08	590	-2.1	-3.5	-1.5	34	16.72
15-20-nov	5:05:08	590	-1.7	-3.7	-1.9	34	16.72
15-20-nov	6:05:08	590	0.0	-2.4	-2.5	34	16.71
15-20-nov	7:05:08	591	2.0	-0.8	-2.7	35	16.71
15-20-nov	8:05:08	591	4.6	2.9	-1.7	36	16.71
15-20-nov	9:05:08	592	8.5	7.8	-0.6	37	16.70
15-20-nov	10:05:08	592	10.2	10.9	0.7	37	16.70
15-20-nov	11:05:08	592	10.2	11.3	1.1	38	16.71
15-20-nov	12:05:08	591	11.2	12.2	0.9	38	16.71
15-20-nov	13:05:08	591	11.7	13.1	1.4	38	16.69
15-20-nov	14:05:08	592	10.9	12.5	1.6	38	16.70
15-20-nov	15:05:08	592	9.3	10.5	1.2	38	16.70
15-20-nov	16:05:08	593	6.9	7.7	0.8	37	16.71
15-20-nov	17:05:08	593	4.7	4.2	-0.5	36	16.71
15-20-nov	18:05:08	594	2.9	1.9	-1.0	36	16.71
15-20-nov	19:05:08	594	1.6	0.1	-1.5	36	16.71
15-20-nov	20:05:08	594	0.5	-1.3	-1.7	36	16.71
15-20-nov	21:05:08	595	0.1	-1.8	-1.8	36	16.71
15-20-nov	22:05:08	595	-0.3	-2.0	-1.7	36	16.71
15-20-nov	23:05:08	595	-1.0	-2.8	-1.8	35	16.71

BGI PQ200 Air Sampling System Downloaded 2015 30 nov 10:31:39

Job Details:

Job Name: 15Nov30B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2606:16
Flags:

Job Code:
Site Name: 963B
Station Code:
Operators: kn
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	587	582	585	mmHg
TA	1.8	-9	-3.8	°C
Q	---	---	16.7	Lpm

QCV 0.53 %

Max overheat 3.1 °C
occured 26-nov 11:07:34

Timer Information:

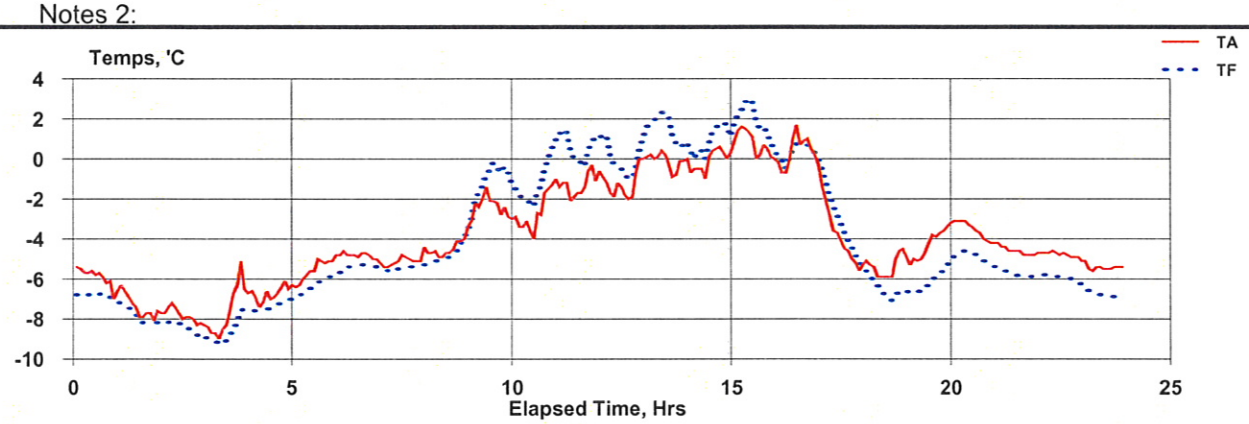
	Date dd-mmm	Time hh:mm:ss
Start:	15-26-nov	0:00:08
Stop:	15-27-nov	0:00:05

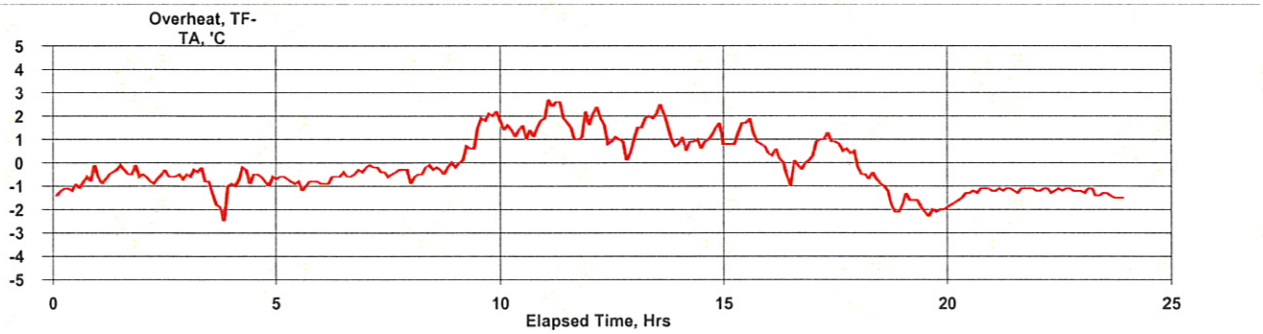
ET: 23:59

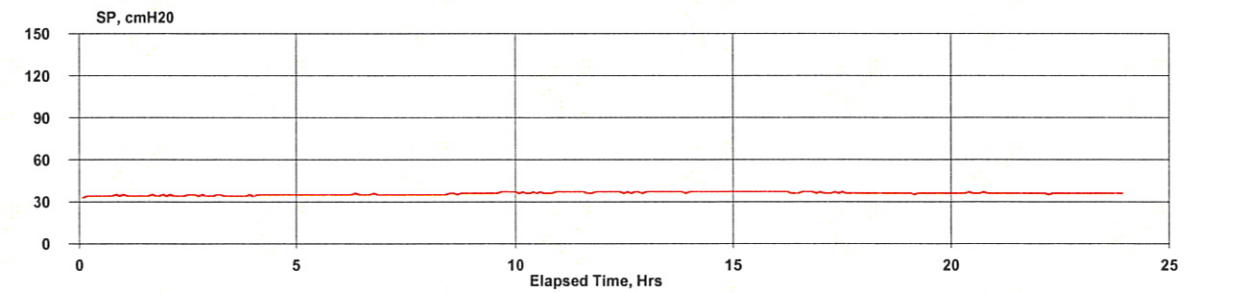
Mass Concentration Data:

Filter ID:	6	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.038	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-26-nov	0:05:08	584	-5.9	-6.8	-0.9	34	16.71
15-26-nov	1:05:08	584	-7.4	-7.9	-0.4	34	16.71
15-26-nov	2:05:08	584	-7.8	-8.4	-0.6	34	16.71
15-26-nov	3:05:08	584	-7.5	-8.6	-1.0	34	16.71
15-26-nov	4:05:08	584	-6.7	-7.4	-0.7	35	16.71
15-26-nov	5:05:08	584	-5.5	-6.3	-0.8	35	16.71
15-26-nov	6:05:08	585	-4.8	-5.4	-0.6	35	16.70
15-26-nov	7:05:08	585	-5.1	-5.5	-0.4	35	16.70
15-26-nov	8:05:08	586	-4.4	-4.7	-0.3	36	16.71
15-26-nov	9:05:08	586	-2.4	-1.1	1.3	36	16.71
15-26-nov	10:05:08	586	-2.6	-1.2	1.4	36	16.71
15-26-nov	11:05:08	586	-1.3	0.6	1.9	37	16.71
15-26-nov	12:05:08	586	-1.2	0.0	1.2	37	16.70
15-26-nov	13:05:08	586	-0.1	1.5	1.6	37	16.70
15-26-nov	14:05:08	585	-0.1	0.9	1.0	37	16.71
15-26-nov	15:05:08	586	0.8	1.9	1.1	37	16.71
15-26-nov	16:05:08	586	0.3	0.3	0.0	37	16.70
15-26-nov	17:05:08	586	-4.0	-3.3	0.7	36	16.71
15-26-nov	18:05:08	586	-5.4	-6.5	-1.1	36	16.71
15-26-nov	19:05:08	586	-4.2	-6.1	-1.9	36	16.71
15-26-nov	20:05:08	586	-3.6	-4.9	-1.4	36	16.70
15-26-nov	21:05:08	586	-4.6	-5.8	-1.2	36	16.71
15-26-nov	22:05:08	586	-4.8	-6.0	-1.2	36	16.71
15-26-nov	23:05:08	586	-5.4	-6.8	-1.3	36	16.71

BGI PQ200 Air Sampling System Downloaded 2015 04 dec 11:10:36

Job Details:

Job Name: 15Dec04B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2630:15
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	595	591	593	mmHg
TA	9	-9.6	-1.2	°C
Q	---	---	16.71	Lpm

QCV 0.58 %

Max overheat 2.1 °C
occured 02-dec 11:29:35

Timer Information:

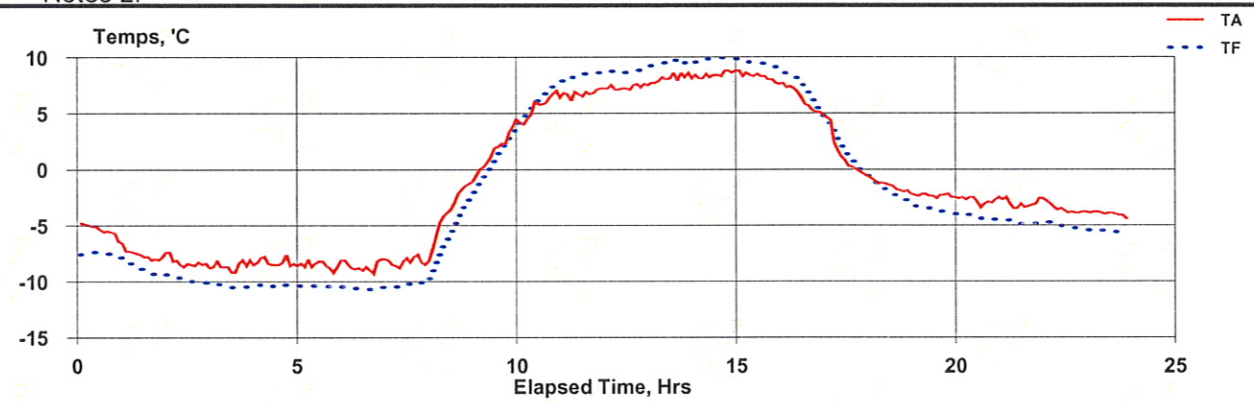
	Date dd-mmm	Time hh:mm:ss
Start:	15-02-dec	0:00:08
Stop:	15-03-dec	0:00:05

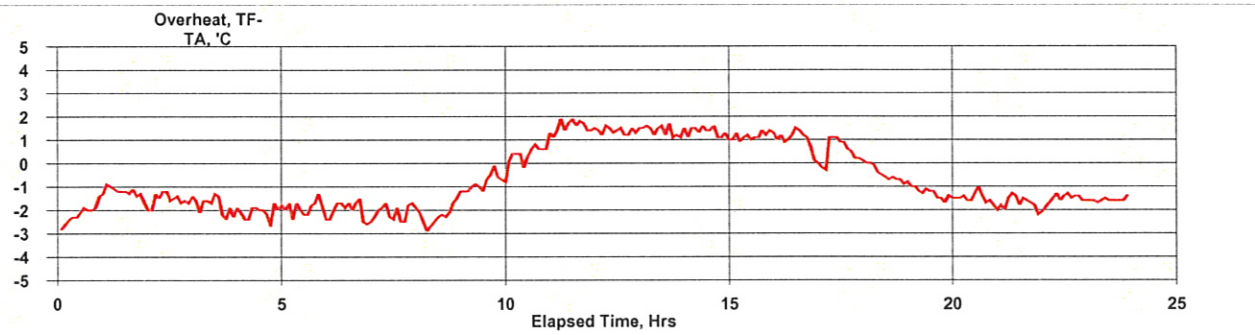
ET: 23:59

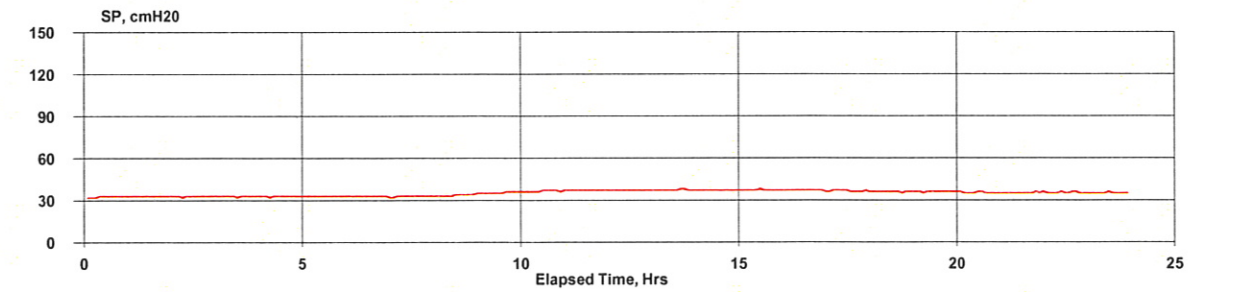
Mass Concentration Data:

Filter ID:	9	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.04	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-02-dec	0:05:08	593	-5.5	-7.6	-2.1	33	16.71
15-02-dec	1:05:08	593	-7.7	-9.0	-1.3	33	16.72
15-02-dec	2:05:08	593	-8.4	-9.9	-1.5	33	16.71
15-02-dec	3:05:08	593	-8.6	-10.4	-1.8	33	16.72
15-02-dec	4:05:08	593	-8.3	-10.4	-2.1	33	16.71
15-02-dec	5:05:08	593	-8.5	-10.4	-1.9	33	16.72
15-02-dec	6:05:08	594	-8.6	-10.6	-2.0	33	16.72
15-02-dec	7:05:08	594	-8.2	-10.3	-2.1	33	16.71
15-02-dec	8:05:08	594	-3.4	-5.6	-2.2	34	16.71
15-02-dec	9:05:08	595	1.8	1.0	-0.8	35	16.71
15-02-dec	10:05:08	594	5.6	6.1	0.5	37	16.71
15-02-dec	11:05:08	594	6.8	8.4	1.6	37	16.70
15-02-dec	12:05:08	594	7.3	8.7	1.4	37	16.71
15-02-dec	13:05:08	593	8.1	9.5	1.4	37	16.71
15-02-dec	14:05:08	594	8.5	9.8	1.3	37	16.71
15-02-dec	15:05:08	593	8.2	9.4	1.2	37	16.70
15-02-dec	16:05:08	593	6.2	7.2	0.9	37	16.71
15-02-dec	17:05:08	593	1.2	1.7	0.5	37	16.71
15-02-dec	18:05:08	593	-1.5	-2.0	-0.5	36	16.71
15-02-dec	19:05:08	594	-2.4	-3.7	-1.3	36	16.72
15-02-dec	20:05:08	594	-2.8	-4.3	-1.5	35	16.71
15-02-dec	21:05:08	594	-3.1	-4.8	-1.7	35	16.71
15-02-dec	22:05:08	594	-3.6	-5.1	-1.5	35	16.71
15-02-dec	23:05:08	594	-4.0	-5.6	-1.6	35	16.71

BGI PQ200 Air Sampling System Downloaded 2015 10 dec 12:32:04

Job Details:

Job Name: 15Dec10B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2654:14
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	594	591	592	mmHg
TA	14.8	-2	4.8	°C
Q	---	---	16.7	Lpm

QCV 0.51 %

Max overheat 2.5 °C
occured 08-dec 12:04:18

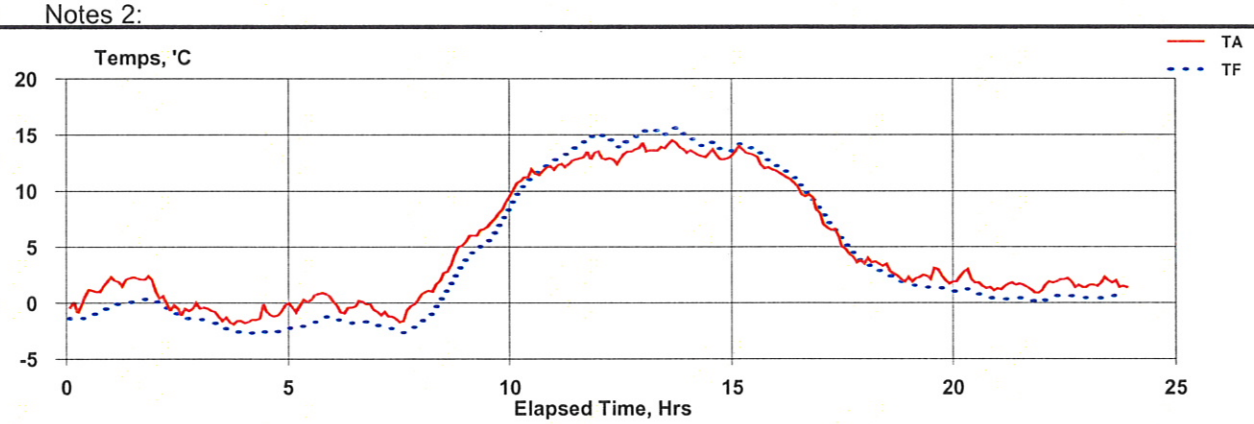
Timer Information:

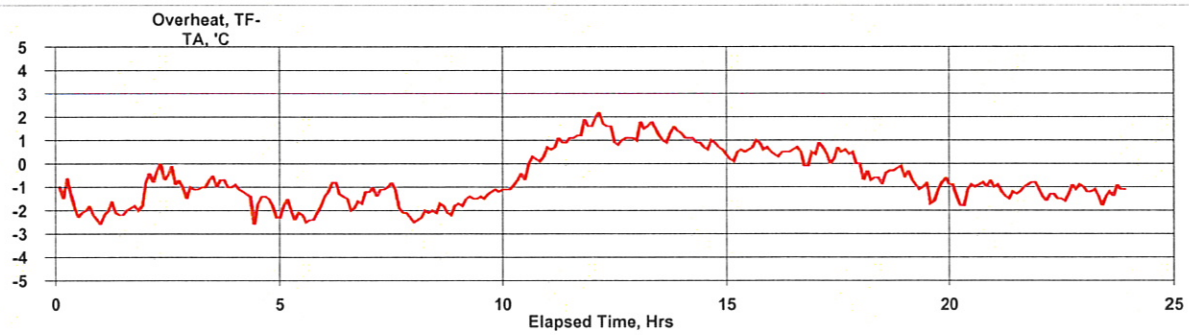
	Date dd-mmm	Time hh:mm:ss
Start:	15-08-dec	0:00:08
Stop:	15-09-dec	0:00:05
ET:	23:59	

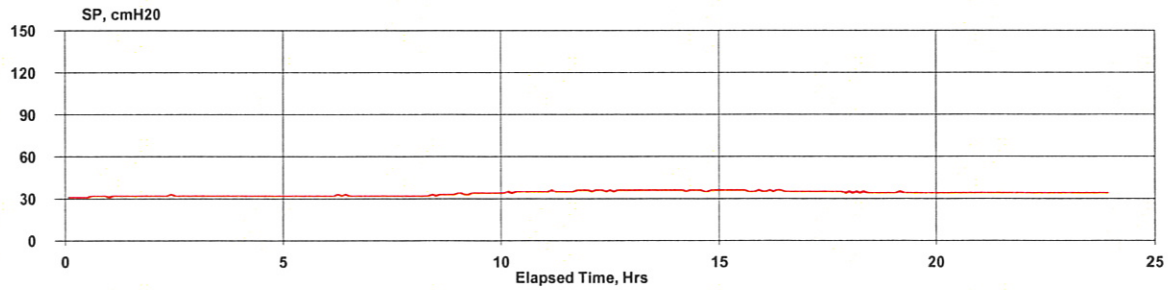
Mass Concentration Data:

Filter ID:	11	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.036	m^3
Mass Conc:	0	ug/m3

Notes 1:
Notes 2:







15-08-dec	0:05:08	593	0.8	-1.0	-1.8	31	16.72
15-08-dec	1:05:08	593	2.0	0.1	-1.9	32	16.72
15-08-dec	2:05:08	593	-0.3	-1.0	-0.7	32	16.72
15-08-dec	3:05:08	592	-1.3	-2.2	-0.9	32	16.71
15-08-dec	4:05:08	592	-0.9	-2.6	-1.7	32	16.71
15-08-dec	5:05:08	592	0.3	-1.8	-2.1	32	16.71
15-08-dec	6:05:08	593	-0.4	-1.7	-1.4	32	16.71
15-08-dec	7:05:08	593	-0.7	-2.3	-1.5	32	16.70
15-08-dec	8:05:08	593	3.0	1.0	-2.0	33	16.71
15-08-dec	9:05:08	593	7.3	5.9	-1.4	34	16.71
15-08-dec	10:05:08	594	11.4	11.1	-0.3	35	16.71
15-08-dec	11:05:08	593	12.8	14.0	1.2	35	16.71
15-08-dec	12:05:08	593	13.2	14.6	1.3	36	16.70
15-08-dec	13:05:08	593	13.8	15.2	1.4	36	16.70
15-08-dec	14:05:08	593	13.2	14.0	0.8	36	16.72
15-08-dec	15:05:08	593	12.9	13.4	0.6	36	16.71
15-08-dec	16:05:08	593	10.1	10.5	0.4	35	16.71
15-08-dec	17:05:08	593	5.2	5.6	0.4	35	16.71
15-08-dec	18:05:08	593	3.0	2.5	-0.5	34	16.71
15-08-dec	19:05:08	593	2.3	1.3	-1.0	34	16.71
15-08-dec	20:05:08	593	1.9	0.8	-1.1	34	16.71
15-08-dec	21:05:08	593	1.4	0.3	-1.1	34	16.71
15-08-dec	22:05:08	593	1.8	0.5	-1.3	34	16.70
15-08-dec	23:05:08	593	1.7	0.5	-1.3	34	16.70

BGI PQ200 Air Sampling System Downloaded 2015 15 dec 11:22:28

Job Details:

Job Name: 15Dec15B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2678:13
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	581	576	578	mmHg
TA	-0.5	-13.9	-5.3	°C
Q	---	---	16.71	Lpm

QCV 0.46 %

Max overheat 4 °C
occured 14-dec 12:17:58

Timer Information:

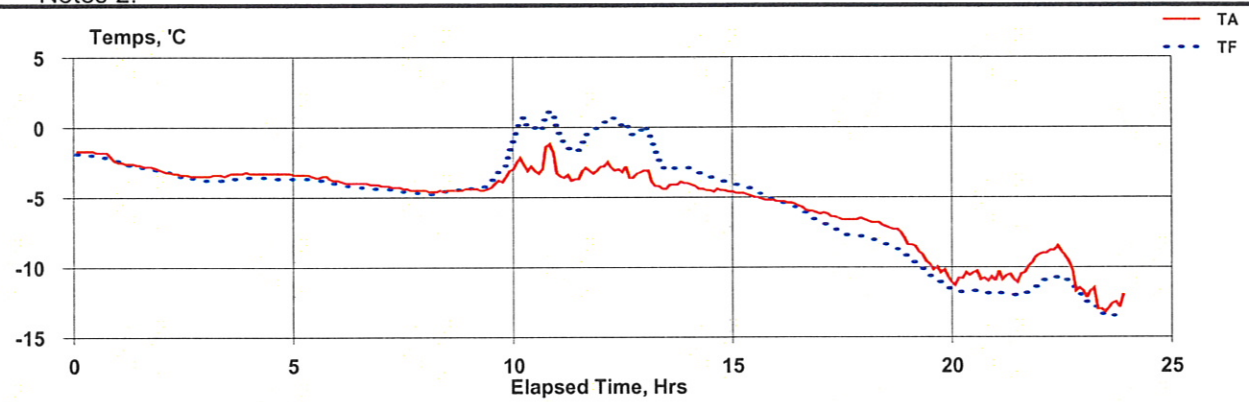
	Date dd-mmm	Time hh:mm:ss
Start:	15-14-dec	0:00:08
Stop:	15-15-dec	0:00:05

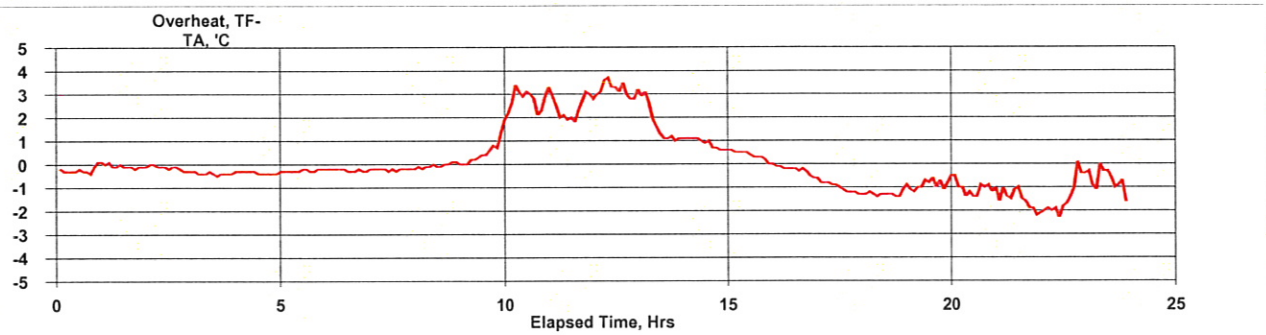
ET: 23:59

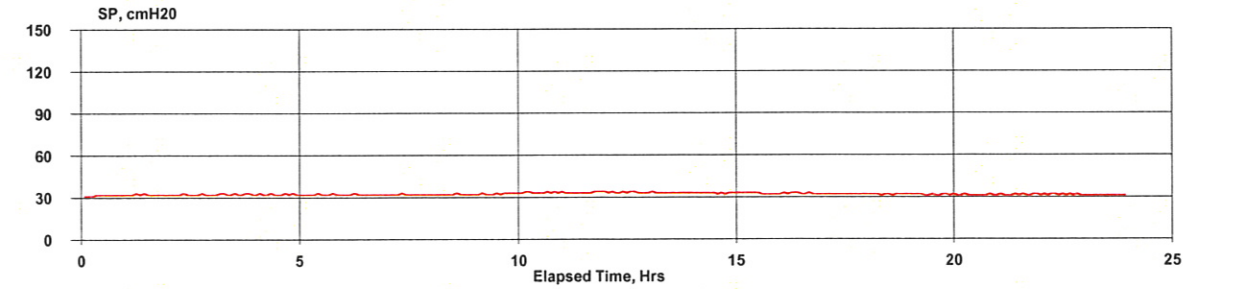
Mass Concentration Data:

Filter ID:	15	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.034	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-14-dec	0:05:08	580	-1.9	-2.1	-0.2	32	16.71
15-14-dec	1:05:08	579	-2.8	-2.8	-0.1	32	16.71
15-14-dec	2:05:08	579	-3.4	-3.5	-0.2	32	16.70
15-14-dec	3:05:08	578	-3.4	-3.7	-0.4	32	16.71
15-14-dec	4:05:08	578	-3.3	-3.7	-0.4	32	16.70
15-14-dec	5:05:08	577	-3.6	-3.8	-0.3	32	16.71
15-14-dec	6:05:08	577	-4.0	-4.3	-0.2	32	16.72
15-14-dec	7:05:08	577	-4.4	-4.6	-0.2	32	16.71
15-14-dec	8:05:08	577	-4.5	-4.6	0.0	32	16.71
15-14-dec	9:05:08	577	-4.0	-3.4	0.6	33	16.72
15-14-dec	10:05:08	577	-2.5	0.3	2.8	33	16.72
15-14-dec	11:05:08	577	-3.3	-0.9	2.4	33	16.71
15-14-dec	12:05:08	577	-3.1	0.1	3.2	33	16.71
15-14-dec	13:05:08	577	-4.0	-2.4	1.7	33	16.71
15-14-dec	14:05:08	577	-4.4	-3.6	0.9	33	16.73
15-14-dec	15:05:08	578	-5.0	-4.6	0.3	33	16.72
15-14-dec	16:05:08	578	-5.7	-6.0	-0.3	32	16.71
15-14-dec	17:05:08	578	-6.5	-7.5	-1.0	32	16.71
15-14-dec	18:05:08	579	-7.2	-8.5	-1.3	32	16.72
15-14-dec	19:05:08	579	-9.7	-10.6	-0.9	32	16.72
15-14-dec	20:05:08	579	-10.8	-11.8	-1.1	31	16.71
15-14-dec	21:05:08	580	-10.3	-11.8	-1.6	31	16.72
15-14-dec	22:05:08	580	-9.7	-11.1	-1.4	32	16.71
15-14-dec	23:05:08	580	-12.5	-13.2	-0.7	31	16.72

BGI PQ200 Air Sampling System Downloaded 2015 21 dec 14:01:47

Job Details:

Job Name: 15Dec21B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2702:12
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	589	583	586	mmHg
TA	0	-6.8	-2.3	°C
Q	---	---	16.7	Lpm

QCV 0.47 %

Max overheat 1.7 °C
occured 20-dec 11:10:29

Timer Information:

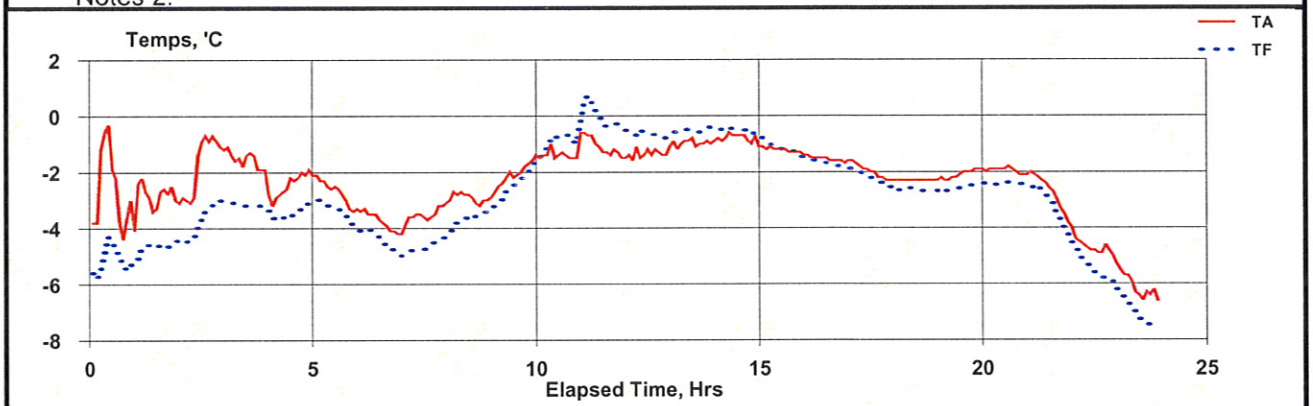
	Date dd-mmm	Time hh:mm:ss
Start:	15-20-dec	0:00:08
Stop:	15-21-dec	0:00:04

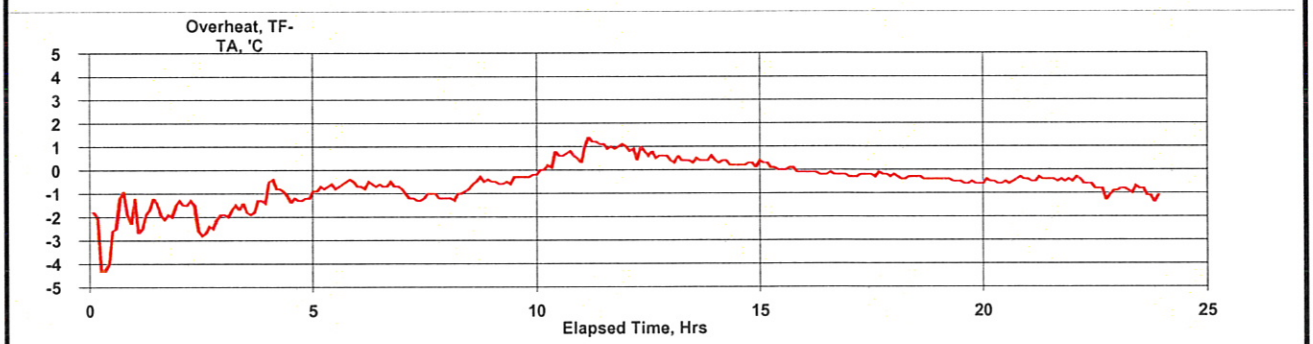
ET: 23:59

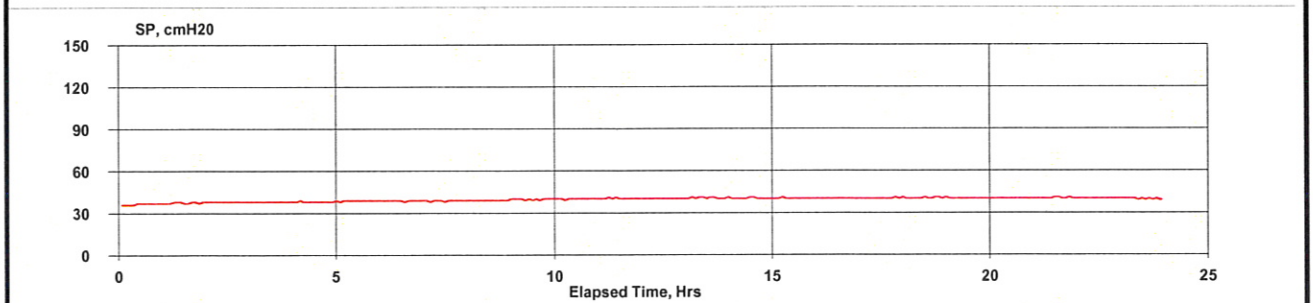
Mass Concentration Data:

Filter ID:	JBR1	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.032	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-20-dec	0:05:08	585	-2.7	-5.1	-2.4	37	16.72
15-20-dec	1:05:08	585	-2.8	-4.6	-1.8	38	16.70
15-20-dec	2:05:08	585	-1.6	-3.7	-2.1	38	16.71
15-20-dec	3:05:08	585	-1.7	-3.2	-1.5	38	16.72
15-20-dec	4:05:08	585	-2.4	-3.5	-1.0	38	16.71
15-20-dec	5:05:08	585	-2.7	-3.4	-0.7	39	16.71
15-20-dec	6:05:08	586	-3.8	-4.4	-0.7	39	16.71
15-20-dec	7:05:08	586	-3.5	-4.7	-1.2	39	16.72
15-20-dec	8:05:08	587	-2.9	-3.7	-0.8	39	16.72
15-20-dec	9:05:08	587	-2.1	-2.4	-0.4	40	16.70
15-20-dec	10:05:08	588	-1.3	-0.9	0.4	40	16.71
15-20-dec	11:05:08	587	-1.1	-0.1	1.1	40	16.70
15-20-dec	12:05:08	587	-1.3	-0.7	0.7	40	16.71
15-20-dec	13:05:08	587	-1.0	-0.5	0.4	41	16.71
15-20-dec	14:05:08	587	-0.8	-0.5	0.3	40	16.72
15-20-dec	15:05:08	588	-1.2	-1.2	0.1	40	16.71
15-20-dec	16:05:08	588	-1.6	-1.7	-0.2	40	16.70
15-20-dec	17:05:08	588	-2.0	-2.2	-0.2	40	16.72
15-20-dec	18:05:08	588	-2.3	-2.7	-0.4	40	16.71
15-20-dec	19:05:08	588	-2.1	-2.6	-0.5	40	16.72
15-20-dec	20:05:08	588	-2.0	-2.4	-0.5	40	16.70
15-20-dec	21:05:08	588	-2.8	-3.3	-0.4	40	16.71
15-20-dec	22:05:08	588	-4.8	-5.5	-0.8	40	16.71
15-20-dec	23:05:08	589	-6.1	-7.1	-1.0	40	16.71

BGI PQ200 Air Sampling System Downloaded 2015 28 dec 11:09:32

Job Details:

Job Name: 15Dec28B.JOB
Version: 5.62
Serial No: 963
Pump Time: 2726:11
Flags:

Job Code:
Site Name: 963B
Station Code:
Operators: KN
User1: ++++++++++++++++++++++++++++++
User2:

	Max	Min	Avg	Units
BP	592	584	588	mmHg
TA	-7.2	-13.2	-10.4	°C
Q	---	---	16.7	Lpm

QCV 0.45 %
Max overheat 2.3 °C
occured 27-dec 14:18:52

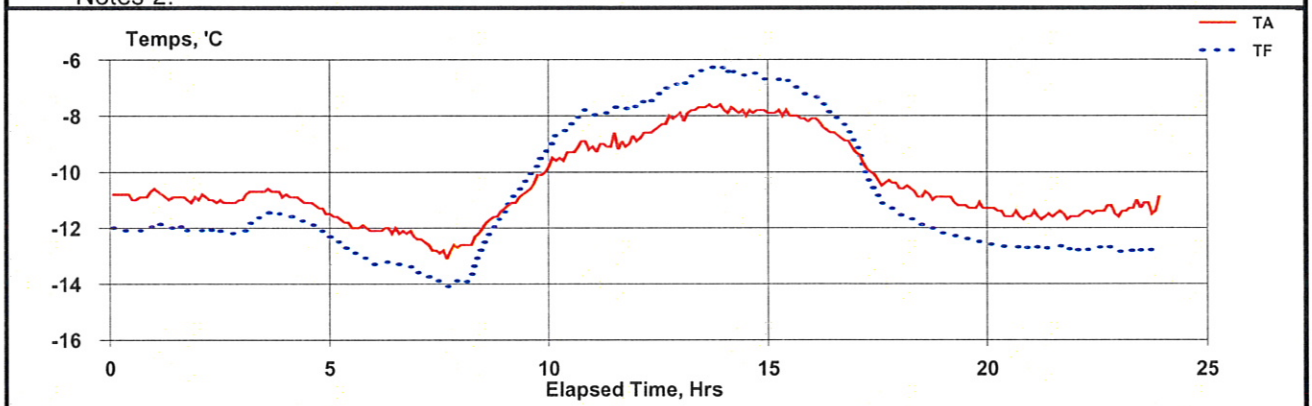
Timer Information:

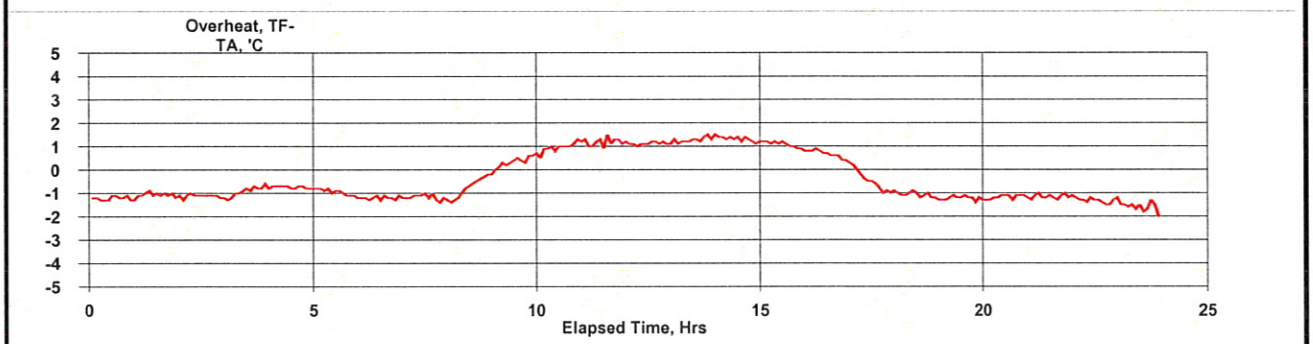
	Date dd-mmm	Time hh:mm:ss
Start:	15-26-dec	0:00:08
Stop:	15-27-dec	0:00:04
ET:	23:59	

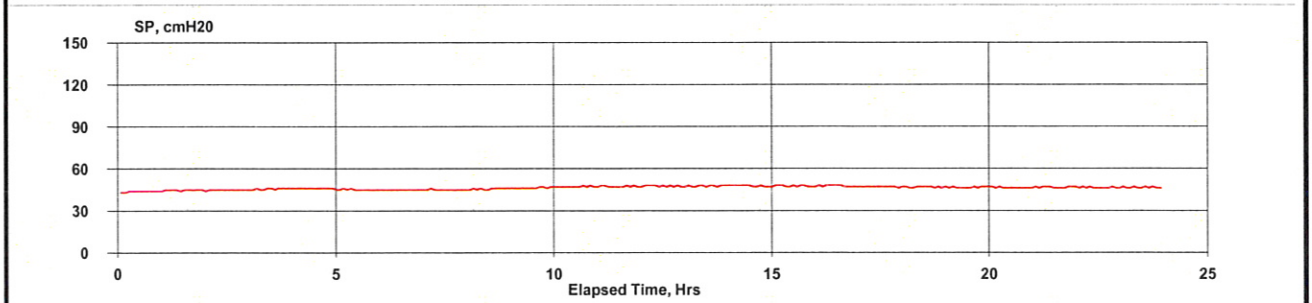
Mass Concentration Data:

Filter ID:	8	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.033	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-26-dec	0:05:08	586	-10.8	-12.1	-1.2	44	16.71
15-26-dec	1:05:08	586	-10.9	-12.0	-1.1	45	16.71
15-26-dec	2:05:08	586	-11.0	-12.1	-1.1	45	16.71
15-26-dec	3:05:08	587	-10.7	-11.6	-0.9	46	16.71
15-26-dec	4:05:08	587	-11.2	-11.9	-0.7	46	16.71
15-26-dec	5:05:08	587	-11.9	-12.9	-1.0	45	16.72
15-26-dec	6:05:08	588	-12.1	-13.3	-1.2	45	16.70
15-26-dec	7:05:08	588	-12.7	-13.9	-1.2	45	16.71
15-26-dec	8:05:08	589	-12.0	-12.7	-0.7	46	16.71
15-26-dec	9:05:08	590	-10.6	-10.2	0.4	46	16.71
15-26-dec	10:05:08	590	-9.3	-8.3	1.0	47	16.71
15-26-dec	11:05:08	590	-9.0	-7.8	1.2	47	16.70
15-26-dec	12:05:08	589	-8.3	-7.2	1.1	48	16.72
15-26-dec	13:05:08	589	-7.8	-6.5	1.3	48	16.73
15-26-dec	14:05:08	589	-7.8	-6.5	1.3	48	16.72
15-26-dec	15:05:08	590	-8.0	-6.9	1.1	48	16.70
15-26-dec	16:05:08	590	-8.7	-8.0	0.6	48	16.71
15-26-dec	17:05:08	590	-10.2	-10.7	-0.6	47	16.72
15-26-dec	18:05:08	591	-10.8	-11.9	-1.1	47	16.71
15-26-dec	19:05:08	591	-11.2	-12.4	-1.2	46	16.70
15-26-dec	20:05:08	591	-11.5	-12.7	-1.2	46	16.70
15-26-dec	21:05:08	590	-11.6	-12.7	-1.2	47	16.70
15-26-dec	22:05:08	591	-11.4	-12.8	-1.3	46	16.70
15-26-dec	23:05:08	591	-11.2	-12.8	-1.6	46	16.71

Collocated Monitor 964C

PM_{10} Sampler Summary

October 1, 2015 - December 31, 2015

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

AQS ID:

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
10/03/15	P2925404	4.1	5.1	23:59	24.0	19.5	384.666	384.766	0.100		
10/09/15	P2925407	6.0	7.3	23:59	24.0	19.6	381.638	381.783	0.145		
10/15/15	P2925675	5.7	7.1	23:59	24.0	19.5	389.299	389.438	0.139		
10/21/15	P2925678	Invalid - AG	Invalid - AG	4:49	4.8	4.0	378.312	378.324	0.012		Q T errors
10/27/15	P2925408	Invalid - AN	Invalid - AN	0:02			385.742	385.732	-0.010		Q T errors
11/02/15	P2925820	Invalid - AN	Invalid - AN	0:02			375.606	375.614	0.008		Q T errors
11/08/15	P2926000	Invalid - AN	Invalid - AN	0:02			371.363	371.376	0.013		Q T errors
11/14/15	P2925998	Invalid - AN	Invalid - AN	0:02			376.526	376.546	0.020		Q T errors
11/20/15	P2926217	Invalid - AN	Invalid - AN	0:02			380.744	380.762	0.018		Q T errors
11/26/15	P2926220	Invalid - AN	Invalid - AN	0:02			374.744	374.759	0.015		Q T errors
12/02/15	P2926223	Invalid - AN	Invalid - AN				381.572	381.653	0.081		
12/08/15	P2926453	Invalid - AN	Invalid - AN	1:52	1.9	1.6	379.371	379.392	0.021		Incomplete run
12/14/15	P2926456	1.4	1.7	23:59	24.0	20.4	380.060	380.096	0.036		
12/20/15	P2926667	4.9	5.7	23:59	24.0	20.5	379.972	380.090	0.118		
12/26/15	P2926660	6.4	7.3	23:59	24.0	21.2	376.503	376.658	0.155		

# Valid	Recovery	Average	St. Dev.	Max	Min
6	40%	5.7	2.2	7.3	1.7

BGI PQ200 Air Sampling System Downloaded 2015 05 oct 10:17:58

Job Details:

Job Name:	15Oct05C.JOB
Version:	5.62
Serial No:	964
Pump Time:	2350:05
Flags:	

Job Code:	
Site Name:	
Station Code:	
Operators:	
User1:	
User2:	

	Max	Min	Avg	Units
BP	589	585	587	mmHg
TA	18.1	4.6	10.5	°C
Q	---	---	16.71	Lpm

QCV	0.59	%
Max overheat	2.4	°C
occured	04-oct 14:25:43	

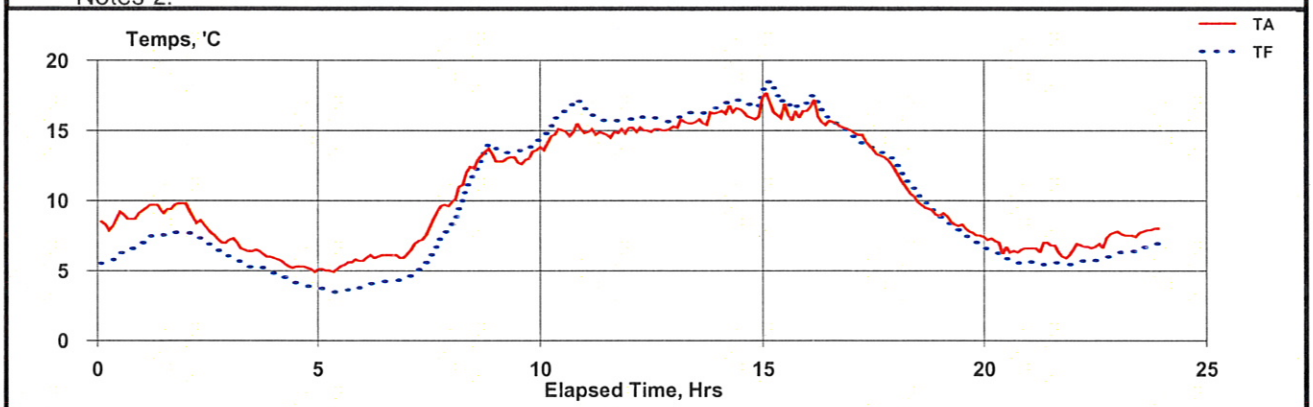
Timer Information:

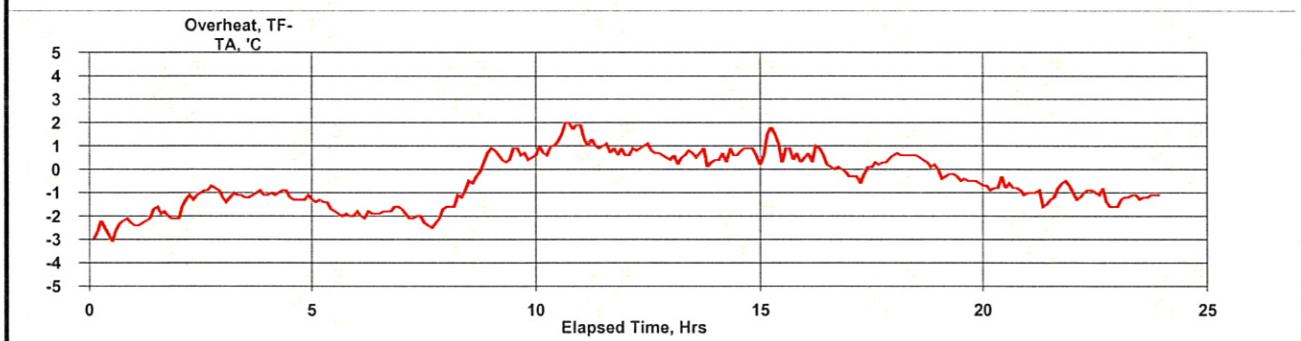
	Date dd-mmm	Time hh:mm:ss
Start:	15-03-oct	0:00:08
Stop:	15-04-oct	0:00:05
ET:	23:59	

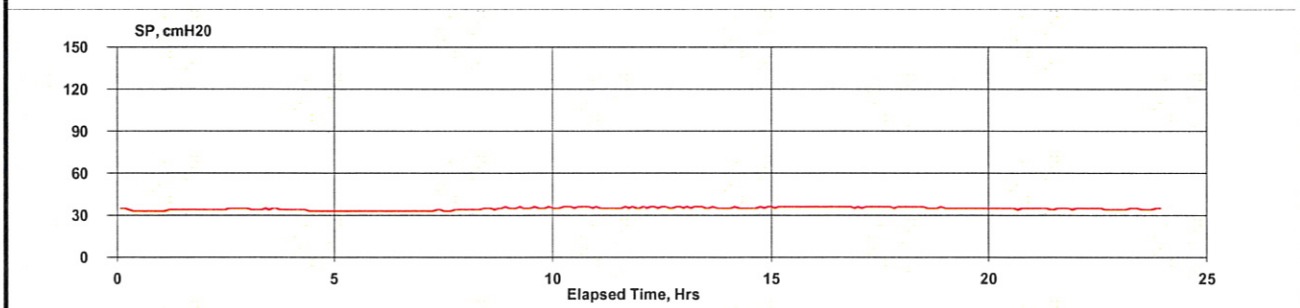
Mass Concentration Data:

Filter ID:	13	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.042	m^3
Mass Conc:	0	ug/m3

Notes 1:
Notes 2:







15-03-oct	0:05:08	589	8.7	6.2	-2.5	33	16.71
15-03-oct	1:05:08	589	9.6	7.5	-2.0	34	16.72
15-03-oct	2:05:08	589	7.9	6.9	-1.1	35	16.71
15-03-oct	3:05:08	588	6.4	5.3	-1.1	34	16.71
15-03-oct	4:05:08	588	5.3	4.2	-1.1	33	16.72
15-03-oct	5:05:08	588	5.4	3.6	-1.7	33	16.70
15-03-oct	6:05:08	588	6.0	4.2	-1.8	33	16.72
15-03-oct	7:05:08	588	8.3	6.3	-2.1	34	16.71
15-03-oct	8:05:08	588	12.4	11.9	-0.5	35	16.70
15-03-oct	9:05:08	588	13.1	13.7	0.6	35	16.70
15-03-oct	10:05:08	588	14.7	16.1	1.4	36	16.71
15-03-oct	11:05:08	587	14.9	15.8	0.9	35	16.71
15-03-oct	12:05:08	587	15.1	15.8	0.8	36	16.71
15-03-oct	13:05:08	586	15.7	16.3	0.5	35	16.71
15-03-oct	14:05:08	586	16.4	17.0	0.7	35	16.71
15-03-oct	15:05:08	586	16.4	17.3	0.9	36	16.71
15-03-oct	16:05:08	586	15.7	16.0	0.3	36	16.71
15-03-oct	17:05:08	586	13.6	13.7	0.1	36	16.71
15-03-oct	18:05:08	586	10.0	10.5	0.4	36	16.71
15-03-oct	19:05:08	586	8.1	7.7	-0.4	35	16.72
15-03-oct	20:05:08	587	6.7	5.9	-0.8	35	16.72
15-03-oct	21:05:08	587	6.5	5.5	-1.0	35	16.71
15-03-oct	22:05:08	587	7.0	5.8	-1.2	35	16.70
15-03-oct	23:05:08	587	7.7	6.5	-1.2	34	16.71

BGI PQ200 Air Sampling System Downloaded 2015 12 oct 09:07:49

Job Details:

Job Name: 15Oct12C.JOB
Version: 5.62
Serial No: 964
Pump Time: 2374:04
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	600	595	598	mmHg
TA	21.9	7.2	14.3	°C
Q	---	---	16.71	Lpm

QCV 0.57 %

Max overheat 2.7 °C
occured 09-oct 15:11:15

Timer Information:

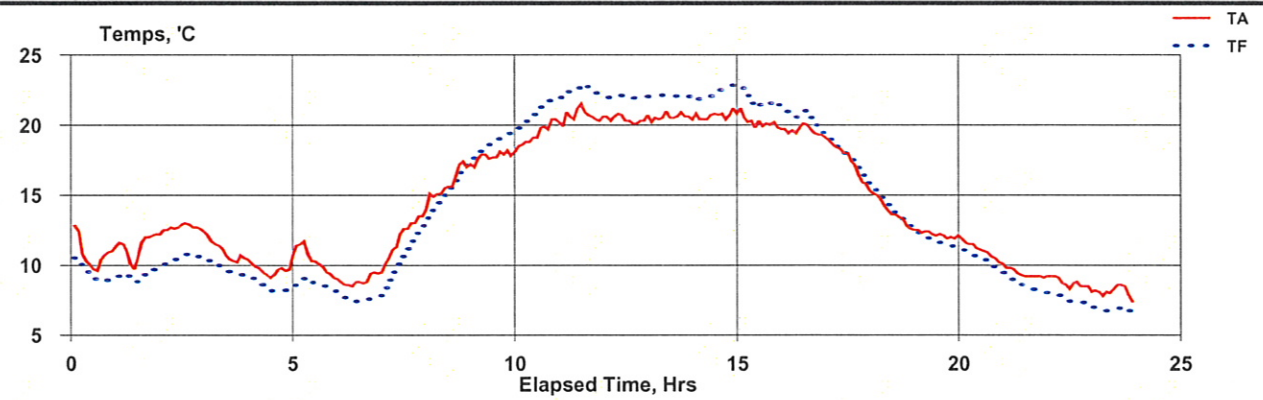
	Date dd-mmm	Time hh:mm:ss
Start:	15-09-oct	0:00:08
Stop:	15-10-oct	0:00:05

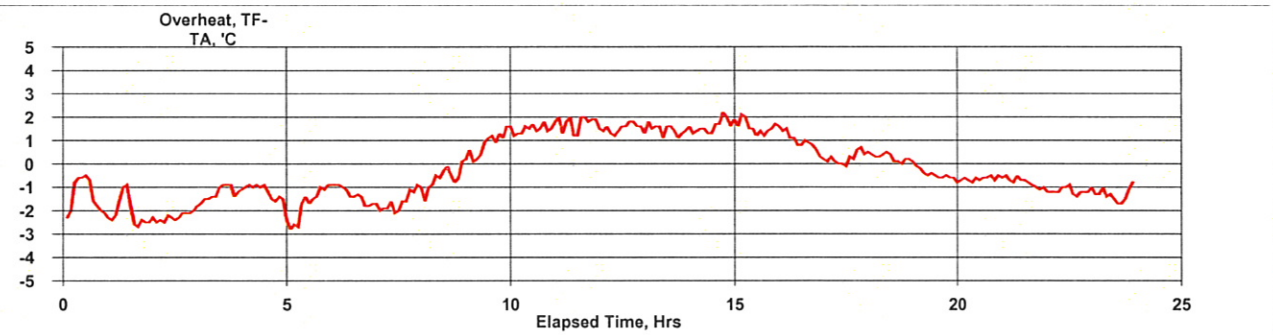
ET: 23:59

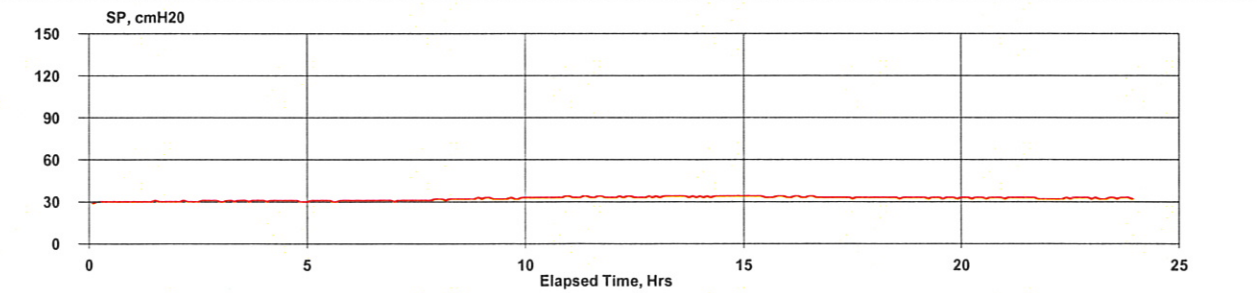
Mass Concentration Data:

Filter ID:	16	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.042	m^3
Mass Conc:	0	ug/m3

Notes 1:
Notes 2:







15-09-oct	0:05:08	598	10.8	9.4	-1.4	30	16.71
15-09-oct	1:05:08	598	11.4	9.3	-2.1	30	16.72
15-09-oct	2:05:08	598	12.7	10.5	-2.2	31	16.71
15-09-oct	3:05:08	598	10.9	9.7	-1.2	31	16.71
15-09-oct	4:05:08	598	9.7	8.4	-1.3	31	16.70
15-09-oct	5:05:08	598	10.3	8.6	-1.6	31	16.72
15-09-oct	6:05:08	598	9.0	7.6	-1.4	31	16.70
15-09-oct	7:05:08	599	12.3	10.7	-1.6	31	16.71
15-09-oct	8:05:08	599	16.0	15.5	-0.6	32	16.70
15-09-oct	9:05:08	599	17.8	18.7	0.9	32	16.71
15-09-oct	10:05:08	599	19.4	20.9	1.5	33	16.71
15-09-oct	11:05:08	599	20.7	22.4	1.7	33	16.71
15-09-oct	12:05:08	599	20.4	21.9	1.5	33	16.71
15-09-oct	13:05:08	598	20.6	22.0	1.5	34	16.71
15-09-oct	14:05:08	598	20.7	22.3	1.6	34	16.71
15-09-oct	15:05:08	598	20.2	21.7	1.6	34	16.71
15-09-oct	16:05:08	598	19.6	20.4	0.9	33	16.71
15-09-oct	17:05:08	598	17.3	17.6	0.3	33	16.71
15-09-oct	18:05:08	598	13.7	14.0	0.3	33	16.71
15-09-oct	19:05:08	598	12.2	11.7	-0.5	33	16.71
15-09-oct	20:05:08	599	11.0	10.4	-0.6	33	16.71
15-09-oct	21:05:08	599	9.4	8.5	-0.8	33	16.72
15-09-oct	22:05:08	599	8.7	7.5	-1.2	33	16.71
15-09-oct	23:05:08	599	8.1	6.8	-1.3	33	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 16 oct 09:32:24

Job Details:

Job Name: 15Oct16C.JOB
Version: 5.62
Serial No: 964
Pump Time: 2398:03
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	597	594	595	mmHg
TA	25.5	5.9	15.2	°C
Q	---	---	16.7	Lpm

QCV 0.56 %

Max overheat 2.9 °C
occured 15-oct 12:51:17

Timer Information:

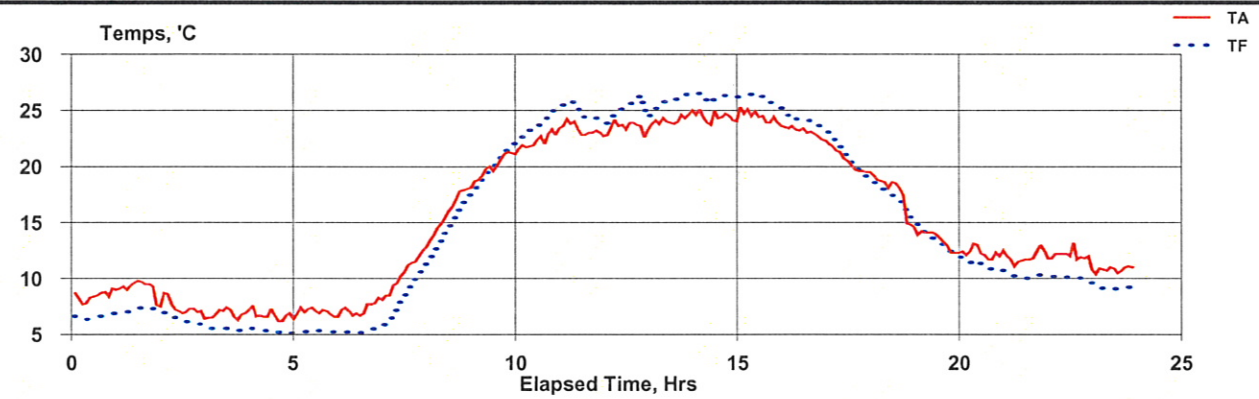
	Date dd-mmm	Time hh:mm:ss
Start:	15-15-oct	0:00:08
Stop:	15-16-oct	0:00:05

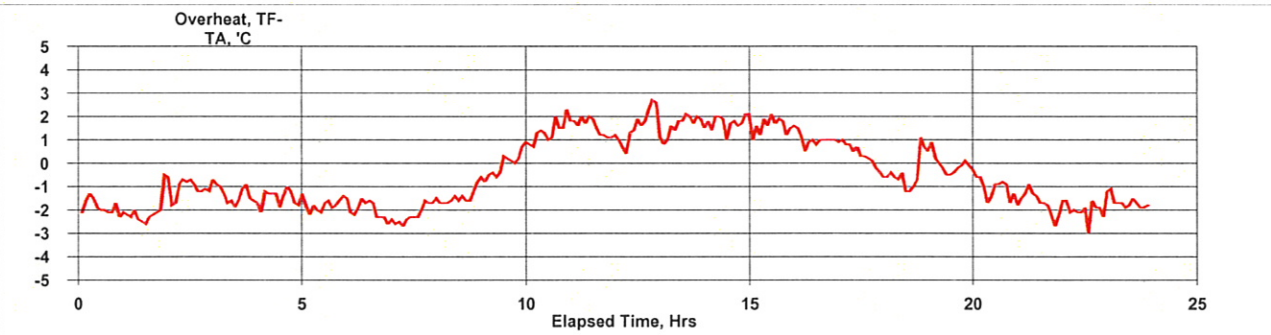
ET: 23:59

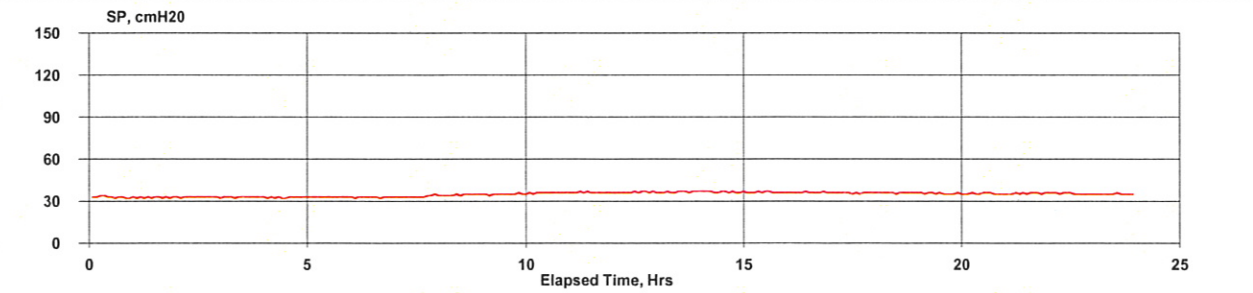
Mass Concentration Data:

Filter ID:	6	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.042	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-15-oct	0:05:08	596	8.5	6.6	-1.9	33	16.72
15-15-oct	1:05:08	596	9.1	7.1	-2.0	33	16.71
15-15-oct	2:05:08	596	7.4	6.3	-1.1	33	16.71
15-15-oct	3:05:08	596	6.9	5.5	-1.4	33	16.71
15-15-oct	4:05:08	596	6.7	5.3	-1.5	33	16.72
15-15-oct	5:05:08	596	7.0	5.2	-1.8	33	16.72
15-15-oct	6:05:08	596	7.4	5.3	-2.1	33	16.71
15-15-oct	7:05:08	597	10.7	8.6	-2.1	33	16.70
15-15-oct	8:05:08	597	16.1	14.7	-1.4	35	16.72
15-15-oct	9:05:08	597	20.1	20.1	0.0	35	16.71
15-15-oct	10:05:08	597	22.4	23.8	1.4	36	16.71
15-15-oct	11:05:08	596	23.3	24.8	1.5	36	16.71
15-15-oct	12:05:08	596	23.5	25.1	1.6	36	16.71
15-15-oct	13:05:08	595	24.2	25.8	1.6	37	16.70
15-15-oct	14:05:08	595	24.4	26.2	1.8	37	16.71
15-15-oct	15:05:08	595	24.4	26.0	1.6	36	16.70
15-15-oct	16:05:08	595	23.1	24.0	1.0	36	16.71
15-15-oct	17:05:08	595	20.5	20.8	0.3	36	16.71
15-15-oct	18:05:08	595	17.5	17.1	-0.4	36	16.71
15-15-oct	19:05:08	595	13.4	13.3	-0.1	35	16.71
15-15-oct	20:05:08	595	12.3	11.2	-1.1	35	16.71
15-15-oct	21:05:08	595	11.9	10.2	-1.7	36	16.71
15-15-oct	22:05:08	595	12.0	10.0	-2.0	35	16.71
15-15-oct	23:05:08	595	10.8	9.1	-1.7	35	16.71

BGI PQ200 Air Sampling System Downloaded 2015 22 oct 12:04:08

Job Details:

Job Name: 15Oct22C.JOB
Version: 5.62
Serial No: 964
Pump Time: 2402:52
Flags: Q T

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	592	589	591	mmHg
TA	5.4	3.2	4.2	°C
Q	---	---	16.71	Lpm

QCV 0 %
Max overheat 2.6 °C
occured 21-oct 15:05:23

Timer Information:

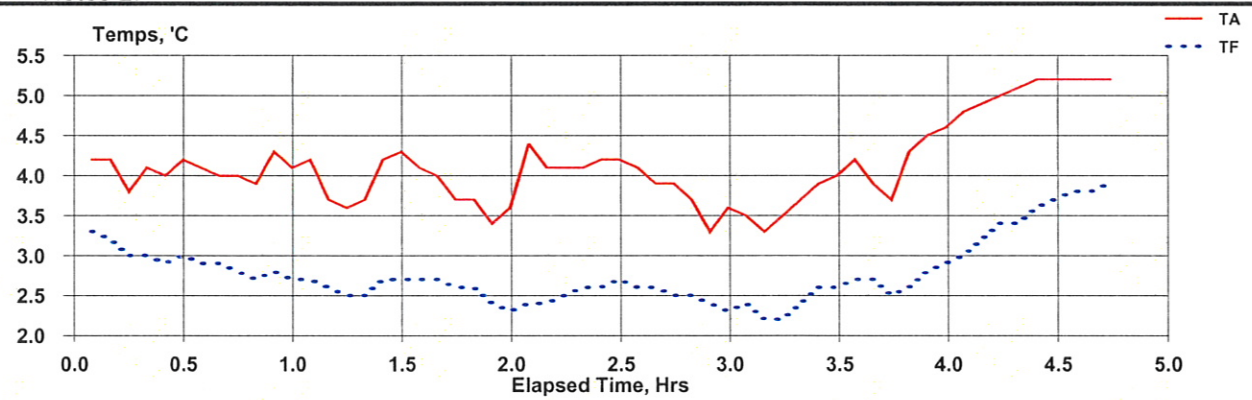
	Date dd-mmm	Time hh:mm:ss
Start:	15-21-oct	0:00:08
Stop:	15-22-oct	0:00:05

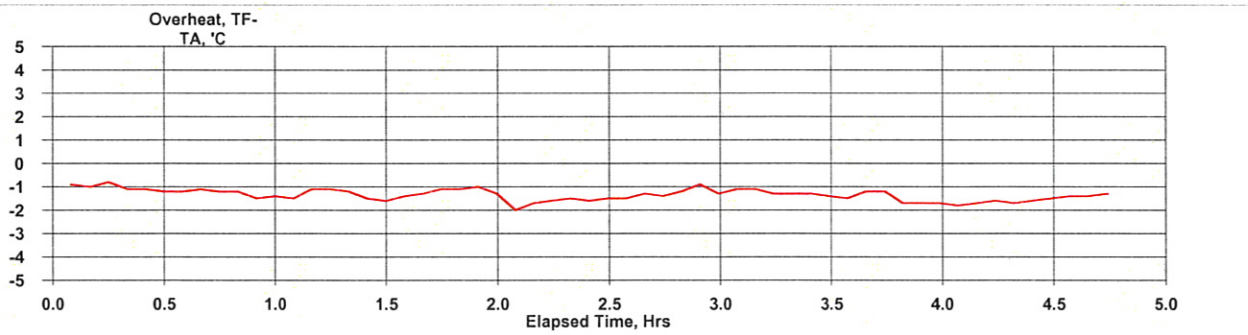
ET: 4:49

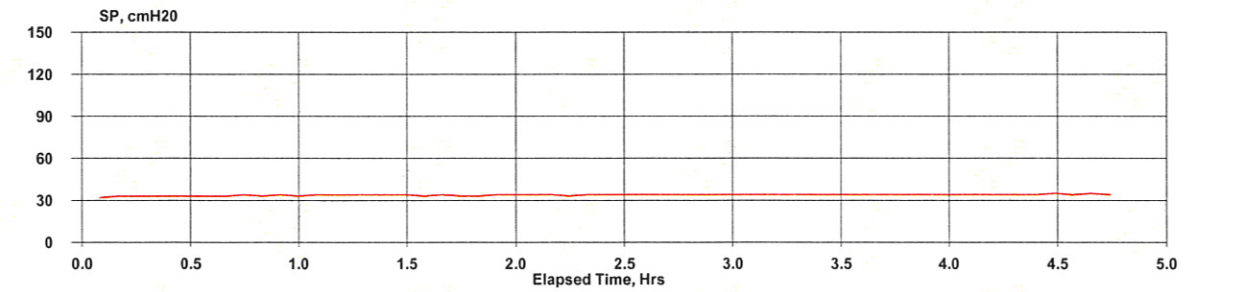
Mass Concentration Data:

Filter ID:	9	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	4.826	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-21-oct	0:05:08	592	4.1	2.9	-1.1	33	16.71
15-21-oct	1:05:08	592	3.9	2.6	-1.3	34	16.71
15-21-oct	2:05:08	592	4.0	2.5	-1.5	34	16.71
15-21-oct	3:05:08	592	3.9	2.6	-1.4	34	16.71
15-21-oct	4:05:08	592	5.1	3.5	-1.6	34	16.71

BGI PQ200 Air Sampling System

Downloaded 2015 29 oct 10:22:19

Job Details:

Job Name:	15Oct29C.JOB	Job Code:	
Version:	5.62	Site Name:	963C
Serial No:	964	Station Code:	
Pump Time:	4194:54	Operators:	KN
Flags:	Q T	User1:	
		User2:	

	Max	Min	Avg	Units
BP	593	591	591	mmHg
TA	4.3	3	4.2	°C
Q	---	---	0	Lpm
QCV			0	%
Max overheat			2.1	°C
occured	27-oct 17:57:38			

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-27-oct	0:00:08
Stop:	15-28-oct	0:00:05
ET:	0:02	

Mass Concentration Data:

Filter ID:	20	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0.008	m^3
Mass Conc:	0	ug/m3

Notes 1:

Notes 2:

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System Downloaded 2015 03 nov 09:37:46

Job Details:

Job Name:	15Nov03C.JOB
Version:	5.62
Serial No:	964
Pump Time:	4450:56
Flags:	Q T

Job Code:	
Site Name:	
Station Code:	
Operators:	
User1:	
User2:	

	Max	Min	Avg	Units
BP	593	590	590	mmHg
TA	4.3	3.2	4.2	°C
Q	---	---	0	Lpm
QCV			0	%
Max overheat			1.2	°C

occured 03-nov 06:11:56

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-02-nov	0:00:08
Stop:	15-03-nov	0:00:05
ET:	0:02	

Mass Concentration Data:

Filter ID:	13	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0.008	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System

Downloaded 2015 09 nov 13:47:01

Job Details:

Job Name:	15Nov09C.JOB
Version:	5.62
Serial No:	964
Pump Time:	4450:58
Flags:	Q T

Job Code:	
Site Name:	964C
Station Code:	
Operators:	KN
User1:	
User2:	

	Max	Min	Avg	Units
BP	596	593	594	mmHg
TA	-2	-3.4	-2	°C
Q	---	---	0	Lpm

QCV	0 %
Max overheat	2.5 °C
occured	08-nov 18:36:58

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-08-nov	0:00:08
Stop:	15-09-nov	0:00:05
ET:	0:02	

Mass Concentration Data:

Filter ID:	1	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0.007	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System

Downloaded 2015 17 nov 13:57:24

Job Details:

Job Name:	15Nov17C.JOB
Version:	5.62
Serial No:	964
Pump Time:	4451:02
Flags:	Q T

Job Code:	
Site Name:	964C
Station Code:	
Operators:	KN
User1:	
User2:	

	Max	Min	Avg	Units
BP	595	593	593	mmHg
TA	-2	-4.1	-2.1	°C
Q	---	---	0	Lpm

QCV	0 %
Max overheat	2.4 °C
occured	14-nov 17:55:35

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-14-nov	0:00:08
Stop:	15-15-nov	0:00:05
ET:	0:02	

Mass Concentration Data:

Filter ID:	18	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0.007	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System

Downloaded 2015 23 nov 10:22:44

Job Details:

Job Name:	15Nov23C.JOB
Version:	5.62
Serial No:	964
Pump Time:	4451:04
Flags:	Q T

Job Code:	
Site Name:	964C
Station Code:	
Operators:	KN
User1:	
User2:	

	Max	Min	Avg	Units
BP	594	591	592	mmHg
TA	0.5	-0.7	0.4	°C
Q	---	---	0	Lpm
QCV			0	%
Max overheat			2.7	°C

occured 21-nov 17:10:40

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-20-nov	0:00:08
Stop:	15-21-nov	0:00:05
ET:	0:02	

Mass Concentration Data:

Filter ID:	4	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0.008	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System Downloaded 2015 30 nov 10:57:48

Job Details:

Job Name:	15Nov30C.JOB	Job Code:	
Version:	5.62	Site Name:	964C
Serial No:	964	Station Code:	
Pump Time:	4451:06	Operators:	KN
Flags:	Q T	User1:	
		User2:	

	Max	Min	Avg	Units
BP	586	584	584	mmHg
TA	-4	-5.3	-4.1	°C
Q	---	---	0	Lpm

QCV	0 %
Max overheat	2.4 °C
occured	28-nov 11:45:19

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	15-26-nov	0:00:08
Stop:	15-27-nov	0:00:05
ET:	0:02	

Mass Concentration Data:

Filter ID:	7	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0.037	m^3
Mass Conc:	0	µg/m3

Notes 1:

Notes 2:

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System Downloaded 2015 03 ~~nov~~ Dec 09:37:46

Job Details:

Job Name:	15Dec04C.JOB	Job Code:	
Version:		Site Name:	
Serial No:		Station Code:	
Pump Time:		Operators:	
Flags:		User1:	
		User2:	

	Max	Min	Avg	Units
BP	0	0	0	mmHg
TA	0	0	0	°C
Q	---	---	0	Lpm
QCV			0	%
Max overheat occured			0	°C

Timer Information:

	Date dd-mmm	Time hh:mm:ss
Start:	Dec 2, 2015	
Stop:		
ET:		

Mass Concentration Data:

Filter ID:	14	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	0	m^3
Mass Conc:		µg/m3

Notes 1:
Notes 2:

Offsite for Repairs, mass flow sensor was replaced

Hourly

yy-dd-mmm	hh:mm:ss	mmHg	°C	°C	°C	cmH2O	aLpm

BGI PQ200 Air Sampling System Downloaded 2015 10 dec 12:32:13

Job Details:

Job Name: 15Dec10C.JOB
Version: 5.62
Serial No: 964
Pump Time: 4740:12
Flags: T

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	596	593	594	mmHg
TA	2.7	-0.9	1.5	°C
Q	---	---	16.71	Lpm

QCV 0.21 %

Max overheat 2.1 °C
occured 08-dec 16:51:58

Timer Information:

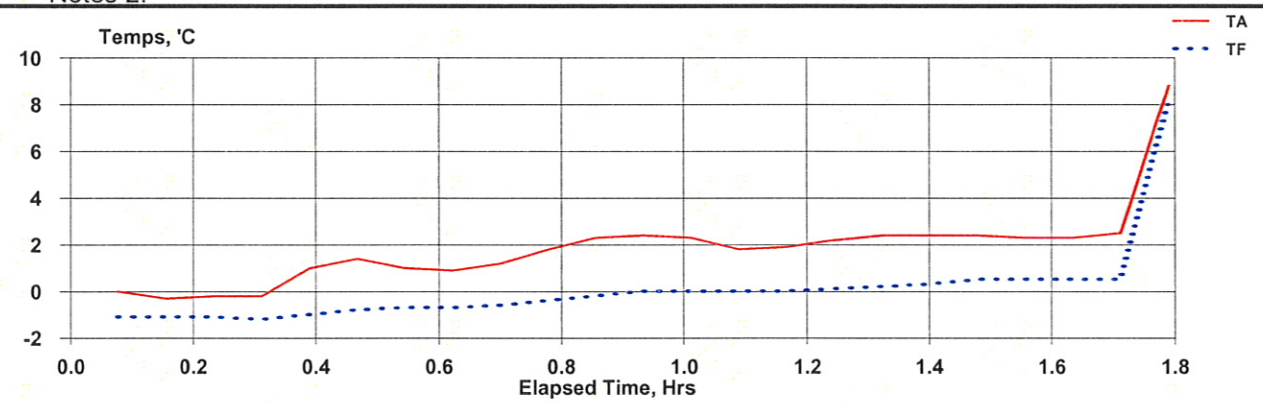
	Date dd-mmm	Time hh:mm:ss
Start:	15-08-dec	0:00:08
Stop:	15-09-dec	0:00:05

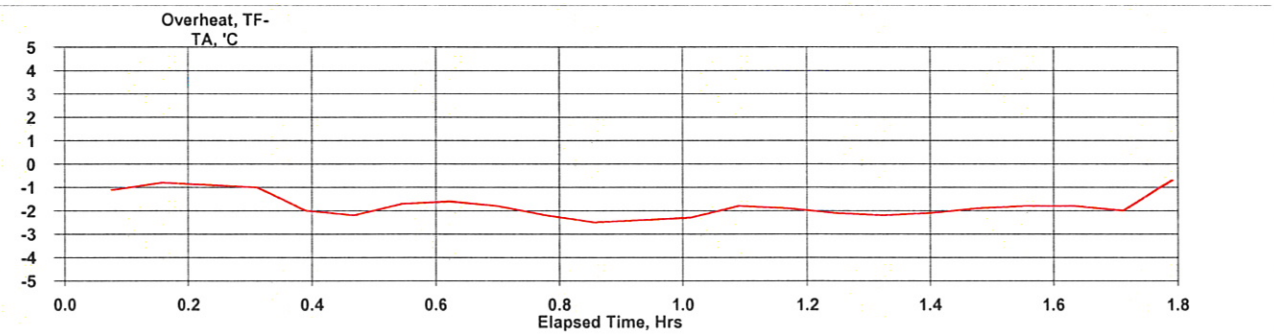
ET: 1:52

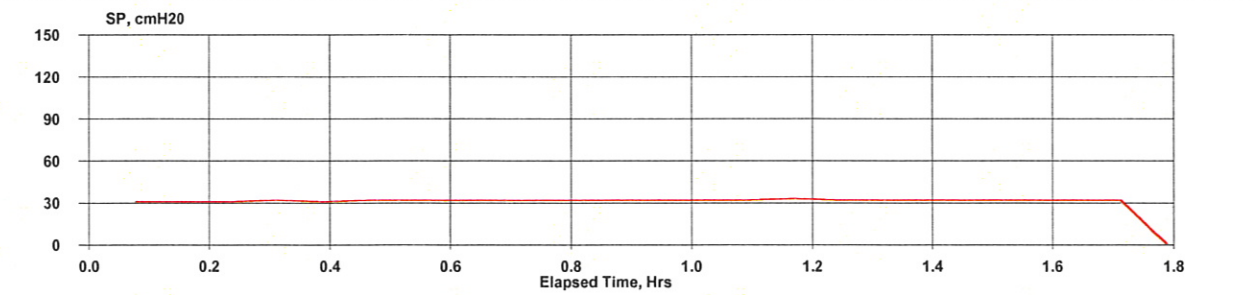
Mass Concentration Data:

Filter ID:	12	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	1.877	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-08-dec	0:05:08	595	0.9	-0.7	-1.7	32	16.72
15-08-dec	1:05:08	595	2.3	0.3	-2.0	32	16.71
15-10-dec	12:29:16	589	8.8	8.1	-0.7		0.00

BGI PQ200 Air Sampling System Downloaded 2015 15 dec 11:22:22

Job Details:

Job Name: 15Dec15C.JOB
Version: 5.62
Serial No: 964
Pump Time: 4764:11
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	583	579	580	mmHg
TA	-0.4	-14	-5.3	°C
Q	---	---	16.71	Lpm

QCV 0.59 %

Max overheat 3.9 °C
occured 14-dec 12:17:39

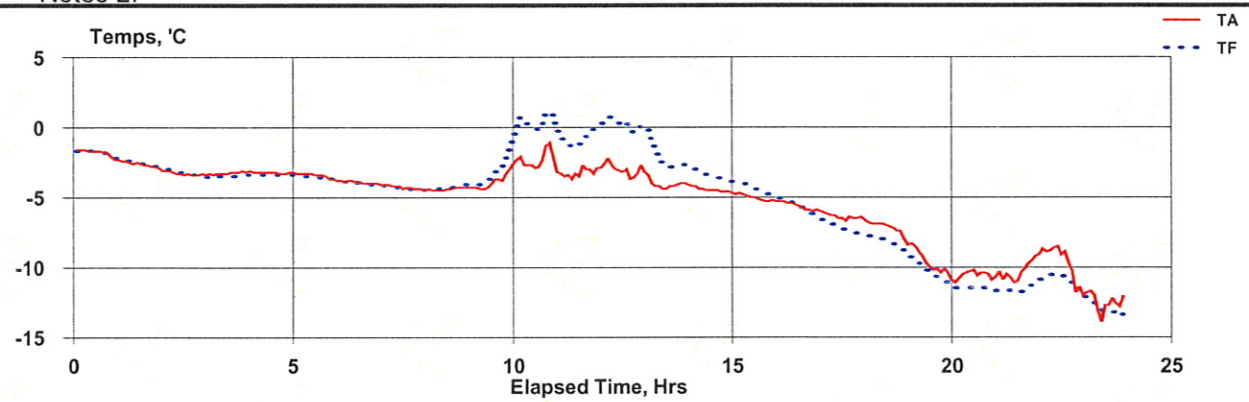
Timer Information:

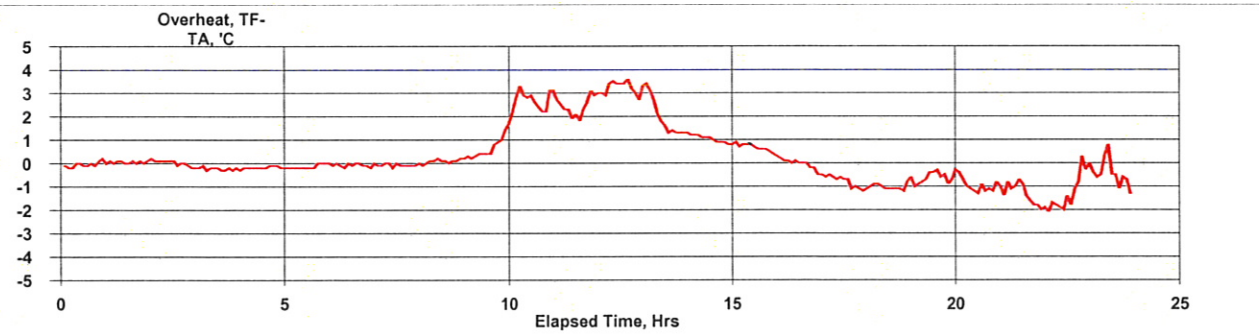
	Date dd-mmm	Time hh:mm:ss
Start:	15-14-dec	0:00:08
Stop:	15-15-dec	0:00:05
ET:	23:59	

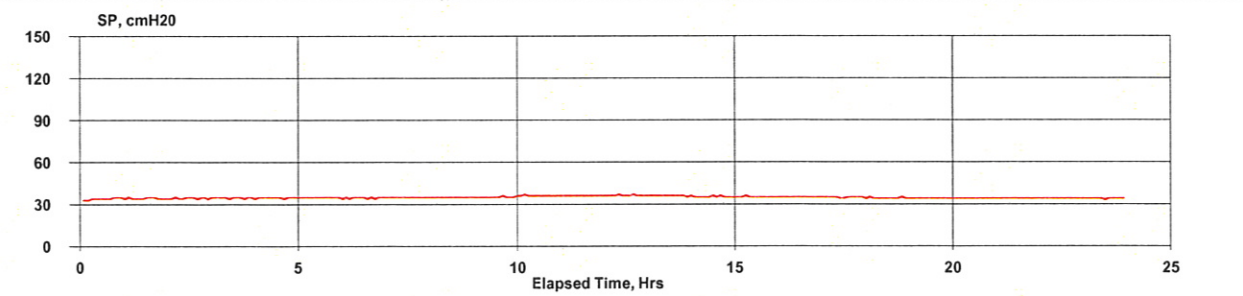
Mass Concentration Data:

Filter ID:	16	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.043	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-14-dec	0:05:08	582	-1.8	-1.9	0.0	34	16.71
15-14-dec	1:05:08	582	-2.7	-2.6	0.1	34	16.71
15-14-dec	2:05:08	581	-3.3	-3.3	0.0	35	16.71
15-14-dec	3:05:08	581	-3.2	-3.5	-0.2	35	16.71
15-14-dec	4:05:08	580	-3.2	-3.4	-0.2	35	16.71
15-14-dec	5:05:08	580	-3.5	-3.6	-0.1	35	16.71
15-14-dec	6:05:08	580	-3.9	-4.0	-0.1	35	16.71
15-14-dec	7:05:08	580	-4.3	-4.4	-0.1	35	16.72
15-14-dec	8:05:08	579	-4.4	-4.3	0.1	35	16.71
15-14-dec	9:05:08	579	-3.8	-3.1	0.7	35	16.71
15-14-dec	10:05:08	579	-2.4	0.4	2.7	36	16.71
15-14-dec	11:05:08	579	-3.2	-0.7	2.5	36	16.70
15-14-dec	12:05:08	579	-3.0	0.2	3.2	36	16.71
15-14-dec	13:05:08	580	-4.1	-2.2	1.9	36	16.73
15-14-dec	14:05:08	580	-4.5	-3.5	1.0	35	16.71
15-14-dec	15:05:08	580	-5.1	-4.4	0.6	35	16.71
15-14-dec	16:05:08	581	-5.7	-5.7	-0.1	35	16.71
15-14-dec	17:05:08	581	-6.4	-7.2	-0.8	35	16.71
15-14-dec	18:05:08	581	-7.2	-8.2	-1.0	34	16.71
15-14-dec	19:05:08	582	-9.7	-10.4	-0.6	34	16.71
15-14-dec	20:05:08	582	-10.6	-11.6	-1.0	34	16.72
15-14-dec	21:05:08	582	-10.2	-11.6	-1.4	34	16.70
15-14-dec	22:05:08	582	-9.7	-10.9	-1.2	34	16.71
15-14-dec	23:05:08	582	-12.5	-13.0	-0.5	34	16.71

BGI PQ200 Air Sampling System Downloaded 2015 21 dec 14:01:52

Job Details:

Job Name: 15Dec21C.JOB
Version: 5.62
Serial No: 964
Pump Time: 4788:10
Flags:

Job Code:
Site Name:
Station Code:
Operators:
User1:
User2:

	Max	Min	Avg	Units
BP	591	586	589	mmHg
TA	0	-6.8	-2.2	°C
Q	---	---	16.71	Lpm

QCV 0.57 %

Max overheat 1.8 °C
occured 20-dec 11:08:55

Timer Information:

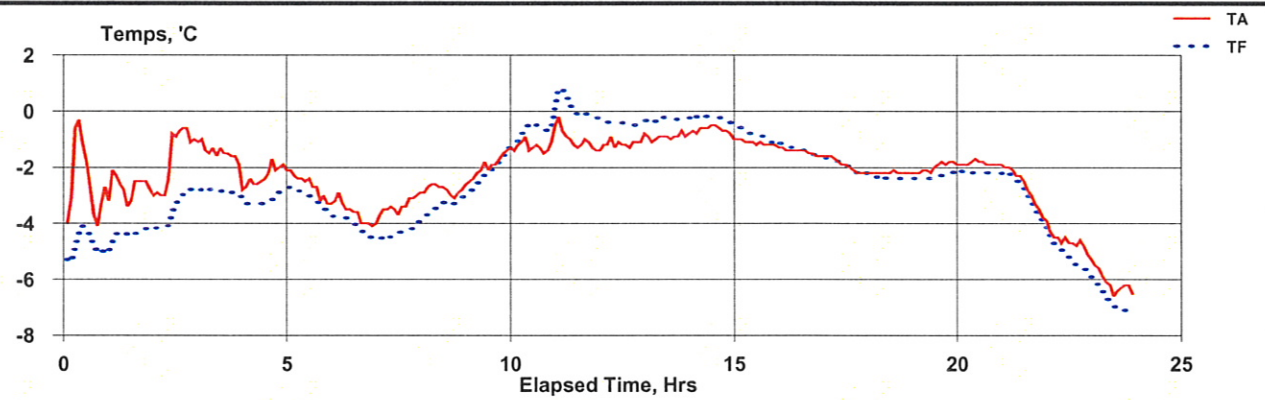
	Date dd-mmm	Time hh:mm:ss
Start:	15-20-dec	0:00:08
Stop:	15-21-dec	0:00:05

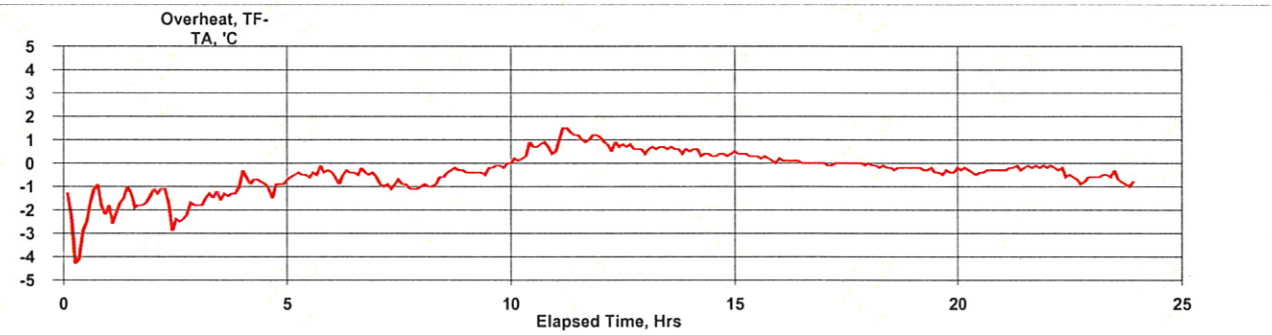
ET: 23:59

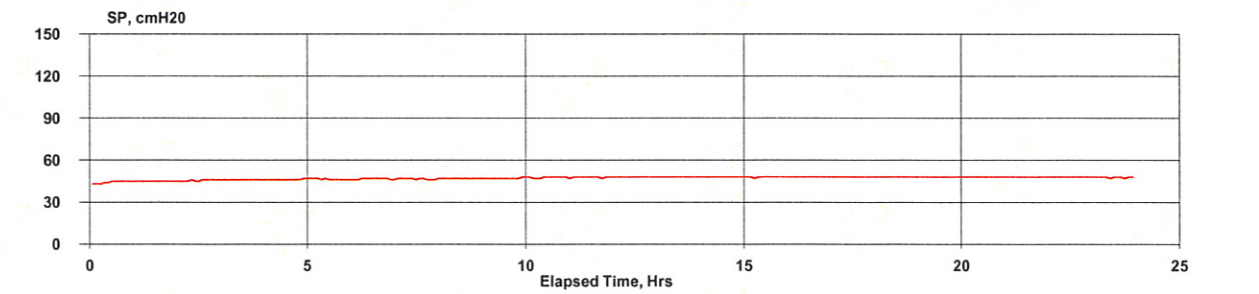
Mass Concentration Data:

Filter ID:	JBR11	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.046	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:







15-20-dec	0:05:08	588	-2.6	-4.8	-2.2	44	16.72
15-20-dec	1:05:08	588	-2.7	-4.3	-1.7	45	16.74
15-20-dec	2:05:08	588	-1.5	-3.4	-1.9	46	16.72
15-20-dec	3:05:08	587	-1.6	-2.9	-1.3	46	16.72
15-20-dec	4:05:08	588	-2.3	-3.2	-0.9	46	16.72
15-20-dec	5:05:08	588	-2.7	-3.1	-0.4	46	16.72
15-20-dec	6:05:08	588	-3.6	-4.1	-0.5	47	16.72
15-20-dec	7:05:08	588	-3.4	-4.3	-1.0	47	16.71
15-20-dec	8:05:08	589	-2.8	-3.4	-0.6	47	16.72
15-20-dec	9:05:08	589	-1.9	-2.1	-0.2	47	16.71
15-20-dec	10:05:08	590	-1.2	-0.7	0.5	48	16.70
15-20-dec	11:05:08	590	-1.1	0.1	1.2	48	16.71
15-20-dec	12:05:08	590	-1.1	-0.4	0.7	48	16.71
15-20-dec	13:05:08	590	-0.9	-0.3	0.6	48	16.70
15-20-dec	14:05:08	590	-0.7	-0.3	0.4	48	16.71
15-20-dec	15:05:08	590	-1.1	-0.9	0.3	48	16.71
15-20-dec	16:05:08	590	-1.5	-1.4	0.0	48	16.71
15-20-dec	17:05:08	590	-2.0	-2.0	0.0	48	16.71
15-20-dec	18:05:08	590	-2.2	-2.4	-0.2	48	16.71
15-20-dec	19:05:08	591	-2.0	-2.3	-0.3	48	16.71
15-20-dec	20:05:08	591	-1.9	-2.2	-0.3	48	16.71
15-20-dec	21:05:08	591	-2.8	-3.0	-0.2	48	16.71
15-20-dec	22:05:08	591	-4.7	-5.2	-0.5	48	16.71
15-20-dec	23:05:08	591	-6.1	-6.8	-0.7	48	16.70

BGI PQ200 Air Sampling System

Downloaded 2015 28 dec 11:10:13

Job Details:

Job Name: 15Dec28C.JOB
Version: 5.62
Serial No: 964
Pump Time: 4812:09
Flags:

Job Code:
Site Name: 964C
Station Code:
Operators: KN
User1:
User2:

	Max	Min	Avg	Units
BP	594	586	591	mmHg
TA	-7.2	-13.1	-10.3	°C
Q	---	---	16.71	Lpm

QCV 0.49 %

Max overheat 2.2 °C
occured 27-dec 14:15:13

Timer Information:

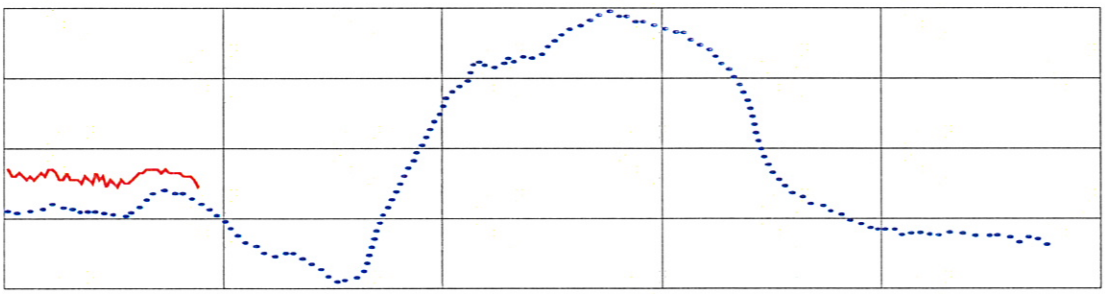
	Date dd-mmm	Time hh:mm:ss
Start:	15-26-dec	0:00:08
Stop:	15-27-dec	0:00:05

ET: 23:59

Mass Concentration Data:

Filter ID:	17	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.043	m^3
Mass Conc:	0	µg/m3

Notes 1:
Notes 2:



Overheat, TF-

15-26-dec	0:05:08	588	-10.8	-11.8	-1.0	32	16.71
15-26-dec	1:05:08	588	-10.9	-11.8	-0.9	32	16.72
15-26-dec	2:05:08	589	-10.9	-11.9	-0.9	32	16.72
15-26-dec	3:05:08	589	-10.7	-11.3	-0.7	33	16.72
15-26-dec	4:05:08	590	-11.1	-11.7	-0.6	33	16.72
15-26-dec	5:05:08	590	-11.9	-12.7	-0.8	32	16.72
15-26-dec	6:05:08	590	-12.1	-13.1	-1.0	32	16.70
15-26-dec	7:05:08	591	-12.7	-13.7	-1.0	32	16.71
15-26-dec	8:05:08	592	-11.9	-12.4	-0.5	33	16.72
15-26-dec	9:05:08	592	-10.4	-9.9	0.6	33	16.71
15-26-dec	10:05:08	592	-9.2	-8.0	1.2	34	16.72
15-26-dec	11:05:08	592	-8.9	-7.6	1.4	34	16.71
15-26-dec	12:05:08	592	-8.2	-7.0	1.2	34	16.71
15-26-dec	13:05:08	592	-7.7	-6.3	1.4	34	16.71
15-26-dec	14:05:08	592	-7.8	-6.4	1.4	34	16.72
15-26-dec	15:05:08	593	-7.9	-6.8	1.1	34	16.72
15-26-dec	16:05:08	593	-8.6	-7.8	0.8	34	16.72
15-26-dec	17:05:08	593	-10.1	-10.5	-0.4	33	16.72
15-26-dec	18:05:08	593	-10.7	-11.6	-1.0	33	16.71
15-26-dec	19:05:08	593	-11.1	-12.1	-1.0	33	16.71
15-26-dec	20:05:08	593	-11.4	-12.4	-1.0	33	16.70
15-26-dec	21:05:08	593	-11.5	-12.5	-1.0	33	16.71
15-26-dec	22:05:08	593	-11.3	-12.5	-1.2	33	16.71
15-26-dec	23:05:08	594	-11.1	-12.6	-1.5	33	16.71

APPENDIX C

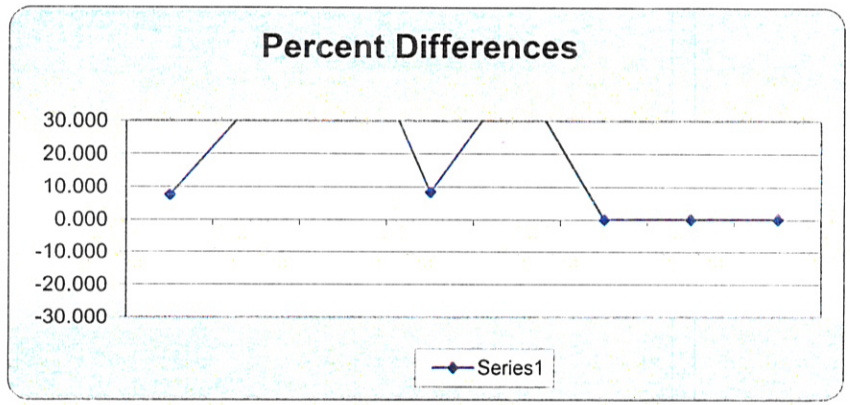
Precision and Single-Point Flow Rate Checks

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|	$\|d\|^2$					
5.5	5.1	7.547	8.403	56.960	7.547	56.960				5.5	17.7
10.6	7.3	36.872	75th Percentile	1359.508	36.872	1359.508	n	$\Sigma\|d\|$	$\Sigma\|d\|^2$	5.5	17.9
14.5	7.1	68.519	44.681	4694.787	68.519	4694.787	5	166.021	8178.250		
6.2	5.7	8.403		70.616	8.403	70.616	n-1	Σd	Σd^2		
11.5	7.3	44.681		1996.378	44.681	1996.378	4	166.021	8178.250		

CV (%) (Eqn 11)
35.4



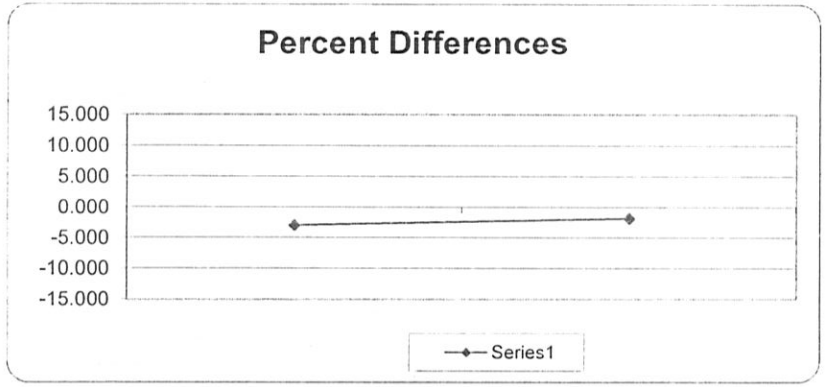
Alton Coal Development, LLC - Coal Hollow Mine

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	17.6	-5.114	-4.010	26.149	5.114	26.149
16.7	17.2	-2.907	**75th Percentile**	8.451	2.907	8.451
16.7	17.01	-1.822	-2.365	3.321	1.822	3.321

n	**$\Sigma\|d\|$**	**"AB" (Eqn 4)**
3	9.843	3.281
n-1	**$\Sigma\|d\|^2$**	**"AS" (Eqn 5)**
2	37.921	1.677

Bias (%) (Eqn 3)	Both Signs Positive
6.11	FALSE
Signed Bias (%)	Both Signs Negative
-6.11	TRUE



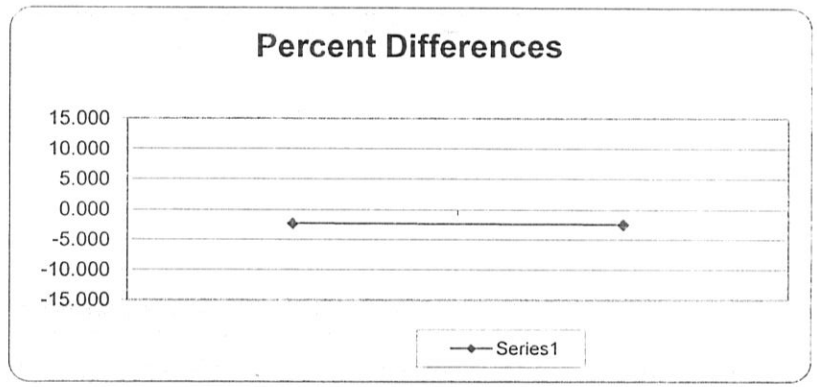
Alton Coal Development, LLC - Coal Hollow Mine

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	16.84	-0.831	-2.339	0.691	0.831	0.691
16.7	17.08	-2.225	75th Percentile	4.950	2.225	4.950
16.7	17.12	-2.453	-1.528	6.019	2.453	6.019

n	$\Sigma\|d\|$	"AB" (Eqn 4)
3	5.509	1.836
n-1	$\Sigma\|d\|^2$	"AS" (Eqn 5)
2	11.660	0.878

Bias (%) (Eqn 3)	Both Signs Positive
3.32	FALSE
Signed Bias (%)	Both Signs Negative
-3.32	TRUE



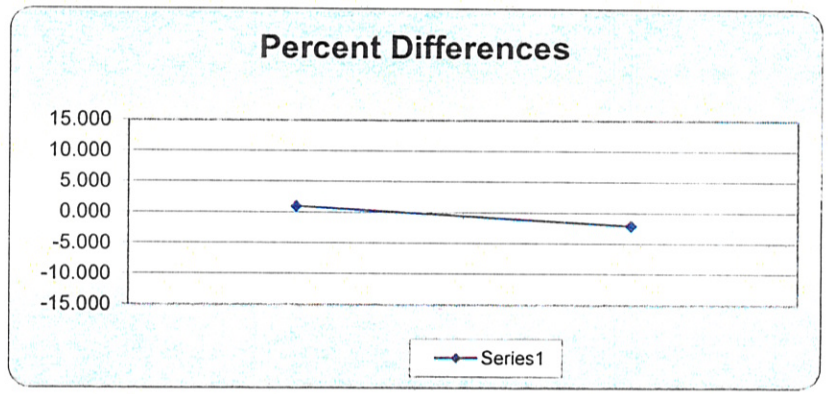
Alton Coal Development, LLC - Coal Hollow Mine

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	17.5	-4.571	-3.312	20.898	4.571	20.898	
16.7	16.53	1.028	75th Percentile	1.058	1.028	1.058	
16.7	17.05	-2.053	-0.512	4.214	2.053	4.214	

n	$\Sigma\|d\|$	"AB" (Eqn 4)
3	7.653	2.551
n-1	$\Sigma\|d\|^2$	"AS" (Eqn 5)
2	26.170	1.823

Bias (%) (Eqn 3)	Both Signs Positive
5.62	FALSE
Signed Bias (%)	Both Signs Negative
-5.62	TRUE



APPENDIX D

Field Data Sheets

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
10-05-15	1052	10-05-15	0952	11	14	M-M	10-09-15	JKSR
10-12-15	0952	10-12-15	0851	14	4	M-M	10-15-15	JKSR
10-16-15	1015	10-16-15	0914	4	7	M-M	10-21-15	JKSR
10-21-15	1240	10-21-15	1139	7	IML 1	M-M	10-27-15	JKSR
10-29-15	1054	10-29-15	0953	IML-1	11	M-M	11-2-15	KN
11-03-15	0922	11-03-15	0921	11	17	M-M	11-06-15	JKSR
11-09-15	1319	11-09-15	1318	17	JBR 7	M-M	11/14/15	KN
11-17-15	13:24	11-17-15	1323	JBR 7	IML4	13:24	11/17/15	KN
11-17-15	1327	11-17-15	1326	IML4	IML5	M-M	11/20/15	KN
11-23-15	0957	11-23-15	0955	IML5	5	M-5	11/26/15	KN
11-30-15	1000	11-30-15	0957	5	8	M-M	12/2/15	KN
12-04-15	1055	12-04-15	1053	8	10	M-M	12-09-15	JKSR
12-10-15	1218	12-10-15	1216	10	13	M-M	12-14-15	JKSR
12-15-15	1107	12-15-15	1105	13	4	M-M	12-20-15	JKSR
12-21-15	1351	12-21-15	1348	4	JBR 7	M-M	12-26-15	JKSR
12-28-15	1038	12-28-15	1035	JBR7	18	M-M	01-01-15	KN

Field Blank

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
10-22-15		100	99	Pass	JKSR	
11-30-15	1005	108	102	Pass	KN	
12-28-15	10:44	97	94	Pass	KN	

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
10-22-15		16.70	588.0	584	11.6	12.3		17.6		JKSR
11-30-15	1008	16.70	55.3	584	-02.9	-04.1	14.45	17.20		KN
12-28-15	10:49	16.70	577	577	-2.5	-2.1	14.20	17.01		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	
10-05-15	1118	10-05-15	1016	12	15	M-M	10-09-15	JKSR	
10-12-15	1009	10-12-15	0907	15	5	M-M	10-15-15	JKSR	
10-16-15	1031	10-16-15	0930	5	8	M-M	10-21-15	JKSR	
10-21-15	1304	10-21-15	1203	8	10	M-M	10-27-15	JKSR	
10-29-15	11:23	10-29-15	10:21	10	12	M-M	11-2-15	KN	
11-03-15	0939	11-03-15	0937	12	19	M-M	11-08-15	JKSR	Set Time
11-09-15	1341	11-09-15	1341	19	8	M-M	11-14-15	KN	
11-17-15	1353	11-17-15	1352	8	IML8	M-M	11-20-15	KN	
11-23-15	1018	11-23-15	1019	IML8	6	M-M	11-26-15	KN	
11-30-15	1101	11-30-15	1103	6	9	M-M	12-2-15	KN	
12-04-15	1112	12-04-15	1111	9	11	M-M	12-08-15	JKSR	
12-10-15	1233	12-10-15	1232	11	15	M-M	12-14-15	JKSR	
12-15-15	1123	12-15-15	1122	15	JBR1	M-M	12-20-15	JKSR	
12-21-15	1403	12-21-15	1402	JBR1	JBR8	M-M	12-26-15	JKSR	
12-28-15		12-28-15		8	19	M-M	1-1-15	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
10/22/15		105	101	Pass	JKSR	
11/30/15	1115	113	110	Pass	KN	
12/28/15	1131	117	114	Pass	KN	

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
10/22/15		16.80	590	590	12.3	13.8		16.84		JKSR
11/30/15	1119	16.70	590	591	1.8	2.2	14.23	17.08		KN
12/28/15	1138	16.70	583	583	-3.8	-2.6	14.49	17.12		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	
10-05-15	1121	10-05-15	1018	13	16	M-M	10-09-15	JKSR	
10-12-15	1011	10-12-15	0908	16	6	M-M	10-15-15	JKSR	
10-16-15	1036	10-16-15	0933	6	9	M-M	10-21-15	JKSR	
10-21-15	1307	10-21-15	1204	9	20	M-M	10-27-15	JKSR	QT 04:45
10-29-15	11:24	10-29-15	1025	20	13	M-M	11-02-15	KN	
11-03-15	0941	11-03-15	0937	13	JBR1	M-M	11-08-15	JKSR	QT set time
11-09-15	1353	11-09-15	1353	7	18	M-M	11-14-15	KN	QT
11-17-15	1404	11-17-15	1404	18	4	M-M	11-20-15	KN	QT unplugged Batteries
11-23-15	1028	11-23-15	1026	4	7	M-M	11-26-15	KN	QT
11-30-15	11:15	11-30-15	11:13	7	14	M-M	12-07-15	KN	QT
12-04-15		12-04-15		14		M-M	12-08-15	JKSR	did NOT RUN
12-10-15	1234	12-10-15	1231	14	16	M-M	12-14-15	JKSR	T Low battery shutdown
12-15-15	1125	12-15-15	1122	16	JBR11	M-M	12-20-15	JKSR	
12-21-15	1405	12-21-15	1402	JBR11	17	M-M	12-26-15	JKSR	
12-28-15	11:46	12-28-15	11:44	17	20	M-M	1/1/15	KN	

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
10/22/15		105	103	Pass	JKSR	
11/30/15	11:24	106	104	Pass	KN	
12/28/15	1146	114	110	Pass	KN	

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
10/22/15		16.7	591	590	12.7	12.2		17.50		JKSR
11/30/15	11:26	16.7	592	590	2.5	3.2	13.86	16.53		KN
12/28/15	11:48	16.7	582	583	-1.9	-0.8	14.38	17.05		KN

APPENDIX E

Independent PM_{10} Sampler Performance Audit Report

AUDIT REPORT
FOR

ALTON COAL DEVELOPMENT, LLC
COAL HOLLOW MINE
ALTON, UTAH
FOURTH QUARTER 2015

Prepared for

Kirk Nicholes
Alton Coal Development, LLC
463 N 100 W
Cedar City, Utah, 84721

Prepared by

Air Resource SPECIALISTS

1901 Sharp Point Drive, Suite E
Fort Collins, CO 80525
970-484-7941

Site Audited: October 22, 2015

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1.0 INTRODUCTION

Air Resource Specialists, Inc. (ARS) conducted a performance audit of Alton Coal Development, LLC ambient air quality monitoring systems on October 22, 2015. The monitoring sites are located at the Coal Hollow Mine near Alton, Utah.

Table 1-1

Site Location Information

	Primary	Background	Meteorological
Latitude	37° 24' 5.0" N	37° 24' 20.9" N	37° 23' 53.2" N
Longitude	112° 27' 21.0" W	112° 26' 1.1" W	112° 26' 43.1" W
UTM	12S 371147 4140396	12S 373119 4140856	12S 372073 4140018
Elevation	6,890 feet MSL	7,158 feet MSL	7,007 feet MSL

Audit results for the particulate samplers are summarized in Table 1-2. Audit results for the meteorological measurements are summarized in Table 1-3. Detailed discussions of performance audit findings and other findings can be found in Section 3.0.

Table 1-2

Summary of Particulate Sampler Audit Results

	Parameter	**Instrument**	**Within Accuracy Goal**
Primary	PM_{10}	BGI PQ200S	Yes
	PM_{10} (collocated)	BGI PQ200S	Yes
Background	PM_{10}	BGI PQ200S	Yes

Table 1-3

Summary of Meteorological Audit Results

Parameter	**Sensor**	**Within Accuracy Goal**
Wind Speed	Met-One 34B	N/A*
Wind Direction	Met-One 34B	Yes
Temperature	Campbell Scientific 107	Yes
Precipitation	Hydrological Services TB4	Yes

*Wind speed audit not completed

Details of the audit are presented in the following sections:

Section 2.0	Audit Methods and Equipment
Section 3.0	Audit Results
Appendix A	Audit Data Forms
Appendix B	Audit Standards Certifications

Any questions related to this audit or audit report should be addressed to:

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2.0 AUDIT METHODS

Audit procedures, audit challenge ranges, and acceptance criteria are described below. These ranges and limits conform to EPA's PSD guidelines. Audit results were verbally communicated to the site operator prior to departure from the site. A follow-up e-mail summarizing audit findings was also sent to Alton Coal Development, LLC personnel. Audit details are provided in Appendix A.

Guidance from the following EPA documents was used to establish the audit procedures:

- 40 CFR 58, Appendix A. *Quality Assurance Requirements for SLAMS, SPMs, and PSD Air Monitoring*
- EPA *Quality Assurance Handbook for Air Pollution Measurement Systems:*
  - *Volume I. A Field Guide to Environmental Quality Assurance*
  - *Volume II. Ambient Air Quality Monitoring Program*
  - *Volume IV. Meteorological Measurements*
- EPA *Meteorological Monitoring Guidance for Regulatory Modeling Applications*
- EPA *Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone*

2.1 PARTICULATE SAMPLERS (FRM PM_{10})

The filter-based FRM PM_{10} particulate samplers are audited in their normal operating mode. ARS audits the samplers with a BGI deltaCal audit standard which measures flow, temperature, and barometric pressure. Prior to conducting the flow audit, a system leak check is performed in accordance with the manufacturer's specifications. The observed volumetric operational flow and design flow of the sampler are compared to the audit flows measured by the audit standard. Differences between the operational sampler flow and audit flow that are greater than ±10% are considered out of tolerance. Differences between the designated design flow and the audit flow greater than ±10% are considered out of tolerance. In addition to the flow audits, observed ambient temperature, filter temperature, and barometric pressure measurements of the particulate samplers are also audited by comparison to the audit standard. A temperature difference greater than ±2°C and a barometric pressure difference greater than ±10mm Hg are considered out of tolerance. Audit methods and acceptable criteria for the particulate samplers are summarized in Table 2-1.

Table 2-1

Particulate Samplers
Audit Acceptance Criteria

Parameter	Audit Method	Acceptance Criteria
FRM PM_{10}	Leak Check	Manufacturer specs
	Audit flow to actual sampler flow	≤ ± 4%
	Design criteria flow to audit flow	≤ ± 5%
	Audit temperature to sampler temperature	≤ ± 2 °C
	Audit temperature to sampler filter temperature	≤ ± 2 °C
	Audit barometric pressure to sampler pressure	≤ ±10mm Hg

Table 2-2

Particulate Samplers
Audit Equipment

References	Manufacturer	Model Number	Serial Number	Expiration Date
FRM Flow	BGI	DeltaCal	1237	1/12/2016

2.2 METEOROLOGICAL PARAMETERS

Meteorological measurement systems are audited in accordance with (and accuracy goals were obtained from) the EPA's *Quality Assurance Handbook for Air Pollution Measurement Systems: Volume IV – Meteorological Measurements*, (March 2008). ARS uses National Institute of Standards and Technologies (NIST) traceable test equipment for all meteorological parameters. All equipment is recertified annually. Audit ranges and acceptable criteria for each parameter are summarized in Table 2-3.

2.2.1 Wind Speed

Wind speed sensors are audited using an R.M. Young model 18802 (high RPM) or 18811 (low RPM) pulsed motor wind speed calibrator. Each sensor is tested at zero and five shaft revolution speeds. The equivalent wind speed is calculated corresponding to the sensor manufacturer's specified values for shaft speed versus wind velocity and compared to readings obtained from the on-site datalogger.

2.2.2 Wind Direction

Wind direction sensor audits include the verification of sensor orientation, linearity, and starting threshold (bearing integrity). The sensor orientation accuracy is verified by a reference. The reference can be an internal reference (a tower-mounted alignment vane) or external (pointing at landmarks from the sensor). Accuracy of the references is verified by the solar azimuth method for the determination of true north. Using a compass and the site latitude and longitude, a computer model outputs the sun's azimuth for that exact time of day. The compass is adjusted to that azimuth, effectively correcting for the compass to the local magnetic declination (which may include local magnetic field disturbances). The sensor orientation accuracy is checked by aligning the wind direction vane to and from each landmark reference, recording sensor responses from the on-site datalogger.

Potentiometer linearity is tested by verifying the change in response between two successive orientations across eight points on a calibrated disc mounted atop the sensor. For example, any two adjacent orientations on the eight-point disc are separated by 45 degrees. The difference in the datalogger response for these two adjacent orientations is compared to this value.

2.2.3 Ambient Temperature

Temperature sensors that are non-immersible are audited by collocation of the audit sensor under ambient conditions utilizing similar methods of sensor aspiration. Collocated comparisons are typically carried out using hourly averages. Audit data are collected by a datalogger provided by the auditor. Temperature sensors that are immersible are audited by comparison to the audit sensor in water baths. The test baths are typically at 0°C, near ambient conditions (or approximately 25°C), and near the full scale of the sensor (typically near 50°C). Data observed on the on-site datalogger are used to assess the accuracy of sensors. Sensor aspirators are inspected for proper function, including fan function and flow direction.

2.2.4 Precipitation

The tipping bucket style precipitation gauges are audited with a volumetric precipitation gauge calibrator by transferring a known amount of water through the gauge orifice at a maximum rate equivalent to 2.0 inches/hour of precipitation. The total values from the on-site datalogger values are compared to the actual introduced volume. The level and cleanliness of the sensor is observed where possible.

Table 2-3

Meteorological Sensors
Audit Ranges and Acceptance Criteria

Parameter	Audit Method	Acceptance Criteria
Wind Speed	Accuracy at five speeds with anemometer drive	$\leq \pm 0.2$ m/s
	Starting threshold with torque gauge	Manufacturer specs
Wind Direction	Accuracy with compass	$\leq \pm 5°$
	Linearity	$\leq \pm 5°$
	Starting threshold with torque gauge	Manufacturer specs
Ambient Temperature (non-immersible sensor)	Accuracy via collocation in ambient conditions	$\leq \pm 0.5°$
Ambient Temperature (immersible sensor)	Accuracy via collocation in three water baths	$\leq \pm 0.5°$
Precipitation	Accuracy via known volume of water	$\leq \pm 10\%$

Table 2-4

Meteorological Audit Equipment

References	Manufacturer	Model Number	Serial Number	Expiration Date
Wind Speed (high rpm)	R.M. Young	18802	CA 4104	4/10/2016
Wind Direction Orientation	Brunton	Transit	5060710523	N/A
Temperature (immersible)	Eutechnics	4600	99F101610	2/13/2016
Precipitation	Novalynx	260-2595	N/A	N/A

3.0 AUDIT RESULTS

Audit findings and recommendations are discussed below. Detailed audit results are provided in Appendix A.

Performance Audit Results

- The wind speed sensor was not able to be audited due to a lack of necessary audit equipment.
- The collocated $PM_{2.5}$ sampler was found with a time discrepancy of 4 minutes. The flow on this sampler took approximately 2 minutes to stabilize and was found almost 5% high. Troubleshooting is recommended for the flow on this sampler.

APPENDIX A

AUDIT DATA FORMS

Air Resource Specialists, Inc.

TEMPERATURE / DELTA-TEMPERATURE SYSTEM AUDIT

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
Temperature Reference	Eutechnics	4600	99F101610	2/13/2016

2m Temperature Sensor	
Manufacturer	Campbell Scientific
Model	107
Serial Number	10755-14/WO#1272

List sensors according to height on tower, from highest to lowest.

Temp. Deltas

CALIBRATION ACCEPTANCE CRITERIA (<=)	
Ambient Temperature Difference (°C)	0.5
Vertical Temperature Difference (°C)	0.1

AS FOUND	2m Temperature											
Bath Temp (°C)	DAS	Difference										
42.22	42.22	0.00	PASS									
26.28	26.29	0.01	PASS									
0.01	0.22	0.21	PASS									
MAX ABS Difference		0.21	PASS									

MAX ABS Difference						

Aspirator fan functional 2m?	☐ Yes	☐ No	☑ N/A
	☐ Yes	☐ No	☐ N/A
	☐ Yes	☐ No	☐ N/A
	☐ Yes	☐ No	☐ N/A

Each sensor was verified against its data channel ?		
☑ Yes	☐ No	☐ N/A
Each Temperature Difference = Upper - Lower ?		
☐ Yes	☐ No	☐ N/A

NOTES:

Air Resource Specialists, Inc.

WIND SPEED SENSOR AUDIT

ABBR.	n/a	CLIENT	ALTON	FIELD SPECIALIST	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
Wind Speed Reference	RM Young	18802	CA 4104	4/10/2016
Wind Speed Torque Gauge				

Manufacturer and Model	Met One - 034B
Sensor Serial #	E2281
Cups Serial #	n/a

AUDIT CRITERIA (<=)	
Wind Speed Difference (m/s)	0.20
Wind Speed Difference (%)	N/A

Select UNITS	m/s

		Wind Speed			
Motor Speed (rpm)	Target Speed	DAS	Difference		
0	0.000		N/A	N/A	N/A
100	2.943				
200	5.607				
300	8.270				
600	16.260				
1800	48.220				

Starting Threshold	TORQUE
Torque <= 0.2 g-cm	

Heater sleeve functional?	☐ Yes ☐ No ☐ N/A

NOTES:

Air Resource Specialists, Inc.

WIND DIRECTION AUDIT

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
Direction Alignment Reference	Brunton	Transit	5060710523	
Direction Linearity Reference				
Direction Torque Gauge				

Manufacturer & Model	Met One - 034B
Sensor Serial #	E2281
Vane Serial #	

Local Magnetic Declination (degrees)	9.5
Method	Last report

Mag. Dec. from NOAA (deg/min/sec)	10	48		10.80

http://www.ngdc.noaa.gov/geomag-web/#declination

AUDIT CRITERIA (<=)	
Cross-arm Alignment Error (degrees)	2
Total Align. Diff (degrees)	5
Sensor Linearity (degrees)	5

Landmarks	Degrees
To left most building/barn to the east	338
From left most building/barn to the east	158
From center of right rock outcrop, saddle	73
To center of right outcrop, saddle	253

Reference Alignment Error (degrees)	2.0	PASS

SENSOR ALIGNMENT			
Reference	Degrees	DAS	Difference
From the North	0		
From the South	180	181.5	1.5
From the East	90		
From the West	270		
Total Alignment MAX ABS Diff			

OR

SENSOR ALIGNMENT				
Landmark	Degrees	DAS	Difference	
ost building/barn to	338	343.0	5.0	
most building/barn t	158	158.8	0.8	
er of right rock outcr	73	74.3	1.3	
ter of right outcrop,	253	253.4	0.4	
Total Alignment MAX ABS Diff			5.0	PASS

SENSOR LINEARITY			
Point	DAS	Difference	
1		N/A	
2			
3			
4			
5			
6			
7			
8			
1			
MAX Difference			

Starting Threshold	TORQUE
Torque <= 6.5 g-cm	

Heater sleeve functional? ☐ Yes ☐ No ☐ N/A

NOTES:

Air Resource Specialists, Inc.

PRECIPITATION SENSOR AUDIT

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
Precipitation Reference	Nova Lynx	260-2595	n/a	n/a

Manufacturer	Hydrological Services
Model	TB4
Serial Number	05-94

AUDIT CRITERIA (<=)	
Difference from Input Volume (%)	10%

	Reference Chart			Input Volume (mL)		946
	Manufacturer	Model	Diameter (in.)	mm/tip	mL/tip	DAS target
	Met One	385	12	0.254	18.53	12.96
	RM Young	52202	6.2825	0.100	2.00	47.30
	Climatronics	100097-1-G0-H0	8	0.254	8.24	29.17
	Climatronics	100508	9.66	0.100	4.73	20.01
x			8	0.254	8.24	29.17

Conversions			
Value	Units	Value	Units
1.000	inch	25.40	mm
25.40	mm	1.000	inch

		Precipitation		
Reference (mL)	Target (mm)	DAS (mm)	Difference	
946	29.17	29.21	**0.1%**	PASS

Heater functional?	☐ Yes ☐ No ☑ N/A
Sensor found level?	☑ Yes ☐ No
Sensor found clean?	☑ Yes ☐ No

NOTES:

Air Resource Specialists, Inc.

FRM AUDIT (PM_{10})

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Temperature Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Barometric Pressure Standard #1	Mesa Labs	deltaCal	1237	1/12/2016

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	962A

Date and Time correct?
☑ Yes ☐ No
If no, time off by:
0 min

SETTINGS	
Total Flow	16.70

	Automated LEAK CHECK	
	Vacuum Loss Rate	Pass/Fail
	1 cm/min	PASS

	FLOW VERIFICATION				
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	17.06	16.70	-2.1%	2.2%	PASS

AUDIT CRITERIA (<=)	
Actual Flow % Diff	10%
Design Flow % Diff	10%

	AMBIENT TEMPERATURE SENSOR (°C)			
	Reference	Instrument	Difference	
	10.6	9.9	-0.7	PASS

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

	FILTER TEMPERATURE SENSOR (°C)			
	Reference	Instrument	Difference	
	12.3	11.6	-0.7	PASS

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

	PRESSURE SENSOR (mmHg)			
	Reference	Instrument	Difference	
	584.5	583.0	-1.5	PASS

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10

NOTES:

Air Resource Specialists, Inc.

FRM AUDIT (PM_{10})

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Temperature Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Barometric Pressure Standard #1	Mesa Labs	deltaCal	1237	1/12/2016

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	963B

Date and Time correct?
☑ Yes ☐ No
If no, time off by:
0 min

SETTINGS	
Total Flow	16.70

Automated LEAK CHECK	
Vacuum Loss Rate	Pass/Fail
4 cm/min	PASS

	FLOW VERIFICATION				
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.84	16.70	-0.8%	0.8%	PASS

AUDIT CRITERIA (<=)	
Actual Flow % Diff	10%
Design Flow % Diff	10%

	AMBIENT TEMPERATURE SENSOR (°C)			
	Reference	Instrument	Difference	
	11.7	11.0	-0.7	PASS

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

	FILTER TEMPERATURE SENSOR (°C)			
	Reference	Instrument	Difference	
	13.8	12.3	-1.5	PASS

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

	PRESSURE SENSOR (mmHg)			
	Reference	Instrument	Difference	
	590.0	590.0	0.0	PASS

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10

NOTES:

Air Resource Specialists, Inc.

FRM AUDIT (PM_{10})

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Temperature Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Barometric Pressure Standard #1	Mesa Labs	deltaCal	1237	1/12/2016

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	964C

Date and Time correct?
☐ Yes ☑ No
If no, time off by:
4 min

SETTINGS	
Total Flow	16.70

	Automated LEAK CHECK	
	Vacuum Loss Rate	Pass/Fail
	2 cm/min	PASS

	FLOW VERIFICATION				
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.75	17.50	4.5%	0.3%	PASS

AUDIT CRITERIA (<=)	
Actual Flow % Diff	10%
Design Flow % Diff	10%

	AMBIENT TEMPERATURE SENSOR (°C)			
	Reference	Instrument	Difference	
	11.5	11.4	-0.1	PASS

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

	FILTER TEMPERATURE SENSOR (°C)			
	Reference	Instrument	Difference	
	12.2	12.7	0.5	PASS

AUDIT CRITERIA (<=)	
Temperature Difference (°C)	2

	PRESSURE SENSOR (mmHg)			
	Reference	Instrument	Difference	
	590.0	591.0	1.0	PASS

AUDIT CRITERIA (<=)	
Pressure Difference (mmHg)	10

NOTES: Flow unstable

Air Resource Specialists, Inc.

SITE INFORMATION

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
NETWORK TYPE		PSD					

		Deg	Min	Sec		Decimal
LATITUDE	North	34	24	22.1	--CALCULATE->	34.4061
LONGITUDE	West	112	27	15.5		112.4543

Decimal		Deg	Min	Sec
	--CALCULATE->			

	Meters		Feet
ELEVATION		--CALCULATE->	

Feet		Meters
	--CALCULATE->	

Please verify site standards used by the site operator

SITE STANDARDS	MANUFACTURER	MODEL	SERIAL #	Calibration Expiration Date
PM Flow Reference				

NOTES:

Air Resource Specialists, Inc.

CALIBRATION AND VERIFICATION STANDARDS

ABBR.	n/a	CLIENT	ALTON	AUDITOR	M. Farinacci	DATE	10/22/2015
SITE NAME		Alton Coal- Coal Hollow					
Network type		PSD					

			MANUFACTURER	MODEL	SERIAL #	Calibration Expiration Date
Ozone Transfer Standard						
Gas Dilution Transfer Standard						
MFC High Flow Reference						
MFC Low Flow Reference						
Temperature Reference			Eutechnics	4600	99F101610	2/13/2016
AT/RH Sensor Reference						
Barometric Pressure Reference						
Wind Speed Reference (high rpm)			RM Young	18802	CA 4104	4/10/2016
Wind Speed Reference (low rpm)						
Wind Speed Torque Gauge						
Wind Direction Alignment Reference			Brunton	Transit	5060710523	
Wind Direction Linearity Reference						
Wind Direction Torque Gauge						
Solar Radiation Reference						
Multiplier		W/m2 / mV				
UV Radiation Reference						
Multiplier		W/m2 / mV				
Precipitation Reference						
Volume	946	mL	Nova Lynx	260-2595	n/a	n/a

PM Flow Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Flow Standard #2				
PM Flow Standard #3				
PM Flow Standard #4				

PM Temperature Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Temperature Standard #2				
PM Temperature Standard #3				
PM Temperature Standard #4				

PM Barometric Pressure Standard #1	Mesa Labs	deltaCal	1237	1/12/2016
PM Barometric Pressure Standard #2				
PM Barometric Pressure Standard #3				
PM Barometric Pressure Standard #4				

TEOM MTV Standard				

APPENDIX B

AUDIT STANDARDS CERTIFICATIONS

MICRO PRECISION CALIBRATION INC.

MICRO PRECISION CALIBRATION
22835 INDUSTRIAL PLACE
GRASS VALLEY CA 95949
530-268-1860

Certificate of Calibration

Date: Feb 13, 2015

Cert No. 222008122407667

Customer:
AIR RESOURCE SPECIALIST, INC
1901 SHARP POINT DR, STE E
FORT COLLINS CO 80525

MPC Control #:	AX8944
Asset ID:	N/A
Gage Type:	DIGITAL THERMOMETER
Manufacturer:	EUTECHNICS
Model Number:	4600
Size:	N/A
Temp/RH:	69°F / 40 %

Work Order #:	SAC-70069987
Purchase Order #:	A29242
Serial Number:	99F101610
Department:	N/A
Performed By:	JACK R. WERTZ III
Received Condition:	IN TOLERANCE
Returned Condition:	IN TOLERANCE
Cal. Date:	February 13, 2015
Cal. Interval:	12 MONTHS
Cal. Due Date:	February 13, 2016

Calibration Notes:

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
CH2157	DUAL TEMPERATURE CALIBRATOR	9009	24590T	FLUKE	Sep 15, 2015	222008122242610
CL7456	STANDARD PLATINUM RESISTANCE THERMOMETER PROBE	5681	1595	FLUKE	Dec 4, 2015	A7B16006

Procedures Used in this Event

Procedure Name	Description
NAVAIR 17-20ST-95	Digital Thermometers

Calibrating Technician: Jack R. Wertz III

JACK R. WERTZ III

QC Approval: B. Gold

BRIAN GOLD

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA's Publication and NIST Technical Note 1297, 1994 Edition. Services rendered comply with ISO 17025:2005, ANSI/NCSL Z540-1, MPC Quality Manual, MPC CSD and with customer purchase order instructions.

Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. The information on this report, pertains only to the instrument identified.

All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. This report may not be reproduced in part or in a whole without the prior written approval of the issuing MPC lab.

(CERT, Rev 3)

CERTIFICATE OF CALIBRATION AND TESTING

MODEL: **18802** (Comprised of Models 18820A Control Unit & 18830A Motor Assembly)
SERIAL NUMBER: CA04104

R. M. Young Company certifies that the above equipment was inspected and calibrated prior to shipment in accordance with established manufacturing and testing procedures. Standards established by R.M. Young Company for calibrating the measuring and test equipment used in controlling product quality are traceable to the National Institute of Standards and Technology.

Nominal Motor Rpm	27106D Output Frequency Hz (1)	Calculated Rpm (1)	Indicated Rpm (2)
300	50	300	300
2700	450	2700	2700
5100	850	5100	5100
7500	1250	7500	7500
10,200	1700	10200	10200
12,600	2100	12600	12600
15,000	2500	15000	15000
☒ Clockwise and Counterclockwise rotation verified			

(1) Measured frequency output of RM Young Model 27106D standard anemometer attached to motor shaft 27106D produces 10 pulses per revolution of the anemometer shaft
(2) Indicated on the Control Unit LCD display

* Indicates out of tolerance

☐ New Unit	☒ Service / Repair Unit ☒ No Calibration Adjustments Required	☐ As Found ☐ As Left

Traceable frequency meter used in calibration Model: DP5740 SN: 4863

Date of inspection 10 Apr 2015
Inspection Interval One Year

Tested By EC

Mesa Labs 10 Park Place Butler, NJ 07405
NIST Traceable Calibration Facility, ISO 9001:2008 Registered

MesaLabs

CERTIFICATE OF CALIBRATION - NIST TRACEABILITY

(Refer to instruction manual for further details of calibration)

deltaCal Serial Number: **1237** DATE: 12-Jan-2015

Calibration Operator: P.Pitty

Critical Venturi Flow Meter: Max Uncertainity = 0.346%
Serial Number: 1A *CEESI NVLAP NIST Data File 07BGI-0001*
Serial Number: 2A *CEESI NVLAP NIST Data File 07BGI-0003*
Serial Number: 5C COX Nist Data File CCAL33222 - 5 C
Serial Number: 4A *CEESI NVLAP NIST Data File 07BGI-0002*
Serial Number: 3A *CEESI NVLAP NIST Data File 07BGI-0004*

Room Temperature: Uncertainity=0.071% Room Temperature: 23.0 °C
Brand: Accu-Safe Serial Number: 254881
NIST Traceability No. 516837
deltaCal:
Ambient Temperature (set): 23.0 °C
Aux (filter) Temperature (set): 23.0 °C

Barometric Pressure ans Absolute Pressure
Vaisala Model PTB330(50-1100) Digital Accuracy: 0.03371%
S/N DH0850001
NIST Traceable (Princo Primary Standard Model 453 S/N W12537) Certificate No. P-7485
deltaCal:
Barometric pressure (set): 759 mm of Hg

Results of Venturi Calibration
Flow Rate (Q) vs. Pressure Drop (ΔP). Where: Q=Lpm, ΔP= Cm of H2O

Q= 3.86319 ΔP ^ 0.52084 Overall Uncertainty: 0.35%

Date Placed In Service 1/19/15
(To be filled in by operator upon receipt)

Recommended Recalibration Date 1/19/16
(12 months from date placed in service)

Revised: October 2014
Cal102-01T2 Rev A

To Check a deltaCal 12-Jan-15 P.Pitty

1.5-19.5 VER 3.41P

BP= 759 mm of Hg

Maximum allowable error at any flow rate is .75%.

Serial No. 1237

	Reading Abs. P Crit. Vent. mm of Hg	Room Temp	CV Qa Flow Lpm	Qa deltaCal Indicated	% Error
# 5	198.8	23.0	6.46	6.50	0.56
	263.7	23.0	8.65	8.64	-0.08
	350.8	23.0	11.58	11.56	-0.15
	459.4	23.0	15.23	15.23	0.02
	578.2	23.0	19.22	19.28	0.30
				Average %	0.13