

Alton Coal Development, LLC.

Summary of PM₁₀ Data

Collected at Coal Hollow Mine, Utah

During the First Quarter, 2018

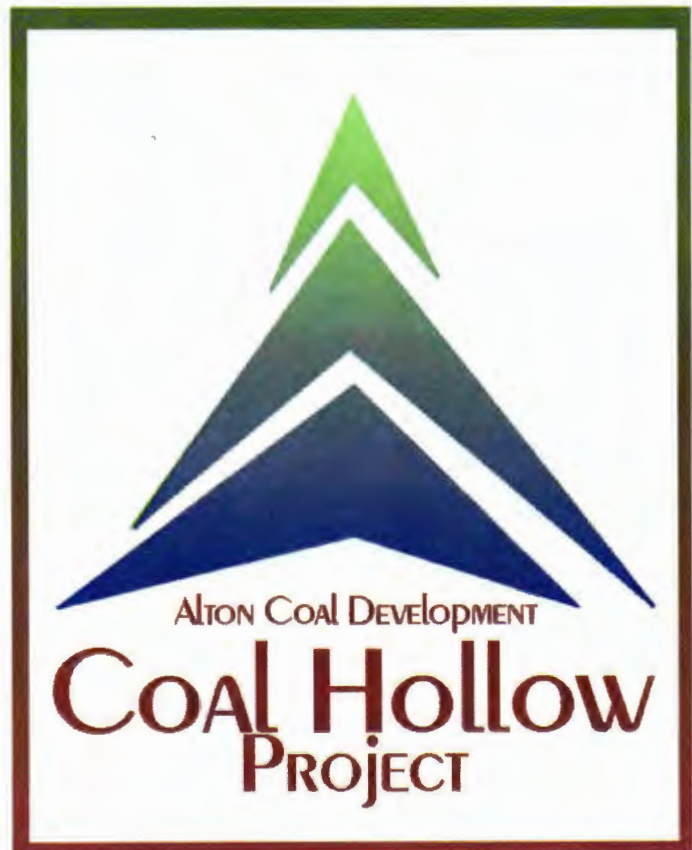
DAQ-2018-010027

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Contents

1.0	Introduction.....	2
2.0	Site Location	2
3.0	AIR QUALITY DATA SUMMARIES	4
4.0	DATA RECOVERY AND QUALITY ASSURANCE.....	7
4.1	Data Recovery.....	7
4.2	Quality Assurance	8
4.2.1	Precision of PM ₁₀ Measurements.....	9
4.2.2	Audit Results.....	9
4.2.3	Zero and Single Point Flow Rate Checks	10

List of Tables

Table I - Summary of Measured PM ₁₀ Concentrations (µg/m ³)	5
Table II - Summary of Measured PM ₁₀ Concentrations (µg/m ³)	5
Table III - Summary of Measured PM ₁₀ Concentrations (µg/m ³).....	6
Table IV - Summary of Measured PM ₁₀ Concentrations (µg/m ³)	6
Table VI – Mean Quarterly and Monthly Wind Speed.....	7
Table VIII - Summary of Data Recovery.....	8
Table VII III- Audit Summary	10

List of Figures

Figure 1 - Site Location Map	3
Figure 2 - Satellite View of Monitoring Locations	4

List of Appendices

APPENDIX A	
Windrose	
APPENDIX B	
Listing of PM ₁₀ Concentrations (Data sheets for monitor's on DVD)	
APPENDIX C	
Precision and Single-Point Flow Rate Checks	
APPENDIX D	
Field Data Sheets	
APPENDIX E	
Independent PM ₁₀ Sampler Performance Audit Report	

1.0 INTRODUCTION

This report summarizes measurements of Particulate Matter less than 10 microns nominal aerodynamic diameter (PM₁₀) collected and processed by Alton Coal Development, LLC, (ACD) from the five monitoring stations located at the Coal Hollow Mine Facility in Alton, Utah. Monitoring for PM₁₀ is a condition of the mines operating permit.

PM₁₀ monitoring at the site consists of five BGI PQ200 PM₁₀ 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 first quarter of 2018.

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 1 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 three 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 for the Coal Hollow Mine (CHM) 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 background monitor coordinates are Northing: 4140856, Easting 373119, (UTM) Datum NAD27, Zone 12. The CHM compliance monitor and the co-located monitor coordinates are Northing: 4140396, Easting 371147, (UTM) Datum NAD27, Zone 12. The North Private Lease area of the CHM is located in Sections 12, 13 of Township 39S, Range 6W and Sections 7, 18 of Township 39S, Range 5W. The compliance monitor for the North Private Lease has a manufactures serial #2366, therefore this monitor will be referred as monitor 2366D. The co-located monitor has a manufactures serial #2398, therefore this monitor will be referred as monitor 2398E. The NPL compliance monitor and the co-located monitor coordinates are Northing: 4141570, Easting 370928, (UTM) Datum NAD27, Zone 12.

Figure 1 - Site Location Map

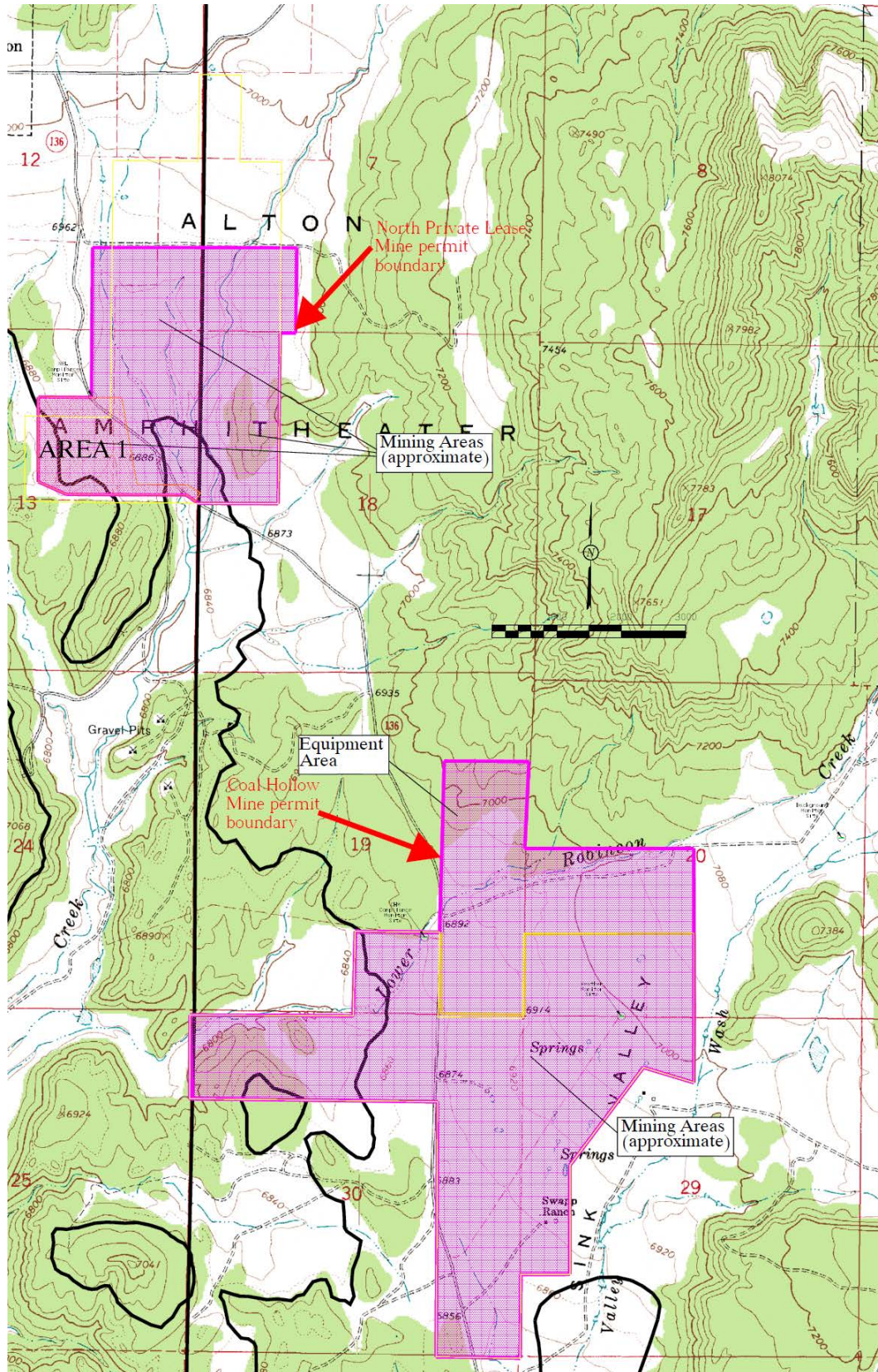
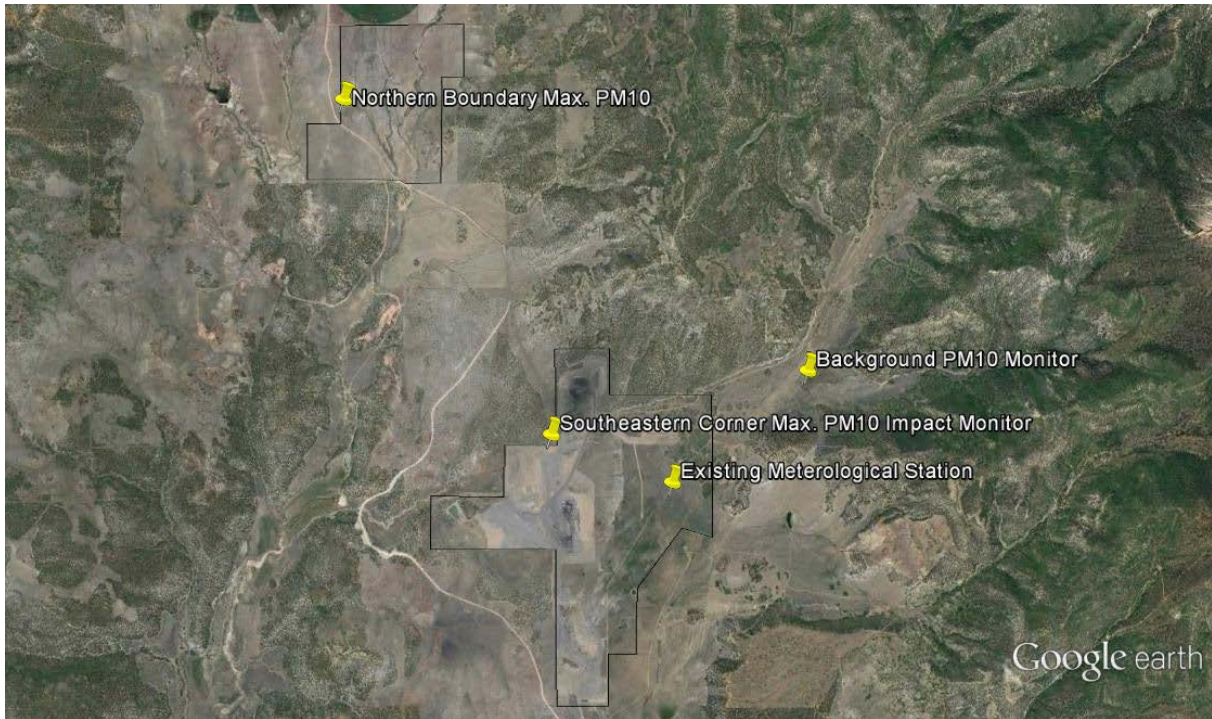


Figure 2 - Satellite View of Monitoring Locations



3.0 AIR QUALITY DATA SUMMARIES

A listing of the measured PM₁₀ 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 PM₁₀ concentration during the midnight to midnight data collection cycle. As required by the operating permit for the CHM, 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 PM₁₀ 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. Also, required by the operating permit for the NPL, duplicate measurements were made with Sampler #2366D (designated as a compliance monitor) and Sampler #2398E (designated as a co-located sampler) to the extent possible. The quarterly mean PM₁₀ concentration and the comparison of measured concentrations to standards are based on measurements from the primary Sampler #2366D. If a measurement from Sampler #2366D was missing or invalid, the measurement from the secondary Sampler #2398E would be used.

The highest 24-hour mean PM₁₀ concentrations measured during the quarter from the three monitoring locations are summarized in Table I, Table II, Table III, Table IV and Table V. The three highest concentrations, # of valid samples, and the arithmetic mean concentrations from each of the sites are listed. All measured PM₁₀ concentrations were below the 24-hour National Ambient Air Quality Standard (NAAQS) of 150 µg/m³.

Table I - Summary of Measured PM₁₀ Concentrations (µg/m³)
Background Monitor - 962A

RANK	DATE	PM ₁₀ CONCENTRATION
Highest	2/19/2018	13.6
2 nd Highest	3/3/2018	6.1
Monthly Mean	1/1/18-1/31/18	3.2
Monthly Mean	2/1/18-2/28/18	4.9
Monthly Mean	3/1/18-3/31/18	3.6
Quarterly Mean	1/1/18-3/31/18 (15 valid samples)	3.9

Table II - Summary of Measured PM₁₀ Concentrations (µg/m³)
Compliance Monitor - 963B

RANK	DATE	PM ₁₀ CONCENTRATION
Highest	2/1/2018	18.3
2 nd Highest	3/9/2018	12.8
Monthly Mean	1/1/18-1/31/18	6.3
Monthly Mean	2/1/18-2/28/18	9.2
Monthly Mean	3/1/18-3/31/18	7.6
Quarterly Mean	1/1/18-3/31/18 (14 valid samples)	7.7

Table III - Summary of Measured PM₁₀ Concentrations (µg/m³)
Collocated Monitor – 964C

RANK	DATE	PM ₁₀ CONCENTRATION
Highest	2/1/2018	20.4
2 nd Highest	3/9/2018	16.8
Monthly Mean	1/1/18-1/31/18	8.4
Monthly Mean	2/1/18-2/28/18	10.0
Monthly Mean	3/1/18-3/31/18	7.2
Quarterly Mean	1/1/18-3/31/18 (14 valid samples)	8.5

Table IV - Summary of Measured PM₁₀ Concentrations (µg/m³)
Compliance Monitor – 2366D

RANK	DATE	PM ₁₀ CONCENTRATION
Highest	2/1/2018	72.7
2 nd Highest	3/9/2018	66.7
Monthly Mean	1/1/18-1/31/18	5.0
Monthly Mean	2/1/18-2/28/18	23.1
Monthly Mean	3/1/18-3/31/18	33.6
Quarterly Mean	1/1/18-3/31/18 (15 valid samples)	20.6

**Table V - Summary of Measured PM₁₀ Concentrations (µg/m³)
Collocated Monitor – 2398E**

RANK	DATE	PM ₁₀ CONCENTRATION
Highest	2/1/2018	78.1
2 nd Highest	3/9/2018	73.9
Monthly Mean	1/1/18-1/31/18	6.2
Monthly Mean	2/1/18-2/28/18	22.9
Monthly Mean	3/1/18-3/31/18	32.7
Quarterly Mean	1/1/18-3/31/18 (15 valid samples)	20.6

Table VI – Mean Quarterly and Monthly Wind Speed

	1st Quarter 2018	Jan.	Feb.	Mar.
Mean Wind Speed (m/s)	2.95	2.44	3.05	3.36

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 14 of the 15 samples during the quarter. The percent recovery for this quarter is 93%. For the sample date March 15th, the monitor failed to run due to a programming error in the end date.

Monitor 964C

Monitor 964C collected 14 of the 15 samples during the quarter. The percent recovery for this quarter is 93%. For the sample date January 8th, the monitor failed to run due to a flow rate excursion $> \pm 5\%$ for > 5 minutes that caused the monitor to shut down.

Monitor 2366D

Monitor 2366D collected 15 of the 15 samples during the quarter. The percent recovery for this quarter is 100%.

Monitor 2398E

Monitor 2398E collected 15 of the 15 samples during the quarter. The percent recovery for this quarter is 100%.

The PM₁₀ data recoveries for the five monitoring stations are presented below:

Table VII - Summary of Data Recovery

SAMPLER	POSSIBLE SAMPLES	VALID SAMPLES	PERCENT DATA RECOVERY
962A	15	15	100%
963B	15	14	93%
964C	15	14	93%
2366D	15	15	100%
2398E	15	15	100%

4.2 Quality Assurance

Quality assurance procedures utilized to verify the integrity of the measured PM₁₀ data included the following:

1. Review of PM₁₀ precision measurements based upon duplicate, collocated measurements.
2. Independent quarterly audits of the PM₁₀ samplers.
3. Monthly zero and single point flow rate checks of the PM₁₀ samplers.

4.2.1 Precision of PM₁₀ Measurements

The precision of the PM₁₀ measurements was determined from the duplicate samples collected from the collocated BGI PQ200 Monitors 963B and 964C at the Coal Hollow Mine and 2366D and 2398E at the North Private Lease. As recommended in *40 CFR, Part 58, Appendix A, Section 5.3.1*, PM₁₀ precision checks are reported for instances when the concentrations for duplicate samples both exceed 3 µg/m³. 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 at the Coal Hollow Mine were developed based on 11 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 -69.8% to 35.0%. The aggregate coefficient of variability (CV) calculated in accordance with *40 CFR, Part 58, Appendix A Equation 11* is 27.4%. This value is not within the 10% goal for aggregate CV.

Precision calculations at the North Private Lease were developed based on 14 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 -46.2% to 51.1%. The aggregate coefficient of variability (CV) calculated in accordance with *40 CFR, Part 58, Appendix A Equation 11* is 28.0%. This value is not within the 10% goal for aggregate CV.

4.2.2 Audit Results

The accuracy of the PM₁₀ sampler flows was verified by a performance audit conducted by Air Resource Specialist on Mar. 29, 2018. A copy of the audit report is presented in Appendix E and is summarized in Table VI. The audit results indicate that the four of the five samplers were operating properly. The collocated monitor 963C failed the flow verification, the flow controller was determined to be faulty and was replaced.

Table VIII- Audit Summary

SAMPLER	AUDIT % DIFFERENCE	LIMIT*	DESIGN % DIFFERENCE	LIMIT*
962A	-2.0	±4%	2.2	± 5%
963B	-0.8	±4%	0.9	± 5%
964C	35.8	±4%	-26.3	± 5%
2366D	-0.2	±4%	0.2	± 5%
2398E	-0.5	±4%	0.5	± 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

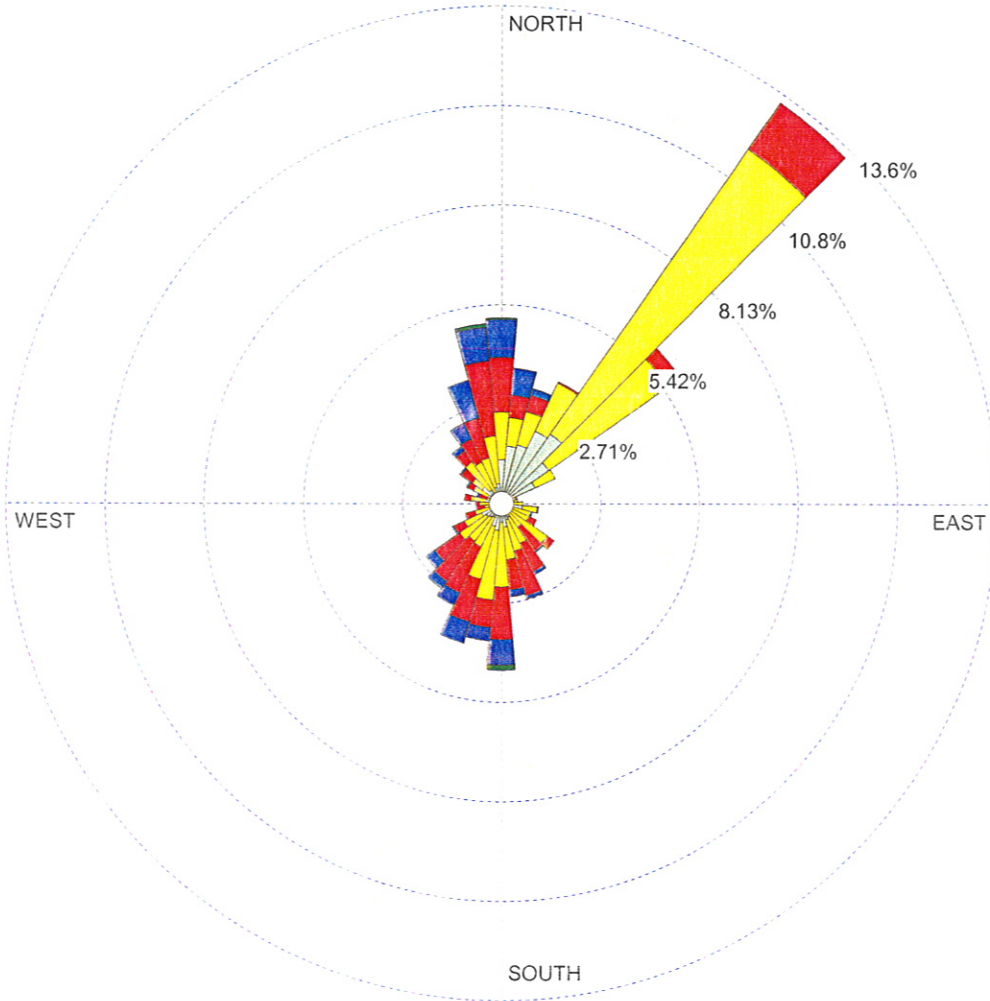
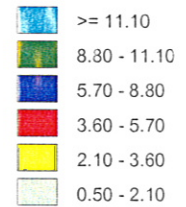
Windrose

WIND ROSE PLOT:

Alton Coal Development, LLC , Alton, Utah
2018 1st Quarter

DISPLAY:

Wind Speed
Direction (blowing from)

WIND SPEED
(m/s)

Calms: 6.90%

COMMENTS:

DATA PERIOD:

Start Date: 1/1/2018 - 00:00
End Date: 3/31/2018 - 23:00

COMPANY NAME:

Alton Coal Development, LLC - Coal Hollow Mine

MODELER:

B. Kirk Nicholes

CALM WINDS:

6.90%

TOTAL COUNT:

2160 hrs.

AVG. WIND SPEED:

2.95 m/s

DATE:

4/19/2018

PROJECT NO.:



Station ID: 1
 Start Date: 1/1/2018 - 00:00
 End Date: 3/31/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Count)

	Wind Direction (Blowing From) / Wind Speed (m/s)						
	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	26	28	32	22	1	0	109
5-15	34	17	13	16	0	0	80
15-25	36	20	10	4	0	0	70
25-35	47	31	1	0	0	0	79
35-45	50	204	33	0	0	0	287
45-55	34	86	9	0	0	0	129
55-65	22	13	0	0	0	0	35
65-75	9	1	0	0	0	0	10
75-85	8	2	0	0	0	0	10
85-95	7	6	0	0	0	0	13
95-105	13	8	0	1	0	0	22
105-115	7	11	0	1	0	0	19
115-125	4	14	5	0	0	0	23
125-135	5	28	5	0	0	0	38
135-145	6	11	17	1	0	0	35
145-155	9	17	18	2	0	0	46
155-165	10	19	27	2	0	0	58
165-175	14	19	18	4	0	0	55
175-185	11	38	31	15	3	0	98
185-195	16	41	16	8	0	0	81
195-205	14	32	26	13	0	0	85
205-215	9	19	30	8	0	0	66
215-225	10	17	29	5	0	0	61
225-235	11	19	18	6	0	0	54
235-245	13	11	7	1	0	0	32
245-255	4	12	6	0	0	0	22
255-265	5	5	5	0	0	0	15
265-275	6	7	2	0	0	0	15
275-285	10	8	4	0	0	0	22
285-295	6	3	5	1	0	0	15
295-305	9	9	4	1	0	0	23
305-315	14	7	8	1	0	0	30
315-325	10	20	8	3	0	0	41
325-335	7	20	15	10	0	0	52
335-345	10	18	24	23	0	0	75
345-355	12	28	44	20	2	0	106
Total	518	849	470	168	6	0	2160

Frequency of Calm Winds: 149
 Average Wind Speed: 2.95 m/s

Station ID: 1
 Start Date: 1/1/2018 - 00:00
 End Date: 3/31/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Normalized)

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

	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	0.012037	0.012963	0.014815	0.010185	0.000463	0.000000	0.050463
5-15	0.015741	0.007870	0.006019	0.007407	0.000000	0.000000	0.037037
15-25	0.016667	0.009259	0.004630	0.001852	0.000000	0.000000	0.032407
25-35	0.021759	0.014352	0.000463	0.000000	0.000000	0.000000	0.036574
35-45	0.023148	0.094444	0.015278	0.000000	0.000000	0.000000	0.132870
45-55	0.015741	0.039815	0.004167	0.000000	0.000000	0.000000	0.059722
55-65	0.010185	0.006019	0.000000	0.000000	0.000000	0.000000	0.016204
65-75	0.004167	0.000463	0.000000	0.000000	0.000000	0.000000	0.004630
75-85	0.003704	0.000926	0.000000	0.000000	0.000000	0.000000	0.004630
85-95	0.003241	0.002778	0.000000	0.000000	0.000000	0.000000	0.006019
95-105	0.006019	0.003704	0.000000	0.000463	0.000000	0.000000	0.010185
105-115	0.003241	0.005093	0.000000	0.000463	0.000000	0.000000	0.008796
115-125	0.001852	0.006481	0.002315	0.000000	0.000000	0.000000	0.010648
125-135	0.002315	0.012963	0.002315	0.000000	0.000000	0.000000	0.017593
135-145	0.002778	0.005093	0.007870	0.000463	0.000000	0.000000	0.016204
145-155	0.004167	0.007870	0.008333	0.000926	0.000000	0.000000	0.021296
155-165	0.004630	0.008796	0.012500	0.000926	0.000000	0.000000	0.026852
165-175	0.006481	0.008796	0.008333	0.001852	0.000000	0.000000	0.025463
175-185	0.005093	0.017593	0.014352	0.006944	0.001389	0.000000	0.045370
185-195	0.007407	0.018981	0.007407	0.003704	0.000000	0.000000	0.037500
195-205	0.006481	0.014815	0.012037	0.006019	0.000000	0.000000	0.039352
205-215	0.004167	0.008796	0.013889	0.003704	0.000000	0.000000	0.030556
215-225	0.004630	0.007870	0.013426	0.002315	0.000000	0.000000	0.028241
225-235	0.005093	0.003796	0.008333	0.002778	0.000000	0.000000	0.025000
235-245	0.006019	0.005093	0.003241	0.000463	0.000000	0.000000	0.014815
245-255	0.001852	0.005556	0.002778	0.000000	0.000000	0.000000	0.010185
255-265	0.002315	0.002315	0.002315	0.000000	0.000000	0.000000	0.006944
265-275	0.002778	0.003241	0.000926	0.000000	0.000000	0.000000	0.006944
275-285	0.004630	0.003704	0.001852	0.000000	0.000000	0.000000	0.010185
285-295	0.002778	0.001389	0.002315	0.000463	0.000000	0.000000	0.006944
295-305	0.004167	0.004167	0.001852	0.000463	0.000000	0.000000	0.010648
305-315	0.006481	0.003241	0.003704	0.000463	0.000000	0.000000	0.013889
315-325	0.004630	0.009259	0.003704	0.001389	0.000000	0.000000	0.018981
325-335	0.003241	0.009259	0.006944	0.004630	0.000000	0.000000	0.024074
335-345	0.004630	0.008333	0.011111	0.010648	0.000000	0.000000	0.034722
345-355	0.005556	0.012963	0.020370	0.009259	0.000926	0.000000	0.049074
Total	0.239815	0.393056	0.217593	0.077778	0.002778	0.000000	0.931019

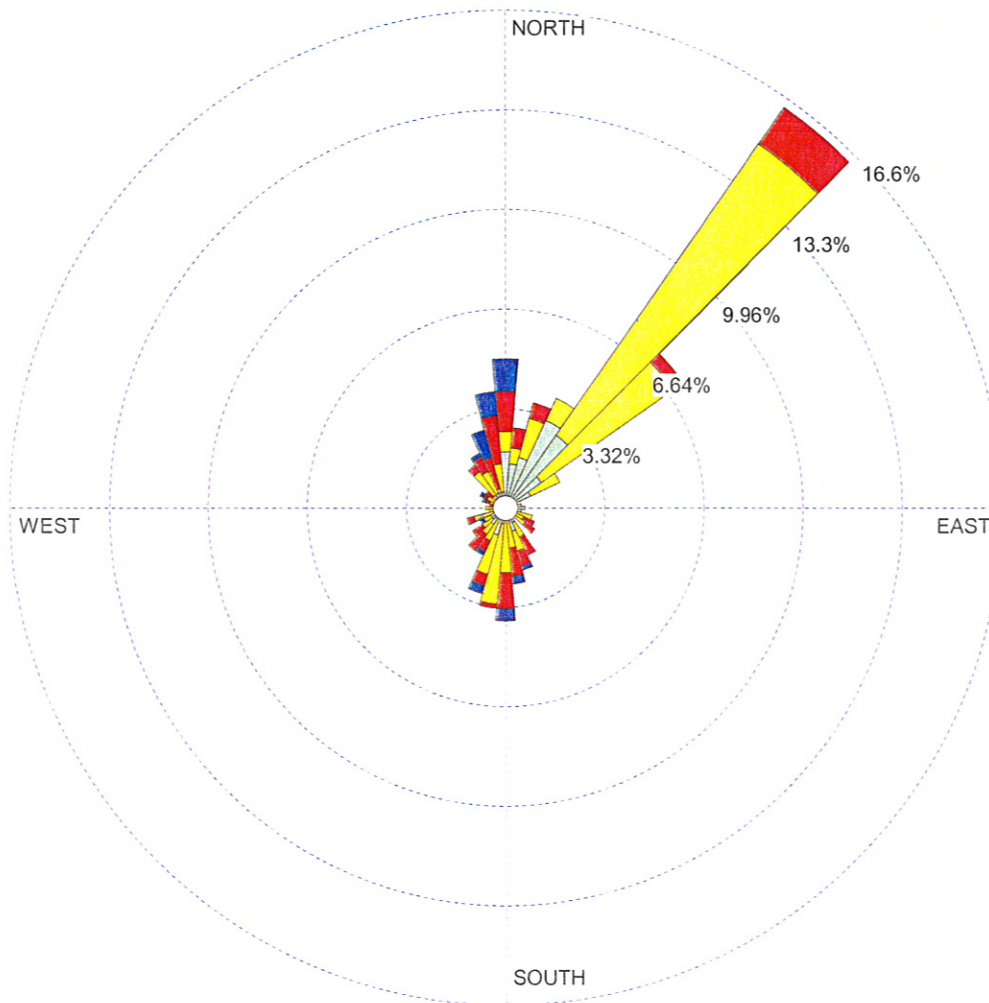
Frequency of Calm Winds: 6.90%
 Average Wind Speed: 2.95 m/s

WIND ROSE PLOT:

Alton Coal Development, LLC , Alton, Utah
2018 January

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

DATA PERIOD:

Start Date: 1/1/2018 - 00:00
End Date: 1/31/2018 - 23:00

COMPANY NAME:

Alton Coal Development, LLC - Coal Hollow Mine

MODELER:

B. Kirk Nicholes

CALM WINDS:

15.32%

TOTAL COUNT:

744 hrs.

AVG. WIND SPEED:

2.44 m/s

DATE:

4/19/2018

PROJECT NO.:



Station ID: 1
 Start Date: 1/1/2018 - 00:00
 End Date: 1/31/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Count)

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

	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	14	5	10	8	0	0	37
5-15	11	4	5	0	0	0	20
15-25	13	10	4	0	0	0	27
25-35	24	6	0	0	0	0	30
35-45	22	88	11	0	0	0	121
45-55	11	40	3	0	0	0	54
55-65	7	8	0	0	0	0	15
65-75	1	0	0	0	0	0	1
75-85	3	1	0	0	0	0	4
85-95	5	0	0	0	0	0	5
95-105	4	0	0	0	0	0	4
105-115	2	5	0	0	0	0	7
115-125	1	4	3	0	0	0	8
125-135	1	5	3	0	0	0	9
135-145	0	0	3	0	0	0	3
145-155	4	4	5	0	0	0	13
155-165	6	5	4	1	0	0	16
165-175	3	7	7	2	0	0	19
175-185	1	15	9	3	0	0	28
185-195	4	20	1	0	0	0	25
195-205	7	10	3	2	0	0	22
205-215	3	6	3	1	0	0	13
215-225	5	3	5	0	0	0	13
225-235	4	3	3	0	0	0	10
235-245	4	2	0	1	0	0	7
245-255	3	5	2	0	0	0	10
255-265	1	3	0	0	0	0	4
265-275	3	2	0	0	0	0	5
275-285	2	1	1	0	0	0	4
285-295	3	1	1	1	0	0	6
295-305	2	3	1	1	0	0	7
305-315	2	2	2	0	0	0	6
315-325	4	7	2	0	0	0	13
325-335	4	6	4	1	0	0	15
335-345	4	1	8	7	0	0	20
345-355	4	7	12	6	0	0	29
Total	192	289	115	34	0	0	744

Frequency of Calm Winds: 114
 Average Wind Speed: 2.44 m/s

Station ID: 1
 Start Date: 1/1/2018 - 00:00
 End Date: 1/31/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Normalized)

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

	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	0.018817	0.006720	0.013441	0.010753	0.000000	0.000000	0.049731
5-15	0.014785	0.005376	0.006720	0.000000	0.000000	0.000000	0.026882
15-25	0.017473	0.013441	0.005376	0.000000	0.000000	0.000000	0.036290
25-35	0.032258	0.008065	0.000000	0.000000	0.000000	0.000000	0.040323
35-45	0.029570	0.118280	0.014785	0.000000	0.000000	0.000000	0.162634
45-55	0.014785	0.053763	0.004032	0.000000	0.000000	0.000000	0.072581
55-65	0.009409	0.010753	0.000000	0.000000	0.000000	0.000000	0.020161
65-75	0.001344	0.000000	0.000000	0.000000	0.000000	0.000000	0.001344
75-85	0.004032	0.001344	0.000000	0.000000	0.000000	0.000000	0.005376
85-95	0.006720	0.000000	0.000000	0.000000	0.000000	0.000000	0.006720
95-105	0.005376	0.000000	0.000000	0.000000	0.000000	0.000000	0.005376
105-115	0.002688	0.006720	0.000000	0.000000	0.000000	0.000000	0.009409
115-125	0.001344	0.005376	0.004032	0.000000	0.000000	0.000000	0.010753
125-135	0.001344	0.006720	0.004032	0.000000	0.000000	0.000000	0.012097
135-145	0.000000	0.000000	0.004032	0.000000	0.000000	0.000000	0.004032
145-155	0.005376	0.005376	0.006720	0.000000	0.000000	0.000000	0.017473
155-165	0.008065	0.006720	0.005376	0.001344	0.000000	0.000000	0.021505
165-175	0.004032	0.009409	0.009409	0.002688	0.000000	0.000000	0.025538
175-185	0.001344	0.020161	0.012097	0.004032	0.000000	0.000000	0.037634
185-195	0.005376	0.026882	0.001344	0.000000	0.000000	0.000000	0.033602
195-205	0.009409	0.013441	0.004032	0.002688	0.000000	0.000000	0.029570
205-215	0.004032	0.008065	0.004032	0.001344	0.000000	0.000000	0.017473
215-225	0.006720	0.004032	0.006720	0.000000	0.000000	0.000000	0.017473
225-235	0.005376	0.004032	0.004032	0.000000	0.000000	0.000000	0.013441
235-245	0.005376	0.002688	0.000000	0.001344	0.000000	0.000000	0.009409
245-255	0.004032	0.006720	0.002688	0.000000	0.000000	0.000000	0.013441
255-265	0.001344	0.004032	0.000000	0.000000	0.000000	0.000000	0.005376
265-275	0.004032	0.002688	0.000000	0.000000	0.000000	0.000000	0.006720
275-285	0.002688	0.001344	0.001344	0.000000	0.000000	0.000000	0.005376
285-295	0.004032	0.001344	0.001344	0.001344	0.000000	0.000000	0.008065
295-305	0.002688	0.004032	0.001344	0.001344	0.000000	0.000000	0.009409
305-315	0.002688	0.002688	0.002688	0.000000	0.000000	0.000000	0.008065
315-325	0.005376	0.009409	0.002688	0.000000	0.000000	0.000000	0.017473
325-335	0.005376	0.008065	0.005376	0.001344	0.000000	0.000000	0.020161
335-345	0.005376	0.001344	0.010753	0.009409	0.000000	0.000000	0.026882
345-355	0.005376	0.009409	0.016129	0.008065	0.000000	0.000000	0.038978
Total	0.258065	0.388441	0.154570	0.045699	0.000000	0.000000	0.846774

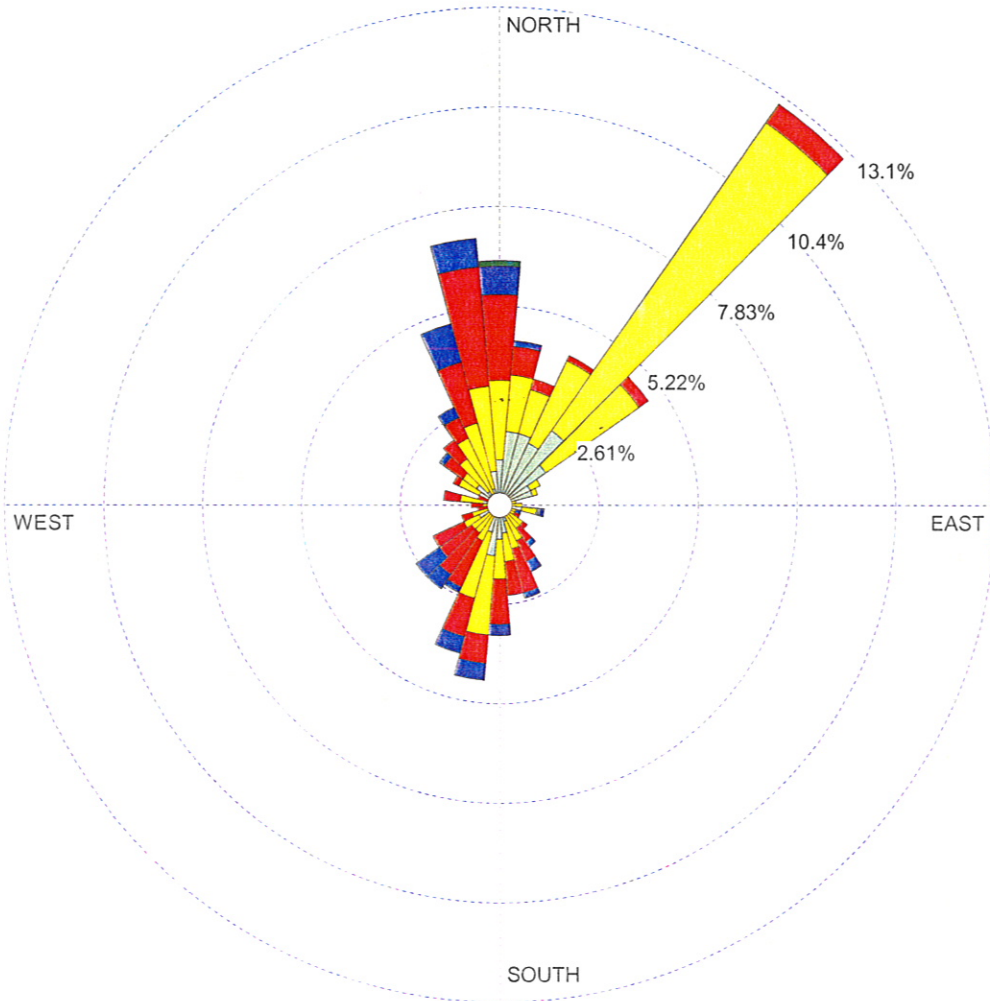
Frequency of Calm Winds: 15.32%
 Average Wind Speed: 2.44 m/s

WIND ROSE PLOT:

Alton Coal Development, LLC , Alton, Utah
2018 February

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:

DATA PERIOD:

Start Date: 2/1/2018 - 00:00
End Date: 2/28/2018 - 23:00

COMPANY NAME:

Alton Coal Development, LLC - Coal Hollow Mine

MODELER:

B. Kirk Nicholes

CALM WINDS:

2.83%

TOTAL COUNT:

672 hrs.

AVG. WIND SPEED:

3.05 m/s

DATE:

4/19/2018

PROJECT NO.:



Station ID: 1
 Start Date: 2/1/2018 - 00:00
 End Date: 2/28/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Count)

	Wind Direction (Blowing From) / Wind Speed (m/s)						
	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	8	14	15	5	1	0	43
5-15	13	10	5	1	0	0	29
15-25	13	8	2	0	0	0	23
25-35	12	16	1	0	0	0	29
35-45	16	66	4	0	0	0	86
45-55	10	20	2	0	0	0	32
55-65	6	2	0	0	0	0	8
65-75	6	1	0	0	0	0	7
75-85	2	1	0	0	0	0	3
85-95	1	3	0	0	0	0	4
95-105	4	3	0	1	0	0	8
105-115	2	1	0	1	0	0	4
115-125	0	3	1	0	0	0	4
125-135	2	3	1	0	0	0	6
135-145	2	3	3	1	0	0	9
145-155	2	5	4	2	0	0	13
155-165	3	5	8	1	0	0	17
165-175	5	5	6	0	0	0	16
175-185	6	7	8	2	0	0	23
185-195	9	14	5	3	0	0	31
195-205	5	12	7	3	0	0	27
205-215	2	5	9	1	0	0	17
215-225	2	4	9	3	0	0	18
225-235	1	5	7	5	0	0	18
235-245	4	3	6	0	0	0	13
245-255	0	5	2	0	0	0	7
255-265	0	0	4	0	0	0	4
265-275	0	3	2	0	0	0	5
275-285	3	4	3	0	0	0	10
285-295	1	1	2	0	0	0	4
295-305	4	4	1	0	0	0	9
305-315	5	3	4	1	0	0	13
315-325	3	7	4	0	0	0	14
325-335	2	11	4	2	0	0	19
335-345	3	12	11	7	0	0	33
345-355	6	15	21	5	0	0	47
Total	163	284	161	44	1	0	672

Frequency of Calm Winds: 19
 Average Wind Speed: 3.05 m/s

Station ID: 1
 Start Date: 2/1/2018 - 00:00
 End Date: 2/28/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Normalized)

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

	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	0.011905	0.020833	0.022321	0.007440	0.001488	0.000000	0.063988
5-15	0.019345	0.014881	0.007440	0.001488	0.000000	0.000000	0.043155
15-25	0.019345	0.011905	0.002976	0.000000	0.000000	0.000000	0.034226
25-35	0.017857	0.023810	0.001488	0.000000	0.000000	0.000000	0.043155
35-45	0.023810	0.098214	0.005952	0.000000	0.000000	0.000000	0.127976
45-55	0.014881	0.029762	0.002976	0.000000	0.000000	0.000000	0.047619
55-65	0.008929	0.002976	0.000000	0.000000	0.000000	0.000000	0.011905
65-75	0.008929	0.001488	0.000000	0.000000	0.000000	0.000000	0.010417
75-85	0.002976	0.001488	0.000000	0.000000	0.000000	0.000000	0.004464
85-95	0.001488	0.004464	0.000000	0.000000	0.000000	0.000000	0.005952
95-105	0.005952	0.004464	0.000000	0.001488	0.000000	0.000000	0.011905
105-115	0.002976	0.001488	0.000000	0.001488	0.000000	0.000000	0.005952
115-125	0.000000	0.004464	0.001488	0.000000	0.000000	0.000000	0.005952
125-135	0.002976	0.004464	0.001488	0.000000	0.000000	0.000000	0.008929
135-145	0.002976	0.004464	0.004464	0.001488	0.000000	0.000000	0.013393
145-155	0.002976	0.007440	0.005952	0.002976	0.000000	0.000000	0.019345
155-165	0.004464	0.007440	0.011905	0.001488	0.000000	0.000000	0.025298
165-175	0.007440	0.007440	0.008929	0.000000	0.000000	0.000000	0.023810
175-185	0.008929	0.010417	0.011905	0.002976	0.000000	0.000000	0.034226
185-195	0.013393	0.020833	0.007440	0.004464	0.000000	0.000000	0.046131
195-205	0.007440	0.017857	0.010417	0.004464	0.000000	0.000000	0.040179
205-215	0.002976	0.007440	0.013393	0.001488	0.000000	0.000000	0.025298
215-225	0.002976	0.005952	0.013393	0.004464	0.000000	0.000000	0.026786
225-235	0.001488	0.007440	0.010417	0.007440	0.000000	0.000000	0.026786
235-245	0.005952	0.004464	0.008929	0.000000	0.000000	0.000000	0.019345
245-255	0.000000	0.007440	0.002976	0.000000	0.000000	0.000000	0.010417
255-265	0.000000	0.000000	0.005952	0.000000	0.000000	0.000000	0.005952
265-275	0.000000	0.004464	0.002976	0.000000	0.000000	0.000000	0.007440
275-285	0.004464	0.005952	0.004464	0.000000	0.000000	0.000000	0.014881
285-295	0.001488	0.001488	0.002976	0.000000	0.000000	0.000000	0.005952
295-305	0.005952	0.005952	0.001488	0.000000	0.000000	0.000000	0.013393
305-315	0.007440	0.004464	0.005952	0.001488	0.000000	0.000000	0.019345
315-325	0.004464	0.010417	0.005952	0.000000	0.000000	0.000000	0.020833
325-335	0.002976	0.016369	0.005952	0.002976	0.000000	0.000000	0.028274
335-345	0.004464	0.017857	0.016369	0.010417	0.000000	0.000000	0.049107
345-355	0.008929	0.022321	0.031250	0.007440	0.000000	0.000000	0.069940
Total	0.242560	0.422619	0.239583	0.065476	0.001488	0.000000	0.971726

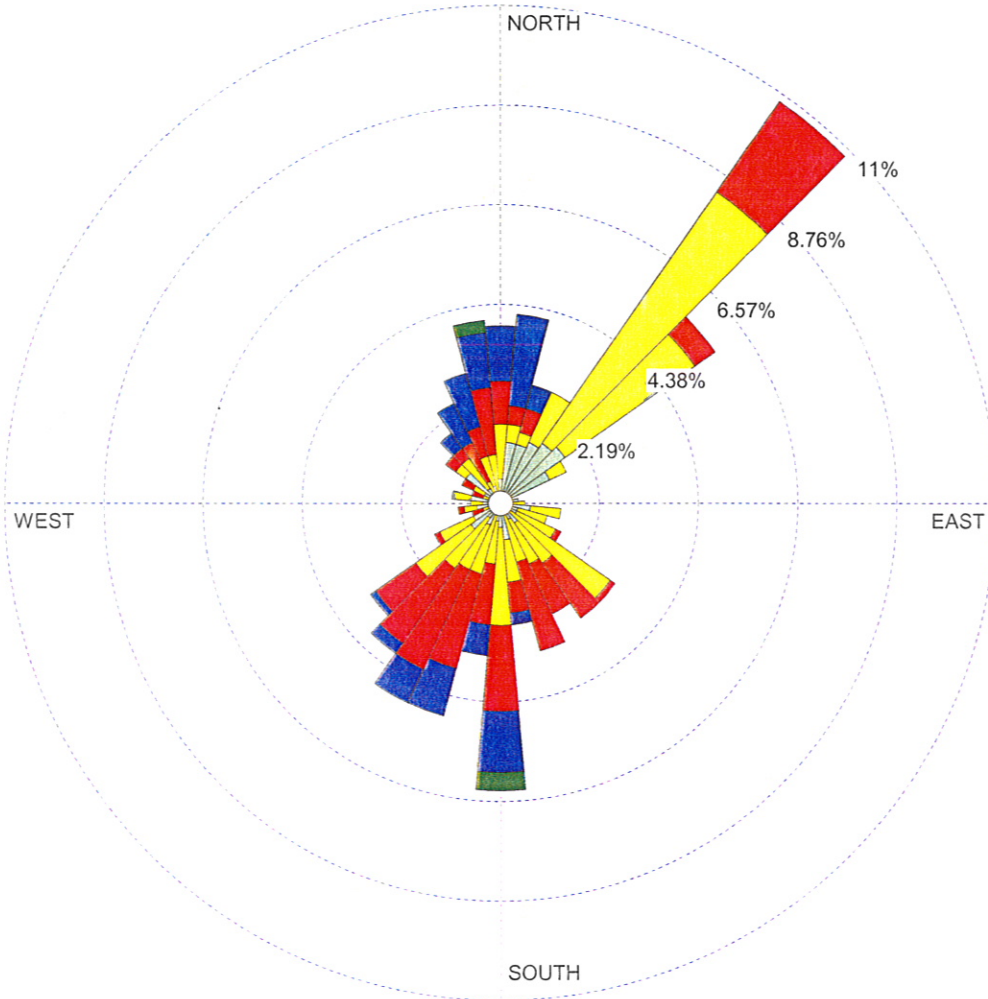
Frequency of Calm Winds: 2.83%
 Average Wind Speed: 3.05 m/s

WIND ROSE PLOT:

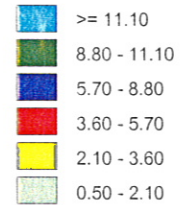
Alton Coal Development, LLC , Alton, Utah
2018 March

DISPLAY:

Wind Speed
Direction (blowing from)



WIND SPEED
(m/s)



Calms: 2.15%

COMMENTS:

DATA PERIOD:

Start Date: 3/1/2018 - 00:00
End Date: 3/31/2018 - 23:00

COMPANY NAME:

Alton Coal Development, LLC - Coal Hollow Mine

MODELER:

B. Kirk Nicholes

CALM WINDS:

2.15%

TOTAL COUNT:

744 hrs.

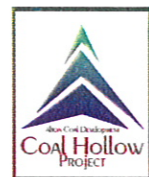
AVG. WIND SPEED:

3.36 m/s

DATE:

4/19/2018

PROJECT NO.:



Station ID: 1
 Start Date: 3/1/2018 - 00:00
 End Date: 3/31/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Count)

	Wind Direction (Blowing From) / Wind Speed (m/s)						
	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	4	9	7	9	0	0	29
5-15	10	3	3	15	0	0	31
15-25	10	2	4	4	0	0	20
25-35	11	9	0	0	0	0	20
35-45	12	50	18	0	0	0	80
45-55	13	26	4	0	0	0	43
55-65	9	3	0	0	0	0	12
65-75	2	0	0	0	0	0	2
75-85	3	0	0	0	0	0	3
85-95	1	3	0	0	0	0	4
95-105	5	5	0	0	0	0	10
105-115	3	5	0	0	0	0	8
115-125	3	7	1	0	0	0	11
125-135	2	20	1	0	0	0	23
135-145	4	8	11	0	0	0	23
145-155	3	8	9	0	0	0	20
155-165	1	9	15	0	0	0	25
165-175	6	7	5	2	0	0	20
175-185	4	16	14	10	3	0	47
185-195	3	7	10	5	0	0	25
195-205	2	10	16	8	0	0	36
205-215	4	8	18	6	0	0	36
215-225	3	10	15	2	0	0	30
225-235	6	11	8	1	0	0	26
235-245	5	6	1	0	0	0	12
245-255	1	2	2	0	0	0	5
255-265	4	2	1	0	0	0	7
265-275	3	2	0	0	0	0	5
275-285	5	3	0	0	0	0	8
285-295	2	1	2	0	0	0	5
295-305	3	2	2	0	0	0	7
305-315	7	2	2	0	0	0	11
315-325	3	6	2	3	0	0	14
325-335	1	3	7	7	0	0	18
335-345	3	5	5	9	0	0	22
345-355	2	6	11	9	2	0	30
Total	163	276	194	90	5	0	744

Frequency of Calm Winds: 16
 Average Wind Speed: 3.36 m/s

Station ID: 1
 Start Date: 3/1/2018 - 00:00
 End Date: 3/31/2018 - 23:00

Run ID: Coal Hollow Mine

Frequency Distribution
 (Normalized)

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

	0.50 - 2.10	2.10 - 3.60	3.60 - 5.70	5.70 - 8.80	8.80 - 11.10	>= 11.10	Total
355-5	0.005376	0.012097	0.009409	0.012097	0.000000	0.000000	0.038978
5-15	0.013441	0.004032	0.004032	0.020161	0.000000	0.000000	0.041667
15-25	0.013441	0.002688	0.005376	0.005376	0.000000	0.000000	0.026882
25-35	0.014785	0.012097	0.000000	0.000000	0.000000	0.000000	0.026882
35-45	0.016129	0.067204	0.024194	0.000000	0.000000	0.000000	0.107527
45-55	0.017473	0.034946	0.005376	0.000000	0.000000	0.000000	0.057796
55-65	0.012097	0.004032	0.000000	0.000000	0.000000	0.000000	0.016129
65-75	0.002688	0.000000	0.000000	0.000000	0.000000	0.000000	0.002688
75-85	0.004032	0.000000	0.000000	0.000000	0.000000	0.000000	0.004032
85-95	0.001344	0.004032	0.000000	0.000000	0.000000	0.000000	0.005376
95-105	0.006720	0.006720	0.000000	0.000000	0.000000	0.000000	0.013441
105-115	0.004032	0.006720	0.000000	0.000000	0.000000	0.000000	0.010753
115-125	0.004032	0.009409	0.001344	0.000000	0.000000	0.000000	0.014785
125-135	0.002688	0.026882	0.001344	0.000000	0.000000	0.000000	0.030914
135-145	0.005376	0.010753	0.014785	0.000000	0.000000	0.000000	0.030914
145-155	0.004032	0.010753	0.012097	0.000000	0.000000	0.000000	0.026882
155-165	0.001344	0.012097	0.020161	0.000000	0.000000	0.000000	0.033602
165-175	0.008065	0.009409	0.006720	0.002688	0.000000	0.000000	0.026882
175-185	0.005376	0.021505	0.018817	0.013441	0.004032	0.000000	0.063172
185-195	0.004032	0.009409	0.013441	0.006720	0.000000	0.000000	0.033602
195-205	0.002688	0.013441	0.021505	0.010753	0.000000	0.000000	0.048387
205-215	0.005376	0.010753	0.024194	0.008065	0.000000	0.000000	0.048387
215-225	0.004032	0.013441	0.020161	0.002688	0.000000	0.000000	0.040323
225-235	0.008065	0.014785	0.010753	0.001344	0.000000	0.000000	0.034946
235-245	0.006720	0.008065	0.001344	0.000000	0.000000	0.000000	0.016129
245-255	0.001344	0.002688	0.002688	0.000000	0.000000	0.000000	0.006720
255-265	0.005376	0.002688	0.001344	0.000000	0.000000	0.000000	0.009409
265-275	0.004032	0.002688	0.000000	0.000000	0.000000	0.000000	0.006720
275-285	0.006720	0.004032	0.000000	0.000000	0.000000	0.000000	0.010753
285-295	0.002688	0.001344	0.002688	0.000000	0.000000	0.000000	0.006720
295-305	0.004032	0.002688	0.002688	0.000000	0.000000	0.000000	0.009409
305-315	0.009409	0.002688	0.002688	0.000000	0.000000	0.000000	0.014785
315-325	0.004032	0.008065	0.002688	0.004032	0.000000	0.000000	0.018817
325-335	0.001344	0.004032	0.009409	0.009409	0.000000	0.000000	0.024194
335-345	0.004032	0.006720	0.006720	0.012097	0.000000	0.000000	0.029570
345-355	0.002688	0.008065	0.014785	0.012097	0.002688	0.000000	0.040323
Total	0.219086	0.370968	0.260753	0.120968	0.006720	0.000000	0.978495

Frequency of Calm Winds: 2.15%
 Average Wind Speed: 3.36 m/s

APPENDIX B

Listing of PM₁₀ Concentrations

Background Monitor 962A

BGI PQ200 Air Sampling System Downloaded 2018 04 jan 12:12:50

Job Details:

Job Name: 18Jan04A.JOB
Version: 5.62
Serial No: 962
Pump Time: 9876:41
Flags: F

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

	Max	Min	Avg	Units
BP	590	586	588	mmHg
TA	10.2	-4.7	3.6	°C
Q	---	---	16.71	Lpm

Timer Information:

	Date	Time
	dd-mmm	hh:mm:ss
Start:	17-02-jan	0:00:08
Stop:	18-03-jan	0:00:05
ET:	23:59	

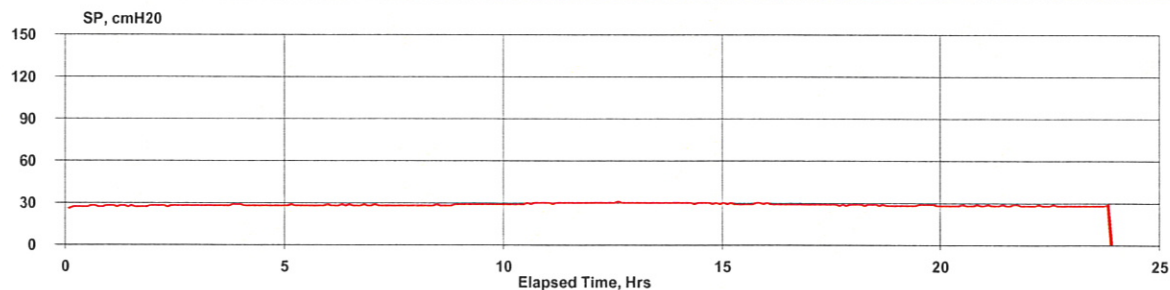
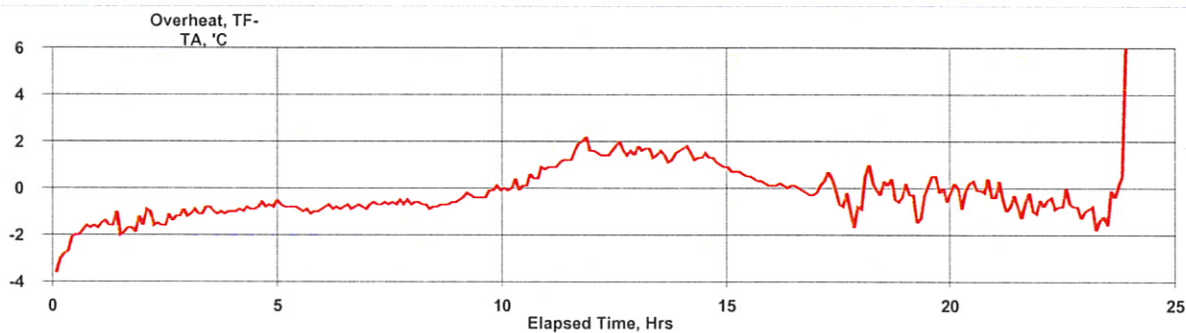
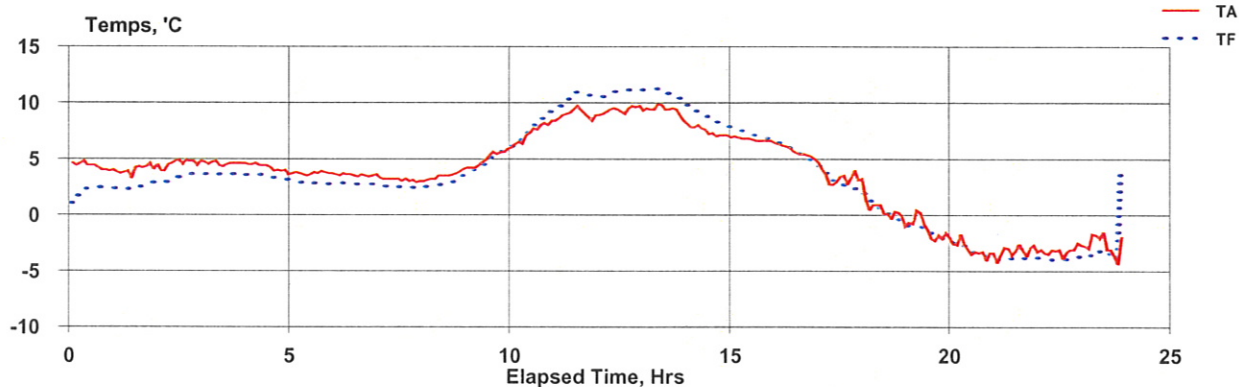
Mass Concentration Data:

Filter ID:	4
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.038 m ³
Mass Conc:	0 µg/m ³

QCV 0.59 %
Max overheat 8.3 °C
occured 03-jan 17:24:35

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 10 jan 10:56:11

Job Details:

Job Name: 18Jan10A.JOB
Version: 5.62
Serial No: 962
Pump Time: 9900:40
Flags:

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

	Max	Min	Avg	Units
BP	586	583	584	mmHg
TA	7.4	-3.9	2.2	°C
Q	---	---	16.71	Lpm

QCV 0.47 %
Max overheat 2.6 °C
occured 09-jan 07:01:39

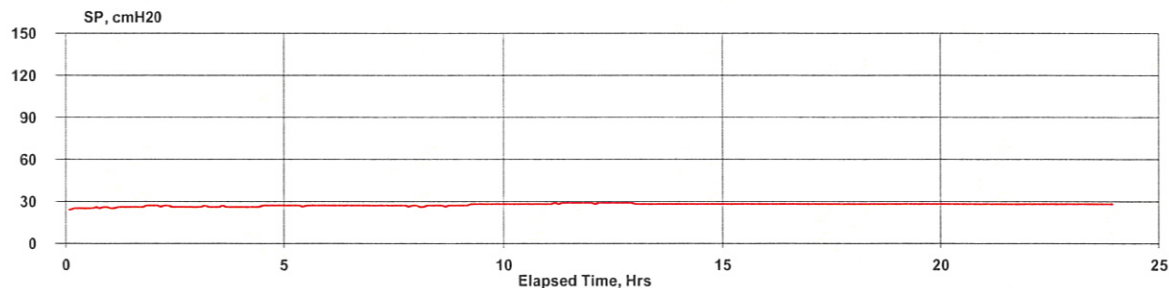
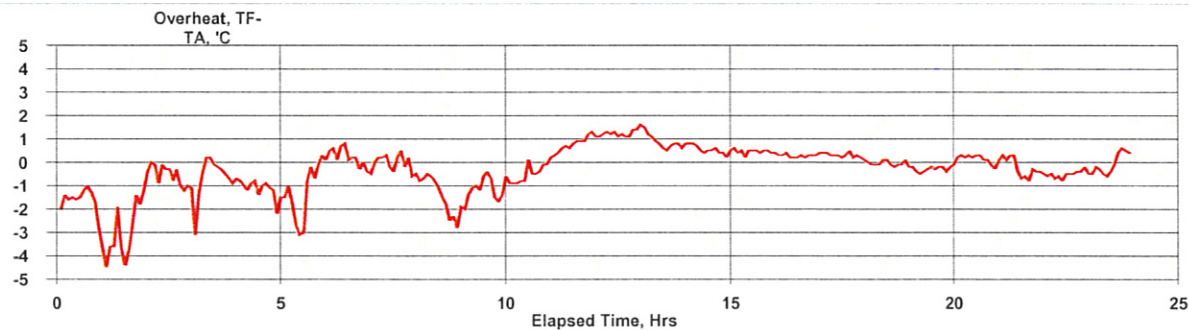
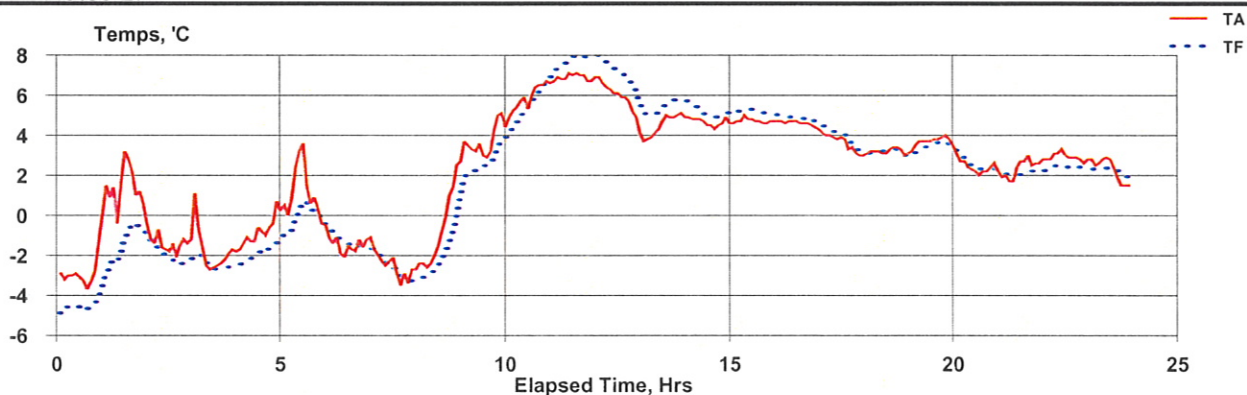
Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-08-jan 0:00:08
Stop: 18-09-jan 0:00:04
ET: 23:59

Mass Concentration Data:

Filter ID: 31
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.037 m³
Mass Conc: 0 µg/m³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 jan 11:39:15

Job Details:

Job Name: 18Jan16A.JOB
Version: 5.62
Serial No: 962
Pump Time: 9924:39
Flags:

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

	Max	Min	Avg	Units
BP	591	587	589	mmHg
TA	12	-5.2	1.8	°C
Q	---	---	16.71	Lpm

QCV 0.59 %

Max overheat 6 °C
occured 15-jan 17:42:47

Timer Information:

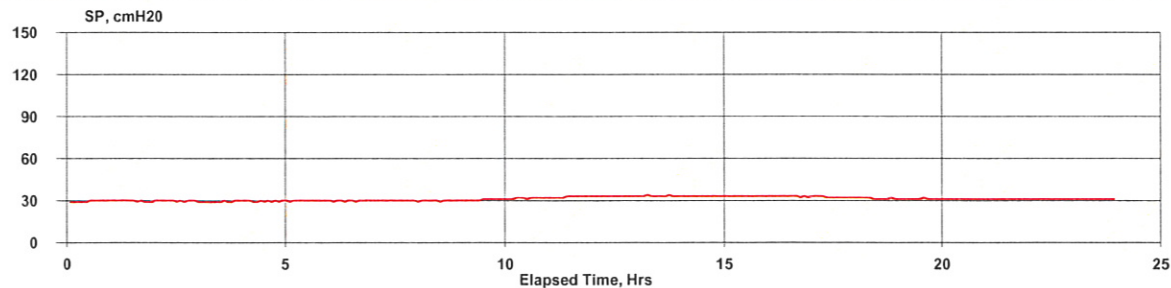
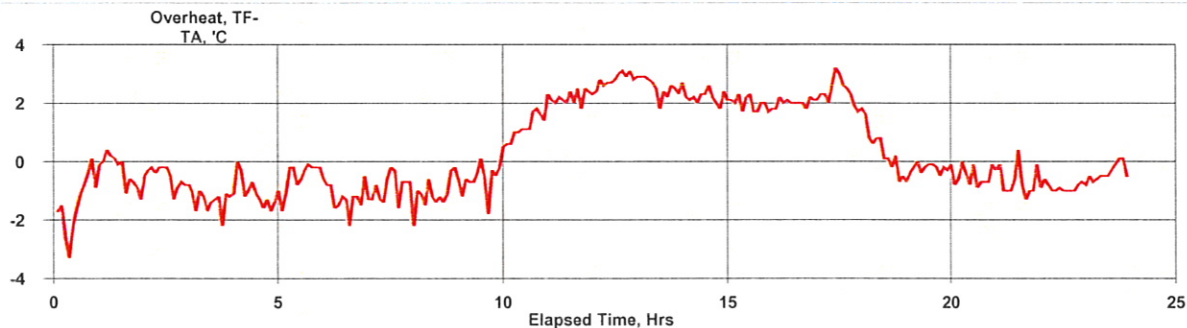
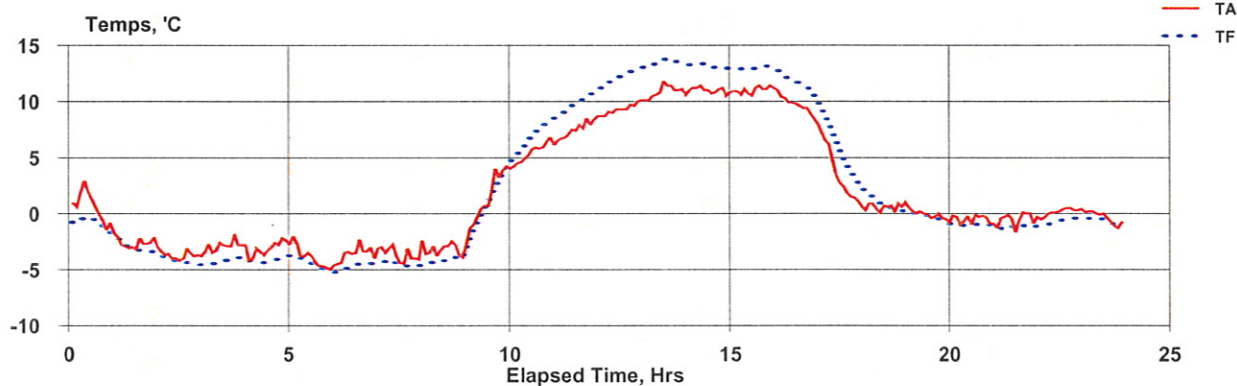
Date Time
dd-mmm hh:mm:ss
Start: 18-14-jan 0:00:08
Stop: 18-15-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 9
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.043 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 jan 13:56:00

Job Details:

Job Name: 18Jan23A.JOB
 Version: 5.62
 Serial No: 962
 Pump Time: 9948:38
 Flags:

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

	Max	Min	Avg	Units
BP	579	574	576	mmHg
TA	5.2	-7.6	-1.2	°C
Q	---	---	16.71	Lpm

QCV 0.59 %
 Max overheat 5 °C
 occurred 22-jan 17:58:44

Timer Information:

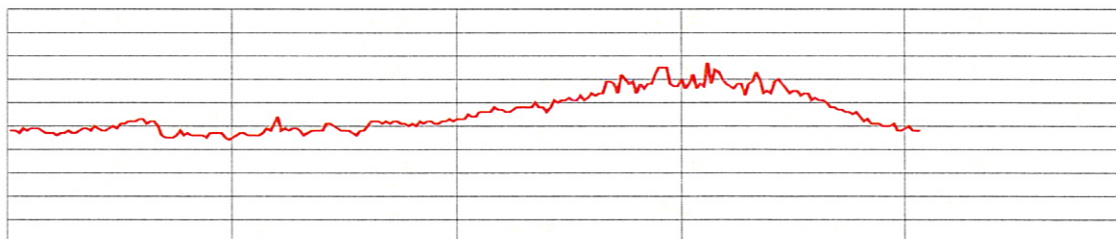
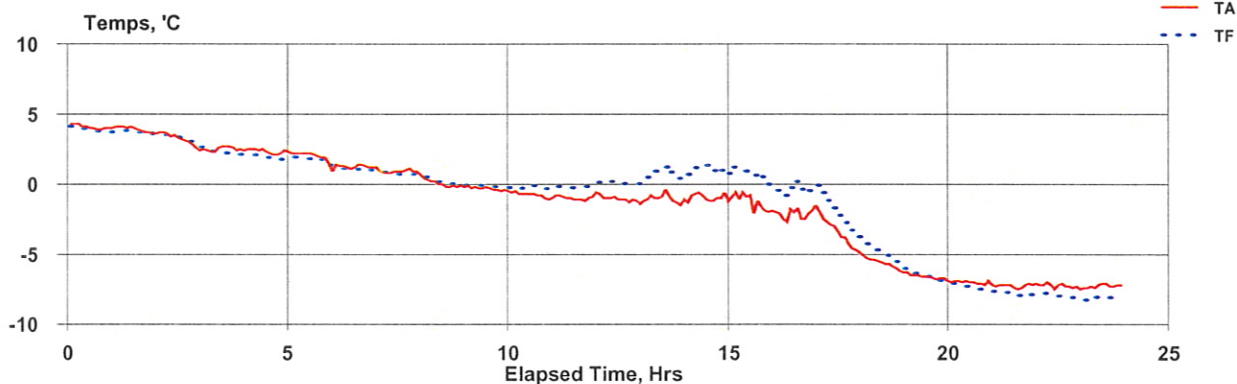
Date	Time
dd-mmm	hh:mm:ss
Start: 18-20-jan	0:00:08
Stop: 18-21-jan	0:00:04
ET: 23:59	

Mass Concentration Data:

Filter ID:	19
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.042 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 29 jan 11:23:53

Job Details:

Job Name: 18Jan29A.JOB
Version: 5.62
Serial No: 962
Pump Time: 9972:37
Flags:

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

	Max	Min	Avg	Units
BP	587	579	583	mmHg
TA	4	-11.9	-3.7	°C
Q	---	---	16.71	Lpm

QCV 0.61 %

Max overheat 6.3 °C
occured 27-jan 17:55:08

Timer Information:

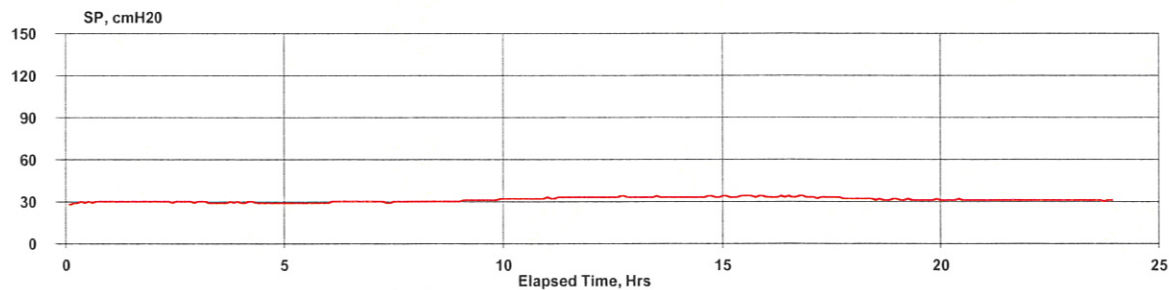
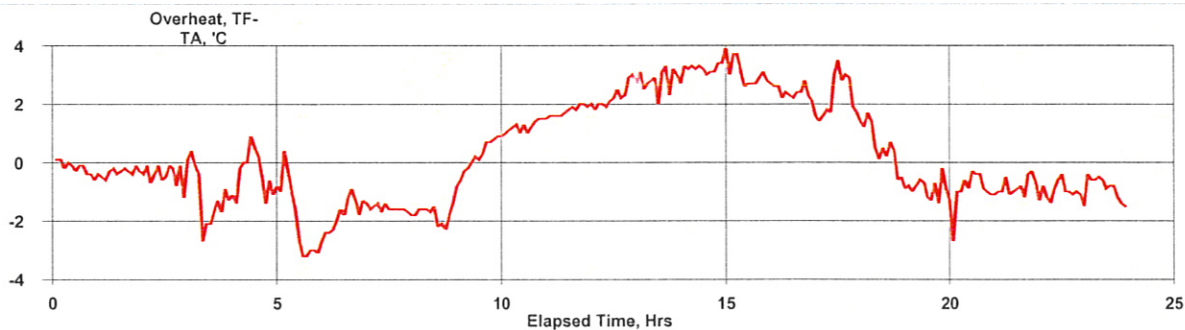
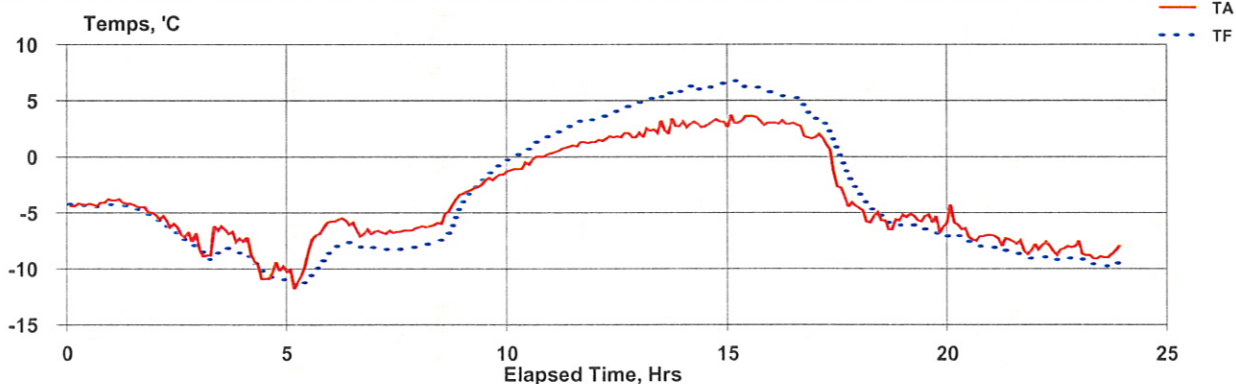
	Date	Time
	dd-mmm	hh:mm:ss
Start:	18-26-jan	0:00:08
Stop:	18-27-jan	0:00:05
ET:	23:59	

Mass Concentration Data:

Filter ID:	37
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.043 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 02 feb 09:47:52

Job Details:

Job Name: 18Feb02A.JOB
Version: 5.62
Serial No: 962
Pump Time: 9996:36
Flags:

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

	Max	Min	Avg	Units
BP	588	583	585	mmHg
TA	14.3	-3.5	4.7	°C
Q	---	---	16.71	Lpm

QCV 0.6 %
Max overheat 3.3 °C
occured 01-feb 12:45:51

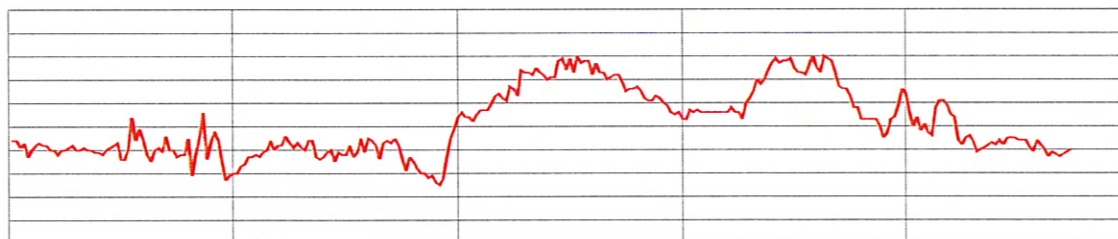
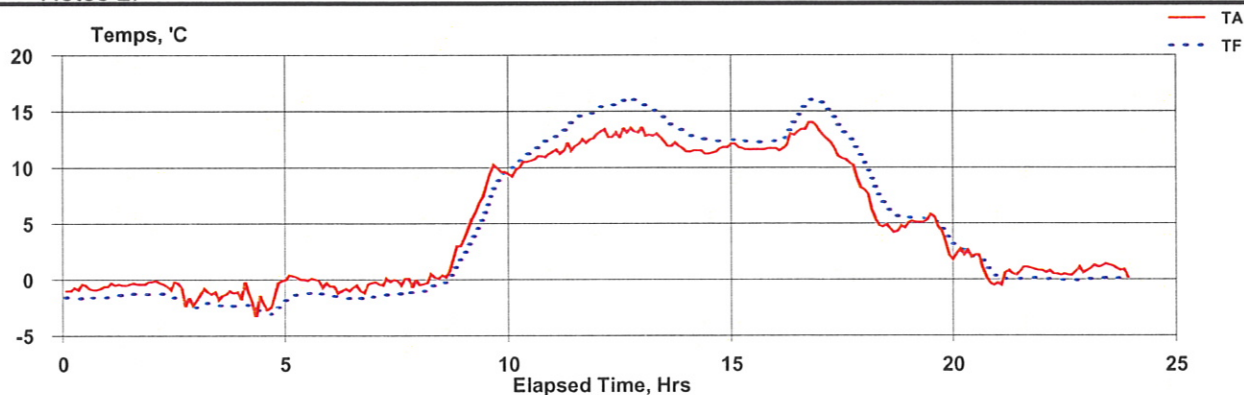
Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-01-feb	0:00:08
Stop: 18-02-feb	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:	24.039 m ³
Mass Conc:	0 µg/m ³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 08 feb 15:13:34

Job Details:

Job Name: 18Feb08A.JOB
Version: 5.62
Serial No: 962
Pump Time: :020:35
Flags:

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

	Max	Min	Avg	Units
BP	590	586	588	mmHg
TA	14.3	-9.5	3	°C
Q	---	---	16.71	Lpm

QCV 0.56 %
Max overheat 3.9 °C
occured 07-feb 14:11:09

Timer Information:

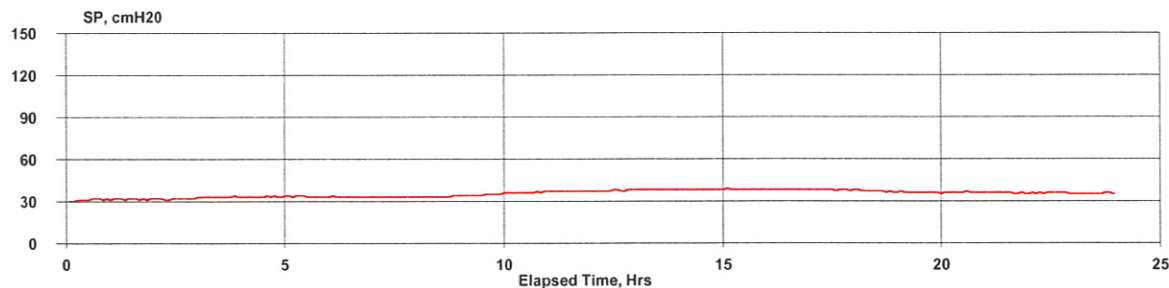
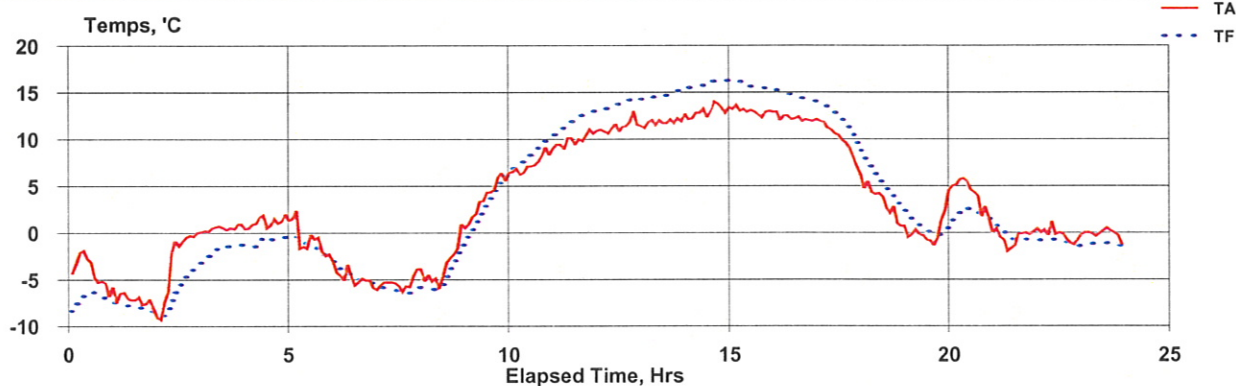
Date Time
dd-mmm hh:mm:ss
Start: 18-07-feb 0:00:08
Stop: 18-08-feb 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 22
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.04 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 14 feb 12:08:55

Job Details:

Job Name: 18Feb14A.JOB
Version: 5.62
Serial No: 962
Pump Time: :044:34
Flags:

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

	Max	Min	Avg	Units
BP	587	578	584	mmHg
TA	4.6	-5.6	-0.3	°C
Q	---	---	16.71	Lpm

QCV 0.56 %
Max overheat 4.8 °C
occured 13-feb 14:43:34

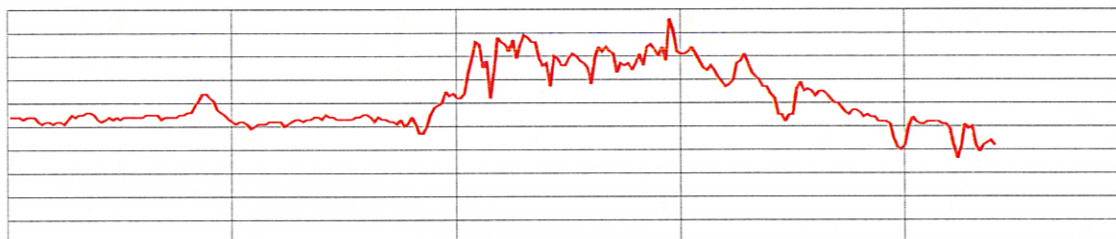
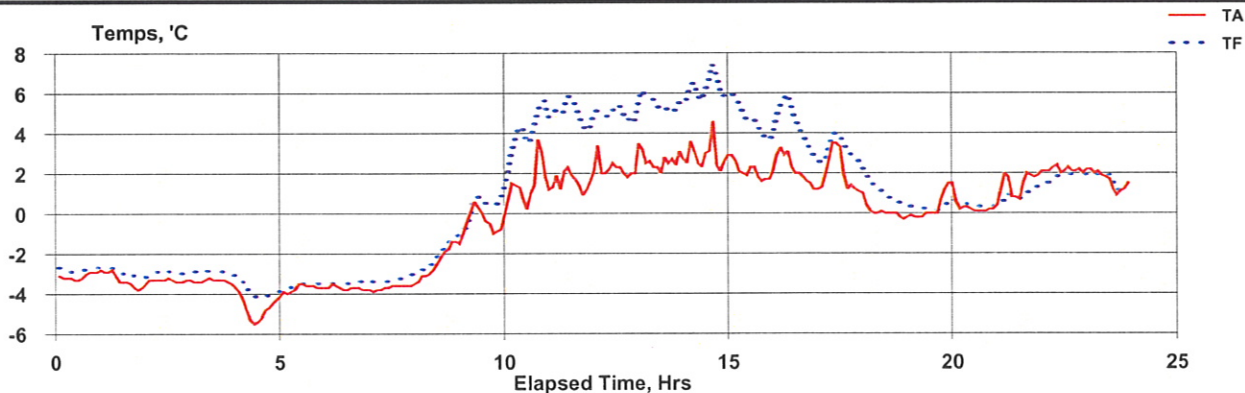
Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-13-feb	0:00:08
Stop: 18-14-feb	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:	24.042 m ³
Mass Conc:	0 µg/m ³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 20 feb 12:21:22

Job Details:

Job Name: 18Feb20A.JOB
Version: 5.62
Serial No: 962
Pump Time: :068:33
Flags:

Job Code:

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

	Max	Min	Avg	Units
BP	575	568	570	mmHg
TA	2.7	-13.3	-4.8	°C
Q	---	---	16.71	Lpm

QCV 0.59 %

Max overheat 4.6 °C
occured 19-feb 15:14:20

Timer Information:

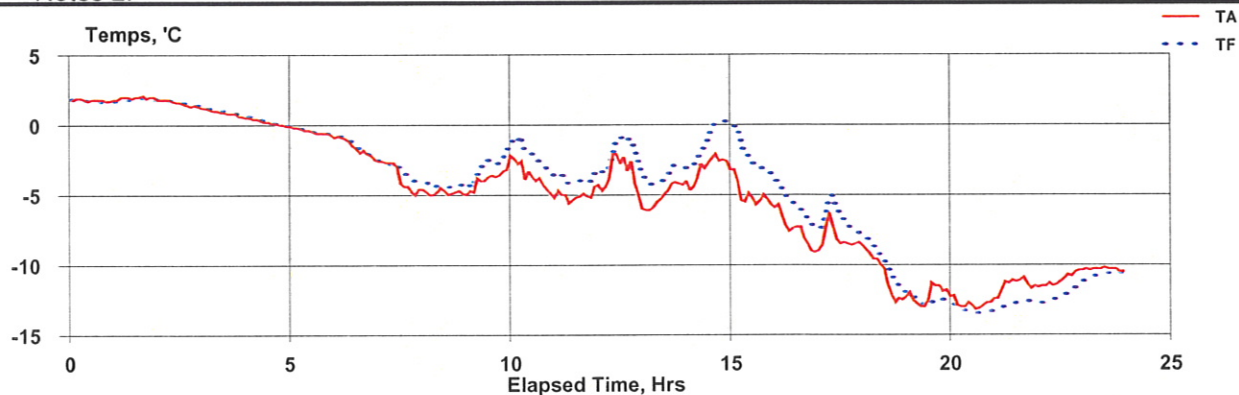
Date	Time
dd-mmm	hh:mm:ss
Start: 18-19-feb	0:00:08
Stop: 18-20-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	9
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.042 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 27 feb 11:31:39

Job Details:

Job Name: 18Feb27A.JOB
Version: 5.62
Serial No: 962
Pump Time: :092:32
Flags:

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

	Max	Min	Avg	Units
BP	584	579	582	mmHg
TA	2.3	-16.7	-7.5	°C
Q	---	---	16.71	Lpm

QCV 0.57 %
Max overheat 4.5 °C
occured 25-feb 15:46:15

Timer Information:

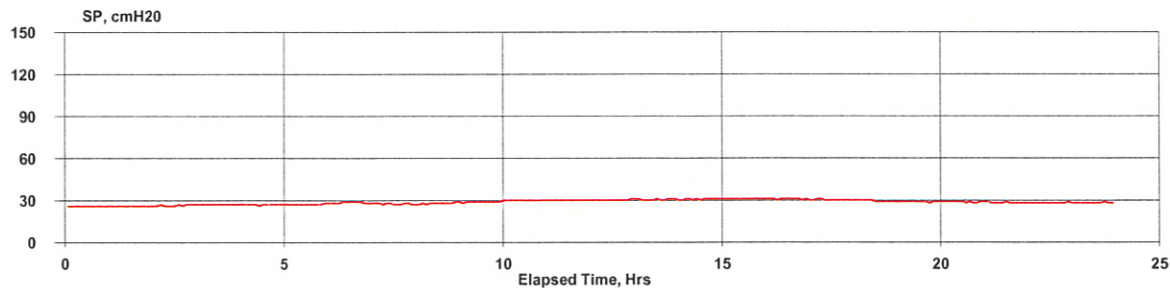
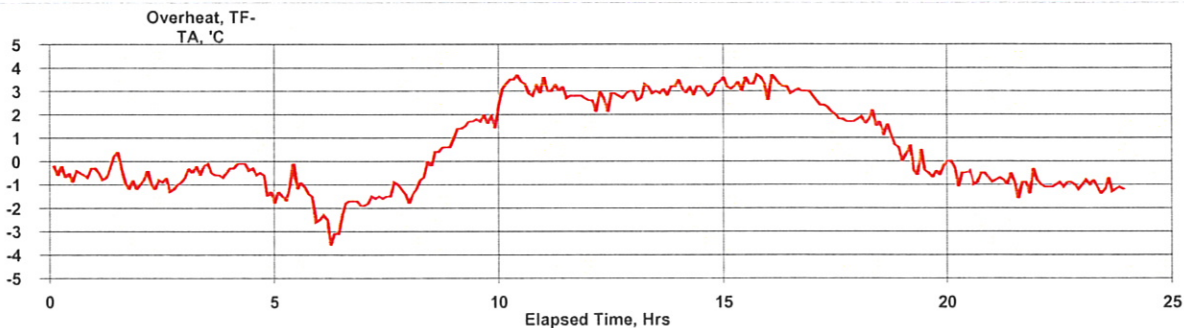
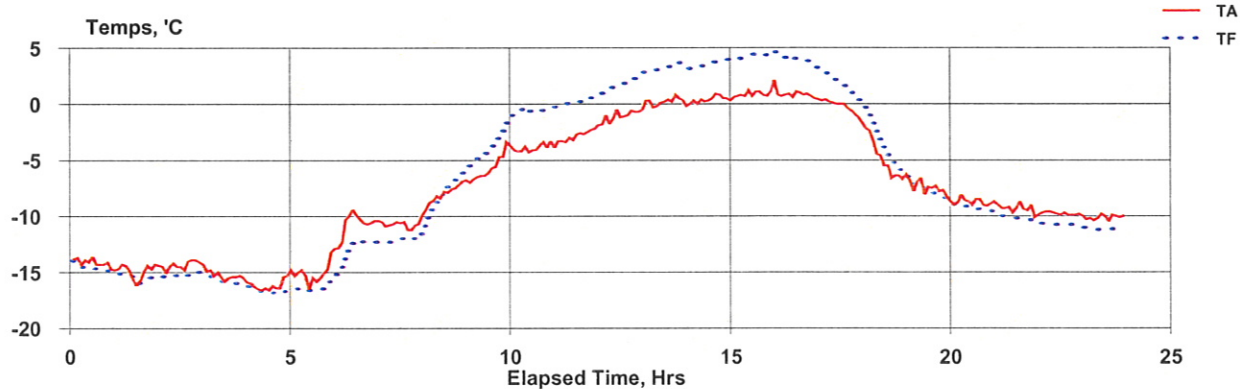
Date Time
dd-mmm hh:mm:ss
Start: 18-25-feb 0:00:08
Stop: 18-26-feb 0:00:04
ET: 23:59

Mass Concentration Data:

Filter ID: 12
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.042 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 05 mar 16:26:54

Job Details:

Job Name: 18Mar05A.JOB
Version: 5.62
Serial No: 962
Pump Time: :116:31
Flags:

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

	Max	Min	Avg	Units
BP	581	577	579	mmHg
TA	8.5	-3.5	3	°C
Q	---	---	16.71	Lpm

QCV 0.59 %
Max overheat 3.5 °C
occured 04-mar 17:32:10

Timer Information:

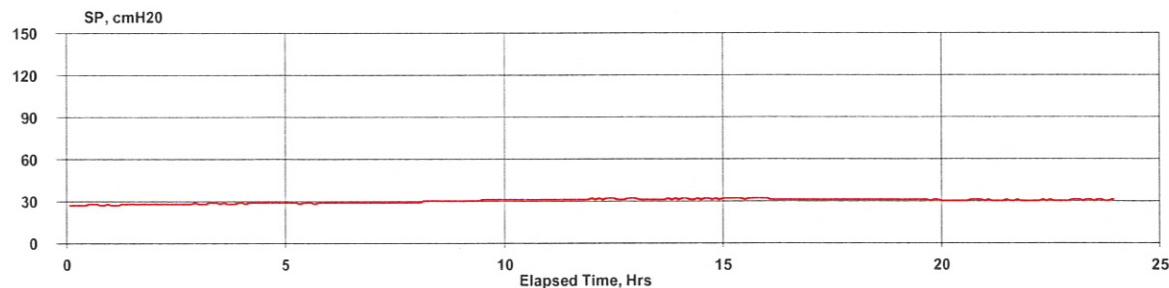
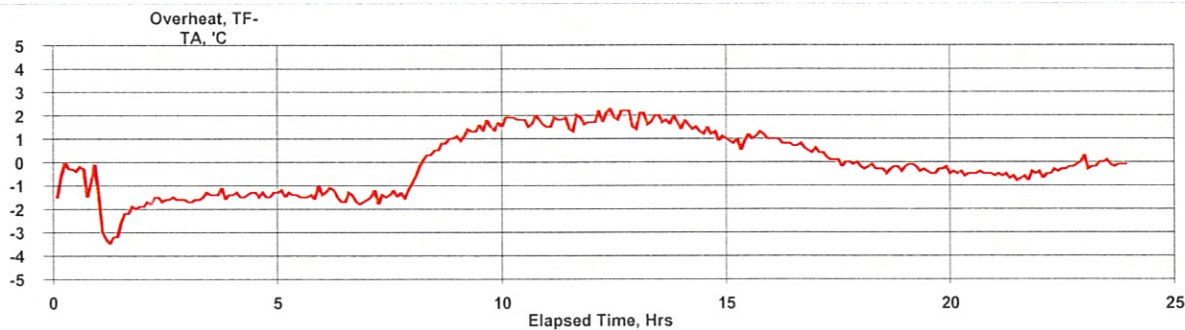
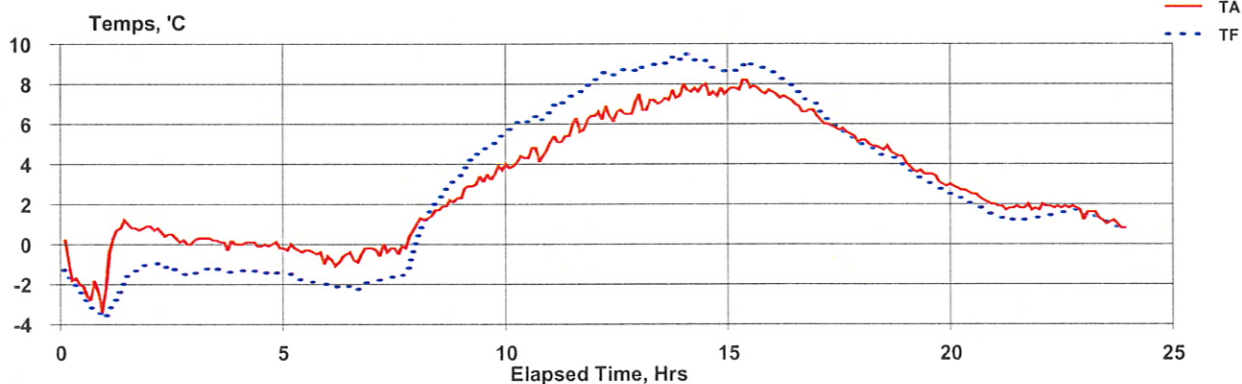
Date Time
dd-mmm hh:mm:ss
Start: 18-03-mar 0:00:08
Stop: 18-04-mar 0:00:04
ET: 23:59

Mass Concentration Data:

Filter ID: 20
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.043 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 12 mar 09:57:56

Job Details:

Job Name: 18Mar12A.JOB
Version: 5.62
Serial No: 962
Pump Time: :140:30
Flags:

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

	Max	Min	Avg	Units
BP	582	580	581	mmHg
TA	13.8	-3.8	4.1	°C
Q	---	---	16.71	Lpm

QCV 0.57 %

Max overheat 4 °C
occured 09-mar 18:32:30

Timer Information:

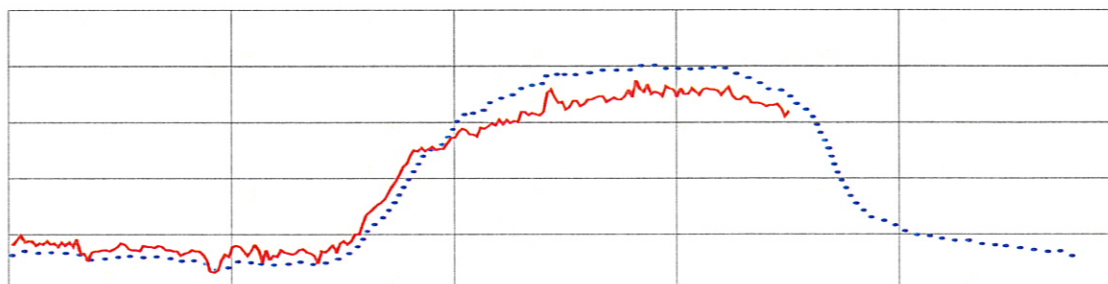
Date	Time
dd-mmm	hh:mm:ss
Start: 18-09-mar	0:00:08
Stop: 18-10-mar	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	37
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.042 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 mar 09:45:28

Job Details:

Job Name: 18Mar16A.JOB
Version: 5.62
Serial No: 962
Pump Time: :164:29
Flags:

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

	Max	Min	Avg	Units
BP	579	575	576	mmHg
TA	2.3	-7.3	-1.5	°C
Q	---	---	16.71	Lpm

QCV 0.55 %
Max overheat 3.3 °C
occured 15-mar 16:08:25

Timer Information:

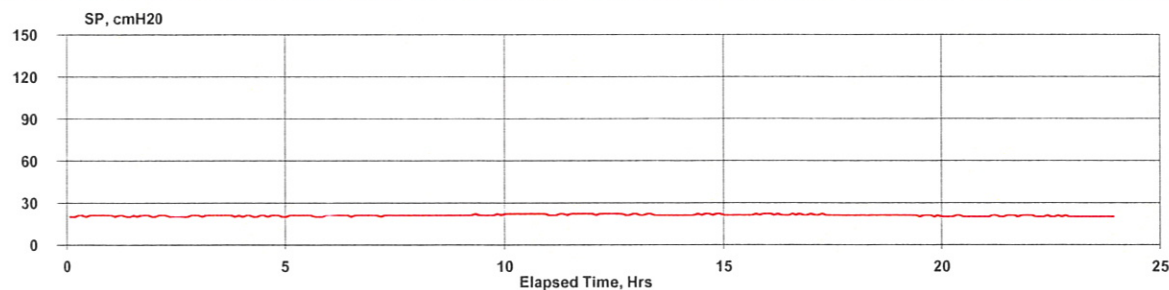
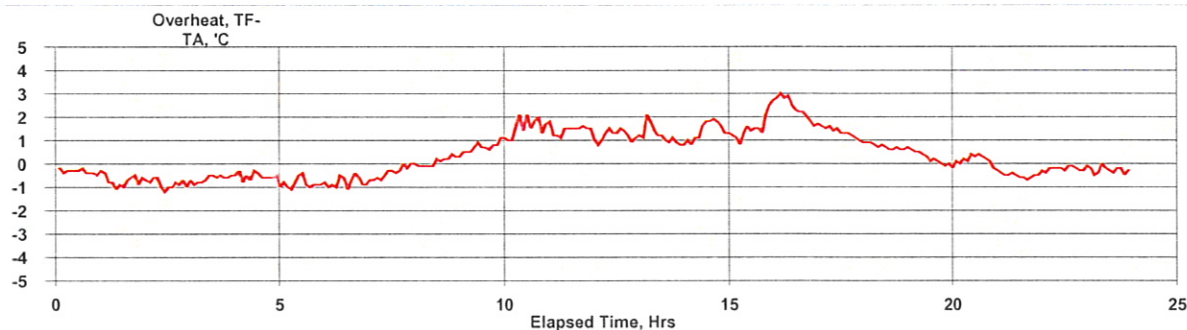
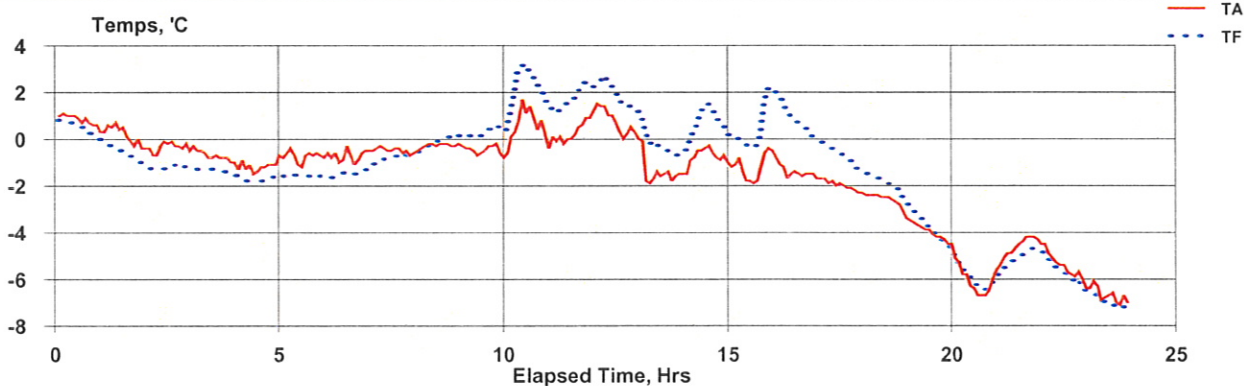
Date Time
dd-mmm hh:mm:ss
Start: 18-15-mar 0:00:08
Stop: 18-16-mar 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 4
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.041 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 mar 09:33:28

Job Details:

Job Name: 18Mar23A.JOB
Version: 5.62
Serial No: 962
Pump Time: :188:28
Flags:

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

	Max	Min	Avg	Units
BP	585	581	583	mmHg
TA	14	-1.1	6	°C
Q	---	---	16.71	Lpm

QCV 0.53 %
Max overheat 3.4 °C
occured 21-mar 11:20:44

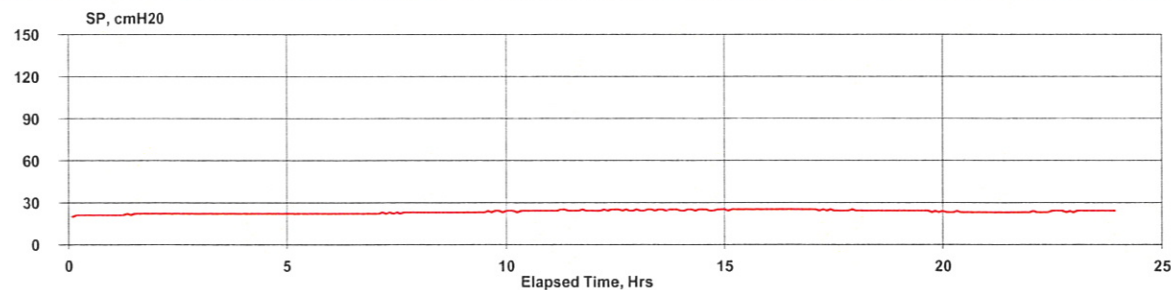
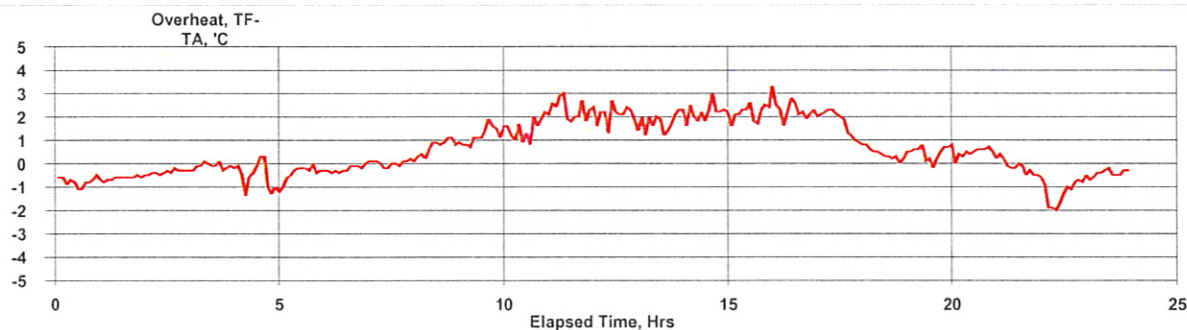
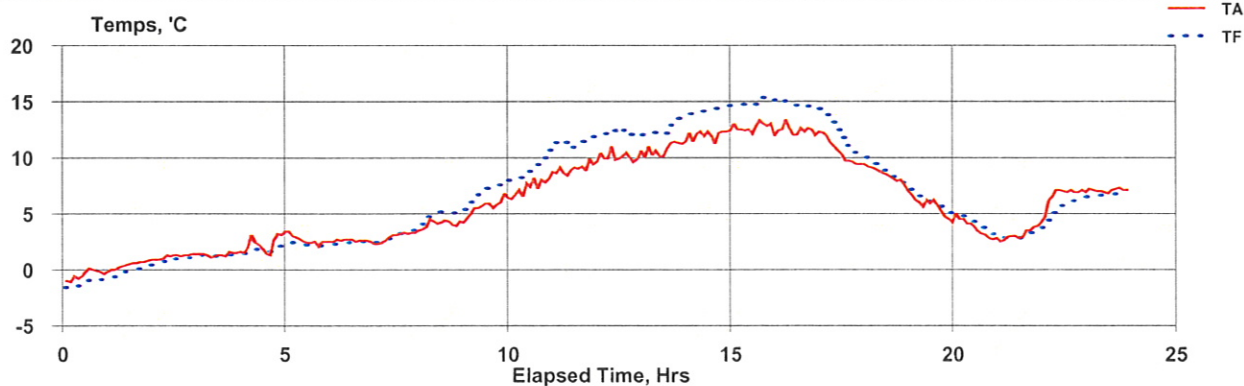
Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-21-mar 0:00:08
Stop: 18-22-mar 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 21
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.043 m³
Mass Conc: 0 µg/m³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 28 mar 11:06:59

Job Details:

Job Name: 18Mar28A.JOB
Version: 5.62
Serial No: 962
Pump Time: :212:27
Flags:

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

	Max	Min	Avg	Units
BP	584	580	582	mmHg
TA	8.3	-5.5	0.4	°C
Q	---	---	16.71	Lpm

QCV 0.58 %
Max overheat 3.3 °C
occured 27-mar 15:40:15

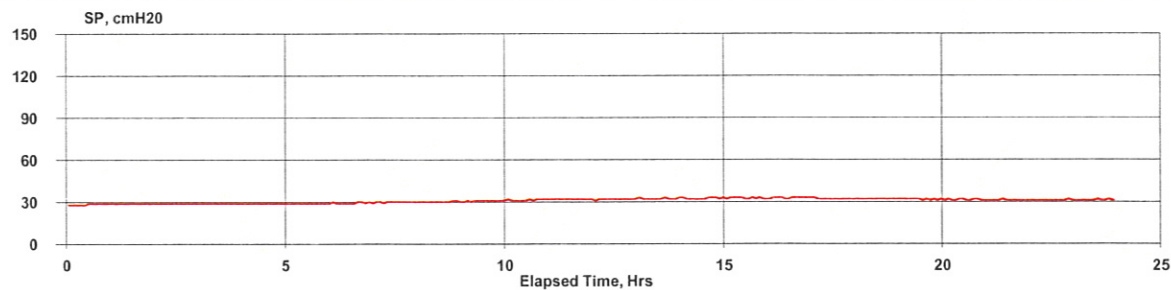
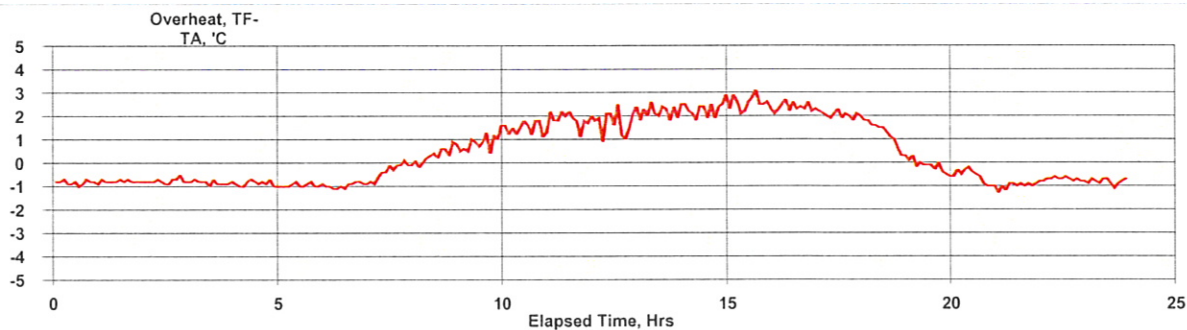
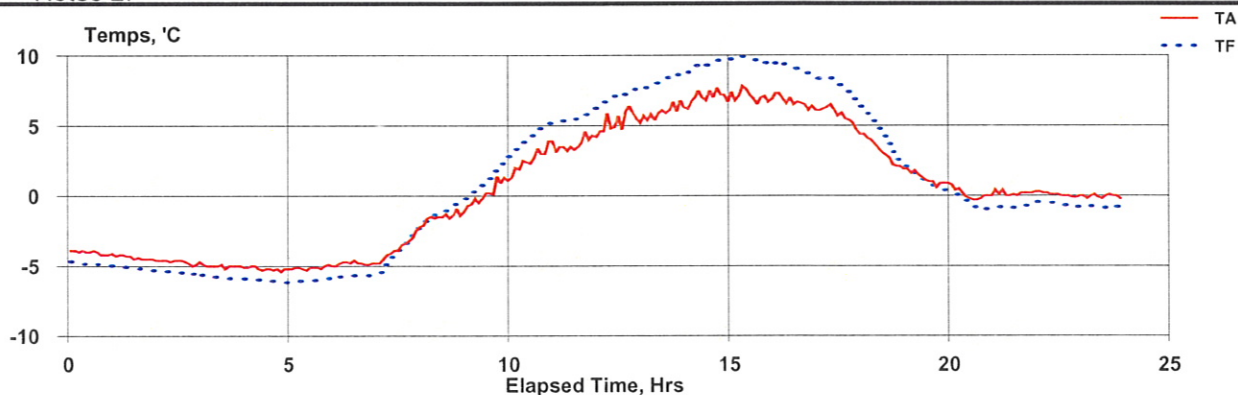
Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-27-mar 0:00:08
Stop: 18-28-mar 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: 24.043 m³
Mass Conc: 0 µg/m³

Notes 1:
Notes 2:



Compliance Monitor 963B

BGI PQ200 Air Sampling System Downloaded 2018 04 jan 12:31:56

Job Details:

Job Name: 18Jan04B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5640:54
Flags:

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

	Max	Min	Avg	Units
BP	596	591	594	mmHg
TA	10.2	-4	3.1	°C
Q	---	---	16.7	Lpm

QCV 0.54 %
Max overheat 2.4 °C
occured 03-jan 17:36:21

Timer Information:

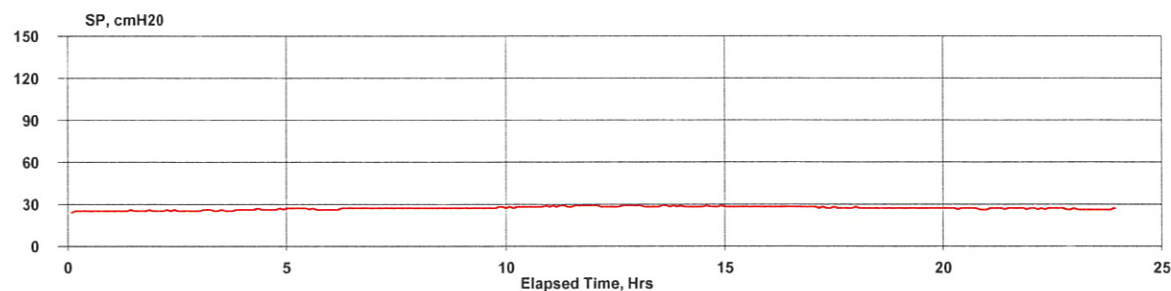
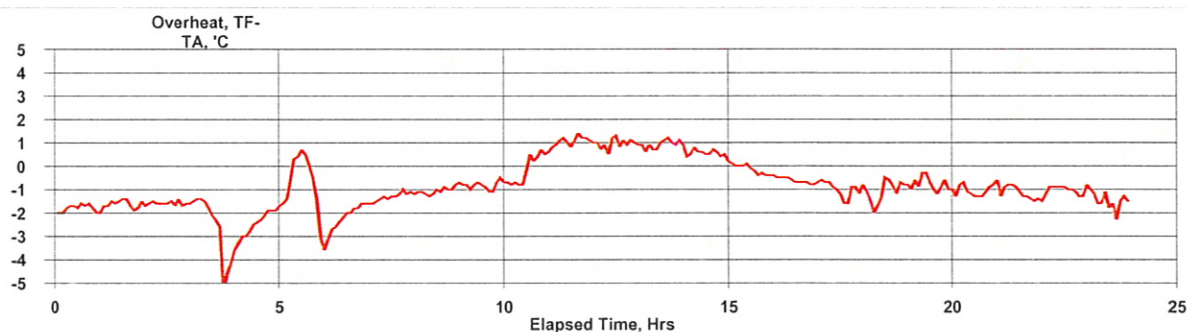
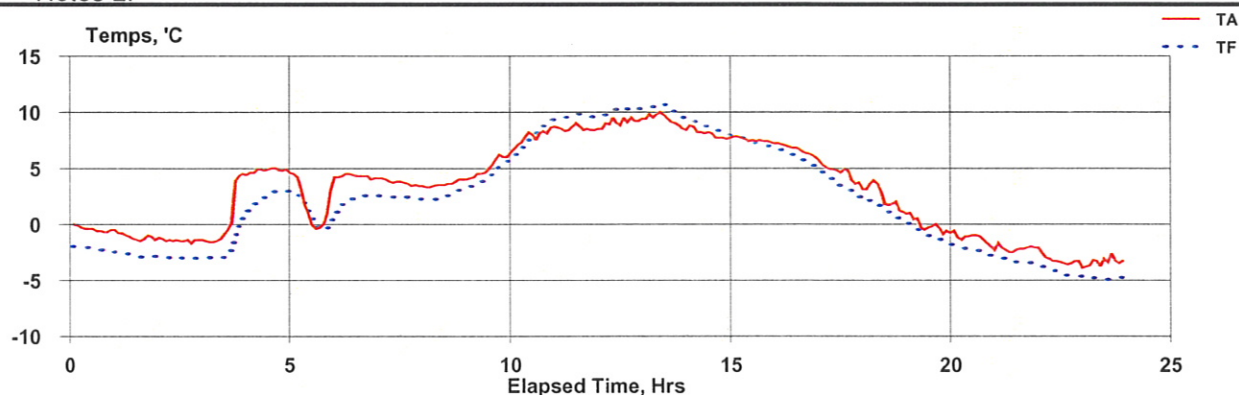
Date Time
dd-mmm hh:mm:ss
Start: 17-02-jan 0:00:08
Stop: 18-03-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 5
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.04 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 10 jan 11:18:45

Job Details:

Job Name: 18Jan10B.JOB
 Version: 5.62
 Serial No: 963
 Pump Time: 5664:53
 Flags:

Job Code:

Site Name: 963B

Station Code:

Operators: KN

User1: ++++++

User2:

	Max	Min	Avg	Units
BP	593	589	590	mmHg
TA	7.7	-5.4	1.5	°C
Q	---	---	16.7	Lpm

QCV 0.55 %
 Max overheat 1.2 °C
 occurred 09-jan 22:27:24

Timer Information:

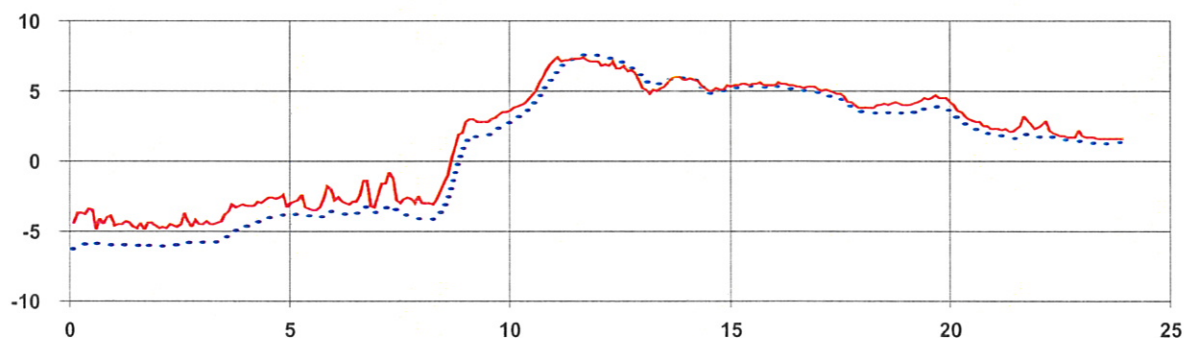
Date	Time
dd-mmm	hh:mm:ss
Start: 18-08-jan	0:00:08
Stop: 18-09-jan	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	32
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.042 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



Overheat, TF-

Job Details:

Job Name: 18Jan16B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5688:52
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: |||||

User2:

	Max	Min	Avg	Units
BP	597	593	595	mmHg
TA	11.8	-4.5	2.4	°C
Q	---	---	16.7	Lpm

QCV 0.54 %
Max overheat 2.3 °C
occured 14-jan 12:58:12

Timer Information:

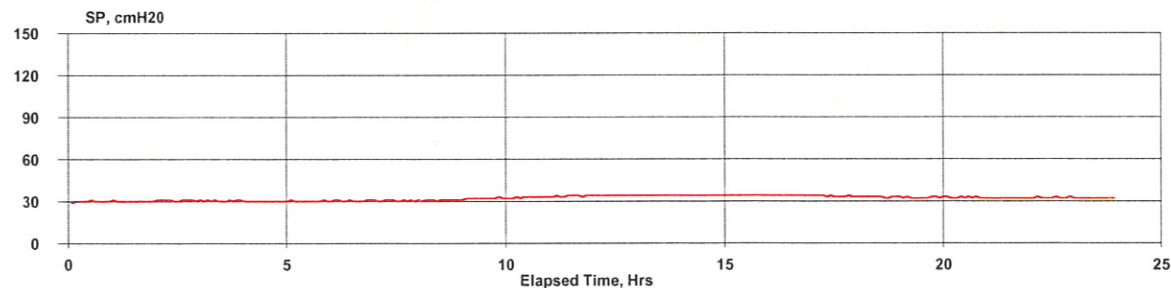
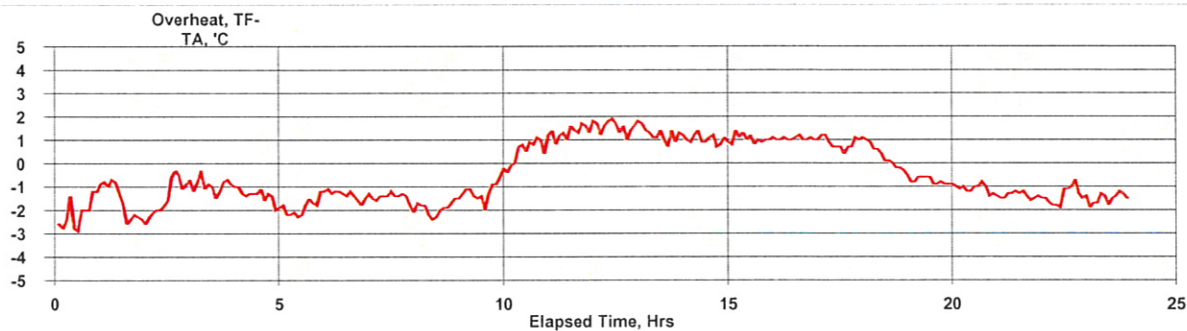
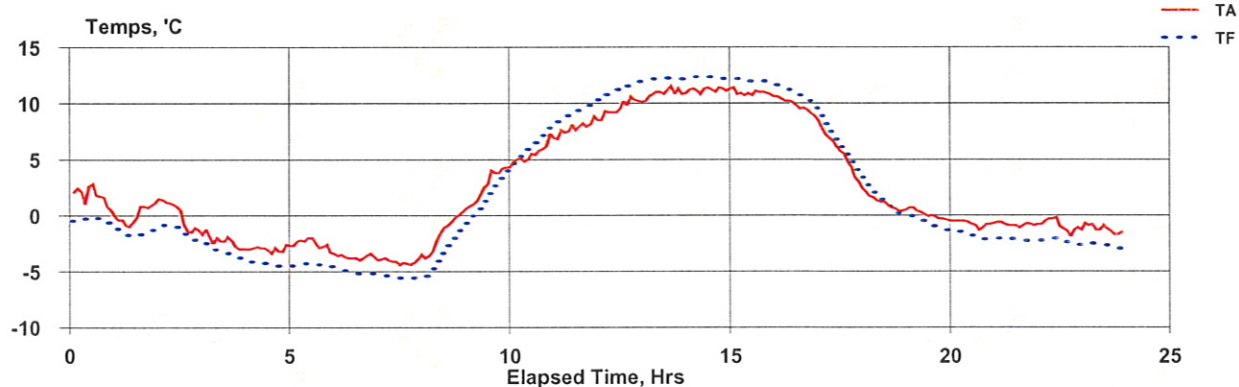
	Date	Time
	dd-mmm	hh:mm:ss
Start:	18-14-jan	0:00:08
Stop:	18-15-jan	0:00:05
ET:	23:59	

Mass Concentration Data:

Filter ID:	10
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.04 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 jan 14:11:56

Job Details:

Job Name: 18Jan23B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5712:51
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: |||||
User2:

	Max	Min	Avg	Units
BP	585	581	582	mmHg
TA	5.8	-6.6	-0.5	°C
Q	---	---	16.7	Lpm

QCV 0.56 %
Max overheat 2.4 °C
occured 22-jan 17:19:58

Timer Information:

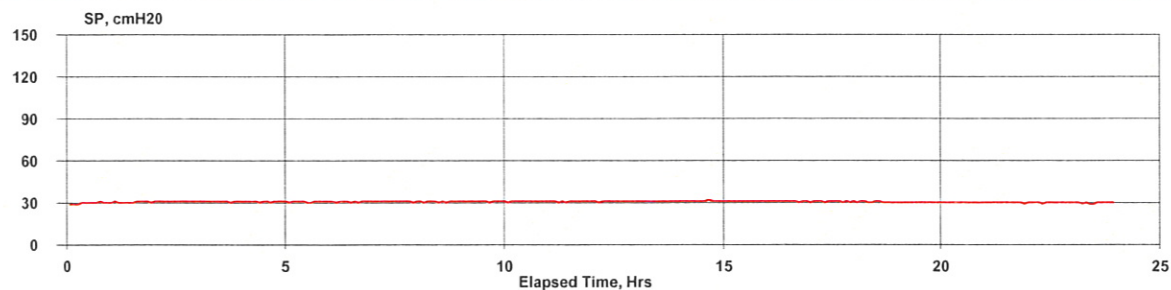
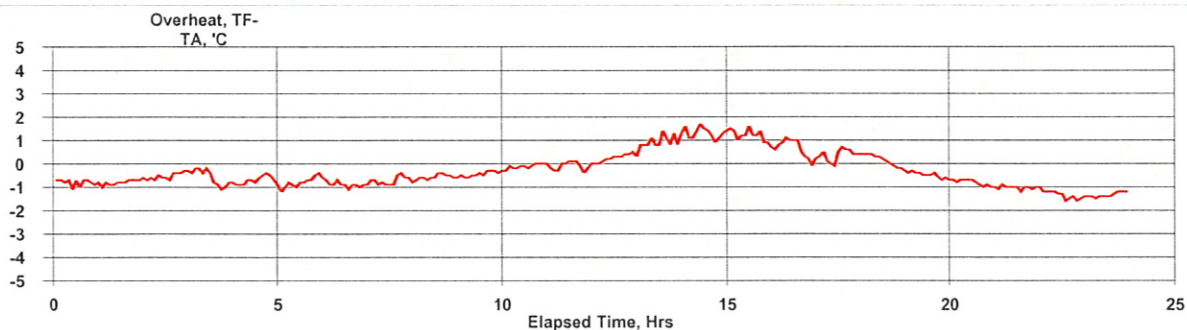
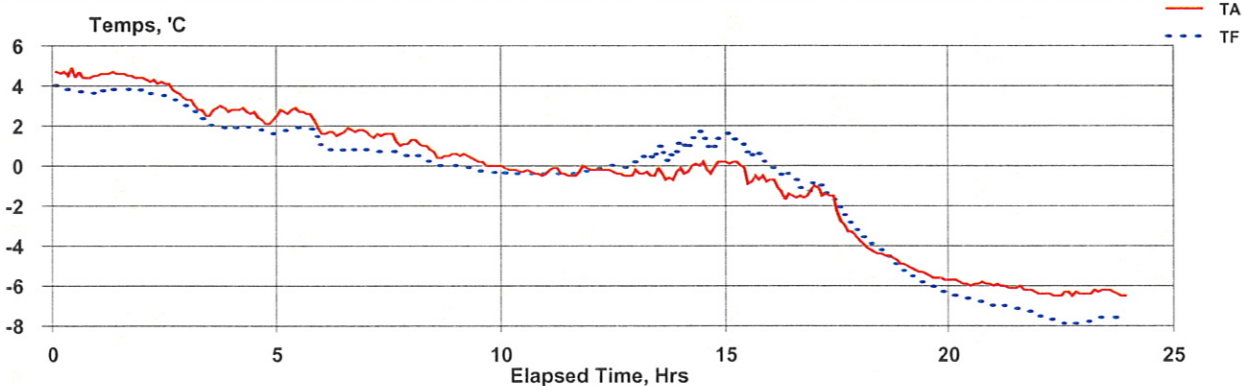
Date Time
dd-mmm hh:mm:ss
Start: 18-20-jan 0:00:08
Stop: 18-21-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 20
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.04 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 29 jan 11:34:48

Job Details:

Job Name: 18Jan29B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5736:50
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: |||||

User2:

	Max	Min	Avg	Units
BP	593	585	590	mmHg
TA	4.6	-9.5	-3.1	°C
Q	---	---	16.71	Lpm

QCV 0.58 %

Max overheat 2.8 °C
occured 26-jan 14:56:02

Timer Information:

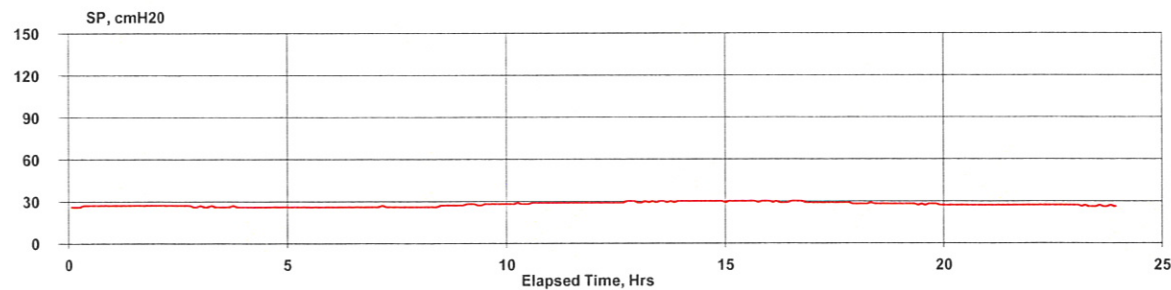
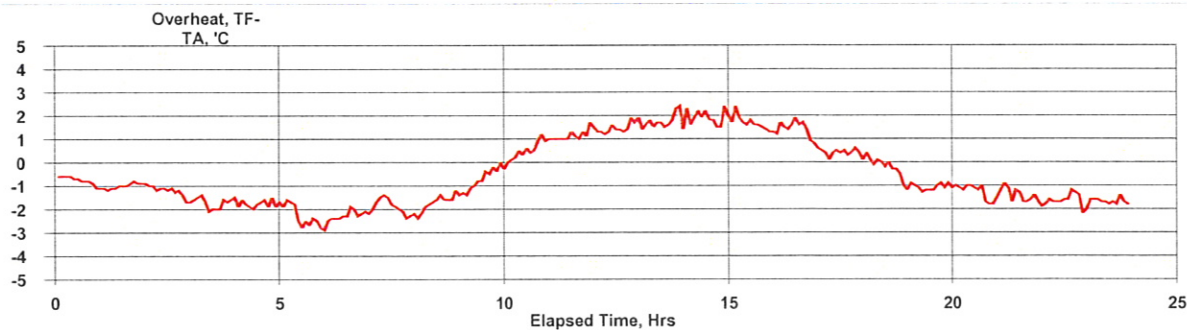
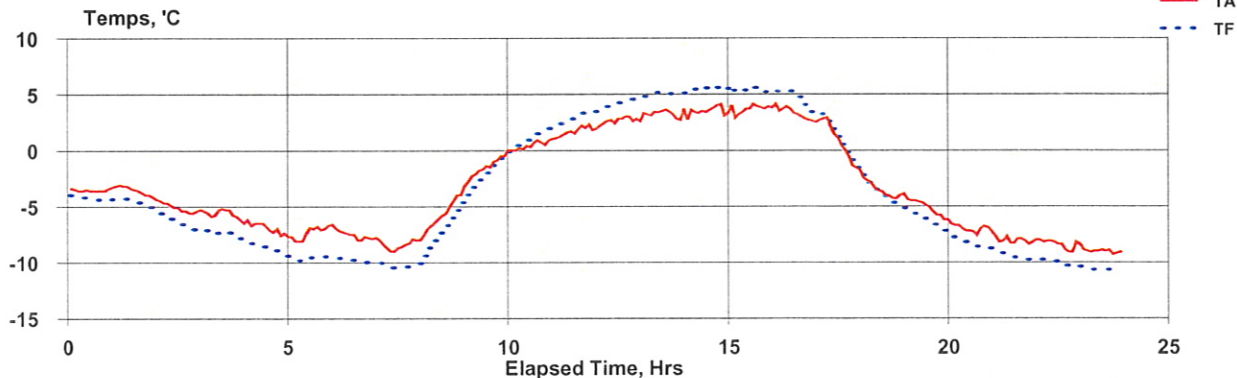
Date Time
dd-mmm hh:mm:ss
Start: 18-26-jan 0:00:08
Stop: 18-27-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 38
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.042 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 02 feb 10:06:56

Job Details:

Job Name: 18Feb02B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5760:49
Flags:

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

	Max	Min	Avg	Units
BP	594	589	591	mmHg
TA	14	-3.5	4.4	°C
Q	---	---	16.7	Lpm

QCV 0.55 %
Max overheat 2.5 °C
occured 01-feb 11:58:38

Timer Information:

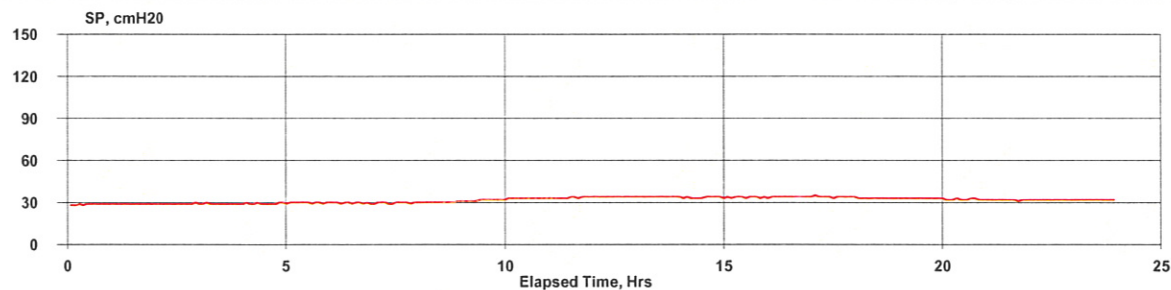
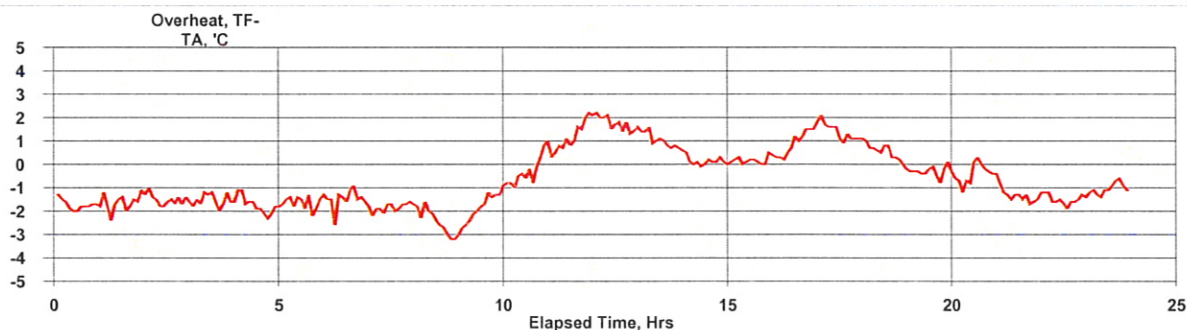
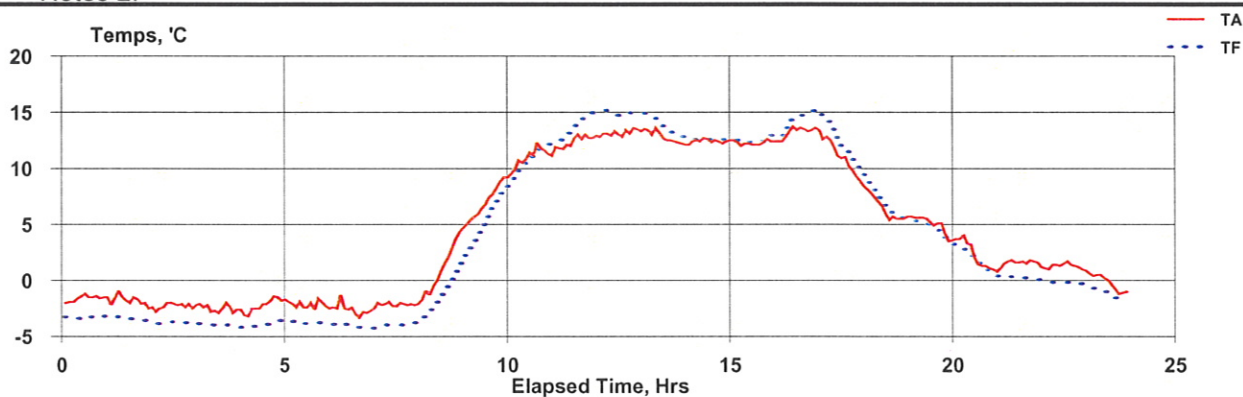
Date Time
dd-mmm hh:mm:ss
Start: 18-01-feb 0:00:08
Stop: 18-02-feb 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 13
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.042 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 08 feb 14:53:12

Job Details:

Job Name: 18Feb08B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5784:48
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ++++++

User2:

	Max	Min	Avg	Units
BP	597	592	595	mmHg
TA	14.4	-6.3	4.1	°C
Q	---	---	16.7	Lpm

QCV 0.52 %

Max overheat 3 °C

occured 07-feb 12:56:06

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-07-feb	0:00:08
Stop: 18-08-feb	0:00:04

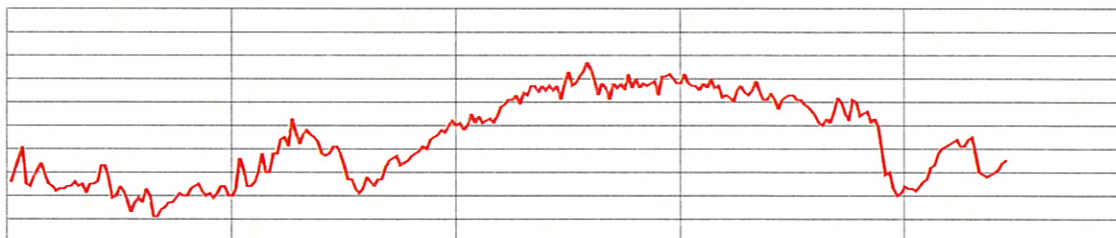
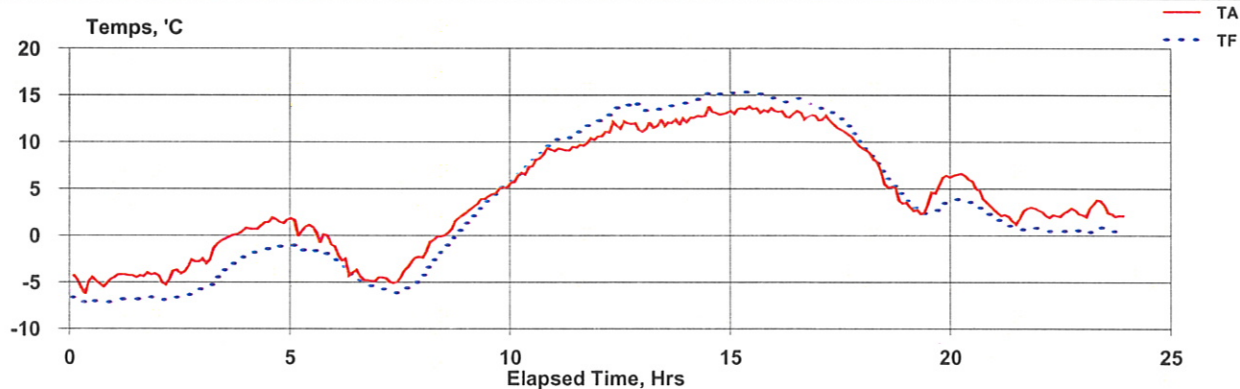
ET: 23:59

Mass Concentration Data:

Filter ID:	23
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.04 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 14 feb 12:23:54

Job Details:

Job Name: 18Feb14B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5808:47
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ++++++

User2:

	Max	Min	Avg	Units
BP	593	584	590	mmHg
TA	5.6	-4	0	°C
Q	---	---	16.7	Lpm

Timer Information:

	Date	Time
	dd-mmm	hh:mm:ss
Start:	18-13-feb	0:00:08
Stop:	18-14-feb	0:00:05
ET:	23:59	

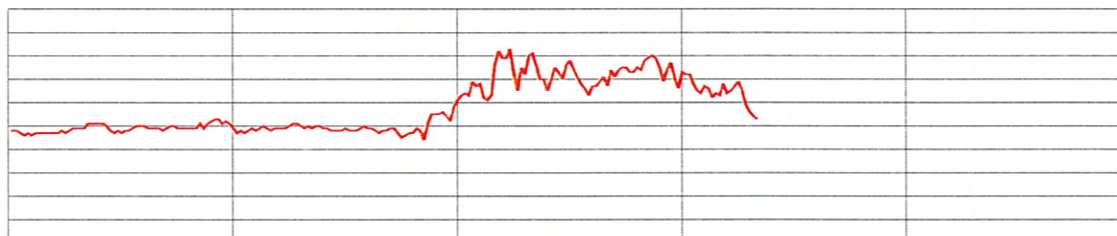
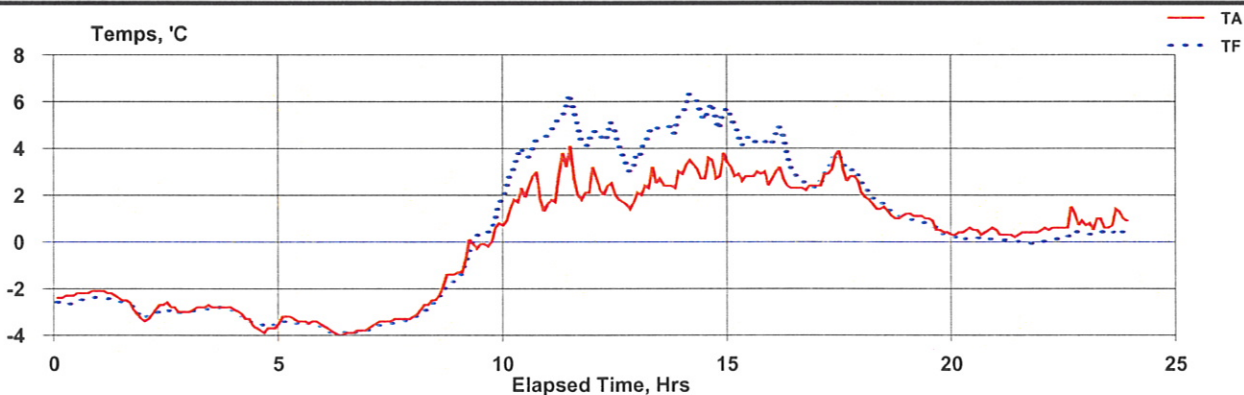
Mass Concentration Data:

Filter ID:	5
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.041 m ³
Mass Conc:	0 µg/m ³

QCV 0.55 %
Max overheat 3.6 °C
occured 13-feb 11:09:15

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 20 feb 14:09:29

Job Details:

Job Name: 18Feb20B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5832:46
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ++++++

User2:

	Max	Min	Avg	Units
BP	582	574	577	mmHg
TA	3.6	-12.2	-3.9	°C
Q	---	---	16.7	Lpm

QCV 0.56 %
Max overheat 2.9 °C
occured 19-feb 14:58:39

Timer Information:

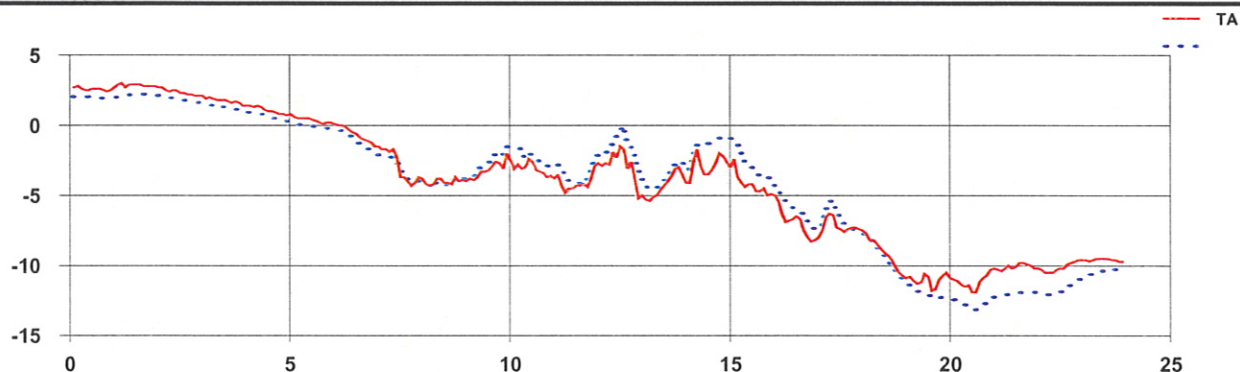
Date	Time
dd-mmm	hh:mm:ss
Start: 18-19-feb	0:00:08
Stop: 18-20-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	10
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.04 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



Overheat, TF-

BGI PQ200 Air Sampling System Downloaded 2018 27 feb 11:49:44

Job Details:

Job Name: 18Feb27B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5856:45
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: |||||

User2:

	Max	Min	Avg	Units
BP	591	585	589	mmHg
TA	3.7	-17.1	-6.8	°C
Q	---	---	16.71	Lpm

Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-25-feb 0:00:08
Stop: 18-26-feb 0:00:05
ET: 23:59

Mass Concentration Data:

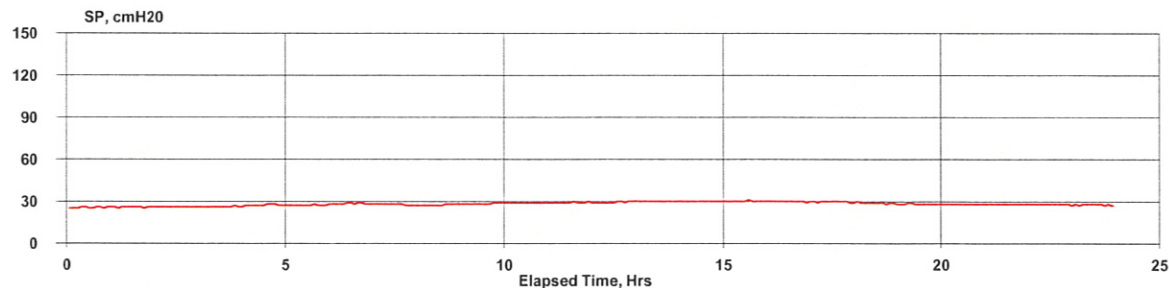
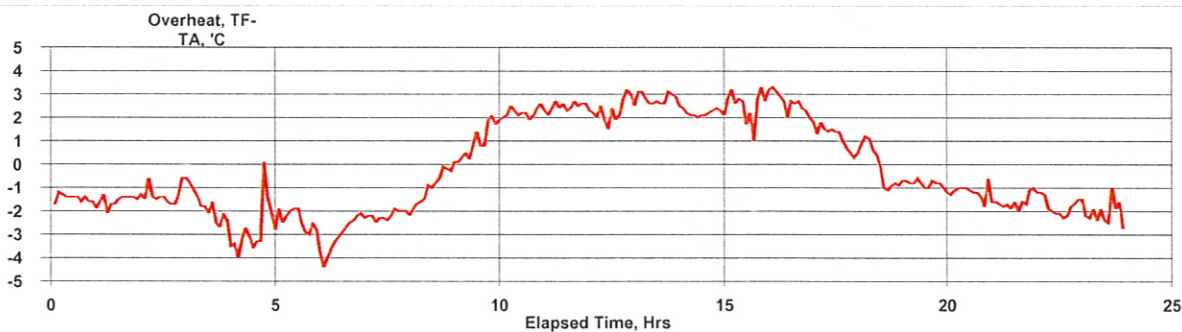
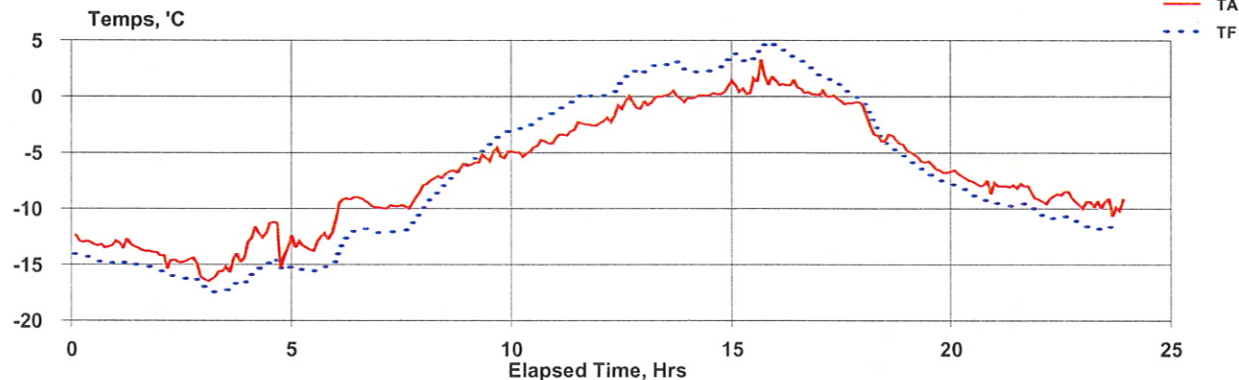
Filter ID: 14
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.042 m³
Mass Conc: 0 µg/m³

QCV 0.56 %

Max overheat 3.7 °C
occured 25-feb 16:01:35

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 05 mar 15:31:02

Job Details:

Job Name: 18Mar05B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5880:44
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: ++++++
User2:

	Max	Min	Avg	Units
BP	587	583	585	mmHg
TA	9.6	-2.9	3.3	°C
Q	---	---	16.71	Lpm

QCV 0.57 %
Max overheat 2.8 °C
occured 04-mar 16:56:45

Timer Information:

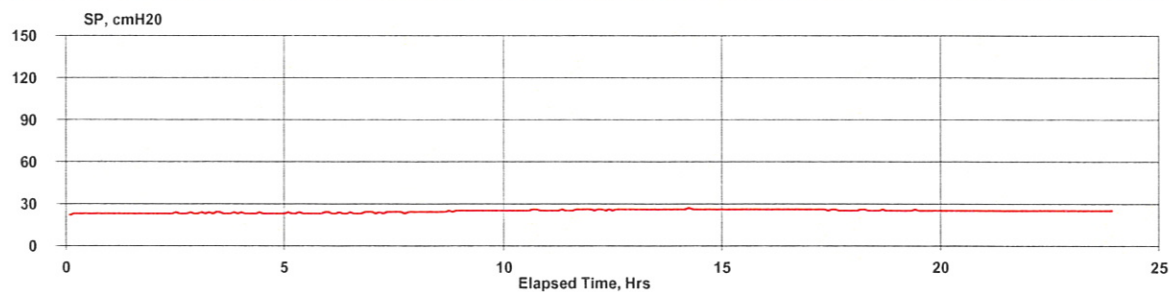
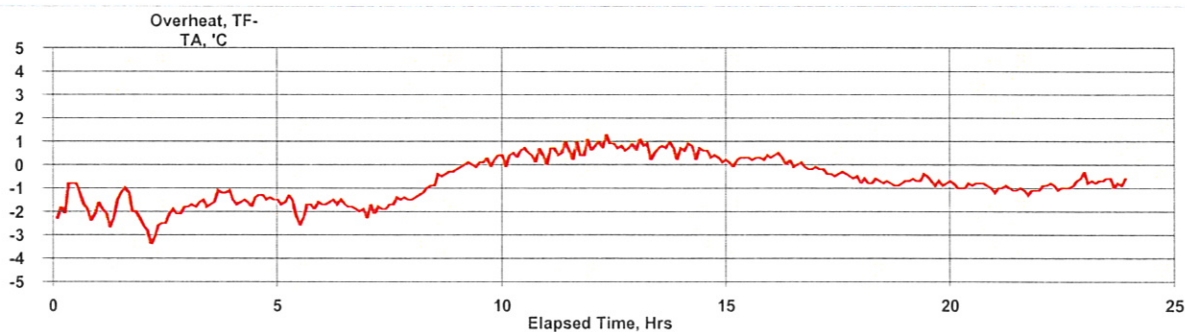
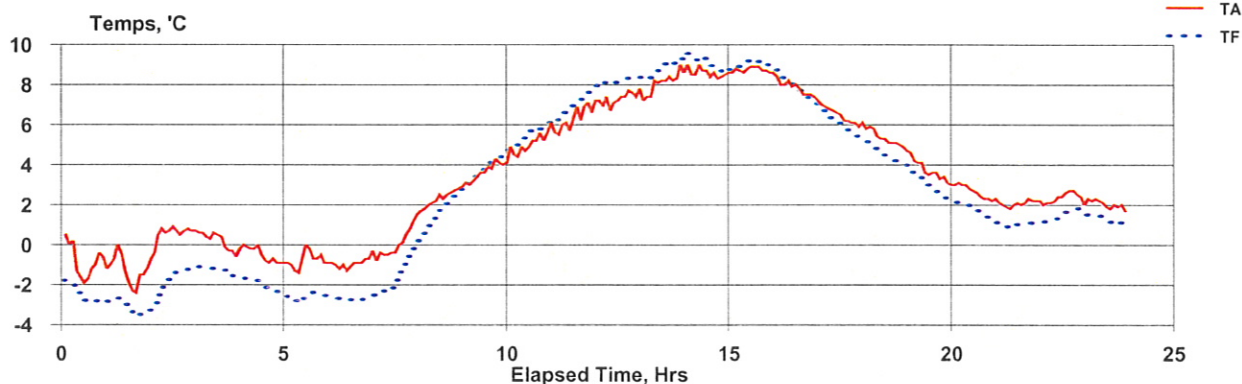
Date Time
dd-mmm hh:mm:ss
Start: 18-03-mar 0:00:08
Stop: 18-04-mar 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 27
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.037 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 12 mar 10:24:43

Job Details:

Job Name: 18Mar12B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5904:43
Flags:

Job Code:

Site Name: 963B
Station Code:
Operators:
User1: |||||
User2:

	Max	Min	Avg	Units
BP	589	586	587	mmHg
TA	14.3	-4	4.1	°C
Q	---	---	16.7	Lpm

QCV 0.49 %

Max overheat 2.3 °C
occured 09-mar 11:30:21

Timer Information:

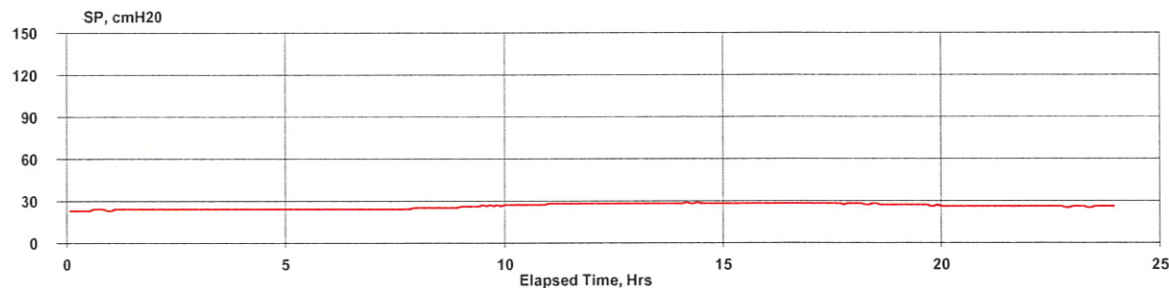
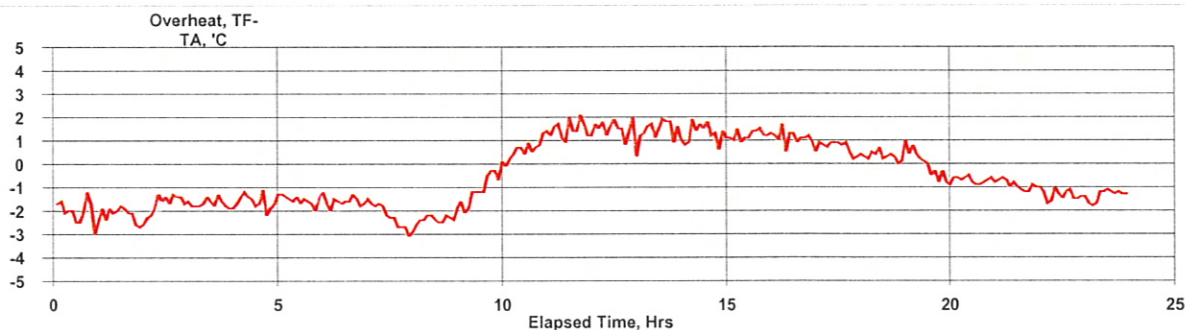
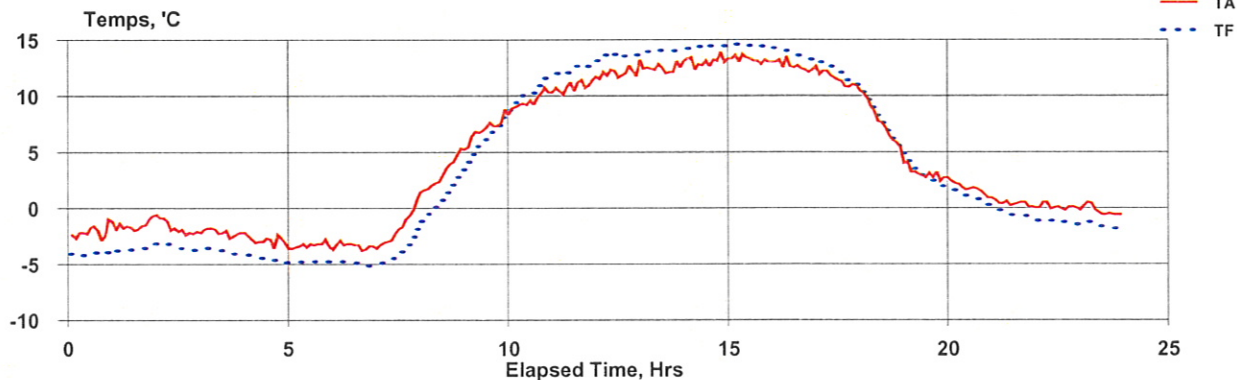
Date	Time
dd-mmm	hh:mm:ss
Start: 18-09-mar	0:00:08
Stop: 18-10-mar	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	KN	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.041	m ³
Mass Conc:	0	µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 mar 10:15:55

Job Details:

Job Name: 18Mar16B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5938:55
Flags:

Job Code:

Site Name: 963B
Station Code:
Operators: KN

User1: |||||

User2:

	Max	Min	Avg	Units
BP	587	581	584	mmHg
TA	3.1	-7.1	-1.4	°C
Q	---	---	16.71	Lpm

Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-15-mar 0:00:08
Stop: 18-16-mar 10:12:34
ET: 34:12:00

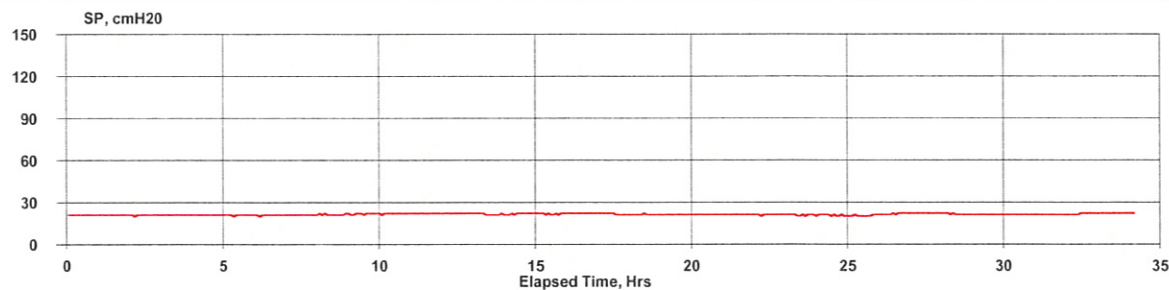
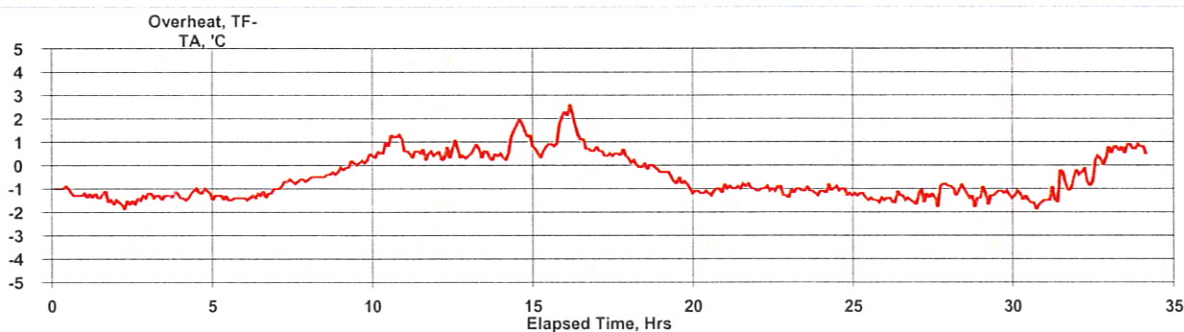
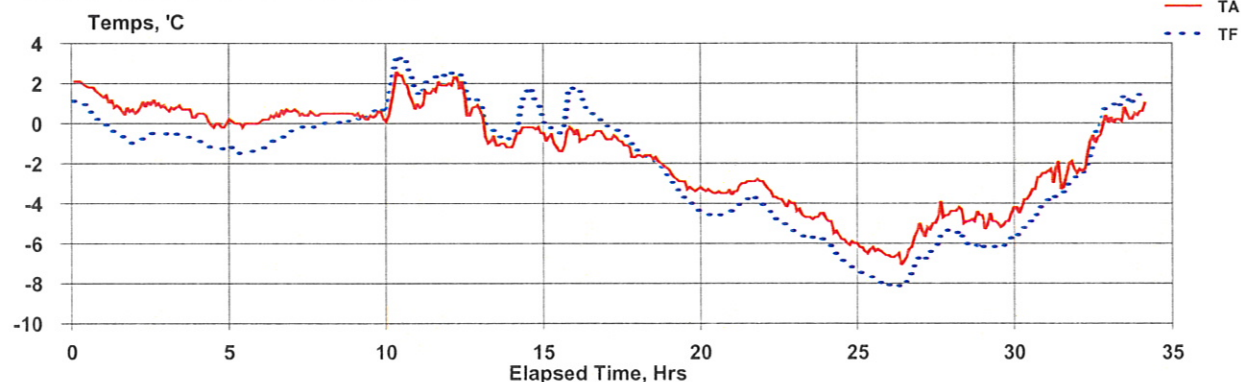
Mass Concentration Data:

Filter ID: 5
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 34.265 m³
Mass Conc: 0 µg/m³

QCV 1.51 %
Max overheat 2.8 °C
occured 15-mar 16:07:02

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 mar 09:45:28

Job Details:

Job Name: 18Mar23B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5962:54
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ++++++

User2:

	Max	Min	Avg	Units
BP	591	586	589	mmHg
TA	14	-1.3	6.5	°C
Q	---	---	16.7	Lpm

QCV 0.52 %
Max overheat 2.4 °C
occured 21-mar 11:17:21

Timer Information:

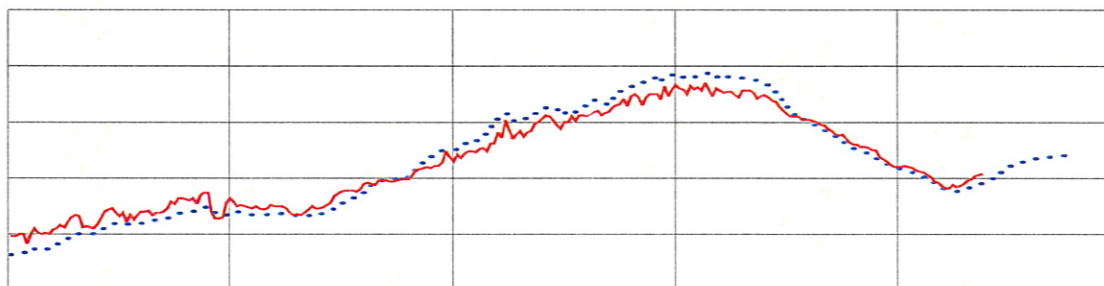
Date	Time
dd-mmm	hh:mm:ss
Start: 18-21-mar	0:00:08
Stop: 18-22-mar	0:00:04
ET: 23:59	

Mass Concentration Data:

Filter ID:	22
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.039 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



Overheat, TF-

BGI PQ200 Air Sampling System Downloaded 2018 28 mar 11:17:22

Job Details:

Job Name: 18Mar28B.JOB
Version: 5.62
Serial No: 963
Pump Time: 5986:53
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: |||||

User2:

	Max	Min	Avg	Units
BP	591	586	589	mmHg
TA	8.7	-4.2	1.3	°C
Q	---	---	16.7	Lpm

Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-27-mar 0:00:08
Stop: 18-28-mar 0:00:05
ET: 23:59

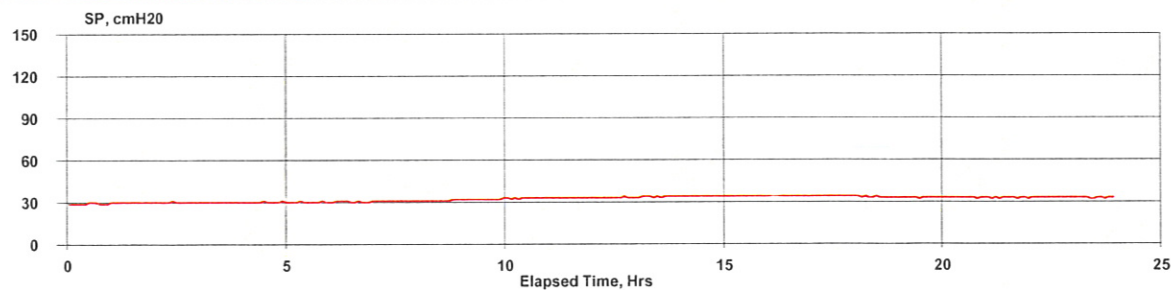
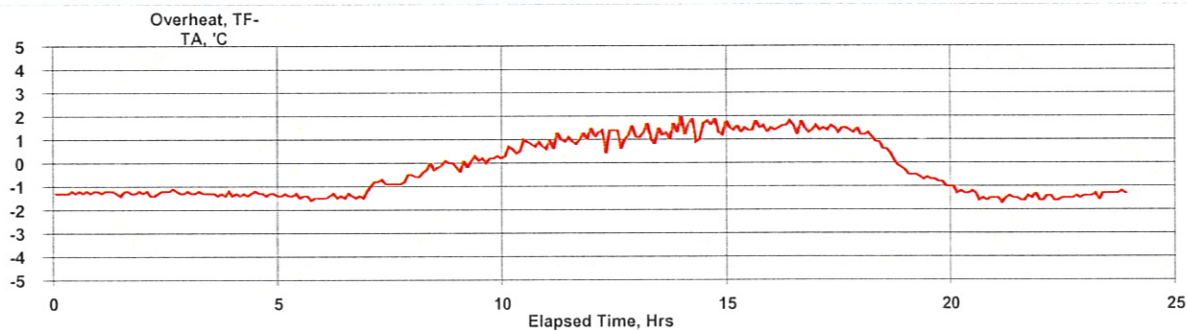
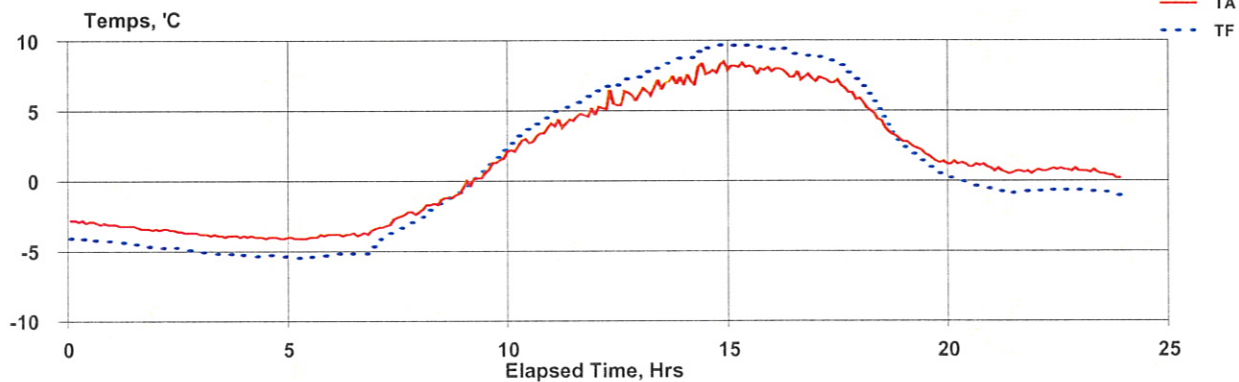
Mass Concentration Data:

Filter ID: 10
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.04 m³
Mass Conc: 0 µg/m³

QCV 0.55 %
Max overheat 2.4 °C
occured 27-mar 15:16:34

Notes 1:

Notes 2:



Collocated Monitor 964C

BGI PQ200 Air Sampling System

Downloaded 2018 04 jan 12:35:08

Job Details:

Job Name: 18Jan04C.JOB

Version: 5.62

Serial No: 964

Pump Time: 353:32

Flags: Q T

Job Code:

Site Name: 964C

Station Code:

Operators: KN

User1:

User2:

	Max	Min	Avg	Units
BP	598	594	596	mmHg
TA	10.3	-3.9	3.3	°C
Q	---	---	16.71	Lpm

QCV 0.53 %

Max overheat 2.5 °C

occured 03-jan 17:36:59

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 17-02-jan	0:00:08
Stop: 18-03-jan	0:00:05

ET: 23:43

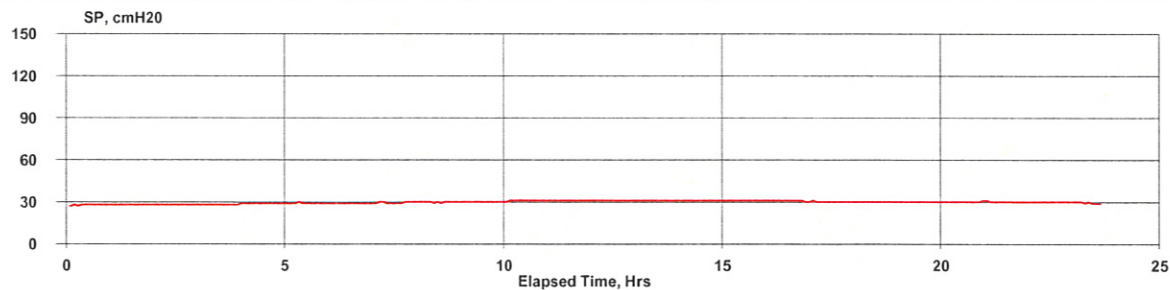
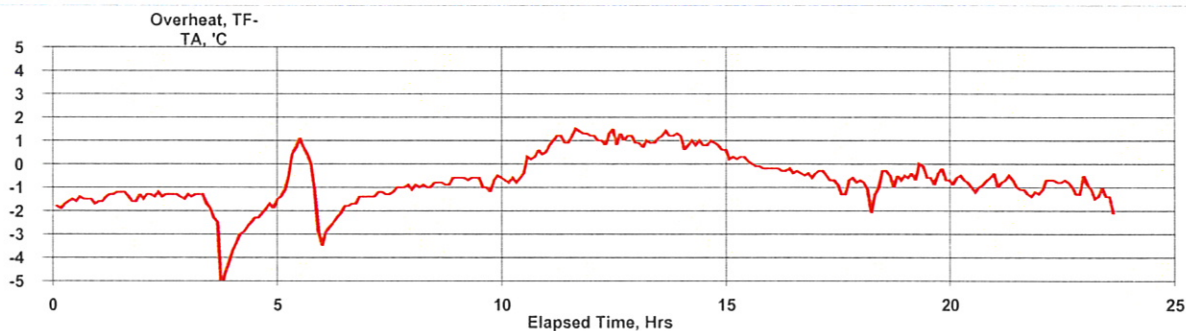
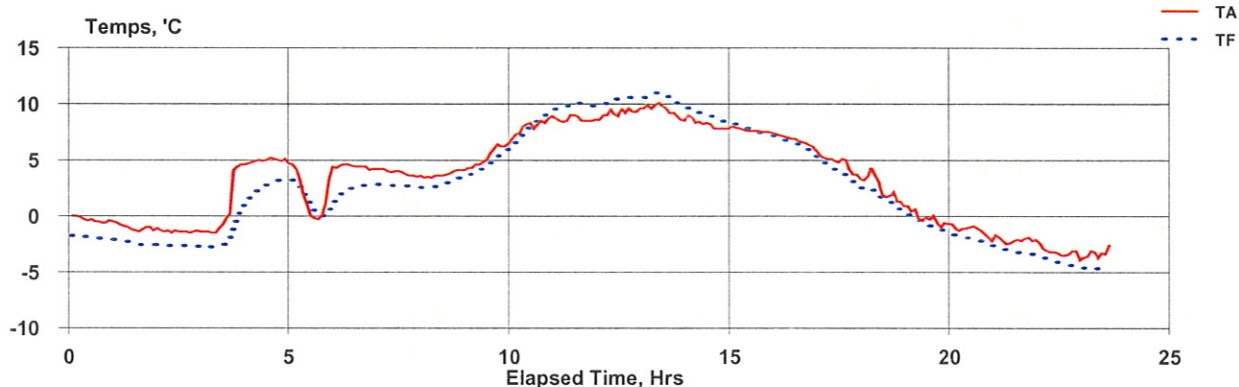
Mass Concentration Data:

Filter ID:	6
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	23.764 m ³

Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 10 jan 11:22:38

Job Details:

Job Name: 18Jan10C.JOB

Version: 5.62

Serial No: 964

Pump Time: 370:26

Flags: Q T

Job Code:

Site Name: 964C

Station Code:

Operators: KN

User1:

User2:

	Max	Min	Avg	Units
BP	595	592	593	mmHg
TA	7.8	-5.3	1	°C
Q	---	---	16.71	Lpm

QCV 0.22 %

Max overheat 1.4 °C

occured 09-jan 22:26:34

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-08-jan	0:00:08
Stop: 18-09-jan	0:00:05

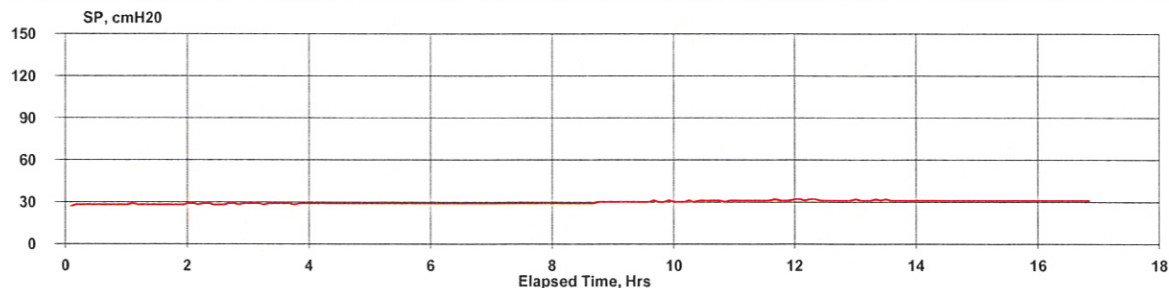
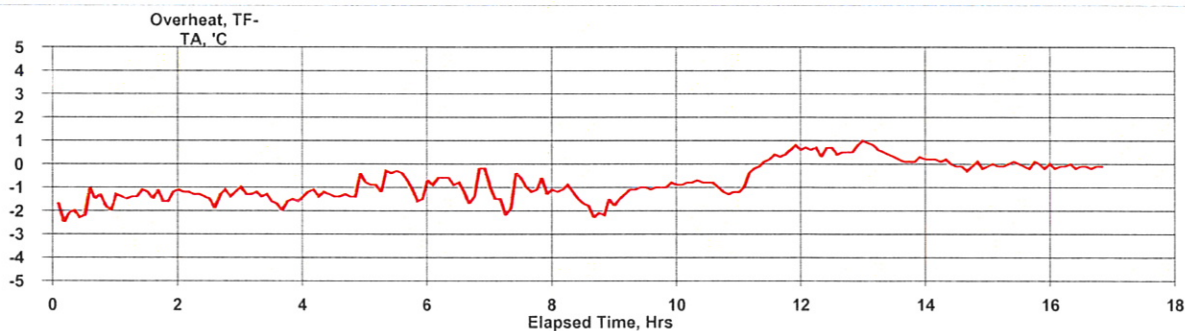
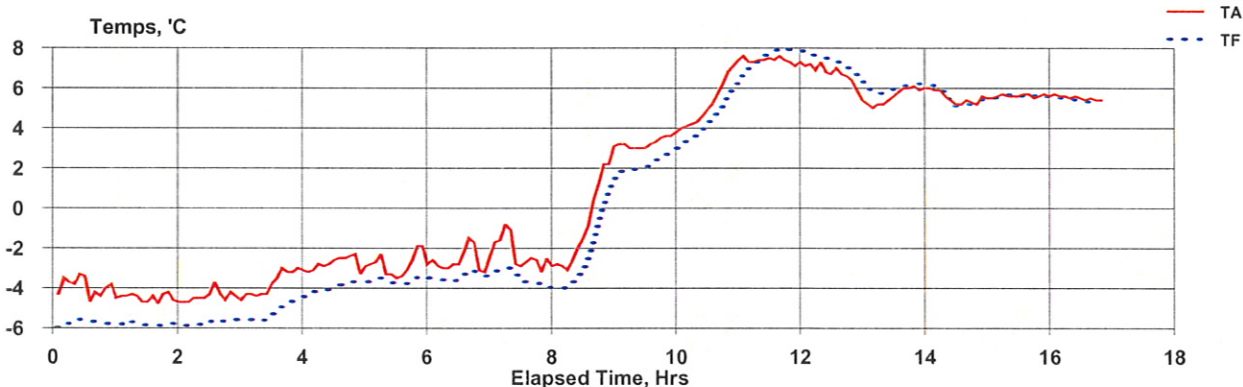
ET: 16:54

Mass Concentration Data:

Filter ID:	33
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	16.934 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 16 jan 12:12:42

Job Details:

Job Name: 18Jan16C.JOB
Version: 5.62
Serial No: 964
Pump Time: 394:25
Flags:

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

	Max	Min	Avg	Units
BP	600	595	597	mmHg
TA	12	-4.5	2.5	°C
Q	---	---	16.73	Lpm

QCV 0.43 %

Max overheat 2.4 °C
occured 14-jan 12:58:03

Timer Information:

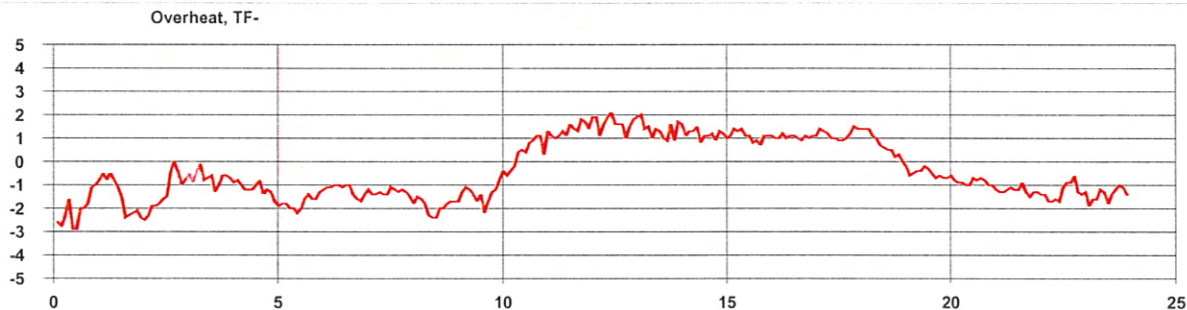
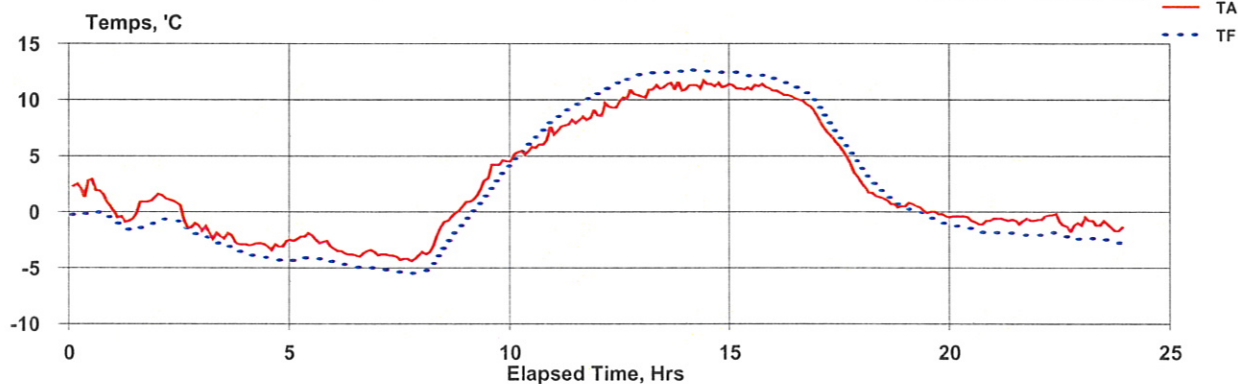
Date	Time
dd-mmm	hh:mm:ss
Start: 18-14-jan	0:00:08
Stop: 18-15-jan	0:00:04
ET: 23:59	

Mass Concentration Data:

Filter ID:	11
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.049 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 jan 14:12:44

Job Details:

Job Name: 18Jan23C.JOB
Version: 5.62
Serial No: 964
Pump Time: 418:24
Flags:

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

	Max	Min	Avg	Units
BP	587	583	584	mmHg
TA	6	-6.5	-0.4	°C
Q	---	---	16.72	Lpm

QCV 0.35 %
Max overheat 2.3 °C
occured 22-jan 17:19:49

Timer Information:

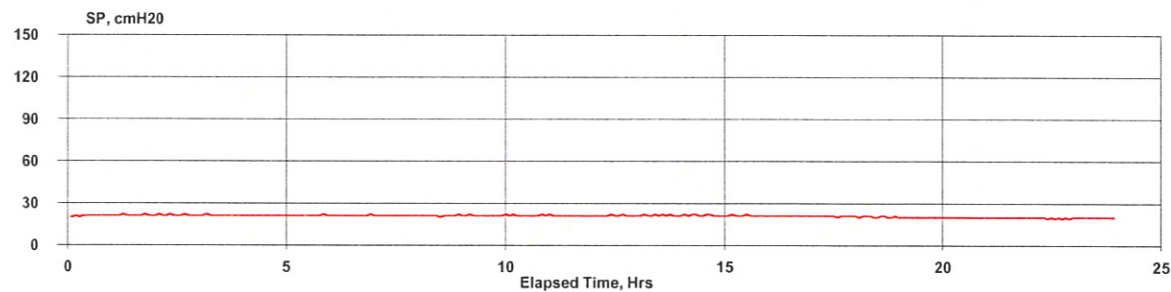
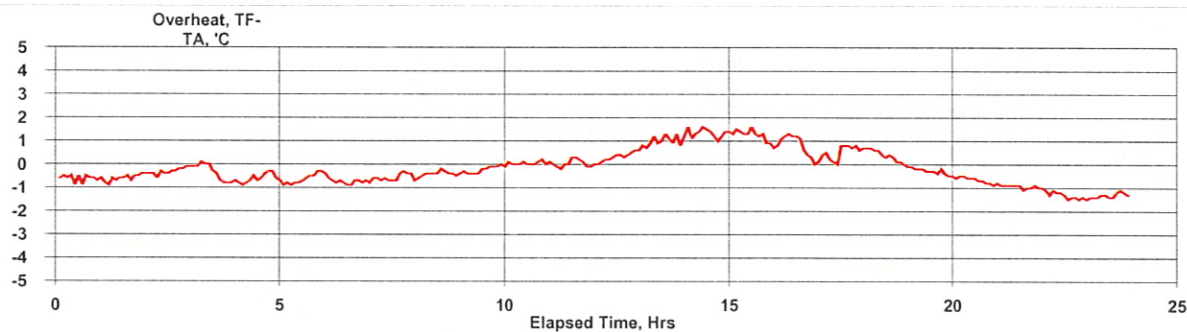
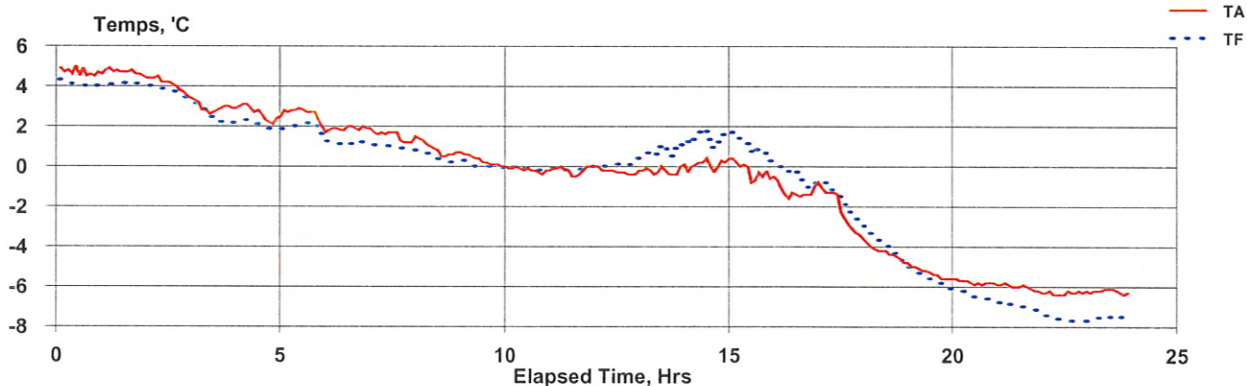
Date Time
dd-mmm hh:mm:ss
Start: 18-20-jan 0:00:08
Stop: 18-21-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 21
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.041 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 29 jan 11:35:38

Job Details:

Job Name: 18Jan29C.JOB
 Version: 5.62
 Serial No: 964
 Pump Time: 442:23
 Flags:

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

	Max	Min	Avg	Units
BP	596	587	592	mmHg
TA	4.8	-9.4	-3	°C
Q	---	---	16.71	Lpm

QCV 0.38 %
 Max overheat 2.8 °C
 occurred 26-jan 14:55:56

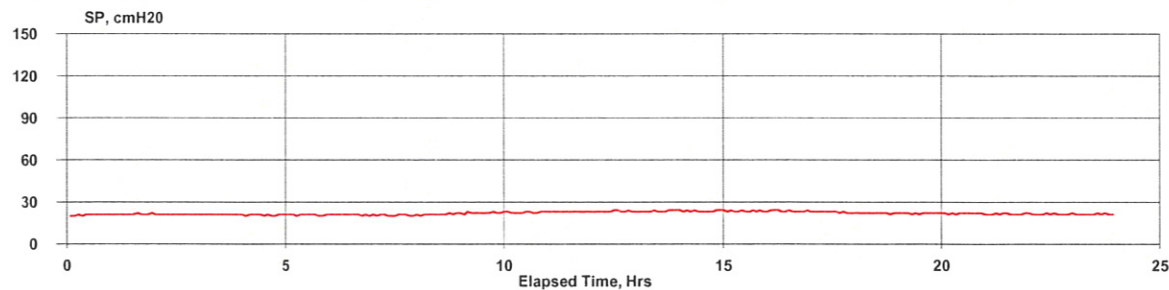
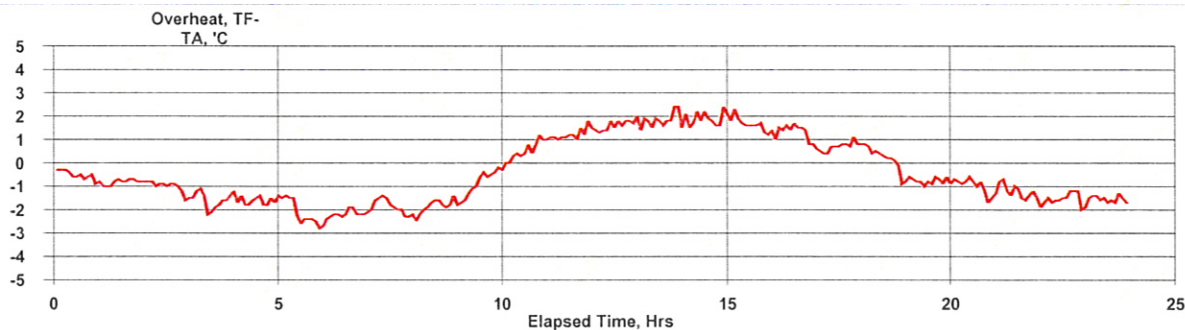
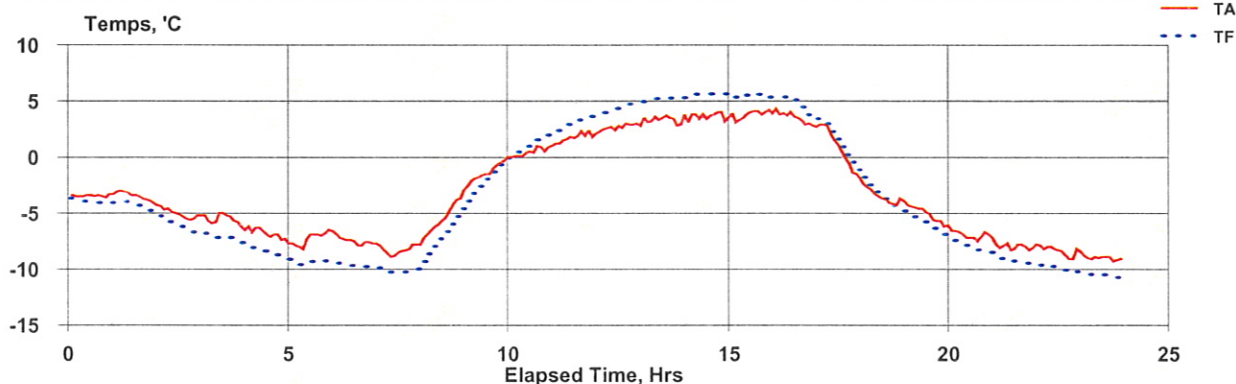
Timer Information:

Date Time
 dd-mmm hh:mm:ss
 Start: 18-26-jan 0:00:08
 Stop: 18-27-jan 0:00:05
 ET: 23:59

Mass Concentration Data:

Filter ID: 39
 Final Wt: mg
 Initial Wt: mg
 Delta Wt: 0.000 mg
 Total Vol: 24.022 m³
 Mass Conc: 0 µg/m³

Notes 1:
 Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 02 feb 10:09:16

Job Name: 18Feb02C.JOB

Version: 5.62

Serial No: 964

Pump Time: 466:22

Flags:

Job Code:

Site Name: 964C

Station Code:

Operators: KN

User1:

User2:

	Max	Min	Avg	Units
BP	596	591	593	mmHg
TA	14.2	-3.5	4.5	°C
Q	---	---	16.72	Lpm

QCV 0.43 %

Max overheat 2.4 °C

occured 01-feb 12:00:32

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-01-feb	0:00:08
Stop: 18-02-feb	0:00:05

ET: 23:59

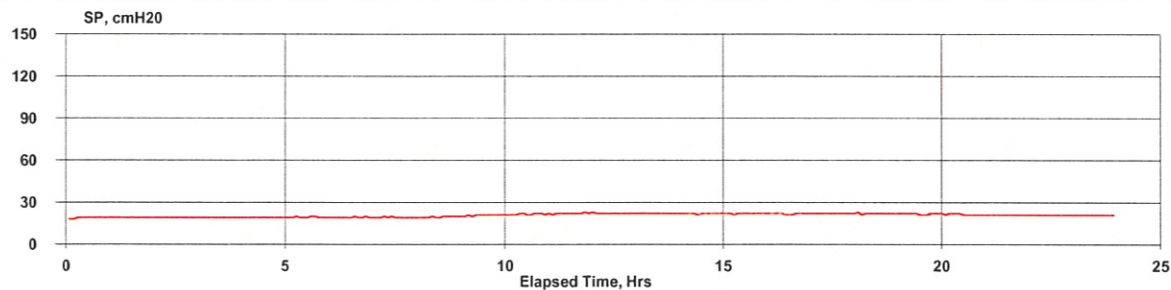
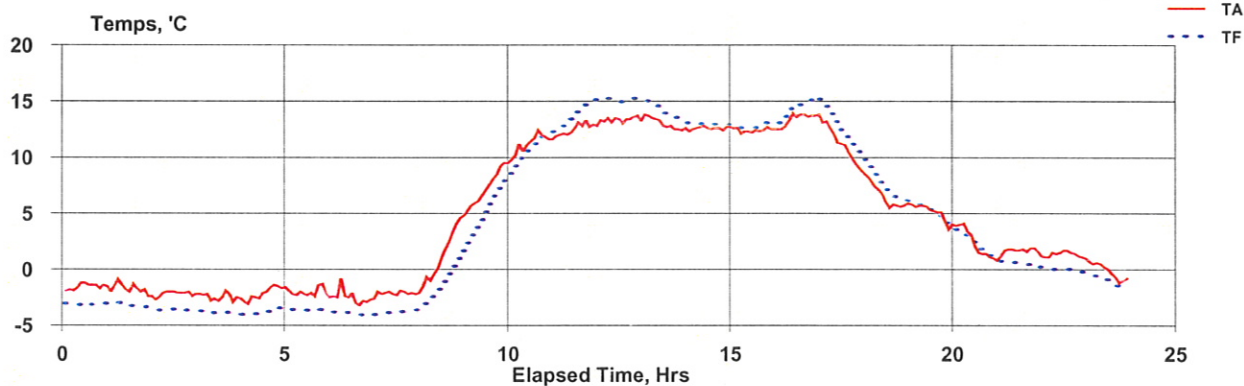
Mass Concentration Data:

Filter ID:	14
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.046 m ³

Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 08 feb 14:55:15

Job Details:

Job Name: 18Feb08C.JOB
Version: 5.62
Serial No: 964
Pump Time: 490:21
Flags:

Job Code:

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

	Max	Min	Avg	Units
BP	599	594	597	mmHg
TA	14.6	-6.3	4.3	°C
Q	---	---	16.74	Lpm

Timer Information:

	Date	Time
	dd-mmm	hh:mm:ss
Start:	18-07-feb	0:00:08
Stop:	18-08-feb	0:00:04
ET:	23:59	

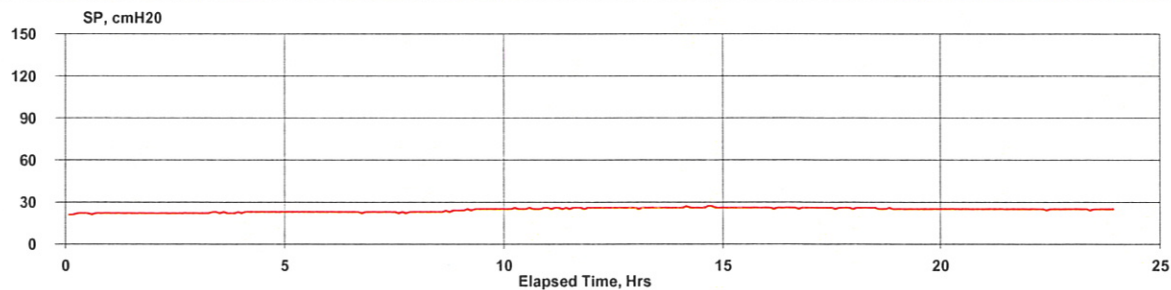
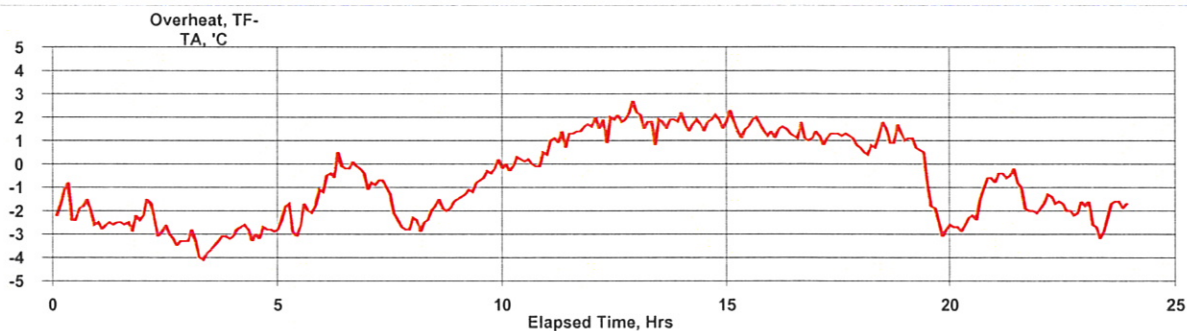
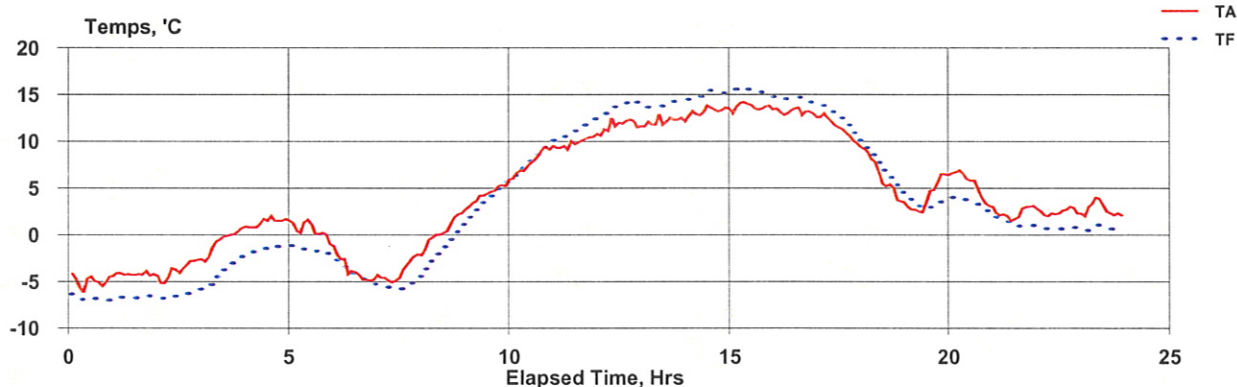
Mass Concentration Data:

Filter ID:	24
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.06 m ³
Mass Conc:	0 µg/m ³

QCV 0.44 %
Max overheat 3 °C
occured 07-feb 12:55:27

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 14 feb 12:24:41

Job Details:

Job Name: 18Feb14C.JOB
Version: 5.62
Serial No: 964
Pump Time: 514:20
Flags:

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

	Max	Min	Avg	Units
BP	595	586	592	mmHg
TA	5	-4	0	°C
Q	---	---	16.74	Lpm

QCV 0.45 %
Max overheat 3.6 °C
occured 13-feb 11:33:25

Timer Information:

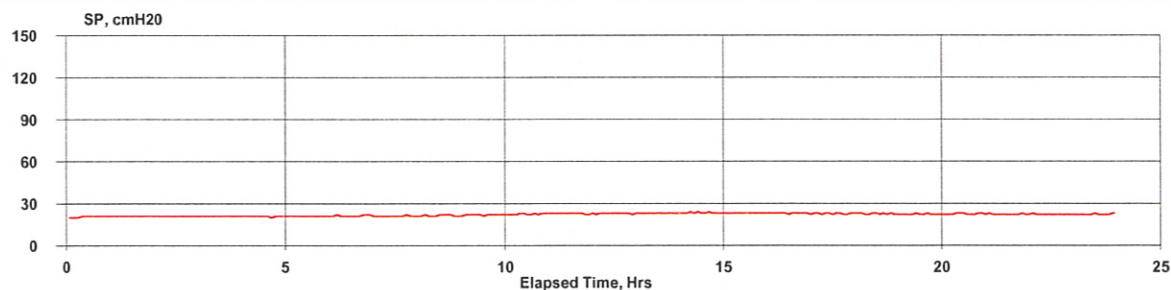
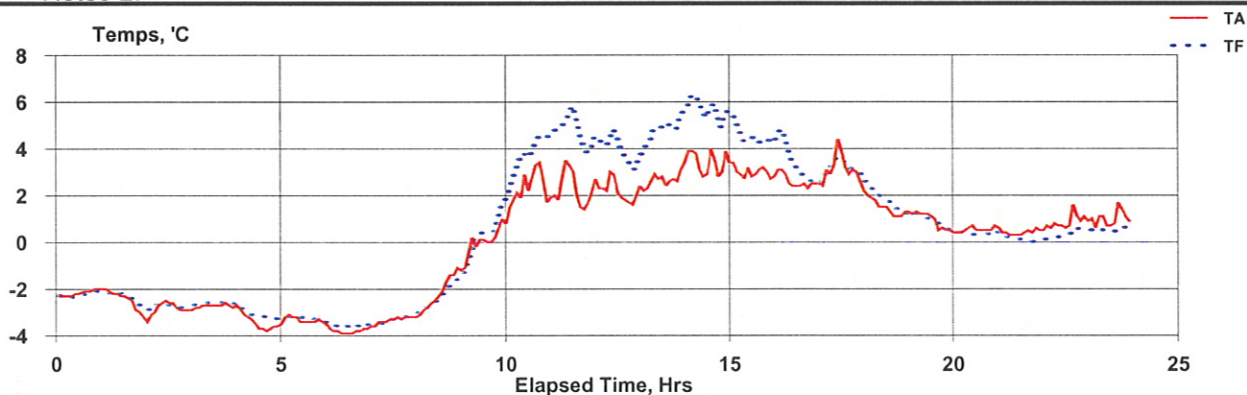
Date	Time
dd-mmm	hh:mm:ss
Start: 18-13-feb	0:00:08
Stop: 18-14-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	6
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.066 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 20 feb 14:10:23

Job Details:

Job Name: 18Feb20C.JOB
Version: 5.62
Serial No: 964
Pump Time: 538:19
Flags:

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

	Max	Min	Avg	Units
BP	584	576	579	mmHg
TA	3.8	-12.1	-3.8	°C
Q	---	---	16.7	Lpm

QCV 0.33 %
Max overheat 3 °C
occured 19-feb 14:58:01

Timer Information:

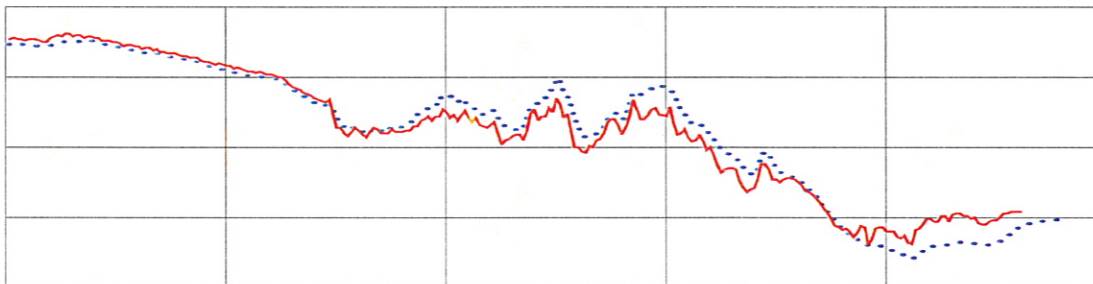
Date	Time
dd-mmm	hh:mm:ss
Start: 18-19-feb	0:00:08
Stop: 18-20-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	11
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.01 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



Overheat, TF-

BGI PQ200 Air Sampling System Downloaded 2018 27 feb 11:50:09

Job Details:

Job Name: 18Feb27C.JOB
Version: 5.62
Serial No: 964
Pump Time: 562:18
Flags:

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

	Max	Min	Avg	Units
BP	593	587	591	mmHg
TA	3.9	-16.8	-6.7	°C
Q	---	---	16.73	Lpm

QCV 0.5 %
Max overheat 3.5 °C
occured 25-feb 12:50:03

Timer Information:

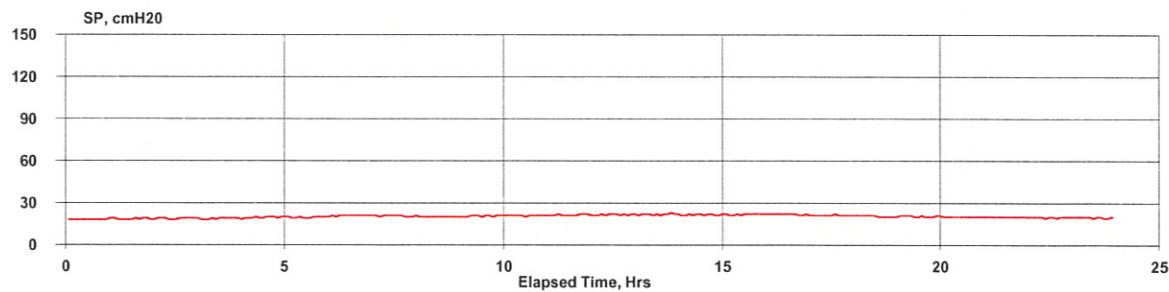
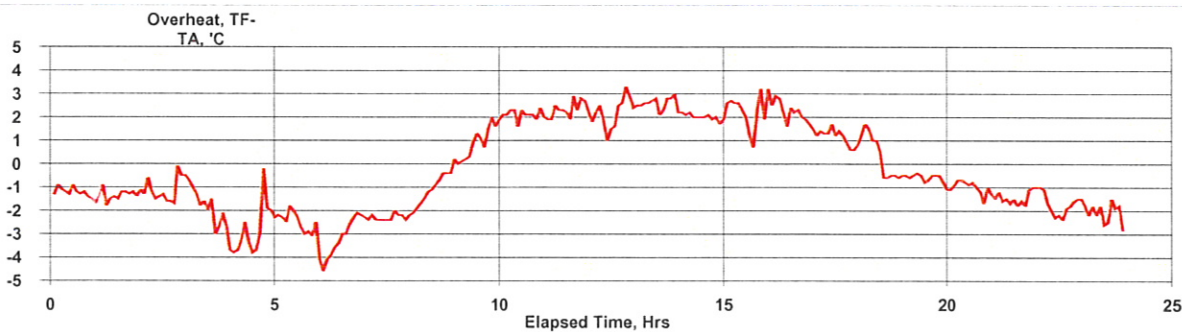
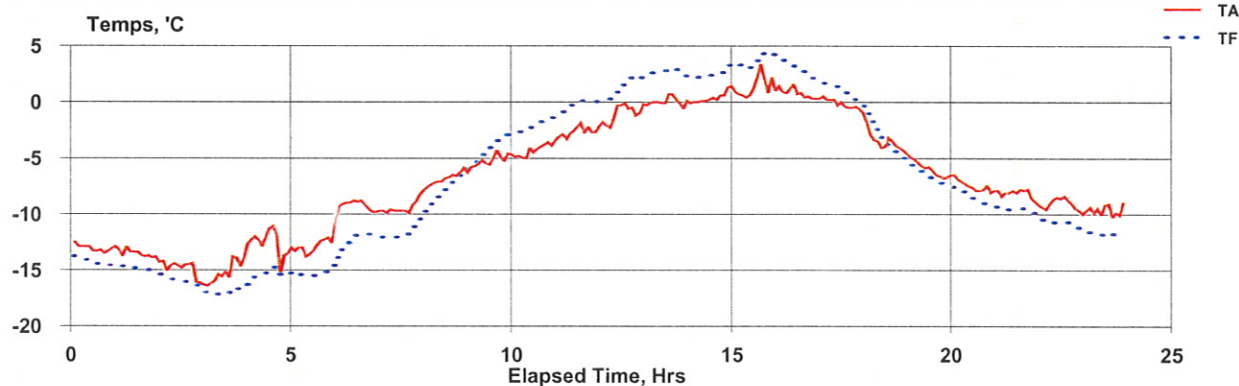
Date Time
dd-mmm hh:mm:ss
Start: 18-25-feb 0:00:08
Stop: 18-26-feb 0:00:05
ET: 23:59

Mass Concentration Data:

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

Notes 1:

Notes 2:



Downloaded 2018 05 mar 15:31:35

[illegible]

Downloaded 2018 12 mar 10:25:43

[illegible]

BGI PQ200 Air Sampling System Downloaded 2018 16 mar 10:20:40

Job Details:

Job Name: 18Mar16C.JOB
Version: 5.62
Serial No: 964
Pump Time: 634:15
Flags:

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

	Max	Min	Avg	Units
BP	588	584	585	mmHg
TA	3.3	-4.9	-0.3	°C
Q	---	---	16.74	Lpm

QCV 0.44 %
Max overheat 2.7 °C
occured 15-mar 16:09:39

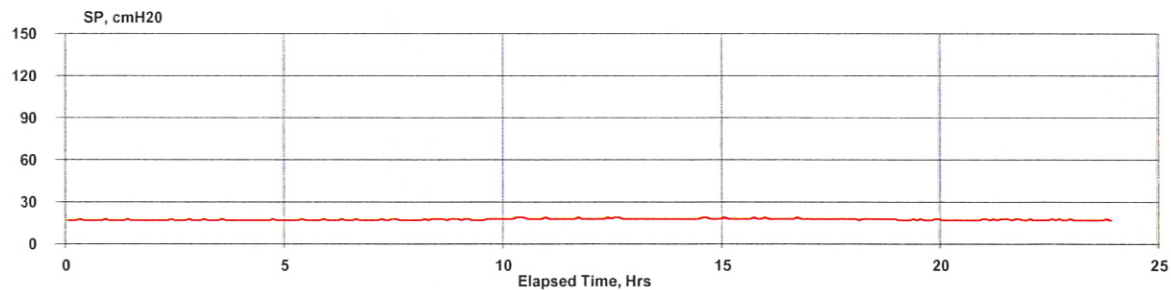
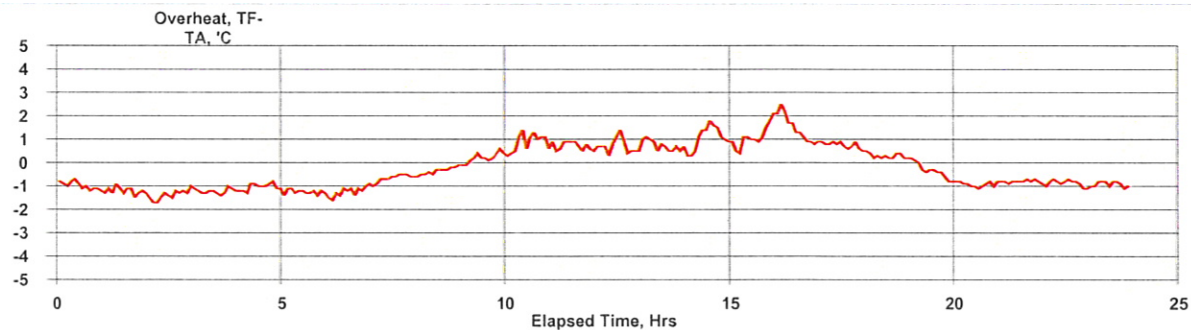
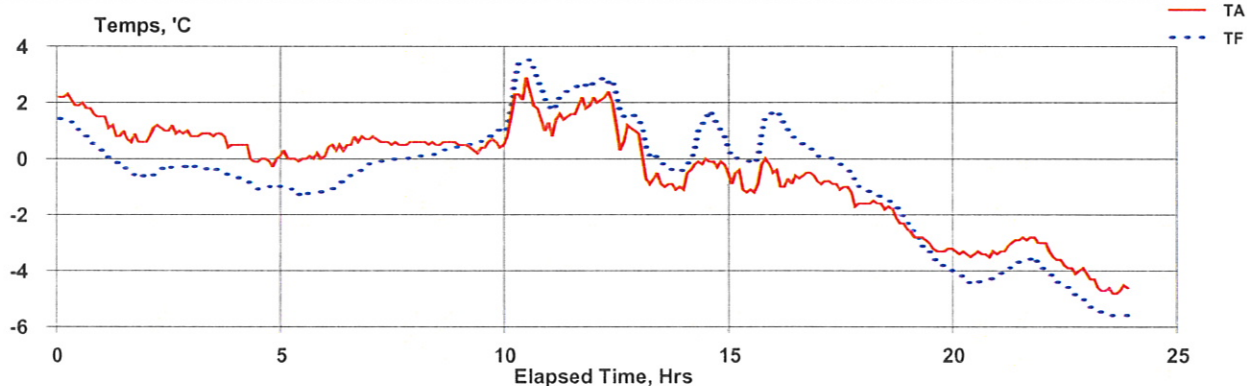
Timer Information:

Date Time
dd-mm hh:mm:ss
Start: 18-15-mar 0:00:08
Stop: 18-16-mar 0:00:04
ET: 23:59

Mass Concentration Data:

Filter ID: 6
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.063 m³
Mass Conc: 0 µg/m³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 23 mar 09:45:28

Job Details:

Job Name: 18Mar23C.JOB

Version: 5.62

Serial No: 964

Pump Time: 658:14

Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1:

User2:

	Max	Min	Avg	Units
BP	593	588	591	mmHg
TA	14.1	-1.2	6.7	°C
Q	---	---	16.73	Lpm

QCV 0.52 %

Max overheat 2.6 °C

occured 21-mar 11:16:23

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-21-mar	0:00:08
Stop: 18-22-mar	0:00:05

ET: 23:59

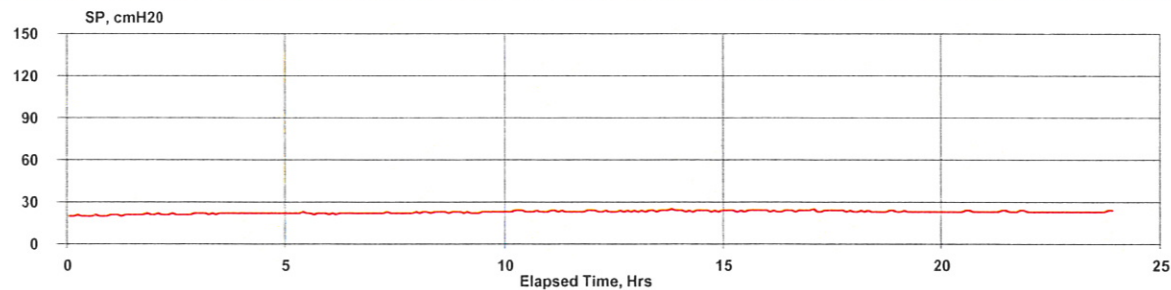
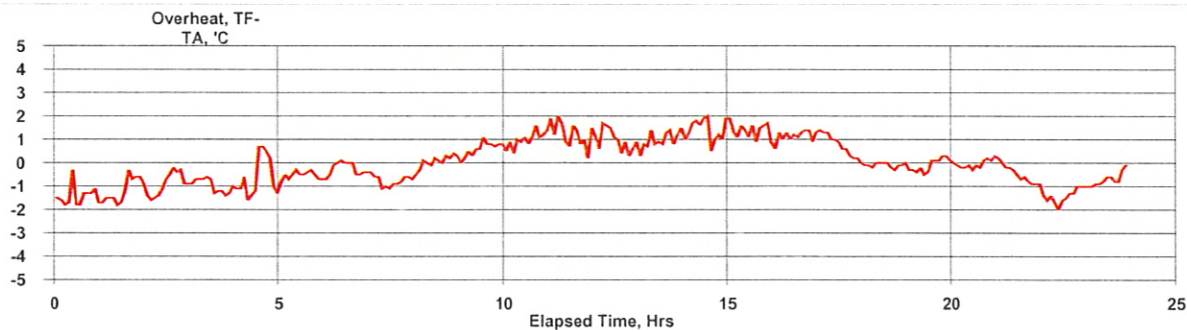
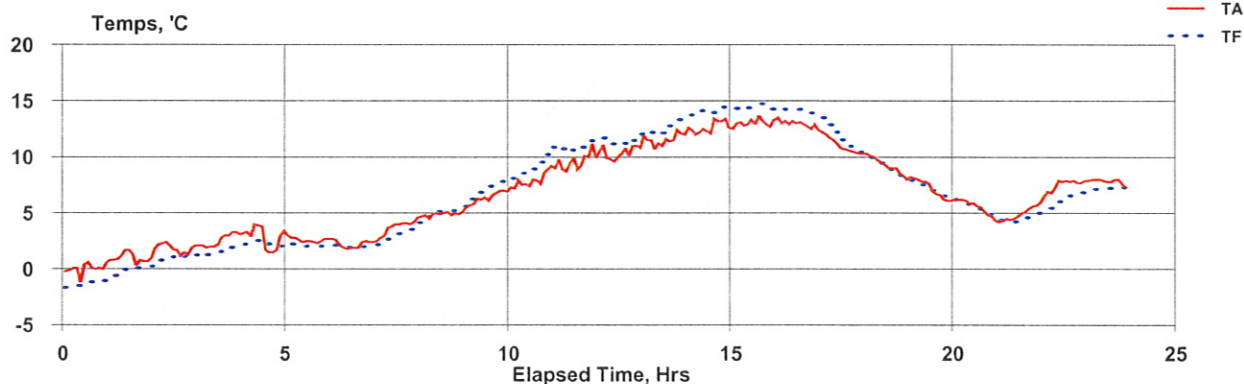
Mass Concentration Data:

Filter ID:	23
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.057 m ³

Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 28 mar 11:17:20

Job Details:

Job Name: 18Mar28C.JOB
Version: 5.62
Serial No: 964
Pump Time: 682:13
Flags:

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

	Max	Min	Avg	Units
BP	593	588	591	mmHg
TA	8.9	-4.1	1.4	°C
Q	---	---	16.71	Lpm

QCV 0.62 %
Max overheat 2.4 °C
occured 27-mar 15:15:27

Timer Information:

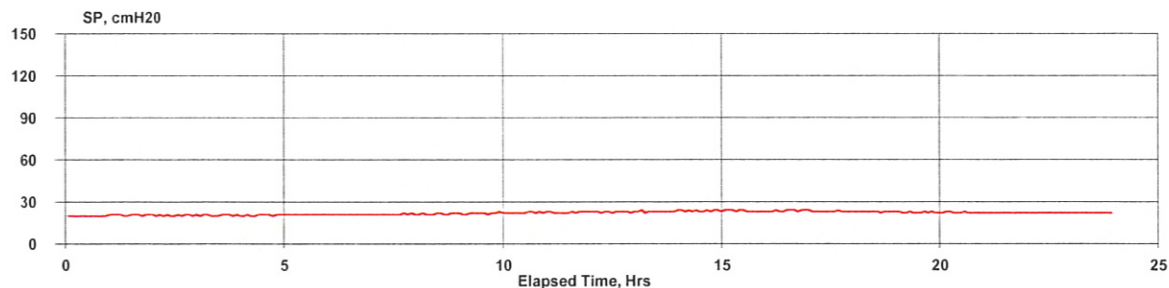
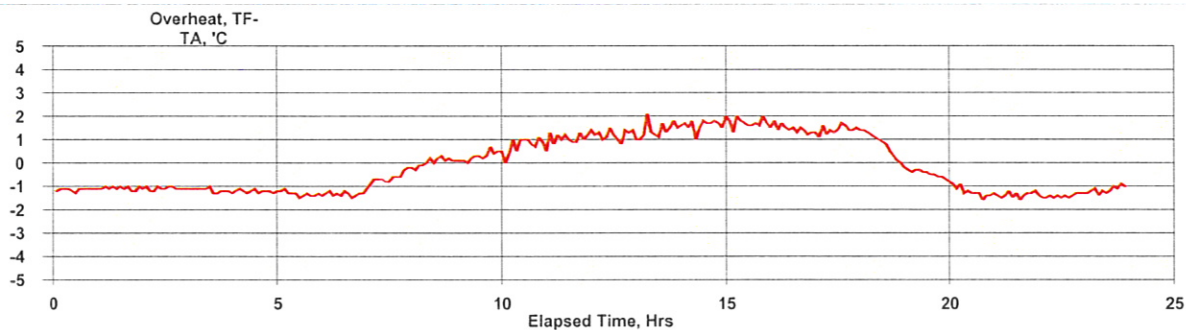
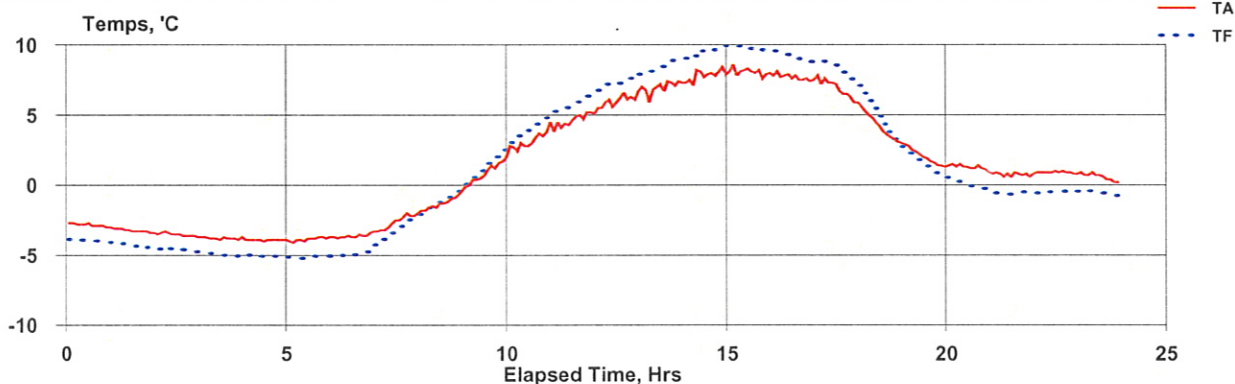
Date Time
dd-mmm hh:mm:ss
Start: 18-27-mar 0:00:08
Stop: 18-28-mar 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 11
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.019 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



Compliance Monitor 2366D

BGI PQ200 Air Sampling System Downloaded 2018 04 jan 13:43:42

Job Details:

Job Name: 18Jan04D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 2868:25
Flags:

Job Code:
Site Name: 2366D
Station Code:
Operators: KN

User1: xx
User2: xx

	Max	Min	Avg	Units
BP	596	592	594	mmHg
TA	9.6	-3.4	2.7	°C
Q	---	---	16.7	Lpm

QCV 0.52 %
Max overheat 4.3 °C
occured 03-jan 17:11:38

Timer Information:

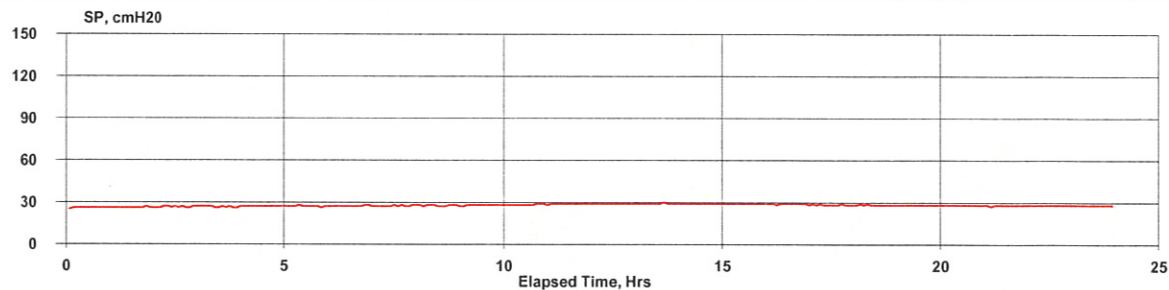
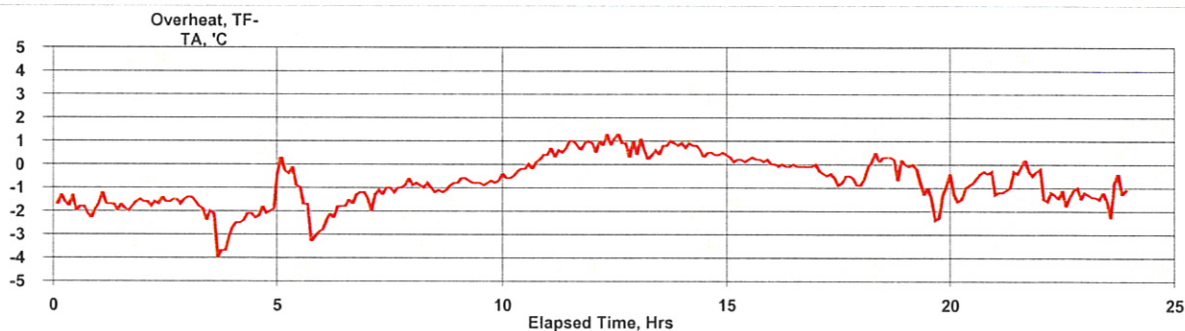
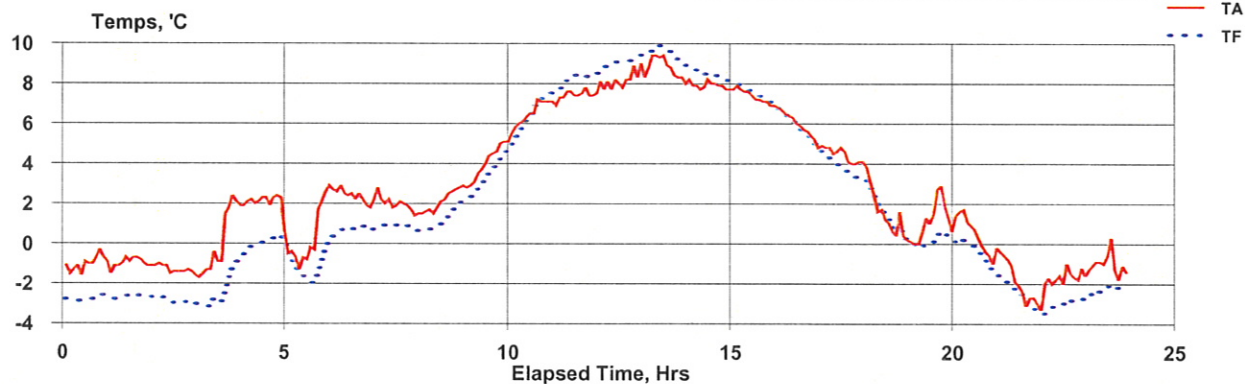
Date	Time
dd-mmm	hh:mm:ss
Start: 17-02-jan	0:00:08
Stop: 18-03-jan	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	7
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.037 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 04 jan 13:43:42

Job Details:

Job Name: 18Jan04D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 2868:25
Flags:

Job Code:
Site Name: 2366D
Station Code:
Operators: KN
User1: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
User2: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

	Max	Min	Avg	Units
BP	596	592	594	mmHg
TA	9.6	-3.4	2.7	°C
Q	---	---	16.7	Lpm

QCV 0.52 %
Max overheat 4.3 °C
occured 03-jan 17:11:38

Timer Information:

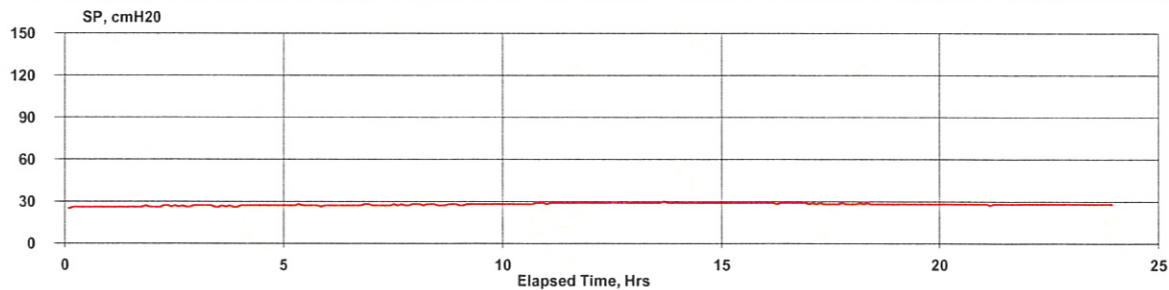
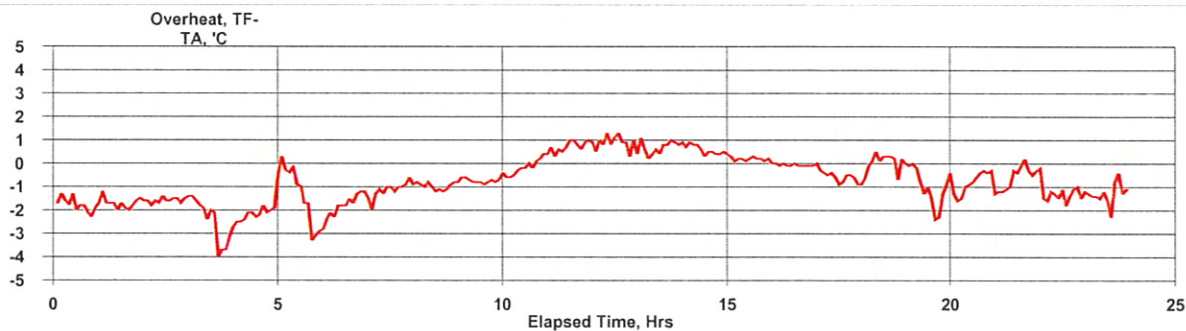
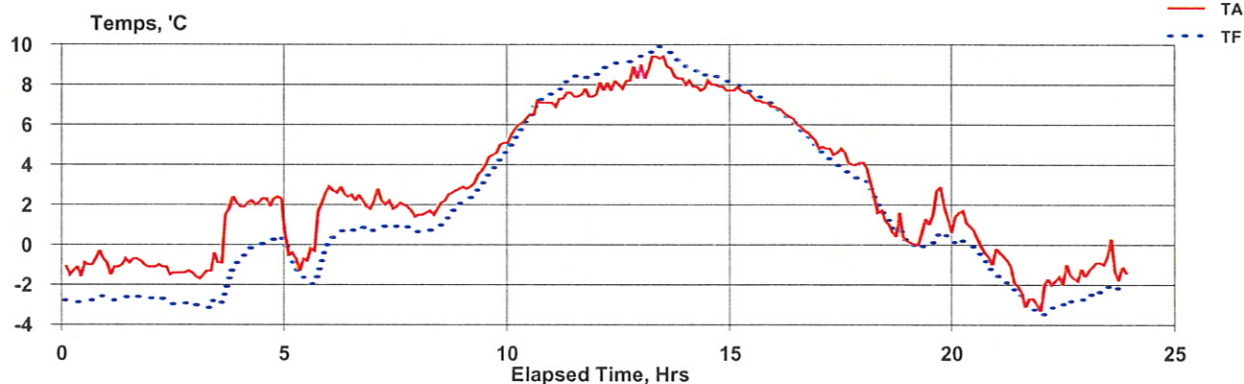
Date	Time
dd-mmm	hh:mm:ss
Start: 17-02-jan	0:00:08
Stop: 18-03-jan	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	7
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.037 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 jan 12:23:36

Job Details:

Job Name: 18Jan16D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 2916:23
Flags:

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

	Max	Min	Avg	Units
BP	597	593	595	mmHg
TA	11.7	-2.8	3	°C
Q	---	---	16.7	Lpm

QCV 0.56 %
Max overheat 3.4 °C
occured 14-jan 12:12:51

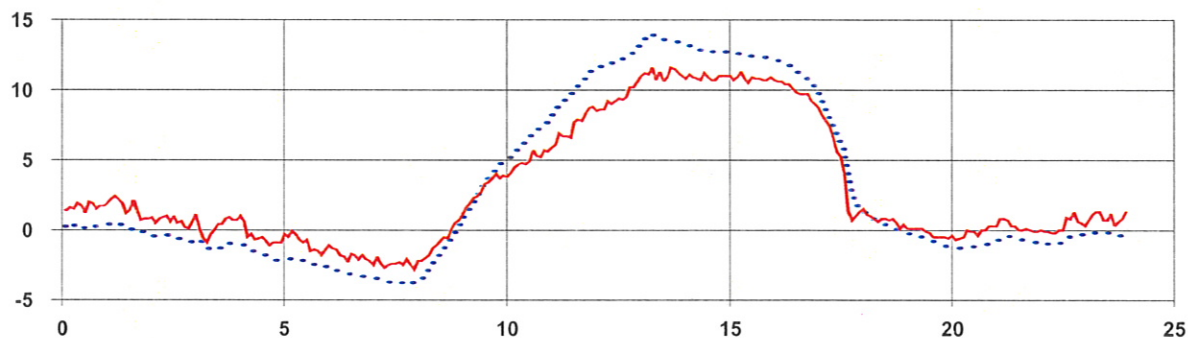
Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-14-jan	0:00:08
Stop: 18-15-jan	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:	24.038 m ³
Mass Conc:	0 µg/m ³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 jan 14:43:05

Job Details:

Job Name: 18Jan23D.JOB
 Version: 5.62
 Serial No: 2366
 Pump Time: 2940:22
 Flags:

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

	Max	Min	Avg	Units
BP	585	581	582	mmHg
TA	5.9	-7	-0.8	°C
Q	---	---	16.71	Lpm

QCV 0.54 %
 Max overheat 3.4 °C
 occurred 20-jan 14:15:31

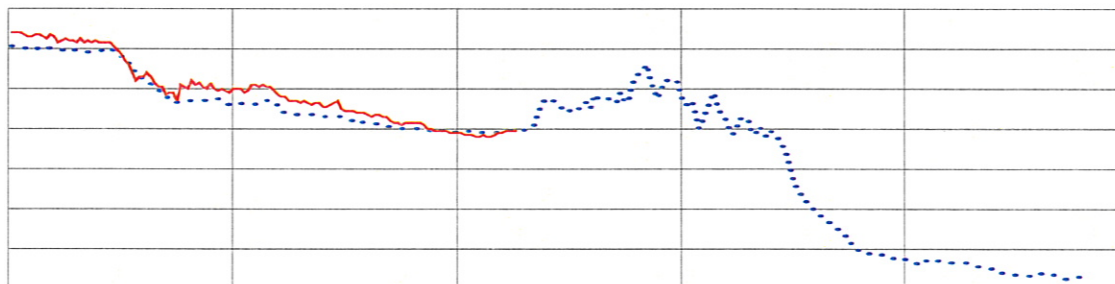
Timer Information:

	Date	Time
	dd-mmm	hh:mm:ss
Start:	18-20-jan	0:00:08
Stop:	18-21-jan	0:00:05
ET:	23:59	

Mass Concentration Data:

Filter ID:	29	
Final Wt:		mg
Initial Wt:		mg
Delta Wt:	0.000	mg
Total Vol:	24.04	m ³
Mass Conc:	0	µg/m ³

Notes 1:
 Notes 2:



Overheat, TF-

BGI PQ200 Air Sampling System Downloaded 2018 29 jan 11:46:18

Job Details:

Job Name: 18Jan29D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 2964:21
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyy

User2: yyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	593	585	590	mmHg
TA	3.7	-9	-3.1	°C
Q	---	---	16.71	Lpm

QCV 0.57 %
Max overheat 3.7 °C
occured 27-jan 17:58:17

Timer Information:

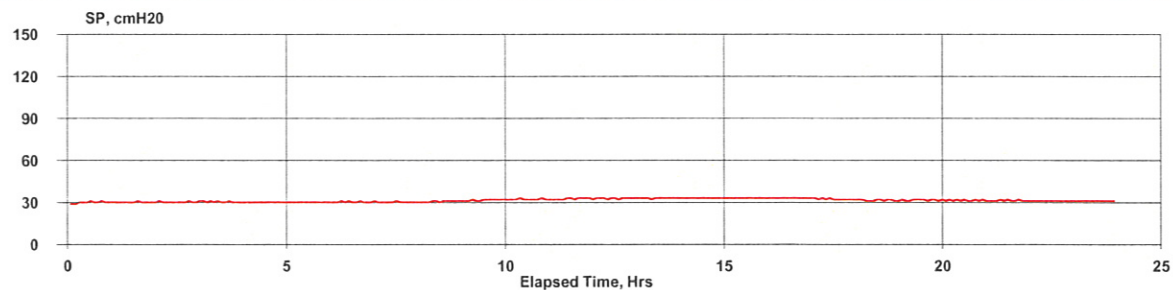
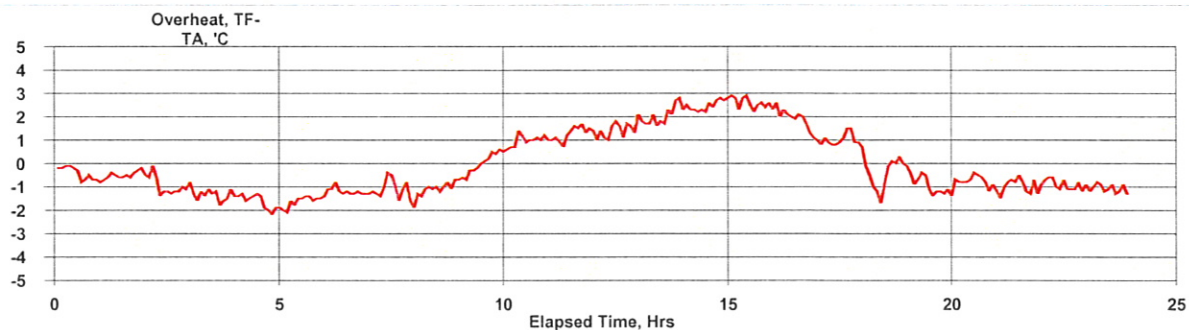
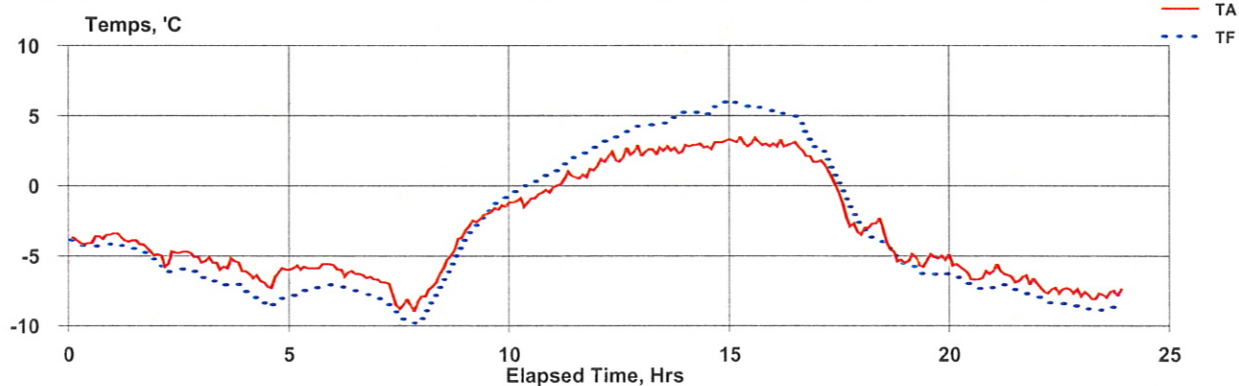
Date Time
dd-mmm hh:mm:ss
Start: 18-26-jan 0:00:08
Stop: 18-27-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 40
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.039 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 02 feb 10:44:17

Job Details:

Job Name: 18Feb02D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 2988:20
Flags:

Job Code:
Site Name: 2366D
Station Code:
Operators: KN
User1: ~~~~~
User2: ~~~~~

	Max	Min	Avg	Units
BP	594	590	591	mmHg
TA	14.3	-1.8	5.4	°C
Q	---	---	16.7	Lpm

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-01-feb	0:00:08
Stop: 18-02-feb	0:00:05
ET: 23:59	

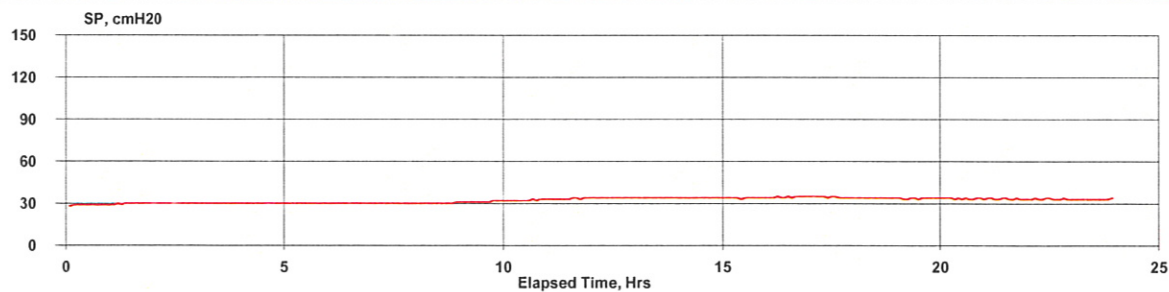
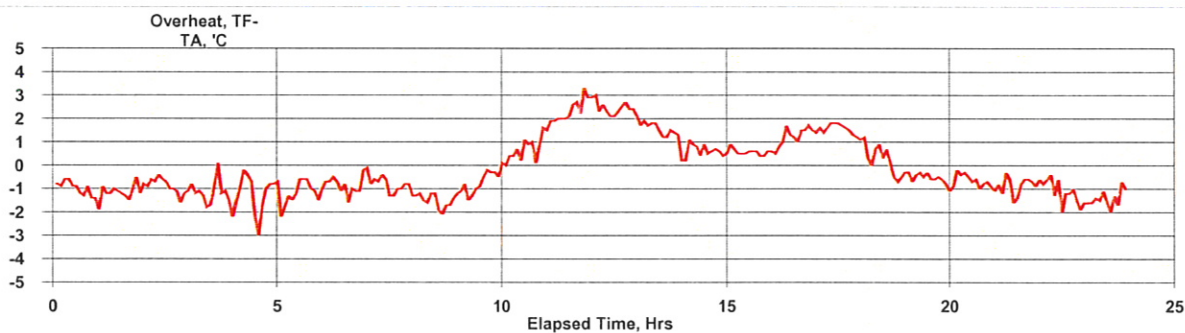
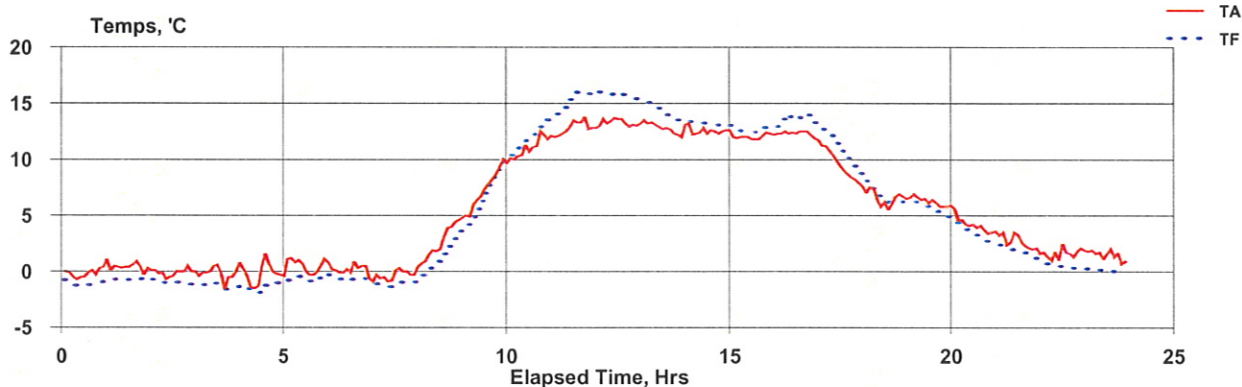
Mass Concentration Data:

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

QCV 0.56 %
Max overheat 3.3 °C
occured 01-feb 11:49:38

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 08 feb 14:39:58

Job Details:

Job Name: 18Feb08D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3012:19
Flags:

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

	Max	Min	Avg	Units
BP	597	593	594	mmHg
TA	14.6	-4.5	4.5	°C
Q	---	---	16.7	Lpm

QCV 0.5 %
Max overheat 3.8 °C
occured 07-feb 13:36:26

Timer Information:

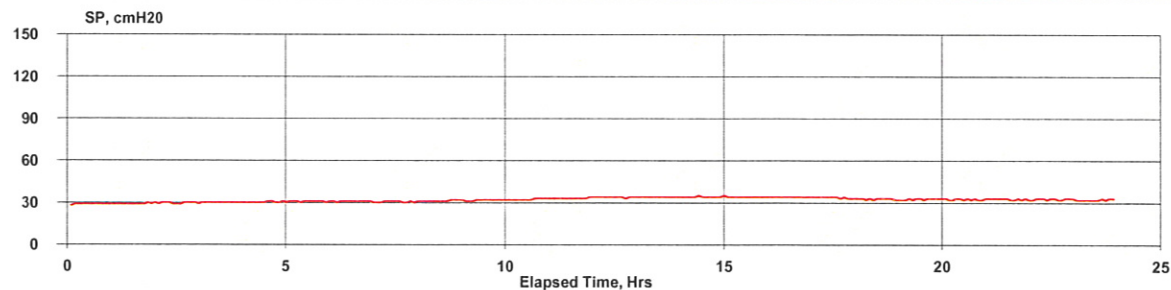
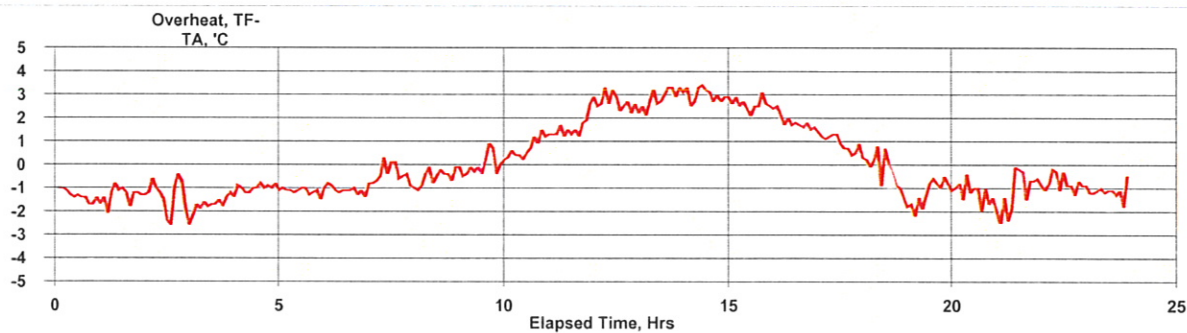
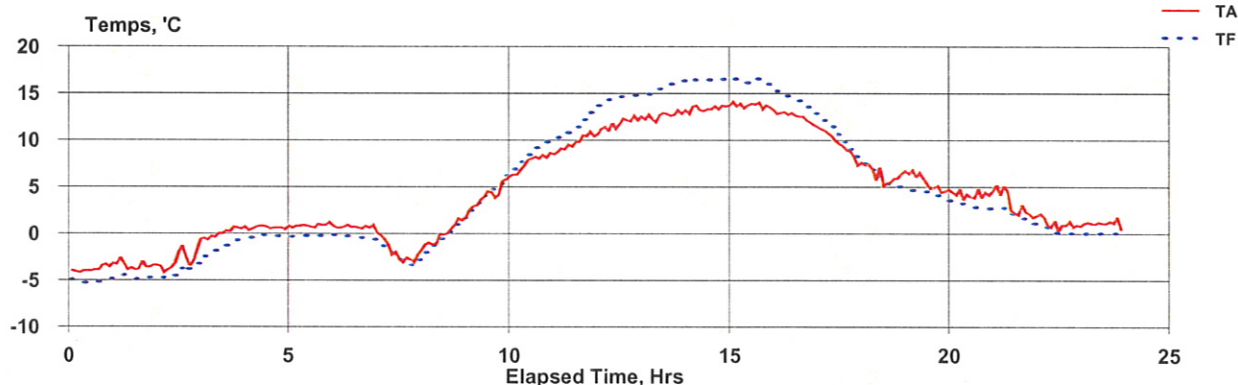
Date	Time
dd-mm-yy	hh:mm:ss
Start: 18-07-feb	0:00:08
Stop: 18-08-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	25
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.038 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 14 feb 12:35:52

Job Details:

Job Name: 18Feb14D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3036:18
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ~~~~~

User2: ~~~~~

	Max	Min	Avg	Units
BP	593	585	590	mmHg
TA	5.1	-4.8	-0.1	°C
Q	---	---	16.71	Lpm

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-13-feb	0:00:08
Stop: 18-14-feb	0:00:05
ET: 23:59	

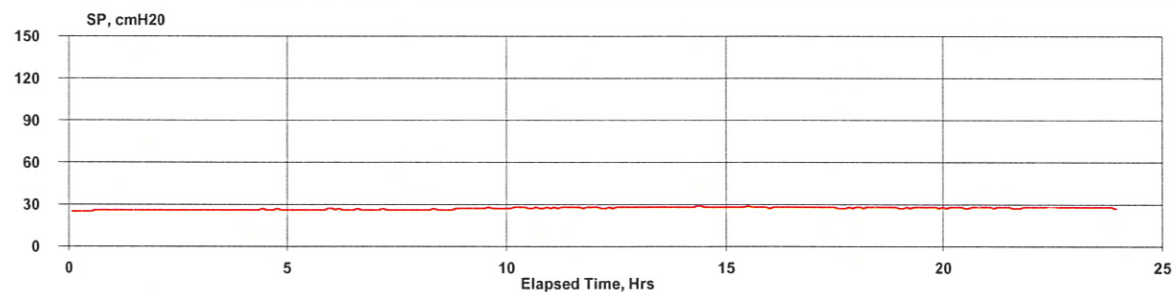
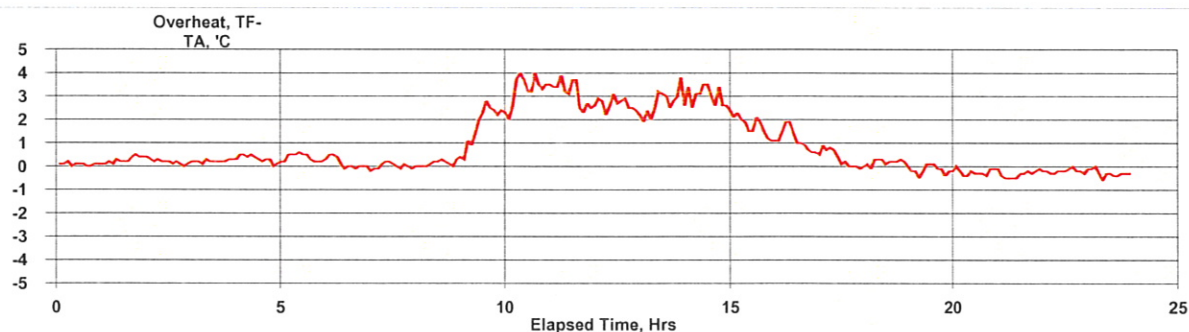
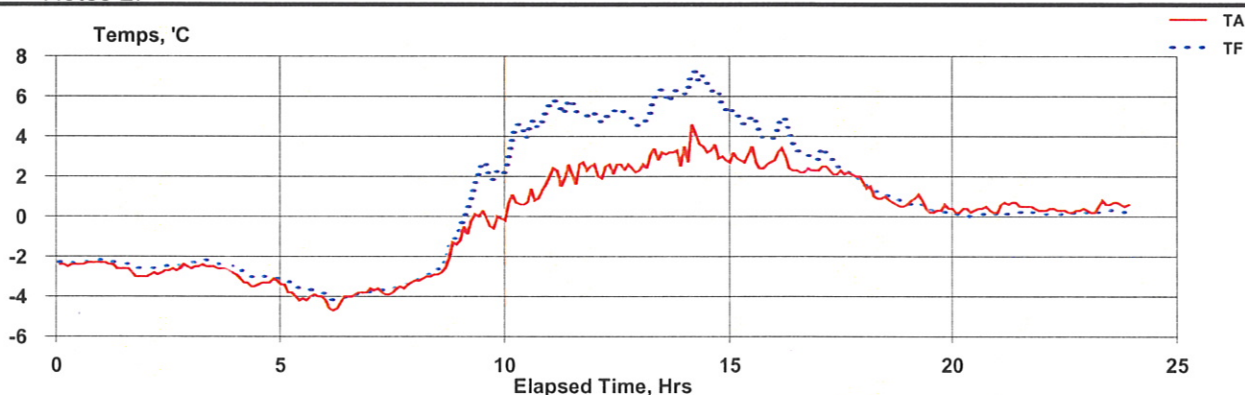
Mass Concentration Data:

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

QCV 0.55 %
Max overheat 4.2 °C
occured 13-feb 10:39:26

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 20 feb 13:32:19

Job Details:

Job Name: 18Feb20D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3060:17
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ~~~~~

User2: ~~~~~

	Max	Min	Avg	Units
BP	582	574	577	mmHg
TA	3.8	-12.6	-4.1	°C
Q	---	---	16.71	Lpm

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-19-feb	0:00:08
Stop: 18-20-feb	0:00:04
ET: 23:59	

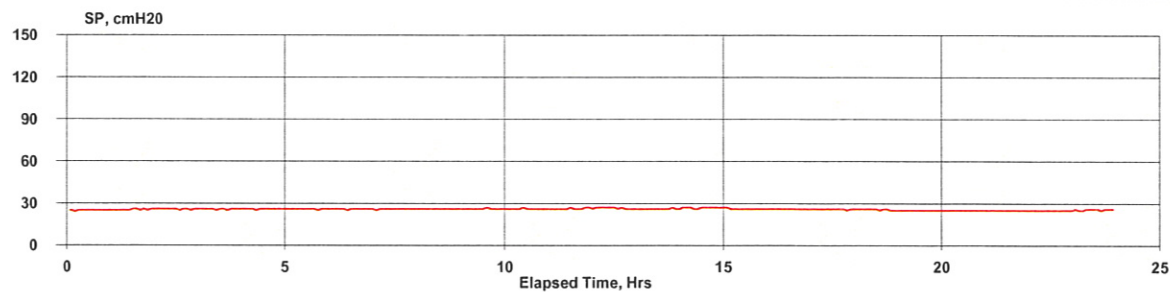
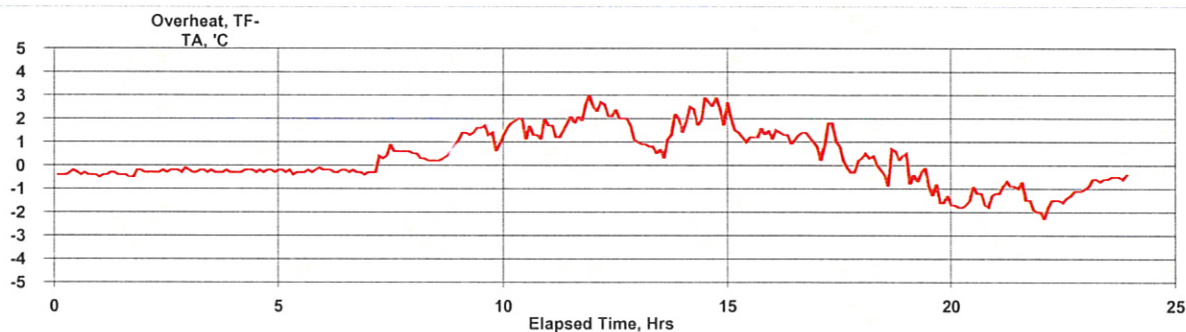
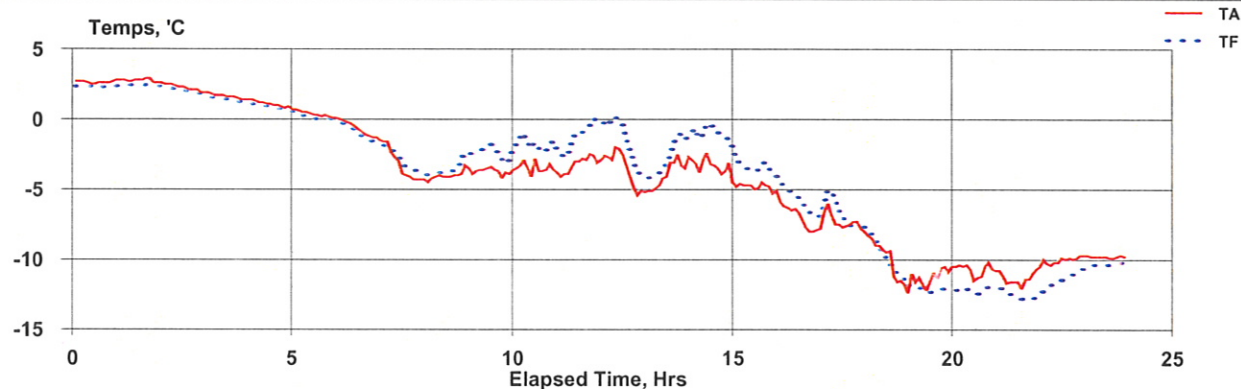
Mass Concentration Data:

Filter ID:	15
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.039 m ³
Mass Conc:	0 µg/m ³

QCV 0.53 %
Max overheat 3.5 °C
occured 19-feb 14:33:41

Notes 1:

Notes 2:



Downloaded 2018 27 feb 12:01:06

m				

BGI PQ200 Air Sampling System Downloaded 2018 05 mar 15:12:37

Job Details:

Job Name: 18Mar05D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3108:15
Flags:

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

	Max	Min	Avg	Units
BP	587	583	585	mmHg
TA	9.7	-3.7	3.1	°C
Q	---	---	16.71	Lpm

QCV 0.58 %
Max overheat 3 °C
occured 04-mar 14:00:19

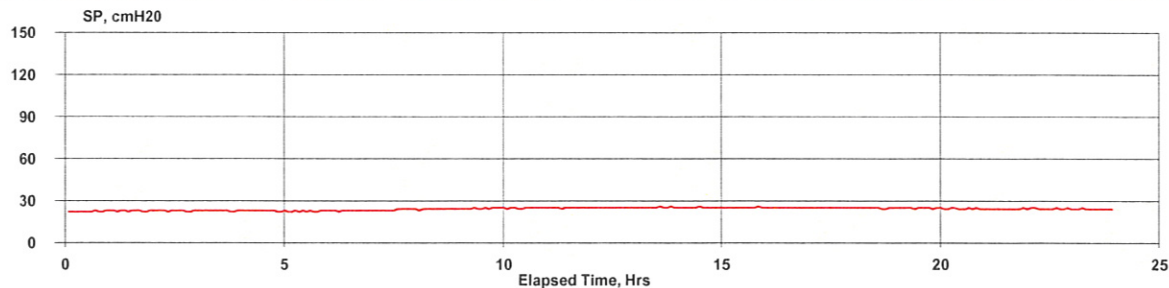
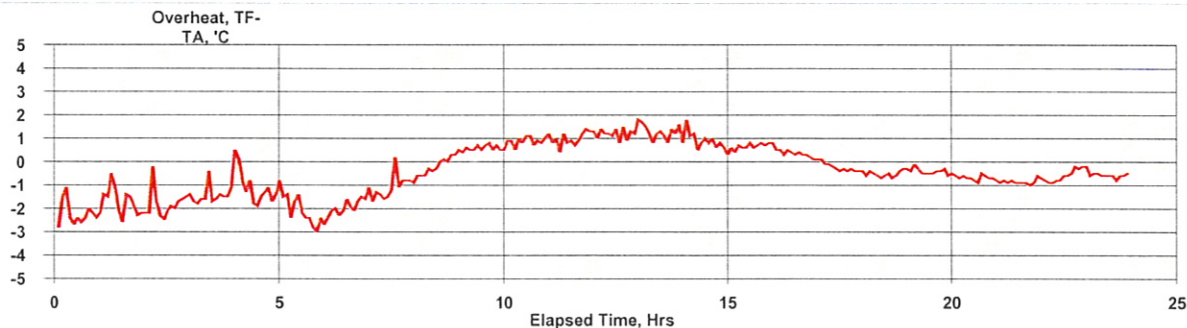
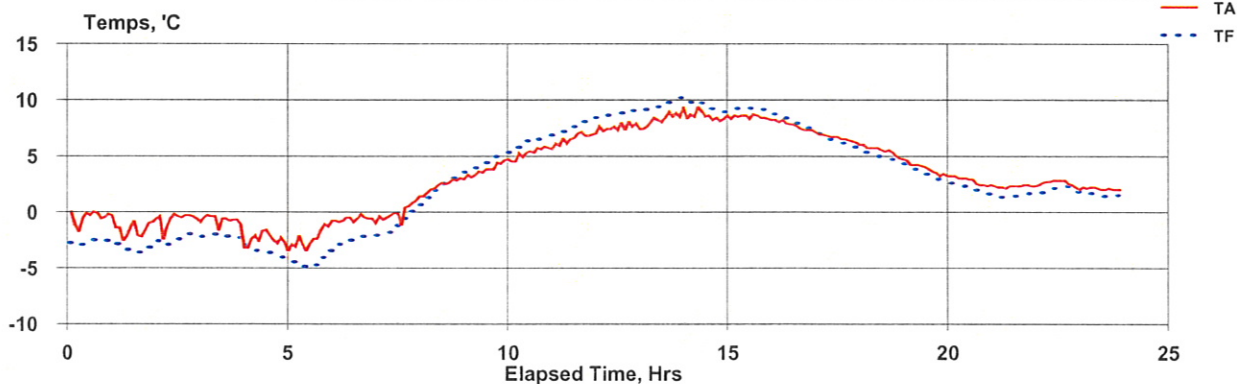
Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-03-mar	0:00:08
Stop: 18-04-mar	0:00:04
ET: 23:59	

Mass Concentration Data:

Filter ID:	
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.031 m ³
Mass Conc:	0 µg/m ³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 05 mar 15:12:37

Job Details:

Job Name: 18Mar05D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3108:15
Flags:

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

	Max	Min	Avg	Units
BP	587	583	585	mmHg
TA	9.7	-3.7	3.1	°C
Q	---	---	16.71	Lpm

QCV 0.58 %
Max overheat 3 °C
occured 04-mar 14:00:19

Timer Information:

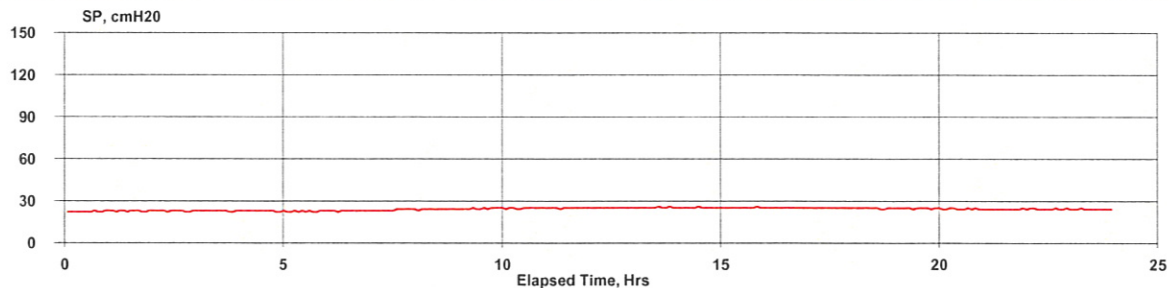
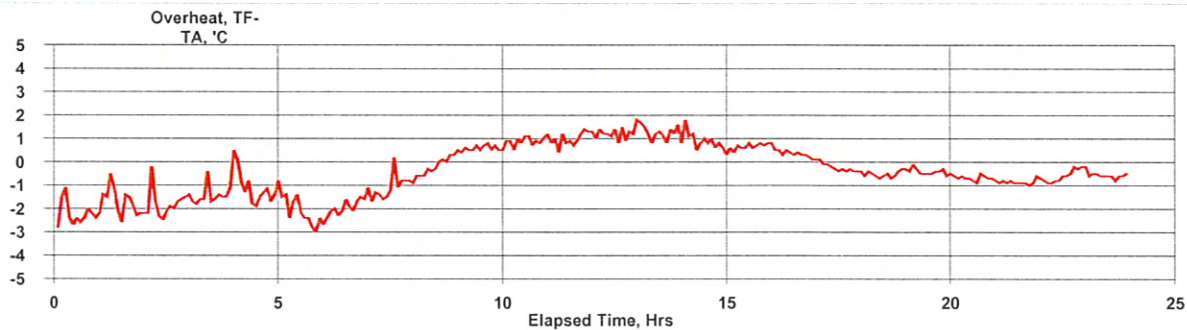
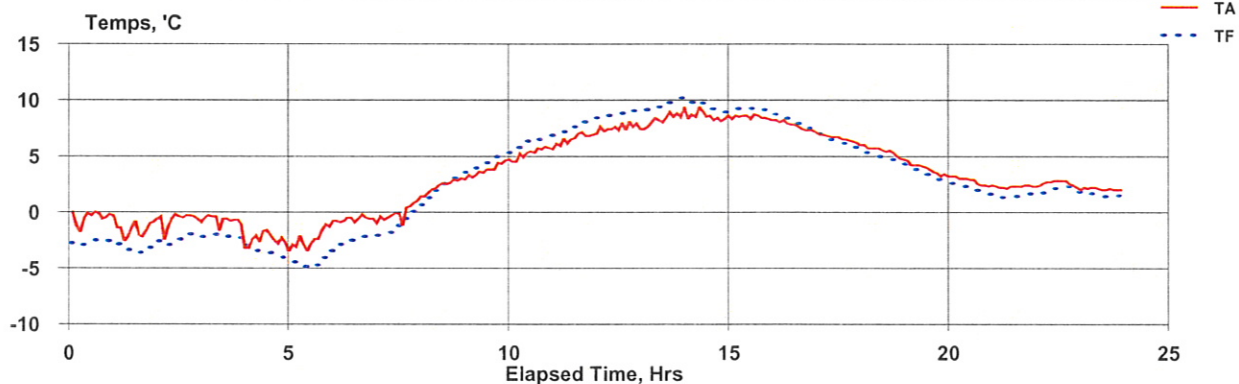
Date	Time
dd-mmm	hh:mm:ss
Start: 18-03-mar	0:00:08
Stop: 18-04-mar	0:00:04
ET: 23:59	

Mass Concentration Data:

Filter ID:	
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.031 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 mar 10:42:08

Job Details:

Job Name: 18Mar16D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3156:13
Flags:

Job Code:
Site Name: 2366D
Station Code:
Operators: KN

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
User2: yyyyyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	586	582	583	mmHg
TA	2.9	-5.3	-0.3	°C
Q	---	---	16.71	Lpm

QCV 0.45 %
Max overheat 2.6 °C
occured 15-mar 15:51:20

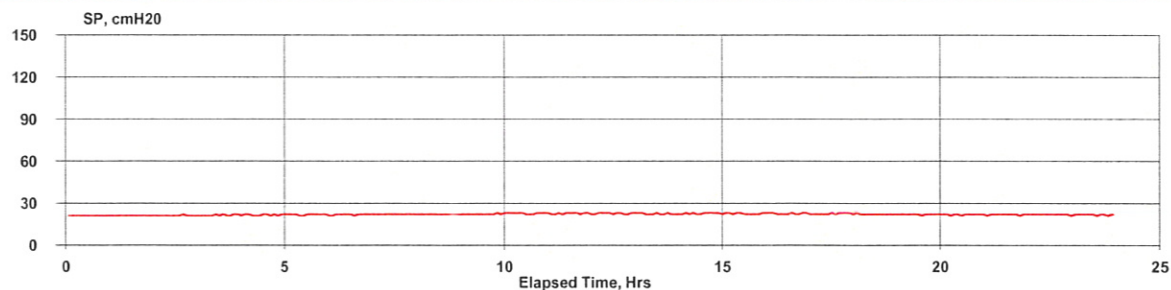
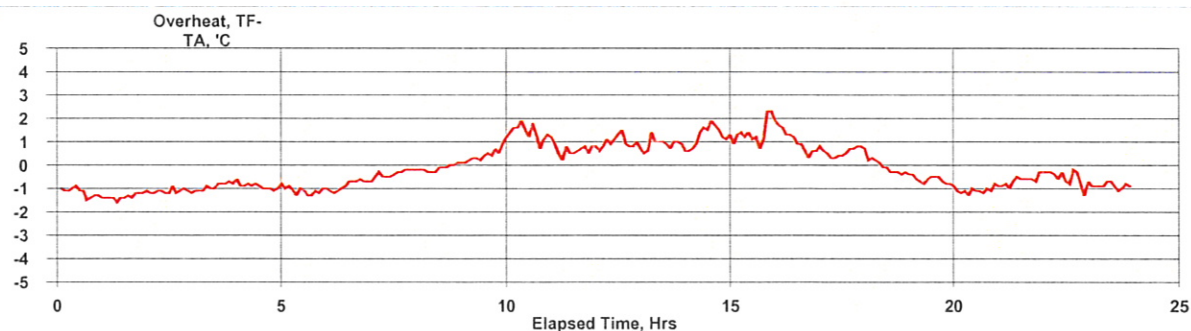
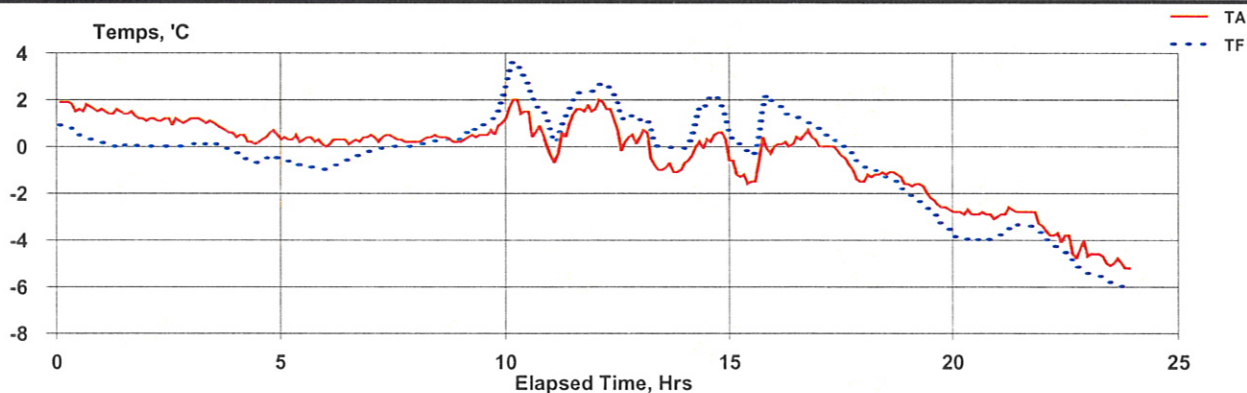
Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-15-mar 0:00:08
Stop: 18-16-mar 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: 24.033 m³
Mass Conc: 0 µg/m³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 mar 10:02:23

Job Details:

Job Name: 18Mar23D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3180:12
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ~~~~~

User2: ~~~~~

	Max	Min	Avg	Units
BP	591	587	589	mmHg
TA	13.9	-0.9	6.2	°C
Q	---	---	16.7	Lpm

Timer Information:

Date Time
dd-mm hh:mm:ss
Start: 18-21-mar 0:00:08
Stop: 18-22-mar 0:00:05
ET: 23:59

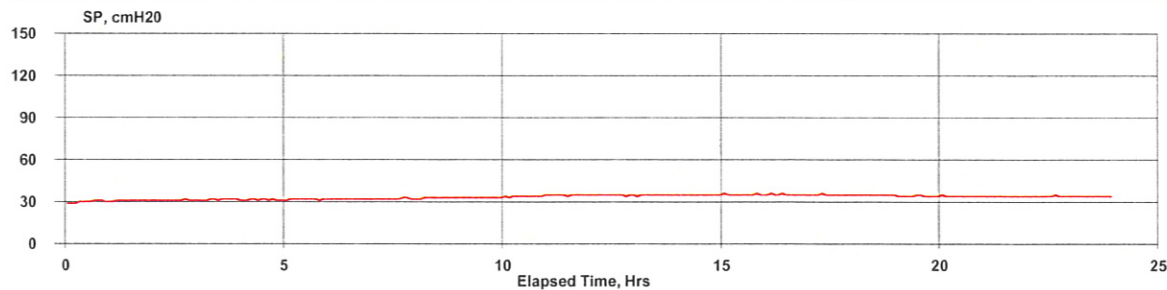
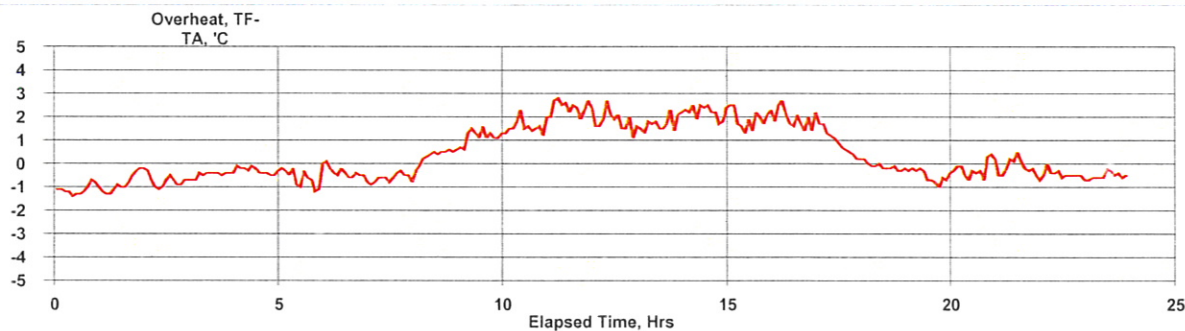
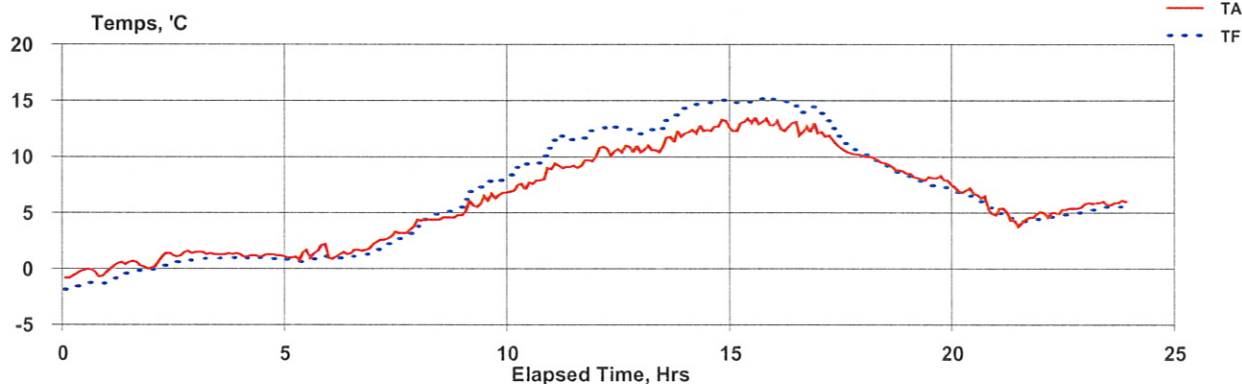
Mass Concentration Data:

Filter ID: 24
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.04 m³
Mass Conc: 0 µg/m³

QCV 0.54 %
Max overheat 3.3 °C
occured 21-mar 14:22:46

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 28 mar 11:28:02

Job Details:

Job Name: 18Mar28D.JOB
Version: 5.62
Serial No: 2366
Pump Time: 3204:11
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: ~~~~~

User2: ~~~~~

	Max	Min	Avg	Units
BP	591	587	589	mmHg
TA	8.9	-4.8	0.9	°C
Q	---	---	16.71	Lpm

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-27-mar	0:00:08
Stop: 18-28-mar	0:00:05
ET: 23:59	

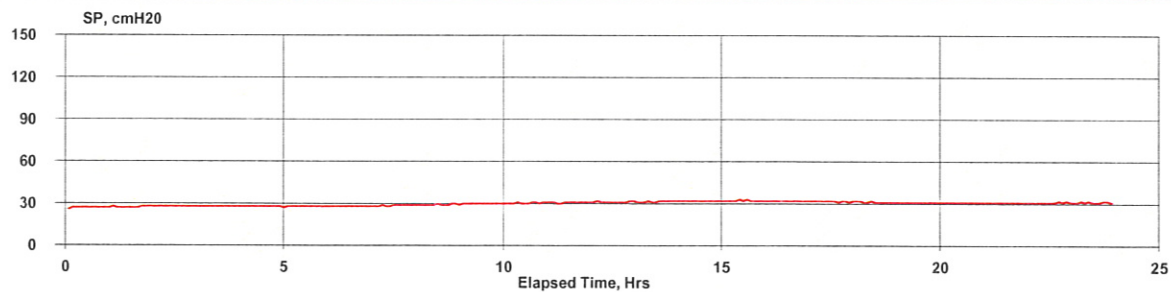
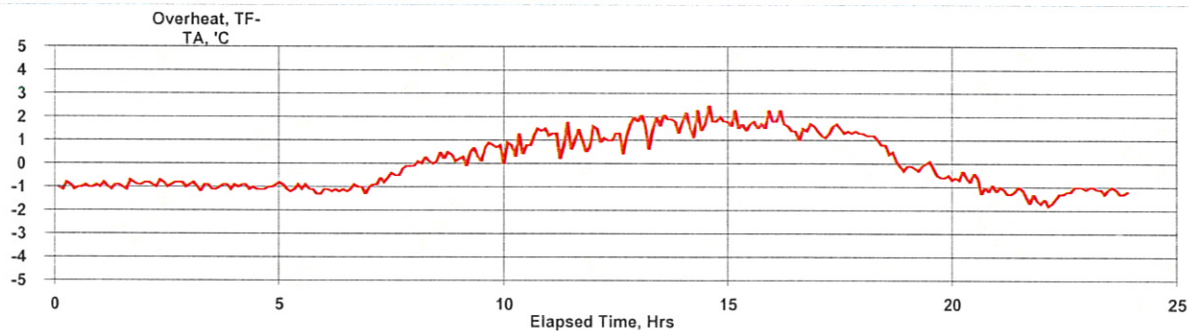
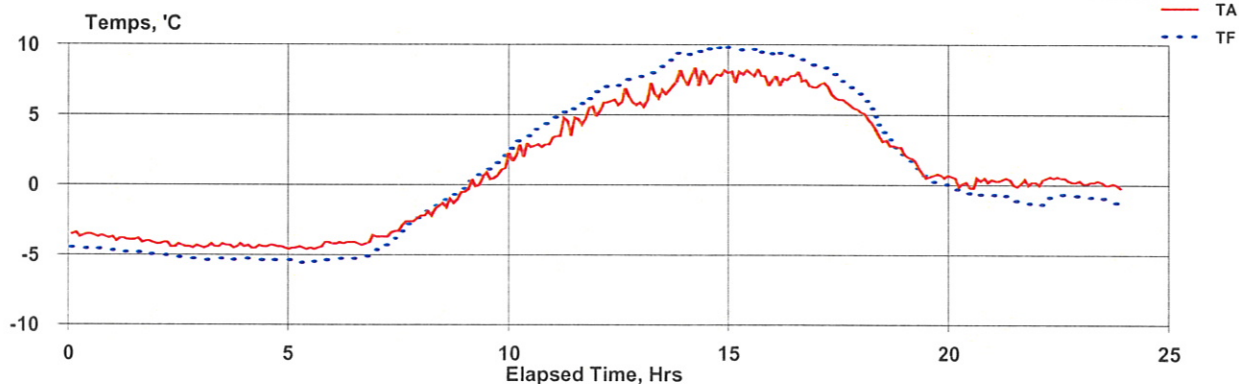
Mass Concentration Data:

Filter ID:	12
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.039 m ³
Mass Conc:	0 µg/m ³

QCV 0.53 %
Max overheat 2.7 °C
occured 27-mar 14:58:03

Notes 1:

Notes 2:



Collocated Monitor 2398E

BGI PQ200 Air Sampling System Downloaded 2018 04 jan 13:47:02

Job Details:

Job Name: 18Jan04E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 550:37
Flags:

Job Code:
Site Name: 2398E
Station Code:
Operators: KN

User1: ~~~~~
User2: ~~~~~

	Max	Min	Avg	Units
BP	597	592	595	mmHg
TA	10.1	-2.9	3.2	°C
Q	---	---	16.71	Lpm

QCV 0.5 %
Max overheat 4.5 °C
occured 03-jan 17:09:23

Timer Information:

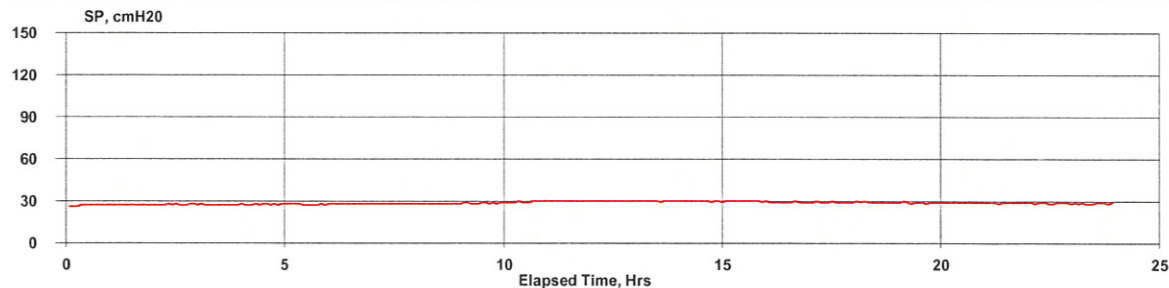
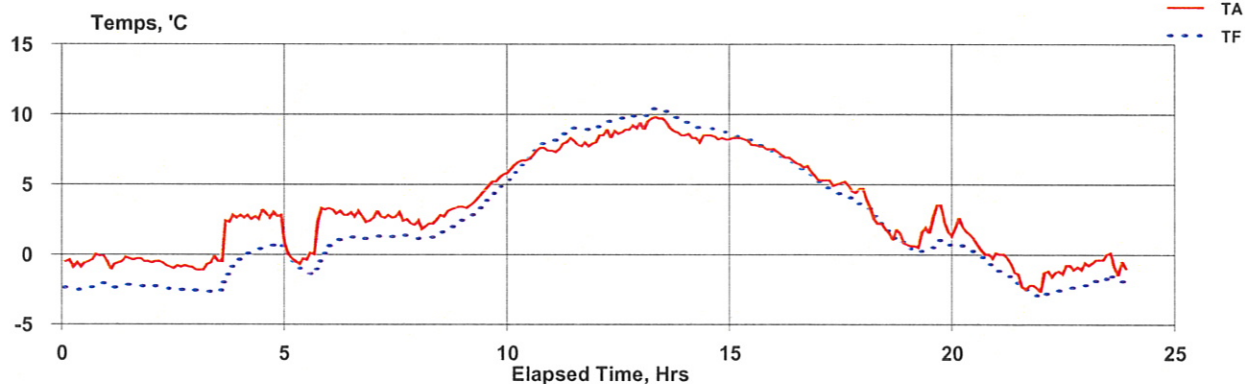
Date	Time
dd-mmm	hh:mm:ss
Start: 17-02-jan	0:00:08
Stop: 18-03-jan	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	8
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.037 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 10 jan 12:25:13

Job Details:

Job Name: 18Jan10E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 574:36
Flags:

Job Code:

Site Name: 2398E
Station Code:
Operators: KN

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy

User2: yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	593	590	591	mmHg
TA	8.1	-3.4	2.3	°C
Q	---	---	16.71	Lpm

QCV 0.59 %

Max overheat 1.4 °C
occured 08-jan 13:08:24

Timer Information:

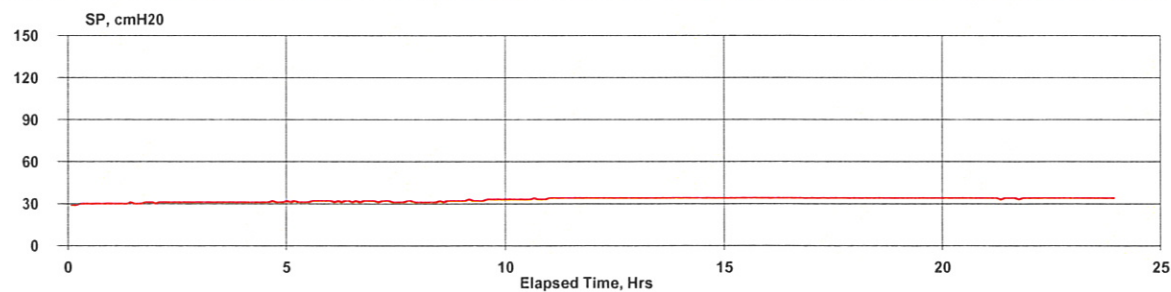
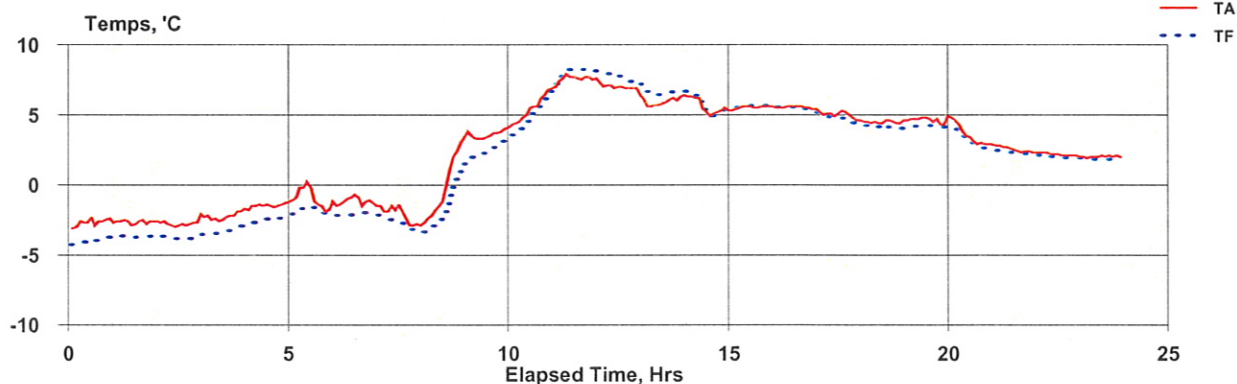
Date Time
dd-mmm hh:mm:ss
Start: 18-08-jan 0:00:08
Stop: 18-09-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 35
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.043 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 jan 12:23:44

Job Details:

Job Name: 18Jan16E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 598:36
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy

User2: yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	600	595	597	mmHg
TA	12.4	-2.3	3.5	°C
Q	---	---	16.71	Lpm

Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-14-jan 0:00:00
Stop: 18-15-jan 0:00:05
ET: 24:00:00

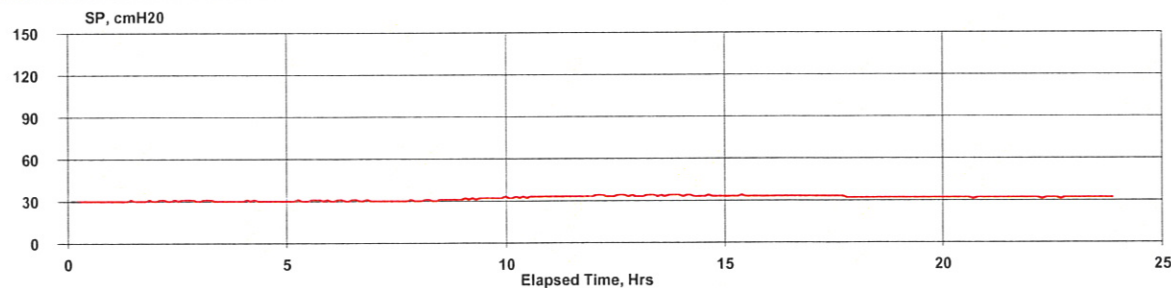
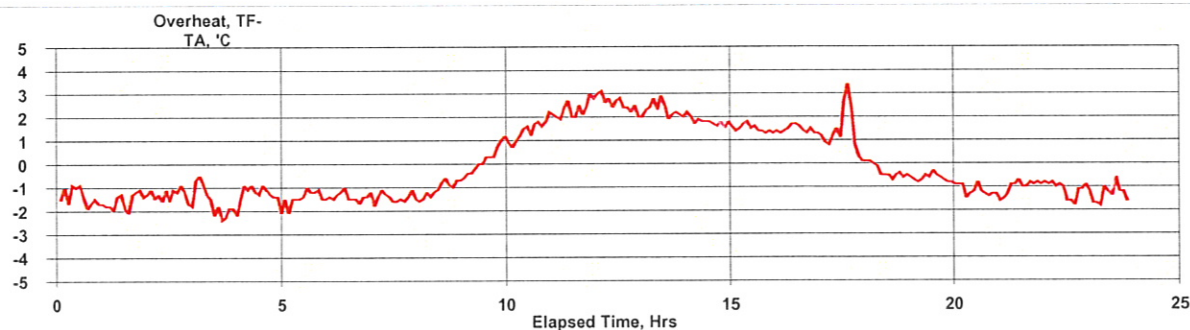
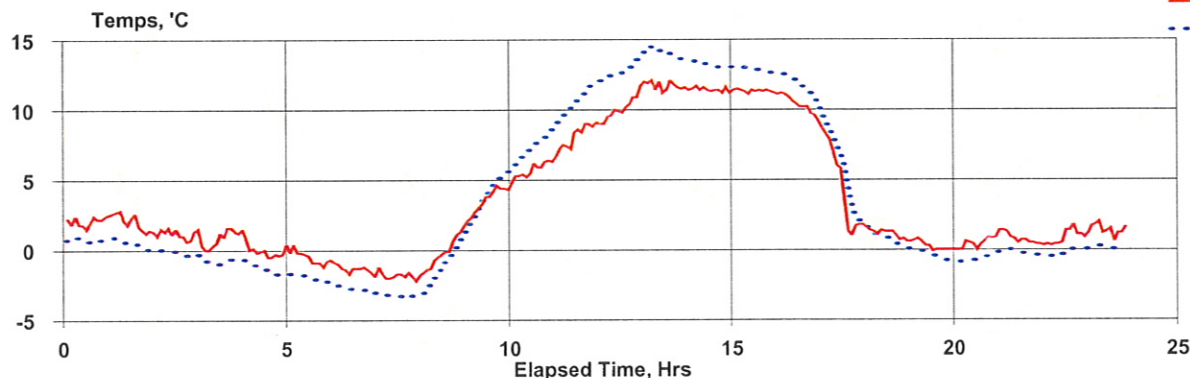
Mass Concentration Data:

Filter ID: 16
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.042 m³
Mass Conc: 0 µg/m³

QCV 0.5 %
Max overheat 3.6 °C
occured 14-jan 17:38:37

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 23 jan 14:43:43

Job Details:

Job Name: 18Jan23E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 622:35
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyy

User2: yyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	587	583	584	mmHg
TA	6.1	-6.5	-0.2	°C
Q	---	---	16.71	Lpm

QCV 0.55 %

Max overheat 3.2 °C
occured 20-jan 14:14:29

Timer Information:

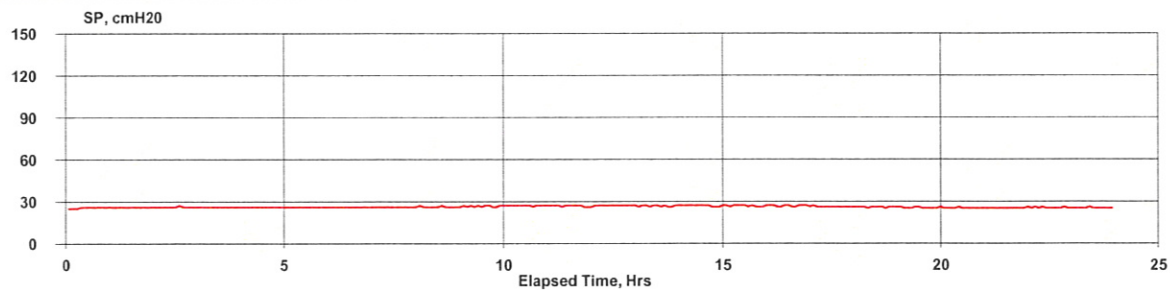
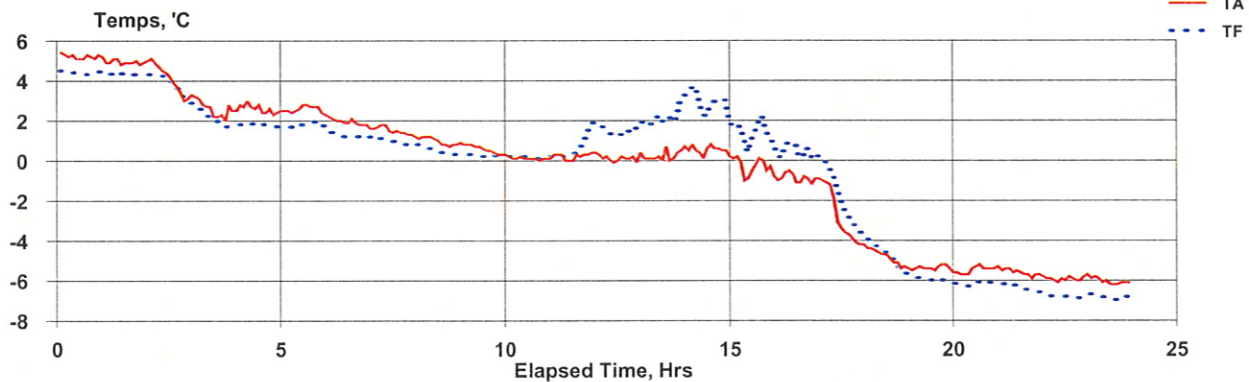
Date	Time
dd-mmm	hh:mm:ss
Start: 18-20-jan	0:00:08
Stop: 18-21-jan	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	36
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.041 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 29 jan 11:47:10

Job Details:

Job Name: 18Jan29E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 646:34
Flags:

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

	Max	Min	Avg	Units
BP	595	587	592	mmHg
TA	4.3	-8.4	-2.6	°C
Q	---	---	16.71	Lpm

QCV 0.56 %
Max overheat 3.7 °C
occured 27-jan 17:57:31

Timer Information:

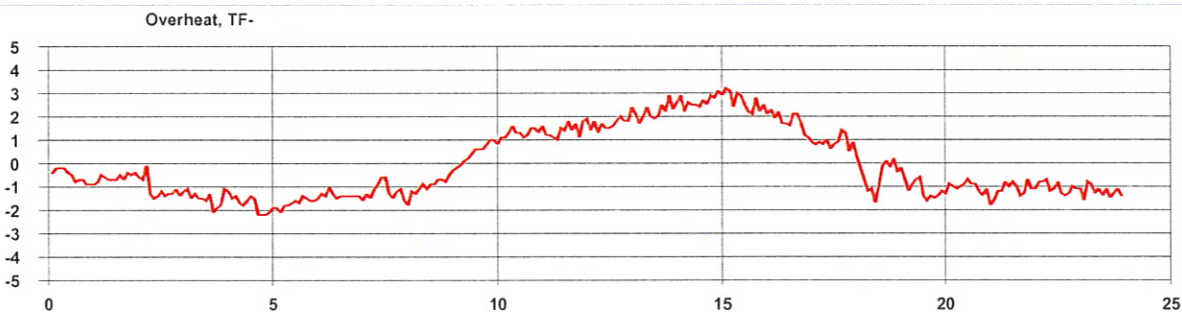
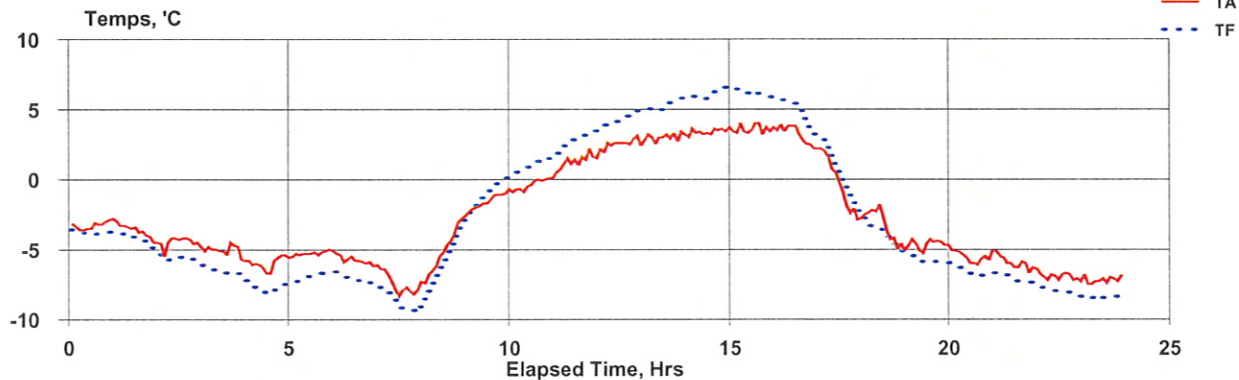
Date Time
dd-mmm hh:mm:ss
Start: 18-26-jan 0:00:08
Stop: 18-27-jan 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 42
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.041 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 02 feb 10:48:58

Job Details:

Job Name: 18Feb02E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 670:33
Flags:

Job Code:
Site Name: 2398
Station Code:
Operators: KN

User1: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
User2: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

	Max	Min	Avg	Units
BP	596	591	594	mmHg
TA	14.6	-1.3	5.9	°C
Q	---	---	16.71	Lpm

QCV 0.54 %
Max overheat 3.4 °C
occured 01-feb 11:48:46

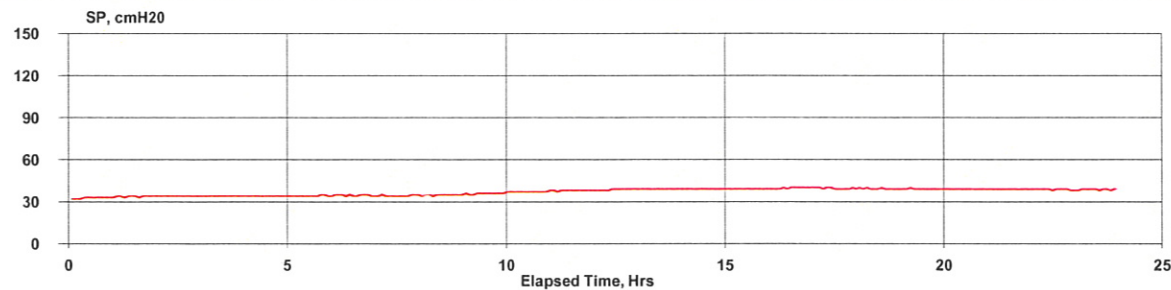
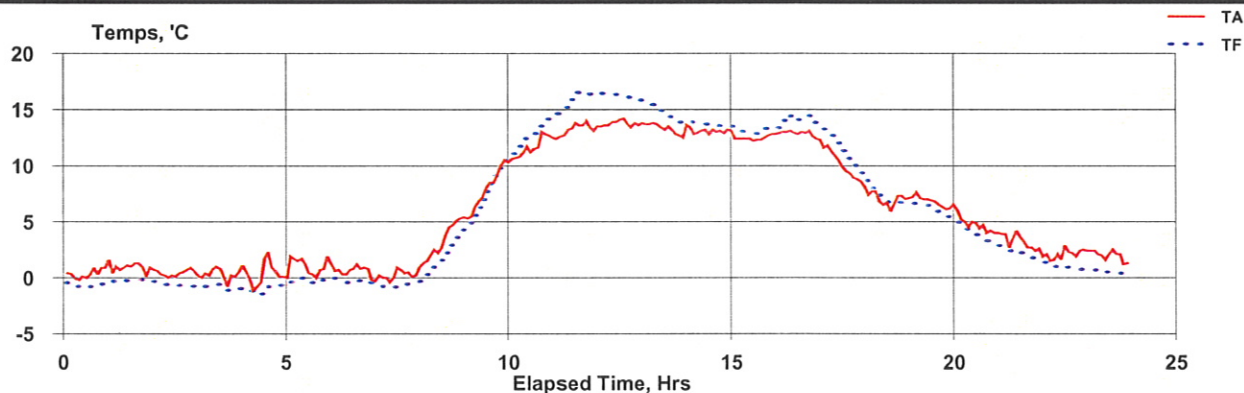
Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-01-feb 0:00:08
Stop: 18-02-feb 0:00:04
ET: 23:59

Mass Concentration Data:

Filter ID: 18
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.04 m³
Mass Conc: 0 µg/m³

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 08 feb 14:40:15

Job Details:

Job Name: 18Feb08E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 694:32
Flags:

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

	Max	Min	Avg	Units
BP	599	594	597	mmHg
TA	15.2	-3.9	5	°C
Q	---	---	16.71	Lpm

QCV 0.56 %
Max overheat 3.9 °C
occured 07-feb 13:35:32

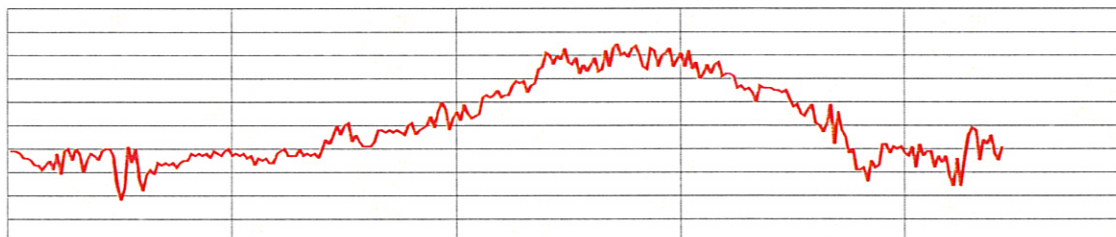
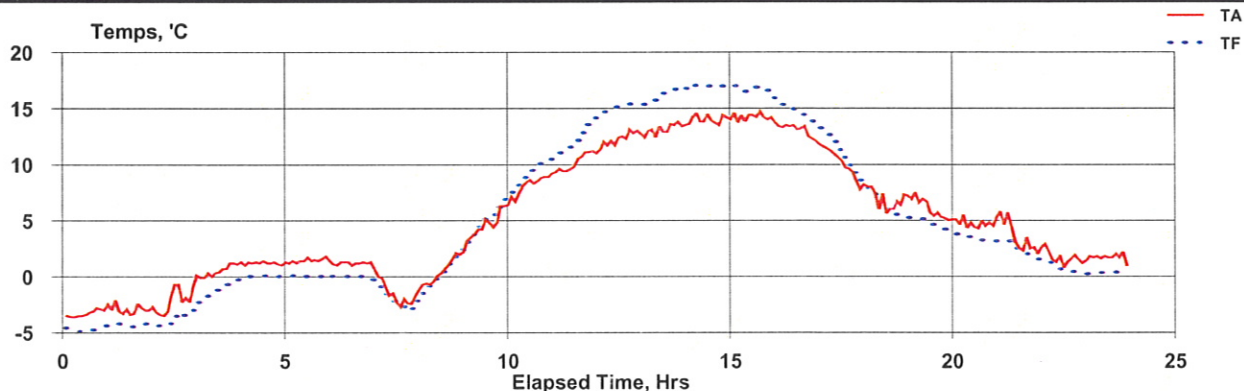
Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-07-feb	0:00:08
Stop: 18-08-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

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

Notes 1:
Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 14 feb 12:36:29

Job Details:

Job Name: 18Feb14E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 718:31
Flags:

Job Code:

Site Name:
Station Code:
Operators:

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyy
User2: yyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	594	585	591	mmHg
TA	5.5	-4.2	0.3	°C
Q	---	---	16.71	Lpm

Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-13-feb 0:00:08
Stop: 18-14-feb 0:00:05
ET: 23:59

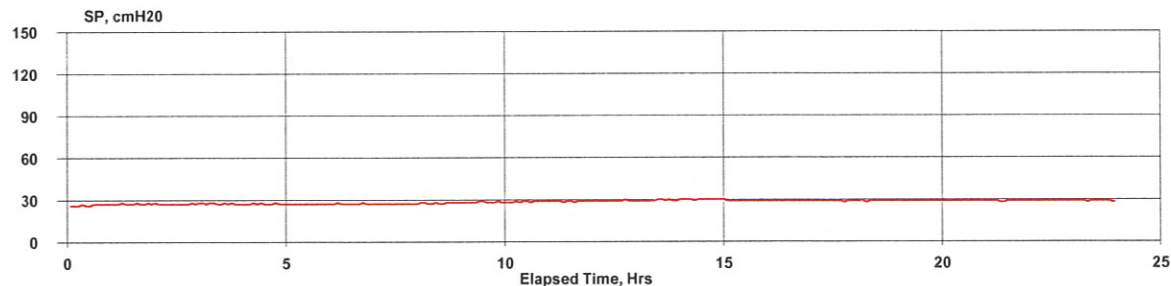
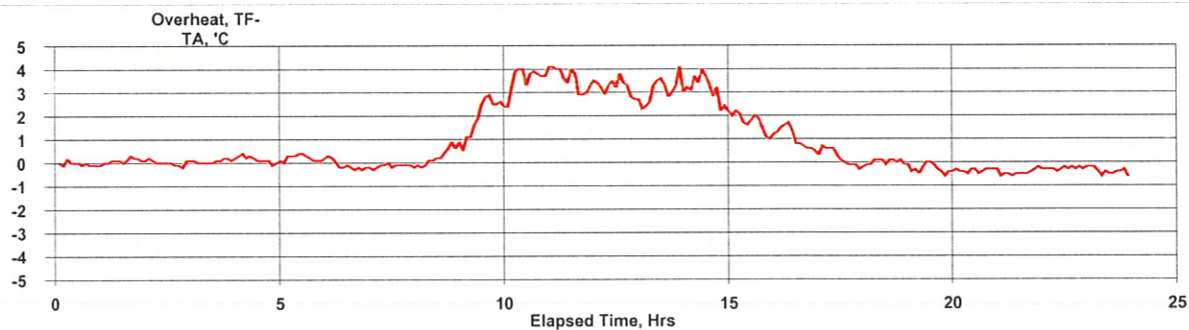
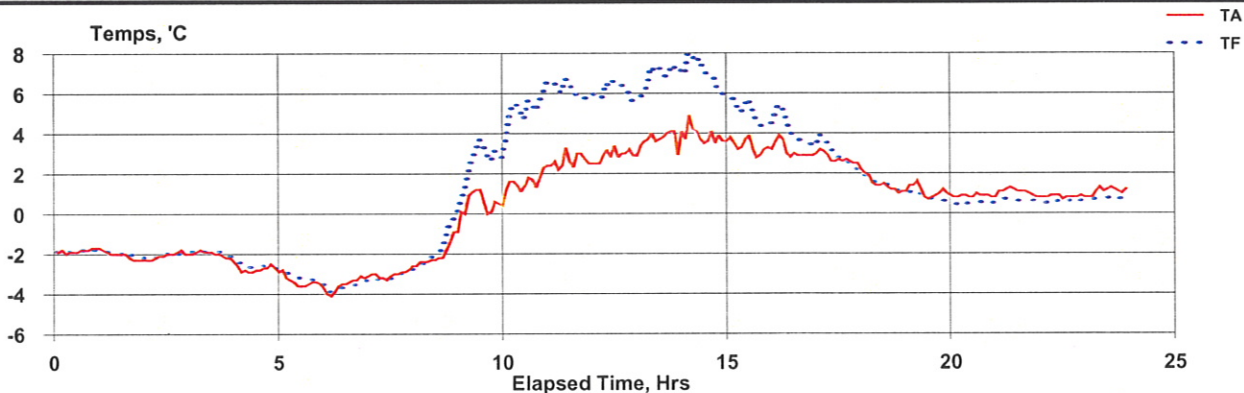
Mass Concentration Data:

Filter ID: 8
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.043 m³
Mass Conc: 0 µg/m³

QCV 0.55 %
Max overheat 4.6 °C
occured 13-feb 10:41:47

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 20 feb 13:33:22

Job Details:

Job Name: 18Feb20E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 742:30
Flags:

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

	Max	Min	Avg	Units
BP	583	575	578	mmHg
TA	4	-12.1	-3.6	°C
Q	---	---	16.71	Lpm

QCV 0.57 %
Max overheat 3.4 °C
occured 19-feb 14:32:53

Timer Information:

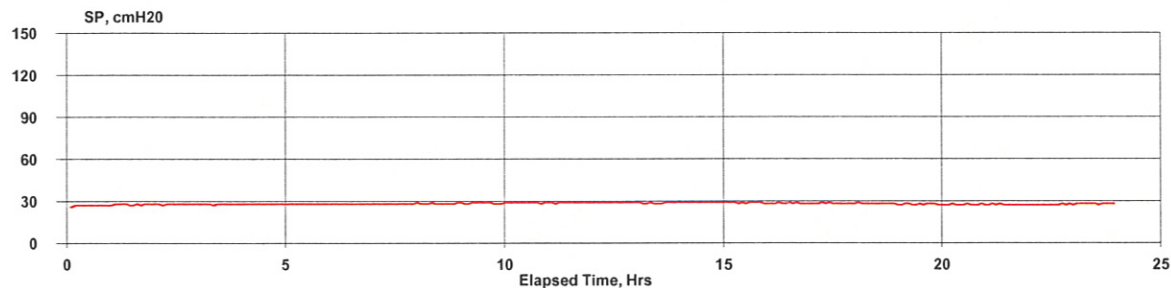
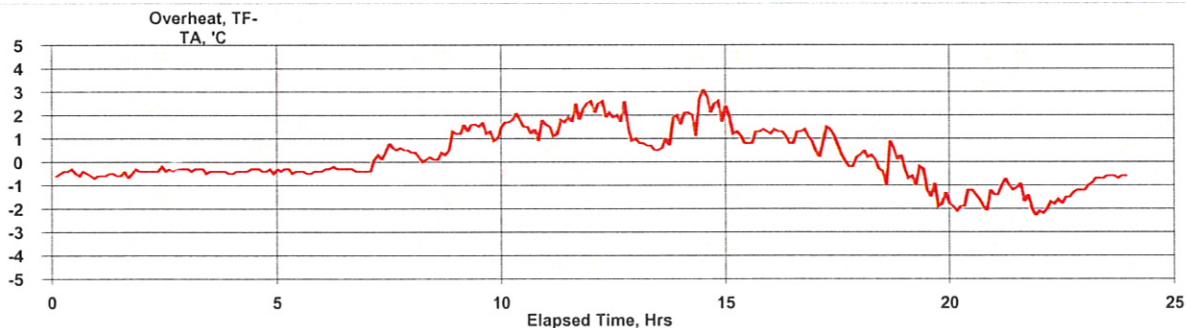
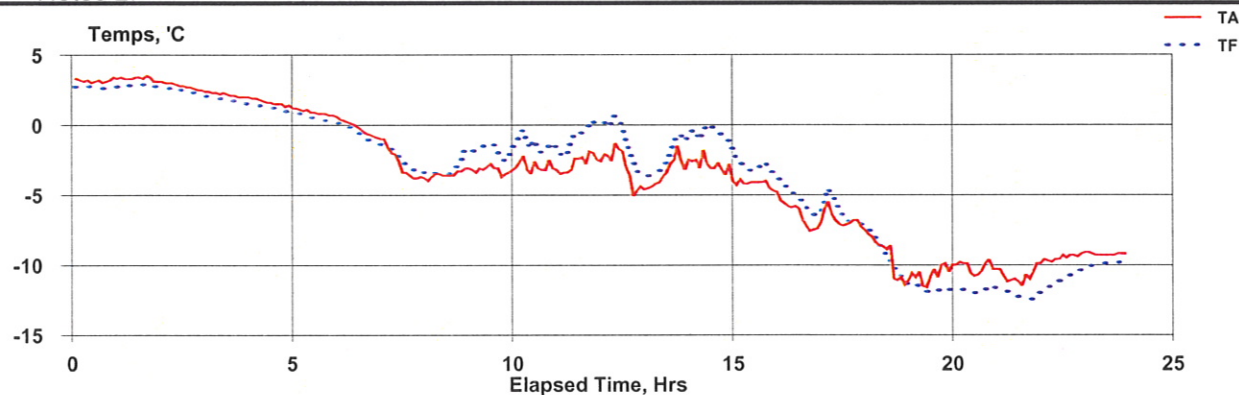
Date Time
dd-mmm hh:mm:ss
Start: 18-19-feb 0:00:08
Stop: 18-20-feb 0:00:05
ET: 23:59

Mass Concentration Data:

Filter ID: 16
Final Wt: mg
Initial Wt: mg
Delta Wt: 0.000 mg
Total Vol: 24.041 m³
Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 27 feb 12:01:45

Job Details:

Job Name: 18Feb27E.JOB
 Version: 5.62
 Serial No: 2398
 Pump Time: 766:29
 Flags:

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

	Max	Min	Avg	Units
BP	592	586	590	mmHg
TA	2.6	-14.8	-6.7	°C
Q	---	---	16.71	Lpm

QCV 0.57 %
 Max overheat 4.5 °C
 occurred 25-feb 10:45:28

Timer Information:

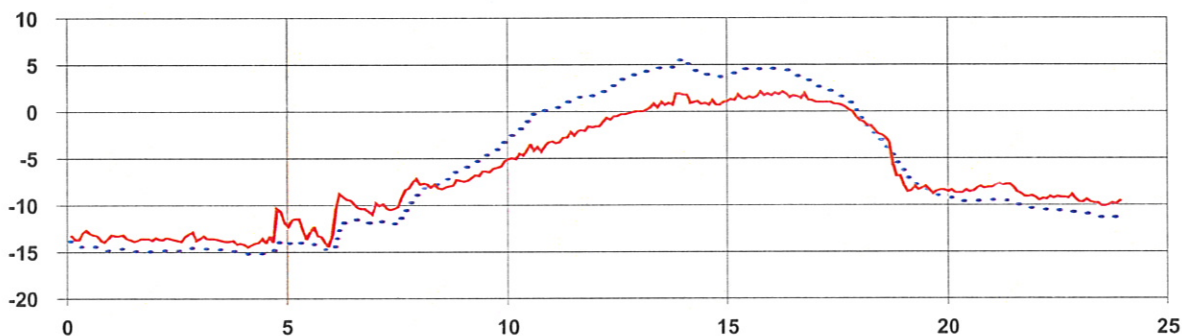
Date	Time
dd-mmm	hh:mm:ss
Start: 18-25-feb	0:00:08
Stop: 18-26-feb	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	19
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.041 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



Overheat, TF-

BGI PQ200 Air Sampling System Downloaded 2018 05 mar 15:12:59

Job Details:

Job Name: 18Mar05E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 790:28
Flags:

Job Code:

Site Name:

Station Code:

Operators:

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyy

User2: yyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	588	585	586	mmHg
TA	10.2	-3.2	3.7	°C
Q	---	---	16.71	Lpm

Timer Information:

Date Time
dd-mmm hh:mm:ss
Start: 18-03-mar 0:00:08
Stop: 18-04-mar 0:00:05
ET: 23:59

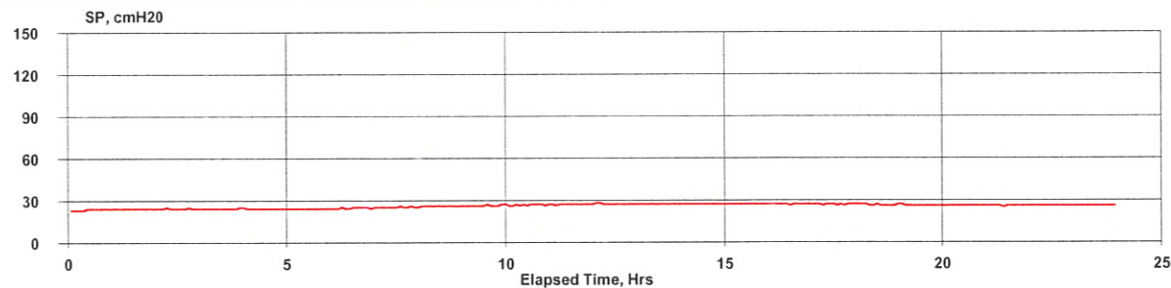
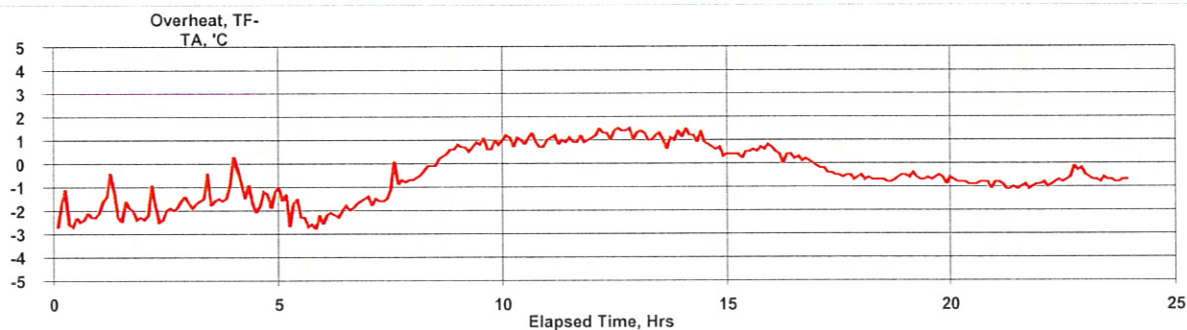
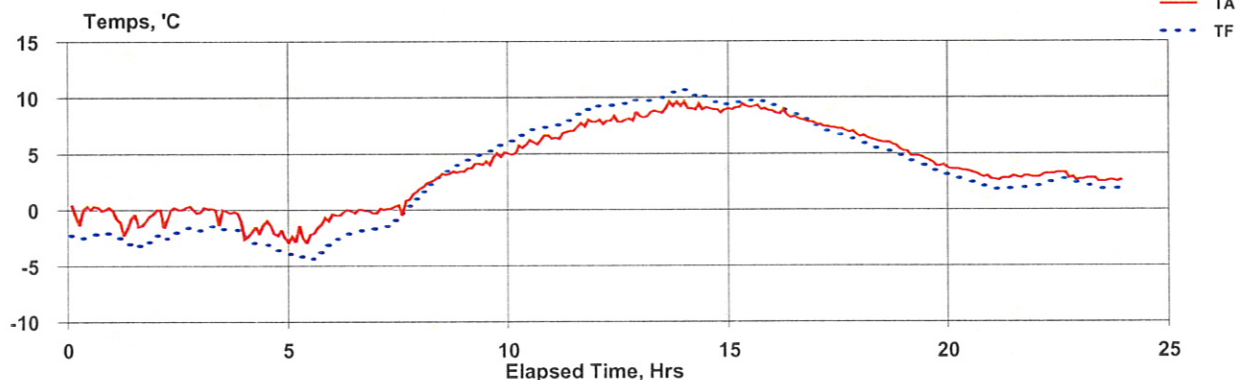
Mass Concentration Data:

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

QCV 0.56 %
Max overheat 3 °C
occured 04-mar 13:59:29

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System

Downloaded 2018 12 mar 11:08:18

Job Details:

Job Name: 18Mar12E.JOB

Version: 5.62

Serial No: 2398

Pump Time: 814:27

Flags:

Job Code:

Site Name: 239E

Station Code:

Operators: KN

User1: yyyyyyyyyyyyyyyyyyyyyyyyyyy

User2: yyyyyyyyyyyyyyyyyyyyyyyyyyy

	Max	Min	Avg	Units
BP	590	587	588	mmHg
TA	14.4	-2.1	5	°C
Q	---	---	16.71	Lpm

QCV 0.56 %

Max overheat 2.9 °C

occured 11-mar 18:36:54

Timer Information:

Date	Time
dd-mmm	hh:mm:ss
Start: 18-09-mar	0:00:08
Stop: 18-10-mar	0:00:05

ET: 23:59

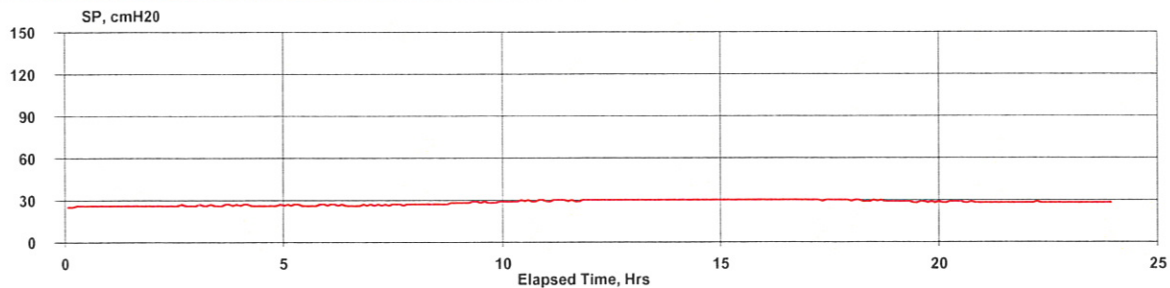
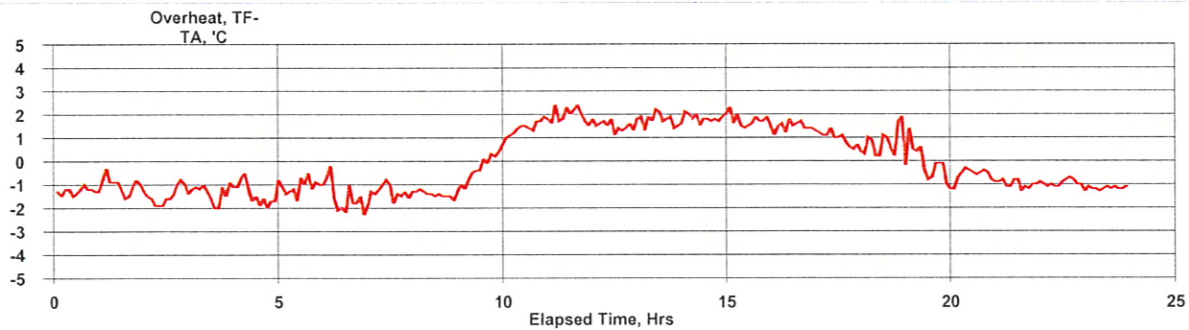
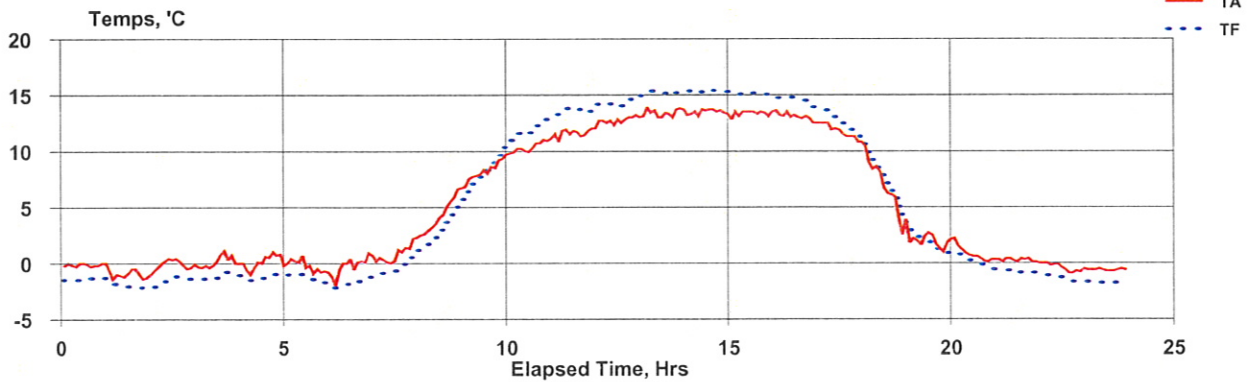
Mass Concentration Data:

Filter ID:	8
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.04 m ³

Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 16 mar 10:45:49

Job Details:

Job Name: 18Mar16E.JOB
Version: 5.62
Serial No: 2398
Pump Time: 838:26
Flags:

Job Code:
Site Name: 239E
Station Code:
Operators: KN

User1:
User2:

	Max	Min	Avg	Units
BP	587	583	584	mmHg
TA	3.2	-4.7	0.2	°C
Q	---	---	16.71	Lpm

QCV 0.57 %
Max overheat 2.4 °C
occured 15-mar 15:50:05

Timer Information:

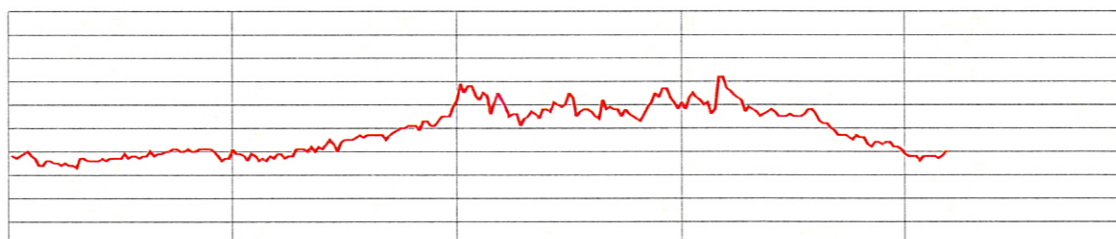
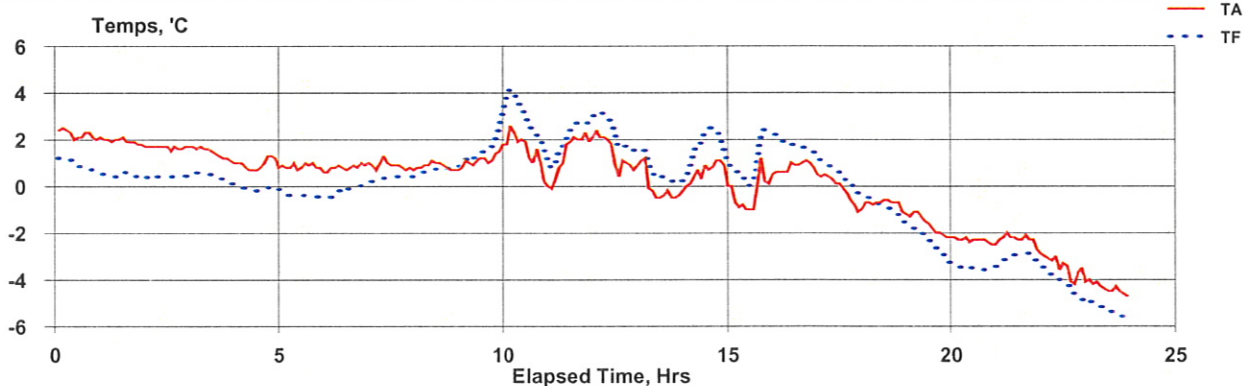
Date	Time
dd-mmm	hh:mm:ss
Start: 18-15-mar	0:00:08
Stop: 18-16-mar	0:00:05
ET: 23:59	

Mass Concentration Data:

Filter ID:	8
Final Wt:	mg
Initial Wt:	mg
Delta Wt:	0.000 mg
Total Vol:	24.042 m ³
Mass Conc:	0 µg/m ³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 23 mar 10:02:46

Job Details:

Job Name: 18Mar23E.JOB
 Version: 5.62
 Serial No: 2398
 Pump Time: 862:25
 Flags:

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

	Max	Min	Avg	Units
BP	593	587	590	mmHg
TA	14.5	-0.4	6.7	°C
Q	---	---	16.71	Lpm

QCV 0.55 %
 Max overheat 3.2 °C
 occurred 21-mar 14:22:03

Timer Information:

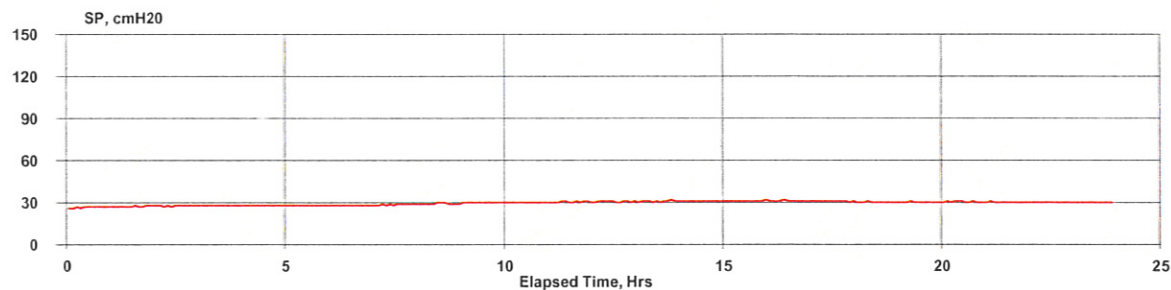
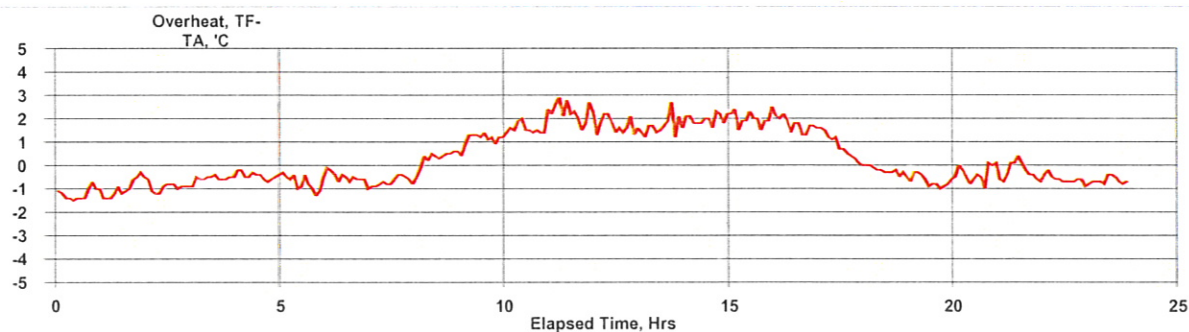
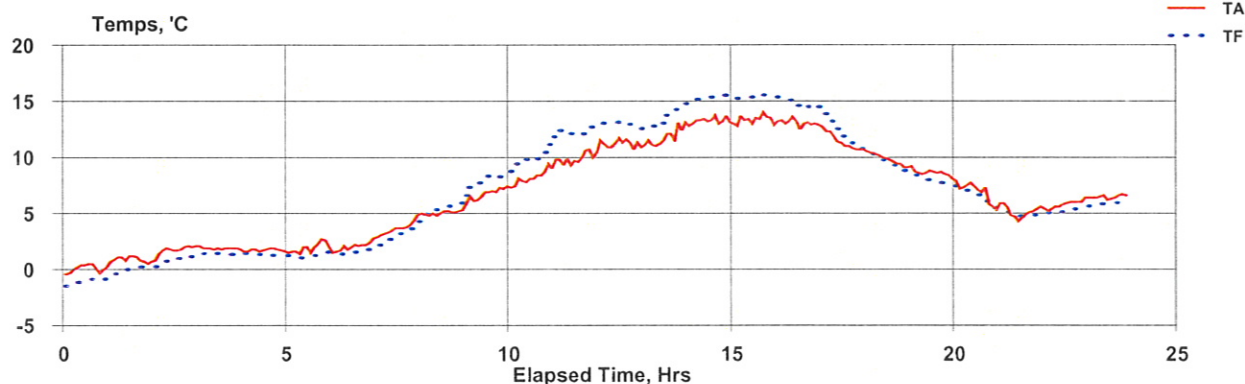
Date Time
 dd-mmm hh:mm:ss
 Start: 18-21-mar 0:00:08
 Stop: 18-22-mar 0:00:05
 ET: 23:59

Mass Concentration Data:

Filter ID: 25
 Final Wt: mg
 Initial Wt: mg
 Delta Wt: 0.000 mg
 Total Vol: 24.041 m³
 Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



BGI PQ200 Air Sampling System Downloaded 2018 28 mar 11:29:42

Job Details:

Job Name: 18Mar28E.JOB
 Version: 5.62
 Serial No: 2398
 Pump Time: 886:24
 Flags:

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

	Max	Min	Avg	Units
BP	592	588	591	mmHg
TA	9.3	-4.2	1.4	°C
Q	---	---	16.71	Lpm

QCV 0.53 %
 Max overheat 2.7 °C
 occurred 27-mar 14:27:49

Timer Information:

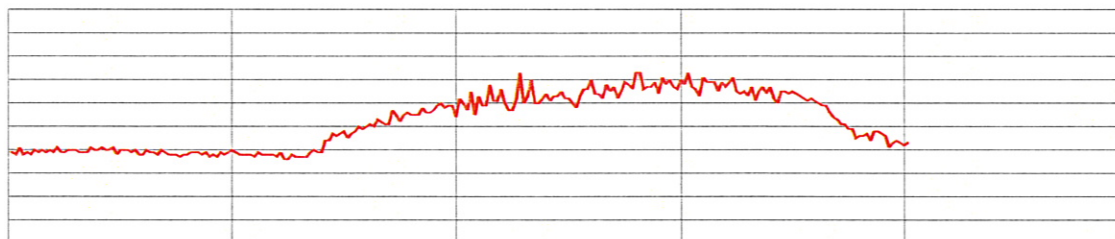
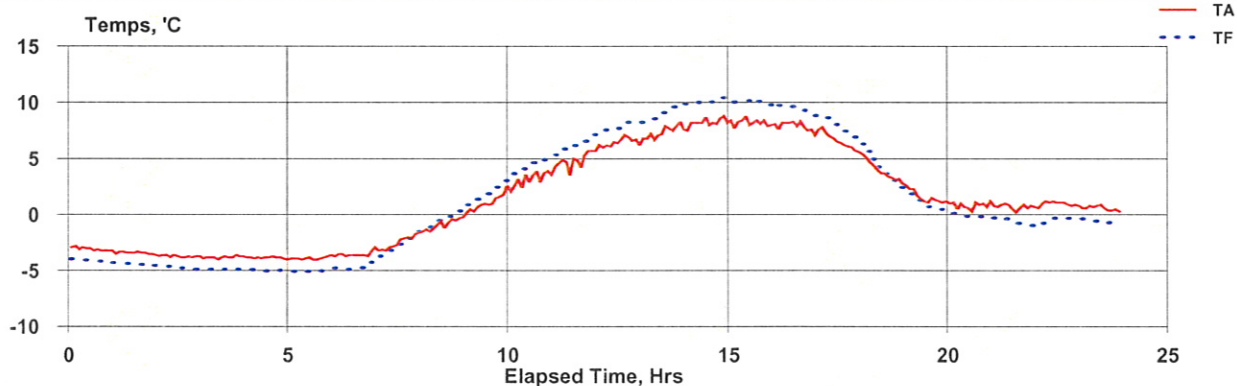
Date Time
 dd-mmm hh:mm:ss
 Start: 18-27-mar 0:00:08
 Stop: 18-28-mar 0:00:04
 ET: 23:59

Mass Concentration Data:

Filter ID: 14
 Final Wt: mg
 Initial Wt: mg
 Delta Wt: 0.000 mg
 Total Vol: 24.04 m³
 Mass Conc: 0 µg/m³

Notes 1:

Notes 2:



APPENDIX C

Precision and Single-Point Flow Rate Checks

Alton Coal Development

Coal Hollow

Precision Report For Collocated Samplers

STP PM10 Concentrations($\mu\text{g}/\text{m}^3$)

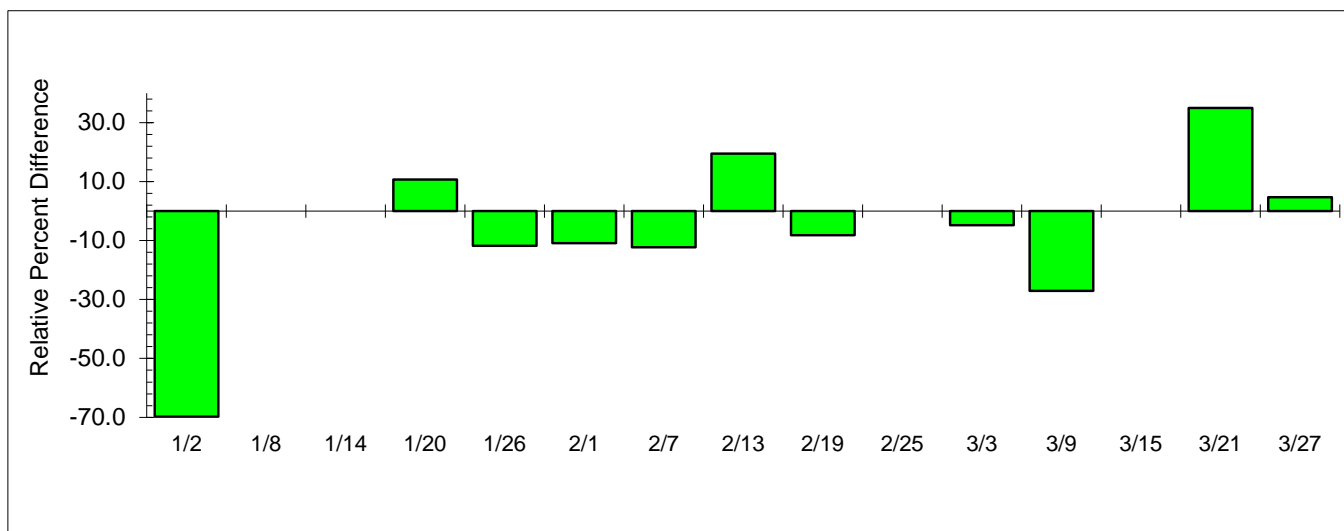
January 1, 2018 - March 31, 2018

Date	1/2	1/8	1/14	1/20	1/26	2/1	2/7	2/13	2/19	2/25	3/3	3/9	3/15	3/21	3/27
Coal Hollow-B	11.2	9.8	1.5	4.9	4.0	18.3	12.2	4.5	9.4	1.7	4.1	12.8		4.7	8.7
Coal Hollow-C	23.2		1.5	4.4	4.5	20.4	13.8	3.7	10.2	2.0	4.3	16.8	3.2	3.3	8.3
Rel. %Diff.	-69.8	*	*	10.8	-11.8	-10.9	-12.3	19.5	-8.2	*	-4.8	-27.0	*	35.0	4.7

Relative Percent Difference = $((X - Y) / ((X + Y) / 2)) * 100$

X=Coal Hollow-B

Y =Coal Hollow-C



Statistical Calculations:

n= 11.0 S Dev= 27.1 %
Mean= -6.8 ** CV= 27.4 %

* Both sample concentrations must be greater than or equal to $3 \mu\text{g}/\text{m}^3$ to be used for these precision calculations.

For a detailed discussion of these precision calculations, refer to 40 CFR 58, Appendix A.

** CV - Upper 90% Confidence bound for Coefficient of Variation

Alton Coal Development Coal Hollow

Precision Report For Collocated Samplers

STP PM10 Concentrations($\mu\text{g}/\text{m}^3$)

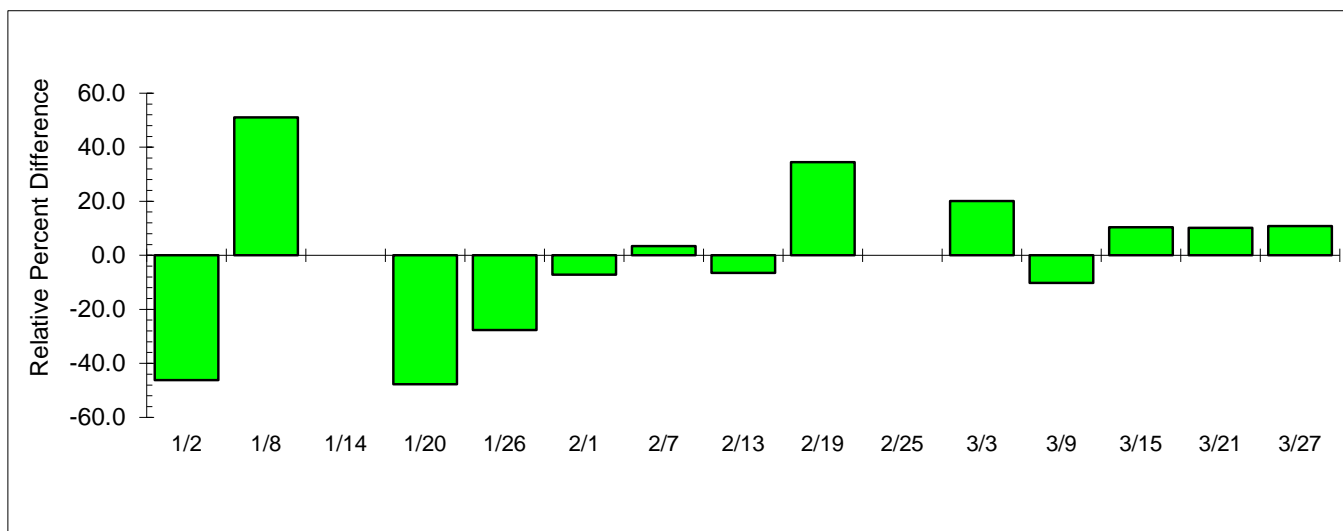
January 1, 2018 - March 31, 2018

Date	1/2	1/8	1/14	1/20	1/26	2/1	2/7	2/13	2/19	2/25	3/3	3/9	3/15	3/21	3/27
Coal Hollow-D	6.5	5.9	2.1	5.1	5.3	72.7	15.1	5.9	19.4	2.3	19.7	66.7	12.1	43.2	26.3
Coal Hollow-E	10.4	3.5	1.7	8.3	7.0	78.1	14.6	6.3	13.7	1.9	16.1	73.9	10.9	39.0	23.6
Rel. %Diff.	-46.2	51.1	*	-47.8	-27.6	-7.2	3.4	-6.6	34.4	*	20.1	-10.2	10.4	10.2	10.8

Relative Percent Difference = $((X - Y) / ((X + Y) / 2)) * 100$

X=Coal Hollow-D

Y =Coal Hollow-E



Statistical Calculations:

n= 13.0	S Dev= 28.7 %
Mean= -0.4	** CV= 28.0 %

* Both sample concentrations must be greater than or equal to $3 \mu\text{g}/\text{m}^3$ to be used for these precision calculations.

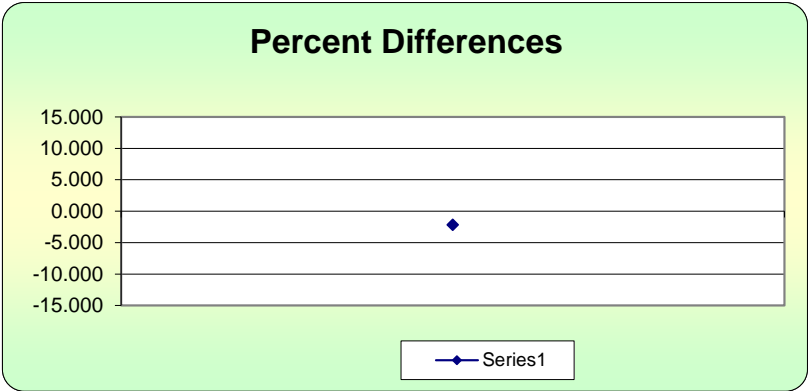
For a detailed discussion of these precision calculations, refer to 40 CFR 58, Appendix A.

** CV - Upper 90% Confidence bound for Coefficient of Variation

Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

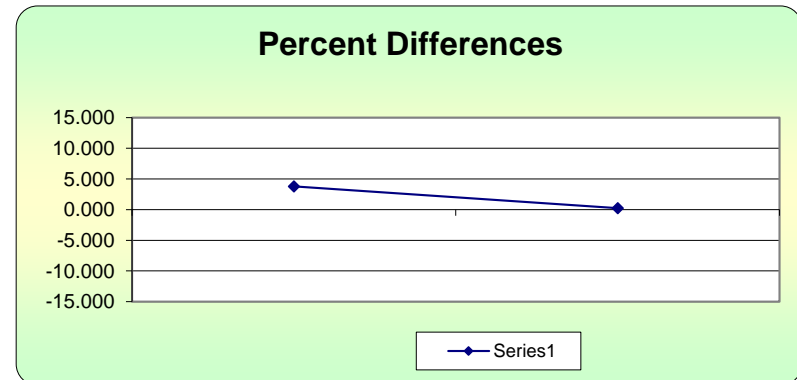
Site ID: Monitor 962A		Pollutant type:		Bias (%)			
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d ²	d	d ²	
16.7	17.07	-2.168	-3.683	4.698	2.168	4.698	
16.7	17.43	-4.188	75th Percentile	17.541	4.188	17.541	
			-2.673				
		n	Σ d	"AB" (Eqn 4)			
		2	6.356			3.178	
		n-1	Σ d ²	"AS" (Eqn 5)			
		1	22.239			1.429	
		Bias (%) (Eqn 3)		Both Signs Positive			
				9.56		FALSE	
		Signed Bias (%)		Both Signs Negative			
		-9.56				TRUE	



Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

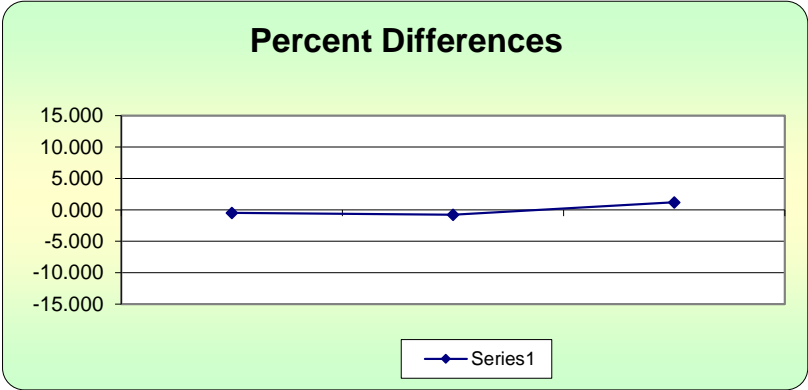
Site ID: Monitor 963B		Pollutant type:		Bias (%)			
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d ²	d	d ²	
16.7	16.09	3.791	1.128	14.373	3.791	14.373	
16.7	16.66	0.240	75th Percentile	0.058	0.240	0.058	
			2.903				
		n	Σ d	"AB" (Eqn 4)			
		2	4.031	2.016			
		n-1	Σ d ²	"AS" (Eqn 5)			
		1	14.431	2.511			
		Bias (%) (Eqn 3)		Both Signs Positive			
		13.23		TRUE			
		Signed Bias (%)		Both Signs Negative			
		+13.23		FALSE			



Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

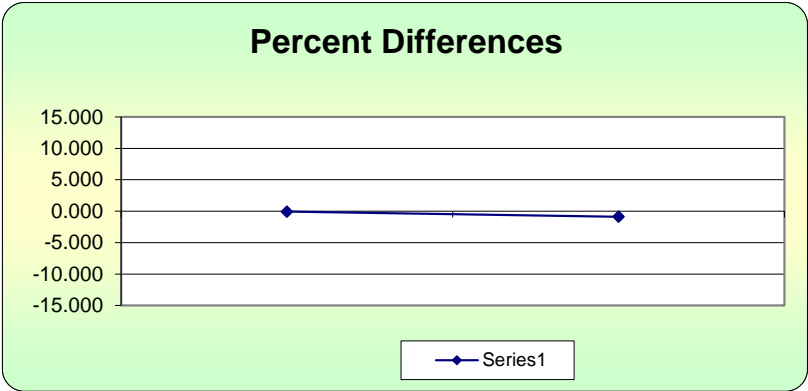
Site ID: Monitor 964C		Pollutant type:		Bias (%)			
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d ²	d	d ²	
16.7	16.78	-0.477	-0.624	0.227	0.477	0.227	
16.72	16.85	-0.772	75th Percentile	0.595	0.772	0.595	
16.7	16.5	1.212	0.368	1.469	1.212	1.469	
				n	Σ d	"AB" (Eqn 4)	
				3	2.460	0.820	
				n-1	Σ d ²	"AS" (Eqn 5)	
				2	2.292	0.370	
				Bias (%) (Eqn 3)		Both Signs Positive	
				1.44		FALSE	
				Signed Bias (%)		Both Signs Negative	
				+/-1.44		FALSE	



Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

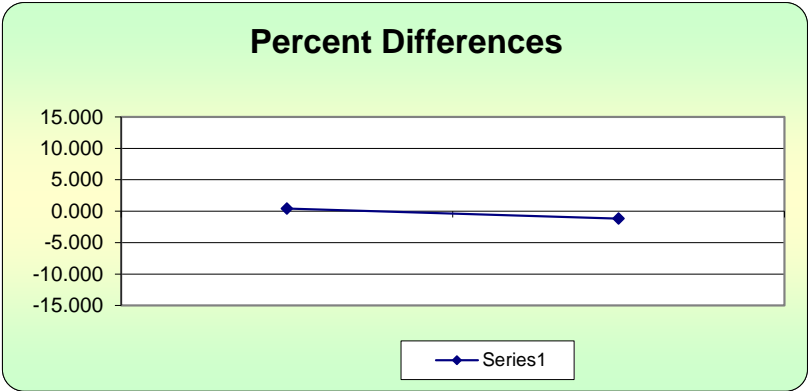
Site ID: Monitor 2366D		Pollutant type:		Bias (%)			
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d ²	d	d ²	
16.7	16.71	-0.060	-0.683	0.004	0.060	0.004	
16.7	16.85	-0.890	75th Percentile	0.792	0.890	0.792	
			-0.267				
		n	Σ d	"AB" (Eqn 4)			
		2	0.950			0.475	
		n-1	Σ d ²	"AS" (Eqn 5)			
		1	0.796			0.587	
		Bias (%) (Eqn 3)		Both Signs Positive			
		3.1		FALSE			
		Signed Bias (%)		Both Signs Negative			
		-3.1		TRUE			



Alton Coal Development, LLC - Coal Hollow Mine

One-Point Flow Rate Bias Estimate

Site ID: Monitor 2398E		Pollutant type:		Bias (%)			
Meas Val (Y)	Audit Val (X)	d (Eqn. 1)	25th Percentile	d ²	d	d ²	
16.7	16.63	0.421	-0.782	0.177	0.421	0.177	
16.7	16.9	-1.183	75th Percentile	1.401	1.183	1.401	
				0.020			
		n	Σ d	"AB" (Eqn 4)			
		2	1.604			0.802	
		n-1	Σ d ²	"AS" (Eqn 5)			
		1	1.578			0.539	
		Bias (%) (Eqn 3)		Both Signs Positive			
				3.21		FALSE	
		Signed Bias (%)		Both Signs Negative			
		+/-3.21				FALSE	



APPENDIX D

Field Data Sheets

Background Monitor 962A

Table I - Every 6th Day Sampling

Fcode

Black

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
1-18-18	12:00	97	97	Pass	KN	Cleaned manifold
2-8-18	12:09	97	97	Pass	KN	Cleaned manifold

Table III - Monthly Flow Rate Verification

[illegible]

Compliance Monitor 963B

Table I - Every 6th Day Sampling

[illegible]

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
1-10-18	12:16	97	97	Pass	KN	Cleaned Manifolds
2-9-18	9:09	97	97	Pass	KN	Cleaned Manifolds

Table III - Monthly Flow Rate Verification

[illegible]

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
					6	M-M	1-2-18	JKSR
01-01-18	1240	01-01-18	1239	6	33	M-M	1-8-18	KN
01-10-18	1127	01-10-18	1126	33	11	M-M	01-14-18	KN
01-16-18	1214	01-16-18	1212	11	21	M-M	01-20-18	JKSR
01-23-18	1414	01-23-18	1412	21	39	M-M	01-26-18	JKSR
01-29-18	1137	01-29-18	1135	39	14	M-M	02-01-18	JKSR
02-02-18	1014	02-02-18	1012	14	24	M-M	02-07-18	KN
02-08-18	1457	02-08-18	1455	24	6	M-M	02-13-18	JKSR
02-14-18	1224	02-14-18	1222	6	30	1222	02-14-18	JKSR
02-14-18	1223	02-14-18	1224	30	11	M-M	02-19-18	JKSR
02-20-18	1413	02-20-18	1410	11	17	M-M	02-25-18	JKSR
02-27-18	1153	02-27-18	1150	17	28	M-M	03-03-18	JKSR
03-05-18	1535	03-05-18	1531	28	39	M-M	03-09-18	JKSR
03-02-18	11:31	03-02-18	1027	39	6	M-M	03-05-18	KAI
03-16-18	1128	03-16-18	1024	6	23	M-M	03-21-18	KN
03-23-18	1049	03-23-18	0945	23	11	M-M	03-27-18	JKSR
03-28-18	1221	03-28-18	1117	11	18	M-M	04-02-18	JKSR

QT code

QT code 10.54 hrs ma

Blank

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
1-10-18	12:32	96	96	Pass	KN	Cleaned Manifold
2-9-18	10:05	98	97	Pass	KAI	" "
03/29/18						
03/30/18	10:02	102	102	Pass	KN	Replaced Flow control sensor

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
1-10-18	12:27	16.70	586	588	6.5	1.0	13.72	16.78	-0.48	KN
2-9-18	10:09	16.72	587	588	1.2	1.6	14.12	16.85	-0.89	KN
3/30/18	1056	16.7	595	594	12.4	12.8	13.41	16.50	81.21	KN

Compliance Monitor 2366D

Table I - Every 6th Day Sampling

[illegible]

Field Blank

Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
1-10-18	1:15pm	96	95	Pass	KN	Cleaned manifold
2-9-18	11:09	95	95	Pass	KN	Cleaned manifold

Table III - Monthly Flow Rate Verification

[illegible]

Co-located Monitor 2398E

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
					8	M-M	1-2-18	JKSR
1-4-18	1351	01-4-18	1348	8	35	M-M	1-8-18	KA
01-10-18	1232	01-10-18	1229	35	16	M-M	01-14-18	KA
01-16-18	1227	01-16-18	1223	16	36	M-M	01-20-18	JKSR
01-23-18	1443	01-23-18	1447	36	42	M-M	01-26-18	JKSR
01-29-18	1151	01-29-18	1147	42	18	M-M	02-01-18	JKSR
02-02-18	1045	02-02-18	1042	18	28	1045	02-02-18	KA
02-02-18	1057	02-02-18	1053	28	27	M-M	02-07-18	KA
02-08-18	1444	02-08-18	1440	27	8	M-M	02-13-18	JKSR
02-14-18	1241	02-14-18	1236	8	16	M-M	02-19-18	JKSR
02-20-18	1338	02-20-18	1333	16	19	M-M	02-25-18	JKSR
02-27-18	1207	02-27-18	1201	19	36	M-M	03-03-18	JKSR
03-05-18	1518	03-05-18	1513	36	42	M-M	03-09-18	JKSR
03-12-18	1215	03-12-18	1110	42	8	M-M	03-15-18	KA
03-16-18	1153	03-16-18	1048	8	25	M-M	03-21-18	KA
03-23-18	1108	03-23-18	1002	25	14	M-M	03-27-18	JKSR
03-28-18	1234	03-28-18	1128	14	31	1128	03-28-18	JKSR
03-28-18	1236	03-28-18	1129	31	30	M-M	04-02-18	JKSR

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Table II - Monthly Leak Test

Date	Time	Initial SP Value	Final SP Value	Pass/Fail	Initials	Maintenance
1-10-18	1:23	98	96	Pass	KN	Cleaned Manifold
2-9-18	11:11	97	96	Pass	KN	Cleaned Manifold

Table III - Monthly Flow Rate Verification

[illegible]

APPENDIX E

Independent PM₁₀ Sampler Performance Audit Report

**AUDIT REPORT
FOR
ALTON COAL DEVELOPMENT, LLC
COAL HOLLOW MINE
ALTON, UTAH
FIRST QUARTER 2018**

Prepared for

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

Prepared by



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

Site Audited: March 29, 2018

A decorative graphic in the bottom left corner consisting of three stylized mountain peaks in shades of green and blue.

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1-1
2.0 AUDIT METHODS AND EQUIPMENT	2-1
2.1 Particulate Samplers	2-1
3.0 AUDIT RESULTS	3-1
APPENDIX A Audit Data Forms	A-1
APPENDIX B Audit Standards Certifications	B-1

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1-1 Site Location Information	1-1
1-2 Summary of Particulate Audit Results	1-1
2-1 Particulate Samplers, Audit Methods and Acceptance Criteria	2-1
2-2 Particulate Samplers, Audit Equipment	2-2

1.0 INTRODUCTION

Air Resource Specialists, Inc. (ARS) conducted a performance audit of Alton Coal Development, LLC ambient air quality monitoring systems on March 29, 2018. The monitoring sites are located at the Coal Hollow Mine near Alton, Utah.

Table 1-1

Site Location Information

	Primary CHM	Background	Primary NPL
Latitude	37° 24' 5.0" N	37° 24' 20.9" N	37° 25' 18.6" N
Longitude	112° 27' 21.0" W	112° 26' 1.1" W	112° 28' 12.8" W
UTM	12S 371147 4140396	12S 373119 4140856	12S 369909 4142684
Elevation	6,890 feet MSL	7,158 feet MSL	6,892 feet MSL

Audit results for the particulate samplers are summarized in Table 1-2. 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 CHM	PM ₁₀	BGI PQ200S	Yes
	PM ₁₀ (collocated)	BGI PQ200S	No
Background	PM ₁₀	BGI PQ200S	Yes
Primary NPL	PM ₁₀	BGI PQ200	Yes
	PM ₁₀ (collocated)	BGI PQ200	Yes

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:

Christian A. Kirk
Quality Assurance Officer / Lead Auditor
Air Resource Specialists, Inc.
1901 Sharp Point Drive, Suite F
Fort Collins, Colorado 80525
Telephone: 970-484-7941
Fax: 970-484-3423
E-mail: ckirk@air-resource.com

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 Part 58, Appendix A. *Quality Assurance Requirements for Monitors Used In Evaluations of National Ambient Air Quality Standards*
- 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*

2.1 PARTICULATE SAMPLERS (FRM PM₁₀)

The filter-based FRM PM₁₀ 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 $\pm 10\%$ are considered out of tolerance. Differences between the designated design flow and the audit flow greater than $\pm 10\%$ 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 $\pm 2^{\circ}\text{C}$ and a barometric pressure difference greater than $\pm 10\text{mm Hg}$ 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	$\leq \pm 10\%$
	Design criteria flow to audit flow	$\leq \pm 10\%$
	Audit temperature to sampler temperature	$\leq \pm 2^{\circ}\text{C}$
	Audit temperature to sampler filter temperature	$\leq \pm 2^{\circ}\text{C}$
	Audit barometric pressure to sampler pressure	$\leq \pm 10\text{mm Hg}$

Table 2-2
Particulate Samplers
Audit Equipment

References	Manufacturer	Model Number	Serial Number	Expiration Date
FRM Flow	BGI	DeltaCal	1237	12/1/2018

3.0 AUDIT RESULTS

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

Performance Audit Results

- The collocated BGI PQ200S at the Primary site failed the performance audit. It appears that the flow sensor may have failed. The audit flow measured was 12.30 LPM, while the instrument display showed 16.70 LPM.
- Although the BGI PQ200S at the Background site passed the performance audit, the instrument display showed a flow that varied between 16.67 and 16.80 LPM. The audit flow was stable at 17.06 LPM. This may be an indication of an issue with the flow sensor.

APPENDIX A

AUDIT DATA FORMS



FRM AUDIT (PM₁₀)

ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
Network type		Alton Coal- Coal Hollow					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltaCal	1237	12/1/2018
PM Temperature Standard #1	BGI	deltaCal	1237	12/1/2018
PM Barometric Pressure Standard #1	BGI	deltaCal	1237	12/1/2018

MANUFACTURER	BGI
MODEL	PQ200S
SERIAL NUMBER	N963B

Date and Time correct?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If no, time off by:
-2 min

SETTINGS	
Total Flow	16.70

Automated LEAK CHECK		
Vacuum Loss Rate	Pass/Fail	
3 cm	PASS	

FLOW VERIFICATION					
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.85	16.72	-0.8%	0.9%	PASS

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

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
8.2	7.7	-0.5	PASS

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

FILTER TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
6.7	5.5	-1.2	PASS

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

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
592.5	591.0	-1.5	PASS

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

NOTES:	
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FRM AUDIT (PM₁₀)

ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
Network type		Alton Coal- Coal Hollow					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltaCal	1237	12/1/2018
PM Temperature Standard #1	BGI	deltaCal	1237	12/1/2018
PM Barometric Pressure Standard #1	BGI	deltaCal	1237	12/1/2018

MANUFACTURER	BGI
MODEL	PQ200S
SERIAL NUMBER	N964C

Date and Time correct?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If no, time off by:
-4 min

SETTINGS	
Total Flow	16.70

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

FLOW VERIFICATION					
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	12.30	16.70	35.8%	-26.3%	FAIL

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

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
8.3	8.1	-0.2	PASS

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

FILTER TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
7.7	7.0	-0.7	PASS

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

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
592.5	593.0	0.5	PASS

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

NOTES: failed flow sensor?



FRM AUDIT (PM₁₀)

ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
Network type		Alton Coal- Coal Hollow					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltaCal	1237	12/1/2018
PM Temperature Standard #1	BGI	deltaCal	1237	12/1/2018
PM Barometric Pressure Standard #1	BGI	deltaCal	1237	12/1/2018

MANUFACTURER	BGI
MODEL	PQ200S
SERIAL NUMBER	N962

Date and Time correct?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If no, time off by:
-1 min

SETTINGS	
Total Flow	16.70

Automated LEAK CHECK		
Vacuum Loss Rate	Pass/Fail	
3 cm	PASS	

FLOW VERIFICATION					
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	17.06	16.72	-2.0%	2.2%	PASS

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

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
7.5	6.9	-0.6	PASS

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

FILTER TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
6.4	5.5	-0.9	PASS

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

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
586.5	585.0	-1.5	PASS

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

NOTES: 16.67-16.80 on instrument display



FRM AUDIT (PM₁₀)

ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
Network type		Alton Coal- Coal Hollow					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltaCal	1237	12/1/2018
PM Temperature Standard #1	BGI	deltaCal	1237	12/1/2018
PM Barometric Pressure Standard #1	BGI	deltaCal	1237	12/1/2018

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	2366D

Date and Time correct?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If no, time off by:
-5 min

SETTINGS	
Total Flow	16.70

Automated LEAK CHECK		
Vacuum Loss Rate	Pass/Fail	
3 cm	PASS	

FLOW VERIFICATION					
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.74	16.70	-0.2%	0.2%	PASS

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

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
9.2	8.6	-0.6	PASS

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

FILTER TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
8.7	7.7	-1.0	PASS

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

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
592.0	591.0	-1.0	PASS

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

NOTES:	
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FRM AUDIT (PM₁₀)

ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
Network type		Alton Coal- Coal Hollow					

	MANUFACTURER	MODEL	SERIAL NUMBER	EXPIRATION DATE
PM Flow Standard #1	BGI	deltaCal	1237	12/1/2018
PM Temperature Standard #1	BGI	deltaCal	1237	12/1/2018
PM Barometric Pressure Standard #1	BGI	deltaCal	1237	12/1/2018

MANUFACTURER	BGI
MODEL	PQ200
SERIAL NUMBER	2398E

Date and Time correct?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If no, time off by:
-6 min

SETTINGS	
Total Flow	16.70

Automated LEAK CHECK		
Vacuum Loss Rate	Pass/Fail	
3 cm	PASS	

FLOW VERIFICATION					
	Reference	Instrument	Actual Diff	Design Diff	
Total Flow	16.78	16.70	-0.5%	0.5%	PASS

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

AMBIENT TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
9.3	9.1	-0.2	PASS

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

FILTER TEMPERATURE SENSOR (°C)			
Reference	Instrument	Difference	
8.9	8.7	-0.2	PASS

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

PRESSURE SENSOR (mmHg)			
Reference	Instrument	Difference	
592.0	593.0	1.0	PASS

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

NOTES:	
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SITE INFORMATION

ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
NETWORK TYPE		Alton Coal- Coal Hollow					

		Deg	Min	Sec		Decimal
LATITUDE	North				--CALCULATE-->	
LONGITUDE	West					

Decimal		--CALCULATE-->	Deg	Min	Sec

	Meters	--CALCULATE-->	Feet
ELEVATION			

Feet	--CALCULATE-->	Meters

Please verify site standards used by the site operator

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

NOTES:

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ABBR.	n/a	CLIENT	Alton Coal	AUDITOR	C.Kirk	DATE	3/29/2018
SITE NAME		Coal Hollow Mine					
Network type		Alton Coal- Coal Hollow					

	MANUFACTURER		MODEL	SERIAL #	Calibration Expiration Date
Ozone Transfer Standard					
Gas Dilution Transfer Standard					
MFC High Flow Reference					
MFC Low Flow Reference					
Temperature Reference					
AT/RH Sensor Reference					
Barometric Pressure Reference					
Wind Speed Reference (high rpm)					
Wind Speed Reference (low rpm)					
Wind Speed Torque Gauge					
Wind Direction Alignment Reference					
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		mL			

PM Flow Standard #1	BGI	deltaCal	1237	12/1/2018
PM Flow Standard #2				
PM Flow Standard #3				
PM Flow Standard #4				

PM Temperature Standard #1	BGI	deltaCal	1237	12/1/2018
PM Temperature Standard #2				
PM Temperature Standard #3				
PM Temperature Standard #4				

PM Barometric Pressure Standard #1	BGI	deltaCal	1237	12/1/2018
PM Barometric Pressure Standard #2				
PM Barometric Pressure Standard #3				
PM Barometric Pressure Standard #4				

TEOM MTV Standard				
-------------------	--	--	--	--

HiVol Direct Flow Reference				
Orifice				
ΔP orifice manometer				

APPENDIX B

AUDIT STANDARDS CERTIFICATIONS



CERTIFICATE OF CALIBRATION - NIST TRACEABILITY

(Refer to instruction manual for further details of calibration)

deltaCal Serial Number: **1237**

DATE: 22-Nov-2017

Calibration Operator: P.Pitty

Critical Venturi Flow Meter: Max Uncertainty = 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: +/- 0.03°C from -5°C - 70°C Room Temperature: 23.5 °C

Brand: Telatemp Serial Number: 358921

Std Cal Date 19-Apr-17 Std Cal Due Date 19-Apr-18

deltaCal:

Ambient Temperature (set): 23.5 °C

Aux (filter) Temperature (set): 23.5 °C

Barometric Pressure and Absolute Pressure

Vaisala Model PTB330(50-1100) Digital Accuracy: 0.03371%

Serial Number: H0850001

Std Cal Date 27-Mar-17 Std Cal Due Date 27-Mar-18

deltaCal:

Barometric pressure (set): 749 mm of Hg

Results of Venturi Calibration

Flow Rate (Q) vs. Pressure Drop (ΔP).

Where: Q=Lpm, ΔP = Cm of H₂O

Q= 3.93154 ΔP ^ 0.51535

Overall Uncertainty: 0.35%

Q= 3.87507 ΔP ^ 0.50721

Overall Uncertainty: 0.35%

Date Placed In Service 12/1/17

(To be filled in by operator upon receipt)

Recommended Recalibration Date 12/1/18

(12 months from date placed in service)

To Check a deltaCal

1.5-19.5

VER 4.00P

22-Nov-17 P.Pitty

BP= 749 mm of Hg

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

Serial No. 1237

	Reading		CV		
	Abs. P		Qa	Qa	
	Crit. Vent.	Room	Flow	deltaCal	
	mm of Hg	Temp	Lpm	Indicated	% Error
# 2	125.05	23.50	1.410	1.413	0.23
	215.29	23.50	2.462	2.468	0.24
	266.58	23.50	3.060	3.051	-0.30
	405.05	23.50	4.675	4.684	0.19
	567.26	23.50	6.567	6.530	-0.56
#1	177.30	23.50	7.067	7.100	0.46
	269.58	23.50	10.825	10.816	-0.09
	333.95	23.50	13.447	13.417	-0.22
	411.08	23.50	16.588	16.580	-0.05
	483.80	23.50	19.549	19.564	0.07
Average %					0.00

To Check a deltaCal
1.5-19.5

VER 4.00P

22-Nov-17 Pre-Recert

BP= 748.5 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
# 2	138.23	19.70	1.544	1.801	16.61
	309.57	19.70	3.518	3.690	4.88
	551.18	19.70	6.302	6.380	1.24
#1	188.43	19.70	7.429	7.520	1.22
	371.83	19.70	14.807	14.970	1.10
	481.42	19.70	19.216	19.460	1.27
Average %					4.39