



Palliser Airshed Society

Ambient Air Monitoring Network Summary

March 2004

Prepared By:
FOCUS
AIR QUALITY MONITORING

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Alberta Environment
Enforcement and Monitoring Division
11th Floor, Oxbridge Place
9820 - 106th Street
Edmonton, Alberta, T5K 2J6

Attention: Director of Monitoring and Evaluation

RE: Palliser Airshed Society (PAS) Ambient Air Monitoring Report – March 2004

Enclosed is the PAS Ambient Monitoring Report for the month of **March 2004**.

Continuous Monitoring – Crescent Heights

Included in this report are the, monthly sampling table, detailed hourly average reports and multipoint calibration reports of all instruments. The measured ambient air quality was within the Provincial and Federal guidelines with no exceedances recorded. Operational time of all instruments were below 90% due to a continued downtime from the previous month. Alberta Environment was informed (reference# 147009), and a letter was submitted within seven days of notification and is attached as a reference. There were no significant events leading to emergency response for the month of March.

The following is a summary of the monthly averages found during this month of sampling:

- Monthly average concentrations of NO₂ was 8.3 ppb
- Monthly average concentrations for O₃ was 33.6 ppb
- Monthly average concentrations for THC was 2.21 ppm
- Monthly average concentrations for PM_{2.5} was 1.0 µg/m³

Passive Monitoring – Six Stations throughout the PAS zone:

There were no damaged or missing samples for the month and no exceedances of the Provincial Air Quality guidelines

- Monthly average concentrations for SO₂ passives ranged from 0.2 ppb to 0.4 ppb
- Monthly average concentrations for NO₂ passives ranged from 4.1 ppb to 8.1 ppb
- Monthly average concentrations for O₃ passives ranged from 32.3 ppb to 37.7 ppb

If you have any questions, please contact the Focus office at 466-6555.

Gary Cross

Gary Cross C.E.T.
AQM Technical Manager

Kevin McCullum

Kevin McCullum, M.Sc.,P.Eng.
Environmental AQM Engineer



April 30, 2004

Standards & Approvals Division
Alberta Environment
4th Floor, Oxbridge Place
9820 – 106 Street
Edmonton, Alberta T5K 2J6

ATTENTION: Director

RE: Ambient Air Monitoring Contravention Report

A contravention was recently reported by Focus on behalf of the Palliser Airshed Society (PAS) of less than ninety (90%) percent data collection for the month of February and March at the Medicine Hat Ambient Air monitoring station, reference number 147009.

The cause of the contravention was missing data from the Data Acquisition System (DAS) as caused by initial start-up problems relating mainly to internet connectivity issues and computer viruses. Daily data remote inspection was not available until March 9th hindering the ability to review station data collection. As a result of these issues and proactive improvement of data collection procedures the following actions have and will be taken:

1. A firewall and virus protection has been installed on the site PC to protect from internet intrusions.
2. An uninterruptible power supply (UPS) system will be installed to insure the DAS and station computer (PC) are less affected by power modulations or loss.
3. A back-up digital chart recorder will be installed to act as a secondary data collection source and all collected data will be archived regularly onsite.
4. Data remote queries are now available to ensure routine central archived data collection is occurring without irregularities.

The listed action items are to ensure that data will not be lost in the future for reasons related to computer or power problems

Sincerely,

THE FOCUS CORPORATION

Gary Cross C.E.T.
AQM Technical Manager

GC/mm



April 30, 2004

March 2004 Monthly Overall Summary Report

Ambient Air Quality Data

Mar-2004		PAS - AMBIENT AIR QUALITY DATA					Maximum Recorded Values						
Pollutant (units)	Guidelines		Station	Monthly Average	Exceedence		Conc	1-hr			24-hr		Operational Time (%)
	1-hr	24-hr			1-hr	24-hr		Day	WSPD (km/hr)	WDIR (Sector)	Conc	Day	
NO (ppb)			Crescent Heights	3.2	0	0	126.9	Mar-28	3.3	SW	10.9	Mar-11	79%
NO ₂ (ppb)	212	106	Crescent Heights	8.3	0	0	47.5	Mar-28	3.3	SW	17.0	Mar-11	79%
NO _x (ppb)			Crescent Heights	11.3	0	0	173.7	Mar-28	3.3	SW	27.6	Mar-11	79%
O ₃ (ppb)	82		Crescent Heights	33.6	0	0	56.7	Mar-28	25.4	SE	43.6	Mar-19	79%
THC (ppm)			Crescent Heights	2.21	0	0	3.37	Mar-29	5.6	SSW	2.40	Mar-23	79%
PM _{2.5} (µg/m ³)		30 ^a	Crescent Heights	0.9	0	0	11.9	Mar-28	3.3	SW	3.3	Mar-31	67%
RH (%)			Crescent Heights	56.4									78%
SR (W/m ²)			Crescent Heights	162.1									79%
Temp (°C)			Crescent Heights	5.9									78%
WSPD v (km/hr)			Crescent Heights	5.9									79%
WSPD s (km/hr)			Crescent Heights	13.7									79%
WDIR (Deg)			Crescent Heights	WSW*									79%

Note: ^a the 24-hr Canada Wide Standard level is considered as an absolute value
 * Wind Direction is the predominate direction for the Month



April 30, 2004

Continuous Monitoring

Ambient Air Compliance Network

Crescent Heights Station

General Station Issues

Missing data resulting from problems with communications to the central data archive amounted to less than 90% uptime. As data can now be viewed by the technicians on a daily basis, data retrieval problems can be identified and addressed immediately. Alarms will be established to alert the on call personnel if this happens in the future.

Parameter	Make	Model	Units	Notes
Ozone	Teledyne - API	400E	ppb	- no operational problems observed
Nitrogen Dioxide	Teledyne - API	200E	ppb	- no operational problems observed
Total				
Hydrocarbons	Bendix	400A	ppm	- no operational problems observed
PM 2.5	R&P TEOM	1400ab	ug/m3	- no operational problems observed
Wind Speed	Met One	010C	KPH	- no operational problems observed
Wind Direction	Met One	020C	Deg	- no operational problems observed
Ambient				
Temperature	Met One	083D	DegC	- no operational problems observed
Relative Humidity	Met One	083D	%	- no operational problems observed
Solar Radiation	Met One	096-1	W/m2	- no operational problems observed
Data Acquisition System	Titan Logix	AP1000	N/A	some communications problems and a computer virus resulted in data loss from March 1 to March 7. See the attached contravention letter for more information (reference #147009)

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Ozone (O₃)

Guideline Limit:	Alberta Environment:	1-hr 0.082 ppm	24-hr na ppm
		1-hr 82 ppb	24-hr na ppb

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	57 ppb 28-Mar 15:00 16:00
Maximum 24-hr Average:	44 ppb 19-Mar

Status Characters

C Calibration	A AIC - Zero / Span Check
S Instrument out of Service	R Alarm
* < 75% Data	X Filter Exchange
N Excessive Instrument Drift	M Equipment Maintenance
F DACS Off-Line	E Exceedance

AIC Time:	25 hrs	Operational Time:	558 hrs
Calibration Time:	2 hrs	AMD Operational Uptime:	78.6%
Percentile	99 95 75 50 25 5 1	Average	Geomean
	54 51 44 36 25 9 4	34 ppb	- ppb

Day Mountain Standard Time

Day	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-hour Average	Daily Maximum
1-Mar-04	Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	*	0.0
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	38	36	36	35	35	34	34	34	33	A	*	37.7
8-Mar-04	25	26	25	19	27	28	23	14	11	23	30	36	46	51	46	35	33	23	22	25	24	29	29	A	28.3	51.3	
9-Mar-04	29	29	29	31	28	28	27	28	30	30	30	32	33	29	30	39	47	50	C	C	49	45	44	43	34.4	50.2	
10-Mar-04	36	32	39	A	42	39	38	35	34	44	47	48	49	51	52	52	52	46	40	37	24	6	5	7	37.2	52.3	
11-Mar-04	16	11	18	A	14	9	3	4	10	11	34	45	48	46	45	44	42	36	27	17	7	1	5	4	21.6	47.7	
12-Mar-04	8	16	13	A	3	2	11	13	27	39	40	41	42	48	47	33	29	23	21	32	33	35	36	43	27.5	47.6	
13-Mar-04	41	40	42	A	41	44	38	33	38	42	42	44	44	45	47	49	49	47	40	34	25	17	16	16	38.0	49.1	
14-Mar-04	24	27	34	A	32	35	41	42	41	44	46	48	47	46	44	43	41	36	32	24	26	23	27	27	36.1	47.5	
15-Mar-04	13	14	18	A	18	11	11	11	16	28	36	40	37	40	38	36	39	33	33	29	29	25	30	40	27.1	40.4	
16-Mar-04	43	37	31	A	35	34	28	28	17	24	35	42	49	50	48	51	50	45	33	19	17	13	21	24	33.7	51.4	
17-Mar-04	26	22	18	A	28	25	23	30	25	31	44	45	48	49	49	47	48	47	37	22	24	24	9	21	32.3	49.2	
18-Mar-04	24	24	20	A	43	46	42	38	37	36	35	34	31	36	38	39	42	40	27	16	31	32	37	35	34.1	46.0	
19-Mar-04	39	46	44	A	51	47	47	46	46	48	50	47	48	50	47	47	46	40	32	34	38	37	39	34	43.6	51.4	
20-Mar-04	31	22	28	A	11	6	10	18	26	35	40	42	43	44	47	48	47	45	43	41	39	34	34	37	33.4	47.7	
21-Mar-04	24	26	14	A	4	8	8	18	23	25	33	39	43	43	42	34	41	44	33	17	14	5	12	10	24.3	44.3	
22-Mar-04	9	15	14	A	12	9	10	17	23	28	33	38	49	53	54	53	52	49	46	44	42	28	17	27	31.4	54.2	
23-Mar-04	15	17	20	A	17	16	11	12	13	33	29	31	34	41	39	40	40	36	33	25	19	10	5	7	23.8	41.3	
24-Mar-04	11	21	24	A	24	10	20	22	30	38	47	52	50	50	52	53	44	37	41	34	35	41	43	46	35.8	52.7	
25-Mar-04	52	37	40	A	49	39	29	30	36	43	51	54	54	54	M	52	50	45	44	40	36	32	33	37	42.6	54.1	
26-Mar-04	44	48	44	A	41	42	44	42	38	37	35	37	27	34	31	32	36	35	35	41	39	39	36	37	38.0	48.3	
27-Mar-04	37	38	A	38	37	37	36	38	39	45	45	46	46	47	47	47	47	44	34	27	31	34	32	35	39.5	47.4	
28-Mar-04	38	A	28	22	17	14	19	24	37	42	44	49	51	54	56	57	55	51	51	41	40	23	4	1	35.7	56.7	
29-Mar-04	A	12	6	12	7	5	4	10	13	24	39	46	50	51	51	50	49	45	40	41	46	47	45	A	31.5	51.5	
30-Mar-04	46	45	44	42	40	42	40	38	40	42	45	46	48	48	49	49	50	48	31	39	46	43	A	25	42.9	49.9	
31-Mar-04	22	12	9	6	7	27	26	25	25	35	35	43	45	47	48	50	52	51	46	41	38	A	30	30	32.6	52.4	
Hourly Avg	*	*	*	*	26.1	25.2	24.5	25.8	28.2	34.5	39.3	42.6	44.3	46.1	45.2	44.6	44.6	41.3	35.7	31.4	31.5	27.4	25.9	*			
Hourly Max	51.7	48.3	44.4	42.5	51.4	47.0	46.6	45.8	46.1	48.4	51.4	54.1	54.0	54.0	55.9	56.7	55.3	51.4	50.6	43.5	48.8	46.6	45.0	46.2			

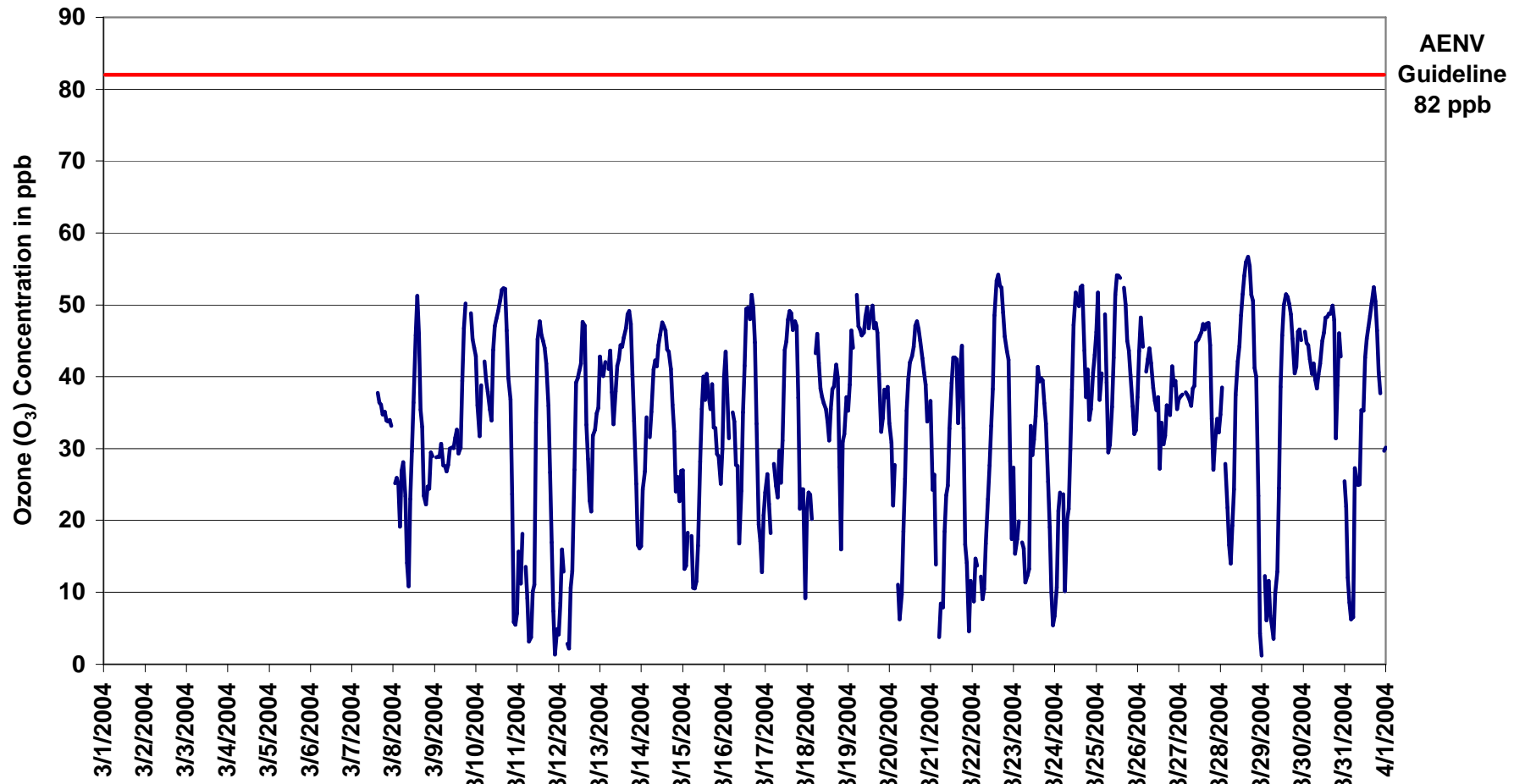


Figure 1. PAS – Crescent Heights O₃ Monthly Trend

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter :	Ozone (O₃) 8-hr Running Average		
Guideline Limit:	Canada Wide Standard	8-hr	0.065 ppm
		8-hr	65 ppb

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 8-hr Exceedances:	0		
Maximum 8-hr Average:	53.0 ppb	28-Mar	18:00 19:00

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Percentile	99	95	75	50	25	5	1	Average	Geomean
	50.7	47.6	41.4	35.5	26.4	13.7	8.1	33.4 ppb	- ppb

Day Mountain Standard Time

Hour Start Hour End	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	24-hour Average	Daily Maximum	
1-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	38	37	37	36	36	36	35	35	35	34	*	37.7	
8-Mar-04	33	32	30	28	27	26	25	23	22	21	22	24	26	29	32	35	38	38	37	35	33	30	28	27	29.1	37.6	
9-Mar-04	26	27	28	29	29	29	28	28	29	29	29	29	30	30	30	32	34	36	37	38	41	43	46	46	32.5	46.3	
10-Mar-04	45	41	41	41	40	39	38	37	37	39	40	41	42	43	45	47	49	50	49	47	44	39	33	27	41.5	49.7	
11-Mar-04	23	18	15	12	11	11	11	11	10	10	12	16	20	25	30	35	39	42	42	38	33	27	22	17	22.2	42.4	
12-Mar-04	13	11	9	8	7	7	8	9	12	15	19	22	27	32	37	40	40	38	35	34	33	32	30	31	22.9	39.8	
13-Mar-04	33	35	38	38	40	41	41	40	39	40	40	40	41	41	42	44	45	46	46	44	42	38	35	31	40.0	46.0	
14-Mar-04	27	25	24	23	24	26	30	34	36	39	40	41	43	44	45	45	45	44	42	39	37	34	32	30	35.3	45.0	
15-Mar-04	26	23	21	21	20	18	16	14	14	16	19	21	24	27	31	34	37	37	37	36	35	33	32	32	26.0	37.2	
16-Mar-04	33	33	33	34	35	36	36	34	30	28	29	30	32	34	36	39	44	46	46	43	39	35	31	28	35.1	46.2	
17-Mar-04	25	22	20	20	22	23	24	25	24	26	29	31	34	37	40	42	45	47	46	43	40	37	32	29	31.9	47.0	
18-Mar-04	26	23	21	21	24	27	31	34	36	38	40	39	38	36	36	36	36	37	36	34	34	33	33	33	32.5	39.8	
19-Mar-04	32	33	35	38	41	43	44	46	47	47	48	48	47	48	48	48	48	47	45	43	42	40	39	38	43.1	47.9	
20-Mar-04	36	33	33	33	29	24	20	18	17	19	21	24	27	32	37	41	43	44	45	45	44	43	41	40	32.8	44.7	
21-Mar-04	37	35	31	30	25	21	17	15	15	14	17	20	25	29	33	35	37	40	40	37	33	29	25	22	27.6	39.8	
22-Mar-04	18	14	12	11	11	11	11	12	14	16	19	21	26	31	37	41	45	48	49	50	49	46	41	38	28.0	49.9	
23-Mar-04	34	30	26	24	20	19	18	16	15	18	19	20	23	26	29	33	36	36	37	36	34	30	26	22	26.1	36.9	
24-Mar-04	18	16	15	14	15	15	17	19	21	24	27	30	34	39	43	47	48	48	47	45	43	42	41	40	31.2	48.2	
25-Mar-04	41	41	41	42	44	44	42	40	37	38	40	41	42	44	46	49	51	52	50	48	46	43	41	40	43.5	51.5	
26-Mar-04	39	39	39	39	40	41	43	44	43	41	40	40	38	37	35	34	34	33	33	34	35	36	37	37	37.9	43.6	
27-Mar-04	37	38	38	38	37	37	37	37	38	39	39	40	41	43	44	45	46	46	45	43	41	39	37	36	40.1	46.3	
28-Mar-04	35	33	32	31	29	27	25	23	23	25	27	31	35	40	45	49	51	52	53	52	51	47	40	33	37.1	53.0	
29-Mar-04	30	25	18	14	9	7	7	8	9	10	14	18	24	30	35	41	45	48	48	47	47	46	45	45	27.9	47.8	
30-Mar-04	44	44	45	45	44	44	43	42	42	41	41	42	43	43	45	46	47	48	46	45	45	44	44	40	43.9	47.9	
31-Mar-04	36	31	28	23	18	15	17	17	17	20	23	28	33	35	38	41	45	46	48	48	47	47	44	41	32.7	47.8	
Hourly Avg	31.1	29.3	28.1	27.4	26.6	26.3	26.2	26.0	26.1	27.2	28.9	30.8	33.0	35.7	38.3	40.6	42.6	43.4	43.0	41.6	40.1	37.9	35.6	33.5			
Hourly Max	44.5	44.4	45.0	45.1	44.3	43.7	44.2	45.7	46.8	47.0	47.8	47.7	47.3	47.7	47.7	49.2	51.2	52.2	53.0	52.1	50.6	46.8	45.7	46.3			

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Nitrogen Oxide (NO)

Guideline Limit:	Alberta Environment:	1-hr na ppm	24-hr na ppm
		1-hr na ppb	24-hr na ppb

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	127 ppb 28-Mar 23:00 0:00
Maximum 24-hr Average:	11 ppb 11-Mar

AIC Time:	25 hrs	Operational Time:	554 hrs						
Calibration Time:	6 hrs	AMD Operational Uptime:	78.6%						
Percentile	99	95	75	50	25	5	1	Average	Geomean
	29	11	3	1	1	0	0	3 ppb	- ppb

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Day Mountain Standard Time

Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-hour Average	Daily Maximum	
Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	2	1	1	1	1	1	1	1	1	1	A	*	2.0
8-Mar-04	3	0	1	6	1	1	2	11	23	9	6	5	3	1	2	3	6	5	3	2	5	3	1	A	4.3	22.7	
9-Mar-04	3	0	3	1	3	1	2	6	2	2	2	C	C	C	C	C	1	0	1	1	0	1	0	1	0	1.7	6.1
10-Mar-04	1	1	1	A	0	0	1	2	4	2	2	2	2	1	1	1	1	1	1	1	3	17	12	7	2.8	17.0	
11-Mar-04	7	3	1	A	0	2	14	46	25	40	10	2	1	3	1	2	2	2	2	4	16	29	14	24	10.9	45.7	
12-Mar-04	3	1	4	A	5	17	6	16	6	2	1	2	2	2	2	3	2	2	2	1	1	1	1	0	3.5	17.3	
13-Mar-04	0	0	1	A	1	0	1	2	3	2	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1.4	2.7	
14-Mar-04	1	1	0	A	0	0	0	0	1	2	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	1.0	1.8
15-Mar-04	2	6	2	A	1	4	2	12	12	5	3	2	4	4	3	3	2	2	3	1	1	3	1	0	3.3	12.3	
16-Mar-04	0	0	3	A	1	0	0	2	8	8	3	3	1	2	2	1	1	1	5	3	5	7	2	1	2.6	8.0	
17-Mar-04	0	1	1	A	1	1	1	2	5	3	1	1	1	1	2	2	1	1	1	5	2	3	7	0	1.9	7.4	
18-Mar-04	0	2	1	A	0	0	1	1	1	1	2	2	4	2	1	2	1	3	2	6	1	1	0	4	1.7	6.4	
19-Mar-04	1	0	1	A	0	0	1	2	2	1	1	2	1	1	1	1	1	1	1	1	0	1	1	0	0.9	2.5	
20-Mar-04	1	1	1	A	1	2	5	3	2	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0.9	4.9	
21-Mar-04	1	0	1	A	9	4	5	3	2	3	1	1	1	1	2	9	3	1	1	4	6	17	3	4	3.5	17.5	
22-Mar-04	2	5	2	A	2	1	2	2	3	2	1	1	1	0	1	0	0	0	0	0	0	1	1	1	1.3	5.4	
23-Mar-04	2	2	6	A	1	1	4	12	27	2	8	5	3	1	2	1	1	1	1	1	4	4	5	4	4.2	26.5	
24-Mar-04	22	0	1	A	7	11	8	6	6	3	1	1	1	2	2	2	4	5	8	3	2	1	0	1	4.2	22.3	
25-Mar-04	0	2	1	A	0	1	3	3	3	3	1	2	2	1	M	1	1	0	0	0	0	0	0	0	1.1	3.1	
26-Mar-04	0	0	0	A	0	0	0	0	1	1	1	1	5	3	3	5	2	2	1	1	1	0	1	0	1.3	4.8	
27-Mar-04	1	0	A	0	1	0	0	1	1	1	1	3	3	2	2	2	1	1	1	2	1	0	1	0	1.2	2.8	
28-Mar-04	0	A	0	0	2	4	1	2	2	4	1	1	1	1	1	1	1	2	1	1	1	2	9	127	7.2	126.9	
29-Mar-04	A	10	4	1	29	9	29	20	28	13	5	3	2	2	1	1	2	2	1	1	0	0	2	A	7.5	29.1	
30-Mar-04	0	1	0	4	4	0	1	3	2	3	2	2	1	1	1	2	2	1	3	1	2	1	A	1	1.6	3.7	
31-Mar-04	1	4	32	54	22	4	4	2	4	3	2	2	1	2	2	2	1	1	1	1	1	A	0	0	6.3	54.2	
Hourly Avg	*	*	*	*	3.8	2.6	3.8	6.6	7.3	4.8	2.5	*	*	*	*	2.0	1.6	1.6	1.7	1.7	2.2	4.0	2.7	*			
Hourly Max	22.3	9.5	31.9	54.2	29.1	17.3	29.1	45.7	28.4	40.4	9.7	4.7	4.8	4.1	3.1	8.7	5.6	5.0	7.6	6.4	16.1	28.5	14.1	126.9			

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Oxides of Nitrogen (NO_x)

Guideline Limit:	Alberta Environment:	1-hr	na	ppm	24-hr	na	ppm
		1-hr	na	ppb	24-hr	na	ppb

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	174 ppb 28-Mar 23:00 0:00
Maximum 24-hr Average:	28 ppb 11-Mar

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

AIC Time:	25 hrs	Operational Time:	554 hrs						
Calibration Time:	6 hrs	AMD Operational Uptime:	78.6%						
Percentile	99	95	75	50	25	5	1	Average	Geomean
	58	35	14	7	4	2	1	11 ppb	- ppb

Day Mountain Standard Time

Day	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-hour Average	Daily Maximum	
1-Mar-04	Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	*	0.0	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	6	6	4	4	3	3	3	2	3	A	*	6.2	
8-Mar-04	10	4	4	15	5	5	8	25	43	20	13	12	8	4	6	11	14	22	19	13	17	12	6	A	12.8	42.6		
9-Mar-04	7	2	7	4	9	5	8	12	6	6	7	C	C	C	C	C	C	3	3	7	3	4	4	3	5.5	11.7		
10-Mar-04	9	14	6	A	6	8	10	10	14	6	4	4	3	3	2	C	3	7	11	13	26	57	47	32	13.0	57.3		
11-Mar-04	22	20	14	A	19	25	46	78	51	71	21	4	3	5	3	4	6	10	15	25	43	60	41	50	27.6	77.8		
12-Mar-04	21	12	20	A	34	47	31	43	22	8	6	4	5	5	6	13	13	20	21	12	11	9	6	3	16.2	47.3		
13-Mar-04	4	5	8	A	8	3	8	14	10	6	7	5	6	5	4	3	4	6	9	13	18	20	16	15	8.6	20.5		
14-Mar-04	11	10	4	A	7	2	2	3	5	5	3	2	2	1	3	3	3	5	7	11	9	12	8	7	5.5	12.2		
15-Mar-04	21	22	13	A	9	16	13	27	27	12	8	7	8	8	8	9	9	14	15	15	12	16	7	3	13.0	27.1		
16-Mar-04	2	8	12	A	12	8	12	13	31	26	12	9	3	5	8	4	5	8	17	26	24	27	13	10	12.9	31.4		
17-Mar-04	8	8	11	A	12	15	19	13	22	14	5	5	4	3	5	6	5	6	14	28	21	20	37	15	12.9	36.9		
18-Mar-04	10	13	10	A	4	2	5	7	5	4	5	5	9	4	3	6	3	7	15	30	6	6	3	7	7.4	30.2		
19-Mar-04	4	1	8	A	3	2	4	6	6	2	2	5	4	2	5	3	4	8	16	10	4	7	6	5	5.2	16.5		
20-Mar-04	4	12	6	A	24	24	23	10	3	1	1	0	0	0	0	0	1	1	2	1	1	2	3	1	5.3	24.5		
21-Mar-04	8	3	15	A	36	22	22	12	8	8	3	2	2	2	6	23	10	5	12	29	30	48	22	23	15.3	47.7		
22-Mar-04	20	18	14	A	20	21	19	14	11	7	4	2	2	1	2	2	1	2	3	3	1	10	15	10	8.8	20.8		
23-Mar-04	20	17	20	A	11	11	19	28	45	4	15	10	9	5	8	5	4	6	6	10	16	25	27	21	14.9	45.0		
24-Mar-04	38	7	7	A	20	40	24	19	13	6	3	2	3	5	4	6	13	21	17	14	11	4	3	5	12.4	40.0		
25-Mar-04	1	18	13	A	3	10	19	14	9	9	3	6	4	2	M	2	2	2	2	2	2	2	2	2	5.8	18.6		
26-Mar-04	1	1	1	A	3	2	1	2	3	3	4	3	17	8	9	13	8	8	7	4	4	4	6	4	5.1	17.4		
27-Mar-04	4	2	A	A	4	4	2	4	4	3	2	5	7	6	6	5	5	7	15	19	16	8	8	5	6.3	18.7		
28-Mar-04	3	A	7	6	9	12	8	8	7	11	4	3	3	2	2	2	3	7	4	11	9	25	49	174	16.0	173.7		
29-Mar-04	A	33	25	16	52	30	58	38	49	28	15	11	5	5	4	5	8	9	9	6	4	3	6	A	18.9	57.6		
30-Mar-04	3	4	2	7	7	2	5	7	6	7	4	5	3	3	3	6	7	9	25	14	7	5	A	14	6.7	24.7		
31-Mar-04	14	28	58	87	49	12	13	10	13	9	7	5	3	5	5	5	5	7	7	10	9	A	13	7	16.5	86.7		
Hourly Avg	*	*	*	*	15.2	13.6	15.9	17.5	17.2	11.5	6.5	*	*	*	*	6.0	5.8	8.1	10.9	13.1	12.3	16.1	14.6	*				
Hourly Max	38.3	32.6	57.7	86.7	51.5	47.3	57.6	77.8	51.2	71.0	20.8	12.1	17.4	8.3	8.8	23.5	14.0	22.1	24.7	30.2	42.6	59.6	49.0	173.7				

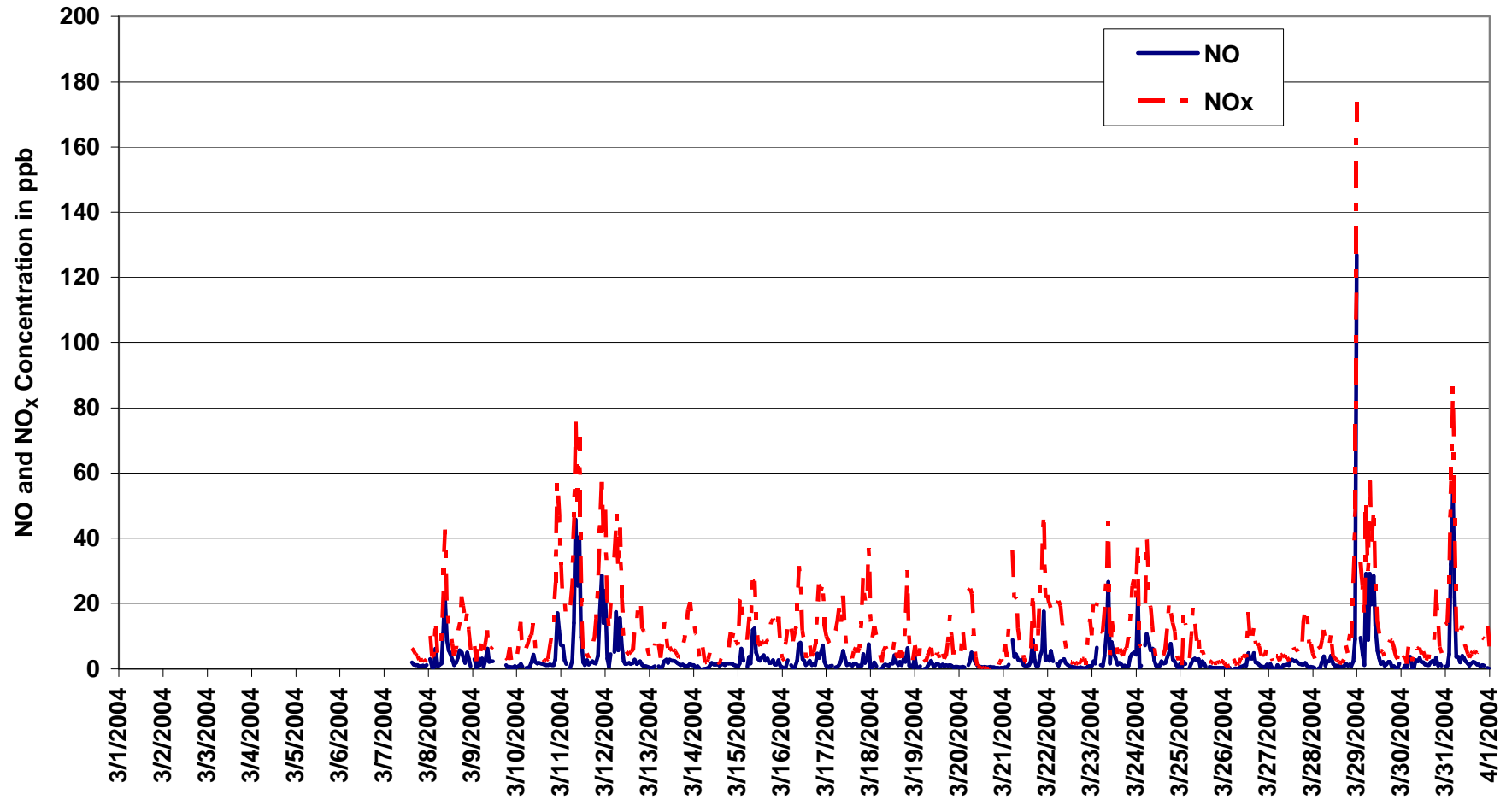


Figure 2. PAS – Crescent Heights NO and NO_x Monthly Trends

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Nitrogen Dioxide (NO₂)

Guideline Limit:	Alberta Environment:	1-hr 0.212 ppm	24-hr 0.106 ppm
		1-hr 212 ppb	24-hr 106 ppb

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	47 ppb 28-Mar 23:00 0:00
Maximum 24-hr Average:	17 ppb 11-Mar

AIC Time:	25 hrs	Operational Time:	554 hrs						
Calibration Time:	6 hrs	AMD Operational Uptime:	78.6%						
Percentile	99	95	75	50	25	5	1	Average	Geomean
	33	24	11	6	3	1	0	8 ppb	- ppb

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Day Mountain Standard Time

Day	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-hour Average	Daily Maximum	
1-Mar-04	Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	*	0.0	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0	
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	4	4	3	3	2	2	2	2	2	2	A	*	4.3
8-Mar-04	7	3	3	9	4	4	7	14	20	11	8	8	5	3	4	8	9	17	16	12	12	9	5	A	8.6	20.1		
9-Mar-04	4	2	4	3	6	5	6	6	4	4	5	C	C	C	C	C	C	2	2	6	2	3	4	3	4.0	6.2		
10-Mar-04	8	13	5	A	6	7	9	9	10	4	2	2	2	2	1	2	2	6	10	12	24	41	36	25	10.3	40.5		
11-Mar-04	15	18	13	A	19	23	33	32	26	31	11	3	2	2	2	3	4	8	14	21	27	31	27	27	17.0	32.8		
12-Mar-04	18	11	16	A	29	30	25	28	16	6	5	3	3	4	4	10	12	18	19	11	11	9	5	3	12.9	30.5		
13-Mar-04	4	5	7	A	7	4	8	12	8	5	4	3	4	3	3	2	3	4	9	13	17	19	15	14	7.5	19.2		
14-Mar-04	10	10	4	A	7	2	2	3	4	3	2	1	1	1	2	2	2	4	5	10	8	11	8	7	4.8	11.4		
15-Mar-04	20	17	11	A	8	12	12	15	15	8	5	5	5	4	5	6	7	12	13	13	11	13	6	3	9.9	19.6		
16-Mar-04	2	8	9	A	11	8	11	11	24	18	9	7	2	4	6	3	4	7	12	23	19	20	11	9	10.4	24.2		
17-Mar-04	8	7	10	A	11	14	17	11	17	11	4	4	3	2	4	5	4	6	13	24	19	17	30	15	11.2	29.8		
18-Mar-04	9	11	10	A	5	2	5	6	4	3	4	3	5	2	2	4	2	4	13	24	6	5	2	4	5.9	24.2		
19-Mar-04	4	1	8	A	3	2	3	4	4	1	1	4	4	3	1	4	3	3	7	15	10	4	6	4	4.5	15.5		
20-Mar-04	4	11	5	A	23	22	18	7	2	0	0	0	0	0	0	0	0	1	2	1	0	2	3	1	4.6	22.9		
21-Mar-04	7	3	13	A	28	18	17	10	6	5	2	1	1	1	2	4	15	7	5	11	25	25	31	19	19	12.0	30.6	
22-Mar-04	18	13	12	A	19	20	17	12	8	5	3	1	2	1	1	1	1	2	3	3	1	9	15	9	7.7	20.0		
23-Mar-04	18	16	14	A	10	10	16	17	19	3	7	6	6	3	6	4	3	5	6	9	13	21	23	17	10.9	22.6		
24-Mar-04	16	7	6	A	13	30	16	13	7	4	2	2	2	3	3	4	10	16	10	12	9	4	3	3	8.4	29.6		
25-Mar-04	1	16	12	A	3	9	16	11	6	6	2	4	2	2	M	2	2	1	2	2	2	2	2	2	4.8	16.0		
26-Mar-04	1	1	1	A	3	2	1	1	3	3	3	3	3	13	5	6	8	6	6	6	3	4	4	5	4	3.9	12.8	
27-Mar-04	3	2	A	4	3	3	4	3	3	2	2	3	5	4	4	4	3	6	14	17	15	8	7	4	5.3	17.1		
28-Mar-04	3	A	7	6	7	8	7	6	5	8	3	2	2	2	1	1	1	2	6	4	9	9	23	40	47	9.1	47.5	
29-Mar-04	A	23	21	15	23	21	29	19	21	15	9	8	4	3	3	4	6	7	8	6	4	3	4	A	11.6	28.8		
30-Mar-04	3	3	2	4	4	2	4	5	4	4	2	3	2	2	2	4	5	7	22	13	5	4	A	13	5.3	21.6		
31-Mar-04	13	24	26	33	28	8	10	9	9	6	5	3	3	3	3	4	4	6	6	9	8	A	12	6	10.3	32.8		
Hourly Avg	*	*	*	*	11.7	11.1	12.2	11.0	10.2	6.9	4.2	*	*	*	*	4.3	4.4	6.7	9.4	11.6	10.3	12.3	12.0	*				
Hourly Max	19.6	23.8	26.0	32.8	29.4	30.5	32.8	32.4	26.0	30.9	11.4	7.6	12.8	4.9	6.2	15.0	11.6	18.0	21.6	25.0	26.8	40.5	40.3	47.5				

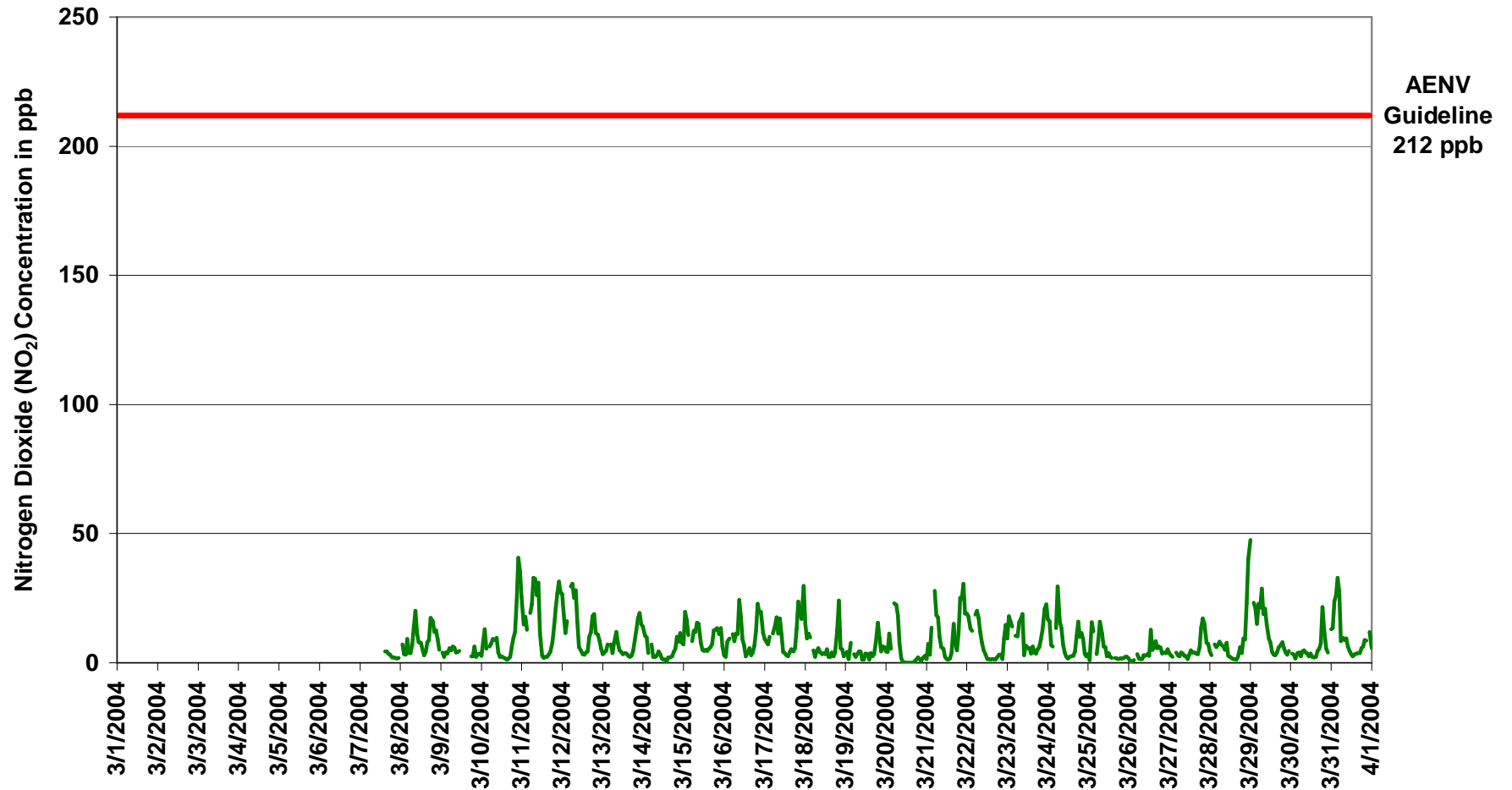


Figure 3. PAS – Crescent Heights NO₂ Monthly Trends

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Total Hydrocarbons (THC)

Guideline Limit:	Alberta Environment:	1-hr	na	ppm	24-hr	na	ppm
		1-hr	na	ppb	24-hr	na	ppb

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	3.4 ppm 29-Mar 2:00 3:00
Maximum 24-hr Average:	2.4 ppm 23-Mar

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

AIC Time:	25 hrs	Operational Time:	558 hrs						
Calibration Time:	2 hrs	AMD Operational Uptime:	78.6%						
Percentile	99	95	75	50	25	5	1	Average	Geomean
	2.9	2.6	2.3	2.2	2.1	2.0	1.8	2.21 ppm	- ppm

Day Mountain Standard Time

Day	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	24-hour Average	Daily Maximum
1-Mar-04	Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	*	0.00	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.00
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.00
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.00
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.00
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.00
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	A	*	2.01
8-Mar-04	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	A	2.10	2.30
9-Mar-04	2.0	2.0	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.8	1.8	C	C	2.0	2.1	2.1	2.1	2.1	2.1	2.1	1.93	2.12	
10-Mar-04	2.2	2.2	2.2	A	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.6	2.6	2.9	2.9	2.31	2.90	
11-Mar-04	2.5	2.5	2.3	A	2.3	2.3	2.4	2.5	2.6	2.6	2.3	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.3	2.6	2.6	2.9	2.8	2.8	2.38	2.93	
12-Mar-04	2.3	2.2	2.2	A	2.3	2.3	2.6	2.4	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.19	2.65		
13-Mar-04	2.2	2.4	2.3	A	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.7	2.4	2.3	2.3	2.27	2.68		
14-Mar-04	2.3	2.2	2.2	A	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.4	2.4	2.17	2.40	
15-Mar-04	2.5	2.5	2.5	A	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.25	2.54	
16-Mar-04	2.1	2.2	2.2	A	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.16	2.34	
17-Mar-04	2.1	2.3	2.3	A	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.5	2.23	2.51	
18-Mar-04	2.7	2.2	2.2	A	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	2.03	2.67		
19-Mar-04	2.0	2.0	2.1	A	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.09	2.22	
20-Mar-04	2.2	2.3	2.2	A	2.5	2.7	3.2	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.34	3.16	
21-Mar-04	2.3	2.4	2.5	A	2.5	2.7	2.6	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.5	2.7	2.7	2.6	2.6	2.39	2.70	
22-Mar-04	2.6	2.7	2.6	A	2.8	2.8	2.8	2.6	2.5	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.39	2.79	
23-Mar-04	2.7	2.7	2.6	A	2.6	2.4	2.7	2.9	2.6	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.6	2.7	2.40	2.85	
24-Mar-04	2.6	2.3	2.2	A	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.11	2.60	
25-Mar-04	2.1	2.1	2.1	A	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	M	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.19	2.30	
26-Mar-04	2.2	2.1	2.2	A	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.11	2.19	
27-Mar-04	2.1	2.1	A	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.3	2.2	2.2	2.2	2.13	2.31	
28-Mar-04	2.2	A	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.5	2.6	2.25	2.63	
29-Mar-04	A	3.1	3.4	3.1	2.7	2.6	2.5	2.5	2.4	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	A	2.38	3.37	
30-Mar-04	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.3	2.10	2.25	
31-Mar-04	2.3	2.4	2.4	2.5	2.6	2.2	2.1	2.1	2.1	2.1	2.5	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	A	2.3	2.2	2.23	2.62	
Hourly Avg	*	*	*	*	2.29	2.27	2.31	2.28	2.24	2.18	2.15	2.12	2.10	2.09	2.09	2.10	2.12	2.13	2.17	2.21	2.24	2.24	2.28	*				
Hourly Max	2.72	3.07	3.37	3.10	2.76	2.79	3.16	2.85	2.64	2.58	2.47	2.29	2.21	2.21	2.19	2.25	2.27	2.30	2.32	2.54	2.68	2.67	2.93	2.90				

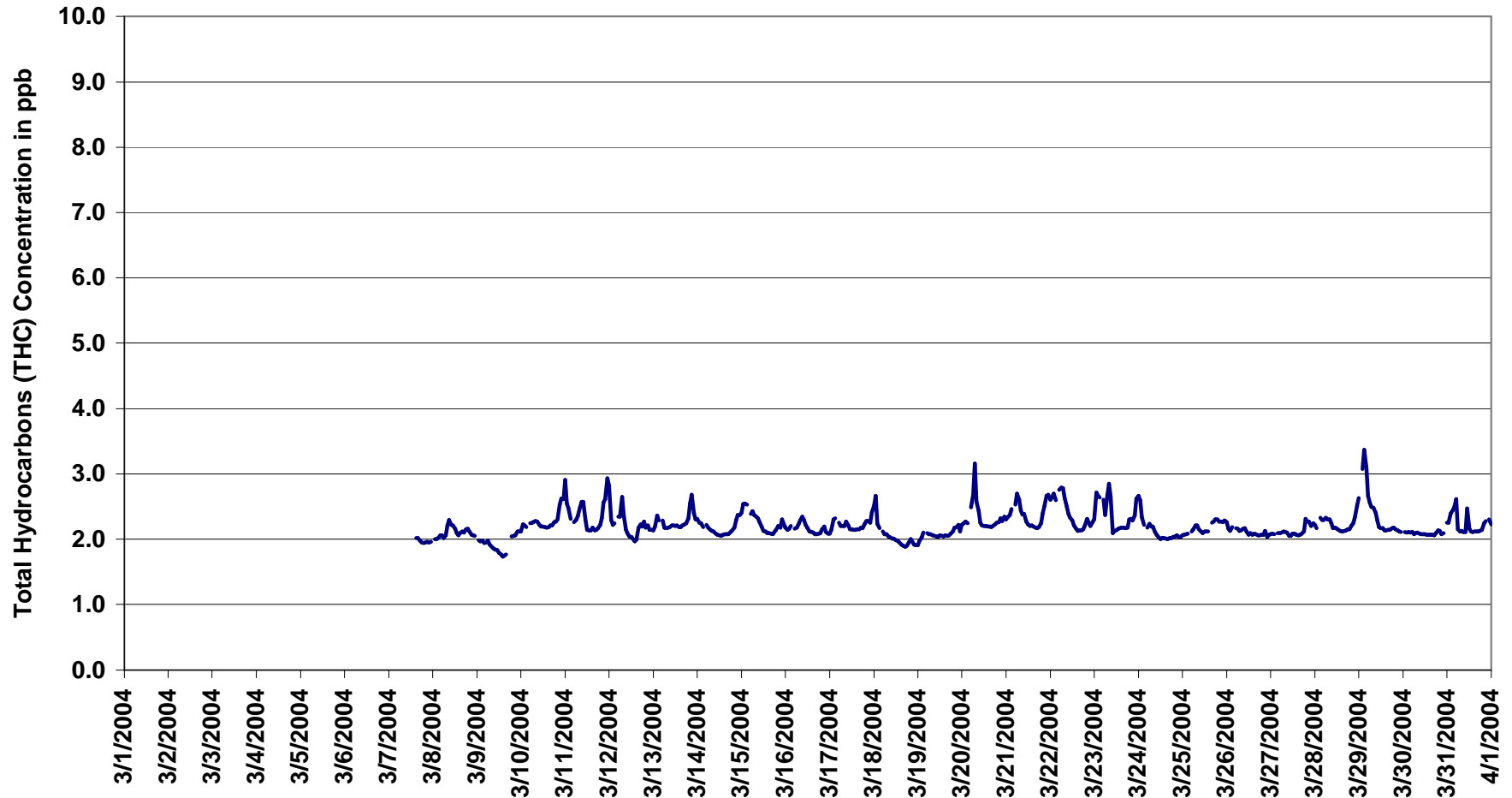


Figure 4. PAS – Crescent Heights THC Monthly Trends

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Particulate Matter (PM_{2.5})

Guideline Limit: Canada Wide Standard 1-hr - µg/m³ 24-hr 30 µg/m³
(considered as an absolute value)

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0			
Number of 24-hr Exceedances:	0			
Maximum 1-hr Average:	11.9	µg/m ³	28-Mar	23:00 0:00
Maximum 24-hr Average:	3.3	µg/m ³	31-Mar	

AIC Time:	0 hrs		Operational Time:	498 hrs					
Calibration Time:	4 hrs		AMD Operational Uptime:	67.5%					
Percentile	99	95	75	50	25	5	1	Average	Geomean
	6.7	4.5	1.4	0.0	0.0	0.0	0.0	0.9 µg/m ³	- µg/m ³

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Day	Mountain Standard Time																								24-hour Average	Daily Maximum		
	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00			23:00	0:00
1-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	0	0	0	0	1	1	0	0	0	0	0	*	1.0
8-Mar-04	0	0	0	0	0	0	0	0	3	0	0	0	N	0	3	2	0	0	0	N	N	0	N	N	0	0.4	3.0	
9-Mar-04	N	N	N	N	N	N	N	0	0	0	0	0	N	0	C	C	C	C	0	0	N	0	N	0	0	*	0.0	
10-Mar-04	0	0	0	0	0	0	0	0	1	0	0	0	0	N	N	0	0	0	0	0	1	5	6	2	0.6	5.7		
11-Mar-04	0	N	0	N	0	0	0	0	3	3	7	0	0	0	0	2	0	1	0	2	1	4	3	1	1.3	7.1		
12-Mar-04	0	N	N	N	N	0	0	0	0	0	0	1	2	0	0	5	6	5	5	1	0	0	N	0	1.3	5.8		
13-Mar-04	2	3	2	1	1	1	2	3	1	0	0	0	0	N	0	0	0	0	2	2	2	2	1	0	0.9	2.9		
14-Mar-04	0	0	0	0	0	0	N	0	0	N	N	0	0	0	0	1	1	2	2	2	2	1	0	0	0.4	1.9		
15-Mar-04	4	2	0	0	0	0	0	0	1	0	0	N	N	N	0	0	N	3	1	3	1	2	2	2	1.0	3.6		
16-Mar-04	0	0	0	0	0	0	0	0	0	1	0	N	N	N	N	1	N	0	2	1	1	0	0	0	0.3	2.1		
17-Mar-04	0	0	0	0	1	2	0	0	1	0	N	0	N	0	0	0	0	0	1	5	1	0	0	0	0.4	4.7		
18-Mar-04	0	0	N	N	N	N	N	N	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	*	0.4		
19-Mar-04	3	0	0	N	0	N	0	0	0	0	0	0	0	0	1	4	2	1	6	4	1	5	0	1.2	5.6			
20-Mar-04	1	3	1	2	1	1	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	2.7		
21-Mar-04	0	0	0	0	1	0	0	0	0	0	N	N	N	0	N	0	0	0	2	3	5	6	2	2	1.0	5.9		
22-Mar-04	1	0	0	0	0	0	0	0	0	1	1	0	0	N	N	0	0	0	0	0	0	0	0	0	0.2	1.1		
23-Mar-04	0	0	0	0	0	0	0	1	4	0	4	2	2	2	0	2	0	2	2	4	2	4	4	3	1.6	4.3		
24-Mar-04	2	3	1	1	1	2	0	2	2	0	N	N	0	0	N	0	2	2	3	4	2	0	N	N	1.4	3.6		
25-Mar-04	1	0	0	0	0	2	0	1	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	N	0.2	2.4		
26-Mar-04	N	N	N	0	N	N	N	0	0	0	0	0	4	1	0	1	0	0	N	N	N	N	0	N	*	3.8		
27-Mar-04	0	0	N	0	0	0	N	0	0	0	N	N	0	0	N	0	N	0	2	2	1	0	2	6	0.7	6.0		
28-Mar-04	0	0	0	0	0	0	0	0	N	N	0	0	N	0	0	1	3	5	1	1	2	6	12	1.6	11.9			
29-Mar-04	6	3	3	0	3	0	3	3	4	2	N	0	0	0	0	0	1	0	0	0	0	0	0	0	1.2	5.8		
30-Mar-04	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0	0	2	2	5	2	2	2	3	1.0	4.7		
31-Mar-04	2	5	7	9	7	3	6	5	7	4	7	3	0	N	0	3	2	1	1	3	1	0	0	0	3.3	8.7		
Hourly Avg	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0.7	*	0.9	1.5	*	*	1.2	*	*	*			
Hourly Max	5.8	5.2	7.2	8.7	7.5	2.5	5.7	5.4	6.7	7.1	6.5	2.9	3.8	1.6	2.6	5.2	5.8	4.8	5.2	5.6	4.5	5.9	5.7	11.9				

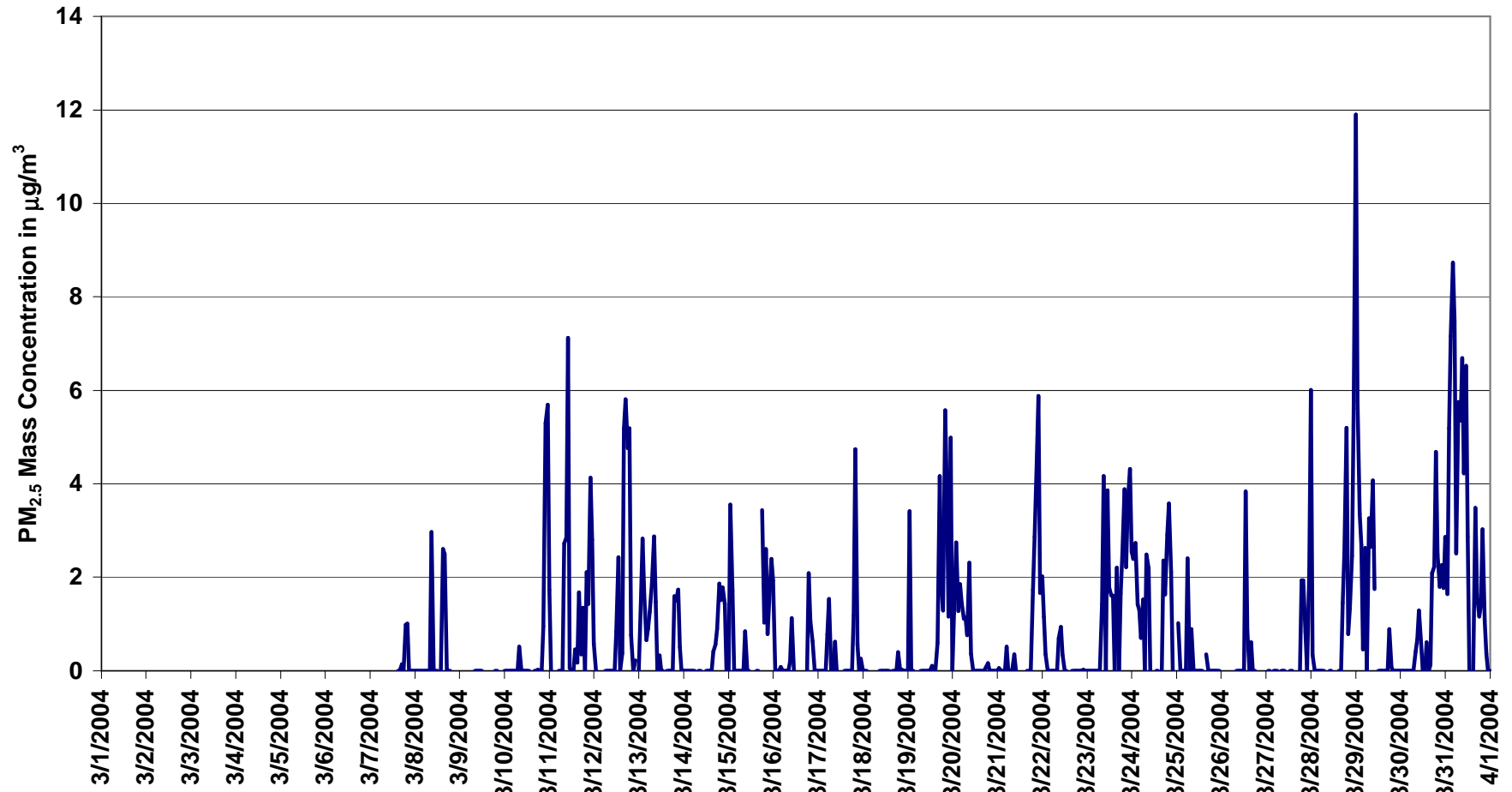


Figure 5. PAS - Crescent Heights PM_{2.5} Monthly Trends

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : **Relative Humidity (%)**

Guideline Limit:

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0			
Number of 24-hr Exceedances:	0			
Maximum 1-hr Average:	92.3	%	13-Mar	5:00 6:00
Maximum 24-hr Average:	75.4	%	13-Mar	

AIC Time:	0 hrs		Operational Time:	577 hrs					
Calibration Time:	0 hrs		AMD Operational Uptime:	77.6%					
Percentile	99	95	75	50	25	5	1	Average	Geomean
	90.7	82.8	71.2	57.6	44.1	23.6	13.8	56.4 %	- %

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Day Mountain Standard Time

Day	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-hour Average	Daily Maximum	
1-Mar-04	Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	*	0	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	55	56	58	56	56	58	57	56	55	58		*	58
8-Mar-04	72	75	74	73	69	65	68	76	N	58	52	44	37	36	42	52	59	55	60	65	69	70	71	68		61	76	
9-Mar-04	67	69	68	66	67	70	72	66	62	61	62	59	54	56	44	51	66	69	85	91	63	64	58	63		65	91	
10-Mar-04	65	63	62	59	61	63	62	65	61	51	46	44	44	36	34	36	37	45	56	59	63	65	69	77		55	77	
11-Mar-04	77	79	74	74	75	75	74	73	68	61	51	44	43	46	50	50	51	56	63	69	76	N	N	N		63	79	
12-Mar-04	80	N	79	77	74	N	N	66	56	46	45	45	45	37	38	54	61	67	72	79	77	81	78	71		63	81	
13-Mar-04	75	77	84	92	92	92	91	88	83	78	74	70	64	57	56	56	55	58	68	73	78	82	84	83		75	92	
14-Mar-04	82	80	78	77	78	77	69	63	56	50	45	40	41	42	46	48	53	59	64	70	67	68	68	69		62	82	
15-Mar-04	70	74	76	79	82	85	86	80	73	66	60	53	52	46	47	47	39	42	45	51	56	61	67	74		63	86	
16-Mar-04	82	85	85	84	80	86	91	91	88	84	77	59	41	35	34	41	43	47	59	67	69	70	68	64		68	91	
17-Mar-04	61	74	79	77	79	86	89	89	82	74	59	54	48	48	48	47	51	51	56	67	72	75	80	80		68	89	
18-Mar-04	81	80	79	73	65	61	63	62	61	58	55	53	42	35	34	31	32	40	49	53	57	58	62		56	81		
19-Mar-04	64	81	81	66	58	58	52	48	42	36	29	26	28	29	28	30	38	48	50	54	65	67	84	76		52	84	
20-Mar-04	75	76	78	83	85	85	84	77	76	69	62	55	51	48	46	46	47	53	59	63	66	69	65	64		66	85	
21-Mar-04	74	76	80	81	82	83	82	78	71	69	60	50	42	40	36	33	32	35	44	52	56	62	67	70		61	83	
22-Mar-04	73	74	74	74	73	74	75	73	68	66	62	56	52	48	44	44	43	48	54	58	63	72	78	77		63	78	
23-Mar-04	78	79	76	78	80	81	82	75	65	52	48	44	39	38	40	43	42	45	51	60	65	69	73	77		62	82	
24-Mar-04	76	76	76	76	76	78	74	67	57	45	33	25	25	24	20	17	21	26	33	41	51	59	56	49		49	78	
25-Mar-04	46	48	50	47	47	56	62	58	51	39	N	35	36	36	M	40	44	50	53	58	66	70	69	65		51	70	
26-Mar-04	55	46	48	57	56	52	50	52	53	54	54	50	59	64	62	58	54	55	50	36	40	42	48	51		52	64	
27-Mar-04	54	56	58	57	58	60	57	50	48	41	39	33	27	26	27	26	23	24	27	35	35	41	46	59		42	60	
28-Mar-04	69	71	75	79	80	80	76	56	40	32	31	28	25	22	19	17	18	19	29	37	42	45	50	57		46	80	
29-Mar-04	63	65	71	68	72	74	72	66	57	46	32	25	24	19	19	18	18	21	27	31	32	33	30	28		42	74	
30-Mar-04	29	30	32	31	31	32	32	30	25	22	18	16	14	13	13	11	9	10	14	17	17	21	28	34		22	34	
31-Mar-04	38	42	48	48	51	42	42	46	49	50	22	42	45	44	38	34	39	42	45	50	58	62	65	66	65		48	66
Hourly Avg	67	*	70	70	70	*	*	67	*	54	*	44	41	39	38	40	41	45	51	56	59	61	63	64				
Hourly Max	82	85	85	92	92	92	91	91	88	84	77	70	64	64	62	58	66	69	85	91	78	82	84	83				

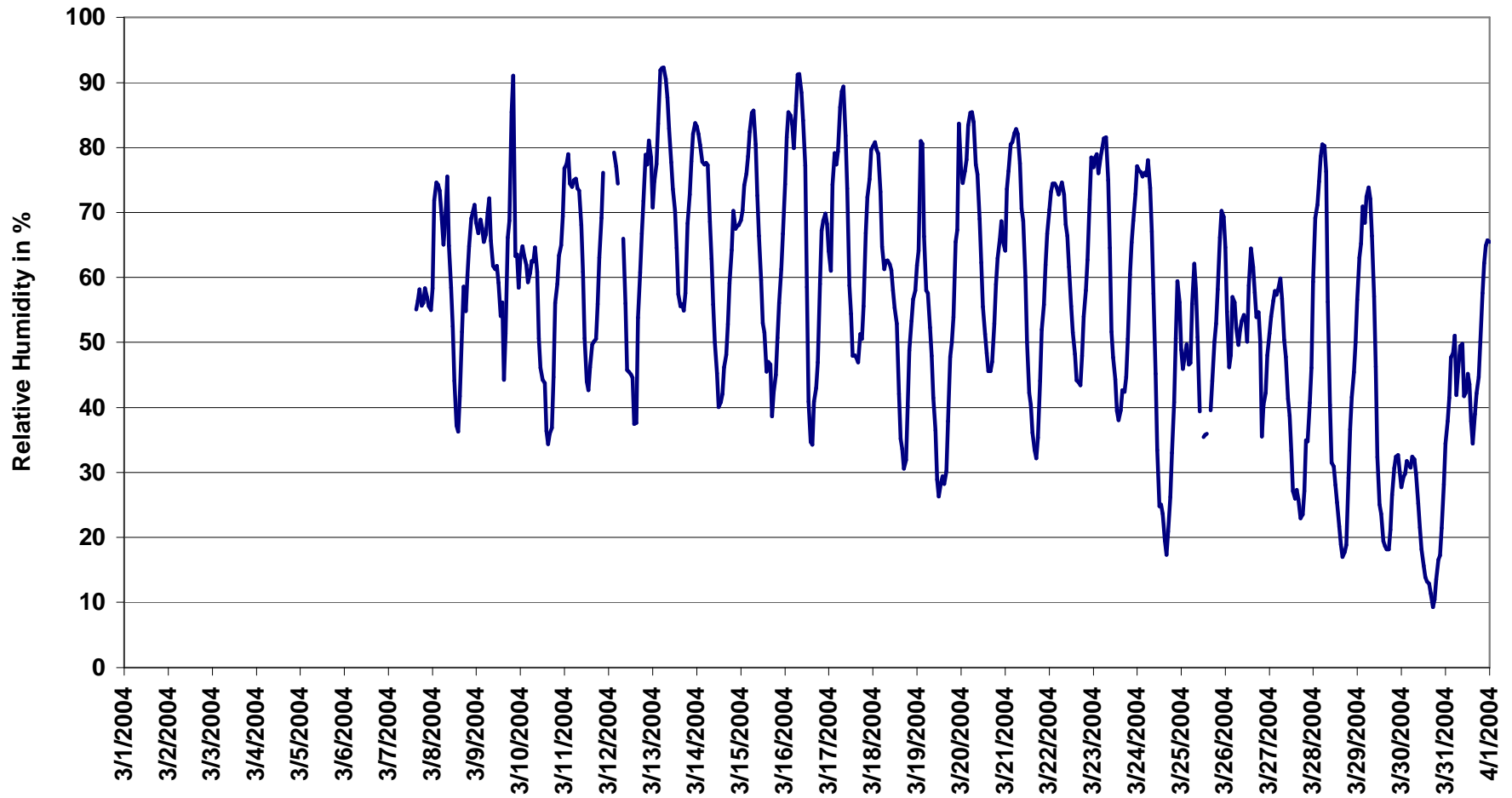


Figure 6. PAS – Crescent Heights Relative Humidity Monthly Trends

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : **Temperature (°C)**

Guideline Limit:

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0			
Number of 24-hr Exceedances:	0			
Maximum 1-hr Average:	26.0 °C	30-Mar	16:00	17:00
Maximum 24-hr Average:	18.0 °C	30-Mar		

AIC Time:	0 hrs		Operational Time:	577 hrs					
Calibration Time:	0 hrs		AMD Operational Uptime:	77.6%					
Percentile	99	95	75	50	25	5	1	Average	Geomean
	23.1	15.9	9.3	5.3	1.7	-2.6	-4.4	5.9 °C	- °C

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Day	Mountain Standard Time																								24-hour Average	Daily Maximum	
	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00			23:00
1-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	8	9	9	10	10	9	9	9	10	9	*	9.7
8-Mar-04	6	5	5	5	7	8	7	4	N	8	10	11	12	12	13	12	11	12	10	7	5	6	7	7	8.2	13.4	
9-Mar-04	7	7	7	7	7	6	5	8	9	11	11	11	13	12	16	12	6	5	2	1	2	1	0	-1	6.8	15.9	
10-Mar-04	-1	0	0	0	0	-1	-1	-1	-1	0	2	2	3	4	4	4	3	2	0	0	-1	-2	-2	-3	0.7	4.0	
11-Mar-04	-3	-4	-4	-4	-5	-5	-5	-3	-1	2	6	7	8	8	9	10	10	9	7	5	3	N	N	N	2.4	10.2	
12-Mar-04	-1	N	-2	-1	-1	N	N	3	6	9	9	10	12	15	14	8	6	5	5	4	4	3	3	3	5.4	14.6	
13-Mar-04	2	2	1	0	0	0	0	0	1	1	1	2	3	4	4	4	3	3	1	0	-2	-3	-4	-4	0.7	3.6	
14-Mar-04	-4	-3	-3	-3	-3	-2	0	1	2	4	5	7	8	8	8	8	7	6	4	3	4	3	3	2	2.7	8.3	
15-Mar-04	2	2	1	0	0	-1	-1	0	3	5	7	7	7	9	9	10	11	10	8	7	6	4	3	3	4.6	10.8	
16-Mar-04	1	1	1	1	2	1	1	1	1	2	3	5	6	7	8	9	9	8	7	5	5	5	4	5	4.0	8.9	
17-Mar-04	5	1	0	0	1	1	1	1	2	4	4	4	6	6	6	6	5	5	4	2	2	1	1	0	2.9	6.0	
18-Mar-04	1	1	1	1	2	4	5	6	7	8	10	11	15	17	17	18	17	14	11	10	10	10	9	8.9	18.1		
19-Mar-04	7	3	2	3	4	3	3	4	5	6	8	8	7	7	8	7	7	5	4	4	3	2	1	0	4.7	8.3	
20-Mar-04	-1	-1	-1	-2	-3	-4	-5	-3	-1	1	2	3	4	5	6	6	5	4	2	1	0	-1	-1	-1	0.6	5.9	
21-Mar-04	-2	-3	-4	-3	-4	-4	-4	-3	-1	0	2	4	6	7	8	9	9	8	6	5	4	3	2	1	1.9	9.2	
22-Mar-04	1	1	1	0	0	1	0	1	2	3	5	6	7	7	8	8	8	8	6	4	3	1	-1	0	3.3	8.5	
23-Mar-04	-1	-1	0	-1	-1	-1	-2	0	5	8	10	12	14	15	14	13	13	13	11	9	8	7	5	4	6.4	14.7	
24-Mar-04	4	4	5	4	4	3	4	5	8	11	14	16	16	17	18	18	17	16	14	12	10	8	7	7	10.1	18.1	
25-Mar-04	7	7	6	6	6	4	3	4	7	9	N	11	11	12	M	12	11	8	7	5	4	2	2	3	6.7	12.1	
26-Mar-04	5	7	7	5	6	5	6	5	6	6	8	9	8	8	8	9	10	10	9	9	8	6	5	4	7.0	10.3	
27-Mar-04	3	3	2	2	2	1	2	4	6	8	10	12	13	14	14	14	14	14	12	9	8	6	5	4	7.5	14.4	
28-Mar-04	4	3	2	1	-1	-1	1	3	7	10	10	12	13	13	14	14	14	13	10	8	6	4	3	2	6.9	13.9	
29-Mar-04	1	0	-1	-2	-2	-3	-3	0	3	8	12	15	17	18	19	19	19	19	17	14	13	13	13	13	9.2	19.3	
30-Mar-04	13	13	12	12	12	11	11	13	16	18	21	23	24	25	25	26	26	25	23	20	20	18	14	12	18.0	26.0	
31-Mar-04	10	9	7	7	7	10	10	10	11	14	15	13	12	11	11	11	10	10	8	6	5	4	4	3	9.1	14.6	
Hourly Avg	2.8	*	1.8	1.6	1.6	*	*	2.6	*	6.5	*	9.2	10.1	10.9	11.2	11.0	10.5	9.7	8.0	6.4	5.5	4.7	4.0	3.5			
Hourly Max	12.8	12.7	11.8	11.7	11.9	11.2	11.4	12.9	15.7	18.2	20.9	22.8	24.1	25.0	25.2	25.8	26.0	25.4	22.6	20.2	19.9	17.6	14.4	13.1			

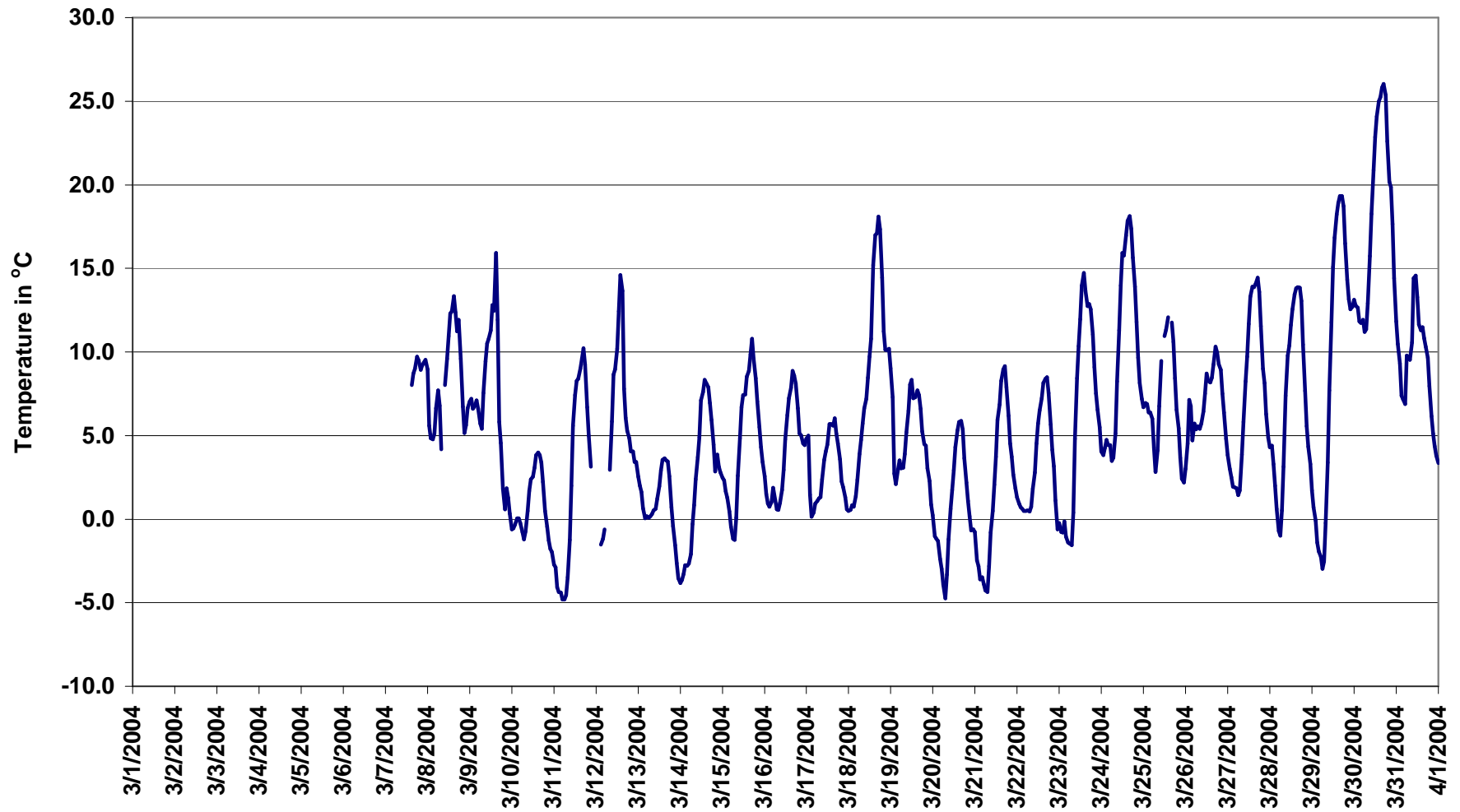


Figure 7. PAS – Crescent Heights Temperature Monthly Trends

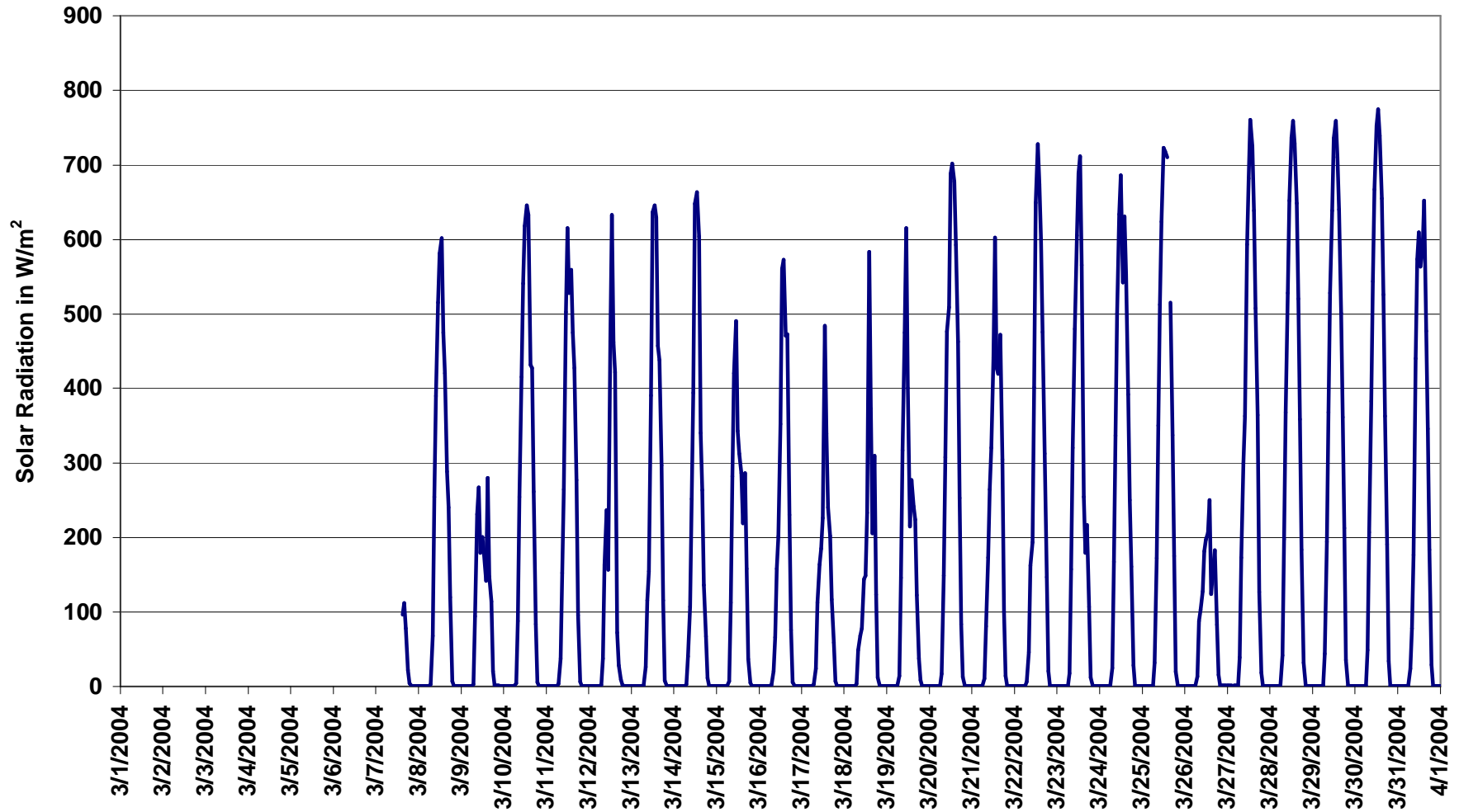


Figure 8. PAS – Crescent Heights Solar Radiation Monthly Trends

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : **Wind Speed (km/hr)**

Guideline Limit:

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0			
Number of 24-hr Exceedances:	0			
Maximum 1-hr Average:	36.8	km/hr	25-Mar	0:00 1:00
Maximum 24-hr Average:	24.6	km/hr	9-Mar	

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Calm Time:	0 hrs	0% calms	Operational Time:	585 hrs					
Calibration Time:	0 hrs		AMD Operational Uptime:	78.6%					
Percentile	99	95	75	50	25	5	1	AverageS	AverageV
	31.6	28.0	19.3	12.0	7.0	3.7	2.4	13.7 km/hr	5.9 km/hr

Day Mountain Standard Time

Hour Start Hour End	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	24-hr Scalar Average	24-hr Vector Average	Daily Max	
1-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	*	0.0	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	*	0.0
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	*	0.0
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	*	0.0
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	*	0.0
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	*	*	0.0
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	23	23	19	26	25	25	24	23	25	22	*	*	26.1
8-Mar-04	19	19	15	13	15	15	15	6	3	4	6	6	10	12	10	13	13	6	10	9	9	13	19	22	11.7	8.1	22.0	
9-Mar-04	28	26	17	22	18	16	15	28	32	30	29	31	32	21	25	33	30	30	25	8	31	21	29	14	24.6	18.1	32.6	
10-Mar-04	10	14	18	19	19	16	14	16	16	19	19	21	21	21	21	19	13	8	7	4	3	4	6	6	14.6	13.4	21.4	
11-Mar-04	9	7	7	8	6	4	2	3	3	3	13	19	19	19	18	16	14	8	6	6	5	4	4	5	8.7	6.0	19.4	
12-Mar-04	6	7	6	5	4	3	4	7	9	24	28	32	27	24	22	17	10	8	10	10	14	10	17	26	13.7	8.4	31.9	
13-Mar-04	19	24	25	20	21	22	24	25	24	22	21	21	17	17	16	15	11	8	5	6	4	7	7	7	16.3	13.4	25.5	
14-Mar-04	9	9	11	8	6	9	13	9	12	11	23	24	25	22	15	15	11	11	13	9	10	8	12	7	12.6	7.0	24.8	
15-Mar-04	5	6	6	7	7	7	10	8	6	9	10	14	19	20	16	12	8	7	8	6	7	6	11	17	9.6	5.7	20.2	
16-Mar-04	7	6	7	10	9	4	4	6	6	10	10	9	8	6	6	7	10	9	7	4	7	7	9	9	7.3	4.1	10.4	
17-Mar-04	13	11	17	14	6	4	7	11	11	11	17	15	15	15	10	11	12	9	4	3	5	5	4	5	9.7	5.8	16.7	
18-Mar-04	6	7	6	9	10	9	15	16	27	27	28	26	20	27	30	28	31	28	12	9	21	29	35	31	20.3	16.9	34.9	
19-Mar-04	27	18	21	16	17	19	23	24	29	30	30	24	19	17	15	14	11	8	4	8	9	8	11	10	17.2	14.5	30.1	
20-Mar-04	5	4	2	2	3	3	3	7	9	12	11	12	10	11	11	12	14	16	14	14	12	13	11	12	9.3	7.5	15.6	
21-Mar-04	6	6	5	4	4	5	4	4	2	6	8	9	9	6	4	7	4	4	4	6	4	5	4	2	5.1	1.4	9.5	
22-Mar-04	2	5	4	5	7	3	4	6	6	9	11	12	13	12	11	11	10	12	13	15	13	9	5	4	8.3	6.2	15.0	
23-Mar-04	4	4	4	5	9	11	10	5	7	21	15	11	8	9	10	12	7	9	10	8	10	6	5	7	8.6	2.6	20.6	
24-Mar-04	8	11	7	7	7	5	7	10	16	20	26	29	32	29	28	27	27	27	24	19	16	24	28	31	19.4	18.7	31.9	
25-Mar-04	37	30	27	24	23	14	9	12	13	13	10	11	11	10	M	19	21	24	24	25	26	21	14	14	18.7	2.6	36.8	
26-Mar-04	18	18	18	13	19	21	25	18	12	10	10	5	5	14	14	12	16	20	19	21	18	20	18	19	16.0	6.4	24.5	
27-Mar-04	16	14	18	19	22	14	17	24	22	23	26	24	24	23	24	19	16	13	9	9	9	13	12	13	17.7	15.6	26.3	
28-Mar-04	6	7	10	11	13	8	9	9	15	28	19	18	19	20	24	25	22	22	15	11	3	2	3	3	13.4	9.3	27.7	
29-Mar-04	4	6	6	7	5	5	5	5	4	4	5	5	8	13	13	12	12	14	12	16	19	19	18	22	10.0	8.9	22.0	
30-Mar-04	21	20	17	14	16	20	20	21	27	27	25	23	23	22	25	22	22	17	15	19	22	13	8	5	19.4	18.5	27.5	
31-Mar-04	4	4	3	4	6	14	8	9	16	15	19	17	18	19	20	19	17	13	9	10	9	11	7	4	11.4	6.6	19.6	
1-hr Scalar	12.1	11.8	11.6	11.2	11.3	10.5	11.1	12.1	13.6	16.2	17.4	17.4	17.1	16.9	17.0	16.9	15.5	14.5	12.3	11.4	12.5	12.0	12.8	12.7				
1-hr Vector	5.5	5.3	4.5	5.0	5.2	4.2	4.1	5.5	7.5	9.0	9.2	8.9	8.3	8.3	9.1	7.4	6.7	5.4	3.3	2.8	4.0	5.3	5.5	4.6				
Hourly Max	36.8	29.9	27.0	23.9	23.3	22.5	24.5	27.6	31.6	30.4	29.5	31.9	31.9	29.3	29.9	32.6	31.4	30.0	25.3	25.2	31.4	29.0	34.9	31.5				

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : **Wind Direction (degrees)**

Guideline Limit:

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	
Maximum 24-hr Average:	

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Calm Time:	0 hrs	0% calms	Operational Time:	585 hrs					
Calibration Time:	0 hrs			AMD Operational Uptime:	78.6%				
Percentile	99	95	75	50	25	5	1	Average	Geomean
	354.1	321.0	250.5	213.7	127.2	41.7	23.5	59 deg	- deg

Day Mountain Standard Time

Day	Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-hour Average	
1-Mar-04	Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00		
1-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
2-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
3-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
4-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
5-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
6-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
7-Mar-04	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	209	214	243	266	265	90	91	269	268	261		
8-Mar-04	221	230	237	237	259	267	112	146	302	173	299	315	305	293	330	231	234	211	232	229	227	209	203	205		41	
9-Mar-04	224	233	239	224	226	240	252	225	224	229	235	224	220	234	253	265	224	244	66	131	109	133	145	134		63	
10-Mar-04	100	95	98	105	112	109	107	97	111	116	123	126	126	125	126	128	130	129	132	140	171	346	229	210		115	
11-Mar-04	219	316	323	307	304	304	59	278	292	209	211	223	230	229	220	222	234	240	235	229	199	68	67	315		28	
12-Mar-04	313	300	300	322	201	290	32	193	192	207	213	216	224	265	127	141	114	94	99	99	105	266	106	133		72	
13-Mar-04	130	138	143	142	127	142	145	145	145	141	143	141	140	137	137	138	135	139	35	46	287	299	287	299		144	
14-Mar-04	293	300	285	304	289	286	306	293	316	330	358	182	186	191	194	203	218	227	253	246	131	110	134	112		0	
15-Mar-04	270	246	250	242	217	212	223	222	214	214	206	199	210	216	239	240	99	145	115	74	69	160	114	33		52	
16-Mar-04	51	210	228	239	112	245	48	249	225	227	231	109	142	24	296	199	201	186	182	350	216	234	255	98		51	
17-Mar-04	119	100	44	81	95	97	255	265	101	99	129	134	131	131	132	124	140	141	114	194	214	220	350	275		119	
18-Mar-04	286	309	306	297	294	277	348	352	190	190	191	193	183	193	211	221	223	230	252	247	216	215	226	238		23	
19-Mar-04	109	132	104	268	268	269	268	263	262	267	270	98	120	120	117	117	96	270	252	111	32	23	134	34		102	
20-Mar-04	29	6	32	265	121	122	136	42	85	283	291	287	290	292	80	80	70	77	76	79	276	270	86	282		266	
21-Mar-04	291	272	279	293	35	33	33	38	157	21	39	38	45	38	209	235	155	120	121	143	241	217	223	97		215	
22-Mar-04	229	232	269	37	53	30	22	31	50	38	79	75	62	86	276	86	87	75	73	76	282	306	298	88		258	
23-Mar-04	166	39	21	154	159	150	148	155	217	228	247	262	109	127	10	32	51	57	79	296	152	207	265	240		130	
24-Mar-04	246	231	233	225	221	189	222	223	223	221	230	232	219	222	233	238	242	256	242	246	243	226	218	221		51	
25-Mar-04	239	254	258	265	268	106	211	231	238	258	122	42	45	77	M	71	85	89	283	289	288	285	273	272		354	
26-Mar-04	273	275	76	69	74	70	271	282	277	271	291	309	252	216	210	194	201	213	217	228	226	221	220	225		338	
27-Mar-04	227	224	232	233	226	238	223	218	220	239	237	238	246	250	247	245	262	91	115	114	103	132	139	107		64	
28-Mar-04	269	242	239	225	227	231	221	259	130	144	123	128	119	128	128	133	137	140	223	80	67	193	227	217		115	
29-Mar-04	249	239	212	222	181	338	327	317	309	318	308	351	181	186	356	351	356	347	348	350	353	353	352	354		354	
30-Mar-04	357	354	183	196	200	201	200	197	197	197	192	193	194	193	190	355	352	345	339	341	182	199	230	208		8	
31-Mar-04	183	183	272	304	231	236	213	248	233	247	123	133	133	133	128	140	128	139	143	124	84	182	41	33		111	
Hourly Avg	55	55	65	57	67	79	57	52	50	59	58	58	60	62	66	72	67	72	53	39	43	36	63	56			

Station: Crescent Heights

Station Owner: Palliser Airshed Society

Parameter : Standard Deviation of Wind Direction (degrees)
Determined by the Yamartino 15-min interval calculation

Sampling Dates: March 1, 2004 to April 1, 2004

Summary

Number of 1-hr Exceedances:	0
Number of 24-hr Exceedances:	0
Maximum 1-hr Average:	
Maximum 24-hr Average:	

Calm Time:	0 hrs	0% calms	Operational Time:	586 hrs					
Calibration Time:	0 hrs		AMD Operational Uptime:	78.8%					
Percentile	99	95	75	50	25	5	1	Average	Geomean
	70.6	56.8	20.7	10.5	7.0	4.7	4.1	59 deg	- deg

Status Characters

C	Calibration	A	AIC - Zero / Span Check
S	Instrument out of Service	R	Alarm
*	< 75% Data	X	Filter Exchange
N	Excessive Instrument Drift	M	Equipment Maintenance
F	DACS Off-Line	E	Exceedance

Day Mountain Standard Time

Hour Start	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Daily Maximum		
Hour End	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1-Mar-04																										0.0	
2-Mar-04																											0.0
3-Mar-04																											0.0
4-Mar-04																											0.0
5-Mar-04																											0.0
6-Mar-04																											0.0
7-Mar-04														5	5	5	12	5	4	4	4	4	4	4	5		12.5
8-Mar-04	7	4	7	6	6	5	47	65	55	58	28	26	21	10	20	7	7	18	8	6	12	6	5	6		64.5	
9-Mar-04	6	7	10	4	5	6	8	9	4	5	5	5	5	11	7	41	52	56	62	64	45	48	9	9		64.1	
10-Mar-04	8	6	6	7	7	7	8	7	8	11	11	10	10	9	10	9	9	7	8	30	32	21	10	15		32.2	
11-Mar-04	6	13	10	9	6	32	44	35	52	26	17	9	7	7	8	9	7	10	9	7	14	23	35	11		52.3	
12-Mar-04	10	9	22	14	15	21	25	26	20	6	4	5	7	7	8	10	28	11	11	10	9	7	8	6		28.3	
13-Mar-04	9	7	9	10	35	17	16	9	7	7	8	10	14	20	13	15	18	39	31	11	15	7	9	7		38.6	
14-Mar-04	9	6	7	7	6	7	11	14	13	23	6	7	8	9	12	11	11	8	13	7	14	15	9	10		23.3	
15-Mar-04	17	12	5	7	7	7	4	6	11	12	16	11	10	8	9	11	15	16	58	81	82	64	63	10		82.1	
16-Mar-04	21	20	8	8	26	30	60	73	11	5	8	28	57	64	33	47	16	11	10	20	12	15	8	8		72.9	
17-Mar-04	22	63	56	61	60	45	14	8	9	9	10	10	13	12	15	13	9	22	34	21	16	11	13	10		62.6	
18-Mar-04	9	9	13	7	7	21	15	16	6	6	5	6	7	8	8	5	5	4	6	8	8	4	4	5		21.1	
19-Mar-04	8	8	9	10	6	5	5	5	4	6	6	9	13	15	12	12	39	18	13	49	32	52	33	26		52.2	
20-Mar-04	48	54	36	24	19	38	64	41	12	12	16	17	26	23	30	16	14	7	6	5	6	6	8	6		64.1	
21-Mar-04	6	8	13	18	19	47	55	11	50	49	12	35	42	59	58	39	73	50	14	36	12	9	20	34		72.7	
22-Mar-04	37	5	29	51	63	20	63	13	16	22	18	17	21	25	26	20	21	11	6	4	8	7	11	20		62.8	
23-Mar-04	49	22	50	56	25	32	46	75	39	7	12	16	33	35	42	8	16	8	15	31	32	69	17	14		75.0	
24-Mar-04	7	6	7	9	16	20	20	8	6	7	8	9	7	8	9	8	7	5	5	6	6	4	4	6		20.4	
25-Mar-04	5	5	5	5	5	14	8	10	10	12	35	72	49	33		13	10	8	5	4	4	6	13	13		72.4	
26-Mar-04	7	10	13	15	10	8	10	14	9	16	14	24	15	13	13	11	9	7	5	4	4	6	4	4		23.8	
27-Mar-04	7	7	6	7	5	10	8	6	7	7	10	9	10	10	10	12	11	8	7	12	10	6	55	37		54.6	
28-Mar-04	48	6	5	6	4	19	11	10	11	10	12	13	12	10	12	9	11	16	58	44	34	48	42	33		58.1	
29-Mar-04	30	10	14	9	16	16	13	16	25	27	31	45	38	23	18	15	13	8	6	6	7	5	6	5		44.5	
30-Mar-04	5	6	10	12	5	5	5	5	6	7	9	10	11	11	9	8	6	6	6	5	16	15	11	26		26.0	
31-Mar-04	15	57	27	27	17	6	25	11	6	9	9	12	11	22	44	20	40	27	20	41	68	70	38	69		70.3	
Hourly Max	49	63	56	61	63	47	64	75	55	58	35	72	57	64	58	47	73	56	62	81	82	70	63	69			

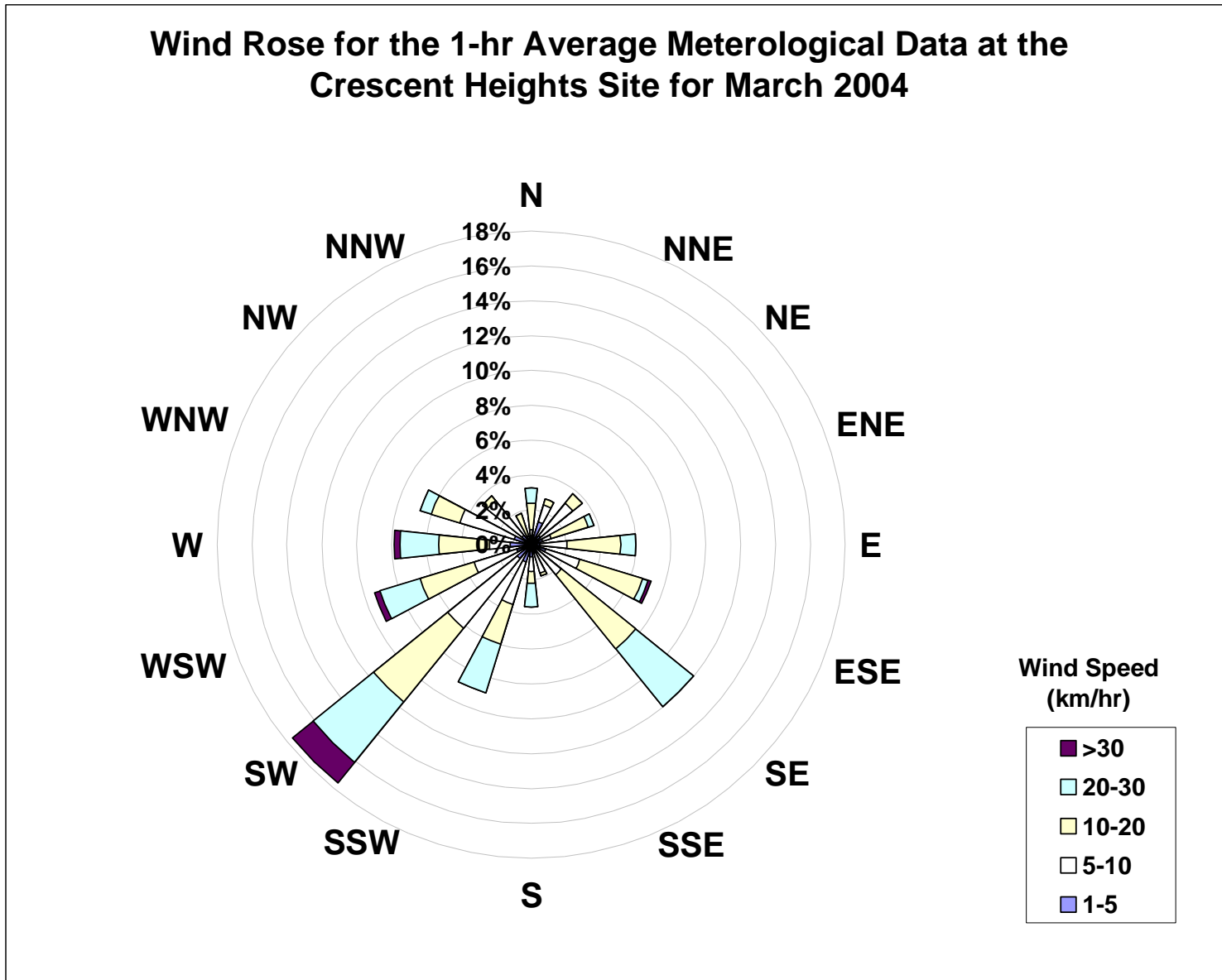
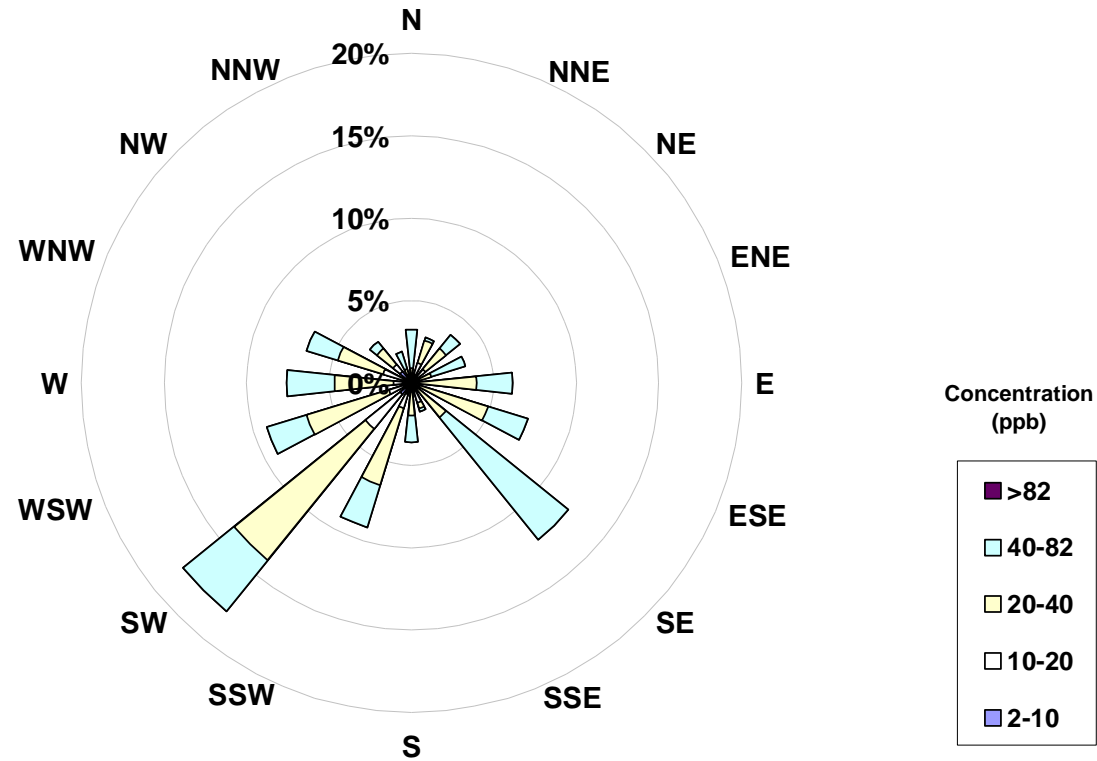


Figure 9. PAS – Crescent Heights Monthly Wind Rose

Monthly Summary Concentration Roses March 2004

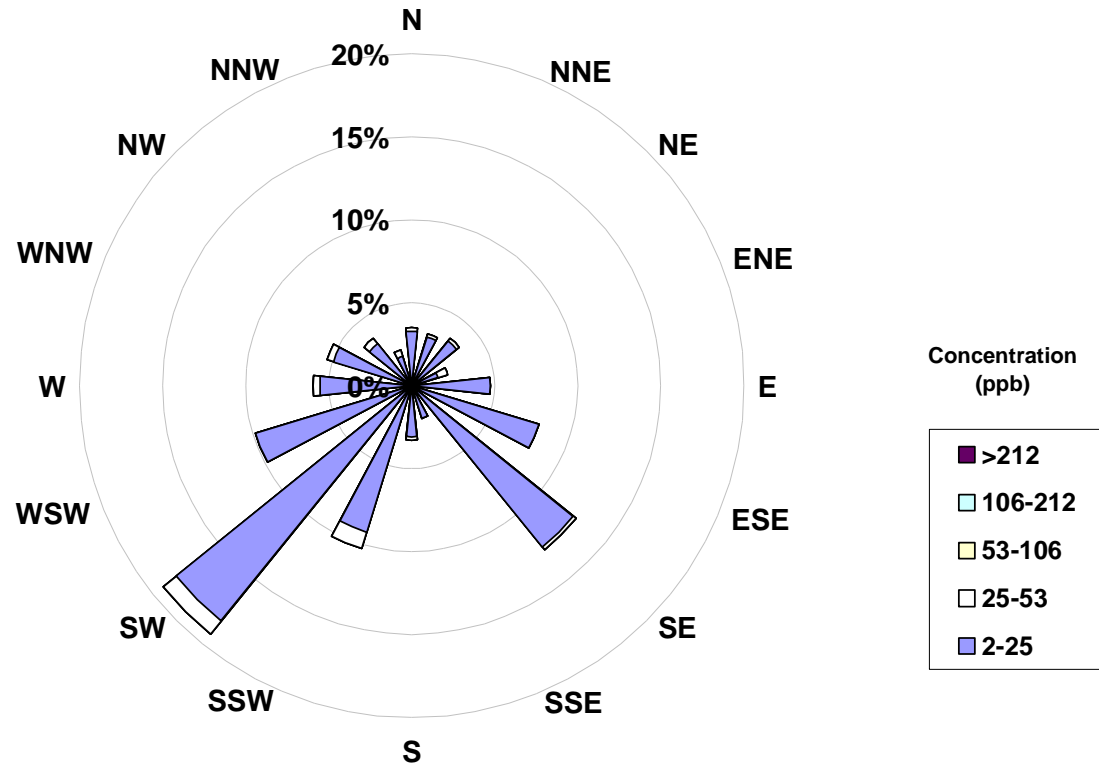
O₃ Concentration Rose
NO₂ Concentration Rose
PM_{2.5} Concentration Rose

Concentration Rose for the 1-hr O₃ Average Concentration Occurrences at the Crescent Heights Site for March 2004



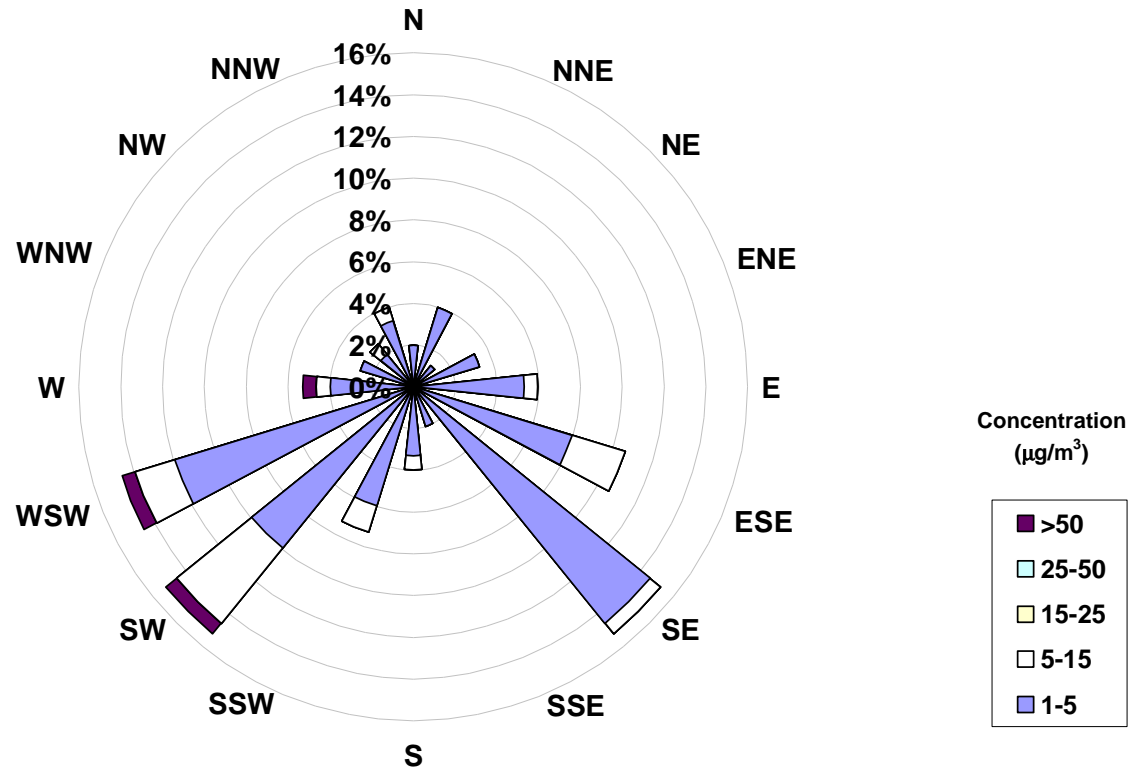
Frequency Distribution of O ₃ in ppb			
Range			Frequency (hrs)
0	<	2	2
2	to	10	32
10	to	20	64
20	to	40	252
40	to	82	208
	>	82	0
Total Non-Zero Values			558

Concentration Rose for the 1-hr NO₂ Average Concentration Occurrences at the Crescent Heights Site for March 2004



Frequency Distribution of NO ₂ in ppb			
Range	Frequency (hrs)		
0 < 2	66		
2 to 25	462		
25 to 53	26		
53 to 106	0		
106 to 212	0		
> 212	0		
Total Non-Zero Values	554		

Concentration Rose for the 1-hr PM_{2.5} Average Concentration Occurrences at the Crescent Heights Site for March 2004



Frequency Distribution of PM _{2.5} in µg/m ³			
Range	Frequency (hrs)		
0 < 1	351		
1 to 5	126		
5 to 15	21		
15 to 25	0		
25 to 50	0		
> 50	0		
Total Non-Zero Values	498		

Passive Monitoring

Ambient Air Compliance Network

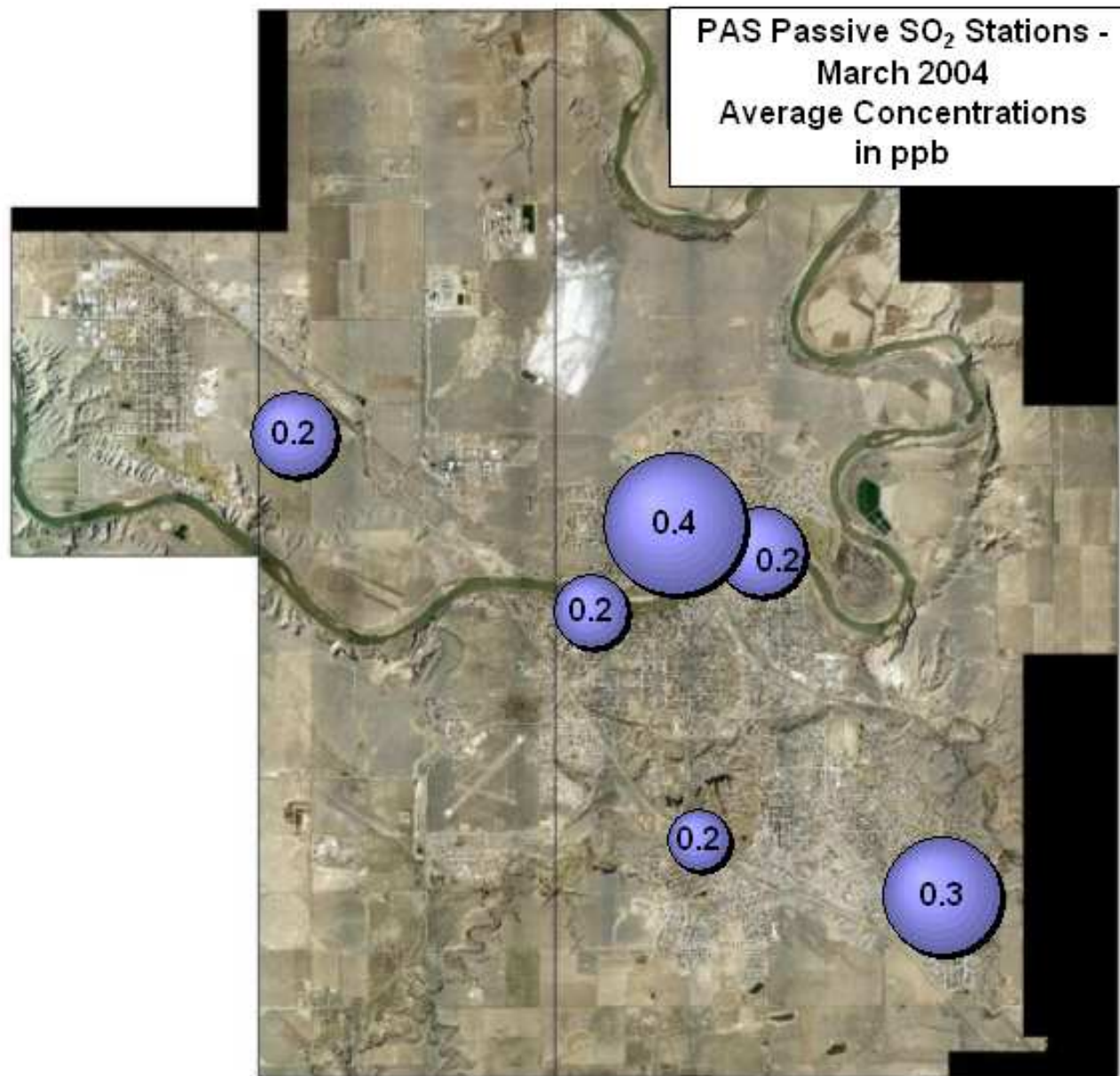
Pallisar Airshed Society - PAS Passive Stations for March 2004

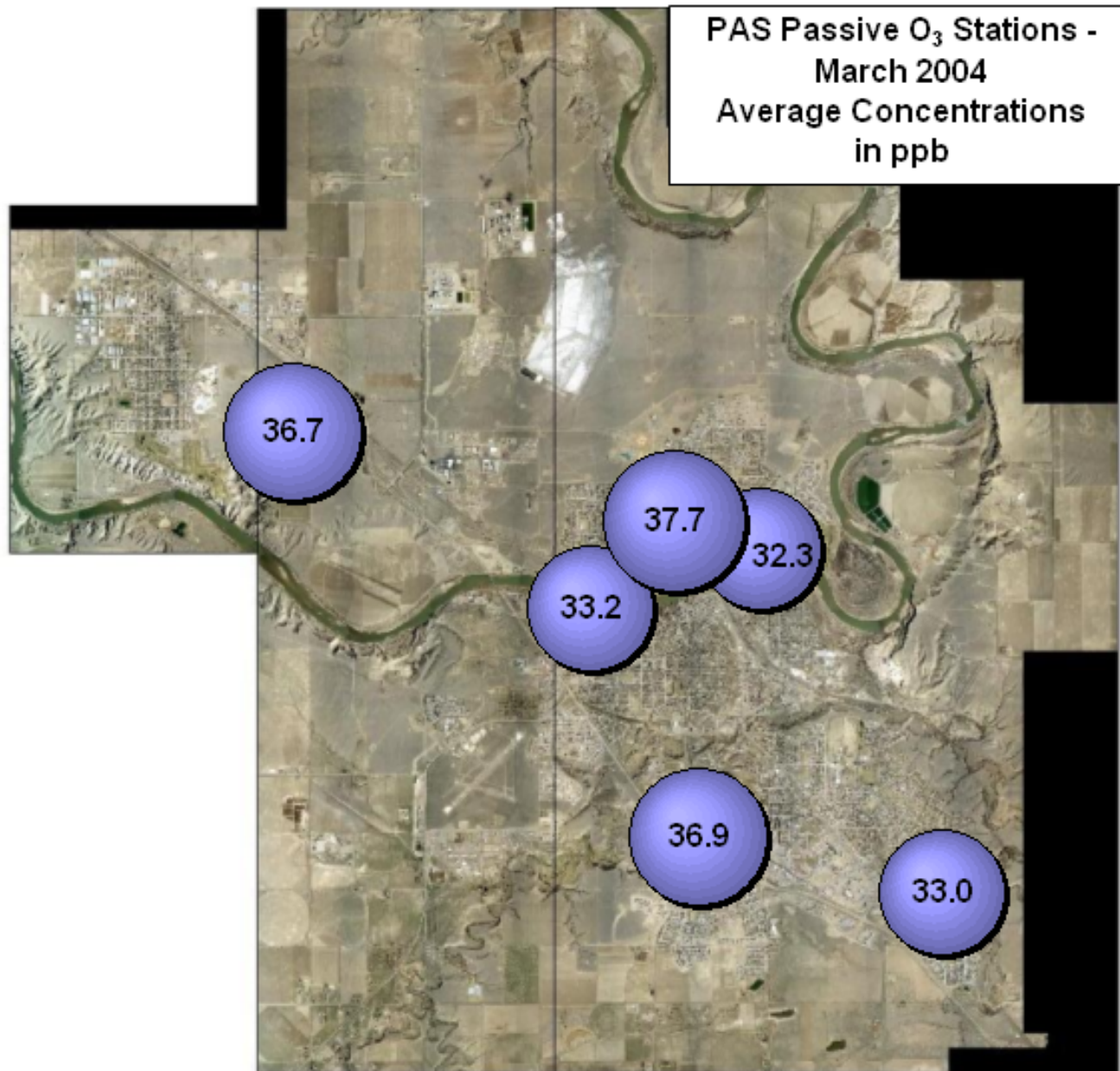
Station Number	Station Name	SO ₂ ppb	O ₃ ppb	NO ₂ ppb	Easting	Northing	Elevation
Duplicates							
1a	Hospital	0.2	34.3	6.5			
1b		0.2	32.1	9.6			
1	Hospital	0.2	33.2	8.1	521648	5542721	698
2	Ball Park	0.2	32.3	4.8	524019	5543686	660
3	Monitoring Station	0.4	37.7	6.1	522812	5544133	714
4	Redcliff	0.2	36.7	4.1	517448	5545608	725
5	Southridge	0.2	36.9	4.5	523172	5539016	721
6	Christian School Park	0.3	33.0	5.4	526577	5538133	709

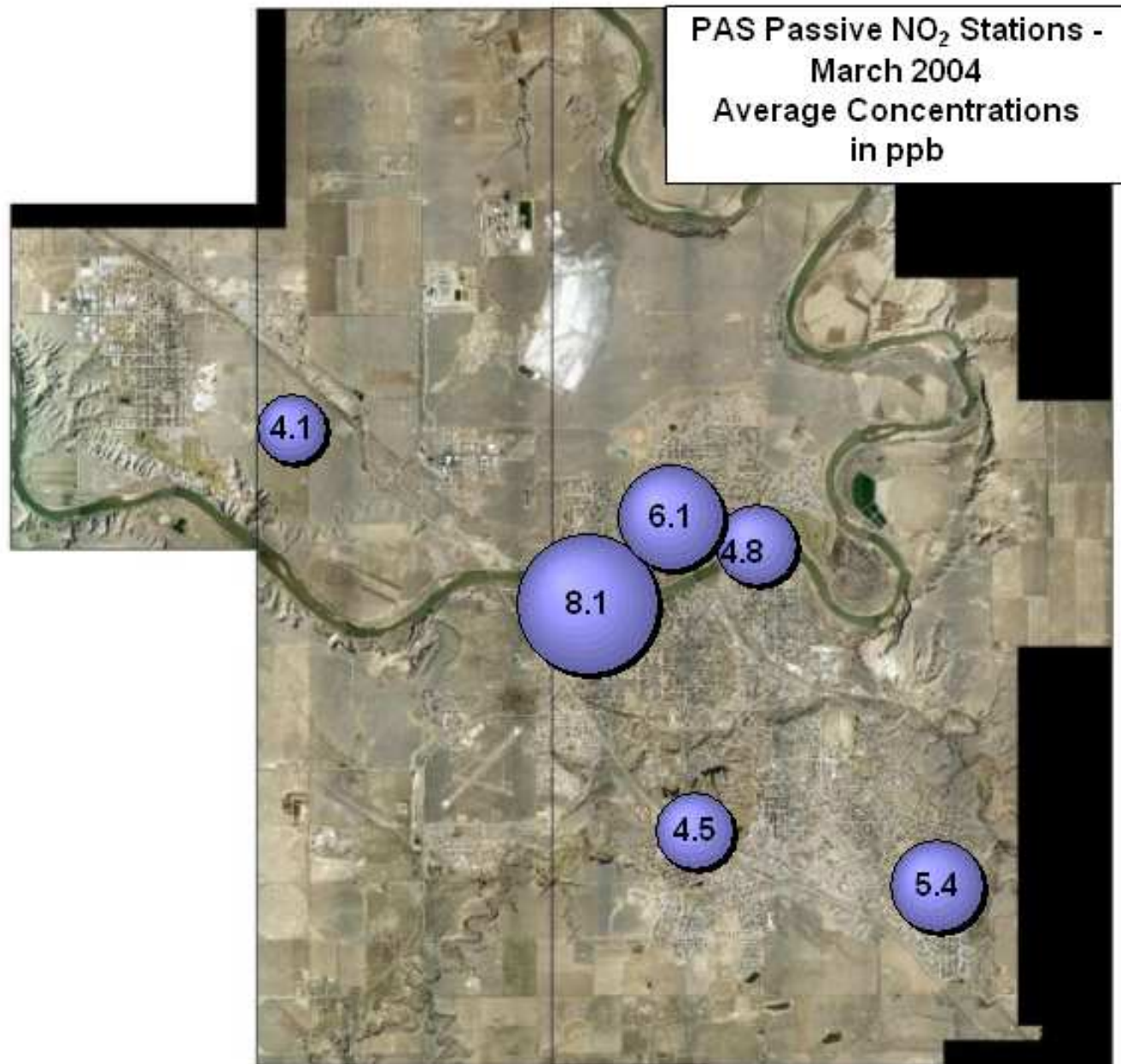
Stats:							
Mean	0.3	35.0	5.5				
Standard Deviation	0.1	2.4	1.5				
Minimum	0.2			5	Southridge		
Maximum	0.4			3	Monitoring Station		
Minimum		32.3		2	Ball Park		
Maximum		37.7		3	Monitoring Station		
Minimum			4.1	4	Redcliff		
Maximum			8.1	1	Hospital		

Comparison between Continuous and Passive monitoring (passive #3)

	SO ₂	O ₃	NO ₂
PAS Station	-	33.6	8.3
PAS Passive	0.4	37.7	6.1







April 30, 2004

March 2004 - Calibration Report

PAS - Crescent Heights Station

O₃, NO_x, NO, NO₂, THC

Calibration Report



Parameter 03
 Air Monitoring Network Palliser Airshed

Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 13, 2004
Station Number	1	Station Location	Crescent Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	17:44	End Time (MST)	20:05
Barometric Pressure	0.916 mb	Station Temperature	20.5 Deg C
Calibrator	Envionics 6100	Serial Number	3016
Cal Gas Concentrator	NA	Cal Gas Expiry Date	NA
DACS make	Focus AP1000	DACS serial No.	NA
DACS voltage range	0 - 1 volt	DACS channel #	5
	<u>Before</u>		<u>After</u>
DACS slope	0.050	DACS slope	0.050
DACS intercept	0.000	DACS intercept	0.000
Calculated slope	1.010495	Calculated slope	0.996772
Calculated intercept	0.434302	Calculated intercept	4.912258
Analyzer make	API Model 400E	Analyzer serial #	331

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	NA	ppb	-1.1	ppb
coefficient	NA		1.088	
Lamp measure	4032.7	mV	3836.4	mV
Lamp Reference	4032.3	mV	3838	mV
Pressure	26.9	inches Hg	25.9	inches Hg
Sample Flow	665	ccm	702	ccm
Lamp temp	52	Deg C	52	Deg C

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.0	-4.9	N/A
4995	0.00	400.0	396.5	1.0087
4995	0.00	200.0	195.3	1.0243
4995	0.00	100.0	95.6	1.0457
4995	0.00	0.0	-4.9	0.0000
4995	0.00	400.0	400.4	0.9991
Average Correction Factor				1.0262

Calculated value of As Found Response: 409.9 ppm Percent Change of As Found: 2.5%

	before calibration		after calibration	
Auto zero	-4.5	ppb	-3.9	ppb
Auto span	430.5	ppb	404.2	ppb

Notes: Analyzer was span adjusted.
All test functions normal.

Calibration Performed By: Kelly Baragar

Calibration Summary



Air Quality Monitoring

Parameter O3
 Air Monitoring Network Palliser Airshed

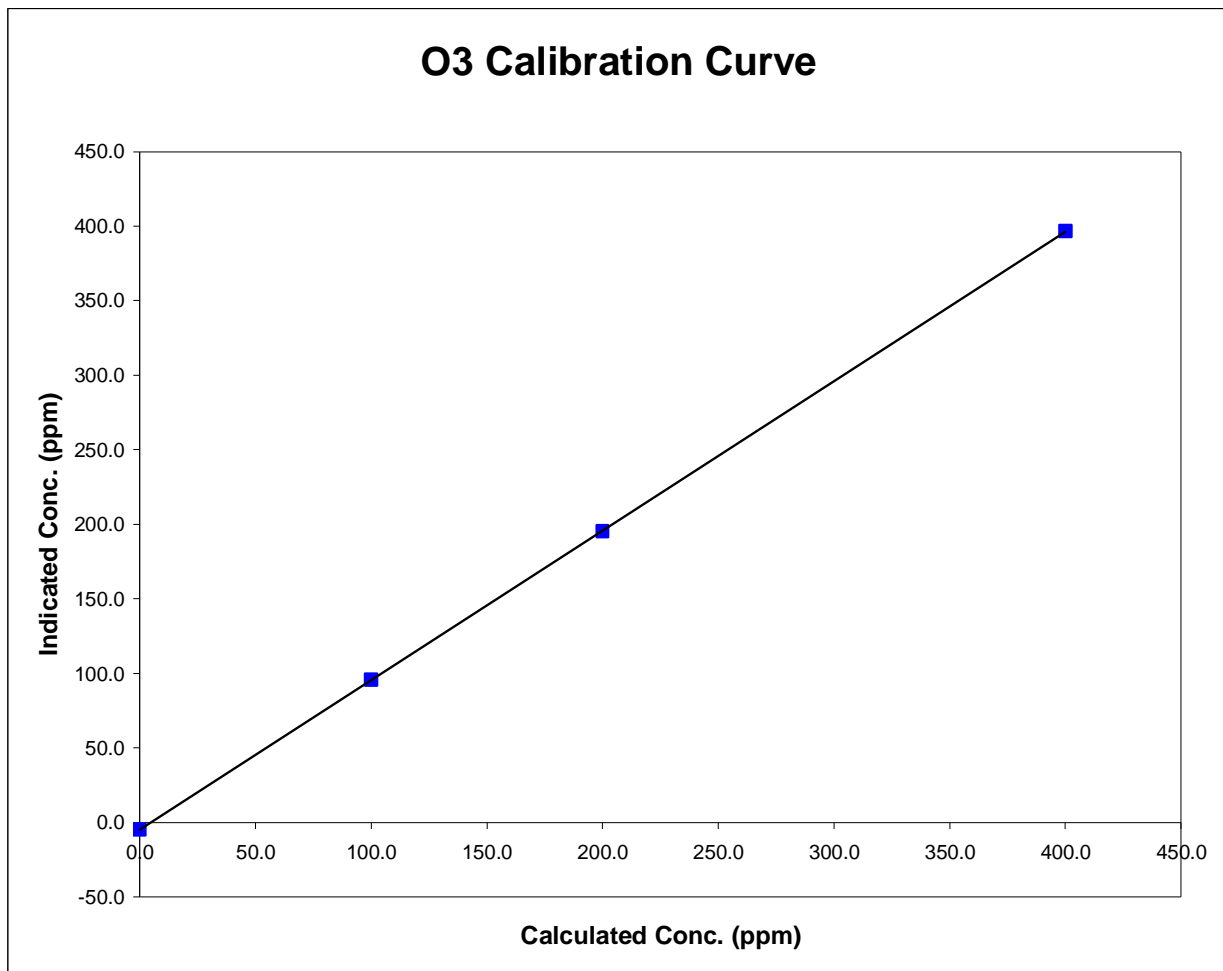
Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 13, 2004
Station Number	1	Station Location	Crescent Heights
Start Time (MST)	17:44	End Time (MST)	20:05
Analyzer make/model	API Model 400E	Analyzer serial #	331

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
400.0	396.5	1.0087		
200.0	195.3	1.0243	Correlation Coefficient	0.999997
100.0	95.6	1.0457		
0.0	-4.9	N/A	Slope	0.996772
			Intercept	4.912258

O3 Calibration Curve



April 30, 2004

O3 Calibration



March 09, 2004 17:44 - 20:05 MST

Calibration Report

Parameter **NOx-NO-NO₂**
 Air Monitoring Network **Palliser Airshed**

**Station Information**

Calibration Date March 9, 2004 Previous Calibration February 12, 2004
 Station Number 1 Station Location Crescent Heights

Reason: Routine Installation Removal Other: _____

Start Time (MST) 11:20 End Time (MST) 16:45
 Barometric Pressure 0.915 mmHg Station Temperature 19 Deg C
 Calibrator Envionics 6100 Serial Number 3016
 NO Cal Gas Conc 49.8 ppm Cal Gas Expiry Date 12-Dec-05
 NOx Cal Gas Conc 49.9 ppm Cal Gas Serial # ALM011558

DACS Information

DACS make FOCUS AP1000 DACS serial No. N/A

Parameter		NO ₂	NO _x	NO
Before	DACS slope	0.050000	0.050000	0.050000
	DACS offset	0.000000	0.000000	0.000000
After	DACS slope	0.050000	0.050000	0.050000
	DACS offset	0.000000	0.000000	0.000000
Before	Data Slope	1.006157	1.003387	0.999669
	Data Offset	-0.699155	-1.322858	-0.942398
After	Data Slope	0.997944	0.997533	0.996811
	Data Offset	2.779591	3.154438	3.288483
Channel #		8	6	7
Voltage Range		0 - 1 VDC	0 - 1 VDC	0 - 1 VDC

Analyzer Information

Analyzer make/model API Model 200E Analyzer serial # 219

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO background	-1.9	mV	-2.8	mV
NO _x background	0.5	mV	0.9	mV
NO coefficient	1.200		1.302	
NO _x coefficient	1.189		1.286	
Chamber Temp	50.0	Deg C	50.0	Deg C
Cooler Temp	7.0	Deg C	7.0	Deg C
Azero	29.5		33.8	
Perm Temp	40.3	Deg C	40.3	Deg C
Pressure	3.7	inches Hg	3.7	inches Hg
Sample Flow	450.0	ccm	450.0	ccm

Notes: Response to as found zero slightly elevated.
Analyzer was zero and span adjusted. No other maintenance performed.

Calibration Report



Parameter **NOx-NO-NO₂**
 Air Monitoring Network **Palliser Airshed**

Station Information

Calibration Date: **March 9, 2004** Station Location: **Crescent Heights**

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO ₂ conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO ₂ conc (ppb)	NOx Correction factor	NO Correction factor	
zero	4993	0.00	0.0	0.0	0.0	-3.1	-3.2	-3.0	N/A	N/A	
1	4993	39.97	396.3	395.5	0.8	394.2	393.6	-2.0	1.0054	1.0049	
2	4993	19.96	198.7	198.3	0.4	195.9	195.3	-2.4	1.0142	1.0152	
3	4993	9.95	99.2	99.0	0.2	96.3	96.2	-3.2	1.0310	1.0296	
AFZ	4993	0.00	0.0	0.0	0.0	4.9	-2.9	4.5	0.0000	0.0000	
AFS	4993	39.97	396.3	395.5	0.8	367.4	367.2	-2.5	1.0785	1.0770	
									Average Correction Factor	1.0169	1.0166

As Found Concentrations NO_x= 361.2 NO= 369.2 As Found Percent Change NO_x= -8.9% NO= -6.7%

GPT Calibration Data

Dilution Flow 4993 ccm Source Gas Flow 39.97 ccm

O3 Setpoint (ppb)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO ₂ conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO ₂ conc (ppb)	NOx Correction factor	NO Correction factor	NO ₂ Correction factor	Converter Efficiency	
0	396.2	394.0	2.3	394.0	391.9	-3.0	N/A	N/A	N/A	N/A	
100	397.1	75.0	322.2	395.0	71.9	319.9	1.0055	1.0425	1.0071	99.3%	
200	396.6	209.3	187.3	394.4	206.7	185.1	1.0055	1.0127	1.0121	98.8%	
350	394.2	300.9	93.4	392.0	298.5	90.9	1.0056	1.0078	1.0268	97.4%	
							Average Correction Factor	1.0055	1.0210	1.0153	98.5%

AIC Data

	Previous calibration			Current calibration				
Parameter	NOx	NO ₂	NO	NOx	NO ₂	NO		
Auto zero	1.8	0.5	1.7	ppb	-3.8	-3.9	-3.1	ppb
Auto span	383.9	377.7	6.6	ppb	383.4	378.2	2.3	ppb

Calibration Performed By: Kelly Baragar

Calibration Summary



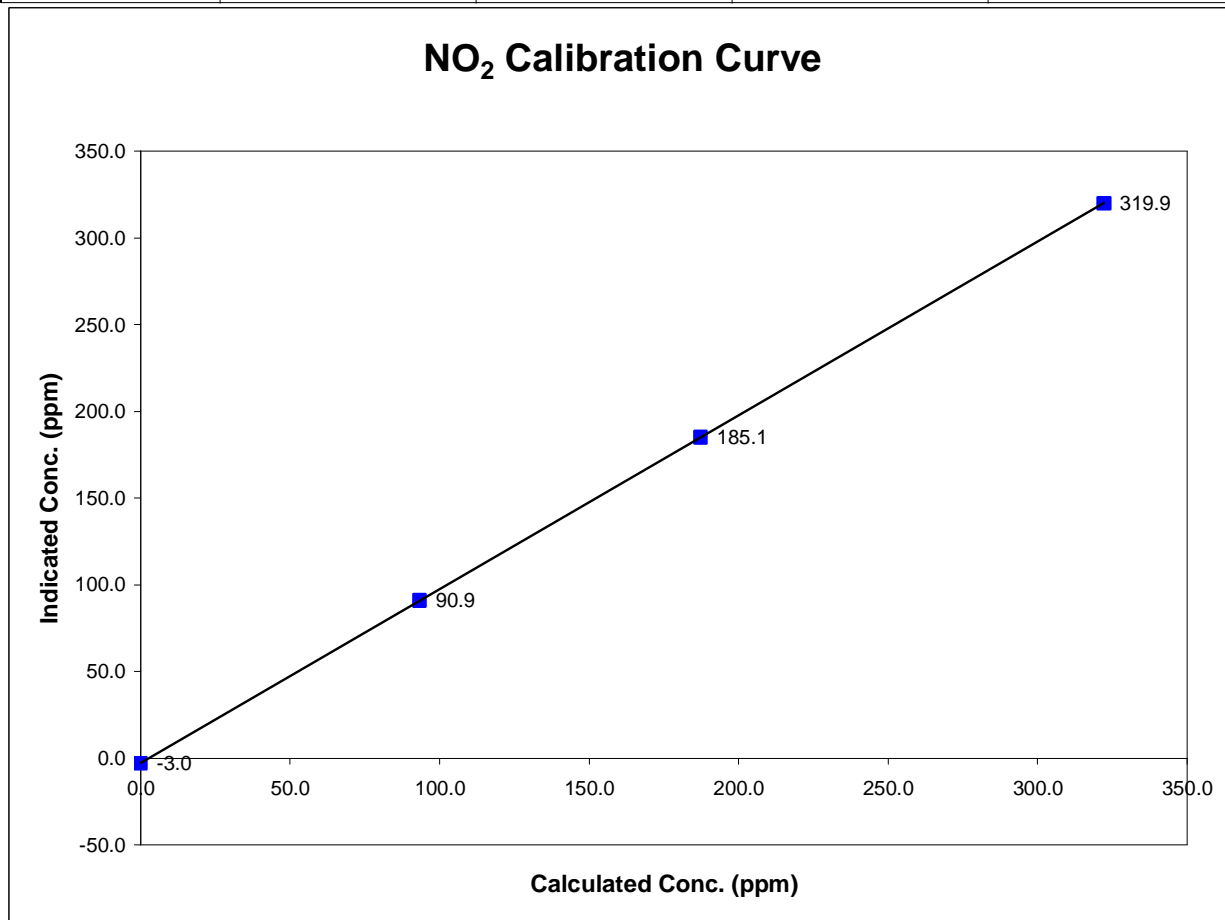
Parameter NO₂
 Air Monitoring Network Palliser Airshed

Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 12, 2004
Station Number	1	Station Location	Crescent Heights
Start Time (MST)	11:20	End Time (MST)	16:45
Analyzer make	API Model 200E	Analyzer serial #	219

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-3.0	0.0000	Correlation Coefficient	0.999998
93.4	90.9	1.0268		
187.3	185.1	1.0121		
322.2	319.9	1.0071		
			Slope	0.997944
			Intercept	2.779591



Calibration Summary



Parameter NO_x
 Air Monitoring Network Palliser Airshed

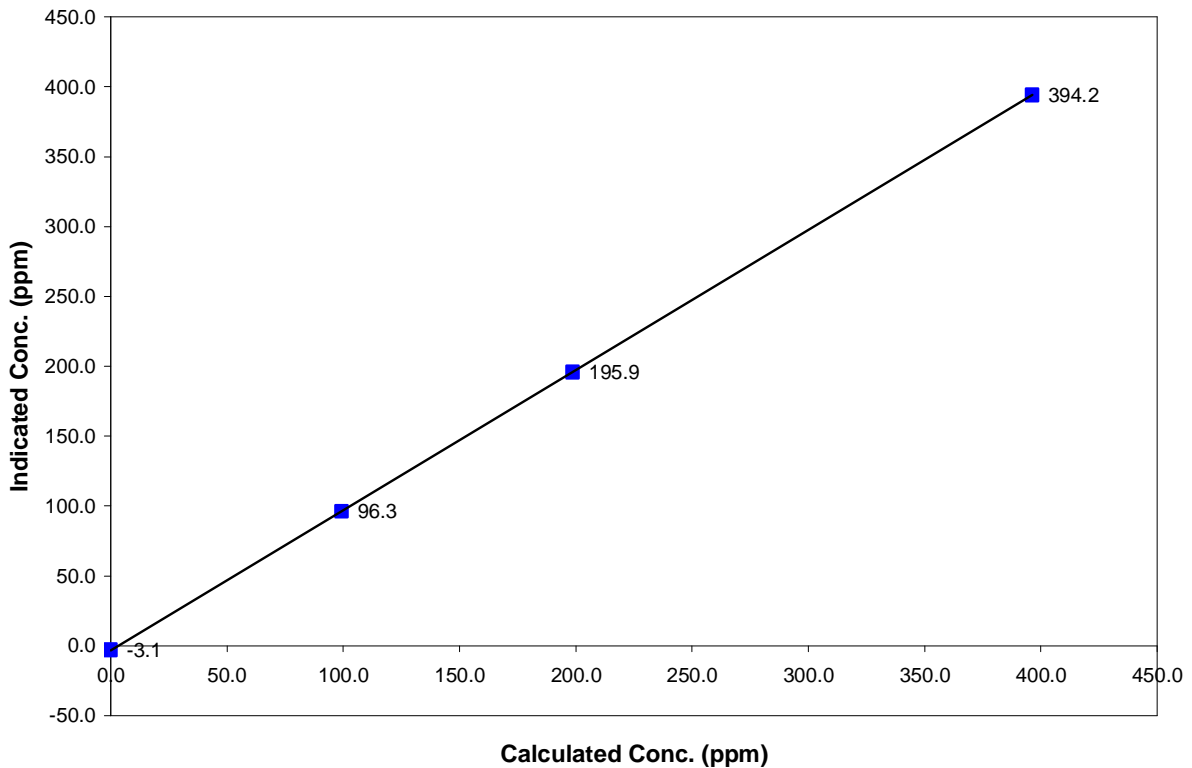
Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 12, 2004
Station Number	1	Station Location	Crescent Heights
Start Time (MST)	11:20	End Time (MST)	16:45
Analyzer make	API Model 200E	Analyzer serial #	219

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-3.1	0.0000	Correlation Coefficient	1.000000
396.3	394.2	1.0054		
198.7	195.9	1.0142		
99.2	96.3	1.0310		
			Slope	0.997533
			Intercept	3.154438

NO_x Calibration Curve



Calibration Summary



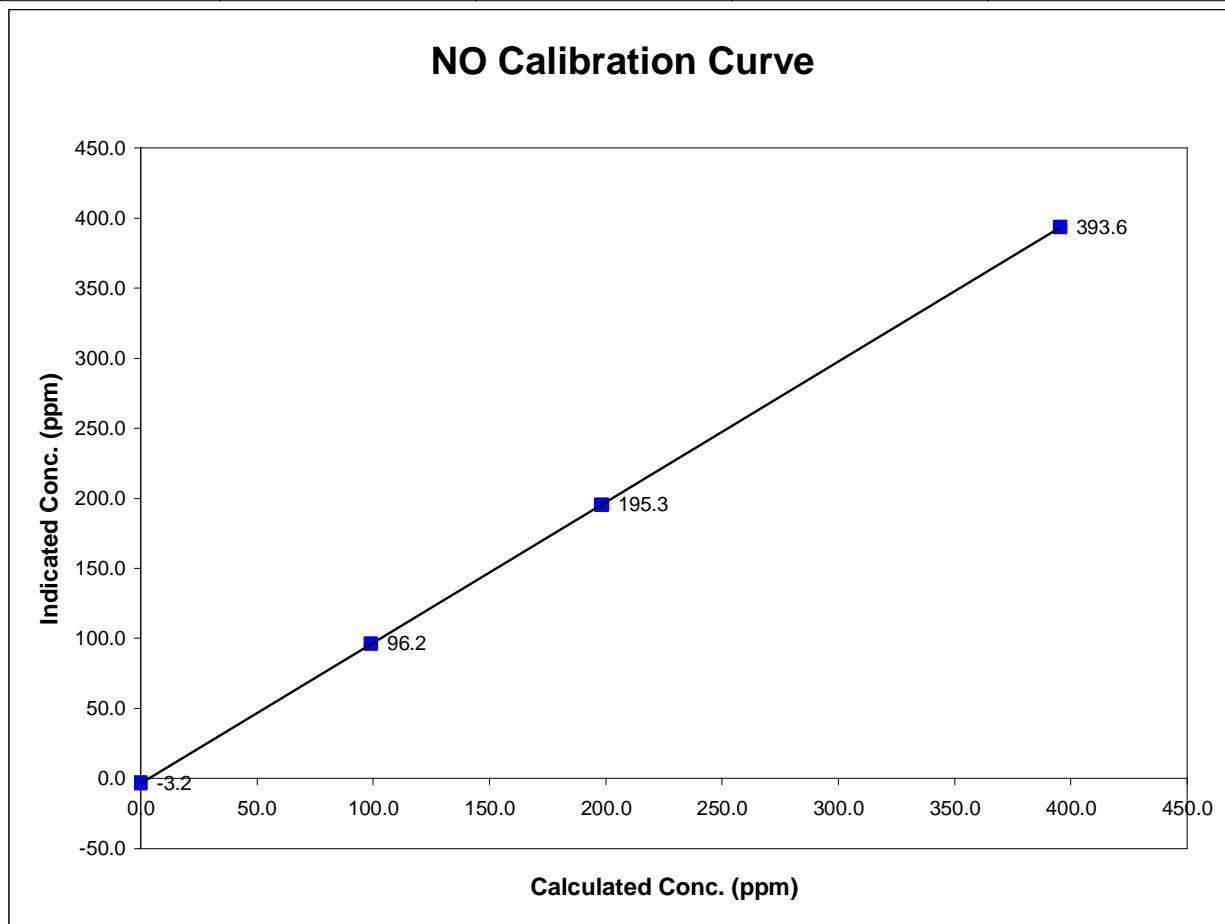
Parameter NO
 Air Monitoring Network Palliser Airshed

Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 12, 2004
Station Number	1	Station Location	Crescent Heights
Start Time (MST)	11:20	End Time (MST)	16:45
Analyzer make	API Model 200E	Analyzer serial #	219

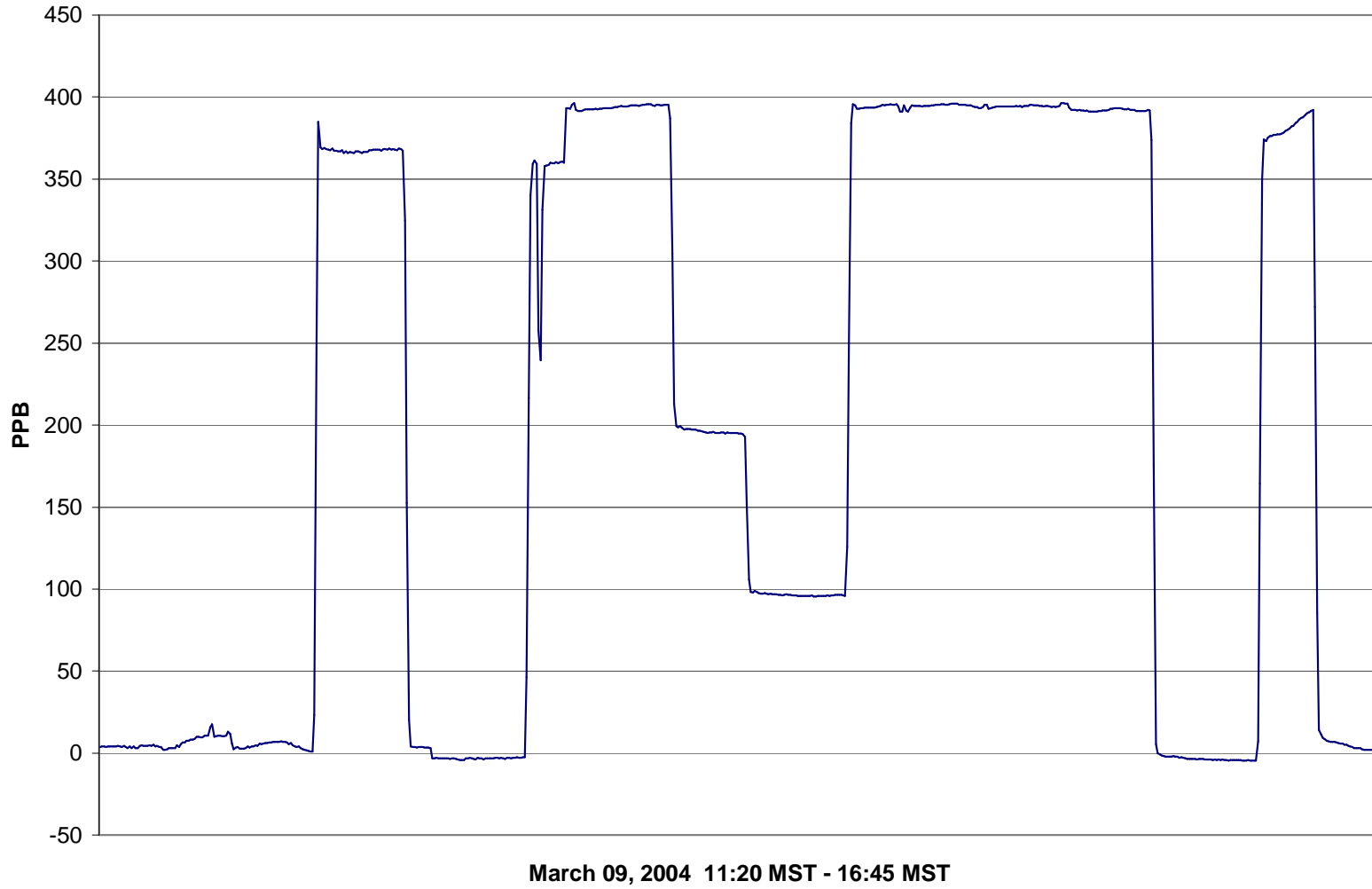
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-3.2	N/A		
395.5	393.6	1.0049	Correlation Coefficient	0.999998
198.3	195.3	1.0152		
99.0	96.2	1.0296	Slope	0.996811
			Intercept	3.288483



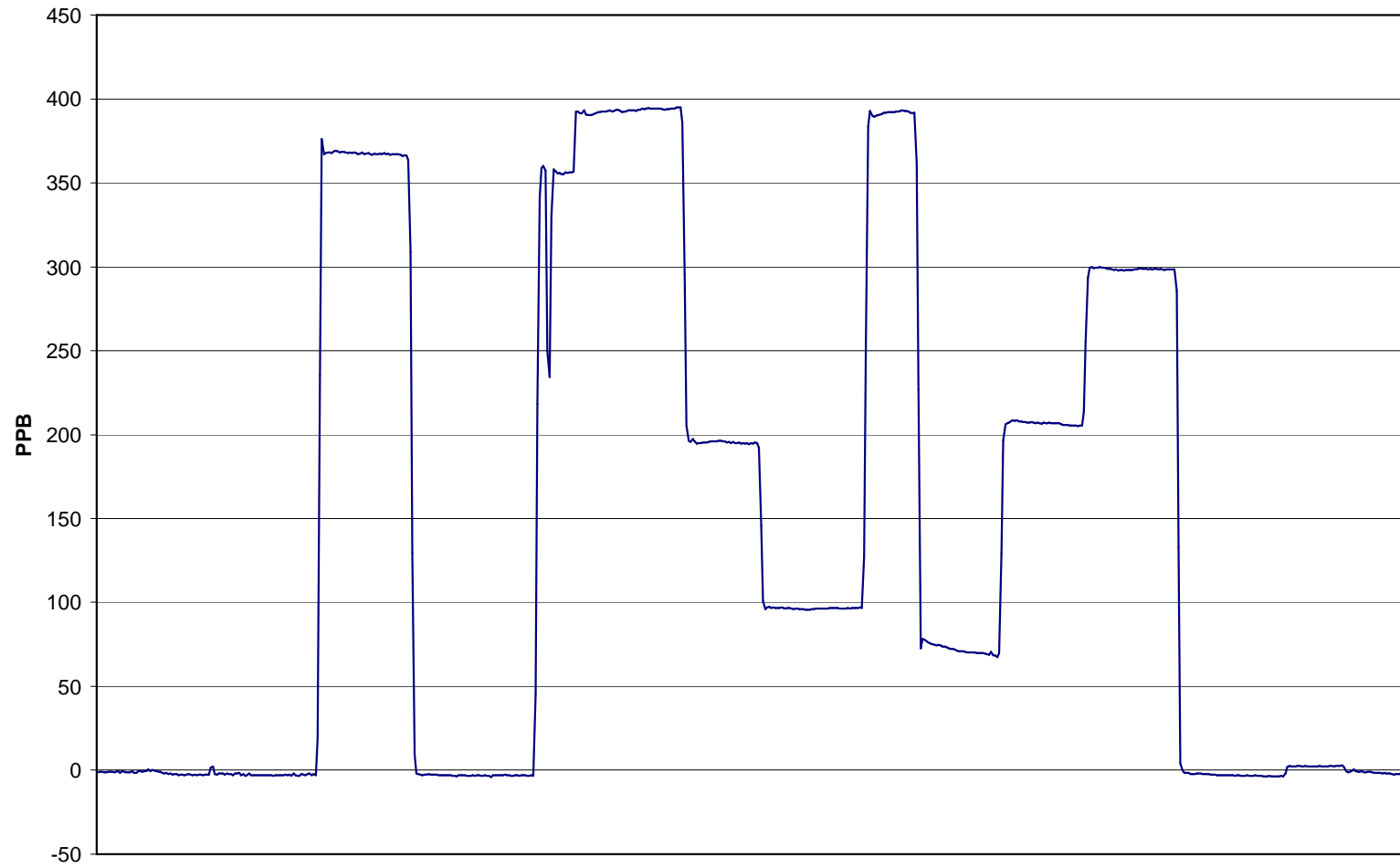
April 30, 2004

NOx Calibration



April 30, 2004

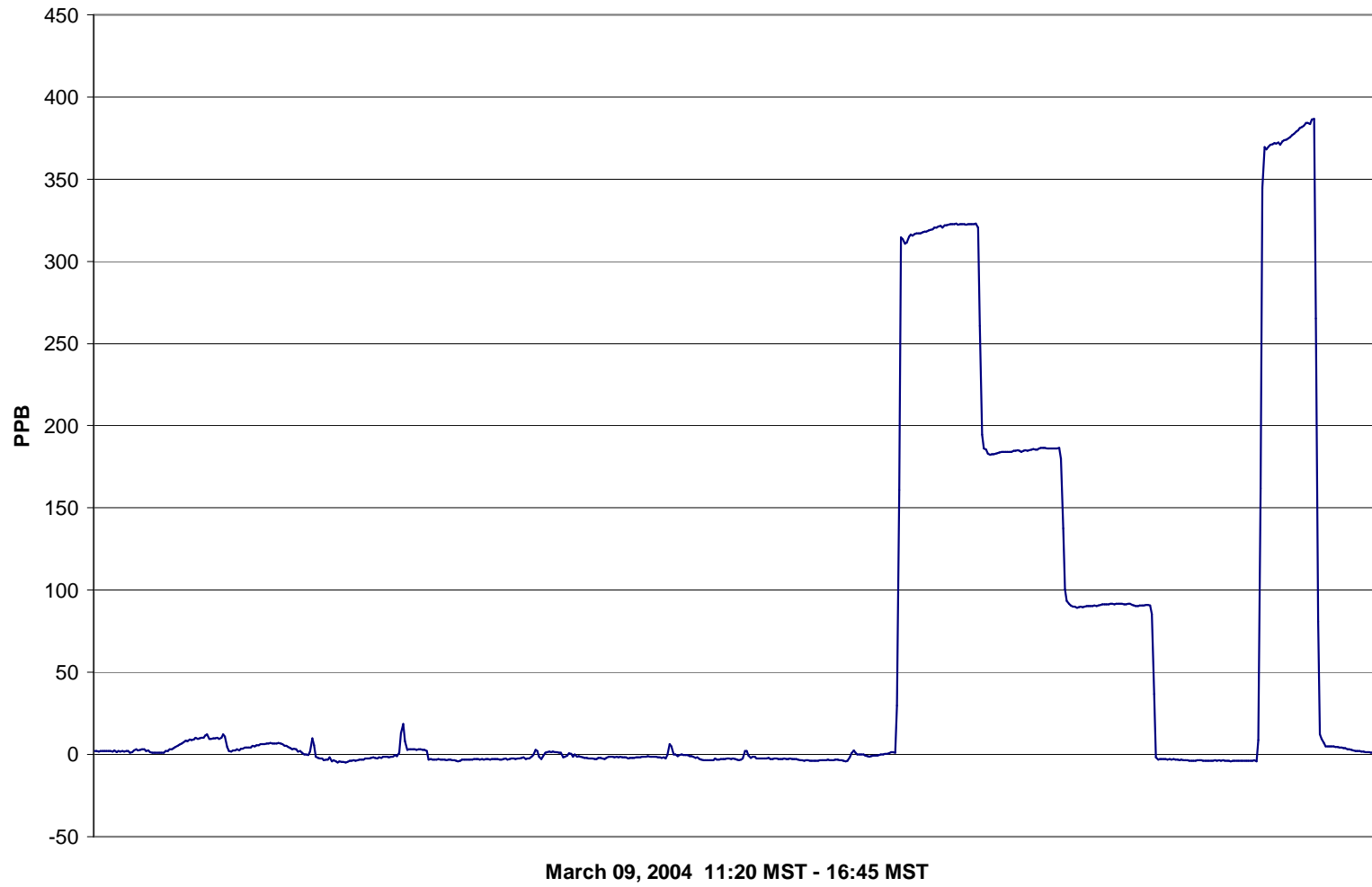
NO Calibration



March 09, 2004 11:20 MST - 16:45 MST

April 30, 2004

NO2 Calibration



Calibration Report



Parameter THC
 Air Monitoring Network Palliser Airshed

Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 13, 2004
Station Number	1	Station Location	Crescent Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Install	<input type="checkbox"/> Removal
			<input type="checkbox"/> Other:
Start Time (MST)	15:50	End Time (MST)	18:10
Barometric Pressure	0.916 mb	Station Temperature	19.5 Deg C
Calibrator	EnviroNics 6100	Serial Number	3016
Cal Gas Concentration	700 ppm CH ₄ / 301 ppm C ₃ H ₈	Cal Gas Expiry Date	8/28/2005
Cal Gas CH ₄ equiv	1527.75 ppm	Cal Gas Cylinder #	ALM030358
DACS make	Focus AP1000	DACS serial No.	1
DACS voltage range	0 - 1 volt	DACS channel #	9
	<u>Before</u>		<u>After</u>
DACS slope	0.005000	DACS slope	0.005000
DACS intercept	0.000000	DACS intercept	0.000000
Calculated slope	0.999675	Calculated slope	0.991713
Calculated intercept	-0.051417	Calculated intercept	0.258427
Analyzer make	Bendix Model 8201	Analyzer serial #	300437-2

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
THC zero pot	172		172	
THC span pot	557		615	

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
2997	0.00	0.000	-0.358	N/A
2997	39.96	20.102	19.961	1.0070
2997	19.96	10.107	9.971	1.0137
2997	9.97	5.065	4.953	1.0227
2997	0.00	0.000	-0.358	As Found Zero
2997	39.96	20.102	18.988	As Found Span
Average Correction Factor				1.0145

Calculated value of As Found Response: 19.289 ppm Percent Change of As Found: 4.0

	before calibration		after calibration	
Auto zero	0.071	ppm	-0.157	ppm
Auto span	23.256	ppm	21.318	ppm

Notes: Span adjustment performed. Pump tested for leaks but still appears OK. No other maintenance done.

Calibration Performed By: Kelly Baragar

Calibration Summary



Air Quality Monitoring

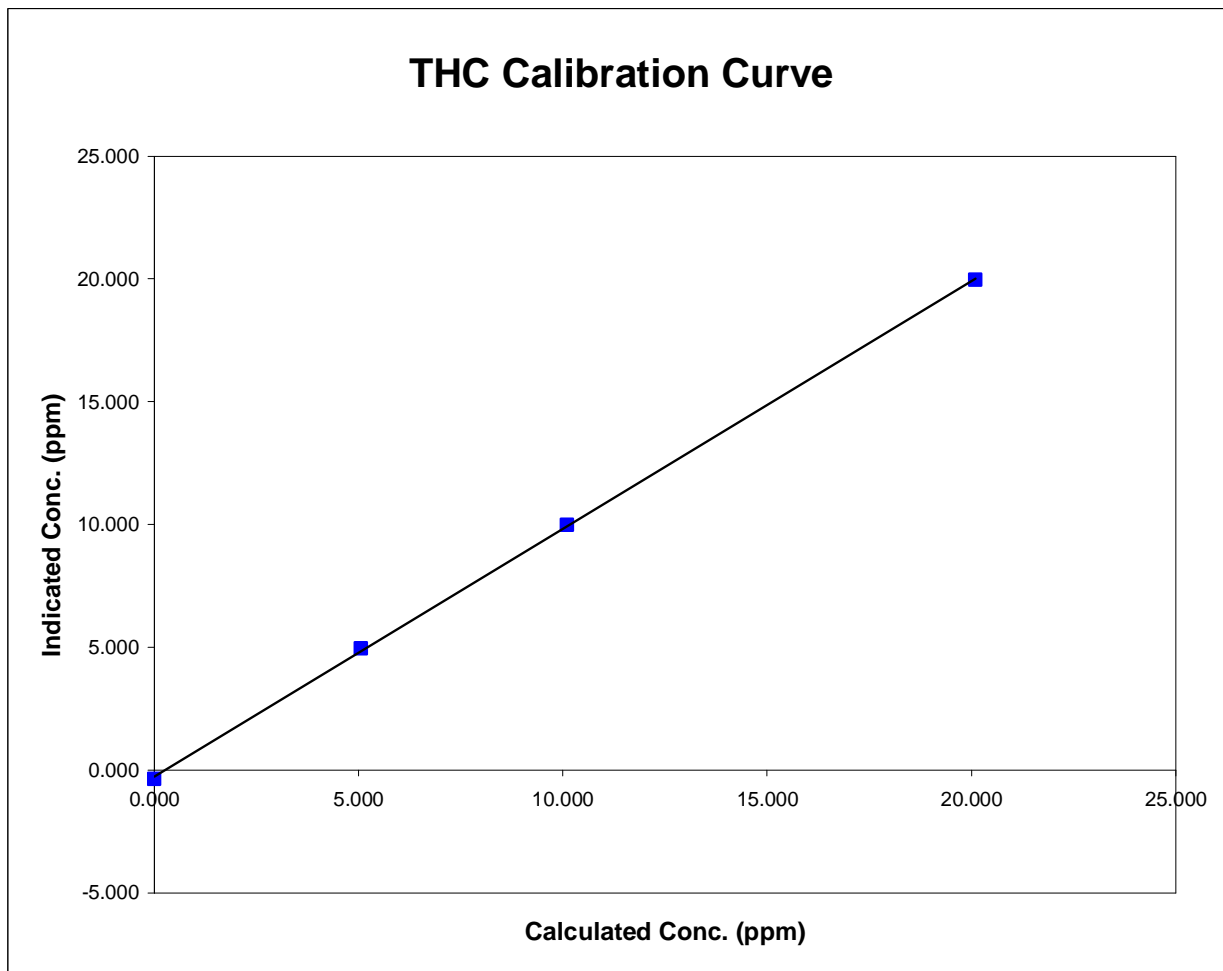
Parameter THC
 Air Monitoring Network Palliser Airshed

Station Information

Calibration Date	March 9, 2004	Previous Calibration	February 13, 2004
Station Number	1	Station Location	Crescent Heights
Start Time (MST)	15:50	End Time (MST)	18:10
Analyzer make/model	Bendix Model 8201	Analyzer serial #	300437-2

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	-0.358	N/A		
5.065	4.953	1.0227	Correlation Coefficient	0.999890
10.107	9.971	1.0137		
20.102	19.961	1.0070	Slope	0.991713
			Intercept	0.258427



April 30, 2004

THC Calibration

