



**Palliser Airshed Society**  
**Ambient Air Monitoring Network Summary**

**Continuous Ambient Air Quality Monitoring Program  
Monthly Report**

**August 2009**

**Operations and Reporting**





2009-09-21

**Alberta Environment**  
11th Floor, Oxbridge Place  
9820-106 Street  
Edmonton Alberta T6B 2X3

**Attention: Director of Monitoring and Evaluation**

**RE: Palliser Airshed Society (PAS) Ambient Air Monitoring Report – August 2009**

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**Enclosed is the PAS Ambient Monitoring Report for the month of August 2009.**

- **One of the passive monitoring locations was missing a rain shelter, a temporary one was put in place.**

**Continuous Monitoring – Crescent Heights**

Included in this report are; monthly sampling table, detailed hourly average reports and multipoint calibration reports of all instruments.

**Crescent Heights:**

- ◆ All analyzers and instruments at the Station, minus the PM<sub>2.5</sub> TEOM, were above 99.2% operational for the month of August.
- ◆ The overall measured ambient air quality was within the Alberta Ambient Air Quality Objectives (AAAQO) with no exceedences recorded at the Station.
- ◆ The following is a summary of the monthly averages recorded during sampling:
  - Monthly average concentrations of SO<sub>2</sub> was 0.2 ppb
  - Monthly average concentrations of NO<sub>2</sub> was 5.4 ppb
  - Monthly average concentrations for O<sub>3</sub> was 31.3 ppb
  - Monthly average concentrations for CO was 0.1 ppm
  - Monthly average concentrations for THC was 1.9 ppm
  - Monthly average concentrations for PM<sub>2.5</sub> could not be calculated

**Passive Monitoring – Ten Sites throughout the PAS zone:**

Due to a modified sampling program the twenty passive stations were reduced to ten locations and have been changed out to the other ten sites.

If you have any questions, please contact Robert at 1-780-377-3583 or at bob.scotten@amec.com.



Robert Scotten  
Executive Director



Wen Xue  
Data Reviewer

# Continuous Monitoring

## Ambient Air Monitoring Network

### Crescent Heights Station

#### General Station Issues

Routine monthly calibrations were performed August 4.

Parameter	Make	Model	Units	Notes
<b>Sulphur Dioxide</b>	API	200E	Ppb	No operational issues were noted. Four hours of missing data.
<b>Nitrogen Dioxide</b>	Teledyne - API	200E	Ppb	No operational issues were noted. Three hours of missing data.
<b>Ozone</b>	TECO	43I	Ppb	No operational issues were noted. Five hours of missing data.
<b>Carbon Monoxide</b>	TEI	49C	Ppm	No operational issues were noted. One hour of missing data.
<b>Total Hydrocarbons</b>	Bendix	400A	Ppm	No operational issues were noted. Four hours of missing data.
<b>PM<sub>2.5</sub></b>	R&P TEOM	1400ab	µg/m <sup>3</sup>	The TEOM was upgraded and not reconfigured properly. Two hundred eighty-eight hours of missing data.
<b>Ambient Temperature</b>	Met One	083D	DegC	No operational issues were noted. Six hours of missing data.
<b>Relative Humidity</b>	Met One	083D	%	No operational issues were noted. Three hours of missing data.
<b>Wind Speed</b>	Met One	010C	Kph	No operational issues were noted. Five hours of missing data.
<b>Wind Direction</b>	Met One	020C	Deg	No operational issues were noted. Five hours of missing data.

## August 2009 Monthly Summary Report

### Ambient Air Quality Data

Aug-2009 Palliser Airshed Society							Maximum Recorded Values					Operational Time (%)	
Pollutant (units)	Objectives		Station	Monthly Average	Exceedence		Conc	1-hr / 8-hr		24-hr			
	1-hr	24-hr			1-hr	24-hr		Day	WSPD (km/hr)	WDIR (Sector)	Conc		Day
SO2 (ppb)			Crescent Heights	0.20	-	-	1.67	Aug-19 10:00			0.55	Aug-24	99.5%
NO (ppb)	-	-	Crescent Heights	1.63	-	-	67.13	Aug-25 22:00			5.64	Aug-25	99.6%
NO2 (ppb)	212	106	Crescent Heights	5.41	0	0	38.08	Aug-25 22:00			10.69	Aug-31	99.6%
NOX (ppb)	-	-	Crescent Heights	7.04	-	-	88.44	Aug-25 22:00			15.73	Aug-31	99.6%
O3 (ppb)	82	-	Crescent Heights	31.32	0	-	64.63	Aug-22 15:00			43.13	Aug-22	99.3%
CO (ppm)	13	-	Crescent Heights	0.10	0	-	0.49	Aug-25 22:00			0.14	Aug-02	99.9%
CO (ppm) - 8-hr	5		Crescent Heights	-	0	0	0.22	Aug-26 01:00			-	-	99.9%
THC (ppm) **	-	-	Crescent Heights	1.93	-	-	2.72	Aug-20 03:00			2.13	Aug-27	99.5%
PM2.5 (mg/m3)	-	30	Crescent Heights	8.12	-	0	43.66	Aug-29 04:00			11.30	Aug-26	61.3%
RH (%)	-	-	Crescent Heights	59.87	-	-	92.89	Aug-05 06:00			88.50	Aug-04	99.3%
GR (W/m2)	-	-	Crescent Heights	115.42	-	-	449.66	Aug-11 13:00			156.17	Aug-08	99.5%
Temp (°C)	-	-	Crescent Heights	19.17	-	-	34.47	Aug-01 17:00			24.35	Aug-21	99.2%
WSPD v (km/hr)	-	-	Crescent Heights	9.20	-	-	39.09	Aug-01 22:00			17.56	Aug-15	99.3%
WDIR (deg)	-	-	Crescent Heights	0.00	-	-	-	-			-	-	99.3%

# **PAS - Crescent Heights**

Monthly Summary Tables, Graphs and Roses



**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

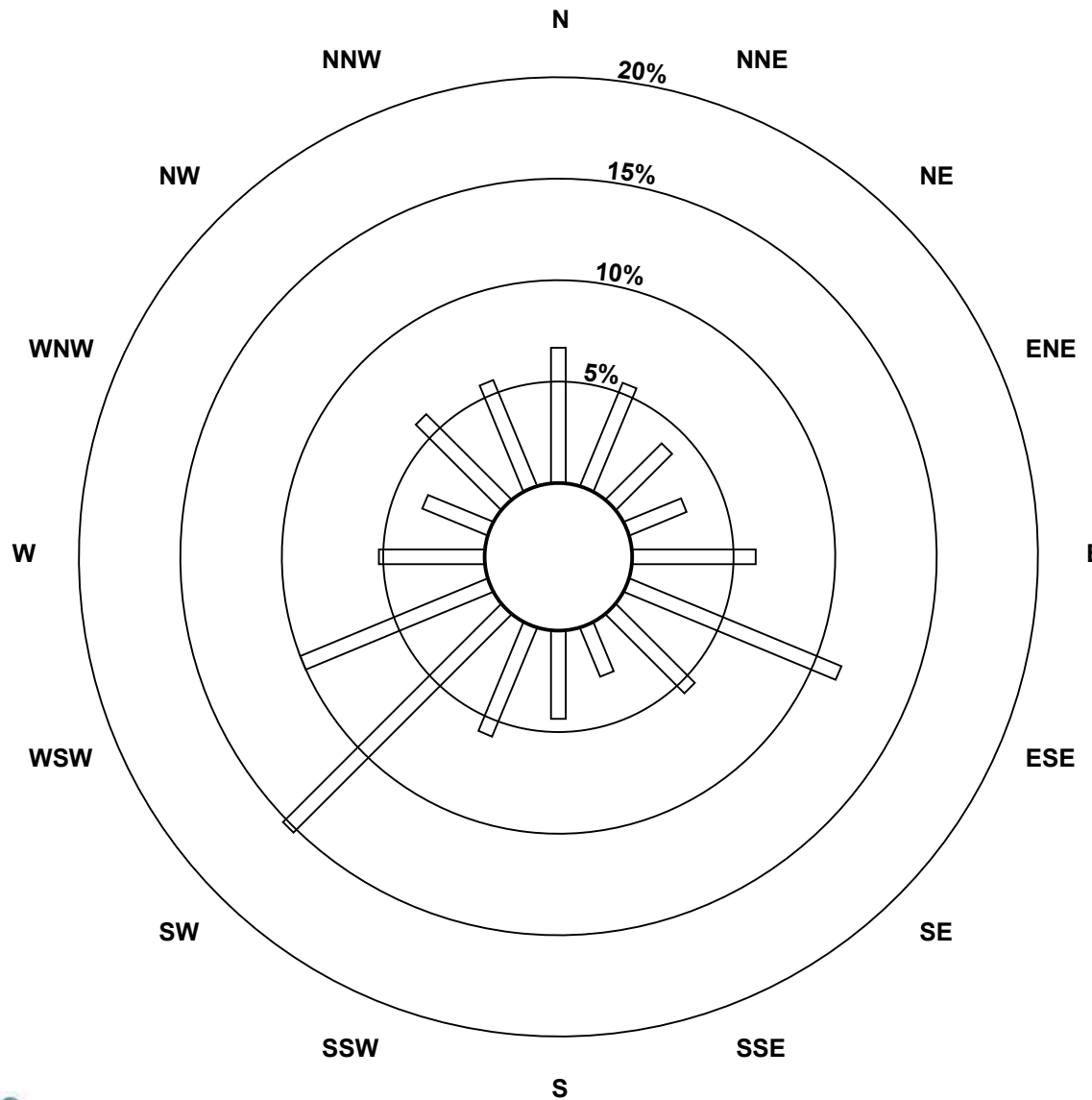
**Sulphur Dioxide (SO<sub>2</sub>) - ppb**  
**August 2009**

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0										Hours in Service: 744																	
Maximum Value: 1.7 ppb on Aug 19 10:00										Maximum Daily Average: 0.6 ppb on Aug 24										Hours of Data: 693							
Minimum Value: 0 ppb on Aug 1 01:00										Minimum Daily Average: 0.0 ppb on Aug 10										Hours of Missing Data: 51							
Maximum Diurnal Average: 0.3 ppb at hour 22										Minimum Diurnal Average: 0.1 ppb at hour 5										Hours of Calibration: 47							
Monthly Average: 0.2 ppb										Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.2 P <sub>90</sub> = 0.5 P <sub>99</sub> = 0.9										Percent Operational Time: 99.5							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Aug	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
2-Aug	Z	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.8
3-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
4-Aug	0	0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Z	0	0	--	0.2	
5-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0.1	0.2	
6-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0.2	0.4	
7-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0.2	0.3	
8-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0.2	0.3	
9-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0.1	0.3	
10-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0.0	0.1	
11-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	1	1	1	0	0.1	0.8	
12-Aug	0	0	1	0	0	0	0	0	0	1	0	0	Z	0	M	M	M	M	0	0	0	0	0	0	0.2	0.5	
13-Aug	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	
14-Aug	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
15-Aug	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
16-Aug	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	
17-Aug	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0.3	1.2	
18-Aug	0	0	0	0	0	0	0	Z	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6	
19-Aug	0	0	0	0	0	0	Z	0	1	2	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0.3	1.7	
20-Aug	1	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.8	
21-Aug	0	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	
22-Aug	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.3	0.7	
23-Aug	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5	
24-Aug	0	Z	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	0	0.6	1.2	
25-Aug	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	Z	0.2	0.8	
26-Aug	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Z	0	0.5	1.2	
27-Aug	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0.2	0.6	
28-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0.1	0.3	
29-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	1	1	0	0	0.2	0.5	
30-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0	0	0	0	0.2	0.5	
31-Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	1	0	0	1	1	0	0.3	0.9	
																								Diurnal Average			
																								Diurnal Maximum			
Z - Zero C - Calibration M - Missing																											
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 57 ppb																											

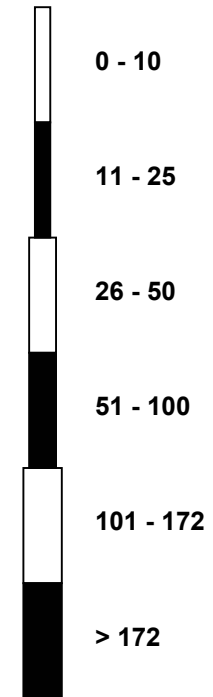


**Palliser Airshed Society - Crescent Heights  
Pollutant Rose**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb  
August 2009**



**Pollutant Classes (ppb)**

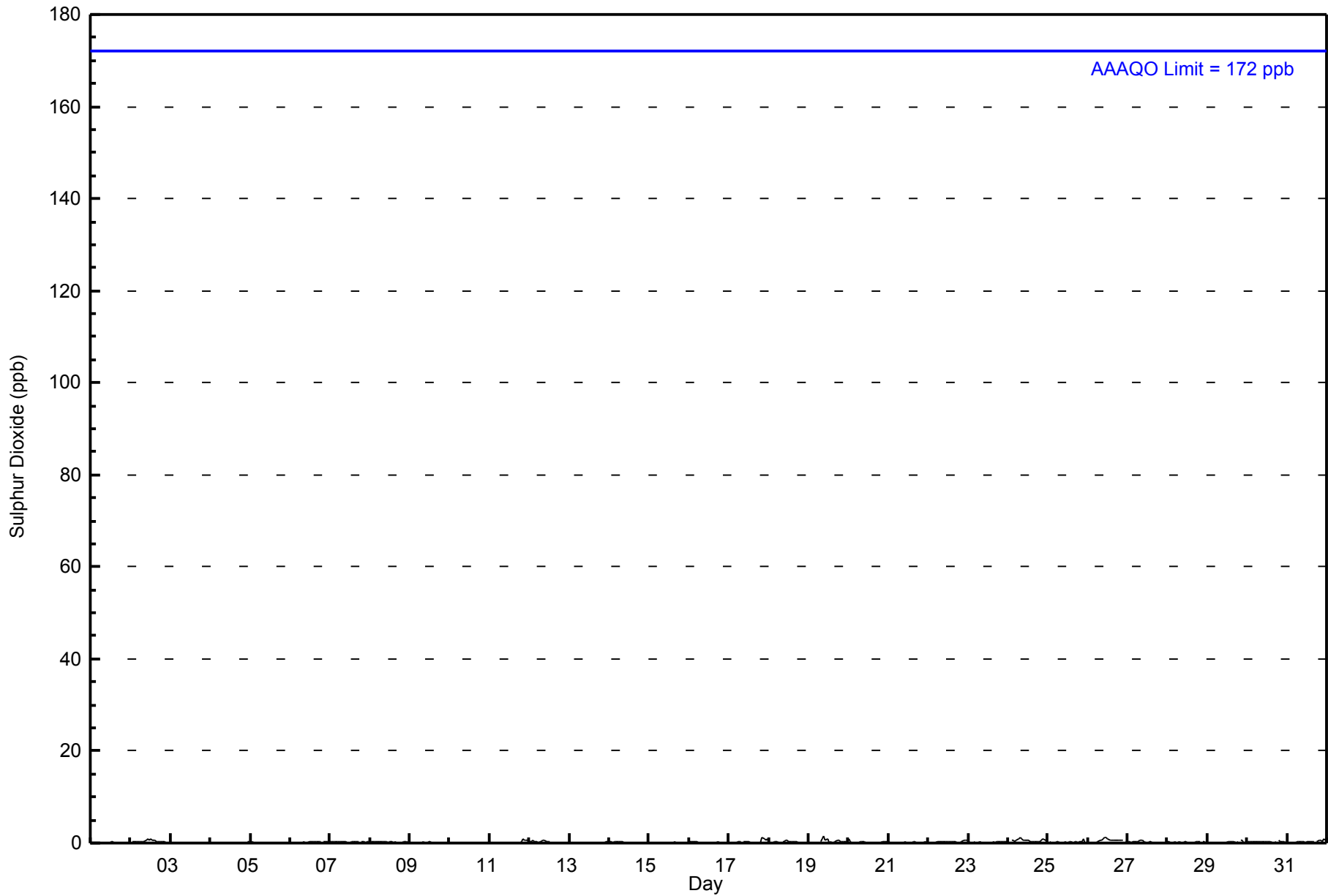






**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Sulphur Dioxide (SO<sub>2</sub>) - ppb  
August 2009**





# Palliser Airshed Society - Crescent Heights

## Hourly Averages

# Nitrogen Dioxide (NO<sub>2</sub>) - ppb

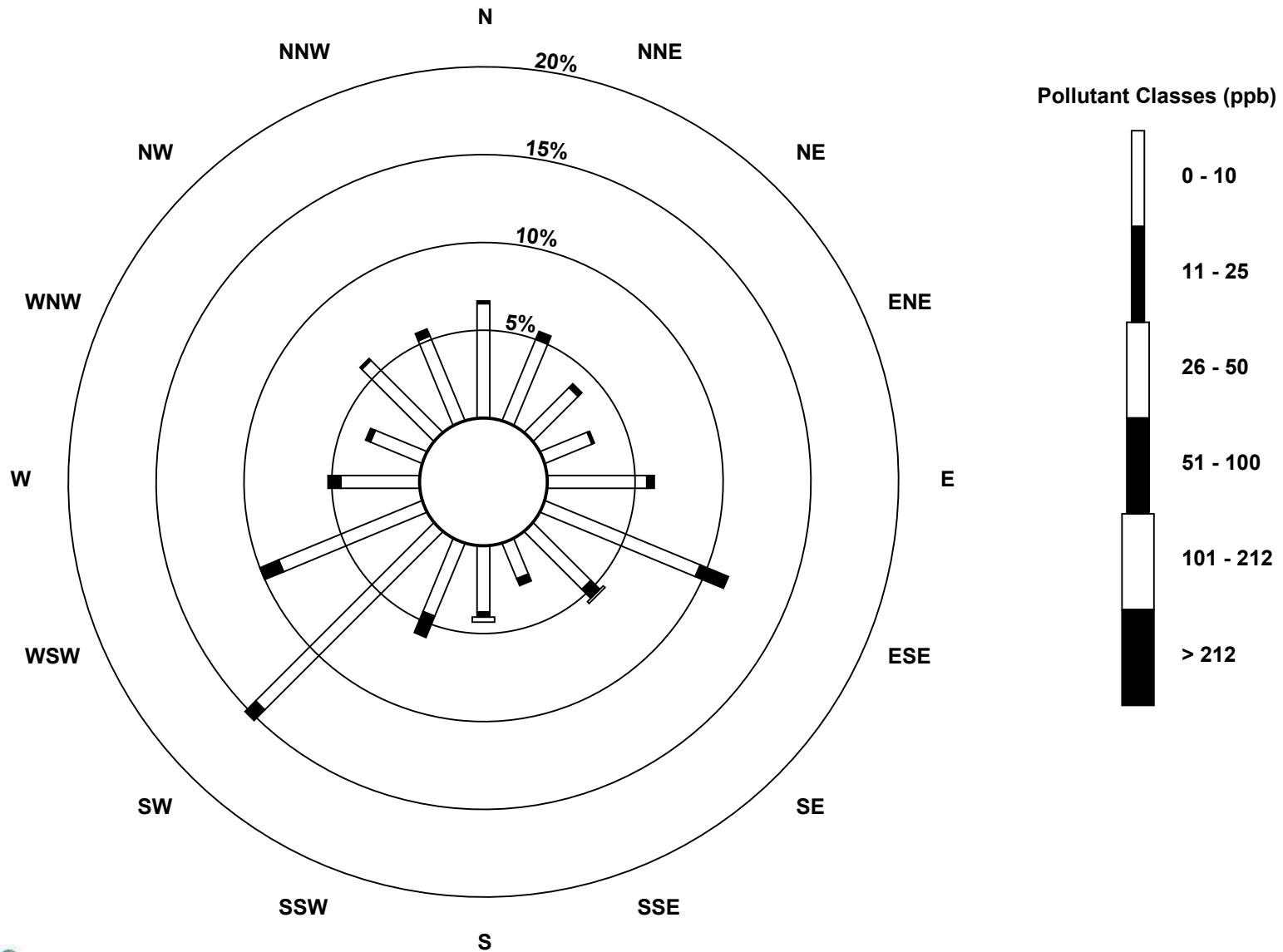
## August 2009

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 38.1 ppb on Aug 25 22:00      Maximum Daily Average: 10.8 ppb on Aug 31		Hours in Service: 744 Hours of Data: 694 Hours of Missing Data: 50 Hours of Calibration: 47 Percent Operational Time: 99.6																																														
Minimum Value: 1 ppb on Aug 28 15:00 Maximum Diurnal Average: 10.0 ppb at hour 21 Monthly Average: 5.4 ppb		Minimum Daily Average: 2.2 ppb on Aug 3 Minimum Diurnal Average: 2.3 ppb at hour 13 Percentiles: P <sub>1</sub> = 0.7 P <sub>10</sub> = 1.5 Q <sub>1</sub> = 2.3 Median = 4.2 Q <sub>3</sub> = 7.2 P <sub>90</sub> = 10.5 P <sub>99</sub> = 19.9																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Aug	11	Z	7	5	9	10	8	4	4	2	2	2	2	2	2	2	3	2	3	4	8	2	2	6	4.4	10.6																						
2-Aug	Z	10	15	6	7	5	10	6	7	5	5	3	3	2	3	2	2	2	2	5	11	11	8	Z	5.9	14.5																						
3-Aug	10	4	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	3	3	Z	5	2.2	9.6																						
4-Aug	4	5	5	3	3	3	5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Z	9	12	--	12.2																						
5-Aug	8	4	4	6	10	7	10	9	4	1	1	1	1	2	2	2	2	6	2	4	Z	6	6	6	4.5	10.0																						
6-Aug	4	3	3	5	4	4	6	5	6	8	4	2	2	3	8	3	2	2	2	Z	6	6	4	4	4.2	7.9																						
7-Aug	3	3	3	3	5	3	5	3	2	2	2	2	2	2	1	1	2	2	Z	7	6	4	6	10	3.4	9.7																						
8-Aug	10	7	7	11	8	9	5	4	2	1	1	1	1	1	2	1	Z	5	4	5	7	12	9	9	5.0	12.4																						
9-Aug	7	7	6	7	7	7	7	8	5	2	2	2	1	1	2	3	Z	5	7	9	12	6	5	7	5.4	11.7																						
10-Aug	3	2	3	6	5	6	6	5	3	2	2	2	2	2	Z	4	4	5	8	9	6	5	5	3	4.1	8.6																						
11-Aug	3	2	2	2	3	3	3	4	3	3	2	3	3	3	Z	5	5	7	10	10	20	14	19	8	5.9	19.9																						
12-Aug	8	8	5	6	5	8	10	9	5	4	3	3	2	Z	6	4	M	M	M	8	14	8	6	3	6.3	14.1																						
13-Aug	4	4	3	4	4	4	3	4	3	2	3	1	Z	3	2	5	6	6	5	7	8	7	12	7	4.7	11.9																						
14-Aug	6	4	3	5	6	7	5	5	4	2	1	Z	3	2	1	1	2	6	7	10	4	8	4	4	4.5	10.3																						
15-Aug	9	4	3	2	3	3	3	2	2	3	Z	4	2	3	6	7	7	4	1	3	2	2	1	2	3.5	9.3																						
16-Aug	2	2	2	2	2	2	3	4	5	Z	5	5	2	2	4	2	2	2	2	9	10	9	9	8	4.1	10.2																						
17-Aug	10	12	8	7	6	7	6	3	Z	4	3	2	2	2	2	4	6	7	5	7	11	11	9	10	6.2	12.3																						
18-Aug	12	6	3	5	5	5	5	Z	4	4	5	4	4	3	2	3	3	3	3	7	8	6	7	4	4.8	12.2																						
19-Aug	6	3	3	3	8	8	Z	11	5	6	4	3	4	4	4	2	2	2	2	5	7	11	7	16	5.6	15.8																						
20-Aug	18	11	8	7	10	Z	7	10	8	7	1	1	1	1	1	1	1	2	1	2	7	5	4	3	5.0	17.8																						
21-Aug	1	1	3	2	Z	13	11	9	7	3	6	3	2	3	2	3	4	3	2	2	2	4	6	2	4.1	12.9																						
22-Aug	3	3	4	Z	7	8	9	10	5	9	4	6	6	3	3	2	2	2	2	8	10	11	7	10	5.8	10.7																						
23-Aug	5	3	Z	16	6	10	10	10	7	6	3	2	3	3	2	3	2	4	4	5	7	4	3	3	5.3	16.2																						
24-Aug	3	Z	6	8	10	10	10	9	7	5	6	5	4	3	2	2	2	2	2	7	13	11	8	8	6.3	13.5																						
25-Aug	Z	13	6	3	7	15	14	12	11	4	2	2	2	4	4	2	3	4	9	20	34	38	15	Z	10.2	38.1																						
26-Aug	7	3	3	5	8	7	7	5	4	5	4	5	5	4	5	4	5	4	7	15	21	31	Z	12	7.6	31.0																						
27-Aug	12	23	20	14	12	14	15	14	17	6	1	1	1	1	1	1	1	1	2	9	10	Z	11	7	8.5	22.7																						
28-Aug	10	9	8	12	15	14	12	12	7	4	2	2	2	1	1	1	1	1	2	2	Z	6	5	7	5.9	15.0																						
29-Aug	4	3	6	9	10	13	11	7	4	2	2	2	1	1	2	1	2	1	1	Z	9	7	5	5	4.8	13.0																						
30-Aug	9	4	2	1	2	8	6	4	3	2	2	1	1	2	2	1	1	3	Z	12	9	7	4	4	3.9	12.5																						
31-Aug	7	7	8	11	10	15	19	20	20	17	10	6	4	3	3	2	3	Z	8	24	17	13	9	13	10.8	24.1																						
																								6.8	6.0	5.4	6.0	6.6	7.6	7.8	7.3	5.7	4.3	3.0	2.6	2.3	2.4	2.6	2.4	2.7	3.3	4.0	7.8	10.0	9.0	7.1	6.8	Diurnal Average
																								17.8	22.7	20.3	16.2	15.0	15.4	18.5	19.8	19.8	17.4	10.5	6.1	6.2	4.2	7.8	6.5	7.0	6.8	9.7	24.1	34.3	38.1	18.7	15.8	Diurnal Maximum
Z - Zero      C - Calibration      M - Missing Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 212 ppb      24-hr 106 ppb																																																



**Palliser Airshed Society - Crescent Heights  
Pollutant Rose**

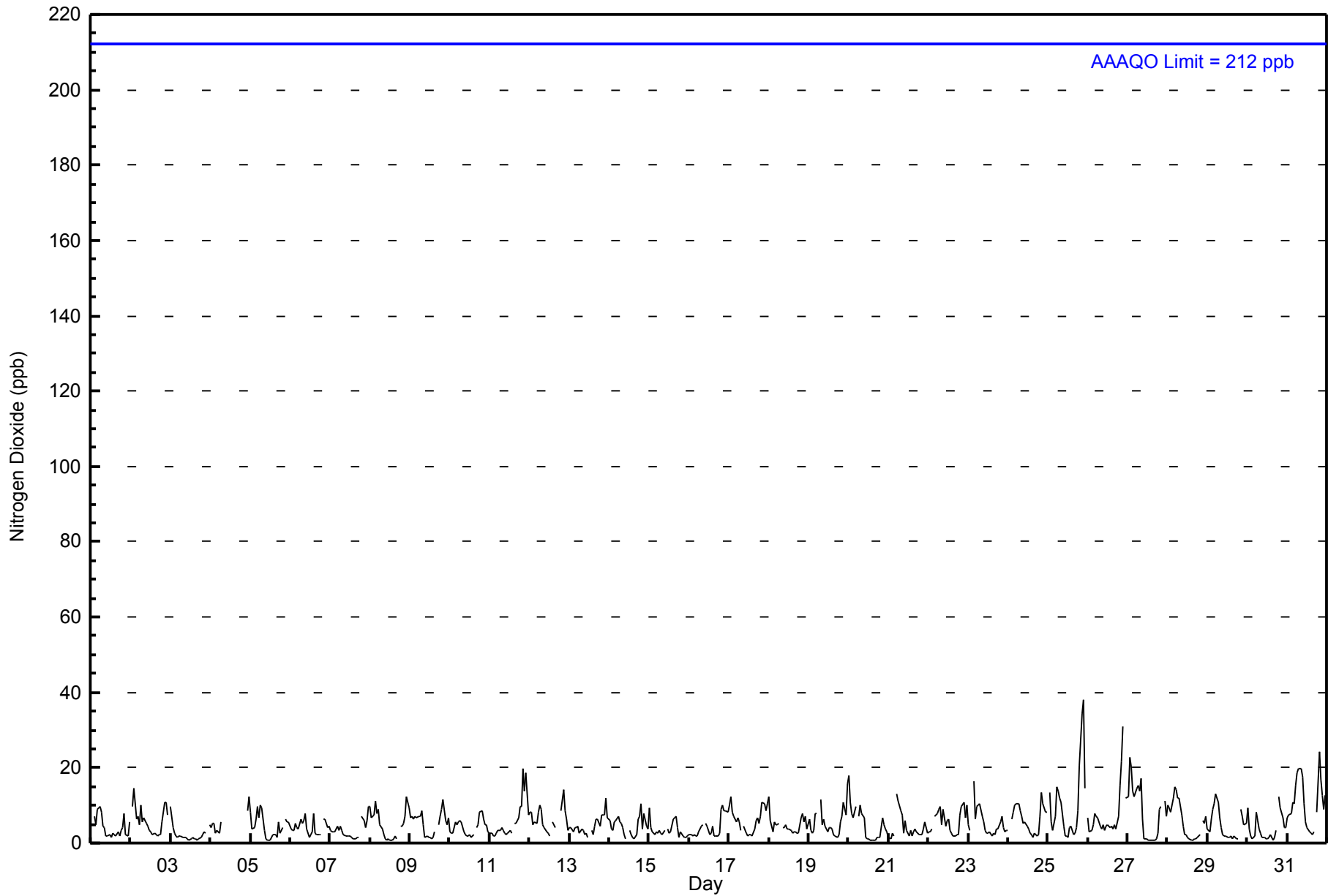
**Nitrogen Dioxide (NO<sub>2</sub>) - ppb  
August 2009**





**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Nitrogen Dioxide (NO<sub>2</sub>) - ppb  
August 2009**





# Palliser Airshed Society - Crescent Heights

## Hourly Averages

# Nitrogen Oxide (NO) - ppb

## August 2009

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0	Hours in Service: 744
Maximum Value: 67.1 ppb on Aug 25 22:00	Maximum Daily Average: 5.6 ppb on Aug 25
Minimum Value: 0 ppb on Aug 3 19:00	Hours of Data: 694
Maximum Diurnal Average: 5.7 ppb at hour 8	Hours of Missing Data: 50
Monthly Average: 1.6 ppb	Hours of Calibration: 47
Minimum Daily Average: 0.2 ppb on Aug 3	Percent Operational Time: 99.6
Minimum Diurnal Average: 0.4 ppb at hour 19	
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.2 Median = 0.5 Q <sub>3</sub> = 1.6 P <sub>90</sub> = 3.5 P <sub>99</sub> = 16.1	

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Aug	2	Z	2	0	0	2	2	1	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0.8	2.3																						
2-Aug	Z	1	2	0	0	0	3	2	3	2	2	1	0	0	0	0	0	0	0	0	0	4	0	Z	1.0	3.5																						
3-Aug	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Z	0	0.2	0.5																						
4-Aug	0	0	0	0	0	0	0	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Z	0	2	--	2.4																						
5-Aug	1	0	0	0	2	2	6	4	1	1	0	0	0	1	0	0	0	0	0	0	Z	1	0	0	0.9	5.6																						
6-Aug	0	0	0	1	0	0	3	3	5	8	2	0	0	1	3	1	0	0	0	Z	1	2	0	1	1.5	8.5																						
7-Aug	1	0	1	1	0	0	2	1	1	1	1	1	1	1	0	0	1	1	Z	1	1	0	0	0	0.7	1.5																						
8-Aug	1	2	1	18	2	13	6	4	1	0	0	0	0	0	0	0	0	Z	0	0	0	0	1	0	2.2	17.8																						
9-Aug	0	1	1	1	1	2	4	7	3	0	1	0	0	0	1	1	Z	0	1	1	0	0	0	3	1.3	6.5																						
10-Aug	0	0	0	3	3	2	2	3	1	1	1	1	1	1	Z	0	1	1	1	0	0	0	0	0	1.0	3.3																						
11-Aug	0	0	0	0	0	1	1	2	2	1	2	1	2	Z	1	1	2	3	2	3	0	3	1	1	1.3	3.1																						
12-Aug	2	1	0	0	2	2	5	5	2	3	2	1	0	Z	2	2	M	M	M	0	1	0	1	0	1.6	5.3																						
13-Aug	0	2	0	0	1	1	0	1	1	1	1	1	Z	0	0	1	1	1	0	2	2	0	0	0	0.7	2.4																						
14-Aug	0	0	0	0	1	1	1	2	1	1	0	Z	0	0	0	0	0	2	1	3	1	1	0	0	0.7	3.4																						
15-Aug	1	1	0	0	0	0	2	1	1	3	Z	1	1	1	3	3	3	1	0	1	0	0	0	0	1.1	3.4																						
16-Aug	0	0	0	0	0	0	0	1	2	Z	2	2	1	1	3	1	0	1	0	3	0	2	0	0	0.9	2.9																						
17-Aug	0	1	1	4	0	7	10	4	Z	3	1	1	1	2	1	2	1	1	0	0	0	0	0	0	1.8	10.1																						
18-Aug	2	0	0	2	3	5	5	Z	3	3	3	1	1	1	1	1	0	0	0	0	0	2	0	0	1.6	4.8																						
19-Aug	0	0	0	0	3	5	Z	5	2	5	2	1	2	2	1	1	1	0	1	1	1	1	0	0	1.5	5.0																						
20-Aug	22	0	0	1	7	Z	11	28	9	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.7	28.2																						
21-Aug	0	0	0	0	Z	5	7	5	4	2	6	1	1	4	0	2	2	0	0	0	0	4	5	1	2.2	6.7																						
22-Aug	1	0	0	Z	1	0	1	4	2	4	1	2	2	1	0	0	0	0	0	0	0	0	4	0	1.1	4.0																						
23-Aug	0	0	Z	0	0	1	2	6	3	3	1	2	1	1	0	0	0	1	0	1	1	1	1	0	1.1	6.2																						
24-Aug	0	Z	0	0	0	0	2	3	3	2	2	2	1	1	1	0	0	0	0	0	1	0	0	0	0.8	2.9																						
25-Aug	Z	9	0	0	0	8	4	6	6	2	1	1	1	1	2	0	0	1	1	1	9	67	4	Z	5.6	67.1																						
26-Aug	0	0	0	0	0	1	3	2	1	2	1	1	1	1	1	1	1	0	0	1	1	12	Z	0	1.3	12.3																						
27-Aug	2	6	11	1	1	5	15	15	12	3	1	1	0	0	0	0	0	0	0	0	0	Z	0	0	3.3	15.2																						
28-Aug	0	2	1	2	17	11	8	16	5	2	1	1	0	0	0	0	0	0	0	0	Z	0	0	0	2.9	16.5																						
29-Aug	0	0	1	1	1	1	3	3	2	1	0	0	0	0	1	0	0	0	0	0	Z	2	0	0	0.8	3.3																						
30-Aug	1	0	0	0	0	4	2	1	1	0	0	0	0	0	1	0	0	1	Z	0	0	0	0	0	0.6	4.4																						
31-Aug	2	3	2	4	1	4	17	30	34	13	5	2	1	1	0	0	0	Z	0	2	0	0	0	0	5.3	33.6																						
																								1.4	1.0	0.8	1.4	1.6	2.8	4.3	5.7	3.9	2.5	1.4	1.0	0.7	0.8	0.8	0.7	0.6	0.5	0.4	0.8	0.9	3.4	0.7	0.6	Diurnal Average
																								22.3	9.0	11.0	17.8	16.5	12.8	16.6	30.1	33.6	13.3	6.2	2.4	1.8	3.8	3.4	2.9	2.7	1.7	3.1	3.4	8.7	67.1	4.9	3.8	Diurnal Maximum

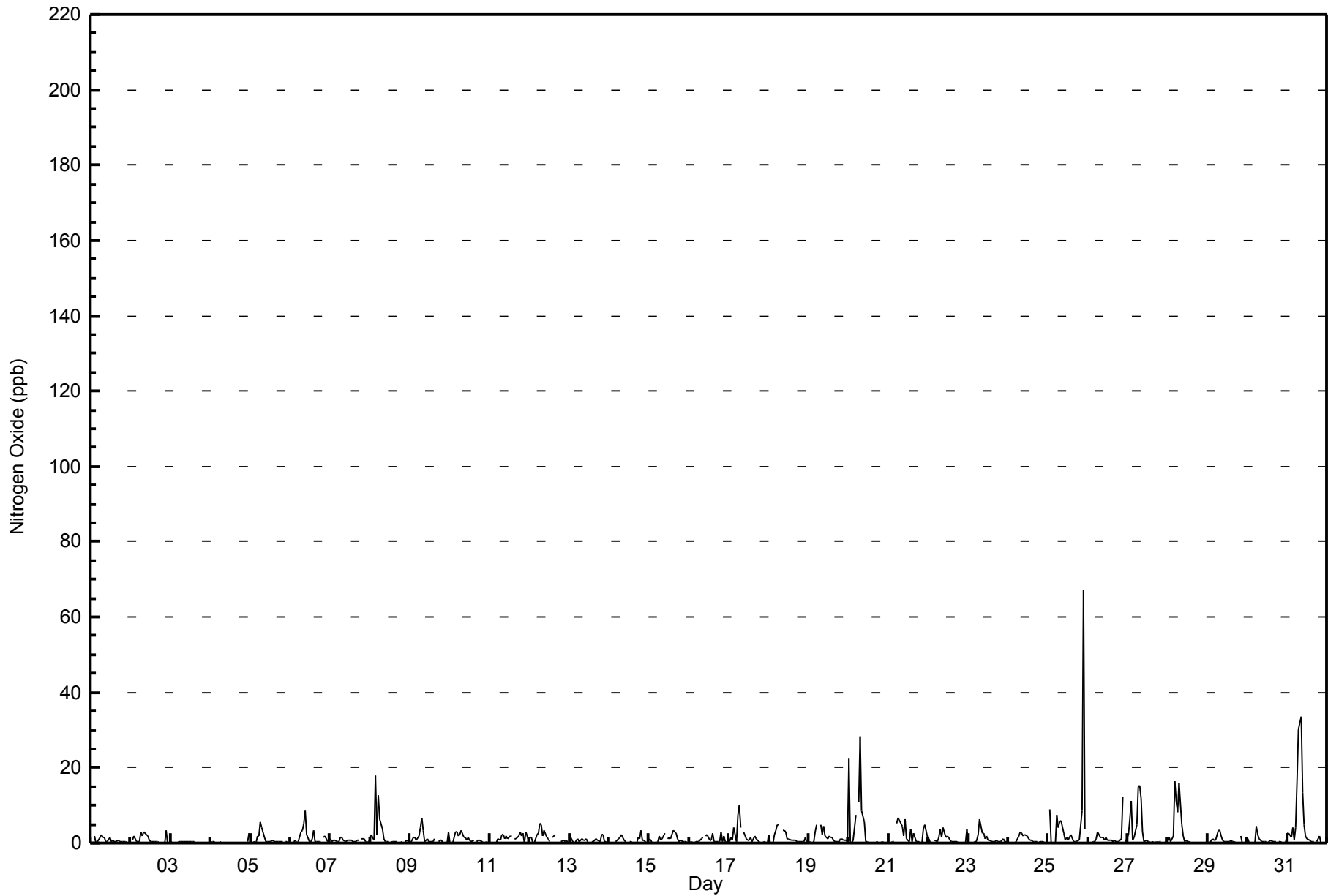
Z - Zero      C - Calibration      M - Missing  
 Alberta Ambient Air Quality Objectives (AAAQO):





**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

**Nitrogen Oxide (NO) - ppb**  
**August 2009**





# Palliser Airshed Society - Crescent Heights

## Hourly Averages

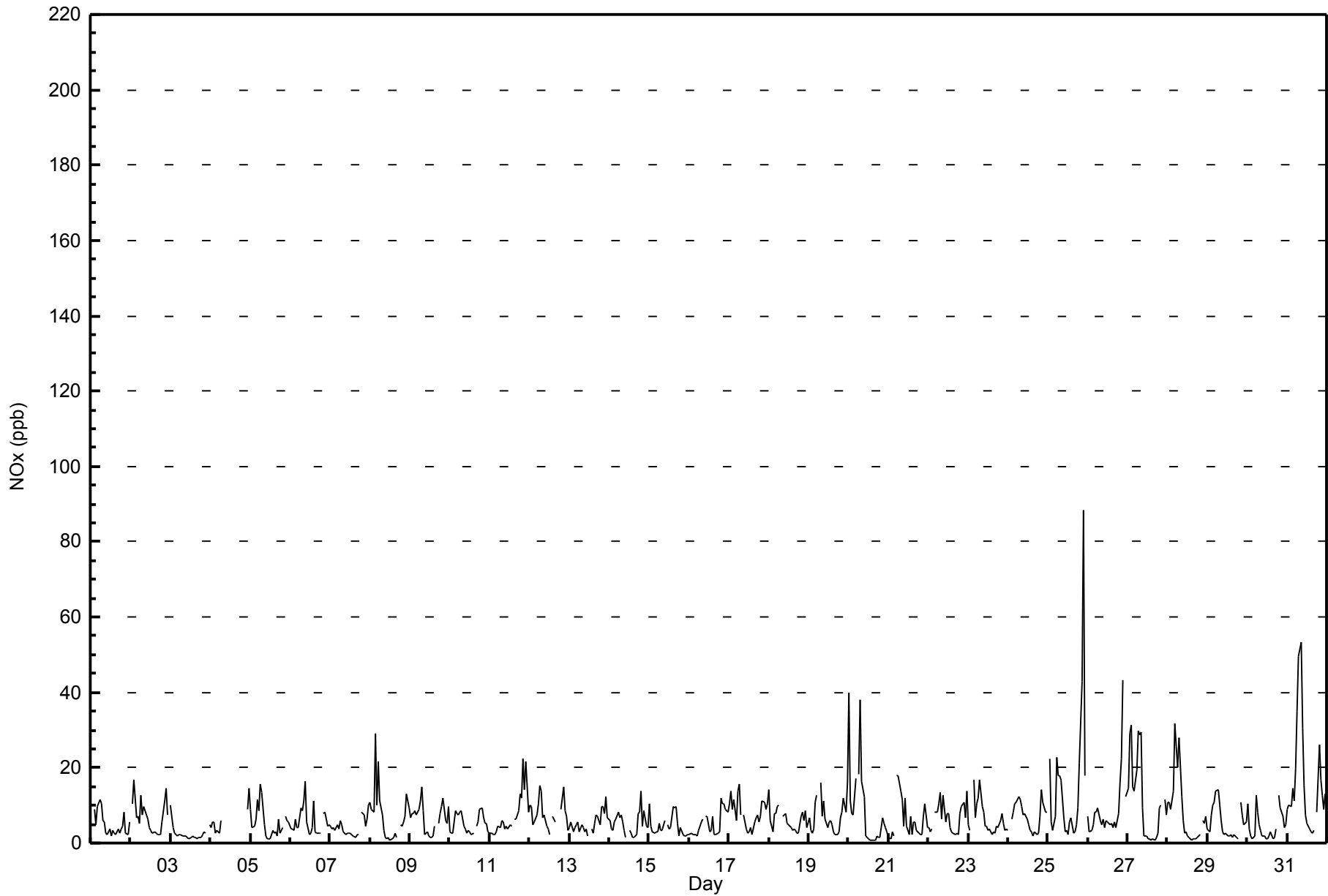
**NOx (NO<sub>x</sub>) - ppb**  
**August 2009**

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 88.4 ppb on Aug 25 22:00      Maximum Daily Average: 16.0 ppb on Aug 31		Hours in Service: 744 Hours of Data: 694 Hours of Missing Data: 50 Hours of Calibration: 47 Percent Operational Time: 99.6																																														
Minimum Value: 1 ppb on Aug 20 15:00 Maximum Diurnal Average: 13.0 ppb at hour 8 Monthly Average: 7.0 ppb		Minimum Daily Average: 2.5 ppb on Aug 3 Minimum Diurnal Average: 3.1 ppb at hour 13 Percentiles: P <sub>1</sub> = 0.9 P <sub>10</sub> = 1.9 Q <sub>1</sub> = 2.8 Median = 5.2 Q <sub>3</sub> = 8.8 P <sub>90</sub> = 13.7 P <sub>99</sub> = 37.1																																														
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Aug	12	Z	9	5	10	11	10	6	6	3	2	4	2	3	3	2	4	2	4	4	8	3	2	6	5.2	12.4																						
2-Aug	Z	10	17	7	7	5	13	8	10	8	6	4	4	3	3	3	2	2	2	6	11	14	8	Z	6.9	16.6																						
3-Aug	10	4	3	2	2	2	2	2	2	2	2	1	1	2	2	1	1	1	1	2	3	3	Z	5	2.5	9.9																						
4-Aug	4	6	5	3	3	3	6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Z	9	15	--	14.6																						
5-Aug	9	4	4	7	12	9	16	13	5	2	1	1	1	3	3	3	2	6	3	4	Z	7	6	6	5.5	15.6																						
6-Aug	4	4	3	6	4	4	9	9	11	16	6	2	3	4	11	3	3	3	3	Z	8	8	5	5	5.8	16.3																						
7-Aug	4	4	4	3	5	4	6	5	3	2	3	3	3	2	2	2	2	2	Z	8	7	5	6	10	4.1	10.1																						
8-Aug	11	9	8	29	10	22	11	7	3	1	1	1	1	1	2	1	Z	Z	5	4	5	7	13	9	7.2	29.0																						
9-Aug	7	8	8	8	7	9	11	15	9	2	3	2	2	2	2	4	Z	Z	5	8	10	12	6	5	10	6.7	15.0																					
10-Aug	3	3	3	9	8	7	8	9	5	4	3	3	3	2	3	Z	5	6	9	9	7	5	5	3	5.2	9.2																						
11-Aug	3	3	2	2	3	5	4	6	5	4	4	4	5	5	Z	6	6	9	13	12	22	14	22	8	7.2	22.4																						
12-Aug	10	10	5	6	7	11	15	14	7	7	5	4	2	Z	7	6	M	M	M	9	15	9	7	3	7.9	15.4																						
13-Aug	4	6	3	4	5	6	3	5	4	3	4	2	Z	4	3	5	7	7	5	10	10	8	12	7	5.4	12.4																						
14-Aug	6	4	3	6	6	8	7	7	5	3	2	Z	4	3	2	1	2	8	8	14	4	8	5	4	5.2	13.7																						
15-Aug	11	5	3	2	3	3	5	3	3	6	Z	5	4	4	10	9	10	5	2	4	2	2	2	2	4.6	10.6																						
16-Aug	2	3	2	2	2	2	3	6	6	Z	7	7	3	3	7	2	2	3	3	12	11	11	9	8	5.1	11.9																						
17-Aug	10	14	9	11	6	14	16	7	Z	8	4	3	3	4	2	6	7	8	5	7	11	11	9	10	8.0	15.6																						
18-Aug	14	6	3	8	8	10	10	Z	7	7	8	5	5	4	3	4	3	3	3	7	8	6	9	4	6.3	14.3																						
19-Aug	7	3	2	4	11	13	Z	16	7	11	6	4	6	6	5	3	2	11	2	2	3	7	8	12	8	16	7.1	16.2																				
20-Aug	40	11	8	8	17	Z	18	38	16	12	2	2	1	1	1	1	1	2	1	2	7	5	4	3	8.7	40.0																						
21-Aug	1	1	3	2	Z	18	18	14	12	4	12	4	2	7	2	5	5	3	3	2	2	7	10	4	6.3	17.9																						
22-Aug	4	3	4	Z	8	8	10	14	7	13	6	8	8	4	3	3	2	3	2	8	10	11	7	14	6.9	13.7																						
23-Aug	5	3	Z	17	7	11	12	17	10	8	4	4	4	4	2	3	3	4	4	6	8	5	3	4	6.4	16.6																						
24-Aug	3	Z	6	8	10	11	12	12	10	7	8	6	5	3	3	2	3	2	3	7	14	11	8	8	7.1	14.1																						
25-Aug	Z	22	6	3	7	23	18	18	17	7	3	3	2	6	7	3	3	5	9	21	43	88	18	Z	15.1	88.4																						
26-Aug	7	3	3	5	8	8	9	6	5	6	4	6	6	5	5	4	6	4	8	16	22	43	Z	12	8.9	43.1																						
27-Aug	14	29	31	15	14	19	30	29	29	9	2	2	1	1	1	1	1	1	3	9	10	Z	12	7	11.8	31.3																						
28-Aug	11	11	9	14	32	26	20	28	12	6	3	3	2	1	1	1	1	1	2	2	Z	6	5	7	8.8	31.6																						
29-Aug	4	3	7	10	11	14	14	10	6	3	2	2	2	2	2	2	2	2	1	1	Z	11	7	5	6	5.5	14.1																					
30-Aug	10	4	2	1	2	13	8	5	3	2	2	1	1	2	3	1	2	4	Z	13	9	7	4	5	4.5	12.7																						
31-Aug	9	10	10	15	11	20	35	50	53	31	15	8	5	4	3	2	3	Z	8	26	17	13	9	13	16.0	53.2																						
																								8.3	7.0	6.2	7.4	8.2	10.5	12.1	13.0	9.6	6.8	4.5	3.6	3.1	3.2	3.5	3.1	3.3	3.8	4.4	8.6	10.9	11.8	7.8	7.4	Diurnal Average
																								40.0	29.2	31.3	29.0	31.6	25.6	35.0	49.6	53.2	30.6	15.4	8.0	7.9	7.1	11.0	9.5	9.7	8.5	12.9	26.0	42.9	88.4	21.8	16.2	Diurnal Maximum
Z - Zero      C - Calibration      M - Missing Alberta Ambient Air Quality Objectives (AAAQO):																																																



**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

**NOx (NO<sub>x</sub>) - ppb**  
**August 2009**







# Palliser Airshed Society - Crescent Heights

## Hourly Averages

Ozone (O<sub>3</sub>) - ppb  
August 2009

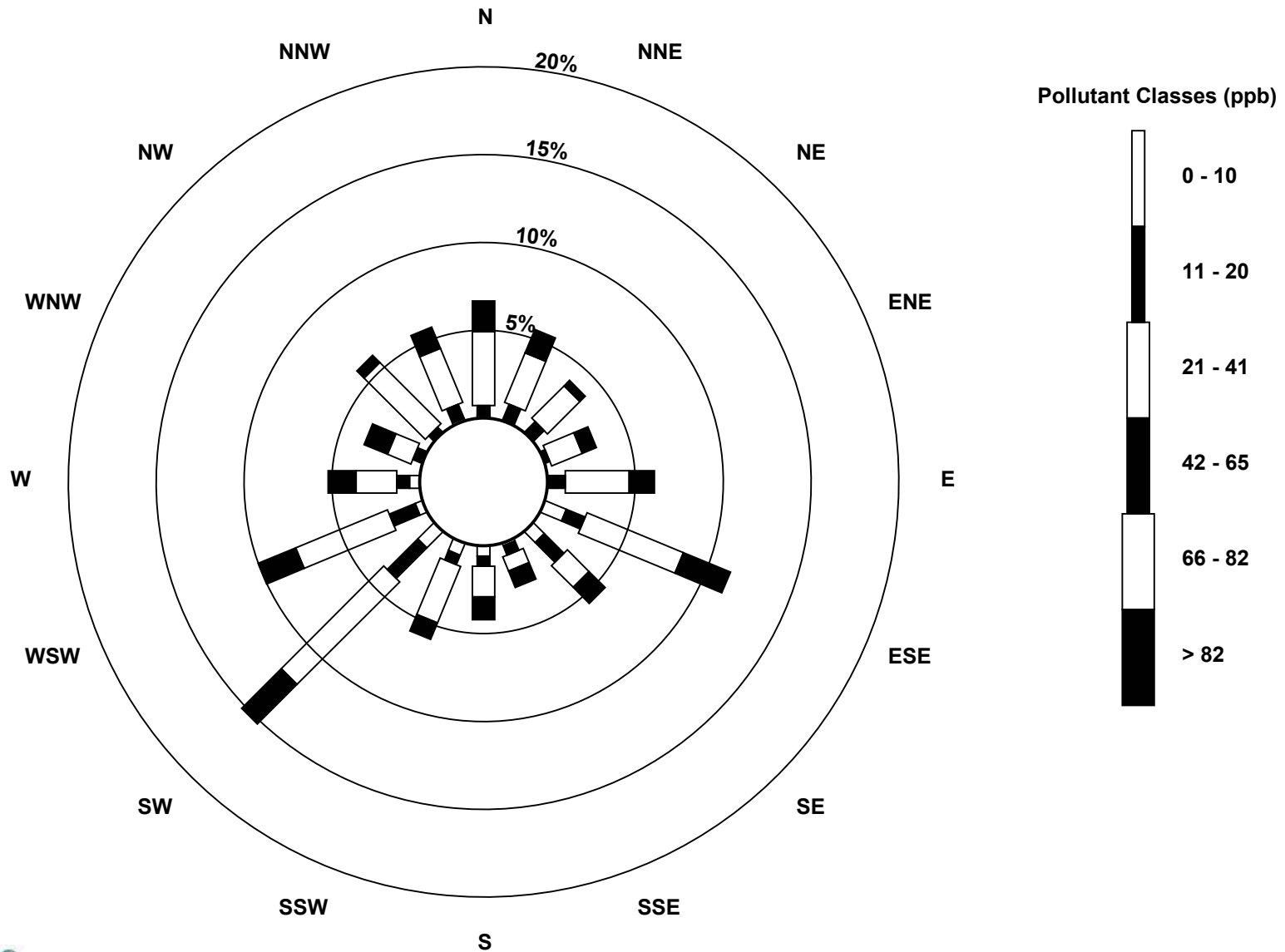
Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0		Hours in Service: 744																									
Maximum Value: 64.6 ppb on Aug 22 15:00		Maximum Daily Average: 43.1 ppb on Aug 22																									
Minimum Value: 3 ppb on Aug 28 05:00		Hours of Data: 692																									
Maximum Diurnal Average: 47.1 ppb at hour 16		Hours of Missing Data: 52																									
Monthly Average: 31.3 ppb		Hours of Calibration: 47																									
Minimum Daily Average: 22.0 ppb on Aug 15		Percent Operational Time: 99.3																									
Minimum Diurnal Average: 16.4 ppb at hour 6																											
Percentiles: P <sub>1</sub> = 6.3 P <sub>10</sub> = 14.2 Q <sub>1</sub> = 21.5 Median = 30.0 Q <sub>3</sub> = 40.8 P <sub>90</sub> = 50.6 P <sub>99</sub> = 62.1																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Aug	17	Z	22	21	14	16	21	30	34	42	39	39	44	47	46	42	43	44	42	39	32	46	45	39	35.0	47.4	
2-Aug	Z	29	21	25	21	24	17	22	24	31	38	43	51	54	52	51	51	49	51	44	33	25	25	Z	35.5	54.1	
3-Aug	23	36	31	26	24	22	25	26	34	38	36	37	38	39	42	44	44	42	40	36	33	32	Z	25	33.6	44.2	
4-Aug	21	17	17	23	18	18	13	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Z	18	10	--	23.0	
5-Aug	17	23	21	17	10	13	9	13	23	30	32	35	36	34	34	37	38	34	38	33	Z	29	27	24	26.3	37.9	
6-Aug	22	22	23	20	21	19	15	17	18	20	31	37	39	41	36	42	41	37	35	Z	29	23	25	20	27.6	42.4	
7-Aug	20	21	22	22	20	21	20	24	31	34	37	40	42	44	45	47	47	46	Z	38	34	31	24	17	31.6	47.0	
8-Aug	15	16	11	6	7	4	7	14	30	42	45	47	51	53	55	57	57	Z	49	42	35	27	16	16	30.5	57.5	
9-Aug	21	18	15	11	12	8	11	16	26	36	40	41	45	53	56	53	Z	51	46	39	33	31	30	27	31.3	55.6	
10-Aug	28	31	29	25	24	26	27	29	35	37	44	48	49	51	49	Z	48	43	38	35	32	30	27	26	35.2	50.9	
11-Aug	25	25	26	26	25	28	27	26	28	31	35	36	36	38	Z	40	35	31	28	31	29	31	23	29	30.0	39.8	
12-Aug	24	22	25	22	19	14	10	10	18	21	28	37	39	Z	34	M	M	M	M	M	18	23	21	21	22.5	38.7	
13-Aug	17	16	18	15	13	20	30	31	36	40	41	43	Z	44	42	37	36	36	38	31	30	26	18	20	29.5	43.6	
14-Aug	17	19	19	13	10	10	12	14	23	32	36	Z	42	45	47	47	45	36	31	30	36	27	27	29	28.2	47.1	
15-Aug	24	24	16	16	15	21	23	24	24	23	Z	28	28	24	21	20	19	18	19	20	25	25	25	23	22.0	27.9	
16-Aug	23	23	23	24	25	25	23	23	23	Z	21	24	33	34	31	36	38	38	37	27	25	22	23	19	26.9	38.0	
17-Aug	15	11	13	13	12	8	8	11	Z	21	27	32	40	40	42	40	38	35	37	33	20	15	14	11	23.3	42.0	
18-Aug	10	14	14	9	8	6	7	Z	11	17	23	33	36	40	39	40	41	38	33	24	20	19	16	21	22.6	40.9	
19-Aug	21	21	21	20	12	10	Z	11	22	23	33	40	41	41	45	47	48	48	46	36	32	22	21	10	29.1	48.2	
20-Aug	7	8	9	10	5	Z	5	6	16	23	31	36	40	41	42	41	41	39	38	34	24	23	24	25	24.7	42.5	
21-Aug	26	26	23	26	Z	8	14	21	26	33	31	35	38	38	41	42	42	44	42	41	39	36	30	31	31.9	43.5	
22-Aug	29	28	29	Z	30	25	25	25	38	38	49	53	57	64	65	62	63	62	61	50	44	34	34	29	43.1	64.6	
23-Aug	38	39	Z	25	30	21	18	20	28	30	43	51	52	50	54	55	57	55	52	49	46	40	39	36	40.3	56.7	
24-Aug	34	Z	28	25	22	22	23	29	36	41	42	44	47	51	50	52	52	51	50	42	30	24	24	25	36.7	51.7	
25-Aug	Z	25	29	30	25	16	20	24	29	44	48	50	56	58	60	64	63	60	50	34	17	7	20	Z	37.6	63.6	
26-Aug	28	31	28	25	25	25	31	34	38	45	54	55	56	58	60	62	61	63	56	43	33	18	Z	26	41.5	62.9	
27-Aug	21	6	5	8	8	9	7	14	25	37	30	31	36	45	50	48	47	48	46	37	33	Z	22	22	27.6	49.5	
28-Aug	18	18	16	10	3	5	8	10	21	34	45	52	58	60	62	62	61	61	60	57	Z	40	37	32	36.1	62.2	
29-Aug	37	36	30	23	21	14	17	23	30	40	46	51	52	52	51	51	50	51	49	Z	31	28	33	32	36.8	51.8	
30-Aug	27	34	36	37	36	21	22	28	33	41	43	46	48	49	47	45	45	43	Z	28	25	26	32	32	35.9	49.3	
31-Aug	26	24	23	19	18	11	7	8	12	23	34	44	52	58	57	56	57	Z	49	28	28	27	27	22	30.9	57.9	
		22.5	22.9	21.4	19.6	17.7	16.4	16.8	20.1	26.6	32.7	37.3	41.0	44.2	46.4	46.7	47.1	46.6	44.5	43.0	36.4	30.2	27.1	25.7	24.1	Diurnal Average	
		37.6	38.7	36.3	37.1	36.0	27.6	31.2	34.4	38.1	45.4	54.0	54.8	58.2	63.6	64.6	63.6	63.3	62.9	60.6	57.0	46.1	45.8	44.6	38.9	Diurnal Maximum	
Z - Zero		C - Calibration		M - Missing																							
Alberta Ambient Air Quality Objectives (AAAQO):		1-hr		82 ppb																							





**Palliser Airshed Society - Crescent Heights  
Pollutant Rose**

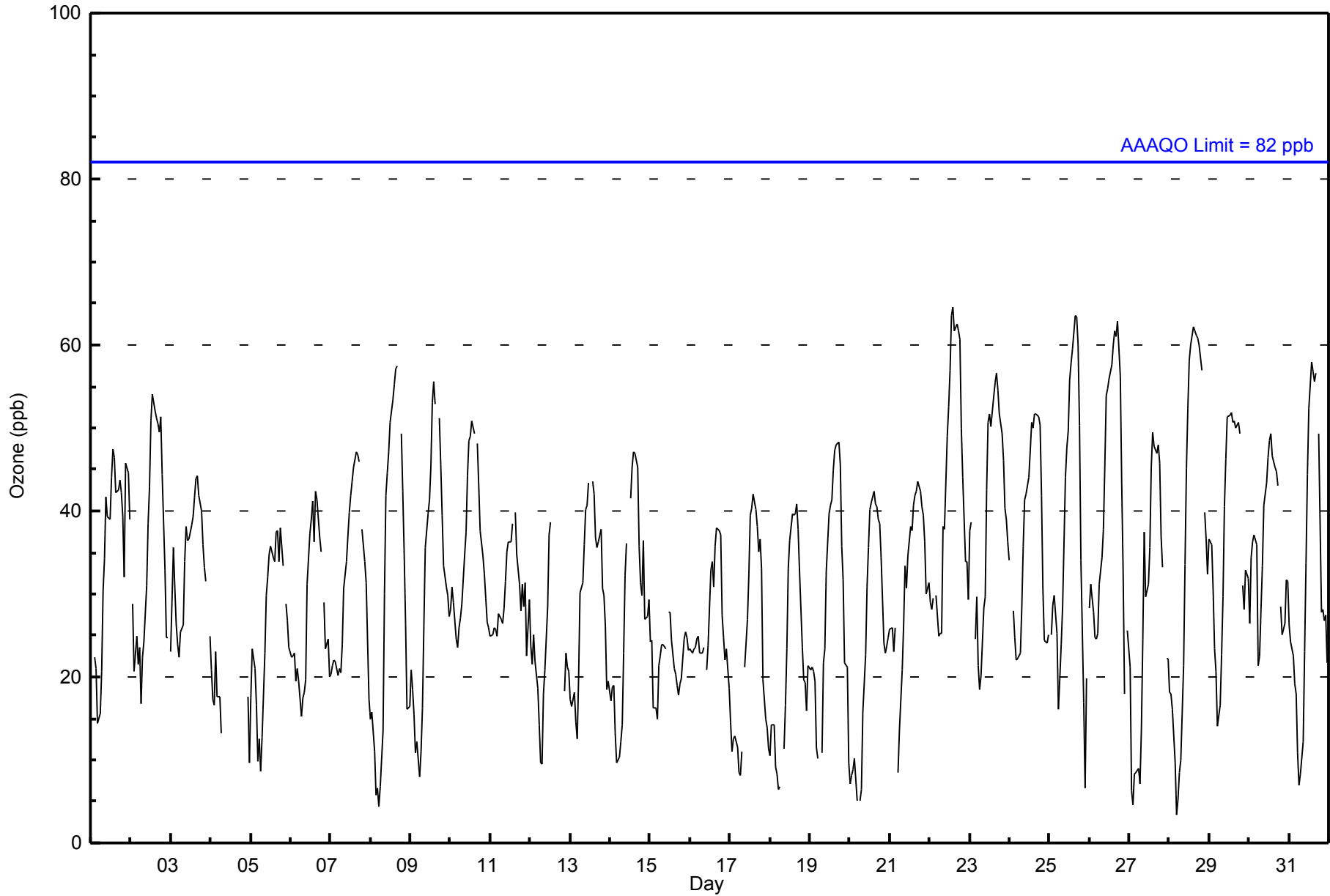
**Ozone (O<sub>3</sub>) - ppb  
August 2009**





**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Ozone (O<sub>3</sub>) - ppb  
August 2009**





**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Carbon Monoxide (CO) - ppm  
August 2009**

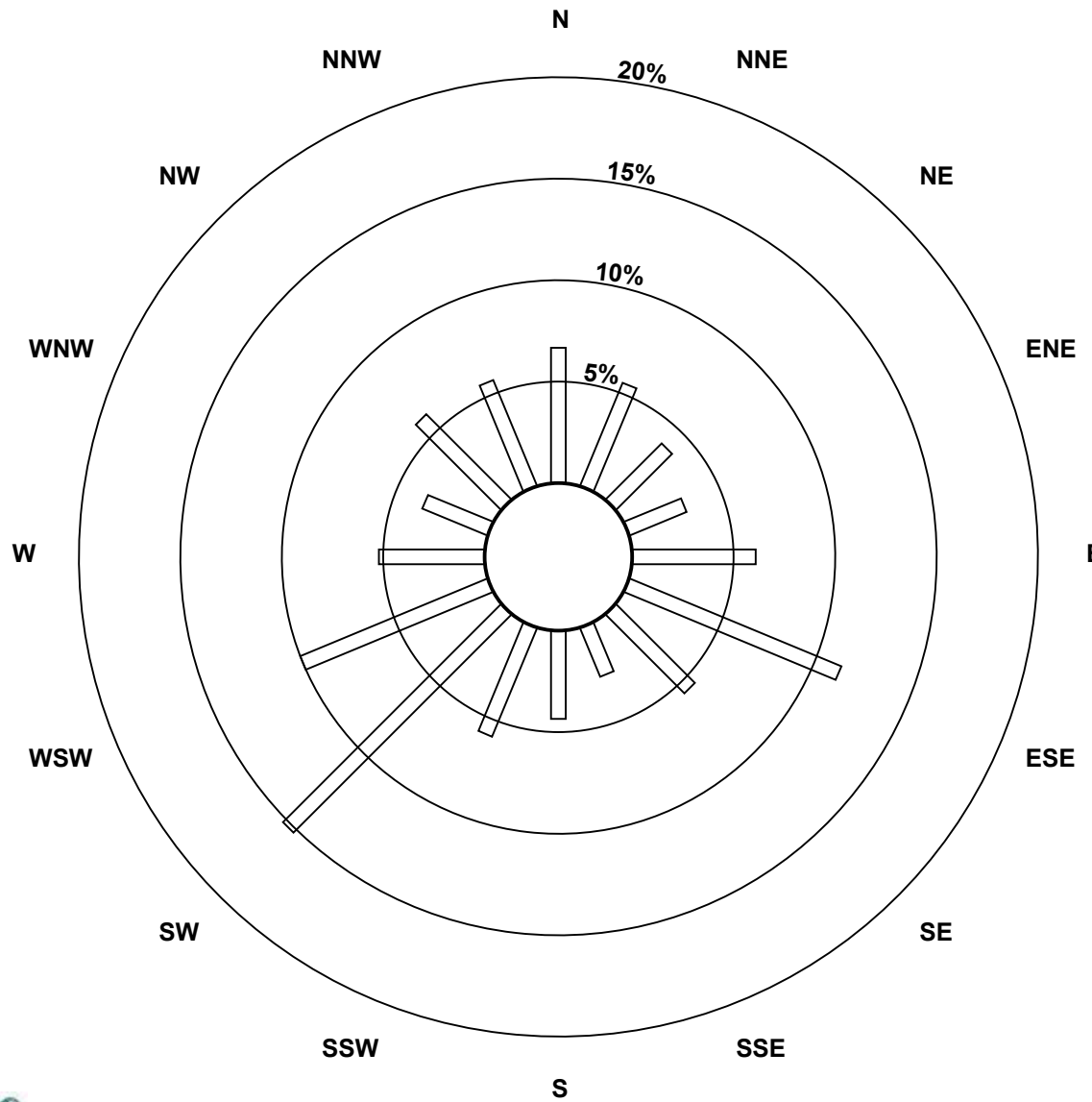
Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 0.49 ppm on Aug 25 22:00      Maximum Daily Average: 0.14 ppm on Aug 2																		Hours in Service: 744 Hours of Data: 696 Hours of Missing Data: 48 Hours of Calibration: 47 Percent Operational Time: 99.9									
Minimum Value: 0.00 ppm on Aug 3 15:00      Minimum Daily Average: 0.05 ppm on Aug 30 Maximum Diurnal Average: 0.16 ppm at hour 21      Minimum Diurnal Average: 0.07 ppm at hour 16 Monthly Average: 0.10 ppm      Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.1 P <sub>99</sub> = 0.2																											
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Aug	0.14	Z	0.08	0.10	0.11	0.11	0.13	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.08	0.08	0.09	0.11	0.13	0.18	0.11	0.11	0.12	0.11	0.18	
2-Aug	Z	0.12	0.11	0.11	0.11	0.11	0.12	0.11	0.13	0.15	0.15	0.14	0.14	0.12	0.13	0.12	0.11	0.11	0.13	0.16	0.22	0.23	0.19	Z	0.10	0.14	0.23
3-Aug	0.17	0.14	0.14	0.13	0.09	0.09	0.08	0.08	0.04	0.03	0.03	0.01	0.00	0.02	0.00	0.00	0.06	0.08	0.09	0.11	0.10	0.10	Z	0.10	0.07	0.17	
4-Aug	0.10	0.10	0.12	0.11	0.11	0.11	0.15	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Z	0.10	0.10	--	0.15	
5-Aug	0.08	0.06	0.09	0.09	0.11	0.12	0.15	0.15	0.10	0.10	0.09	0.09	0.10	0.10	0.12	0.12	0.12	0.18	0.15	0.16	Z	0.15	0.13	0.12	0.12	0.18	
6-Aug	0.10	0.10	0.10	0.10	0.10	0.10	0.14	0.15	0.11	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.11	0.11	0.11	Z	0.10	0.10	0.10	0.09	0.11	0.15	
7-Aug	0.10	0.06	0.08	0.07	0.08	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	Z	0.12	0.13	0.12	0.13	0.10	0.13	
8-Aug	0.15	0.11	0.10	0.10	0.07	0.08	0.08	0.08	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	Z	0.10	0.12	0.15	0.12	0.13	0.11	0.15	
9-Aug	0.09	0.11	0.09	0.09	0.08	0.08	0.10	0.14	0.10	0.10	0.10	0.10	0.10	0.07	0.05	0.07	Z	0.10	0.14	0.17	0.23	0.17	0.17	0.16	0.11	0.23	
10-Aug	0.14	0.12	0.11	0.12	0.12	0.15	0.17	0.17	0.14	0.11	0.08	0.06	0.06	0.06	0.07	Z	0.07	0.10	0.11	0.14	0.12	0.11	0.08	0.08	0.11	0.17	
11-Aug	0.08	0.06	0.04	0.03	0.03	0.04	0.05	0.05	0.05	0.06	0.05	0.04	0.04	0.04	Z	0.05	0.05	0.07	0.08	0.10	0.16	0.18	0.19	0.15	0.07	0.19	
12-Aug	0.15	0.14	0.10	0.11	0.10	0.12	0.16	0.17	0.12	0.10	0.10	0.09	0.09	Z	0.10	0.10	0.08	0.09	M	0.18	0.21	0.14	0.11	0.09	0.12	0.21	
13-Aug	0.09	0.09	0.07	0.08	0.09	0.09	0.10	0.11	0.09	0.09	0.09	0.09	Z	0.09	0.09	0.12	0.14	0.13	0.12	0.12	0.12	0.15	0.14	0.09	0.10	0.15	
14-Aug	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.12	0.11	0.09	Z	0.08	0.09	0.09	0.09	0.10	0.13	0.10	0.13	0.10	0.12	0.10	0.10	0.10	0.13	
15-Aug	0.10	0.10	0.10	0.10	0.09	0.09	0.10	0.10	0.10	0.10	Z	0.08	0.09	0.10	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.09	0.10	0.09	0.10	0.11	
16-Aug	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.09	Z	0.10	0.09	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.15	0.15	0.14	0.13	0.13	0.10	0.15	
17-Aug	0.14	0.14	0.10	0.11	0.10	0.14	0.11	0.12	Z	0.10	0.10	0.10	0.10	0.08	0.06	0.07	0.08	0.13	0.10	0.13	0.19	0.15	0.10	0.10	0.11	0.19	
18-Aug	0.11	0.10	0.09	0.10	0.09	0.10	0.12	Z	0.10	0.10	0.10	0.10	0.10	0.09	0.07	0.05	0.07	0.08	0.10	0.12	0.14	0.14	0.11	0.09	0.10	0.14	
19-Aug	0.09	0.09	0.09	0.09	0.10	0.11	Z	0.14	0.10	0.09	0.09	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.06	0.11	0.12	0.20	0.16	0.19	0.10	0.20	
20-Aug	0.13	0.13	0.09	0.07	0.11	Z	0.11	0.26	0.15	0.13	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.08	0.08	0.07	0.11	0.10	0.07	0.06	0.09	0.26	
21-Aug	0.05	0.05	0.05	0.05	Z	0.10	0.15	0.13	0.12	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.10	0.09	0.09	0.15	
22-Aug	0.09	0.08	0.06	Z	0.05	0.09	0.11	0.13	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.10	0.07	0.08	0.09	0.10	0.14	0.19	0.23	0.10	0.10	0.11	0.23
23-Aug	0.11	0.10	Z	0.08	0.08	0.09	0.10	0.12	0.10	0.11	0.10	0.06	0.05	0.07	0.06	0.06	0.05	0.06	0.09	0.09	0.10	0.10	0.10	0.10	0.09	0.12	
24-Aug	0.10	Z	0.10	0.10	0.12	0.11	0.15	0.12	0.10	0.07	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.08	0.15	0.19	0.14	0.06	0.05	0.09	0.19	
25-Aug	Z	0.06	0.06	0.05	0.06	0.08	0.13	0.15	0.19	0.07	0.05	0.04	0.02	0.02	0.02	0.03	0.05	0.07	0.11	0.22	0.41	0.49	0.15	Z	0.11	0.49	
26-Aug	0.08	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.09	0.09	0.09	0.08	0.08	0.07	0.05	0.05	0.05	0.13	0.32	0.30	0.20	Z	0.09	0.10	0.32	
27-Aug	0.08	0.14	0.17	0.13	0.13	0.14	0.18	0.13	0.12	0.09	0.08	0.08	0.08	0.08	0.06	0.07	0.08	0.08	0.11	0.16	0.16	Z	0.09	0.06	0.11	0.18	
28-Aug	0.08	0.09	0.07	0.09	0.12	0.14	0.15	0.22	0.14	0.10	0.09	0.09	0.07	0.06	0.05	0.05	0.05	0.07	0.07	Z	0.08	0.10	0.09	0.09	0.09	0.22	
29-Aug	0.06	0.07	0.08	0.08	0.09	0.13	0.11	0.10	0.08	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.06	Z	0.09	0.08	0.06	0.06	0.06	0.07	0.13	
30-Aug	0.13	0.06	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.04	0.05	0.04	0.04	0.04	0.04	0.05	Z	0.07	0.08	0.05	0.04	0.04	0.05	0.13	
31-Aug	0.05	0.05	0.04	0.04	0.05	0.13	0.20	0.27	0.20	0.19	0.12	0.08	0.07	0.09	0.08	0.07	0.08	Z	0.12	0.34	0.18	0.10	0.10	0.13	0.12	0.34	
																						Diurnal Average					
																						Diurnal Maximum					

Z - Zero      C - Calibration      M - Missing  
 Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm

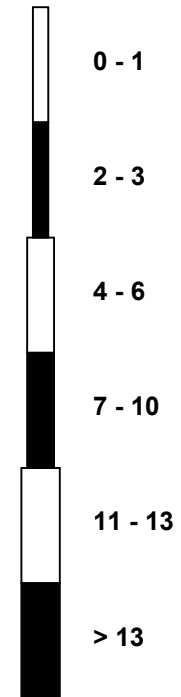


**Palliser Airshed Society - Crescent Heights  
Pollutant Rose**

**Carbon Monoxide (CO) - ppm  
August 2009**



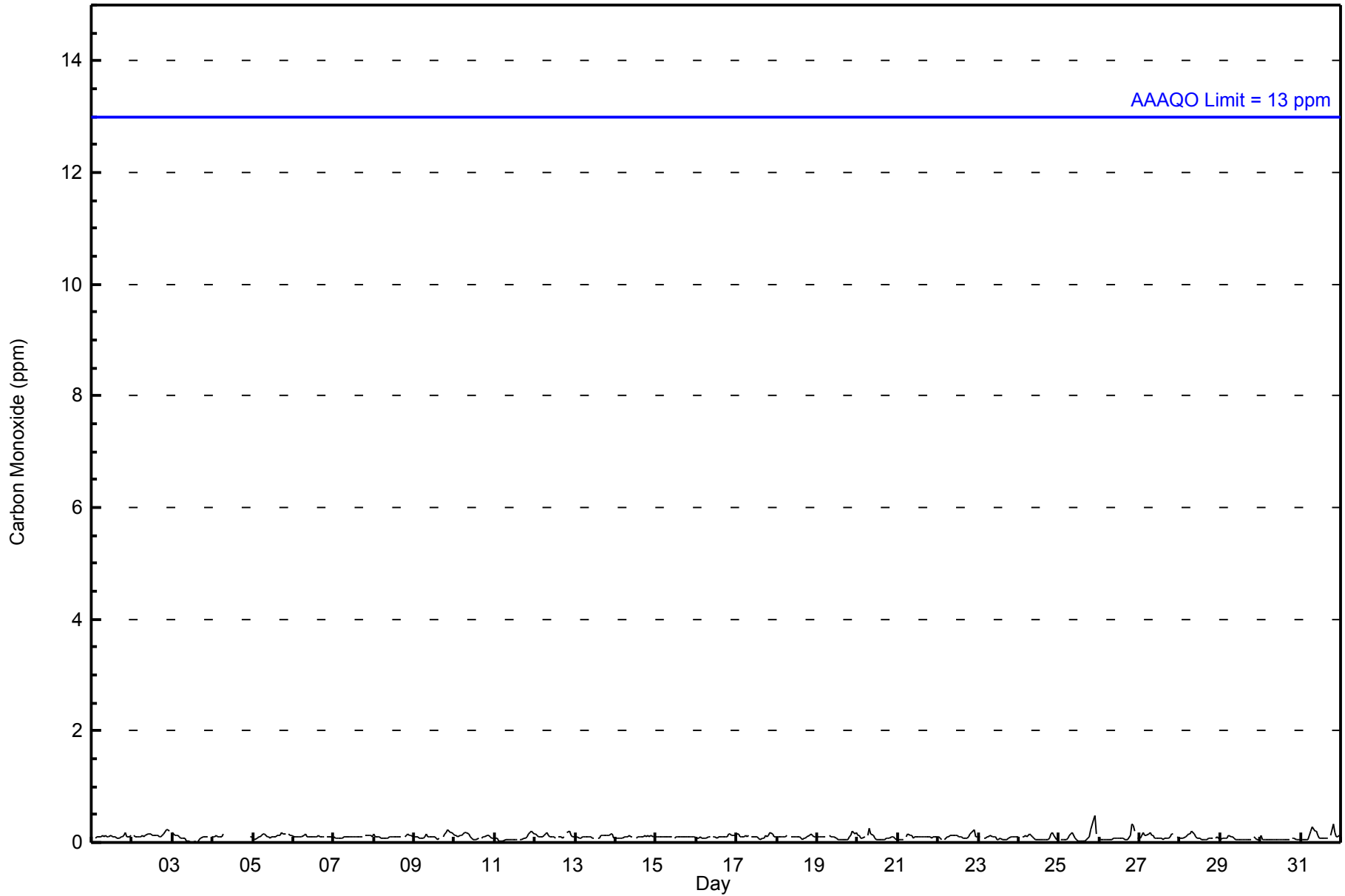
**Pollutant Classes (ppm)**





**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Carbon Monoxide (CO) - ppm  
August 2009**





**Palliser Airshed Society - Crescent Heights**  
**8 Hr Running Averages**

**Carbon Monoxide (CO) - ppm**  
**August 2009**

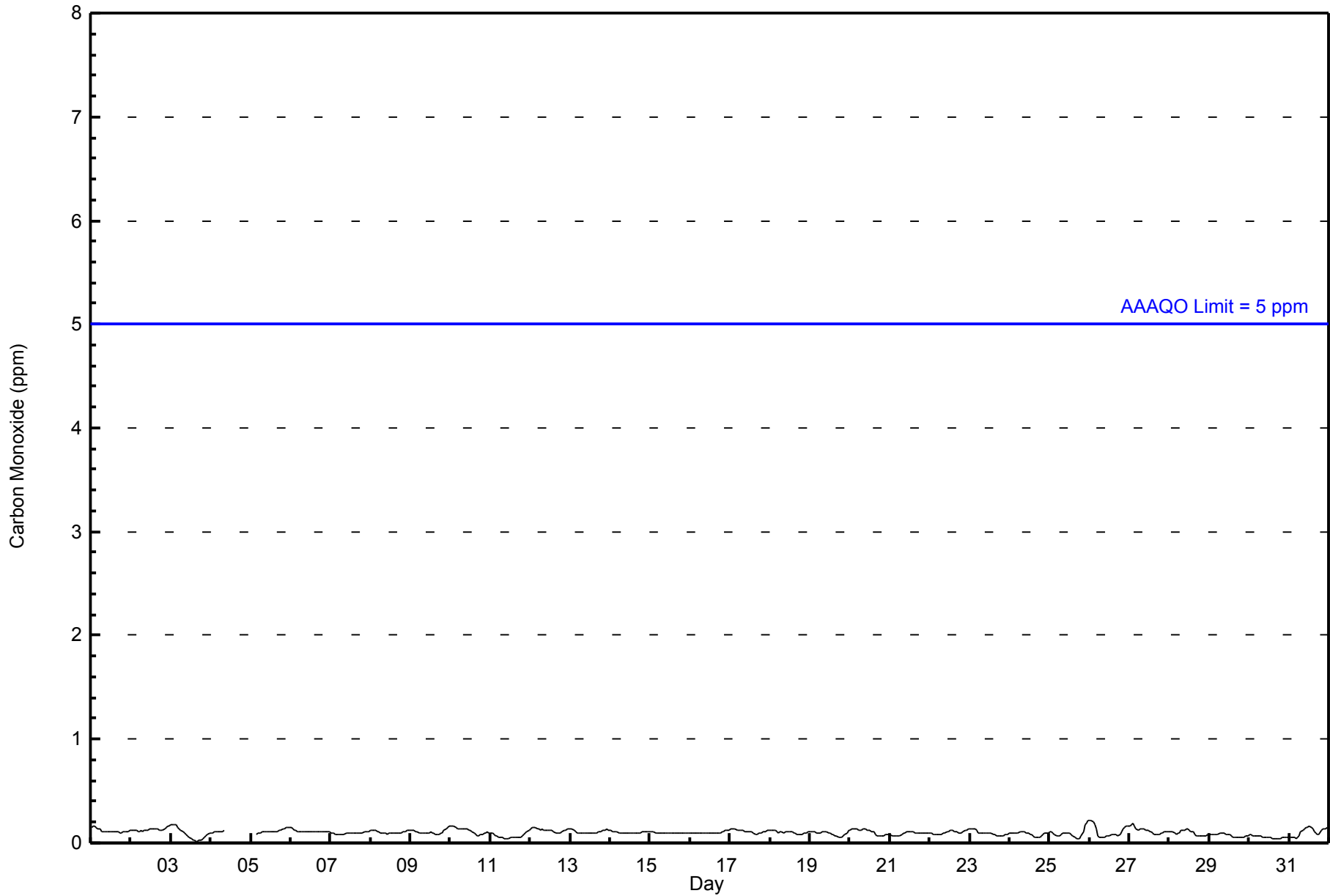
Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 0.22 ppm on Aug 26 01:00																		Hours in Service: 744 Hours of Data: 726 Hours of Missing Data: 18 Hours of Calibration: 18 Percent Operational Time: 100.0							
Minimum Value: 0.01 ppm on Aug 3 16:00																									
Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.1 Q <sub>1</sub> = 0.1 Median = 0.1 Q <sub>3</sub> = 0.1 P <sub>90</sub> = 0.1 P <sub>99</sub> = 0.2																									
Day	Hourly Period Ending At (MST)																							Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
1-Aug	0.15	0.16	0.16	0.15	0.14	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.12	0.16
2-Aug	0.12	0.13	0.13	0.13	0.12	0.12	0.12	0.11	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.12	0.13	0.14	0.15	0.16	0.17	0.17
3-Aug	0.17	0.18	0.18	0.17	0.15	0.13	0.12	0.11	0.10	0.08	0.07	0.05	0.04	0.03	0.02	0.01	0.02	0.02	0.03	0.04	0.06	0.07	0.08	0.09	0.18
4-Aug	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	0.12
5-Aug	C	C	C	0.09	0.09	0.09	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.15	
6-Aug	0.14	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.14	
7-Aug	0.10	0.09	0.09	0.09	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	
8-Aug	0.12	0.12	0.12	0.12	0.11	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.12	0.12	
9-Aug	0.12	0.12	0.12	0.11	0.10	0.10	0.10	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.08	0.08	0.08	0.09	0.10	0.12	0.13	0.15	0.16	
10-Aug	0.16	0.16	0.16	0.15	0.14	0.14	0.14	0.14	0.14	0.14	0.13	0.13	0.12	0.11	0.10	0.08	0.07	0.07	0.08	0.09	0.10	0.10	0.10	0.16	
11-Aug	0.10	0.10	0.09	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.08	0.10	0.11	0.12	
12-Aug	0.13	0.14	0.15	0.15	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.11	0.10	0.09	0.09	0.09	0.11	0.13	0.13	0.13	0.13	
13-Aug	0.13	0.13	0.12	0.11	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.13	0.13	
14-Aug	0.12	0.12	0.11	0.11	0.10	0.10	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.10	0.10	0.10	0.11	0.11	0.11	0.11	
15-Aug	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	
16-Aug	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.11	0.12	0.12	0.12	
17-Aug	0.13	0.14	0.14	0.13	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.11	0.11	0.12	0.12	
18-Aug	0.13	0.12	0.12	0.12	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.08	0.09	0.09	0.10	0.10	0.11	
19-Aug	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.08	0.07	0.06	0.06	0.05	0.06	0.07	0.09	0.10	0.12	
20-Aug	0.13	0.14	0.14	0.13	0.13	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.12	0.11	0.11	0.08	0.07	0.06	0.06	0.07	0.07	0.08	0.08	0.08	
21-Aug	0.08	0.07	0.07	0.07	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	
22-Aug	0.09	0.09	0.09	0.09	0.08	0.08	0.08	0.09	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.11	0.10	0.10	0.10	0.10	0.11	0.12	0.12	0.13	
23-Aug	0.13	0.13	0.14	0.13	0.12	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.08	0.07	0.06	0.06	0.07	0.07	0.08	0.08	0.08	
24-Aug	0.09	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.10	0.10	0.09	0.08	0.07	0.06	0.06	0.05	0.06	0.07	0.09	0.10	0.10	0.11	
25-Aug	0.10	0.10	0.10	0.09	0.07	0.06	0.07	0.09	0.10	0.10	0.10	0.10	0.09	0.08	0.07	0.05	0.04	0.04	0.04	0.07	0.11	0.17	0.19	0.21	
26-Aug	0.22	0.22	0.21	0.18	0.13	0.07	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.07	0.07	0.08	0.11	0.13	0.15	0.16	0.16	
27-Aug	0.17	0.18	0.19	0.16	0.13	0.12	0.13	0.14	0.14	0.14	0.12	0.12	0.11	0.11	0.09	0.08	0.08	0.08	0.08	0.09	0.10	0.10	0.11	0.11	
28-Aug	0.11	0.11	0.10	0.09	0.09	0.09	0.10	0.12	0.13	0.13	0.13	0.13	0.12	0.11	0.10	0.08	0.07	0.07	0.06	0.06	0.06	0.06	0.07	0.08	
29-Aug	0.08	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.08	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	
30-Aug	0.07	0.08	0.07	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	
31-Aug	0.05	0.05	0.05	0.05	0.04	0.05	0.07	0.10	0.12	0.14	0.15	0.16	0.16	0.15	0.14	0.11	0.10	0.09	0.09	0.12	0.14	0.14	0.14	0.15	
0.22 0.22 0.21 0.18 0.15 0.14 0.14 0.14 0.14 0.14 0.14 0.15 0.16 0.16 0.15 0.14 0.13 0.13 0.13 0.12 0.13 0.14 0.17 0.19 0.21																									
Diurnal Maximum																									
C - Calibration Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm																									





**Palliser Airshed Society - Crescent Heights  
8 Hr Running Averages**

**Carbon Monoxide (CO) - ppm  
August 2009**



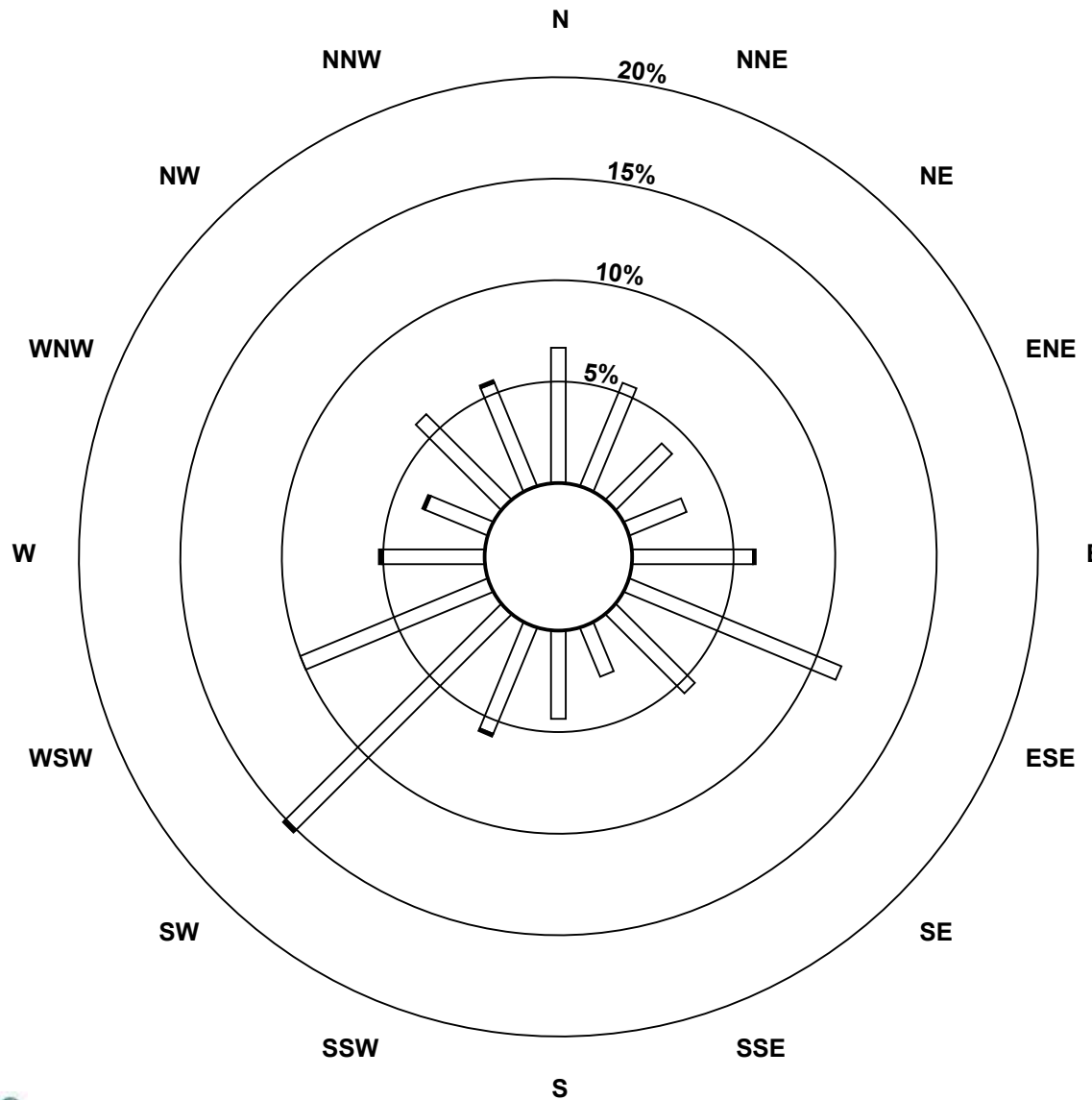




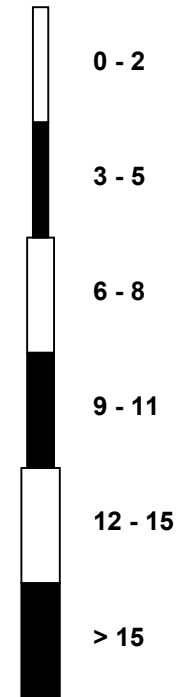


**Palliser Airshed Society - Crescent Heights  
Pollutant Rose**

**Total Hydrocarbon (THC) - ppm  
August 2009**



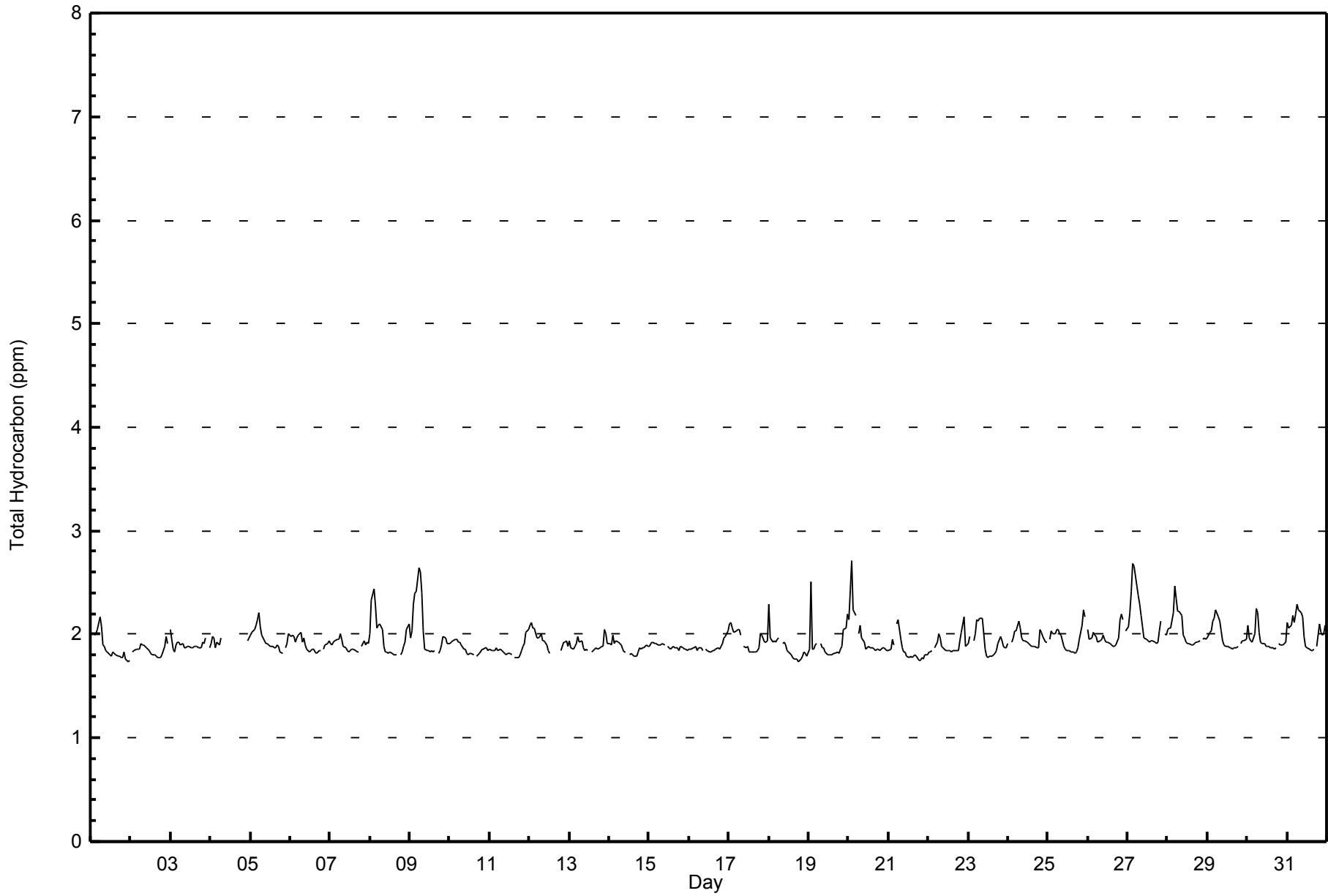
**Pollutant Classes (ppm)**





**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Total Hydrocarbon (THC) - ppm  
August 2009**





# Palliser Airshed Society - Crescent Heights

## Hourly Averages

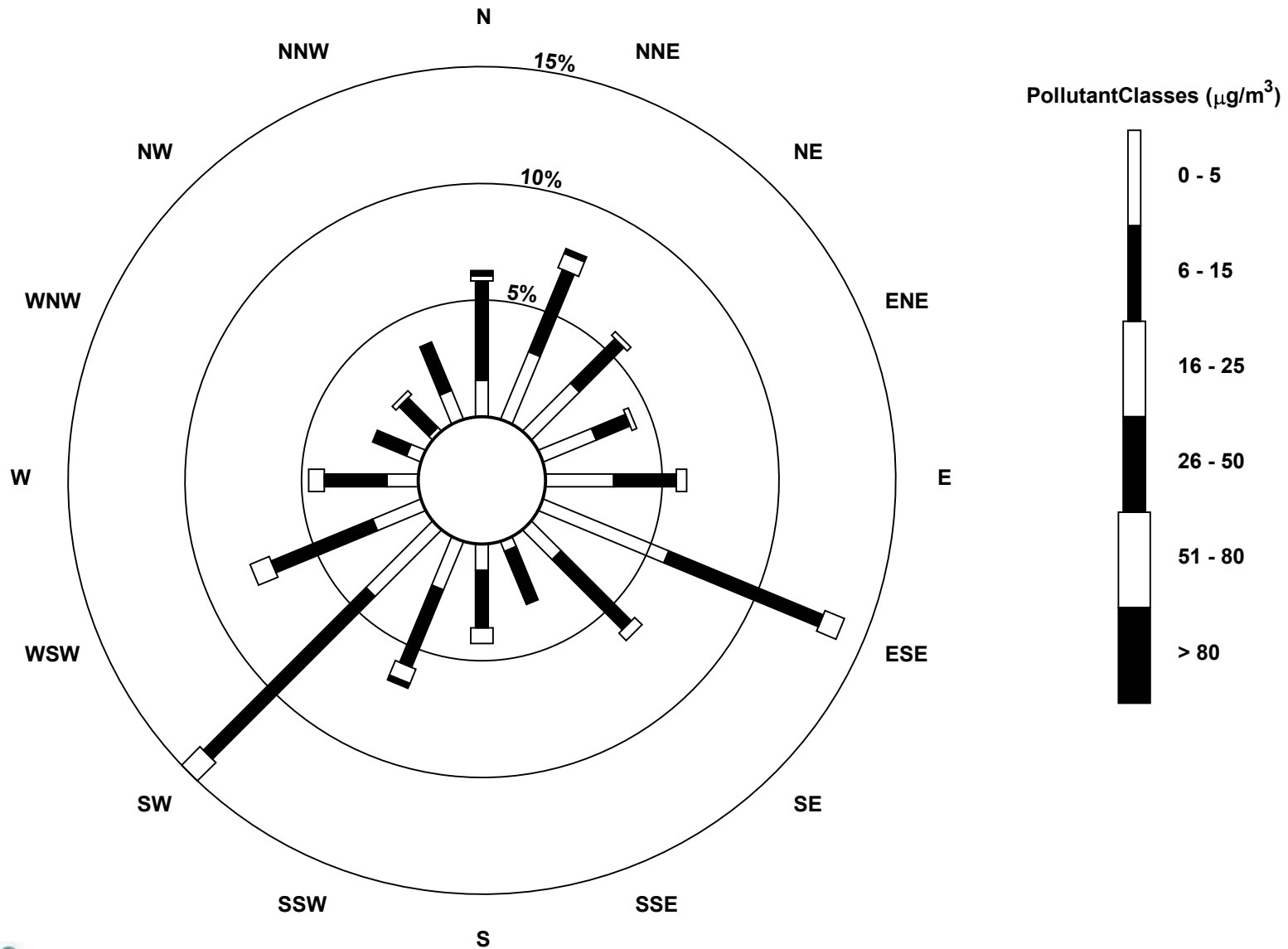
**PM2.5 (PM<sub>2.5</sub>) - µg/m<sup>3</sup>**  
**August 2009**

Number of Exceedances (AAAQO): 1-hr: 0 24-hr: 0 Maximum Value: 43.7 µg/m <sup>3</sup> on Aug 29 04:00      Maximum Daily Average: 11.3 µg/m <sup>3</sup> on Aug 26																	Hours in Service: 744 Hours of Data: 447 Hours of Missing Data: 297 Hours of Calibration: 9 Percent Operational Time: 61.3																															
Minimum Value: 0 µg/m <sup>3</sup> on Aug 1 16:00      Minimum Daily Average: 3.4 µg/m <sup>3</sup> on Aug 4 Maximum Diurnal Average: 13.5 µg/m <sup>3</sup> at hour 22      Minimum Diurnal Average: 5.5 µg/m <sup>3</sup> at hour 13 Monthly Average: 8.1 µg/m <sup>3</sup> Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 2.5 Q <sub>1</sub> = 4.7 Median = 7.0 Q <sub>3</sub> = 11.1 P <sub>90</sub> = 14.9 P <sub>99</sub> = 19.0																																																
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum																						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24																								
1-Aug	8	8	8	7	8	9	10	12	11	6	13	10	3	11	7	0	5	10	7	23	18	31	0	9	9.7	30.8																						
2-Aug	6	3	6	8	6	8	10	9	14	12	13	9	0	12	14	11	5	11	14	15	20	19	19	18	10.9	20.1																						
3-Aug	11	15	16	10	3	11	0	5	0	1	0	0	0	2	0	2	3	3	2	9	0	4	0	5	4.2	15.7																						
4-Aug	6	6	2	0	3	1	2	1	M	6	6	6	3	5	3	3	1	1	3	3	4	5	5	4	3.4	6.4																						
5-Aug	2	2	4	2	4	4	6	3	2	6	1	2	3	4	5	5	8	10	9	10	12	10	11	7	5.5	11.6																						
6-Aug	5	5	7	5	3	5	7	6	6	7	4	7	6	8	8	6	5	6	7	6	8	7	5	6	6.0	7.6																						
7-Aug	5	5	5	7	7	8	8	7	8	8	7	6	6	5	5	5	5	6	6	9	9	7	6	4	6.5	9.3																						
8-Aug	6	5	4	4	2	5	6	6	6	5	5	4	3	4	4	4	5	5	5	5	9	7	7	6	5.1	9.0																						
9-Aug	4	5	5	5	5	5	7	8	8	6	7	7	5	2	3	8	9	9	11	12	10	15	18	18	8.0	18.5																						
10-Aug	14	11	11	12	12	16	18	18	13	10	3	3	3	3	6	4	7	5	7	8	9	6	6	5	8.8	17.6																						
11-Aug	4	3	3	1	2	4	5	4	5	5	4	3	3	4	0	3	4	5	5	13	14	14	14	12	5.6	14.0																						
12-Aug	11	10	7	8	7	6	6	7	2	6	5	2	C	C	C	C	C	C	C	C	C	M	M	M	--	11.4																						
13-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
14-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
15-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
16-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
17-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
18-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
19-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
20-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
21-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
22-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
23-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	--																						
24-Aug	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	--	13.2																						
25-Aug	16	6	14	8	13	12	12	15	13	7	8	10	5	7	4	8	8	8	7	7	10	18	36	6	10.6	35.8																						
26-Aug	0	0	0	25	0	13	8	12	12	14	12	14	14	13	16	11	9	11	13	12	13	24	16	11	11.3	24.8																						
27-Aug	0	15	11	18	20	16	14	15	15	12	12	10	12	7	5	8	8	4	9	16	11	14	6	8	11.2	19.6																						
28-Aug	5	12	9	10	11	11	9	13	18	15	14	7	6	7	4	10	10	10	9	7	13	18	0	0	9.5	18.3																						
29-Aug	11	0	1	44	8	13	16	19	13	8	5	7	11	7	6	8	8	4	7	6	8	13	5	8	9.9	43.7																						
30-Aug	3	6	15	21	20	19	11	3	14	6	3	8	7	12	11	5	7	8	7	9	12	12	6	8	9.6	20.6																						
31-Aug	9	10	10	8	4	8	8	15	10	17	8	8	6	9	4	4	4	10	11	12	17	21	13	17	10.1	21.0																						
																								6.7	6.7	7.2	10.6	7.2	9.2	8.6	9.2	9.5	8.4	6.8	6.4	5.5	6.8	5.8	5.8	6.1	7.0	7.7	10.1	11.1	13.5	9.8	8.7	Diurnal Average
																								16.4	15.3	15.7	43.7	19.6	18.6	17.6	18.6	18.3	17.2	14.2	14.5	13.6	12.9	15.7	11.1	9.5	11.4	13.7	23.1	20.1	30.8	35.8	18.5	Diurnal Maximum
C - Calibration      M - Missing Alberta Ambient Air Quality Objectives (AAAQO): 24-hr 30 ug/m3																																																



**Palliser Airshed Society - Crescent Heights  
PollutantRose**

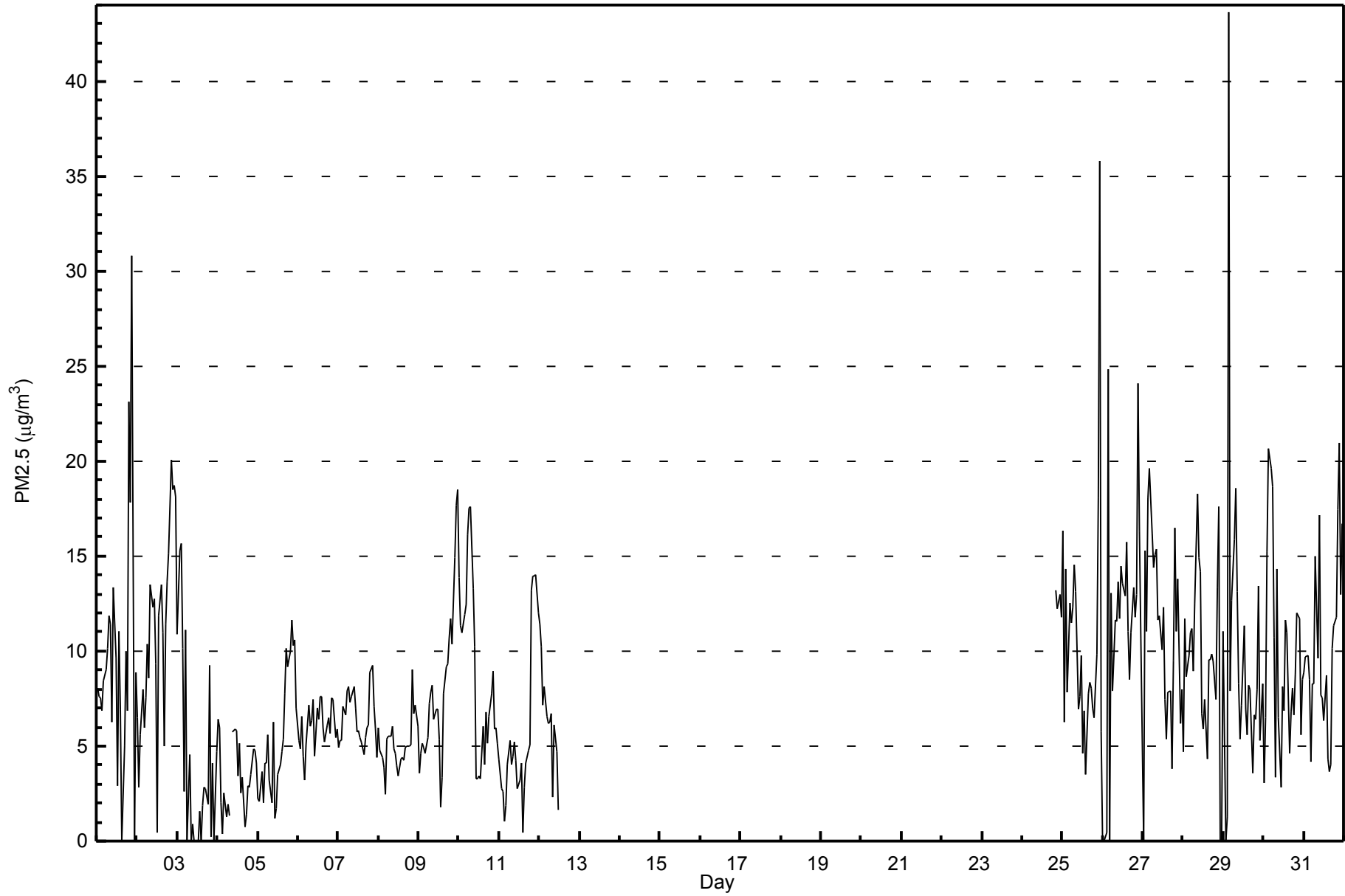
**PM<sub>2.5</sub> (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
August 2009**





Palliser Airshed Society - Crescent Heights  
Hourly Averages

PM2.5 (PM<sub>2.5</sub>) -  $\mu\text{g}/\text{m}^3$   
August 2009





# Palliser Airshed Society - Crescent Heights

## Hourly Averages

# External Temperature (ET) - °C

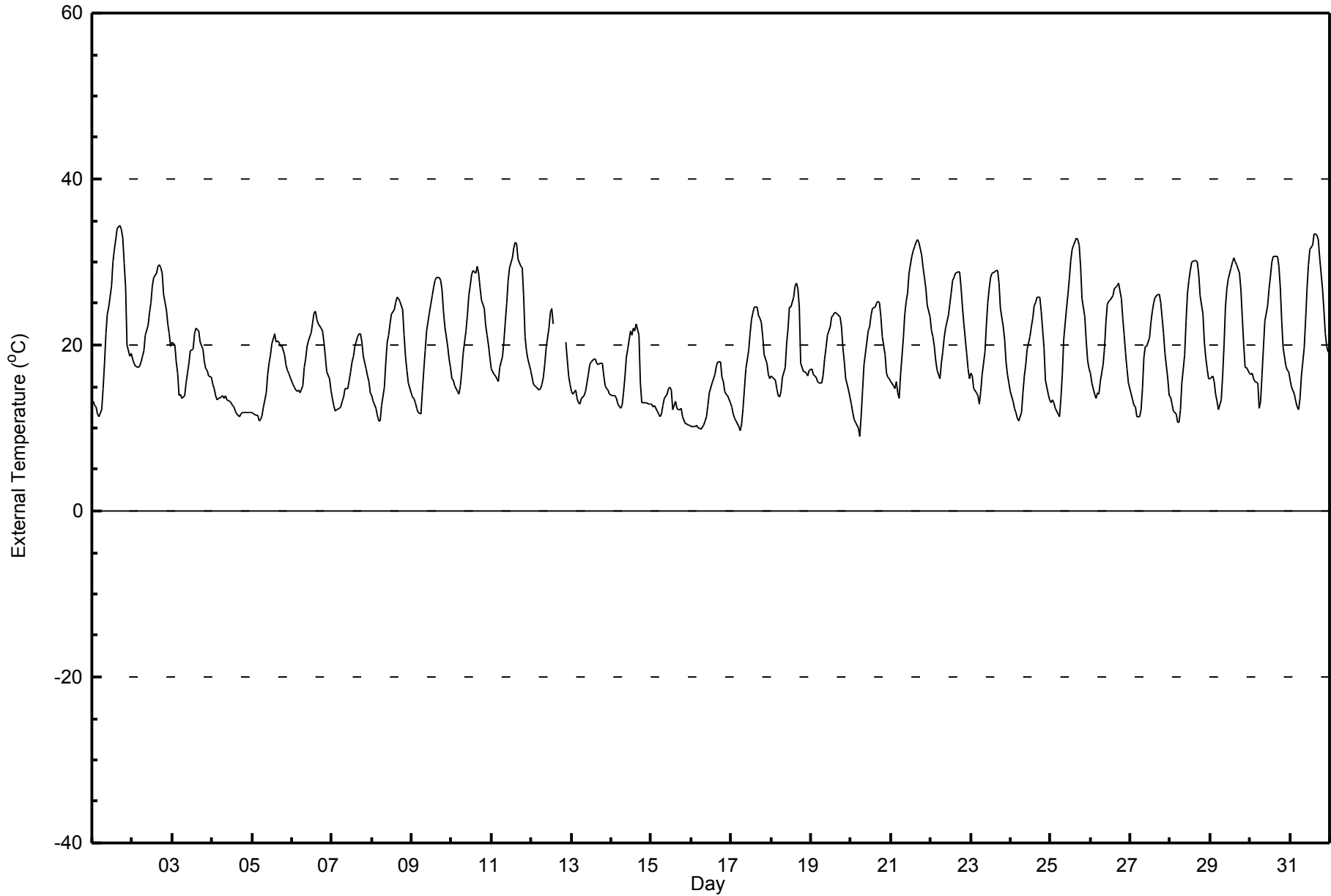
## August 2009

Maximum Value: 34.5 °C on Aug 1 17:00		Maximum Daily Average: 24.4 °C on Aug 21																				Hours in Service: 744					
Minimum Value: 9 °C on Aug 20 06:00		Minimum Daily Average: 12.4 °C on Aug 15																				Hours of Data: 738					
Maximum Diurnal Average: 25.8 °C at hour 16		Minimum Diurnal Average: 12.8 °C at hour 6																				Hours of Missing Data: 6					
Monthly Average: 19.2 °C		Percentiles: P <sub>1</sub> = 10.2 P <sub>10</sub> = 12.2 Q <sub>1</sub> = 14.2 Median = 17.8 Q <sub>3</sub> = 23.7 P <sub>90</sub> = 28.3 P <sub>99</sub> = 32.7																				Hours of Calibration: 0					
																						Percent Operational Time: 99.2					
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Aug	13	13	12	12	11	12	15	18	21	24	25	27	30	32	33	34	34	34	33	30	27	20	19	19	22.8	34.5	
2-Aug	18	18	17	17	17	18	19	19	21	22	24	25	27	28	29	29	30	29	29	26	24	23	21	20	23.0	29.7	
3-Aug	20	20	18	17	14	14	14	14	15	17	18	19	19	21	22	22	22	20	20	18	17	17	16	16	17.9	22.1	
4-Aug	15	15	14	13	14	14	14	14	14	13	13	13	13	13	12	12	11	12	12	12	12	12	12	12	12.9	15.3	
5-Aug	12	12	12	12	11	11	12	13	14	17	18	19	20	21	20	21	20	20	20	19	18	17	17	16	16.2	21.4	
6-Aug	15	15	15	14	15	14	15	17	18	20	20	22	23	24	24	23	23	22	22	20	19	17	16	15	18.6	24.1	
7-Aug	14	13	12	12	12	13	13	14	15	15	16	17	18	19	20	21	21	21	20	19	17	16	16	14	16.1	21.3	
8-Aug	14	13	12	11	11	11	13	15	18	20	21	23	24	24	25	26	26	25	24	21	19	17	15	14	18.4	25.8	
9-Aug	14	14	13	12	12	12	14	17	19	22	24	25	26	27	28	28	28	28	27	24	22	20	18	17	20.4	28.2	
10-Aug	16	16	15	14	14	15	17	19	22	23	26	27	28	29	29	30	29	27	25	24	22	21	20	19	22.0	29.5	
11-Aug	17	16	16	16	16	17	19	20	23	25	28	29	30	32	32	32	30	29	29	26	21	19	18	17	23.3	32.5	
12-Aug	16	15	15	15	15	15	15	16	18	20	22	24	24	23	M	M	M	M	M	M	20	18	16	15	17.9	24.4	
13-Aug	14	14	15	14	13	13	14	14	14	15	16	18	18	18	18	18	18	18	16	15	15	15	14	14	15.6	18.3	
14-Aug	14	14	14	14	13	12	13	14	16	18	19	22	21	22	22	23	21	15	13	13	13	13	13	13	16.1	22.5	
15-Aug	13	13	13	12	12	11	12	13	14	14	15	15	15	12	13	12	12	12	12	11	11	11	10	10	12.4	15.0	
16-Aug	10	10	10	10	10	10	10	10	11	11	13	14	15	16	17	17	18	18	16	16	14	14	14	13	13.3	17.9	
17-Aug	13	12	11	11	10	10	11	12	15	17	19	21	23	24	25	25	24	23	23	21	19	18	16	16	17.4	24.6	
18-Aug	16	16	16	15	14	14	14	16	17	20	22	25	25	26	27	27	27	25	18	17	17	17	16	17	19.3	27.4	
19-Aug	17	16	16	16	16	15	15	16	18	20	21	22	23	24	24	24	24	23	22	20	18	16	15	14	19.0	23.9	
20-Aug	13	12	11	11	10	9	12	15	18	20	22	22	24	24	25	25	25	25	23	21	19	17	16	16	18.0	25.3	
21-Aug	16	15	15	16	14	14	16	21	24	25	26	29	31	31	32	32	33	32	31	29	28	27	25	23	24.4	32.7	
22-Aug	22	21	20	18	17	16	18	19	21	22	24	25	26	28	28	29	29	29	27	25	23	19	17	16	22.3	28.8	
23-Aug	17	16	15	14	14	13	14	16	19	22	25	27	28	29	29	29	29	27	24	22	21	18	16	15	20.9	29.0	
24-Aug	14	13	12	12	11	11	12	14	16	18	19	21	22	23	25	25	26	26	24	22	20	16	14	13	17.9	25.8	
25-Aug	13	13	13	12	12	11	14	17	21	24	26	28	30	31	32	33	33	32	30	26	23	21	18	17	22.1	32.8	
26-Aug	17	15	14	14	14	14	16	18	20	23	25	25	26	26	27	27	27	27	26	23	21	19	17	15	20.6	27.5	
27-Aug	14	13	13	12	11	11	12	15	19	20	20	21	23	24	25	26	26	26	25	23	21	19	16	14	18.7	26.1	
28-Aug	14	13	12	12	11	11	12	15	19	23	26	28	29	30	30	30	30	29	26	24	20	18	17	16	20.6	30.2	
29-Aug	16	16	16	14	13	12	13	16	20	25	27	28	29	30	31	30	30	29	27	23	20	17	17	17	21.5	30.5	
30-Aug	16	17	16	16	15	12	13	16	20	23	25	27	28	30	31	31	31	30	27	23	20	17	17	17	21.5	30.7	
31-Aug	16	15	14	13	13	12	14	16	20	23	27	30	32	32	33	33	33	33	31	27	24	21	20	19	22.9	33.5	
		15.1	14.6	14.1	13.6	13.0	12.8	14.0	15.8	18.0	20.1	21.7	23.1	24.2	24.9	25.5	25.8	25.6	24.9	23.4	21.4	19.5	17.7	16.6	15.8	Diurnal Average	
		21.6	21.0	19.8	18.1	17.5	17.9	18.7	20.9	23.8	25.3	27.7	29.7	31.6	32.0	33.5	34.1	34.5	33.9	32.9	29.9	28.2	26.8	24.8	23.4	Diurnal Maximum	
M - Missing																											



**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

**External Temperature (ET) - °C**  
**August 2009**







# Palliser Airshed Society - Crescent Heights

## Hourly Averages

# Relative Humidity (RH) - %

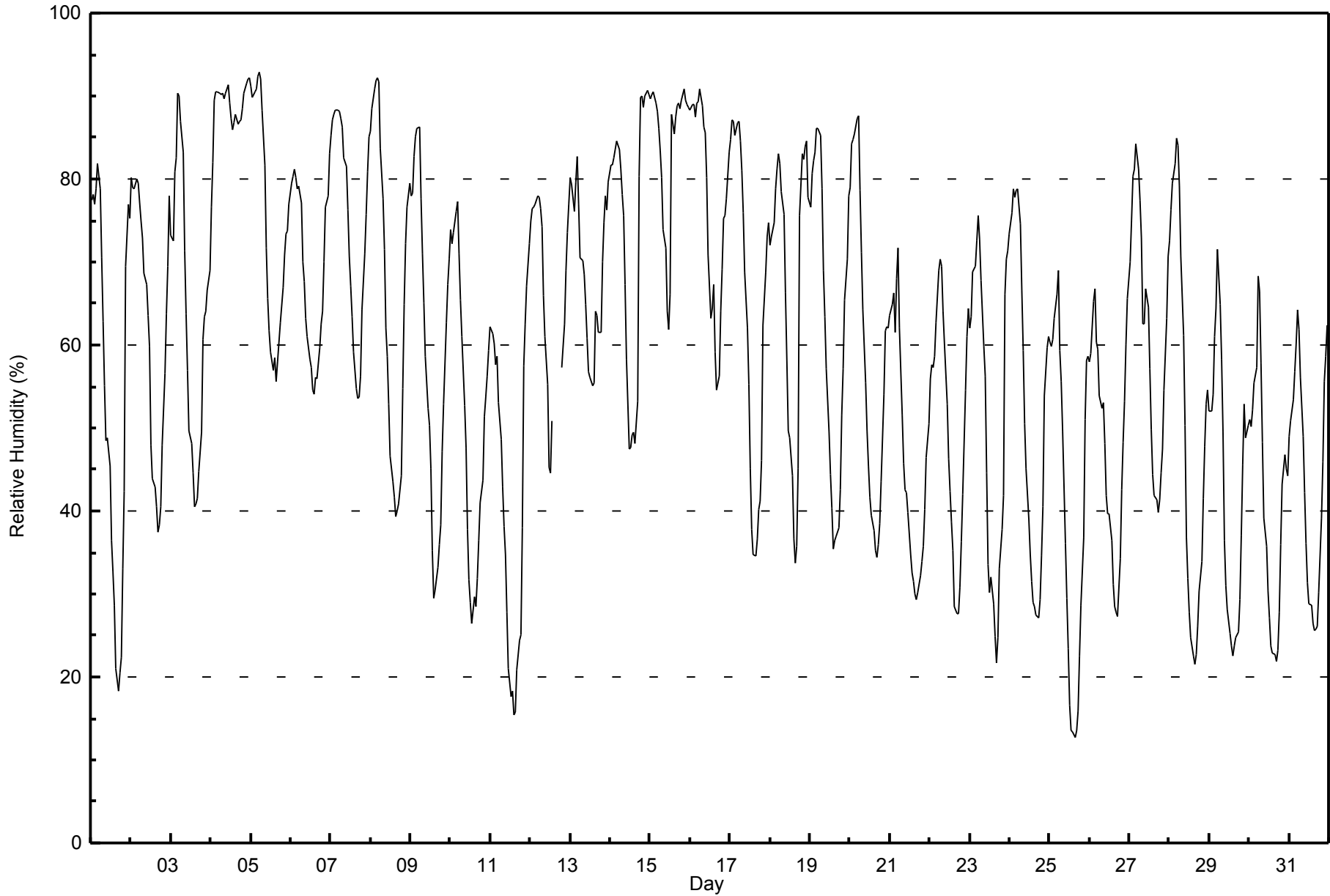
## August 2009

Maximum Value: 92.9 % on Aug 5 06:00		Maximum Daily Average: 88.5 % on Aug 4		Hours in Service: 744																							
Minimum Value: 13 % on Aug 25 16:00		Minimum Daily Average: 40.6 % on Aug 25		Hours of Data: 739																							
Maximum Diurnal Average: 79.0 % at hour 6		Minimum Diurnal Average: 38.6 % at hour 16		Hours of Missing Data: 5																							
Monthly Average: 59.9 %		Percentiles: P <sub>1</sub> = 16.5 P <sub>10</sub> = 30.1 Q <sub>1</sub> = 43.4 Median = 61.6 Q <sub>3</sub> = 77.6 P <sub>90</sub> = 87.0 P <sub>99</sub> = 91.6		Hours of Calibration: 0																							
				Percent Operational Time: 99.3																							
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Aug	77	78	77	79	82	79	70	63	55	48	49	45	36	33	29	21	18	20	22	33	42	69	77	75	53.3	81.9	
2-Aug	80	79	79	80	79	77	75	73	69	67	63	60	48	44	43	41	38	38	40	48	57	64	70	78	62.0	80.2	
3-Aug	73	73	81	83	90	90	87	83	71	64	57	50	48	45	41	41	41	45	50	61	63	64	67	69	64.0	90.3	
4-Aug	77	82	89	90	91	90	90	90	90	90	91	89	87	86	87	88	87	87	87	88	90	91	92	92	88.5	92.3	
5-Aug	91	90	90	91	92	93	92	88	82	72	66	62	59	57	58	56	58	60	63	67	71	73	74	77	74.2	92.9	
6-Aug	79	80	81	80	79	79	77	70	68	63	61	58	57	55	54	56	56	60	63	64	70	77	78	83	68.7	83.0	
7-Aug	85	87	88	88	88	88	87	86	83	81	76	71	67	63	59	55	54	54	56	64	71	76	81	85	74.8	88.3	
8-Aug	86	88	91	92	92	92	84	78	72	62	59	53	47	44	42	39	40	41	44	55	65	72	77	80	66.3	92.2	
9-Aug	78	78	83	85	86	86	78	71	65	59	52	50	45	35	30	31	33	36	38	47	53	63	67	70	59.2	86.2	
10-Aug	74	72	74	76	77	71	65	61	53	48	38	32	29	26	30	28	32	36	41	44	51	54	56	59	51.2	77.3	
11-Aug	62	61	60	58	59	53	49	43	38	35	28	21	18	18	15	16	21	24	25	38	57	63	67	72	41.7	72.2	
12-Aug	75	76	77	77	78	78	76	74	66	61	55	45	45	51	Mn	Mn	M	M	M	57	63	69	74	77	67.0	77.9	
13-Aug	80	79	76	80	83	77	71	70	68	65	61	57	56	55	55	64	64	62	62	70	75	78	76	80	69.3	82.7	
14-Aug	82	82	83	84	85	84	81	78	76	67	58	47	48	49	50	48	53	80	90	90	89	90	91	90	73.9	90.7	
15-Aug	90	90	91	89	88	86	83	80	74	72	64	62	66	88	85	87	89	89	88	89	91	90	89	89	83.7	90.8	
16-Aug	88	89	89	88	89	89	91	89	86	86	80	71	63	64	67	59	55	56	64	69	75	76	78	83	76.9	90.9	
17-Aug	85	87	87	85	87	87	85	81	76	69	62	55	45	38	35	35	37	40	41	46	62	69	73	75	64.2	87.1	
18-Aug	72	73	75	79	81	83	82	78	76	66	58	50	49	44	37	34	36	45	76	83	82	84	85	78	66.8	84.5	
19-Aug	77	81	82	83	86	86	85	79	69	63	57	50	44	40	35	37	37	38	43	51	57	65	70	78	62.3	86.1	
20-Aug	79	84	85	85	87	88	79	71	64	55	50	45	42	39	38	35	34	36	38	43	54	62	62	62	59.1	87.6	
21-Aug	64	65	66	62	68	72	62	52	46	43	42	40	35	33	31	30	29	30	32	34	36	40	46	51	46.1	71.6	
22-Aug	56	58	57	59	63	69	70	69	64	60	53	46	42	39	35	28	28	28	31	36	42	55	61	64	50.5	70.3	
23-Aug	62	63	69	69	72	76	73	68	60	56	45	34	30	32	29	25	22	25	33	38	42	66	70	71	51.2	75.6	
24-Aug	73	76	79	78	79	79	75	67	59	50	45	39	35	32	29	28	27	27	29	35	40	54	60	61	52.3	78.8	
25-Aug	60	60	61	63	66	69	59	56	50	36	29	23	17	14	13	13	14	16	23	29	37	51	58	59	40.6	69.0	
26-Aug	58	59	65	67	60	59	54	52	53	48	42	40	40	36	31	29	28	27	34	43	48	53	60	66	48.0	66.8	
27-Aug	70	75	80	81	84	81	77	73	63	63	67	65	57	50	44	42	41	40	41	45	48	55	63	71	61.5	84.3	
28-Aug	73	76	80	82	85	84	79	71	61	50	37	32	28	25	23	22	23	26	30	34	42	48	53	55	50.6	84.9	
29-Aug	52	52	54	61	64	72	65	58	50	36	31	28	25	24	22	24	25	25	29	37	46	53	49	50	43.0	71.6	
30-Aug	51	50	52	55	57	68	66	58	48	39	36	30	27	24	23	23	22	23	28	36	43	47	45	44	41.5	68.3	
31-Aug	49	51	53	57	60	64	62	56	49	42	36	31	29	29	26	26	26	26	30	39	46	56	59	62	44.3	64.2	
		72.8	74.1	75.9	76.9	78.7	79.0	75.2	70.5	64.6	58.6	53.2	47.8	44.0	42.3	39.9	38.6	38.8	41.4	45.8	52.0	58.3	65.3	68.6	71.1	Diurnal Average	
		91.2	90.2	90.8	91.8	92.4	92.9	92.1	90.4	89.7	90.3	91.4	89.2	87.3	87.9	86.8	87.9	88.8	89.2	89.9	89.9	90.8	91.5	92.1	92.3	Diurnal Maximum	
M - Missing		Mn - Maintenance																									



**Palliser Airshed Society - Crescent Heights  
Hourly Averages**

**Relative Humidity (RH) - %  
August 2009**





**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

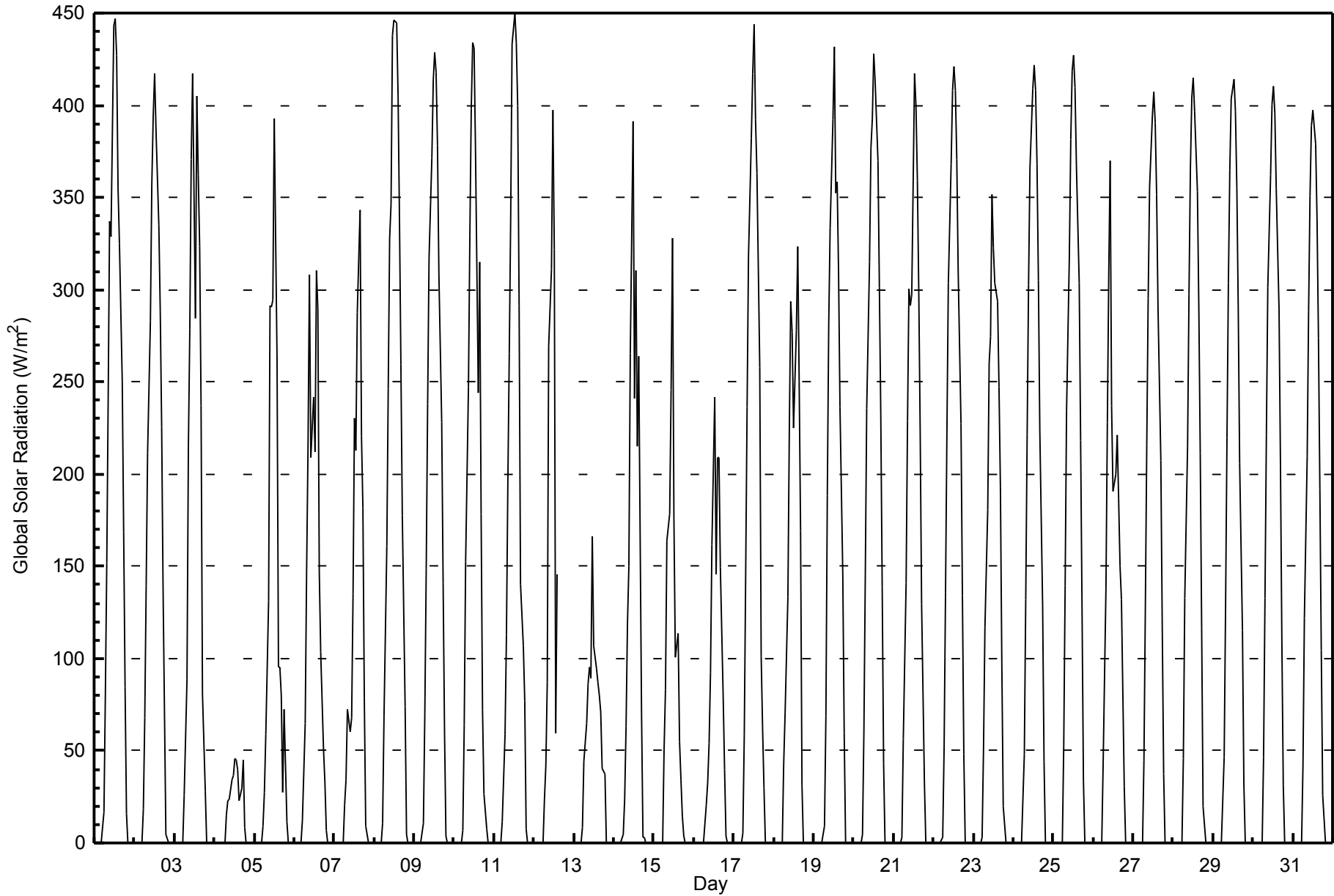
**Global Solar Radiation (GR) - W/m<sup>2</sup>**  
**August 2009**

Maximum Value: 449.7 W/m <sup>2</sup> on Aug 11 13:00		Maximum Daily Average: 156.2 W/m <sup>2</sup> on Aug 8		Hours in Service: 744 Hours of Data: 740 Hours of Missing Data: 4 Hours of Calibration: 0 Percent Operational Time: 99.5																							
Minimum Value: 0 W/m <sup>2</sup> on Aug 1 01:00 Maximum Diurnal Average: 345.7 W/m <sup>2</sup> at hour 12 Monthly Average: 115.6 W/m <sup>2</sup>		Minimum Daily Average: 15.4 W/m <sup>2</sup> on Aug 4 Minimum Diurnal Average: 0.0 W/m <sup>2</sup> at hour 1 Percentiles: P <sub>1</sub> = 0.0 P <sub>10</sub> = 0.0 Q <sub>1</sub> = 0.0 Median = 30.9 Q <sub>3</sub> = 228.0 P <sub>90</sub> = 365.2 P <sub>99</sub> = 432.7																									
Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1-Aug	0	0	0	0	0	17	81	152	241	337	328	443	447	427	355	325	250	168	85	16	0	0	0	0	153.1	447.0	
2-Aug	0	0	0	0	0	19	68	140	211	283	357	394	417	386	335	288	226	138	71	5	0	0	0	0	139.0	417.3	
3-Aug	0	0	0	0	0	0	26	88	215	278	371	417	284	405	363	324	237	80	28	0	0	0	0	0	129.9	417.2	
4-Aug	0	0	0	0	0	0	0	15	23	23	34	37	46	45	39	23	30	45	9	0	0	0	0	0	15.4	45.9	
5-Aug	0	0	0	0	0	9	28	59	131	291	291	294	393	262	95	95	80	28	73	12	0	0	0	0	89.1	392.8	
6-Aug	0	0	0	0	0	12	65	147	214	308	209	242	212	311	289	147	104	51	33	7	0	0	0	0	98.0	310.7	
7-Aug	0	0	0	0	0	0	21	34	72	60	68	135	230	212	287	343	221	181	78	10	0	0	0	0	81.4	343.0	
8-Aug	0	0	0	0	0	11	69	161	246	328	347	438	446	445	405	337	260	178	74	5	0	0	0	0	156.2	446.0	
9-Aug	0	0	0	0	0	11	70	148	238	317	371	413	429	418	378	308	228	141	60	4	0	0	0	0	147.4	428.6	
10-Aug	0	0	0	0	0	7	64	152	247	330	398	434	431	376	244	315	179	72	27	8	0	0	0	0	136.9	433.7	
11-Aug	0	0	0	0	0	11	59	113	195	265	338	433	450	434	399	291	140	107	77	8	0	0	0	0	138.4	449.7	
12-Aug	0	0	0	0	0	0	24	42	87	269	312	397	322	59	145	M	M	M	M	0	0	0	0	0	82.9	397.3	
13-Aug	0	0	0	0	0	9	44	65	86	95	89	166	106	94	87	80	71	41	38	0	0	0	0	0	44.6	166.0	
14-Aug	0	0	0	0	0	5	24	63	119	150	266	392	241	311	215	264	70	3	3	0	0	0	0	0	88.6	391.6	
15-Aug	0	0	0	0	0	0	50	83	164	178	246	328	176	100	114	55	34	14	4	0	0	0	0	0	64.4	327.9	
16-Aug	0	0	0	0	0	0	0	21	33	54	92	162	241	145	209	209	149	79	40	4	0	0	0	0	59.9	241.5	
17-Aug	0	0	0	0	0	5	59	146	237	318	382	417	444	392	363	258	102	62	30	0	0	0	0	0	134.0	444.0	
18-Aug	0	0	0	0	0	0	43	71	134	223	294	277	225	278	324	250	170	31	0	0	0	0	0	0	96.6	323.7	
19-Aug	0	0	0	0	0	0	10	69	189	281	334	392	432	352	358	309	236	146	60	0	0	0	0	0	131.9	432.0	
20-Aug	0	0	0	0	0	5	60	145	235	315	377	393	428	413	370	302	232	138	43	0	0	0	0	0	144.0	427.9	
21-Aug	0	0	0	0	0	3	57	141	229	300	291	298	417	399	359	299	222	130	32	0	0	0	0	0	132.5	417.5	
22-Aug	0	0	0	0	0	3	52	136	224	304	368	408	421	408	371	310	227	134	48	0	0	0	0	0	142.3	421.1	
23-Aug	0	0	0	0	0	3	51	117	181	260	275	352	323	304	293	247	193	97	20	0	0	0	0	0	113.1	351.7	
24-Aug	0	0	0	0	0	0	48	132	222	303	366	409	422	408	368	305	223	129	45	0	0	0	0	0	140.8	422.1	
25-Aug	0	0	0	0	0	0	52	139	234	319	382	419	427	410	368	304	218	127	34	0	0	0	0	0	143.0	427.0	
26-Aug	0	0	0	0	0	0	43	138	228	309	370	237	191	200	221	187	150	132	31	0	0	0	0	0	101.5	369.9	
27-Aug	0	0	0	0	0	0	45	128	215	295	356	395	407	391	352	289	208	118	37	0	0	0	0	0	134.8	407.1	
28-Aug	0	0	0	0	0	0	46	132	215	298	366	404	415	397	353	290	211	117	20	0	0	0	0	0	136.0	415.0	
29-Aug	0	0	0	0	0	0	46	128	220	303	365	404	414	397	355	290	206	116	32	0	0	0	0	0	136.5	414.0	
30-Aug	0	0	0	0	0	0	47	132	221	301	362	401	411	396	355	289	205	109	31	0	0	0	0	0	135.8	410.7	
31-Aug	0	0	0	0	0	0	42	122	210	288	350	389	397	379	338	274	192	104	26	0	0	0	0	0	129.7	397.4	
		0.0	0.0	0.0	0.0	0.0	4.2	44.9	108.4	184.4	257.6	301.7	345.7	343.4	321.1	293.8	253.5	175.8	100.6	39.6	2.5	0.0	0.0	0.0	0.0	Diurnal Average	
		0.0	0.0	0.0	0.0	0.0	18.7	81.1	160.9	247.4	337.5	398.3	443.5	449.7	444.9	405.0	343.0	259.6	181.3	84.6	16.1	0.0	0.0	0.0	0.0	Diurnal Maximum	
M - Missing																											



**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

**Global Solar Radiation (GR) - W/m<sup>2</sup>**  
**August 2009**







# Palliser Airshed Society - Crescent Heights

## Hourly Averages

# Wind Speed (kph), Wind Direction (deg)

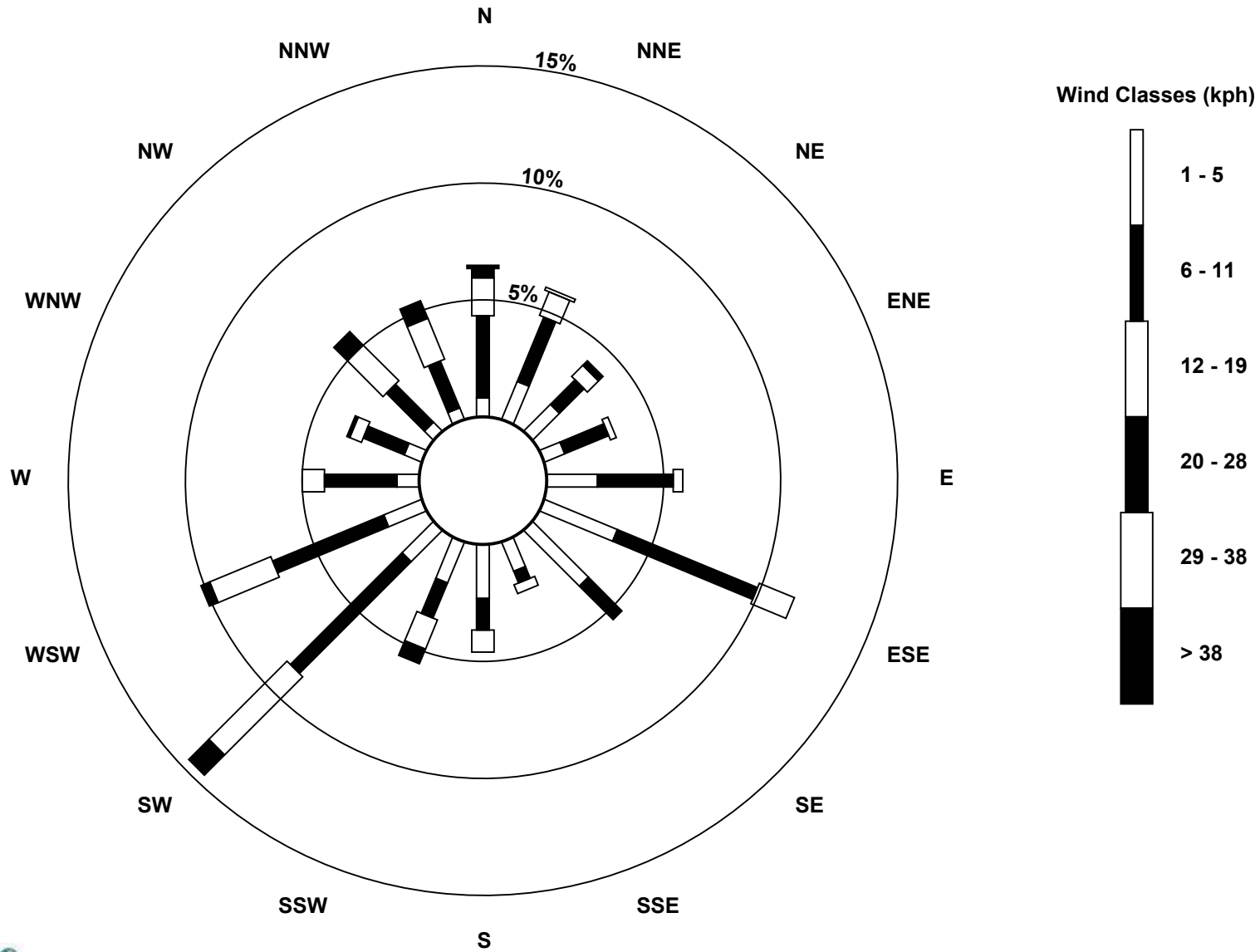
## August 2009

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	5	5	3	6	4	3	1	4	4	3	12	13	9	10	8	7	7	11	14	11	8	24	20	9	8	24
Dir	84	80	170	101	50	270	227	197	244	210	207	219	246	255	280	282	287	339	344	10	7	2	7	5	306.9	2.4
24 Spd	5	8	9	9	8	9	6	7	6	6	5	3	4	5	5	4	4	6	7	8	7	7	9	7	6	9
Dir	306	306	307	309	295	305	304	307	290	285	219	186	225	240	186	203	138	125	93	65	82	123	115	116	213.8	115.3
25 Spd	7	5	6	6	4	5	5	6	6	12	18	18	19	16	13	8	9	9	6	5	4	5	6	6	9	19
Dir	121	163	202	186	181	214	224	222	197	223	215	214	211	246	243	228	245	285	315	286	181	182	210	191	216.1	211.2
26 Spd	9	9	4	3	9	12	14	18	18	15	14	13	11	8	7	8	7	5	5	6	3	5	5	3	9	18
Dir	210	219	176	171	198	213	235	226	226	240	243	242	245	260	270	248	245	295	5	24	69	146	124	110	223.3	226.3
27 Spd	3	2	3	2	5	6	4	7	6	11	12	11	12	12	11	10	9	9	8	8	9	5	6	6	7	12
Dir	151	122	203	279	202	205	241	249	309	349	355	6	359	357	20	14	30	29	31	33	43	114	120	115	359.1	357.2
28 Spd	4	4	4	4	5	4	4	4	4	4	5	4	7	6	6	9	10	12	12	12	8	9	8	7	7	12
Dir	121	140	140	152	146	169	109	116	89	112	141	165	129	104	90	98	106	98	97	106	118	110	115	122	120.5	97.1
29 Spd	7	7	4	4	4	4	5	4	5	3	6	4	9	11	7	11	12	13	13	9	9	6	6	3	7	13
Dir	82	54	43	33	63	42	21	19	61	116	203	162	147	120	136	106	113	113	113	125	135	133	110	97	97.8	113.1
30 Spd	3	8	10	10	8	7	7	6	6	4	5	4	3	3	7	8	8	9	8	7	9	9	7	5	7	10
Dir	193	116	106	92	75	8	355	46	60	85	35	43	96	145	160	116	148	135	132	130	129	122	116	49	97.2	92.5
31 Spd	6	6	5	5	2	2	2	2	5	2	4	3	3	2	7	10	9	7	4	3	6	6	6	3	5	10
Dir	13	12	360	14	43	36	281	271	213	260	47	202	182	271	180	186	185	187	176	95	107	116	113	209	141.6	186.0
Spd	7	8	8	8	8	8	7	8	10	11	12	12	11	11	10	10	10	10	10	9	8	10	9	7	Diurnal Average	
Dir	156.3	317.9	191.8	173.8	170.4	247.9	249.6	252.2	257.3	236.6	252.7	260.2	215.3	208.4	211.9	214.3	207.9	240.4	26.4	19.0	91.0	132.6	153.1	156.1	Diurnal Maximum	
Spd	19	19	20	21	19	24	25	26	28	24	25	25	25	24	26	25	23	21	23	21	23	39	29	18		
Dir	310.5	36.9	42.0	35.9	24.2	222.3	213.9	208.8	207.7	207.0	216.8	235.4	242.8	231.5	333.1	342.7	344.1	349.3	314.7	318.6	320.1	357.2	21.0	310.1		
Maximum Speed Value: 39 kph on Aug 1 22:00		Minimum Speed Value: 0 kph on Aug 4 20:00																	Hours in Service: 744							
Maximum Daily Speed Average: 18 kph on Aug 15		Minimum Daily Speed Average: 5 kph on Aug 31																	Hours of Data: 739							
Maximum Diurnal Speed Average: 12 kph at hour 11		Minimum Diurnal Speed Average: 7 kph at hour 24																	Hours of Missing Data: 5							
Monthly Average Speed: 9 kph		Speed Percentiles: P <sub>1</sub> = 1.1 P <sub>10</sub> = 3.7 Q <sub>1</sub> = 5.4 Median = 8.2 Q <sub>3</sub> = 11.8 P <sub>90</sub> = 16.4 P <sub>99</sub> = 25.1																	Percent Operational Time: 99.3							
Monthly Average Direction: 226.5 Deg		All monthly, daily, and diurnal averages have been calculated using scalar methods																								
M - Missing																										
Percentage Frequency Distribution																										
		Speed Range (kph)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	1.76	6.22	3.52	0.68	0.14	0.14	12.45																			
NorthEast	2.30	4.87	1.35	0.41	0.00	0.00	8.93																			
East	2.98	6.63	2.03	0.00	0.00	0.00	11.64																			
SouthEast	4.47	8.25	0.68	0.00	0.00	0.00	13.40																			
South	4.19	2.44	1.62	0.00	0.00	0.00	8.25																			
SouthWest	2.98	10.42	7.85	2.84	0.00	0.00	24.09																			
West	2.17	6.22	3.38	0.14	0.00	0.00	11.91																			
NorthWest	0.68	3.65	3.52	1.49	0.00	0.00	9.34																			
Total	21.52	48.71	23.95	5.55	0.14	0.14	100.00																			



**Palliser Airshed Society - Crescent Heights**  
**Wind Rose**

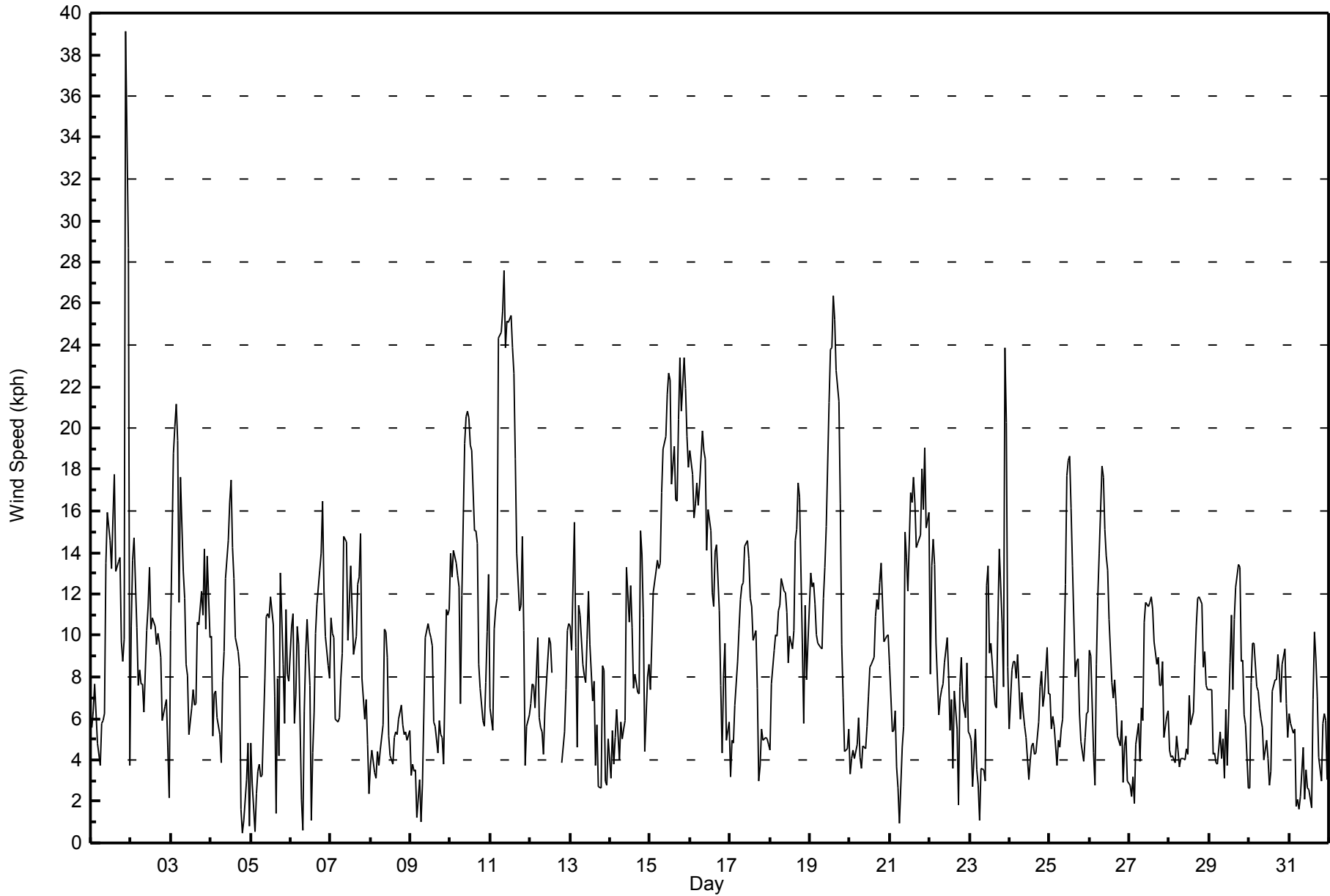
**Wind Speed (WS) - kph**  
**August 2009**





**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

**Wind Speed (WS) - kph**  
**August 2009**

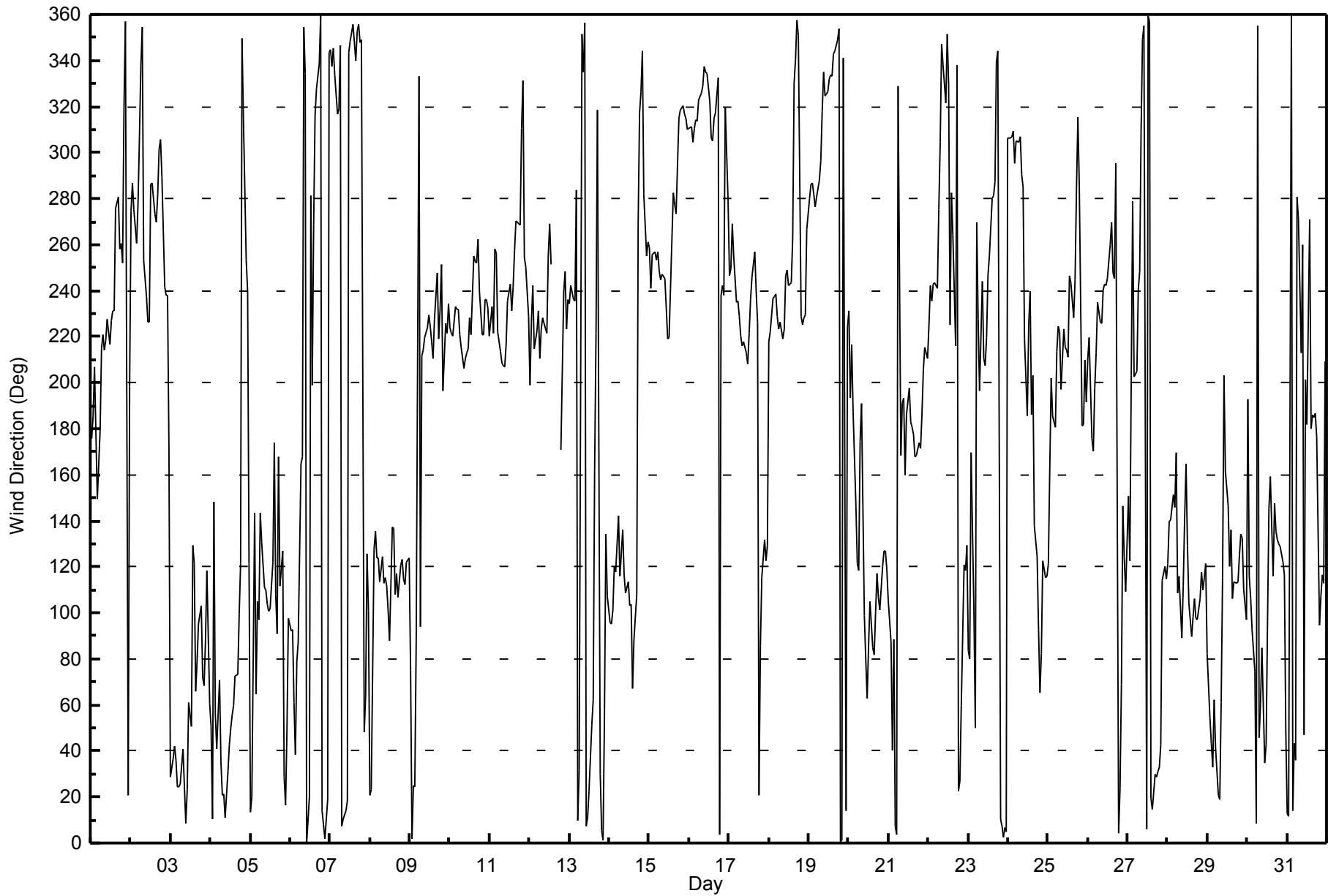




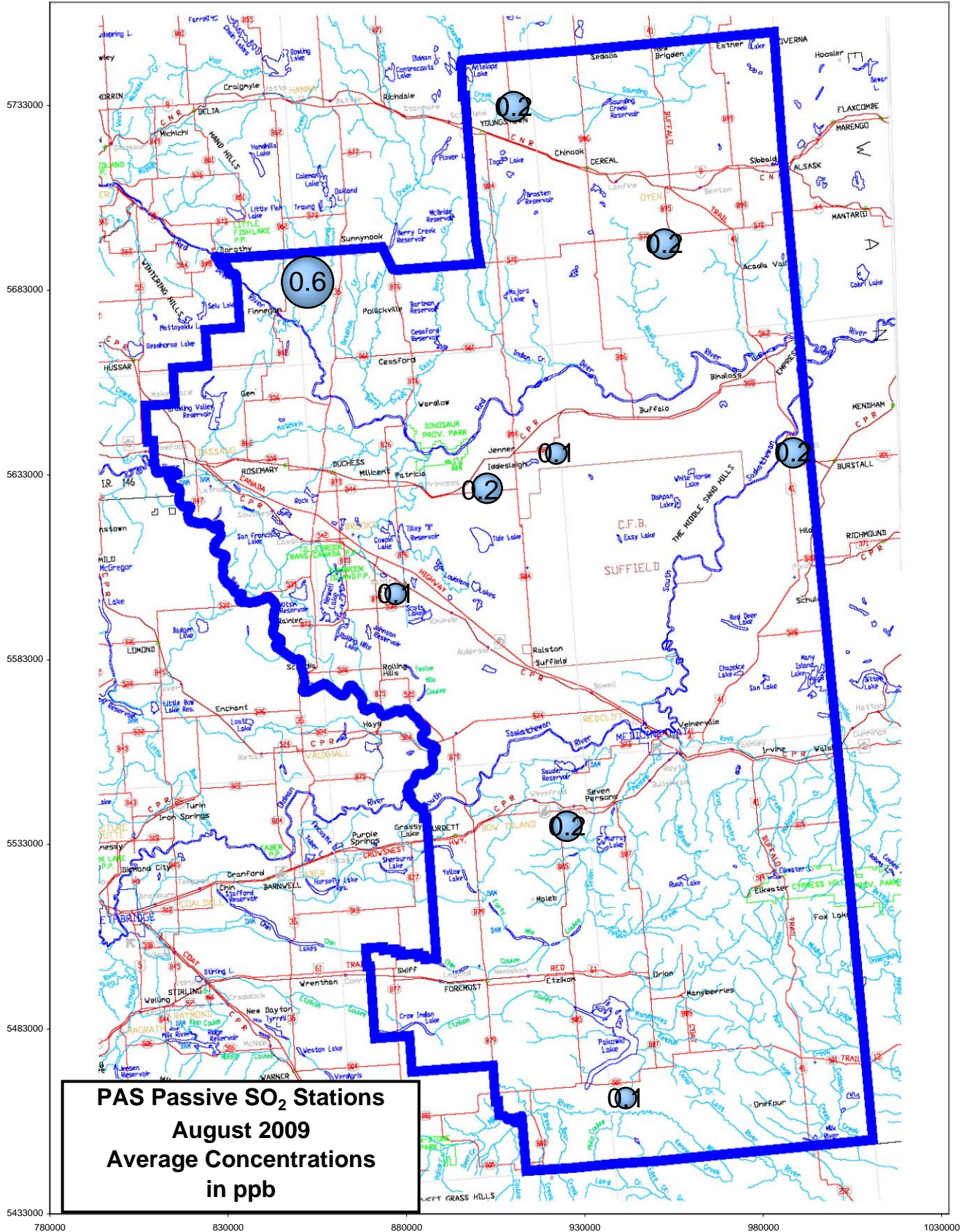


**Palliser Airshed Society - Crescent Heights**  
**Hourly Averages**

**Wind Direction (WD) - Deg**  
**August 2009**



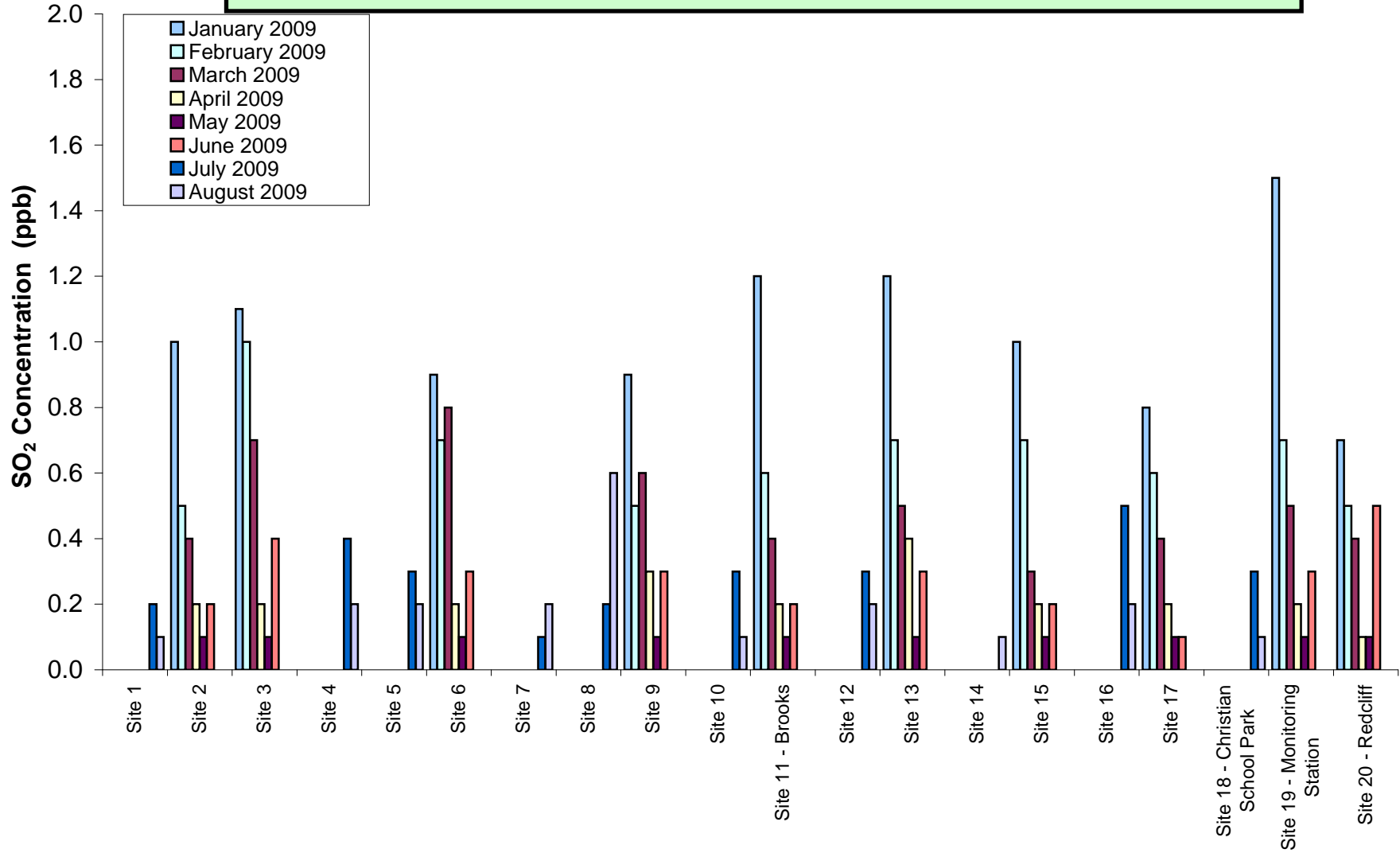
**Palliser Airshed Society**  
**Passive Monitoring**  
**August 2009**

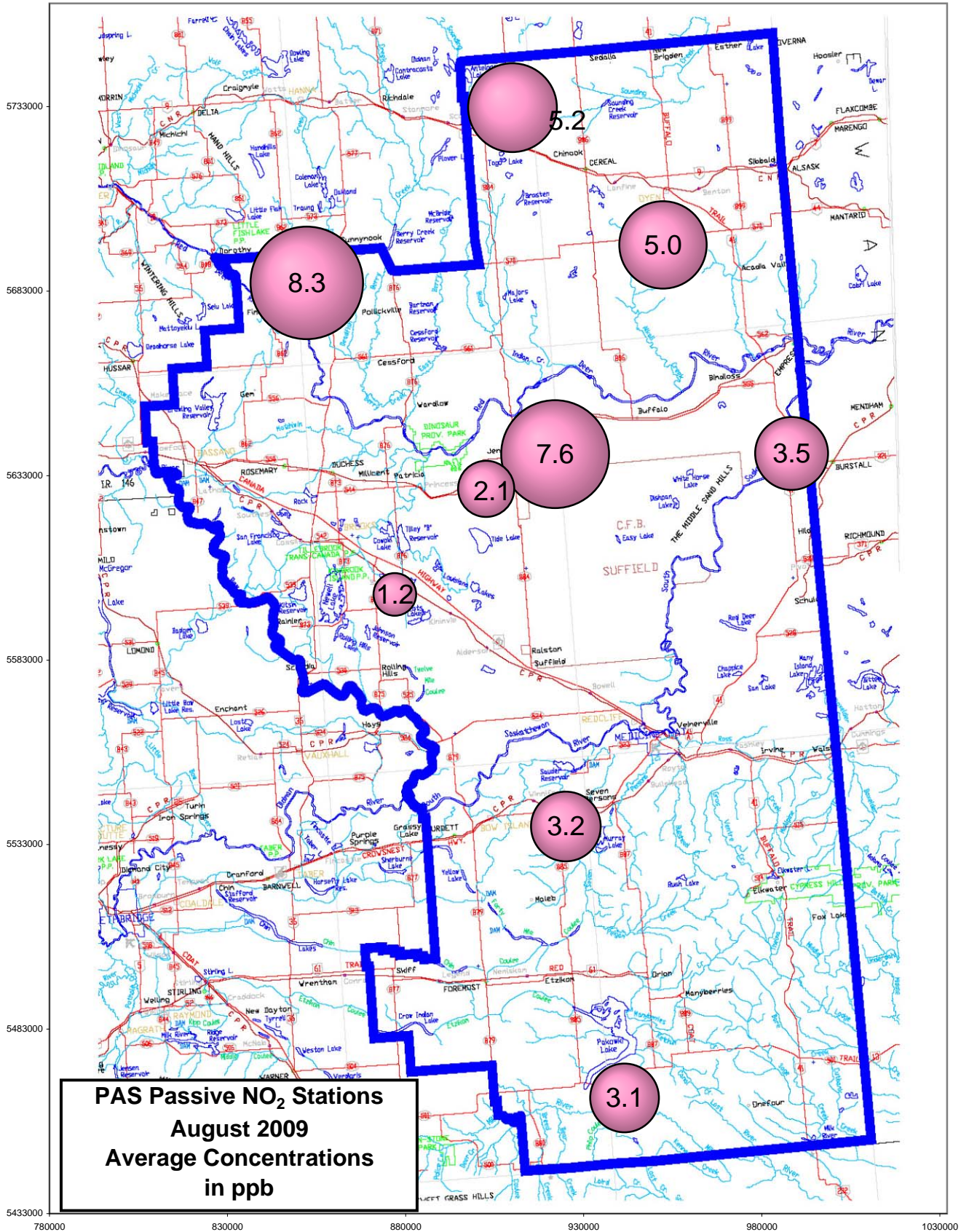


**PAS Passive SO<sub>2</sub> Stations**  
**August 2009**  
**Average Concentrations**  
**in ppb**

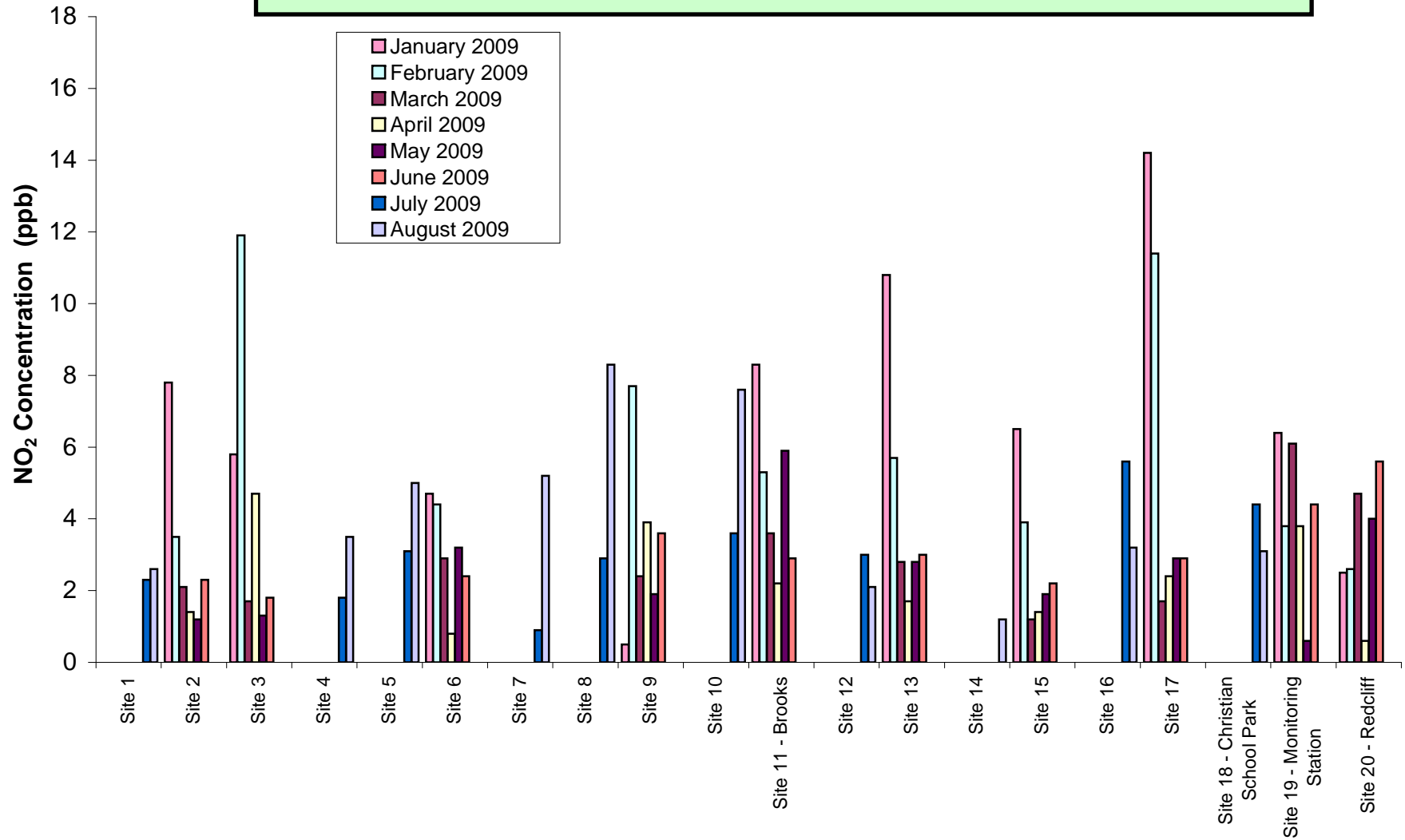
780000 830000 880000 930000 980000 1030000

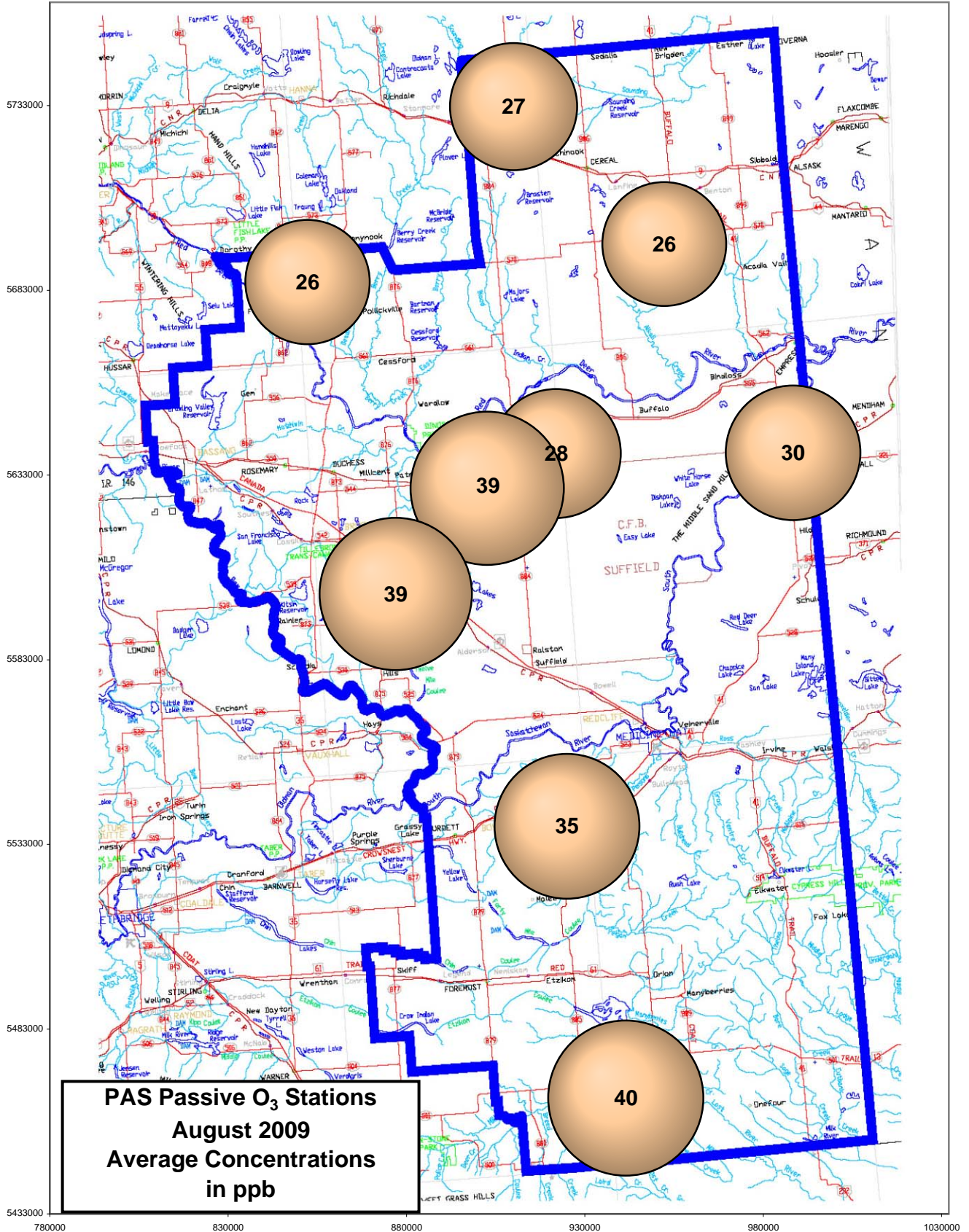
**Alberta Ambient Air Quality Objective - Annual SO<sub>2</sub> Objective is 11 ppb**





**Alberta Ambient Air Quality Objective - Annual NO<sub>2</sub> Objective is 32 ppb**



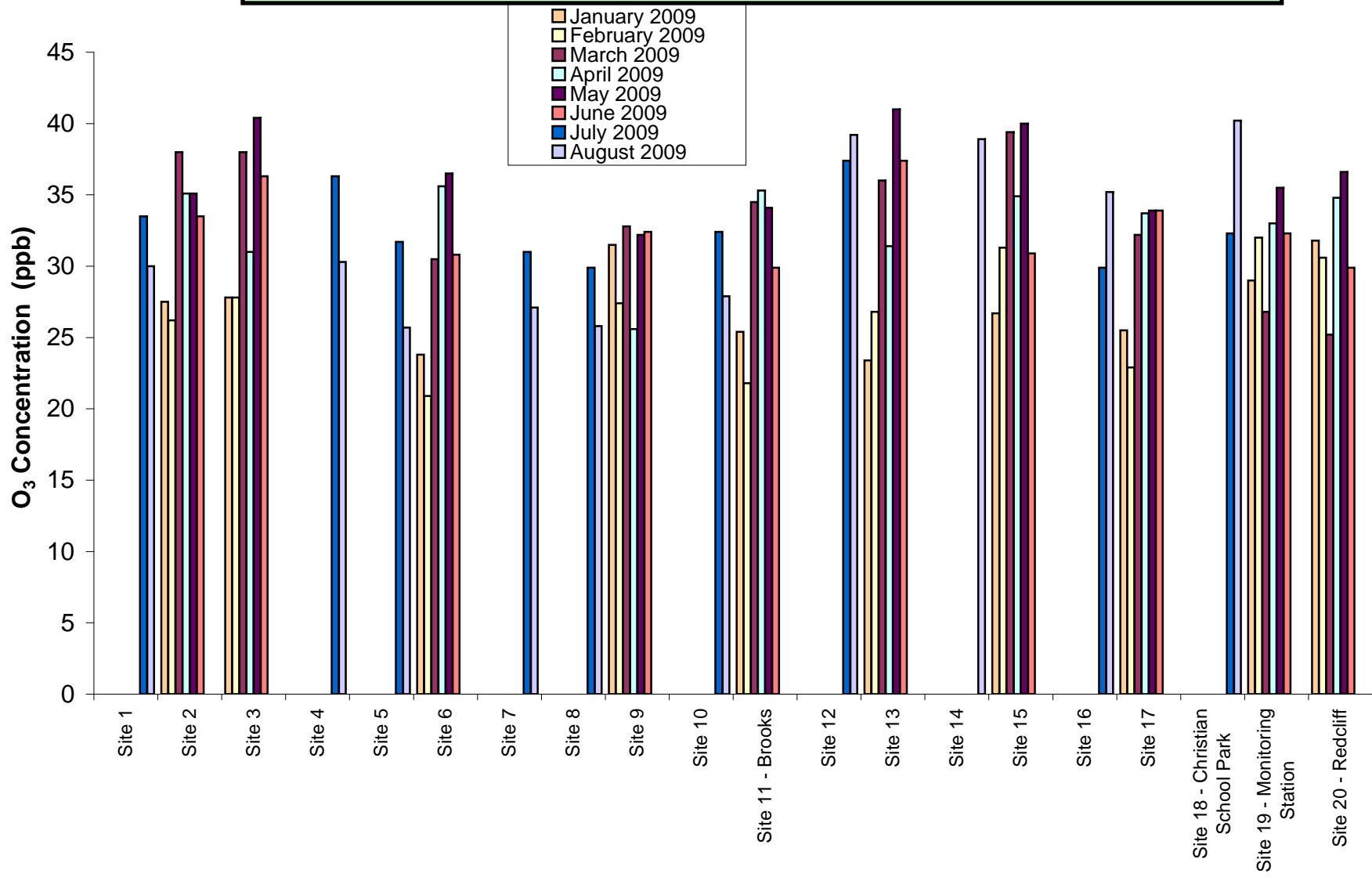


**PAS Passive O<sub>3</sub> Stations**  
**August 2009**  
**Average Concentrations**  
**in ppb**

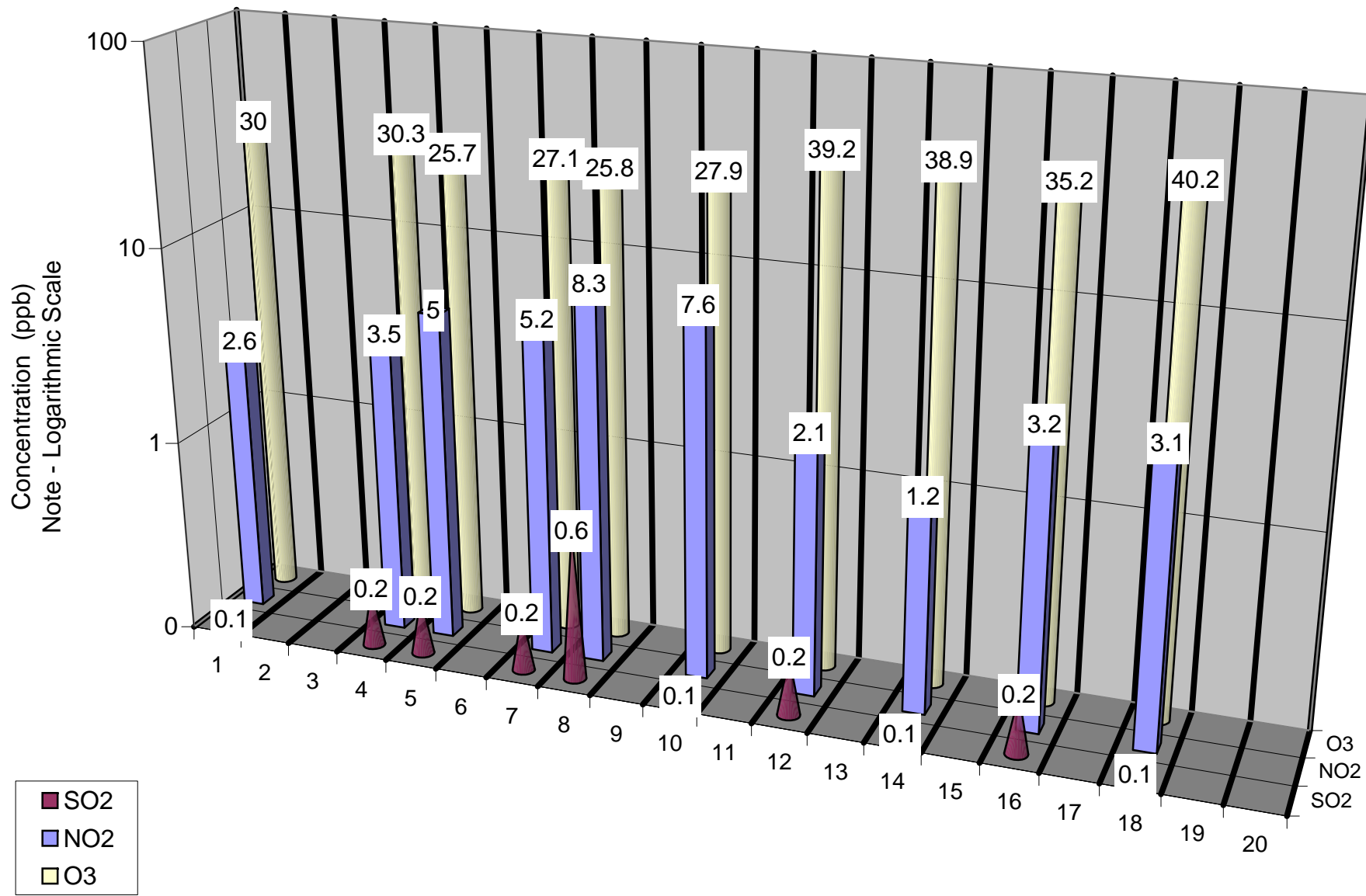
780000 830000 880000 930000 980000 1030000

5733000  
5683000  
5633000  
5583000  
5533000  
5483000  
5433000

## Alberta Ambient Air Quality Objective - No Annual O<sub>3</sub> Objective







# **PAS**

## **August 2009 – Calibration Reports**

**Crescent Heights Station:**

**SO<sub>2</sub>, NO<sub>x</sub>, NO, NO<sub>2</sub>,**

**CO, O<sub>3</sub>, and THC**

# Calibration Report

Parameter SO<sub>2</sub>  
 Air Monitoring Network \_\_\_\_\_

Palliser



## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	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)	8:00	End Time (MST)	13:30
Barometric Pressure	27.67 in Hg	Station Temperature	18.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3404
Cal Gas Conc	47.7 ppm	Cal Gas Verif. Date	31-Mar-09
		Cal Gas Cylinder #	S920124A
DACS make	Capmbell Sci. CR 3000	DACS serial No.	3198
DACS voltage range	0 - 5 volt	DACS channel #	13
	Before		After
Calculated slope	1.009149	Calculated slope	1.007010
Calculated intercept	-4.934036	Calculated intercept	-3.399584
Analyzer make	TEI Model 43i	Analyzer serial #	808829408

	before		after	
Concentration range	0 - 1000	ppb	0 - 1000	ppb
SO2 coefficient	1.038		1.019	
SO2 bkg setting	4.4		4.4	
Internal Temp.	29.2	Deg C	28.6	Deg C
Chamber Temp.	45.0	Deg C	45.0	Deg C
Perm. Gas Temp.	45.00	Deg C	45.01	Deg C
Lamp intensity	67.0	%	67.0	%
Pressure	667.9	mm Hg	677.2	mm Hg
Sample Flow	0.456	LPM	0.462	LPM

## Calibration Data

	Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)
zero	5000	0.00	0.00	0.12	N/A
P1	4950	77.17	732.22	732.10	1.0002
P2	4976	52.50	498.01	496.40	1.0032
P3	5013	26.28	248.76	248.70	1.0002
AFZ	5000	0.00	0.00	-0.12	0.0000
AFS	4948	77.57	736.25	744.50	0.9889
Average Correction Factor					1.0012

Calculated value of As Found Response: 746.498 ppm      Percent Change of As Found: -1.4%

	before calibration		after calibration	
Auto zero	-0.08	ppm	-0.38	ppm
Auto span	41.43	ppm	41.22	ppm

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Calibration Performed By: Leon Burns

# Calibration Summary

Parameter SO<sub>2</sub>  
 Air Monitoring Network Palliser



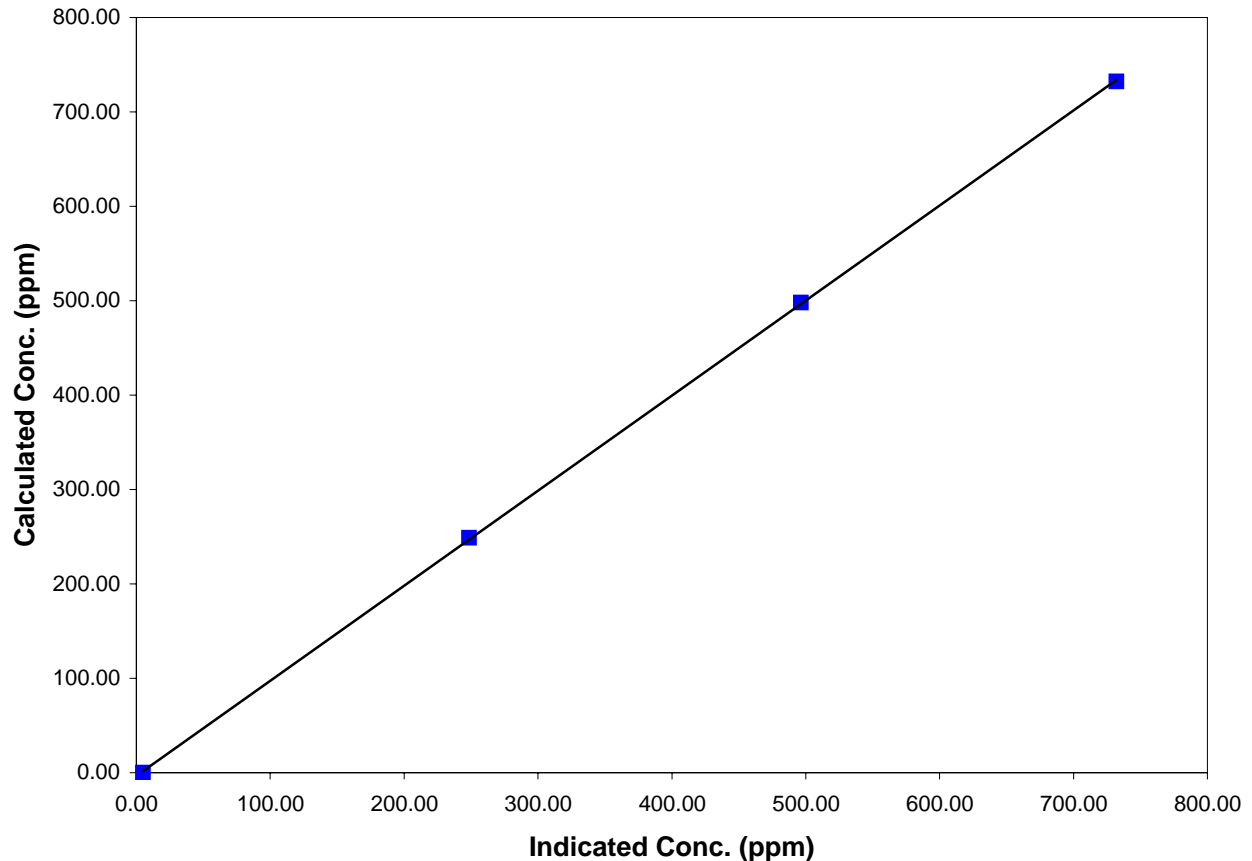
## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	8:00	End Time (MST)	13:30
Analyzer make/model	TEI Model 43i	Analyzer serial #	808829408

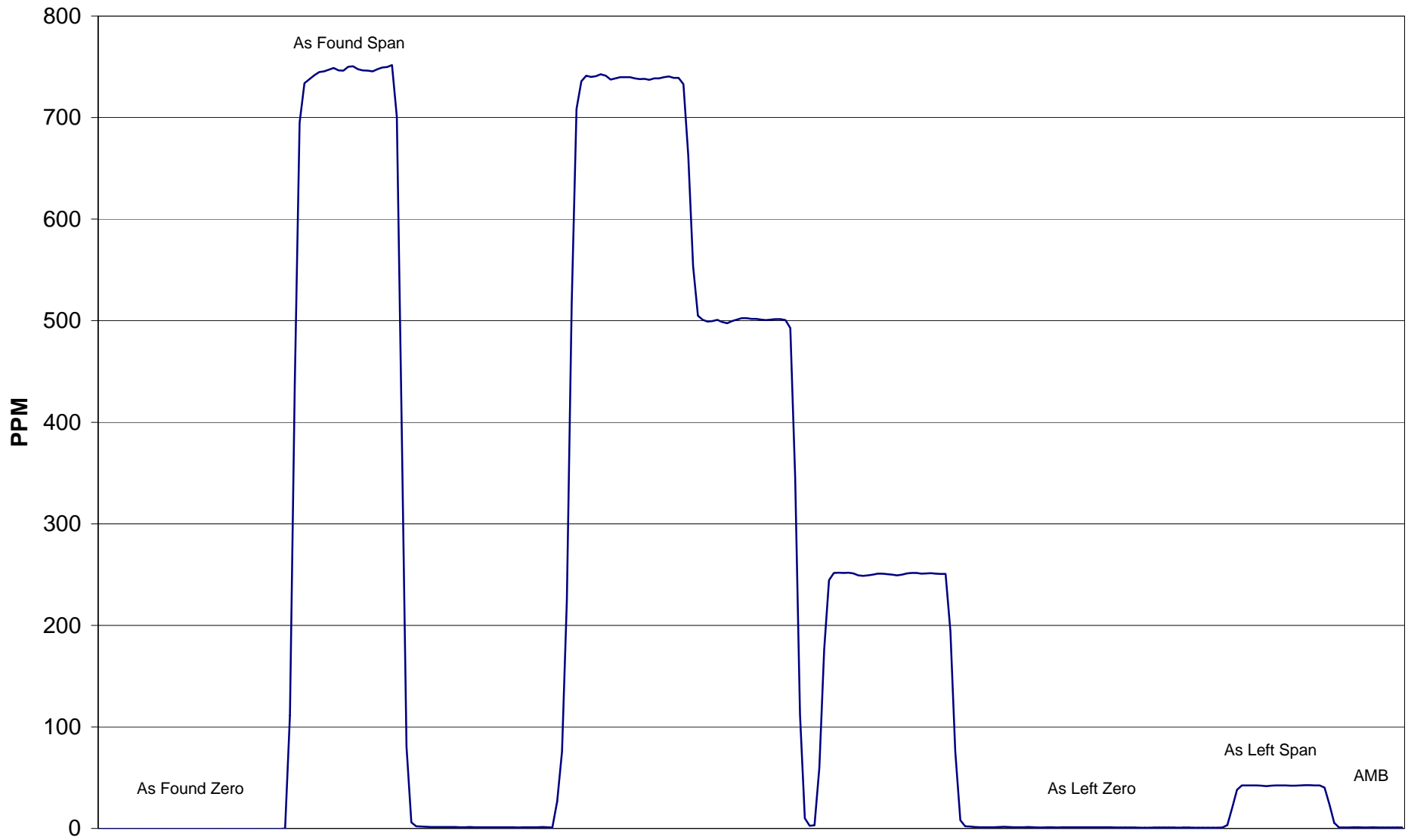
## Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.00	5.00	N/A	Correlation Coefficient	0.999965
732.22	732.10	1.0002		
498.01	496.40	1.0032		
248.76	248.70	1.0002		
			Slope	1.007010
			Intercept	-3.399584

## SO<sub>2</sub> Calibration Curve



# SO<sub>2</sub> Calibration



# Calibration Report

Parameter **NOx-NO-NO<sub>2</sub>**  
 Air Monitoring Network **Palliser Airshed**



## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009				
Station Number	101	Station Location	Crescent Heights				
Reason:	<table border="1"> <tr> <td><input checked="" type="checkbox"/> Routine</td> <td><input type="checkbox"/> Installation</td> <td><input type="checkbox"/> Removal</td> <td><input type="checkbox"/> Other:</td> </tr> </table>			<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Installation	<input type="checkbox"/> Removal	<input type="checkbox"/> Other:
<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Installation	<input type="checkbox"/> Removal	<input type="checkbox"/> Other:				
Start Time (MST)	8:00	End Time (MST)	13:30				
Barometric Pressure	27.67 inches Hg	Station Temperature	18.0 Deg C				
Calibrator	EnviroNics 6100	Serial Number	3404				
NO Cal Gas Conc	21.6 ppm	Cal Gas Verif. Date	31-Mar-09				
NOx Cal Gas Conc	21.6 ppm	Cal Gas Serial #	S920124A				

## DACS Information

DACS make	Campbell Sci. CR 3000	DACS serial No.	3198
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Parameter	NO	NO <sub>2</sub>	NO <sub>x</sub>	
Before	Data Slope	1.002461	0.998910	0.998542
	Data Offset	-1.108977	-0.057183	-0.925355
After	Data Slope	1.001752	0.996381	0.997615
	Data Offset	-0.155204	0.108244	0.055590
Channel #	2	3	4	
Voltage Range	0 - 5 VDC	0 - 5 VDC	0 - 5 VDC	

## Analyzer Information

Analyzer make/model	TEI 42i	Analyzer serial #	713021122
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Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO background	4.6	mV	4.9	mV
NO <sub>x</sub> background	5.5	mV	5.7	mV
NO coefficient	0.599		0.605	
NO <sub>x</sub> coefficient	1.002		1.003	
Internal Temp	26.9	Deg C	28.6	Deg C
Chamber Temp	49.9	Deg C	49.8	Deg C
Cooler Temp	-3.1		-3.0	
Perm Temp	34.35	Deg C	34.36	Deg C
Pressure	177.7	inches Hg	177.1	inches Hg
Sample Flow	0.595	ccm	0.599	ccm

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Calibration Report

Parameter **NO<sub>x</sub>-NO-NO<sub>2</sub>**  
 Air Monitoring Network **Palliser Airshed**



## Station Information

Calibration Date: August 4, 2009 Station Location: Crescent Heights

## Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NO conc (ppb)	Calculated NO <sub>2</sub> conc (ppb)	Calculated NO <sub>x</sub> conc (ppb)	Indicated NO conc (ppb)	Indicated NO <sub>2</sub> conc (ppb)	Indicated NO <sub>x</sub> conc (ppb)	NO Correction factor	NO <sub>x</sub> Correction factor	
zero	<b>5000</b>	<b>0.00</b>	0.0	0.0	0.0	<b>-0.02</b>	<b>-0.24</b>	<b>0.01</b>	N/A	N/A	
P1	<b>4950</b>	<b>77.17</b>	331.6	0.0	331.6	<b>331.30</b>	<b>0.86</b>	<b>332.70</b>	1.001	0.997	
P2	<b>4976</b>	<b>52.50</b>	225.5	0.0	225.5	<b>224.80</b>	<b>0.33</b>	<b>225.30</b>	1.003	1.001	
P3	<b>5013</b>	<b>26.28</b>	112.6	0.0	112.6	<b>113.10</b>	<b>0.26</b>	<b>113.10</b>	0.996	0.996	
AFZ	<b>5000</b>	<b>0.00</b>	0.0	0.0	0.0	<b>0.22</b>	<b>-0.01</b>	<b>0.42</b>	0.000	0.000	
AFS	<b>4948</b>	<b>77.57</b>	333.4	0.0	333.4	<b>328.60</b>	<b>0.12</b>	<b>329.20</b>	1.015	1.013	
									Average Correction Factor	1.000	0.998

As Found Concentrations  
 As Found Percent Change

NO= 327.0 ppb  
 NO= -1.9%

NO<sub>x</sub>= 327.4 ppb  
 NO<sub>x</sub>= -1.8%

## GPT Calibration Data

O <sub>3</sub> Setpoint (ppb)	Indicated NO <sub>x</sub> ref (ppb)	Calculated NO conc (ppb)	Calculated NO <sub>2</sub> conc (ppb)	Calculated NO <sub>x</sub> conc (ppb)	Indicated NO conc (ppb)	Indicated NO <sub>2</sub> conc (ppb)	Indicated NO <sub>x</sub> conc (ppb)	NO <sub>2</sub> Correction factor	Converter Efficiency	
<b>0</b>	336.3	336.0	-0.7	335.6	<b>335.60</b>	<b>0.22</b>	<b>336.30</b>	N/A	N/A	
<b>200</b>	336.6	105.6	230.2	335.9	<b>105.60</b>	<b>231.00</b>	<b>336.60</b>	0.9966	100.3%	
<b>125</b>	336.2	150.7	184.7	335.5	<b>150.60</b>	<b>185.10</b>	<b>336.20</b>	0.9981	100.2%	
<b>50</b>	336.6	243.2	92.7	335.9	<b>242.90</b>	<b>93.20</b>	<b>336.60</b>	0.9944	100.6%	
								Average Correction Factor	0.996	1.004

## AIC Data

Parameter	Previous calibration				Current calibration			
	NO	NO <sub>2</sub>	NO <sub>x</sub>		NO	NO <sub>2</sub>	NO <sub>x</sub>	
Auto zero	<b>0.12</b>	<b>0.61</b>	<b>0.91</b>	ppb	<b>-0.03</b>	<b>-0.11</b>	<b>-0.07</b>	ppb
Auto span	<b>3.43</b>	<b>186.00</b>	<b>189.60</b>	ppb	<b>2.30</b>	<b>183.60</b>	<b>186.20</b>	ppb

Calibration Performed By: Leon Burns

# Calibration Summary

Parameter NO  
 Air Monitoring Network Palliser Airshed



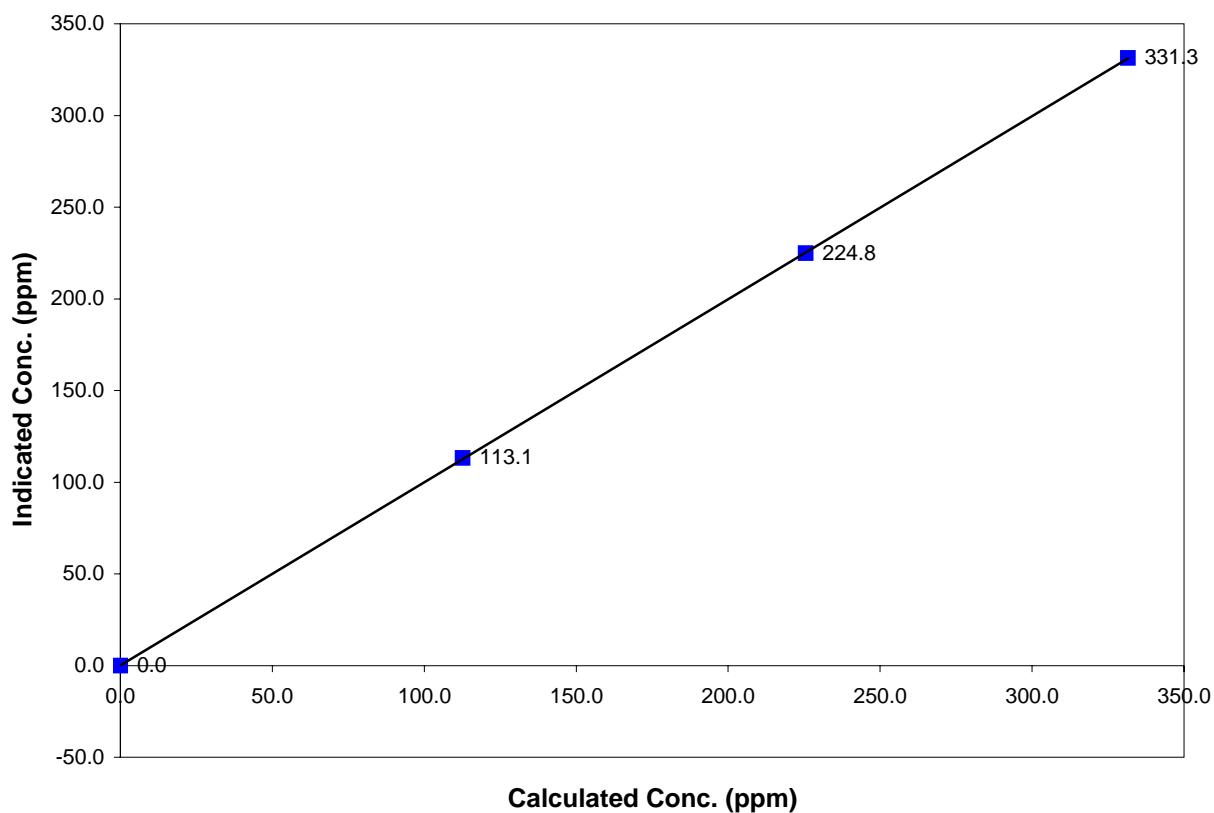
## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	8:00	End Time (MST)	13:30
Analyzer make	TEI 42i	Analyzer serial #	713021122

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
331.6	331.3	1.0008	Correlation Coefficient	0.999991
225.5	224.8	1.0032		
112.6	113.1	0.9960		
			Slope	1.001752
			Intercept	-0.155204

## NO Calibration Curve





# Calibration Summary

Parameter NO<sub>2</sub>  
 Air Monitoring Network Palliser Airshed



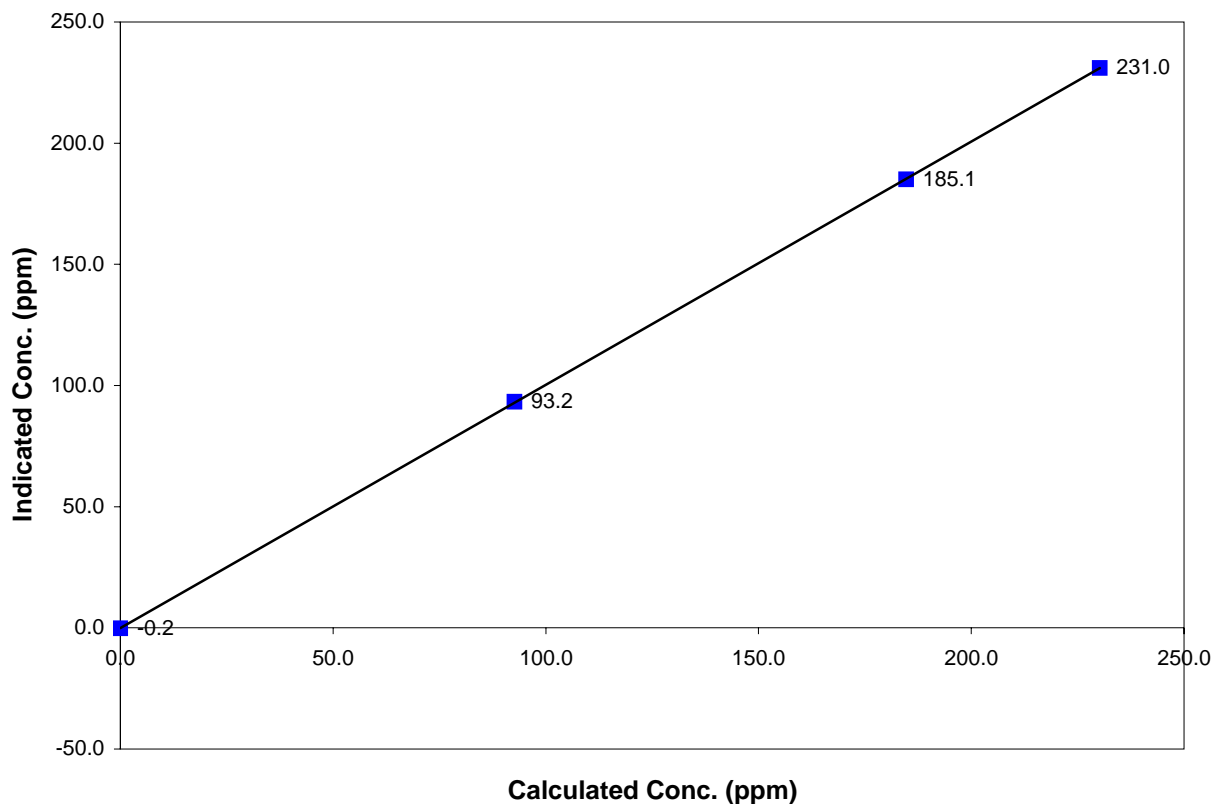
## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	8:00	End Time (MST)	13:30
Analyzer make	TEI 42i	Analyzer serial #	713021122

## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	0.0000	Correlation Coefficient	0.999995
230.2	231.0	0.9966		
184.7	185.1	0.9981		
92.7	93.2	0.9944		
			Slope	0.996381
			Intercept	0.108244

## NO<sub>2</sub> Calibration Curve



# Calibration Summary

Parameter NO<sub>x</sub>  
 Air Monitoring Network Palliser Airshed



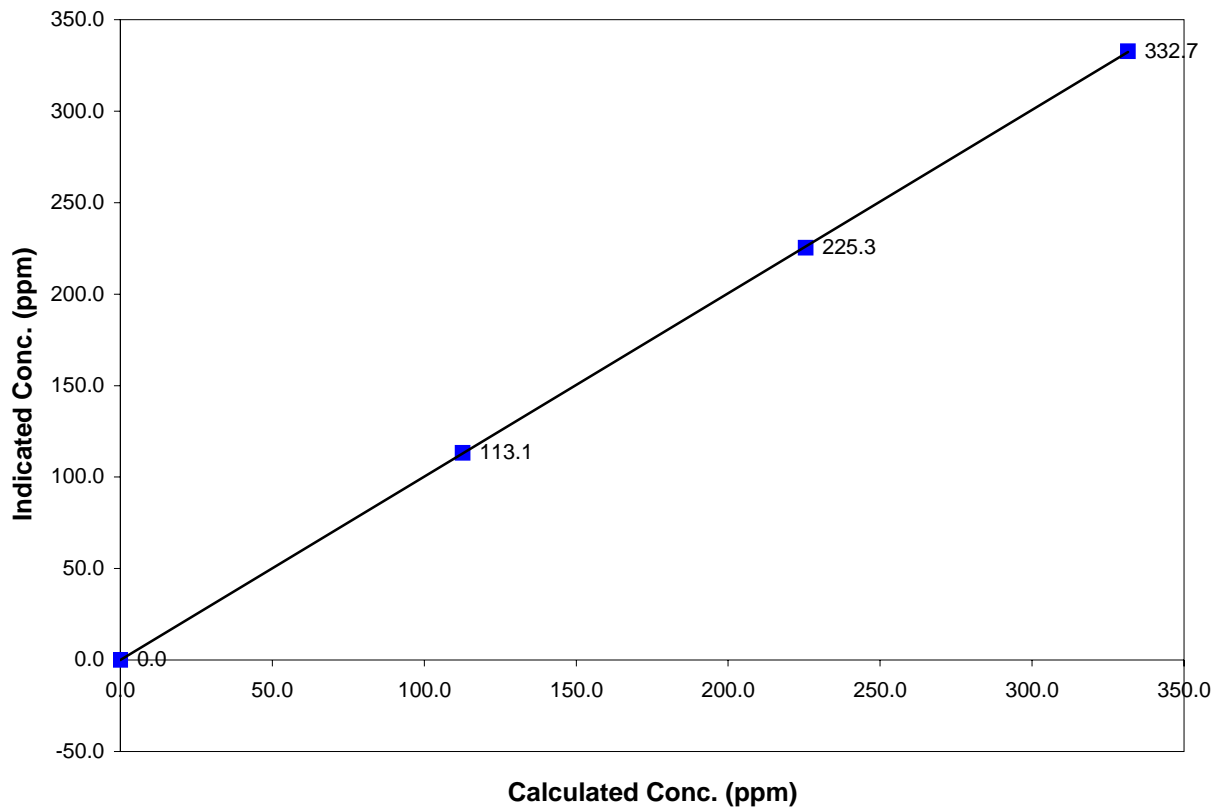
## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	8:00	End Time (MST)	13:30
Analyzer make	TEI 42i	Analyzer serial #	713021122

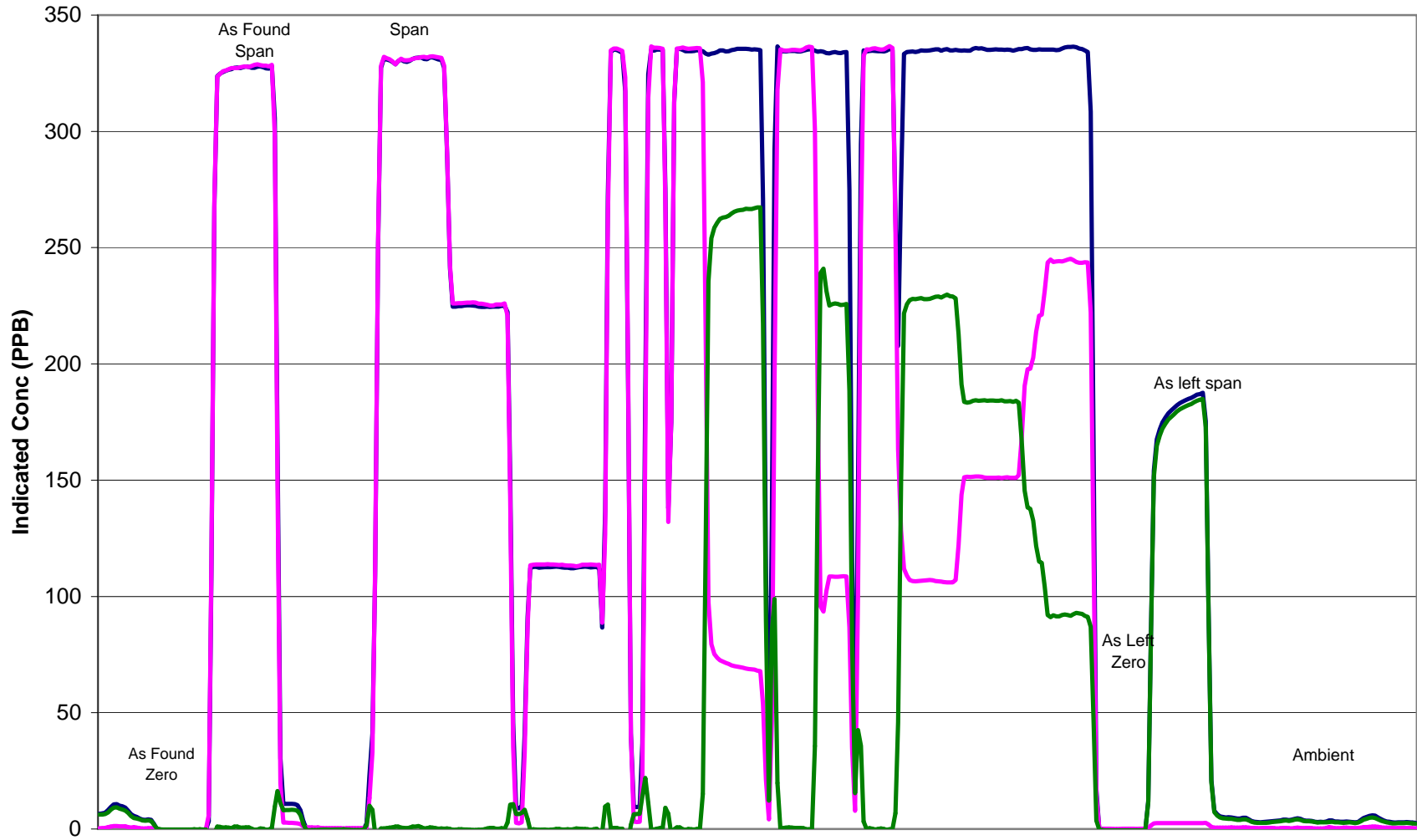
## Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	0.0000		
331.6	332.7	0.9966	Correlation Coefficient	0.999989
225.5	225.3	1.0010		
112.6	113.1	0.9960	Slope	0.997615
			Intercept	0.055590

## NO<sub>x</sub> Calibration Curve



# NOx Calibration



# Calibration Report

Parameter CO  
 Air Monitoring Network Palliser



## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	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)	8:00	End Time (MST)	13:30
Barometric Pressure	27.67 in Hg	Station Temperature	18.0 Deg C
Calibrator	EnviroNics 6100	Serial Number	3404
Cal Gas Conc	2402.3 ppm	Cal Gas Verif. Date	31-Mar-09
		Cal Gas Cylinder #	S920124A
DACS make	Capmbell Sci. CR 3000	DACS serial No.	3198
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	0.998320	Calculated slope	0.999701
Calculated intercept	-0.101224	Calculated intercept	-0.002941
Analyzer make	TEI Model 48C-LT	Analyzer serial #	436609887

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO coefficient	1.125		1.116	
CO bkg setting	6.672		5.957	
Lamp ratio	1.132919		1.104365	
Lamp intensity	199745	Hz	200386	Hz
Sample Flow	1.009	LPM	1.133	LPM

## 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)
zero	5000	0.00	0.00	0.00	N/A
P1	4950	77.17	36.88	36.89	0.9996
P2	4976	52.50	25.08	25.09	0.9996
P3	5013	26.28	12.53	12.54	0.9990
AFZ	5000	0.00	0.00	0.00	#DIV/0!
AFS	4948	77.57	37.08	37.61	0.9859
Average Correction Factor					0.9994

Calculated value of As Found Response: 37.446 ppm      Percent Change of As Found: -1.0%

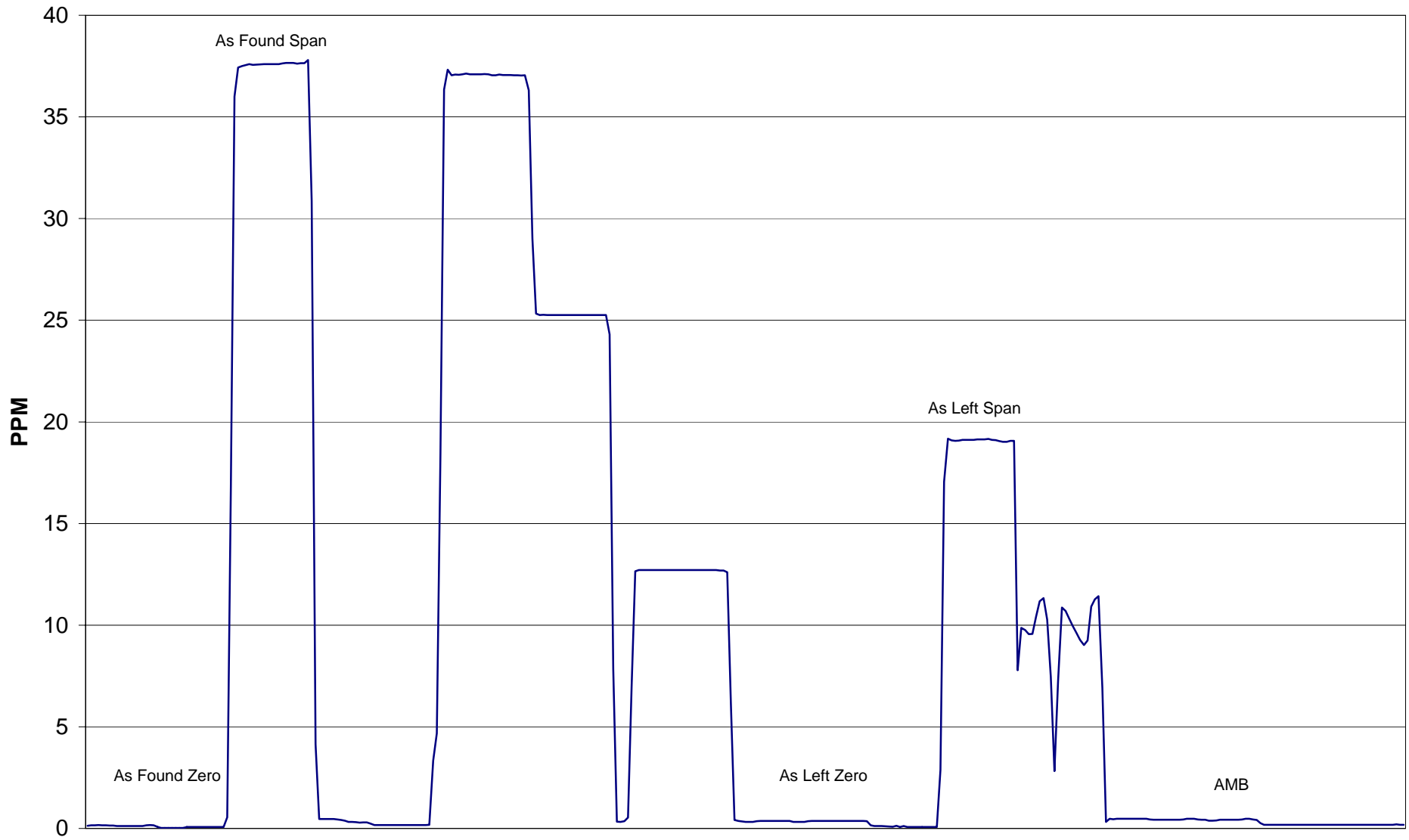
	before calibration		after calibration	
Auto zero	-0.09	ppm	-0.10	ppm
Auto span	19.34	ppm	18.84	ppm

Notes: Changed span gas.  
 \_\_\_\_\_  
 \_\_\_\_\_

Calibration Performed By: Leon Burns



# CO Calibration



# Calibration Report

Parameter                     03                      
 Air Monitoring Network                     Palliser Airshed                    



## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	Station Location	Crescent Heights
Reason:	<input checked="" type="checkbox"/> Routine	<input type="checkbox"/> Calibration	<input type="checkbox"/> Removal
			Other: <input type="text"/>

Start Time (MST)	8:00	End Time (MST)	13:30
Barometric Pressure	27.67 inches Hg	Station Temperature	18.0 Deg C
Calibrator	TECO 165	Serial Number	165-53899-298
Cal Gas Concentratio	NA	Cal Gas Expiry Date	NA

DACS make	Campbell Sci. CR 3000	DACS serial No.	3198
DACS voltage range	0 - 5 volt	DACS channel #	1

	Before		After
Calculated slope	0.999915	Calculated slope	0.995249
Calculated intercept	-0.453026	Calculated intercept	0.145776

Analyzer make	TECO 49i	Analyzer serial #	713021144
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	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	0.0	ppb	-1.2	ppb
Coefficient	1.115		1.132	
Intensity A	59692	Hz	58532	Hz
Intensity B	98431	Hz	97101	Hz
Pressure	696.0	mmHg	703.3	mmHg
Sample Flow A	0.680	Lpm	0.686	Lpm
Sample Flow B	0.652	Lpm	0.663	Lpm

## Calibration Data

Dilution air flow rate (cc/min)		Ozone Set Point	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
zero	2000	0.0	0.0	-0.42	N/A
P1	2000	360.0	142.0	142.20	0.9986
P2	2000	350.0	116.0	116.50	0.9957
P3	2000	325.0	70.0	70.70	0.9901
AFZ	2000	0.0	0.0	-0.65	0.0000
AFS	2000	360.0	142.0	146.56	0.9689
Average Correction Factor					0.9948

Calculated value of As Found Response: 146.7 ppm      Percent Change of As Found: 3.3%

	before calibration		after calibration	
Auto zero	-0.04	ppb	-0.21	ppb
Auto span	176.40	ppb	168.90	ppb

Notes:

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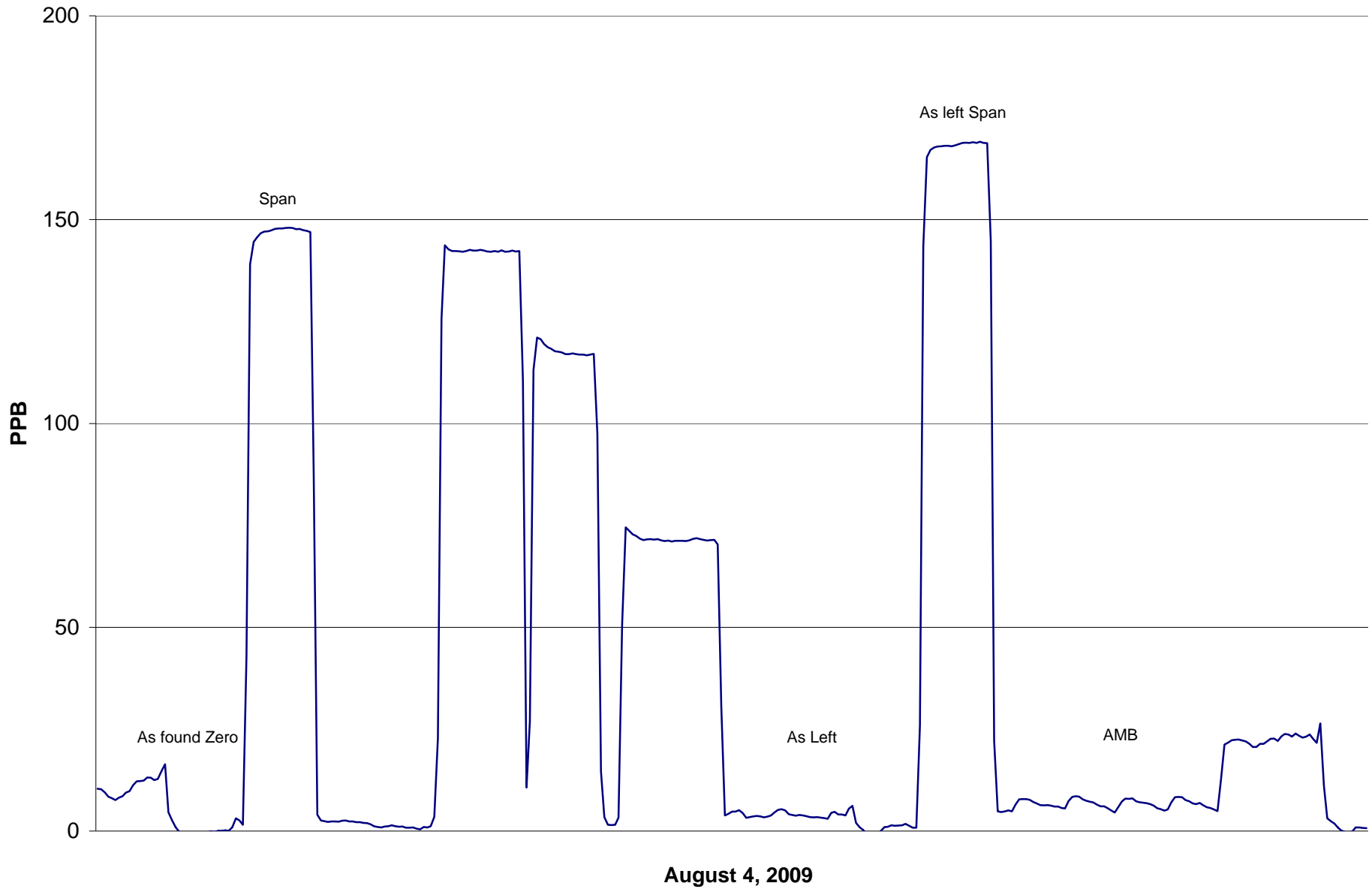
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Calibration Performed By:                     Leon Burns





# O3 Calibration



# Calibration Report

Parameter THC  
 Air Monitoring Network Palliser Airshed



## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	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)	13:00	End Time (MST)	17:26
Barometric Pressure	27.67 inches Hg	Station Temperature	18.0 Deg C
Calibrator	Enviroics 6100	Serial Number	3404
Cal Gas Concentration	705 ppm CH <sub>4</sub> / 203 ppm C <sub>3</sub> H <sub>8</sub>	Cal Gas Ver. Date	31-Mar-09
Cal Gas CH <sub>4</sub> equiv	1263 ppm	Cal Gas Cylinder #	X 215385
DACS make	Campbell SCI. CR 3000	DACS serial No.	3198
DACS voltage range	0 - 10 volt	DACS channel #	6
	<b>Before</b>		<b>After</b>
Calculated slope	1.000313	Calculated slope	0.998864
Calculated intercept	0.200945	Calculated intercept	0.177948
Analyzer make	TEI model 51C-LT	Analyzer serial #	407505596

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
THC sample pressure	5.75	PSI	5.74	PSI
THC span counts	17544	raw	17647	raw
THC zero counts	1210	raw	1212	raw
V Bias	-329	Volts	-328	Volts

## 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)
zero	3000	0.00	0.00	0.00	N/A
P1	2937	86.87	36.28	36.33	0.9987
P2	2963	62.44	26.07	25.81	1.0099
P3	2984	37.57	15.70	15.29	1.0271
AFZ	3000	0.00	0.00	0.00	As Found Zero
AFS	2921	86.95	36.51	37.87	As Found Span
Average Correction Factor					1.0119

Calculated value of As Found Response: 38.083 ppm      Percent Change of As Found: -4.3%

	before calibration		after calibration	
Auto zero	-0.03	ppm	-0.05	ppm
Auto span	21.66	ppm	22.39	ppm

Notes: Had problems with cal.

Calibration Performed By: Leon Burns

# Calibration Summary

Parameter THC  
 Air Monitoring Network Palliser Airshed



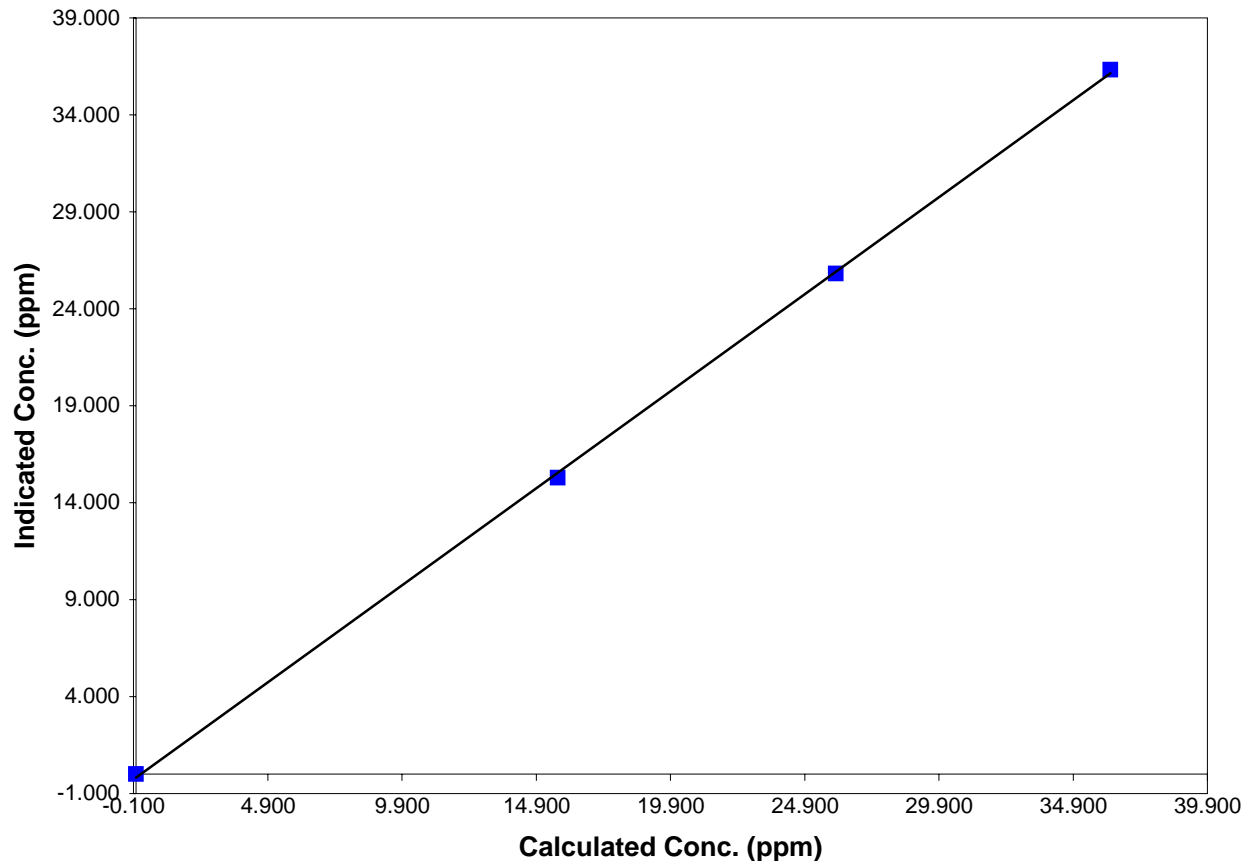
## Station Information

Calibration Date	August 4, 2009	Previous Calibration	July 1, 2009
Station Number	101	Station Location	Crescent Heights
Start Time (MST)	13:00	End Time (MST)	17:26
Analyzer make/model	TEI model 51C-LT	Analyzer serial #	407505596

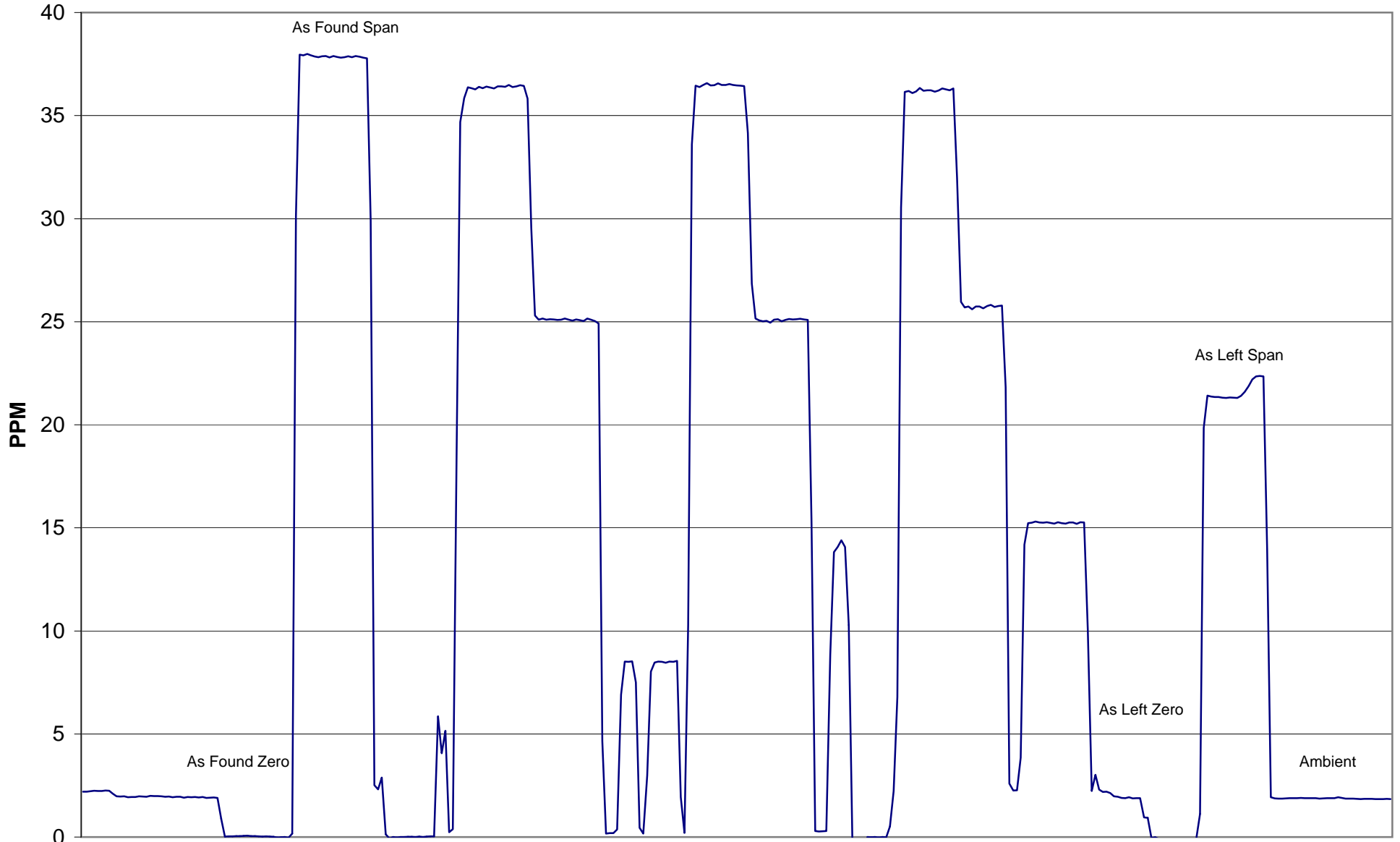
## Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.000	N/A		
36.284	36.330	0.9987	Correlation Coefficient	0.999804
26.066	25.810	1.0099		
15.704	15.290	1.0271	Slope	0.998864
			Intercept	0.177948

## THC Calibration Curve



# THC Calibration



August 4, 2009