Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

Continuous Ambient Air Quality Monitoring Program
Monthly Report
December 2013

Operations and Reporting

Peace Airshed Zone Association
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February 15th, 2014

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

RE: Peace Airshed Zone Association (PAZA) – December 2013 Ambient Air Report

Enclosed is the PAZA Ambient Monitoring Network Report for the month of **December 2013**.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the following facility Operating Approvals:

Company	Facility	LSD	EPEA Approval Number
Advantage Oil & Gas Ltd.	Glacier	05-02-076-13-W6	262479-00-00
Alberta Power (2000) Ltd. (an ATCO company)	Sturgeon	SW-06-069-21-W5	10283-02-02
ATCO Power Canada	Poplar Hill	11-19-073-08-W6	67774-01-01
ATCO Power Canada	Valleyview	SW-06-069-21-W5	147709-01-01
AltaGas Ltd.	Pouce Coupe	03-03-081-13-W6	247673-00-00
	Ante Creek	02-26-068-25-W5	266694-00-00
	Gordondale	16-31-78-11-W6M	287474-00-00
Apache Canada Ltd.	House Mountain	01-08-070-10-W5	10137-02-02
Barrick Energy Inc.	Sturgeon/Valleyview	02-02-069-22-W5	1633-02-00
Birchcliff Energy Ltd.	Pouce Coupe	03-22-078-12-W6	252529-00-00
Canadian Natural Resources Limited	Bonanza	11-25-081-11-W6	00000029-01-00
	Progress/Gordondale	01-01-077-10-W6	00010036-02-00

Company	Facility	LSD	EPEA Approval Number
	Gold Creek	13-26-067-05-W6	00010446-02-00
	Teepee Creek	SE-2-074-04-W6	00001635-02-00
Canfor Forest Products	Grande Prairie	SW-23-071-06-W6	152645-01-00
Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Devon Canada	NW Belloy (Dunvegan)	16-36-079-03-W6	00009810-02-00
	Eaglesham (South)	02-14-077-25-W5	00047669-01-00
	North Normanville	03-36-079-23-W5	00047455-01-00
	West Culp	05-34-078-25-W6	00136284-00-00
	Cecil	08-15-084-08-W6	00010032-02-00
Encana Corporation	Sexsmith	04-08-075-07-W6	00010002-01-00
Enerplus Resources	Pouce Coupe	SW-06-069-21-W5	1464-02-03
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Long Run Exploration	Eaglesham	01-25-076-01-W6	00241532-00-00
	Kakut	14-12-075-03-W6	00248469-00-00
	Donnelly	06-01-077-21-W5	00000087-02-00
	Puskwaskau	03-26-074-01-W6	00017524-01-00
Longview Oil Corp.	Sunset House	06-22-070-20-W5	138884-01-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00
	Pouce Coupe	16-07-078-11-W6	00000614-01-00

Company	Facility	LSD	EPEA Approval Number
Petrus Resources	Rycroft	08-25-077-06-W6	11351-02-00
	Spirit River	08-34-077-06-W6	11096-02-00
Spectra Energy Midstream Corporation	Fourth Creek	16-11-082-09-W6	00000263-01-00
	Gordondale	11-26-079-09-W6	00011495-01-01
	Pouce Coupe/Bonanza	3-23-080-13-W6	00070203-01-01
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
TAQA North Ltd.	Valhalla	13-21-076-09-W6	00017620-01-00
Veresen Energy	Hythe Brainard	11-18-074-12-W6	00010910-02-00
Weyerhaeuser Canada	Grande Prairie Pulp and Wood Plant	01-14-070-05-W6	00000113-02-00

Included in this report is a summary of the monthly continuous monitoring, detailed hourly average reports and multipoint calibration reports of all instruments. Operational summaries can be found on the "Monthly Continuous Data Summary" and "Continuous Network Equipment Summary" pages of the report.

Continuous Monitoring: **Seven (7) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Valleyview, Falher and Portable-Reno.**

During the month of **December** the following events were noted:

Henry Pirker Station:

- The measured ambient air quality was within the AAAQO for the Henry Pirker station.
- All analyzers and sensors at the Henry Pirker station had an operational uptime greater than 90% for the month of December.

Evergreen Park Station:

- The measured ambient air quality was within the AAAQO for the Evergreen Park station.
- All analyzers and sensors at the Evergreen Park station had an operational uptime greater than 90% for the month of December.

Smoky Heights Station:

- The measured ambient air quality was within the AAAQO for the Smoky Heights station.
- All analyzers and sensors at the Smoky Heights station had an operational uptime greater than 90% for the month of December.

Beaverlodge Station:

- The measured ambient air quality was within the AAAQO for the Beaverlodge station.
- All analyzers and sensors at the Beaverlodge station had an operational uptime greater than 90% for the month of December.

Valleyview Station:

- The measured ambient air quality was within the AAAQO for the Valleyview station.
- All analyzers and sensors at the Valleyview station had an operational uptime greater than 90% for the month of December.

Reno Station:

- The measured ambient air quality was within the AAAQO for the Sunset House station.
- All analyzers and sensors at the Reno station had an operational uptime greater than 90% for the month of December, with the exception of the wind head which returned an uptime of 82% due to freezing/icing conditions.

Falher Station:

- The measured ambient air quality was within the AAAQO for the Falher station.
- All analyzers and sensors at the Falher station had an operational uptime greater than 90% for the month of December.

Passive Monitoring - 46 Stations throughout the PAZA zone:

There were five duplicate sites sampled in the month of December: Bay Tree, Woking, Bear Lake, Deer Mountain, and Girouxville 4. The passive sample analyses were performed by MAXXAM Analytics Inc.

A summary of the passive data collected are reported as follows:

- Monthly average concentrations for SO_2 passives ranged from 0.1 ppb to 0.6 ppb, with a mean of 0.4 ppb.
- Monthly average concentrations for NO_2 passives ranged from 0.6 ppb to 12.6 ppb, with a mean of 2.1 ppb.
- Monthly average concentrations for O_3 passives ranged from 23.9 ppb to 48.8 ppb, with a mean of 33.6 ppb.
- Monthly average concentrations for H_2S were between 0.1 And 0.3 pbb, with a mean of 0.2 ppb.

Three locations were not collected due to heavy snowfall making the sites inaccessible; Fourth Creek, Shaftesbury and Jean Cote.

If you have any questions or concerns, please contact Patrick Andersen at 403.505.1041 or the PAZA office at 780.833.4343.

On Behalf of the
Peace Airshed Zone Association

Shelly Pruden
City of Grande Prairie

Greg Pippus
Weyerhaeuser Grande Prairie

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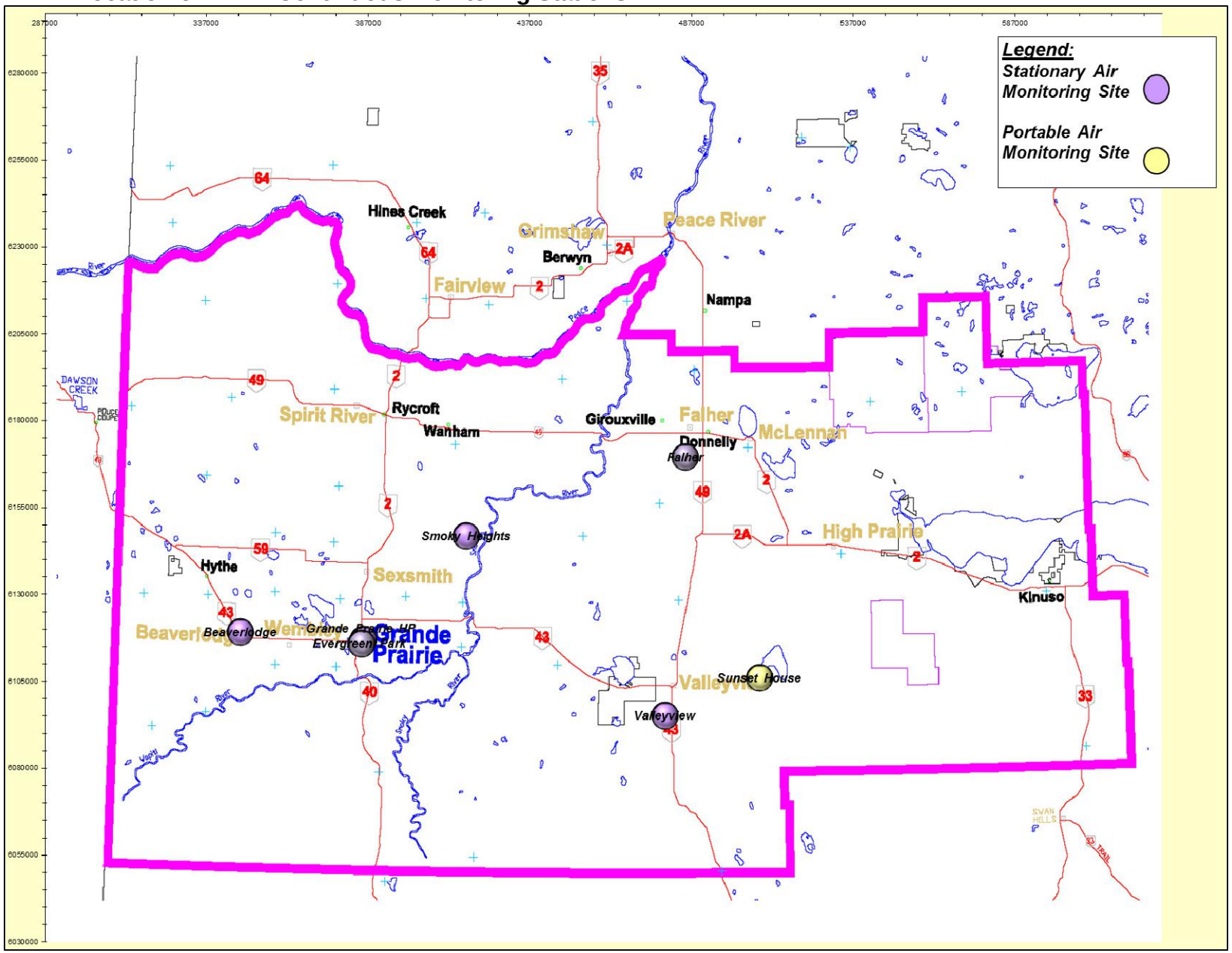
AQM Operations Manager

Location of PAZA Continuous Monitoring Stations



PAZA Monthly Continuous Data Summary

Dec-2013	Peace Airshed Zone Assocation						Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
Pollutant (units)	**Objectives**		**Station**	**Monthly Average**	**Exceedence**		Conc	Day	Conc	Day	**Operational Time (%)**
	1-hr	24-hr			1-hr	24-hr					
SO_2 (ppb)	172	48	Henry Pirker	0.5	0	0	5.1	Dec-16 08:00	1.3	Dec-14	100%
SO_2 (ppb)	172	48	Evergreen Park	0.4	0	0	7.8	Dec-16 11:00	1.4	Dec-05	100%
SO_2 (ppb)	172	48	Smoky Heights	0.6	0	0	6.9	Dec-24 00:00	1.7	Dec-23	100%
SO_2 (ppb)	172	48	Beaverlodge	0.5	0	0	6.9	Dec-14 06:00	1.4	Dec-14	100%
SO_2 (ppb)	172	48	Valleyview	0.7	0	0	12.7	Dec-15 17:00	4.1	Dec-16	100%
SO_2 (ppb)	172	48	Reno	0.2	0	0	5.1	Dec-22 04:00	0.8	Dec-07	100%
SO_2 (ppb)	172	48	Falher	0.2	0	0	0.8	Jan-01 00:00	0.4	Dec-07	100%
NO (ppb)			Henry Pirker	9.9	0	0	146.9	Dec-19 13:00	51.5	Dec-19	100%
NO_2 (ppb)	159	106	Henry Pirker	15.5	0	0	55.6	Dec-19 13:00	37.8	Dec-19	100%
NO_X (ppb)			Henry Pirker	25.4	0	0	202.9	Dec-19 13:00	89.5	Dec-19	100%
NO (ppb)			Beaverlodge	1.0	0	0	29.5	Dec-10 08:00	4.4	Dec-22	100%
NO_2 (ppb)	159	106	Beaverlodge	5.9	0	0	32.0	Dec-11 01:00	15.9	Dec-22	100%
NO_X (ppb)			Beaverlodge	6.8	0	0	43.4	Dec-04 22:00	20.3	Dec-22	100%
NO (ppb)			Reno	0.4	0	0	31.0	Dec-28 13:00	1.9	Dec-28	100%
NO_2 (ppb)	159	106	Reno	2.6	0	0	13.5	Dec-04 17:00	7.8	Dec-07	100%
NO_X (ppb)			Reno	3.0	0	0	42.1	Dec-28 13:00	8.5	Dec-07	100%
O_3 (ppb)	82		Henry Pirker	20.0	0	-	41.1	Dec-25 13:00	37.2	Dec-24	100%
O_3 (ppb) - 8-hr			Henry Pirker		0				38.9	Dec-24	
O_3 (ppb)	82		Beaverlodge	28.2	0	-	44.0	Dec-25 03:00	42.1	Dec-24	100%
O_3 (ppb) - 8-hr			Beaverlodge		0				43.2	Dec-25	
O_3 (ppb)	82		Reno	28.6	0	-	43.5	Dec-24 12:00	38.4	Dec-25	100%
O_3 (ppb) - 8-hr			Reno		0				40.6	Dec-24	
CO (ppm)	13		Henry Pirker	0.22	0	-	1.0	Dec-04 09:00	0.5	Dec-19	100%
CO (ppm) - 8-hr	5		Henry Pirker		0				0.7	Dec-20	

PAZA Monthly Continuous Data Summary – continued

Dec-2013	Peace Airshed Zone Assocation						Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
THC (ppm)			Henry Pirker	2.1	-	-	2.9	Dec-19 13:00	2.6	Dec-19	99%
CH_4 (ppm)			Henry Pirker	2.1	-	-	2.9	Dec-19 13:00	2.6	Dec-19	99%
NMHC (ppm)			Henry Pirker	0.0	-	-	0.1	Dec-04 09:00	0.0	Dec-04	99%
THC (ppm)			Reno	2.23	-	-	3.0	Dec-16 20:00	2.5	Dec-17	100%
TRS (ppb)			Henry Pirker	0.5	-	-	1.8	Dec-14 20:00	0.9	Dec-19	100%
TRS (ppb)			Evergreen Park	0.4	-	-	2.5	Dec-15 01:00	1.0	Dec-19	100%
TRS (ppb)			Smoky Heights	0.2	-	-	1.5	Dec-25 18:00	0.4	Dec-07	100%
TRS (ppb)			Reno	0.3	-	-	0.6	Dec-21 00:00	0.4	Dec-07	100%
H_2S (ppb)	10	3	Valleyview	0.2	0	0	1.9	Dec-01 21:00	0.4	Dec-19	100%
H_2S (ppb)	10	3	Falher	0.2	0	0	0.7	Dec-16 22:00	0.4	Dec-24	100%
$PM_{2.5}$ (µg/m3)	80	30	Henry Pirker	5.7	0	0	43.3	Dec-19 22:00	16.1	Dec-19	98%
$PM_{2.5}$ (µg/m3)	80	30	Evergreen Park	2.5	0	0	22.3	Dec-19 20:00	11.1	Dec-19	100%
$PM_{2.5}$ (µg/m3)	80	30	Smoky Heights	2.6	0	0	24.5	Dec-11 11:00	7.4	Dec-20	100%
$PM_{2.5}$ (µg/m3)	80	30	Beaverlodge	8.5	0	0	33.4	Dec-06 09:00	13.8	Dec-22	100%
$PM_{2.5}$ (µg/m3)	80	30	Reno	1.8	0	0	14.8	Dec-05 20:00	8.2	Dec-05	100%
RH (%)			Henry Pirker	69.3	-	-	87.8	Dec-17 04:00	77.7	Dec-09	100%
RH (%)			Evergreen Park	75.3	-	-	94.8	Dec-17 04:00	85.8	Dec-09	100%
RH (%)			Beaverlodge	85.0	-	-	100.0	Dec-17 00:00	95.5	Dec-09	100%
RH (%)			Valleyview	76.6	-	-	98.4	Dec-14 20:00	90.4	Dec-01	100%
SR (W/m^2)			Henry Pirker	15.8	-	-	194.3	Dec-03 14:00	36.7	Dec-03	100%
Temp (°C)			Henry Pirker	-14.5	-	-	6.0	Dec-26 15:00	2.2	Dec-26	100%
Temp (°C)			Evergreen Park	-13.8	-	-	7.0	Dec-26 20:00	3.2	Dec-26	100%
Temp (°C)			Smoky Heights	-15.3	-	-	5.5	Dec-15 02:00	1.3	Dec-15	100%
Temp (°C)			Beaverlodge	-13.1	-	-	5.5	Dec-26 19:00	3.1	Dec-26	100%
Temp (°C)			Valleyview	-13.2	-	-	7.6	Dec-26 19:00	3.7	Dec-15	100%
Temp (°C)			Reno	-16.1	-	-	3.5	Dec-15 04:00	0.7	Dec-15	100%
Temp (°C)			Falher	-16.2	-	-	4.3	Dec-15 08:00	1.7	Dec-15	100%

PAZA Monthly Continuous Data Summary – continued

Dec-2013	Peace Airshed Zone Assocation						Maximum Recorded Values				
							1-hr		24-hr / 8-hr		
WSPD s (km/hr)			Henry Pirker	9.6	-	-	45.0	Dec-15 09:00	24.4	Dec-15	100%
WSPD s (km/hr)			Evergreen Park	11.5	-	-	72.0	Dec-15 09:00	37.2	Dec-15	96%
WSPD s (km/hr)			Smoky Heights	12.2	-	-	51.0	Dec-15 09:00	34.0	Dec-15	100%
WSPD s (km/hr)			Beaverlodge	11.3	-	-	61.0	Dec-15 10:00	37.2	Dec-15	100%
WSPD s (km/hr)			Valleyview	5.8	-	-	25.0	Dec-15 10:00	14.1	Dec-15	100%
WSPD s (km/hr)			Reno	12.3	-	-	62.0	Dec-15 11:00	37.5	Dec-15	82%
WSPD s (km/hr)			Falher	14.4	-	-	45.0	Dec-15 10:00	32.7	Dec-15	100%
WSPD v (km/hr)			Henry Pirker	4.6	-	-	44.0	Dec-15 09:00	23.3	Dec-15	100%
WSPD v (km/hr)			Evergreen Park	5.9	-	-	72.0	Dec-15 09:00	35.9	Dec-15	96%
WSPD v (km/hr)			Smoky Heights	5.2	-	-	51.0	Dec-15 09:00	33.3	Dec-15	100%
WSPD v (km/hr)			Beaverlodge	5.9	-	-	61.0	Dec-15 10:00	36.3	Dec-15	100%
WSPD v (km/hr)			Valleyview	2.7	-	-	25.0	Dec-15 10:00	13.1	Dec-15	100%
WSPD v (km/hr)			Reno	2.9	-	-	62.0	Dec-15 11:00	36.2	Dec-15	82%
WSPD v (km/hr)			Falher	5.6	-	-	45.0	Dec-15 10:00	32.0	Dec-15	100%
WDIR			Henry Pirker	WNW	-	-	-	-	-	-	100%
WDIR			Evergreen Park	WNW	-	-	-	-	-	-	96%
WDIR			Smoky Heights	WNW	-	-	-	-	-	-	100%
WDIR			Beaverlodge	WNW	-	-	-	-	-	-	100%
WDIR			Valleyview	WNW	-	-	-	-	-	-	100%
WDIR			Reno	SW	-	-	-	-	-	-	82%
WDIR			Falher	WSW	-	-	-	-	-	-	100%

Continuous Network Equipment Summary

PAZA – Henry Pirker Station

General Station Issues

Routine monthly calibrations were performed on December 6th (SO_2, NO_X, O_3) and 7th (CO, TRS, THC).

Parameter	Make	Model	Notes
SO_2	TEI	43C	No operational issues observed.
NOx/NO/NO_2	TEI	42C	No operational issues observed.
O_3	TEI	49C	No operational issues observed.
CO	TEI	48C	No operational issues observed.
THC/CH_4/NMHC	TEI	55I	Hydrogen cylinder expired on early morning of December 7th, replaced same day. Analyzer checked and span range adjusted on December 24th after irregular span.
TRS	TEI	45C/43C	No operational issues observed.
$PM_{2.5}$	Sharp	5030	Sample tape broke in overnight period of December 6th and 7th, replaced on 7th.
RH	Met One	083D	No operational issues observed.
ET	Met One	083D	No operational issues observed.
SR	Met One	096-1	No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

PAZA – Evergreen Park Station

General Station Issues

Routine monthly calibration performed on December 10th (SO_2, TRS).

Parameter	Make	Model	Notes
SO_2	TEI	43i	No operational issues observed.
TRS	TEI	43C	No operational issues observed.
$PM_{2.5}$	R&P	1400AB	Two (2) hours flagged as invalid due to unstable analyzer behaviour
ET	Met One/Gill	083D	No operational issues observed.
RH	Met One/Gill		No operational issues observed.
WS / WD	Met One/ Gill		Ultrasonic wind head exhibited irregular behavior due to icing from December 30th, self stabilizing on January 1st.

PAZA – Smoky Heights Station			
General Station Issues			
Routine monthly calibration performed on December 19th (SO_2, TRS). Glassware cleaned during calibration			
Parameter	**Make**	**Model**	**Notes**
SO_2	TEI	43C	No operational issues observed.
TRS	TEI	43C	No operational issues observed.
$PM_{2.5}$	R&P	1400AB	No operational issues observed.
ET	Met One	083D	No operational issues observed.
WS / WD	Met One	010C/020C	No operational issues observed.

PAZA – Beaverlodge Station

General Station Issues

Routine monthly calibrations performed on December 9th (NO_X , O_3, SO_2). Glassware was cleaned during calibration.

Parameter	Make	Model	Notes
SO_2	TEI	43CTL	No operational issues observed.
NOx/NO/NO_2	TEI	42C	No operational issues observed.
O_3	TEI	49C	No operational issues observed.
$PM_{2.5}$	R&P	1400AB	Cooler and sample filter changed.
ET	n/a	n/a	Two (2) hours invalidated due to loose connection between device and datalogger
RH	n/a	n/a	Two (2) hours invalidated due to loose connection between device and datalogger
WS / WD	Blue Sky	857	No operational issues observed.

PAZA – Valleyview Station			
General Station Issues Routine monthly calibrations were performed on December 16th (SO_2 & H_2S).			
Parameter	**Make**	**Model**	**Notes**
SO_2	TEI	43i	No operational issues observed.
H_2S	TEI	43A	No operational issues observed.
ET	Gill	Met Pak 3	Two (2) hours invalidated due to datalogger failure to capture
RH	Gill	Met Pak 3	Two (2) hours invalidated due to datalogger failure to capture
WS / WD	Gill	Met Pak 3	No operational issues observed.

PAZA – Portable-Reno			
General Station Issues			
Routine monthly calibrations were performed on December 4th (THC, $PM_{2.5}$) and December 17th (SO_2, NO_X, O_3, TRS).			
Parameter	**Make**	**Model**	**Notes**
SO_2	TEI	43i	No operational issues observed.
NO_x	TEI	42i	No operational issues observed.
O_3	TEI	49C	No operational issues observed.
TRS	TEI	39C	No operational issues observed.
THC	TEI	51C	Adjustment to range on December 16th, span irregular on December 17th, recalibrated December 17th.
$PM_{2.5}$	R&P	1400AB	Two (2) hours flagged invalid due to negative swings.
ET	Gill	Met Pak 3	No operational issues observed.
WS / WD	Gill	Met Pak 3	Wind head freezing on December 26th, returning to service early in January.

PAZA – Falher Station			
General Station Issues Routine monthly calibrations were performed on December 18th (SO_2 & H_2S).			
Parameter	**Make**	**Model**	**Notes**
SO_2	TEI	43i	No operational issues observed.
H_2S	Thermo	450i	No operational issues observed.
ET	Gill	RM Young 5103	No operational issues observed.
WS / WD	Gill	RM Young 5103	No operational issues observed.

PAZA
Henry Pirker Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 5.1 ppb on Dec 16 08:00 Maximum Daily Average: 1.3 ppb on Dec 14

Minimum Value: 0 ppb on Dec 4 21:00 Minimum Daily Average: 0.1 ppb on Dec 24
Maximum Diurnal Average: 0.8 ppb at hour 13 Minimum Diurnal Average: 0.3 ppb at hour 1
Monthly Average: 0.49 ppb Percentiles: P_1 = 0.0 P_{10} = 0.1 Q_1 = 0.2 Median = 0.4 Q_3 = 0.6 P_{90} = 1.0 P_{99} = 2.8

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	1	1	1	0.3	0.9
2-Dec	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0.4	0.8
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.2	0.5
4-Dec	0	0	A	0	0	0	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0.3	0.8
5-Dec	0	A	1	0	0	0	0	1	0	1	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0.5	2.1
6-Dec	A	1	1	1	1	0	0	0	1	C	C	C	C	1	0	0	0	0	0	0	0	0	0	A	0.4	0.6
7-Dec	0	0	0	0	0	0	0	1	1	1	1	1	3	1	1	1	1	1	0	0	0	0	A	1	0.7	2.9
8-Dec	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	A	1	1	0.6	1.2
9-Dec	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.6
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0	0.2	0.6
11-Dec	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	A	0	0	0	1	1	0.3	1.2
12-Dec	1	1	1	2	1	1	0	0	0	0	0	2	2	1	0	0	0	A	0	1	1	0	0	1	0.7	2.0
13-Dec	0	0	0	1	1	0	0	0	0	2	1	1	1	1	1	1	A	0	0	0	0	0	0	0	0.5	1.9
14-Dec	0	0	0	0	0	1	1	1	1	1	1	3	3	4	3	A	2	2	1	1	1	1	1	0	1.3	4.0
15-Dec	1	1	1	0	1	1	1	0	1	1	2	1	0	0	A	0	1	1	3	0	0	0	0	2	0.8	2.8
16-Dec	0	0	0	0	0	0	2	5	2	0	0	0	0	A	0	0	0	1	1	1	1	1	1	0	0.7	5.1
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	1	0	1	1	1	1	0.3	0.8
18-Dec	1	1	0	1	1	0	0	1	1	1	1	A	1	0	0	0	1	1	1	1	1	1	0	0	0.7	1.3
19-Dec	0	0	0	0	0	0	0	0	0	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.5	1.2
20-Dec	1	1	1	1	1	1	1	0	0	A	0	0	1	0	1	0	0	0	0	0	0	1	1	1	0.6	1.1
21-Dec	0	0	0	0	0	0	0	0	A	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.5	1.1
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	0.6
23-Dec	1	1	1	1	1	1	A	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.4	1.0
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
27-Dec	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0.4	2.5
28-Dec	1	A	1	1	1	1	3	2	3	2	2	2	2	1	1	0	0	0	0	1	1	1	1	1	1.1	3.2
29-Dec	A	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	1	1	1	0	0	A	0.6	1.1
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.5
31-Dec	1	2	1	0	0	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	A	1	1	0.7	1.8
Diurnal Average	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.7	0.8	0.6	0.6	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.5	0.5		
Diurnal Maximum	1.1	1.8	1.4	2.0	1.1	1.6	3.0	5.1	3.2	2.0	1.9	2.7	3.0	4.0	3.5	0.8	2.0	1.8	2.8	1.4	1.4	0.9	2.5	1.6		

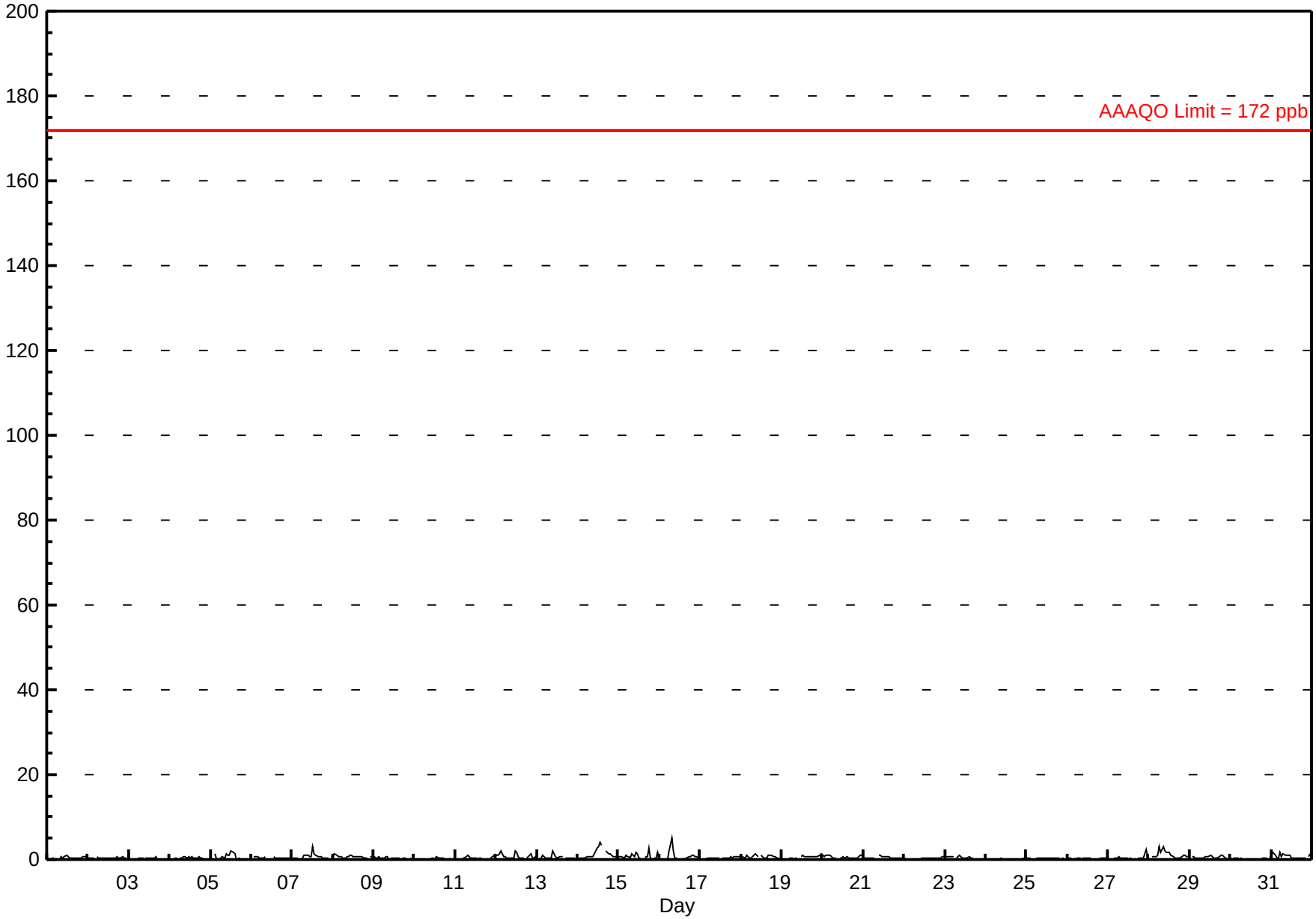
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Henry Pirker - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Henry Pirker - December 2013

Maximum Value: 10.4 ppb on Dec 16 09:00

Maximum Daily Average: 2.1 ppb on Dec 5

Minimum Value: 0 ppb on Dec 19 03:00

Minimum Daily Average: 0.4 ppb on Dec 24

Maximum Diurnal Average: 1.5 ppb at hour 13

Minimum Diurnal Average: 0.8 ppb at hour 22

Monthly Average: 1.01 ppb

Percentiles: $P_1 = 0.3$ $P_{10} = 0.5$ $Q_1 = 0.5$ Median = 0.8 $Q_3 = 1.1$ $P_{90} = 1.9$ $P_{99} = 4.9$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	0	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.6
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	0	0	0.8	2.8
3-Dec	0	0	0	A	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0.6	1.0
4-Dec	0	0	A	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.9	1.5
5-Dec	2	A	3	2	2	2	1	1	2	3	3	2	5	4	3	2	2	2	2	1	1	0	1	0	2.1	4.9
6-Dec	A	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	1	0	0	0	0	A	0.8	1.1
7-Dec	1	1	0	0	0	0	1	1	1	1	1	1	7	2	2	1	1	1	1	1	1	1	A	1	1.2	7.0
8-Dec	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1.0	1.5
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	1.0
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	0	1	1	0	A	0	0	0	0	0.7	2.0
11-Dec	0	0	0	0	0	0	2	2	1	0	1	1	0	0	1	0	0	0	A	0	0	1	1	2	0.9	2.5
12-Dec	2	2	2	3	2	1	1	1	1	1	1	3	3	1	1	1	1	A	1	1	2	1	1	1	1.3	2.7
13-Dec	1	1	1	3	3	1	1	1	1	5	2	1	1	1	1	1	A	1	0	0	0	0	0	0	1.1	4.5
14-Dec	0	0	1	1	1	1	1	1	1	1	2	3	3	5	4	A	2	2	1	2	1	1	1	1	1.8	5.1
15-Dec	1	1	1	1	2	2	2	1	2	2	3	4	1	2	A	1	2	2	5	1	1	1	0	5	1.8	5.0
16-Dec	0	0	0	1	0	0	7	10	10	0	0	0	0	A	0	0	1	1	1	2	1	1	1	1	1.9	10.4
17-Dec	0	1	0	0	0	0	0	0	0	1	1	1	A	0	1	1	1	1	4	1	2	1	1	1	0.9	4.0
18-Dec	1	1	1	2	1	1	1	1	2	1	1	A	1	1	0	1	1	1	1	1	1	1	1	1	1.2	2.0
19-Dec	1	0	0	0	1	1	1	1	1	1	A	1	2	1	1	1	1	1	1	1	1	1	1	2	0.9	1.8
20-Dec	1	1	1	1	1	1	1	1	0	A	1	1	1	1	1	1	0	1	1	1	1	1	1	2	1.0	1.9
21-Dec	1	1	1	0	0	0	0	0	A	1	1	1	1	1	1	1	1	0	1	1	0	0	1	0	0.8	1.4
22-Dec	0	0	0	0	0	0	0	A	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.6	1.1
23-Dec	1	1	1	1	1	1	A	1	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.8	1.7
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
25-Dec	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0.5	0.9
26-Dec	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	0.6	1.0
27-Dec	1	0	A	1	1	1	2	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	5	1	0.9	5.4
28-Dec	1	A	1	1	1	3	4	2	4	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1.7	4.4
29-Dec	A	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	0	A	1.0	1.7
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0.5	0.9
31-Dec	2	2	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	0	1	1	A	1	2	1.3	2.4
	0.8	0.8	0.8	0.9	0.9	0.9	1.2	1.2	1.3	1.1	1.2	1.2	1.5	1.2	1.1	0.8	0.9	0.9	1.0	0.8	0.8	0.8	1.0	1.1	Diurnal Average	
	2.4	2.4	2.5	2.7	2.5	3.1	6.9	9.9	10.4	4.5	3.0	4.0	7.0	5.1	4.5	2.3	2.5	2.8	4.5	2.4	2.3	1.3	5.4	5.0	Diurnal Maximum	

C - Calibration

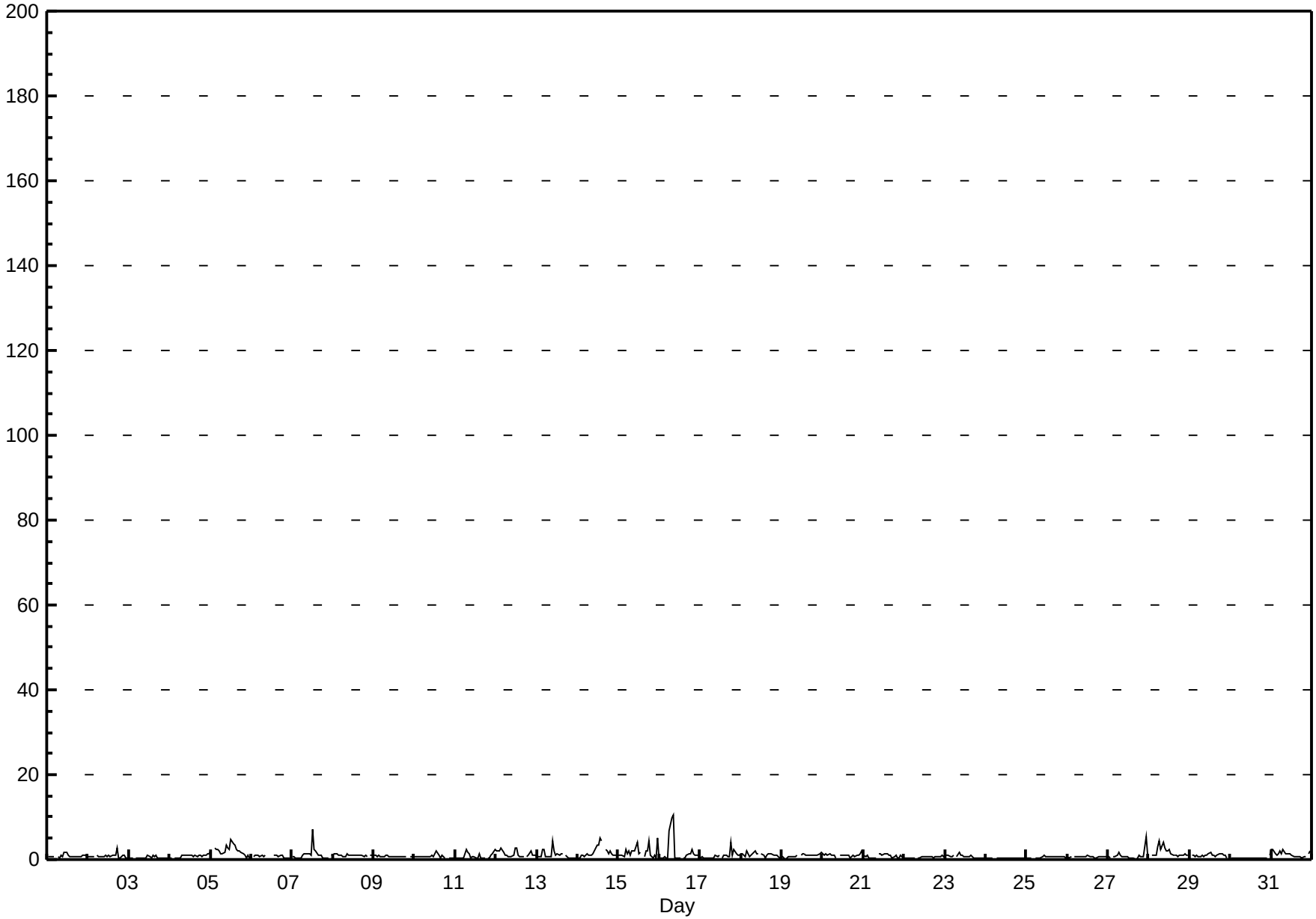
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

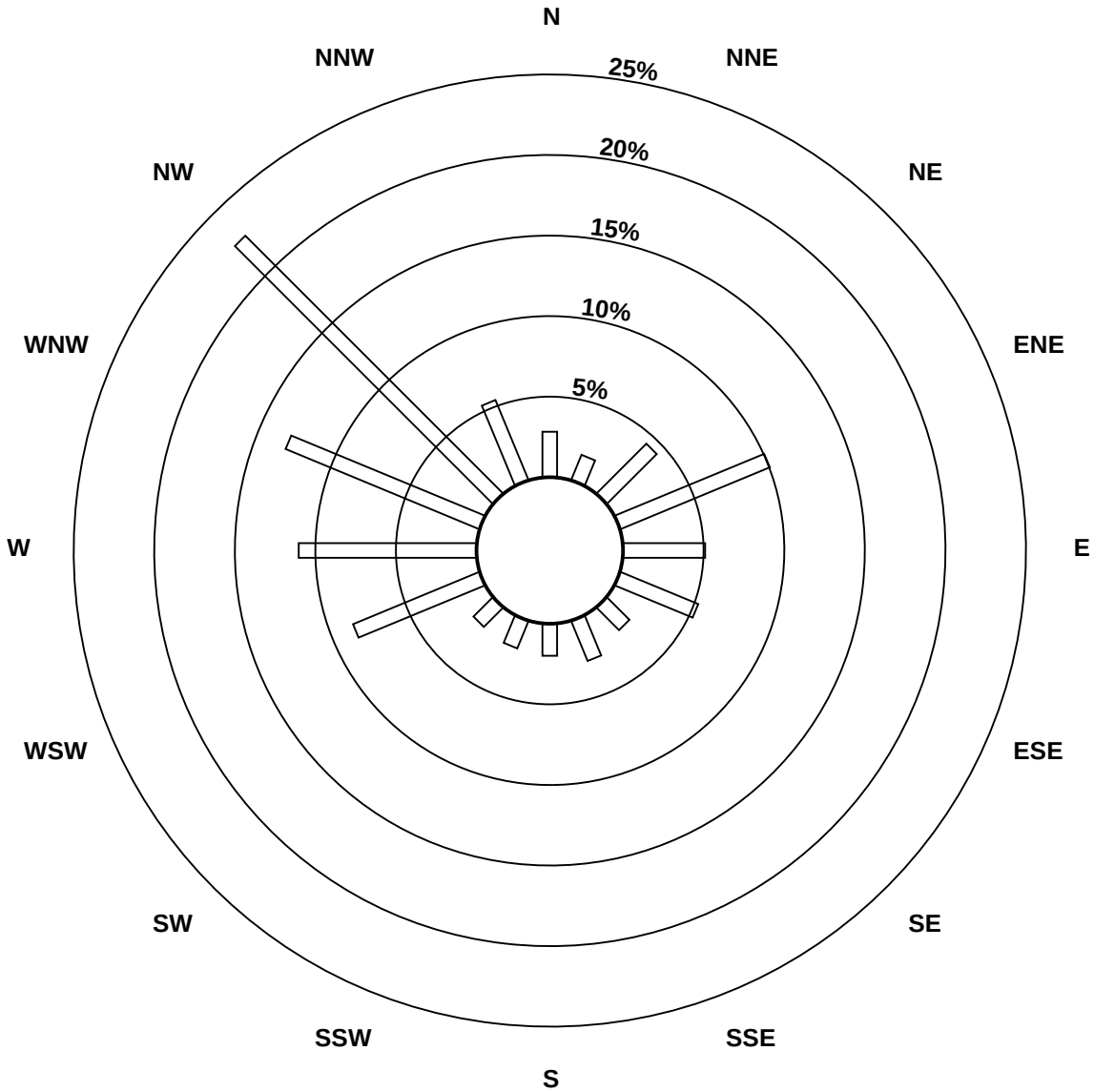
Henry Pirker - December 2013



Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Henry Pirker - December 2013



Pollutant Classes (ppb)

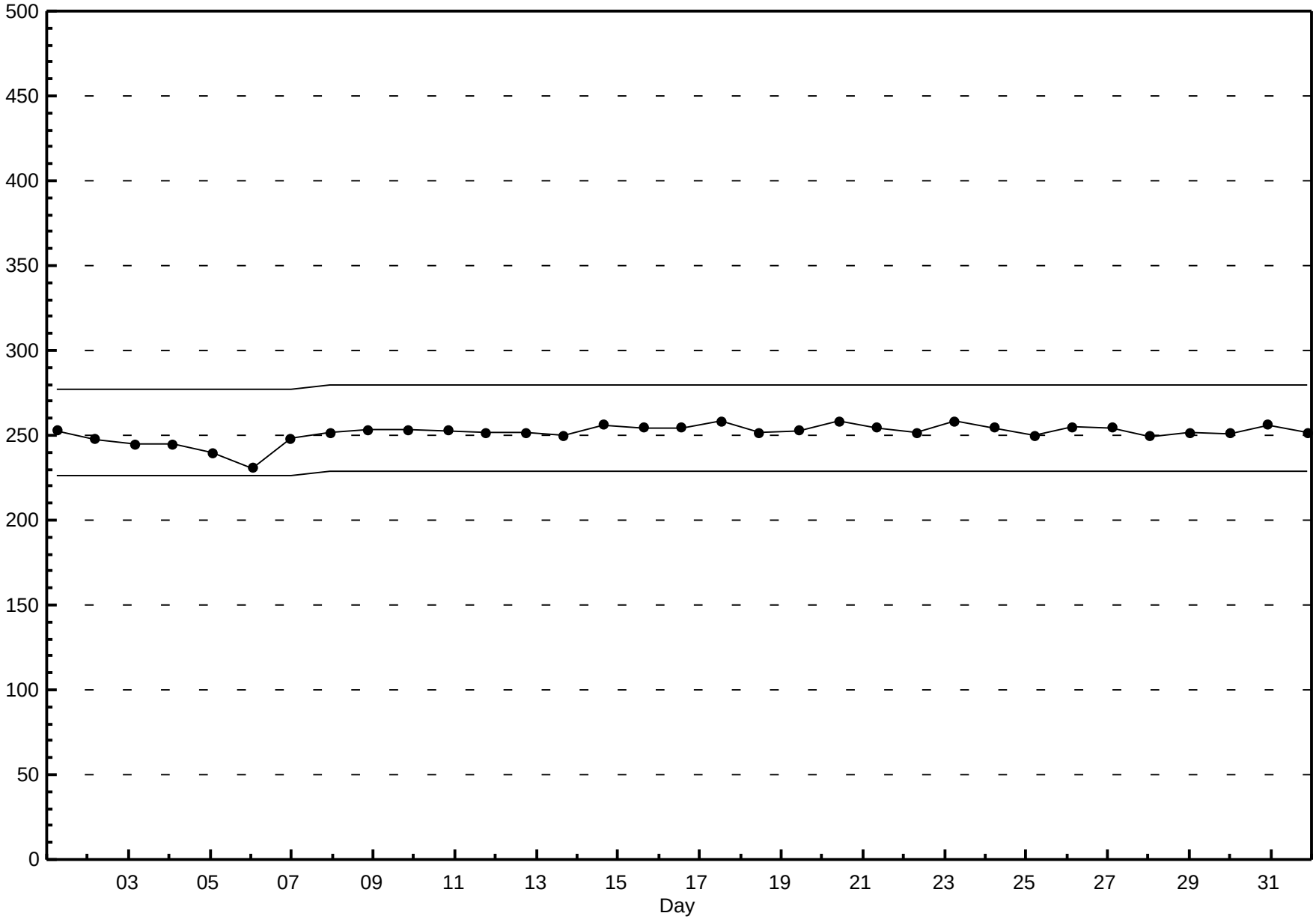
- 0 - 10
- 11 - 20
- 21 - 60
- 61 - 110
- 111 - 172
- > 172

Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 1.8 ppb on Dec 14 20:00

Maximum Daily Average: 0.9 ppb on Dec 19

Minimum Value: 0 ppb on Dec 1 23:00

Minimum Daily Average: 0.3 ppb on Dec 2

Maximum Diurnal Average: 0.6 ppb at hour 19

Minimum Diurnal Average: 0.4 ppb at hour 1

Monthly Average: 0.50 ppb

Percentiles: $P_1 = 0.2$ $P_{10} = 0.3$ $Q_1 = 0.4$ Median = 0.4 $Q_3 = 0.5$ $P_{90} = 0.8$ $P_{99} = 1.3$

Hours in Service:	744
Hours of Data:	704
Hours of Missing Data:	40
Hours of Calibration:	40
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
2-Dec	0	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0.4	0.5
4-Dec	0	0	A	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
5-Dec	0	A	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0.6	0.9
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.8	1.1
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	0	0	0	A	0	--	1.2
8-Dec	0	0	0	1	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	0	0	A	0	0	0.5	0.8
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	A	0	0	0	0.4	0.5
10-Dec	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	1	1	0	A	0	0	0	0	0.5	0.8
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.4	0.5
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.4
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.4	0.4
14-Dec	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	A	1	1	1	2	1	1	0	1	0.7	1.8
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	0.4
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	1	1	1	1	1	1	1	0.5	0.7
17-Dec	1	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	1	1	0	0	0	0	0	0	0.4	0.5
18-Dec	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	1	1	1	1	1	1	1	1	1	0.5	0.9
19-Dec	0	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
20-Dec	1	1	1	1	1	1	1	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	1.3
21-Dec	0	0	0	1	0	0	0	0	A	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	0.5	0.8
22-Dec	0	1	0	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
23-Dec	1	1	1	1	1	1	A	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.5	0.9
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0.5
25-Dec	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
26-Dec	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.4	1.0
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
28-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0.4	0.5
29-Dec	A	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	A	0.5	0.7
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	1	A	1	0.5	0.6
31-Dec	0	0	1	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	1	A	1	0	0.5	0.6
	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5	Diurnal Average	
	1.2	1.0	1.1	1.1	1.3	1.3	1.0	1.1	1.1	1.2	1.2	1.1	1.4	1.0	1.0	1.0	1.1	1.2	1.4	1.8	1.4	1.0	1.1	1.3	Diurnal Maximum	

C - Calibration A - Automated Daily Zero Span

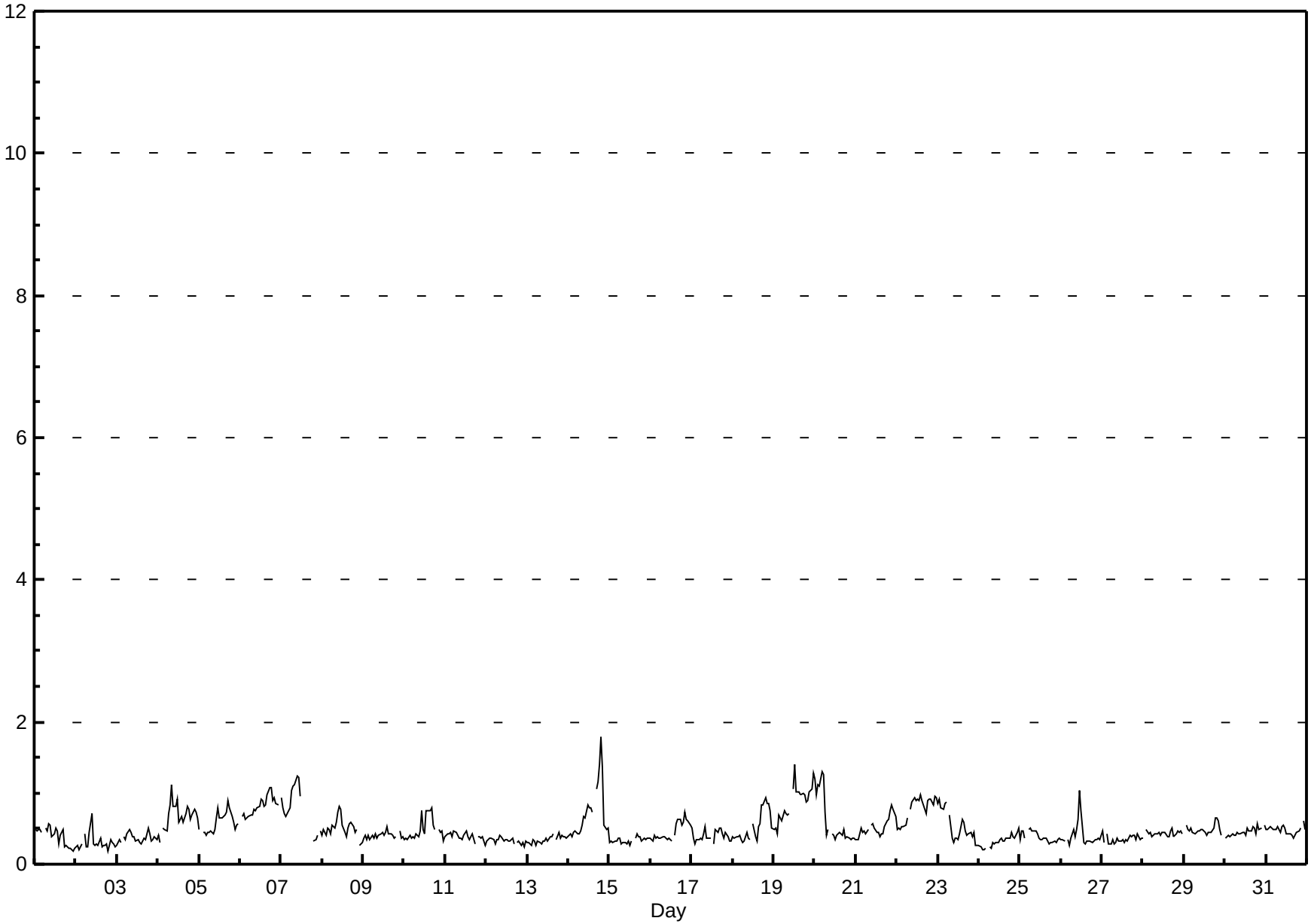
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2013

Maximum Value: 2.2 ppb on Dec 14 20:00

Maximum Daily Average: 1.3 ppb on Dec 19

Minimum Value: 1 ppb on Dec 24 04:00

Minimum Daily Average: 0.7 ppb on Dec 12

Maximum Diurnal Average: 1.0 ppb at hour 18

Minimum Diurnal Average: 0.9 ppb at hour 3

Monthly Average: 0.94 ppb

Percentiles: $P_1 = 0.6$ $P_{10} = 0.7$ $Q_1 = 0.8$ Median = 0.9 $Q_3 = 1.0$ $P_{90} = 1.3$ $P_{99} = 1.8$

Hours in Service:	744
Hours of Data:	704
Hours of Missing Data:	40
Hours of Calibration:	40
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
2-Dec	1	1	1	1	A	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.6
3-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
4-Dec	1	1	A	1	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.6
5-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.3
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	1	A	1.2	1.8
7-Dec	1	1	1	1	1	1	1	2	1	2	2	1	C	C	C	C	C	C	C	1	1	1	A	1	--	1.7
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.9	1.3
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.0
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	A	1	1	1	1	1.0	2.1
11-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.8	1.1
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.7	1.0
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.8	1.0
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	2	2	2	2	1	1	1	1.2	2.2
15-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	1.0
16-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.9	1.3
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
18-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
19-Dec	1	1	1	1	1	1	1	1	1	1	A	2	2	1	1	1	2	2	1	1	1	2	2	2	1.3	1.8
20-Dec	2	2	2	2	2	2	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.9
21-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4
22-Dec	1	1	1	1	1	1	1	A	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1.2	1.6
23-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5
24-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
25-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
26-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4
27-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	0.9
28-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
29-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.9	1.2
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.9	1.0
31-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1	0.9	2.1
	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.0	1.0	0.9	1.0	0.9	Diurnal Average	
	1.7	1.5	1.6	1.6	1.6	1.9	1.6	1.6	1.6	1.7	1.7	1.5	1.8	2.1	1.6	1.4	1.6	1.8	2.0	2.2	2.2	1.5	2.1	1.7	Diurnal Maximum	

C - Calibration

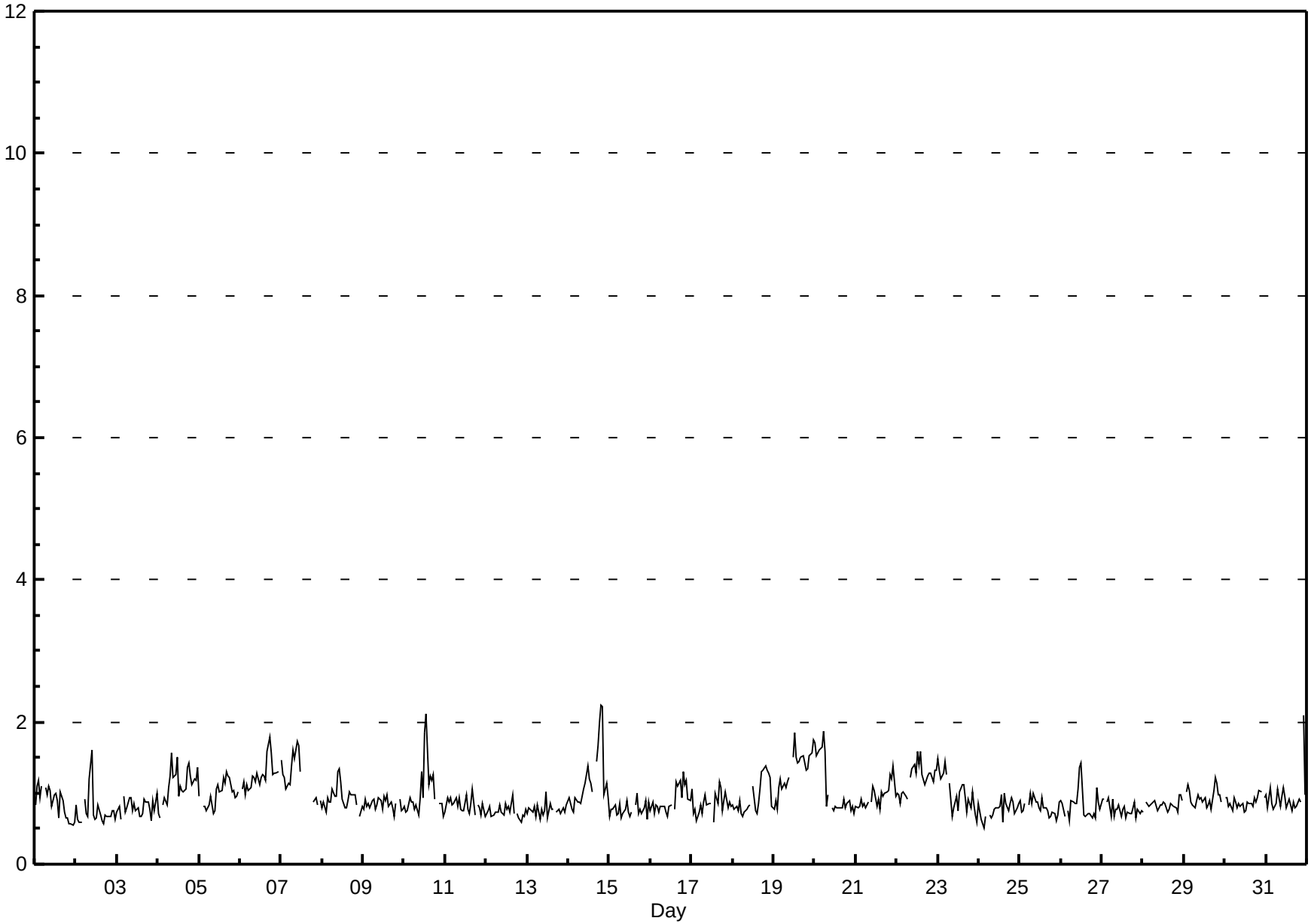
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2013

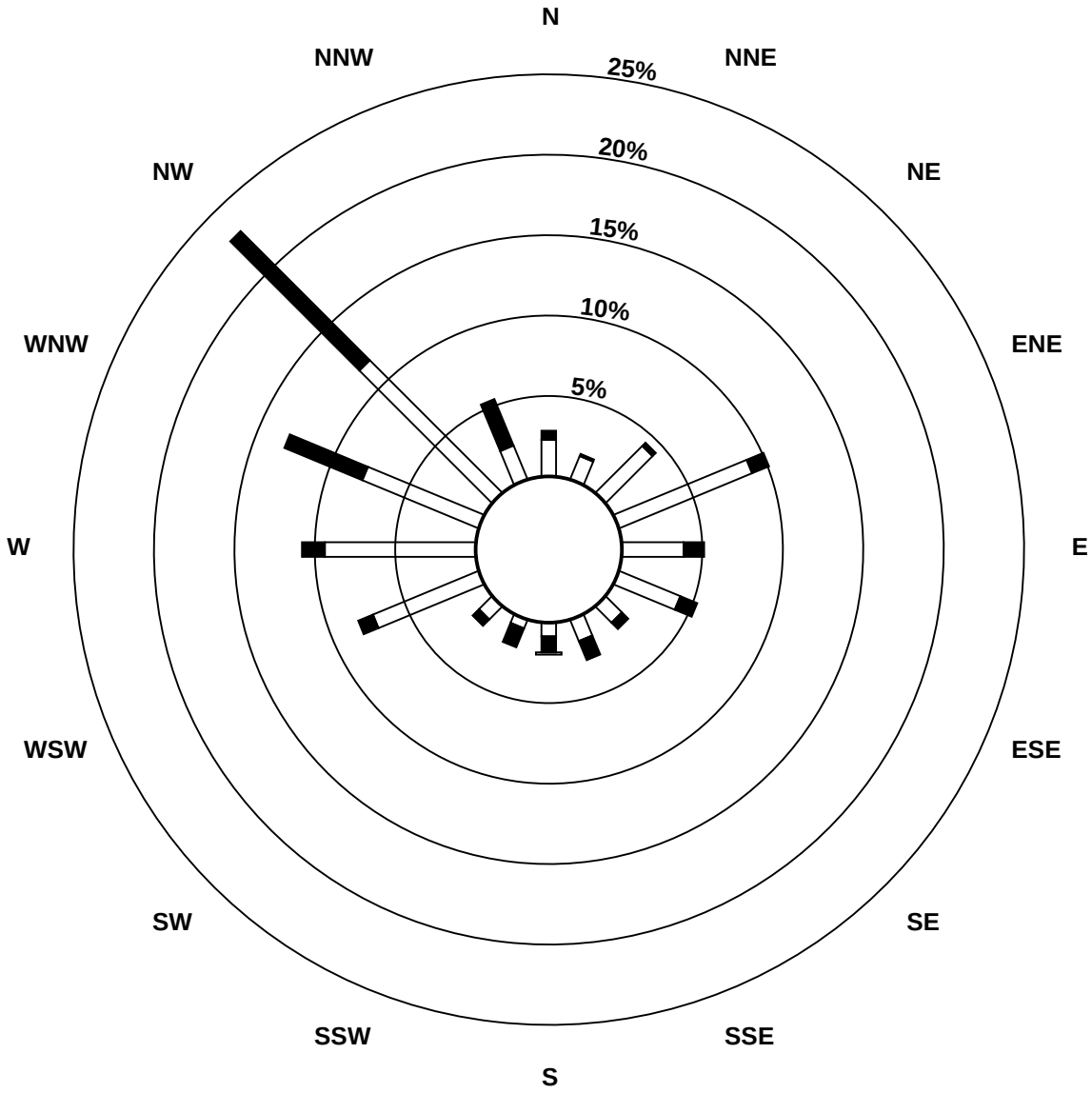


FOCUS AIR QUALITY MONITORING

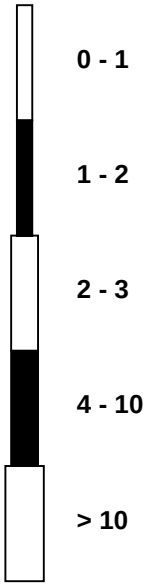
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb

Henry Pirker - December 2013



Pollutant Classes (ppb)

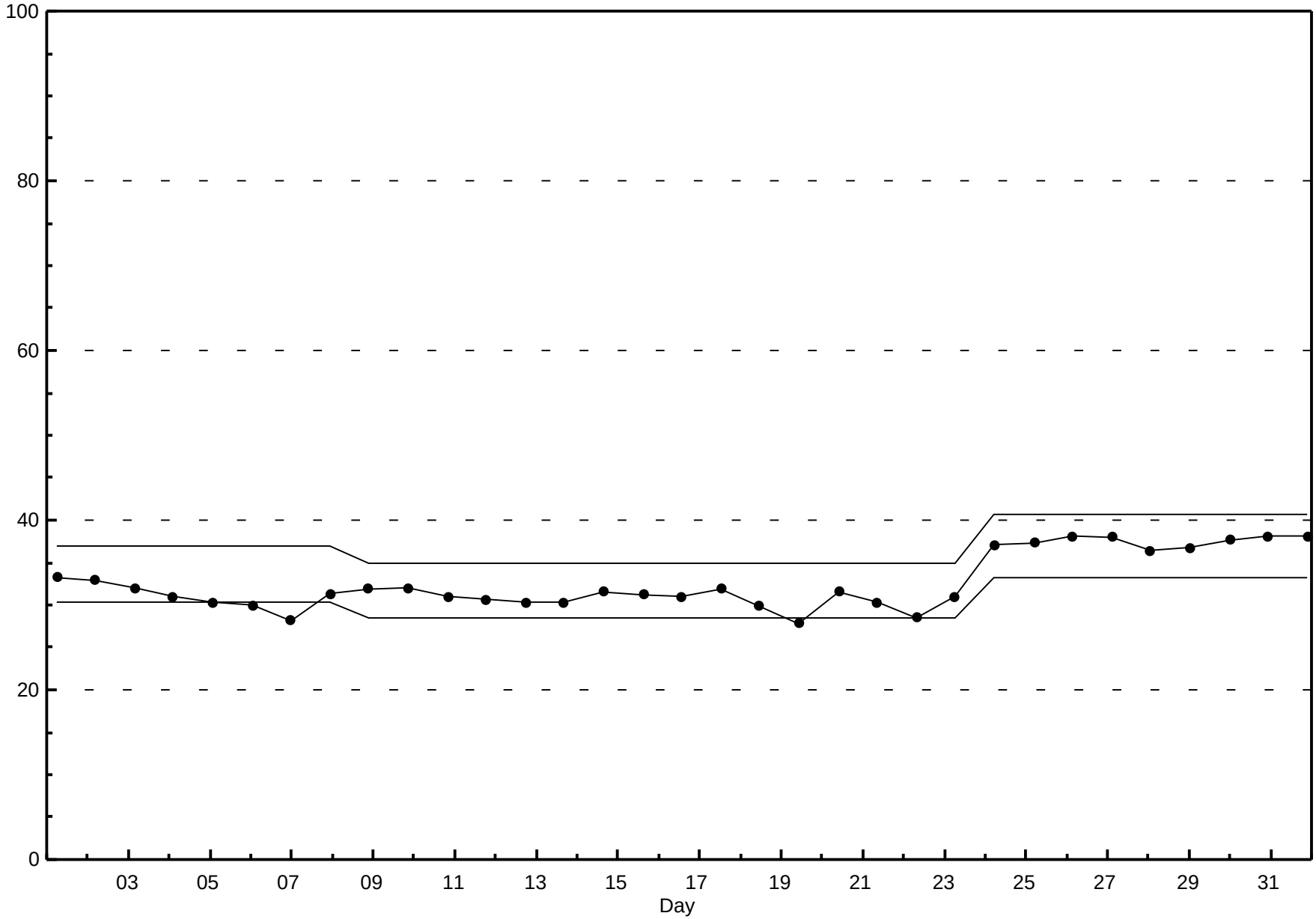


Peace Airshed Zone Association

Span Responses

Total Reduced Sulphur (TRS)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Nitrogen Dioxide (NO_2) - ppb

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 55.6 ppb on Dec 19 13:00 Maximum Daily Average: 37.8 ppb on Dec 19

Minimum Value: 1 ppb on Dec 25 13:00 Minimum Daily Average: 2.9 ppb on Dec 1
Maximum Diurnal Average: 20.0 ppb at hour 19 Minimum Diurnal Average: 11.0 ppb at hour 3
Monthly Average: 15.45 ppb Percentiles: P_1 = 1.7 P_{10} = 3.1 Q_1 = 5.3 Median = 10.5 Q_3 = 24.3 P_{90} = 35.6 P_{99} = 49.5

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	3	2	3	3	3	A	5	4	4	3	3	3	3	2	3	3	4	4	2	2	2	2	2	2	2.9	4.7
2-Dec	2	2	3	3	A	3	3	4	5	4	5	4	4	3	5	8	6	7	7	6	6	8	10	12	5.2	11.8
3-Dec	12	14	12	A	19	28	37	41	29	23	20	11	6	6	4	8	15	23	35	25	26	33	35	31	21.4	40.7
4-Dec	24	19	A	29	29	32	40	43	47	40	38	38	22	26	23	26	36	41	40	36	36	36	31	23	32.7	47.4
5-Dec	11	A	7	7	8	11	27	19	26	17	12	10	7	7	14	19	26	33	26	26	24	24	33	34	18.7	34.4
6-Dec	A	30	30	25	27	31	30	29	30	C	C	C	C	C	24	28	36	39	38	33	36	35	34	A	--	39.5
7-Dec	33	33	31	24	22	23	32	38	39	41	41	32	14	8	14	17	20	17	13	10	6	9	A	5	22.7	41.0
8-Dec	4	3	3	5	6	6	16	19	34	44	41	39	21	11	12	19	17	18	29	21	18	A	5	2	17.1	43.6
9-Dec	4	4	2	3	4	4	5	6	7	11	27	27	23	22	16	15	12	12	17	13	A	24	7	4	11.7	27.4
10-Dec	3	3	4	5	8	14	15	24	24	31	35	20	12	36	36	39	39	32	31	A	34	28	24	21	22.5	39.2
11-Dec	16	13	12	9	11	24	13	8	9	15	13	12	11	11	9	10	11	10	A	12	8	12	12	6	11.6	24.4
12-Dec	6	6	6	7	8	7	8	10	11	9	10	8	8	8	8	11	9	A	7	9	9	9	7	7	8.2	11.3
13-Dec	6	7	6	9	10	12	10	7	7	7	8	6	5	6	11	13	A	13	12	11	9	9	8	7	8.6	13.0
14-Dec	8	7	14	14	10	13	16	22	26	28	23	24	27	29	27	A	37	40	35	36	34	26	20	17	23.1	39.8
15-Dec	4	4	4	6	4	2	4	3	2	3	3	3	4	4	A	11	14	10	17	16	10	6	3	5	6.2	17.2
16-Dec	2	5	4	5	5	5	6	8	10	10	11	13	10	A	19	24	44	47	45	46	48	44	39	29	20.6	47.7
17-Dec	10	6	5	5	5	8	13	22	27	17	17	20	A	5	4	3	3	4	3	3	3	3	3	2	8.4	26.7
18-Dec	3	2	2	3	3	3	4	4	5	4	5	A	5	5	9	25	34	47	47	47	46	43	41	35	18.4	47.5
19-Dec	28	23	24	30	28	32	32	31	30	32	A	41	56	46	42	38	43	42	40	40	42	46	50	54	37.8	55.6
20-Dec	53	48	50	50	54	44	31	24	26	A	11	9	10	12	12	13	12	12	11	11	10	10	12	12	23.4	53.6
21-Dec	9	8	8	11	9	11	21	21	A	23	21	12	8	6	10	16	17	37	35	36	39	39	36	36	20.4	39.4
22-Dec	30	20	17	19	22	18	24	A	27	26	24	24	25	23	31	33	34	33	36	35	34	33	36	34	27.7	36.3
23-Dec	33	33	28	27	31	35	A	32	4	4	5	6	8	15	19	30	11	10	12	8	8	6	6	6	16.4	35.3
24-Dec	5	4	5	5	2	A	3	2	3	5	6	10	9	10	6	6	5	6	3	3	3	4	6	16	5.5	16.0
25-Dec	11	16	9	5	A	4	5	7	11	13	13	7	1	2	3	2	2	1	2	3	2	3	3	3	5.6	16.2
26-Dec	3	3	1	A	5	6	14	30	26	31	30	24	24	5	3	3	3	3	3	3	4	4	3	3	10.2	31.1
27-Dec	3	3	A	3	4	4	3	4	5	6	7	9	7	7	5	6	8	4	4	4	5	10	3	3	5.1	10.5
28-Dec	3	A	3	3	3	3	4	4	4	5	8	9	10	11	7	10	11	9	8	9	10	11	11	9	7.2	11.3
29-Dec	A	13	16	18	12	11	11	12	9	8	9	13	8	8	11	13	7	6	6	6	8	9	12	A	10.2	18.1
30-Dec	6	7	6	6	5	5	5	7	9	8	7	8	7	7	8	10	10	11	11	12	11	10	A	9	8.0	11.6
31-Dec	8	10	7	5	4	5	8	7	16	23	19	15	10	8	9	10	16	20	23	25	33	A	21	20	14.0	33.0
	11.8	12.0	11.0	11.8	12.5	13.9	14.9	16.5	17.0	16.9	16.3	15.7	12.6	12.0	13.5	15.6	18.1	19.7	20.0	18.2	18.8	18.4	17.7	15.3	Diurnal Average	
	52.8	48.4	50.3	49.8	53.6	43.5	40.0	43.0	47.4	43.6	41.4	41.2	55.6	45.9	41.7	38.6	43.6	47.2	47.5	47.0	47.7	46.3	49.6	54.2	Diurnal Maximum	

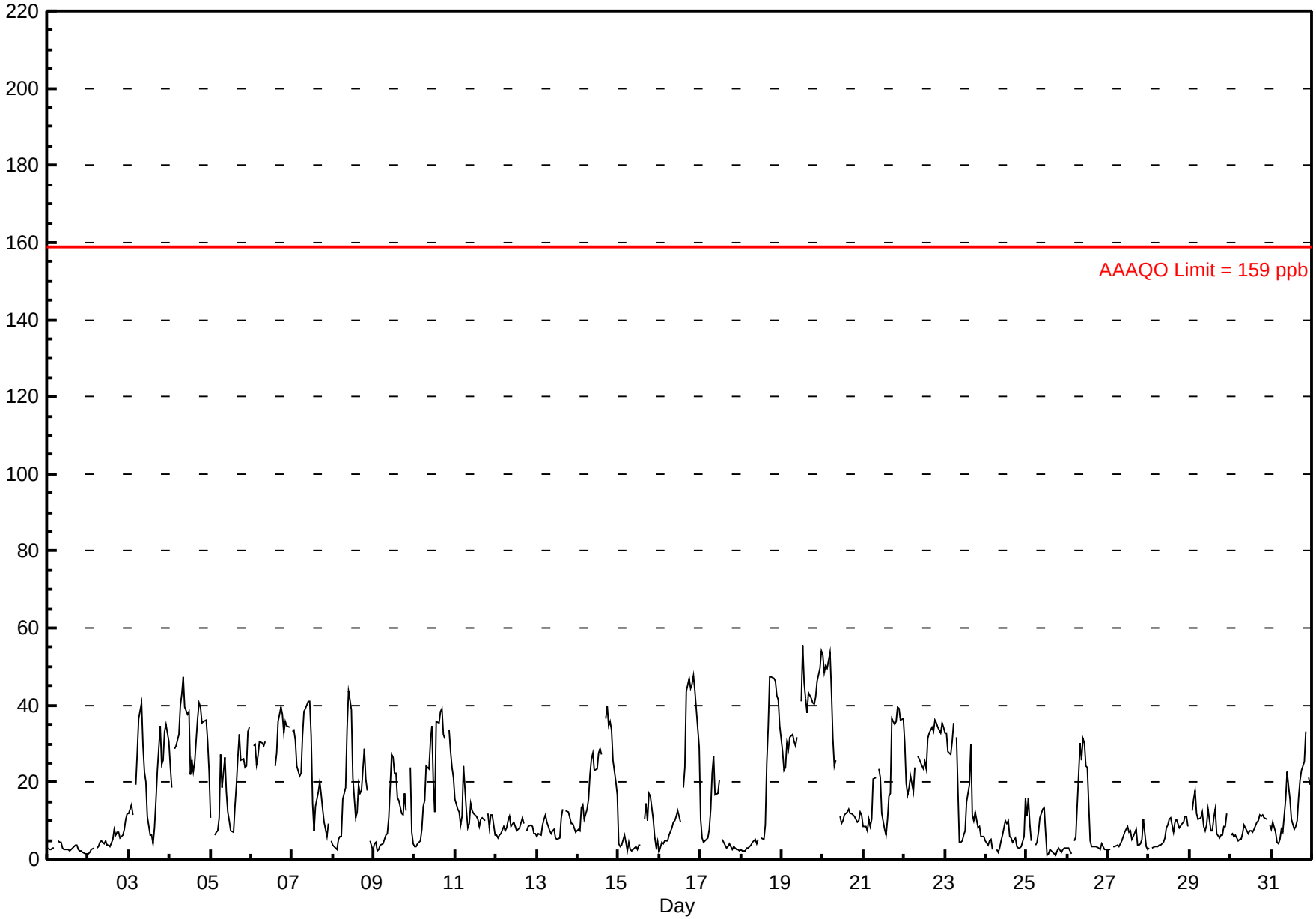
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

Peace Airshed Zone Association

Hourly Averages

Nitrogen Dioxide (NO_2) - ppb

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Nitrogen Dioxide (NO_2) - ppb

Henry Pirker - December 2013

Maximum Value: 89.1 ppb on Dec 19 09:00

Maximum Daily Average: 45.3 ppb on Dec 19

Minimum Value: 2 ppb on Dec 25 13:00

Minimum Daily Average: 4.4 ppb on Dec 1

Maximum Diurnal Average: 25.1 ppb at hour 9

Minimum Diurnal Average: 15.0 ppb at hour 3

Monthly Average: 20.75 ppb

Percentiles: P_1 = 2.4 P_{10} = 4.7 Q_1 = 8.8 Median = 15.7 Q_3 = 33.1 P_{90} = 41.9 P_{99} = 58.1

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	5	3	4	4	5	A	7	7	6	4	7	4	4	3	4	5	5	5	4	5	3	3	2	4	4.4	7.5
2-Dec	2	4	4	4	A	4	5	15	7	5	25	6	38	6	9	11	12	11	12	9	9	14	16	16	10.5	38.2
3-Dec	17	18	17	A	24	34	42	43	43	40	28	46	12	10	6	15	24	35	43	39	36	46	40	38	30.2	46.5
4-Dec	38	28	A	34	36	38	46	54	56	46	45	45	29	31	30	31	39	45	43	38	39	39	39	28	39.0	55.9
5-Dec	23	A	9	11	11	22	39	27	37	28	16	13	10	11	22	24	38	39	35	33	33	31	36	36	25.3	39.4
6-Dec	A	33	33	28	31	33	33	33	37	C	C	C	C	C	28	39	43	45	43	35	40	38	37	A	--	44.9
7-Dec	35	36	36	27	25	26	39	41	42	46	53	45	37	13	23	31	25	21	17	13	9	14	A	12	28.9	52.7
8-Dec	5	5	4	11	10	8	23	25	47	49	50	44	29	13	24	34	20	33	38	35	24	A	14	4	23.8	49.8
9-Dec	7	6	3	4	6	7	12	13	10	18	37	33	27	29	27	20	15	18	30	17	A	39	27	8	17.9	38.6
10-Dec	5	6	6	8	11	19	26	36	35	37	43	34	19	71	39	43	42	40	40	A	36	34	28	25	29.6	71.2
11-Dec	23	16	14	13	14	31	20	13	19	23	19	17	15	16	17	19	18	16	A	28	14	18	22	16	18.2	30.9
12-Dec	12	9	13	12	15	11	12	20	15	12	15	13	11	11	16	29	15	A	12	12	14	13	10	11	13.5	29.2
13-Dec	8	11	12	16	18	17	15	12	13	22	15	7	7	12	17	17	A	19	16	14	12	13	11	10	13.7	22.1
14-Dec	10	12	18	23	13	18	22	28	28	32	27	28	33	33	31	A	40	44	38	39	39	35	30	28	28.2	44.3
15-Dec	5	5	5	10	12	3	7	5	4	5	5	4	6	5	A	19	25	14	23	25	18	10	5	9	9.9	25.5
16-Dec	5	8	8	8	8	8	13	11	32	14	14	17	14	A	36	52	54	55	53	53	51	49	43	38	27.9	54.8
17-Dec	19	10	11	13	9	10	22	30	38	38	23	28	A	7	6	5	6	7	5	4	5	4	4	4	13.3	38.4
18-Dec	4	4	3	4	4	5	6	7	8	7	8	A	9	7	18	35	48	51	53	57	50	46	44	42	22.5	56.7
19-Dec	36	28	32	33	35	37	38	34	89	35	A	57	60	49	46	45	47	47	46	43	46	48	53	58	45.3	89.1
20-Dec	59	52	54	56	58	50	42	33	33	A	14	14	13	18	20	18	15	16	15	17	15	13	16	17	28.6	58.6
21-Dec	17	11	9	14	11	14	29	29	A	28	26	18	12	10	19	41	26	40	39	50	44	42	39	42	26.4	50.0
22-Dec	36	25	25	24	30	26	34	A	32	33	29	29	28	32	34	36	36	34	38	38	36	34	38	36	32.3	38.1
23-Dec	33	35	33	30	33	40	A	42	8	5	7	9	13	34	31	43	19	17	22	11	11	9	8	10	21.8	42.7
24-Dec	7	7	7	9	7	A	5	3	5	8	9	14	15	17	9	9	7	8	6	4	4	5	9	27	8.7	27.1
25-Dec	20	25	24	9	A	5	9	9	15	19	16	14	2	2	4	2	2	2	4	4	3	5	5	5	8.8	24.5
26-Dec	5	4	3	A	9	11	27	37	34	36	36	27	42	13	6	5	4	4	5	5	7	7	4	8	14.7	41.7
27-Dec	4	5	A	6	6	16	5	9	7	10	10	13	10	13	8	10	13	7	5	6	12	18	4	3	8.7	18.0
28-Dec	4	A	4	5	7	5	5	7	9	8	11	11	65	22	13	13	18	15	11	13	15	17	15	11	13.1	65.1
29-Dec	A	15	23	23	16	13	15	14	12	11	15	19	10	12	13	20	14	8	8	8	12	16	16	A	14.2	23.2
30-Dec	11	9	10	15	7	8	8	11	14	11	9	13	12	10	11	20	15	16	17	15	15	14	A	16	12.4	20.5
31-Dec	9	14	11	6	8	22	21	12	18	28	27	21	16	11	12	13	23	25	26	35	35	A	27	25	19.3	35.4
	15.9	15.2	15.0	15.8	16.4	18.6	20.8	21.9	25.1	22.7	21.9	22.1	20.5	18.0	19.3	23.4	23.5	24.5	24.8	23.5	22.8	23.2	22.1	20.2	Diurnal Average	
	58.6	52.5	53.6	55.7	58.2	50.3	46.4	54.4	89.1	48.6	52.7	57.1	65.1	71.2	46.1	52.2	54.1	54.8	53.0	56.7	51.1	49.0	53.0	58.3	Diurnal Maximum	

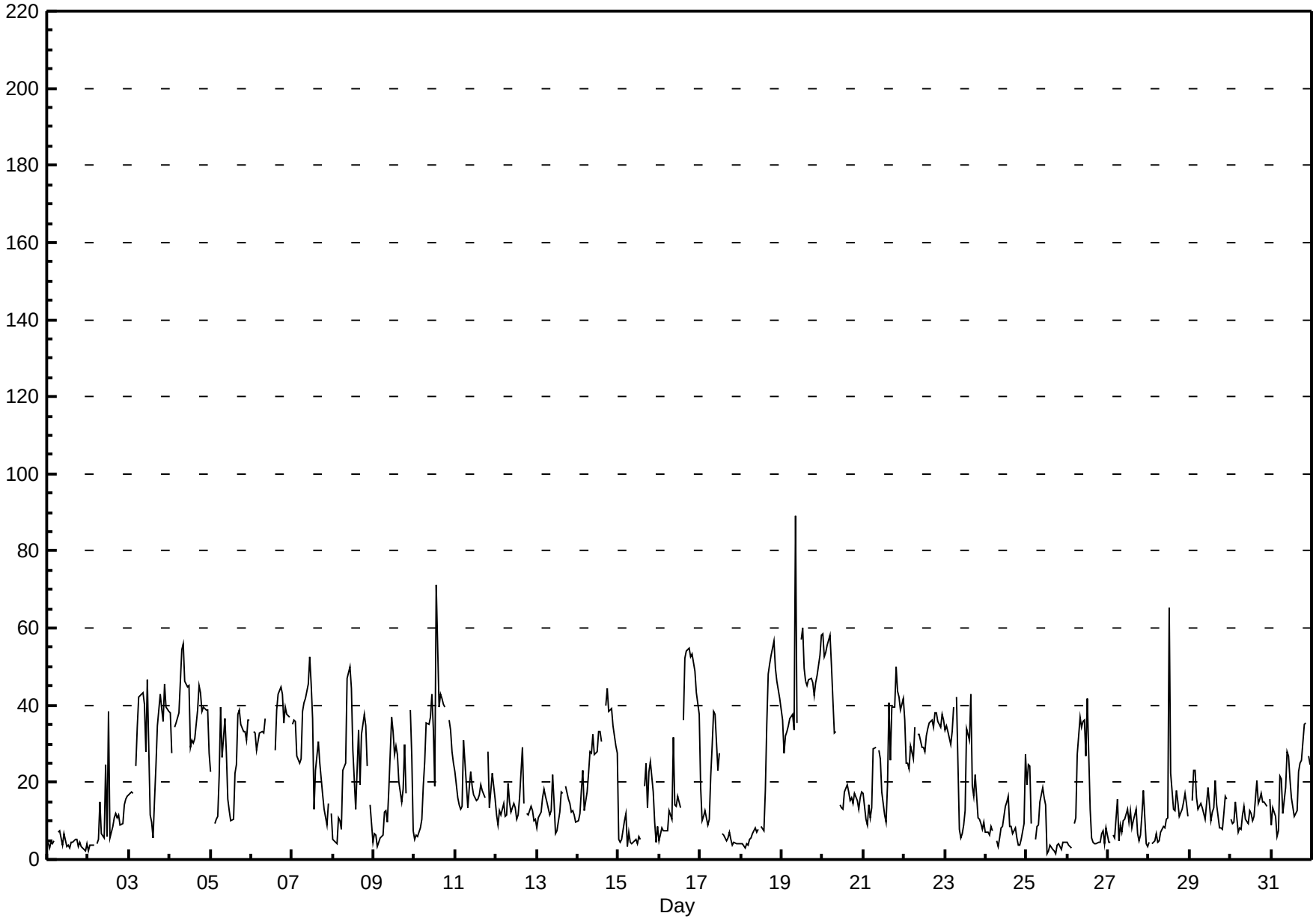
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Dioxide (NO_2) - ppb

Henry Pirker - December 2013



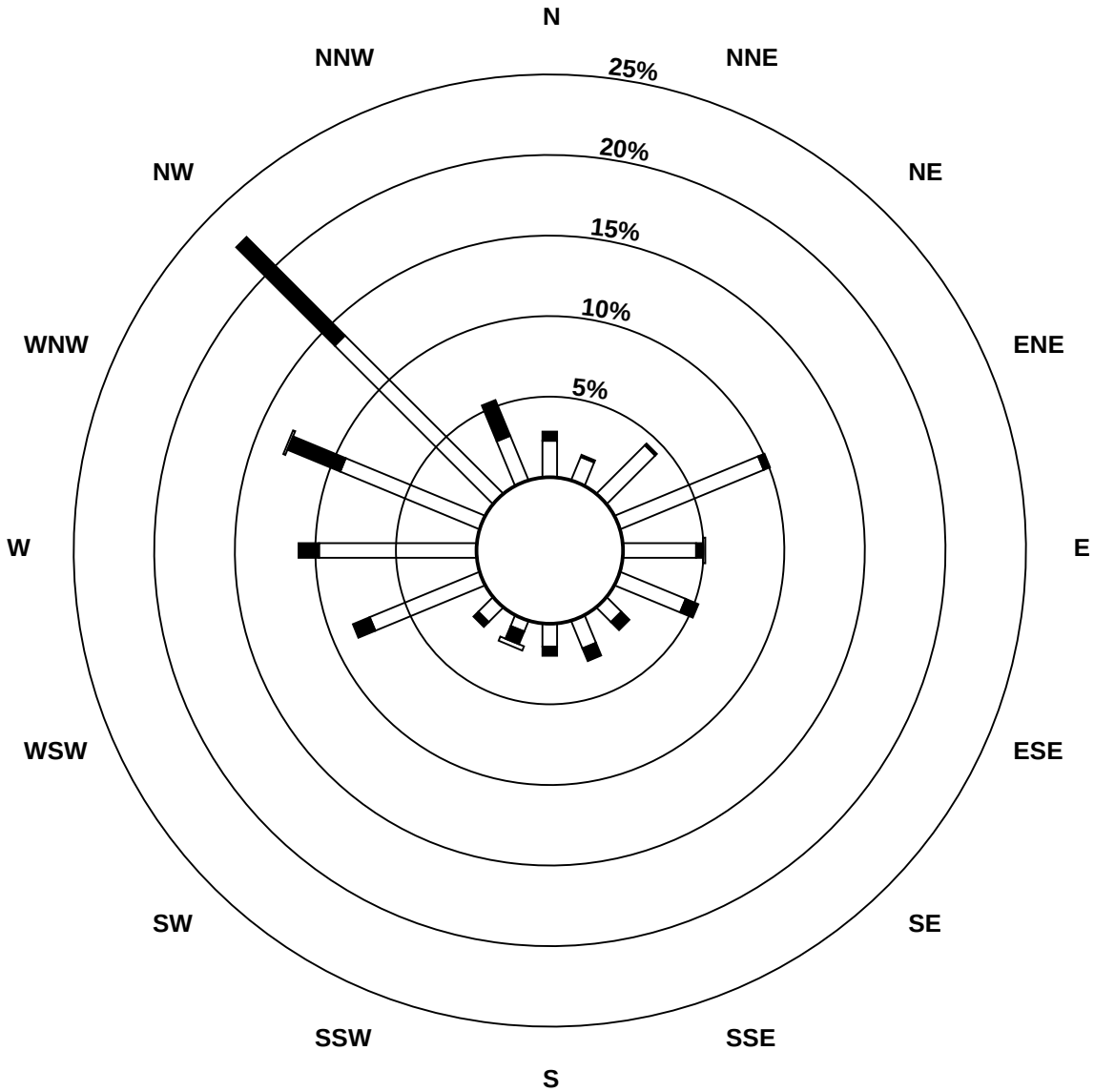
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Pollutant Rose

Nitrogen Dioxide (NO_2) - ppb

Henry Pirker - December 2013



Pollutant Classes (ppb)

- 0 - 25
- 26 - 50
- 51 - 110
- 111 - 159
- > 159

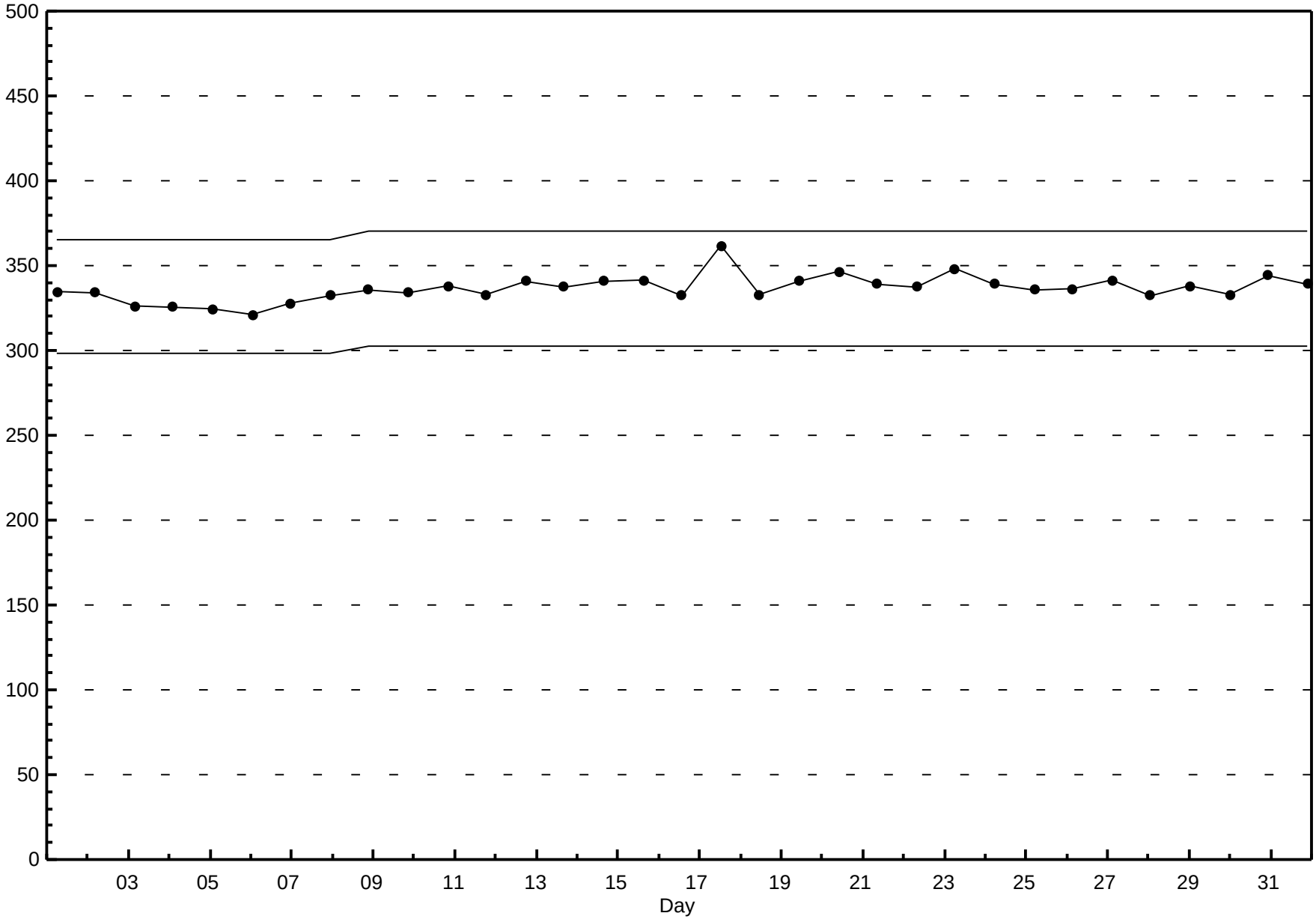
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Span Responses

Nitrogen Dioxide (NO_2)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 146.9 ppb on Dec 19 13:00

Maximum Daily Average: 51.5 ppb on Dec 19

Minimum Value: 0 ppb on Dec 15 01:00

Minimum Daily Average: 0.2 ppb on Dec 25

Maximum Diurnal Average: 16.2 ppb at hour 18

Minimum Diurnal Average: 4.3 ppb at hour 4

Monthly Average: 9.88 ppb

Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.4$ Median = 1.6 $Q_3 = 6.3$ $P_{90} = 31.7$ $P_{99} = 98.8$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	0	A	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.5	1.3
2-Dec	0	0	0	0	A	0	0	1	1	1	3	1	3	2	2	2	1	1	1	0	0	0	0	1	1.0	3.4
3-Dec	1	1	1	A	2	4	17	24	10	8	10	7	3	3	1	2	2	3	12	3	1	6	10	4	5.9	23.9
4-Dec	3	0	A	4	2	6	35	59	99	70	67	86	29	33	21	16	36	61	47	31	26	21	8	1	33.1	99.2
5-Dec	1	A	1	1	1	0	4	1	5	3	6	6	5	4	10	10	9	16	6	6	6	3	16	18	5.9	17.8
6-Dec	A	11	18	6	6	14	12	15	32	C	C	C	C	C	33	30	57	71	58	24	33	28	27	A	--	70.8
7-Dec	25	24	12	2	2	3	30	54	51	60	54	26	7	2	3	3	1	0	0	0	0	0	A	0	15.6	59.7
8-Dec	0	0	0	0	0	0	0	0	7	26	52	44	11	3	4	5	1	0	2	1	0	A	0	0	6.8	51.8
9-Dec	0	0	0	0	0	0	0	0	0	1	8	12	9	8	4	2	1	0	0	0	A	3	1	1	2.1	11.7
10-Dec	1	1	1	1	0	1	1	3	3	13	43	14	7	62	61	68	64	26	12	A	12	3	1	1	17.3	67.7
11-Dec	0	0	0	0	0	3	2	2	2	2	3	5	5	3	2	3	2	2	A	3	2	3	3	2	2.1	4.7
12-Dec	1	1	1	1	2	2	2	4	4	3	4	5	3	4	4	6	2	A	2	2	3	2	1	1	2.6	5.5
13-Dec	1	1	1	1	1	1	1	0	1	2	2	2	2	4	5	6	A	2	4	3	2	2	2	1	2.0	6.3
14-Dec	1	1	0	1	0	1	2	8	19	34	25	38	51	50	35	A	85	100	70	83	60	3	0	0	29.1	100.0
15-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	1	A	1	1	1	0	1	0	0	0	0	0.4	1.4
16-Dec	0	0	0	0	0	0	0	0	1	1	2	4	3	A	6	10	32	36	25	31	50	28	9	2	10.4	49.9
17-Dec	0	0	0	0	0	0	1	3	5	4	5	9	A	1	1	1	1	1	1	0	0	0	0	0	1.6	9.2
18-Dec	0	0	0	0	0	0	0	0	1	1	1	A	2	2	3	11	20	71	73	73	75	61	54	19	20.4	75.2
19-Dec	6	1	2	3	4	12	16	13	17	25	A	80	147	99	80	63	65	66	57	54	54	82	102	135	51.5	146.9
20-Dec	121	78	94	95	115	53	16	5	6	A	3	4	5	5	6	6	3	2	2	1	2	1	0	0	27.1	120.8
21-Dec	0	0	0	0	0	0	1	1	A	5	10	5	3	2	6	10	1	8	4	11	23	43	30	23	8.1	43.0
22-Dec	11	1	0	1	2	1	4	A	4	9	20	30	35	27	41	32	23	11	33	26	23	15	38	30	18.1	41.4
23-Dec	23	29	9	7	23	51	A	25	0	0	0	0	1	6	6	14	0	0	0	0	0	0	0	0	8.4	50.5
24-Dec	0	0	0	0	0	A	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	0	1	0	0.4	2.2
25-Dec	0	0	0	0	A	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.4
26-Dec	0	0	0	A	0	0	0	5	2	6	12	12	17	1	1	0	0	0	0	0	1	1	0	0	2.6	17.2
27-Dec	0	0	A	1	1	1	1	1	1	1	1	2	2	2	1	1	1	0	0	0	0	1	0	0	0.9	2.2
28-Dec	0	A	0	0	0	0	0	0	0	0	2	3	6	6	2	2	2	1	1	1	1	1	1	1	1.3	6.3
29-Dec	A	0	1	1	1	1	0	0	0	0	2	7	4	4	4	4	1	1	0	0	0	1	1	A	1.5	6.8
30-Dec	1	1	1	1	1	1	1	2	3	2	2	3	4	4	3	5	3	2	3	2	2	2	A	1	2.1	4.6
31-Dec	1	0	0	0	0	1	4	0	1	3	8	8	6	4	4	4	3	4	4	8	14	A	4	2	3.5	14.0
	6.8	5.2	5.0	4.3	5.7	5.4	5.1	7.7	9.1	9.6	12.0	14.4	12.9	11.8	11.7	10.5	13.9	16.2	13.9	12.2	13.0	10.7	10.7	8.5	Diurnal Average	
	120.8	77.8	94.3	95.1	114.7	53.3	34.5	59.5	99.2	70.1	66.8	86.3	146.9	99.2	80.0	67.7	84.6	100.0	72.5	83.4	75.2	82.0	102.1	135.3	Diurnal Maximum	

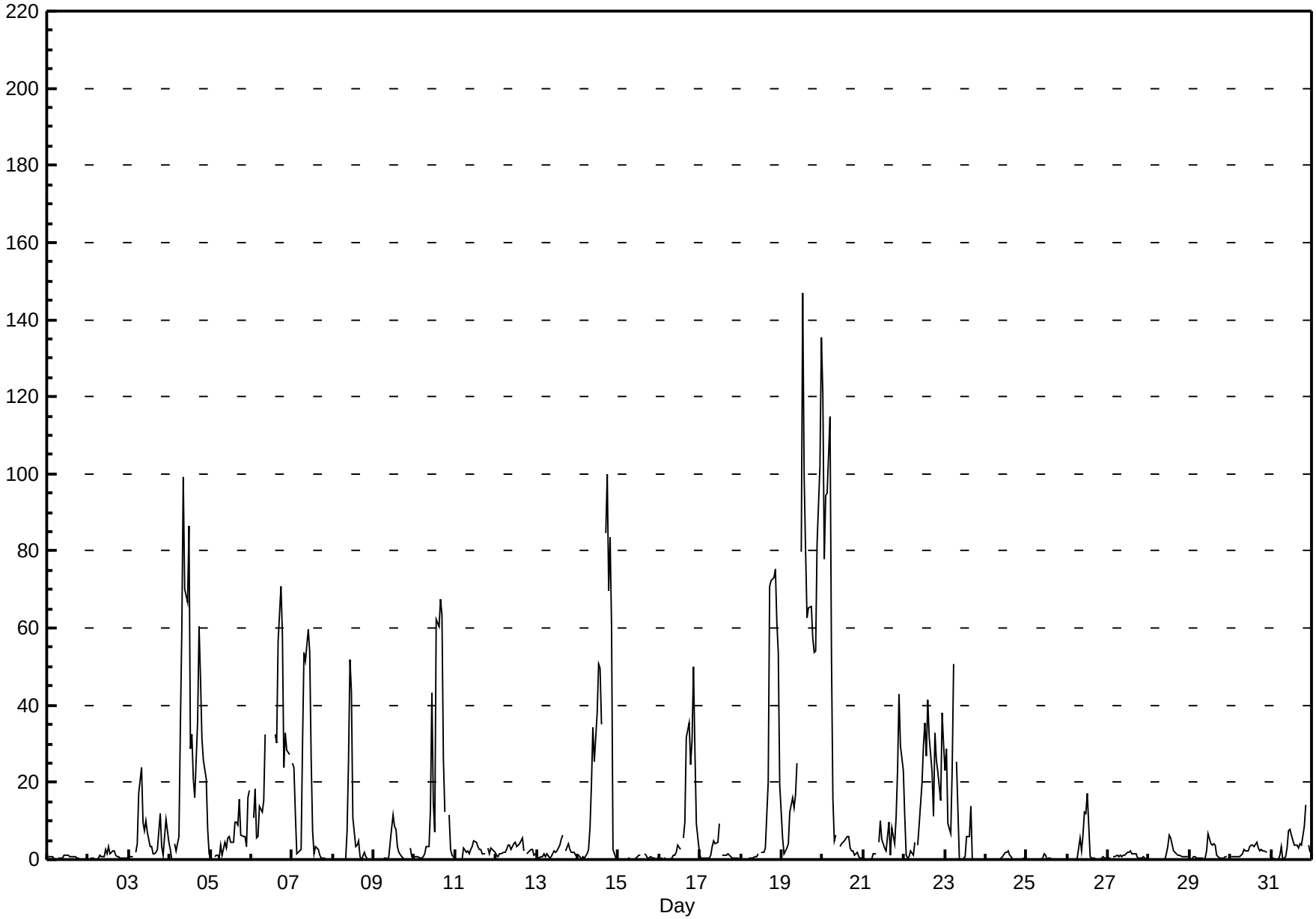
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Henry Pirker - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Oxide (NO) - ppb

Henry Pirker - December 2013

Maximum Value: 172.6 ppb on Dec 10 14:00

Maximum Daily Average: 75.8 ppb on Dec 19

Minimum Value: 0 ppb on Dec 23 09:00

Minimum Daily Average: 0.6 ppb on Dec 25

Maximum Diurnal Average: 27.5 ppb at hour 12

Minimum Diurnal Average: 7.8 ppb at hour 4

Monthly Average: 18.49 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.5$ $Q_1 = 1.2$ Median = 4.7 $Q_3 = 19.5$ $P_{90} = 64.2$ $P_{99} = 139.8$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	3	1	2	4	3	A	1	2	1	1	8	2	2	2	2	1	1	1	1	1	1	1	1	1	2.0	7.8
2-Dec	1	1	1	1	A	1	1	17	1	2	49	3	83	3	4	4	3	2	2	2	1	2	1	1	8.1	82.7
3-Dec	2	2	2	A	3	9	31	37	37	41	20	86	7	6	2	3	4	8	35	17	6	52	18	11	19.1	86.3
4-Dec	11	2	A	15	12	19	63	122	141	109	97	118	50	44	33	30	45	90	70	42	44	31	26	3	52.9	140.7
5-Dec	2	A	6	4	3	3	14	5	16	7	9	9	7	7	18	13	29	31	21	21	22	13	25	25	13.4	30.8
6-Dec	A	24	36	11	14	21	26	34	71	C	C	C	C	C	50	67	97	102	93	33	45	43	37	A	--	101.7
7-Dec	42	37	22	3	4	6	66	63	62	81	78	43	26	4	7	7	2	1	1	1	0	1	A	0	24.2	81.0
8-Dec	1	0	1	1	1	1	1	0	28	38	77	54	17	5	10	17	2	3	6	6	2	A	1	1	11.7	76.8
9-Dec	0	0	0	0	1	1	3	1	1	2	19	23	13	15	9	3	1	1	1	1	A	15	4	3	5.1	23.5
10-Dec	3	3	4	2	1	2	4	11	11	43	71	37	13	173	79	87	82	71	49	A	19	9	4	2	33.9	172.6
11-Dec	2	1	1	0	1	6	6	9	6	10	16	16	8	12	6	9	6	12	A	28	5	8	8	19	8.4	27.6
12-Dec	4	3	4	8	4	5	7	15	9	5	7	17	8	8	23	29	7	A	6	6	8	11	4	5	8.8	28.9
13-Dec	2	2	2	2	17	2	10	2	9	14	24	4	4	48	11	16	A	6	12	5	5	3	6	3	9.2	48.3
14-Dec	2	4	1	2	1	3	8	18	29	56	42	57	67	66	47	A	114	141	84	101	94	10	3	4	41.5	140.8
15-Dec	0	0	0	0	0	0	0	0	0	0	1	1	2	2	A	3	3	1	1	3	2	1	1	1	1.1	3.0
16-Dec	0	1	1	1	1	1	1	1	27	22	3	5	5	A	28	56	76	81	74	71	78	54	19	5	26.6	80.7
17-Dec	1	1	1	1	1	1	3	9	18	17	9	17	A	2	2	3	4	4	3	1	1	1	1	1	4.5	18.0
18-Dec	1	1	0	1	1	1	1	1	2	2	2	A	4	3	7	24	62	94	91	132	92	84	65	50	31.3	132.0
19-Dec	31	4	9	8	10	24	28	22	87	64	A	153	168	113	103	100	85	111	110	70	68	96	124	157	75.8	168.3
20-Dec	159	105	107	127	142	87	35	19	13	A	6	10	9	10	18	13	8	5	9	9	9	2	1	2	39.3	159.1
21-Dec	0	0	0	0	0	0	5	12	A	9	18	9	6	4	75	91	3	16	9	41	49	68	60	41	22.6	91.4
22-Dec	30	2	1	2	5	4	22	A	10	18	28	55	44	44	51	47	28	16	40	43	31	24	47	39	27.4	54.5
23-Dec	26	37	33	20	36	77	A	58	0	0	0	1	5	83	15	34	0	0	0	0	0	0	0	0	18.5	83.2
24-Dec	0	0	0	0	1	A	0	1	1	1	2	4	4	5	2	1	1	0	0	0	0	0	8	3	1.4	8.3
25-Dec	1	1	0	0	A	0	0	0	1	2	2	3	1	1	1	1	0	0	0	0	0	0	0	1	0.6	2.5
26-Dec	0	0	0	A	0	0	3	13	8	29	22	26	69	3	1	1	1	1	1	1	2	10	2	4	8.5	69.4
27-Dec	3	2	A	4	5	8	3	7	2	6	2	5	3	8	5	5	7	1	1	2	2	1	0	1	3.6	8.4
28-Dec	0	A	0	1	1	0	0	1	4	1	3	5	100	28	10	5	7	3	3	2	2	2	4	4	8.0	100.2
29-Dec	A	1	3	3	1	2	1	1	1	2	6	13	8	8	7	12	4	3	1	1	1	5	2	A	3.9	13.5
30-Dec	2	2	3	4	2	2	3	7	12	6	8	10	7	7	7	14	6	6	9	7	9	6	A	4	6.3	13.6
31-Dec	3	1	1	1	1	54	45	0	2	9	15	12	15	8	8	7	5	10	8	94	25	A	16	8	15.1	93.7
	11.5	8.2	8.3	7.8	9.4	11.7	13.1	16.3	20.3	20.6	22.2	27.5	26.0	24.8	21.4	23.4	23.2	27.3	24.6	24.7	20.9	19.1	16.9	13.7	Diurnal Average	
	159.1	104.6	107.3	127.1	142.4	86.8	65.9	122.2	140.7	109.1	96.7	152.5	168.3	172.6	103.3	99.6	114.3	140.8	109.5	132.0	94.0	95.6	124.0	156.6	Diurnal Maximum	

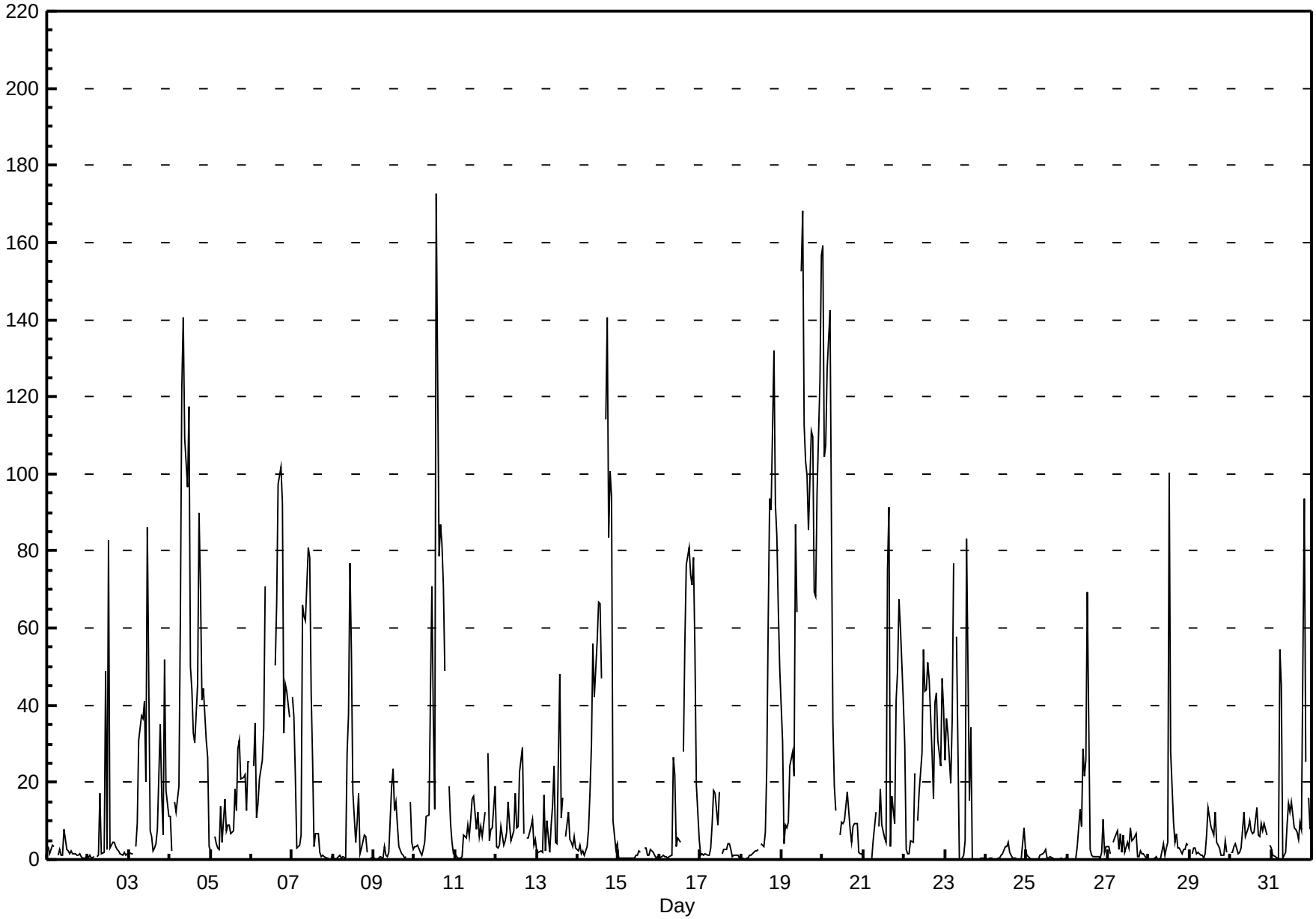
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Oxide (NO) - ppb

Henry Pirker - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Oxides of Nitrogen (NO_X) - ppb

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 202.9 ppb on Dec 19 13:00

Maximum Daily Average: 89.5 ppb on Dec 19

Minimum Value: 1 ppb on Dec 25 18:00

Minimum Daily Average: 3.4 ppb on Dec 1

Maximum Diurnal Average: 35.9 ppb at hour 18

Minimum Diurnal Average: 16.1 ppb at hour 3

Monthly Average: 25.39 ppb

Percentiles: P_1 = 1.8 P_{10} = 3.5 Q_1 = 6.0 Median = 12.1 Q_3 = 31.2 P_{90} = 64.7 P_{99} = 144.5

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	4	3	3	4	4	A	5	5	5	3	4	4	4	3	3	4	5	4	3	2	2	2	2	2	3.4	5.0
2-Dec	2	2	3	3	A	3	4	6	6	5	7	5	7	5	8	10	7	8	8	6	7	8	11	12	6.2	12.3
3-Dec	13	15	12	A	21	32	54	65	39	30	30	19	10	10	6	10	17	26	47	28	27	39	45	35	27.4	64.8
4-Dec	27	19	A	33	32	38	75	103	147	110	105	125	51	58	44	42	73	102	87	67	62	57	38	24	66.0	147.0
5-Dec	11	A	7	8	9	11	31	20	31	20	18	16	12	12	24	29	36	48	32	32	30	28	49	52	24.7	52.5
6-Dec	A	41	48	30	33	45	43	45	63	C	C	C	C	C	57	58	92	110	96	57	69	63	62	A	--	110.4
7-Dec	58	57	43	26	24	25	62	92	91	101	95	58	22	9	17	20	21	17	13	10	6	9	A	5	38.4	100.8
8-Dec	4	3	3	5	6	6	16	19	41	69	93	83	32	14	16	24	18	18	31	22	18	A	5	2	23.9	93.3
9-Dec	4	5	2	3	4	4	6	7	7	11	36	38	31	30	20	17	12	12	17	13	A	27	8	5	13.8	38.4
10-Dec	4	4	5	5	8	14	17	27	27	44	78	34	19	98	96	106	103	59	44	A	45	31	25	22	39.8	106.4
11-Dec	16	13	12	9	11	27	15	11	11	17	16	17	16	14	11	13	12	12	A	15	10	15	14	8	13.7	27.4
12-Dec	7	7	8	8	10	9	11	14	15	11	14	13	11	12	12	16	11	A	9	11	12	11	8	8	10.8	16.4
13-Dec	7	7	7	9	12	12	11	8	7	9	10	7	8	9	16	19	A	15	17	13	11	11	10	8	10.7	19.3
14-Dec	9	8	14	15	11	15	18	30	46	62	48	62	78	79	62	A	121	140	105	120	94	28	21	17	52.3	140.1
15-Dec	4	3	3	6	5	2	5	3	2	3	4	3	5	5	A	12	16	10	18	17	11	6	4	5	6.6	17.6
16-Dec	2	5	4	5	5	5	7	9	11	11	13	17	12	A	25	34	76	83	69	77	98	72	48	32	31.2	97.8
17-Dec	11	6	5	5	6	9	14	26	32	21	22	30	A	6	6	4	5	5	4	3	4	3	3	2	10.1	31.6
18-Dec	3	2	2	3	3	4	4	5	6	5	7	A	8	7	12	36	54	118	120	120	122	104	95	54	39.0	121.7
19-Dec	34	25	26	34	32	44	49	44	46	57	A	121	203	145	122	101	108	108	98	94	96	129	152	190	89.5	202.9
20-Dec	174	126	145	145	168	97	47	29	32	A	14	14	15	16	18	19	15	14	14	12	12	11	13	12	50.5	173.8
21-Dec	8	8	8	11	9	11	22	23	A	28	32	17	11	8	16	26	18	45	39	47	63	82	66	59	28.6	82.3
22-Dec	41	21	17	19	24	19	28	A	31	35	44	53	61	50	73	64	57	44	69	61	57	48	74	64	45.9	73.6
23-Dec	56	62	37	34	54	86	A	57	4	4	5	7	8	21	25	43	11	10	12	8	8	6	6	6	24.8	85.9
24-Dec	5	4	5	5	3	A	3	2	3	5	7	12	11	12	7	6	5	6	4	3	3	4	6	16	5.9	16.3
25-Dec	11	16	10	5	A	4	5	7	11	13	15	8	1	2	3	2	2	1	2	3	2	3	3	3	5.8	16.4
26-Dec	3	3	1	A	5	6	15	36	28	38	43	36	41	6	4	4	4	4	3	3	5	4	3	3	12.9	42.6
27-Dec	3	3	A	4	4	5	4	6	6	7	9	11	9	10	7	7	9	4	4	5	6	11	3	3	6.0	11.1
28-Dec	3	A	3	3	3	3	4	4	5	6	10	12	17	16	10	12	12	11	9	10	10	12	12	9	8.5	16.8
29-Dec	A	13	17	19	13	11	11	13	9	8	11	20	12	11	15	17	8	6	7	7	9	9	13	A	11.6	19.8
30-Dec	7	7	7	7	6	6	6	9	11	10	9	11	11	11	12	14	13	14	14	14	13	12	A	10	10.2	14.3
31-Dec	9	10	7	5	4	6	12	7	16	26	27	23	17	11	12	14	19	24	27	34	47	A	25	21	17.5	46.9
	18.6	17.2	16.1	16.2	18.2	19.3	20.0	24.3	26.2	26.6	28.4	30.2	25.6	23.9	25.2	26.2	32.1	35.9	34.0	30.5	31.9	29.2	28.4	23.9	Diurnal Average	
	173.8	126.4	144.8	145.1	168.5	97.0	74.6	102.8	147.0	110.1	104.8	125.0	202.9	145.4	122.0	106.4	121.4	140.1	120.3	120.3	121.7	128.5	152.0	189.8	Diurnal Maximum	

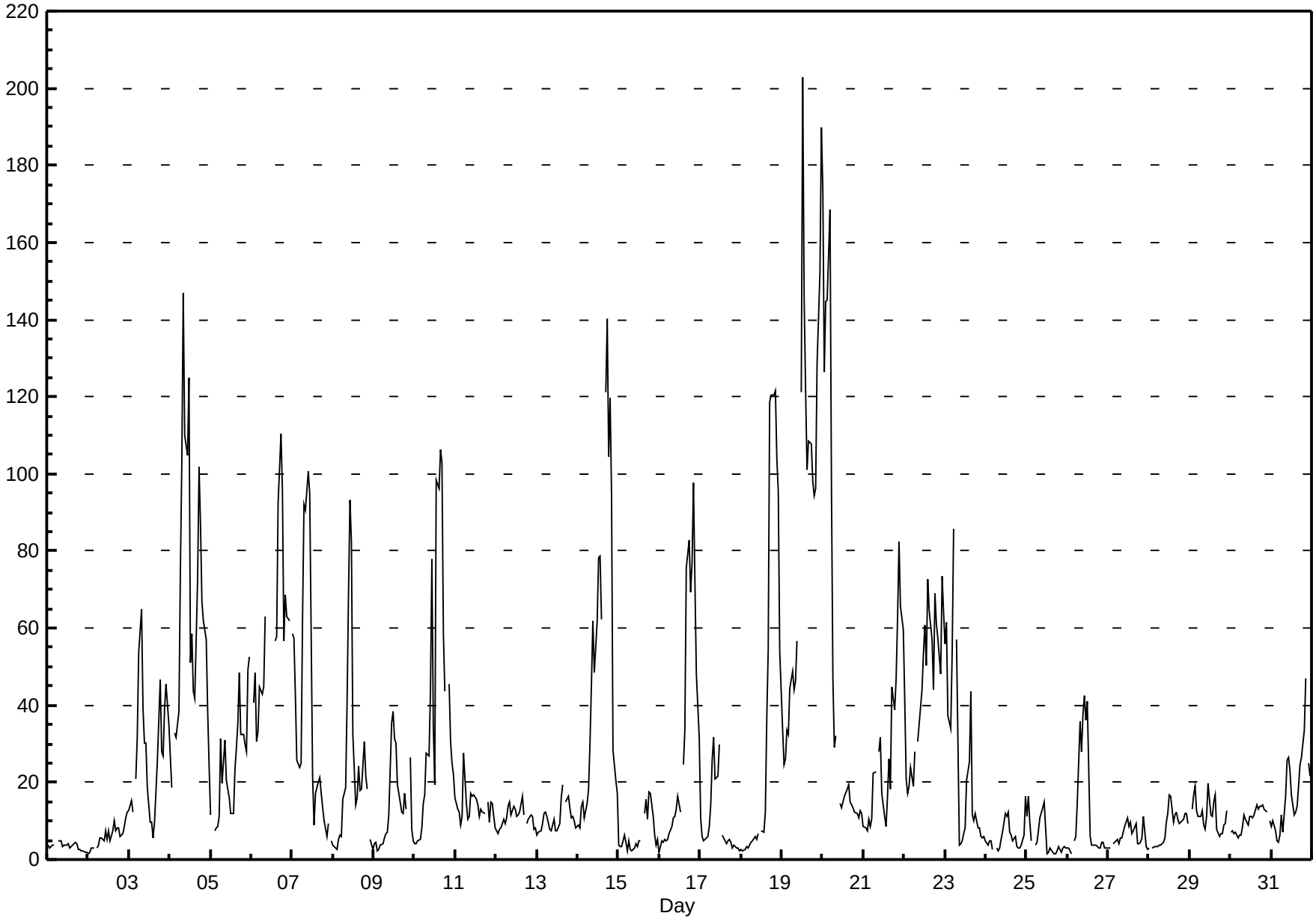
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Oxides of Nitrogen (NO_X) - ppb

Henry Pirker - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Oxides of Nitrogen (NO_X) - ppb

Henry Pirker - December 2013

Maximum Value: 244.2 ppb on Dec 10 14:00

Maximum Daily Average: 119.5 ppb on Dec 19

Minimum Value: 2 ppb on Dec 25 18:00

Minimum Daily Average: 6.3 ppb on Dec 1

Maximum Diurnal Average: 51.2 ppb at hour 18

Minimum Diurnal Average: 23.1 ppb at hour 2

Monthly Average: 38.66 ppb

Percentiles: P_1 = 2.8 P_{10} = 5.5 Q_1 = 10.4 Median = 20.5 Q_3 = 53.3 P_{90} = 103.8 P_{99} = 189.8

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	8	4	7	8	8	A	7	10	6	5	15	6	6	4	7	6	6	6	4	6	4	4	3	5	6.3	14.6
2-Dec	2	5	4	5	A	5	6	32	8	7	74	8	122	9	13	14	16	13	14	11	10	16	17	18	18.6	121.5
3-Dec	18	19	18	A	28	44	73	80	80	80	48	116	19	15	8	18	28	41	78	56	42	96	57	47	48.2	116.4
4-Dec	49	30	A	49	48	57	110	177	193	153	142	162	79	74	61	62	84	134	113	79	84	68	65	30	91.5	193.2
5-Dec	23	A	14	14	14	23	53	30	52	35	24	21	16	18	40	35	67	70	56	55	55	44	61	60	38.3	69.8
6-Dec	A	57	69	39	45	53	58	67	108	C	C	C	C	C	78	105	140	147	135	67	85	80	74	A	--	146.6
7-Dec	76	72	58	30	28	32	104	101	104	125	131	86	62	16	30	37	27	22	17	14	10	15	A	12	52.6	130.5
8-Dec	6	6	4	11	11	8	23	25	75	85	125	97	46	18	33	51	21	36	44	41	26	A	15	5	35.3	125.3
9-Dec	7	7	4	5	6	7	15	13	10	20	56	56	39	44	36	23	16	19	30	18	A	49	31	9	22.6	56.1
10-Dec	8	8	8	9	11	20	30	47	44	73	114	70	32	244	118	129	123	111	89	A	55	42	32	26	62.8	244.2
11-Dec	24	16	14	13	14	37	24	21	25	33	34	29	22	26	22	28	20	28	A	55	18	22	30	34	25.6	55.4
12-Dec	15	10	16	18	18	15	18	35	24	17	22	30	19	20	39	58	19	A	15	17	22	22	14	13	21.5	58.3
13-Dec	9	12	14	18	35	18	22	13	22	32	31	11	11	56	28	32	A	25	25	19	17	16	16	13	21.5	56.1
14-Dec	13	14	19	25	13	21	30	46	56	88	68	84	100	99	77	A	154	184	120	138	131	45	32	29	69.0	184.3
15-Dec	5	5	5	10	12	3	7	5	4	5	6	5	8	7	A	22	28	14	24	26	19	10	5	9	10.6	27.6
16-Dec	5	9	8	9	8	8	14	12	58	24	18	22	18	A	64	108	130	135	126	125	126	102	63	43	53.6	134.7
17-Dec	20	11	12	14	10	11	25	36	56	55	32	45	A	8	8	8	10	11	8	4	5	5	5	5	17.5	56.3
18-Dec	5	5	3	4	4	6	7	7	10	9	10	A	12	11	25	59	109	141	141	187	142	129	108	92	53.3	187.3
19-Dec	67	31	41	41	44	60	64	55	145	99	A	210	229	163	150	143	132	158	156	112	114	143	177	215	119.5	228.5
20-Dec	218	158	161	183	199	137	77	44	45	A	21	23	20	27	34	30	22	21	23	26	24	14	17	18	67.0	217.8
21-Dec	17	11	9	14	11	14	34	42	A	37	44	27	17	14	91	128	27	56	49	88	92	108	98	79	48.0	127.8
22-Dec	66	27	27	25	35	31	56	A	42	47	56	83	72	76	85	82	64	50	78	82	66	58	85	75	59.5	85.0
23-Dec	59	71	66	50	69	117	A	98	8	5	7	10	17	117	46	77	20	16	22	11	10	9	8	10	40.1	117.2
24-Dec	7	7	7	8	8	A	5	4	6	9	10	17	19	21	10	9	7	8	6	4	4	5	15	28	9.7	28.0
25-Dec	20	25	24	9	A	5	9	9	15	20	18	17	2	3	4	3	2	2	4	4	3	5	5	5	9.2	25.0
26-Dec	5	4	3	A	9	11	30	50	43	64	58	53	106	16	6	5	5	5	5	5	8	18	6	12	22.8	106.3
27-Dec	8	6	A	11	11	23	7	15	9	16	12	17	13	21	12	15	20	7	6	9	13	19	4	3	12.0	23.4
28-Dec	4	A	4	5	7	4	5	7	13	9	14	15	166	50	23	17	24	18	14	14	17	18	17	14	20.9	165.7
29-Dec	A	16	26	26	18	14	15	14	12	12	21	31	18	20	20	32	19	10	9	9	13	20	18	A	17.8	32.5
30-Dec	12	11	13	19	8	10	11	16	25	15	17	22	17	16	18	34	21	19	26	20	23	18	A	19	17.8	34.3
31-Dec	12	14	12	6	8	76	53	12	20	37	42	33	30	19	19	19	27	31	33	127	60	A	40	28	32.9	126.6
	27.2	23.1	23.1	23.4	25.4	30.0	33.0	37.4	44.0	42.0	43.7	48.6	46.1	42.5	40.2	46.3	46.2	51.2	48.9	47.6	43.2	41.4	38.5	33.0	Diurnal Average	
	217.8	157.6	160.6	183.0	199.1	137.1	109.5	177.2	193.2	153.2	141.8	210.2	228.5	244.2	149.8	143.0	154.2	184.3	155.6	187.3	141.6	143.4	177.4	215.1	Diurnal Maximum	

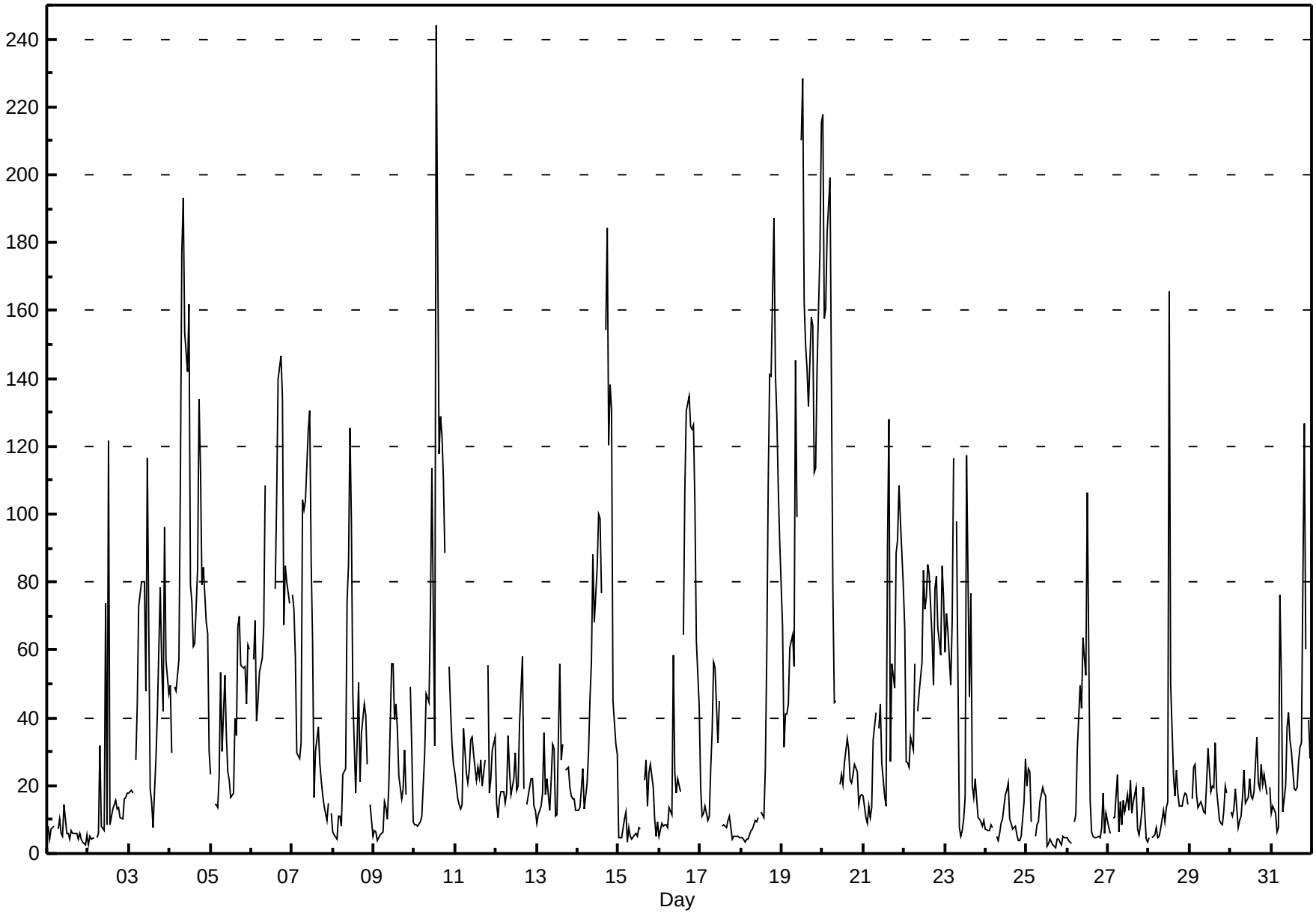
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Oxides of Nitrogen (NO_X) - ppb

Henry Pirker - December 2013



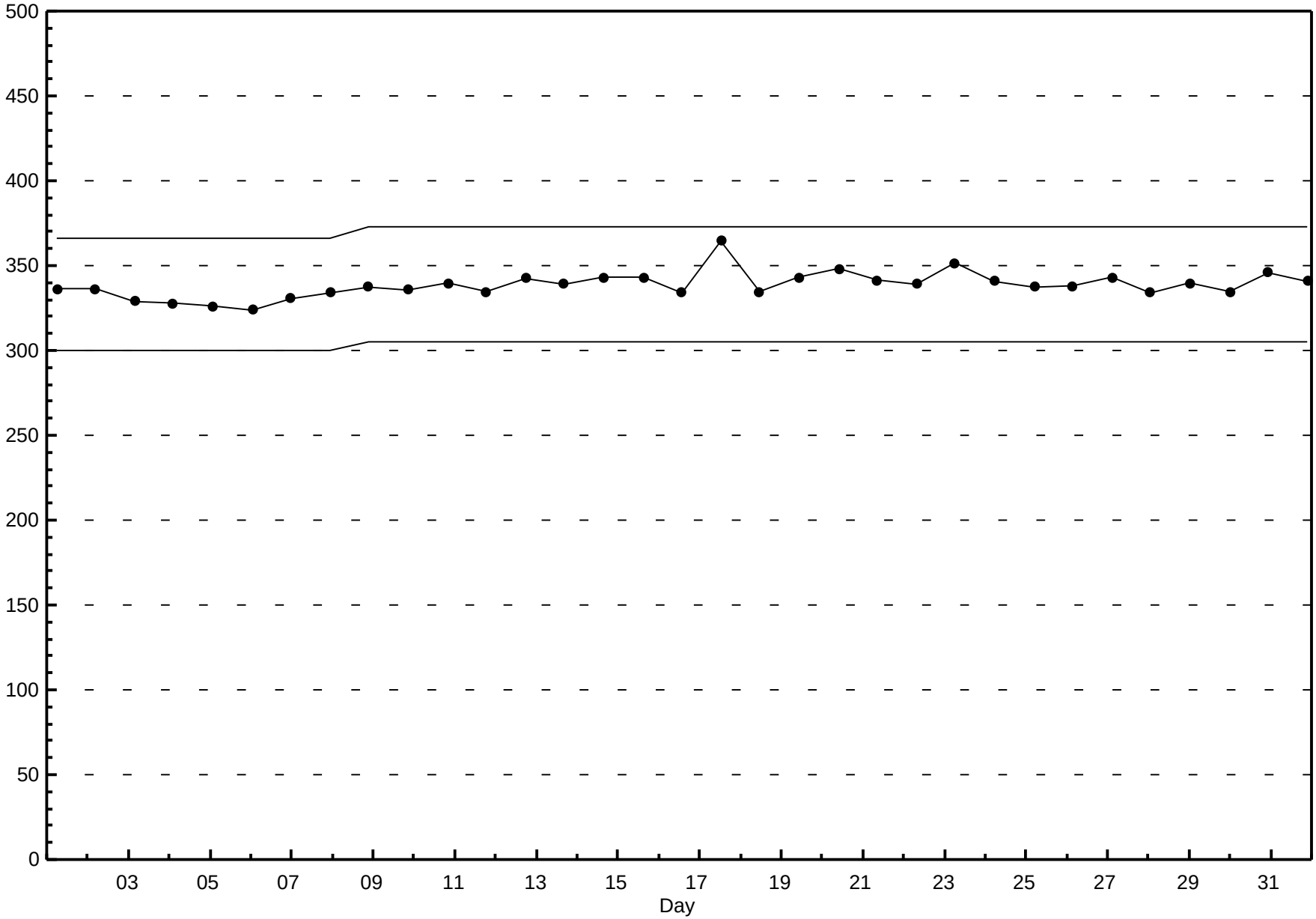
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Span Responses

Oxides of Nitrogen (NO_X)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Ozone (O_3) - ppb

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 41.1 ppb on Dec 25 13:00
Maximum Daily Average: 37.2 ppb on Dec 24

Minimum Value: 1 ppb on Dec 14 09:00
Maximum Diurnal Average: 24.4 ppb at hour 14
Monthly Average: 20.03 ppb

Minimum Daily Average: 4.5 ppb on Dec 19
Minimum Diurnal Average: 16.5 ppb at hour 19
Percentiles: P_1 = 1.3 P_{10} = 3.0 Q_1 = 10.3 Median = 22.0 Q_3 = 28.1 P_{90} = 34.9 P_{99} = 39.7

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	21	21	20	21	22	A	20	20	20	21	22	23	24	24	25	25	25	26	27	28	28	28	28	28	23.7	28.3
2-Dec	28	28	27	27	A	27	27	26	26	26	27	27	28	28	27	25	26	25	26	27	27	26	24	23	26.5	28.4
3-Dec	23	21	23	A	17	10	4	2	10	16	19	27	30	31	33	30	24	17	7	14	13	7	5	7	17.0	32.9
4-Dec	13	16	A	8	7	5	2	3	3	3	6	8	15	15	16	13	4	2	2	2	2	3	7	14	7.4	16.5
5-Dec	26	A	32	30	29	26	12	19	12	19	21	23	27	27	21	16	11	6	10	8	10	9	4	5	17.4	31.7
6-Dec	A	4	4	7	5	3	4	4	5	6	10	14	13	C	C	C	4	3	3	3	3	3	3	A	5.2	13.9
7-Dec	3	3	3	7	8	7	4	2	2	3	6	13	29	35	31	27	24	26	29	31	34	31	A	35	17.0	35.5
8-Dec	35	35	36	34	33	33	24	20	8	3	6	9	19	27	27	20	21	19	10	16	17	A	35	38	22.8	37.6
9-Dec	35	34	36	34	35	35	34	32	33	29	15	15	18	19	25	26	30	30	25	28	A	18	32	35	28.3	35.7
10-Dec	36	35	33	32	28	23	21	14	13	7	8	18	23	10	7	4	2	5	6	A	3	6	8	10	15.2	35.6
11-Dec	14	17	17	20	18	7	18	23	22	19	20	21	24	26	28	26	26	27	A	26	29	27	27	30	22.2	29.8
12-Dec	29	30	29	28	26	27	25	24	22	24	23	24	25	25	24	22	23	A	24	23	22	22	23	23	24.6	29.5
13-Dec	23	23	23	21	19	18	19	20	21	20	19	21	22	22	19	16	A	15	15	16	17	17	17	18	19.1	23.5
14-Dec	17	17	11	10	13	11	9	4	1	2	5	7	7	6	4	A	2	2	2	2	3	9	15	19	7.7	19.4
15-Dec	33	34	34	31	35	40	40	40	39	37	37	37	37	36	A	32	28	30	23	24	29	33	36	35	33.9	40.1
16-Dec	39	37	36	36	37	37	35	34	32	32	32	31	33	A	26	21	6	3	3	2	2	2	3	11	23.0	39.2
17-Dec	28	32	33	32	31	27	22	13	9	22	23	20	A	34	31	27	23	22	22	23	23	24	25	26	24.8	34.2
18-Dec	26	27	27	27	27	27	27	27	26	27	27	A	28	29	27	15	8	3	2	2	1	1	1	3	18.0	29.1
19-Dec	7	10	10	4	6	3	3	4	4	4	A	7	6	7	6	5	2	2	2	2	2	4	3	3	4.5	9.8
20-Dec	2	2	2	2	2	1	5	11	7	A	21	24	24	23	22	20	21	22	22	22	24	22	20	20	14.8	24.0
21-Dec	22	21	22	19	20	17	9	9	A	10	13	22	27	30	27	22	20	4	4	5	3	3	2	2	14.5	30.4
22-Dec	4	13	16	14	11	14	9	A	6	7	10	12	11	12	9	6	3	2	2	2	2	2	2	2	7.2	15.7
23-Dec	1	1	2	1	1	1	A	7	36	37	36	34	31	22	17	13	31	32	30	33	32	34	34	35	21.8	36.9
24-Dec	37	37	36	36	39	A	39	40	39	38	37	34	35	34	38	38	39	37	40	40	40	40	37	27	37.2	40.1
25-Dec	32	27	33	38	A	36	35	31	27	23	23	32	41	40	38	38	38	38	37	36	37	37	36	37	34.2	41.1
26-Dec	37	36	37	A	34	31	21	6	11	5	5	7	11	29	30	30	29	29	29	29	26	28	29	29	24.2	37.4
27-Dec	30	30	A	30	30	31	32	33	32	30	29	28	29	29	30	29	27	28	27	26	25	21	26	27	28.6	32.8
28-Dec	26	A	26	25	25	25	24	24	24	23	21	20	20	20	23	20	19	19	20	19	18	16	16	19	21.4	25.9
29-Dec	A	15	12	9	14	14	14	13	15	16	16	13	17	19	16	15	19	20	19	19	16	16	17	A	15.6	19.5
30-Dec	24	23	24	23	24	24	25	23	21	22	26	26	25	25	23	20	19	17	18	17	19	21	A	24	22.3	26.0
31-Dec	24	22	23	25	26	26	23	24	16	10	14	16	21	23	23	21	16	13	10	8	2	A	11	11	17.7	26.4
	23.3	22.4	23.0	21.7	21.4	20.2	19.5	18.3	18.0	18.0	19.1	20.4	23.4	24.4	23.1	21.4	19.0	17.5	16.5	17.7	16.9	17.6	18.1	20.5	Diurnal Average	
	39.2	37.2	37.4	37.5	38.8	39.7	39.5	40.1	39.4	37.8	36.9	37.0	41.1	39.7	38.1	38.0	38.6	38.0	39.6	40.1	40.0	39.6	37.2	37.6	Diurnal Maximum	

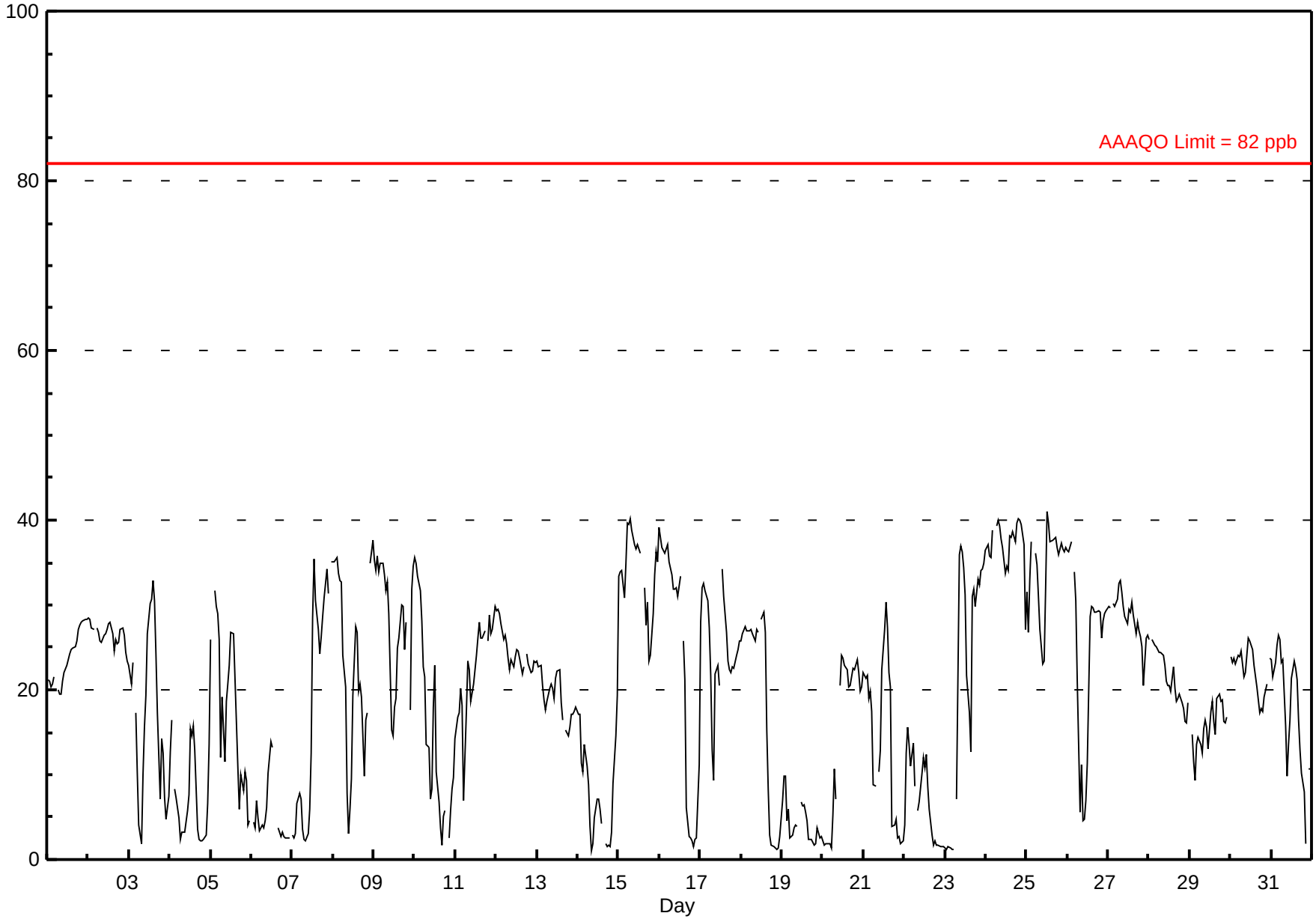
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na

Peace Airshed Zone Association

Hourly Averages

Ozone (O_3) - ppb

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Ozone (O_3) - ppb

Henry Pirker - December 2013

Maximum Value: 42.4 ppb on Dec 15 08:00

Maximum Daily Average: 39.2 ppb on Dec 24

Minimum Value: 2 ppb on Dec 23 06:00

Minimum Daily Average: 6.9 ppb on Dec 19

Maximum Diurnal Average: 27.0 ppb at hour 14

Minimum Diurnal Average: 19.5 ppb at hour 21

Monthly Average: 22.94 ppb

Percentiles: P_1 = 1.9 P_{10} = 5.6 Q_1 = 15.6 Median = 24.7 Q_3 = 30.8 P_{90} = 36.9 P_{99} = 40.8

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	22	22	21	22	23	A	22	21	21	22	23	24	24	25	26	26	26	27	28	28	28	28	29	29	24.5	28.8
2-Dec	29	29	29	28	A	28	27	27	27	27	28	28	29	29	28	27	28	28	28	29	29	29	27	26	28.1	29.3
3-Dec	26	25	26	A	21	18	16	3	20	20	30	30	32	33	34	34	29	24	15	21	17	13	10	14	22.2	33.7
4-Dec	21	20	A	13	10	9	3	5	5	4	6	11	19	19	19	16	10	4	3	3	3	5	10	16	10.2	20.9
5-Dec	31	A	34	32	31	31	25	26	25	23	23	25	29	28	26	20	18	12	15	15	14	15	7	6	22.2	34.2
6-Dec	A	7	7	13	9	4	7	4	8	8	13	18	15	C	C	C	8	4	4	4	3	3	3	A	7.5	17.9
7-Dec	4	4	5	9	11	11	7	2	2	4	10	16	39	39	38	32	28	30	31	33	36	33	A	37	20.1	38.9
8-Dec	36	36	36	36	35	34	30	24	19	6	9	14	28	31	31	25	23	22	15	23	22	A	38	38	26.6	38.4
9-Dec	38	35	37	35	37	37	36	33	36	33	23	18	25	26	30	29	32	34	33	34	A	33	36	35	32.5	37.9
10-Dec	37	36	35	33	30	27	25	21	20	19	18	22	26	20	8	5	2	12	13	A	9	10	11	11	19.6	36.7
11-Dec	17	19	19	22	20	16	25	26	25	24	23	24	28	30	30	30	30	30	A	30	31	30	31	32	25.7	31.9
12-Dec	32	31	32	30	29	29	27	27	25	25	24	26	26	26	26	26	25	A	26	25	24	24	24	24	26.8	31.7
13-Dec	25	25	25	24	21	20	21	22	23	22	22	22	23	24	23	20	A	18	16	17	19	19	19	19	21.2	25.5
14-Dec	19	19	16	15	16	13	11	7	3	5	7	9	9	8	5	A	3	2	4	3	16	17	23	35	11.4	34.5
15-Dec	34	34	35	34	39	41	42	42	40	38	38	38	38	37	A	36	35	34	31	30	34	37	37	37	36.7	42.4
16-Dec	41	40	38	38	38	38	38	36	34	34	35	33	36	A	33	32	22	11	10	6	4	6	6	19	27.4	40.8
17-Dec	31	33	34	33	32	29	29	21	16	34	29	24	A	35	35	29	25	24	23	23	24	25	25	27	28.0	35.3
18-Dec	26	28	28	28	28	28	28	28	27	28	28	A	30	30	30	20	18	8	2	2	2	2	2	6	19.9	30.2
19-Dec	12	12	13	7	12	8	8	6	6	8	A	8	7	7	7	6	3	5	3	2	3	8	3	3	6.9	12.9
20-Dec	3	3	3	3	3	2	14	15	13	A	23	25	25	25	25	23	22	24	25	26	25	25	23	23	17.2	25.7
21-Dec	24	23	23	22	21	19	15	14	A	13	18	26	29	32	31	29	27	13	12	14	6	9	3	5	18.6	32.0
22-Dec	12	16	19	17	17	18	13	A	8	9	12	15	12	14	10	7	5	2	4	2	2	2	2	2	9.7	18.7
23-Dec	2	2	3	2	2	2	A	30	38	37	37	36	36	29	24	29	33	35	35	35	35	36	36	38	25.7	38.3
24-Dec	38	38	38	38	40	A	41	41	40	39	39	36	37	38	39	40	40	39	41	41	41	41	40	36	39.2	41.3
25-Dec	35	31	40	39	A	38	37	33	29	27	27	40	41	41	39	38	38	38	38	37	38	38	37	38	36.4	41.3
26-Dec	37	37	38	A	36	35	27	14	16	11	8	8	23	30	31	30	30	30	30	30	28	29	30	30	26.9	37.9
27-Dec	31	30	A	31	31	32	34	34	33	31	31	31	31	32	32	30	29	30	28	27	27	27	27	27	30.3	34.1
28-Dec	26	A	26	26	26	26	25	25	25	24	23	22	22	21	25	23	22	21	22	22	21	20	18	21	23.2	26.4
29-Dec	A	19	16	14	15	17	16	14	17	17	17	17	19	20	19	17	21	20	20	20	17	18	22	A	17.9	21.9
30-Dec	26	25	26	25	25	26	26	26	23	24	27	27	27	27	24	23	21	20	20	20	22	23	A	27	24.4	27.4
31-Dec	25	24	26	26	28	28	26	26	21	14	17	22	25	25	24	24	20	16	14	17	4	A	15	14	20.9	27.6
	25.6	24.2	25.0	24.0	23.7	23.0	23.5	21.9	21.6	21.1	22.3	23.3	26.4	27.0	26.0	25.1	22.4	20.6	19.6	20.6	19.5	20.9	20.5	23.3	Diurnal Average	
	40.8	39.9	40.3	39.4	39.9	41.4	41.9	42.4	40.4	39.4	38.8	40.3	41.3	40.8	39.4	39.8	39.8	38.9	40.8	40.8	40.8	41.3	39.8	38.4	Diurnal Maximum	

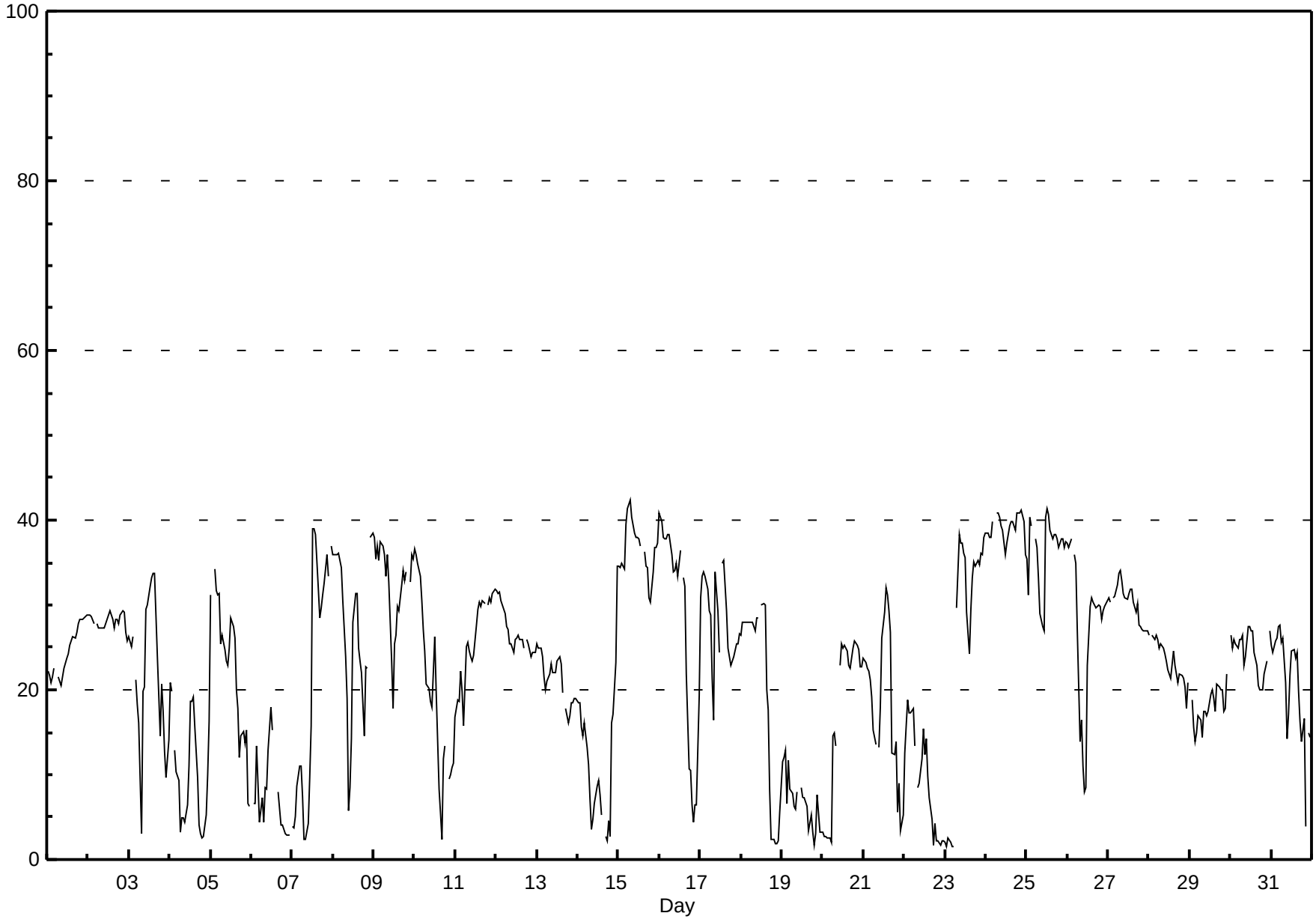
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Ozone (O_3) - ppb

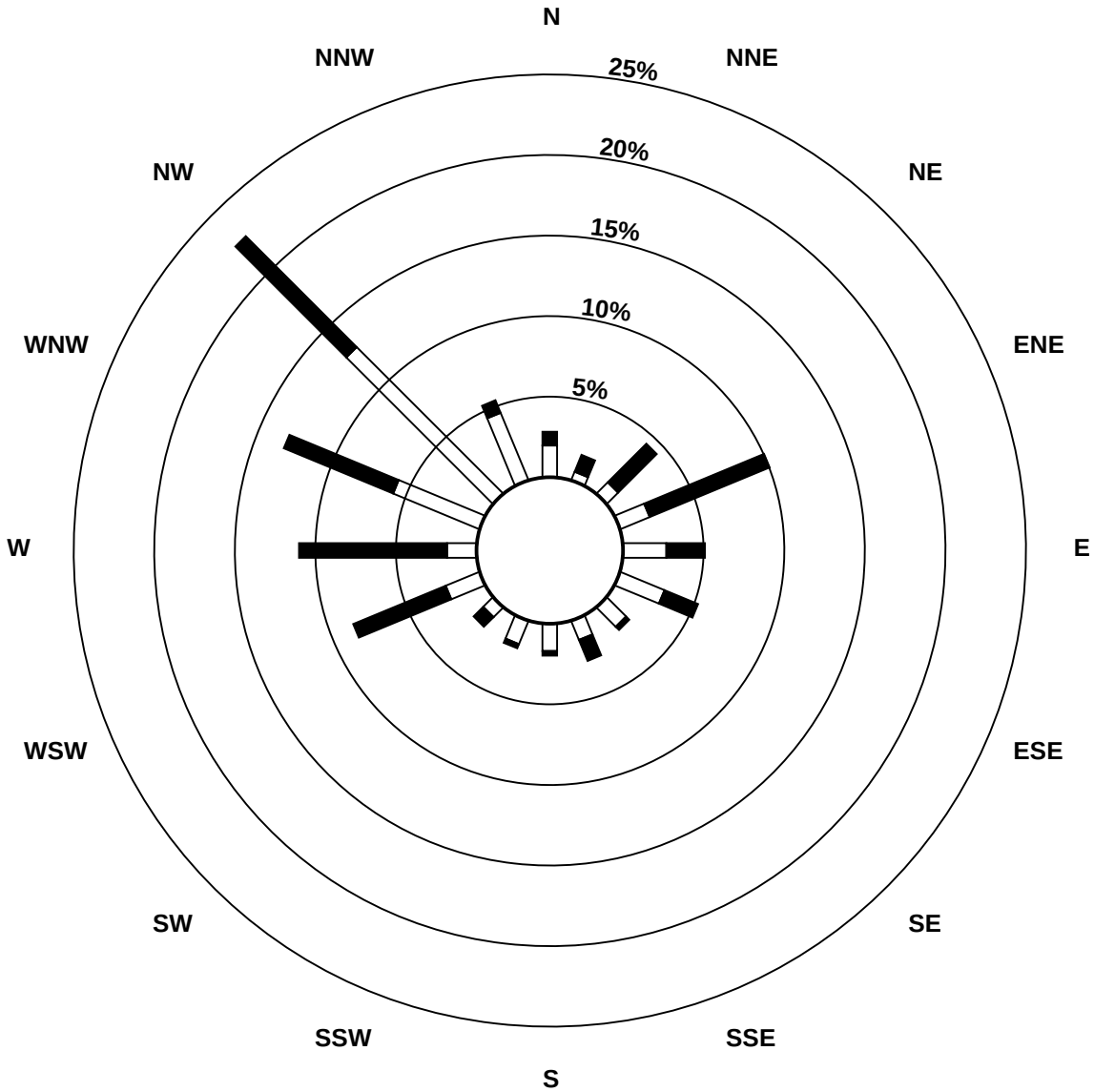
Henry Pirker - December 2013



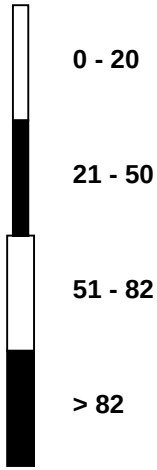
Pollutant Rose

Ozone (O_3) - ppb

Henry Pirker - December 2013



Pollutant Classes (ppb)



Peace Airshed Zone Association

Eight Hour Running Averages

Ozone (O_3) - ppb

Henry Pirker - December 2013

Maximum Value: 38.9 ppb on Dec 24 22:00

Minimum Value: 1.3 ppb on Dec 23 07:00

Percentiles: P_1 = 1.9 P_{10} = 4.8 Q_1 = 12.5 Median = 21.2 Q_3 = 26.9 P_{90} = 33.2 P_{99} = 38.0

Hours in Service:	744
Hours of Data:	738
Hours of Missing Data:	6
Hours of Calibration:	6
Percent Operational Time:	100.0

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-Dec	11	13	15	16	18	21	21	21	20	20	21	21	21	22	22	23	24	24	25	25	26	26	27	27	27.3
2-Dec	28	28	28	28	28	28	28	27	27	27	26	26	27	27	27	27	27	26	26	26	26	26	26	26	28.0
3-Dec	25	25	24	24	23	20	17	14	12	12	11	13	15	17	21	24	26	26	25	23	21	18	15	12	26.5
4-Dec	10	10	11	10	9	9	9	8	7	5	5	5	6	7	9	10	10	10	9	9	7	6	4	4	10.8
5-Dec	7	8	12	16	20	23	24	25	23	22	21	20	20	20	21	21	20	19	18	16	14	11	9	8	24.8
6-Dec	7	7	6	6	5	5	5	4	4	5	5	6	7	8	9	N	N	N	N	N	N	3	3	3	8.6
7-Dec	3	3	3	3	4	5	5	4	4	4	5	6	8	12	15	18	21	24	27	29	30	29	29	30	30.1
8-Dec	32	33	34	34	34	34	33	31	28	24	20	17	15	15	15	15	17	19	19	20	20	19	20	22	34.3
9-Dec	24	26	30	33	35	35	35	34	34	33	31	28	26	24	23	22	22	22	23	25	26	26	27	28	35.2
10-Dec	29	30	31	31	31	32	30	28	25	21	18	17	16	14	12	11	10	10	9	8	5	4	5	6	31.6
11-Dec	7	9	11	12	14	14	15	17	18	18	18	18	19	22	23	23	24	25	25	26	27	27	27	27	27.3
12-Dec	28	28	28	28	28	28	28	27	26	26	25	24	24	24	24	23	23	23	24	24	23	23	23	23	28.5
13-Dec	23	23	23	23	22	22	21	21	20	20	19	20	20	21	21	20	20	19	19	18	17	16	16	16	23.1
14-Dec	16	17	16	16	15	14	13	12	10	8	7	6	6	5	5	5	5	5	4	3	3	3	5	7	16.7
15-Dec	11	15	19	22	26	30	33	36	36	37	37	38	38	38	37	36	35	34	32	30	29	29	30	30	38.2
16-Dec	31	32	34	35	36	37	37	36	35	35	34	34	33	33	31	30	26	22	18	13	9	8	5	4	36.7
17-Dec	7	10	14	18	21	24	27	27	25	23	22	21	19	20	22	24	26	26	26	26	26	24	24	23	27.1
18-Dec	24	24	25	25	26	26	27	27	27	27	27	27	27	27	27	26	23	20	16	14	11	7	4	3	27.3
19-Dec	2	3	4	5	5	5	6	6	5	5	4	4	4	5	5	5	5	5	5	4	3	3	3	2	5.8
20-Dec	2	2	2	2	2	2	2	3	4	4	7	10	13	16	19	20	22	22	22	22	22	22	22	22	22.2
21-Dec	22	22	22	21	21	20	19	17	17	15	14	14	15	17	20	22	22	21	20	17	14	11	8	5	21.8
22-Dec	3	4	6	7	8	9	10	11	12	11	10	10	10	9	9	9	9	8	7	6	5	3	2	2	11.5
23-Dec	2	2	2	1	1	1	1	2	7	12	17	22	26	29	28	28	28	27	26	26	26	28	30	33	32.7
24-Dec	33	34	35	35	36	36	37	38	38	38	38	38	37	37	37	37	36	36	37	38	38	39	39	37	38.9
25-Dec	37	35	34	34	33	33	32	33	32	32	30	30	31	31	32	33	34	36	38	38	38	37	37	37	38.0
26-Dec	37	37	37	37	36	35	33	29	25	21	16	15	12	12	13	16	18	21	24	27	29	29	29	29	36.8
27-Dec	29	29	29	29	29	30	30	31	31	31	31	30	30	30	30	29	29	29	28	28	28	27	26	26	31.0
28-Dec	26	25	25	25	25	26	25	25	25	25	24	23	23	22	22	21	21	20	20	20	20	19	18	18	25.7
29-Dec	18	17	16	15	14	14	14	13	13	13	14	14	15	15	16	16	16	17	17	18	18	17	17	18	18.0
30-Dec	19	19	20	20	22	23	24	24	23	23	24	24	24	24	24	24	23	23	22	21	20	19	19	19	24.1
31-Dec	20	21	21	22	23	24	24	24	23	22	20	19	19	18	18	18	18	18	18	17	15	13	12	10	24.2
Diurnal Maximums	36.8	36.5	36.6	36.7	36.2	36.7	36.9	37.6	38.0	38.1	38.3	38.0	38.2	37.7	37.5	36.6	36.5	36.4	37.5	38.0	38.2	38.9	38.8	37.4	

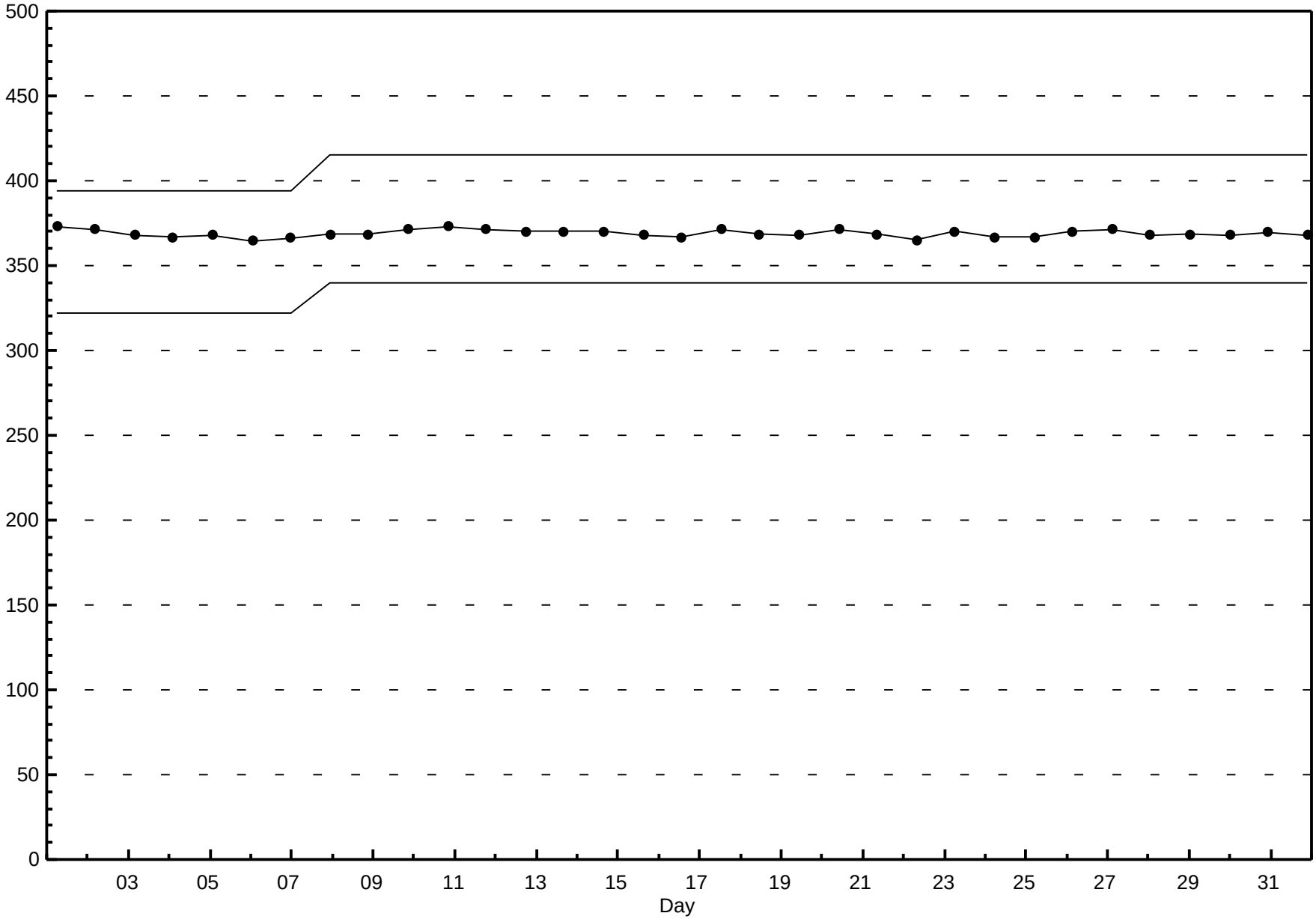
N - Not Valid

Peace Airshed Zone Association

Span Responses

Ozone (O_3)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 1.03 ppm on Dec 4 09:00

Maximum Daily Average: 0.47 ppm on Dec 19

Minimum Value: 0.0 ppm on Dec 7 13:00

Minimum Daily Average: 0.11 ppm on Dec 2

Maximum Diurnal Average: 0.26 ppm at hour 18

Minimum Diurnal Average: 0.17 ppm at hour 3

Monthly Average: 0.215 ppm

Percentiles: P_1 = 0.09 P_{10} = 0.10 Q_1 = 0.13 Median = 0.17 Q_3 = 0.24 P_{90} = 0.39 P_{99} = 0.78

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0.2	0.2	0.1	0.2	0.1	A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.16
2-Dec	0.1	0.1	0.1	0.1	A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.14
3-Dec	0.1	0.1	0.1	A	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.16	0.33
4-Dec	0.2	0.2	A	0.2	0.2	0.3	0.4	0.7	1.0	0.4	0.4	0.5	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.2	0.34	1.03
5-Dec	0.1	A	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.18	0.27
6-Dec	A	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	A	0.28	0.36
7-Dec	0.3	0.3	0.3	0.3	0.4	0.4	0.6	0.6	0.6	C	C	C	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	A	0.1	0.24	0.64
8-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.7	0.6	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.1	0.1	0.23	0.68
9-Dec	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.1	0.1	0.18	0.31
10-Dec	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.6	0.3	0.2	0.4	0.4	0.4	0.4	0.3	0.3	A	0.3	0.2	0.2	0.2	0.24	0.57
11-Dec	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	A	0.1	0.1	0.1	0.1	0.1	0.15	0.22
12-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	A	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.19
13-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	A	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.14	0.20
14-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	A	0.9	0.9	0.8	0.7	0.5	0.3	0.2	0.2	0.35	0.90
15-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	A	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.14	0.19
16-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	A	0.2	0.3	0.4	0.5	0.4	0.5	0.7	0.6	0.4	0.3	0.26	0.72
17-Dec	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	A	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16	0.28
18-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	A	0.1	0.1	0.1	0.3	0.3	0.6	0.7	0.5	0.5	0.3	0.3	0.2	0.24	0.72
19-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	A	0.7	0.9	0.7	0.6	0.5	0.5	0.6	0.5	0.4	0.5	0.7	0.8	0.9	0.47	0.95
20-Dec	0.8	0.7	0.6	0.6	0.7	0.5	0.3	0.3	0.3	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.33	0.83
21-Dec	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	A	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.4	0.3	0.3	0.6	0.6	0.4	0.3	0.24	0.64
22-Dec	0.3	0.2	0.2	0.2	0.2	0.2	0.2	A	0.2	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.4	0.3	0.5	0.4	0.4	0.4	0.5	0.4	0.33	0.52
23-Dec	0.4	0.4	0.3	0.4	0.4	0.5	A	0.3	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.26	0.51
24-Dec	0.1	0.1	0.1	0.1	0.1	A	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.13	0.23
25-Dec	0.2	0.2	0.2	0.2	A	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.16	0.24
26-Dec	0.1	0.1	0.2	A	0.2	0.2	0.3	0.6	0.4	0.4	0.3	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.24	0.60
27-Dec	0.1	0.1	A	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.13	0.17
28-Dec	0.1	A	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.17	0.22
29-Dec	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.18	0.24
30-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.1	0.17	0.23
31-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.4	0.3	A	0.3	0.3	0.21	0.39
	0.18	0.18	0.17	0.17	0.17	0.19	0.20	0.23	0.23	0.20	0.22	0.24	0.22	0.21	0.21	0.22	0.24	0.26	0.25	0.24	0.25	0.24	0.23	0.20	Diurnal Average	
	0.83	0.65	0.63	0.64	0.68	0.51	0.57	0.71	1.03	0.42	0.68	0.67	0.95	0.74	0.60	0.52	0.87	0.90	0.80	0.72	0.72	0.74	0.80	0.95	Diurnal Maximum	

C - Calibration A - Automated Daily Zero Span

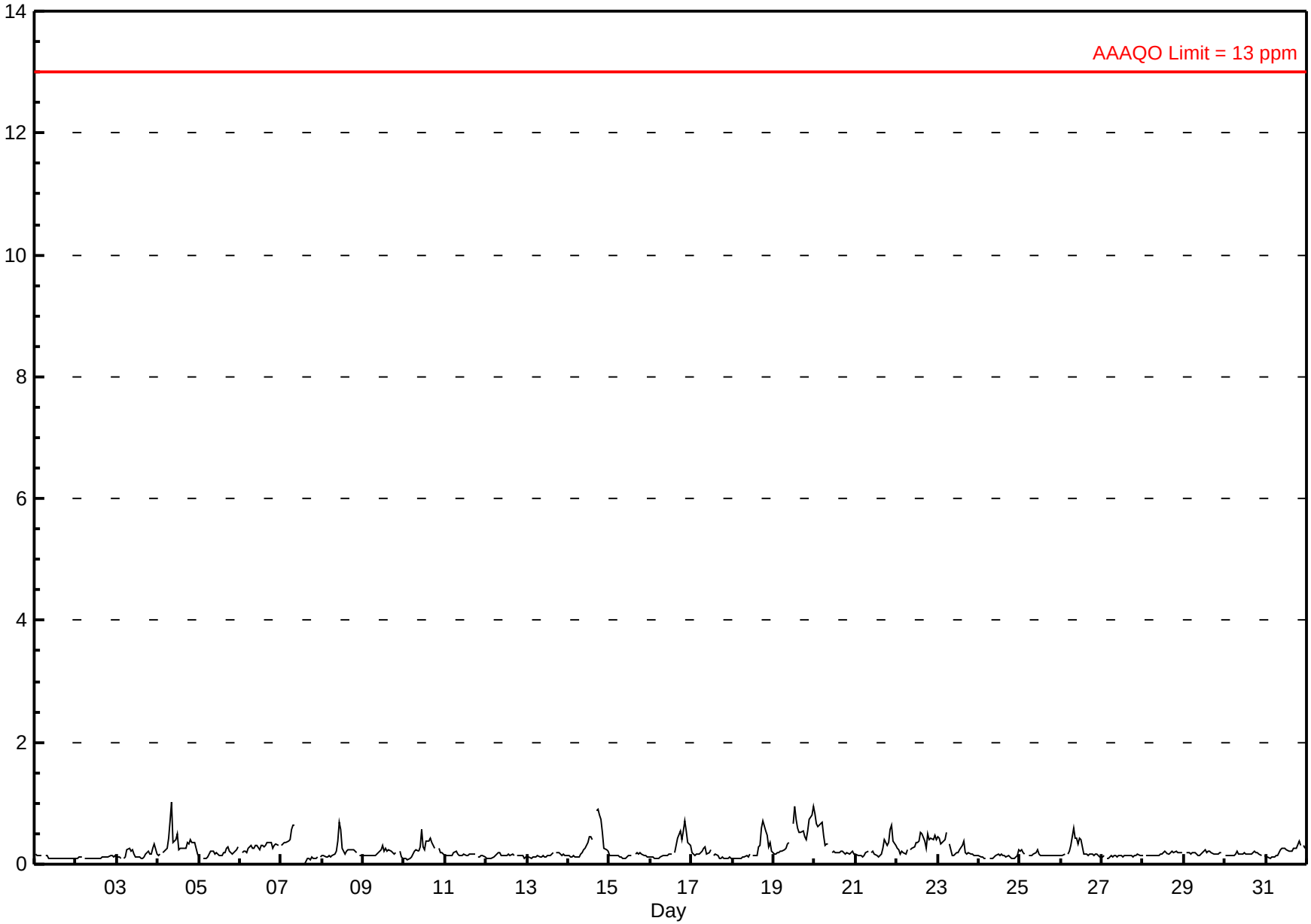
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13 ppm 24-hr na

Peace Airshed Zone Association

Hourly Averages

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2013

Maximum Value: 2.46 ppm on Dec 26 08:00

Maximum Daily Average: 0.65 ppm on Dec 19

Minimum Value: 0.0 ppm on Dec 7 14:00

Minimum Daily Average: 0.15 ppm on Dec 1

Maximum Diurnal Average: 0.48 ppm at hour 8

Minimum Diurnal Average: 0.22 ppm at hour 3

Monthly Average: 0.343 ppm

Percentiles: $P_1 = 0.10$ $P_{10} = 0.15$ $Q_1 = 0.17$ Median = 0.25 $Q_3 = 0.41$ $P_{90} = 0.68$ $P_{99} = 1.51$

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0.3	0.2	0.2	0.3	0.2	A	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.15	0.33
2-Dec	0.1	0.1	0.2	0.2	A	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.15	0.22
3-Dec	0.1	0.1	0.1	A	0.1	0.2	0.3	0.4	0.4	0.5	0.3	0.2	0.1	0.2	0.2	0.1	0.2	0.3	0.4	0.3	0.3	0.4	1.2	0.2	0.28	1.20
4-Dec	0.2	0.2	A	0.2	0.3	0.4	1.2	1.8	1.9	0.5	0.7	1.0	0.3	0.4	0.5	0.3	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.3	0.59	1.87
5-Dec	0.2	A	0.1	0.1	0.2	0.2	0.2	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.26	0.53
6-Dec	A	0.3	0.3	0.2	0.2	0.4	0.9	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.5	A	0.40	0.88
7-Dec	0.4	0.4	0.4	0.4	0.4	0.5	0.7	0.9	0.7	C	C	C	0.2	0.0	0.2	0.5	0.3	0.3	0.3	0.1	0.1	0.2	A	0.1	0.36	0.87
8-Dec	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.3	0.7	1.1	0.7	0.3	0.2	0.4	0.4	0.3	0.3	0.3	0.3	0.3	A	0.1	0.1	0.31	1.10
9-Dec	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	1.0	0.3	0.6	0.4	0.5	0.4	0.3	0.2	0.3	A	0.3	0.2	0.1	0.29	1.04
10-Dec	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.3	0.3	0.5	2.3	0.5	0.4	0.7	0.5	0.6	0.4	0.4	0.4	A	0.4	0.4	0.2	0.2	0.42	2.32
11-Dec	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.6	0.2	0.2	0.2	0.3	0.2	0.6	0.7	0.3	0.3	0.6	A	0.2	0.2	0.2	0.5	0.4	0.31	0.69
12-Dec	0.1	0.1	0.2	0.2	0.3	0.6	0.6	0.8	0.4	0.3	0.2	0.3	0.4	0.6	0.2	0.3	0.2	A	0.8	0.2	0.3	0.3	0.1	0.3	0.35	0.81
13-Dec	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.5	0.2	0.5	A	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.24	0.51
14-Dec	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.5	A	1.3	1.1	1.1	0.9	0.7	0.5	0.3	0.4	0.47	1.28
15-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	A	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.17	0.25
16-Dec	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	A	0.3	0.5	0.5	1.5	0.7	1.3	1.1	0.7	0.4	0.4	0.42	1.53
17-Dec	0.3	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.2	0.2	0.3	A	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.2	0.23	0.43
18-Dec	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.2	0.3	A	0.2	0.1	0.2	0.5	0.7	1.1	1.4	0.8	0.9	0.5	0.6	0.3	0.40	1.36
19-Dec	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.5	1.0	0.6	A	0.9	1.1	0.9	0.9	0.8	0.7	0.9	0.7	0.5	0.7	0.9	0.9	1.1	0.65	1.12
20-Dec	1.1	0.8	0.7	0.8	0.8	0.6	0.4	0.9	1.1	A	0.3	0.4	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.7	0.2	0.3	0.5	0.3	0.51	1.07
21-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	A	0.2	0.3	0.3	0.2	0.1	0.2	0.3	0.3	0.6	0.4	0.5	1.4	1.0	1.0	0.4	0.39	1.43
22-Dec	0.5	0.5	0.2	0.4	0.5	0.3	0.5	A	0.4	0.5	0.4	0.6	0.6	0.5	0.7	0.7	0.4	0.3	0.6	0.6	0.5	0.5	0.7	0.5	0.50	0.73
23-Dec	0.5	0.5	0.4	0.5	0.5	0.6	A	0.5	0.2	0.2	0.2	0.2	0.9	0.3	0.5	0.6	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.36	0.93
24-Dec	0.2	0.2	0.1	0.1	0.1	A	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.5	0.17	0.49
25-Dec	0.3	0.3	0.3	0.2	A	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19	0.35
26-Dec	0.2	0.2	0.2	A	0.3	0.3	0.6	2.5	1.2	0.5	0.4	0.8	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.44	2.46
27-Dec	0.2	0.2	A	0.2	0.1	1.2	0.2	0.5	0.7	0.2	0.2	0.2	0.2	0.3	0.5	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.29	1.15
28-Dec	0.2	A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.7	0.3	0.2	0.2	0.2	0.24	0.71
29-Dec	A	0.2	0.3	0.2	0.2	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.5	0.3	0.3	0.4	0.2	0.2	0.2	0.3	0.2	0.4	0.3	A	0.28	0.52
30-Dec	0.3	0.2	0.3	0.2	0.2	0.2	0.4	0.7	0.4	0.3	0.7	0.7	0.2	0.3	0.2	0.3	0.4	0.5	0.5	0.4	0.2	0.2	A	0.2	0.34	0.74
31-Dec	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.5	0.4	0.6	0.5	0.4	0.3	0.4	0.5	0.6	0.3	0.3	1.7	0.8	A	0.6	1.6	0.48	1.67
	0.25	0.23	0.22	0.22	0.23	0.30	0.34	0.48	0.44	0.31	0.39	0.40	0.34	0.32	0.34	0.36	0.35	0.42	0.40	0.42	0.39	0.35	0.39	0.33	Diurnal Average	
	1.07	0.77	0.72	0.75	0.78	1.15	1.19	2.46	1.87	0.69	2.32	1.04	1.10	0.90	0.90	0.76	1.28	1.53	1.36	1.67	1.43	0.96	1.20	1.56	Diurnal Maximum	

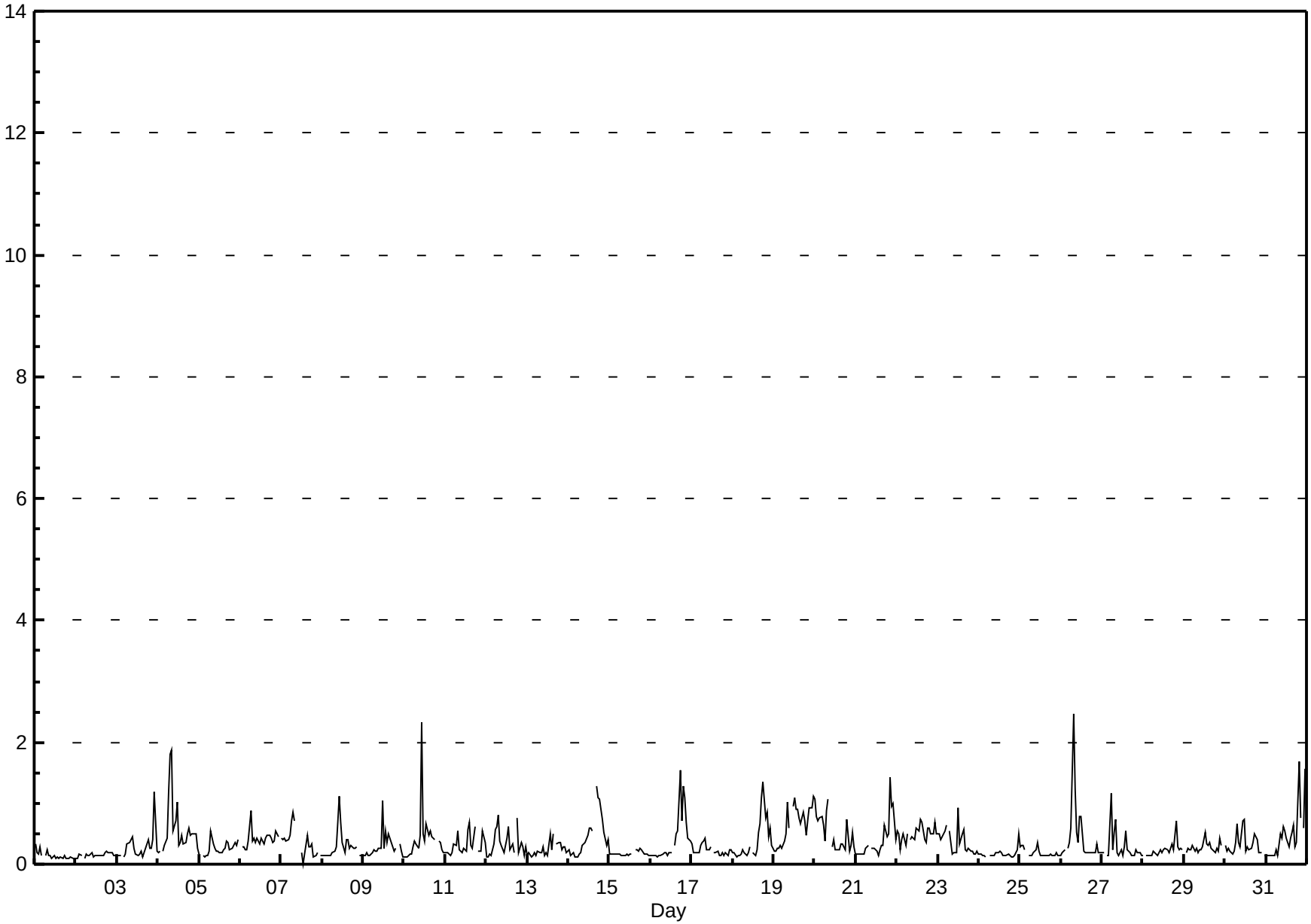
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2013

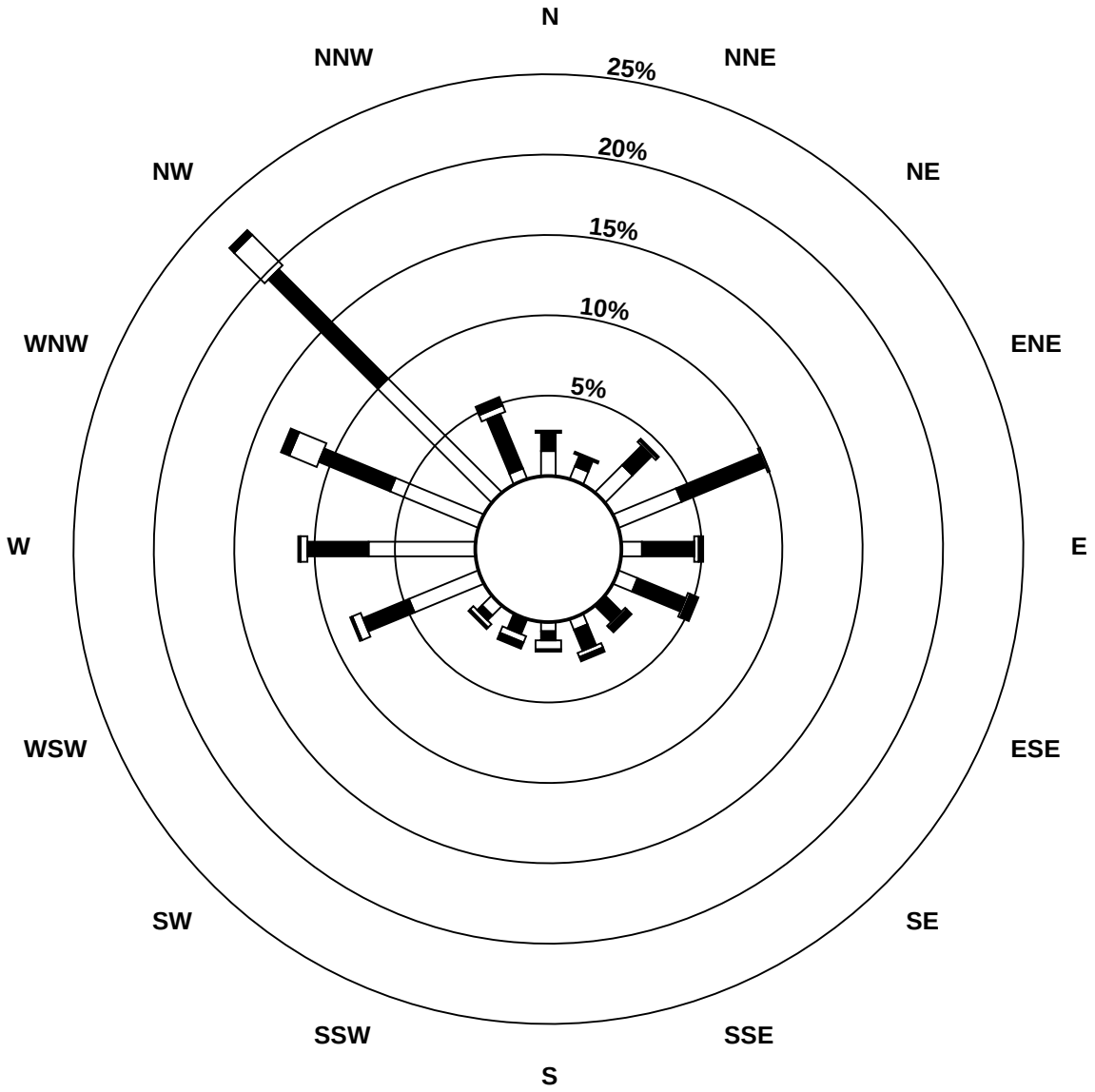


FOCUS AIR QUALITY MONITORING

Pollutant Rose

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2013



Pollutant Classes (ppm)

- 0 - 0.1
- 0.1 - 0.3
- 0.3 - 0.5
- 0.5 - 1
- 1 - 10
- > 10

Peace Airshed Zone Association

Eight Hour Running Averages

Carbon Monoxide (CO) - ppm

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 8-hr: 0
Maximum Value: 0.74 ppm on Dec 20 05:00

Minimum Value: 0.01 ppm on Dec 7 18:00

Percentiles: P_1 = 0.10 P_{10} = 0.12 Q_1 = 0.14 Median = 0.17 Q_3 = 0.25 P_{90} = 0.39 P_{99} = 0.65

Hours in Service:	744
Hours of Data:	738
Hours of Missing Data:	6
Hours of Calibration:	6
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Maximum
1-Dec	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.44
2-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13
3-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.20
4-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.49
5-Dec	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.29
6-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.33
7-Dec	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	N	N	N	N	N	N	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.50
8-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.34
9-Dec	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.24
10-Dec	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.37
11-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.22
12-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16
13-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18
14-Dec	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.6	0.7	0.7	0.6	0.6	0.6	0.67
15-Dec	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.48
16-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.48
17-Dec	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.45
18-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.44
19-Dec	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.7	0.6	0.6	0.5	0.5	0.6	0.6	0.65
20-Dec	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.74
21-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.40
22-Dec	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.42
23-Dec	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.43
24-Dec	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.16
25-Dec	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.19
26-Dec	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.39
27-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.15
28-Dec	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19
29-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.19
30-Dec	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.18
31-Dec	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.29
Diurnal Maximums	0.66	0.67	0.69	0.72	0.74	0.71	0.65	0.57	0.51	0.48	0.50	0.49	0.49	0.51	0.56	0.60	0.62	0.65	0.63	0.66	0.67	0.64	0.62	0.62	

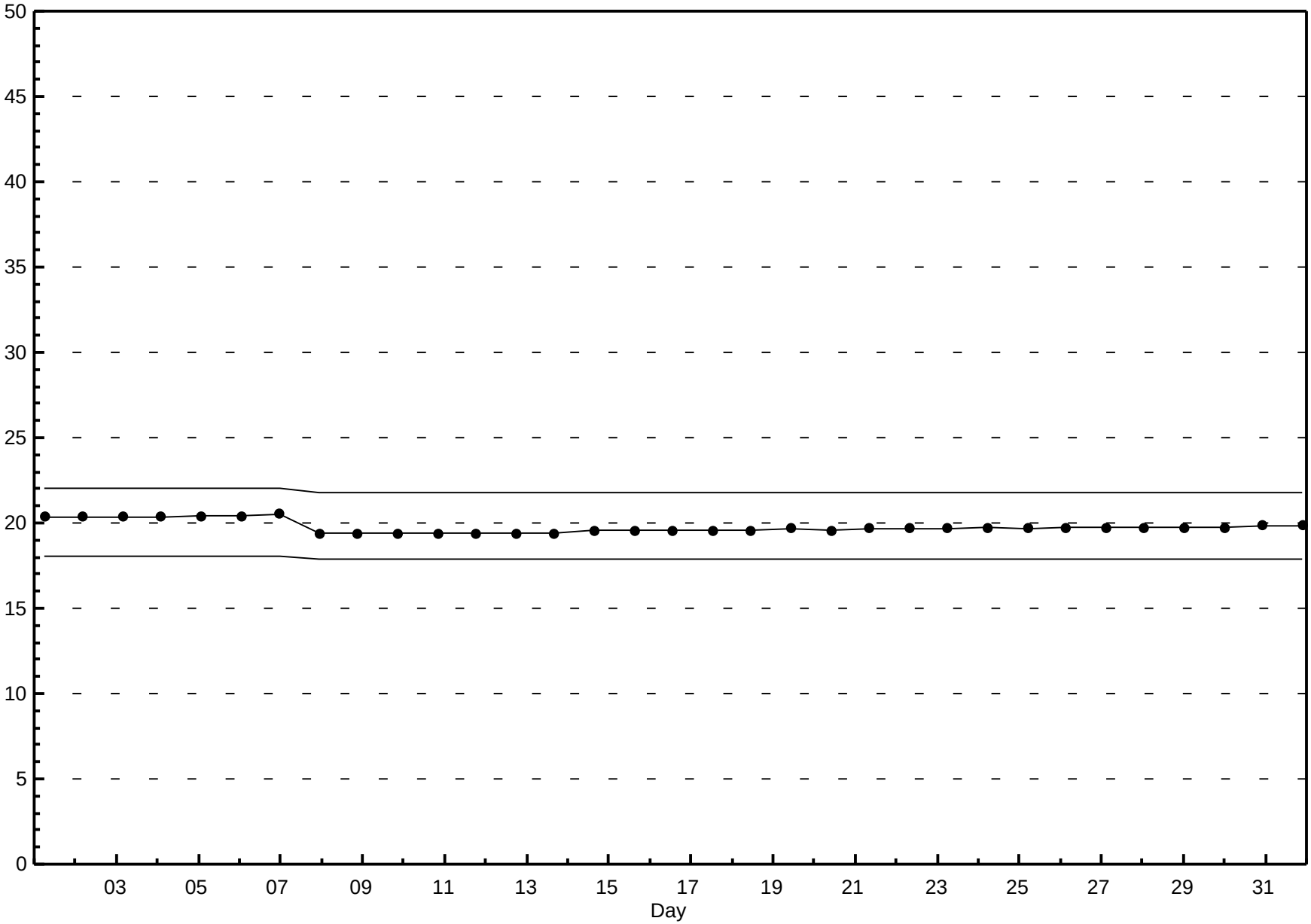
N - Not Valid
Alberta Ambient Air Quality Objectives (AAAQO): 8-hr 5 ppm

Peace Airshed Zone Association

Span Responses

Carbon Monoxide (CO)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 2.86 ppm on Dec 19 13:00

Maximum Daily Average: 2.60 ppm on Dec 19

Minimum Value: 1.8 ppm on Dec 6 23:00

Minimum Daily Average: 1.86 ppm on Dec 15

Maximum Diurnal Average: 2.09 ppm at hour 6

Minimum Diurnal Average: 2.01 ppm at hour 1

Monthly Average: 2.052 ppm

Percentiles: P_1 = 1.83 P_{10} = 1.88 Q_1 = 1.93 Median = 1.99 Q_3 = 2.08 P_{90} = 2.36 P_{99} = 2.77

Hours in Service:	744
Hours of Data:	695
Hours of Missing Data:	49
Hours of Calibration:	39
Percent Operational Time:	98.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	1.97
2-Dec	1.9	1.9	1.9	2.0	A	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.00
3-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.01	2.10
4-Dec	2.2	2.2	A	2.3	2.4	2.4	2.6	2.6	2.6	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.2	2.37	2.61
5-Dec	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.10	2.30
6-Dec	A	2.2	2.3	2.4	2.4	2.5	2.5	2.5	2.6	2.7	2.7	2.6	2.6	2.5	2.5	2.3	2.3	2.3	2.2	2.1	2.0	1.9	1.8	A	2.35	2.69
7-Dec	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	2.0	1.9	1.9	1.9	1.9	1.9	A	1.9	--	1.96
8-Dec	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.2	2.3	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.1	A	1.9	1.9	2.03	2.33
9-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.92	2.01
10-Dec	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.0	2.0	2.0	2.2	2.2	2.2	2.1	2.0	A	2.1	2.0	2.0	2.1	2.02	2.21
11-Dec	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	1.9	1.9	A	1.9	2.0	1.9	1.9	1.9	1.98	2.09
12-Dec	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	1.97	1.99
13-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.01	2.19
14-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	A	2.8	2.6	2.4	2.5	2.5	2.1	2.1	2.0	2.18	2.85
15-Dec	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.86	1.90
16-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.1	1.9	2.0	2.0	2.1	2.2	2.2	2.1	2.1	1.96	2.22
17-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	A	1.8	1.9	1.9	1.9	1.9	2.0	1.9	2.0	1.9	2.0	1.9	1.92	2.02
18-Dec	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.3	2.02	2.26
19-Dec	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.6	2.8	2.8	A	2.8	2.9	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.6	2.6	2.60	2.86
20-Dec	2.6	2.5	2.6	2.8	2.8	2.5	2.3	2.1	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.18	2.80
21-Dec	2.0	2.0	2.3	2.0	2.1	2.2	2.1	2.0	A	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.5	2.3	2.2	2.2	2.11	2.46
22-Dec	2.2	2.3	2.3	2.3	2.3	2.4	2.4	A	2.5	2.6	2.6	2.4	2.5	2.5	2.4	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.3	2.33	2.59
23-Dec	2.3	2.4	2.3	2.3	2.4	2.5	A	2.2	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.01	2.53
24-Dec	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.89	2.05
25-Dec	2.0	2.1	2.0	1.9	A	1.9	2.0	1.9	2.0	2.0	2.1	2.0	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.92	2.13
26-Dec	1.9	1.9	1.9	A	1.9	2.0	2.1	2.2	2.0	2.0	2.0	2.1	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.93	2.23
27-Dec	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.95	2.02
28-Dec	2.0	A	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.02	2.06
29-Dec	A	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	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	A	2.04	2.08
30-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	1.9	2.00	2.03
31-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	A	2.1	2.1	2.03	2.14
	2.01	2.03	2.03	2.06	2.07	2.09	2.06	2.05	2.07	2.07	2.06	2.08	2.07	2.04	2.04	2.03	2.06	2.05	2.05	2.05	2.07	2.04	2.03	2.04	Diurnal Average	
	2.61	2.53	2.59	2.80	2.77	2.60	2.62	2.65	2.77	2.78	2.69	2.79	2.86	2.71	2.58	2.61	2.85	2.60	2.56	2.50	2.49	2.51	2.57	2.65	Diurnal Maximum	

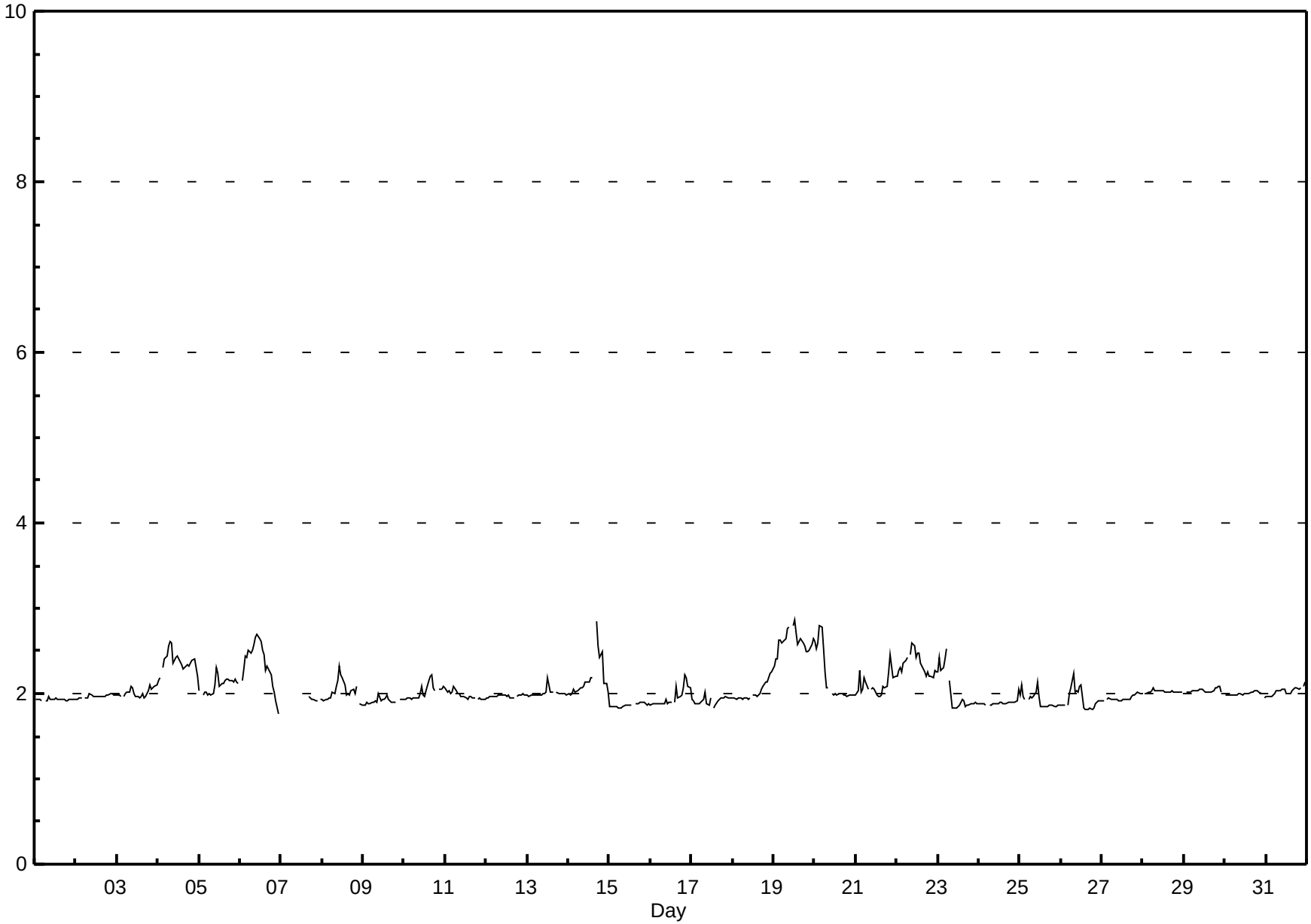
C - Calibration N - Not Valid A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2013

Maximum Value: 4.52 ppm on Dec 4 09:00

Maximum Daily Average: 2.68 ppm on Dec 19

Minimum Value: 1.8 ppm on Dec 26 17:00

Minimum Daily Average: 1.90 ppm on Dec 15

Maximum Diurnal Average: 2.23 ppm at hour 9

Minimum Diurnal Average: 2.09 ppm at hour 1

Monthly Average: 2.146 ppm

Percentiles: P_1 = 1.84 P_{10} = 1.90 Q_1 = 1.96 Median = 2.07 Q_3 = 2.24 P_{90} = 2.53 P_{99} = 2.98

Hours in Service:	744
Hours of Data:	695
Hours of Missing Data:	49
Hours of Calibration:	39
Percent Operational Time:	98.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	2.1	2.1	2.0	2.1	1.9	A	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.97	2.13
2-Dec	1.9	1.9	2.0	2.0	A	2.0	2.0	2.0	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.00	2.16
3-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.4	2.3	2.2	2.0	2.0	2.0	2.0	2.3	2.0	2.0	2.1	2.2	2.2	2.2	2.2	2.2	2.09	2.42
4-Dec	2.3	2.2	A	2.4	2.5	2.5	2.6	2.9	4.5	2.4	2.6	2.6	2.5	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.53	4.52
5-Dec	2.1	A	2.1	2.2	2.3	2.0	2.1	2.0	2.0	2.3	2.3	2.3	2.1	2.1	2.1	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.17	2.32
6-Dec	A	2.2	2.4	2.5	2.5	2.6	2.5	2.5	2.6	2.7	2.7	2.7	2.6	2.6	2.5	2.4	2.4	2.3	2.3	2.2	2.1	2.0	1.8	A	2.41	2.72
7-Dec	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	2.0	2.0	2.0	1.9	2.0	1.9	A	2.0	--	1.98
8-Dec	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.2	2.3	2.4	2.7	2.5	2.3	2.3	2.0	2.0	2.0	2.1	2.1	2.0	2.2	A	1.9	1.9	2.12	2.65
9-Dec	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.2	1.9	2.0	2.0	2.1	2.1	2.0	1.9	1.9	1.9	1.9	A	1.9	2.0	2.0	1.97	2.20
10-Dec	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.1	2.0	2.2	2.2	2.2	2.2	2.2	2.1	A	2.1	2.1	2.1	2.1	2.09	2.23
11-Dec	2.1	2.0	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.0	2.0	2.0	2.0	1.9	2.3	2.2	2.1	2.2	A	2.1	2.1	2.1	2.1	2.1	2.10	2.33
12-Dec	2.1	2.2	2.2	2.1	2.3	2.2	2.3	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.0	A	2.1	2.2	2.2	2.4	2.1	2.1	2.18	2.38
13-Dec	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.1	2.0	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.07	2.96
14-Dec	2.1	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.4	A	3.0	2.9	2.7	2.8	2.9	3.2	2.2	2.3	2.37	3.21
15-Dec	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	2.1	2.0	1.9	1.9	1.9	1.9	1.90	2.07
16-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	1.9	1.9	1.9	A	1.9	2.4	2.2	2.5	2.1	2.6	2.8	2.7	2.4	2.4	2.14	2.85
17-Dec	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	1.9	1.9	2.2	A	1.8	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.97	2.22
18-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.07	2.44
19-Dec	2.4	2.4	2.5	2.7	2.7	2.7	2.6	2.7	2.9	2.8	A	3.1	3.1	2.8	2.6	2.6	2.8	2.6	2.6	2.5	2.6	2.5	2.6	2.7	2.68	3.07
20-Dec	2.7	2.6	2.6	3.1	3.0	2.7	2.6	2.3	2.2	A	2.1	2.2	2.3	2.2	2.1	2.3	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.34	3.13
21-Dec	2.0	2.3	2.4	2.0	2.2	2.2	2.2	2.1	A	2.1	2.1	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.9	2.8	2.5	2.2	2.3	2.22	2.86
22-Dec	2.2	2.3	2.3	2.3	2.4	2.4	2.5	A	2.5	2.7	2.7	2.5	2.6	2.5	2.4	2.4	2.3	2.2	2.3	2.3	2.2	2.2	2.4	2.3	2.39	2.70
23-Dec	2.3	2.5	2.4	2.5	2.7	2.7	A	2.4	1.8	1.8	1.8	1.8	1.9	1.9	2.2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.09	2.68
24-Dec	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.3	1.92	2.35
25-Dec	2.3	2.4	2.2	2.1	A	2.0	2.0	2.0	2.0	2.1	2.5	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.00	2.52
26-Dec	1.9	1.9	1.9	A	1.9	2.9	2.6	3.0	2.2	2.2	2.2	2.5	2.5	1.9	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.3	2.1	2.13	3.05
27-Dec	2.2	2.0	A	2.1	2.5	2.2	2.3	2.1	2.1	2.2	2.0	1.9	2.0	2.1	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.08	2.46
28-Dec	2.0	A	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.2	2.0	2.1	2.1	2.06	2.17
29-Dec	A	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	A	2.08	2.25
30-Dec	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.9	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.1	2.2	2.1	A	2.2	2.18	2.86
31-Dec	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.3	2.1	2.1	2.0	2.5	2.2	2.3	2.3	2.1	2.1	A	2.1	2.3	2.13	2.52
	2.09	2.10	2.11	2.14	2.16	2.18	2.15	2.15	2.23	2.18	2.15	2.21	2.19	2.12	2.11	2.14	2.12	2.13	2.12	2.15	2.18	2.16	2.11	2.13	Diurnal Average	
	2.73	2.58	2.62	3.13	2.99	2.85	2.64	3.05	4.52	2.82	2.72	3.07	3.07	2.78	2.62	2.64	3.00	2.88	2.70	2.86	2.88	3.21	2.64	2.72	Diurnal Maximum	

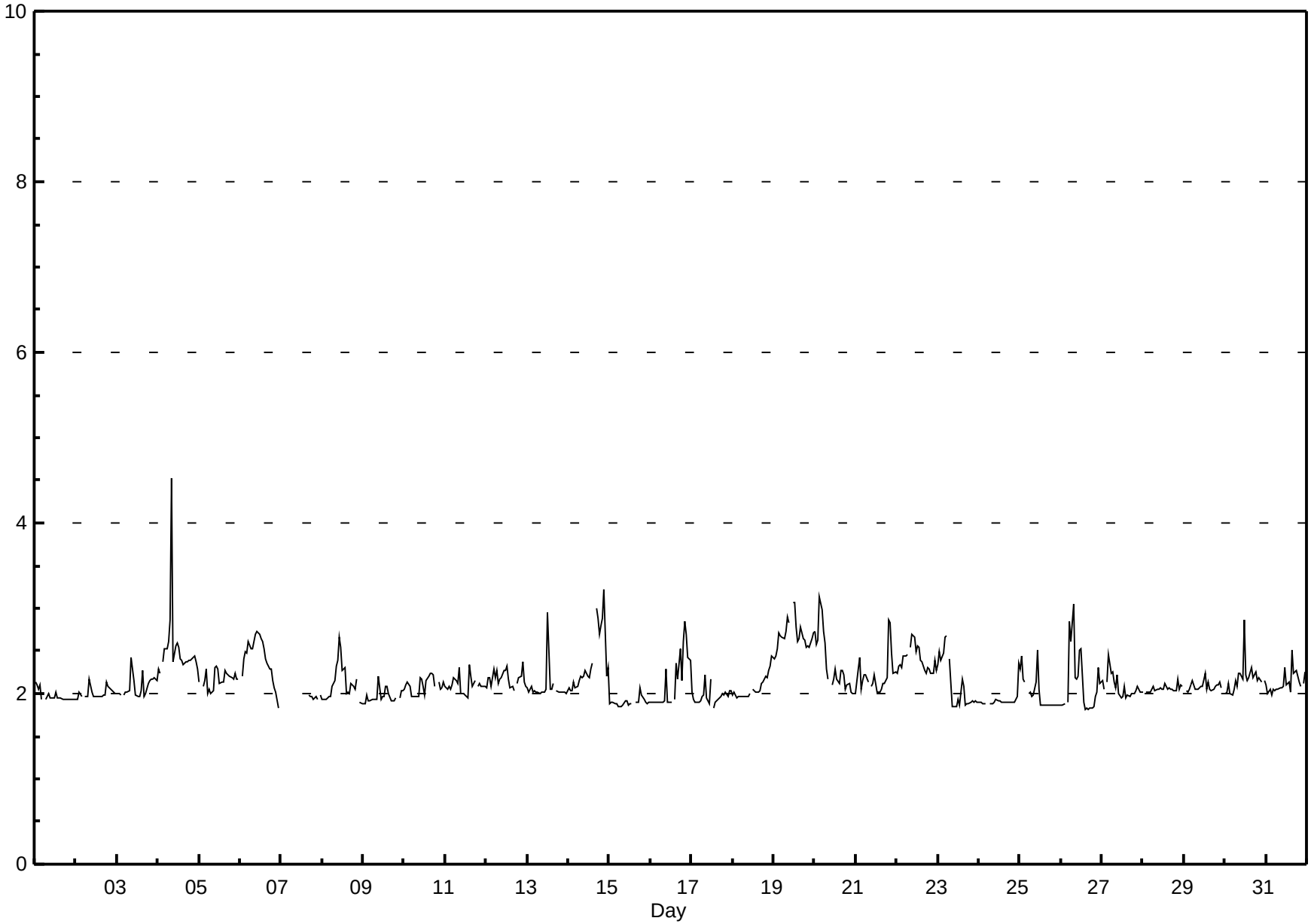
C - Calibration N - Not Valid A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Total Hydrocarbons (THC) - ppm

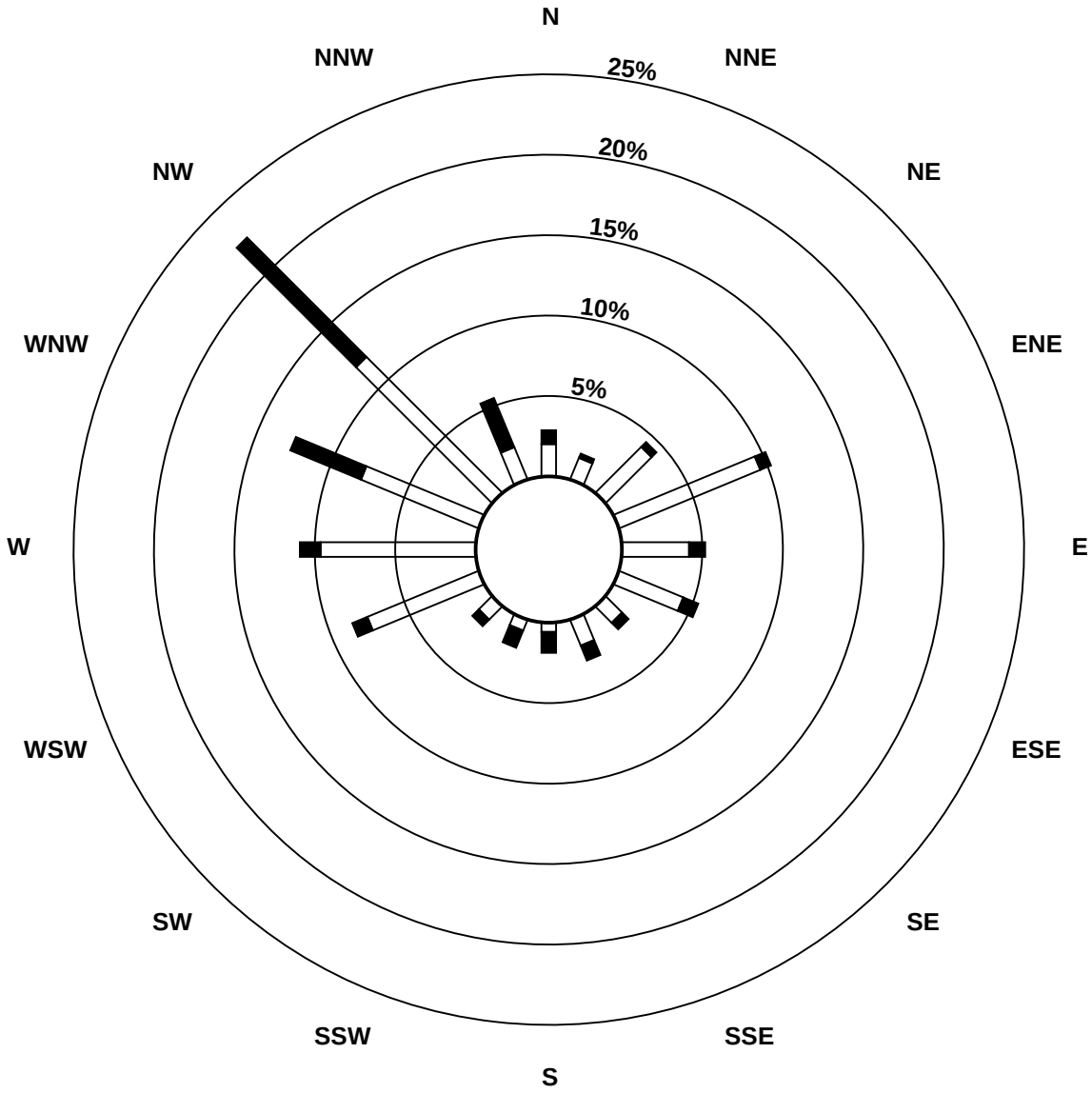
Henry Pirker - December 2013



Pollutant Rose

Total Hydrocarbons (THC) - ppm

Henry Pirker - December 2013



Pollutant Classes (ppm)

- 1.5 - 2.0
- 2.1 - 3.0
- 3.1 - 10.0
- > 10.0

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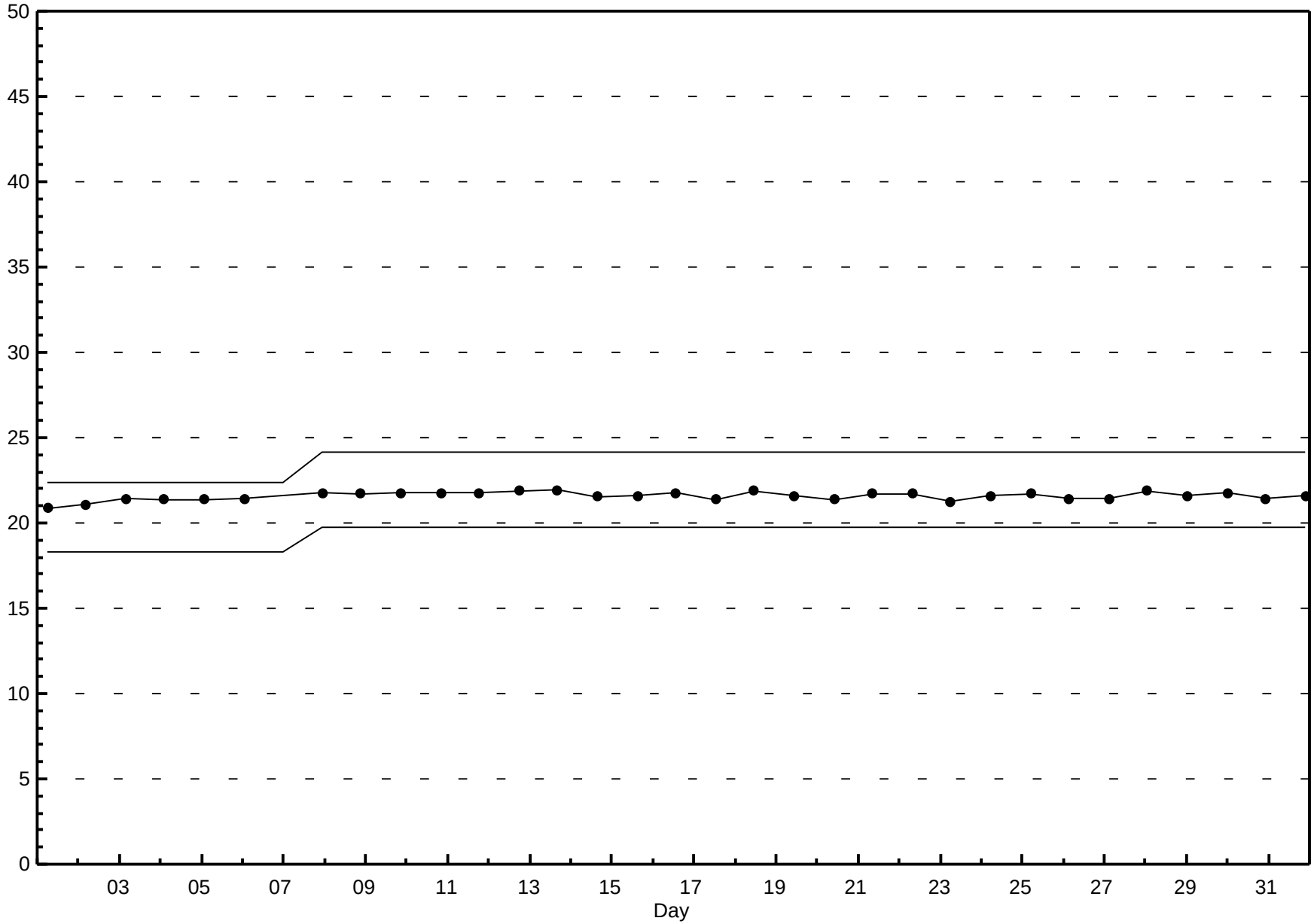
Span Responses

Total Hydrocarbons (THC)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Methane (CH_4) - ppm

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 2.87 ppm on Dec 19 13:00

Maximum Daily Average: 2.61 ppm on Dec 19

Minimum Value: 1.8 ppm on Dec 6 23:00

Minimum Daily Average: 1.87 ppm on Dec 15

Maximum Diurnal Average: 2.09 ppm at hour 6

Minimum Diurnal Average: 2.02 ppm at hour 1

Monthly Average: 2.055 ppm

Percentiles: P_1 = 1.84 P_{10} = 1.89 Q_1 = 1.94 Median = 1.99 Q_3 = 2.08 P_{90} = 2.35 P_{99} = 2.78

Hours in Service:	744
Hours of Data:	695
Hours of Missing Data:	49
Hours of Calibration:	39
Percent Operational Time:	98.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.92	1.96
2-Dec	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.96	2.00
3-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	1.9	2.0	2.0	1.9	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.00	2.09
4-Dec	2.1	2.2	A	2.3	2.4	2.4	2.5	2.6	2.5	2.3	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.36	2.60
5-Dec	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.09	2.29
6-Dec	A	2.2	2.3	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.7	2.6	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.1	2.0	1.9	1.8	A	2.34	2.68
7-Dec	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	--	1.95
8-Dec	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.1	A	1.9	1.9	2.03	2.33
9-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.92	2.01
10-Dec	1.9	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.2	2.2	2.2	2.1	2.0	A	2.1	2.1	2.1	2.1	2.03	2.22
11-Dec	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	A	1.9	2.0	1.9	1.9	1.9	1.98	2.09
12-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.00
13-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.01	2.19
14-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	A	2.9	2.6	2.4	2.5	2.5	2.1	2.1	2.0	2.18	2.86
15-Dec	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.87	1.91
16-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	2.1	2.0	2.0	2.0	2.1	2.2	2.2	2.1	2.1	1.97	2.22
17-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	1.9	1.9	1.9	A	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	1.93	2.02
18-Dec	2.0	2.0	1.9	2.0	2.0	1.9	1.9	2.0	2.0	1.9	2.0	A	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.02	2.27
19-Dec	2.3	2.4	2.4	2.6	2.6	2.6	2.6	2.7	2.8	2.8	A	2.8	2.9	2.7	2.6	2.6	2.6	2.6	2.6	2.5	2.5	2.5	2.6	2.7	2.61	2.87
20-Dec	2.6	2.5	2.6	2.8	2.8	2.5	2.3	2.1	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.18	2.81
21-Dec	2.0	2.0	2.3	2.0	2.1	2.2	2.1	2.1	A	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.3	2.5	2.3	2.2	2.2	2.11	2.47
22-Dec	2.2	2.3	2.3	2.3	2.4	2.4	2.4	A	2.5	2.6	2.6	2.4	2.5	2.5	2.4	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.3	2.3	2.34	2.60
23-Dec	2.3	2.4	2.3	2.3	2.4	2.5	A	2.2	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.02	2.53
24-Dec	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.90	2.05
25-Dec	2.0	2.1	2.0	1.9	A	1.9	2.0	2.0	2.0	2.0	2.1	2.0	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.93	2.14
26-Dec	1.9	1.9	1.9	A	1.9	2.0	2.1	2.2	2.0	2.0	2.0	2.1	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.94	2.24
27-Dec	1.9	1.9	A	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.96	2.03
28-Dec	2.0	A	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.03	2.07
29-Dec	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.0	A	2.04	2.09
30-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.00	2.04
31-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.03	2.15
	2.02	2.03	2.04	2.06	2.07	2.09	2.06	2.05	2.07	2.08	2.07	2.08	2.07	2.05	2.04	2.04	2.06	2.05	2.05	2.05	2.07	2.05	2.04	2.04	Diurnal Average	
	2.62	2.53	2.60	2.81	2.78	2.60	2.63	2.65	2.78	2.79	2.68	2.80	2.87	2.72	2.59	2.62	2.86	2.61	2.57	2.50	2.50	2.52	2.58	2.65	Diurnal Maximum	

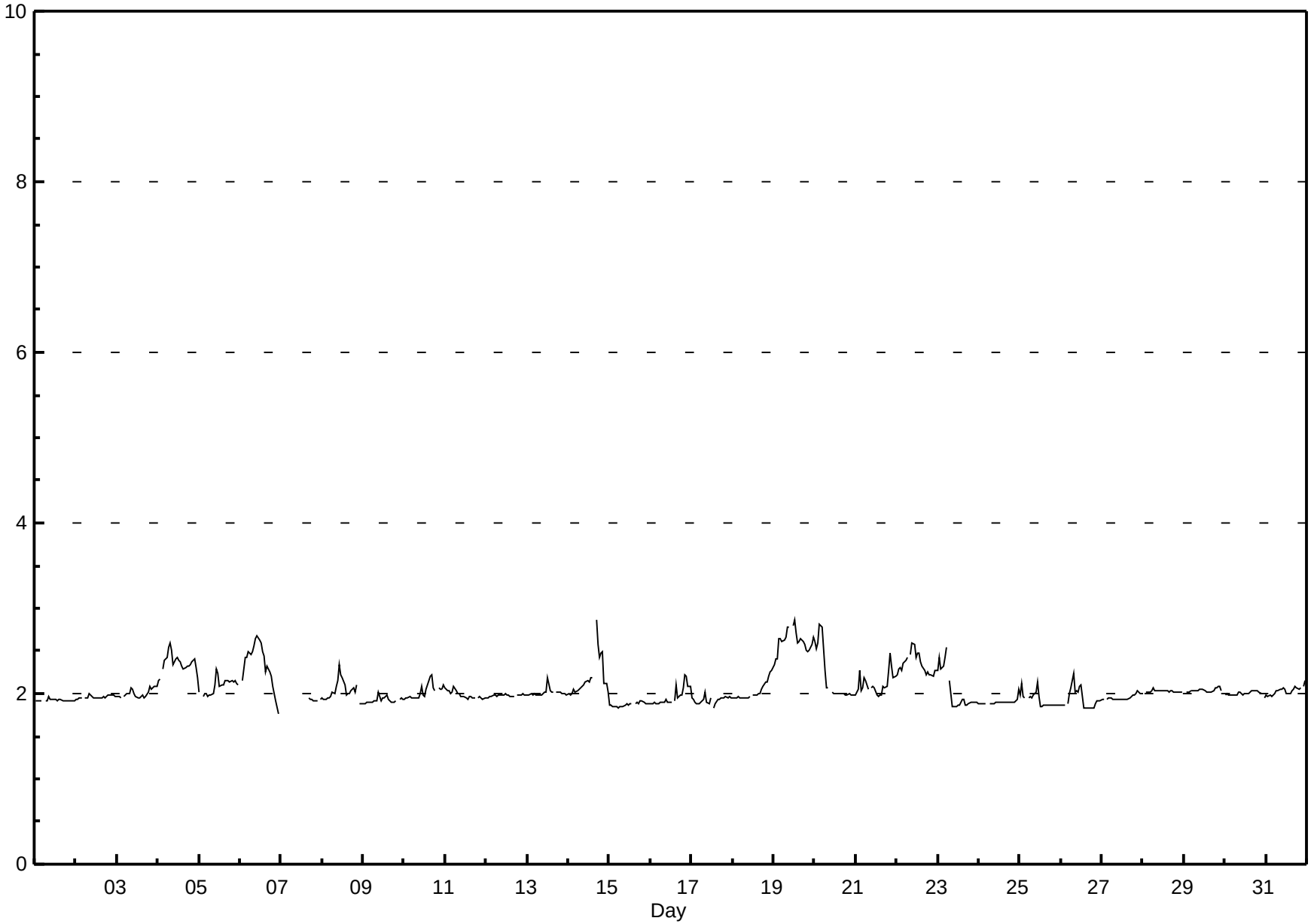
C - Calibration N - Not Valid A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Methane (CH_4) - ppm

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Methane (CH_4) - ppm

Henry Pirker - December 2013

Maximum Value: 3.21 ppm on Dec 14 22:00

Maximum Daily Average: 2.69 ppm on Dec 19

Minimum Value: 1.8 ppm on Dec 6 23:00

Minimum Daily Average: 1.90 ppm on Dec 15

Maximum Diurnal Average: 2.21 ppm at hour 12

Minimum Diurnal Average: 2.09 ppm at hour 1

Monthly Average: 2.146 ppm

Percentiles: P_1 = 1.84 P_{10} = 1.91 Q_1 = 1.97 Median = 2.07 Q_3 = 2.25 P_{90} = 2.52 P_{99} = 3.00

Hours in Service:	744
Hours of Data:	695
Hours of Missing Data:	49
Hours of Calibration:	39
Percent Operational Time:	98.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	2.1	2.1	2.0	2.1	1.9	A	1.9	1.9	2.0	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.96	2.11
2-Dec	1.9	1.9	2.0	2.0	A	1.9	1.9	2.0	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.0	1.99	2.15
3-Dec	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.4	2.3	2.1	2.0	2.0	2.0	2.0	2.3	1.9	2.0	2.1	2.1	2.2	2.2	2.2	2.1	2.08	2.41
4-Dec	2.3	2.2	A	2.4	2.5	2.5	2.6	2.9	2.8	2.4	2.5	2.6	2.5	2.4	2.4	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.3	2.45	2.86
5-Dec	2.1	A	2.1	2.1	2.3	2.0	2.0	2.0	2.0	2.3	2.3	2.3	2.1	2.1	2.1	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.16	2.31
6-Dec	A	2.2	2.4	2.5	2.5	2.6	2.5	2.5	2.6	2.7	2.7	2.7	2.6	2.6	2.5	2.4	2.3	2.3	2.3	2.1	2.1	2.0	1.8	A	2.40	2.70
7-Dec	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	2.0	2.0	2.0	1.9	2.0	1.9	A	2.0	--	1.98
8-Dec	1.9	1.9	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.4	2.7	2.6	2.3	2.3	2.0	2.0	2.0	2.1	2.1	2.1	2.2	A	1.9	1.9	2.12	2.66
9-Dec	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.2	1.9	2.0	2.0	2.1	2.1	2.0	1.9	1.9	1.9	2.0	A	2.0	2.0	2.0	1.97	2.21
10-Dec	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.2	2.2	2.1	2.0	2.2	2.2	2.2	2.2	2.2	2.1	A	2.1	2.1	2.1	2.1	2.10	2.24
11-Dec	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.3	2.0	2.0	2.0	2.0	2.0	2.3	2.2	2.1	2.2	A	2.1	2.1	2.1	2.1	2.1	2.10	2.34
12-Dec	2.1	2.2	2.2	2.1	2.3	2.2	2.3	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.0	A	2.1	2.2	2.2	2.4	2.1	2.1	2.18	2.39
13-Dec	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.1	2.0	2.1	A	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.08	2.97
14-Dec	2.1	2.0	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.4	A	3.0	2.9	2.7	2.8	2.9	3.2	2.2	2.3	2.37	3.21
15-Dec	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	2.1	2.0	1.9	1.9	1.9	1.9	1.90	2.07
16-Dec	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	1.9	1.9	1.9	A	1.9	2.4	2.2	2.5	2.2	2.6	2.9	2.7	2.4	2.4	2.14	2.86
17-Dec	2.0	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.2	2.0	1.9	2.2	A	1.8	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.98	2.23
18-Dec	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	A	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.07	2.45
19-Dec	2.4	2.4	2.5	2.7	2.7	2.7	2.7	2.7	2.9	2.8	A	3.1	3.1	2.8	2.6	2.7	2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.69	3.09
20-Dec	2.7	2.6	2.6	3.1	3.0	2.7	2.6	2.3	2.2	A	2.1	2.2	2.3	2.2	2.1	2.3	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.34	3.14
21-Dec	2.0	2.3	2.4	2.0	2.2	2.2	2.2	2.1	A	2.1	2.1	2.2	2.0	2.0	2.0	2.1	2.1	2.1	2.2	2.9	2.8	2.5	2.3	2.3	2.23	2.86
22-Dec	2.2	2.3	2.3	2.3	2.5	2.5	2.5	A	2.5	2.7	2.7	2.5	2.6	2.6	2.4	2.4	2.3	2.2	2.3	2.3	2.2	2.3	2.4	2.3	2.40	2.71
23-Dec	2.3	2.5	2.4	2.5	2.7	2.7	A	2.4	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.10	2.68
24-Dec	1.9	1.9	1.9	1.9	1.9	A	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.4	1.93	2.36
25-Dec	2.3	2.4	2.2	2.1	A	2.0	2.0	2.0	2.0	2.1	2.5	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.01	2.52
26-Dec	1.9	1.9	1.9	A	1.9	2.9	2.6	3.1	2.2	2.2	2.2	2.5	2.5	1.9	1.8	1.8	1.8	1.8	1.8	1.9	2.0	2.0	2.3	2.1	2.13	3.06
27-Dec	2.2	2.1	A	2.1	2.5	2.2	2.3	2.1	2.1	2.2	2.0	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	2.07	2.46
28-Dec	2.0	A	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.2	2.0	2.1	2.1	2.06	2.18
29-Dec	A	2.0	2.0	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.1	A	2.09	2.25
30-Dec	2.0	2.0	2.1	2.0	2.0	2.1	2.2	2.1	2.2	2.2	2.2	2.9	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.2	2.2	2.1	A	2.2	2.18	2.87
31-Dec	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.3	2.1	2.1	2.0	2.5	2.2	2.3	2.3	2.1	2.1	A	2.1	2.3	2.13	2.51
	2.09	2.11	2.11	2.14	2.16	2.19	2.15	2.15	2.17	2.18	2.16	2.21	2.19	2.12	2.11	2.14	2.12	2.13	2.12	2.15	2.18	2.16	2.11	2.13	Diurnal Average	
	2.74	2.59	2.63	3.14	3.00	2.86	2.66	3.06	2.90	2.84	2.70	3.08	3.09	2.79	2.62	2.66	3.00	2.89	2.71	2.86	2.89	3.21	2.64	2.73	Diurnal Maximum	

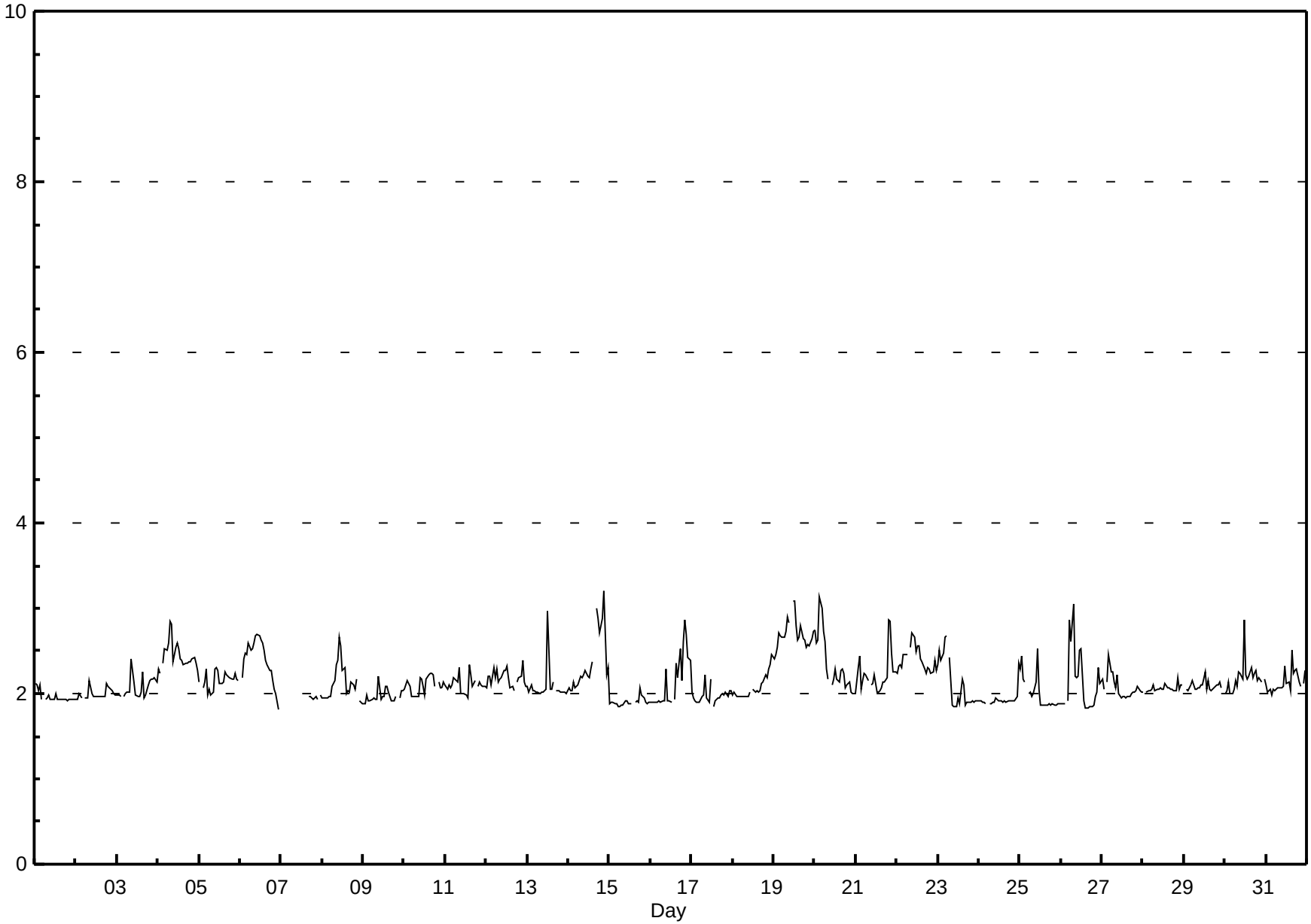
C - Calibration N - Not Valid A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Methane (CH_4) - ppm

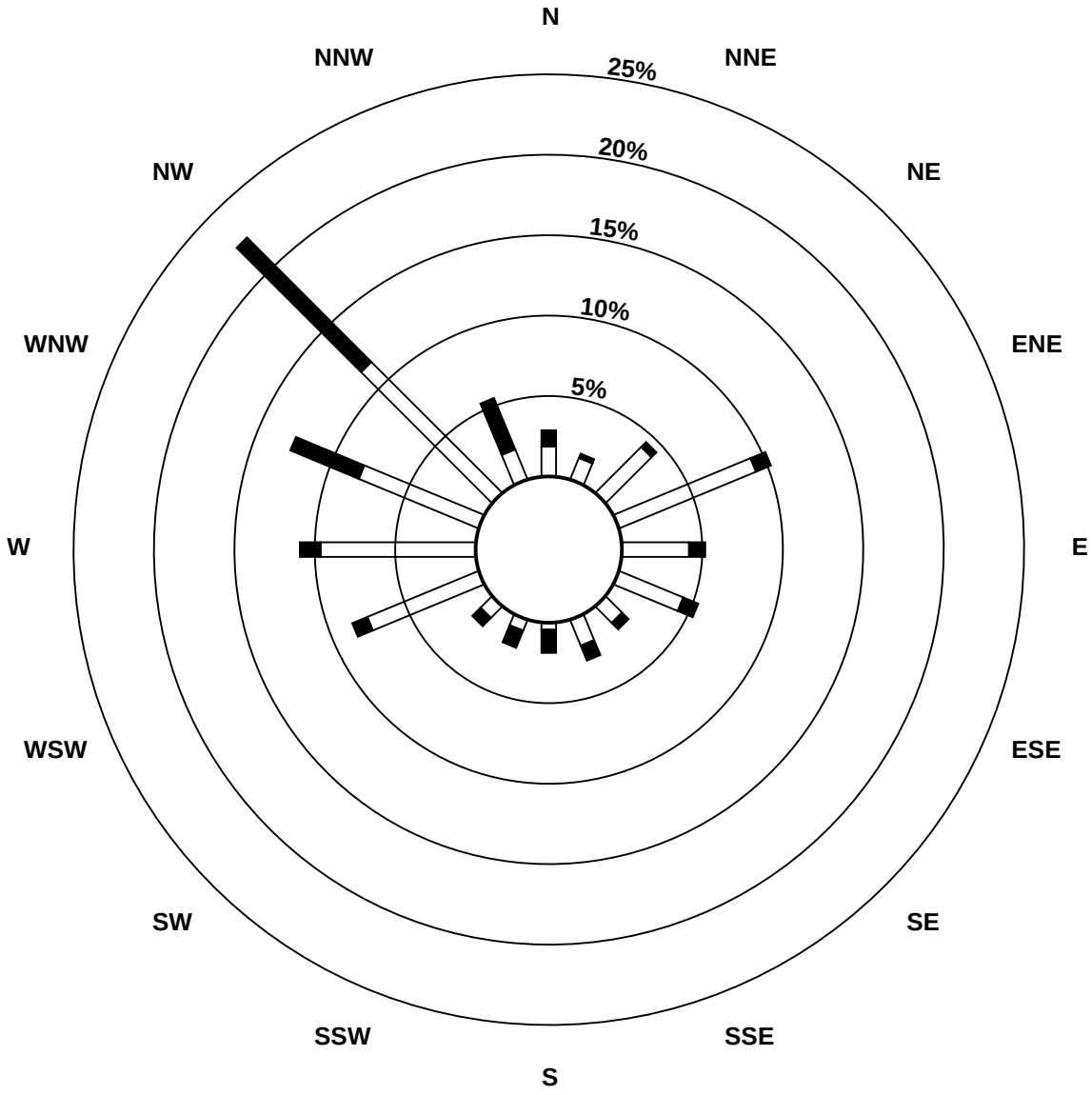
Henry Pirker - December 2013



Pollutant Rose

Methane (CH_4) - ppm

Henry Pirker - December 2013



Pollutant Classes (ppm)

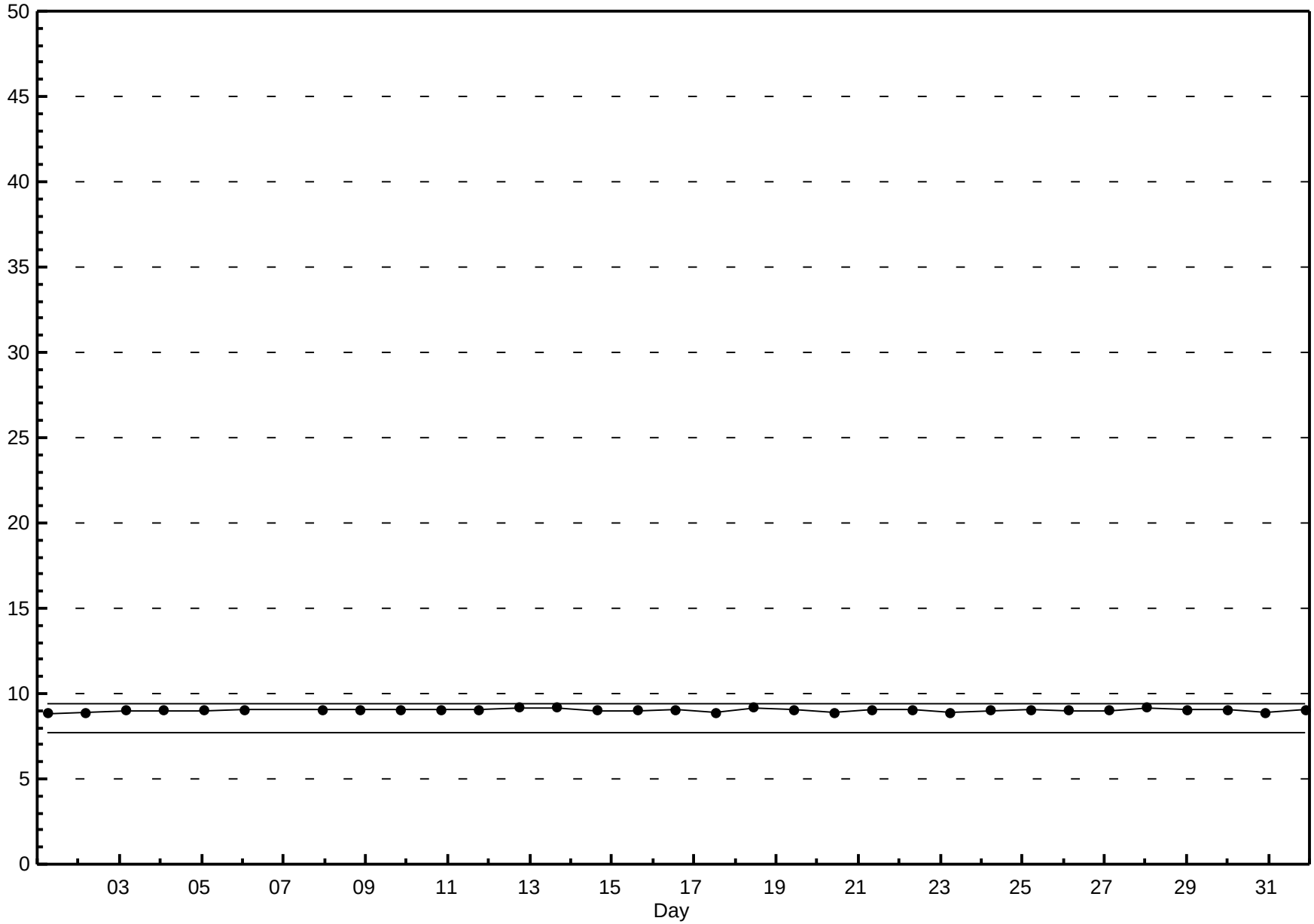
- 1.5 - 2.0
- 2.1 - 3.0
- 3.1 - 10.0
- > 10.0

Peace Airshed Zone Association

Span Responses

Methane (CH_4)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 0.07 ppm on Dec 4 09:00

Maximum Daily Average: 0.00 ppm on Dec 4

Minimum Value: 0.0 ppm on Dec 1 01:00

Minimum Daily Average: 0.00 ppm on Dec 3

Maximum Diurnal Average: 0.00 ppm at hour 9

Minimum Diurnal Average: 0.00 ppm at hour 5

Monthly Average: 0.000 ppm

Percentiles: P_1 = 0.00 P_{10} = 0.00 Q_1 = 0.00 Median = 0.00 Q_3 = 0.00 P_{90} = 0.00 P_{99} = 0.00

Hours in Service:	744
Hours of Data:	695
Hours of Missing Data:	49
Hours of Calibration:	39
Percent Operational Time:	98.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.00	0.00
2-Dec	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Dec	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.1	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	0.0	0.00	0.07
5-Dec	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
6-Dec	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00
7-Dec	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	--	0.02
8-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
9-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00
10-Dec	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	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	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	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	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	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	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	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	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	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
16-Dec	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
17-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.00	0.00
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.00	0.00
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.00	0.00
24-Dec	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.00	0.00
26-Dec	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
28-Dec	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00
30-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00
31-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Diurnal Average	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.01	0.00	0.00	0.00	Diurnal Maximum	

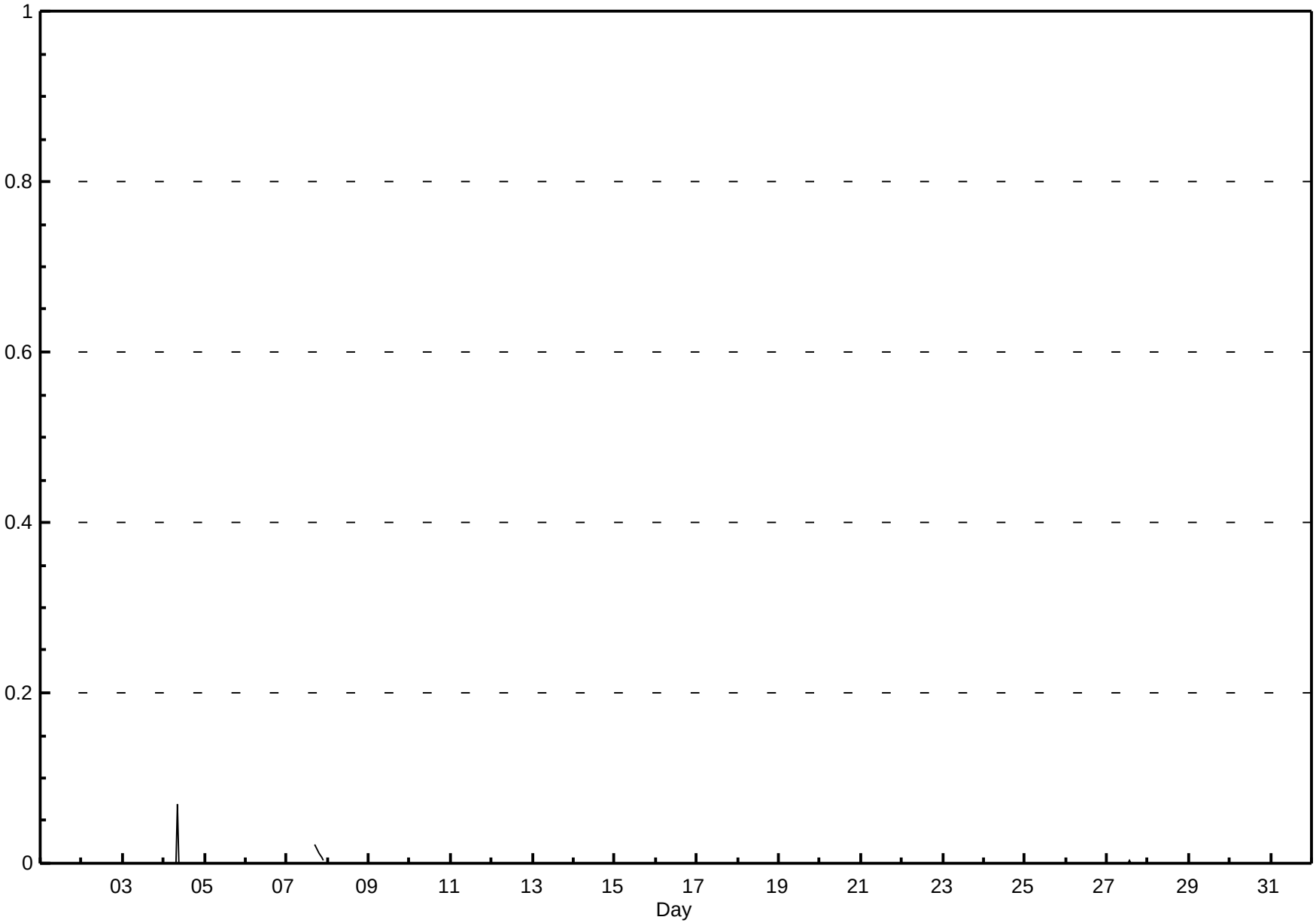
C - Calibration N - Not Valid A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - December 2013

Maximum Value: 2.07 ppm on Dec 4 09:00

Maximum Daily Average: 0.09 ppm on Dec 4

Minimum Value: 0.0 ppm on Dec 23 05:00

Maximum Diurnal Average: 0.07 ppm at hour 9

Monthly Average: 0.005 ppm

Minimum Daily Average: 0.00 ppm on Dec 5

Minimum Diurnal Average: 0.00 ppm at hour 7

Percentiles: P_1 = 0.00 P_{10} = 0.00 Q_1 = 0.00 Median = 0.00 Q_3 = 0.00 P_{90} = 0.00 P_{99} = 0.01

Hours in Service:	744
Hours of Data:	695
Hours of Missing Data:	49
Hours of Calibration:	39
Percent Operational Time:	98.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.00	0.00
2-Dec	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.00	0.00
3-Dec	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
4-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	2.1	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	0.0	0.09	2.07
5-Dec	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
6-Dec	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.04
7-Dec	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	--	0.03
8-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
9-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.00	0.00
10-Dec	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	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.00	0.00
11-Dec	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	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.00	0.00
12-Dec	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	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
13-Dec	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	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
14-Dec	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	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
15-Dec	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
16-Dec	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	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
17-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
18-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
19-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.00	0.00
20-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.00	0.00
21-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.00	0.00
22-Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.00	0.00
23-Dec	0.0	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.00	0.00
24-Dec	0.0	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.00	0.00
25-Dec	0.0	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.00	0.00
26-Dec	0.0	0.0	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
27-Dec	0.0	0.0	A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.15
28-Dec	0.0	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00
29-Dec	A	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.00	0.00
30-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.00	0.00
31-Dec	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	A	0.0	0.0	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Diurnal Average	
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.07	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.03	0.02	0.02	0.01	0.01	0.04	0.00	0.00	Diurnal Maximum	

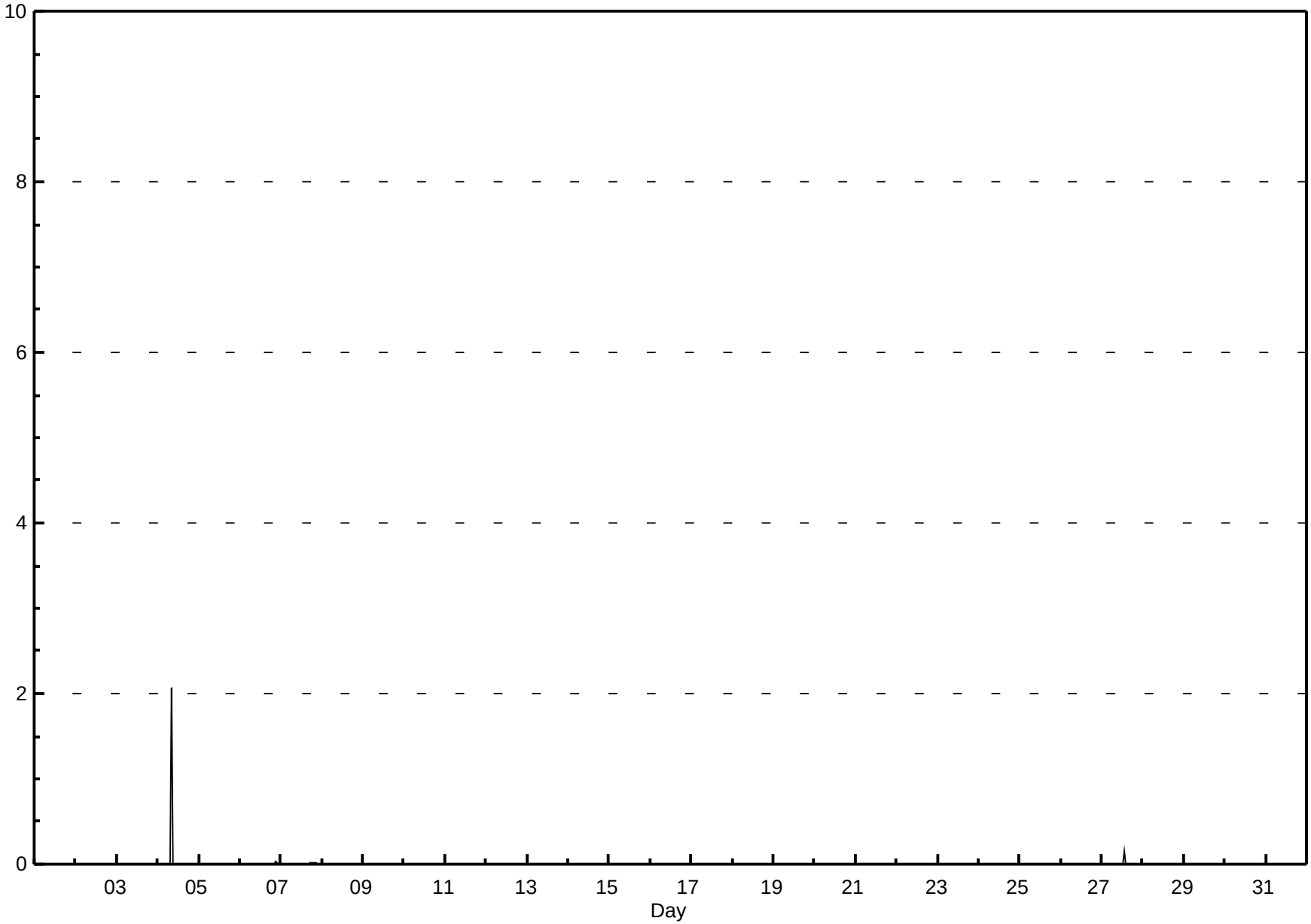
C - Calibration N - Not Valid A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Non Methane Hydrocarbon (NMHC) - ppm

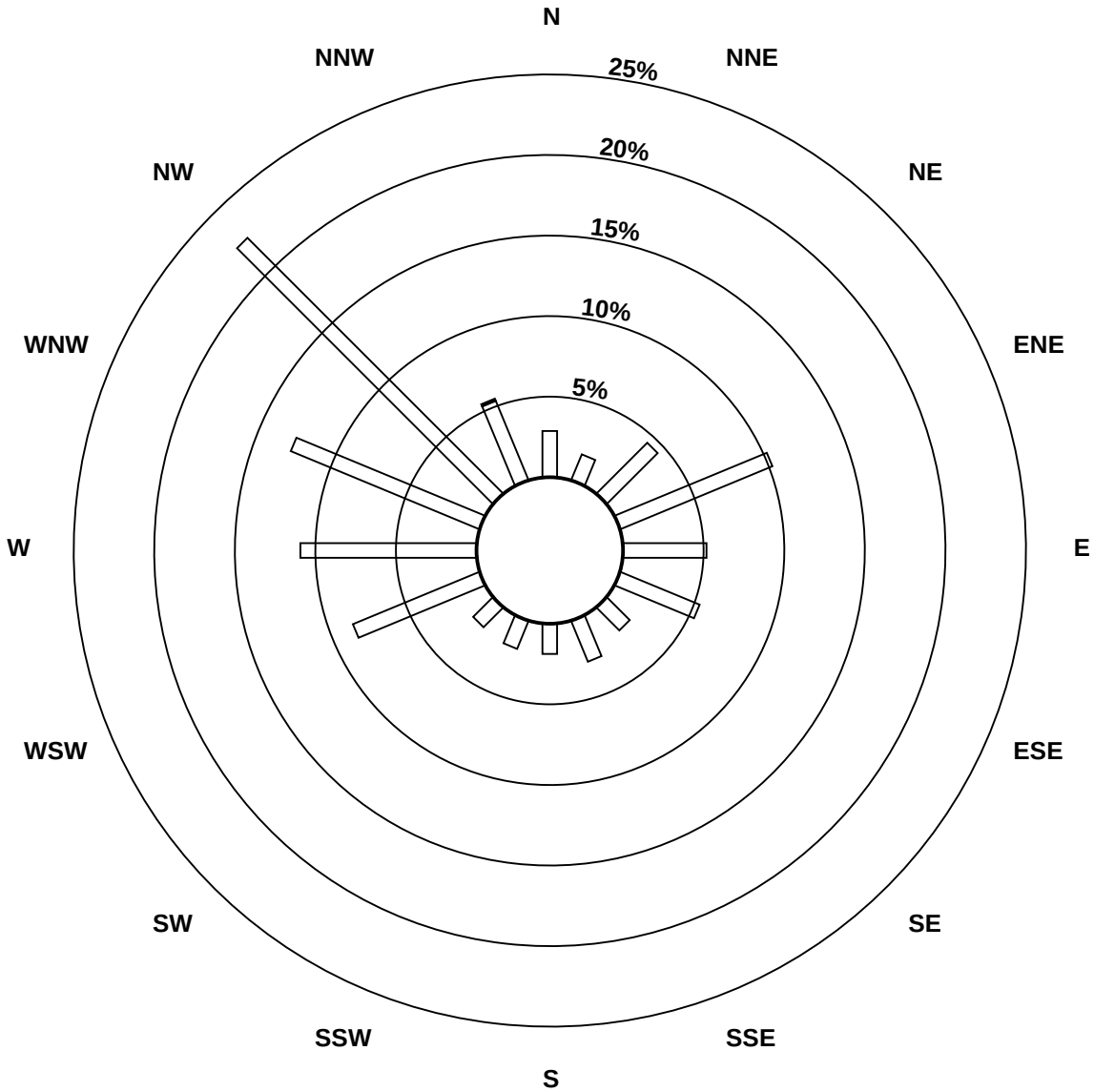
Henry Pirker - December 2013



Pollutant Rose

Non Methane Hydrocarbon (NMHC) - ppm

Henry Pirker - December 2013



Pollutant Classes (ppm)

- 0 - 0.05
- 0.06 - 0.1
- 0.11 - 0.30
- > 0.30

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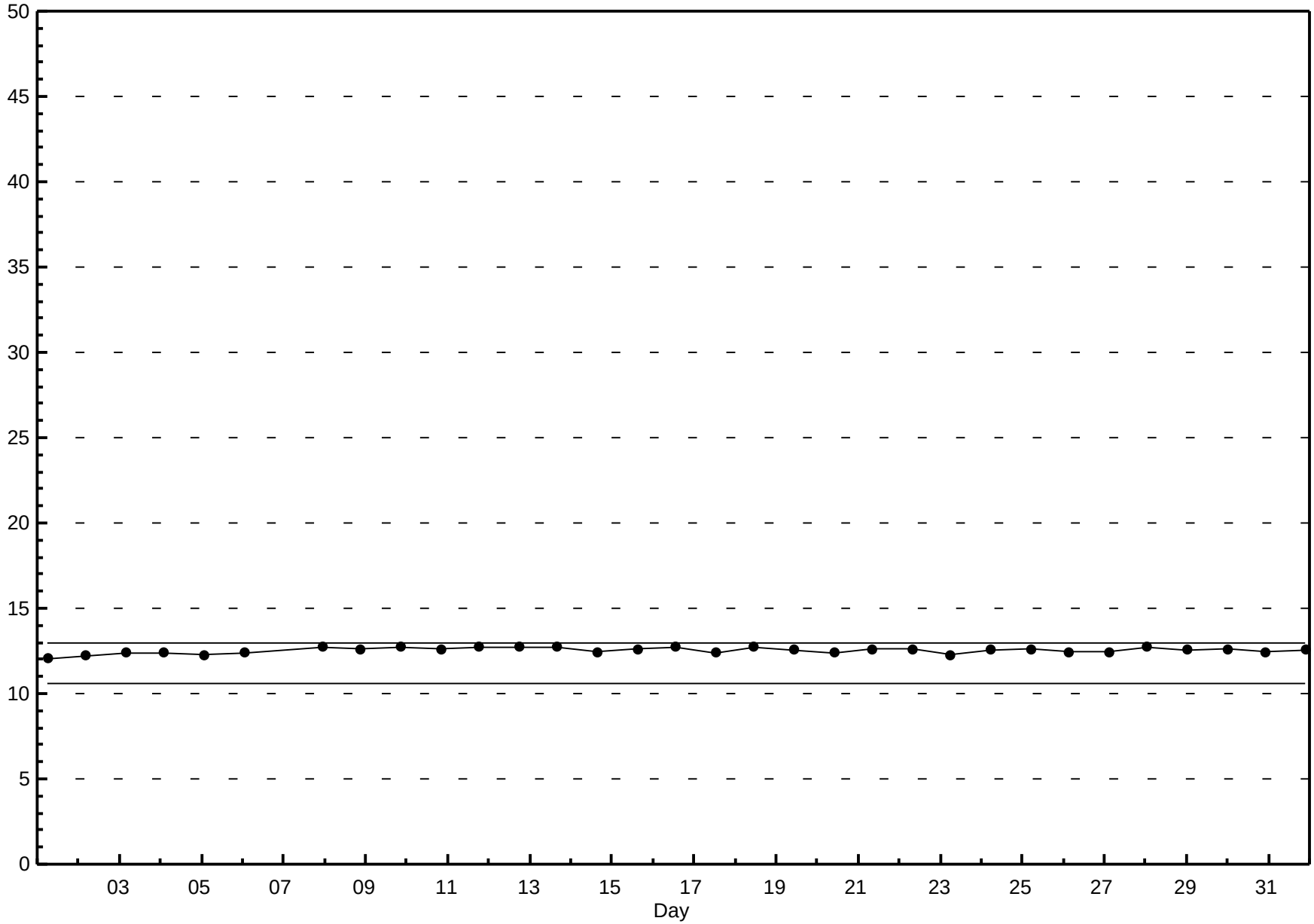
Span Responses

Non Methane Hydrocarbon (NMHC)

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Henry Pirker - December 2013

Number of Exceedences: 1-hr: 0 24-hr: 0

Maximum Value: 43.3 $\mu g/m^3$ on Dec 19 22:00

Maximum Daily Average: 16.1 $\mu g/m^3$ on Dec 19

Minimum Value: 1 $\mu g/m^3$ on Dec 23 19:00

Maximum Diurnal Average: 7.4 $\mu g/m^3$ at hour 22

Monthly Average: 5.74 $\mu g/m^3$

Minimum Daily Average: 1.5 $\mu g/m^3$ on Dec 24

Minimum Diurnal Average: 4.8 $\mu g/m^3$ at hour 9

Percentiles: P_1 = 1.2 P_{10} = 1.5 Q_1 = 2.5 Median = 4.1 Q_3 = 7.9 P_{90} = 11.8 P_{99} = 21.9

Hours in Service:	744
Hours of Data:	728
Hours of Missing Data:	16
Hours of Calibration:	0
Percent Operational Time:	97.9

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	10	10	13	14	10	12	10	9	5	5	4	4	4	4	4	4	4	3	3	3	3	3	3	3	6.1	13.7
2-Dec	4	5	5	5	5	4	4	4	4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3.4	5.0
3-Dec	3	4	3	3	4	4	4	7	4	4	4	3	3	2	3	3	3	6	9	5	4	8	10	12	4.8	11.5
4-Dec	8	9	6	6	7	11	12	16	14	13	13	13	9	10	8	9	12	22	16	16	19	22	12	13	12.3	22.1
5-Dec	9	7	7	6	5	6	6	6	7	7	7	8	8	8	8	11	11	11	10	9	9	8	9	18	8.4	18.4
6-Dec	18	11	9	10	8	8	8	9	10	11	12	9	12	11	10	14	15	21	18	N	14	N	N	N	11.9	21.2
7-Dec	N	N	N	N	N	N	N	N	N	N	N	N	20	14	14	14	13	11	11	10	9	9	8	8	--	19.8
8-Dec	10	9	9	8	8	7	7	8	8	8	12	13	8	6	6	7	7	8	6	6	6	4	3	3	7.3	12.9
9-Dec	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	2	2	2	2	2	2	2	2	2.0	3.4
10-Dec	2	1	2	2	2	2	2	3	3	3	5	4	3	5	8	12	13	10	9	8	7	8	7	6	5.2	13.0
11-Dec	6	5	5	5	5	5	5	4	4	4	4	4	4	4	3	3	3	2	2	2	2	2	1	2	3.5	6.3
12-Dec	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.5
13-Dec	2	3	3	3	4	4	4	3	3	4	4	3	3	3	3	4	9	8	5	6	5	6	5	5	4.3	8.7
14-Dec	4	4	4	4	4	4	4	4	4	7	6	6	7	8	10	11	14	16	22	19	13	7	6	5	8.1	21.5
15-Dec	4	4	4	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	1	1	1	2.0	4.0
16-Dec	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	5	8	8	9	7	3.0	8.7
17-Dec	6	5	5	4	3	3	3	3	4	3	2	2	2	1	2	2	4	5	5	5	5	5	5	5	3.7	5.9
18-Dec	5	6	5	4	4	4	4	3	3	4	4	3	3	3	3	3	4	20	8	8	9	17	14	16	6.5	19.5
19-Dec	13	9	9	8	8	8	8	9	9	15	20	15	19	20	16	17	18	21	18	16	19	43	22	24	16.1	43.3
20-Dec	25	22	24	22	24	18	12	9	10	9	9	9	9	8	7	7	7	7	6	6	6	6	6	6	11.3	25.4
21-Dec	6	5	6	6	6	6	6	7	6	6	6	5	4	4	3	3	4	7	5	10	13	18	12	16	7.2	17.5
22-Dec	10	14	10	8	8	7	8	7	8	14	15	10	9	10	12	12	13	11	12	12	13	11	11	12	10.7	14.9
23-Dec	11	11	12	11	11	12	11	8	4	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	4.9	11.8
24-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1.5	2.6
25-Dec	4	8	3	3	3	2	3	4	4	5	4	3	2	1	1	1	1	1	1	1	1	1	1	1	2.6	8.1
26-Dec	1	1	1	1	1	1	1	3	3	3	4	6	5	3	2	2	1	1	1	1	2	3	5	5	2.4	5.6
27-Dec	5	6	6	5	4	4	4	3	3	3	2	2	2	2	2	2	2	2	2	3	4	3	3	2	3.2	5.7
28-Dec	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	3.3	4.5
29-Dec	5	6	7	6	6	5	4	4	4	4	4	4	4	5	5	4	5	4	4	4	4	4	4	4	4.6	7.1
30-Dec	5	6	6	6	5	5	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3.7	5.7
31-Dec	3	3	3	3	3	3	3	3	4	4	4	5	4	4	4	4	4	4	5	5	7	8	9	8	4.5	8.5
	6.3	6.1	5.7	5.5	5.3	5.2	5.0	5.1	4.8	5.2	5.6	5.1	5.2	5.0	4.9	5.5	6.0	7.2	6.4	6.0	6.4	7.4	6.1	6.7	Diurnal Average	
	25.4	21.5	23.6	21.8	23.5	17.8	11.7	16.1	13.8	15.5	20.4	14.7	19.8	20.4	16.3	17.3	18.1	21.6	21.5	18.7	18.8	43.3	22.0	24.5	Diurnal Maximum	

N - Not Valid

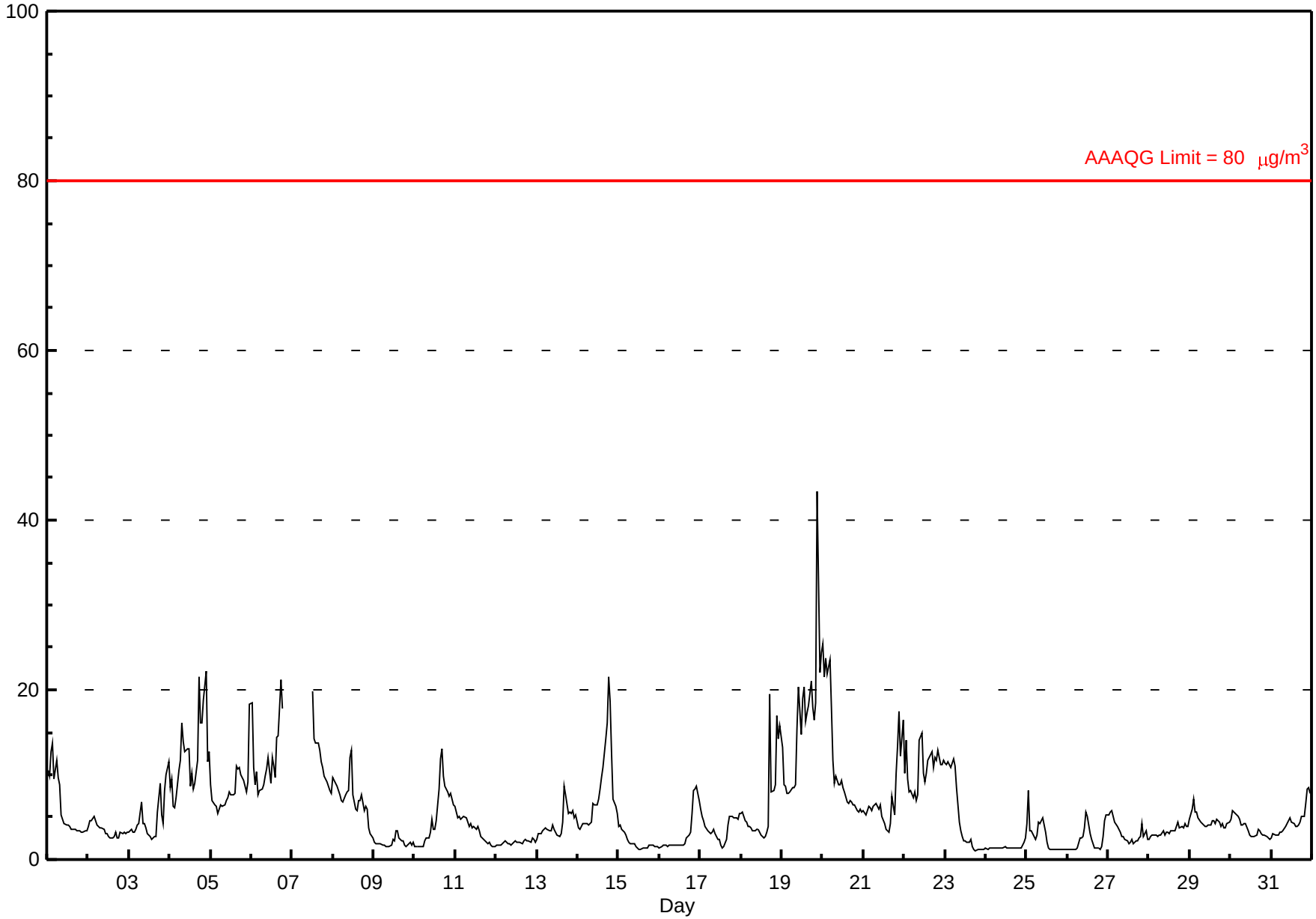
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Henry Pirker - December 2013

Maximum Value: 130.6 $\mu g/m^3$ on Dec 19 22:00

Maximum Daily Average: 28.7 $\mu g/m^3$ on Dec 19

Minimum Value: 1 $\mu g/m^3$ on Dec 23 22:00

Minimum Daily Average: 2.0 $\mu g/m^3$ on Dec 24

Maximum Diurnal Average: 15.1 $\mu g/m^3$ at hour 22

Minimum Diurnal Average: 6.0 $\mu g/m^3$ at hour 5

Monthly Average: 8.59 $\mu g/m^3$

Percentiles: $P_1 = 1.3$ $P_{10} = 1.8$ $Q_1 = 3.1$ Median = 5.0 $Q_3 = 9.9$ $P_{90} = 17.5$ $P_{99} = 45.7$

Hours in Service:	744
Hours of Data:	728
Hours of Missing Data:	16
Hours of Calibration:	0
Percent Operational Time:	97.9

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	12	11	15	15	11	13	11	10	6	5	5	4	4	4	4	4	4	4	4	4	3	3	4	4	6.9	15.2
2-Dec	5	6	5	6	5	5	4	4	6	4	3	3	3	3	3	3	4	3	3	3	3	3	3	3	4.0	6.1
3-Dec	4	4	4	3	4	5	6	11	5	5	4	4	3	3	3	3	4	13	41	11	6	18	22	49	9.7	49.3
4-Dec	11	15	10	11	10	33	25	49	18	29	19	19	11	13	11	11	16	52	19	18	22	70	17	19	21.9	69.9
5-Dec	16	8	8	8	6	7	14	9	7	10	9	9	10	11	10	13	13	13	11	12	13	11	13	33	11.3	32.6
6-Dec	55	35	14	18	8	10	10	13	16	38	24	12	16	13	11	21	19	38	25	N	16	N	N	N	20.6	55.3
7-Dec	N	N	N	N	N	N	N	N	N	N	N	N	45	16	15	15	16	14	12	11	10	9	8	8	--	45.3
8-Dec	13	11	9	9	8	7	7	12	18	15	17	15	9	6	7	8	8	9	6	9	8	5	3	3	9.3	18.3
9-Dec	3	2	2	2	2	2	2	2	2	2	2	3	3	7	5	4	3	2	2	2	2	2	2	2	2.6	7.0
10-Dec	3	2	2	2	2	2	3	3	3	4	6	5	4	6	11	14	23	12	12	9	9	22	9	7	7.3	23.3
11-Dec	11	5	6	5	5	6	5	5	4	5	4	7	4	5	6	3	3	3	2	2	4	2	2	2	4.4	11.3
12-Dec	2	2	2	2	2	3	2	2	2	2	2	3	2	2	2	2	4	4	3	3	2	4	3	2	2.5	4.2
13-Dec	3	3	3	4	4	4	4	4	4	8	4	3	3	3	4	8	13	12	6	6	7	7	5	9	5.4	12.8
14-Dec	5	4	5	5	4	4	4	5	5	15	9	7	8	10	15	16	15	18	55	26	16	13	7	9	11.8	54.8
15-Dec	7	4	4	3	3	3	2	2	2	2	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2.3	7.5
16-Dec	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	5	4	7	14	10	10	9	3.8	13.6
17-Dec	6	6	5	4	4	3	3	4	4	4	3	3	2	2	2	3	5	6	6	6	6	6	5	8	4.4	7.8
18-Dec	6	7	5	5	4	4	4	4	4	4	4	4	3	3	3	3	6	90	26	14	16	30	33	30	13.0	89.9
19-Dec	29	16	13	9	8	8	10	10	10	47	81	18	20	21	18	26	20	46	25	17	55	131	25	27	28.7	130.6
20-Dec	33	35	32	27	26	24	14	10	11	10	10	12	12	10	7	7	9	7	7	7	6	6	7	6	14.0	34.9
21-Dec	6	6	6	7	6	6	7	7	7	6	8	6	5	4	4	3	7	11	7	20	39	50	21	71	13.3	71.2
22-Dec	17	53	29	10	12	9	10	8	9	68	49	18	10	12	13	14	17	13	14	13	15	15	12	16	19.0	68.0
23-Dec	16	12	14	12	12	12	12	11	5	4	3	3	3	3	3	3	2	2	1	1	1	1	1	1	5.8	15.9
24-Dec	9	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	2	1	1	1	2	5	4	2.0	8.8
25-Dec	17	17	5	5	3	3	5	5	5	6	7	5	3	2	1	1	1	1	1	1	1	1	1	1	4.2	17.0
26-Dec	1	1	1	1	1	1	2	6	4	4	4	7	9	4	3	2	2	1	1	1	2	5	5	6	3.1	8.7
27-Dec	6	6	6	6	5	4	4	3	3	3	3	3	2	3	4	2	3	3	3	5	6	3	5	3	4.0	6.5
28-Dec	3	3	3	3	3	3	3	3	9	3	4	5	4	4	4	4	4	6	4	5	4	5	4	4	4.0	9.3
29-Dec	6	7	20	7	7	5	4	5	4	4	5	5	6	8	7	9	10	10	4	6	4	5	7	7	6.8	20.4
30-Dec	6	8	7	7	5	5	5	4	5	7	4	3	3	3	3	3	4	5	3	3	3	3	3	3	4.4	8.0
31-Dec	3	5	5	3	3	3	3	4	7	6	5	5	5	5	4	4	4	5	6	8	10	12	12	13	5.9	13.0
	10.7	9.9	8.1	6.7	6.0	6.6	6.3	7.2	6.4	10.7	10.1	6.5	7.0	6.1	6.0	7.0	7.9	13.2	10.3	7.8	9.9	15.1	8.7	12.0	Diurnal Average	
	55.3	52.9	31.8	27.0	26.1	33.3	24.9	49.2	18.3	68.0	80.9	18.6	45.3	21.1	17.8	26.0	23.3	89.9	54.8	26.0	55.5	130.6	33.4	71.2	Diurnal Maximum	

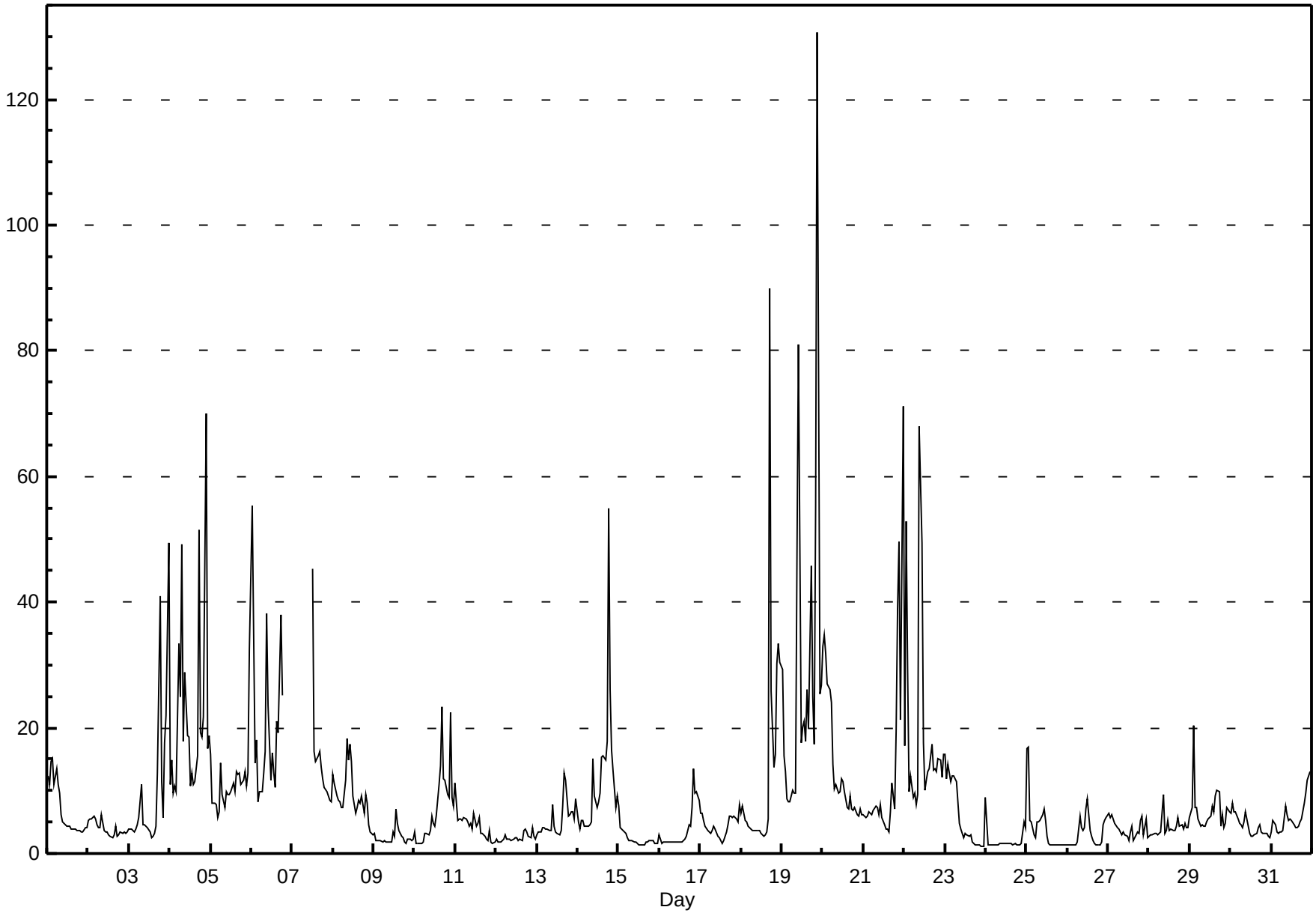
N - Not Valid

Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Henry Pirker - December 2013

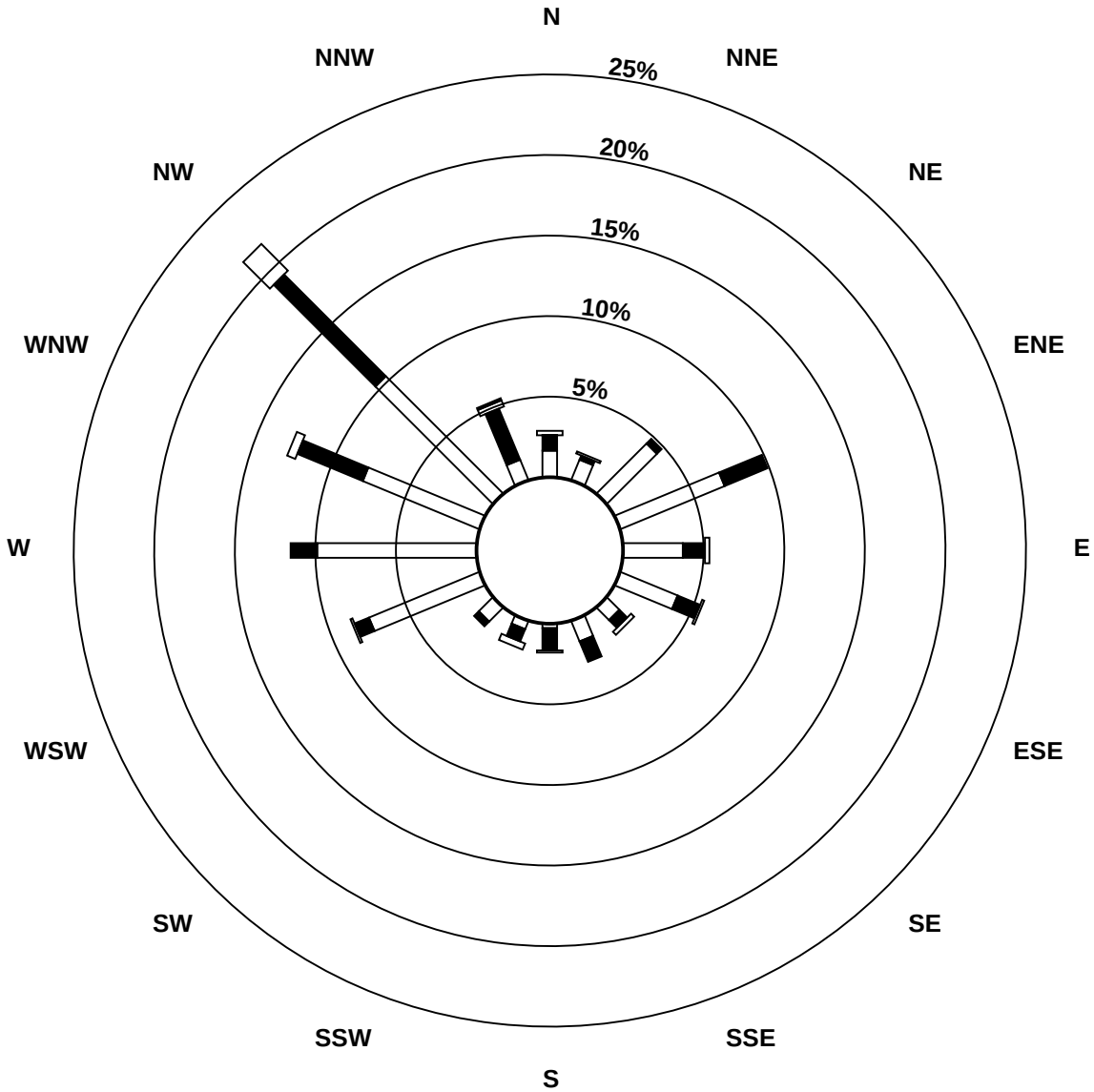


Peace Airshed Zone Association

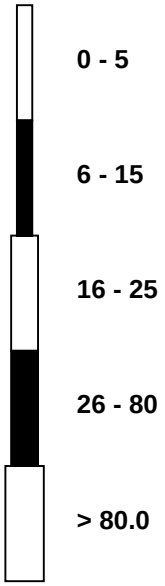
Pollutant Rose

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Henry Pirker - December 2013



Pollutant Classes ($\mu g/m^3$)



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 6.0 ^{o}C on Dec 26 15:00 Maximum Daily Average: 2.2 ^{o}C on Dec 26

Minimum Value: -37 ^{o}C on Dec 7 02:00 Minimum Daily Average: -32.8 ^{o}C on Dec 6

Maximum Diurnal Average: -12.1 ^{o}C at hour 14 Minimum Diurnal Average: -15.6 ^{o}C at hour 7

Monthly Average: -14.48 ^{o}C Percentiles: P_1 = -36.1 P_{10} = -26.7 Q_1 = -20.0 Median = -16.9 Q_3 = -7.0 P_{90} = 0.3 P_{99} = 5.2

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

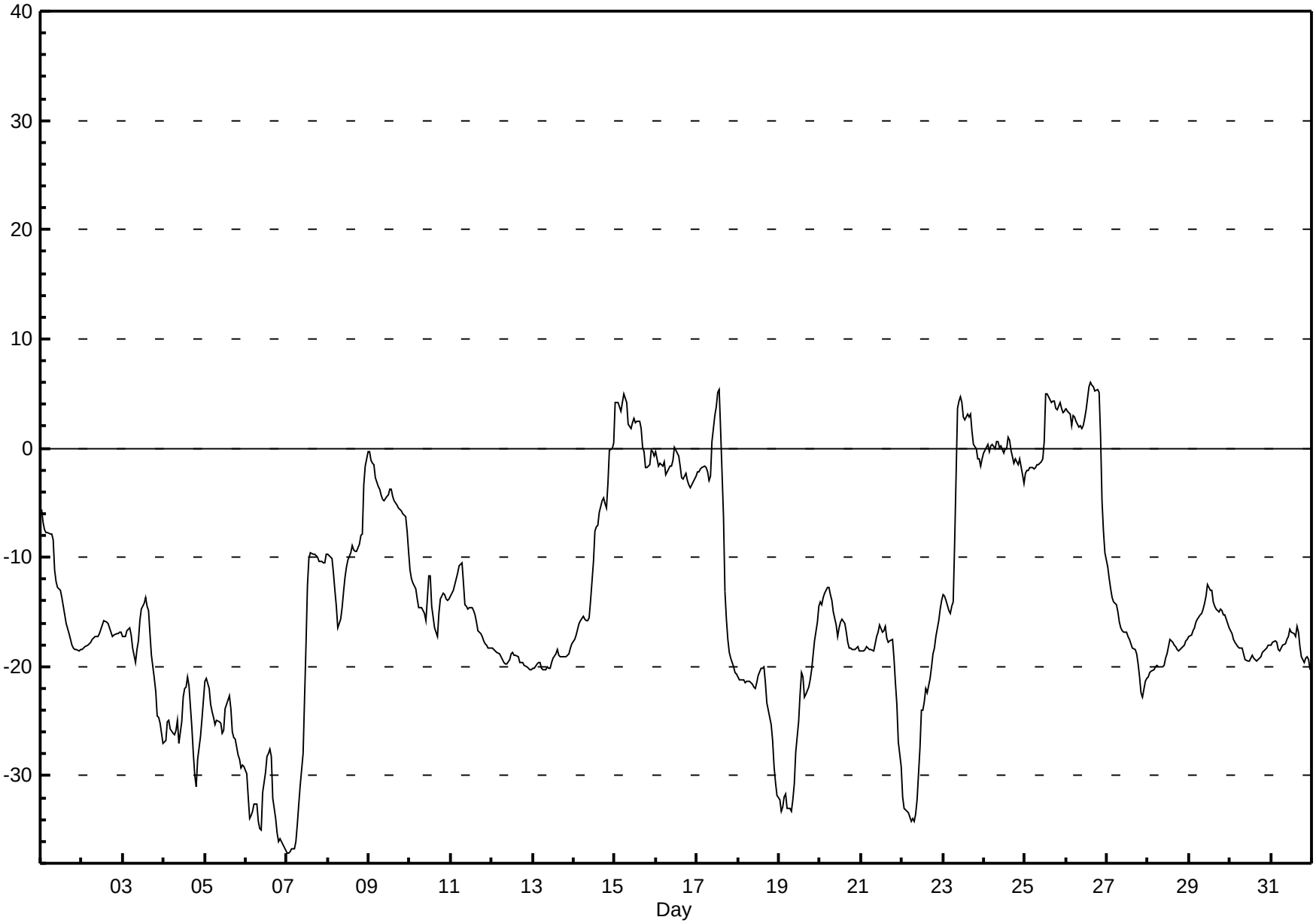
Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	-6	-7	-8	-8	-8	-8	-8	-8	-11	-12	-13	-13	-14	-14	-15	-16	-17	-18	-18	-18	-18	-18	-19	-18	-13.0	-5.6
2-Dec	-18	-18	-18	-18	-18	-18	-18	-17	-17	-17	-17	-17	-16	-16	-16	-16	-16	-17	-17	-17	-17	-17	-17	-17	-17.1	-15.8
3-Dec	-17	-17	-17	-17	-16	-17	-18	-20	-18	-18	-16	-15	-14	-14	-14	-15	-17	-19	-21	-22	-25	-25	-25	-27	-18.5	-13.7
4-Dec	-27	-27	-25	-25	-26	-26	-26	-26	-25	-27	-25	-23	-22	-22	-21	-22	-26	-28	-30	-31	-29	-26	-25	-23	-25.5	-21.0
5-Dec	-21	-21	-22	-23	-24	-25	-25	-25	-25	-25	-26	-26	-24	-23	-23	-24	-26	-26	-27	-28	-28	-29	-29	-29	-25.2	-21.0
6-Dec	-30	-32	-34	-34	-33	-33	-33	-34	-35	-35	-32	-30	-28	-28	-28	-28	-32	-34	-35	-36	-36	-36	-36	-37	-32.8	-27.5
7-Dec	-37	-37	-37	-37	-37	-36	-34	-33	-31	-28	-23	-18	-13	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-21.3	-9.6
8-Dec	-10	-10	-10	-11	-13	-14	-16	-16	-15	-13	-12	-11	-10	-10	-9	-9	-9	-9	-9	-8	-8	-3	-2	0	-9.9	-0.3
9-Dec	0	-1	-1	-1	-3	-3	-4	-4	-5	-5	-4	-4	-4	-4	-4	-5	-5	-6	-6	-6	-6	-6	-8	-9	-4.4	-0.3
10-Dec	-11	-12	-12	-13	-14	-15	-15	-15	-15	-16	-14	-12	-12	-14	-16	-17	-17	-15	-14	-13	-13	-14	-14	-14	-14.0	-11.2
11-Dec	-14	-13	-13	-12	-11	-11	-11	-12	-14	-15	-15	-15	-15	-15	-15	-16	-17	-17	-17	-18	-18	-18	-18	-18	-14.8	-10.5
12-Dec	-18	-18	-19	-19	-19	-19	-19	-20	-20	-20	-19	-19	-19	-19	-19	-19	-20	-20	-20	-20	-20	-20	-20	-20	-19.3	-18.3
13-Dec	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-19	-19	-18	-19	-19	-19	-19	-19	-19	-19	-18	-18	-19.4	-17.9
14-Dec	-17	-17	-17	-16	-16	-15	-16	-16	-16	-15	-14	-10	-8	-7	-7	-6	-5	-5	-5	-5	-3	0	0	1	-9.8	0.5
15-Dec	4	4	4	3	4	5	5	4	2	2	2	3	2	2	3	2	0	0	-2	-2	-2	0	0	-1	1.9	5.0
16-Dec	0	-2	-1	-2	-2	-1	-2	-2	-2	-2	-1	0	0	-1	-2	-3	-3	-2	-3	-3	-4	-3	-3	-3	-1.9	0.0
17-Dec	-2	-2	-2	-2	-2	-2	-2	-3	-3	1	3	4	5	5	2	-6	-13	-16	-18	-19	-19	-20	-21	-21	-6.3	5.4
18-Dec	-21	-21	-21	-21	-21	-21	-21	-21	-22	-22	-22	-21	-21	-20	-20	-20	-22	-23	-24	-25	-27	-29	-31	-32	-22.9	-20.0
19-Dec	-32	-33	-33	-32	-32	-33	-33	-33	-32	-31	-28	-25	-23	-21	-21	-23	-22	-22	-21	-20	-19	-18	-16	-15	-25.7	-14.5
20-Dec	-14	-14	-14	-13	-13	-13	-13	-14	-15	-16	-17	-16	-16	-16	-16	-17	-18	-18	-18	-18	-18	-18	-18	-19	-16.0	-12.7
21-Dec	-19	-19	-18	-18	-18	-18	-18	-19	-18	-17	-17	-16	-17	-17	-16	-17	-18	-18	-17	-19	-21	-24	-27	-29	-19.0	-16.1
22-Dec	-32	-33	-33	-33	-33	-34	-34	-34	-34	-32	-27	-24	-24	-23	-22	-22	-21	-20	-19	-18	-17	-16	-15	-14	-25.6	-13.9
23-Dec	-13	-14	-14	-15	-15	-15	-14	-9	4	4	5	4	3	3	3	3	3	2	0	0	-1	-1	-2	-1	-3.3	4.7
24-Dec	0	0	0	0	0	0	0	1	1	0	0	-1	0	0	1	1	0	-1	-1	-1	-1	-1	-2	-3	-0.4	1.0
25-Dec	-2	-2	-2	-2	-2	-2	-2	-2	-1	-1	-1	1	5	5	5	4	4	4	4	4	4	4	3	3	1.3	4.9
26-Dec	4	3	3	2	3	3	2	2	2	2	2	3	4	6	6	6	6	5	5	5	1	-5	-8	-10	2.2	6.0
27-Dec	-11	-12	-13	-14	-14	-14	-15	-16	-17	-17	-17	-17	-17	-17	-18	-18	-18	-19	-20	-21	-22	-23	-21	-21	-17.2	-10.9
28-Dec	-21	-21	-20	-20	-20	-20	-20	-20	-20	-20	-19	-19	-18	-17	-18	-18	-18	-18	-19	-18	-18	-18	-18	-18	-19.0	-17.5
29-Dec	-17	-17	-17	-16	-16	-16	-15	-15	-15	-14	-13	-13	-13	-13	-14	-14	-15	-15	-15	-15	-15	-15	-16	-16	-15.0	-12.5
30-Dec	-17	-17	-18	-18	-18	-18	-18	-18	-19	-19	-19	-20	-19	-19	-19	-19	-19	-19	-19	-19	-19	-18	-18	-18	-18.6	-16.7
31-Dec	-18	-18	-18	-18	-18	-19	-18	-18	-18	-17	-17	-17	-17	-17	-17	-16	-17	-18	-19	-20	-19	-19	-19	-20	-18.0	-16.3
	-14.8	-15.1	-15.1	-15.2	-15.3	-15.4	-15.6	-15.6	-15.2	-15.0	-14.1	-13.1	-12.4	-12.1	-12.3	-12.9	-13.8	-14.2	-14.6	-14.9	-15.1	-15.1	-15.2	-15.4	Diurnal Average	
	4.2	4.1	4.1	3.4	4.1	5.0	4.5	4.1	3.6	4.3	4.7	4.1	5.1	5.6	6.0	5.8	5.6	5.3	5.3	5.0	4.1	3.6	3.3	3.4	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 87.8 % on Dec 17 04:00 Maximum Daily Average: 77.7 % on Dec 9

Minimum Value: 45 % on Dec 15 16:00 Minimum Daily Average: 59.1 % on Dec 15

Maximum Diurnal Average: 71.4 % at hour 4 Minimum Diurnal Average: 66.1 % at hour 14

Monthly Average: 69.32 % Percentiles: P_1 = 53.4 P_{10} = 59.7 Q_1 = 64.6 Median = 70.5 Q_3 = 73.0 P_{90} = 76.9 P_{99} = 86.9

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

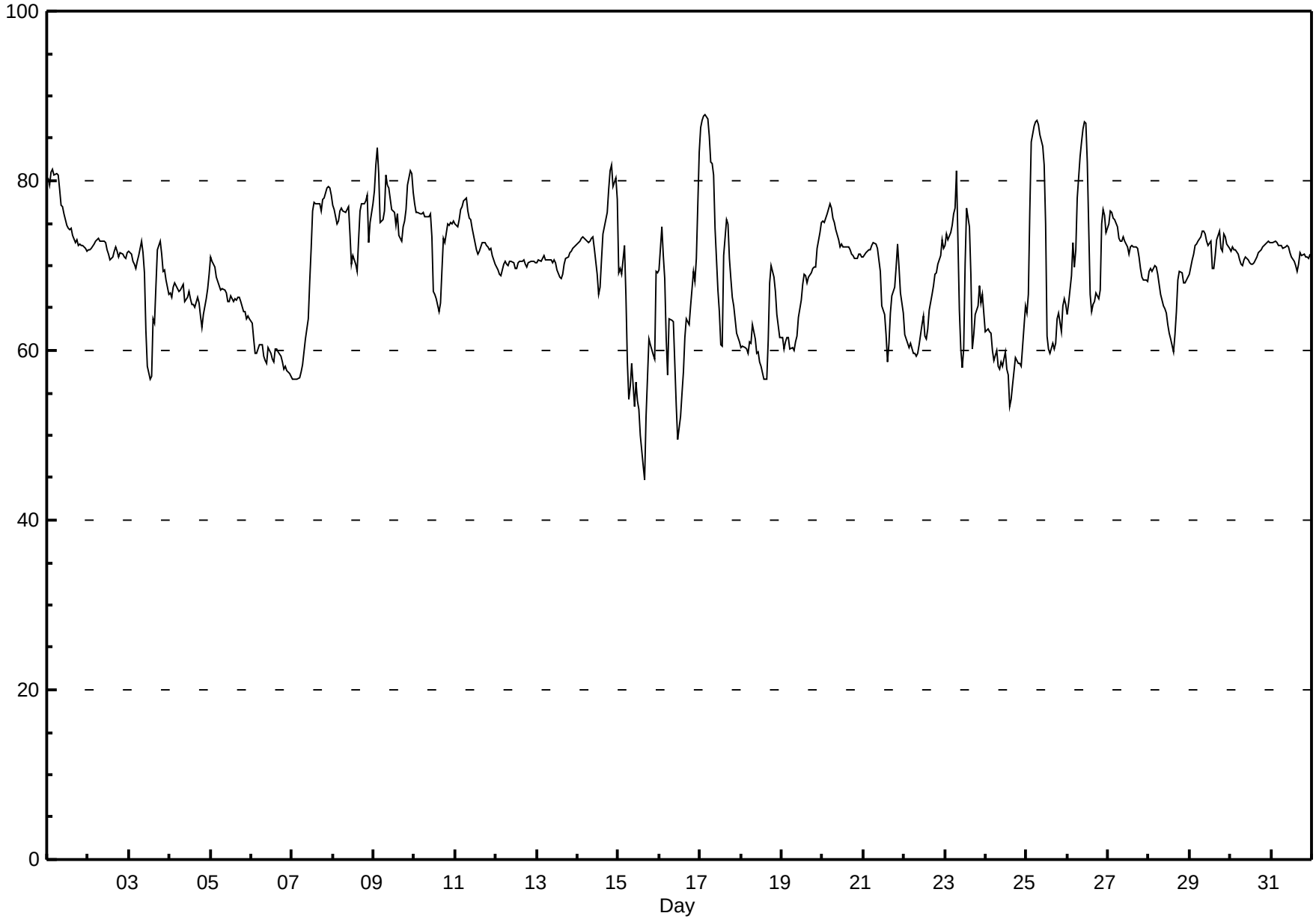
Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	80	80	81	81	81	81	81	79	77	77	76	75	74	74	74	74	73	73	72	73	72	72	72	72	76.0	81.4
2-Dec	72	72	72	73	73	73	73	73	73	73	73	72	71	71	71	72	72	72	71	71	71	71	71	72	72.0	73.1
3-Dec	72	71	71	70	70	71	71	73	71	69	62	58	57	57	64	63	68	72	73	71	69	69	68	67	67.8	72.8
4-Dec	67	66	68	68	68	67	67	68	68	66	66	67	66	65	65	65	66	66	64	63	64	66	67	69	66.3	68.9
5-Dec	71	71	70	69	68	68	67	67	67	67	66	66	66	66	66	66	66	66	66	65	65	64	64	64	66.6	71.0
6-Dec	63	61	60	60	60	61	61	59	59	58	60	60	59	59	60	60	60	59	59	58	58	58	57	57	59.4	63.3
7-Dec	57	57	57	57	57	57	58	60	61	64	68	72	76	77	77	77	77	76	78	78	79	79	79	78	69.1	79.3
8-Dec	77	77	75	75	77	77	76	76	77	77	74	70	71	70	69	73	76	77	77	78	78	73	75	77	75.1	78.2
9-Dec	79	82	84	81	75	76	76	81	79	79	77	77	76	75	76	74	73	75	75	77	79	81	81	79	77.7	83.8
10-Dec	77	76	76	76	76	76	76	76	76	76	73	67	67	66	65	66	69	73	73	75	75	75	75	75	73.1	77.3
11-Dec	75	75	75	77	77	78	78	76	76	75	74	74	72	71	72	72	73	73	72	72	72	72	71	70	73.8	78.0
12-Dec	70	69	69	69	70	71	70	70	71	71	70	70	70	70	70	70	71	70	70	70	70	71	71	70	70.1	70.6
13-Dec	70	71	70	71	71	71	71	71	71	70	71	70	70	69	69	69	70	71	71	71	72	72	72	72	70.6	72.4
14-Dec	73	73	73	73	73	73	73	73	73	73	72	69	67	67	71	74	75	76	79	81	82	79	80	78	74.2	81.9
15-Dec	69	70	69	72	66	59	54	56	59	53	56	54	53	50	46	45	52	57	61	61	59	59	69	69	59.1	72.4
16-Dec	69	75	71	68	62	57	64	64	63	58	54	50	52	55	57	62	64	63	65	67	69	68	71	83	63.8	83.4
17-Dec	86	87	88	88	87	85	82	82	81	74	67	65	61	60	71	75	75	71	68	66	65	62	61	61	73.8	87.8
18-Dec	60	61	60	60	60	61	61	63	61	60	60	59	58	57	57	57	61	68	70	69	67	64	63	62	61.5	70.0
19-Dec	62	60	61	62	62	60	60	60	61	62	64	66	68	69	69	68	69	69	70	70	70	72	74	75	65.9	75.1
20-Dec	75	75	76	76	77	77	76	75	74	73	72	73	72	72	72	72	72	71	71	71	71	71	71	71	73.2	77.3
21-Dec	71	72	72	72	72	72	73	73	72	71	69	65	64	62	59	61	64	66	67	70	73	70	67	64	68.3	72.8
22-Dec	62	61	61	60	61	60	60	59	60	61	63	64	62	61	62	65	67	68	69	69	70	71	73	72	64.2	73.0
23-Dec	72	74	73	74	75	76	77	81	65	60	58	60	70	77	74	69	60	62	64	65	68	66	67	64	68.8	81.3
24-Dec	62	63	62	62	60	59	60	58	58	59	58	60	58	57	53	54	56	59	59	58	58	58	63	65	59.2	65.2
25-Dec	64	67	76	85	87	87	87	87	85	84	82	75	62	60	60	61	60	61	64	64	62	65	66	65	71.5	87.1
26-Dec	64	66	69	73	70	72	78	83	85	86	87	87	82	67	65	65	66	67	66	67	75	77	76	74	73.5	87.0
27-Dec	75	76	76	76	75	75	73	73	73	73	73	72	71	72	72	72	72	72	71	70	69	68	68	68	72.4	76.5
28-Dec	69	70	69	70	70	69	68	67	65	65	64	63	62	61	60	62	65	68	69	69	68	68	68	69	66.6	70.0
29-Dec	69	71	71	72	72	73	73	74	74	74	73	72	73	70	70	71	73	74	72	72	74	73	73	72	72.3	74.2
30-Dec	72	72	72	72	71	71	70	70	71	71	71	70	70	70	70	71	72	72	72	72	72	73	73	73	71.3	72.9
31-Dec	73	73	73	73	72	72	72	72	72	72	72	72	71	71	70	69	70	72	71	71	71	71	71	71	71.6	72.8
	70.3	70.6	71.0	71.4	70.8	70.4	70.6	70.9	70.2	69.4	68.6	67.5	66.8	66.1	66.4	66.9	68.0	69.0	69.4	69.5	70.0	69.6	70.3	70.3	Diurnal Average	
	86.3	87.2	87.6	87.8	87.3	87.0	87.1	86.6	85.4	86.1	87.0	86.8	82.2	77.4	77.4	77.2	77.3	77.3	78.9	81.2	81.9	81.1	80.8	83.4	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Henry Pirker - December 2013



Peace Airshed Zone Association

Hourly Averages

Solar Radiation (SR) - W/m^2

Henry Pirker - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 194.3 W/m^2 on Dec 3 14:00

Maximum Daily Average: 36.7 W/m^2 on Dec 3

Minimum Value: 0 W/m^2 on Dec 1 01:00

Minimum Daily Average: 3.3 W/m^2 on Dec 29

Maximum Diurnal Average: 83.7 W/m^2 at hour 13

Minimum Diurnal Average: 0.0 W/m^2 at hour 1

Monthly Average: 15.82 W/m^2

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.0 Q_3 = 11.3 P_{90} = 60.2 P_{99} = 156.6

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

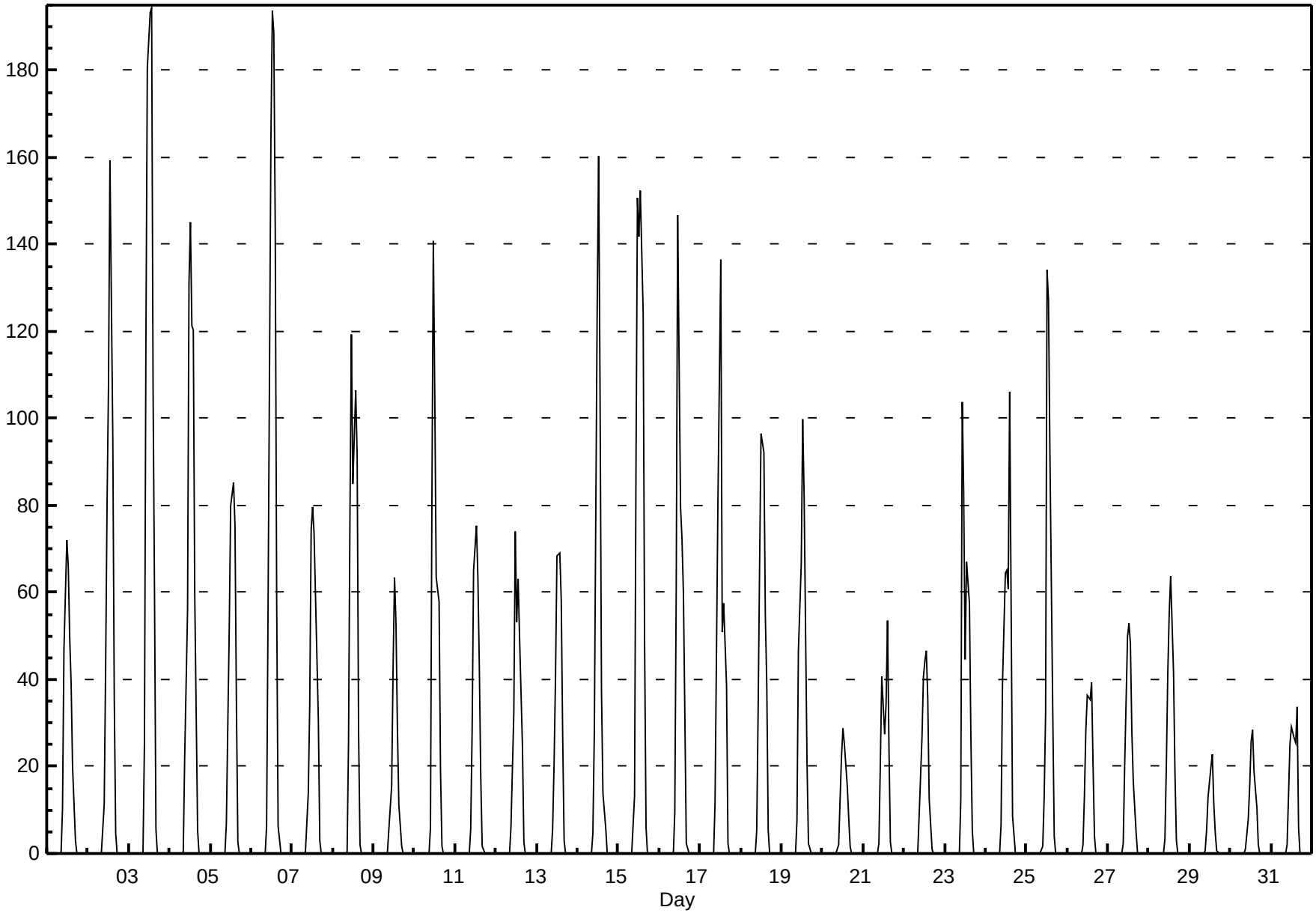
Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	0	0	0	0	0	0	0	0	0	10	47	72	66	50	39	20	3	0	0	0	0	0	0	0	12.8	72.0
2-Dec	0	0	0	0	0	0	0	0	0	11	43	81	108	159	95	36	5	0	0	0	0	0	0	0	22.4	159.2
3-Dec	0	0	0	0	0	0	0	0	0	25	115	181	193	194	107	60	5	0	0	0	0	0	0	0	36.7	194.3
4-Dec	0	0	0	0	0	0	0	0	0	22	56	131	145	121	120	60	5	0	0	0	0	0	0	0	27.6	145.2
5-Dec	0	0	0	0	0	0	0	0	0	7	29	52	80	85	75	34	3	0	0	0	0	0	0	0	15.2	85.1
6-Dec	0	0	0	0	0	0	0	0	0	6	56	164	194	189	144	59	6	0	0	0	0	0	0	0	34.1	193.8
7-Dec	0	0	0	0	0	0	0	0	0	14	34	74	80	74	60	31	3	0	0	0	0	0	0	0	15.4	79.6
8-Dec	0	0	0	0	0	0	0	0	0	26	78	119	85	106	91	28	2	0	0	0	0	0	0	0	22.3	119.3
9-Dec	0	0	0	0	0	0	0	0	0	5	16	42	64	53	29	11	2	0	0	0	0	0	0	0	9.3	63.5
10-Dec	0	0	0	0	0	0	0	0	0	6	80	141	105	64	58	19	2	0	0	0	0	0	0	0	19.8	140.8
11-Dec	0	0	0	0	0	0	0	0	0	6	28	65	75	63	43	18	2	0	0	0	0	0	0	0	12.5	75.3
12-Dec	0	0	0	0	0	0	0	0	0	6	32	74	53	63	50	25	3	0	0	0	0	0	0	0	12.7	74.0
13-Dec	0	0	0	0	0	0	0	0	0	6	21	40	68	69	58	27	3	0	0	0	0	0	0	0	12.2	69.2
14-Dec	0	0	0	0	0	0	0	0	0	5	27	125	160	105	37	14	6	0	0	0	0	0	0	0	20.0	160.3
15-Dec	0	0	0	0	0	0	0	0	0	13	89	151	142	152	124	48	6	0	0	0	0	0	0	0	30.2	152.4
16-Dec	0	0	0	0	0	0	0	0	0	10	61	147	80	73	60	32	2	0	0	0	0	0	0	0	19.3	146.8
17-Dec	0	0	0	0	0	0	0	0	0	12	81	108	136	51	58	39	2	0	0	0	0	0	0	0	20.3	136.4
18-Dec	0	0	0	0	0	0	0	0	0	5	33	66	97	92	55	39	5	0	0	0	0	0	0	0	16.3	96.6
19-Dec	0	0	0	0	0	0	0	0	0	8	47	67	100	82	51	21	2	0	0	0	0	0	0	0	15.7	100.0
20-Dec	0	0	0	0	0	0	0	0	0	2	12	22	29	25	16	8	2	0	0	0	0	0	0	0	4.8	28.8
21-Dec	0	0	0	0	0	0	0	0	0	2	20	41	28	34	54	25	3	0	0	0	0	0	0	0	8.6	53.7
22-Dec	0	0	0	0	0	0	0	0	0	9	27	41	44	47	36	13	1	0	0	0	0	0	0	0	9.0	46.6
23-Dec	0	0	0	0	0	0	0	0	0	13	104	83	45	67	57	27	5	0	0	0	0	0	0	0	16.7	103.9
24-Dec	0	0	0	0	0	0	0	0	0	7	39	64	65	61	106	57	9	0	0	0	0	0	0	0	17.0	106.1
25-Dec	0	0	0	0	0	0	0	0	0	2	13	32	134	127	92	32	4	0	0	0	0	0	0	0	18.2	134.1
26-Dec	0	0	0	0	0	0	0	0	0	2	13	28	36	35	39	21	4	0	0	0	0	0	0	0	7.4	39.4
27-Dec	0	0	0	0	0	0	0	0	0	2	20	50	53	48	28	16	5	0	0	0	0	0	0	0	9.3	53.0
28-Dec	0	0	0	0	0	0	0	0	0	3	20	41	55	64	42	19	3	0	0	0	0	0	0	0	10.3	63.8
29-Dec	0	0	0	0	0	0	0	0	0	1	5	13	20	23	12	5	1	0	0	0	0	0	0	0	3.3	22.9
30-Dec	0	0	0	0	0	0	0	0	0	1	8	15	26	28	19	11	2	0	0	0	0	0	0	0	4.6	28.3
31-Dec	0	0	0	0	0	0	0	0	0	2	13	25	29	26	25	34	6	0	0	0	0	0	0	0	6.7	33.6
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	8.0	40.9	76.0	83.7	78.5	60.6	28.5	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Diurnal Average	
	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5	25.5	115.4	180.6	193.8	194.3	144.0	60.1	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

Solar Radiation (SR) - W/m^2

Henry Pirker - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	12	12	11	8	8	11	11	11	19	20	22	22	23	25	26	23	24	23	26	24	24	23	23	22	14.8	26.3
Dir	71	75	69	66	48	31	5	338	313	314	313	312	306	307	306	303	300	296	294	294	294	293	293	293	312.9	306.1
2 Spd	23	23	19	19	19	20	19	18	19	20	19	18	19	19	19	16	16	16	14	13	13	13	11	12	17.0	22.7
Dir	294	294	300	300	302	305	306	304	304	305	306	306	306	304	293	299	305	295	288	289	287	283	262	254	297.4	293.9
3 Spd	12	12	12	11	9	7	6	6	10	13	12	15	15	16	17	14	12	9	6	7	4	4	5	4	8.9	16.9
Dir	249	256	258	252	252	261	281	292	265	250	287	291	279	291	313	307	302	311	320	319	288	302	332	317	283.5	313.0
4 Spd	5	3	4	4	2	3	4	3	3	3	2	3	4	3	3	3	3	3	4	3	3	3	4	3	3.1	5.3
Dir	351	256	307	324	273	306	304	8	339	321	267	304	303	315	335	315	313	325	308	315	313	322	324	333	316.7	350.9
5 Spd	2	3	4	4	3	3	2	3	3	5	6	5	6	5	4	3	3	4	5	4	4	2	3	2	2.7	6.2
Dir	58	55	58	67	65	11	337	336	323	320	321	312	301	308	297	293	294	300	309	305	336	321	334	308	328.2	320.6
6 Spd	2	3	3	3	2	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.6	3.4
Dir	319	320	302	318	342	317	334	306	317	315	299	300	318	317	292	319	320	313	325	321	334	319	318	317	317.4	316.7
7 Spd	1	1	1	1	1	1	1	1	1	0	1	4	12	13	12	11	11	10	12	15	12	10	10	16	6.3	15.9
Dir	324	325	324	301	322	319	301	288	268	181	286	316	299	288	273	249	257	264	249	268	287	275	275	290	276.4	289.8
8 Spd	18	18	19	14	11	8	4	1	3	1	2	5	5	8	7	5	5	5	5	6	7	15	15	22	5.4	22.4
Dir	305	308	317	323	322	311	291	270	260	334	122	158	165	162	156	147	162	193	256	288	299	260	285	283	285.3	282.8
9 Spd	19	17	16	17	9	10	13	15	12	10	7	3	2	4	6	7	7	5	5	4	2	4	10	12	3.9	19.1
Dir	267	266	296	354	343	305	309	303	300	281	257	304	311	56	93	96	106	114	130	112	76	348	52	67	318.0	267.1
10 Spd	13	11	7	6	6	6	6	6	6	4	3	4	3	4	4	1	1	1	1	1	1	1	1	1	2.4	12.7
Dir	67	71	60	72	121	117	114	133	143	163	90	127	117	290	313	287	327	68	358	102	282	313	315	321	93.5	66.8
11 Spd	1	1	1	3	3	4	9	10	10	10	9	10	10	9	7	7	7	6	7	7	7	6	8	7	6.0	10.3
Dir	313	307	316	314	353	71	80	56	42	22	13	16	17	28	57	62	54	54	48	45	59	44	43	45	39.2	42.3
12 Spd	7	7	7	7	7	7	9	9	9	9	8	9	9	9	8	7	2	4	8	7	6	6	6	6	7.0	9.0
Dir	50	49	57	57	68	78	79	69	68	60	60	57	56	56	47	45	51	53	52	67	71	72	76	79	61.8	60.1
13 Spd	7	5	5	7	8	10	9	6	6	8	7	7	9	6	3	7	8	8	9	10	10	10	10	9	3.7	10.5
Dir	87	60	55	25	11	1	350	320	312	314	316	309	315	343	52	98	110	105	102	101	106	109	104	106	51.7	1.1
14 Spd	7	7	2	7	10	9	8	5	3	4	4	1	2	4	3	1	2	4	1	3	8	8	4	8	3.0	10.1
Dir	96	110	171	233	256	246	235	242	292	298	175	180	324	188	158	131	148	138	133	178	215	212	191	218	210.7	255.9
15 Spd	19	19	17	14	28	38	35	43	44	32	35	33	28	25	17	15	16	19	9	11	15	22	23	24	23.3	44.4
Dir	223	215	227	235	253	257	255	262	261	272	265	265	272	273	275	269	256	247	250	228	236	248	257	254	255.6	260.7
16 Spd	33	23	24	26	21	22	19	24	24	21	20	18	23	21	13	10	7	4	4	3	4	6	6	6	14.0	32.9
Dir	275	262	256	253	264	274	269	260	258	268	273	272	275	276	277	277	248	258	280	109	122	132	159	129	264.1	275.3
17 Spd	8	12	14	14	15	12	12	9	8	22	14	10	17	30	25	33	33	24	23	23	22	19	19	20	8.4	33.0
Dir	109	118	120	121	121	122	129	140	192	251	241	206	254	264	301	314	316	309	305	309	307	314	303	311	288.1	314.0
18 Spd	17	17	15	15	15	13	14	13	13	15	16	16	14	11	8	7	5	3	3	4	4	4	4	5	10.3	16.9
Dir	308	308	312	308	312	312	313	313	316	312	298	295	291	293	291	291	299	328	318	315	317	321	317	322	306.8	308.0
19 Spd	6	5	4	3	4	4	5	4	4	3	2	1	2	2	4	5	3	3	4	2	1	2	1	0	2.6	6.0
Dir	328	309	338	359	321	342	323	322	329	332	3	216	192	200	297	315	318	311	320	299	304	333	257	205	318.8	328.3
20 Spd	4	3	2	2	4	4	4	6	7	8	9	9	7	6	8	8	8	7	6	5	7	4	4	4	4.8	9.4
Dir	284	324	328	27	86	90	64	90	105	86	74	69	65	69	66	75	65	69	65	74	70	94	109	140	74.3	73.8
21 Spd	4	5	5	5	4	3	1	4	6	7	7	11	13	13	10	8	5	2	1	4	2	2	4	4	3.1	13.4
Dir	176	168	166	171	170	173	354	178	270	262	278	284	281	290	302	299	316	323	277	358	37	111	318	327	274.0	289.7
22 Spd	5	5	3	4	4	4	3	4	4	4	3	3	4	3	4	4	3	3	2	6	2	1	2	2	3.1	5.6
Dir	310	335	325	315	333	327	326	306	313	316	321	295	294	283	291	295	300	295	200	293	308	250	198	300	306.1	292.8

FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Henry Pirker - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	1	2	4	4	1	2	4	11	35	35	30	22	9	3	2	7	14	17	15	18	16	18	14	18	11.5	34.8
Dir	218	211	309	300	187	63	328	237	259	261	269	277	325	324	120	252	267	263	256	255	252	253	239	248	261.8	258.7
24 Spd	16	19	19	13	22	21	22	29	29	23	20	17	12	14	18	19	21	16	19	19	17	17	7	2	17.3	28.8
Dir	252	260	264	275	278	277	284	283	280	280	278	280	271	274	269	258	259	250	257	262	262	272	341	65	271.2	282.6
25 Spd	4	3	6	6	7	7	7	8	8	5	7	10	35	29	20	26	25	34	18	21	24	19	14	14	12.5	35.3
Dir	318	20	252	195	166	169	158	159	149	165	214	263	262	262	262	259	258	257	255	261	259	251	240	238	248.5	261.8
26 Spd	11	12	11	10	8	2	3	4	5	4	5	3	3	22	24	25	25	25	25	18	11	10	12	13	6.8	25.4
Dir	248	274	300	275	274	253	172	112	89	128	157	169	276	264	267	266	265	258	258	276	35	71	88	88	264.9	265.8
27 Spd	13	11	11	11	9	8	9	9	8	8	9	8	13	10	13	14	10	13	16	14	10	9	11	10	6.9	16.2
Dir	81	84	81	76	77	60	60	58	53	47	36	20	13	360	353	359	352	316	313	317	306	293	307	316	11.9	313.5
28 Spd	6	5	5	6	4	7	8	6	6	4	1	5	1	1	3	4	6	7	6	5	5	4	4	4	0.9	8.2
Dir	320	301	312	308	298	291	296	304	320	328	310	301	249	244	196	165	130	110	112	100	113	100	82	78	323.7	295.9
29 Spd	4	3	4	3	3	4	2	5	4	4	4	6	6	7	5	5	9	9	9	9	5	5	5	8	2.8	9.4
Dir	81	88	128	120	98	99	296	336	298	308	356	46	55	24	46	10	330	319	316	326	323	2	113	107	10.2	319.0
30 Spd	8	7	8	7	8	9	9	8	7	7	10	8	10	9	8	9	8	7	7	5	6	6	4	5	7.2	9.8
Dir	110	99	104	101	108	90	84	86	68	68	71	71	71	67	58	68	81	77	78	60	62	64	56	45	78.1	70.7
31 Spd	4	4	5	6	7	7	6	4	3	1	6	4	7	8	7	5	4	5	4	1	4	4	5	5	2.5	7.5
Dir	54	15	347	326	328	308	310	307	343	87	112	95	87	89	89	81	65	71	84	50	313	309	329	347	22.5	88.9
Spd	3.2	2.8	3.3	3.0	3.1	3.6	3.7	4.3	6.0	6.3	5.5	5.5	6.6	7.1	5.9	5.5	5.5	5.4	4.9	5.1	4.1	4.2	3.2	3.2	Diurnal Average	
Dir	293.4	288.4	296.9	302.7	293.5	297.2	301.4	290.3	285.3	287.7	289.4	294.4	295.1	291.7	298.9	295.7	290.3	282.4	285.4	290.4	291.0	282.7	292.3	290.7		
Spd	32.9	22.9	23.7	25.6	28.0	38.2	34.7	42.7	44.4	34.7	35.0	32.6	35.3	30.4	26.3	33.0	32.6	34.1	25.5	24.3	24.4	22.8	23.2	24.1	Diurnal Maximum	
Dir	275.3	261.6	255.7	253.2	252.9	256.7	254.8	262.0	260.7	260.8	264.5	265.5	261.8	264.3	306.1	314.0	315.8	256.9	294.3	293.5	259.0	293.2	257.2	253.5		

Maximum Speed Value: 44 km/h on Dec 15 09:00
Maximum Daily Speed Average: 23.3 km/h on Dec 15
Maximum Diurnal Speed Average: 7.1 km/h at hour 14

Minimum Speed Value: 0 km/h on Dec 7 10:00
Minimum Daily Speed Average: 0.9 km/h on Dec 6
Minimum Diurnal Speed Average: 2.8 km/h at hour 2

Monthly Average Velocity: 4.61 km/h 291.61 deg

Speed Percentiles: $P_1 = 0.8$ $P_{10} = 2.0$ $Q_1 = 3.9$ Median = 6.9 $Q_3 = 12.7$ $P_{90} = 20.6$ $P_{99} = 34.6$

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

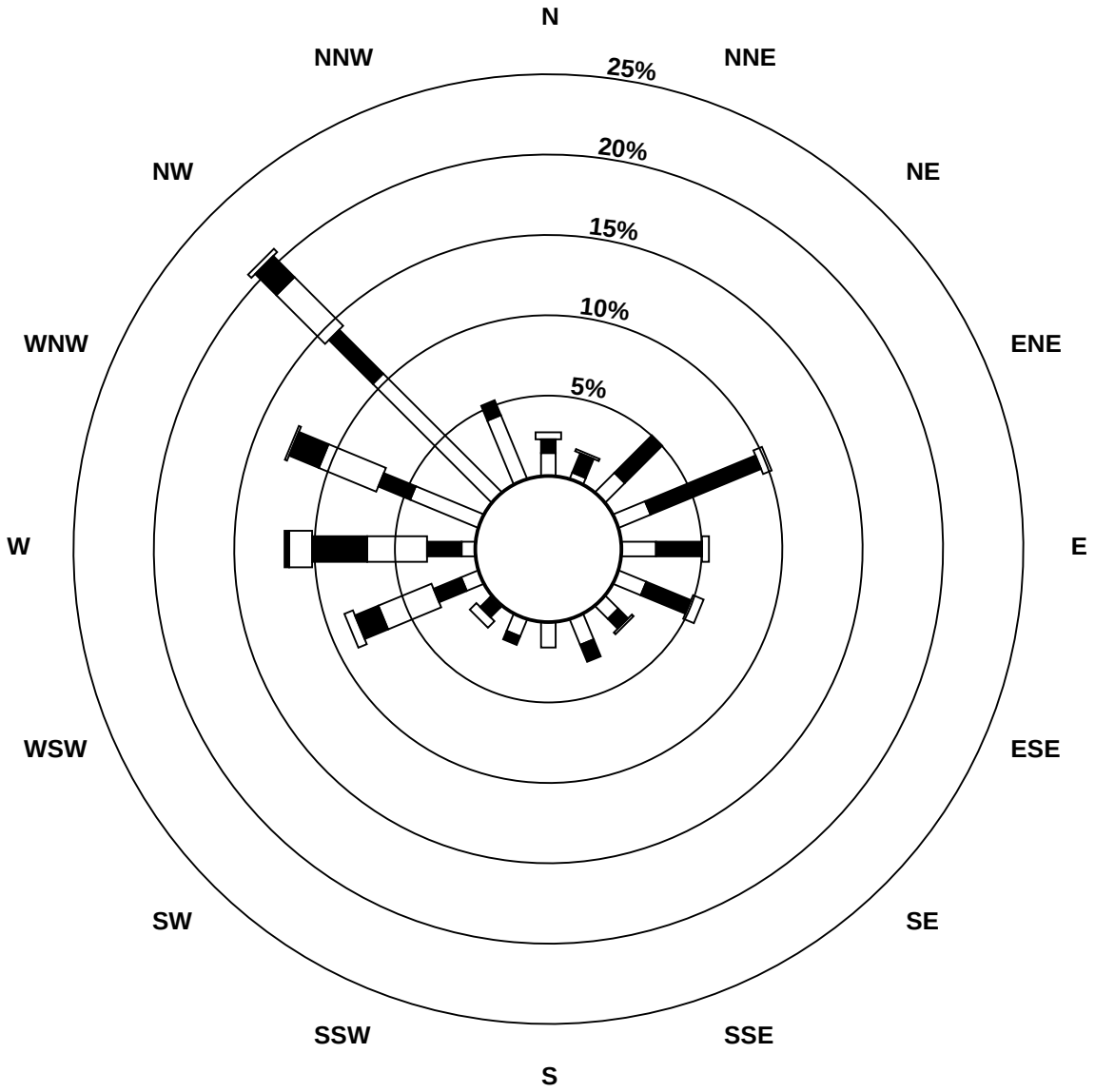
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	18	18	5	0	0	0	41
NorthEast	20	52	3	0	0	0	75
East	25	66	9	0	0	0	100
SouthEast	16	14	6	0	0	0	36
South	26	12	0	0	0	0	38
SouthWest	5	10	11	0	0	0	26
West	27	30	56	39	16	3	171
NorthWest	141	44	38	32	2	0	257
Total	278	246	128	71	18	3	744

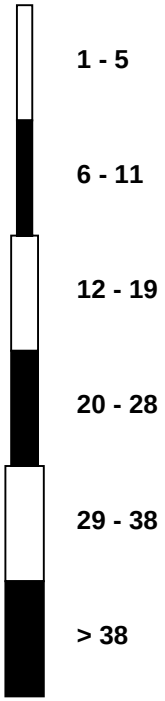
Wind Rose

Wind Speed (WS) (km/h)

Henry Pirker - December 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Henry Pirker - December 2013

Maximum Speed: 45 km/h on Dec 15 09:00

Maximum Daily Speed Average: 24.4 km/h on Dec 15

Minimum Speed: 1 km/h on Dec 11 03:00

Minimum Daily Speed Average: 1.7 km/h on Dec 6

Maximum Diurnal Speed Average: 11.3 km/h at hour 14

Minimum Diurnal Speed Average: 8.4 km/h at hour 23

Monthly Average Speed: 9.55 km/h

Percentiles: P_1 = 1.0 P_{10} = 2.9 Q_1 = 4.3 Median = 7.1 Q_3 = 12.9 P_{90} = 20.7 P_{99} = 34.9

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

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-Dec	13	12	11	9	8	11	11	12	19	20	22	22	23	25	26	23	24	23	26	24	24	23	23	22	19.0	26.4
2-Dec	23	23	19	19	19	20	19	18	19	20	20	19	19	19	19	16	17	16	14	13	13	13	11	12	17.4	22.8
3-Dec	12	12	12	11	9	7	6	6	11	13	12	15	15	16	17	14	12	9	6	7	5	4	5	4	10.0	17.0
4-Dec	5	3	5	4	2	3	4	3	3	3	3	4	4	3	3	4	3	3	4	3	3	3	4	4	3.5	5.5
5-Dec	3	3	4	4	3	3	3	3	3	5	6	5	6	5	4	3	3	4	5	4	4	3	3	2	3.7	6.3
6-Dec	2	3	3	3	2	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.7	3.5
7-Dec	1	1	1	1	1	1	1	1	1	1	1	4	13	14	12	11	11	11	13	15	12	10	11	16	6.8	16.0
8-Dec	18	18	19	14	11	8	5	2	4	2	4	5	5	8	7	6	5	5	5	7	7	15	15	23	9.0	22.5
9-Dec	19	17	17	18	10	10	13	15	12	10	7	3	3	4	6	8	7	5	5	4	3	4	11	13	9.4	19.4
10-Dec	13	11	7	6	6	6	6	6	6	5	3	4	4	5	4	1	1	1	1	1	1	1	1	1	4.2	12.8
11-Dec	1	1	1	4	4	4	9	11	11	10	9	10	10	10	7	7	7	6	7	7	7	6	8	7	6.8	10.5
12-Dec	7	7	7	7	7	7	9	9	9	9	9	9	9	9	8	7	2	4	8	7	6	6	7	7	7.3	9.2
13-Dec	7	6	5	7	8	11	9	6	6	8	7	7	9	6	5	8	8	8	10	10	10	11	10	10	8.0	10.6
14-Dec	8	7	3	8	10	10	8	6	4	4	5	4	3	5	4	4	3	5	4	4	9	9	5	10	5.8	10.3
15-Dec	19	19	17	15	29	38	35	43	45	32	35	33	29	25	17	15	16	19	9	12	15	22	23	24	24.4	44.7
16-Dec	33	24	24	26	22	23	19	24	24	21	20	18	23	21	13	10	7	5	5	4	4	6	6	7	16.2	33.3
17-Dec	9	12	14	14	15	12	12	10	9	22	14	10	17	31	29	33	33	24	23	23	23	20	20	20	18.7	33.1
18-Dec	17	17	15	15	15	13	14	14	13	15	16	16	14	11	8	7	5	4	3	4	4	4	4	5	10.6	17.0
19-Dec	6	5	4	4	4	4	5	4	4	3	3	2	2	2	4	5	4	3	4	3	3	2	2	2	3.6	6.1
20-Dec	4	3	2	2	4	4	4	6	7	9	10	9	7	6	8	8	8	7	6	5	7	4	4	5	5.9	9.6
21-Dec	4	6	5	5	4	3	3	4	7	7	7	11	13	14	10	8	5	2	2	4	3	2	4	4	5.8	13.5
22-Dec	5	5	4	4	5	5	4	5	4	5	3	4	4	3	4	5	4	4	3	6	4	3	4	3	4.1	5.8
23-Dec	3	4	5	5	3	5	5	12	35	35	30	22	10	4	3	8	14	17	15	18	16	18	15	18	13.3	34.9
24-Dec	16	19	19	13	22	21	22	29	29	23	20	17	12	14	18	19	21	16	19	19	17	17	8	3	18.1	28.8
25-Dec	5	5	7	6	7	7	7	8	8	6	7	12	36	30	20	26	25	34	18	21	25	19	14	14	15.2	35.6
26-Dec	11	13	11	10	9	5	3	4	5	4	5	4	5	22	24	25	25	25	25	19	13	11	12	13	12.7	25.5
27-Dec	13	11	11	11	9	9	9	10	9	8	9	9	13	11	13	14	10	13	16	14	10	9	11	10	11.0	16.3
28-Dec	6	5	5	6	5	7	8	6	6	4	3	5	4	3	4	5	7	7	6	5	5	4	4	4	5.2	8.3
29-Dec	4	3	4	3	4	4	4	5	4	4	5	6	6	8	5	6	9	10	9	9	5	6	5	8	5.7	9.5
30-Dec	8	8	8	7	8	9	10	8	7	8	10	8	10	9	8	9	9	7	7	5	6	6	4	5	7.7	10.0
31-Dec	5	5	6	7	7	7	6	5	4	3	6	5	7	8	8	5	4	5	5	3	4	5	5	5	5.3	7.7
	9.7	9.3	8.9	8.7	8.8	9.1	8.9	9.6	10.6	10.3	10.0	9.8	10.9	11.3	10.4	10.3	10.0	9.8	9.1	9.1	8.7	8.6	8.4	9.1	Diurnal Average	
	33.3	23.5	23.8	25.7	28.5	38.4	34.9	43.0	44.7	34.9	35.2	32.9	35.6	30.5	28.6	33.1	32.9	34.2	25.6	24.4	24.5	22.9	23.3	24.3	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

Hourly Standard Deviations

Wind Direction (WD) - deg

Henry Pirker - December 2013

Maximum Value: 94.8 deg on Dec 21 07:00

Minimum Value: 3.6 deg on Dec 1 23:00

Percentiles: P_1 = 4.1 P_{10} = 5.7 Q_1 = 8.1 Median = 13.4 Q_3 = 21.6 P_{90} = 42.8 P_{99} = 86.5

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

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-Dec	12	11	11	16	18	14	10	20	5	5	6	5	5	4	5	5	6	5	4	4	4	5	4	4	19.6
2-Dec	4	4	6	5	5	5	4	5	4	4	5	5	5	5	4	6	6	4	5	5	5	7	8	7	8.1
3-Dec	8	7	9	9	8	7	9	14	13	8	10	5	5	7	6	8	8	7	11	7	41	39	12	32	40.7
4-Dec	16	39	24	22	58	14	15	30	23	28	35	17	10	13	22	26	10	18	11	10	18	11	12	24	58.4
5-Dec	48	22	17	14	16	24	23	20	19	9	7	7	11	11	15	16	9	6	8	10	16	28	10	9	48.0
6-Dec	13	14	18	11	43	21	19	12	9	39	18	16	16	13	22	13	9	9	12	15	7	13	6	22	43.4
7-Dec	10	12	13	14	7	14	14	32	18	86	34	25	18	9	15	13	8	8	10	12	6	7	11	7	85.8
8-Dec	5	5	5	6	6	13	23	69	14	58	52	13	12	8	14	20	17	12	20	24	16	7	11	6	69.4
9-Dec	10	7	10	23	30	7	6	6	8	9	14	54	57	38	14	10	12	21	17	29	45	28	26	11	56.6
10-Dec	10	10	16	17	13	9	9	14	11	19	19	20	46	46	17	26	39	27	64	63	44	20	10	9	63.7
11-Dec	13	30	17	23	25	33	14	16	11	12	15	12	13	14	21	15	15	21	18	18	14	21	15	17	32.7
12-Dec	18	20	16	15	15	13	10	12	11	12	16	14	14	16	17	19	16	17	17	14	13	15	13	17	20.2
13-Dec	12	32	23	13	12	10	12	15	14	9	10	9	12	21	47	19	11	13	12	9	11	9	10	11	47.1
14-Dec	12	20	46	24	13	17	18	32	62	27	45	89	57	44	58	80	73	32	86	51	19	19	38	65	88.9
15-Dec	6	6	11	11	14	6	6	7	7	6	6	8	11	7	6	15	13	8	15	23	13	8	5	8	22.8
16-Dec	9	13	5	6	9	7	17	6	5	6	6	6	5	5	10	17	16	53	46	51	23	15	10	15	52.9
17-Dec	7	6	6	5	6	8	11	16	20	10	13	10	16	6	27	5	8	7	8	6	6	9	5	6	26.7
18-Dec	7	7	6	6	6	6	6	7	6	8	8	5	5	5	6	6	15	45	14	33	18	7	13	11	44.7
19-Dec	9	14	38	37	13	10	24	16	19	27	41	66	53	51	13	21	41	40	21	48	81	46	42	83	82.6
20-Dec	22	29	58	40	29	30	27	18	10	15	11	10	11	14	11	15	12	17	15	19	12	29	21	22	57.9
21-Dec	15	13	11	13	14	20	95	28	17	15	11	7	4	7	11	9	11	51	79	20	58	46	19	17	94.8
22-Dec	22	19	17	19	37	24	40	24	28	18	63	20	14	50	28	18	27	55	62	19	88	84	79	52	88.0
23-Dec	87	60	55	50	76	72	38	21	6	6	7	6	28	28	52	38	6	7	10	5	7	7	8	7	87.2
24-Dec	6	5	7	8	5	5	5	4	4	5	5	5	7	6	8	7	6	6	5	6	6	7	18	69	68.5
25-Dec	46	65	30	20	7	11	10	9	13	27	13	42	7	6	8	6	6	5	8	5	5	5	6	7	65.3
26-Dec	7	21	12	18	22	71	33	25	19	16	9	47	78	12	7	5	5	6	6	17	28	22	12	12	78.0
27-Dec	12	11	13	12	12	16	15	16	25	25	14	19	8	12	10	9	17	6	6	6	12	6	11	7	25.1
28-Dec	15	17	15	12	27	12	10	12	17	21	92	34	71	78	50	35	25	12	17	16	16	27	24	21	91.6
29-Dec	28	45	22	43	35	24	77	21	27	21	28	22	25	16	24	22	12	9	7	11	13	28	25	11	76.7
30-Dec	11	13	13	12	11	11	12	15	13	13	12	12	10	13	14	11	11	17	15	17	15	14	29	21	29.3
31-Dec	33	38	22	11	16	8	13	15	20	90	15	33	10	11	13	19	20	13	22	90	25	18	14	15	90.1
	87.2	65.3	57.9	50.2	75.8	72.1	94.8	69.4	62.0	90.0	91.6	88.9	78.0	77.5	58.4	79.5	73.0	54.8	86.0	90.1	88.0	84.0	78.6	82.6	

PAZA
Evergreen Park Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Evergreen Park - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 7.8 ppb on Dec 16 11:00 Maximum Daily Average: 1.4 ppb on Dec 5

Minimum Value: 0 ppb on Dec 9 20:00 Minimum Daily Average: 0.1 ppb on Dec 24
Maximum Diurnal Average: 0.7 ppb at hour 11 Minimum Diurnal Average: 0.2 ppb at hour 2
Monthly Average: 0.43 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.1$ $Q_1 = 0.2$ Median = 0.3 $Q_3 = 0.5$ $P_{90} = 0.8$ $P_{99} = 3.6$

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	0.7
2-Dec	0	0	0	0	A	1	1	1	1	1	0	1	1	1	1	1	1	5	0	0	0	0	0	0	0.8	5.0
3-Dec	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0.3	0.8
4-Dec	0	0	A	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0	1	1	0	0	0.4	0.8
5-Dec	0	A	0	0	0	0	0	0	1	1	1	1	4	7	6	5	2	1	1	1	1	0	0	0	1.4	6.6
6-Dec	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	1	0	0	0	0	A	0.5	1.5
7-Dec	0	0	0	0	0	0	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0	0.7	1.8
8-Dec	1	0	1	1	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	A	0	0	0.5	0.9
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.4
10-Dec	0	0	0	0	0	0	0	0	0	0	0	1	C	C	C	0	0	0	0	A	0	0	0	0	0.2	0.5
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	2	2	1	1	0	0.4	2.0
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0.2	0.8
13-Dec	0	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	A	1	0	0	0	0	0	0	0.4	1.1
14-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	A	1	1	1	1	1	0	0	0	0.5	1.1
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	0	0	0	0	1	0	0.3	1.0
16-Dec	0	0	2	0	1	1	0	0	0	3	8	4	0	A	1	1	1	2	1	1	0	0	0	0	1.3	7.8
17-Dec	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0.3	1.2
18-Dec	1	0	0	0	0	0	0	1	1	0	1	A	1	0	1	1	0	0	0	0	0	0	0	0	0.4	0.8
19-Dec	0	0	0	0	0	0	0	1	1	1	A	1	1	0	0	0	1	1	1	1	1	1	1	1	0.6	1.1
20-Dec	1	1	1	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.9
21-Dec	1	0	0	0	0	0	0	0	A	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	0.8
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
23-Dec	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0.3	3.5
28-Dec	2	A	3	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	3.3
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	0	A	0.4	1.5
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.4
31-Dec	1	0	1	1	0	1	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	A	0	0	0.6	1.6
	0.3	0.2	0.5	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.7	0.6	0.5	0.6	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.4	Diurnal Average	
	1.9	0.9	3.3	0.9	1.5	1.7	1.6	1.3	1.8	3.2	7.8	4.1	3.8	6.6	5.7	4.7	2.0	5.0	1.2	2.0	1.9	1.1	1.0	3.5	Diurnal Maximum	

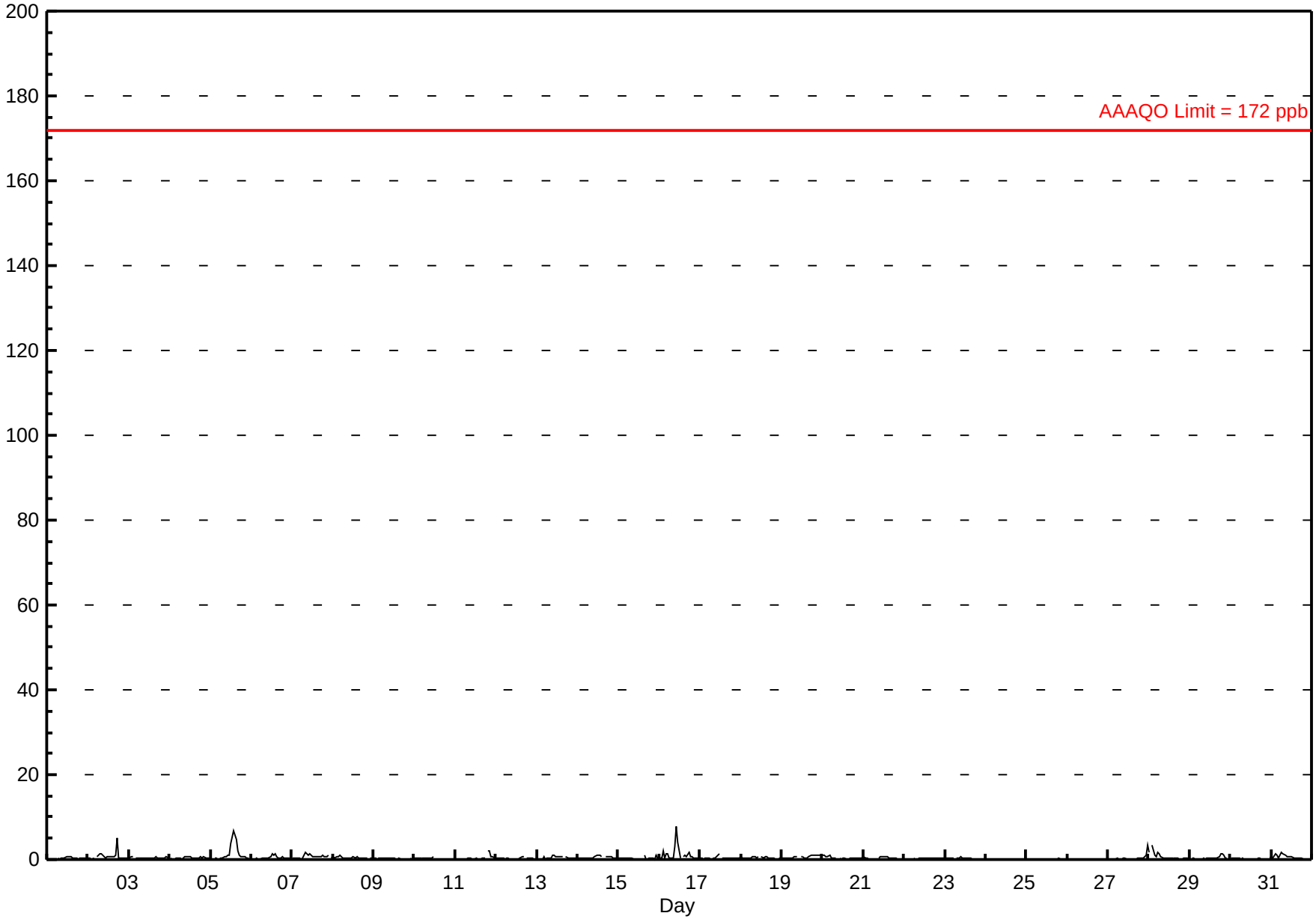
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Evergreen Park - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Evergreen Park - December 2013

Maximum Value: 14.3 ppb on Dec 2 18:00

Maximum Daily Average: 2.6 ppb on Dec 16

Minimum Value: 0 ppb on Dec 10 17:00

Minimum Daily Average: 0.6 ppb on Dec 24

Maximum Diurnal Average: 1.5 ppb at hour 11

Minimum Diurnal Average: 0.8 ppb at hour 2

Monthly Average: 1.06 ppb

Percentiles: $P_1 = 0.4$ $P_{10} = 0.5$ $Q_1 = 0.7$ Median = 0.8 $Q_3 = 1.1$ $P_{90} = 1.6$ $P_{99} = 6.7$

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.9
2-Dec	1	1	1	1	A	1	2	2	2	1	1	1	1	1	1	1	2	14	1	1	1	1	1	1	1.7	14.3
3-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	0.9	2.1
4-Dec	1	1	A	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1.0	1.6
5-Dec	1	A	1	1	1	1	1	1	1	1	2	2	9	8	7	6	3	2	1	1	1	1	1	1	2.3	9.3
6-Dec	A	1	0	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	A	1.1	2.3
7-Dec	1	1	1	1	1	1	1	2	3	2	2	2	1	1	1	1	1	1	2	1	1	1	A	1	1.3	2.7
8-Dec	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	A	1	1	1.1	2.1
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	A	1	1	1	0.8	1.1
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	C	C	C	0	0	0	0	A	0	0	1	1	0.6	1.0
11-Dec	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	A	3	3	2	1	1	1.0	3.4
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	A	1	1	1	1	1	1	0.8	1.7
13-Dec	1	1	1	1	3	1	1	1	1	3	2	2	1	1	1	2	A	1	1	1	1	1	1	1	1.1	2.8
14-Dec	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1	A	1	1	1	1	1	1	1	1	1.1	1.8
15-Dec	1	1	1	1	1	1	1	1	1	1	1	0	1	1	A	2	1	1	1	1	1	1	2	1	0.9	2.4
16-Dec	1	1	3	1	3	3	2	1	1	7	14	6	1	A	2	2	2	3	1	1	1	1	1	1	2.6	13.6
17-Dec	1	1	1	1	1	1	1	1	1	1	2	2	A	1	1	1	1	1	1	1	1	1	1	1	0.9	2.4
18-Dec	2	1	1	1	1	1	1	1	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.6
19-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	2	2	1	2	2	2	2	2	1.2	2.0
20-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.5
21-Dec	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0.8	1.4
22-Dec	0	0	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
23-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1	1	0.8	1.6
24-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0	0	1	1	1	0	0	0	0	1	0.6	1.1
25-Dec	0	1	1	0	A	1	1	1	1	1	0	1	1	0	0	0	0	1	1	1	1	2	1	1	0.6	1.6
26-Dec	1	1	1	A	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0.6	0.8
27-Dec	1	0	A	0	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	3	7	1.1	7.3
28-Dec	2	A	5	2	1	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.3	4.8
29-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	2	1	1	A	1.0	2.8
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	A	1	0.7	1.1
31-Dec	1	1	3	3	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1.2	2.8
	0.9	0.8	1.1	0.9	1.0	0.9	0.9	0.9	1.0	1.2	1.5	1.3	1.3	1.2	1.2	1.2	1.0	1.4	0.9	1.0	1.0	1.0	0.9	1.0	Diurnal Average	
	2.5	1.5	4.8	2.8	3.4	2.6	2.2	2.1	2.7	6.7	13.6	6.3	9.3	8.1	6.7	6.3	3.2	14.3	2.8	3.3	3.4	1.7	3.5	7.3	Diurnal Maximum	

C - Calibration

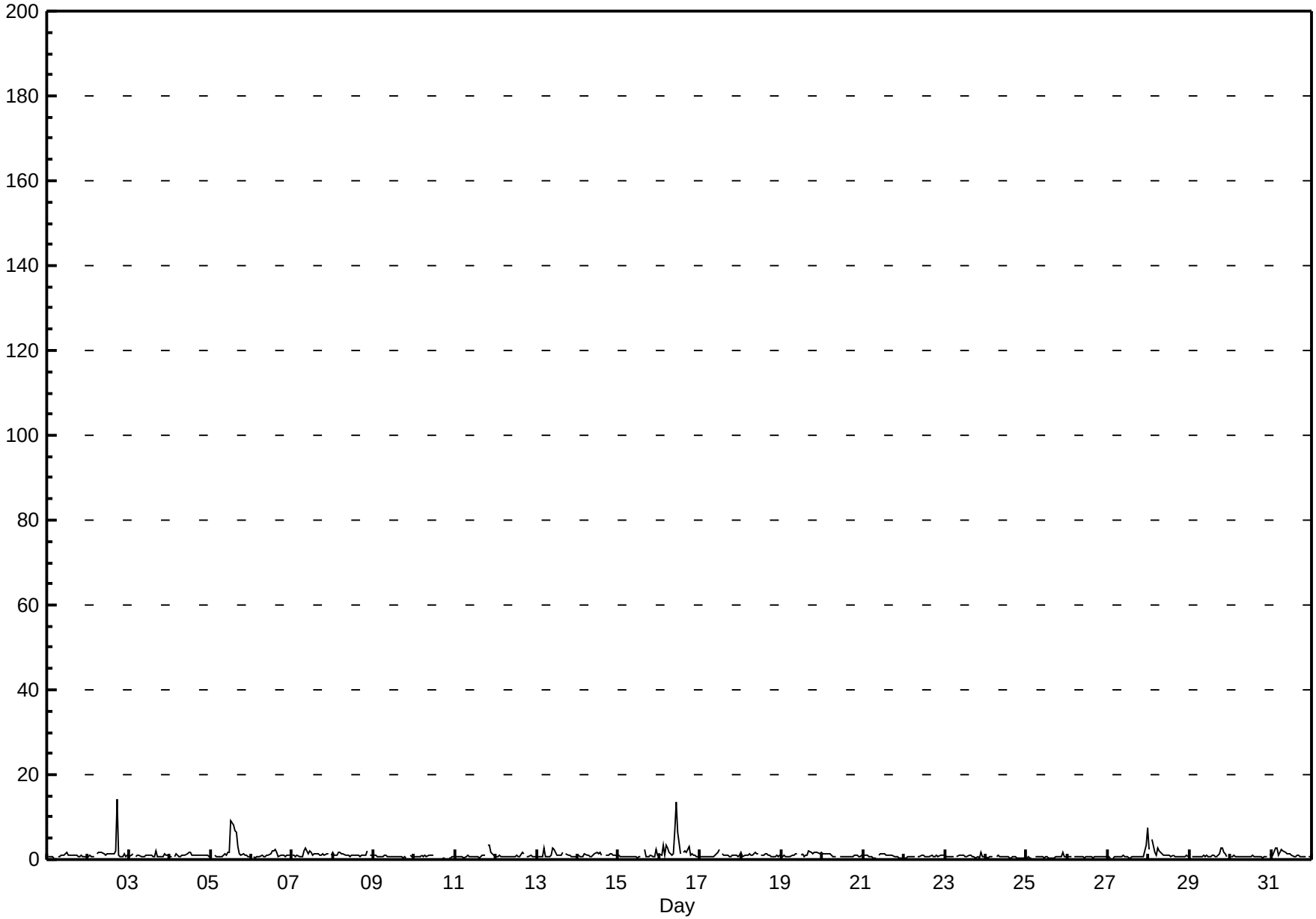
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

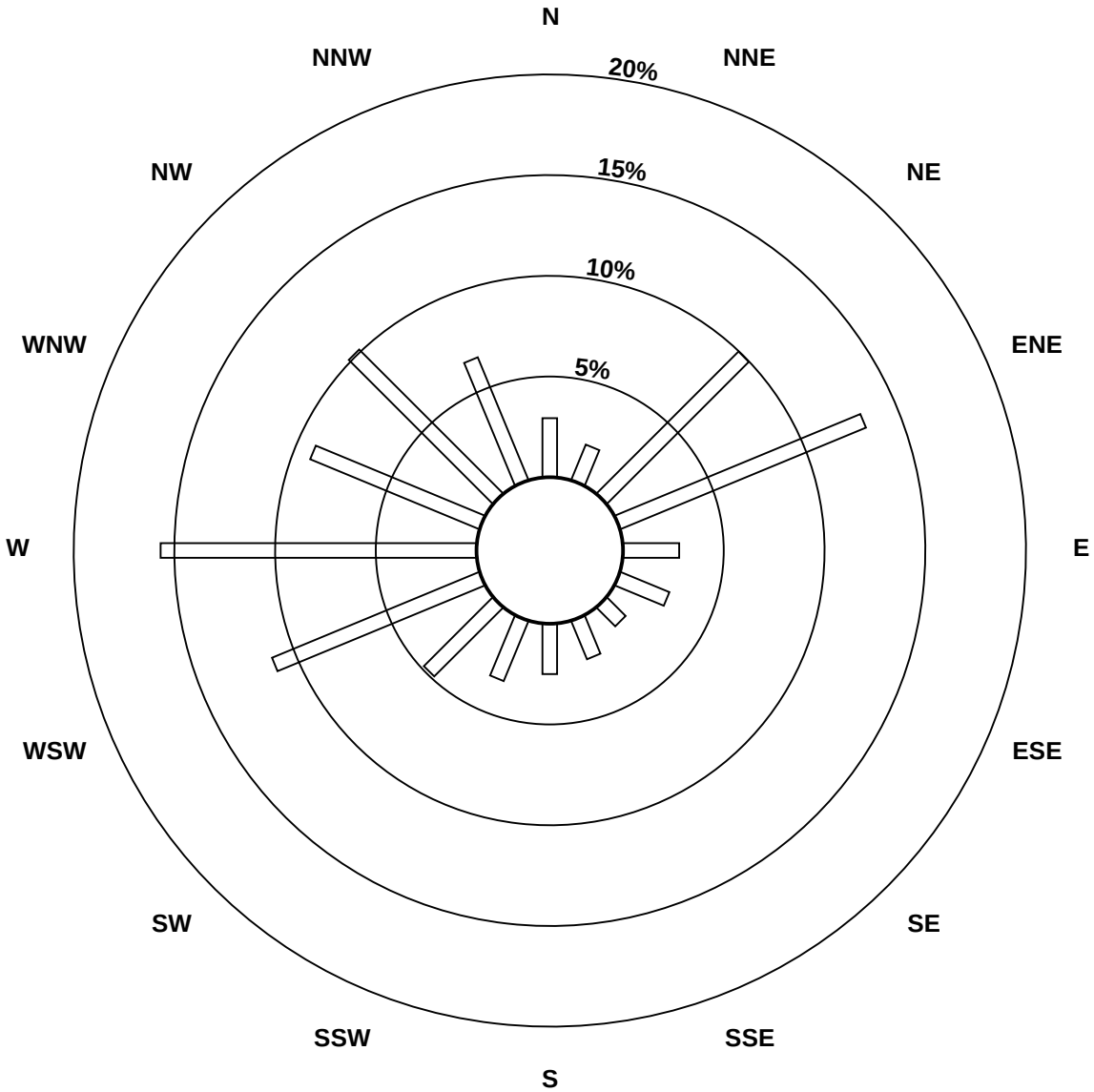
Evergreen Park - December 2013



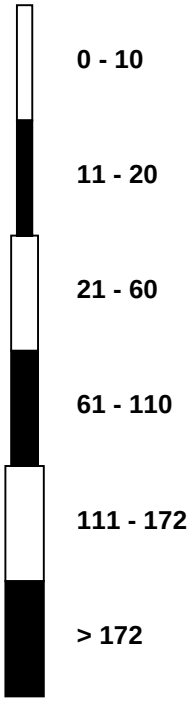
Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Evergreen Park - December 2013



Pollutant Classes (ppb)

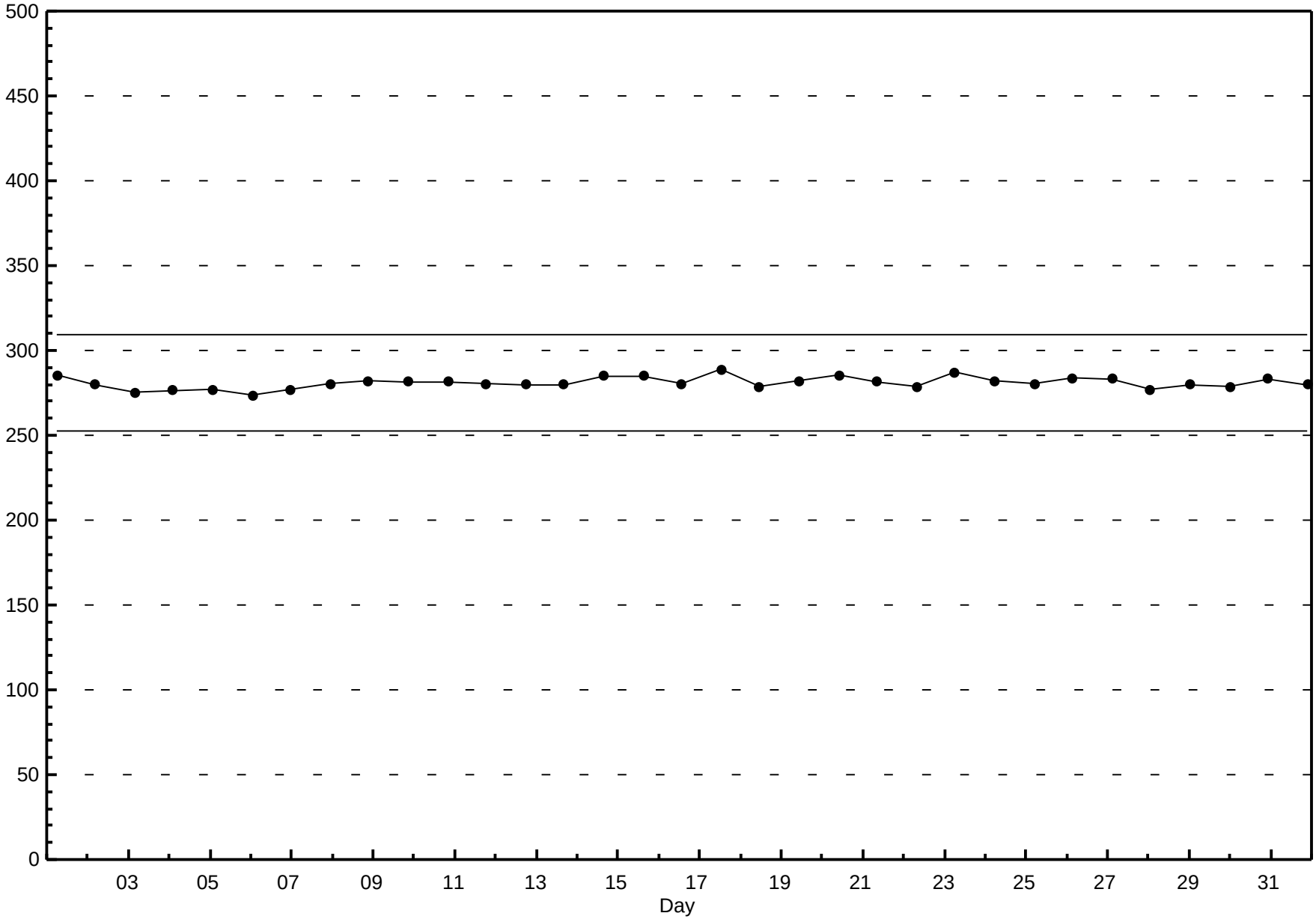


Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Evergreen Park - December 2013



Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Evergreen Park - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 2.5 ppb on Dec 15 01:00 Maximum Daily Average: 1.0 ppb on Dec 19

Minimum Value: 0 ppb on Dec 24 04:00 Minimum Daily Average: 0.1 ppb on Dec 24
Maximum Diurnal Average: 0.5 ppb at hour 1 Minimum Diurnal Average: 0.3 ppb at hour 16
Monthly Average: 0.39 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.1$ $Q_1 = 0.2$ Median = 0.3 $Q_3 = 0.5$ $P_{90} = 0.8$ $P_{99} = 1.5$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	0	0	A	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.3	0.8
4-Dec	1	1	A	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0.9	1.5
5-Dec	1	A	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.9
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	A	0.8	1.2
7-Dec	2	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.6	1.6
8-Dec	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	1	1	1	0	A	0	0	0.4	0.6
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	0.4	0.6
10-Dec	0	0	0	0	0	0	0	0	1	1	C	C	C	C	0	0	0	0	0	A	0	0	1	0	0.3	0.6
11-Dec	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.7
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.4
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.4
14-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	A	1	0	1	1	2	2	1	1	0.6	2.3
15-Dec	2	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.3	2.5
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	0	0	0	1	1	1	0.4	0.7
17-Dec	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
18-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
19-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	1	1	1	1	1	1	1.0	1.6
20-Dec	2	1	1	1	2	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	1.8
21-Dec	0	0	0	0	0	0	0	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
22-Dec	0	1	1	1	1	1	1	A	1	1	1	1	1	0	0	0	0	1	1	1	1	1	0	1	0.6	0.9
23-Dec	1	1	1	1	1	0	A	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
26-Dec	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
28-Dec	0	A	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.1
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	A	0.4	0.6
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	0.4
31-Dec	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0.4	0.5
	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	Diurnal Average	
	2.5	1.5	1.4	1.4	1.8	1.3	0.9	1.0	1.2	1.1	0.9	1.1	1.5	0.8	0.9	0.8	1.3	1.6	1.4	1.5	1.8	2.3	1.3	1.3	Diurnal Maximum	

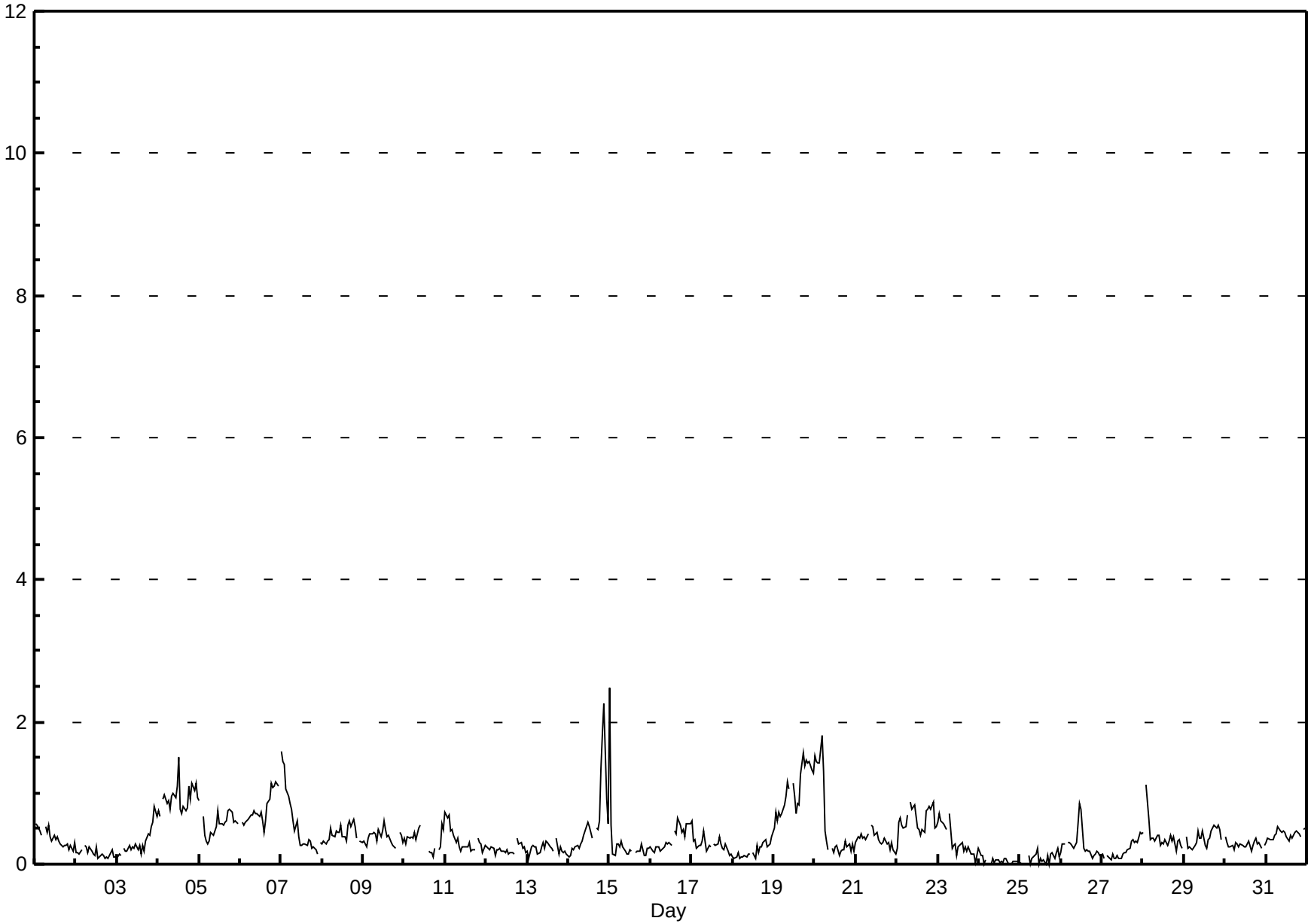
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Evergreen Park - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

Evergreen Park - December 2013

Maximum Value: 4.3 ppb on Dec 15 01:00

Maximum Daily Average: 1.8 ppb on Dec 19

Minimum Value: 1 ppb on Dec 18 02:00

Minimum Daily Average: 0.8 ppb on Dec 24

Maximum Diurnal Average: 1.3 ppb at hour 1

Minimum Diurnal Average: 1.1 ppb at hour 16

Monthly Average: 1.16 ppb

Percentiles: $P_1 = 0.6$ $P_{10} = 0.8$ $Q_1 = 0.9$ Median = 1.1 $Q_3 = 1.3$ $P_{90} = 1.6$ $P_{99} = 2.6$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.3
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
3-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	1.6
4-Dec	1	1	A	2	2	2	2	2	2	2	2	2	3	2	1	2	2	2	2	2	2	2	2	2	1.8	2.6
5-Dec	2	A	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1.3	1.7
6-Dec	A	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	2	2	2	2	2	2	2	A	1.5	2.0
7-Dec	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1.3	2.3
8-Dec	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	A	1	1	1.2	2.1
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	A	1	1	1	1.2	1.6
10-Dec	1	1	1	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	A	1	1	2	1	1.1	1.5
11-Dec	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1.1	1.6
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1.0	1.3
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1.0	1.3
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	3	3	4	3	2	1.5	4.1
15-Dec	4	3	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.2	4.3
16-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	2	1	1	1	1	2	1	2	1.1	1.7
17-Dec	2	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1.0	1.5
18-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
19-Dec	1	1	1	1	2	2	2	2	2	2	A	2	2	1	2	2	3	2	2	2	2	2	2	2	1.8	2.6
20-Dec	3	2	2	2	3	2	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.4	2.7
21-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.4
22-Dec	1	2	2	1	1	1	1	A	2	1	2	1	1	1	1	1	1	2	1	2	2	2	1	2	1.4	1.8
23-Dec	2	2	2	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.6
24-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
25-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
26-Dec	1	1	1	A	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1.1	1.7
27-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.3
28-Dec	1	A	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	3.0
29-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1.1	1.4
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1.0	1.3
31-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	2	1.2	1.6
	1.3	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.2	1.1	Diurnal Average	
	4.3	2.6	3.0	2.3	2.7	2.1	1.7	1.7	2.0	2.0	2.0	2.3	2.6	1.7	1.5	1.7	2.6	2.5	2.2	2.6	2.9	4.1	2.6	1.9	Diurnal Maximum	

C - Calibration

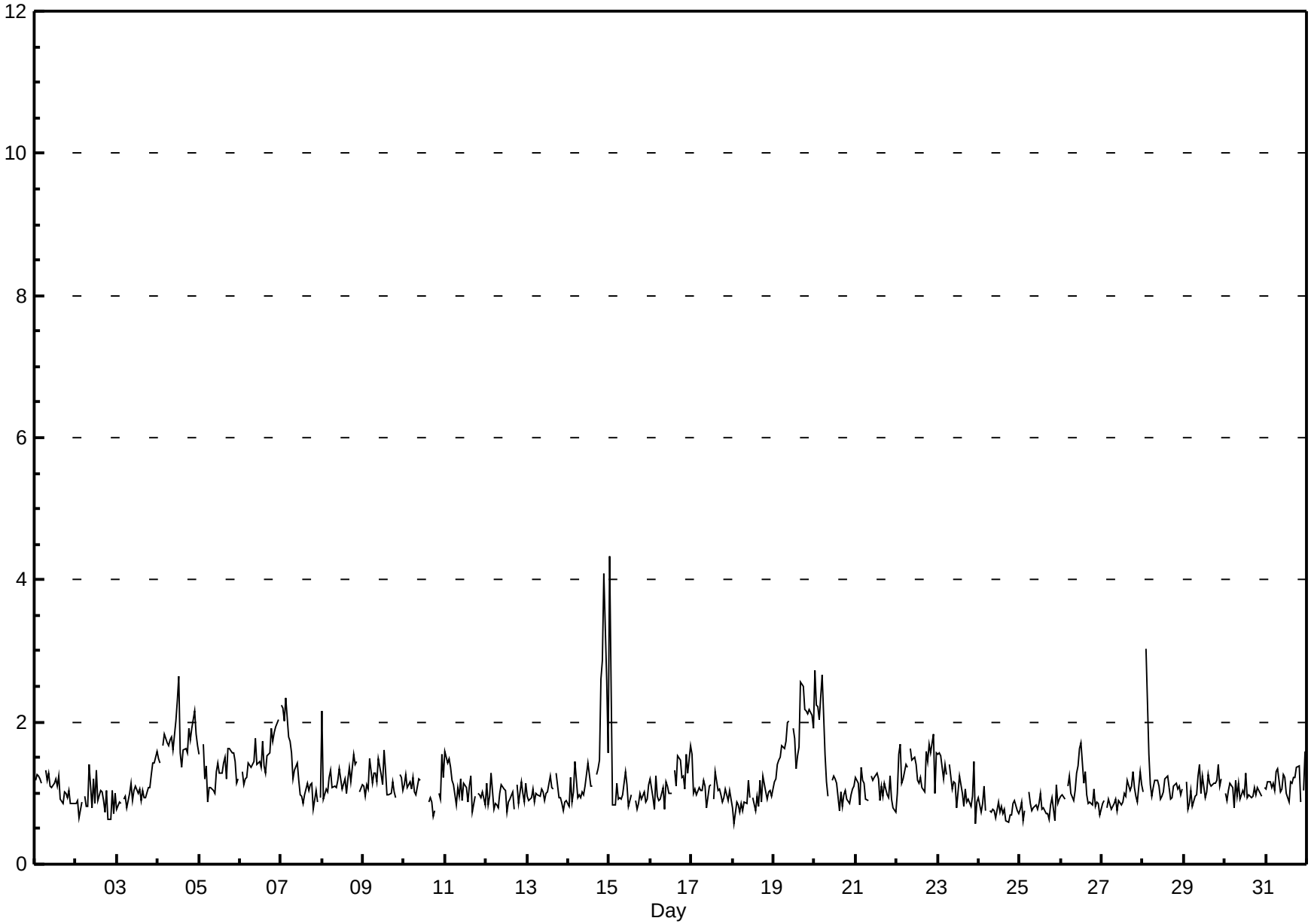
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

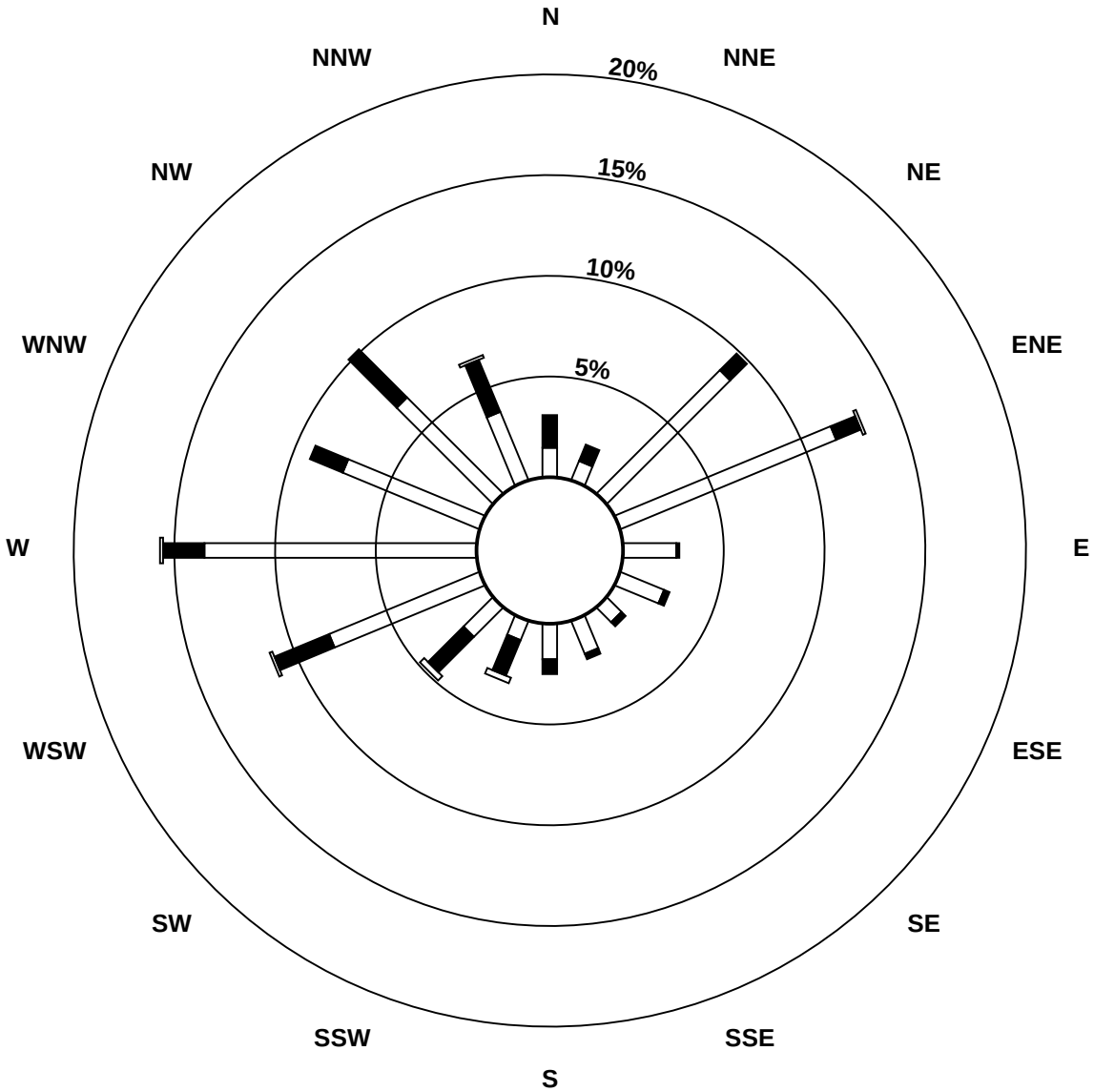
Evergreen Park - December 2013



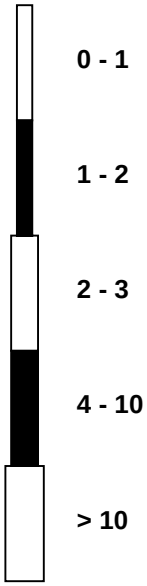
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb

Evergreen Park - December 2013



Pollutant Classes (ppb)

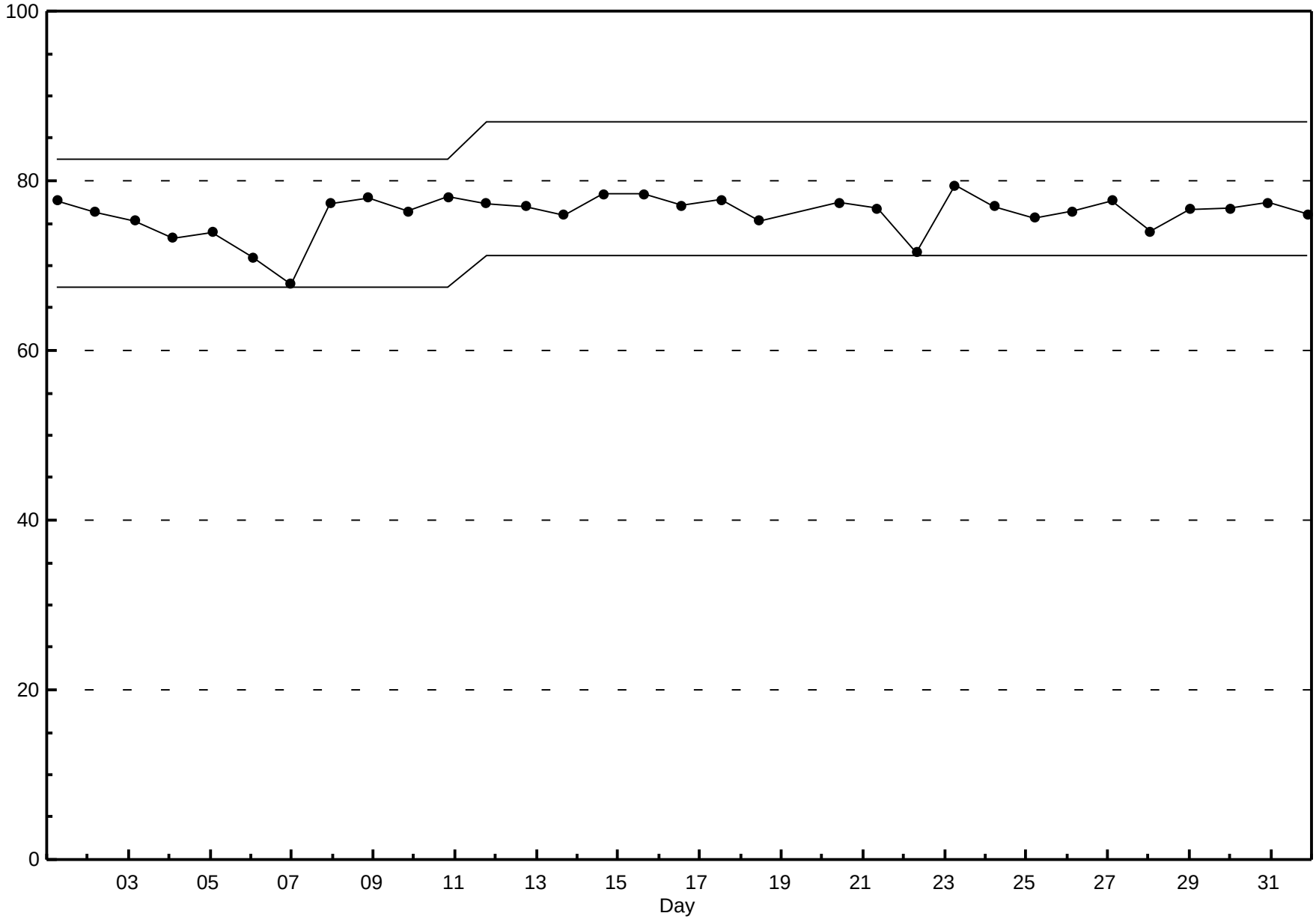


Peace Airshed Zone Association

Span Responses

Total Reduced Sulphur (TRS)

Evergreen Park - December 2013



Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Evergreen Park - December 2013

Number of Exceedences: 1-hr: 0 24-hr: 0

Maximum Value: 22.3 $\mu g/m^3$ on Dec 19 20:00

Maximum Daily Average: 11.1 $\mu g/m^3$ on Dec 19

Minimum Value: 0 $\mu g/m^3$ on Dec 1 11:00

Maximum Diurnal Average: 3.5 $\mu g/m^3$ at hour 17

Monthly Average: 2.53 $\mu g/m^3$

Minimum Daily Average: 0.3 $\mu g/m^3$ on Dec 24

Minimum Diurnal Average: 1.9 $\mu g/m^3$ at hour 6

Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.3$ Median = 1.6 $Q_3 = 3.4$ $P_{90} = 5.9$ $P_{99} = 17.1$

Hours in Service:	744
Hours of Data:	742
Hours of Missing Data:	2
Hours of Calibration:	0
Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	9	5	6	8	6	4	5	4	1	1	0	0	0	1	1	2	2	2	3	2	3	2	2	2	2.9	8.6
2-Dec	2	2	1	1	2	1	2	2	2	2	2	2	1	2	1	2	2	1	1	2	1	2	1	0	1.6	2.3
3-Dec	0	0	0	0	0	0	1	2	4	5	3	3	1	1	1	1	1	2	0	2	1	3	7	2	1.6	6.6
4-Dec	2	1	3	1	2	2	3	1	3	6	6	11	16	9	5	9	7	8	9	8	11	16	15	7	6.7	15.7
5-Dec	5	5	3	1	1	1	2	3	4	4	5	3	2	3	4	4	5	8	6	5	2	3	2	1	3.4	7.9
6-Dec	1	0	2	2	2	2	4	4	3	5	6	9	10	6	5	9	9	9	11	9	7	6	6	5	5.4	11.0
7-Dec	7	6	5	4	5	5	6	6	5	3	2	2	0	0	0	0	0	0	0	0	0	0	0	1	2.4	6.5
8-Dec	2	2	3	2	1	1	1	1	1	0	1	1	1	0	0	0	1	1	2	3	2	0	0	1	1.2	3.0
9-Dec	0	0	0	2	0	0	0	0	0	3	10	1	1	0	0	0	0	0	0	0	2	4	1	0	1.0	9.8
10-Dec	1	1	2	1	0	0	0	0	0	0	0	0	0	1	0	N	4	2	1	0	1	1	3	4	0.9	4.2
11-Dec	5	4	3	3	2	2	2	2	2	2	2	1	1	0	0	1	1	0	0	1	0	0	0	2	1.5	4.7
12-Dec	2	2	2	1	1	0	0	0	0	0	0	1	1	0	0	1	0	1	1	0	1	0	0	0	0.6	2.3
13-Dec	0	2	0	2	2	3	3	4	4	3	3	2	1	3	2	2	1	1	0	0	0	0	0	0	1.5	3.6
14-Dec	0	0	1	2	3	1	1	1	2	2	2	5	5	5	1	4	5	4	5	8	8	4	2	1	3.1	8.1
15-Dec	0	0	0	0	0	0	0	1	1	1	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0.4	2.0
16-Dec	1	0	1	1	0	0	0	1	1	4	3	11	N	16	12	8	14	7	5	1	0	1	0	0	3.8	16.3
17-Dec	0	0	0	0	0	0	0	0	1	2	3	3	4	0	3	4	3	3	2	3	3	2	2	3	1.8	4.4
18-Dec	2	2	3	3	2	3	3	2	3	3	3	2	1	2	2	3	3	4	3	3	2	2	2	2	2.4	3.6
19-Dec	5	3	3	4	3	4	7	10	13	9	7	11	8	4	9	11	18	20	18	22	20	20	19	18	11.1	22.3
20-Dec	19	16	14	17	15	11	2	1	1	1	2	1	3	3	3	4	4	5	4	4	3	4	3	4	5.9	19.3
21-Dec	3	4	4	4	4	4	3	4	4	5	4	2	1	1	0	1	2	3	2	2	3	1	1	2	2.6	5.1
22-Dec	2	4	4	4	3	3	2	1	2	3	4	7	5	5	7	7	8	9	7	7	6	6	8	6	4.9	9.4
23-Dec	3	2	5	5	5	4	6	4	11	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	2.0	11.1
24-Dec	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0.3	1.5
25-Dec	1	2	1	0	0	0	0	0	0	5	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	5.1
26-Dec	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	6	0	0	1	1	2	3	3	0.9	5.6
27-Dec	2	1	3	3	0	0	0	0	0	1	2	1	0	2	2	2	4	3	2	1	2	2	1	2	1.5	3.5
28-Dec	1	2	3	2	1	1	2	1	1	1	1	1	0	1	0	3	2	0	0	0	0	1	0	0	1.0	3.5
29-Dec	0	0	0	0	0	0	0	0	1	3	4	5	2	4	4	5	5	4	3	4	4	3	2	2	2.2	4.6
30-Dec	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.5	1.5
31-Dec	2	2	3	3	2	2	2	2	3	2	2	3	2	1	2	3	3	3	3	3	4	3	4	4	2.7	4.4
	2.5	2.3	2.4	2.5	2.0	1.9	1.9	1.9	2.4	2.5	2.8	2.9	2.3	2.4	2.1	2.9	3.5	3.2	2.9	2.9	2.7	2.8	2.7	2.4	Diurnal Average	
	19.3	16.0	13.7	17.2	14.7	10.7	7.3	9.8	13.1	8.7	9.8	11.4	15.5	16.3	12.3	11.3	17.6	19.7	18.1	22.3	20.5	19.6	19.2	17.7	Diurnal Maximum	

N - Not Valid

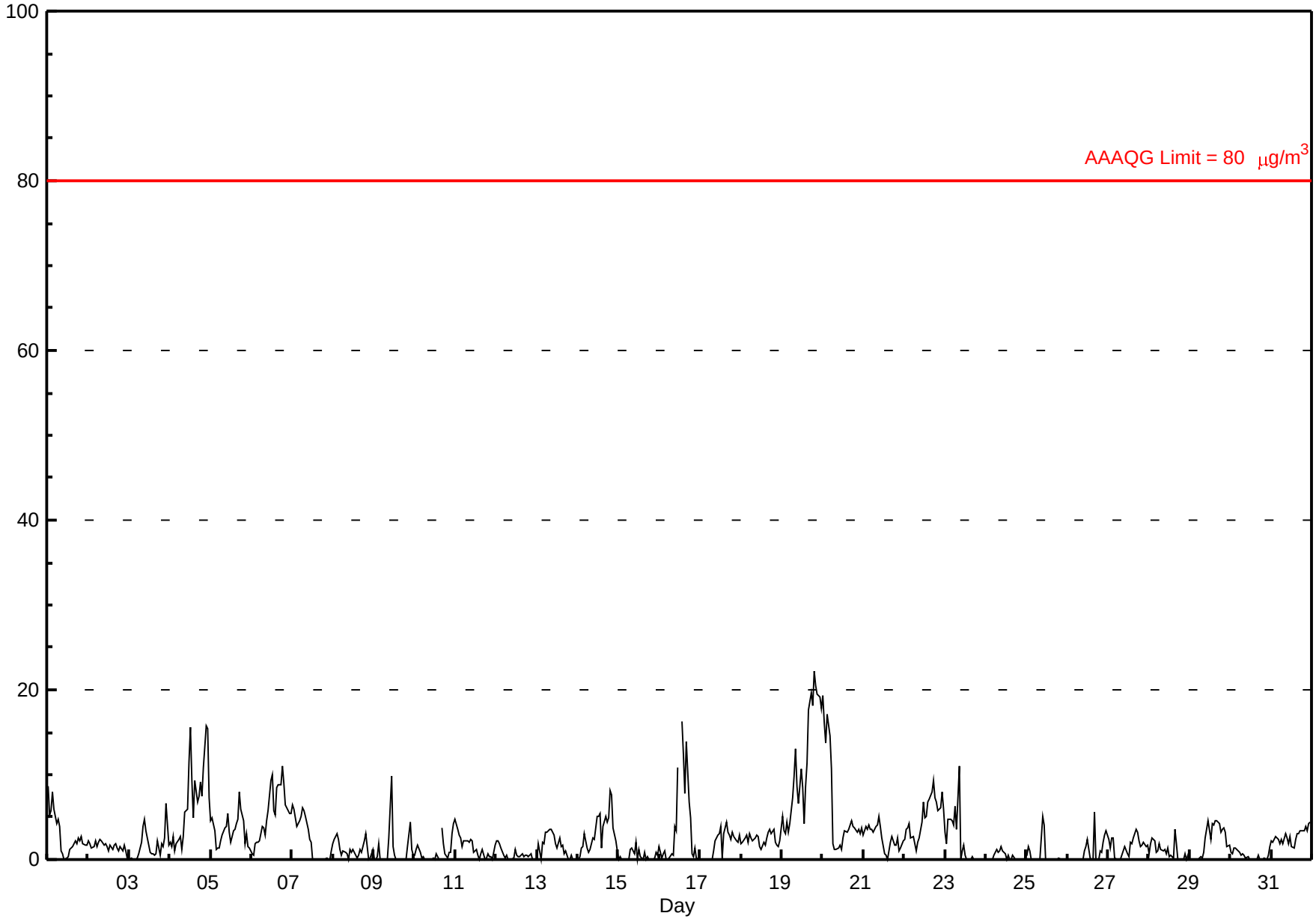
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Evergreen Park - December 2013



Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Evergreen Park - December 2013

Maximum Value: 51.2 $\mu g/m^3$ on Dec 16 14:00

Maximum Daily Average: 15.4 $\mu g/m^3$ on Dec 19

Minimum Value: 0 $\mu g/m^3$ on Dec 9 09:00

Minimum Daily Average: 1.4 $\mu g/m^3$ on Dec 24

Maximum Diurnal Average: 6.4 $\mu g/m^3$ at hour 17

Minimum Diurnal Average: 3.9 $\mu g/m^3$ at hour 6

Monthly Average: 5.11 $\mu g/m^3$

Percentiles: P_1 = 0.0 P_{10} = 1.4 Q_1 = 2.6 Median = 4.1 Q_3 = 6.0 P_{90} = 9.7 P_{99} = 20.4

Hours in Service:	744
Hours of Data:	742
Hours of Missing Data:	2
Hours of Calibration:	0
Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	13	8	8	10	9	7	7	5	3	2	1	2	2	3	3	3	4	5	4	4	6	4	3	4	5.0	12.9
2-Dec	3	4	4	3	4	3	4	4	4	4	4	4	3	4	2	3	4	4	3	3	3	5	3	2	3.5	4.8
3-Dec	3	2	2	2	3	1	3	5	7	8	6	5	4	4	3	3	5	5	2	5	4	8	10	5	4.3	9.9
4-Dec	4	4	7	4	7	5	5	5	7	9	11	21	21	15	9	14	9	10	13	12	15	22	20	11	10.8	21.6
5-Dec	7	7	7	3	3	3	5	5	5	6	8	6	5	5	6	7	7	13	9	8	5	8	4	5	6.0	12.6
6-Dec	4	4	5	6	5	6	9	7	9	9	10	13	15	9	8	12	12	14	15	15	9	11	9	8	9.4	15.1
7-Dec	10	10	11	8	8	8	10	9	9	6	5	6	2	3	0	1	0	2	2	1	2	1	4	3	5.0	11.2
8-Dec	6	4	4	4	3	2	3	3	2	2	3	4	4	3	4	3	3	3	4	5	5	2	2	3	3.4	5.8
9-Dec	2	2	2	6	2	1	2	2	0	18	23	3	3	2	1	0	0	1	2	1	5	8	3	2	3.9	22.6
10-Dec	2	3	4	3	4	4	1	1	1	3	0	3	3	3	3	N	6	4	3	2	3	3	6	6	3.0	6.2
11-Dec	7	6	4	4	3	4	3	4	3	4	4	3	4	3	2	4	4	2	3	3	3	4	2	4	3.6	7.0
12-Dec	5	5	5	4	3	3	3	3	1	1	3	3	3	3	2	3	2	2	3	2	2	3	1	2	2.8	5.1
13-Dec	1	5	4	4	4	5	5	5	7	5	5	4	3	6	3	4	5	3	3	2	4	1	4	3	4.1	7.3
14-Dec	1	2	3	6	6	4	4	5	5	5	4	8	7	8	5	7	8	7	8	12	12	11	4	3	5.9	11.9
15-Dec	1	8	3	0	1	1	0	6	5	3	4	2	4	3	2	2	1	3	0	1	2	2	4	2	2.5	7.9
16-Dec	6	3	3	3	2	1	2	2	2	8	5	26	N	51	37	13	22	17	10	3	3	4	4	2	9.9	51.2
17-Dec	3	0	0	0	0	0	0	2	3	4	5	6	7	2	8	6	9	6	7	7	6	8	5	5	4.1	9.4
18-Dec	5	4	5	5	4	6	6	6	6	5	4	4	4	5	4	5	6	7	7	8	6	6	5	6	5.2	8.0
19-Dec	8	8	7	7	9	8	15	15	19	12	10	15	11	8	12	15	28	29	23	25	23	21	22	19	15.4	29.5
20-Dec	21	17	16	22	17	14	7	2	3	3	3	3	5	5	6	6	6	6	6	5	5	5	5	5	8.0	21.6
21-Dec	5	6	6	6	6	5	5	6	6	8	6	5	2	2	2	4	4	4	4	4	5	3	4	5	4.7	8.0
22-Dec	5	6	6	7	6	6	4	4	5	6	9	12	7	7	10	10	10	14	12	10	10	9	10	8	8.0	13.8
23-Dec	6	5	8	8	7	7	8	5	21	4	3	4	2	2	2	1	2	1	1	1	2	3	0	0	4.3	21.4
24-Dec	0	1	0	1	1	2	3	3	2	3	2	2	2	2	2	1	2	1	1	0	0	0	0	3	1.4	3.1
25-Dec	3	4	4	0	0	2	0	0	1	7	7	3	1	1	2	2	1	1	0	2	1	2	0	0	1.8	7.5
26-Dec	0	0	1	1	0	2	1	1	0	2	4	4	6	2	1	1	11	4	1	4	3	5	5	7	2.7	11.4
27-Dec	5	3	5	6	3	1	2	2	3	3	3	3	3	4	5	5	5	5	6	4	4	4	7	4	4.0	7.3
28-Dec	3	5	5	4	4	3	4	4	5	4	5	6	4	2	4	5	5	2	2	1	3	4	2	3	3.7	6.0
29-Dec	4	3	2	1	1	0	2	4	3	4	6	6	6	6	6	8	7	7	6	8	6	6	3	4	4.6	8.0
30-Dec	3	3	4	3	4	3	2	2	3	3	3	1	1	3	2	1	5	5	2	2	3	2	2	3	2.7	5.0
31-Dec	4	4	5	4	4	4	4	4	7	4	3	6	3	6	4	5	5	6	7	5	7	5	6	6	4.9	7.0
	4.9	4.7	4.8	4.6	4.2	3.9	4.2	4.2	5.1	5.3	5.5	6.2	4.8	5.8	5.2	5.2	6.4	6.2	5.3	5.3	5.2	5.7	5.1	4.7	Diurnal Average	
	21.1	17.5	15.8	21.6	16.7	14.1	14.8	14.7	21.4	18.0	22.6	26.0	20.9	51.2	37.5	15.3	27.5	29.5	22.6	25.0	22.6	21.6	21.9	19.2	Diurnal Maximum	

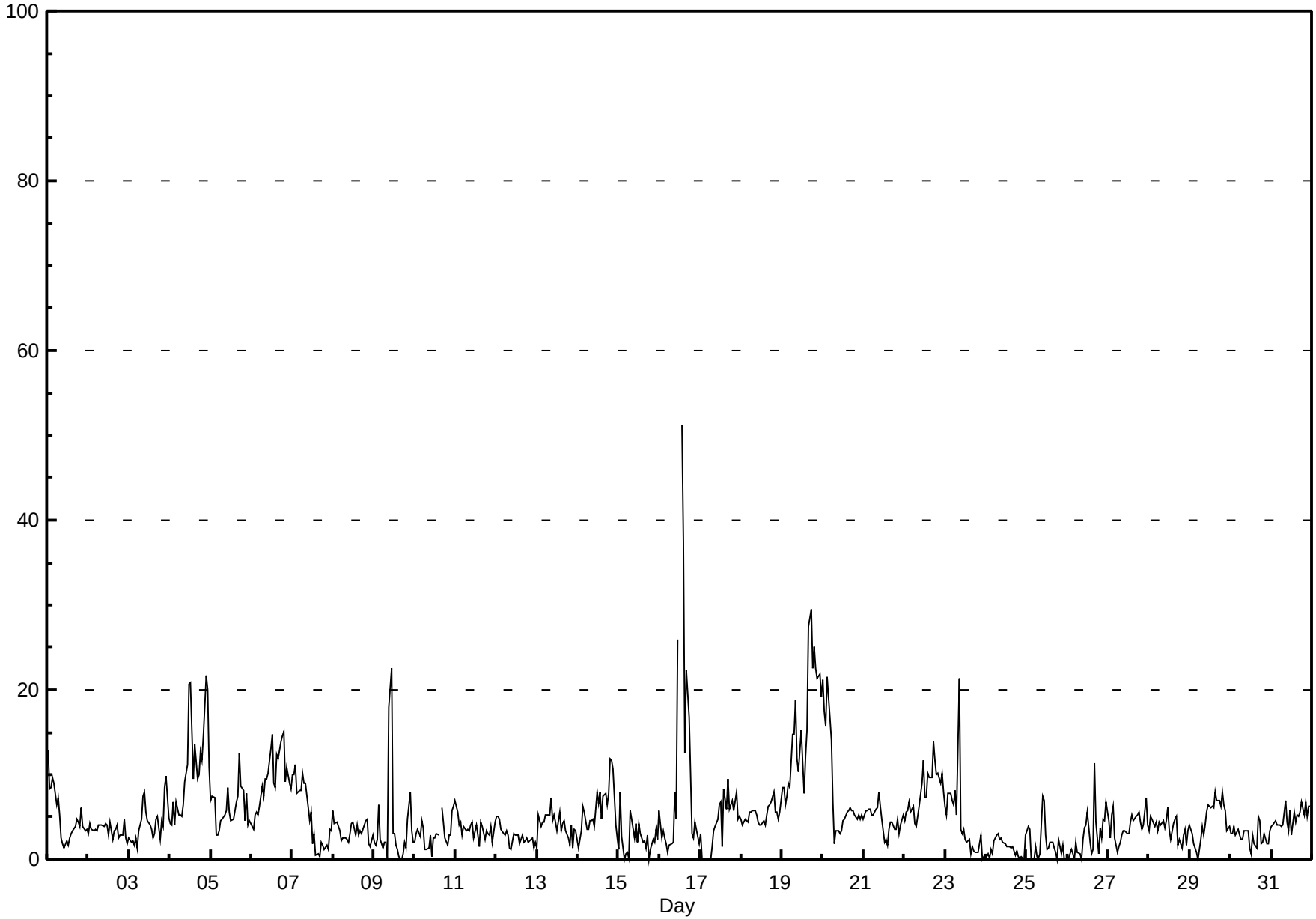
N - Not Valid

Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Evergreen Park - December 2013

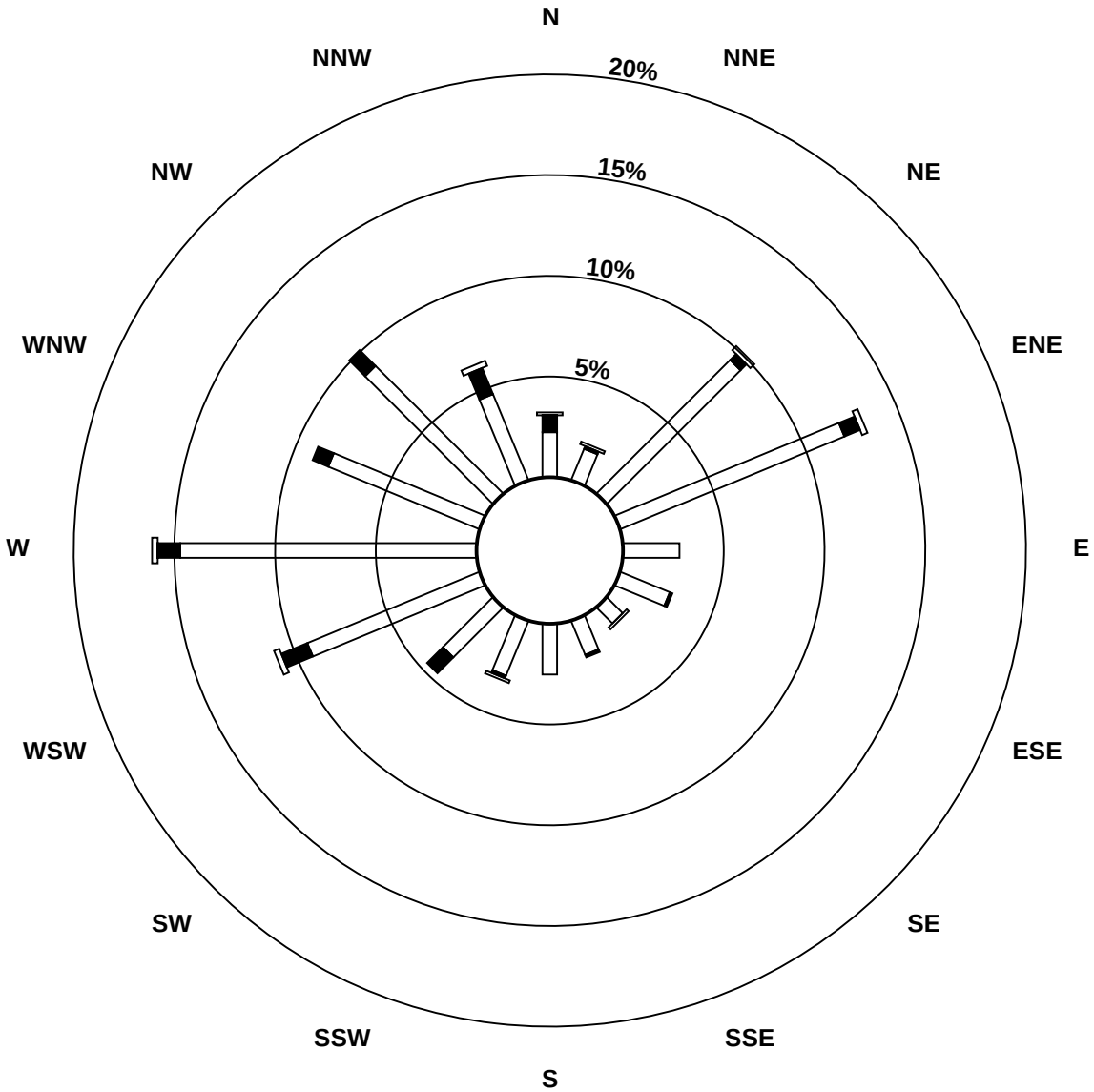


FOCUS AIR QUALITY MONITORING

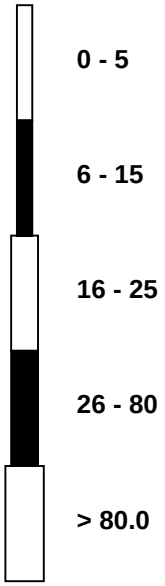
Pollutant Rose

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Evergreen Park - December 2013



Pollutant Classes ($\mu g/m^3$)



Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Evergreen Park - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 7.0 ^{o}C on Dec 26 20:00 Maximum Daily Average: 3.2 ^{o}C on Dec 26

Minimum Value: -35 ^{o}C on Dec 7 02:00 Minimum Daily Average: -31.2 ^{o}C on Dec 6

Maximum Diurnal Average: -11.9 ^{o}C at hour 15 Minimum Diurnal Average: -15.0 ^{o}C at hour 8

Monthly Average: -13.81 ^{o}C Percentiles: P_1 = -34.2 P_{10} = -25.8 Q_1 = -19.3 Median = -16.4 Q_3 = -6.2 P_{90} = 1.6 P_{99} = 5.5

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

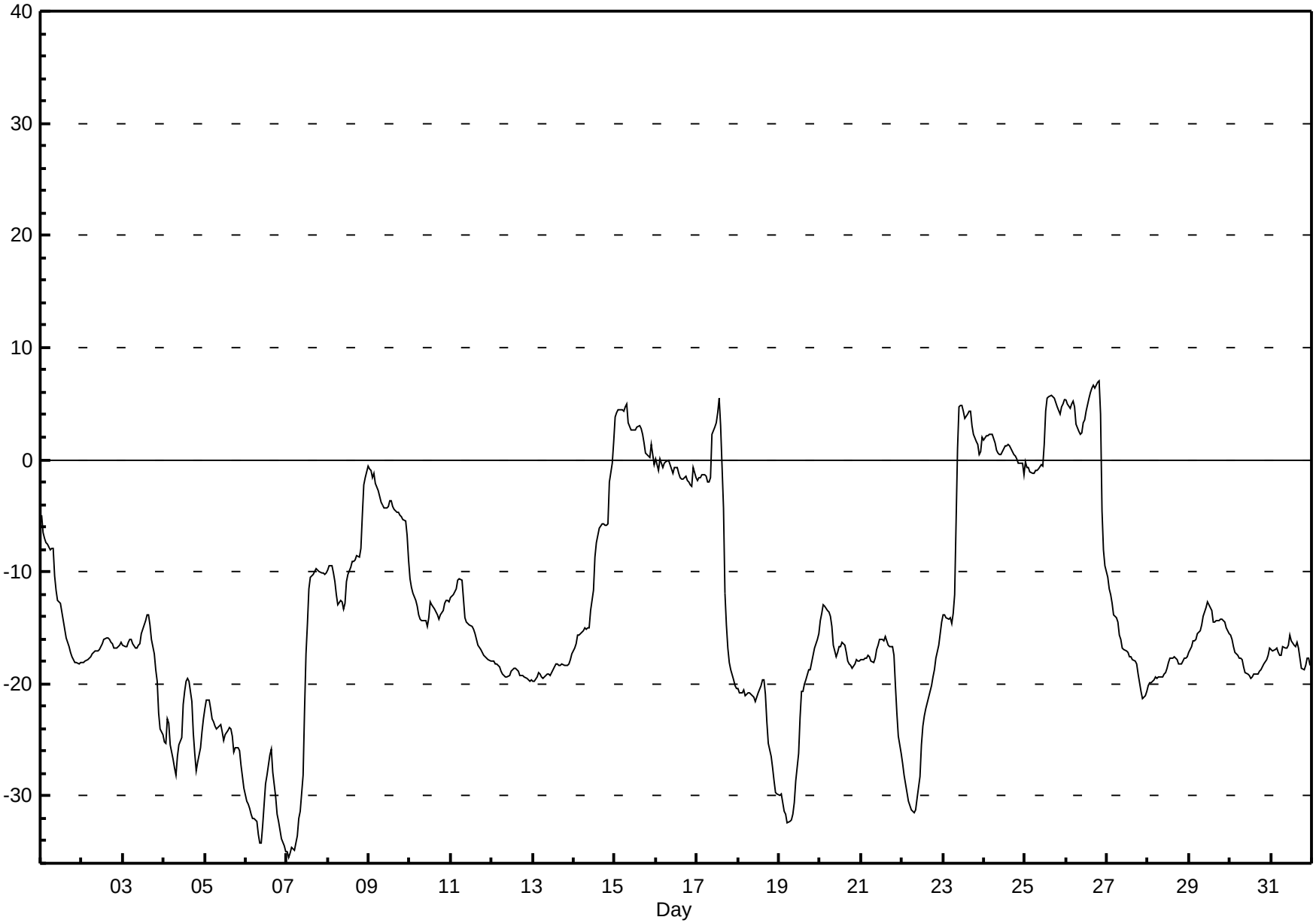
Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	-5	-6	-7	-7	-8	-8	-8	-8	-10	-12	-13	-13	-14	-14	-15	-16	-17	-17	-18	-18	-18	-18	-18	-18	-12.7	-4.9
2-Dec	-18	-18	-18	-18	-18	-18	-17	-17	-17	-17	-17	-17	-16	-16	-16	-16	-16	-16	-16	-17	-17	-17	-17	-16	-16.9	-15.9
3-Dec	-17	-17	-17	-16	-16	-16	-16	-17	-17	-17	-16	-15	-15	-14	-14	-14	-15	-16	-17	-19	-20	-23	-24	-25	-17.1	-13.8
4-Dec	-25	-25	-23	-23	-25	-27	-28	-28	-26	-25	-25	-22	-21	-20	-19	-20	-22	-24	-26	-28	-27	-26	-24	-23	-24.3	-19.5
5-Dec	-22	-21	-21	-22	-23	-23	-24	-24	-24	-24	-24	-25	-25	-24	-24	-24	-25	-26	-26	-26	-26	-27	-28	-29	-24.5	-21.4
6-Dec	-30	-31	-31	-32	-32	-32	-32	-33	-34	-34	-33	-29	-28	-27	-26	-26	-28	-30	-32	-32	-33	-34	-34	-35	-31.2	-25.8
7-Dec	-35	-35	-35	-35	-35	-34	-34	-32	-31	-28	-22	-17	-15	-11	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-20.9	-9.7
8-Dec	-10	-9	-9	-10	-11	-12	-13	-13	-13	-13	-13	-11	-10	-10	-9	-9	-9	-9	-9	-8	-5	-2	-2	-1	-9.1	-0.6
9-Dec	-1	-1	-2	-1	-2	-3	-3	-4	-4	-4	-4	-4	-4	-4	-4	-4	-5	-5	-5	-5	-5	-5	-7	-9	-4.0	-0.8
10-Dec	-11	-11	-12	-13	-13	-14	-14	-14	-14	-14	-15	-14	-13	-13	-13	-14	-14	-14	-14	-13	-13	-13	-13	-13	-13.3	-10.6
11-Dec	-12	-12	-12	-11	-11	-11	-11	-12	-14	-15	-15	-15	-15	-15	-15	-16	-16	-17	-17	-17	-18	-18	-18	-18	-14.6	-10.6
12-Dec	-18	-18	-18	-18	-18	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-20	-20	-20	-19.0	-18.0
13-Dec	-20	-20	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-18	-18	-18	-18	-18	-18	-18	-18	-18	-18	-17	-18.8	-17.4
14-Dec	-17	-16	-16	-16	-15	-15	-15	-15	-15	-15	-13	-12	-9	-7	-7	-6	-6	-6	-6	-6	-6	-2	0	2	-10.0	1.7
15-Dec	4	4	4	4	4	4	5	5	3	3	3	3	3	3	3	3	2	1	1	0	0	1	0	0	2.7	4.9
16-Dec	0	-1	0	0	-1	0	0	0	0	-1	-1	-1	-1	-1	-2	-2	-2	-2	-2	-2	-2	-2	-1	-2	-1.0	0.0
17-Dec	-2	-2	-2	-1	-1	-1	-2	-2	-2	2	3	3	4	5	3	-4	-12	-15	-17	-18	-19	-20	-20	-20	-5.8	5.5
18-Dec	-20	-21	-21	-21	-21	-21	-21	-21	-21	-21	-22	-21	-21	-20	-20	-20	-21	-23	-25	-26	-28	-29	-30	-30	-22.6	-19.6
19-Dec	-30	-30	-31	-31	-32	-32	-32	-32	-32	-31	-29	-26	-23	-21	-21	-20	-20	-19	-19	-18	-17	-17	-16	-16	-24.7	-15.5
20-Dec	-14	-14	-13	-13	-13	-14	-14	-15	-17	-18	-17	-17	-17	-16	-17	-17	-18	-18	-18	-19	-18	-18	-18	-18	-16.2	-12.9
21-Dec	-18	-18	-18	-18	-18	-18	-18	-18	-18	-17	-17	-16	-16	-16	-16	-16	-17	-17	-17	-17	-20	-23	-25	-26	-18.1	-15.8
22-Dec	-27	-28	-29	-30	-30	-31	-31	-31	-31	-30	-28	-25	-24	-23	-22	-22	-21	-20	-19	-19	-18	-17	-15	-15	-24.5	-14.5
23-Dec	-14	-14	-14	-14	-14	-15	-14	-12	1	5	5	5	4	4	4	4	4	3	2	2	1	0	1	2	-2.6	4.9
24-Dec	2	2	2	2	2	2	1	1	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	-1	0.9	2.2
25-Dec	0	-1	-1	-1	-1	-1	-1	-1	-1	0	-1	1	4	5	6	6	6	5	5	5	4	5	5	5	2.2	5.8
26-Dec	5	5	5	5	5	5	3	3	2	2	3	4	4	5	6	6	7	6	7	7	4	-5	-8	-9	3.2	7.0
27-Dec	-11	-11	-12	-13	-14	-14	-15	-16	-16	-17	-17	-17	-17	-18	-18	-18	-18	-18	-19	-20	-21	-21	-21	-21	-16.7	-10.5
28-Dec	-20	-20	-20	-20	-19	-19	-19	-19	-19	-19	-19	-19	-18	-18	-18	-18	-18	-18	-18	-18	-18	-18	-18	-18	-18.6	-17.5
29-Dec	-17	-17	-16	-16	-16	-16	-15	-15	-14	-14	-13	-13	-13	-13	-14	-14	-14	-14	-14	-14	-14	-14	-15	-16	-14.7	-12.6
30-Dec	-16	-16	-17	-17	-18	-18	-18	-18	-18	-19	-19	-19	-19	-19	-19	-19	-19	-19	-19	-18	-18	-18	-17	-17	-18.1	-15.6
31-Dec	-17	-17	-17	-17	-17	-17	-17	-17	-17	-17	-17	-16	-16	-16	-17	-16	-17	-18	-19	-19	-18	-18	-18	-18	-17.2	-15.6
	-14.1	-14.2	-14.1	-14.3	-14.5	-14.7	-14.9	-15.0	-14.8	-14.4	-14.0	-13.0	-12.4	-12.0	-11.9	-12.2	-12.7	-13.3	-13.7	-13.9	-14.1	-14.3	-14.5	-14.5	Diurnal Average	
	5.3	4.9	4.6	4.9	5.2	4.7	4.7	4.9	3.3	4.7	4.9	4.9	4.4	5.5	6.0	6.4	6.6	6.3	6.9	7.0	4.1	4.7	4.9	5.4	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Evergreen Park - December 2013



Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Evergreen Park - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 94.8 % on Dec 17 04:00 Maximum Daily Average: 85.8 % on Dec 9

Minimum Value: 42 % on Dec 15 16:00 Minimum Daily Average: 55.5 % on Dec 24

Maximum Diurnal Average: 77.7 % at hour 4 Minimum Diurnal Average: 72.0 % at hour 15

Monthly Average: 75.29 % Percentiles: P_1 = 51.5 P_{10} = 61.9 Q_1 = 71.6 Median = 77.5 Q_3 = 80.5 P_{90} = 84.3 P_{99} = 93.5

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

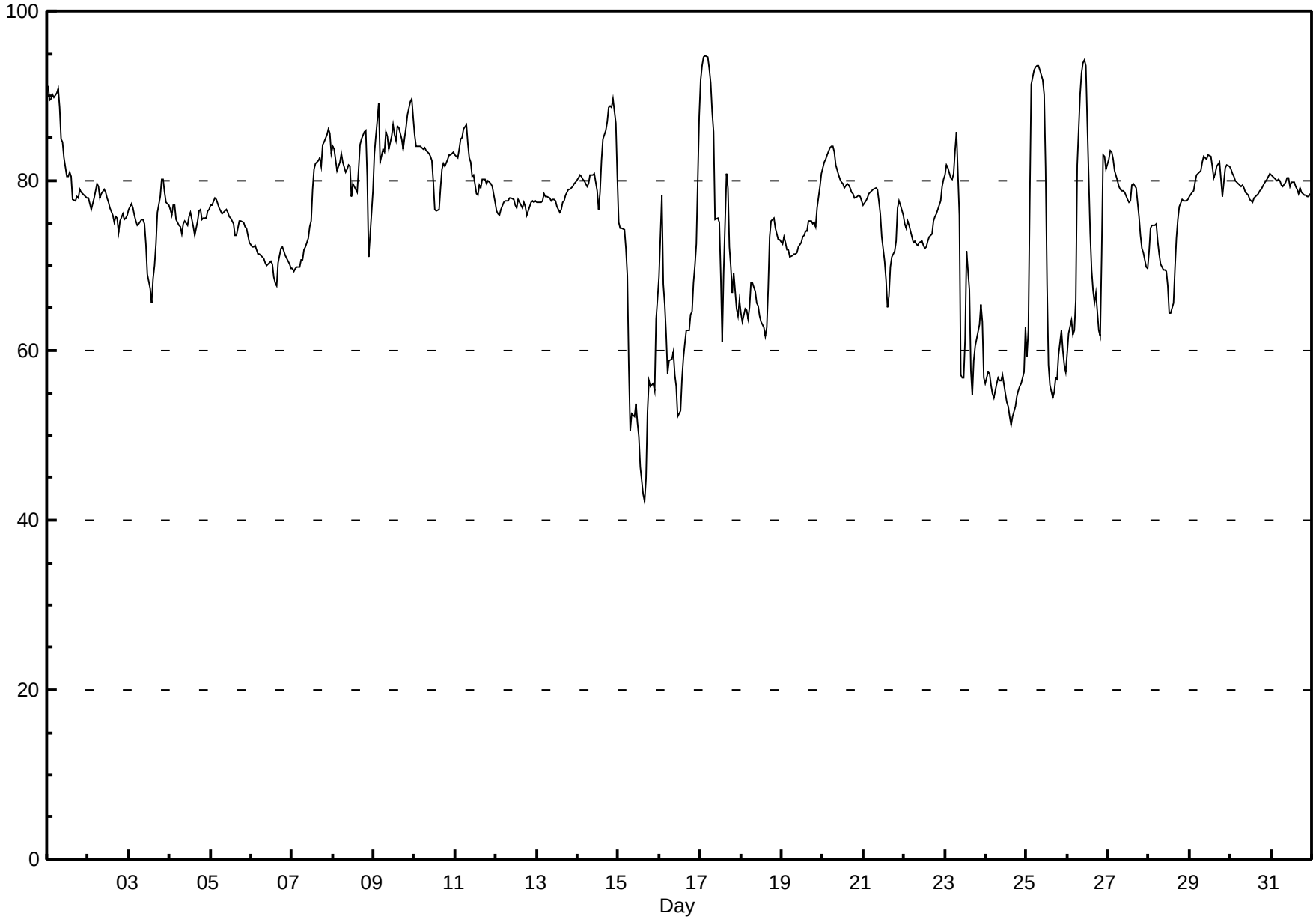
Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	91	90	90	90	90	90	91	89	85	85	83	80	81	81	80	78	78	78	78	79	79	78	78	78	83.3	91.2
2-Dec	78	77	77	78	79	80	79	78	78	79	79	78	77	77	76	75	76	76	74	75	76	75	76	76	77.0	79.6
3-Dec	77	77	77	76	75	75	75	75	75	75	73	69	67	66	69	70	73	76	78	80	80	79	77	77	74.6	80.2
4-Dec	77	76	77	77	75	75	75	74	75	75	75	76	76	75	75	74	75	76	77	75	76	76	76	77	75.6	77.1
5-Dec	77	77	78	78	77	77	76	76	77	77	76	76	76	75	73	74	74	75	75	75	75	74	74	73	75.6	77.9
6-Dec	72	72	72	72	71	71	71	71	70	70	70	71	70	69	68	68	70	72	72	72	71	71	70	70	70.7	72.3
7-Dec	70	69	70	70	70	71	71	72	72	73	75	75	79	81	82	82	83	82	84	85	85	86	86	83	77.3	86.2
8-Dec	84	84	81	82	82	83	82	81	81	82	82	78	80	79	79	81	84	85	86	86	81	71	74	79	81.1	86.0
9-Dec	83	85	87	89	82	84	83	86	85	84	85	87	85	85	86	86	85	84	85	86	88	89	90	88	85.8	89.7
10-Dec	85	84	84	84	84	84	84	84	83	83	82	80	77	76	77	79	81	82	82	83	83	83	83	83	82.1	85.4
11-Dec	83	83	84	85	85	86	87	84	83	82	81	81	78	78	79	79	80	80	80	80	80	80	79	77	81.4	86.7
12-Dec	76	76	76	77	77	78	78	78	78	78	78	77	77	78	78	77	77	77	76	76	77	78	78	78	77.2	77.9
13-Dec	77	78	77	78	78	78	78	78	78	78	78	78	77	76	77	78	78	78	79	79	79	79	80	80	78.0	79.8
14-Dec	80	81	81	80	80	79	80	81	81	81	81	79	77	79	82	85	86	87	89	89	89	90	87	80	82.5	89.6
15-Dec	75	74	74	74	72	69	58	51	53	52	54	52	50	46	43	42	45	53	56	56	56	55	64	66	57.9	75.1
16-Dec	69	78	68	65	62	57	59	59	60	57	56	52	53	57	59	61	62	62	64	65	68	70	72	88	63.5	87.7
17-Dec	92	94	95	95	95	93	91	88	86	75	76	75	69	61	69	81	79	72	70	67	69	65	64	66	78.6	94.8
18-Dec	64	63	65	65	64	65	68	68	67	66	65	64	63	63	62	63	67	73	75	76	74	74	73	73	67.5	75.7
19-Dec	73	73	73	72	72	71	71	71	71	72	72	73	73	74	74	74	75	75	75	75	75	77	79	81	73.8	80.9
20-Dec	81	82	83	83	84	84	84	83	82	81	80	80	80	79	80	80	79	79	78	78	78	78	78	78	80.5	84.1
21-Dec	77	78	78	79	79	79	79	79	79	78	76	73	70	68	65	66	70	71	72	73	77	78	77	76	74.8	79.2
22-Dec	75	74	75	75	74	73	73	73	72	73	73	72	72	72	73	73	74	75	76	76	77	78	79	80	74.5	80.1
23-Dec	81	82	81	80	80	81	84	86	76	57	57	57	61	72	67	58	55	59	61	62	63	65	63	57	68.5	85.8
24-Dec	56	57	57	56	55	54	56	57	56	56	57	55	54	53	52	51	52	53	55	55	56	56	57	63	55.5	62.7
25-Dec	59	62	78	91	93	93	94	94	93	92	90	81	68	58	56	54	55	57	57	60	62	60	58	57	71.8	93.6
26-Dec	60	62	64	62	62	66	82	90	93	94	94	93	87	74	69	67	66	67	62	62	71	83	83	81	74.7	94.3
27-Dec	82	83	83	82	81	80	79	79	79	79	79	78	77	78	79	80	79	78	76	73	72	72	70	70	77.9	83.5
28-Dec	72	74	75	75	75	73	71	70	69	69	69	68	64	64	66	70	73	75	77	78	78	78	78	78	72.5	77.9
29-Dec	78	79	79	80	81	81	81	82	83	83	83	83	83	82	80	81	82	82	80	78	80	81	82	82	81.0	83.1
30-Dec	81	81	81	80	80	79	79	79	79	79	78	78	78	77	78	78	79	79	79	79	80	80	80	81	79.3	81.4
31-Dec	81	80	80	80	80	80	79	79	80	80	80	79	80	80	79	79	78	79	79	78	78	78	78	78	79.4	80.6
	76.4	77.0	77.4	77.7	77.2	77.1	77.4	77.2	76.8	75.6	75.3	74.1	72.9	72.0	72.0	72.4	73.3	74.1	74.4	74.6	75.2	75.4	75.6	75.9	Diurnal Average	
	91.9	93.6	94.6	94.8	94.5	93.5	93.6	93.5	93.1	93.9	94.3	93.5	86.7	84.8	86.4	86.3	85.9	86.9	88.6	88.8	88.6	89.6	89.7	87.7	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Evergreen Park - December 2013



Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	18	18	15	14	13	15	12	9	21	21	24	24	29	25	27	30	27	25	22	21	22	22	21	20	15.3	29.9
Dir	67	64	61	61	47	38	34	358	324	325	312	325	320	314	314	315	310	309	307	299	296	293	290	288	326.5	315.1
2 Spd	21	21	20	19	20	19	21	20	19	21	22	21	20	18	18	17	16	15	14	15	16	15	15	19	18.0	22.0
Dir	291	299	304	301	305	311	314	309	309	312	312	314	317	303	307	304	302	300	300	285	279	274	276	270	301.0	312.4
3 Spd	15	10	12	11	13	10	7	9	14	18	19	16	17	19	17	15	9	5	5	4	4	1	0	2	10.1	19.3
Dir	258	259	266	261	267	264	282	284	274	282	288	280	291	287	302	309	298	285	301	267	329	348	218	300	282.0	286.9
4 Spd	2	1	3	2	0	2	3	1	1	0	0	3	6	4	5	3	1	1	1	1	1	1	3	2	1.1	6.0
Dir	38	1	272	11	29	216	213	57	273	165	350	241	263	291	5	24	11	343	239	347	332	332	308	284	307.7	263.2
5 Spd	2	0	4	6	7	3	4	1	4	7	10	15	9	10	9	5	5	4	4	5	4	4	1	0	3.5	15.0
Dir	248	321	65	54	49	47	33	4	309	295	338	340	308	334	300	311	302	220	311	320	307	217	198	188	327.7	339.8
6 Spd	0	1	1	2	1	1	1	3	0	1	3	2	5	4	4	3	1	2	3	3	2	1	0	1	1.2	5.4
Dir	115	238	268	201	211	237	198	210	268	184	225	240	272	294	337	325	352	359	336	306	311	339	273	248	280.7	271.5
7 Spd	2	2	2	2	3	3	3	8	12	4	11	18	17	11	14	13	8	9	16	18	13	14	17	19	9.6	19.0
Dir	330	331	314	234	317	241	240	240	247	254	255	269	265	270	254	263	255	274	256	270	283	282	280	272	266.7	272.2
8 Spd	17	16	24	13	10	10	13	3	3	1	3	6	6	6	7	4	2	1	5	2	8	23	19	28	6.7	27.6
Dir	291	298	334	312	288	318	345	8	271	83	187	203	189	180	161	151	112	241	242	265	255	273	280	279	285.5	279.2
9 Spd	25	22	18	12	12	9	15	19	11	12	10	5	2	6	5	5	5	1	1	1	1	1	10	17	4.8	24.9
Dir	275	282	287	8	8	300	327	323	310	268	262	250	261	60	74	80	107	134	121	127	200	281	66	60	317.1	274.7
10 Spd	21	15	12	7	4	2	2	1	2	1	3	3	2	5	5	3	4	4	2	3	0	1	1	3	3.7	21.3
Dir	59	57	58	67	104	103	109	104	174	225	75	40	354	0	11	43	46	48	36	63	45	35	318	314	52.7	59.5
11 Spd	2	2	4	3	1	3	11	19	17	15	12	13	13	12	10	12	10	10	10	9	7	8	8	7	8.3	18.6
Dir	276	302	275	308	64	75	69	58	45	39	34	37	41	41	53	46	42	49	45	43	41	38	43	50	43.5	57.9
12 Spd	7	7	8	5	7	9	8	9	10	9	10	9	10	8	8	8	9	9	8	6	5	7	6	4	7.6	10.4
Dir	64	53	62	73	71	61	65	57	64	60	56	57	57	50	49	36	50	47	47	57	82	79	76	71	58.8	55.6
13 Spd	5	6	6	4	10	8	5	5	6	7	9	9	10	5	4	5	6	5	7	7	6	8	7	6	4.0	10.1
Dir	72	50	50	30	35	33	29	345	312	307	329	329	342	4	65	78	111	98	95	89	97	101	98	100	42.5	35.4
14 Spd	4	3	1	10	14	13	8	1	1	2	0	2	2	3	1	2	2	1	2	1	3	12	14	20	3.7	20.0
Dir	75	74	294	234	256	250	232	251	276	209	219	236	224	225	168	41	72	124	56	224	216	205	209	229	227.3	228.8
15 Spd	27	32	26	17	27	28	44	64	72	61	55	65	53	43	26	20	34	34	18	28	31	35	22	23	35.9	71.7
Dir	229	225	229	239	241	241	249	259	264	263	266	261	265	265	269	263	254	254	234	227	235	251	257	254	253.2	264.4
16 Spd	30	33	40	37	30	34	35	36	31	27	25	22	25	17	14	10	7	4	1	5	1	4	6	3	19.2	39.5
Dir	275	262	254	258	261	261	257	259	259	258	259	263	267	261	264	258	256	235	139	212	169	175	205	130	258.2	253.6
17 Spd	6	11	14	12	9	8	8	8	13	29	13	3	10	36	34	33	38	31	26	26	24	31	25	22	10.8	38.0
Dir	99	120	130	131	121	121	163	179	218	242	253	281	268	259	296	329	327	329	319	314	329	329	323	327	303.5	327.3
18 Spd	20	22	15	14	20	13	15	16	16	15	16	11	14	15	15	7	3	1	1	1	0	0	1	0	9.7	22.5
Dir	324	324	320	325	335	330	335	331	321	322	315	314	299	280	277	272	236	190	214	193	302	5	14	46	315.8	323.6
19 Spd	1	3	2	0	2	0	1	1	1	1	1	1	0	2	3	1	2	1	1	1	1	1	1	2	0.3	3.3
Dir	285	277	217	357	216	311	231	240	274	202	77	49	303	340	2	34	249	210	9	144	18	67	50	53	304.5	1.5
20 Spd	1	1	0	3	5	6	6	8	11	12	9	9	10	9	9	10	9	6	5	5	2	0	3	2	5.6	11.5
Dir	239	335	113	64	69	63	68	65	75	76	66	63	65	62	65	77	76	84	89	76	82	99	108	130	72.2	76.2
21 Spd	3	4	2	3	3	1	1	2	6	6	9	10	14	14	10	8	4	5	2	2	1	0	1	1	3.3	13.8
Dir	208	191	159	165	185	151	94	199	243	272	278	287	298	310	297	290	262	272	285	252	52	59	55	47	277.1	310.4
22 Spd	1	1	1	0	1	1	1	1	1	1	1	1	2	2	3	3	2	3	2	5	1	3	2	2	1.3	4.8
Dir	42	342	8	283	28	12	36	31	255	288	307	4	250	348	338	334	336	297	216	317	318	275	257	313	314.3	316.7

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Evergreen Park - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	2	3	4	3	1	1	2	2	24	42	37	30	14	7	7	18	27	25	27	22	26	23	26	30	15.9	41.7
Dir	343	210	305	253	241	165	298	196	252	261	268	272	295	345	318	273	269	265	262	254	257	257	254	255	264.7	261.0
24 Spd	26	33	27	26	31	31	25	19	23	22	23	27	25	26	28	35	36	33	37	33	27	23	10	2	25.8	37.2
Dir	251	259	262	269	269	276	276	272	272	270	270	266	268	265	264	267	265	265	268	266	261	254	257	77	266.0	268.2
25 Spd	3	2	9	8	7	8	7	7	5	3	4	21	38	53	48	53	45	42	28	26	20	27	24	22	19.5	53.0
Dir	302	55	268	207	184	191	183	174	173	169	249	241	261	264	264	261	262	261	252	259	253	251	236	238	252.1	263.5
26 Spd	17	19	11	13	7	2	2	2	3	1	2	4	10	17	13	23	32	25	38	31	8	16	18	17	8.1	37.5
Dir	228	242	248	265	284	238	153	58	57	159	178	201	228	250	256	264	265	260	258	261	15	70	74	74	256.4	257.9
27 Spd	15	13	12	13	15	11	13	12	14	17	14	14	15	15	12	11	7	21	19	15	8	10	7	9	9.4	20.9
Dir	67	67	59	58	59	61	66	65	45	43	39	36	34	33	35	34	34	336	325	312	291	270	301	316	27.6	336.0
28 Spd	4	5	6	5	6	10	9	8	7	3	3	4	3	1	4	3	5	4	1	2	3	3	3	3	1.9	10.2
Dir	297	300	308	306	276	257	279	272	252	229	201	235	267	237	178	166	124	106	70	63	72	34	63	55	267.6	256.5
29 Spd	2	1	0	2	3	2	3	3	3	4	4	6	6	9	9	7	7	14	11	13	5	3	3	4	3.9	14.4
Dir	46	64	64	59	77	80	323	314	295	332	3	49	76	37	45	42	353	342	335	342	311	36	92	80	12.7	342.2
30 Spd	3	4	4	4	5	3	4	5	7	7	8	7	9	15	12	9	10	7	7	13	N	N	N	N	6.8	15.3
Dir	108	115	82	103	106	75	72	62	61	63	65	70	60	55	52	70	56	64	62	37	N	N	N	N	64.9	54.9
31 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Spd	3.8	4.3	4.3	3.4	3.5	3.7	3.9	4.6	7.0	7.6	7.7	8.0	8.6	8.6	7.5	7.3	7.3	7.3	6.8	6.8	5.8	5.9	4.5	4.6	Diurnal Average	
Dir	284.4	280.4	287.1	286.4	293.9	285.0	292.8	290.3	282.3	281.8	289.3	287.3	289.5	290.7	297.1	297.2	289.1	288.6	284.3	282.4	279.4	273.9	275.5	278.7		
Spd	30.3	32.7	39.5	36.5	30.9	34.0	44.3	63.5	71.7	61.4	55.2	64.7	53.0	53.0	47.7	52.8	45.1	42.1	37.5	33.1	31.5	34.5	26.3	30.4	Diurnal Maximum	
Dir	275.2	261.5	253.6	257.5	269.0	260.7	249.3	258.7	264.4	262.8	266.5	261.0	265.1	263.5	263.9	261.2	262.2	260.8	257.9	266.0	235.4	250.9	254.5	254.6		

Maximum Speed Value: 72 km/h on Dec 15 09:00
Maximum Daily Speed Average: 35.9 km/h on Dec 15
Maximum Diurnal Speed Average: 8.6 km/h at hour 13

Minimum Speed Value: 0 km/h on Dec 6 00:00
Minimum Daily Speed Average: 0.3 km/h on Dec 19
Minimum Diurnal Speed Average: 3.4 km/h at hour 4

Monthly Average Velocity: 5.93 km/h 286.57 deg

Speed Percentiles: $P_1 = 0.3$ $P_{10} = 1.1$ $Q_1 = 2.7$ Median = 7.3 $Q_3 = 16.0$ $P_{90} = 26.1$ $P_{99} = 52.9$

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	716
Hours of Missing Data:	28
Percent Operational Time:	96.2

N - Not Valid

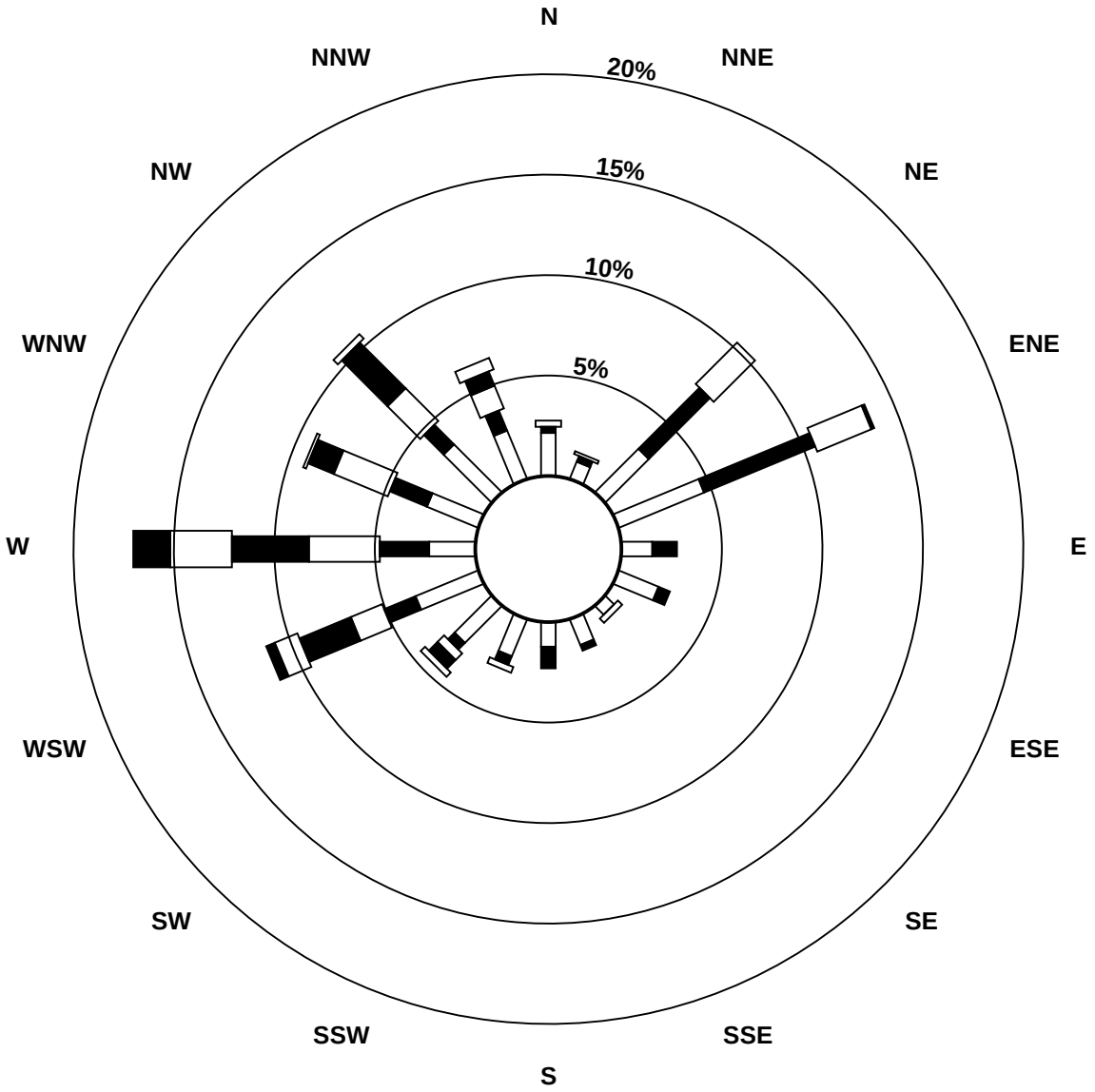
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	30	9	6	0	0	0	45
NorthEast	48	57	36	1	0	0	142
East	36	26	4	0	0	0	66
SouthEast	15	3	2	0	0	0	20
South	30	9	0	0	0	0	39
SouthWest	43	9	7	9	4	0	72
West	37	34	38	43	29	15	196
NorthWest	48	20	27	34	7	0	136
Total	287	167	120	87	40	15	716

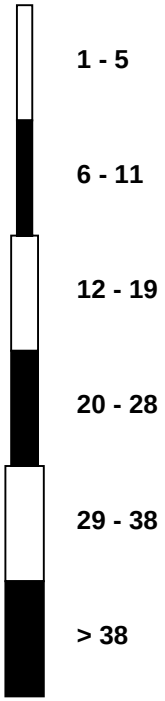
Wind Rose

Wind Speed (WS) (km/h)

Evergreen Park - December 2013



Wind Speed Classes (km/h)



Peace Airshed Zone Association

Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Evergreen Park - December 2013

Maximum Speed: 72 km/h on Dec 15 09:00

Maximum Daily Speed Average: 37.2 km/h on Dec 15

Minimum Speed: 0 km/h on Dec 6 00:00

Minimum Daily Speed Average: 2.0 km/h on Dec 19

Maximum Diurnal Speed Average: 14.6 km/h at hour 14

Minimum Diurnal Speed Average: 9.5 km/h at hour 21

Monthly Average Speed: 11.52 km/h

Percentiles: $P_1 = 0.6$ $P_{10} = 1.8$ $Q_1 = 3.5$ Median = 7.9 $Q_3 = 16.7$ $P_{90} = 26.4$ $P_{99} = 52.9$

Hours in Service:	744
Hours of Data:	716
Hours of Missing Data:	28
Percent Operational Time:	96.2

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	19	19	15	15	13	15	13	11	22	22	25	25	29	25	28	31	28	25	23	21	22	22	21	20	21.3	30.5
2-Dec	21	22	21	20	20	20	22	20	20	21	22	21	20	19	19	17	16	15	14	16	16	15	16	19	18.9	22.5
3-Dec	15	11	12	11	13	10	7	9	14	18	19	17	18	20	18	15	9	6	5	5	5	2	2	2	11.0	19.8
4-Dec	2	2	4	3	0	2	3	2	3	1	1	4	7	5	6	3	2	1	1	1	2	2	3	2	2.5	6.5
5-Dec	2	1	5	6	7	3	4	2	5	7	10	15	10	11	10	6	5	5	4	5	5	4	1	0	5.5	15.3
6-Dec	1	2	2	2	1	1	1	3	1	1	3	2	6	5	4	3	2	2	3	3	2	1	0	1	2.2	5.9
7-Dec	2	2	3	2	3	3	3	8	12	4	11	19	17	12	14	13	8	10	16	18	13	15	17	19	10.4	19.2
8-Dec	17	17	24	14	10	10	13	4	3	1	3	6	6	7	7	5	2	1	5	4	9	24	19	28	10.0	28.0
9-Dec	25	22	19	14	14	9	15	19	12	12	10	6	2	6	5	5	5	2	2	1	1	1	10	17	9.9	25.1
10-Dec	22	15	12	8	4	2	2	2	2	2	3	3	3	5	5	4	5	4	3	3	1	1	2	3	4.8	21.7
11-Dec	2	2	4	3	1	4	11	19	17	15	12	13	13	12	11	12	10	10	10	10	7	8	8	8	9.3	19.2
12-Dec	8	8	8	5	8	9	9	9	10	9	11	10	10	9	9	8	9	10	8	6	5	7	6	4	8.0	10.8
13-Dec	5	6	6	5	10	9	6	6	6	8	10	10	10	5	5	6	7	6	7	8	6	9	7	6	7.0	10.4
14-Dec	5	4	2	10	15	14	8	4	3	4	3	3	2	5	4	3	3	3	5	2	4	12	14	20	6.3	20.2
15-Dec	27	32	26	17	27	28	45	64	72	62	56	65	54	44	26	20	34	35	19	28	32	35	22	23	37.2	72.2
16-Dec	31	33	40	37	30	34	35	36	31	27	25	22	25	17	14	10	7	5	3	5	3	5	7	4	20.3	39.7
17-Dec	6	11	14	12	9	9	9	8	14	29	13	4	10	37	42	33	39	32	27	27	25	32	26	22	20.5	42.3
18-Dec	21	23	16	15	20	14	15	17	17	15	17	12	15	16	15	7	4	1	1	2	0	0	1	1	11.1	23.2
19-Dec	1	3	3	2	2	2	2	2	2	1	2	1	1	2	4	2	3	2	2	1	1	1	2	2	2.0	3.5
20-Dec	1	2	0	3	5	6	6	9	11	12	9	10	10	10	10	11	9	6	6	5	2	1	4	3	6.2	12.0
21-Dec	3	4	3	3	3	1	2	3	6	6	9	11	15	15	10	9	4	5	3	2	2	0	2	2	5.1	15.0
22-Dec	1	2	2	1	2	1	2	1	2	2	2	2	2	3	4	4	2	4	4	5	4	4	5	3	2.7	5.4
23-Dec	4	4	6	5	5	6	5	4	24	42	38	30	16	8	7	18	27	25	27	22	26	23	26	31	17.9	42.0
24-Dec	26	33	27	26	31	31	25	19	23	22	23	27	25	26	28	35	37	33	37	33	28	24	12	4	26.5	37.4
25-Dec	5	5	10	9	7	8	8	7	5	4	4	22	38	53	48	53	45	42	28	26	20	27	24	22	21.7	53.2
26-Dec	17	20	11	14	9	6	5	4	4	2	3	5	11	17	13	23	33	25	38	31	16	17	19	17	15.0	37.8
27-Dec	16	13	12	13	15	11	13	13	14	17	14	14	15	16	12	12	8	21	19	16	9	10	8	9	13.4	21.3
28-Dec	5	5	6	6	6	10	9	8	7	3	4	5	3	3	5	4	5	4	2	2	3	3	4	3	4.9	10.5
29-Dec	3	2	1	2	3	3	4	4	3	4	5	7	6	10	10	7	8	15	11	13	5	4	4	4	5.8	14.6
30-Dec	4	5	5	5	5	4	4	5	7	7	8	7	9	16	13	9	11	7	8	15	N	N	N	N	7.7	16.3
31-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
	10.6	10.9	10.6	9.6	10.1	9.5	10.2	10.8	12.5	12.7	12.5	13.3	13.7	14.6	13.5	13.0	13.0	12.1	11.3	11.2	9.5	10.7	10.1	10.4	Diurnal Average	
	31.0	33.3	39.7	36.7	31.2	34.2	44.6	64.1	72.2	62.1	56.0	65.4	53.7	53.2	47.9	53.1	45.3	42.4	37.8	33.2	31.7	35.0	26.4	30.6	Diurnal Maximum	

N - Not Valid

All monthly, daily, and diurnal averages have been calculated using scalar methods

Peace Airshed Zone Association

Hourly Standard Deviations

Wind Direction (WD) - deg

Evergreen Park - December 2013

Maximum Value: 101.6 deg on Dec 26 06:00

Minimum Value: 3.4 deg on Dec 15 02:00

Percentiles: P_1 = 5.2 P_{10} = 7.4 Q_1 = 13.3 Median = 20.4 Q_3 = 40.8 P_{90} = 70.3 P_{99} = 90.0

Hours in Service:	744
Hours of Data:	716
Hours of Missing Data:	28
Hours of Calibration:	0
Percent Operational Time:	96.2

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-Dec	15	13	17	17	19	13	15	30	14	15	16	15	14	13	14	12	13	14	14	14	12	13	12	10	30.1
2-Dec	13	12	14	14	14	14	12	13	13	12	12	13	13	16	16	16	15	13	16	10	10	9	10	6	16.4
3-Dec	7	11	11	11	10	14	20	15	10	13	11	14	19	14	17	19	22	25	28	32	49	80	95	57	94.9
4-Dec	69	74	56	73	77	48	41	89	72	67	50	65	25	37	27	27	27	34	83	41	38	45	29	31	88.8
5-Dec	33	77	54	29	19	30	18	59	13	13	16	11	28	20	26	22	19	20	28	15	34	17	64	80	80.1
6-Dec	86	43	71	59	62	68	76	44	65	56	31	33	33	37	18	31	40	24	30	22	36	58	71	76	86.4
7-Dec	56	71	50	47	18	22	17	18	9	38	11	12	8	26	9	10	7	21	7	12	15	13	10	9	70.6
8-Dec	13	14	10	16	12	16	11	64	30	78	41	16	19	20	23	32	56	71	15	70	52	10	12	9	78.0
9-Dec	9	10	17	41	30	16	11	13	19	13	10	21	30	39	19	19	23	44	63	60	84	82	21	13	84.5
10-Dec	11	11	17	27	27	37	31	66	42	52	16	22	34	21	16	23	18	18	36	27	75	56	41	18	74.7
11-Dec	37	31	19	26	62	22	15	16	11	11	16	14	13	14	18	17	14	15	14	14	21	14	17	20	61.9
12-Dec	20	19	18	28	22	15	18	22	15	21	17	20	19	23	21	21	15	17	16	27	26	18	24	25	27.9
13-Dec	30	27	28	19	13	17	24	27	18	17	19	20	19	34	37	39	27	24	22	22	28	21	26	28	39.2
14-Dec	36	67	54	11	14	20	34	91	85	78	92	63	74	76	67	54	62	86	68	80	65	10	11	17	92.5
15-Dec	5	3	6	9	7	10	7	8	7	9	10	9	9	8	9	11	8	5	8	5	7	10	6	7	11.1
16-Dec	12	11	6	6	6	6	6	5	5	5	5	6	6	8	8	9	11	55	63	31	70	42	16	23	69.7
17-Dec	14	17	17	16	21	25	27	33	55	7	25	47	20	6	36	13	16	15	19	14	16	16	17	15	54.9
18-Dec	16	14	16	18	13	18	12	15	17	16	14	23	21	16	13	13	68	92	79	77	90	78	84	89	91.8
19-Dec	55	41	62	77	37	96	88	75	71	63	74	54	81	49	26	82	77	72	50	69	73	37	69	37	96.2
20-Dec	70	64	75	33	11	14	19	18	15	24	20	24	18	18	17	18	22	28	28	30	39	76	42	37	76.5
21-Dec	33	21	40	37	20	67	58	64	20	14	13	16	21	24	22	24	17	19	46	69	50	63	88	60	88.0
22-Dec	68	58	57	76	65	51	75	72	94	61	81	83	37	67	53	29	67	49	90	35	84	52	73	64	93.5
23-Dec	71	54	59	60	77	88	71	74	9	7	5	9	39	28	26	12	7	6	7	6	5	6	5	7	88.3
24-Dec	7	5	7	6	8	8	9	8	6	7	6	6	7	5	5	5	5	5	7	6	6	7	60	74	74.1
25-Dec	83	63	19	17	16	16	18	24	29	55	68	21	6	5	6	6	6	7	9	6	4	6	7	6	82.9
26-Dec	7	10	19	13	47	102	74	63	64	73	45	31	17	8	7	6	7	5	6	12	58	16	17	17	101.6
27-Dec	20	16	21	16	14	17	17	14	16	14	16	12	12	13	11	12	20	12	16	18	18	12	28	18	28.3
28-Dec	30	24	18	24	29	12	20	26	19	35	35	31	31	85	44	44	41	25	35	37	32	28	29	35	84.8
29-Dec	43	86	68	27	32	32	63	52	42	21	35	20	35	23	20	23	38	13	16	16	22	42	29	28	85.7
30-Dec	30	23	35	24	23	49	33	24	20	19	19	20	24	18	24	21	31	24	24	24	N	N	N	N	48.8
31-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
	86.4	85.7	74.5	77.5	76.7	101.6	87.9	90.7	93.5	78.3	92.5	83.3	81.2	84.8	67.4	82.1	76.8	91.8	89.7	79.9	89.6	82.3	94.9	88.9	

N - Not Valid

FOCUS AIR QUALITY MONITORING

PAZA
Smoky Heights Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Smoky Heights - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 6.9 ppb on Dec 24 00:00 Maximum Daily Average: 1.7 ppb on Dec 23

Minimum Value: 0 ppb on Dec 19 16:00 Minimum Daily Average: 0.2 ppb on Dec 30
Maximum Diurnal Average: 0.8 ppb at hour 18 Minimum Diurnal Average: 0.3 ppb at hour 2
Monthly Average: 0.57 ppb Percentiles: P_1 = 0.0 P_{10} = 0.2 Q_1 = 0.2 Median = 0.3 Q_3 = 0.6 P_{90} = 1.1 P_{99} = 3.8

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.0
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0.7
3-Dec	1	0	1	A	1	1	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.5	0.8
4-Dec	0	0	A	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0.4	1.0
5-Dec	0	A	0	0	0	2	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0.7	1.7
6-Dec	A	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	A	0.4	1.1
7-Dec	0	0	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	2	3	2	A	1	0.8	3.3
8-Dec	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	A	1	1	0.5	1.0
9-Dec	0	0	0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	0	A	0	0	0	0.4	0.8
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.3
11-Dec	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	1.8
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.3	0.4
13-Dec	0	0	0	2	1	3	2	1	1	1	1	0	1	1	1	0	A	1	0	0	0	0	0	0	0.8	2.7
14-Dec	0	0	0	0	0	0	0	1	1	2	2	1	2	3	3	A	2	1	1	1	1	1	0	0	0.9	3.0
15-Dec	0	0	0	0	0	0	0	1	0	1	1	1	3	1	A	0	1	0	0	0	0	1	1	2	0.6	2.6
16-Dec	1	0	1	1	0	0	0	0	0	0	0	2	2	A	1	0	1	0	0	0	0	0	0	1	0.6	1.8
17-Dec	0	0	0	0	0	0	0	0	0	0	0	2	A	1	0	0	1	0	0	0	0	0	0	0	0.4	2.2
18-Dec	0	0	0	0	0	0	1	1	0	0	1	A	0	0	1	1	1	1	1	1	1	1	1	1	0.6	1.4
19-Dec	1	1	1	1	1	1	1	1	1	1	A	C	C	C	C	0	1	4	2	0	0	0	0	0	0.8	3.9
20-Dec	0	0	0	0	1	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0.4	1.9
21-Dec	0	0	0	0	0	0	1	0	A	1	1	1	1	2	1	1	1	2	2	1	0	1	1	1	0.8	2.0
22-Dec	1	1	1	1	1	0	0	A	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0.7	1.3
23-Dec	0	0	0	0	1	1	A	1	1	4	2	0	0	0	1	0	2	1	2	2	5	5	2	7	1.7	6.9
24-Dec	5	0	3	4	1	A	1	0	0	1	0	1	2	2	2	0	0	1	0	0	0	0	0	0	1.1	5.1
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	0	1	2	6	1	0	0	0	0	1	0	0.6	6.1
26-Dec	0	0	1	A	2	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0.4	2.2
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	1	0	0	0.5	3.3
28-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0.4	1.1
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	0	0	0	0	0	0	0	A	0.4	2.7
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.4
31-Dec	0	0	0	4	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.5	3.7
	0.5	0.3	0.5	0.7	0.6	0.6	0.5	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.7	0.5	0.8	0.8	0.6	0.6	0.6	0.6	0.5	0.6	Diurnal Average	
	5.1	0.7	2.6	3.7	2.0	2.7	2.4	1.0	1.0	4.2	2.4	2.2	2.6	2.6	3.0	2.6	6.1	3.9	2.0	3.3	5.4	5.2	2.2	6.9	Diurnal Maximum	

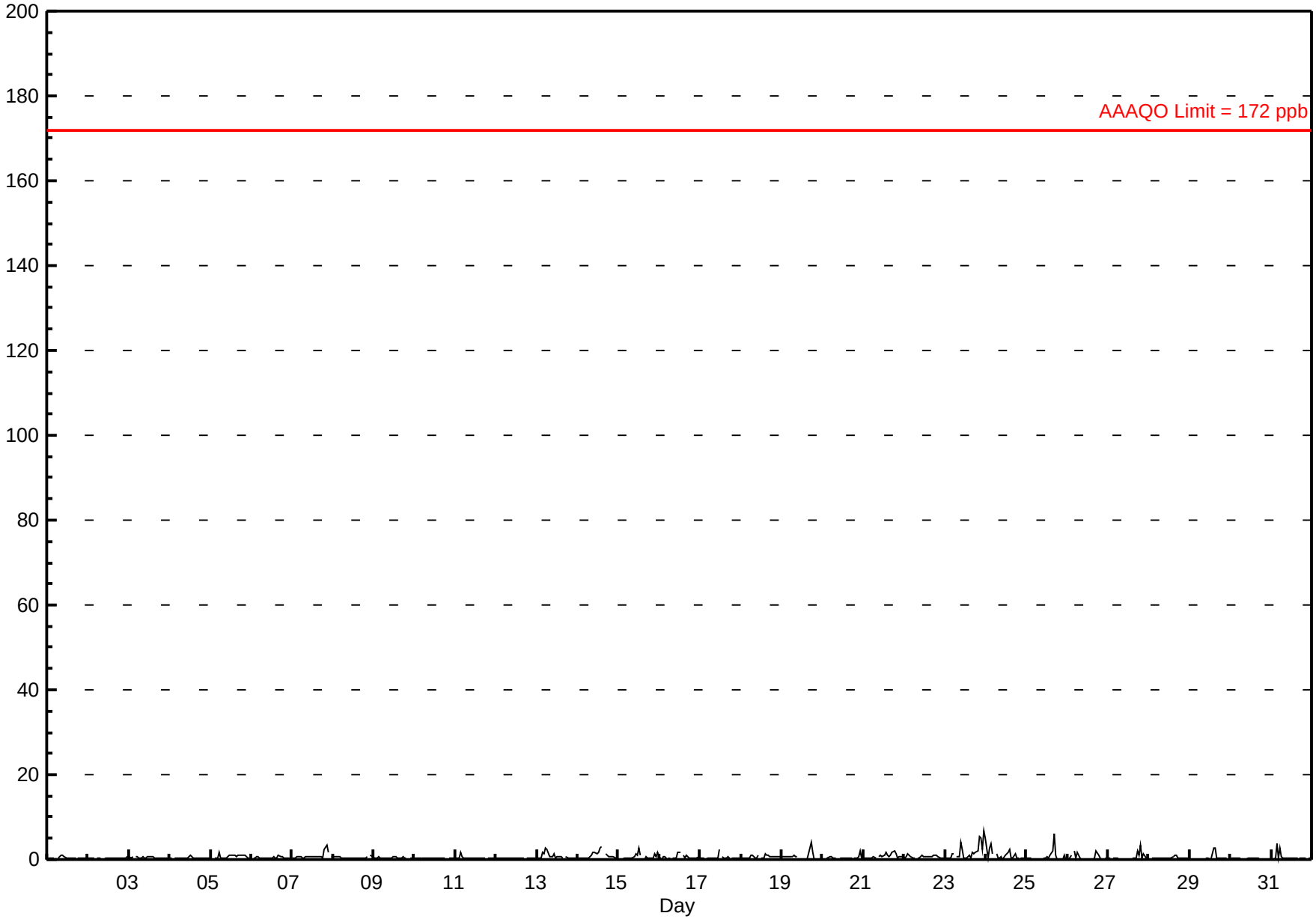
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Smoky Heights - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Smoky Heights - December 2013

Maximum Value: 25.8 ppb on Dec 24 00:00

Maximum Daily Average: 4.4 ppb on Dec 23

Minimum Value: 0 ppb on Dec 19 22:00

Minimum Daily Average: 0.6 ppb on Dec 30

Maximum Diurnal Average: 2.3 ppb at hour 18

Minimum Diurnal Average: 0.8 ppb at hour 2

Monthly Average: 1.46 ppb

Percentiles: $P_1 = 0.4$ $P_{10} = 0.5$ $Q_1 = 0.6$ Median = 0.8 $Q_3 = 1.2$ $P_{90} = 2.8$ $P_{99} = 13.8$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	2.5
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2
3-Dec	1	1	3	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	3.3
4-Dec	1	0	A	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	0.8	2.1
5-Dec	1	A	1	1	1	4	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1.3	4.2
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	2	1	1	1	1	A	1.0	2.8
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	6	3	A	2	1.7	8.5
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	2	0.9	1.9
9-Dec	1	1	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1	A	1	1	0	0.9	2.0
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.7	0.9
11-Dec	1	1	1	8	1	1	1	1	1	1	1	0	1	1	1	0	0	1	A	1	1	1	1	1	1.0	8.3
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	A	1	1	1	1	1	1	0.6	0.9
13-Dec	1	1	1	7	4	8	7	1	1	2	3	1	1	1	1	1	A	1	1	1	1	1	1	1	2.0	7.7
14-Dec	1	1	1	1	1	1	1	1	2	3	3	2	2	14	16	A	2	2	1	2	1	2	1	1	2.6	16.5
15-Dec	0	0	1	1	1	1	1	1	2	2	4	7	6	4	A	0	7	4	1	1	1	2	2	5	2.4	7.1
16-Dec	2	1	3	2	2	1	1	1	2	1	2	5	4	A	2	1	6	1	1	1	1	1	1	1	1.8	5.6
17-Dec	1	1	1	0	1	1	1	1	1	1	2	6	A	3	1	2	2	1	0	1	1	0	1	1	1.2	6.5
18-Dec	1	1	0	1	1	1	5	5	1	1	2	A	1	1	4	2	1	1	1	1	1	1	1	1	1.4	4.7
19-Dec	1	1	1	1	1	1	1	1	1	1	A	C	C	C	C	0	4	10	5	1	0	0	0	0	1.7	10.4
20-Dec	0	0	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	6	1	1.0	6.4
21-Dec	1	1	1	1	1	1	1	1	A	1	3	1	2	3	2	1	3	3	4	2	1	1	1	1	1.5	4.0
22-Dec	1	1	2	2	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	2.1
23-Dec	1	1	1	1	2	2	A	1	2	10	7	1	1	1	2	1	5	5	6	5	10	7	4	26	4.4	25.8
24-Dec	25	2	5	7	2	A	2	1	1	1	1	2	4	4	5	1	1	4	1	0	0	1	1	1	3.1	25.2
25-Dec	1	1	1	1	A	1	0	0	0	0	1	1	1	2	7	6	19	14	1	1	1	0	4	0	2.7	19.3
26-Dec	0	1	8	A	5	1	5	3	1	0	0	0	0	0	0	1	2	4	5	0	1	0	1	1	1.7	8.0
27-Dec	1	1	A	1	1	0	1	1	0	0	0	0	0	0	0	1	1	5	3	5	1	3	1	1	1.2	5.2
28-Dec	1	A	1	1	1	1	0	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.5
29-Dec	A	0	0	0	1	1	0	0	0	1	1	1	1	4	4	6	1	1	1	1	1	1	1	A	1.1	6.0
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	A	1	0.6	0.8
31-Dec	1	1	1	15	1	6	3	1	1	1	1	1	1	1	1	1	0	0	1	1	1	A	1	1	1.6	14.7
	1.6	0.8	1.4	2.0	1.2	1.3	1.4	1.0	0.9	1.3	1.4	1.5	1.3	1.8	2.0	1.2	2.3	2.3	1.5	1.3	1.2	1.2	1.2	1.8	Diurnal Average	
	25.2	2.0	8.0	14.7	4.9	7.7	7.0	4.5	2.5	9.8	6.8	7.1	6.1	14.0	16.5	6.2	19.3	13.9	5.9	8.5	9.8	7.3	6.4	25.8	Diurnal Maximum	

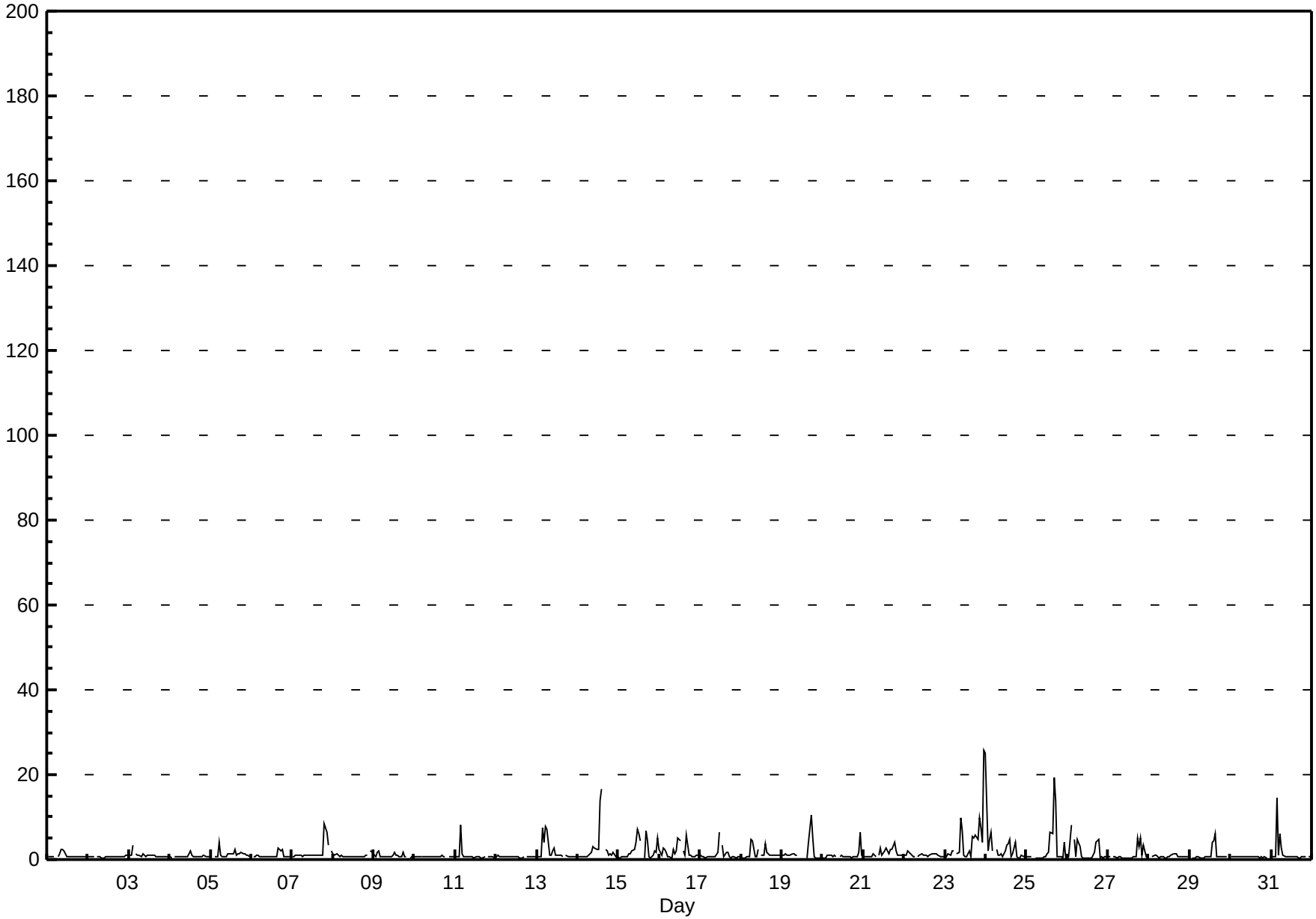
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

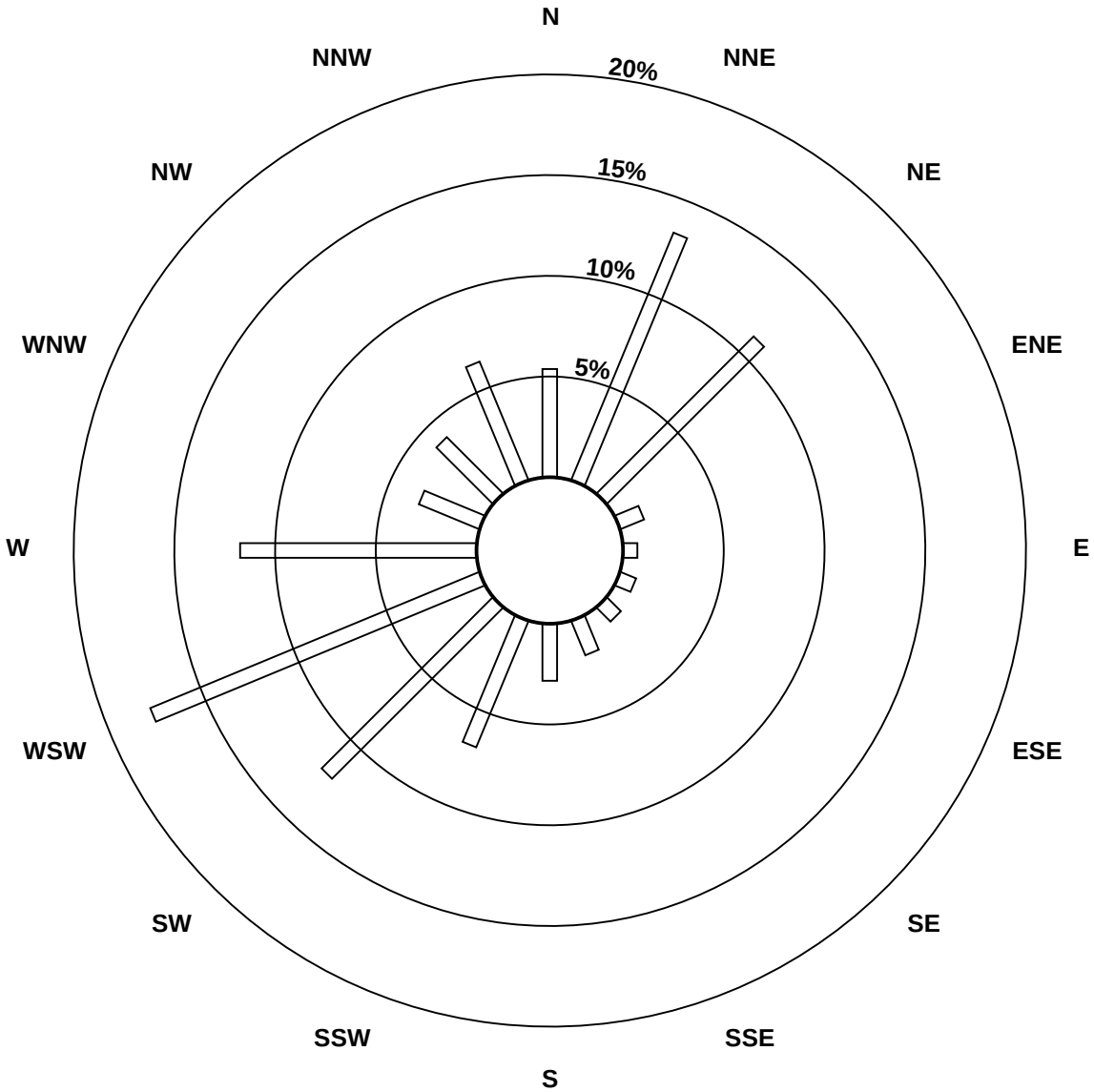
Smoky Heights - December 2013



Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Smoky Heights - December 2013



Pollutant Classes (ppb)

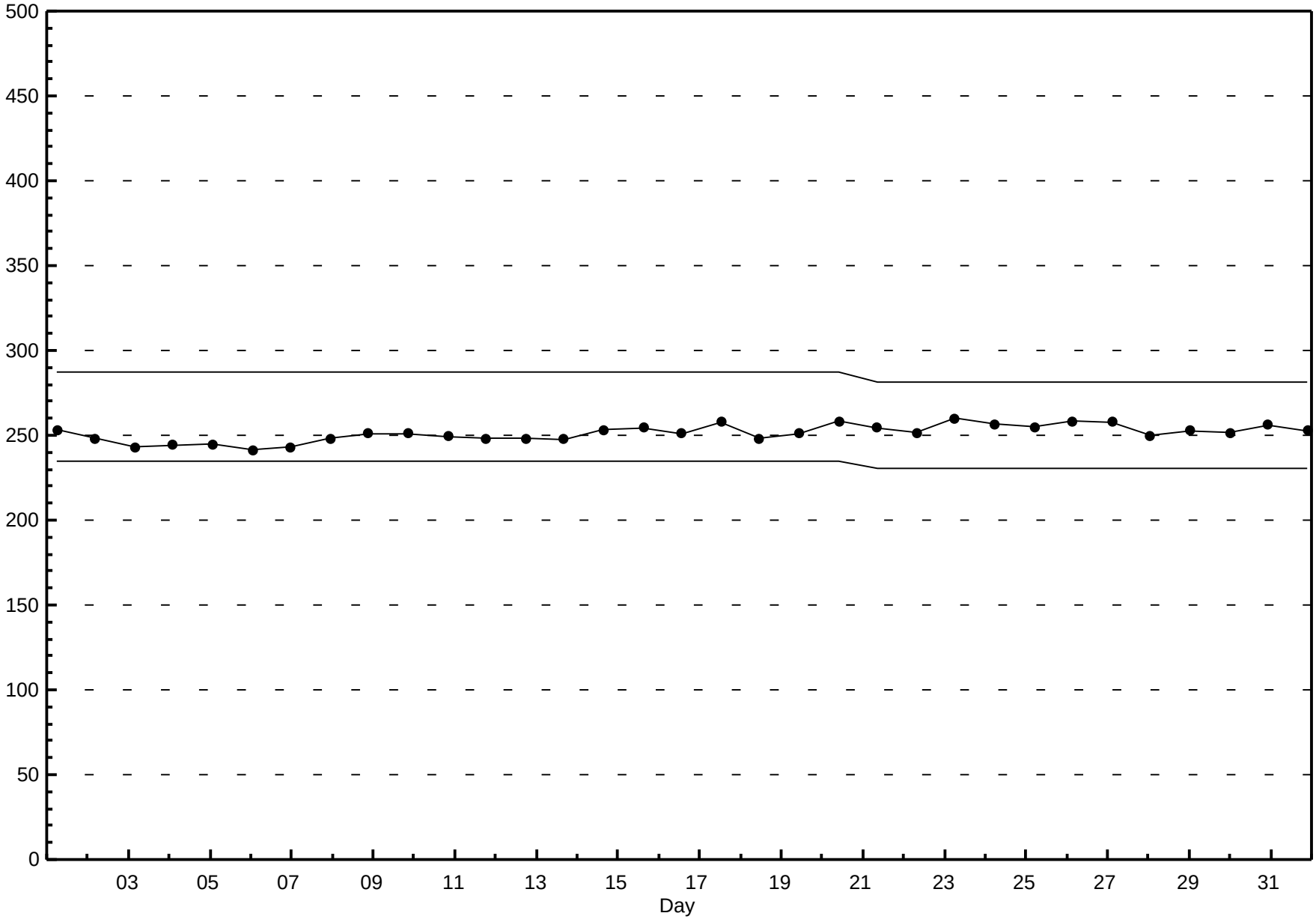
- 0 - 10
- 11 - 20
- 21 - 60
- 61 - 110
- 111 - 172
- > 172

Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Smoky Heights - December 2013



Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.5 ppb on Dec 25 18:00 Maximum Daily Average: 0.4 ppb on Dec 7

Minimum Value: 0 ppb on Dec 19 15:00 Minimum Daily Average: 0.1 ppb on Dec 13
Maximum Diurnal Average: 0.2 ppb at hour 18 Minimum Diurnal Average: 0.1 ppb at hour 23
Monthly Average: 0.18 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.1$ $Q_1 = 0.1$ Median = 0.2 $Q_3 = 0.2$ $P_{90} = 0.3$ $P_{99} = 0.6$

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0.2	0.7
6-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	0.5
7-Dec	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	A	0	0.4	0.8
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.3
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.2
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.2	0.2
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.3
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.2
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.4
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.2
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.1	0.2
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
18-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
19-Dec	0	0	0	0	0	0	1	0	1	1	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
20-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
21-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
23-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0.2	1.5
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
27-Dec	0	0	A	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
28-Dec	0	A	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
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.3
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.3
31-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	Diurnal Average	
	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.8	0.7	0.7	0.8	0.7	0.5	0.4	0.4	1.5	0.7	0.6	0.4	0.3	0.3	0.4	Diurnal Maximum	

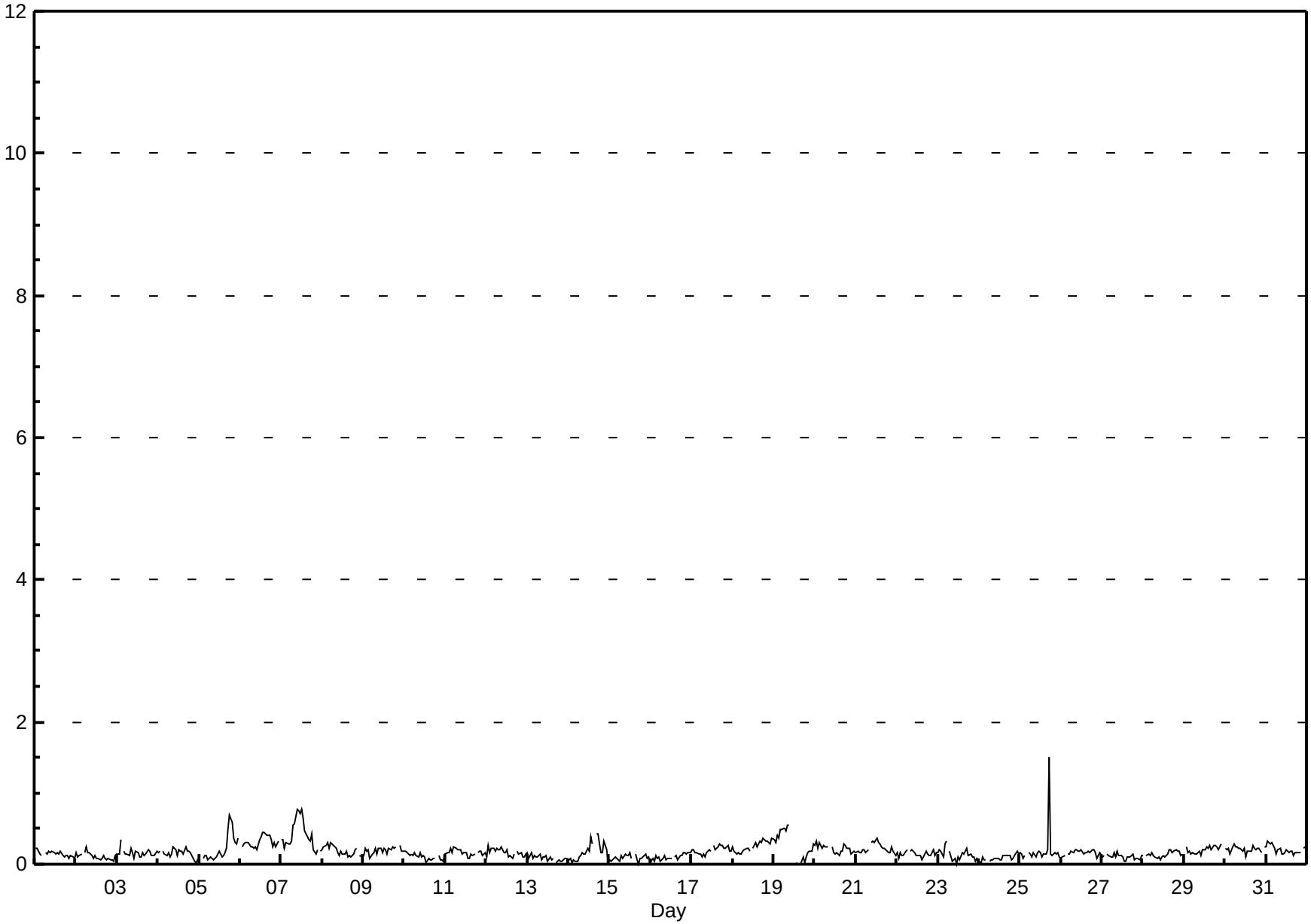
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2013

Maximum Value: 9.4 ppb on Dec 25 18:00

Maximum Daily Average: 0.9 ppb on Dec 25

Minimum Value: 0 ppb on Dec 24 09:00

Minimum Daily Average: 0.5 ppb on Dec 24

Maximum Diurnal Average: 0.9 ppb at hour 18

Minimum Diurnal Average: 0.5 ppb at hour 15

Monthly Average: 0.59 ppb

Percentiles: $P_1 = 0.3$ $P_{10} = 0.4$ $Q_1 = 0.5$ Median = 0.6 $Q_3 = 0.6$ $P_{90} = 0.7$ $P_{99} = 1.1$

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	0	A	0	1	1	1	1	1	0	1	1	1	1	0	1	1	1	0	0	1	0.6	0.7
2-Dec	1	0	1	1	A	1	1	1	1	1	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0.5	0.7
3-Dec	0	1	1	A	1	0	1	0	1	1	0	1	1	0	0	1	0	0	1	1	0	1	1	0	0.6	0.8
4-Dec	1	1	A	1	1	1	1	0	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	0	0.5	0.7
5-Dec	0	A	0	0	0	0	1	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0.6	1.2
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.7	0.8
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.8	1.2
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	A	1	1	0.6	0.8
9-Dec	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.6	0.8
10-Dec	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	0	1	1	A	1	1	1	0	0.5	0.7
11-Dec	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	0	A	0	1	1	0	1	0.6	0.8
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	A	1	0	1	1	0	1	0.6	0.8
13-Dec	1	1	1	0	1	1	0	1	0	1	0	0	0	1	0	1	A	0	0	1	1	0	1	1	0.5	0.8
14-Dec	1	0	0	0	1	0	1	0	1	1	0	1	1	1	1	A	1	1	1	0	0	1	1	0	0.6	1.2
15-Dec	0	0	1	0	0	0	0	1	1	1	1	1	1	1	A	0	1	0	1	0	1	0	0	1	0.5	0.7
16-Dec	0	1	0	0	0	1	0	0	1	0	0	1	1	A	1	0	1	1	0	0	1	1	1	1	0.5	0.6
17-Dec	1	1	1	1	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0	1	0.6	0.8
18-Dec	1	1	0	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
19-Dec	1	1	1	1	1	1	1	1	1	1	C	C	C	1	0	0	0	1	1	0	0	1	1	1	0.7	1.1
20-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	0	1	1	0.6	0.9
21-Dec	1	0	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
22-Dec	0	0	0	1	0	1	1	A	1	1	0	1	1	0	0	0	0	1	1	1	0	1	1	1	0.5	0.7
23-Dec	1	1	1	0	1	1	A	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0.5	0.7
24-Dec	0	0	0	0	0	A	0	0	0	1	0	1	1	1	0	1	0	1	1	0	0	1	1	1	0.5	0.7
25-Dec	1	1	0	0	A	0	0	1	1	0	1	1	1	0	0	1	1	9	1	0	1	1	1	1	0.9	9.4
26-Dec	1	0	0	A	0	0	1	0	1	1	1	1	0	0	0	1	1	1	1	0	1	0	1	1	0.6	0.8
27-Dec	0	0	A	1	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	0	0	0	0	0.5	0.6
28-Dec	1	A	0	1	1	1	1	0	0	0	0	0	1	0	1	1	1	1	0	1	1	1	1	0	0.5	0.7
29-Dec	A	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.6	0.8
30-Dec	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.6	0.8
31-Dec	1	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	0	1	1	1	1	A	1	1	0.6	0.8
	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.6	0.9	0.6	0.6	0.6	0.6	0.6	0.6	Diurnal Average	
	0.7	0.8	0.8	0.7	0.8	0.8	1.1	1.0	1.0	1.2	1.1	1.1	1.2	1.2	0.8	0.8	0.8	9.4	1.2	1.1	0.8	0.8	0.8	0.8	Diurnal Maximum	

C - Calibration

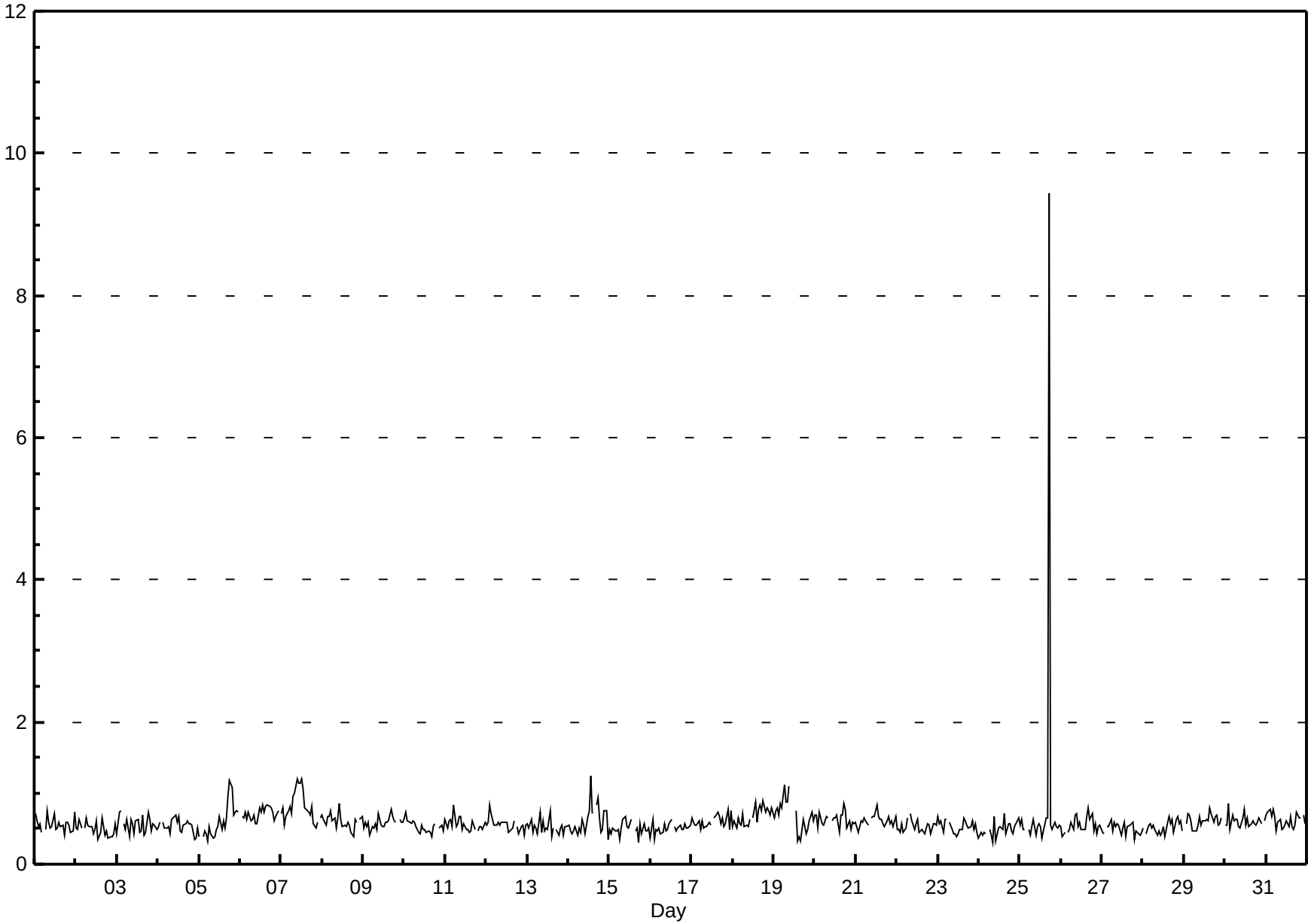
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2013

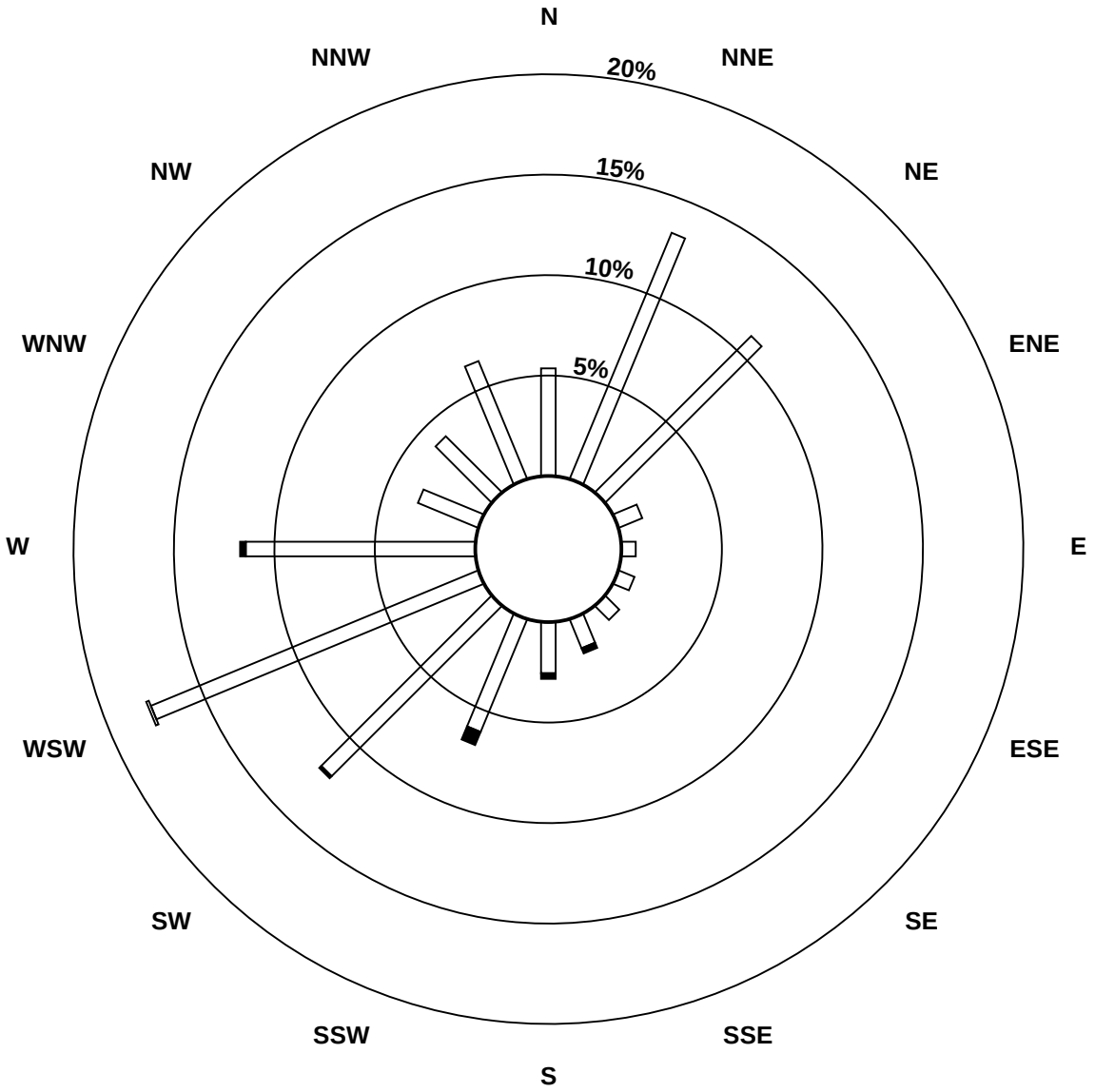


FOCUS AIR QUALITY MONITORING

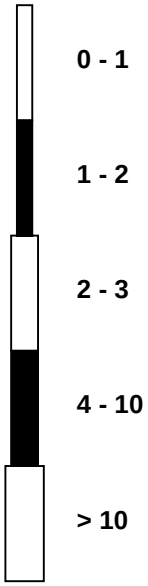
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb

Smoky Heights - December 2013



Pollutant Classes (ppb)

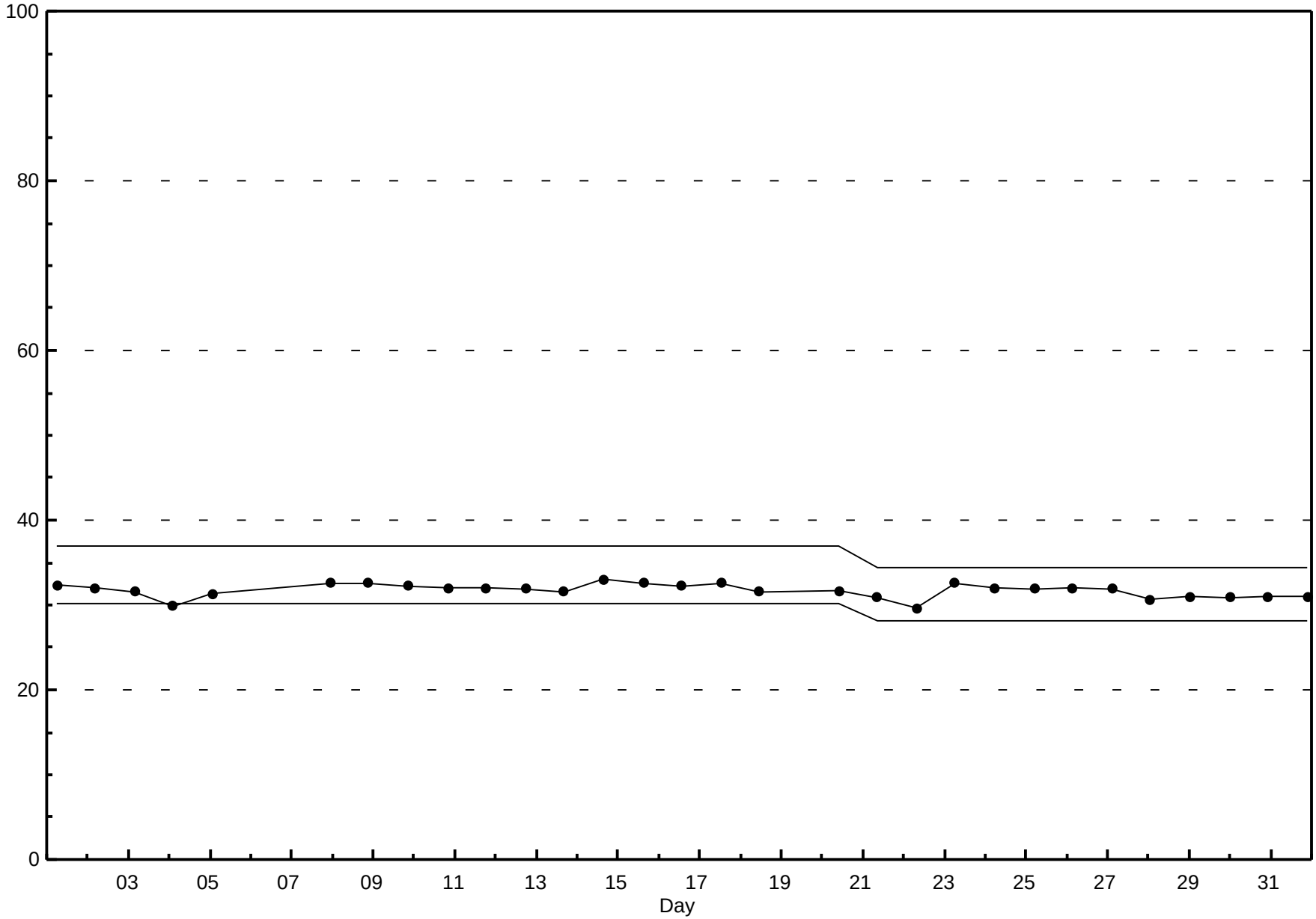


Peace Airshed Zone Association

Span Responses

Total Reduced Sulphur (TRS)

Smoky Heights - December 2013



Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Smoky Heights - December 2013

Number of Exceedences: 1-hr: 0 24-hr: 0

Maximum Value: 24.5 $\mu g/m^3$ on Dec 11 11:00

Maximum Daily Average: 7.4 $\mu g/m^3$ on Dec 20

Minimum Value: 0 $\mu g/m^3$ on Dec 2 23:00

Maximum Diurnal Average: 3.7 $\mu g/m^3$ at hour 18

Monthly Average: 2.56 $\mu g/m^3$

Minimum Daily Average: 0.3 $\mu g/m^3$ on Dec 25

Minimum Diurnal Average: 1.7 $\mu g/m^3$ at hour 9

Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.1$ Median = 1.5 $Q_3 = 3.5$ $P_{90} = 6.3$ $P_{99} = 16.3$

Hours in Service:	744
Hours of Data:	743
Hours of Missing Data:	1
Hours of Calibration:	0
Percent Operational Time:	99.9

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	12	13	19	15	8	8	2	1	1	3	4	2	3	3	1	1	1	3	4	5	7	7	5	4	5.5	18.7
2-Dec	3	2	2	2	2	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	0	0	0	0	1.3	2.5
3-Dec	0	1	1	1	0	0	0	1	1	1	2	1	2	1	2	0	0	2	0	0	0	0	0	2	0.8	2.1
4-Dec	0	1	1	1	2	0	0	6	2	2	2	1	1	0	3	3	5	5	5	7	3	1	2	3	2.4	7.2
5-Dec	1	3	15	3	5	5	5	5	4	4	6	6	7	3	2	1	3	5	5	4	3	4	5	4	4.5	15.0
6-Dec	4	3	4	5	3	3	3	5	4	5	4	5	6	8	8	10	10	8	5	2	3	2	3	5	4.9	10.0
7-Dec	4	4	4	4	5	5	4	6	6	5	6	7	6	4	4	4	4	4	4	5	0	0	2	2	4.2	6.8
8-Dec	2	6	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4	2	1	4	1.1	6.4
9-Dec	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	15	0	1	0	2	7	1.4	14.9
10-Dec	5	0	2	1	5	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	5.2
11-Dec	1	0	2	3	1	1	1	2	2	11	25	8	2	1	2	1	3	5	5	0	0	2	3	7	3.8	24.5
12-Dec	4	3	4	3	0	0	11	7	2	12	5	6	2	4	2	2	8	24	18	9	14	7	1	3	6.3	23.8
13-Dec	0	5	1	2	1	2	3	3	4	3	3	1	2	2	1	1	2	1	0	0	1	0	1	4	1.8	4.6
14-Dec	3	4	0	2	1	2	2	2	2	2	3	4	3	10	0	3	5	4	2	2	1	0	0	1	2.4	10.3
15-Dec	0	0	0	0	0	0	0	1	0	1	1	2	1	0	0	0	0	0	0	0	0	1	0	4	0.4	3.6
16-Dec	1	0	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	2	0.3	1.7
17-Dec	3	2	0	0	0	0	0	0	0	1	3	0	2	0	1	1	6	2	1	3	3	1	3	2	1.4	5.6
18-Dec	2	2	2	2	2	3	2	1	2	3	3	2	1	2	1	3	0	4	3	2	2	1	0	2	2.1	3.6
19-Dec	3	1	2	3	5	4	3	0	5	9	6	4	5	M	14	13	11	10	11	10	8	7	8	8	6.5	13.9
20-Dec	9	19	4	11	7	10	4	5	5	8	8	10	7	9	6	5	17	12	5	7	3	3	2	3	7.4	19.0
21-Dec	2	5	2	2	3	2	3	3	3	3	4	4	4	3	2	2	8	0	1	0	1	1	0	1	2.5	8.3
22-Dec	2	1	0	2	1	0	0	0	1	1	1	0	0	0	1	1	1	1	1	0	4	3	0	0	0.9	4.4
23-Dec	0	0	3	0	4	4	6	4	2	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1.1	5.6
24-Dec	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	1	1	0	1	0	0	0	0	8	0.8	8.3
25-Dec	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.3	5.4
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	5	3	4	5	3	1.0	5.4
27-Dec	5	3	7	5	1	0	0	0	1	2	2	2	1	2	3	9	3	3	2	2	2	2	1	2	2.5	9.4
28-Dec	1	2	6	4	3	4	4	3	2	2	1	2	1	1	1	1	1	0	0	2	1	1	0	0	1.8	5.9
29-Dec	6	2	0	0	0	0	0	0	1	2	4	3	3	5	7	6	9	12	12	2	3	3	2	2	3.5	12.3
30-Dec	2	2	1	1	1	1	1	1	1	0	1	0	0	1	0	1	1	0	0	0	0	1	1	2	0.8	2.5
31-Dec	12	17	8	1	1	1	3	2	1	1	1	2	3	2	3	7	3	2	3	5	10	13	14	10	5.3	17.4
	3.0	3.3	3.1	2.4	1.9	1.9	1.9	2.0	1.7	2.8	3.3	2.5	2.1	2.1	2.1	2.6	3.4	3.7	3.4	2.5	2.6	2.2	2.1	3.0	Diurnal Average	
	12.2	19.0	18.7	15.3	8.1	10.0	10.9	7.1	6.1	12.5	24.5	10.1	6.7	10.3	13.9	12.8	16.9	23.8	17.6	9.8	13.5	12.6	13.8	9.6	Diurnal Maximum	

M - Maintenance

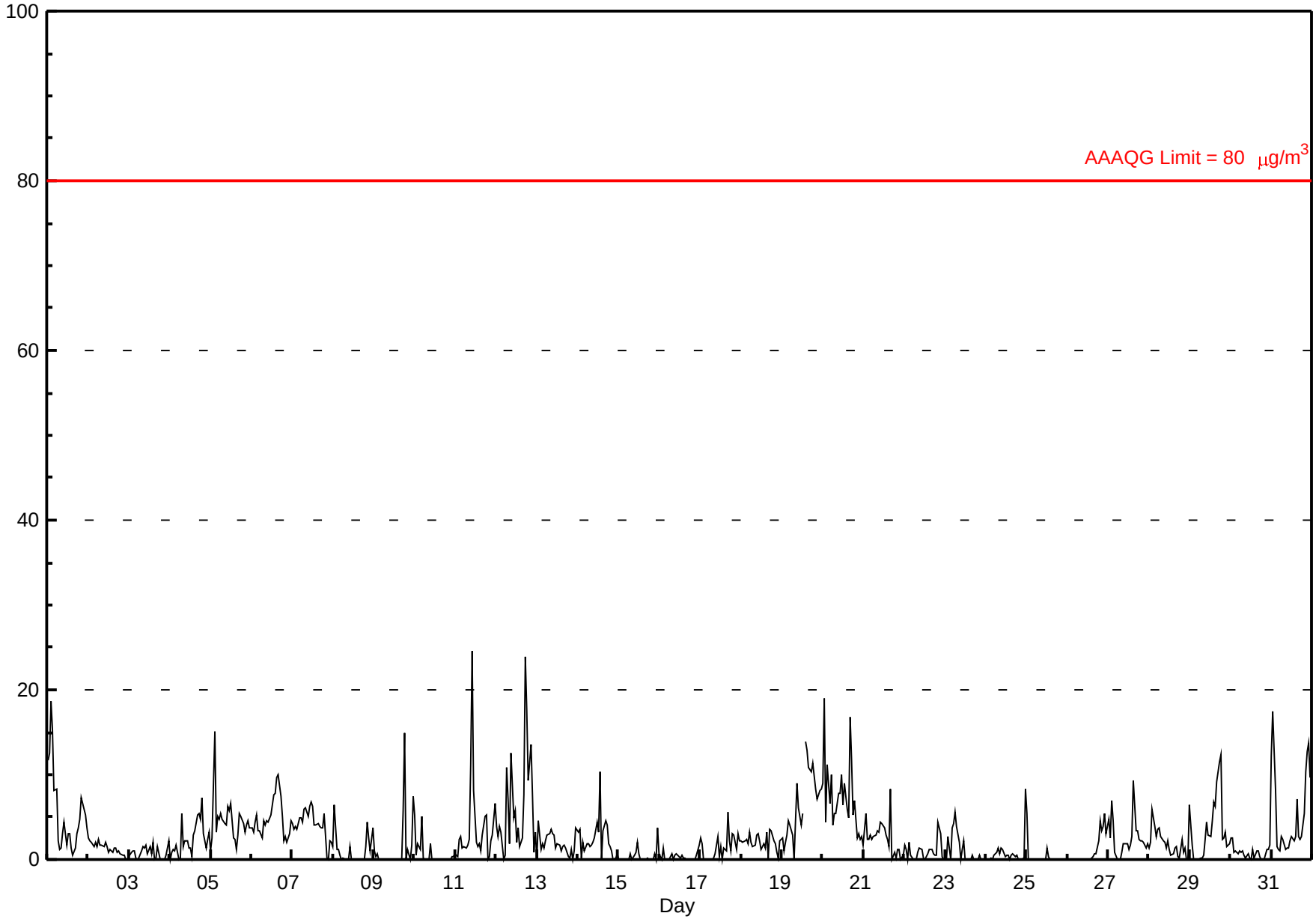
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Smoky Heights - December 2013



Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Smoky Heights - December 2013

Maximum Value: 57.2 $\mu g/m^3$ on Dec 20 02:00

Maximum Daily Average: 14.9 $\mu g/m^3$ on Dec 20

Minimum Value: 0 $\mu g/m^3$ on Dec 17 04:00

Minimum Daily Average: 2.1 $\mu g/m^3$ on Dec 15

Maximum Diurnal Average: 9.2 $\mu g/m^3$ at hour 18

Minimum Diurnal Average: 4.7 $\mu g/m^3$ at hour 6

Monthly Average: 6.31 $\mu g/m^3$

Percentiles: $P_1 = 0.0$ $P_{10} = 1.5$ $Q_1 = 2.7$ Median = 4.7 $Q_3 = 7.3$ $P_{90} = 12.1$ $P_{99} = 38.1$

Hours in Service:	744
Hours of Data:	743
Hours of Missing Data:	1
Hours of Calibration:	0
Percent Operational Time:	99.9

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	22	19	39	30	24	15	5	3	4	5	8	5	4	6	5	3	4	5	6	8	10	9	8	7	10.5	38.6
2-Dec	5	5	4	4	4	4	5	4	4	4	4	4	5	4	3	4	4	3	3	3	2	2	3	2	3.7	4.9
3-Dec	3	5	3	4	3	1	2	4	4	3	6	3	4	4	6	3	4	5	2	3	1	5	10	9	4.0	9.6
4-Dec	3	4	4	3	4	4	6	9	3	4	5	5	3	3	6	7	7	9	13	16	7	4	8	8	6.1	15.7
5-Dec	3	7	34	10	8	7	7	7	6	6	16	8	10	5	7	4	5	7	8	7	6	6	7	7	8.3	33.8
6-Dec	6	5	7	8	5	6	5	6	6	7	7	7	11	10	10	13	13	11	8	4	5	4	5	6	7.3	13.2
7-Dec	6	5	5	6	8	7	7	7	8	7	9	13	10	8	7	6	6	6	6	14	2	2	7	5	7.0	14.0
8-Dec	5	22	3	4	4	2	7	6	2	5	6	4	3	3	1	3	2	2	2	5	9	6	4	10	5.0	21.8
9-Dec	6	4	4	1	1	3	3	2	1	1	1	1	1	1	1	1	3	50	53	4	5	3	5	16	7.1	53.3
10-Dec	12	3	6	4	16	5	2	3	2	6	2	2	2	4	3	1	2	2	2	1	2	2	5	3	3.8	16.1
11-Dec	3	4	6	7	5	4	5	4	8	18	39	14	10	6	7	4	11	11	21	2	3	6	6	13	9.0	38.6
12-Dec	8	5	6	6	3	4	37	11	16	19	16	11	5	8	7	6	26	41	22	30	19	12	8	11	14.1	40.8
13-Dec	6	7	5	4	4	5	5	7	8	7	6	4	5	4	4	3	5	4	2	3	6	2	9	13	5.4	13.2
14-Dec	10	17	3	4	3	5	4	5	5	4	5	12	12	23	4	7	8	9	5	10	5	4	7	9	7.5	22.7
15-Dec	0	0	1	2	0	2	0	3	4	3	3	5	3	1	2	2	1	2	1	1	1	3	2	7	2.1	6.9
16-Dec	2	2	3	1	2	1	1	3	2	3	3	2	3	2	2	2	2	2	2	2	3	3	4	7	2.5	7.0
17-Dec	5	8	0	0	0	0	0	1	2	5	6	4	4	2	4	5	15	7	4	6	8	5	7	5	4.4	14.5
18-Dec	5	4	5	5	6	7	5	4	4	5	7	5	4	5	5	9	4	7	7	6	7	7	2	6	5.5	8.7
19-Dec	8	6	6	8	8	9	7	4	9	34	14	6	8	M	19	17	14	15	15	12	12	10	10	11	11.4	33.7
20-Dec	12	57	7	22	11	17	7	8	11	12	14	14	15	20	18	10	38	24	9	10	5	6	5	5	14.9	57.2
21-Dec	4	11	6	5	5	5	5	5	5	5	7	7	9	8	7	4	23	3	3	3	11	6	3	6	6.5	23.0
22-Dec	5	4	3	6	4	1	4	4	3	6	5	2	2	3	4	3	4	5	3	3	10	6	3	2	4.0	10.3
23-Dec	2	2	6	1	7	8	10	7	8	1	3	7	2	1	1	1	2	2	1	2	2	2	1	2	3.4	10.1
24-Dec	1	2	2	2	1	3	3	3	2	3	2	2	2	2	1	2	2	2	3	1	2	2	3	32	3.4	32.0
25-Dec	38	1	1	1	1	0	0	0	0	0	0	2	4	2	1	2	2	1	1	1	1	1	0	1	2.5	38.1
26-Dec	1	0	1	0	0	0	2	0	0	0	1	0	0	1	2	2	2	3	8	8	6	7	9	9	2.6	9.1
27-Dec	9	7	13	8	4	2	3	3	4	3	5	5	4	5	8	16	6	6	5	4	5	5	9	7	6.2	16.2
28-Dec	5	5	8	7	7	7	7	6	5	5	4	5	4	3	3	4	5	5	3	6	4	5	3	3	5.0	8.4
29-Dec	25	11	3	3	1	2	2	2	3	7	8	6	5	12	16	9	17	27	31	8	9	7	4	5	9.2	31.3
30-Dec	6	5	3	3	3	5	3	6	3	3	3	2	2	6	2	3	4	4	2	2	2	4	4	5	3.6	5.9
31-Dec	23	24	12	9	4	6	6	10	3	4	3	5	8	5	5	22	6	5	5	10	16	16	17	13	10.0	24.2
	8.0	8.4	6.8	5.8	5.0	4.7	5.4	4.8	4.7	6.3	7.0	5.5	5.3	5.7	5.5	5.7	8.0	9.2	8.3	6.3	6.0	5.3	5.7	7.9	Diurnal Average	
	38.1	57.2	38.6	30.5	23.7	17.1	37.1	11.3	16.0	33.7	38.6	13.9	14.7	22.7	19.2	22.2	38.3	49.8	53.3	29.6	18.6	16.4	17.0	32.0	Diurnal Maximum	

M - Maintenance

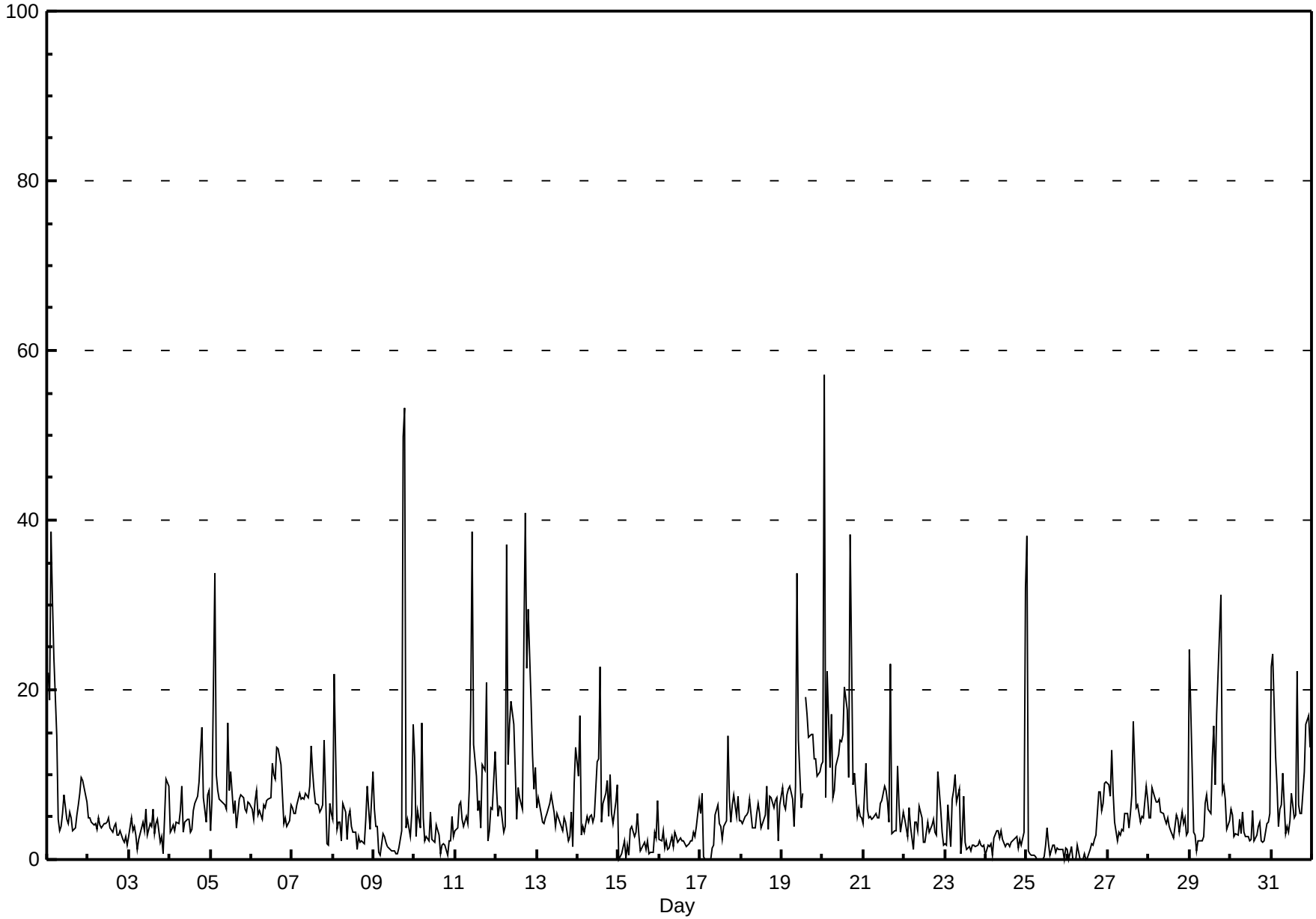
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

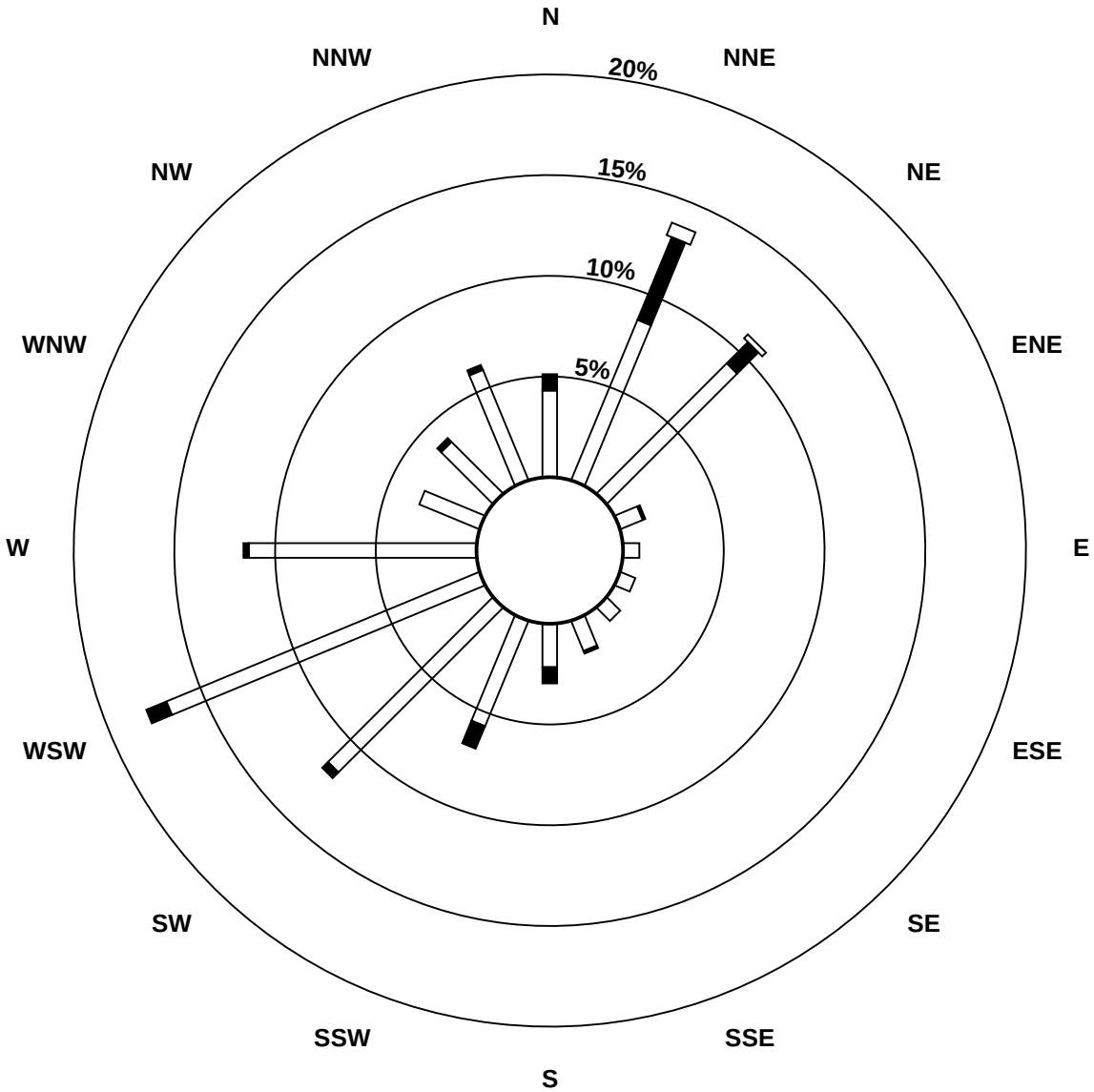
Smoky Heights - December 2013



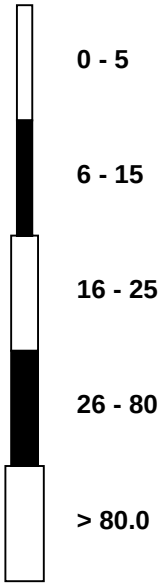
Pollutant Rose

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Smoky Heights - December 2013



Pollutant Classes ($\mu g/m^3$)



Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Smoky Heights - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 5.5 ^{o}C on Dec 15 02:00

Maximum Daily Average: 1.3 ^{o}C on Dec 15

Minimum Value: -35 ^{o}C on Dec 6 09:00

Minimum Daily Average: -32.7 ^{o}C on Dec 6

Maximum Diurnal Average: -13.7 ^{o}C at hour 15

Minimum Diurnal Average: -16.1 ^{o}C at hour 7

Monthly Average: -15.27 ^{o}C

Percentiles: P_1 = -33.8 P_{10} = -27.3 Q_1 = -20.5 Median = -17.8 Q_3 = -7.9 P_{90} = -0.4 P_{99} = 4.5

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

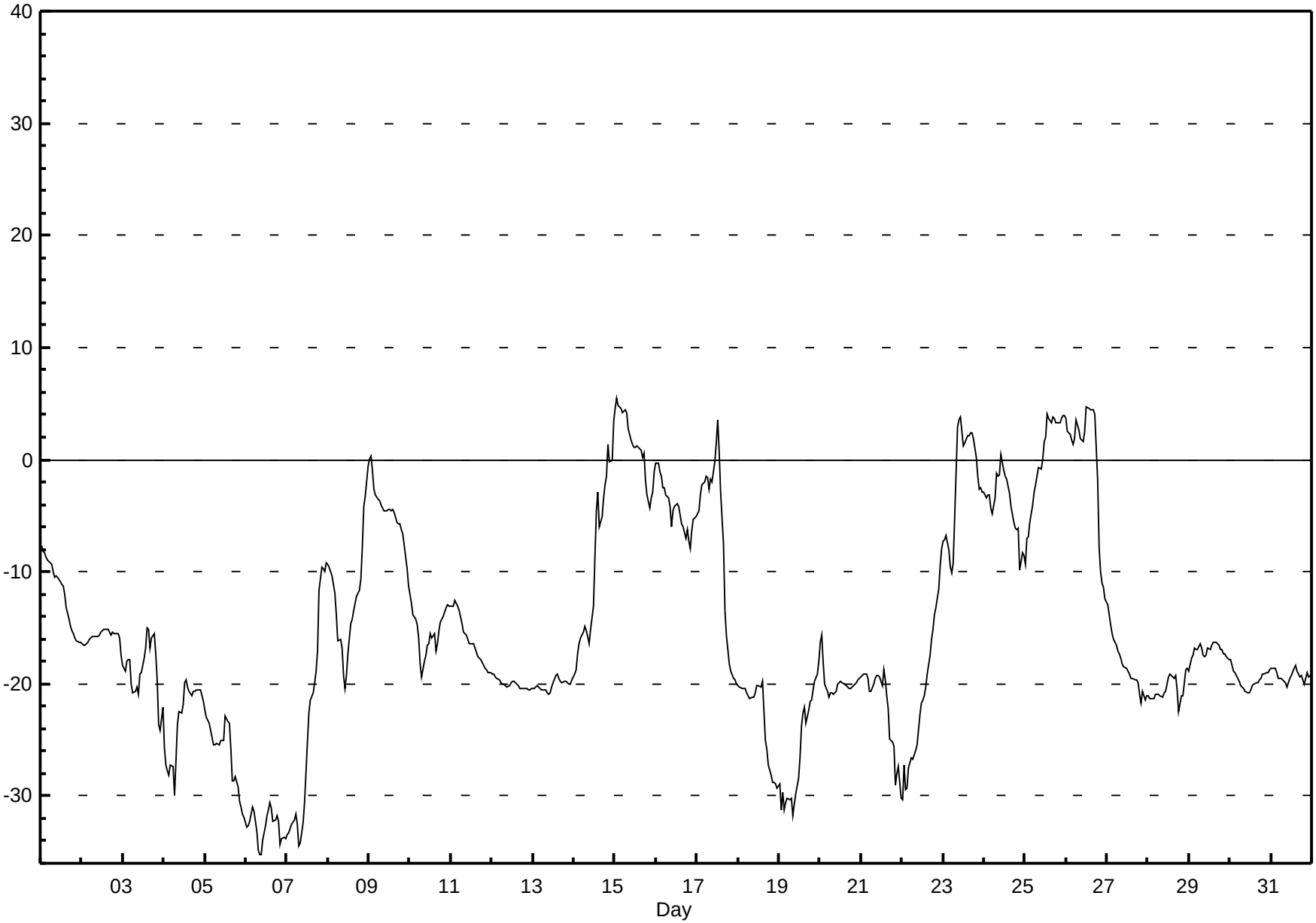
Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	-8	-8	-8	-9	-9	-9	-9	-10	-10	-10	-11	-11	-11	-11	-12	-13	-14	-15	-15	-16	-16	-16	-16	-16	-11.9	-7.7
2-Dec	-16	-17	-17	-16	-16	-16	-16	-16	-16	-16	-16	-15	-15	-15	-15	-15	-15	-16	-15	-15	-16	-15	-16	-17	-15.8	-15.1
3-Dec	-18	-19	-18	-18	-18	-20	-21	-21	-20	-21	-19	-19	-18	-17	-15	-15	-17	-16	-16	-17	-20	-24	-24	-22	-18.8	-15.1
4-Dec	-26	-27	-28	-28	-27	-27	-30	-27	-24	-23	-23	-22	-20	-20	-20	-21	-21	-21	-21	-21	-21	-21	-21	-22	-23.3	-19.6
5-Dec	-22	-23	-24	-24	-25	-25	-25	-25	-25	-25	-25	-25	-23	-23	-24	-26	-29	-29	-28	-29	-30	-31	-32	-32	-26.2	-22.3
6-Dec	-33	-33	-32	-32	-31	-31	-33	-35	-35	-35	-34	-33	-32	-31	-31	-31	-32	-32	-32	-32	-34	-34	-34	-34	-32.7	-30.6
7-Dec	-33	-33	-33	-33	-32	-32	-33	-34	-34	-32	-31	-28	-25	-23	-21	-21	-20	-19	-17	-12	-10	-10	-10	-9	-24.3	-9.2
8-Dec	-9	-10	-10	-11	-12	-14	-16	-16	-17	-19	-20	-19	-17	-15	-14	-13	-13	-12	-12	-11	-8	-4	-3	-1	-12.4	-0.5
9-Dec	0	0	-1	-3	-3	-4	-4	-4	-4	-5	-5	-4	-4	-5	-4	-5	-6	-6	-6	-6	-7	-9	-10	-11	-4.7	0.4
10-Dec	-12	-13	-14	-14	-15	-16	-18	-19	-18	-18	-17	-16	-16	-16	-16	-17	-16	-15	-14	-14	-14	-13	-13	-13	-15.3	-12.0
11-Dec	-13	-13	-13	-13	-13	-13	-15	-15	-16	-16	-16	-16	-16	-16	-17	-17	-18	-18	-18	-18	-19	-19	-19	-19	-16.1	-12.6
12-Dec	-19	-19	-19	-19	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-21	-21	-20	-20.0	-19.1
13-Dec	-20	-20	-20	-20	-20	-21	-21	-21	-21	-21	-21	-20	-20	-19	-19	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20.1	-19.1
14-Dec	-19	-19	-17	-16	-16	-15	-15	-15	-16	-16	-15	-13	-9	-5	-3	-6	-5	-3	-2	-2	1	0	0	3	-9.3	3.4
15-Dec	5	5	5	5	4	4	4	4	3	2	1	1	1	1	1	1	0	1	-2	-3	-4	-3	-3	-1	1.3	5.5
16-Dec	0	0	-1	-1	-3	-3	-3	-3	-4	-6	-5	-4	-4	-4	-5	-6	-6	-7	-6	-7	-8	-6	-5	-5	-4.3	-0.3
17-Dec	-5	-5	-3	-2	-2	-1	-2	-3	-2	-2	0	2	4	1	-3	-7	-13	-16	-17	-18	-19	-19	-20	-20	-7.2	3.6
18-Dec	-20	-20	-20	-20	-20	-21	-21	-21	-21	-21	-21	-20	-20	-20	-20	-22	-25	-26	-27	-28	-29	-29	-29	-29	-23.0	-19.7
19-Dec	-29	-31	-30	-31	-31	-30	-30	-30	-32	-31	-30	-28	-26	-24	-23	-22	-23	-22	-22	-21	-20	-20	-19	-18	-26.0	-17.9
20-Dec	-16	-16	-18	-20	-21	-21	-21	-21	-21	-21	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-19	-19.8	-15.6
21-Dec	-19	-19	-19	-19	-20	-21	-21	-20	-19	-19	-19	-19	-20	-19	-20	-21	-22	-25	-25	-26	-29	-28	-27	-30	-22.0	-18.7
22-Dec	-30	-27	-29	-29	-27	-27	-27	-26	-26	-25	-23	-22	-21	-21	-20	-19	-17	-16	-15	-14	-13	-11	-9	-8	-21.1	-7.9
23-Dec	-7	-7	-7	-8	-10	-10	-9	-5	3	4	4	2	1	1	2	2	2	2	2	0	-2	-3	-2	-3	-1.9	3.8
24-Dec	-3	-3	-3	-3	-4	-5	-3	-1	-1	-1	0	-1	-1	-2	-2	-3	-4	-6	-6	-6	-6	-10	-8	-9	-3.9	0.5
25-Dec	-9	-7	-7	-6	-4	-3	-2	-1	-1	-1	0	2	2	4	4	3	4	4	3	3	3	4	4	4	0.1	4.0
26-Dec	4	3	2	2	1	2	4	3	2	2	2	3	5	5	4	4	4	4	-2	-8	-10	-11	-11	-12	0.0	4.8
27-Dec	-13	-14	-15	-16	-16	-17	-17	-17	-18	-18	-18	-19	-19	-19	-20	-19	-20	-20	-20	-21	-22	-21	-21	-21	-18.3	-12.9
28-Dec	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-20	-19	-19	-19	-20	-19	-21	-22	-21	-21	-20	-19	-19	-20.5	-18.6
29-Dec	-19	-18	-17	-17	-17	-17	-16	-17	-17	-18	-17	-17	-17	-17	-16	-16	-16	-17	-17	-17	-17	-17	-18	-18	-17.1	-16.2
30-Dec	-18	-18	-19	-19	-19	-20	-20	-20	-20	-21	-21	-21	-20	-20	-20	-20	-20	-20	-19	-19	-19	-19	-19	-19	-19.6	-17.9
31-Dec	-19	-19	-19	-19	-20	-20	-19	-20	-20	-20	-20	-20	-19	-19	-18	-19	-19	-19	-19	-20	-20	-19	-19	-19	-19.3	-18.3
	-15.2	-15.2	-15.3	-15.6	-15.7	-15.9	-16.1	-16.1	-15.9	-16.0	-15.4	-14.9	-14.2	-13.8	-13.7	-14.3	-14.9	-15.0	-15.2	-15.5	-15.7	-15.8	-15.6	-15.5	Diurnal Average	
	4.6	5.5	4.9	4.5	4.2	4.3	4.4	4.2	2.9	3.6	3.8	2.6	4.8	4.5	4.4	4.5	4.4	4.0	3.2	3.3	3.3	3.7	4.0	4.0	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Smoky Heights - December 2013



Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	19	21	18	20	18	14	16	16	15	16	17	16	15	18	20	21	22	21	14	7	9	6	4	6	12.9	22.1
Dir	35	35	34	32	35	21	14	354	354	359	346	340	336	333	330	324	317	317	304	286	311	313	297	308	350.2	316.6
2 Spd	8	18	20	22	20	21	20	21	20	22	21	19	21	17	16	17	15	12	10	10	5	3	7	11	14.5	21.6
Dir	315	322	321	326	329	335	335	332	332	329	332	332	328	334	334	330	329	314	289	277	305	281	228	242	323.0	326.2
3 Spd	10	10	14	12	14	14	8	7	12	10	8	7	6	3	2	5	6	16	15	9	5	14	12	15	8.7	16.2
Dir	253	257	262	251	256	266	239	260	265	254	250	229	226	188	292	297	306	318	320	332	288	271	277	281	271.6	317.7
4 Spd	8	8	5	5	4	8	3	1	2	2	3	6	3	2	1	1	1	1	1	2	3	2	5	5	1.7	8.4
Dir	256	257	253	202	240	276	257	240	200	217	236	255	227	197	134	156	98	342	38	36	36	30	29	36	256.4	256.2
5 Spd	5	5	4	4	4	4	3	1	0	1	2	0	1	1	2	4	4	4	5	7	7	6	4	4	1.8	7.3
Dir	41	33	24	8	8	351	315	310	327	34	27	245	184	169	257	276	272	265	264	275	263	267	219	282	301.8	275.0
6 Spd	2	3	4	4	4	5	5	5	5	6	6	6	6	7	8	8	8	9	9	6	9	8	8	9	6.0	9.3
Dir	215	208	211	202	239	244	224	208	225	227	237	236	253	263	258	260	242	253	260	243	249	247	236	231	240.6	259.9
7 Spd	10	10	11	9	10	8	6	8	7	7	6	4	2	2	7	8	9	19	11	17	23	19	11	8	7.9	22.6
Dir	223	221	219	213	216	217	199	194	193	192	189	182	158	154	168	202	206	211	219	256	267	274	308	280	227.2	266.8
8 Spd	5	6	10	9	10	7	11	15	12	3	7	3	6	5	8	7	9	10	10	11	18	20	11	18	6.8	19.8
Dir	282	339	342	344	338	305	256	291	287	237	232	233	192	186	186	196	207	217	220	220	245	251	240	281	257.0	250.9
9 Spd	18	23	26	22	17	15	17	14	19	15	15	13	13	12	11	7	6	3	9	11	13	17	18	17	10.1	26.2
Dir	296	327	346	350	344	320	305	279	268	272	269	269	267	268	280	305	249	342	24	30	29	42	33	26	322.6	346.5
10 Spd	15	14	12	9	8	3	1	4	3	4	3	4	4	4	3	2	2	4	6	5	7	7	9	5	0.3	15.0
Dir	28	43	39	49	21	19	289	270	259	253	236	163	144	161	163	170	239	222	210	234	226	236	232	244	277.6	28.0
11 Spd	8	5	2	7	11	13	18	18	19	15	15	14	13	12	14	14	12	11	13	13	9	11	12	13	11.1	19.2
Dir	217	216	344	25	24	29	32	34	29	25	18	19	22	20	27	29	29	26	29	32	28	25	29	28	26.1	29.4
12 Spd	14	14	14	13	12	12	11	12	12	14	15	15	14	14	17	16	15	13	14	11	12	10	10	11	13.0	16.9
Dir	27	28	26	24	29	25	26	25	25	23	24	23	20	21	25	24	25	24	24	30	28	30	34	33	25.6	24.7
13 Spd	10	9	11	12	12	13	13	11	8	7	2	4	5	4	3	5	7	5	5	6	6	7	8	6	5.6	12.8
Dir	34	19	20	3	1	357	356	353	353	345	321	264	249	253	106	93	91	83	61	50	39	45	37	28	16.6	355.6
14 Spd	5	3	10	12	17	20	19	15	12	11	13	12	21	17	10	6	4	9	12	12	22	20	13	32	12.5	32.0
Dir	30	10	228	226	230	225	224	229	231	214	203	211	248	247	200	174	174	190	211	211	221	224	248	233	224.4	232.6
15 Spd	44	49	44	35	34	40	33	51	51	49	38	33	32	33	27	26	27	35	27	23	15	21	21	28	33.3	51.3
Dir	236	233	230	233	233	240	247	256	251	256	257	264	257	261	259	267	262	260	244	244	244	245	245	247	248.4	251.3
16 Spd	33	36	31	32	26	24	21	22	19	18	20	20	19	16	15	13	15	14	11	10	7	5	4	4	17.8	35.6
Dir	254	265	263	259	261	263	259	262	263	262	250	240	244	250	250	256	256	271	275	251	208	214	256	222	256.5	265.4
17 Spd	0	3	10	15	15	19	18	15	15	18	20	17	19	20	26	21	20	19	20	22	13	17	11	9	5.2	26.5
Dir	222	115	130	144	154	161	165	188	215	230	252	255	269	340	347	9	9	339	322	325	330	327	300	310	296.0	346.8
18 Spd	5	8	7	7	5	5	7	7	10	7	2	2	4	5	1	9	21	17	17	16	8	12	13	18	6.3	21.0
Dir	336	305	297	304	329	34	5	340	290	304	53	283	284	29	200	243	217	248	242	250	226	246	247	254	266.5	217.1
19 Spd	15	17	14	16	16	17	16	7	9	8	12	8	4	4	5	5	4	4	5	6	6	5	3	3	8.3	16.9
Dir	201	204	229	220	218	223	231	231	207	193	194	202	211	249	227	209	216	217	199	197	190	189	199	178	211.9	222.9
20 Spd	2	2	9	7	6	9	12	11	12	10	12	11	15	16	21	18	15	15	13	13	11	11	9	8	10.8	20.5
Dir	213	41	36	32	37	29	34	35	33	23	29	29	31	31	33	33	28	24	19	18	10	2	354	354	25.3	33.2
21 Spd	8	3	2	1	2	4	5	6	7	10	7	6	3	7	3	2	2	1	5	4	3	4	4	4	3.4	9.8
Dir	348	3	221	203	211	247	235	237	246	233	241	268	258	278	235	271	58	346	273	288	275	261	268	264	260.8	232.6
22 Spd	3	4	2	2	3	5	4	4	6	6	6	7	7	9	12	11	12	13	11	13	17	14	15	18	8.5	18.5
Dir	244	255	240	238	247	239	240	236	249	249	232	208	231	233	245	240	236	226	224	220	240	238	233	225	233.9	224.7

FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Smoky Heights - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	18	11	13	11	13	13	15	17	33	32	30	30	18	11	18	6	15	17	22	23	24	23	20	20	17.6	33.3
Dir	224	238	258	209	215	199	256	236	247	255	264	298	278	282	263	247	253	254	256	251	261	262	260	256	254.5	246.7
24 Spd	21	22	20	20	18	20	21	25	22	22	28	24	23	17	15	18	17	19	18	16	8	7	2	2	17.4	28.2
Dir	249	250	260	260	267	263	263	268	260	260	276	261	265	252	256	262	262	263	261	259	282	230	290	47	261.4	275.7
25 Spd	2	3	4	8	15	18	19	17	19	14	20	26	35	35	28	27	33	35	34	31	36	37	34	30	21.3	36.7
Dir	262	246	192	183	182	190	199	208	206	185	198	233	253	257	250	246	255	251	255	253	250	253	252	251	238.8	253.3
26 Spd	27	23	22	15	12	17	23	13	10	8	4	15	25	31	30	27	24	23	20	20	20	21	19	20	9.4	30.6
Dir	252	244	250	257	219	203	250	234	184	182	197	202	230	245	246	248	253	263	17	40	36	36	35	36	252.9	245.4
27 Spd	14	16	16	14	13	16	17	17	18	15	14	13	14	14	14	9	8	9	8	6	6	5	6	3	11.2	18.1
Dir	34	35	30	32	30	32	35	30	24	18	10	6	1	347	0	10	5	346	343	331	314	6	23	73	16.4	24.0
28 Spd	3	4	4	3	1	1	2	3	2	0	3	2	2	4	6	6	6	5	3	4	2	2	2	0	1.5	6.4
Dir	77	69	45	43	121	128	97	103	90	119	60	41	124	135	142	152	157	177	219	265	272	258	217	35	128.7	142.0
29 Spd	2	2	2	2	2	2	4	7	12	13	14	14	15	14	14	13	11	9	7	5	3	3	8	6	6.8	15.2
Dir	32	217	156	221	66	46	30	34	34	31	24	8	9	359	4	9	10	17	19	35	57	39	53	49	21.1	8.7
30 Spd	5	8	8	5	8	10	10	8	10	10	11	13	13	11	14	18	17	16	17	16	16	15	15	16	12.1	17.5
Dir	77	51	42	37	41	39	37	40	40	38	37	35	41	39	33	34	34	35	36	39	40	38	34	32	38.0	34.5
31 Spd	14	14	14	11	11	10	9	8	8	6	4	4	5	4	3	7	8	7	7	5	2	4	7	7	7.1	14.0
Dir	22	16	13	353	348	360	24	26	44	54	65	36	36	49	42	34	37	40	38	27	2	35	40	41	24.8	15.8
Spd	4.5	4.7	4.7	3.9	3.7	4.3	4.8	5.6	6.0	5.6	5.6	6.0	6.7	6.3	5.2	4.7	5.2	6.8	5.8	5.2	5.2	5.3	4.2	5.1	Diurnal Average	
Dir	275.4	286.4	293.3	287.4	281.6	272.4	278.6	280.6	274.6	275.9	277.3	279.8	278.8	288.5	293.0	297.4	284.5	281.6	287.9	282.5	278.9	280.4	289.3	281.3		
Spd	43.6	48.5	43.6	35.4	34.2	39.5	33.2	50.7	51.3	49.1	37.5	32.8	35.3	35.1	29.8	27.1	32.6	35.4	34.3	31.5	35.9	36.7	33.8	32.0	Diurnal Maximum	
Dir	235.5	233.1	229.8	233.4	232.8	239.6	247.4	256.4	251.3	255.7	257.5	263.8	253.0	256.7	245.8	246.4	255.1	251.2	255.3	253.0	249.7	253.3	252.0	232.6		

Maximum Speed Value: 51 km/h on Dec 15 09:00
Maximum Daily Speed Average: 33.3 km/h on Dec 15
Maximum Diurnal Speed Average: 6.8 km/h at hour 18

Minimum Speed Value: 0 km/h on Dec 28 10:00
Minimum Daily Speed Average: 0.3 km/h on Dec 28
Minimum Diurnal Speed Average: 3.7 km/h at hour 5

Hours in Service: 744
Hours of Data: 744
Hours of Missing Data: 0

Monthly Average Velocity: 5.19 km/h 282.62 deg

Speed Percentiles: $P_1 = 0.6$ $P_{10} = 2.8$ $Q_1 = 5.3$ Median = 10.7 $Q_3 = 16.5$ $P_{90} = 21.4$ $P_{99} = 35.6$

Percent Operational Time: 100.0

All monthly, daily, and diurnal averages have been calculated using vector methods

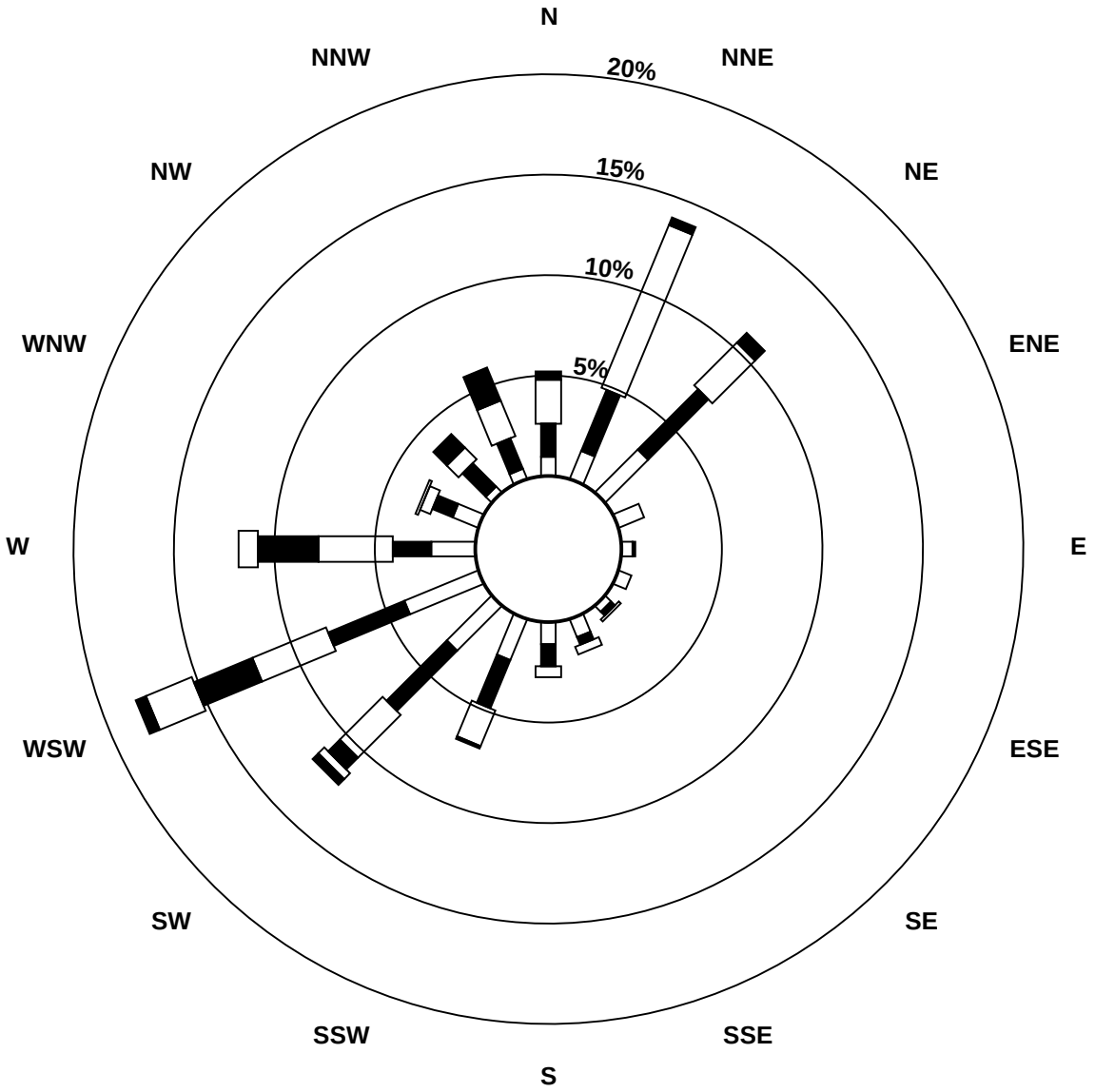
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	11	27	36	8	0	0	82
NorthEast	33	50	74	10	0	0	167
East	9	3	0	0	0	0	12
SouthEast	11	4	2	0	0	0	17
South	19	24	11	2	0	0	56
SouthWest	41	59	41	16	7	4	168
West	35	35	48	37	23	3	181
NorthWest	7	17	18	18	1	0	61
Total	166	219	230	91	31	7	744

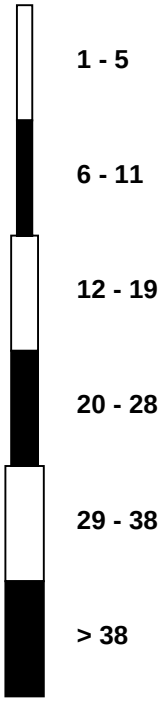
Wind Rose

Wind Speed (WS) (km/h)

Smoky Heights - December 2013



Wind Speed Classes (km/h)



Peace Airshed Zone Association

Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Smoky Heights - December 2013

Maximum Speed: 51 km/h on Dec 15 09:00

Maximum Daily Speed Average: 34.0 km/h on Dec 15

Minimum Speed: 0 km/h on Dec 28 10:00

Minimum Daily Speed Average: 3.2 km/h on Dec 28

Maximum Diurnal Speed Average: 13.4 km/h at hour 9

Minimum Diurnal Speed Average: 10.7 km/h at hour 23

Monthly Average Speed: 12.18 km/h

Percentiles: $P_1 = 0.9$ $P_{10} = 3.2$ $Q_1 = 5.6$ Median = 10.9 $Q_3 = 16.8$ $P_{90} = 21.9$ $P_{99} = 35.8$

Hours in Service: 744

Hours of Data: 744

Hours of Missing Data: 0

Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	19	21	18	21	18	14	16	17	16	16	17	16	15	18	20	21	22	21	14	8	10	6	5	6	15.6	22.2
2-Dec	9	18	20	22	20	21	21	21	20	22	22	20	21	17	16	17	15	12	10	10	5	3	8	11	15.8	21.7
3-Dec	11	11	14	12	14	14	9	7	12	11	9	8	7	6	5	6	7	16	15	10	7	14	12	16	10.4	16.3
4-Dec	9	8	7	6	5	8	4	2	4	3	4	6	3	3	1	2	1	1	2	2	3	3	5	5	3.9	8.8
5-Dec	5	5	4	4	4	4	3	1	0	1	2	1	1	1	3	5	4	4	5	7	7	6	5	4	3.6	7.3
6-Dec	2	3	4	4	4	5	6	5	5	6	6	6	6	7	8	9	8	9	9	6	9	8	8	9	6.4	9.4
7-Dec	10	10	11	9	10	8	6	8	7	7	6	4	2	3	7	8	10	19	11	18	23	20	12	9	9.9	22.7
8-Dec	6	7	10	9	10	8	11	15	12	5	7	3	6	5	8	7	9	10	10	12	18	20	11	19	9.9	19.9
9-Dec	19	23	27	23	17	16	17	15	19	16	15	13	13	12	11	7	6	5	9	11	14	17	18	17	15.0	26.6
10-Dec	15	14	12	9	8	3	1	4	3	4	4	4	4	4	4	2	3	4	6	5	7	7	9	6	5.9	15.1
11-Dec	8	5	3	7	11	14	18	18	19	15	15	14	13	12	14	14	12	11	13	13	9	11	12	13	12.4	19.3
12-Dec	14	14	14	13	12	12	12	12	12	14	15	15	14	14	17	16	15	14	14	11	12	10	10	11	13.1	17.0
13-Dec	10	9	11	12	13	13	13	11	8	8	3	5	5	4	4	5	7	5	5	6	6	7	8	6	7.6	13.0
14-Dec	5	4	10	12	17	20	19	15	12	11	13	13	21	17	12	7	4	9	13	13	22	20	13	32	13.9	32.1
15-Dec	44	49	44	35	34	40	33	51	51	49	38	33	32	33	27	26	27	35	27	23	15	21	21	28	34.0	51.5
16-Dec	33	36	32	32	27	25	21	22	19	18	20	20	19	17	15	13	15	14	11	10	7	5	4	5	18.2	35.8
17-Dec	0	3	10	15	15	19	18	15	15	18	20	18	19	21	27	22	20	20	20	22	13	17	11	9	16.2	26.8
18-Dec	5	8	7	7	5	6	7	7	10	8	2	2	5	5	2	9	21	17	18	17	8	12	13	19	9.2	21.3
19-Dec	16	17	14	17	16	17	17	8	9	8	12	8	5	4	5	5	4	4	6	6	6	5	3	3	8.9	17.3
20-Dec	2	2	9	7	6	9	12	11	12	10	12	11	15	16	21	18	15	15	13	13	11	11	9	8	11.2	20.5
21-Dec	8	3	3	1	2	4	5	7	7	10	7	6	3	8	4	2	2	2	5	4	3	4	4	4	4.5	10.0
22-Dec	3	4	2	2	3	5	4	4	6	6	7	7	7	9	12	11	12	13	11	14	18	15	15	19	8.7	18.6
23-Dec	18	11	13	11	13	13	15	17	33	32	30	31	18	12	18	7	15	17	22	23	24	23	20	21	19.0	33.4
24-Dec	21	22	20	20	18	20	21	26	23	22	28	25	23	17	15	18	17	19	18	16	8	7	2	3	17.9	28.2
25-Dec	3	4	4	8	15	18	19	17	19	14	20	27	35	35	28	27	33	35	34	32	36	37	34	30	23.5	36.7
26-Dec	27	23	23	15	15	17	23	14	10	8	4	15	25	31	30	27	24	23	23	20	20	21	19	20	19.8	30.7
27-Dec	15	16	16	14	13	16	17	17	18	15	14	13	14	14	14	10	8	10	8	6	6	5	6	3	12.1	18.1
28-Dec	4	4	5	3	1	1	2	3	2	0	3	2	2	4	6	6	7	5	4	4	2	2	3	1	3.2	6.6
29-Dec	2	2	2	3	3	2	4	7	12	13	14	15	15	14	14	13	11	9	7	5	3	3	8	6	7.8	15.4
30-Dec	6	8	8	5	8	10	10	8	10	10	11	14	14	11	14	18	18	17	17	16	16	15	15	16	12.2	17.6
31-Dec	14	14	14	11	11	10	9	8	8	6	4	4	5	4	3	7	8	7	7	5	2	4	7	7	7.6	14.1
	11.7	12.3	12.5	11.8	11.9	12.6	12.7	12.6	13.4	12.4	12.3	12.1	12.5	12.2	12.4	11.7	12.2	13.0	12.5	11.8	11.3	11.6	10.7	11.7	Diurnal Average	
	43.7	48.6	43.7	35.4	34.3	39.6	33.3	50.8	51.5	49.1	37.6	33.0	35.5	35.2	29.9	27.3	32.7	35.5	34.4	31.6	36.0	36.7	33.9	32.1	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

Peace Airshed Zone Association

Hourly Standard Deviations

Wind Direction (WD) - deg

Smoky Heights - December 2013

Maximum Value: 92.7 deg on Dec 3 15:00

Minimum Value: 1.9 deg on Dec 24 04:00

Percentiles: P_1 = 2.6 P_{10} = 4.1 Q_1 = 5.6 Median = 8.6 Q_3 = 15.2 P_{90} = 28.5 P_{99} = 67.1

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST)																								Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Maximum
1-Dec	5	4	5	6	4	13	10	10	12	10	8	7	8	8	7	7	6	6	16	21	22	48	43	31	47.6
2-Dec	39	6	5	5	6	8	7	6	6	6	8	8	7	9	8	8	10	6	14	9	15	36	25	6	38.6
3-Dec	20	23	7	6	6	5	18	10	13	12	17	17	28	62	93	39	36	5	7	8	55	9	11	7	92.7
4-Dec	17	8	43	19	29	21	60	54	70	52	27	8	26	50	34	54	38	39	35	22	12	40	11	11	69.5
5-Dec	12	11	11	12	10	9	22	39	43	24	49	59	57	17	71	45	11	19	8	6	16	14	26	14	71.5
6-Dec	24	15	14	17	14	14	17	15	9	9	10	6	11	6	7	5	6	7	5	10	15	5	10	7	24.4
7-Dec	6	6	4	4	3	9	9	4	5	5	6	22	38	34	21	11	14	12	20	21	4	23	28	16	37.5
8-Dec	48	28	10	9	9	20	15	12	6	39	21	49	9	20	10	6	7	9	6	8	4	5	10	21	49.2
9-Dec	7	12	11	9	8	11	8	16	4	6	5	4	5	5	10	28	19	41	8	5	11	8	5	6	41.3
10-Dec	5	6	6	6	8	52	23	10	17	23	40	21	21	23	17	33	48	8	6	10	8	5	5	15	51.9
11-Dec	9	11	44	9	12	8	6	5	5	6	7	7	6	7	9	7	6	6	6	6	5	6	5	6	44.0
12-Dec	5	6	4	5	4	5	4	5	5	5	4	4	6	5	5	6	5	5	5	5	5	5	5	5	6.5
13-Dec	4	9	9	11	10	9	8	11	13	16	29	22	14	15	56	9	7	14	7	6	6	7	5	16	56.4
14-Dec	15	29	19	8	5	5	5	6	7	12	5	12	10	6	35	17	33	17	12	20	6	10	16	6	35.0
15-Dec	3	3	3	3	3	4	5	4	5	3	3	6	3	3	3	4	5	9	3	4	7	4	4	5	9.0
16-Dec	6	5	6	3	2	5	3	3	9	3	9	6	3	7	5	6	6	7	5	9	11	8	18	27	26.6
17-Dec	60	16	8	6	5	5	4	11	8	7	4	5	6	24	9	21	14	16	7	9	14	7	14	14	60.2
18-Dec	28	18	8	8	27	12	12	19	12	28	46	62	19	17	91	11	9	15	10	19	14	13	8	13	90.8
19-Dec	13	13	10	12	9	12	20	19	15	9	6	6	21	18	6	13	17	19	24	6	6	8	8	27	26.7
20-Dec	22	85	5	5	7	5	3	3	3	6	5	5	4	4	3	4	5	5	5	7	7	9	8	9	85.0
21-Dec	9	15	67	19	38	13	18	18	7	10	8	17	25	16	31	34	66	61	15	9	41	9	8	9	66.6
22-Dec	12	7	6	10	9	6	9	8	10	5	14	5	6	7	7	5	7	8	10	11	7	6	6	6	14.4
23-Dec	5	11	9	15	13	10	18	4	4	3	8	8	12	18	16	14	12	9	7	5	4	3	3	6	18.3
24-Dec	5	6	4	2	10	3	2	7	5	7	3	7	3	10	10	2	3	3	4	7	10	23	38	39	38.5
25-Dec	45	42	20	12	4	4	4	3	6	5	9	10	5	4	9	7	6	4	3	4	3	3	3	3	44.8
26-Dec	4	3	4	7	35	8	13	15	12	10	42	10	8	5	3	3	6	7	30	8	6	5	7	5	41.7
27-Dec	8	7	6	9	6	5	4	6	6	7	7	11	11	7	12	11	10	11	10	15	5	16	14	24	24.4
28-Dec	17	10	13	20	40	23	23	7	32	33	14	65	22	14	6	6	16	16	29	7	13	10	35	90	90.2
29-Dec	21	33	28	27	46	19	13	5	4	7	5	12	9	10	9	8	9	9	19	17	33	68	9	11	68.2
30-Dec	14	8	8	8	5	5	5	8	6	6	6	5	6	10	5	3	3	3	3	5	6	6	5	4	14.4
31-Dec	5	5	6	9	8	12	9	6	7	11	21	10	9	15	15	7	6	6	7	11	21	25	5	8	25.1
	60.2	85.0	66.6	27.4	46.3	51.9	59.8	54.2	69.5	51.6	49.2	64.8	56.6	61.9	92.7	54.0	65.7	61.0	35.0	21.6	55.1	68.2	42.7	90.2	

PAZA
Beaverlodge Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 6.9 ppb on Dec 14 06:00 Maximum Daily Average: 1.4 ppb on Dec 14

Minimum Value: 0 ppb on Dec 15 17:00 Minimum Daily Average: 0.1 ppb on Dec 24
Maximum Diurnal Average: 0.6 ppb at hour 6 Minimum Diurnal Average: 0.3 ppb at hour 21
Monthly Average: 0.45 ppb Percentiles: P_1 = 0.0 P_{10} = 0.1 Q_1 = 0.2 Median = 0.3 Q_3 = 0.5 P_{90} = 0.9 P_{99} = 2.6

Hours in Service:	744
Hours of Data:	710
Hours of Missing Data:	34
Hours of Calibration:	34
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
3-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
4-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0.3	0.7
5-Dec	0	0	0	0	A	1	1	2	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0	0	0.6	1.8
6-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	3	3	0.7	3.2
7-Dec	2	2	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0.8	2.3
8-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
9-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0.2	0.4
10-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
11-Dec	0	0	0	0	A	0	1	1	1	1	1	1	1	1	0	1	2	1	2	1	0	0	0	0	0.6	2.2
12-Dec	0	0	1	2	A	0	0	0	0	0	0	0	0	1	2	2	2	3	3	1	0	0	0	0	0.8	3.1
13-Dec	0	0	1	0	A	3	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0.6	2.6
14-Dec	1	0	0	0	A	7	5	3	1	1	1	1	1	1	1	1	3	2	1	1	1	1	0	1	1.4	6.9
15-Dec	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
16-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.1	1.3
17-Dec	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
18-Dec	0	0	0	0	A	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	0	0.3	1.6
19-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
20-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	1	1	1	1	1	1	0.5	1.2
21-Dec	1	0	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0.7	1.5
22-Dec	0	0	0	1	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.4	0.7
23-Dec	0	0	1	1	A	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	1.1
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
26-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
27-Dec	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
28-Dec	0	0	1	1	A	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	1	1	0.6	0.9
29-Dec	1	1	0	1	A	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	1	1	0.6	1.2
30-Dec	1	1	1	1	A	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0.5	1.1
31-Dec	1	1	1	1	A	2	3	2	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1.3	2.6
	0.4	0.4	0.4	0.5	--	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.4	0.4	0.4	Diurnal Average	
	2.3	2.0	1.8	2.3	--	6.9	4.6	2.6	1.5	1.4	1.4	1.4	1.7	2.0	2.3	1.9	2.7	3.1	2.8	1.4	1.1	1.8	2.9	3.2	Diurnal Maximum	

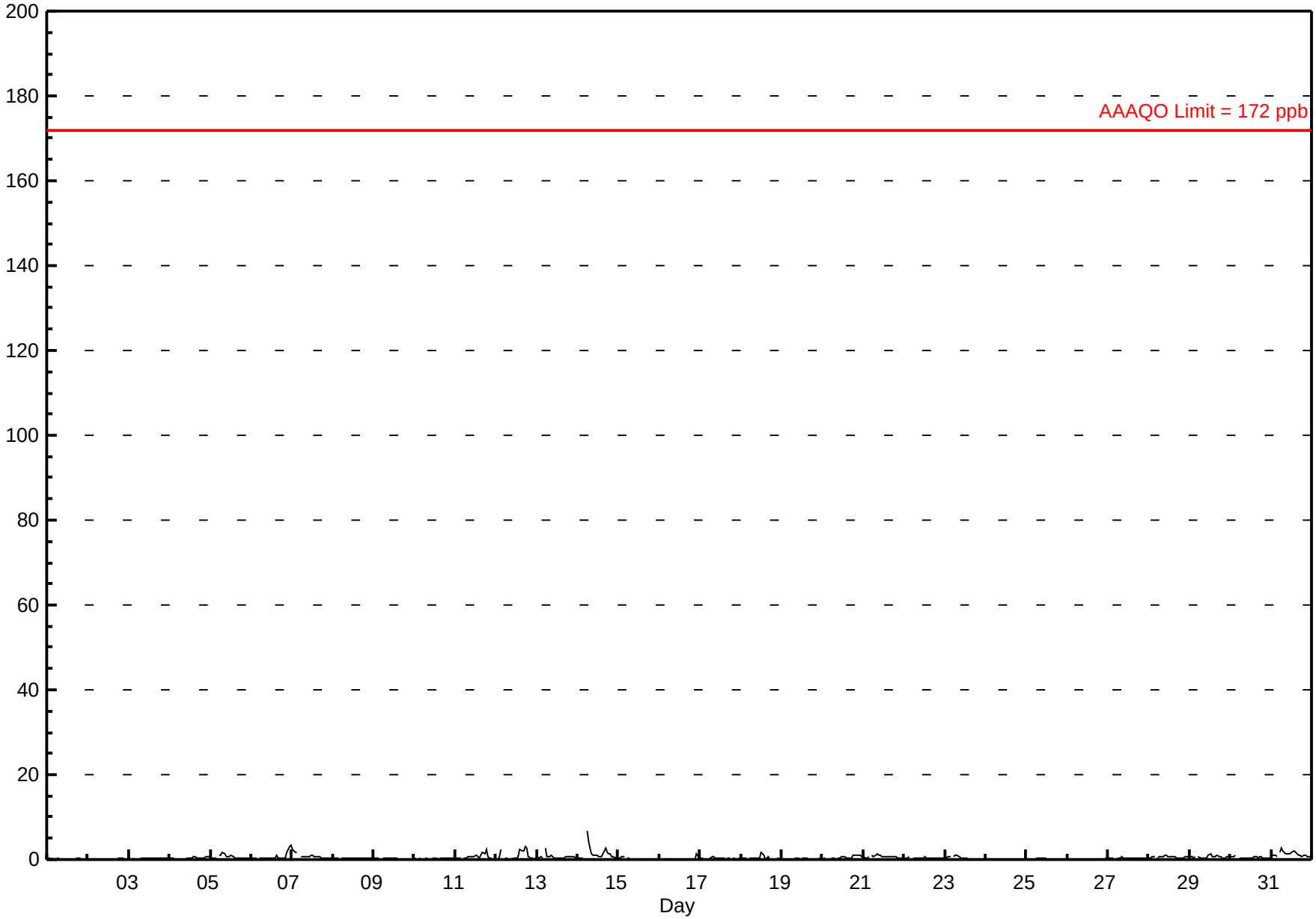
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Beaverlodge - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Beaverlodge - December 2013

Maximum Value: 12.7 ppb on Dec 18 17:00

Maximum Daily Average: 1.9 ppb on Dec 14

Minimum Value: 0 ppb on Dec 15 17:00

Minimum Daily Average: 0.2 ppb on Dec 24

Maximum Diurnal Average: 1.1 ppb at hour 17

Minimum Diurnal Average: 0.5 ppb at hour 21

Monthly Average: 0.69 ppb

Percentiles: P_1 = 0.1 P_{10} = 0.2 Q_1 = 0.3 Median = 0.4 Q_3 = 0.8 P_{90} = 1.4 P_{99} = 3.8

Hours in Service:	744
Hours of Data:	710
Hours of Missing Data:	34
Hours of Calibration:	34
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
3-Dec	0	0	0	1	A	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.5	2.1
4-Dec	0	1	0	0	A	0	0	0	0	0	0	0	0	1	1	1	1	0	1	1	1	1	1	1	0.6	1.4
5-Dec	0	0	0	0	A	1	1	2	2	1	1	1	1	1	1	0	0	0	0	0	0	1	1	0	0.8	2.2
6-Dec	1	0	0	0	A	0	1	0	0	1	0	0	0	0	1	5	1	0	0	1	0	3	4	4	1.1	5.4
7-Dec	3	2	2	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1.1	2.9
8-Dec	0	1	1	0	A	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	1	1	0.5	0.7
9-Dec	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	1	0.4	0.9
10-Dec	0	0	0	1	A	0	0	2	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0.4	1.8
11-Dec	0	0	0	0	A	0	1	1	1	1	1	1	1	1	0	2	3	3	4	1	0	0	0	0	1.0	4.1
12-Dec	0	0	2	3	A	0	0	0	0	0	0	0	0	2	3	2	2	4	3	2	0	0	0	0	1.2	4.0
13-Dec	0	0	1	0	A	4	2	1	1	1	1	2	1	0	0	1	1	1	1	1	1	2	1	1	0.9	3.7
14-Dec	1	1	1	1	A	10	5	4	2	1	1	1	1	1	1	3	3	2	2	2	1	1	1	1	1.9	9.6
15-Dec	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.8
16-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0.3	2.1
17-Dec	0	0	0	0	A	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.4	1.0
18-Dec	0	0	0	0	A	1	1	0	0	0	0	0	3	2	0	0	13	0	0	0	0	0	0	0	1.1	12.7
19-Dec	0	0	0	0	A	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.3	1.2
20-Dec	0	0	0	0	A	1	0	0	0	1	1	1	1	1	1	1	0	1	2	2	2	2	1	1	0.7	1.7
21-Dec	1	1	1	1	A	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.7
22-Dec	0	1	0	2	A	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	0.7	1.9
23-Dec	1	1	1	1	A	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.6
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
26-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
27-Dec	0	0	0	0	A	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0.6	1.4
28-Dec	0	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.7	1.0
29-Dec	1	1	1	1	A	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	0	1	1	0.9	2.6
30-Dec	1	1	1	2	A	1	1	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0.7	2.0
31-Dec	1	1	1	1	A	2	4	3	2	2	2	2	2	2	2	1	1	1	1	1	2	1	1	1	1.6	3.8
	0.5	0.5	0.5	0.7	--	0.9	0.8	0.9	0.7	0.6	0.6	0.7	0.8	0.7	0.6	0.9	1.1	0.7	0.7	0.6	0.5	0.6	0.6	0.6	Diurnal Average	
	2.9	2.5	2.4	2.6	--	9.6	5.4	3.6	2.1	1.6	1.7	2.1	2.8	2.4	2.7	5.4	12.7	4.0	4.1	2.3	2.0	3.2	3.7	3.7	Diurnal Maximum	

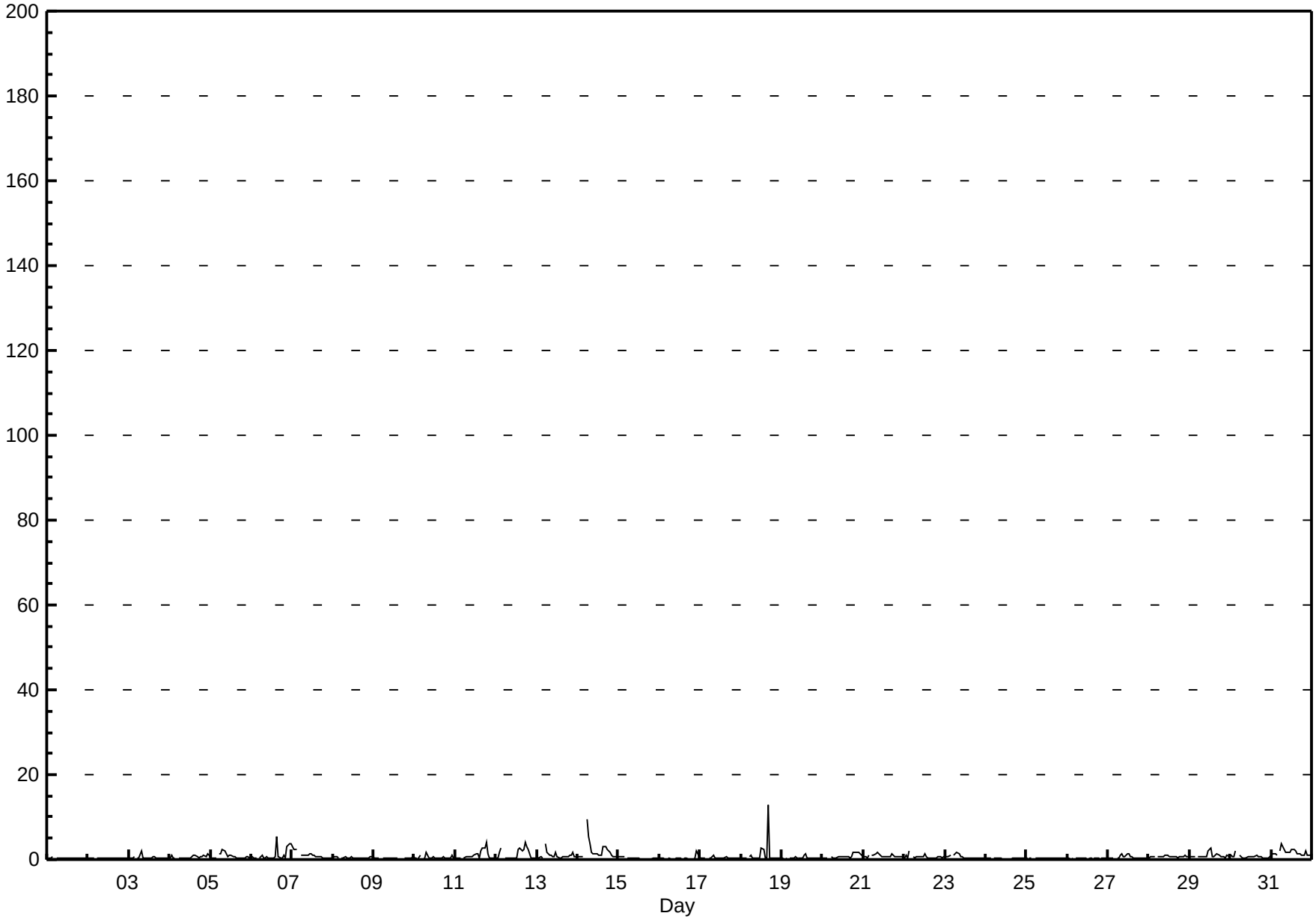
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Beaverlodge - December 2013

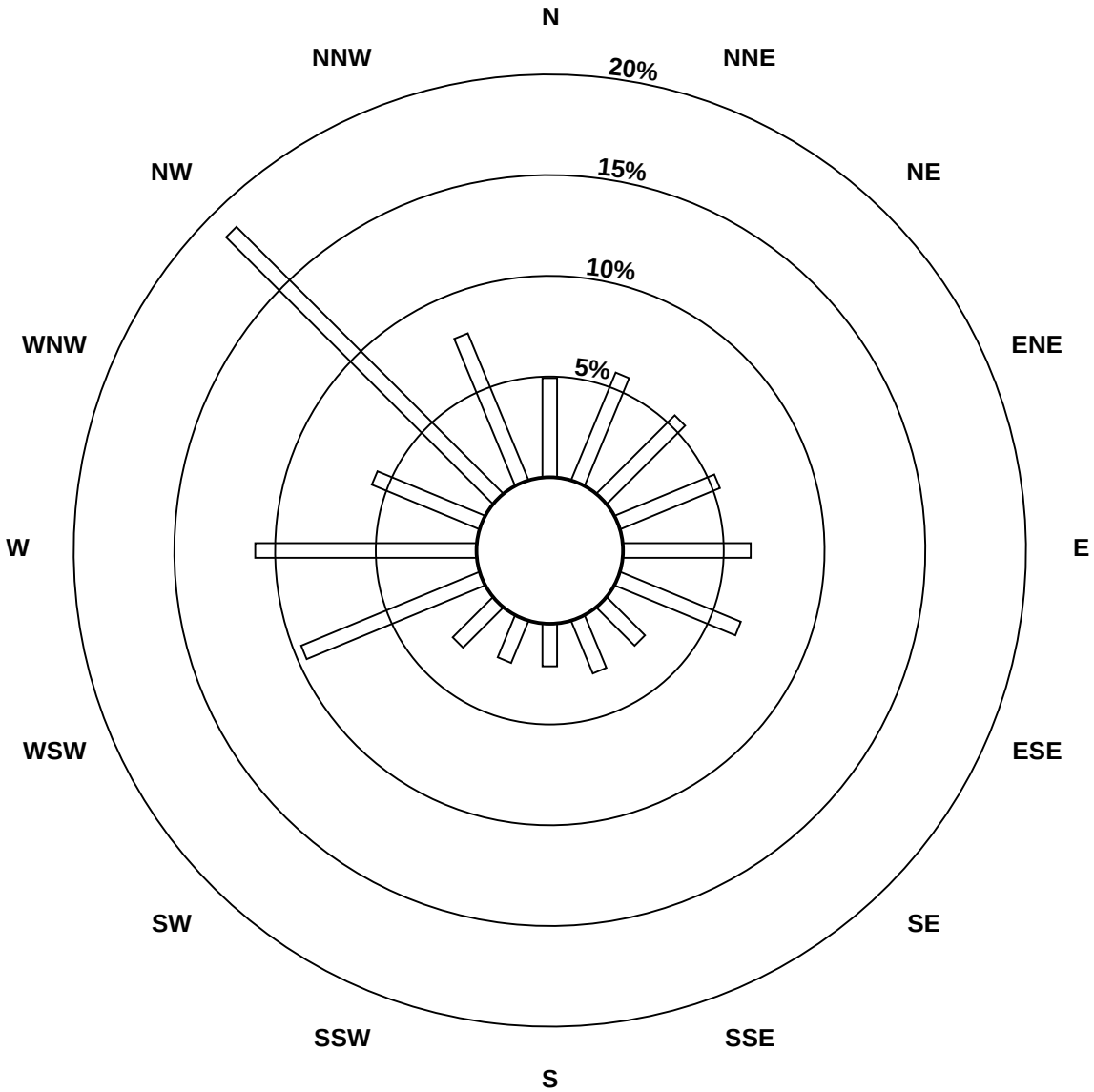


FOCUS AIR QUALITY MONITORING

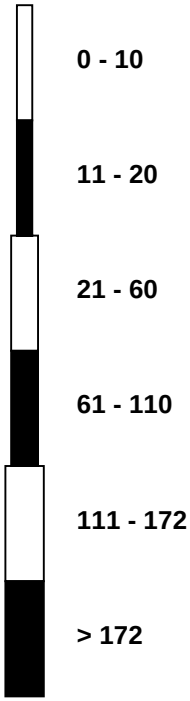
Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Beaverlodge - December 2013



Pollutant Classes (ppb)

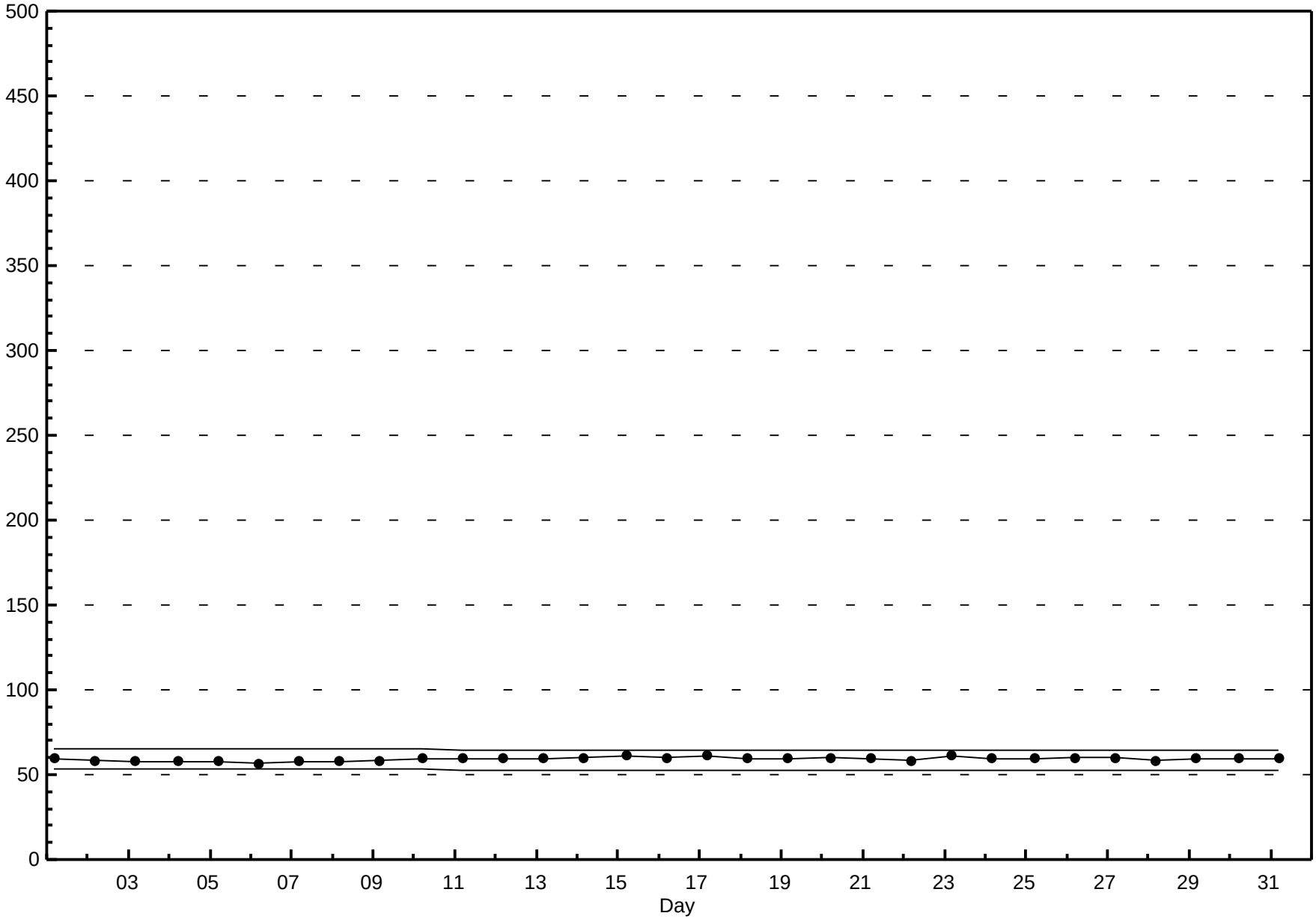


Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Averages

Nitrogen Dioxide (NO_2) - ppb

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 32.0 ppb on Dec 11 01:00
Maximum Daily Average: 15.9 ppb on Dec 22

Minimum Value: 0 ppb on Dec 25 14:00
Maximum Diurnal Average: 7.9 ppb at hour 21
Monthly Average: 5.88 ppb

Minimum Daily Average: 0.6 ppb on Dec 24
Minimum Diurnal Average: 3.6 ppb at hour 13
Percentiles: P_1 = 0.3 P_{10} = 0.8 Q_1 = 1.8 Median = 4.0 Q_3 = 7.4 P_{90} = 14.5 P_{99} = 29.2

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	5	4	2	2	A	3	2	2	2	2	2	1	1	1	1	1	1	2	2	2	2	2	1	1	2.0	5.4
2-Dec	1	1	1	1	A	2	1	2	2	2	1	2	1	1	2	2	3	4	6	5	5	3	4	4	2.4	5.5
3-Dec	2	3	5	5	A	8	6	12	5	5	3	2	2	2	3	4	4	5	4	5	5	6	4	9	4.7	12.2
4-Dec	5	4	4	11	A	11	10	6	4	3	5	5	5	10	12	13	17	30	18	19	21	29	20	30	12.6	29.9
5-Dec	31	26	23	15	A	6	6	7	10	7	4	5	5	4	5	7	9	7	7	9	9	15	6	8	10.1	31.3
6-Dec	7	7	9	8	A	20	22	14	12	15	6	8	8	6	5	7	8	12	7	16	25	12	10	8	10.9	24.6
7-Dec	7	6	5	4	A	6	10	7	16	13	9	12	3	3	4	4	3	4	1	4	8	6	4	3	6.1	16.1
8-Dec	1	2	1	1	A	3	2	2	11	15	6	12	3	4	4	9	6	5	5	5	2	1	1	2	4.5	14.5
9-Dec	2	2	2	1	A	2	6	3	3	C	C	C	C	C	C	4	6	14	12	7	5	6	4	3	--	13.7
10-Dec	1	2	1	1	A	5	5	5	11	4	7	4	7	8	11	6	22	17	22	24	29	22	31	24	11.7	30.7
11-Dec	32	30	28	28	A	16	12	7	3	3	3	4	4	2	1	1	1	2	2	1	1	3	3	1	8.2	32.0
12-Dec	2	2	1	1	A	2	1	2	4	5	3	3	3	2	2	2	2	3	3	2	2	2	2	2	2.2	4.8
13-Dec	3	3	3	2	A	3	2	3	6	6	5	12	3	3	3	6	4	8	15	12	11	10	7	6	6.0	15.3
14-Dec	6	6	7	6	A	7	7	9	10	18	13	4	6	7	16	20	15	13	11	9	12	8	6	7	9.8	20.3
15-Dec	3	1	0	1	A	3	2	4	5	5	5	6	2	1	1	1	1	2	3	2	1	1	1	1	2.1	5.5
16-Dec	1	1	1	1	A	1	0	1	1	2	4	10	3	5	2	9	9	7	7	5	8	8	5	4	4.2	10.2
17-Dec	1	2	3	2	A	3	4	8	6	2	1	1	1	1	2	2	3	3	3	3	3	3	4	2	2.8	8.0
18-Dec	2	2	2	2	A	4	2	4	3	4	4	3	3	3	4	7	14	6	6	4	3	3	4	5	4.1	13.6
19-Dec	6	11	8	10	A	7	7	8	17	12	10	5	4	8	9	18	13	7	2	6	12	5	4	3	8.3	18.3
20-Dec	2	5	15	11	A	8	6	7	20	5	2	2	6	7	5	6	5	6	7	10	9	7	6	7	7.2	20.1
21-Dec	7	5	7	8	A	8	9	9	13	16	7	4	4	5	5	7	10	18	12	19	16	20	9	12	10.0	19.7
22-Dec	9	7	7	15	A	13	16	13	17	18	17	16	15	18	14	17	21	21	21	19	19	19	18	18	15.9	20.8
23-Dec	19	16	19	17	A	8	1	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	1	1	4.0	19.1
24-Dec	1	1	0	0	A	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0.6	1.2
25-Dec	1	1	0	1	A	2	2	2	2	4	4	1	0	0	0	0	0	0	0	0	1	1	1	1	1.1	4.3
26-Dec	1	0	1	1	A	1	1	2	2	2	2	1	0	0	0	0	1	0	0	0	1	1	2	2	1.0	2.1
27-Dec	2	1	2	2	A	3	2	1	1	1	1	1	2	2	3	3	3	3	3	3	4	4	2	5	2.3	4.5
28-Dec	4	4	4	3	A	4	3	3	3	5	4	3	3	2	2	2	4	4	4	5	7	7	7	6	4.0	7.0
29-Dec	6	6	9	9	A	11	14	12	10	7	6	7	6	4	4	4	5	5	5	5	4	3	3	3	6.5	14.2
30-Dec	3	3	3	4	A	6	4	2	1	1	1	1	1	1	2	2	2	2	2	2	2	4	6	5	2.6	6.2
31-Dec	4	4	4	4	A	5	7	6	8	8	5	5	3	4	4	6	11	12	13	22	19	25	24	12	9.4	24.8
	5.7	5.4	5.7	5.6	--	5.9	5.6	5.3	6.8	6.3	4.7	4.7	3.6	3.9	4.3	5.6	6.6	7.1	6.6	7.3	7.9	7.7	6.5	6.3	Diurnal Average	
	32.0	29.7	28.0	27.6	--	19.6	22.3	13.9	20.1	18.2	17.0	15.6	14.6	18.0	16.3	20.3	22.1	29.6	22.1	23.8	28.8	29.3	30.7	29.9	Diurnal Maximum	

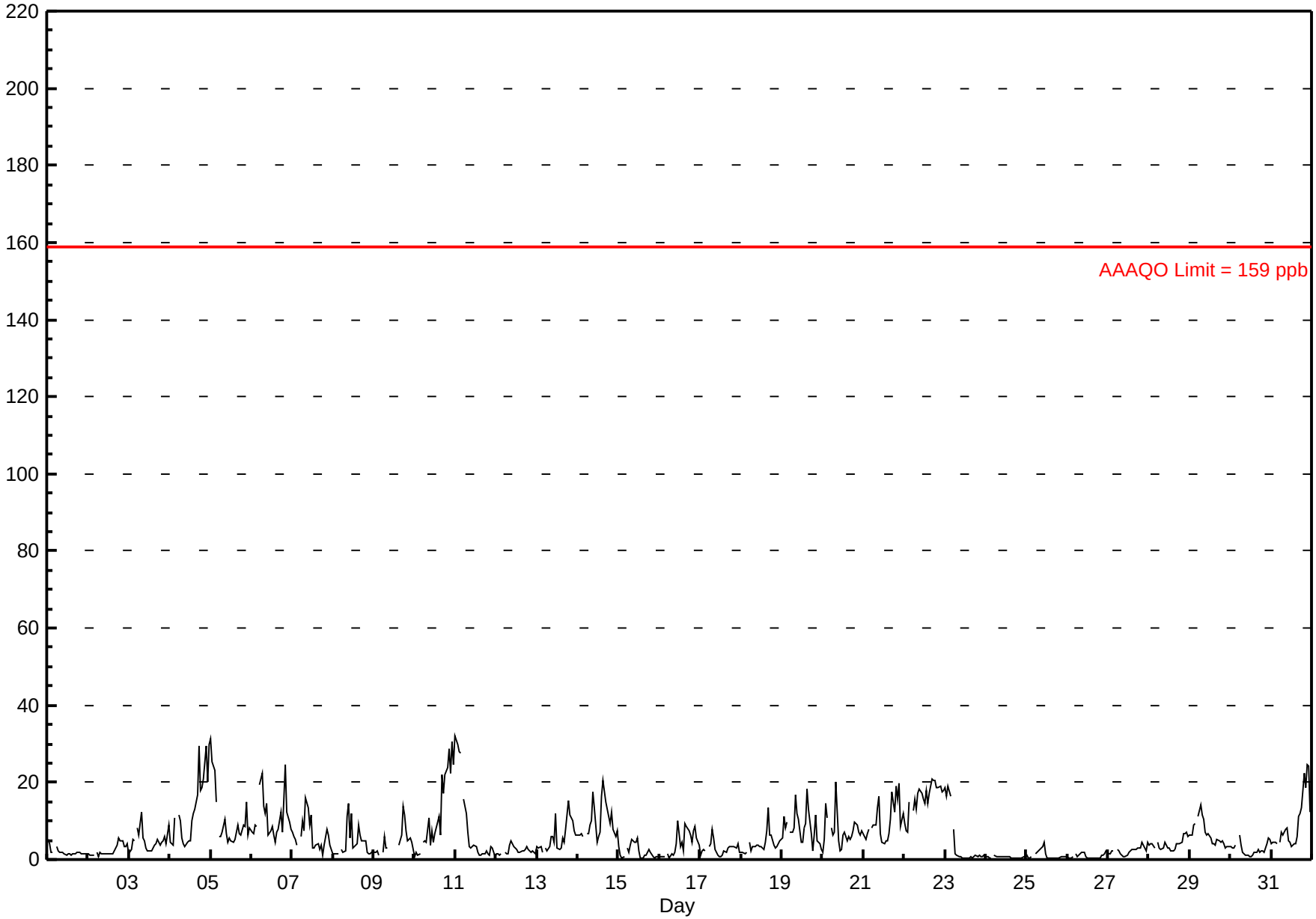
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

Peace Airshed Zone Association

Hourly Averages

Nitrogen Dioxide (NO_2) - ppb

Beaverlodge - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Dioxide (NO_2) - ppb

Beaverlodge - December 2013

Maximum Value: 319.0 ppb on Dec 3 08:00

Maximum Daily Average: 25.4 ppb on Dec 19

Minimum Value: 1 ppb on Dec 25 15:00

Minimum Daily Average: 1.9 ppb on Dec 26

Maximum Diurnal Average: 21.6 ppb at hour 8

Minimum Diurnal Average: 7.1 ppb at hour 13

Monthly Average: 11.72 ppb

Percentiles: P_1 = 0.8 P_{10} = 1.9 Q_1 = 3.1 Median = 6.3 Q_3 = 12.8 P_{90} = 27.1 P_{99} = 101.3

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	6	5	3	5	A	5	3	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2.7	6.2
2-Dec	2	2	1	1	A	4	34	2	2	2	2	2	2	2	3	3	5	6	8	7	10	11	7	12	5.7	33.6
3-Dec	3	6	10	10	A	10	15	319	7	10	5	3	3	3	5	6	5	6	6	7	6	21	6	38	22.2	319.0
4-Dec	8	8	5	27	A	33	15	11	7	5	9	10	16	33	20	28	25	35	22	24	40	45	31	36	21.4	44.7
5-Dec	35	32	30	18	A	11	10	10	12	10	5	7	6	5	7	11	11	10	9	11	22	28	9	13	14.0	35.2
6-Dec	10	23	26	39	A	38	89	27	16	31	11	27	25	29	11	13	10	18	13	30	31	17	12	10	24.2	88.6
7-Dec	10	9	7	5	A	8	25	22	36	31	21	27	6	5	10	9	5	10	4	8	20	13	10	6	13.3	35.7
8-Dec	2	2	2	2	A	4	3	3	34	33	11	25	5	5	8	11	10	7	11	12	4	2	3	4	8.9	34.1
9-Dec	7	8	6	3	A	3	16	7	5	C	C	C	C	C	C	7	13	18	14	12	9	9	6	5	--	17.6
10-Dec	2	3	3	4	A	10	14	103	28	9	16	15	8	14	15	9	34	43	31	36	34	35	35	28	23.1	102.9
11-Dec	34	36	33	33	A	18	23	9	4	5	6	7	4	5	2	2	3	3	4	2	2	5	5	1	10.7	35.9
12-Dec	4	2	1	2	A	3	2	2	7	9	5	4	4	3	3	3	3	4	5	4	2	2	3	2	3.5	9.1
13-Dec	4	4	5	3	A	5	4	4	9	9	7	287	10	4	7	7	6	11	18	14	12	12	9	7	19.9	286.8
14-Dec	7	7	7	6	A	8	10	11	12	28	21	8	20	27	25	25	18	16	19	15	18	12	9	10	14.8	28.3
15-Dec	8	3	1	2	A	6	5	6	8	7	10	10	12	2	2	3	5	4	8	4	3	2	4	3	5.1	12.1
16-Dec	1	3	2	1	A	4	28	4	3	4	7	16	13	9	5	16	15	11	12	8	16	15	9	7	9.2	27.9
17-Dec	2	3	3	2	A	5	7	13	9	9	2	2	1	4	4	5	4	4	4	4	5	4	6	3	4.6	12.7
18-Dec	2	2	2	2	A	141	39	5	7	7	5	4	5	4	6	15	28	20	20	13	4	13	7	6	15.5	140.5
19-Dec	7	27	11	11	A	8	9	9	45	16	15	8	6	179	106	30	20	13	5	16	19	10	8	5	25.4	179.1
20-Dec	5	30	16	15	A	11	9	19	27	12	4	6	9	10	8	9	8	8	10	28	17	10	10	9	12.6	30.2
21-Dec	8	6	7	9	A	9	11	14	21	22	16	6	5	6	7	14	20	29	18	39	38	36	16	40	17.3	40.4
22-Dec	26	11	9	25	A	17	30	19	31	34	23	21	21	23	17	19	23	24	23	21	21	21	19	22	21.7	33.9
23-Dec	21	20	30	54	A	12	2	3	2	1	2	3	2	1	1	2	2	3	6	3	5	3	3	6	8.1	53.8
24-Dec	3	2	3	1	A	3	1	1	1	1	2	2	4	2	4	1	1	1	1	1	1	3	4	1	1.9	4.3
25-Dec	10	1	2	2	A	3	3	4	3	4	13	3	1	1	1	1	1	1	2	2	2	2	2	2	2.8	12.6
26-Dec	2	1	1	2	A	3	1	4	5	2	2	3	1	1	2	1	2	2	1	1	2	1	2	3	1.9	4.5
27-Dec	3	2	3	3	A	4	3	3	2	2	1	2	3	3	3	4	3	4	4	4	7	5	3	6	3.3	6.8
28-Dec	6	5	5	4	A	6	5	3	4	5	5	4	4	3	3	4	8	10	5	6	7	8	8	8	5.6	9.9
29-Dec	7	8	10	11	A	13	20	18	16	10	9	9	8	5	6	6	6	5	5	6	7	4	5	6	8.7	19.9
30-Dec	6	4	4	4	A	156	6	3	5	3	2	2	2	2	5	3	5	2	3	3	2	10	8	6	10.7	156.2
31-Dec	5	5	5	6	A	49	11	9	9	13	9	7	4	5	5	7	16	21	22	36	22	30	29	14	14.8	48.5
	8.3	9.1	8.2	10.1	--	19.6	14.6	21.6	12.2	11.3	8.3	17.7	7.1	13.3	10.1	8.9	10.3	11.4	10.1	12.2	12.7	12.7	9.4	10.4	Diurnal Average	
	35.2	35.9	32.6	53.8	--	156.2	88.6	319.0	44.7	33.9	22.5	286.8	25.4	179.1	105.7	30.3	34.1	43.4	31.1	39.3	40.4	44.7	35.4	40.4	Diurnal Maximum	

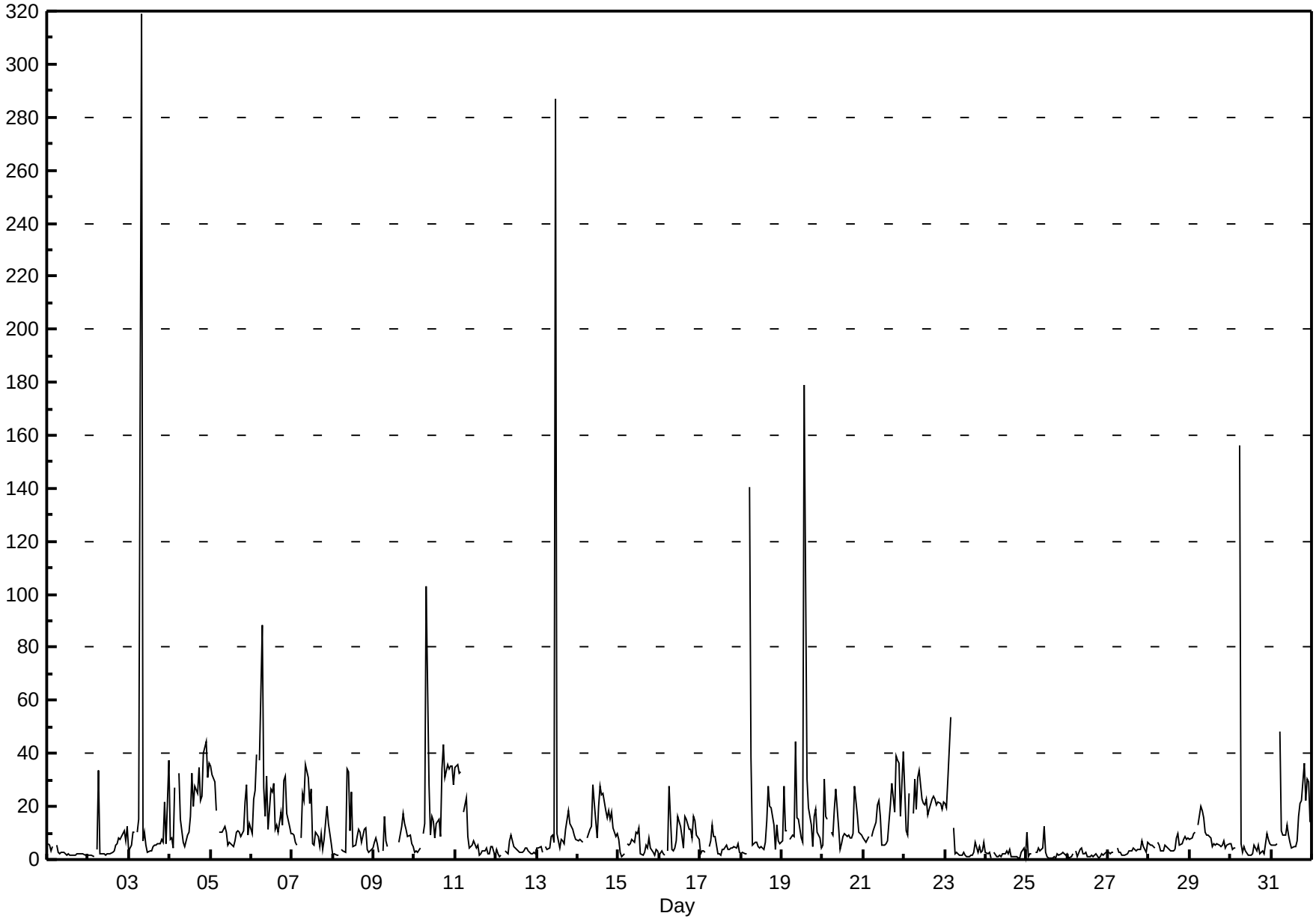
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Dioxide (NO_2) - ppb

Beaverlodge - December 2013

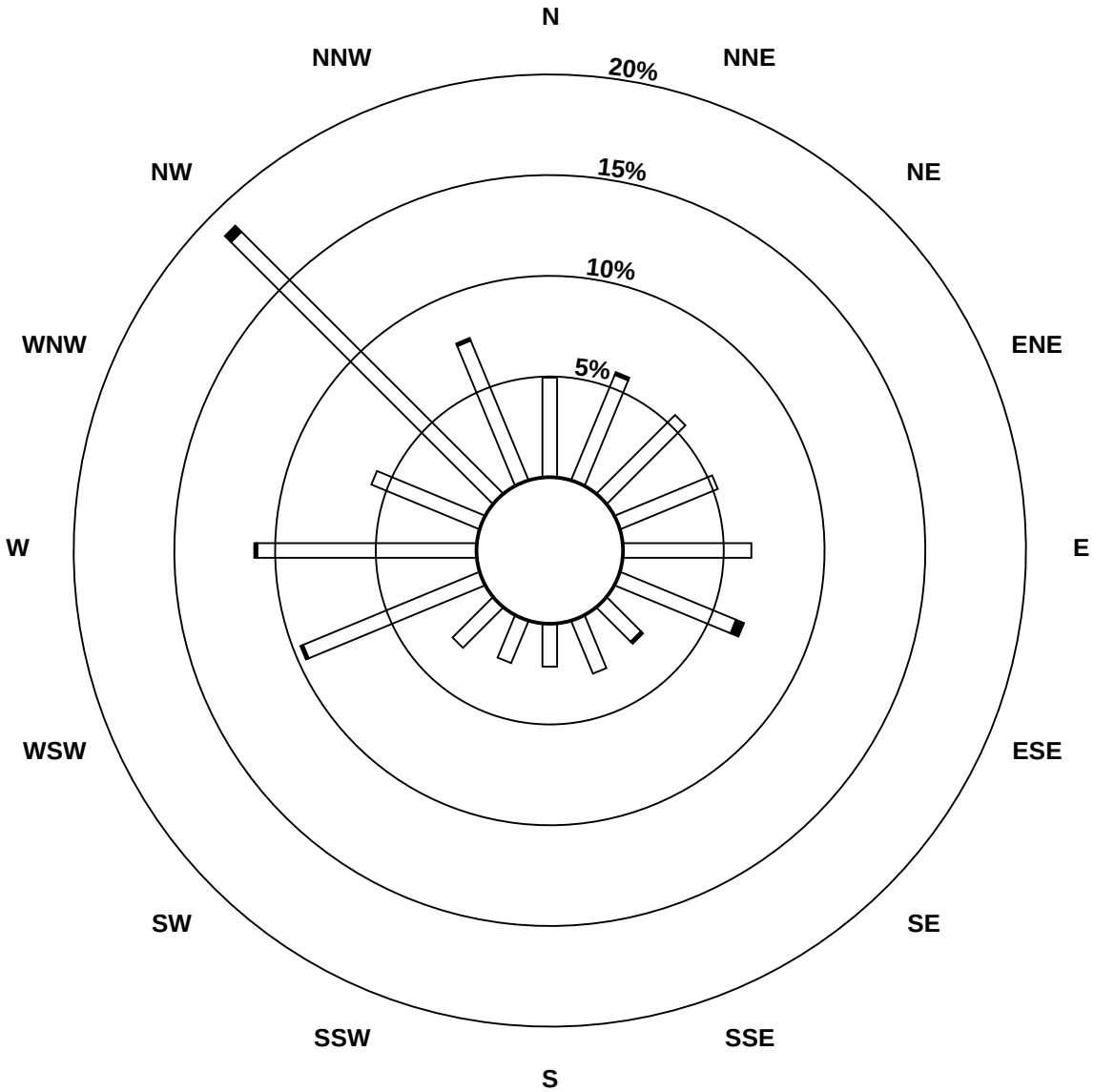


FOCUS AIR QUALITY MONITORING

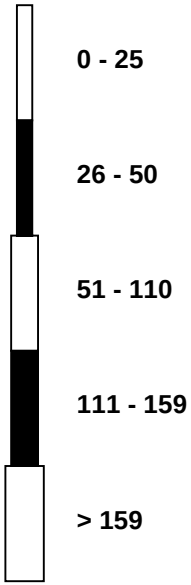
Pollutant Rose

Nitrogen Dioxide (NO_2) - ppb

Beaverlodge - December 2013



Pollutant Classes (ppb)

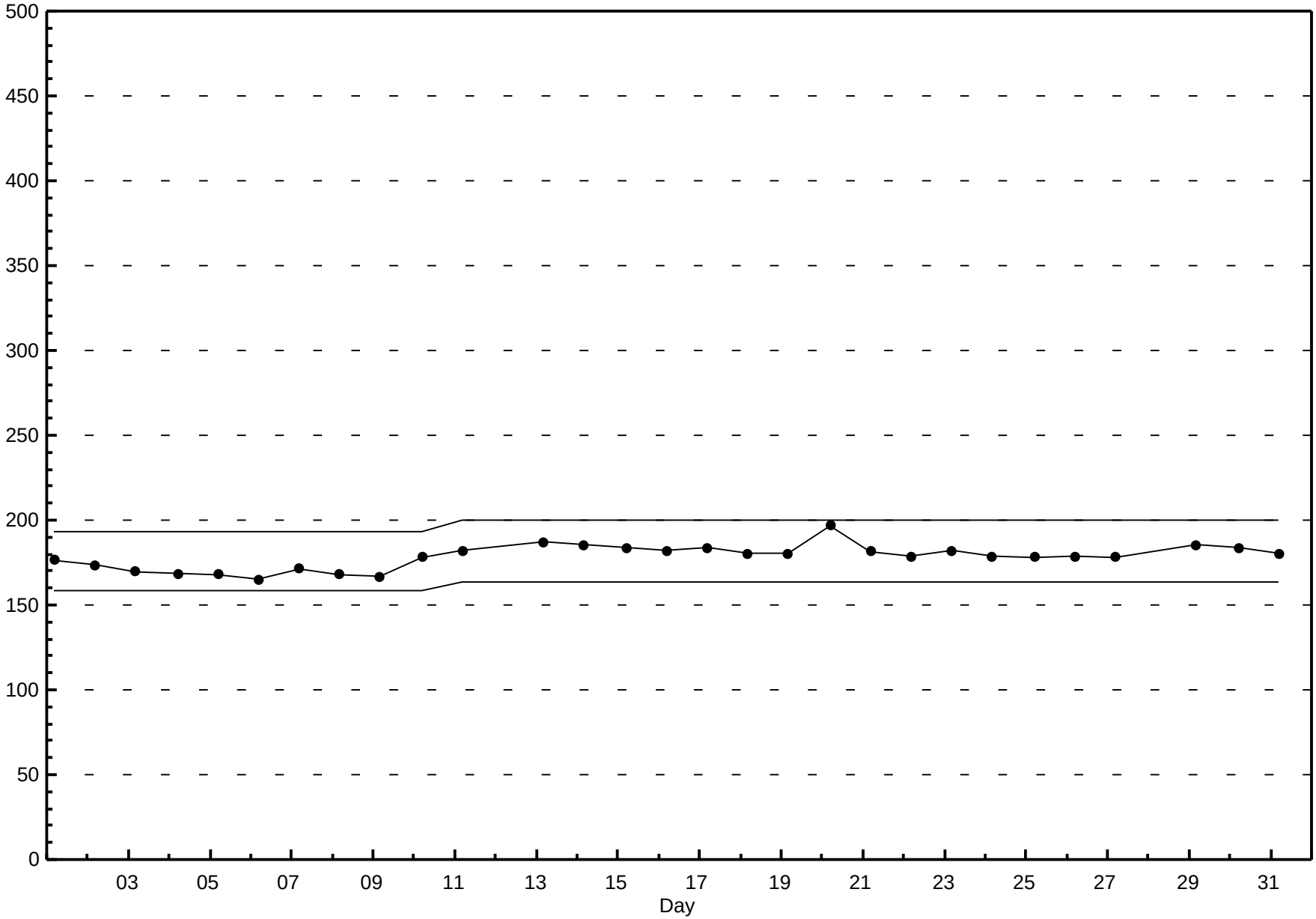


Peace Airshed Zone Association

Span Responses

Nitrogen Dioxide (NO_2)

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 29.5 ppb on Dec 10 08:00
Maximum Daily Average: 4.4 ppb on Dec 22

Minimum Value: 0 ppb on Dec 1 03:00
Maximum Diurnal Average: 2.9 ppb at hour 12
Monthly Average: 0.98 ppb

Minimum Daily Average: 0.0 ppb on Dec 26
Minimum Diurnal Average: 0.1 ppb at hour 19
Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.7 P_{90} = 2.4 P_{99} = 13.5

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
2-Dec	0	0	0	0	A	0	4	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0.4	4.3
3-Dec	0	0	0	0	A	0	0	11	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	0.8	11.1
4-Dec	0	0	0	0	A	1	0	0	0	0	2	3	4	12	8	5	2	3	0	0	2	14	1	13	3.1	14.1
5-Dec	6	1	0	0	A	0	0	0	0	1	2	3	4	3	3	2	1	0	0	0	0	1	0	0	1.2	5.8
6-Dec	0	0	1	2	A	3	9	1	0	6	3	8	12	7	4	3	1	0	0	2	2	0	0	0	2.8	11.5
7-Dec	0	0	0	0	A	0	0	1	8	4	3	6	1	1	1	0	0	0	0	0	0	0	0	0	1.1	7.8
8-Dec	0	0	0	0	A	0	0	0	0	1	1	5	1	1	1	2	0	0	0	0	0	0	0	0	0.5	5.2
9-Dec	0	0	0	0	A	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	--	0.1
10-Dec	0	0	0	0	A	0	0	29	0	0	2	2	5	5	6	1	4	5	1	2	3	2	1	0	3.0	29.5
11-Dec	4	4	1	2	A	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0.7	4.1
12-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	1.1
13-Dec	0	0	0	0	A	0	0	0	0	0	1	20	1	1	1	2	0	0	0	0	0	0	0	0	1.3	20.2
14-Dec	0	0	0	0	A	0	0	0	0	11	6	2	3	6	8	5	1	0	0	0	0	0	0	0	1.9	10.6
15-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
16-Dec	0	0	0	0	A	0	3	0	0	0	1	4	1	1	1	1	0	0	0	0	0	0	0	0	0.6	3.6
17-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0.2	0.8
18-Dec	0	0	0	0	A	1	15	0	0	0	1	1	1	1	2	2	1	0	0	0	0	0	0	0	1.1	15.2
19-Dec	0	0	0	0	A	0	0	0	4	1	2	1	1	3	11	7	1	0	0	0	0	0	0	0	1.5	11.3
20-Dec	0	1	0	0	A	0	0	0	0	0	0	1	2	3	1	1	0	0	0	0	0	0	0	0	0.5	2.8
21-Dec	0	0	0	0	A	0	0	0	0	2	2	2	2	3	2	2	1	0	0	5	2	2	0	2	1.2	4.8
22-Dec	0	0	0	0	A	0	1	0	1	8	11	18	16	22	10	7	4	1	0	0	0	0	0	0	4.4	21.8
23-Dec	0	0	2	3	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	2.8
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
26-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
27-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0.2	0.7
28-Dec	0	0	0	0	A	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	1.4
29-Dec	0	0	0	0	A	0	0	0	0	0	2	3	4	2	2	1	0	0	0	0	0	0	0	0	0.6	3.6
30-Dec	0	0	0	0	A	7	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.4	7.1
31-Dec	0	0	0	1	A	5	0	0	0	1	1	2	2	2	2	2	1	0	0	2	0	5	4	0	1.4	5.5
	0.4	0.2	0.2	0.3	--	0.6	1.1	1.4	0.5	1.2	1.4	2.9	2.2	2.7	2.3	1.6	0.6	0.4	0.1	0.4	0.4	0.8	0.2	0.6	Diurnal Average	
	5.8	3.6	1.8	2.8	--	7.1	15.2	29.5	7.8	10.6	10.7	20.2	15.9	21.8	11.3	7.3	3.9	5.0	0.5	4.8	2.9	14.1	3.6	13.2	Diurnal Maximum	

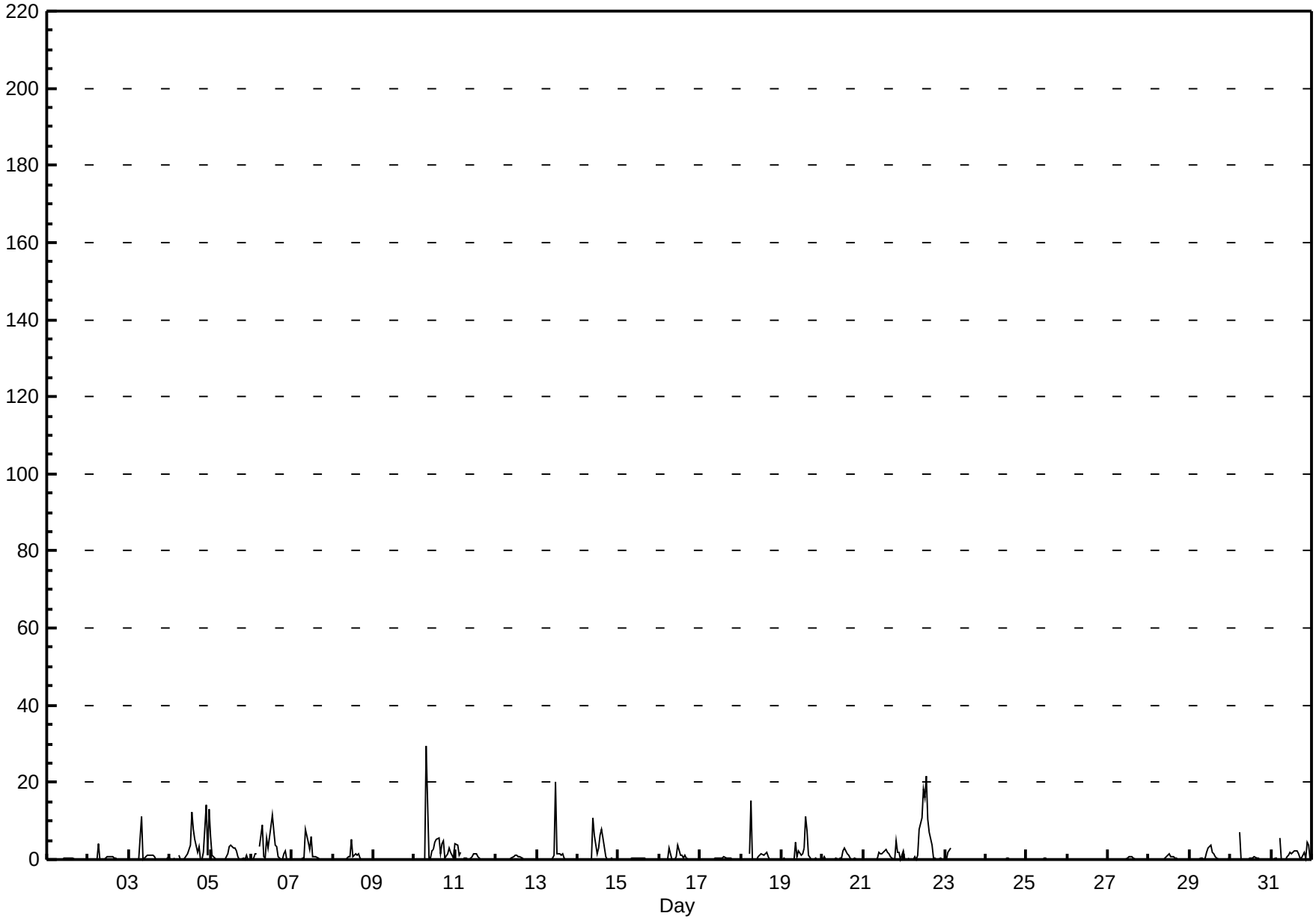
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Beaverlodge - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Oxide (NO) - ppb

Beaverlodge - December 2013

Maximum Value: 451.4 ppb on Dec 10 08:00

Maximum Daily Average: 25.7 ppb on Dec 10

Minimum Value: 0 ppb on Dec 9 17:00

Minimum Daily Average: 0.3 ppb on Dec 26

Maximum Diurnal Average: 24.6 ppb at hour 8

Minimum Diurnal Average: 0.7 ppb at hour 19

Monthly Average: 5.91 ppb

Percentiles: $P_1 = 0.0$ $P_{10} = 0.2$ $Q_1 = 0.2$ Median = 0.5 $Q_3 = 1.8$ $P_{90} = 9.5$ $P_{99} = 101.1$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	A	0	0	0	0	1	1	0	1	1	1	0	0	1	0	0	0	0	0	0	0.4	0.8
2-Dec	0	0	0	0	A	0	84	0	0	0	1	1	1	1	1	1	1	0	1	0	0	0	0	1	4.1	84.0
3-Dec	0	0	0	0	A	0	0	276	1	1	1	2	2	2	2	1	0	0	0	0	0	1	0	12	13.2	276.2
4-Dec	0	0	0	4	A	6	0	2	0	1	5	8	17	51	16	15	5	15	1	0	46	60	6	35	12.7	59.9
5-Dec	15	6	3	0	A	0	0	1	1	1	3	4	4	4	5	3	2	1	0	1	2	4	1	2	2.7	14.5
6-Dec	0	4	19	26	A	23	108	10	3	28	5	55	44	52	12	8	3	0	0	12	8	0	0	0	18.4	108.1
7-Dec	0	0	0	0	A	0	3	13	40	21	12	23	2	2	3	2	0	0	0	0	1	0	0	0	5.4	39.7
8-Dec	0	0	0	0	A	0	0	0	2	2	2	15	2	2	2	2	1	0	0	0	0	0	0	0	1.4	15.3
9-Dec	0	0	0	0	A	0	0	0	0	C	C	C	C	C	C	1	0	0	0	0	0	0	0	0	--	0.5
10-Dec	0	0	0	0	A	0	0	451	3	2	8	13	6	9	10	3	10	40	2	12	10	6	5	1	25.7	451.4
11-Dec	9	16	4	8	A	0	1	0	1	1	1	4	2	4	0	0	1	0	0	0	0	0	0	0	2.4	15.8
12-Dec	0	0	0	0	A	0	0	0	0	1	1	2	2	2	2	1	0	1	1	0	0	0	0	0	0.6	1.7
13-Dec	0	0	0	0	A	0	1	0	0	1	1	218	6	4	3	3	1	0	1	1	1	0	0	0	10.5	217.6
14-Dec	0	0	0	0	A	0	0	1	1	43	16	5	16	46	19	11	1	1	0	0	1	0	1	0	7.1	45.9
15-Dec	0	0	0	0	A	0	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	0	1	1	0.5	1.3
16-Dec	0	0	0	0	A	0	110	0	1	0	2	7	5	3	1	2	1	0	0	0	0	0	0	0	5.8	110.4
17-Dec	0	0	0	0	A	0	0	0	1	1	1	1	1	1	1	4	1	1	1	1	1	0	0	0	0.7	4.1
18-Dec	0	0	0	0	A	51	378	0	0	0	1	1	2	2	2	4	3	0	2	0	0	0	1	0	19.6	377.5
19-Dec	0	2	0	0	A	0	2	0	76	2	3	4	2	45	131	26	4	0	0	0	1	0	0	0	13.1	131.5
20-Dec	0	16	0	0	A	0	0	0	2	0	0	2	4	5	3	2	1	0	0	11	0	0	0	0	2.2	16.2
21-Dec	0	0	0	0	A	0	1	0	2	5	3	2	3	3	3	3	3	2	2	29	17	15	0	29	5.3	29.0
22-Dec	2	0	0	3	A	1	5	0	11	38	17	29	29	35	13	9	6	2	2	0	1	1	0	1	8.9	38.0
23-Dec	0	2	15	69	A	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	4.1	69.4
24-Dec	0	0	0	0	A	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0.4	0.9
25-Dec	0	0	0	0	A	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.7
26-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	0.3	0.7
27-Dec	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	0	0	1	0.4	1.2
28-Dec	0	0	0	0	A	0	0	0	0	1	1	2	2	1	1	1	0	1	0	0	0	0	0	0	0.6	2.0
29-Dec	0	0	1	0	A	0	1	1	0	1	4	4	6	2	3	1	1	0	0	0	0	0	0	2	1.3	6.5
30-Dec	1	0	0	0	A	98	1	0	1	0	0	1	2	1	3	1	1	0	0	0	0	0	0	0	4.9	97.7
31-Dec	0	1	1	1	A	127	0	0	1	3	2	3	2	3	3	3	4	2	4	16	2	11	10	0	8.6	126.8
	1.1	1.6	1.5	3.7	--	10.0	22.5	24.6	4.8	5.2	3.2	13.7	5.5	9.5	8.2	3.5	1.7	2.3	0.7	2.8	3.0	3.4	1.0	2.8	Diurnal Average	
	14.5	16.2	18.7	69.4	--	126.8	377.5	451.4	76.1	42.8	17.4	217.6	43.5	52.2	131.5	25.7	9.5	39.6	3.7	28.6	45.7	59.9	10.2	35.1	Diurnal Maximum	

C - Calibration

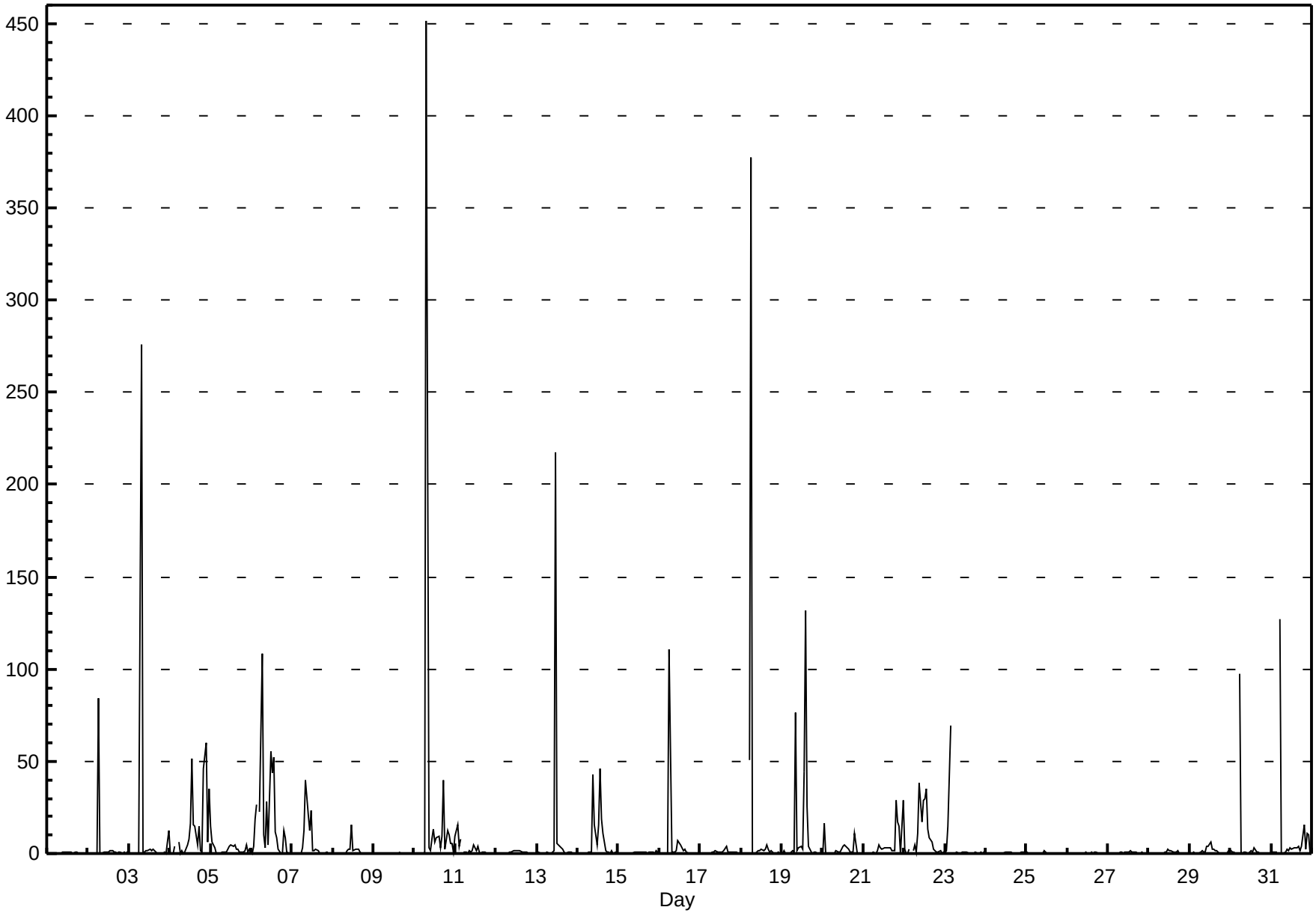
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Oxide (NO) - ppb

Beaverlodge - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Oxides of Nitrogen (NO_X) - ppb

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 43.4 ppb on Dec 4 22:00 Maximum Daily Average: 20.3 ppb on Dec 22

Minimum Value: 0 ppb on Dec 24 04:00 Minimum Daily Average: 0.6 ppb on Dec 24
Maximum Diurnal Average: 8.5 ppb at hour 22 Minimum Diurnal Average: 5.7 ppb at hour 2
Monthly Average: 6.81 ppb Percentiles: P_1 = 0.4 P_{10} = 0.9 Q_1 = 1.9 Median = 4.4 Q_3 = 8.3 P_{90} = 17.7 P_{99} = 32.9

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	5	4	2	2	A	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2.2	5.4
2-Dec	1	1	1	1	A	2	4	2	2	2	2	2	2	2	2	3	3	4	6	5	5	3	4	4	2.8	5.7
3-Dec	2	3	5	5	A	8	6	16	6	5	4	3	3	3	4	4	4	5	4	5	5	6	4	10	5.3	16.2
4-Dec	5	4	4	11	A	12	10	6	4	4	6	7	9	22	20	19	18	33	18	19	23	43	21	43	15.7	43.4
5-Dec	37	26	23	15	A	6	6	7	11	7	6	9	8	8	8	9	10	7	7	9	9	16	6	8	11.2	37.0
6-Dec	7	7	10	10	A	23	31	15	12	20	9	16	20	14	8	10	9	12	7	17	27	12	10	8	13.7	31.1
7-Dec	7	6	5	4	A	6	10	8	24	18	12	18	4	4	5	5	3	4	1	4	8	7	4	3	7.2	23.9
8-Dec	1	2	2	1	A	3	2	2	11	15	7	17	4	5	5	11	7	5	5	5	2	1	2	2	5.1	17.3
9-Dec	2	2	2	1	A	2	6	3	3	C	C	C	C	C	C	3	6	13	11	7	5	5	4	2	--	13.2
10-Dec	1	2	1	1	A	5	5	24	11	4	10	7	11	13	17	7	26	22	23	25	32	24	32	25	14.2	31.8
11-Dec	36	33	29	29	A	16	12	7	3	3	4	5	5	3	1	1	1	2	2	1	1	3	3	1	8.9	36.1
12-Dec	2	2	1	1	A	2	1	2	4	5	4	4	4	3	3	3	2	3	3	2	2	2	2	2	2.5	5.0
13-Dec	3	3	3	2	A	3	3	3	6	7	6	28	4	4	4	7	5	8	15	12	11	10	7	7	7.0	28.3
14-Dec	6	6	7	6	A	7	7	9	10	28	20	6	9	14	24	26	15	13	11	10	12	8	6	7	11.7	28.3
15-Dec	3	1	0	1	A	3	2	4	6	5	5	6	3	1	1	1	1	2	3	2	1	1	1	1	2.3	5.8
16-Dec	1	1	1	1	A	2	2	2	1	2	5	14	4	6	3	11	9	8	7	5	8	8	5	4	4.7	13.9
17-Dec	1	2	3	2	A	3	4	8	6	3	1	1	1	1	3	2	3	4	4	4	4	3	4	2	3.0	8.0
18-Dec	2	2	2	2	A	6	7	4	4	4	4	4	5	4	6	9	14	7	6	4	3	3	4	5	4.8	14.5
19-Dec	6	11	8	10	A	7	7	8	21	12	13	6	6	11	20	26	14	7	2	6	12	5	4	3	9.8	25.6
20-Dec	2	6	15	11	A	8	6	7	20	5	3	3	8	10	6	7	5	6	7	10	9	7	6	7	7.7	20.4
21-Dec	7	5	7	8	A	8	9	9	14	18	8	6	6	7	7	8	11	18	12	24	18	22	9	14	11.1	23.8
22-Dec	10	7	7	15	A	13	17	13	18	26	28	34	31	40	25	24	25	21	21	19	19	19	18	18	20.3	39.9
23-Dec	19	16	21	19	A	8	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	4.3	20.9
24-Dec	1	1	0	0	A	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0.6	1.2
25-Dec	1	1	0	1	A	2	2	2	3	4	5	2	0	0	0	0	0	0	0	0	1	1	1	1	1.2	4.7
26-Dec	1	0	1	1	A	1	1	2	2	2	2	1	0	0	1	0	1	1	0	0	1	1	2	2	1.0	2.1
27-Dec	2	2	2	2	A	3	2	1	1	1	1	1	3	3	3	3	3	3	3	3	4	4	2	5	2.5	4.6
28-Dec	4	4	4	3	A	4	3	3	3	5	5	4	5	3	3	3	4	4	4	5	7	7	7	6	4.3	7.0
29-Dec	6	6	9	10	A	11	15	12	10	8	8	10	9	6	6	4	6	5	5	5	4	3	3	4	7.2	14.6
30-Dec	4	3	3	4	A	13	4	2	1	1	1	1	1	1	2	2	3	2	2	2	2	4	6	5	3.0	12.7
31-Dec	4	5	5	5	A	9	7	6	8	9	6	6	5	6	6	8	13	12	14	24	19	29	28	12	10.8	29.4
	6.1	5.7	5.9	5.9	--	6.4	6.4	6.2	7.4	7.5	6.2	7.5	5.8	6.6	6.6	7.2	7.2	7.5	6.7	7.6	8.2	8.5	6.7	6.9	Diurnal Average	
	37.0	33.2	29.2	29.2	--	22.8	31.1	24.1	23.9	28.3	27.8	33.8	30.6	39.9	25.0	25.8	26.1	32.7	22.6	25.4	31.7	43.4	31.8	43.1	Diurnal Maximum	

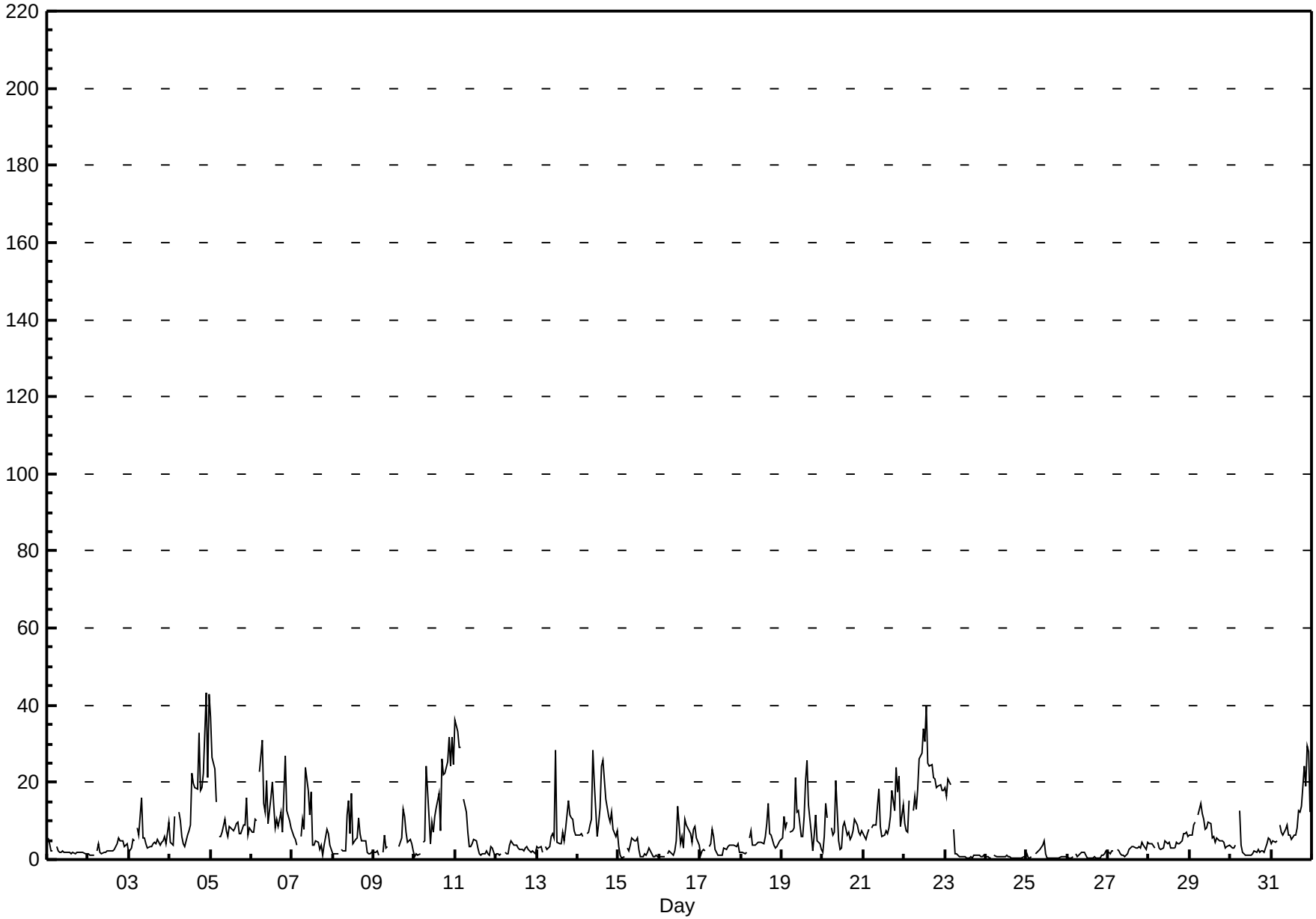
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Oxides of Nitrogen (NO_X) - ppb

Beaverlodge - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Oxides of Nitrogen (NO_X) - ppb

Beaverlodge - December 2013

Maximum Value: 376.8 ppb on Dec 13 12:00

Maximum Daily Average: 41.1 ppb on Dec 6

Minimum Value: 1 ppb on Dec 26 02:00

Minimum Daily Average: 2.1 ppb on Dec 26

Maximum Diurnal Average: 28.4 ppb at hour 8

Minimum Diurnal Average: 9.2 ppb at hour 1

Monthly Average: 15.20 ppb

Percentiles: P_1 = 0.9 P_{10} = 2.2 Q_1 = 3.4 Median = 7.3 Q_3 = 14.3 P_{90} = 35.6 P_{99} = 162.5

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	6	5	4	5	A	5	3	2	3	3	3	2	3	2	2	2	2	3	2	2	2	2	2	2	3.0	6.3
2-Dec	2	2	1	1	A	4	55	3	2	3	2	3	3	4	4	5	6	6	9	8	10	11	8	13	7.1	55.3
3-Dec	3	6	10	10	A	10	15	327	7	11	6	4	5	5	7	7	5	6	6	7	6	22	6	50	23.7	326.7
4-Dec	8	8	5	31	A	39	15	11	7	6	14	19	33	83	35	42	26	50	23	24	86	102	37	70	33.5	102.3
5-Dec	49	38	32	18	A	11	10	11	13	10	8	10	10	9	11	13	13	11	9	11	23	32	10	15	16.4	49.4
6-Dec	10	26	44	66	A	60	171	37	20	58	15	82	68	80	23	21	13	18	13	42	39	18	12	10	41.1	171.5
7-Dec	10	9	7	6	A	8	26	26	72	51	33	50	8	7	13	9	5	10	4	8	21	14	10	6	17.9	72.3
8-Dec	2	2	2	2	A	4	4	3	36	35	13	41	6	8	11	13	11	7	11	12	4	2	3	4	10.2	40.8
9-Dec	7	8	6	3	A	3	17	7	5	C	C	C	C	C	C	7	12	17	13	11	8	9	6	5	--	17.1
10-Dec	2	3	3	4	A	10	14	284	31	10	21	27	14	22	24	12	43	80	32	47	44	40	39	29	36.4	284.3
11-Dec	43	51	37	41	A	18	24	9	5	6	7	12	6	8	2	2	4	3	4	2	2	5	5	1	12.9	51.4
12-Dec	4	2	1	2	A	3	3	2	7	10	5	6	5	5	4	3	4	5	5	4	2	2	3	2	3.9	9.7
13-Dec	4	5	5	3	A	5	5	4	9	9	8	377	15	8	11	9	7	12	18	14	13	12	9	8	24.7	376.8
14-Dec	7	8	7	6	A	8	10	12	13	70	37	13	36	73	41	34	19	16	19	15	19	12	9	10	21.5	73.3
15-Dec	8	3	1	2	A	6	6	6	8	7	11	10	12	3	2	3	6	4	9	4	3	2	5	3	5.4	12.5
16-Dec	2	3	3	2	A	4	28	4	4	5	9	23	17	12	6	19	16	12	12	8	16	15	9	7	10.2	28.1
17-Dec	2	3	3	3	A	5	7	13	9	10	3	3	3	4	5	6	5	5	5	5	5	5	6	3	5.0	13.0
18-Dec	2	3	2	2	A	141	63	6	7	7	6	6	8	5	9	19	30	20	20	13	4	13	8	6	17.4	141.3
19-Dec	7	29	11	11	A	8	11	9	120	17	19	12	9	203	166	54	23	14	5	17	19	10	8	5	34.2	203.1
20-Dec	5	46	17	15	A	11	9	19	28	12	4	8	12	14	11	12	10	9	10	39	17	10	10	9	14.7	46.3
21-Dec	9	6	8	9	A	9	12	14	22	26	20	7	8	9	10	17	21	30	19	67	54	50	16	68	22.2	68.3
22-Dec	28	11	9	26	A	18	35	20	42	71	40	49	50	58	30	26	28	26	24	21	22	22	19	23	30.3	71.1
23-Dec	21	21	45	91	A	12	2	4	2	2	2	3	2	2	1	2	2	3	7	3	5	3	3	7	10.7	90.5
24-Dec	3	2	3	1	A	3	1	1	1	1	2	2	4	3	5	2	1	1	1	1	1	4	5	1	2.2	4.7
25-Dec	10	1	2	2	A	3	3	5	3	5	14	3	1	1	1	1	1	1	2	2	2	2	2	2	3.0	14.3
26-Dec	2	1	1	2	A	3	1	4	4	2	2	3	1	1	2	1	3	3	1	1	2	2	2	3	2.1	4.5
27-Dec	3	2	3	3	A	4	3	3	2	2	2	3	4	4	4	4	4	4	4	4	7	5	3	6	3.6	6.9
28-Dec	6	6	6	4	A	6	5	3	4	6	6	6	6	5	4	5	8	12	5	6	8	9	8	8	6.1	11.5
29-Dec	7	8	10	11	A	13	21	20	16	11	13	13	14	7	9	6	7	6	5	6	7	4	5	7	9.9	20.9
30-Dec	7	4	5	5	A	212	6	3	6	4	2	2	3	3	9	4	6	2	3	3	2	10	8	6	13.7	212.5
31-Dec	5	6	6	7	A	54	11	9	10	15	11	10	6	8	7	10	20	23	23	50	24	41	40	14	17.8	53.7
	9.2	10.6	9.6	12.7	--	22.6	19.2	28.4	16.7	16.2	11.3	27.0	12.5	21.9	15.7	12.0	11.6	13.4	10.4	14.7	15.5	15.8	10.2	13.0	Diurnal Average	
	49.4	51.4	45.4	90.5	--	212.5	171.5	326.7	119.5	71.1	40.1	376.8	68.1	203.1	165.8	54.1	43.4	80.4	32.2	66.7	86.1	102.3	39.6	69.9	Diurnal Maximum	

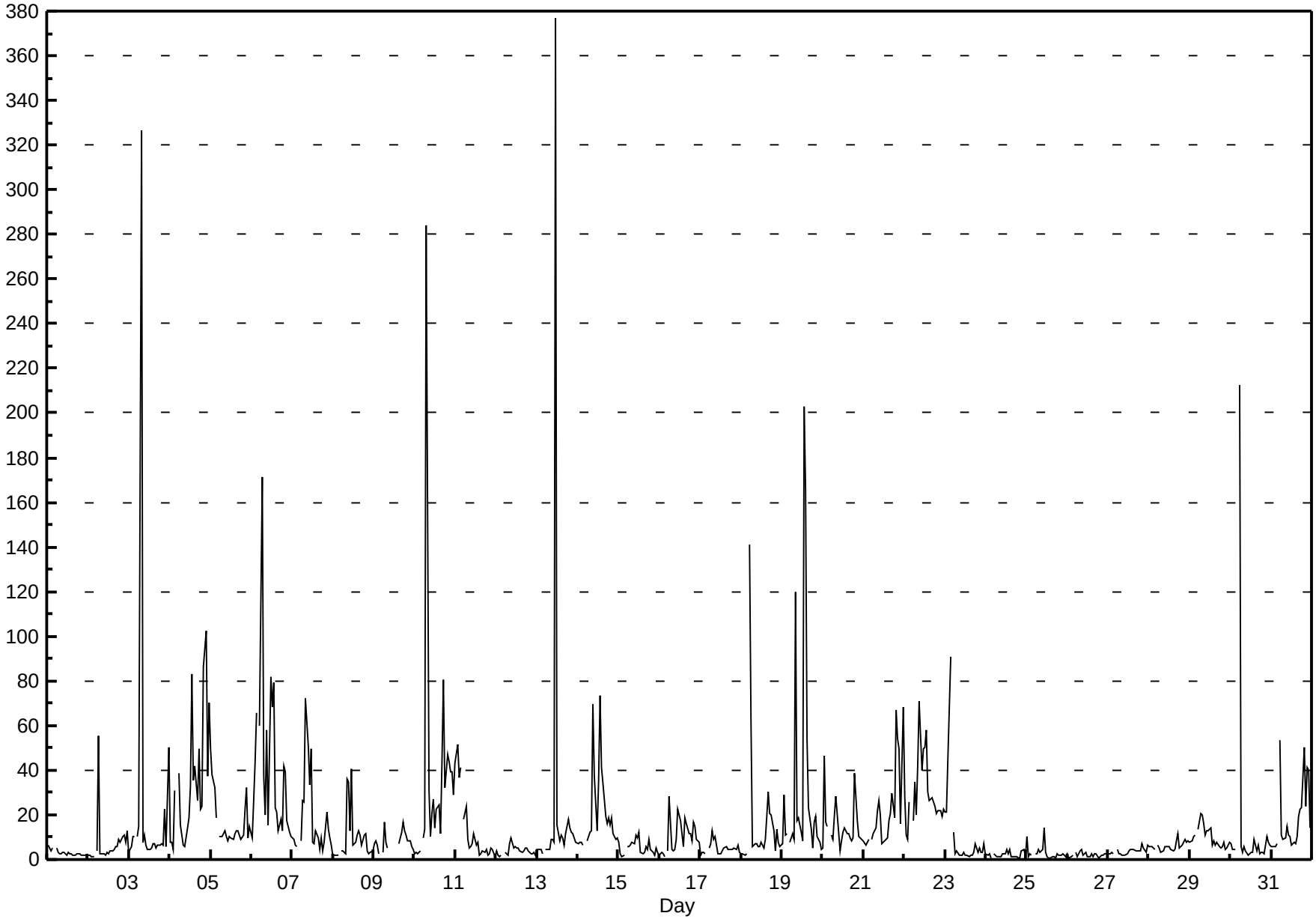
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Oxides of Nitrogen (NO_X) - ppb

Beaverlodge - December 2013



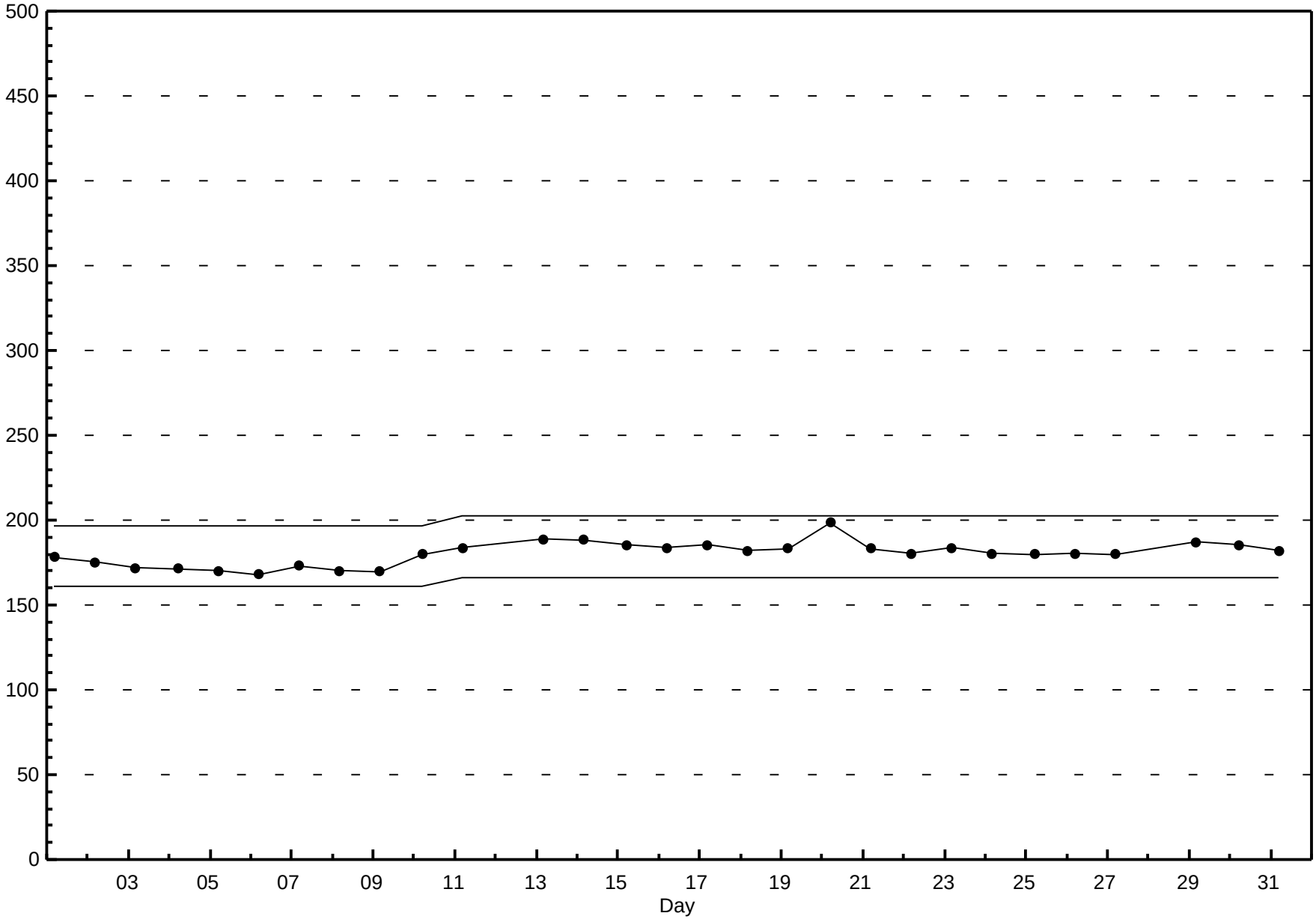
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Span Responses

Oxides of Nitrogen (NO_X)

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Averages

Ozone (O_3) - ppb

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 44.0 ppb on Dec 25 03:00
Maximum Daily Average: 42.1 ppb on Dec 24

Minimum Value: 3 ppb on Dec 11 01:00
Maximum Diurnal Average: 31.1 ppb at hour 14
Monthly Average: 28.15 ppb

Minimum Daily Average: 14.3 ppb on Dec 22
Minimum Diurnal Average: 26.2 ppb at hour 21
Percentiles: P_1 = 4.9 P_{10} = 16.2 Q_1 = 23.1 Median = 29.0 Q_3 = 34.6 P_{90} = 39.2 P_{99} = 42.7

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	18	21	24	23	A	24	24	24	24	25	25	26	27	27	28	28	29	29	29	29	29	29	30	30	26.2	29.7
2-Dec	30	30	30	30	A	30	29	29	30	30	30	30	30	30	31	31	30	29	29	30	30	31	31	30	29.9	31.4
3-Dec	33	32	29	29	A	27	28	30	30	31	33	34	34	35	35	35	35	34	35	34	33	32	33	28	32.1	34.9
4-Dec	32	33	33	26	A	26	26	30	31	32	31	31	31	28	26	24	19	6	18	16	14	7	14	6	23.5	33.3
5-Dec	3	8	9	17	A	29	28	26	20	25	28	26	28	28	28	26	24	25	25	22	23	17	25	22	22.3	28.9
6-Dec	23	25	23	24	A	14	13	18	18	16	24	24	23	26	26	24	24	19	24	15	7	16	19	21	20.3	26.5
7-Dec	23	25	27	30	A	29	24	27	19	22	28	30	40	41	40	39	39	37	39	36	31	32	36	37	31.8	40.6
8-Dec	39	39	39	39	A	38	39	38	29	25	33	27	36	35	34	30	32	32	32	32	37	39	38	37	34.7	38.9
9-Dec	37	37	35	36	A	37	32	35	34	34	35	33	30	C	C	C	C	29	30	33	35	34	34	36	34.0	37.2
10-Dec	38	37	37	36	A	33	32	31	26	33	29	32	30	28	25	30	16	20	14	12	7	12	4	9	24.9	37.6
11-Dec	3	4	4	4	A	14	17	22	29	29	29	27	27	32	35	37	36	36	35	35	36	34	34	36	25.9	36.7
12-Dec	35	35	35	34	A	33	33	32	29	27	28	29	29	29	29	29	29	28	27	28	28	28	28	28	30.0	35.1
13-Dec	26	26	26	27	A	26	26	25	22	22	24	24	26	26	26	23	23	20	13	15	15	15	17	18	22.2	26.7
14-Dec	18	18	17	18	A	17	16	14	13	10	17	31	31	29	16	10	18	21	23	25	22	28	30	30	20.5	31.2
15-Dec	34	37	38	38	A	39	41	36	33	32	33	33	38	40	41	40	39	37	37	38	39	39	38	39	37.3	41.0
16-Dec	41	40	40	41	A	42	40	40	40	39	38	32	38	37	39	33	33	34	35	36	33	32	34	36	37.1	42.0
17-Dec	40	38	36	36	A	34	32	28	29	36	37	37	37	37	29	24	24	23	23	23	25	26	25	29	30.8	39.8
18-Dec	29	29	29	29	A	29	29	29	29	29	31	32	33	34	33	30	25	31	31	33	34	33	32	29	30.5	33.8
19-Dec	27	20	22	20	A	22	23	24	17	22	25	32	34	33	31	20	27	35	41	37	33	39	39	40	28.9	40.7
20-Dec	40	35	20	25	A	29	31	31	15	32	35	34	29	28	30	29	30	28	24	21	22	23	24	21	27.6	40.0
21-Dec	22	24	23	22	A	22	21	21	18	16	26	30	30	30	31	29	25	18	22	17	19	15	25	23	23.1	31.0
22-Dec	24	25	25	18	A	19	15	17	13	12	14	15	16	14	16	13	9	8	8	10	10	9	10	9	14.3	25.4
23-Dec	8	10	9	15	A	24	38	38	39	40	40	40	41	41	41	41	41	40	39	40	39	39	39	39	33.9	41.3
24-Dec	40	40	41	42	A	41	41	41	42	42	42	42	42	43	43	43	43	43	43	43	43	43	43	43	42.1	43.1
25-Dec	43	44	44	43	A	41	41	40	39	38	36	40	41	40	39	39	39	38	38	38	38	38	38	38	39.7	44.0
26-Dec	38	38	38	38	A	36	36	35	33	34	34	34	33	32	32	32	32	31	31	31	28	28	28	27	33.0	37.9
27-Dec	29	30	30	31	A	33	32	32	33	35	36	34	29	29	29	29	29	28	28	27	26	26	27	25	29.9	35.6
28-Dec	25	25	25	26	A	25	26	26	26	24	25	26	26	27	28	27	25	25	24	23	21	20	19	20	24.5	27.7
29-Dec	19	19	16	15	A	13	10	12	13	16	17	17	19	21	21	22	21	21	20	20	21	23	22	21	18.1	22.6
30-Dec	21	21	21	20	A	24	25	28	28	27	31	33	31	29	28	28	27	27	26	26	26	24	22	23	25.9	32.5
31-Dec	24	24	24	25	A	22	21	21	20	19	22	23	25	24	24	23	18	17	15	8	9	5	5	15	18.8	25.0
	27.8	27.9	27.4	27.6	--	28.1	28.0	28.4	26.5	27.6	29.5	30.3	31.1	31.1	30.5	28.9	27.9	27.4	27.6	26.9	26.2	26.3	27.2	27.3	Diurnal Average	
	42.7	44.0	44.0	43.0	--	42.0	41.4	41.5	41.7	41.9	42.2	42.3	42.3	42.6	42.7	42.5	42.5	42.7	42.7	42.7	42.7	42.7	42.8	43.1	Diurnal Maximum	

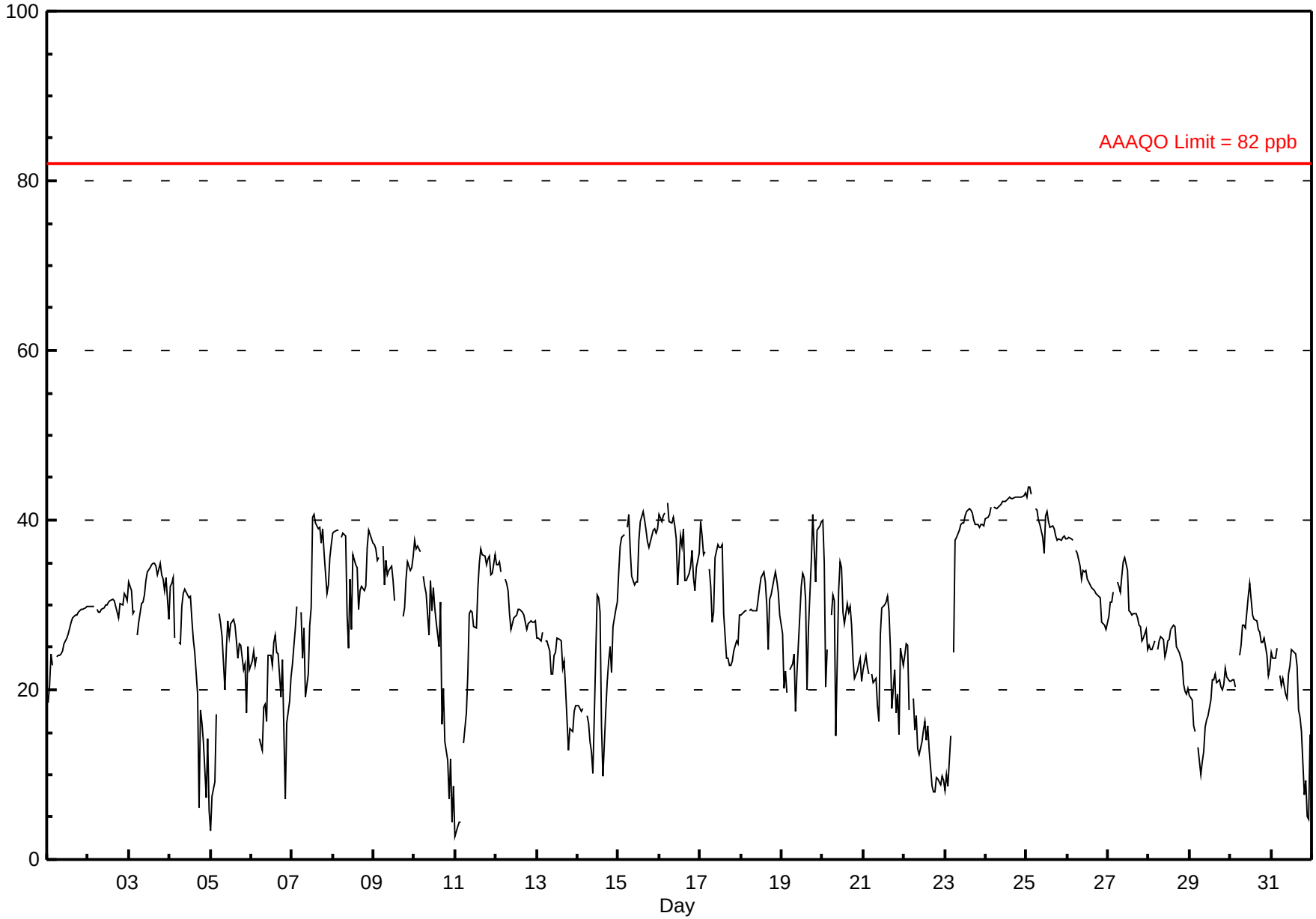
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na

Peace Airshed Zone Association

Hourly Averages

Ozone (O_3) - ppb

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Maximums

Ozone (O_3) - ppb

Beaverlodge - December 2013

Maximum Value: 44.4 ppb on Dec 25 02:00

Maximum Daily Average: 42.5 ppb on Dec 24

Minimum Value: 6 ppb on Dec 5 01:00

Minimum Daily Average: 17.2 ppb on Dec 22

Maximum Diurnal Average: 32.8 ppb at hour 14

Minimum Diurnal Average: 28.7 ppb at hour 21

Monthly Average: 30.34 ppb

Percentiles: P_1 = 9.5 P_{10} = 20.2 Q_1 = 25.6 Median = 30.5 Q_3 = 36.2 P_{90} = 40.4 P_{99} = 43.2

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	19	24	26	26	A	24	24	24	25	25	26	27	27	28	29	29	29	29	30	30	30	30	30	31	27.0	30.8
2-Dec	30	30	30	30	A	30	30	30	30	30	30	30	31	31	31	31	31	30	31	31	32	32	33	33	30.7	32.9
3-Dec	34	34	31	32	A	29	31	33	32	34	34	34	35	35	36	36	36	34	36	36	34	35	35	34	34.0	36.2
4-Dec	34	35	35	35	A	35	29	32	34	33	33	33	34	35	29	32	26	13	28	27	18	17	21	18	28.9	35.0
5-Dec	6	12	12	23	A	33	31	28	26	29	29	27	29	29	29	28	25	27	27	25	26	25	27	24	25.0	33.0
6-Dec	26	27	29	30	A	28	27	25	20	22	26	25	26	29	29	28	26	25	26	23	14	18	21	23	24.8	30.1
7-Dec	25	28	29	31	A	31	29	31	30	33	34	40	41	42	42	41	41	40	40	39	36	36	39	39	35.5	42.1
8-Dec	39	39	39	39	A	38	39	39	38	35	36	34	37	36	36	32	33	33	33	35	39	40	39	38	36.9	39.9
9-Dec	38	38	37	37	A	38	37	36	35	35	36	35	34	C	C	C	C	31	33	35	37	36	36	38	35.8	38.4
10-Dec	38	38	38	38	A	36	35	34	33	34	31	35	31	29	28	32	28	29	21	16	12	18	9	11	28.5	38.1
11-Dec	10	9	8	9	A	16	22	27	31	30	32	32	28	35	36	37	37	36	36	36	36	35	36	36	28.3	37.3
12-Dec	36	35	36	34	A	33	33	32	32	30	30	29	29	30	30	30	29	29	28	28	29	28	28	28	30.8	36.0
13-Dec	28	27	27	27	A	26	26	25	24	24	25	26	27	27	27	24	24	23	17	18	18	17	19	19	23.6	28.0
14-Dec	19	18	18	18	A	18	17	16	18	22	29	35	35	37	28	20	24	24	26	28	25	30	33	32	24.8	37.0
15-Dec	36	38	38	39	A	43	43	42	36	38	39	39	40	41	42	41	40	39	39	39	40	39	39	40	39.5	43.3
16-Dec	42	41	42	41	A	43	41	41	41	41	40	38	41	40	40	39	38	35	37	39	37	36	38	39	39.5	42.8
17-Dec	40	40	37	37	A	35	34	30	33	38	38	37	37	38	31	28	25	32	23	25	26	26	29	29	32.6	40.4
18-Dec	29	30	30	30	A	31	31	30	30	31	31	33	34	34	35	32	32	34	34	35	35	34	33	30	32.1	34.9
19-Dec	29	25	24	21	A	23	24	25	24	25	30	34	35	35	35	34	32	41	42	41	40	41	41	41	32.3	42.2
20-Dec	41	39	22	27	A	31	35	35	23	35	36	35	31	30	32	31	31	30	25	26	28	28	27	25	30.6	41.5
21-Dec	24	25	23	22	A	23	22	23	22	20	29	31	31	31	32	31	29	24	25	26	27	24	30	30	26.2	31.9
22-Dec	26	27	26	26	A	22	22	19	18	18	17	19	20	18	18	15	11	11	9	11	11	10	11	11	17.2	26.7
23-Dec	11	11	15	23	A	38	39	40	40	40	40	40	41	41	42	42	41	41	41	40	40	40	40	40	35.9	41.8
24-Dec	41	41	41	42	A	42	42	42	42	42	43	43	43	43	43	43	43	43	43	43	43	43	43	44	42.5	43.7
25-Dec	44	44	44	44	A	42	42	41	40	38	40	41	41	41	40	40	40	39	38	38	38	39	39	38	40.5	44.4
26-Dec	38	38	38	39	A	37	37	36	34	35	35	35	34	33	32	32	32	32	32	31	31	28	28	28	33.7	38.8
27-Dec	30	31	31	33	A	33	33	33	34	36	36	35	30	30	30	29	29	29	28	28	27	27	27	27	30.8	36.0
28-Dec	27	26	26	27	A	26	27	27	27	26	26	27	27	28	29	28	27	26	25	24	22	21	20	21	25.6	28.6
29-Dec	20	20	17	16	A	14	13	14	16	17	18	18	21	22	22	23	22	22	21	21	23	23	23	22	19.5	23.5
30-Dec	22	22	22	21	A	25	28	28	28	28	33	33	32	30	29	29	28	28	26	26	27	27	23	23	26.9	33.4
31-Dec	27	24	25	27	A	26	23	24	21	21	23	24	26	25	25	24	23	19	18	12	14	11	13	16	21.3	27.3
	29.3	29.6	29.0	29.8	--	30.6	30.5	30.4	29.7	30.5	31.8	32.5	32.5	32.8	32.2	31.4	30.3	29.9	29.6	29.4	28.7	28.9	29.4	29.3	Diurnal Average	
	43.9	44.4	44.4	43.6	--	43.0	43.3	42.1	42.2	42.5	42.6	42.8	43.0	43.2	43.2	42.9	42.9	43.1	43.1	43.1	42.9	43.1	43.4	43.7	Diurnal Maximum	

C - Calibration

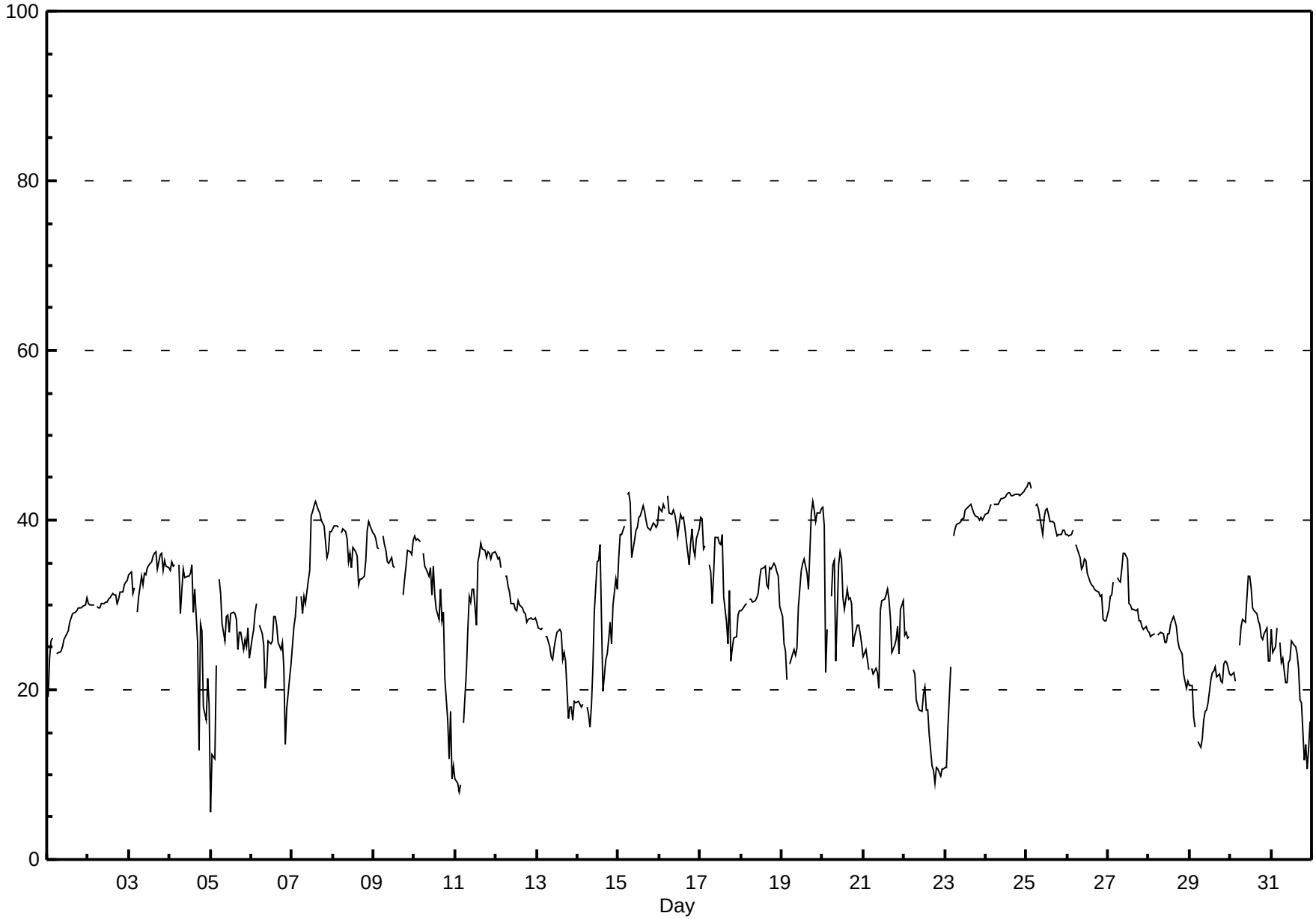
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Ozone (O_3) - ppb

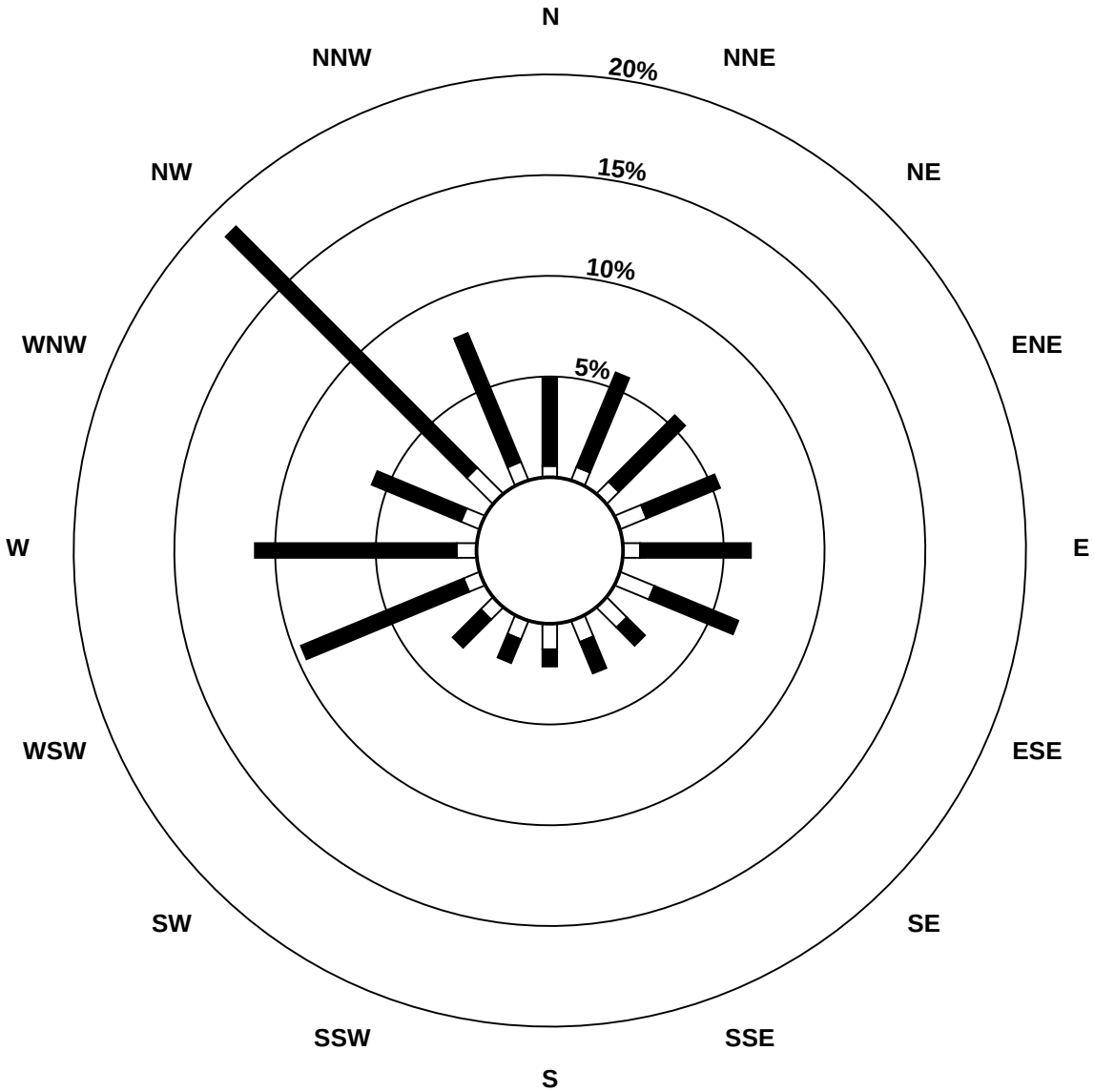
Beaverlodge - December 2013



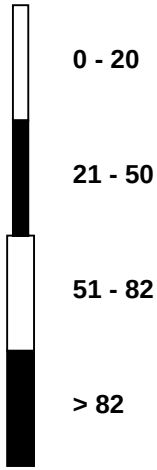
Pollutant Rose

Ozone (O_3) - ppb

Beaverlodge - December 2013



Pollutant Classes (ppb)



Peace Airshed Zone Association

Eight Hour Running Averages

Ozone (O_3) - ppb

Beaverlodge - December 2013

Maximum Value: 43.2 ppb on Dec 25 05:00

Minimum Value: 5.7 ppb on Dec 11 05:00

Percentiles: P_1 = 8.9 P_{10} = 18.0 Q_1 = 22.8 Median = 29.0 Q_3 = 34.1 P_{90} = 38.4 P_{99} = 42.8

Hours in Service:	744
Hours of Data:	737
Hours of Missing Data:	7
Hours of Calibration:	7
Percent Operational Time:	100.0

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-Dec	26	25	25	24	22	21	22	23	23	24	24	25	25	25	26	26	27	27	28	28	29	29	29	29	29.3
2-Dec	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30.2
3-Dec	30	31	31	31	31	30	30	30	29	29	30	30	31	32	33	33	34	34	34	34	34	34	34	33	34.5
4-Dec	33	32	32	31	31	30	29	29	29	29	29	29	30	30	30	29	28	25	23	21	19	16	15	13	32.6
5-Dec	11	11	10	10	9	12	14	17	20	22	25	26	26	26	26	26	27	27	26	26	25	24	23	23	26.6
6-Dec	23	23	23	23	23	22	21	20	19	18	18	18	19	20	22	23	23	24	24	23	21	20	19	18	23.8
7-Dec	18	19	19	21	23	25	26	26	26	25	26	25	27	29	31	32	35	37	38	39	38	37	36	36	38.9
8-Dec	36	36	36	36	37	38	38	39	37	35	34	33	33	33	32	31	31	32	32	33	33	33	34	35	38.5
9-Dec	36	36	37	37	37	37	36	36	35	35	35	34	34	33	33	N	N	N	N	N	N	N	32	33	37.0
10-Dec	34	35	35	36	36	36	36	35	33	33	32	31	31	30	29	29	28	26	24	22	19	17	14	12	35.9
11-Dec	10	8	7	6	6	6	8	10	13	17	21	24	24	27	29	31	32	32	33	34	35	35	35	35	35.3
12-Dec	35	35	35	35	35	34	34	34	33	32	31	30	30	29	29	29	29	29	29	29	28	28	28	28	34.9
13-Dec	28	27	27	27	27	27	26	26	25	25	24	24	24	24	24	24	24	24	23	22	20	19	18	17	27.6
14-Dec	17	16	17	17	17	18	17	17	16	15	15	17	19	20	20	20	20	22	22	22	20	20	22	25	24.6
15-Dec	27	29	30	32	34	35	37	38	38	37	36	35	36	36	36	36	37	38	38	39	39	39	38	38	38.8
16-Dec	38	39	39	40	40	40	40	40	40	40	40	39	39	38	38	37	36	35	35	36	35	34	34	34	40.5
17-Dec	35	36	36	36	36	36	36	35	33	33	33	33	34	34	34	33	33	31	29	27	26	25	24	25	36.4
18-Dec	25	26	27	28	28	29	29	29	29	29	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31.4
19-Dec	31	30	29	27	26	24	23	23	21	22	22	24	25	26	27	27	28	30	32	32	32	33	34	36	36.3
20-Dec	38	38	35	34	34	33	31	30	26	26	28	29	29	29	29	29	31	30	29	27	26	26	25	24	37.9
21-Dec	23	23	23	23	23	23	22	22	22	20	21	22	23	24	25	26	27	27	27	25	24	22	21	21	27.4
22-Dec	20	21	22	22	22	23	21	21	19	17	15	15	15	15	15	14	14	13	12	12	11	10	9	9	22.7
23-Dec	9	9	9	10	10	12	16	20	25	29	33	37	37	39	40	40	40	40	40	40	40	40	40	40	40.5
24-Dec	40	40	40	40	40	40	41	41	41	41	42	42	42	42	42	42	42	42	43	43	43	43	43	43	42.7
25-Dec	43	43	43	43	43	43	43	42	42	41	40	39	40	39	39	39	39	39	39	39	39	38	38	38	43.2
26-Dec	38	38	38	38	38	38	37	37	36	36	35	35	34	34	33	33	33	33	32	32	31	31	30	29	37.9
27-Dec	29	29	29	29	29	30	30	31	32	32	33	34	33	33	32	32	31	30	29	29	28	28	28	27	33.5
28-Dec	27	26	26	26	25	25	25	25	25	25	25	25	25	26	26	26	26	26	26	26	25	24	23	22	26.5
29-Dec	22	21	20	19	18	17	16	15	14	13	14	14	14	15	17	18	19	20	20	21	21	21	21	21	21.5
30-Dec	21	21	21	21	21	21	22	23	24	25	26	28	28	29	29	29	29	29	29	28	27	26	26	25	29.3
31-Dec	25	24	24	24	24	23	23	23	22	22	21	21	21	22	22	22	22	22	21	19	17	15	12	11	24.6
Diurnal Maximums	42.8	42.9	43.1	43.1	43.2	43.0	42.8	42.3	41.9	41.5	41.7	41.8	41.8	42.0	42.1	42.3	42.4	42.5	42.5	42.6	42.6	42.7	42.7	42.7	

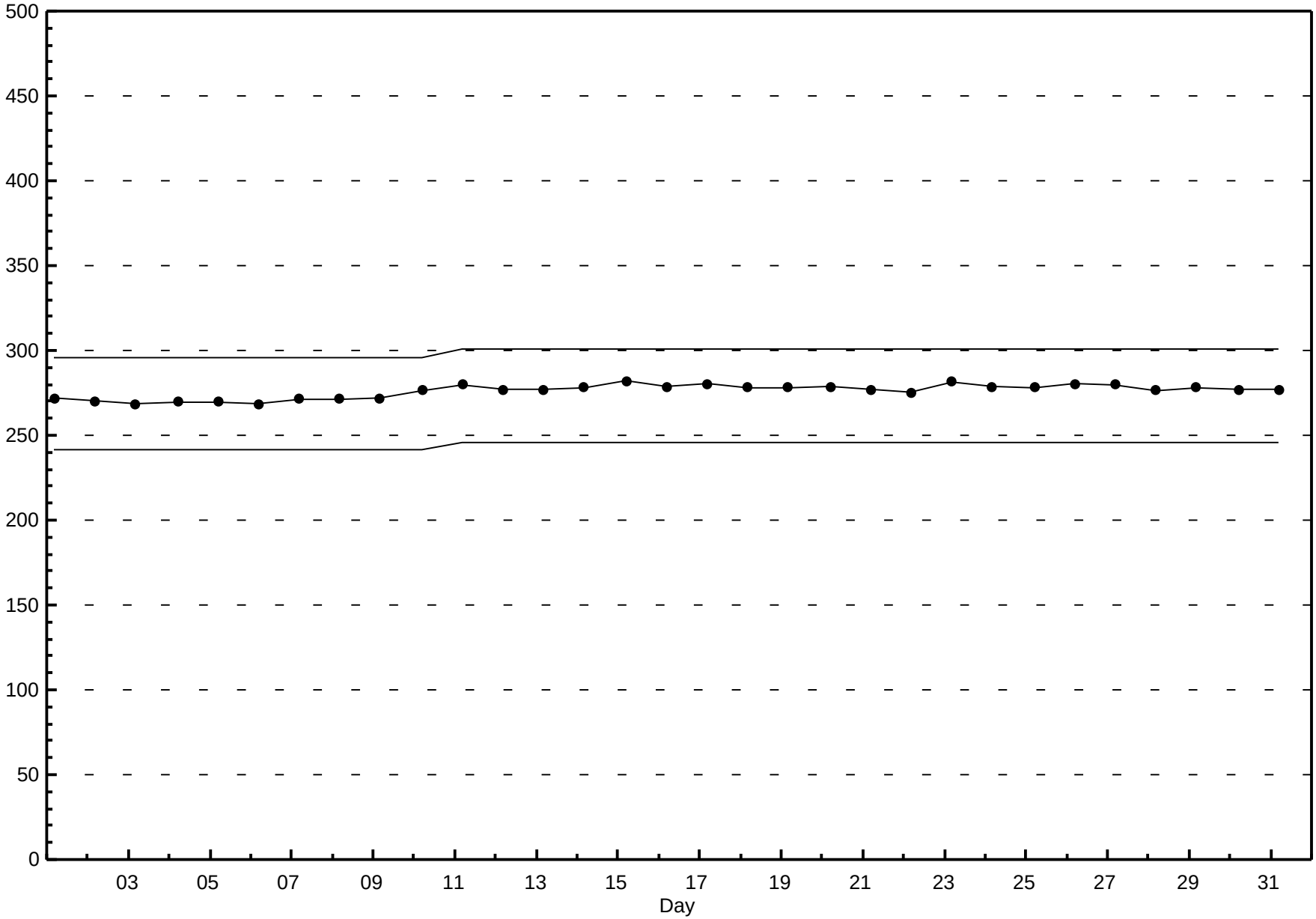
N - Not Valid

Peace Airshed Zone Association

Span Responses

Ozone (O_3)

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Beaverlodge - December 2013

Number of Exceedences: 1-hr: 0 24-hr: 0

Maximum Value: 33.4 $\mu g/m^3$ on Dec 6 09:00

Maximum Daily Average: 13.8 $\mu g/m^3$ on Dec 22

Minimum Value: 0 $\mu g/m^3$ on Dec 2 01:00

Maximum Diurnal Average: 9.9 $\mu g/m^3$ at hour 8

Monthly Average: 8.48 $\mu g/m^3$

Minimum Daily Average: 3.6 $\mu g/m^3$ on Dec 8

Minimum Diurnal Average: 7.0 $\mu g/m^3$ at hour 11

Percentiles: P_1 = 0.0 P_{10} = 2.6 Q_1 = 5.9 Median = 8.4 Q_3 = 11.0 P_{90} = 13.8 P_{99} = 23.8

Hours in Service:	744
Hours of Data:	743
Hours of Missing Data:	1
Hours of Calibration:	0
Percent Operational Time:	99.9

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	25	26	15	12	15	8	8	8	3	4	6	5	7	7	10	7	11	7	8	9	14	10	8	7	9.9	25.9
2-Dec	0	0	17	3	12	14	13	6	7	0	3	3	3	8	6	8	6	6	7	8	7	7	5	9	6.6	17.4
3-Dec	9	8	5	9	10	5	4	7	10	12	5	9	12	5	7	7	6	8	5	7	5	7	9	9	7.4	12.1
4-Dec	8	13	10	0	9	9	9	7	8	10	3	11	14	5	11	12	11	8	7	4	1	16	24	20	9.6	23.9
5-Dec	19	30	15	20	6	7	11	26	16	17	10	8	2	6	16	5	14	10	6	7	6	7	7	5	11.6	30.4
6-Dec	12	5	13	5	7	11	3	26	33	0	0	1	4	5	11	9	3	1	5	0	14	0	9	4	7.5	33.4
7-Dec	5	0	1	3	0	0	1	1	2	3	0	3	0	8	22	9	14	0	0	0	0	8	20	15	4.8	22.0
8-Dec	11	0	0	0	0	0	4	18	0	0	1	17	24	7	0	2	0	0	0	0	3	0	0	0	3.6	23.9
9-Dec	0	0	0	1	9	0	1	0	0	16	M	1	11	12	3	14	4	8	10	8	8	8	10	9	5.7	15.8
10-Dec	7	12	12	7	8	11	8	10	24	13	8	9	11	11	12	11	9	12	10	8	7	10	11	15	10.8	24.5
11-Dec	15	14	15	12	13	16	16	9	9	12	9	11	13	11	6	11	11	4	7	5	9	7	2	4	10.1	15.9
12-Dec	11	7	7	6	8	7	9	8	9	17	16	9	9	5	10	12	11	12	11	10	9	12	8	10	9.7	16.7
13-Dec	9	10	12	14	10	8	11	11	13	11	13	11	13	7	7	9	10	4	9	14	12	17	11	15	10.9	17.5
14-Dec	11	12	10	8	9	10	8	16	14	12	16	10	6	6	11	11	9	9	2	7	7	10	7	6	9.5	16.3
15-Dec	5	8	0	5	9	7	12	7	5	1	1	6	8	5	13	14	0	0	7	3	8	10	11	6	6.3	14.2
16-Dec	0	6	1	6	7	5	9	8	4	7	8	11	10	5	4	11	7	8	7	3	7	7	8	8	6.5	11.1
17-Dec	5	6	7	4	8	7	4	2	11	8	1	2	7	3	3	10	11	8	7	7	13	14	8	11	7.0	13.6
18-Dec	11	8	10	8	11	9	12	10	11	12	9	7	15	12	10	9	7	12	10	13	12	10	7	11	10.3	15.3
19-Dec	8	11	14	19	15	17	18	13	9	9	9	6	6	7	7	7	10	6	6	5	5	5	9	4	9.4	18.9
20-Dec	6	6	10	13	13	7	6	11	13	9	6	7	12	15	13	10	8	8	15	11	12	11	12	11	10.2	15.4
21-Dec	12	12	11	10	11	12	16	18	15	9	8	8	7	6	10	10	7	8	10	9	10	8	6	9	10.1	18.4
22-Dec	14	11	12	12	13	15	16	17	7	13	14	15	15	17	16	18	17	12	14	14	15	15	13	9	13.8	18.1
23-Dec	12	18	14	9	13	12	6	10	8	11	5	8	7	7	8	6	6	8	4	6	4	6	4	2	8.2	18.2
24-Dec	6	6	4	2	10	7	4	3	9	10	2	4	6	7	8	5	8	3	5	3	5	5	5	4	5.5	10.4
25-Dec	5	5	6	5	5	6	4	3	5	6	4	1	5	3	8	9	3	5	6	6	10	10	5	5	5.4	10.1
26-Dec	1	1	6	10	3	6	6	9	6	11	5	5	9	9	5	3	6	10	8	7	7	8	10	7	6.5	11.4
27-Dec	8	11	9	11	9	7	8	10	7	8	9	9	13	8	6	4	9	11	10	9	7	9	10	9	8.7	12.6
28-Dec	10	9	7	8	9	7	9	5	8	7	10	12	11	8	7	11	9	7	8	10	8	9	7	8	8.6	12.0
29-Dec	11	11	12	10	10	8	9	7	11	9	10	11	15	15	11	10	11	6	10	9	11	10	8	9	10.2	15.1
30-Dec	8	8	8	9	8	8	10	9	9	8	10	10	11	10	8	9	7	9	5	6	7	8	7	9	8.4	11.2
31-Dec	9	9	9	7	7	9	8	10	12	10	9	12	12	9	12	10	9	7	12	12	12	12	14	10	10.0	14.2
	8.8	9.2	8.8	8.0	9.0	8.3	8.4	9.9	9.6	8.9	7.0	7.8	9.5	8.1	9.1	9.2	8.1	7.1	7.4	7.0	8.2	8.9	8.9	8.3	Diurnal Average	
	25.2	30.4	17.4	20.0	14.9	17.4	18.0	26.1	33.4	16.7	15.9	16.6	23.9	17.1	22.0	18.1	16.8	12.3	14.8	14.1	14.6	17.5	23.9	20.0	Diurnal Maximum	

M - Maintenance

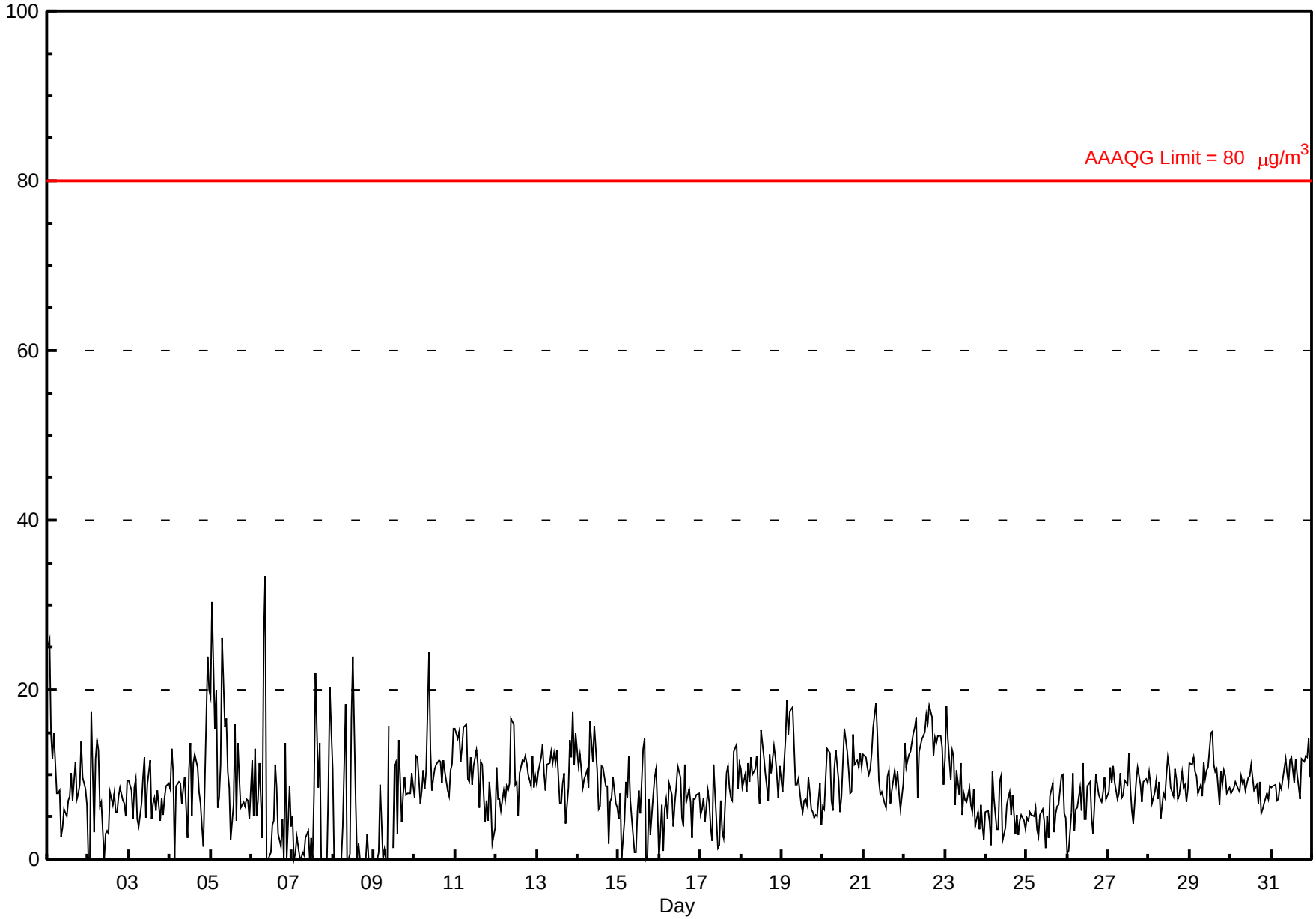
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

Peace Airshed Zone Association

Hourly Averages

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Beaverlodge - December 2013

Maximum Value: 53.5 $\mu g/m^3$ on Dec 6 08:00

Maximum Daily Average: 24.8 $\mu g/m^3$ on Dec 6

Minimum Value: 0 $\mu g/m^3$ on Dec 7 20:00

Minimum Daily Average: 7.6 $\mu g/m^3$ on Dec 25

Maximum Diurnal Average: 15.8 $\mu g/m^3$ at hour 8

Minimum Diurnal Average: 10.4 $\mu g/m^3$ at hour 20

Monthly Average: 13.03 $\mu g/m^3$

Percentiles: P_1 = 1.4 P_{10} = 6.9 Q_1 = 9.1 Median = 11.6 Q_3 = 14.7 P_{90} = 20.5 P_{99} = 41.2

Hours in Service:	744
Hours of Data:	743
Hours of Missing Data:	1
Hours of Calibration:	0
Percent Operational Time:	99.9

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	28	29	19	15	17	11	10	11	4	5	8	7	8	10	11	10	13	8	9	14	15	11	10	8	12.2	29.3
2-Dec	9	14	28	13	15	23	21	7	8	7	8	5	7	10	10	10	7	7	10	10	8	8	9	11	11.0	27.8
3-Dec	10	10	6	11	11	7	7	7	14	15	7	12	15	8	8	8	10	10	7	10	7	9	10	12	9.7	15.3
4-Dec	11	17	17	2	11	11	11	8	10	12	6	17	17	8	13	16	15	10	10	12	12	29	29	22	13.5	29.0
5-Dec	23	36	23	28	9	10	20	31	25	22	19	13	9	16	21	9	20	19	10	10	10	16	14	17	17.9	35.8
6-Dec	21	19	25	21	20	17	9	54	52	0	27	25	26	26	28	16	18	24	24	25	34	24	31	29	24.8	53.5
7-Dec	24	26	29	23	14	15	17	29	13	14	12	20	12	26	38	28	31	21	1	0	0	31	40	32	20.7	40.3
8-Dec	31	20	0	12	0	5	24	38	0	6	19	39	42	32	9	27	20	24	24	7	33	51	3	38	21.0	50.8
9-Dec	34	32	8	43	45	35	38	42	34	34	M	6	21	23	9	16	12	16	15	10	11	10	12	11	22.5	44.7
10-Dec	14	15	14	9	9	12	12	13	27	27	10	11	12	13	14	14	12	13	12	10	12	16	12	18	13.8	27.4
11-Dec	18	17	17	12	14	18	18	12	12	13	10	14	15	13	10	14	12	9	11	7	13	12	8	15	13.1	18.5
12-Dec	15	8	9	8	10	8	10	10	12	21	19	11	11	9	13	13	13	14	13	12	11	13	12	11	11.9	20.9
13-Dec	11	13	19	21	13	10	14	13	14	13	14	13	15	11	8	12	15	7	13	15	18	19	14	19	13.9	20.7
14-Dec	13	14	12	9	10	12	15	18	17	13	18	18	9	10	14	14	14	12	6	10	9	11	11	8	12.4	18.4
15-Dec	6	9	5	11	10	11	14	9	8	4	3	13	13	7	18	18	5	3	9	5	13	13	12	9	9.6	18.5
16-Dec	3	10	10	14	13	6	12	11	11	12	11	15	15	10	8	15	11	12	11	6	12	11	12	11	10.9	15.3
17-Dec	7	7	9	8	11	9	9	7	16	15	5	5	9	5	7	15	12	13	11	11	15	17	11	15	10.3	17.4
18-Dec	14	12	11	11	13	13	15	12	13	16	12	11	18	16	12	10	9	15	13	16	16	12	11	13	13.1	17.8
19-Dec	9	16	16	22	18	20	21	16	14	11	11	10	7	9	9	8	12	7	7	6	7	7	11	9	11.7	22.3
20-Dec	8	8	13	14	15	10	7	13	14	14	8	10	16	18	16	13	14	11	16	14	13	12	14	14	12.7	17.8
21-Dec	14	13	11	11	13	14	17	21	21	11	10	10	8	8	11	11	10	12	12	11	12	9	7	12	12.0	21.4
22-Dec	15	13	13	15	15	17	19	20	14	15	17	16	17	19	19	21	21	13	16	16	16	17	17	10	16.3	20.5
23-Dec	16	20	17	12	14	14	11	13	11	14	8	10	8	7	9	9	7	10	10	8	5	7	6	4	10.4	20.4
24-Dec	8	7	6	4	13	12	6	8	11	11	6	6	7	9	10	7	9	6	7	5	6	6	5	5	7.6	12.6
25-Dec	7	7	6	6	7	8	4	4	7	7	5	4	7	7	9	12	9	9	9	9	11	11	8	6	7.6	11.9
26-Dec	3	3	10	12	7	8	8	10	10	12	11	8	11	11	7	5	10	11	8	8	8	9	12	11	8.9	12.2
27-Dec	10	12	11	12	11	8	9	12	10	9	11	10	14	11	8	5	12	12	11	11	8	11	11	11	10.4	14.5
28-Dec	12	12	8	11	12	8	10	9	9	9	12	14	12	13	12	12	11	8	11	12	9	10	8	12	10.7	13.8
29-Dec	12	12	14	13	11	10	10	9	13	12	12	12	16	16	15	12	12	11	12	11	12	12	8	9	12.0	16.5
30-Dec	9	10	10	10	9	10	11	11	13	12	12	11	13	13	9	11	8	13	11	9	8	9	8	10	10.3	12.8
31-Dec	9	11	11	7	9	10	9	12	13	12	10	14	13	11	13	12	10	9	13	13	13	14	16	13	11.5	15.6
	13.8	14.6	13.1	13.5	12.9	12.2	13.4	15.8	14.7	12.8	11.4	12.6	13.6	13.0	12.9	13.0	12.7	11.9	11.4	10.4	12.3	14.4	12.7	13.7	Diurnal Average	
	34.5	35.8	28.9	43.3	44.7	34.9	38.3	53.5	52.3	34.4	27.0	38.7	41.9	31.9	37.8	28.1	30.8	24.4	24.2	25.0	33.6	50.8	40.3	37.7	Diurnal Maximum	

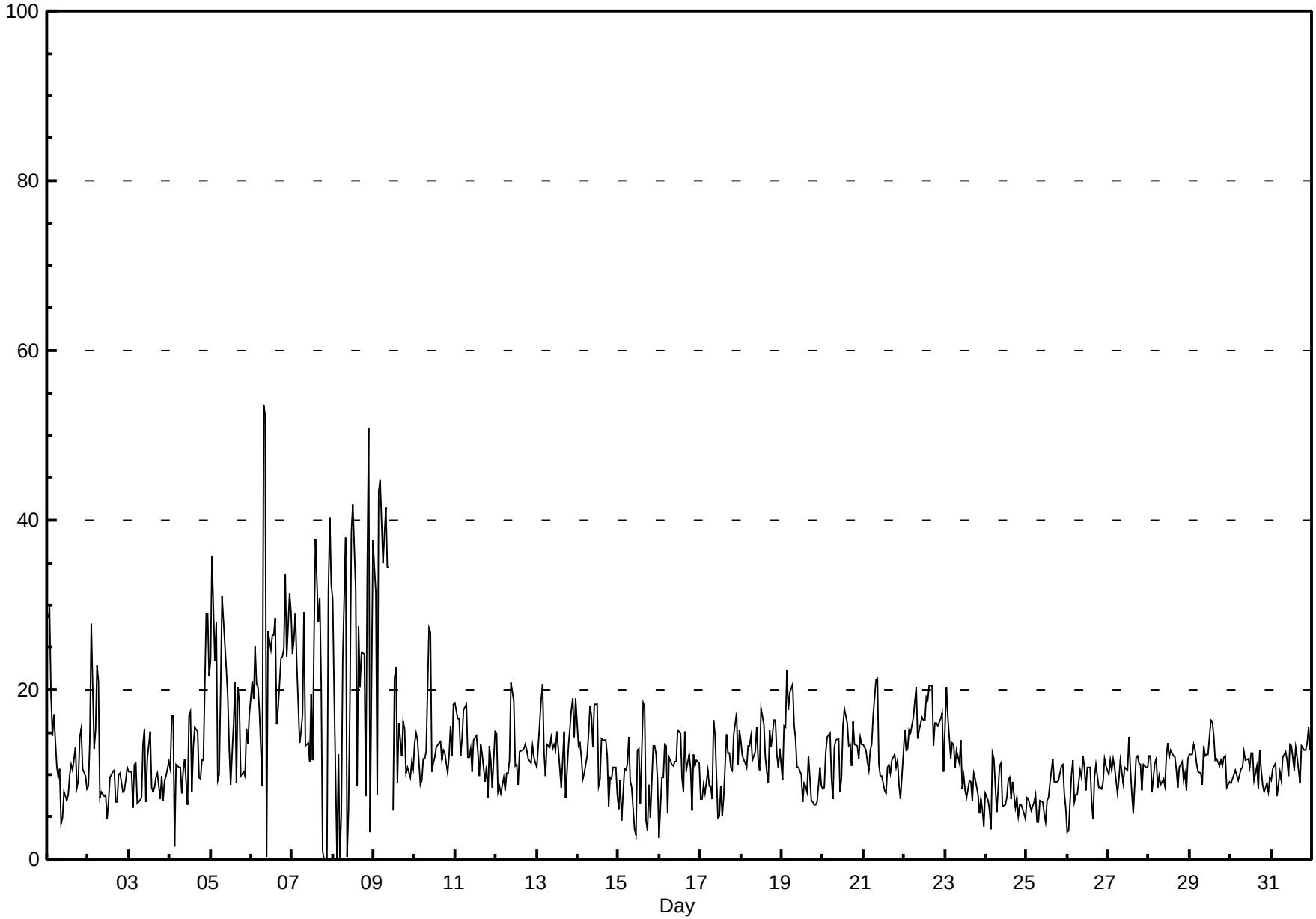
M - Maintenance

Peace Airshed Zone Association

Hourly Maximums

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Beaverlodge - December 2013



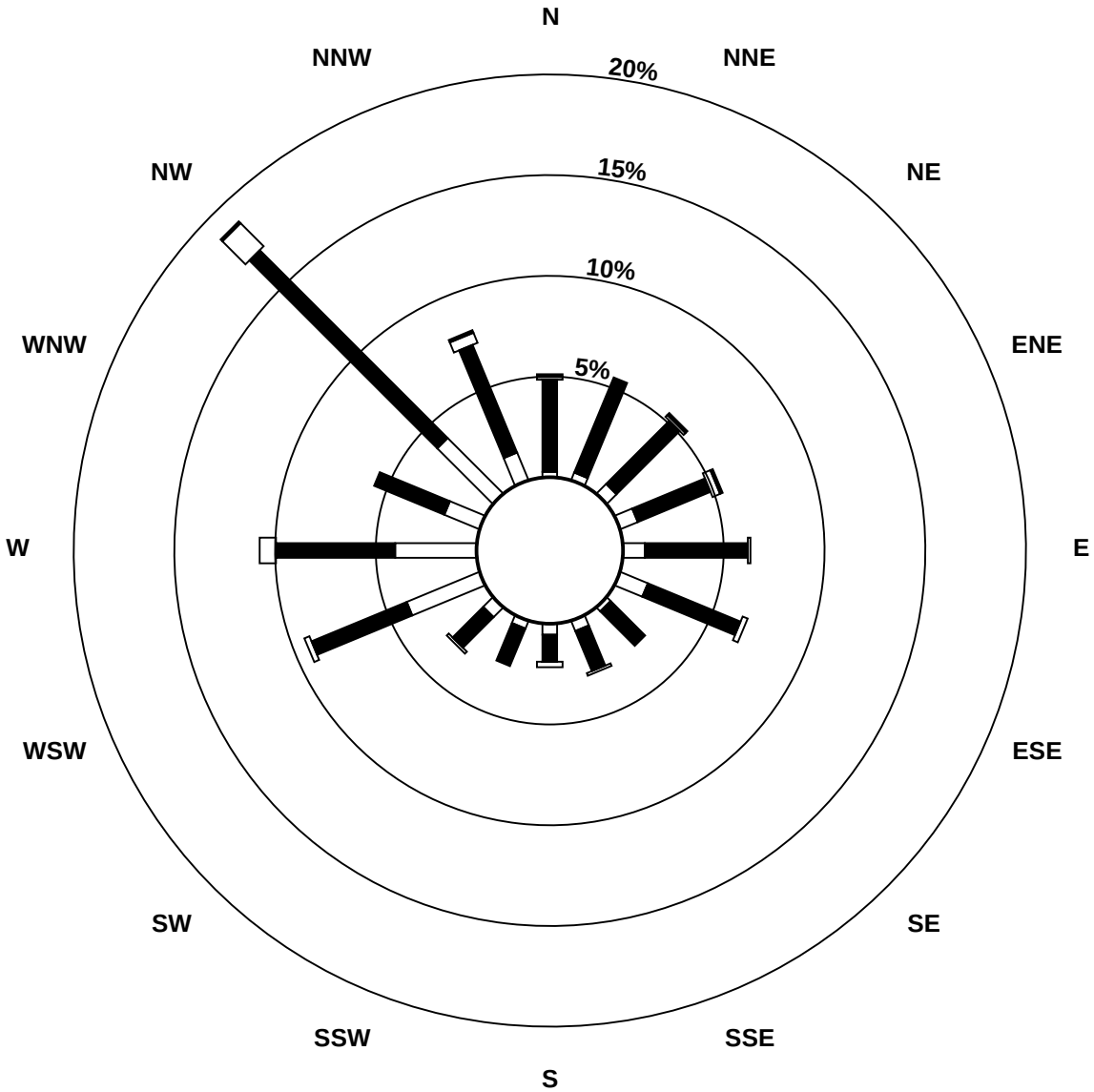
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

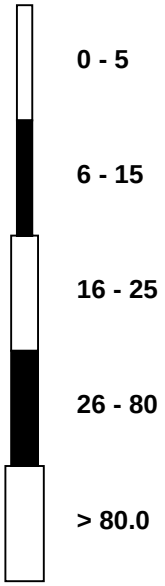
Pollutant Rose

Particulate Matter 2.5 ($PM_{2.5}$) - $\mu g/m^3$

Beaverlodge - December 2013



Pollutant Classes ($\mu g/m^3$)



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 5.5 ^{o}C on Dec 26 19:00 Maximum Daily Average: 3.1 ^{o}C on Dec 26

Minimum Value: -32 ^{o}C on Dec 6 10:00 Minimum Daily Average: -28.4 ^{o}C on Dec 6

Maximum Diurnal Average: -11.3 ^{o}C at hour 14 Minimum Diurnal Average: -13.9 ^{o}C at hour 9

Monthly Average: -13.11 ^{o}C Percentiles: P_1 = -29.1 P_{10} = -23.1 Q_1 = -19.3 Median = -16.1 Q_3 = -5.1 P_{90} = 0.6 P_{99} = 5.2

Hours in Service:	744
Hours of Data:	742
Hours of Missing Data:	2
Hours of Calibration:	0
Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	-3	-4	-4	-5	-9	-12	-13	-13	-14	-14	-15	-15	-16	-17	-17	-18	-18	-19	-19	-19	-19	-19	-19	-19	-14.3	-3.3
2-Dec	-19	-19	-19	-19	-19	-19	-18	-18	-18	-18	-18	-18	-18	-17	-17	-17	-18	-18	-18	-17	-17	-17	-17	-17	-18.0	-17.0
3-Dec	-17	-17	-17	-17	-17	-18	-18	-18	-18	-17	-17	-16	-15	-15	-14	-14	-15	-16	-16	-17	-17	-19	-18	-19	-16.7	-14.0
4-Dec	-19	-19	-18	-19	-19	-20	-21	-20	-21	-20	-19	-17	-17	-17	-16	-18	-22	-22	-22	-23	-24	-26	-24	-25	-20.4	-16.4
5-Dec	-24	-23	-23	-23	-23	-23	-23	-24	-25	-26	-26	-25	-24	-24	-23	-24	-25	-26	-26	-26	-27	-27	-27	-28	-24.9	-22.7
6-Dec	-28	-28	-28	-29	-32	-31	-31	-32	-32	-32	-30	-26	-24	-23	-24	-27	-27	N	-27	N	-29	-28	-28	-27	-28.4	-23.3
7-Dec	-27	-27	-27	-26	-25	-25	-28	-25	-24	-22	-19	-13	-11	-10	-10	-10	-10	-10	-11	-11	-11	-11	-11	-11	-17.2	-9.5
8-Dec	-10	-10	-10	-10	-10	-10	-10	-10	-11	-11	-11	-10	-10	-10	-9	-9	-8	-8	-7	-6	-3	-1	-1	-1	-8.2	-0.9
9-Dec	-1	-2	-3	-2	-3	-4	-4	-4	-5	-5	-5	-5	-5	-5	-5	-5	-5	-6	-6	-6	-6	-6	-6	-7	-4.7	-1.4
10-Dec	-9	-10	-12	-12	-12	-13	-13	-13	-14	-15	-15	-13	-12	-11	-14	-15	-15	-14	-13	-13	-14	-13	-14	-13	-13.0	-9.2
11-Dec	-13	-12	-12	-11	-11	-10	-9	-10	-12	-13	-14	-14	-14	-15	-16	-16	-17	-17	-17	-17	-17	-17	-17	-17	-14.2	-9.5
12-Dec	-18	-18	-18	-18	-18	-18	-19	-19	-19	-19	-19	-19	-19	-18	-19	-20	-20	-20	-20	-20	-20	-20	-20	-20	-19.0	-17.6
13-Dec	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-21	-20	-20	-19	-19	-19	-19	-19	-19	-19	-19	-19	-18	-18	-19.6	-18.1
14-Dec	-18	-17	-17	-17	-17	-16	-16	-16	-14	-10	-7	0	1	1	-3	-4	-1	0	0	0	-1	0	-1	1	-7.3	1.3
15-Dec	1	2	4	5	5	5	5	2	0	0	1	1	1	2	2	2	1	-1	-2	-2	0	1	0	0	1.4	5.2
16-Dec	-2	-2	-1	-1	-1	0	-3	-2	-1	-2	-3	-3	-3	-3	-2	-1	-2	-2	-1	-1	-2	-2	-3	-3	-1.9	-0.5
17-Dec	-2	-2	-2	-2	-2	-2	-3	-4	-3	1	5	5	5	5	-4	-13	-16	-18	-20	-20	-20	-21	-21	-21	-7.3	5.0
18-Dec	-21	-21	-21	-21	-21	-21	-22	-22	-23	-22	-22	-21	-21	-20	-20	-18	-20	-21	-21	-22	-22	-22	-23	-23	-21.3	-18.0
19-Dec	-23	-24	-24	-24	-24	-24	-23	-22	-22	-21	-19	-17	-14	-13	-12	-13	-10	-8	-7	-7	-7	-6	-7	-7	-15.8	-6.4
20-Dec	-8	-8	-10	-10	-10	-10	-9	-9	-10	-11	-11	-11	-13	-13	-13	-14	-15	-15	-15	-15	-15	-16	-16	-17	-12.4	-7.7
21-Dec	-17	-17	-17	-17	-17	-17	-17	-17	-17	-17	-17	-17	-18	-17	-17	-17	-18	-20	-19	-19	-20	-21	-21	-22	-18.2	-16.8
22-Dec	-22	-23	-24	-27	-28	-28	-27	-27	-28	-27	-25	-25	-23	-23	-23	-22	-21	-21	-20	-19	-17	-17	-16	-15	-22.8	-14.9
23-Dec	-15	-15	-13	-9	-10	-6	5	4	4	4	4	4	4	4	4	4	3	1	1	0	0	-1	-2	-2	-1.0	4.5
24-Dec	-1	0	1	2	2	2	1	1	1	1	1	0	0	1	0	0	0	-1	-1	-1	-1	0	0	0	0.3	2.0
25-Dec	0	0	-1	-2	-2	-2	-1	-1	-1	-1	-1	2	4	5	5	5	5	4	3	3	3	3	3	3	1.6	5.1
26-Dec	3	4	4	5	5	5	5	4	3	4	4	5	5	5	5	5	5	5	5	5	0	-5	-6	-8	3.1	5.5
27-Dec	-10	-11	-12	-12	-13	-13	-14	-14	-15	-16	-17	-17	-17	-18	-19	-20	-21	-21	-21	-22	-23	-22	-22	-22	-17.1	-9.8
28-Dec	-21	-21	-21	-21	-21	-21	-21	-21	-21	-21	-20	-19	-19	-19	-19	-19	-19	-20	-20	-19	-19	-18	-18	-18	-19.9	-17.7
29-Dec	-17	-17	-17	-17	-16	-15	-15	-15	-14	-14	-13	-11	-11	-14	-15	-15	-15	-15	-15	-16	-16	-16	-16	-16	-15.0	-11.1
30-Dec	-16	-16	-16	-16	-16	-17	-17	-18	-18	-18	-18	-18	-18	-18	-18	-18	-19	-19	-19	-19	-19	-18	-19	-19	-17.8	-16.1
31-Dec	-18	-19	-18	-19	-18	-18	-18	-18	-18	-18	-17	-16	-16	-14	-14	-14	-16	-18	-19	-19	-18	-18	-18	-19	-17.4	-13.6
	-13.5	-13.5	-13.4	-13.4	-13.6	-13.6	-13.6	-13.6	-13.9	-13.6	-13.0	-12.0	-11.5	-11.3	-11.8	-12.3	-12.9	-12.8	-13.3	-12.9	-13.6	-13.7	-13.8	-13.9	Diurnal Average	
	3.0	4.1	4.3	4.7	4.8	5.2	5.2	4.4	3.9	4.0	4.6	5.3	5.3	5.3	5.1	5.0	5.0	5.3	5.5	4.6	2.8	2.9	2.8	3.0	Diurnal Maximum	

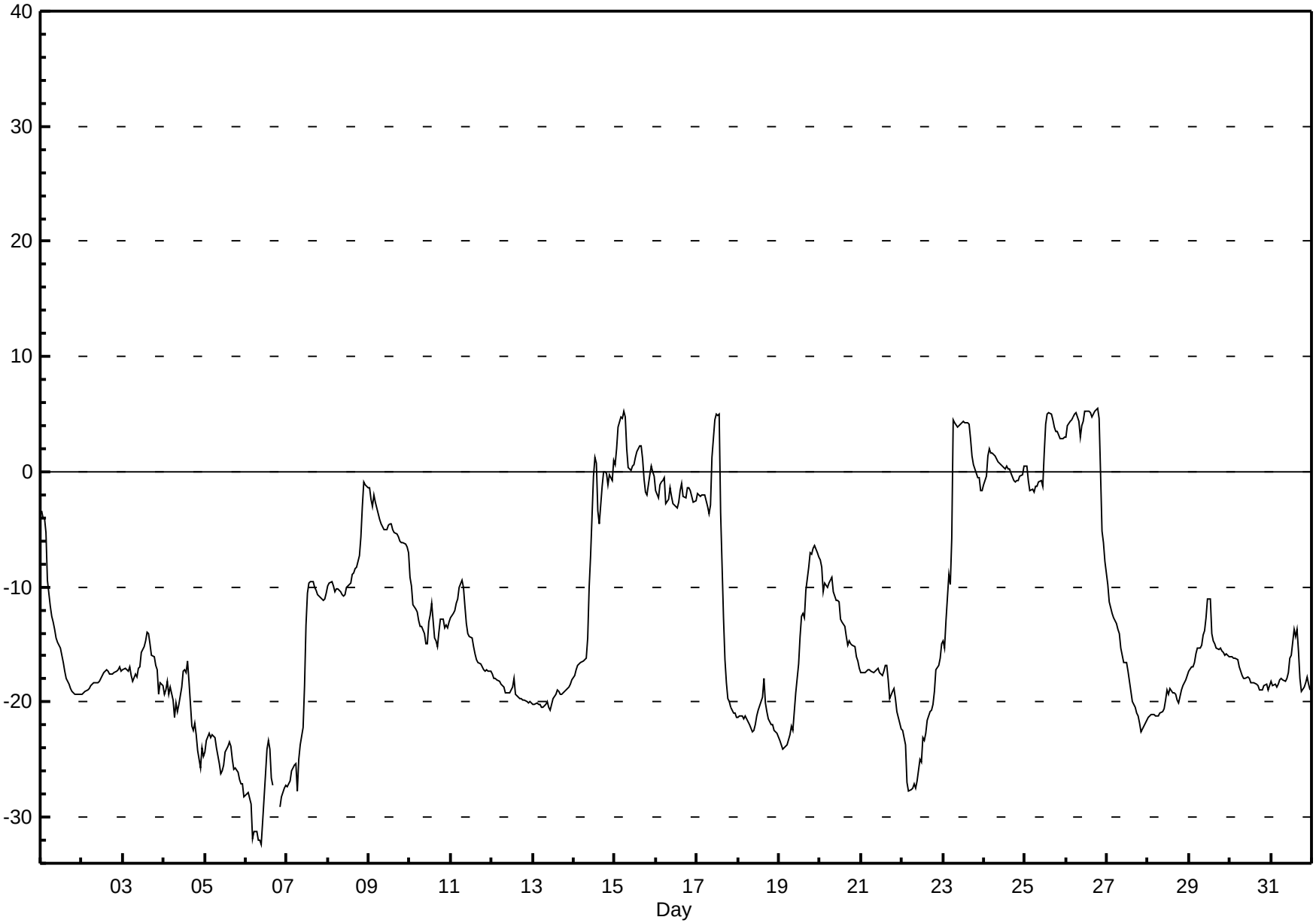
N - Not Valid

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Beaverlodge - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 100.0 % on Dec 17 00:00 Maximum Daily Average: 95.5 % on Dec 9

Minimum Value: 48 % on Dec 15 15:00 Minimum Daily Average: 64.6 % on Dec 24
Maximum Diurnal Average: 88.1 % at hour 1 Minimum Diurnal Average: 80.8 % at hour 15
Monthly Average: 85.04 % Percentiles: P_1 = 60.9 P_{10} = 69.9 Q_1 = 80.6 Median = 87.9 Q_3 = 91.3 P_{90} = 94.8 P_{99} = 100.0

Hours in Service:	744
Hours of Data:	742
Hours of Missing Data:	2
Hours of Calibration:	0
Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	96	96	94	93	91	93	92	90	89	91	90	90	89	89	88	88	87	87	87	87	88	88	88	88	90.0	96.3
2-Dec	88	87	87	87	87	87	87	86	86	86	87	86	85	84	83	84	85	85	85	85	85	86	86	87	85.8	87.6
3-Dec	86	86	86	86	86	88	91	88	87	85	83	78	76	78	78	79	82	86	87	88	90	91	91	90	85.2	91.0
4-Dec	91	90	91	90	91	89	89	90	89	89	88	85	80	79	75	80	87	87	89	87	85	84	86	85	86.4	90.8
5-Dec	85	86	86	86	86	86	86	85	84	83	83	83	81	80	81	82	83	83	83	82	81	82	81	81	83.3	86.2
6-Dec	81	81	80	79	76	78	77	78	77	74	72	70	68	63	66	71	78	N	81	N	80	81	81	81	76.0	81.4
7-Dec	81	81	82	83	82	82	79	83	83	86	88	93	93	93	93	93	88	85	82	81	87	89	96	94	86.6	95.7
8-Dec	93	92	91	90	91	90	86	86	88	89	89	87	90	90	88	90	90	91	90	87	83	80	88	92	88.7	92.8
9-Dec	90	94	99	98	98	98	97	94	96	99	98	97	96	95	90	91	90	90	94	96	97	97	99	99	95.5	99.4
10-Dec	97	97	96	96	95	95	95	95	94	93	91	90	90	92	92	92	93	94	94	94	94	94	94	94	93.8	97.4
11-Dec	94	94	95	96	96	97	97	97	96	95	94	93	93	92	92	92	92	92	91	91	91	91	91	90	93.4	97.4
12-Dec	90	90	90	90	90	89	89	89	89	89	88	88	88	88	88	88	89	89	89	89	88	88	88	88	88.8	90.3
13-Dec	88	88	88	88	88	88	88	88	89	88	88	88	88	88	88	89	89	89	89	90	90	90	90	90	88.7	90.5
14-Dec	91	91	91	91	91	91	91	92	93	96	98	99	97	96	98	96	97	97	98	99	99	99	99	97	95.3	99.2
15-Dec	99	93	82	75	71	61	60	78	80	80	73	74	61	56	48	49	57	66	68	70	67	73	78	79	70.7	98.9
16-Dec	93	90	77	67	61	60	75	73	68	67	66	65	67	67	67	66	70	70	66	68	71	76	95	100	72.7	100.0
17-Dec	100	100	100	100	100	100	100	100	100	95	74	73	73	67	87	88	82	80	78	77	77	76	76	74	86.5	100.0
18-Dec	75	75	75	76	76	81	76	75	75	74	74	73	73	72	70	63	73	77	79	82	83	86	88	88	76.7	88.4
19-Dec	87	86	86	86	86	86	87	87	87	88	89	90	78	70	69	68	61	59	62	64	66	73	83	83	78.4	89.9
20-Dec	85	93	95	94	96	97	98	97	97	96	94	93	93	92	91	91	92	92	93	93	92	92	92	91	93.3	97.6
21-Dec	91	91	91	91	91	90	90	90	90	89	88	87	86	84	82	83	82	88	88	88	89	91	89	88	88.1	91.0
22-Dec	89	87	87	83	83	82	82	83	82	82	83	81	83	84	86	87	87	88	88	89	90	91	92	93	85.9	92.6
23-Dec	92	92	95	97	96	98	74	74	73	70	67	65	63	63	62	62	65	70	72	74	74	74	77	76	76.0	98.2
24-Dec	76	73	64	61	62	62	62	62	63	63	63	64	64	62	63	61	63	65	66	66	67	67	68	65	64.6	76.0
25-Dec	67	70	91	100	100	100	95	94	91	89	91	81	70	63	62	63	66	71	74	74	78	77	79	77	80.2	100.0
26-Dec	78	74	73	73	72	71	70	76	86	80	78	75	75	75	76	77	76	74	72	77	83	88	88	87	77.2	88.2
27-Dec	90	93	93	93	94	93	93	93	92	92	91	91	90	90	89	88	88	87	86	85	85	85	85	85	89.6	93.7
28-Dec	85	85	85	86	85	85	84	84	83	83	83	81	81	81	80	80	82	83	85	85	86	86	87	87	83.8	86.8
29-Dec	89	90	91	92	92	92	93	93	94	94	94	96	96	94	93	93	93	93	93	93	93	92	92	92	92.8	96.1
30-Dec	92	92	92	92	92	91	91	91	91	91	90	90	89	90	90	90	90	90	90	90	90	90	90	90	90.6	92.3
31-Dec	91	90	90	90	90	91	91	91	91	91	91	91	91	92	91	92	92	91	90	90	90	91	90	90	90.7	91.8
	88.1	88.1	87.8	87.4	87.0	86.9	85.9	86.5	86.4	86.0	84.7	83.7	82.2	80.9	80.8	81.1	82.2	83.3	83.5	84.1	84.5	85.5	87.3	87.2	Diurnal Average	
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	98.9	98.3	98.5	96.6	96.3	97.6	96.1	96.8	96.9	97.5	99.0	99.0	99.2	99.0	100.0	Diurnal Maximum	

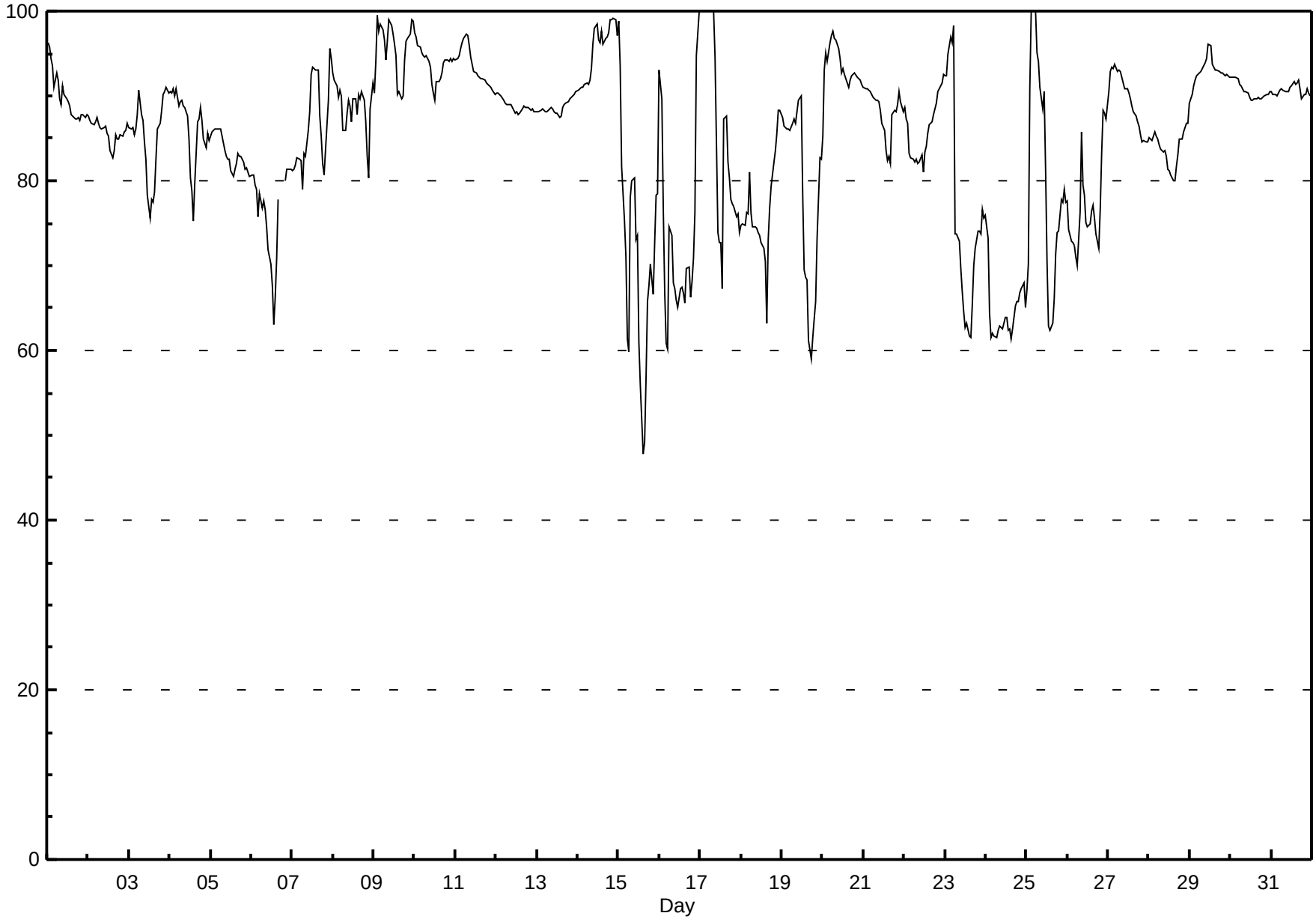
N - Not Valid

Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Beaverlodge - December 2013



Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	16	12	14	11	20	23	23	24	24	22	23	22	25	25	25	24	24	23	21	20	21	19	18	19	20.0	25.2
Dir	348	357	40	6	318	322	322	320	322	319	318	319	316	313	315	315	317	314	312	313	312	312	313	312	321	313
2 Spd	19	20	20	20	20	19	19	19	21	19	19	18	17	16	14	16	16	16	12	10	6	7	7	9	15.4	20.7
Dir	312	315	319	317	317	319	316	319	321	321	319	315	320	317	318	314	310	307	300	302	284	270	274	264	313	321
3 Spd	9	8	5	3	3	2	3	5	6	10	13	13	12	18	15	12	5	4	5	7	6	2	1	1	6.4	18.4
Dir	253	265	292	302	304	246	265	300	308	302	307	313	315	313	311	311	323	334	358	339	317	17	51	265	307	313
4 Spd	1	3	3	1	8	3	1	3	1	1	3	2	0	1	1	1	4	1	1	0	2	0	4	1	1.0	7.5
Dir	60	357	316	319	333	315	246	23	354	35	296	98	97	315	91	351	86	139	62	100	191	306	323	273	348	333
5 Spd	3	2	1	3	5	3	6	8	10	14	13	11	11	12	12	11	12	14	12	9	5	5	2	2	7.5	14.1
Dir	326	347	227	312	342	342	304	304	323	323	322	322	318	319	333	327	315	315	329	334	311	312	346	50	323	315
6 Spd	2	3	3	1	2	2	1	4	3	2	4	2	1	1	2	3	3	2	2	1	1	3	3	3	1.4	4.5
Dir	40	324	312	330	206	40	191	53	71	64	51	78	156	67	66	63	72	106	130	163	189	92	95	100	69	53
7 Spd	3	3	4	2	2	2	1	1	2	1	5	9	13	11	11	12	12	10	12	8	5	6	8	9	4.7	12.9
Dir	70	83	71	81	35	22	52	341	308	347	286	282	289	287	279	285	261	253	245	272	255	279	265	285	278	289
8 Spd	15	16	16	16	13	6	10	7	3	2	1	3	6	6	5	3	2	1	1	5	11	17	18	16	5.9	17.9
Dir	308	312	321	321	312	318	328	325	307	320	302	183	167	158	114	118	84	343	345	257	259	285	290	287	300	290
9 Spd	14	14	10	12	17	8	8	8	9	9	5	3	3	5	9	11	7	9	11	7	3	3	6	12	3.0	16.7
Dir	285	292	299	345	351	336	307	311	312	328	331	69	131	111	107	104	112	120	120	106	98	331	343	31	356	351
10 Spd	13	8	12	4	3	3	2	3	8	9	6	4	3	1	3	5	4	1	2	2	3	1	3	1	2.4	13.3
Dir	69	47	49	79	168	147	63	40	306	334	37	44	63	117	82	112	122	112	126	192	253	258	31	357	55	69
11 Spd	1	1	1	3	3	3	8	13	13	13	11	9	10	14	13	14	12	9	8	10	6	4	3	4	7.0	13.9
Dir	117	105	113	308	333	321	354	357	2	15	11	349	358	21	35	31	36	47	28	30	32	23	90	85	19	21
12 Spd	6	7	5	5	8	9	7	7	7	6	6	7	6	5	9	9	9	9	9	6	7	7	7	9	6.0	9.3
Dir	32	40	33	41	99	94	86	83	58	59	39	39	46	20	18	23	31	25	25	52	117	121	102	103	57	18
13 Spd	11	6	7	10	9	10	9	7	8	13	13	9	7	7	5	10	12	12	12	14	13	15	14	13	4.8	14.6
Dir	106	52	25	28	5	359	1	346	320	310	308	314	335	32	67	115	108	101	105	109	116	115	118	119	63	115
14 Spd	10	7	6	5	5	4	4	6	1	6	3	6	1	2	3	4	4	2	4	4	11	9	15	21	3.7	21.3
Dir	125	130	149	193	217	207	153	65	158	256	271	265	23	203	215	73	54	179	209	210	205	219	225	225	200	225
15 Spd	14	20	32	40	36	50	48	59	59	61	52	55	45	38	39	26	23	18	17	20	30	38	39	29	36.3	61.1
Dir	207	225	236	250	245	254	258	253	251	253	255	259	257	260	272	281	256	255	244	245	252	259	259	269	254	253
16 Spd	30	21	33	26	34	38	23	21	27	18	17	12	17	12	16	12	3	1	1	4	5	3	4	11	14.6	38.2
Dir	278	267	260	271	266	266	247	263	264	269	263	274	263	270	263	271	254	211	87	265	225	158	123	103	263	266
17 Spd	16	21	22	20	20	16	15	7	9	21	30	37	33	38	24	28	30	21	21	19	18	15	13	18	6.6	38.4
Dir	108	118	116	119	116	109	118	142	226	244	255	253	250	258	330	327	325	324	323	321	337	334	331	324	292	258
18 Spd	14	14	16	14	11	14	10	12	9	8	8	9	11	9	4	0	3	4	2	1	2	3	4	3	6.5	16.4
Dir	319	314	312	325	325	310	319	319	333	329	311	308	300	302	298	348	5	35	34	67	91	89	89	130	321	312
19 Spd	2	1	4	2	4	3	2	6	4	3	4	4	2	1	5	1	12	15	18	9	9	12	6	4	1.9	18.1
Dir	85	178	87	90	78	103	65	55	62	61	57	62	95	152	50	67	268	257	271	276	285	296	313	352	306	271
20 Spd	5	2	3	2	3	3	4	3	3	12	6	0	10	10	6	11	9	5	4	3	2	6	4	8	2.9	11.9
Dir	9	344	192	161	62	66	41	60	142	93	80	91	303	298	5	12	25	23	4	251	341	335	352	312	8	93
21 Spd	9	8	9	8	8	8	7	7	7	6	10	11	9	6	5	5	2	2	2	3	1	5	2	1	5.0	10.9
Dir	310	322	313	308	322	321	330	314	283	285	311	316	315	309	313	314	94	77	33	291	236	48	59	115	317	316
22 Spd	1	1	1	2	2	3	2	1	3	2	3	2	0	4	3	1	2	3	3	2	2	3	1	1	0.5	3.7
Dir	229	92	138	269	339	35	261	324	26	67	251	330	138	266	250	190	221	188	199	175	68	208	172	130	238	266

FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Beaverlodge - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	2	1	3	3	2	11	42	44	39	35	38	35	34	34	33	29	31	19	15	22	16	21	18	18	22.1	44.5
Dir	188	251	308	297	127	233	251	249	246	251	262	269	270	266	267	267	262	257	257	262	265	259	246	245	258	249
24 Spd	16	16	31	38	33	36	41	41	36	35	31	25	20	25	23	34	35	30	34	31	27	23	21	22	29.2	41.3
Dir	244	249	264	263	263	267	271	273	273	272	269	264	263	261	254	259	260	258	263	258	259	259	261	269	264	271
25 Spd	14	22	15	9	5	4	2	4	3	2	13	20	35	44	40	42	27	24	15	13	11	14	11	7	14.5	44.1
Dir	278	269	257	187	181	120	153	157	114	91	237	253	259	268	270	267	260	253	238	240	214	217	223	197	252	268
26 Spd	16	13	5	3	8	9	7	4	5	2	4	21	34	41	37	27	32	30	36	26	17	22	17	13	13.0	40.7
Dir	234	255	263	35	227	232	239	164	89	149	221	236	242	237	236	242	243	250	248	247	357	4	351	359	252	237
27 Spd	15	12	11	10	7	11	11	10	15	15	14	11	13	16	17	18	20	18	17	15	12	11	11	9	11.9	20.5
Dir	2	354	353	360	349	12	356	39	17	12	12	16	330	320	318	316	310	310	307	314	311	324	322	337	339	310
28 Spd	6	7	8	9	10	8	7	5	4	3	3	1	3	2	4	4	5	7	6	6	7	6	5	4	0.7	9.6
Dir	337	331	334	325	311	292	307	329	338	25	76	179	209	181	123	142	130	109	87	112	132	137	137	148	24	311
29 Spd	4	5	6	6	2	2	5	3	2	3	6	10	17	16	11	11	11	10	12	10	9	9	10	10	5.0	17.0
Dir	150	160	152	142	195	234	272	272	224	210	25	350	335	332	350	340	321	322	317	327	323	347	12	17	335	335
30 Spd	7	6	7	6	7	9	12	12	12	7	7	9	10	7	6	4	2	10	11	9	8	1	9	8	5.7	12.3
Dir	353	11	18	28	98	95	95	105	102	97	75	86	90	68	60	40	83	98	102	100	99	63	303	305	77	102
31 Spd	7	8	7	8	6	6	6	6	7	2	3	3	3	2	3	2	2	2	3	4	2	4	4	3	3.0	8.2
Dir	331	333	345	346	326	302	293	304	305	332	35	42	42	125	184	150	100	51	30	297	288	288	337	7	331	333
Spd	3.7	4.2	4.4	4.5	4.9	5.5	6.3	6.3	6.9	7.0	7.7	8.4	9.4	9.9	7.9	7.3	6.6	5.2	5.1	5.1	4.2	4.8	4.3	3.8	Diurnal Average	
Dir	305	301	299	301	295	288	285	290	289	291	291	285	282	282	293	297	289	285	284	281	280	288	289	293		
Spd	29.8	22.2	33.0	40.1	35.7	49.6	47.5	58.6	58.6	61.1	51.9	54.9	45.2	44.1	40.5	42.0	35.0	30.2	36.1	30.6	30.0	38.3	38.9	29.2	Diurnal Maximum	
Dir	278	269	260	250	245	254	258	253	251	253	255	259	257	268	270	267	260	258	248	258	252	259	259	269		

Maximum Speed Value: 61 km/h on Dec 15 10:00
Maximum Daily Speed Average: 36.3 km/h on Dec 15
Maximum Diurnal Speed Average: 9.9 km/h at hour 14

Minimum Speed Value: 0 km/h on Dec 20 12:00
Minimum Daily Speed Average: 0.5 km/h on Dec 4
Minimum Diurnal Speed Average: 3.7 km/h at hour 1

Monthly Average Velocity: 5.93 km/h 289.3 deg

Speed Percentiles: $P_1 = 0.5$ $P_{10} = 1.7$ $Q_1 = 3.2$ Median = 7.9 $Q_3 = 14.7$ $P_{90} = 24.8$ $P_{99} = 45.6$

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

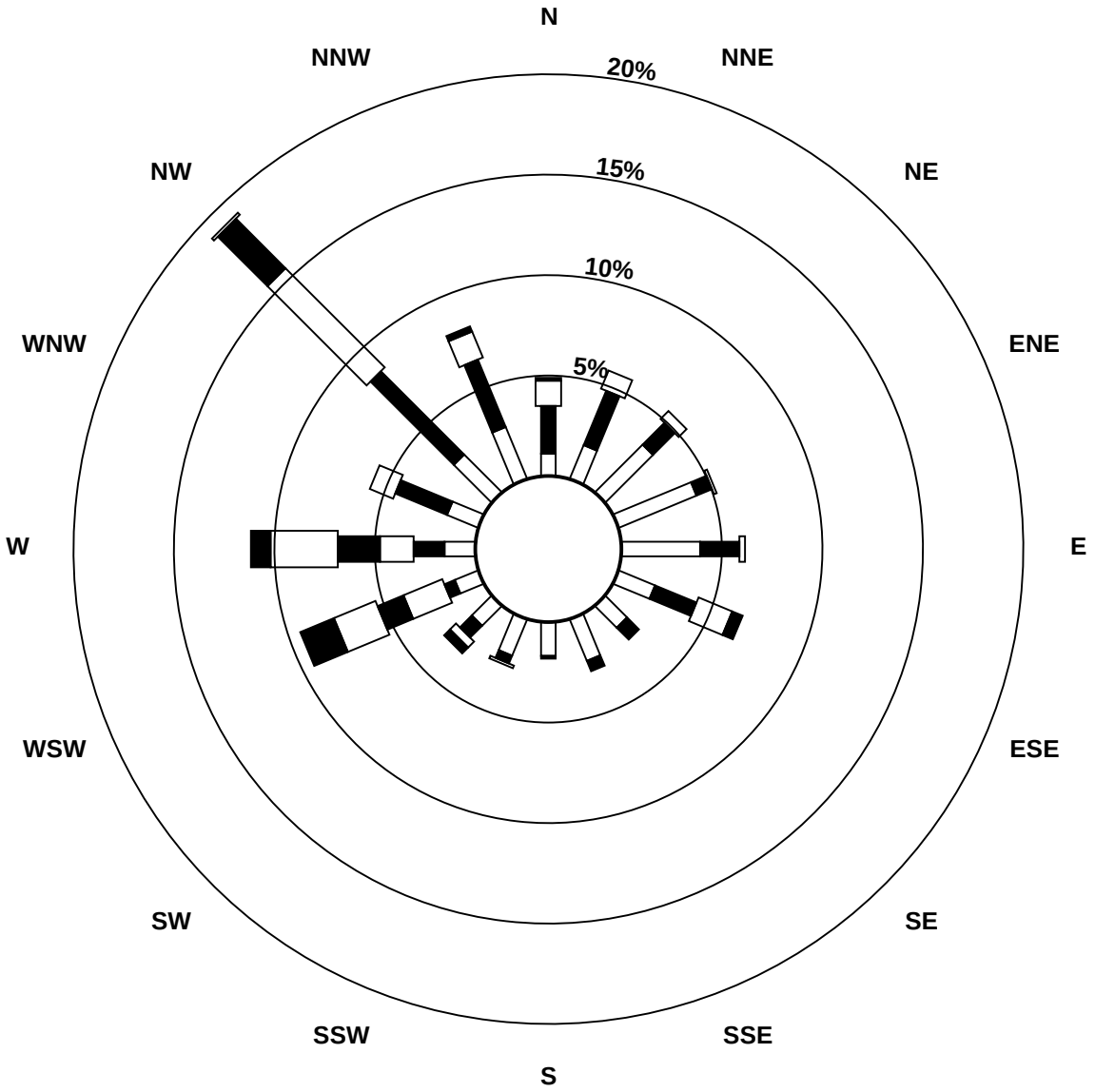
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	26	30	18	1	0	0	75
NorthEast	53	33	6	0	0	0	92
East	45	29	12	0	0	0	86
SouthEast	33	15	5	4	0	0	57
South	25	6	0	0	0	0	31
SouthWest	21	8	13	8	5	2	57
West	22	23	27	21	30	23	146
NorthWest	35	73	58	32	2	0	200
Total	260	217	139	66	37	25	744

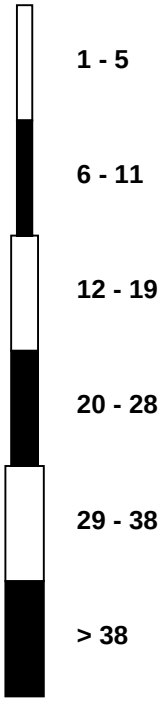
Wind Rose

Wind Speed (WS) (km/h)

Beaverlodge - December 2013



Wind Speed Classes (km/h)



Peace Airshed Zone Association

Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Beaverlodge - December 2013

Maximum Speed: 61 km/h on Dec 15 10:00

Maximum Daily Speed Average: 37.2 km/h on Dec 15

Minimum Speed: 1 km/h on Dec 11 01:00

Minimum Daily Speed Average: 2.7 km/h on Dec 6

Maximum Diurnal Speed Average: 14.2 km/h at hour 14

Minimum Diurnal Speed Average: 9.4 km/h at hour 21

Monthly Average Speed: 11.34 km/h

Percentiles: $P_1 = 1.4$ $P_{10} = 2.4$ $Q_1 = 4.0$ Median = 8.1 $Q_3 = 14.7$ $P_{90} = 24.9$ $P_{99} = 46.2$

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	17	12	14	12	20	24	23	24	24	22	23	22	25	25	25	25	25	23	21	20	21	19	18	19	21.0	25.3
2-Dec	19	20	20	20	20	19	19	19	21	19	19	18	17	16	14	16	16	16	12	10	6	7	7	9	15.8	20.7
3-Dec	9	8	5	4	4	3	4	5	6	10	13	13	12	18	15	12	5	4	5	7	6	4	2	2	7.4	18.4
4-Dec	3	5	5	2	8	6	3	4	2	2	3	2	1	2	1	3	4	2	1	1	2	3	4	2	2.9	7.8
5-Dec	4	3	2	3	5	3	6	8	10	14	13	11	11	12	12	11	12	14	12	9	6	5	3	2	8.0	14.2
6-Dec	2	4	3	3	2	2	2	5	3	2	4	3	1	2	2	3	3	2	2	2	1	3	3	3	2.7	4.5
7-Dec	4	3	4	2	2	2	2	2	2	2	5	10	13	11	11	12	12	10	12	8	5	6	8	9	6.6	12.9
8-Dec	15	16	16	16	13	6	10	7	3	3	3	4	6	7	5	3	2	3	4	6	12	17	18	16	8.8	18.0
9-Dec	14	15	11	13	17	9	8	8	9	9	5	3	4	6	9	11	7	10	11	7	3	3	6	13	8.7	16.8
10-Dec	13	9	12	4	4	3	3	4	9	9	7	4	3	2	3	5	5	2	2	2	3	2	3	2	4.8	13.4
11-Dec	1	1	2	3	3	3	9	14	13	13	11	9	11	14	13	14	12	9	9	10	6	5	5	5	8.1	14.1
12-Dec	6	7	6	6	8	9	7	7	7	6	6	7	6	5	9	9	9	9	9	7	7	7	7	9	7.3	9.3
13-Dec	11	7	8	10	9	10	9	7	8	13	13	9	7	7	6	10	12	12	12	14	13	15	15	13	10.4	14.6
14-Dec	10	8	6	6	5	4	5	6	4	8	5	6	2	3	4	6	5	4	4	4	11	9	15	21	6.7	21.4
15-Dec	14	20	32	41	36	50	48	59	59	61	52	55	45	38	39	26	23	19	17	20	30	38	39	30	37.2	61.3
16-Dec	30	21	33	26	34	38	23	21	27	18	18	12	17	12	16	12	5	2	2	5	5	4	5	11	16.6	38.5
17-Dec	16	22	22	20	20	16	16	7	12	21	30	37	33	40	24	29	30	22	22	19	18	15	13	19	21.7	39.9
18-Dec	14	14	17	14	11	14	10	12	9	8	8	9	11	9	4	2	3	4	2	1	2	3	5	3	8.0	16.5
19-Dec	3	3	4	3	5	3	3	6	4	4	5	4	3	3	5	3	13	15	18	9	9	12	6	5	6.0	18.1
20-Dec	5	3	3	2	3	3	5	4	4	12	7	3	10	10	7	11	9	6	4	4	3	6	4	8	5.6	12.1
21-Dec	9	8	9	8	8	8	7	7	7	6	10	11	10	6	5	5	2	3	2	5	2	5	2	2	6.2	11.0
22-Dec	2	2	1	4	4	4	4	3	6	2	3	4	2	4	3	2	2	3	4	2	2	3	2	2	2.9	5.7
23-Dec	2	3	7	4	4	11	42	45	39	35	38	35	34	34	33	29	31	19	15	22	16	22	18	18	23.2	44.5
24-Dec	16	16	31	38	33	36	41	41	36	35	31	25	21	25	23	34	35	30	34	31	27	23	21	22	29.5	41.4
25-Dec	14	22	16	9	5	5	4	6	3	3	14	20	35	44	41	42	27	24	15	13	11	14	11	7	16.9	44.2
26-Dec	16	13	7	5	9	9	7	4	5	2	5	21	34	41	37	27	32	30	36	26	22	22	17	13	18.4	40.7
27-Dec	15	13	12	10	7	11	11	11	15	15	15	11	13	16	17	18	21	18	17	15	12	11	11	9	13.5	20.5
28-Dec	6	7	8	9	10	8	7	5	4	4	3	2	3	3	4	5	5	7	6	7	7	6	5	5	5.6	9.7
29-Dec	4	5	6	6	3	3	5	3	2	3	7	10	17	16	11	11	11	10	12	10	9	9	10	10	8.1	17.1
30-Dec	7	6	7	6	8	9	12	12	12	8	7	9	10	8	7	4	4	10	11	9	8	5	9	8	8.2	12.4
31-Dec	7	8	7	8	6	6	6	6	7	3	4	3	3	2	4	2	2	2	3	5	2	5	4	4	4.6	8.2
	10.0	9.8	10.8	10.2	10.5	10.9	11.7	11.9	12.1	12.0	12.4	12.7	13.6	14.2	13.3	13.0	12.4	11.1	10.8	10.0	9.4	10.0	9.6	9.8	Diurnal Average	
	30.3	22.4	33.1	40.5	35.8	49.8	47.9	58.9	58.7	61.3	52.3	55.1	45.5	44.2	40.6	42.0	35.1	30.3	36.2	30.7	30.1	38.5	39.0	30.0	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Standard Deviations

Wind Direction (WD) - deg

Beaverlodge - December 2013

Maximum Value: 92.9 deg on Dec 16 17:00

Minimum Value: 1.8 deg on Dec 26 14:00

Percentiles: P_1 = 2.6 P_{10} = 4.0 Q_1 = 5.7 Median = 10.4 Q_3 = 29.1 P_{90} = 58.0 P_{99} = 88.9

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

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-Dec	11	15	7	28	4	5	3	5	3	3	4	3	4	4	4	4	5	4	5	5	4	5	4	4	28.4
2-Dec	4	4	4	4	4	4	4	4	4	4	4	5	4	5	5	5	4	4	6	6	15	11	13	4	14.9
3-Dec	7	7	13	54	46	34	22	6	18	6	4	8	4	3	4	6	18	28	13	20	6	52	43	64	63.9
4-Dec	86	57	76	87	16	89	81	66	76	45	20	56	65	81	36	71	14	47	47	83	32	82	66	69	89.4
5-Dec	44	58	53	21	18	20	14	13	9	5	5	5	6	5	7	11	4	7	4	8	34	29	67	11	66.7
6-Dec	53	61	57	90	74	21	64	10	25	38	10	42	39	30	54	13	24	22	42	66	55	20	11	27	89.8
7-Dec	27	20	15	26	42	42	91	65	59	76	28	24	5	6	6	7	6	18	5	12	13	12	7	15	91.5
8-Dec	6	6	5	7	5	14	7	8	31	41	75	21	8	13	16	13	33	63	81	19	10	10	5	4	81.5
9-Dec	4	13	8	16	7	15	14	8	7	7	36	13	24	28	3	4	11	6	6	11	15	23	7	25	35.7
10-Dec	10	26	8	35	39	17	58	45	21	3	19	22	20	46	23	13	19	80	33	43	21	71	18	77	80.2
11-Dec	63	54	56	20	37	21	36	8	7	9	10	8	10	9	5	3	10	8	5	3	5	8	55	34	62.9
12-Dec	13	6	7	13	13	10	8	9	15	20	18	5	8	28	4	7	5	5	5	32	8	8	6	5	31.6
13-Dec	5	31	10	5	10	7	6	10	9	5	7	8	20	17	27	8	7	6	7	4	4	4	5	6	31.3
14-Dec	10	16	17	17	27	25	28	31	76	56	76	39	58	82	66	48	47	66	28	37	6	7	6	6	81.9
15-Dec	4	9	5	8	5	4	8	6	3	5	8	4	6	5	6	5	7	11	10	4	5	5	3	14	14.4
16-Dec	12	6	5	7	6	8	3	6	4	5	4	5	4	8	3	6	93	60	57	70	35	36	30	5	92.9
17-Dec	22	14	2	3	7	5	11	17	52	4	5	4	3	20	7	12	6	7	8	7	10	11	12	9	52.1
18-Dec	7	8	7	6	10	8	8	6	8	10	10	8	7	8	9	90	36	29	58	76	40	26	18	37	90.3
19-Dec	68	63	25	38	33	35	19	11	19	17	13	15	36	60	14	91	47	7	5	25	7	4	16	33	91.3
20-Dec	8	48	9	36	13	17	7	43	37	10	31	86	5	4	19	7	8	17	10	59	66	16	12	8	86.0
21-Dec	7	11	9	7	11	7	11	13	9	6	9	8	10	11	9	16	41	53	42	57	69	16	64	55	69.2
22-Dec	58	49	55	88	60	48	72	92	67	70	53	58	85	24	58	82	40	26	37	50	46	39	65	83	91.5
23-Dec	36	80	73	57	66	15	4	4	4	3	4	3	4	3	3	4	5	5	4	3	6	9	4	3	79.6
24-Dec	8	5	6	4	6	3	4	3	4	3	3	3	4	3	3	5	3	3	2	3	2	3	3	4	7.7
25-Dec	5	9	14	15	22	40	63	44	43	58	19	8	6	3	4	3	6	5	5	7	6	9	7	11	62.8
26-Dec	13	16	84	60	29	8	15	19	19	48	64	15	2	2	4	3	3	4	4	7	43	6	9	12	83.6
27-Dec	7	8	8	11	10	9	9	31	4	4	6	12	12	7	6	5	3	4	4	4	5	7	12	10	31.5
28-Dec	12	14	10	10	7	7	11	14	27	39	37	71	22	33	17	20	10	6	11	17	8	6	12	15	71.2
29-Dec	21	22	12	19	48	62	24	46	24	23	46	17	5	5	14	18	7	7	9	9	10	10	9	5	61.8
30-Dec	14	13	7	9	26	8	8	4	5	9	7	8	9	25	15	16	73	9	4	4	4	85	6	4	84.6
31-Dec	17	5	11	9	9	11	7	7	4	52	20	28	19	35	42	55	42	11	14	22	44	20	32	40	55.2
	86.2	79.6	83.6	89.8	74.4	89.4	91.5	91.5	75.9	75.9	76.5	86.0	84.7	81.9	66.0	91.3	92.9	80.2	81.5	83.4	69.2	84.6	66.7	83.3	

PAZA
Valleyview Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Valleyview - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 12.7 ppb on Dec 15 17:00 Maximum Daily Average: 4.1 ppb on Dec 16

Minimum Value: 0 ppb on Dec 1 02:00 Minimum Daily Average: 0.0 ppb on Dec 27
Maximum Diurnal Average: 1.2 ppb at hour 11 Minimum Diurnal Average: 0.3 ppb at hour 6
Monthly Average: 0.74 ppb Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.2 Q_3 = 0.5 P_{90} = 1.6 P_{99} = 10.2

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	0.3	2.3
2-Dec	2	1	2	1	A	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0.7	3.7
3-Dec	5	2	3	A	1	0	1	3	6	4	1	0	1	2	1	0	0	1	0	0	0	1	1	0	1.6	6.5
4-Dec	0	1	A	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0.2	1.0
6-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.3
7-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.0	0.2
8-Dec	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.3	1.1
9-Dec	0	0	0	0	0	0	0	0	3	4	4	2	1	0	0	0	2	0	0	0	A	0	0	0	0.7	4.3
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	1	0	0	1	0.2	0.5
11-Dec	0	0	0	0	0	1	2	1	1	1	1	1	0	1	1	0	0	0	A	0	0	0	0	0	0.5	1.6
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.4
13-Dec	0	0	0	1	1	1	1	0	0	0	0	0	1	1	1	1	A	1	1	0	0	0	0	0	0.5	1.1
14-Dec	0	1	2	2	1	1	1	1	1	1	1	0	1	1	0	A	0	0	0	0	0	0	0	0	0.6	1.6
15-Dec	0	0	0	0	0	0	7	0	3	10	12	8	4	4	A	4	13	5	8	0	0	0	0	0	3.5	12.7
16-Dec	1	7	5	10	8	2	3	6	8	10	12	6	C	C	C	1	0	2	2	1	0	0	0	0	4.1	12.4
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	5	1	0	0	0	0	0	0	0	0	0.4	5.3
18-Dec	0	0	0	0	0	0	1	0	0	0	2	A	0	1	1	2	1	0	0	0	0	0	0	0	0.5	2.4
19-Dec	0	0	0	0	0	0	1	1	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0	0	0.3	0.8
20-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
21-Dec	0	0	0	0	0	0	0	0	A	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0.4	1.4
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0.3	0.7
23-Dec	0	0	0	0	0	0	A	0	0	0	1	10	0	0	0	0	0	0	5	4	6	8	10	3	2.1	10.1
24-Dec	7	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	0.5	6.7
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	0	1	5	6	7	9	3	0	0	1.5	9.3
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	5	11	11	9	4	1	0	0	0	0	1.8	11.3
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.4
28-Dec	0	A	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	1.0
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.5
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	1	A	3	0.5	3.7
31-Dec	3	2	2	1	1	1	1	3	0	0	0	2	0	2	1	0	0	0	0	0	0	A	0	0	0.8	3.1
	0.8	0.6	0.6	0.7	0.5	0.3	0.6	0.6	0.9	1.1	1.2	1.1	0.4	0.5	0.7	0.8	1.1	0.9	1.0	0.7	0.9	0.6	0.6	0.5	Diurnal Average	
	6.7	6.6	5.4	10.4	7.9	2.5	6.8	6.1	8.5	10.3	12.4	10.1	4.0	4.4	5.3	11.3	12.7	9.4	8.4	7.0	9.3	8.0	9.8	3.7	Diurnal Maximum	

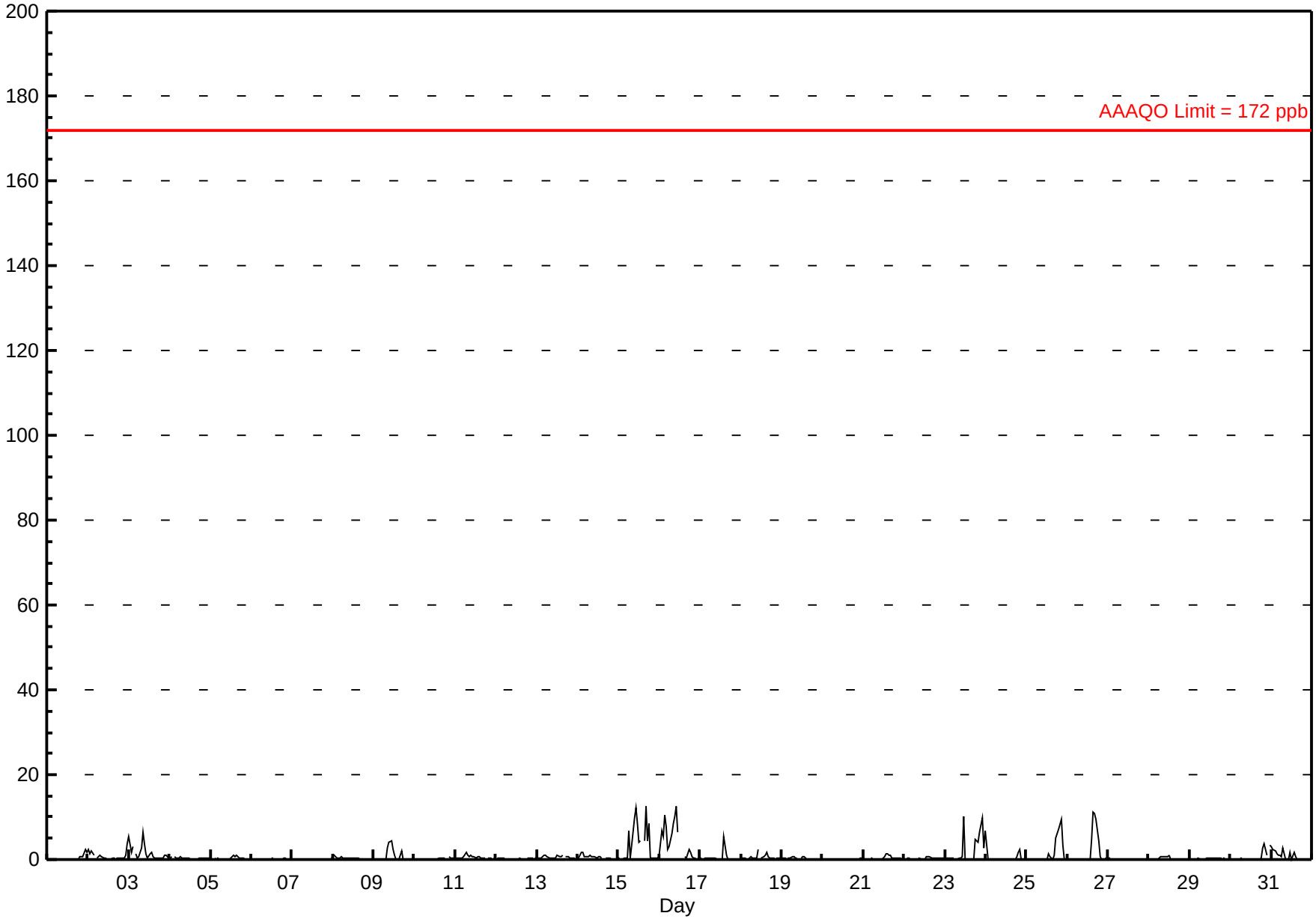
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Valleyview - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Valleyview - December 2013

Maximum Value: 43.3 ppb on Dec 15 17:00

Maximum Daily Average: 11.4 ppb on Dec 16

Minimum Value: 0 ppb on Dec 23 15:00

Minimum Daily Average: 0.6 ppb on Dec 27

Maximum Diurnal Average: 4.2 ppb at hour 19

Minimum Diurnal Average: 1.6 ppb at hour 6

Monthly Average: 2.83 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.8 Q_1 = 1.1 Median = 1.4 Q_3 = 1.8 P_{90} = 5.6 P_{99} = 25.5

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3	3	7	5	1.8	6.8
2-Dec	5	3	3	3	A	1	2	3	3	3	1	1	1	2	1	1	2	1	1	1	1	1	3	13	2.5	12.8
3-Dec	12	7	12	A	8	2	2	10	18	7	4	2	6	4	2	2	1	1	1	2	1	3	3	2	4.8	17.6
4-Dec	1	2	A	2	1	1	2	1	2	1	2	2	1	1	1	2	1	1	2	2	2	1	1	2	1.5	2.3
5-Dec	2	A	2	1	2	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1.4	2.1
6-Dec	A	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	A	1.2	1.9
7-Dec	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1.2	1.6
8-Dec	3	3	1	2	2	2	1	2	2	2	2	1	1	2	2	1	1	1	1	2	1	A	1	2	1.6	3.0
9-Dec	1	1	1	1	1	1	6	1	12	8	8	6	3	1	2	1	8	2	1	1	A	1	1	1	3.0	11.9
10-Dec	1	1	1	2	1	1	1	1	1	1	1	1	2	2	2	1	1	2	1	A	1	1	2	2	1.3	2.1
11-Dec	1	2	1	2	2	2	3	2	2	2	2	2	1	2	2	2	1	1	A	1	2	1	1	1	1.7	2.9
12-Dec	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	A	1	2	1	2	1	1	1.3	2.0
13-Dec	1	1	2	2	2	2	2	2	2	1	1	2	6	2	2	2	A	2	2	1	2	2	1	1	1.8	6.2
14-Dec	2	3	3	3	2	2	2	2	2	2	2	2	2	1	2	A	2	2	1	1	1	1	1	1	1.9	3.5
15-Dec	2	1	1	1	1	2	26	1	17	16	21	17	16	11	A	9	43	11	24	2	2	1	2	1	9.8	43.3
16-Dec	9	20	24	23	26	6	8	9	25	25	25	19	C	C	C	2	2	6	5	2	1	1	1	1	11.4	25.9
17-Dec	1	1	1	1	1	2	2	2	1	1	1	1	A	1	24	7	1	1	1	1	1	1	1	1	2.5	24.1
18-Dec	1	1	1	1	1	2	2	2	1	4	14	A	2	2	4	4	2	1	1	1	1	1	2	2	2.3	13.9
19-Dec	2	2	1	1	1	2	2	2	1	2	A	1	2	2	2	1	1	1	1	2	1	1	1	1	1.4	2.3
20-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1.0	1.6
21-Dec	1	1	1	1	1	2	1	2	A	2	1	1	3	2	2	2	2	2	2	1	1	1	2	2	1.6	3.0
22-Dec	1	1	1	1	1	1	1	A	1	2	1	1	1	2	2	2	2	2	1	1	2	1	1	1	1.4	2.1
23-Dec	1	2	1	2	1	2	A	1	1	1	7	22	2	1	0	14	1	2	30	7	18	27	28	14	8.0	30.0
24-Dec	29	2	1	1	1	A	1	1	0	1	2	1	1	1	1	1	0	1	2	7	7	2	1	1	2.9	29.5
25-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	9	7	1	3	20	19	21	30	19	1	1	6.3	29.6
26-Dec	1	1	1	A	1	1	1	1	1	2	1	1	1	1	22	17	24	24	17	3	1	1	1	2	5.4	24.2
27-Dec	1	2	A	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.6	1.7
28-Dec	1	A	1	1	2	1	1	2	2	2	2	2	2	2	0	0	0	0	0	0	0	1	1	1	1.1	2.0
29-Dec	A	1	1	1	1	2	1	1	1	1	1	1	2	1	1	2	2	1	1	1	2	1	1	A	1.4	2.1
30-Dec	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	3	5	5	3	A	5	1.8	5.1
31-Dec	5	4	4	3	2	2	3	7	2	1	3	9	1	6	3	1	1	1	1	0	1	A	1	1	2.6	9.2
	3.2	2.4	2.6	2.2	2.4	1.6	2.7	2.1	3.5	3.1	3.7	3.5	2.2	2.2	3.1	2.8	3.7	3.1	4.2	2.6	3.2	3.0	2.4	2.4	Diurnal Average	
	29.5	19.6	23.7	22.5	25.9	5.9	25.8	9.7	25.3	24.6	24.8	21.6	16.0	10.5	24.1	16.6	43.3	24.2	30.0	21.0	29.6	26.7	27.8	14.4	Diurnal Maximum	

C - Calibration

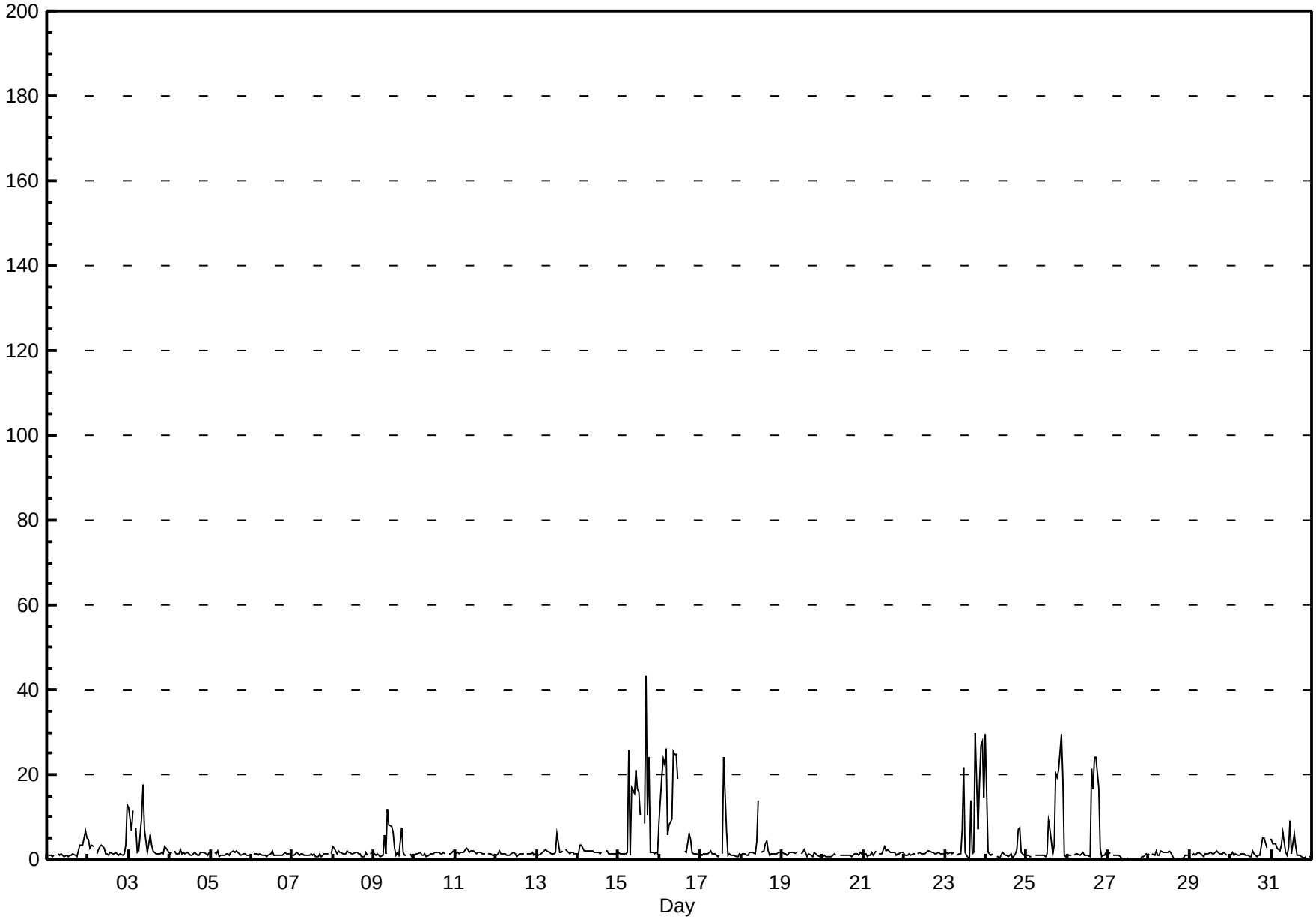
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

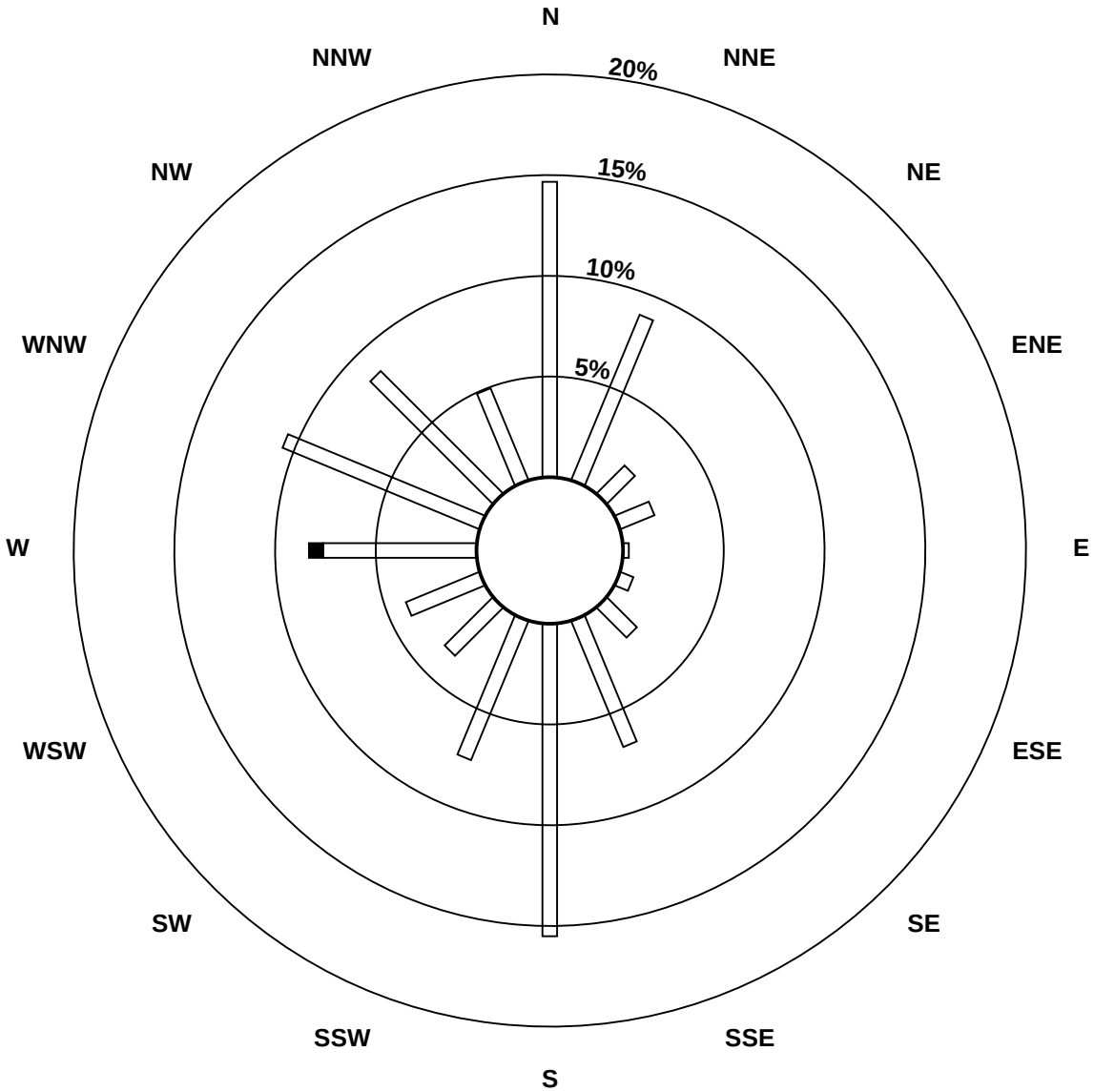
Valleyview - December 2013



Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Valleyview - December 2013



Pollutant Classes (ppb)

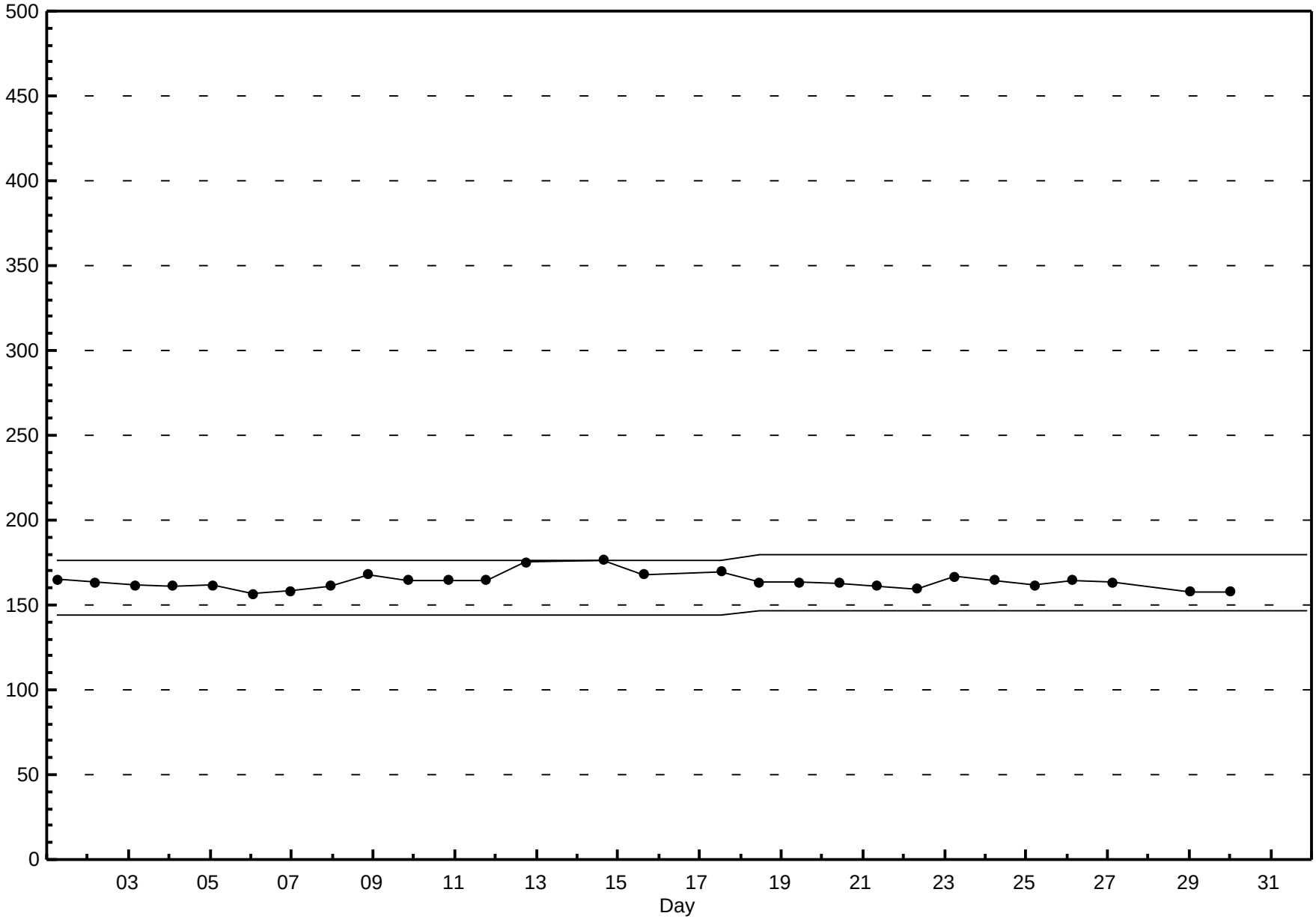
- 0 - 10
- 11 - 20
- 21 - 60
- 61 - 110
- 111 - 172
- > 172

Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Valleyview - December 2013



Peace Airshed Zone Association

Hourly Averages

Hydrogen Sulphide (H_2S) - ppb

Valleyview - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 1.9 ppb on Dec 1 21:00 Maximum Daily Average: 0.4 ppb on Dec 19

Minimum Value: 0 ppb on Dec 21 01:00 Minimum Daily Average: 0.1 ppb on Dec 25
Maximum Diurnal Average: 0.3 ppb at hour 22 Minimum Diurnal Average: 0.2 ppb at hour 14
Monthly Average: 0.19 ppb Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.1 Median = 0.2 Q_3 = 0.2 P_{90} = 0.4 P_{99} = 0.8

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0.2	1.9
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
3-Dec	0	0	0	A	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.1
4-Dec	0	1	A	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	1.1
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0.2	0.6
6-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	A	0.3	0.8
7-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.5
8-Dec	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.7
9-Dec	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	1	0	0	0	A	0	0	0	0.2	0.7
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.3
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.2
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.3
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.3
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.3
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.1	0.4
16-Dec	0	0	0	0	1	0	0	1	1	0	C	C	C	C	0	0	0	1	0	0	0	0	0	0	0.4	0.8
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	0	0	0	0	0	0	0	0	0.2	0.7
18-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
19-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	1	1	1	1	1	1	1	1	0	0.4	0.8
20-Dec	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
21-Dec	0	0	0	0	0	0	0	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	0.8
22-Dec	1	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.7
23-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0.2	0.7
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
27-Dec	0	0	A	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
28-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.2
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.2
31-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.3
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.2	Diurnal Average	
	0.7	1.1	0.5	0.4	0.6	0.5	0.5	0.7	1.1	0.5	0.6	0.4	0.6	0.5	0.8	0.7	0.7	0.8	0.8	0.8	1.9	1.7	0.5	0.8	Diurnal Maximum	

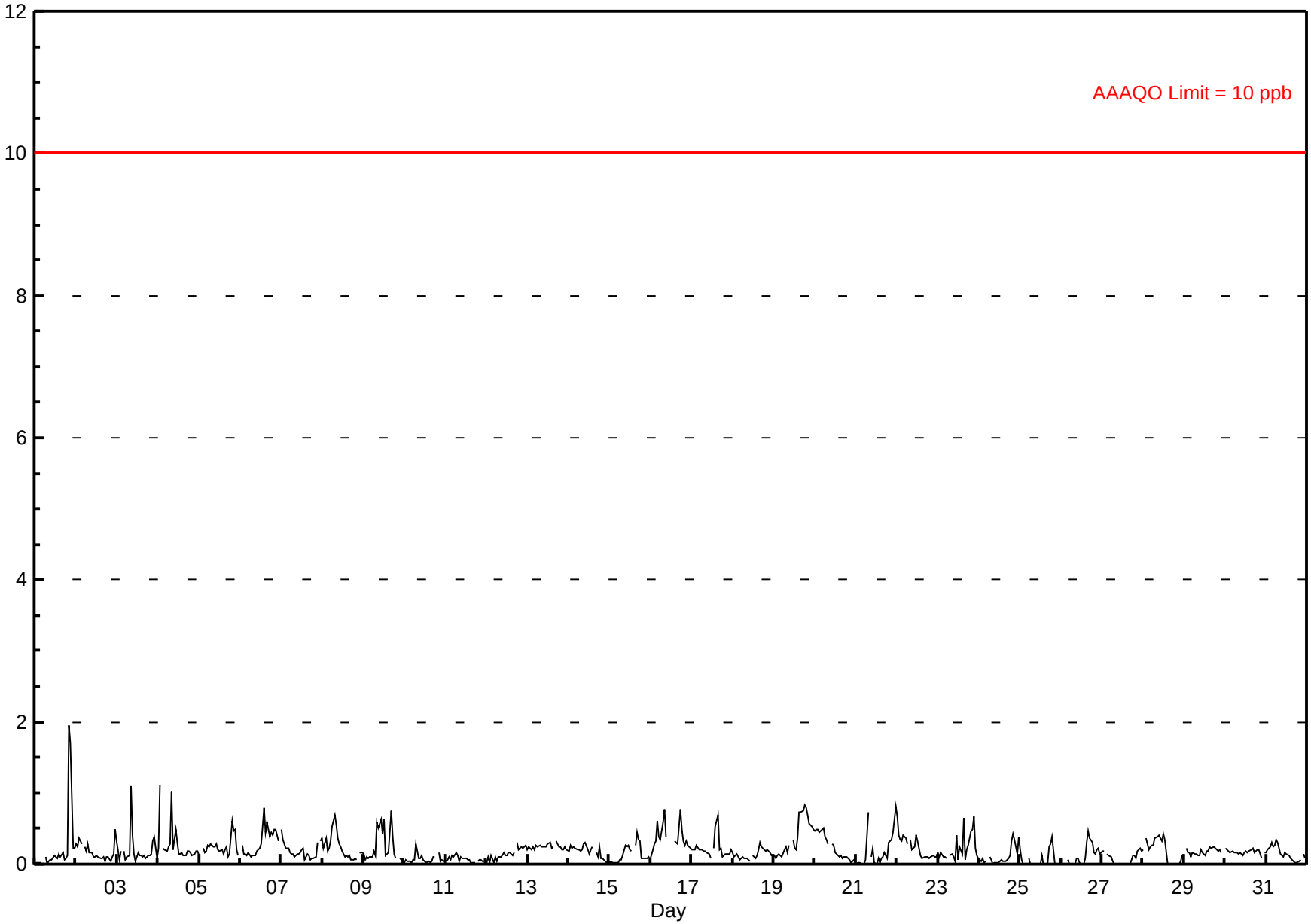
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

Peace Airshed Zone Association

Hourly Averages

Hydrogen Sulphide (H_2S) - ppb

Valleyview - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Hydrogen Sulphide (H_2S) - ppb

Valleyview - December 2013

Maximum Value: 16.7 ppb on Dec 17 16:00

Maximum Daily Average: 1.3 ppb on Dec 17

Minimum Value: 0 ppb on Dec 27 12:00

Minimum Daily Average: 0.4 ppb on Dec 27

Maximum Diurnal Average: 1.1 ppb at hour 16

Minimum Diurnal Average: 0.5 ppb at hour 4

Monthly Average: 0.64 ppb

Percentiles: $P_1 = 0.2$ $P_{10} = 0.4$ $Q_1 = 0.4$ Median = 0.5 $Q_3 = 0.7$ $P_{90} = 0.9$ $P_{99} = 2.6$

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	0	1	0	0	1	4	10	1	1	1.0	10.4
2-Dec	1	1	1	1	A	1	1	1	1	1	1	0	1	0	0	0	1	0	0	1	0	0	1	1	0.6	1.0
3-Dec	1	1	1	A	1	1	0	1	3	1	1	0	1	1	0	0	0	1	0	1	0	1	1	0	0.7	3.1
4-Dec	1	2	A	1	1	0	1	1	2	1	1	1	1	0	1	0	0	1	1	0	0	0	1	1	0.7	2.2
5-Dec	1	A	1	0	0	1	1	1	1	1	1	1	0	1	0	1	1	0	0	1	1	1	1	1	0.6	1.5
6-Dec	A	1	1	0	0	1	0	1	0	0	1	1	1	1	2	1	1	1	1	1	1	1	1	A	0.8	2.3
7-Dec	1	1	1	1	1	1	0	0	1	1	1	0	1	1	0	1	0	1	0	0	1	1	A	1	0.6	1.1
8-Dec	1	1	2	0	1	1	1	1	1	1	1	1	0	1	0	0	1	1	0	1	0	A	1	1	0.7	1.7
9-Dec	1	0	0	0	1	0	1	1	3	1	1	1	3	0	0	1	2	1	1	0	A	1	0	0	0.9	3.3
10-Dec	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	0	A	1	0	1	1	0.5	1.2
11-Dec	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.4	0.5
12-Dec	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0	A	1	1	1	1	0	1	0.5	0.8
13-Dec	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	A	1	1	1	0	1	1	1	0.6	0.8
14-Dec	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	A	1	0	1	0	0	0	0	0	0.5	0.8
15-Dec	0	0	0	0	0	0	0	0	1	1	1	1	1	1	A	1	1	1	1	1	0	0	0	0	0.5	1.0
16-Dec	0	1	2	1	1	1	1	1	1	1	C	C	C	C	1	1	1	1	1	1	1	1	1	1	0.9	2.1
17-Dec	1	1	1	1	1	1	1	0	1	1	0	0	A	1	1	17	1	1	0	1	0	1	0	1	1.3	16.7
18-Dec	1	1	0	0	0	0	1	0	1	1	0	A	0	0	0	1	1	1	1	0	1	0	1	0	0.6	1.2
19-Dec	1	1	1	0	0	0	1	1	0	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.4
20-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	0	0	0	1	1	0	1	0	0	0	0	0.6	0.9
21-Dec	0	0	0	0	0	0	0	2	A	1	1	0	0	0	0	0	0	0	0	1	1	1	1	2	0.6	2.3
22-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0	1	0	0	0	0	1	1	0.6	1.2
23-Dec	1	0	0	0	0	0	A	0	0	1	0	1	0	3	0	2	0	1	1	1	1	1	1	1	0.8	3.4
24-Dec	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.5	1.0
25-Dec	1	0	0	0	A	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0.4	0.9
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	0	0.5	1.0
27-Dec	0	1	A	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.4	0.8
28-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.5	0.9
29-Dec	A	1	1	0	1	0	0	1	1	0	1	0	0	0	1	1	1	1	0	1	1	1	1	A	0.5	0.8
30-Dec	1	0	0	0	1	0	0	0	1	1	1	0	1	0	0	1	1	1	1	1	1	0	A	1	0.6	1.2
31-Dec	0	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	A	1	0	0.5	0.7
	0.6	0.6	0.6	0.5	0.6	0.5	0.6	0.6	0.8	0.6	0.6	0.6	0.6	0.6	0.6	1.1	0.6	0.6	0.6	0.6	0.7	0.9	0.6	0.6	Diurnal Average	
	1.2	1.7	2.1	0.7	1.1	0.8	1.4	1.5	3.1	1.2	1.3	1.3	3.3	3.4	2.3	16.7	1.7	1.4	1.4	1.5	3.6	10.4	1.0	2.3	Diurnal Maximum	

C - Calibration

A - Automated Daily Zero Span

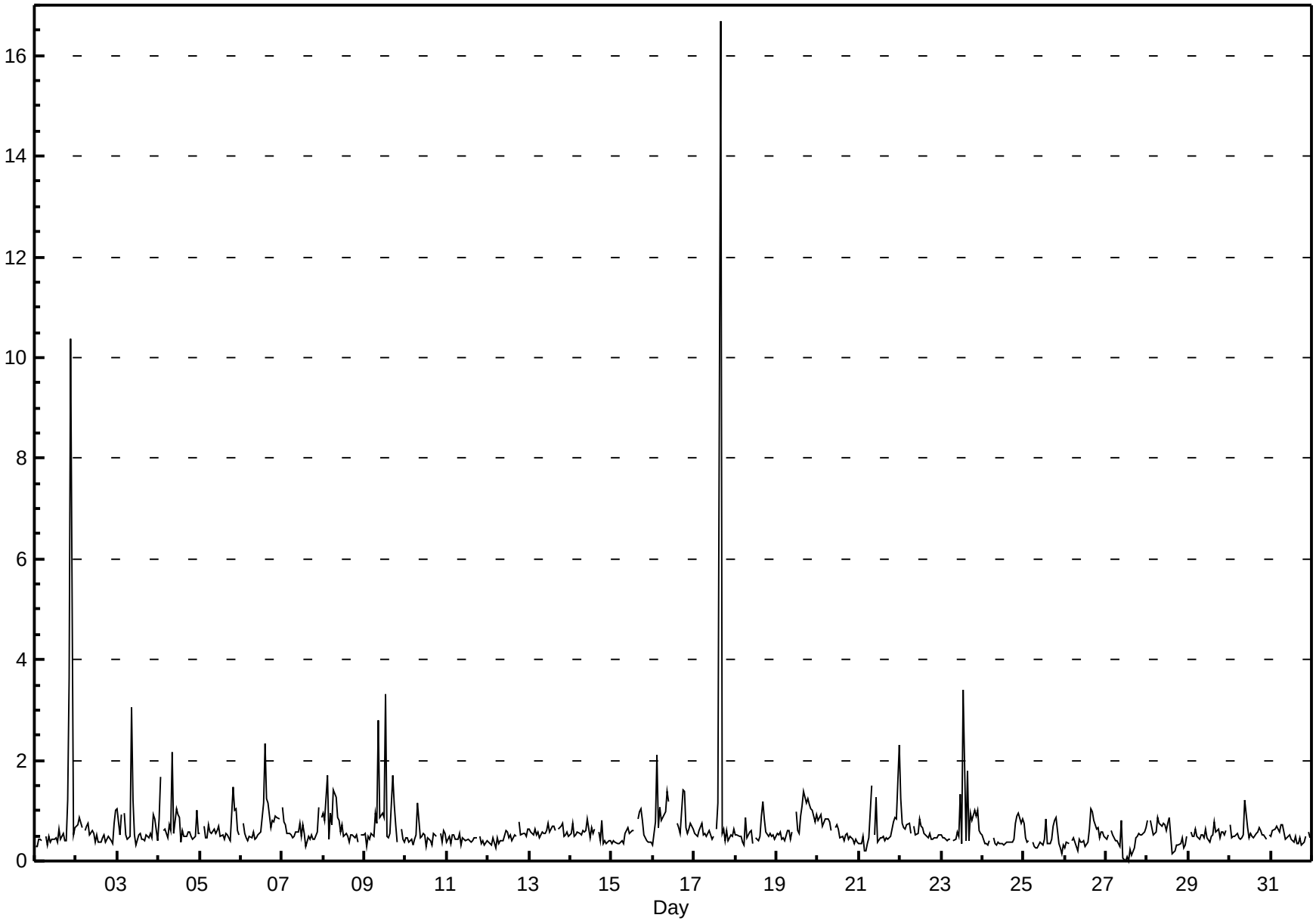
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Hydrogen Sulphide (H_2S) - ppb

Valleyview - December 2013

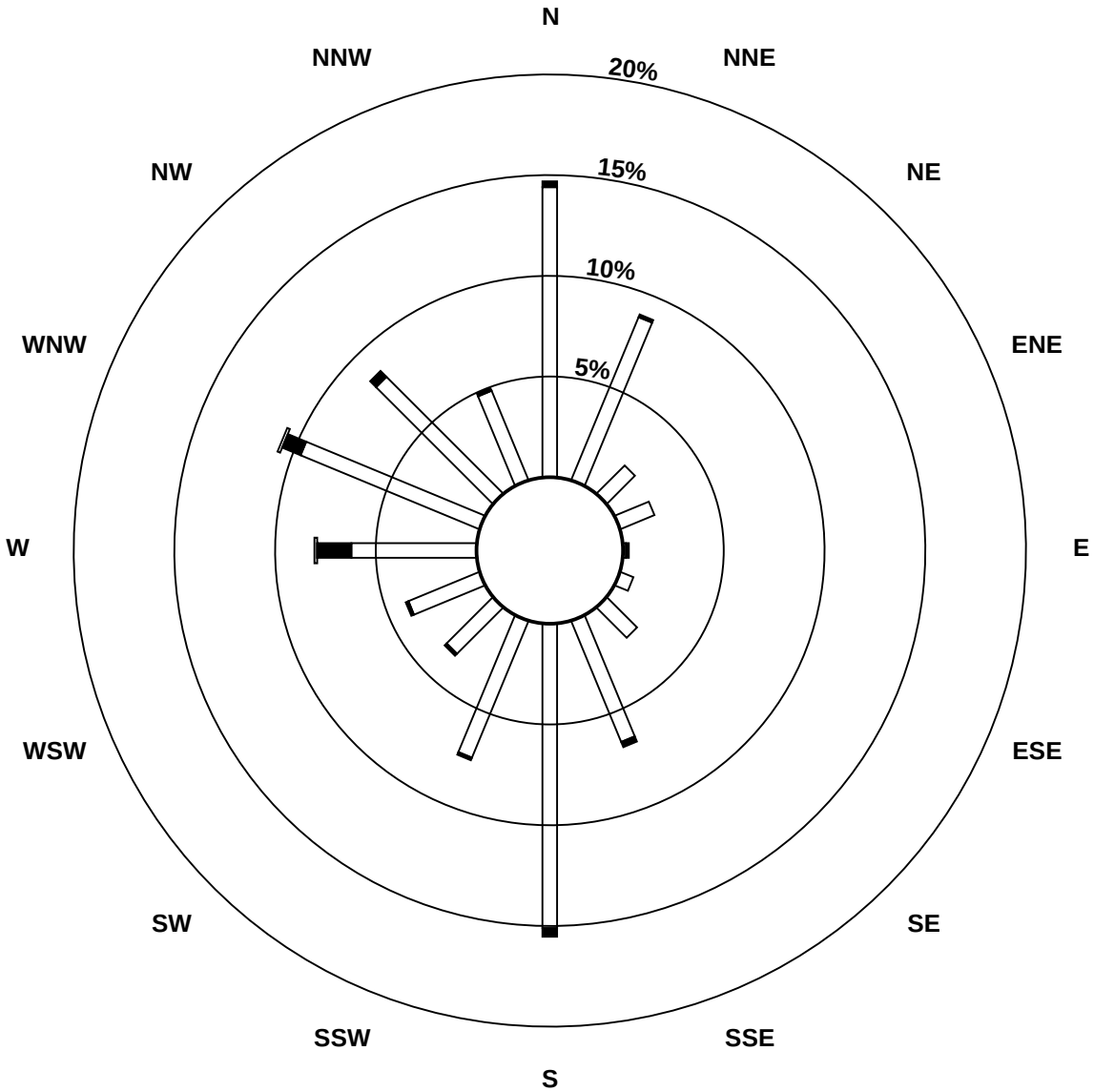


FOCUS AIR QUALITY MONITORING

Pollutant Rose

Hydrogen Sulphide (H_2S) - ppb

Valleyview - December 2013



Pollutant Classes (ppb)

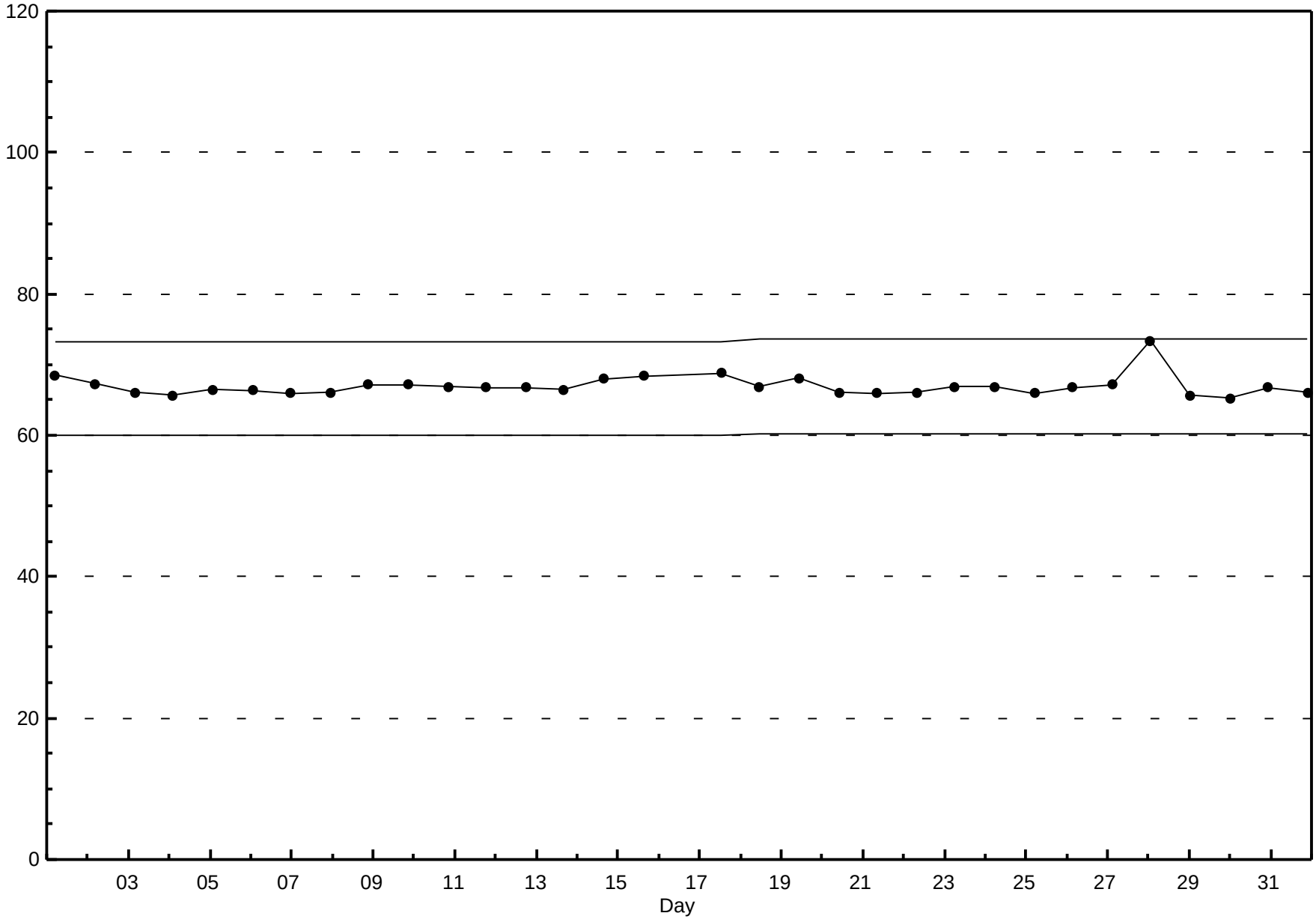
- 0 - 1
- 1 - 2
- 2 - 3
- 4 - 10
- > 10

Peace Airshed Zone Association

Span Responses

Hydrogen Sulphide (H_2S)

Valleyview - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Valleyview - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 7.6 ^{o}C on Dec 26 19:00 Maximum Daily Average: 3.7 ^{o}C on Dec 15

Minimum Value: -37 ^{o}C on Dec 22 09:00 Minimum Daily Average: -32.1 ^{o}C on Dec 6

Maximum Diurnal Average: -11.6 ^{o}C at hour 14 Minimum Diurnal Average: -14.3 ^{o}C at hour 9

Monthly Average: -13.15 ^{o}C Percentiles: P_1 = -35.3 P_{10} = -24.6 Q_1 = -18.2 Median = -15.4 Q_3 = -4.9 P_{90} = 2.0 P_{99} = 6.4

Hours in Service:	744
Hours of Data:	742
Hours of Missing Data:	2
Hours of Calibration:	0
Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	-4	-5	-5	-5	-5	-5	-5	-4	-4	-4	-5	-7	-9	-9	-10	-10	-11	-12	-14	-15	-16	-16	-17	-17	-8.9	-4.0
2-Dec	-17	-17	-17	-17	-17	-17	-16	-16	-16	-16	-15	-15	-15	-14	-14	-14	-15	-15	-15	-15	-15	-15	-16	-16	-15.7	-14.2
3-Dec	-16	-17	-16	-16	-16	-16	-15	-15	-16	-16	-15	-14	-13	-13	-13	-14	-14	-14	-15	-15	-15	-16	-16	-16	-15.1	-13.3
4-Dec	-17	-17	-17	-18	-19	-19	-19	-19	-19	-18	-17	-17	-18	-17	-17	-17	-18	-19	-19	-20	-20	-20	-21	-21	-18.5	-16.5
5-Dec	-24	-24	-24	-24	-23	-23	-23	-23	-24	-24	-24	-23	-23	-23	-22	-22	-24	-25	-26	-26	-27	-29	-30	-31	-24.6	-22.4
6-Dec	-32	-33	-34	-34	-35	-35	-35	-36	-36	-36	-33	-31	-30	-28	-27	-26	-27	-28	-30	-31	-32	-32	-33	-33	-32.1	-26.5
7-Dec	-32	-33	-33	-33	-33	-33	-33	-32	-32	-31	-28	-26	-24	-22	-20	-19	-17	-17	-16	-15	-14	-14	-12	-10	-24.2	-9.9
8-Dec	-10	-10	-10	-11	-12	-13	-14	-15	-17	-17	-17	-15	-14	-13	-13	-13	-12	-12	-12	-11	-11	-10	-9	-5	-12.4	-5.0
9-Dec	-3	-2	-2	-3	-3	-4	-4	-4	-4	-4	-4	-4	-4	-4	-4	-5	-5	-5	-5	-6	-7	-8	-9	-10	-4.6	-1.9
10-Dec	-12	-13	-14	-15	-15	-15	-16	-16	-16	-17	-17	-16	-15	-14	-14	-14	-15	-15	-14	-14	-13	-13	-12	-12	-14.5	-11.8
11-Dec	-11	-11	-11	-10	-10	-10	-10	-11	-13	-14	-14	-14	-15	-15	-15	-15	-16	-16	-17	-17	-17	-17	-17	-18	-14.0	-9.8
12-Dec	-18	-17	-17	-17	-17	-17	-17	-18	-18	-17	-17	-17	-16	-16	-16	-16	-16	-17	-17	-17	-17	-17	-17	-17	-16.9	-15.7
13-Dec	-17	-17	-16	-16	-16	-16	-17	-18	-18	-18	-18	-18	-18	-18	-18	-17	-17	-18	-17	-17	-17	-17	-16	-15	-17.1	-15.1
14-Dec	-14	-13	-12	-11	-11	-10	-10	-10	-10	-11	-10	-9	-7	-5	-5	-2	0	0	1	2	2	3	4	5	-5.5	4.9
15-Dec	6	6	6	6	5	6	5	5	4	5	4	4	4	4	4	4	3	2	2	1	0	0	1	2	3.7	6.3
16-Dec	2	2	1	1	1	1	1	0	0	0	0	1	1	2	1	1	0	0	0	-2	-3	-3	-3	-2	0.0	1.9
17-Dec	-2	-2	-3	-2	-1	-1	-1	-1	-1	0	1	5	6	6	6	5	-5	-9	-12	-14	-15	-16	-17	-18	-3.7	6.5
18-Dec	-18	-19	-19	-19	-19	-19	-19	-19	-20	-19	-19	-19	-19	-19	-19	-19	-20	-21	-23	-25	-26	-27	-28	-28	-20.9	-18.2
19-Dec	-29	-30	-30	-30	-31	-30	-30	-30	-30	-29	-28	-25	-23	-22	-20	-20	-21	-22	-22	-21	-19	-17	-16	-15	-24.6	-14.9
20-Dec	-14	-15	-14	-15	-16	-17	-17	-17	-17	-17	-17	-17	-17	-17	-17	-18	-19	-19	-19	-19	-19	-19	-19	-19	-17.3	-14.4
21-Dec	-18	-18	-18	-18	-18	-18	-18	-19	-20	-19	-19	-18	-16	-16	-16	-17	-17	-18	-20	-22	-25	-27	-29	-30	-19.7	-15.9
22-Dec	-31	-33	-34	-34	-35	-34	-35	-36	-37	-35	-32	-26	-20	-16	-14	-13	-13	-12	-12	-12	-11	-10	-9	-9	-23.1	-8.5
23-Dec	-7	-5	-5	-4	-4	-3	-3	-3	-3	-1	3	6	5	2	N	N	2	2	2	3	3	2	2	1	-0.2	5.5
24-Dec	2	1	-1	0	0	1	2	2	2	2	2	2	2	2	2	2	2	2	1	1	0	-1	-1	-2	1.1	2.4
25-Dec	-4	-4	-4	-3	-3	-3	-2	-2	-1	0	0	1	2	4	5	6	6	6	6	6	5	6	6	6	1.6	6.0
26-Dec	6	5	4	4	4	4	3	2	2	2	3	4	5	5	7	7	7	7	8	6	-3	-8	-10	-10	2.6	7.6
27-Dec	-12	-13	-13	-14	-15	-15	-16	-16	-16	-17	-17	-17	-17	-18	-18	-19	-19	-19	-19	-19	-20	-20	-20	-20	-17.0	-11.8
28-Dec	-21	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-19	-19	-18	-18	-18	-18	-18	-17	-17	-17	-17	-16	-16	-18.6	-15.9
29-Dec	-15	-15	-14	-14	-13	-12	-12	-11	-10	-9	-10	-13	-14	-15	-15	-15	-15	-16	-16	-16	-17	-17	-17	-17	-14.2	-9.0
30-Dec	-17	-17	-18	-18	-18	-18	-18	-18	-19	-19	-19	-19	-18	-17	-17	-16	-16	-16	-15	-14	-14	-15	-15	-15	-16.8	-14.0
31-Dec	-15	-15	-15	-15	-15	-15	-15	-15	-16	-16	-16	-15	-15	-15	-14	-15	-15	-15	-15	-15	-16	-17	-16	-16	-15.4	-14.4
	-13.4	-13.5	-13.7	-13.8	-13.9	-13.8	-13.8	-14.1	-14.3	-14.1	-13.4	-12.7	-12.0	-11.6	-11.8	-11.7	-11.8	-12.2	-12.5	-12.8	-13.5	-13.8	-13.8	-13.6	Diurnal Average	
	6.3	6.3	5.6	5.7	5.4	5.7	5.5	4.7	4.3	4.8	4.2	5.5	6.4	6.0	6.6	6.6	6.7	7.3	7.6	5.8	5.2	5.8	5.9	5.9	Diurnal Maximum	

N - Not Valid

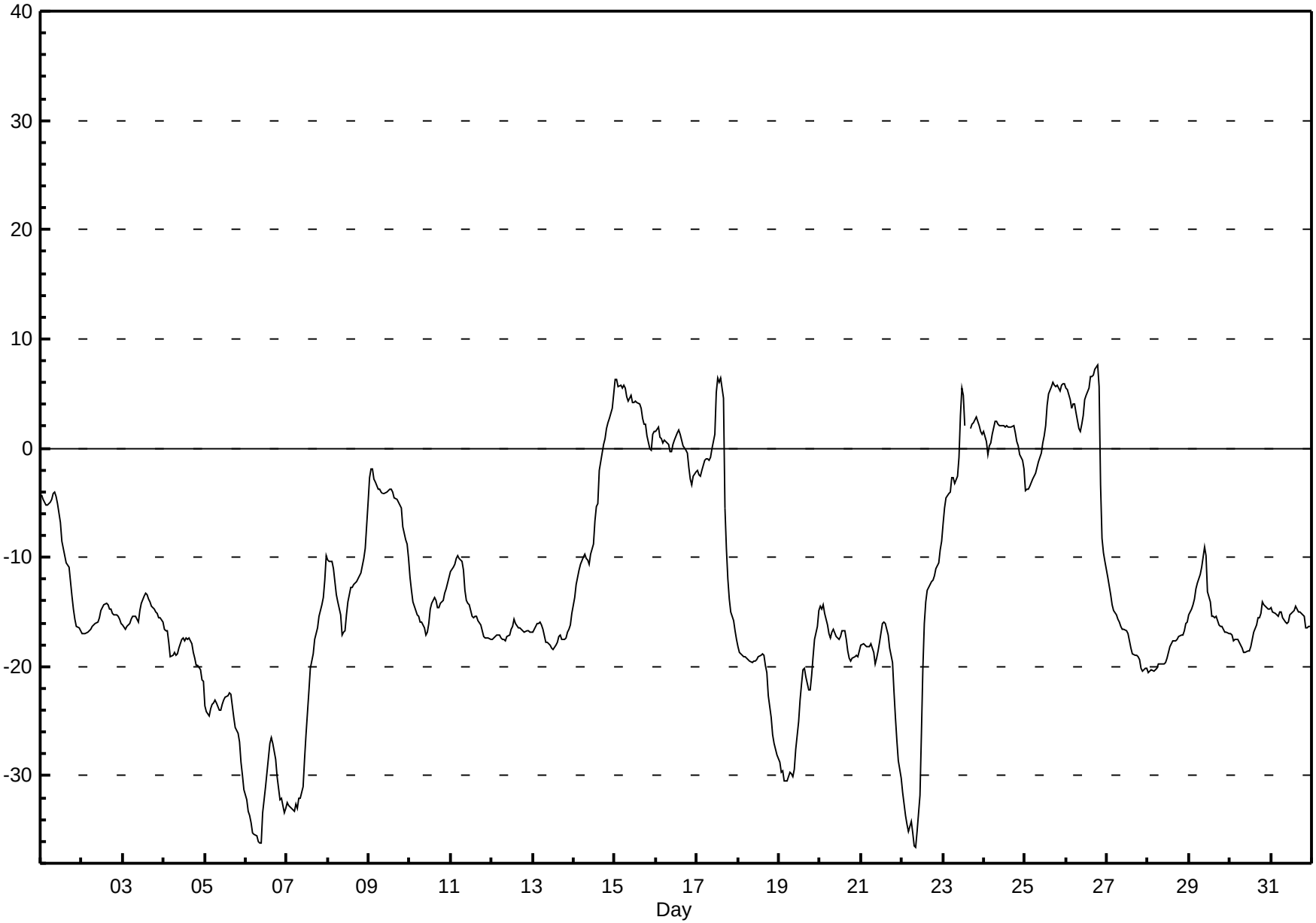
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Valleyview - December 2013



Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Valleyview - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 98.4 % on Dec 14 20:00 Maximum Daily Average: 90.4 % on Dec 1

Minimum Value: 38 % on Dec 15 16:00 Minimum Daily Average: 55.2 % on Dec 15

Maximum Diurnal Average: 78.7 % at hour 4 Minimum Diurnal Average: 73.1 % at hour 15

Monthly Average: 76.57 % Percentiles: P_1 = 44.5 P_{10} = 62.5 Q_1 = 72.4 Median = 78.2 Q_3 = 81.9 P_{90} = 87.3 P_{99} = 96.8

Hours in Service:	744
Hours of Data:	742
Hours of Missing Data:	2
Hours of Calibration:	0
Percent Operational Time:	99.7

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	96	96	95	95	95	95	95	95	96	96	96	94	92	92	91	90	89	87	84	81	81	79	79	79	90.4	96.1
2-Dec	79	79	79	80	78	77	78	79	79	79	80	78	78	77	77	77	78	78	78	79	78	79	78	78	78.3	79.7
3-Dec	78	78	77	78	79	79	78	78	78	78	75	74	73	74	74	77	76	78	77	77	76	78	76	77	76.7	79.1
4-Dec	78	77	77	79	80	79	79	79	79	79	78	79	78	78	78	79	80	79	79	79	80	81	80	81	79.0	81.2
5-Dec	80	78	77	77	77	77	77	77	76	76	77	77	77	77	77	77	77	76	76	75	75	73	73	72	76.2	79.7
6-Dec	71	70	70	69	69	69	69	68	68	68	69	70	71	71	72	73	73	73	72	71	71	71	70	70	70.2	73.0
7-Dec	71	70	70	70	70	70	70	71	71	71	72	73	74	76	77	79	81	81	82	83	84	85	87	88	76.0	88.3
8-Dec	88	88	88	85	82	82	84	86	84	82	78	74	76	74	76	79	82	85	86	86	87	88	89	85	83.1	88.7
9-Dec	86	93	95	90	82	80	81	79	80	83	83	83	80	78	82	83	83	86	89	88	89	88	85	85	84.7	94.5
10-Dec	83	80	76	76	78	79	79	79	81	82	80	78	71	67	67	70	75	76	77	77	79	83	85	86	77.5	85.6
11-Dec	86	85	86	87	87	88	88	87	86	84	84	83	82	81	82	82	81	82	81	81	81	81	81	81	83.6	88.4
12-Dec	80	80	80	80	80	81	81	81	81	81	81	81	81	81	82	82	82	82	82	81	81	81	81	81	81.2	82.0
13-Dec	81	82	82	82	81	82	82	81	80	80	80	79	77	76	76	78	78	79	80	80	81	81	82	83	80.1	82.5
14-Dec	83	85	86	86	86	86	86	87	87	87	87	87	86	87	88	91	91	94	97	98	95	88	80	72	87.5	98.4
15-Dec	66	67	71	68	69	65	68	67	65	48	47	44	43	41	38	38	40	43	49	55	59	59	56	58	55.2	70.6
16-Dec	61	58	62	61	61	53	50	55	59	58	52	48	45	45	47	48	51	52	54	61	66	69	69	68	56.4	69.0
17-Dec	74	92	95	96	87	81	79	77	77	74	71	64	63	64	59	63	82	85	81	77	77	76	74	74	76.8	95.6
18-Dec	73	73	73	75	74	74	76	78	77	76	75	71	69	67	66	66	67	69	76	77	76	76	75	75	73.1	77.9
19-Dec	74	73	73	72	72	73	73	72	72	72	73	73	74	74	74	75	76	77	77	77	78	79	81	82	74.8	81.8
20-Dec	82	82	82	83	83	82	82	82	82	81	81	80	78	78	79	80	79	78	78	78	79	78	78	78	80.2	83.3
21-Dec	79	79	79	79	79	79	77	77	78	77	77	77	72	71	73	73	74	76	78	79	77	75	74	73	76.4	79.2
22-Dec	71	71	70	69	69	70	69	67	67	69	70	71	69	68	68	69	70	70	70	74	80	83	84	85	71.8	85.4
23-Dec	89	89	85	85	87	86	85	89	90	87	68	56	64	90	N	N	92	87	82	69	64	63	63	61	78.6	91.7
24-Dec	59	62	65	62	62	60	55	54	53	53	53	53	53	54	55	54	51	49	49	51	53	57	60	64	55.9	64.8
25-Dec	70	70	82	91	93	95	96	96	97	97	98	97	91	75	69	61	57	57	56	55	57	55	55	55	76.1	97.9
26-Dec	57	58	62	64	62	63	67	76	90	95	97	98	97	93	83	83	81	74	68	78	93	89	87	85	79.2	98.2
27-Dec	83	83	83	82	80	79	80	80	80	80	81	81	80	79	78	78	78	76	75	75	73	72	71	73	78.4	83.4
28-Dec	75	76	76	76	76	75	75	76	76	75	74	72	71	69	67	68	70	72	73	74	75	76	76	77	73.8	77.4
29-Dec	77	78	79	83	84	85	86	87	88	88	88	86	85	82	81	81	81	80	81	81	79	77	77	78	82.1	88.4
30-Dec	78	78	78	79	79	79	78	78	78	78	78	78	78	79	80	82	83	83	83	81	80	82	83	83	79.8	83.4
31-Dec	83	83	83	82	83	83	83	81	80	79	78	77	77	78	79	80	81	82	82	82	81	81	80	80	80.8	83.2
	77.1	77.9	78.6	78.7	78.1	77.6	77.6	78.1	78.5	77.9	76.7	75.3	74.4	74.1	73.1	73.8	75.5	75.7	75.8	76.3	76.9	76.9	76.4	76.4	Diurnal Average	
	96.1	95.7	95.5	95.6	95.3	95.3	95.8	96.4	97.1	97.5	97.9	98.2	96.8	92.8	90.8	91.0	91.7	93.8	96.7	98.4	95.2	89.3	88.7	88.3	Diurnal Maximum	

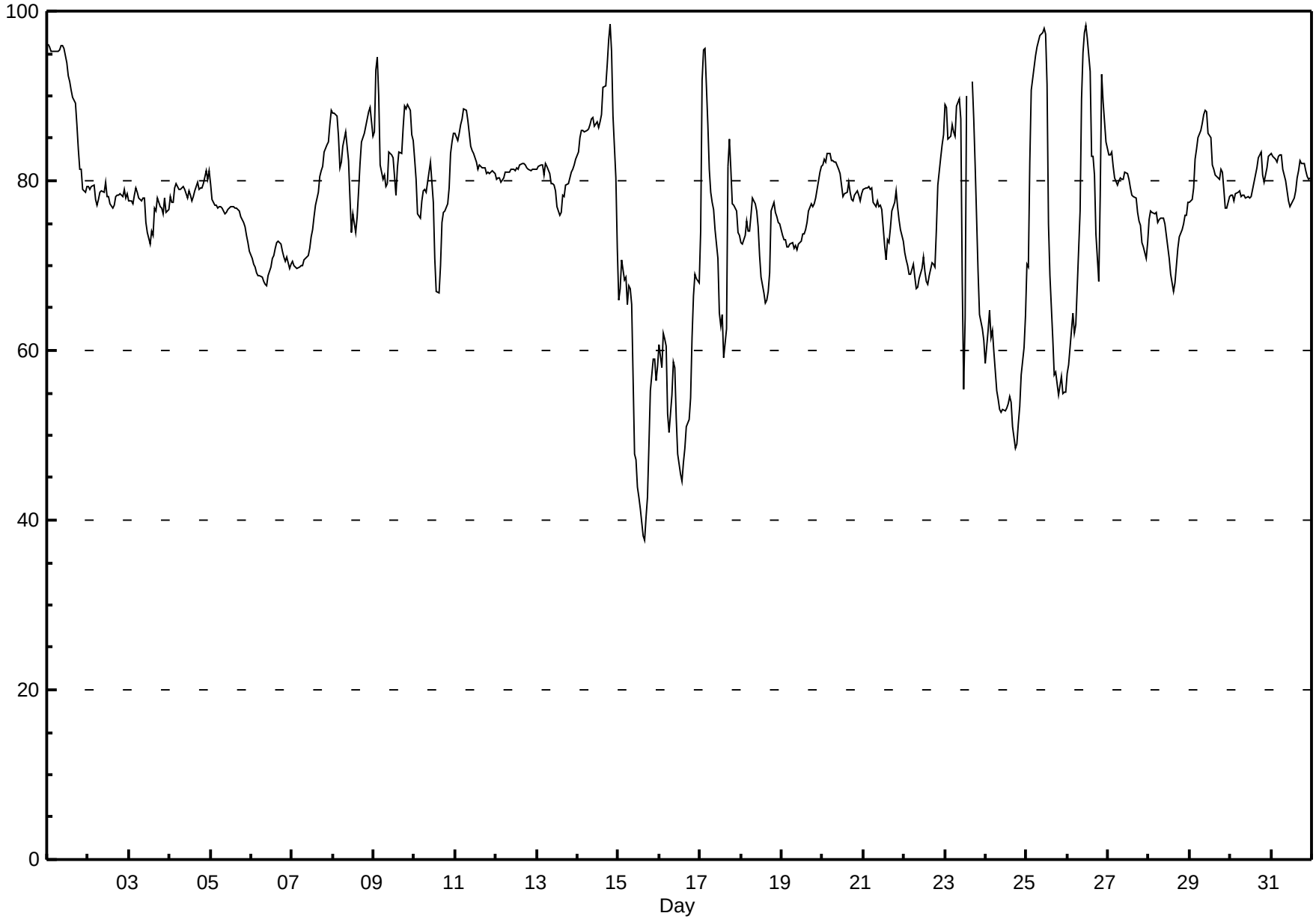
N - Not Valid

Peace Airshed Zone Association

Hourly Averages

Relative Humidity (RH) - %

Valleyview - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	8	8	5	6	5	4	3	3	8	12	12	13	10	10	10	9	8	10	10	11	10	10	10	8	7.3	12.7
Dir	10	21	14	2	13	8	354	325	335	332	333	331	319	324	322	323	306	292	292	283	282	281	281	282	320	331
2 Spd	8	9	8	8	9	10	8	7	9	12	9	10	9	10	11	10	8	8	8	7	8	6	7	8	8.4	11.6
Dir	282	285	285	287	286	286	290	298	294	284	296	308	313	318	324	323	315	317	307	310	301	297	286	276	299	284
3 Spd	8	2	7	4	2	1	2	5	5	2	5	6	5	6	9	9	11	11	11	9	8	8	7	8	5.8	11.2
Dir	265	211	266	287	237	214	253	254	276	245	284	302	278	285	296	312	301	307	306	307	314	282	286	288	290	306
4 Spd	8	7	6	5	2	1	1	1	1	0	1	4	5	4	4	3	3	2	1	1	1	3	3	4	1.7	7.7
Dir	288	282	274	246	220	179	267	337	290	78	277	304	350	23	21	18	30	66	76	60	360	3	25	18	328	288
5 Spd	5	5	4	2	1	0	0	0	0	0	0	3	3	3	2	2	2	3	2	1	1	1	1	1	1.3	5.4
Dir	24	9	14	6	285	162	41	333	159	230	331	346	316	306	319	318	335	1	340	316	301	158	174	168	349	24
6 Spd	1	1	0	0	0	1	0	0	0	0	1	2	1	1	1	1	0	0	0	0	1	1	1	0	0.5	1.5
Dir	184	180	189	210	188	203	180	158	187	197	184	196	256	293	292	278	7	180	194	185	174	204	190	212	215	196
7 Spd	1	0	0	1	1	0	1	1	2	2	1	1	1	2	2	1	1	1	1	2	1	0	4	8	0.7	8.2
Dir	223	191	189	210	220	237	196	205	201	192	216	135	334	171	169	165	182	178	176	174	184	114	311	320	225	320
8 Spd	8	4	3	9	8	5	3	1	0	1	1	1	3	3	4	5	5	5	4	4	3	4	2	2	0.4	8.7
Dir	338	315	328	4	351	317	343	293	266	229	196	168	165	157	163	164	169	171	174	170	180	167	164	305	240	4
9 Spd	3	12	12	13	14	10	6	7	6	11	11	9	9	7	7	5	3	3	3	6	12	11	14	16	7.2	15.7
Dir	327	320	338	12	356	351	317	323	277	278	280	284	283	296	297	298	269	303	311	343	14	5	6	2	329	2
10 Spd	18	17	14	13	12	6	3	2	1	0	0	3	7	7	6	5	5	1	0	1	6	6	4	3	1.2	17.6
Dir	5	3	6	1	4	355	321	267	196	156	159	168	170	170	169	171	167	173	132	174	173	173	173	171	22	5
11 Spd	2	2	2	1	0	3	5	8	10	11	12	12	13	11	11	9	9	7	8	7	6	4	4	5	6.2	13.0
Dir	179	178	177	188	151	21	17	11	5	10	11	6	350	357	357	357	358	3	7	9	4	2	14	6	4	350
12 Spd	7	5	5	4	5	5	4	4	5	4	6	5	6	6	7	7	6	5	5	5	3	2	2	1	4.7	7.0
Dir	4	6	6	12	8	12	359	359	8	4	9	13	5	10	353	1	349	355	350	354	350	330	354	23	2	4
13 Spd	2	1	1	2	1	3	6	10	8	7	10	6	6	5	3	0	0	2	1	2	2	2	1	1	2.4	10.1
Dir	31	13	100	118	105	39	353	347	349	354	339	301	288	296	317	330	63	61	77	58	47	11	32	115	349	347
14 Spd	4	6	9	8	7	6	6	4	2	0	1	2	1	1	1	4	3	2	2	6	6	6	6	7	3.9	8.7
Dir	173	166	173	172	172	173	174	171	173	210	200	194	197	238	188	178	187	168	205	176	186	177	210	226	182	173
15 Spd	11	9	7	6	5	20	15	12	13	25	19	21	24	19	19	18	12	11	18	13	5	4	12	16	13.1	24.6
Dir	231	222	217	216	220	248	261	246	255	271	272	275	278	280	285	280	276	282	275	250	226	223	237	252	262	271
16 Spd	17	21	14	17	13	18	14	13	8	10	13	16	16	16	13	12	8	3	1	1	0	1	3	1	10.1	20.8
Dir	256	273	264	273	279	284	282	276	276	268	277	279	283	286	289	297	303	266	243	177	202	193	205	203	276	273
17 Spd	2	3	4	4	12	12	10	13	11	8	6	7	1	1	10	12	13	15	15	12	11	11	13	13	0.8	15.3
Dir	166	148	139	146	171	174	175	175	175	172	172	248	300	224	272	318	23	21	18	20	7	347	327	321	336	18
18 Spd	11	9	7	7	7	7	5	5	6	4	6	7	4	3	4	4	3	2	1	1	1	2	1	2	4.0	11.0
Dir	317	309	305	309	322	321	312	309	316	295	261	292	301	305	300	285	294	299	173	192	185	184	208	210	301	317
19 Spd	0	1	1	0	1	2	2	1	1	1	2	1	1	1	1	0	0	0	1	0	0	0	0	0	0.7	2.3
Dir	225	150	248	165	213	203	207	204	209	199	192	187	176	219	233	226	247	98	1	181	185	155	178	162	200	203
20 Spd	0	1	0	1	0	3	3	3	4	4	5	4	3	5	6	8	7	7	7	6	6	6	5	1	3.9	7.7
Dir	36	37	31	346	39	14	13	2	10	0	356	6	354	5	9	3	350	353	357	359	357	2	7	15	1	3
21 Spd	1	1	0	0	0	1	1	3	1	1	1	2	2	4	3	4	4	3	1	1	0	0	0	0	0.7	4.3
Dir	359	32	174	126	141	180	266	292	199	190	163	154	227	238	307	294	315	343	349	174	176	47	205	151	278	315
22 Spd	0	0	0	0	1	0	0	1	1	1	0	0	1	8	11	13	13	14	16	11	11	10	8	11	5.5	15.8
Dir	198	166	181	198	197	181	144	165	179	194	187	278	195	177	173	173	171	173	173	171	172	172	173	172	173	173

FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Valleyview - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	7	8	10	7	6	8	5	2	1	2	7	16	19	13	0	5	10	5	9	14	13	12	10	9	5.6	19.3
Dir	174	176	175	174	174	174	183	189	199	205	250	274	297	307	180	314	313	255	262	276	271	272	262	259	255	297
24 Spd	8	3	2	2	2	9	13	14	15	17	14	11	10	9	6	6	8	12	12	7	5	1	3	1	7.4	17.0
Dir	258	199	200	208	211	275	289	290	291	287	288	288	293	304	304	311	297	288	284	275	263	301	355	254	286	287
25 Spd	1	2	1	2	3	5	6	6	6	5	6	4	2	7	11	17	14	9	15	13	13	18	18	16	6.3	18.4
Dir	199	210	181	184	176	172	168	172	165	168	167	183	181	282	289	288	284	267	274	271	265	262	257	253	252	262
26 Spd	12	6	2	3	2	1	1	1	2	1	2	5	3	5	14	14	14	15	18	7	15	13	10	11	3.8	17.7
Dir	245	233	206	139	163	159	175	188	166	160	188	173	187	231	261	269	270	274	278	316	15	12	6	355	281	278
27 Spd	12	12	11	12	11	10	10	10	11	13	14	14	16	19	19	16	15	14	10	9	7	2	2	0	10.9	18.9
Dir	359	360	355	2	1	6	9	7	4	4	356	351	344	342	343	348	345	337	325	327	331	322	325	223	350	343
28 Spd	0	0	1	2	1	0	0	0	1	1	2	2	2	1	0	0	2	2	2	2	1	0	0	1	0.5	2.2
Dir	356	101	58	27	10	124	159	51	66	129	65	68	42	35	77	193	173	167	172	164	154	144	148	40	95	27
29 Spd	0	1	1	0	0	0	0	0	1	1	6	9	7	13	12	11	7	6	3	2	5	2	2	2	3.4	12.5
Dir	129	210	131	131	223	168	20	28	191	182	10	5	10	5	4	5	17	20	27	21	21	32	24	70	13	5
30 Spd	2	3	4	2	2	3	4	4	5	5	3	5	5	5	5	4	5	4	3	7	8	6	6	5	2.8	7.5
Dir	28	13	26	18	352	48	45	29	19	20	18	17	26	25	11	5	27	28	71	122	127	138	135	138	51	127
31 Spd	3	7	5	3	3	1	3	6	6	5	4	2	2	2	1	3	4	3	3	4	6	4	4	4	1.3	7.4
Dir	158	166	173	176	154	212	261	278	291	308	302	302	342	39	13	12	11	18	15	358	346	358	22	18	333	166
Spd	2.6	2.0	1.5	1.5	1.2	1.8	2.0	2.3	2.3	3.1	3.4	4.2	4.5	4.2	4.5	4.4	3.7	3.1	3.4	2.3	2.0	1.7	2.2	2.5	Diurnal Average	
Dir	299	298	296	321	312	285	292	292	299	299	303	303	307	310	309	310	314	311	299	296	313	297	294	291		
Spd	17.6	20.8	14.3	17.2	14.5	19.7	14.9	14.0	15.4	24.6	18.8	20.6	24.0	19.0	19.2	18.4	14.5	15.2	18.3	13.6	14.5	18.4	17.6	16.3	Diurnal Maximum	
Dir	5	273	264	273	356	248	261	290	291	271	272	275	278	280	285	280	345	274	275	276	15	262	257	253		

Maximum Speed Value: 25 km/h on Dec 15 10:00
Maximum Daily Speed Average: 13.1 km/h on Dec 15
Maximum Diurnal Speed Average: 4.5 km/h at hour 13

Minimum Speed Value: 0 km/h on Dec 5 09:00
Minimum Daily Speed Average: 0.4 km/h on Dec 6
Minimum Diurnal Speed Average: 1.2 km/h at hour 5

Monthly Average Velocity: 2.73 km/h 303.1 deg

Speed Percentiles: $P_1 = 0.1$ $P_{10} = 0.5$ $Q_1 = 1.4$ Median = 4.4 $Q_3 = 8.7$ $P_{90} = 12.8$ $P_{99} = 19.2$

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

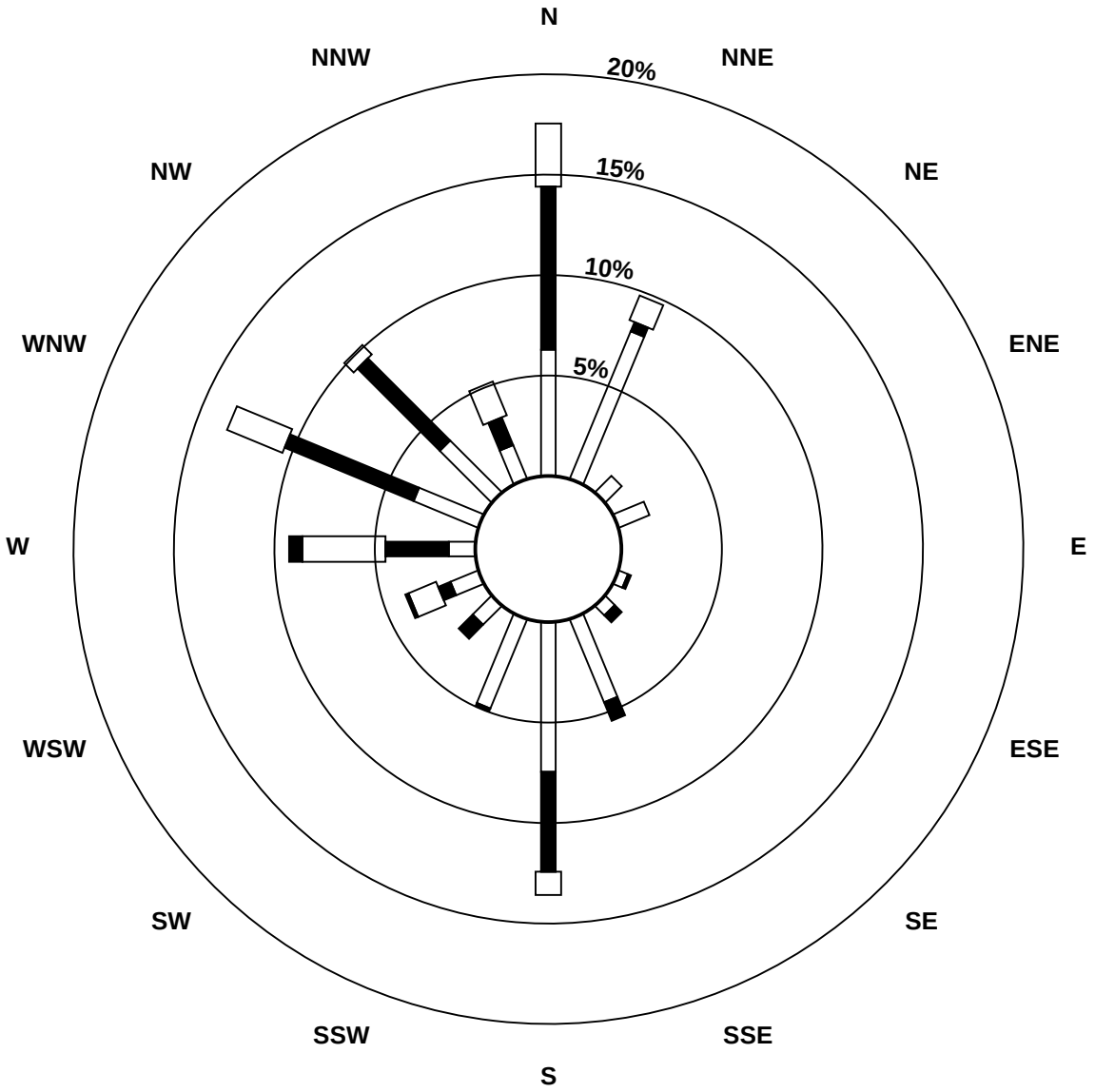
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	67	68	36	0	0	0	171
NorthEast	42	1	1	0	0	0	44
East	11	0	0	0	0	0	11
SouthEast	29	4	0	0	0	0	33
South	136	36	10	0	0	0	182
SouthWest	50	9	4	0	0	0	63
West	23	53	46	7	0	0	129
NorthWest	44	54	12	1	0	0	111
Total	402	225	109	8	0	0	744

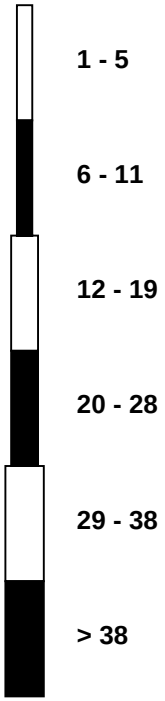
Wind Rose

Wind Speed (WS) (km/h)

Valleyview - December 2013



Wind Speed Classes (km/h)



Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Valleyview - December 2013

Maximum Speed: 25 km/h on Dec 15 10:00

Maximum Daily Speed Average: 14.1 km/h on Dec 15

Minimum Speed: 0 km/h on Dec 23 15:00

Minimum Daily Speed Average: 0.8 km/h on Dec 6

Maximum Diurnal Speed Average: 7.2 km/h at hour 15

Minimum Diurnal Speed Average: 4.6 km/h at hour 5

Monthly Average Speed: 5.75 km/h

Percentiles: $P_1 = 0.2$ $P_{10} = 0.6$ $Q_1 = 1.6$ Median = 4.6 $Q_3 = 8.8$ $P_{90} = 13.0$ $P_{99} = 19.2$

Hours in Service: 744

Hours of Data: 744

Hours of Missing Data: 0

Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	8	8	5	6	6	4	3	3	8	12	12	13	11	10	10	9	9	11	11	11	10	10	10	9	8.7	12.9
2-Dec	8	9	9	8	10	10	9	8	9	12	9	10	10	10	11	10	8	9	8	7	8	6	7	8	8.8	11.7
3-Dec	8	2	7	4	2	1	2	5	5	2	5	6	6	7	9	10	11	11	11	9	8	8	7	8	6.4	11.3
4-Dec	8	7	6	5	2	2	1	2	1	0	1	5	5	4	4	3	4	2	1	1	1	3	3	5	3.2	7.8
5-Dec	6	5	4	2	1	0	0	0	0	0	0	3	3	3	2	2	2	3	2	1	1	1	1	1	1.8	5.6
6-Dec	1	1	1	0	1	1	1	0	0	1	1	2	2	1	2	1	0	1	0	0	1	1	1	1	0.8	1.8
7-Dec	1	1	1	1	1	0	1	1	2	2	2	1	1	2	2	1	1	1	1	2	1	1	5	8	1.7	8.4
8-Dec	8	4	3	9	8	5	3	2	1	1	1	1	3	3	4	5	5	5	5	4	3	4	2	2	3.8	8.9
9-Dec	4	12	13	14	15	10	7	8	6	11	11	9	9	8	7	6	4	3	3	6	12	11	14	16	9.0	15.8
10-Dec	18	17	14	13	12	6	3	2	1	0	0	3	7	7	6	5	6	2	1	1	6	6	4	3	5.9	17.7
11-Dec	2	2	2	1	1	3	5	8	10	12	12	12	13	11	11	9	10	7	9	7	6	4	4	6	6.9	13.1
12-Dec	7	5	5	4	5	5	4	4	5	4	6	5	7	6	7	7	6	5	5	5	3	2	2	1	4.8	7.1
13-Dec	2	1	1	2	2	3	6	10	8	7	10	7	6	5	4	1	0	2	2	2	2	2	1	1	3.6	10.1
14-Dec	4	6	9	8	7	6	6	4	2	0	1	2	1	2	3	5	3	3	3	6	6	6	6	7	4.4	8.7
15-Dec	12	9	7	6	5	20	15	13	14	25	19	21	24	19	19	19	12	11	18	14	5	4	12	16	14.1	24.9
16-Dec	17	21	15	17	14	18	14	13	8	11	13	16	16	16	13	12	8	4	2	2	1	1	3	1	10.7	21.2
17-Dec	2	3	4	4	12	12	10	13	11	8	6	7	1	2	10	16	13	15	15	12	11	11	13	13	9.4	16.0
18-Dec	11	9	7	8	7	7	6	5	6	4	6	7	5	3	4	4	3	2	1	1	1	2	1	2	4.7	11.2
19-Dec	0	1	1	1	1	2	2	1	1	1	2	1	1	1	1	0	0	1	1	1	1	1	0	0	1.0	2.4
20-Dec	0	1	0	2	1	3	3	3	4	4	5	5	4	5	6	8	7	7	7	6	6	6	5	1	4.1	7.8
21-Dec	1	1	0	0	0	1	1	3	1	1	1	2	2	4	4	4	4	3	1	1	1	0	0	0	1.6	4.3
22-Dec	0	0	0	0	1	0	0	1	1	1	0	0	1	8	11	13	13	14	16	11	11	10	8	11	5.6	15.9
23-Dec	7	8	10	7	6	8	5	2	1	2	7	16	20	13	0	5	10	5	10	14	13	12	10	9	8.4	19.7
24-Dec	9	3	2	2	2	9	13	14	16	17	14	12	10	9	7	6	8	12	12	8	5	1	3	1	8.1	17.1
25-Dec	1	2	1	2	3	5	6	6	6	5	6	5	2	7	12	17	14	10	16	13	13	19	18	16	8.6	18.5
26-Dec	12	6	3	3	3	2	2	2	2	1	2	5	3	6	14	14	14	15	18	10	15	13	10	11	7.8	17.9
27-Dec	12	12	11	12	11	10	10	10	11	13	14	14	16	19	19	16	15	14	10	9	7	2	2	0	11.3	18.9
28-Dec	0	1	1	2	1	1	0	0	1	1	2	2	2	1	1	1	2	2	2	2	1	1	0	1	1.1	2.3
29-Dec	0	1	1	1	0	0	0	0	1	2	6	10	7	13	12	11	7	6	3	2	5	2	3	2	3.9	12.7
30-Dec	2	3	4	2	2	3	4	4	5	5	3	5	5	5	5	4	5	4	4	8	8	6	6	5	4.4	8.3
31-Dec	4	8	5	3	3	1	3	6	6	5	4	2	2	2	2	3	4	3	3	4	6	4	4	4	3.8	7.5
	5.6	5.5	4.9	4.8	4.6	5.2	4.7	5.0	5.0	5.4	5.9	6.7	6.6	6.8	7.2	7.2	6.7	6.1	6.5	5.8	5.7	5.1	5.4	5.4	Diurnal Average	
	17.7	21.2	14.5	17.5	14.8	19.8	15.0	14.2	15.6	24.9	19.1	20.8	24.1	19.2	19.4	18.6	14.6	15.4	18.5	13.7	14.7	18.5	17.7	16.4	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

Peace Airshed Zone Association

Hourly Standard Deviations

Wind Direction (WD) - deg

Valleyview - December 2013

Maximum Value: 94.8 deg on Dec 19 18:00

Minimum Value: 0.0 deg on Dec 23 15:00

Percentiles: P_1 = 5.3 P_{10} = 7.4 Q_1 = 9.2 Median = 13.6 Q_3 = 28.5 P_{90} = 54.4 P_{99} = 85.5

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

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-Dec	10	9	19	10	11	15	24	20	10	7	8	10	13	9	11	11	14	11	10	10	13	12	12	12	24.0
2-Dec	18	16	16	11	11	11	10	17	16	8	11	9	8	10	7	9	8	13	9	9	10	13	11	14	17.7
3-Dec	13	51	29	17	24	32	27	13	20	47	64	16	29	14	15	10	9	8	9	9	13	11	10	8	64.2
4-Dec	10	10	14	10	21	30	64	40	56	72	77	28	13	22	17	20	18	23	31	27	30	20	18	19	77.5
5-Dec	15	16	16	29	80	29	60	60	76	40	82	22	18	17	14	13	10	7	30	41	38	28	24	13	82.1
6-Dec	20	19	69	77	41	34	46	59	59	45	16	34	35	19	23	36	85	63	16	21	13	21	37	46	85.5
7-Dec	26	23	20	29	25	33	22	11	7	6	52	53	85	11	15	15	67	21	29	12	24	67	64	11	85.0
8-Dec	8	11	21	15	21	13	16	69	89	45	30	54	9	11	9	10	9	8	9	12	12	15	49	62	89.3
9-Dec	73	9	9	11	12	11	24	22	19	8	7	9	10	12	10	13	17	10	19	12	13	8	7	7	72.6
10-Dec	7	7	9	8	7	8	17	32	24	23	16	10	9	9	9	7	8	22	60	50	7	8	10	13	59.6
11-Dec	14	12	17	36	62	9	9	10	6	7	8	12	6	7	8	8	7	10	9	10	10	9	14	10	62.0
12-Dec	11	10	12	14	13	11	9	9	10	9	10	11	10	12	9	7	7	9	7	9	17	10	17	17	16.8
13-Dec	13	26	32	18	26	13	21	7	8	9	6	24	14	17	19	78	67	29	26	14	15	19	25	29	78.1
14-Dec	25	12	8	8	7	8	8	13	35	71	21	24	46	77	76	36	24	36	54	6	6	8	17	17	77.0
15-Dec	11	12	12	12	12	9	8	14	15	10	9	9	7	9	9	8	9	12	9	8	13	18	12	8	17.9
16-Dec	8	12	10	10	7	7	8	7	10	10	7	7	9	9	9	11	13	16	68	27	35	20	9	24	67.6
17-Dec	11	9	10	15	7	6	7	4	5	8	8	24	66	52	10	41	10	9	9	12	11	18	8	9	65.8
18-Dec	10	11	11	11	9	8	12	11	10	18	16	14	15	20	18	17	13	60	28	19	17	15	11	6	59.7
19-Dec	37	44	61	52	37	16	14	39	19	43	12	34	20	59	44	70	75	95	83	64	65	39	29	38	94.8
20-Dec	86	29	77	29	86	40	22	19	13	14	15	15	22	13	11	11	8	6	11	11	11	11	9	26	85.8
21-Dec	46	68	30	48	46	35	42	16	38	40	61	13	39	11	42	14	10	18	63	35	90	84	42	50	89.7
22-Dec	45	76	40	65	15	35	67	53	47	41	65	77	63	7	7	7	7	7	6	7	8	9	9	6	77.4
23-Dec	14	8	7	6	7	6	17	33	28	22	13	9	12	21	0	24	13	29	13	7	8	7	8	10	33.4
24-Dec	20	14	12	12	22	18	8	9	8	7	9	9	8	9	9	12	11	9	8	14	10	50	30	45	50.1
25-Dec	14	20	11	8	8	7	10	7	7	11	8	27	51	28	56	8	10	19	9	7	7	6	6	5	56.1
26-Dec	5	11	43	29	49	60	42	40	10	35	33	6	8	30	8	7	6	9	9	43	8	8	12	9	60.5
27-Dec	11	7	7	7	8	9	9	9	11	7	7	7	5	5	5	6	6	7	7	8	6	14	23	92	92.3
28-Dec	69	64	28	14	67	70	72	52	40	30	27	30	32	33	72	80	15	19	12	14	21	49	43	39	80.1
29-Dec	72	32	24	55	56	60	55	62	68	77	9	10	12	9	10	8	13	13	16	35	19	21	24	44	76.6
30-Dec	35	41	15	25	48	15	14	14	12	14	20	13	12	13	11	12	10	15	35	17	10	13	13	14	47.7
31-Dec	16	12	11	18	16	38	40	12	14	15	16	24	22	20	30	20	15	18	14	12	9	13	14	13	39.9
	85.8	76.4	76.8	77.1	85.5	69.7	72.1	68.7	89.3	76.6	82.1	77.4	85.0	77.0	76.4	80.1	85.5	94.8	82.7	64.0	89.7	83.5	63.8	92.3	

PAZA
Portable – Reno Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 5.1 ppb on Dec 22 04:00 Maximum Daily Average: 0.8 ppb on Dec 7

Minimum Value: 0 ppb on Dec 1 01:00 Minimum Daily Average: 0.0 ppb on Dec 25
Maximum Diurnal Average: 0.3 ppb at hour 4 Minimum Diurnal Average: 0.2 ppb at hour 17
Monthly Average: 0.23 ppb Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.3 P_{90} = 0.6 P_{99} = 1.3

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
4-Dec	0	0	A	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	1.4
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0.2	0.7
6-Dec	A	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0	1	A	0.6	1.2
7-Dec	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	0	0	1	0	0	A	0	0.8	2.5
8-Dec	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	A	1	1	0.4	1.9
9-Dec	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.8
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.4
11-Dec	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.5
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0.2	0.6
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.1	0.4
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	1	0	0	1	0	1	0.3	1.1
15-Dec	0	0	0	1	0	1	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.9
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	1	1	1	1	0.2	0.6
17-Dec	1	1	1	1	1	1	1	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.4	1.1
18-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	1	0.2	1.5
19-Dec	1	1	0	0	0	0	0	1	1	1	A	0	1	1	1	1	0	0	1	0	0	0	0	0	0.6	1.5
20-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
21-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4
22-Dec	0	0	1	5	2	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	5.1
23-Dec	0	0	0	0	0	0	A	0	0	0	1	0	1	1	1	1	1	1	1	0	0	0	0	0	0.4	0.7
24-Dec	0	1	0	0	0	A	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0.3	0.6
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
27-Dec	0	0	A	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
28-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	A	0.3	0.6
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.4
31-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.4
	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average	
	1.5	0.9	0.9	5.1	2.4	1.0	1.4	2.5	1.1	0.8	1.0	1.2	1.4	1.2	1.2	1.9	0.6	0.6	0.8	0.6	0.7	1.1	0.9	1.5	Diurnal Maximum	

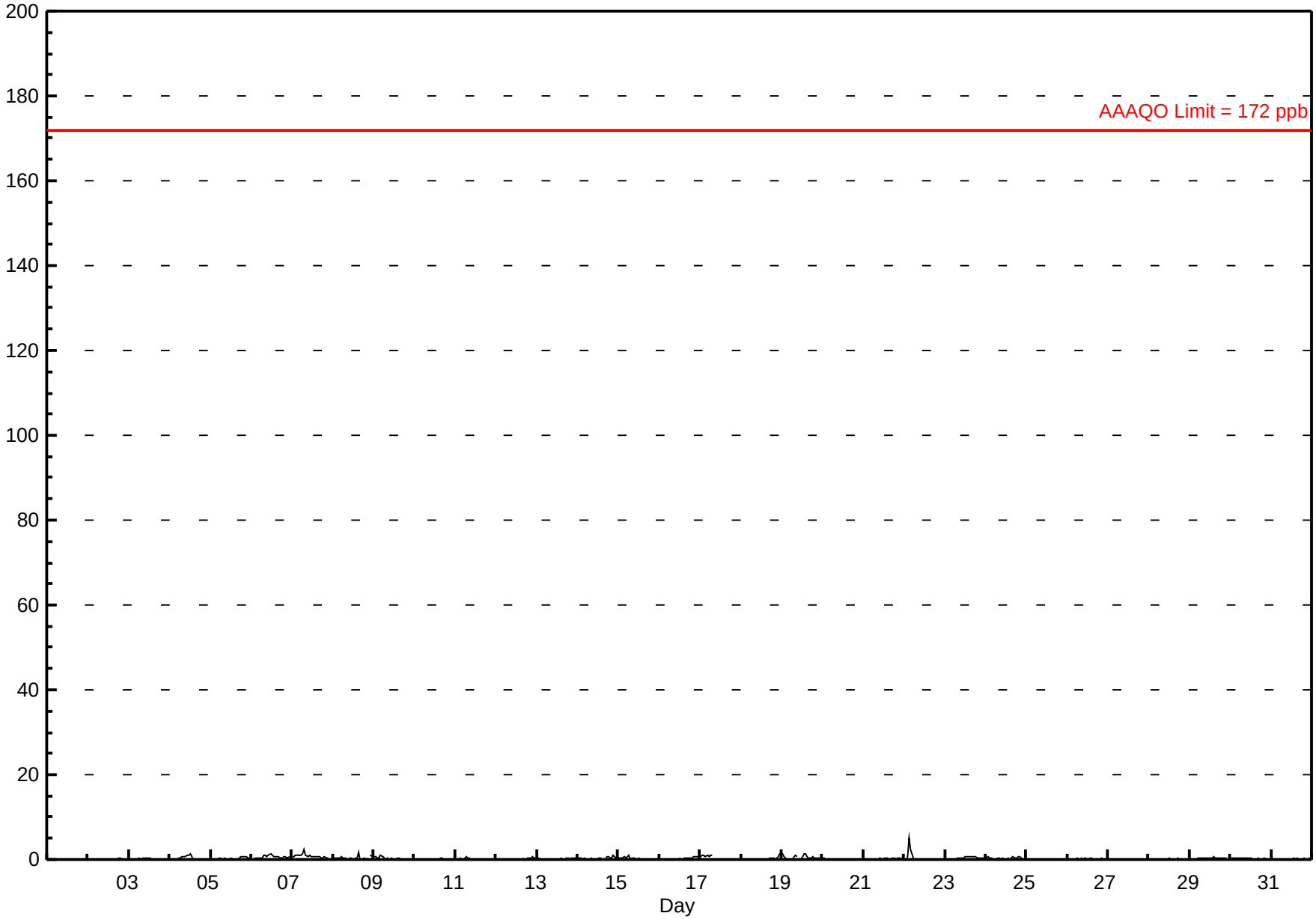
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Portable Reno - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Portable Reno - December 2013

Maximum Value: 18.0 ppb on Dec 15 10:00

Maximum Daily Average: 2.2 ppb on Dec 22

Minimum Value: 0 ppb on Dec 4 15:00

Minimum Daily Average: 0.7 ppb on Dec 18

Maximum Diurnal Average: 1.7 ppb at hour 10

Minimum Diurnal Average: 1.1 ppb at hour 20

Monthly Average: 1.19 ppb

Percentiles: $P_1 = 0.0$ $P_{10} = 0.7$ $Q_1 = 0.8$ Median = 1.1 $Q_3 = 1.4$ $P_{90} = 1.7$ $P_{99} = 3.9$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	37
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	0	1	1	0.9	1.9
3-Dec	1	1	1	A	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.6
4-Dec	1	1	A	1	1	1	1	2	2	2	2	2	2	2	0	0	0	0	1	1	1	1	0	1	1.1	2.5
5-Dec	1	A	1	1	1	2	1	1	2	1	1	1	2	1	1	1	2	2	2	1	2	2	1	1	1.3	1.9
6-Dec	A	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	2	2	1	2	2	1	2	A	1.5	2.2
7-Dec	2	2	2	2	2	2	4	4	2	2	2	2	2	2	2	2	1	2	2	2	1	1	A	1	2.0	3.9
8-Dec	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	7	1	1	1	1	2	A	2	2	1.5	6.7
9-Dec	2	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1.3	2.2
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1.0	1.4
11-Dec	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1.1	1.5
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	2	1	2	1	1.2	1.6
13-Dec	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	1	1	1	1	1	1	1.1	1.8
14-Dec	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2	A	2	2	2	2	2	3	1	1	1.5	2.9
15-Dec	1	1	1	1	1	2	3	1	1	18	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1.9	18.0
16-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	2	2	2	1.2	1.9
17-Dec	2	2	2	2	2	1	2	2	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.8	2.3
18-Dec	0	0	0	0	0	0	0	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	2	0.7	2.4
19-Dec	3	2	1	1	1	1	1	2	2	1	A	1	1	3	2	2	2	2	2	1	1	2	1	1	1.6	3.1
20-Dec	1	1	1	1	1	1	1	1	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.6
21-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4
22-Dec	1	1	2	15	16	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	2.2	16.4
23-Dec	1	1	1	1	1	1	A	1	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1.2	1.6
24-Dec	1	2	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.2	1.6
25-Dec	0	1	0	1	A	1	1	1	1	1	0	0	0	1	1	1	1	1	1	0	1	6	1	1	0.9	6.0
26-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.3
27-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3
28-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
29-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	2	A	1.2	1.8
30-Dec	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1.1	1.5
31-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	2	1.0	1.6
	1.1	1.1	1.1	1.6	1.6	1.1	1.2	1.2	1.1	1.7	1.1	1.1	1.1	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.3	1.1	1.1	Diurnal Average	
	3.1	1.8	1.8	15.4	16.4	2.0	3.9	3.9	2.0	18.0	2.0	2.3	2.2	2.5	2.3	6.7	1.9	1.8	1.9	1.8	2.4	6.0	1.8	2.4	Diurnal Maximum	

C - Calibration

A - Automated Daily Zero Span

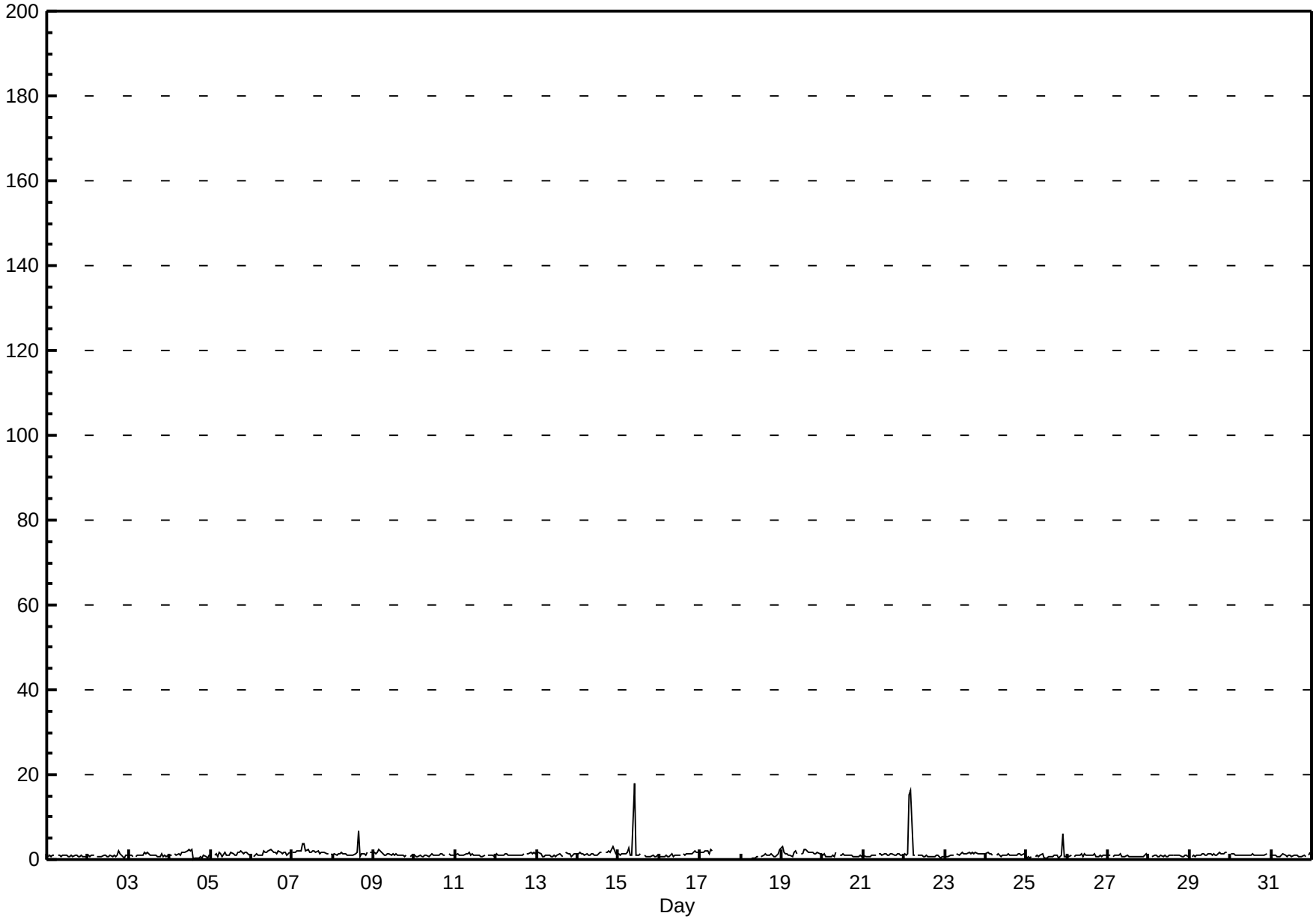
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Portable Reno - December 2013

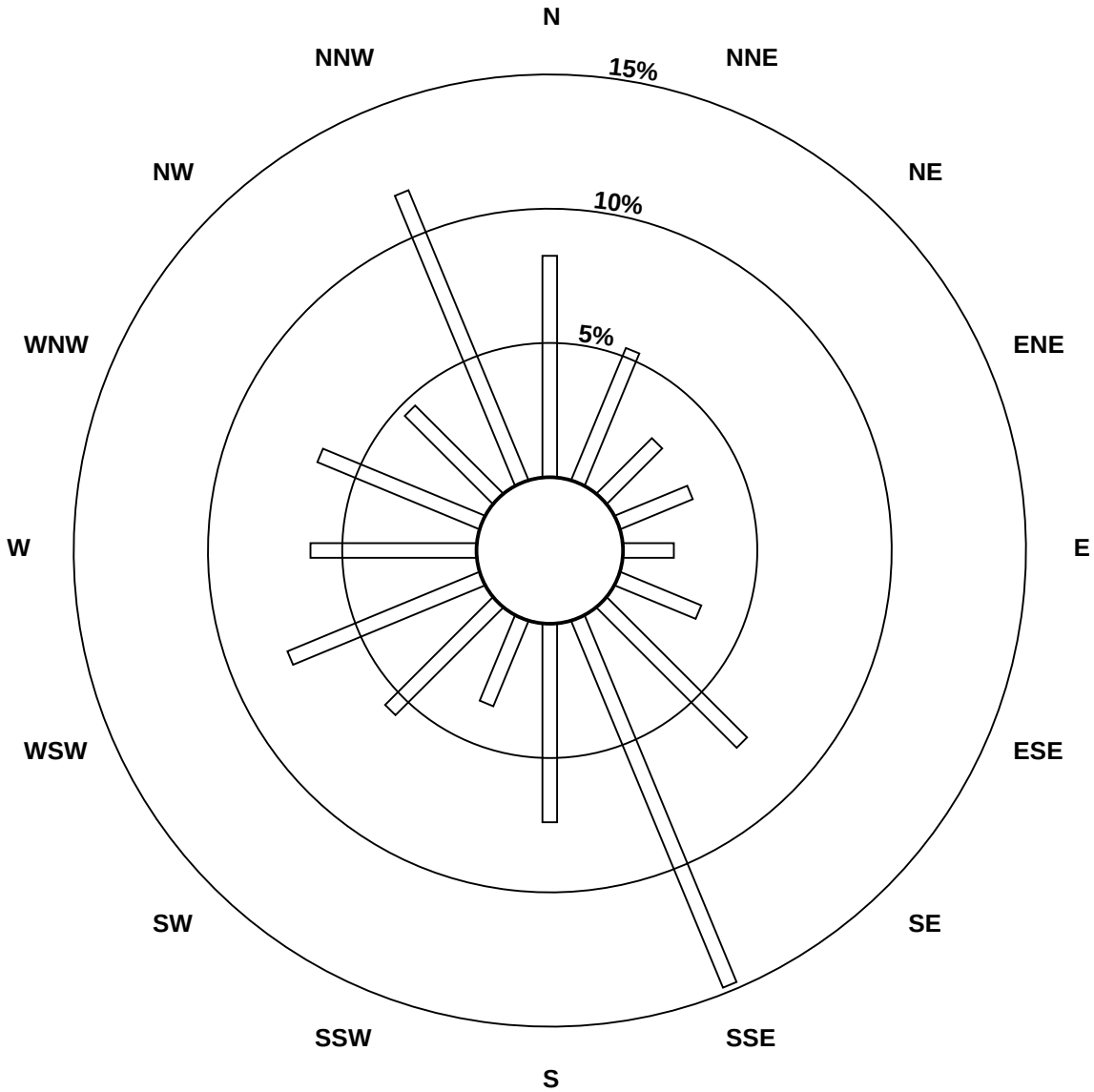


FOCUS AIR QUALITY MONITORING

Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Portable Reno - December 2013



Pollutant Classes (ppb)

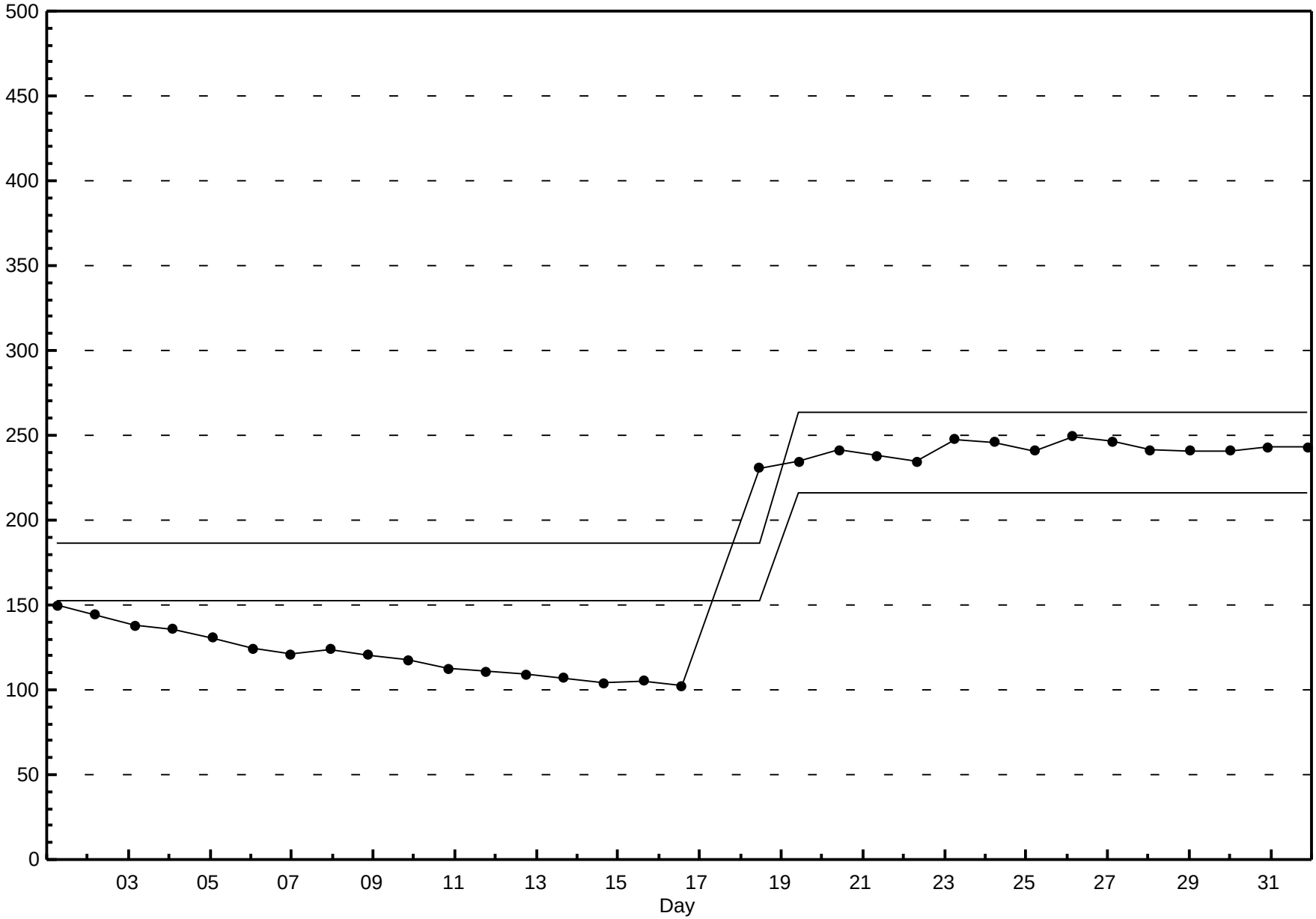
- 0 - 10
- 11 - 20
- 21 - 60
- 61 - 110
- 111 - 172
- > 172

Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 0.6 ppb on Dec 21 00:00 Maximum Daily Average: 0.4 ppb on Dec 7

Minimum Value: 0 ppb on Dec 21 14:00 Minimum Daily Average: 0.2 ppb on Dec 27
Maximum Diurnal Average: 0.3 ppb at hour 2 Minimum Diurnal Average: 0.2 ppb at hour 23
Monthly Average: 0.27 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.2$ $Q_1 = 0.2$ Median = 0.3 $Q_3 = 0.3$ $P_{90} = 0.4$ $P_{99} = 0.5$

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
6-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	0.4
7-Dec	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.4	0.5
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.4
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.3	0.3
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.3	0.4
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.3	0.4
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	0.3
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.3
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.3	0.4
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.3
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0.2	0.3
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	C	C	C	0	0	0	0	0	0.2	0.3
18-Dec	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
19-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
20-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	0.6
21-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
23-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.5
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
28-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.3	0.4
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.3
31-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.3
	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	Diurnal Average	
	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.6	Diurnal Maximum	

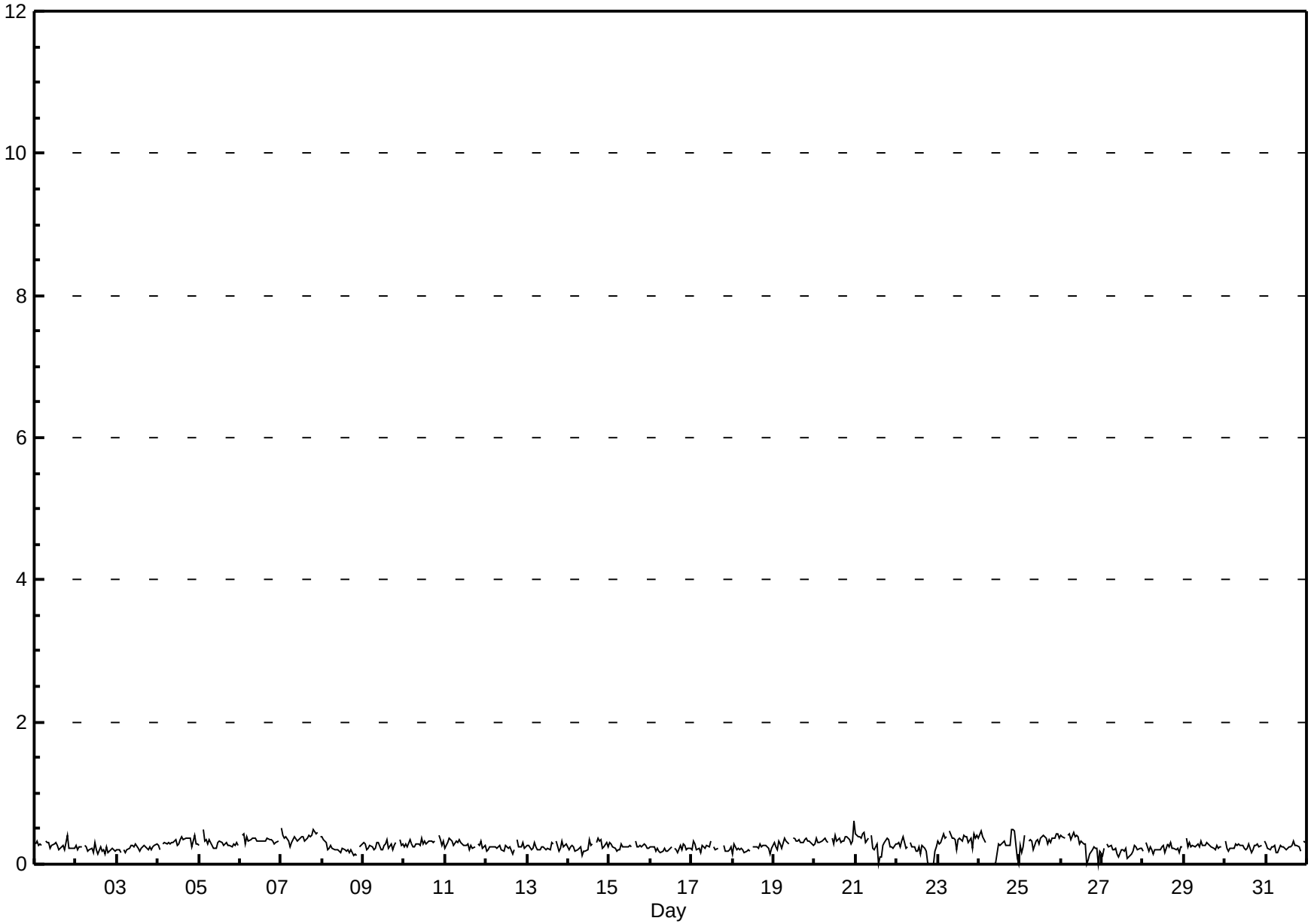
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

Peace Airshed Zone Association

Hourly Averages

Total Reduced Sulphur (TRS) - ppb

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

Portable Reno - December 2013

Maximum Value: 6.6 ppb on Dec 25 22:00

Maximum Daily Average: 1.0 ppb on Dec 25

Minimum Value: 0 ppb on Dec 24 09:00

Minimum Daily Average: 0.6 ppb on Dec 8

Maximum Diurnal Average: 0.9 ppb at hour 22

Minimum Diurnal Average: 0.7 ppb at hour 14

Monthly Average: 0.73 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.6$ $Q_1 = 0.6$ Median = 0.7 $Q_3 = 0.8$ $P_{90} = 0.9$ $P_{99} = 1.2$

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	0.8	1.6
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.8
3-Dec	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
4-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
5-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.8	1.2
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.8	0.9
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	A	1	1	0.6	0.9
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	0.9
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.7	1.0
11-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.7	0.8
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.7	1.0
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	0.9
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.7	0.8
15-Dec	1	1	1	1	1	1	1	1	1	4	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	3.6
16-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0.7	0.9
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	C	C	C	1	1	1	1	1	0.7	0.8
18-Dec	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
19-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
20-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.8	1.9
21-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0.8	0.9
22-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.2
23-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.1
24-Dec	1	1	1	1	1	A	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
25-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	1	1	1.0	6.6
26-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
27-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0.6	0.9
28-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.8
29-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.7	0.9
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.7	0.8
31-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.7	0.9
	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.9	0.7	0.7	Diurnal Average	
	1.0	1.1	1.0	1.0	1.2	0.9	0.9	1.0	0.9	3.6	1.0	0.9	1.0	0.9	0.9	1.1	0.9	1.0	1.3	1.6	1.0	6.6	0.9	1.9	Diurnal Maximum	

C - Calibration

A - Automated Daily Zero Span

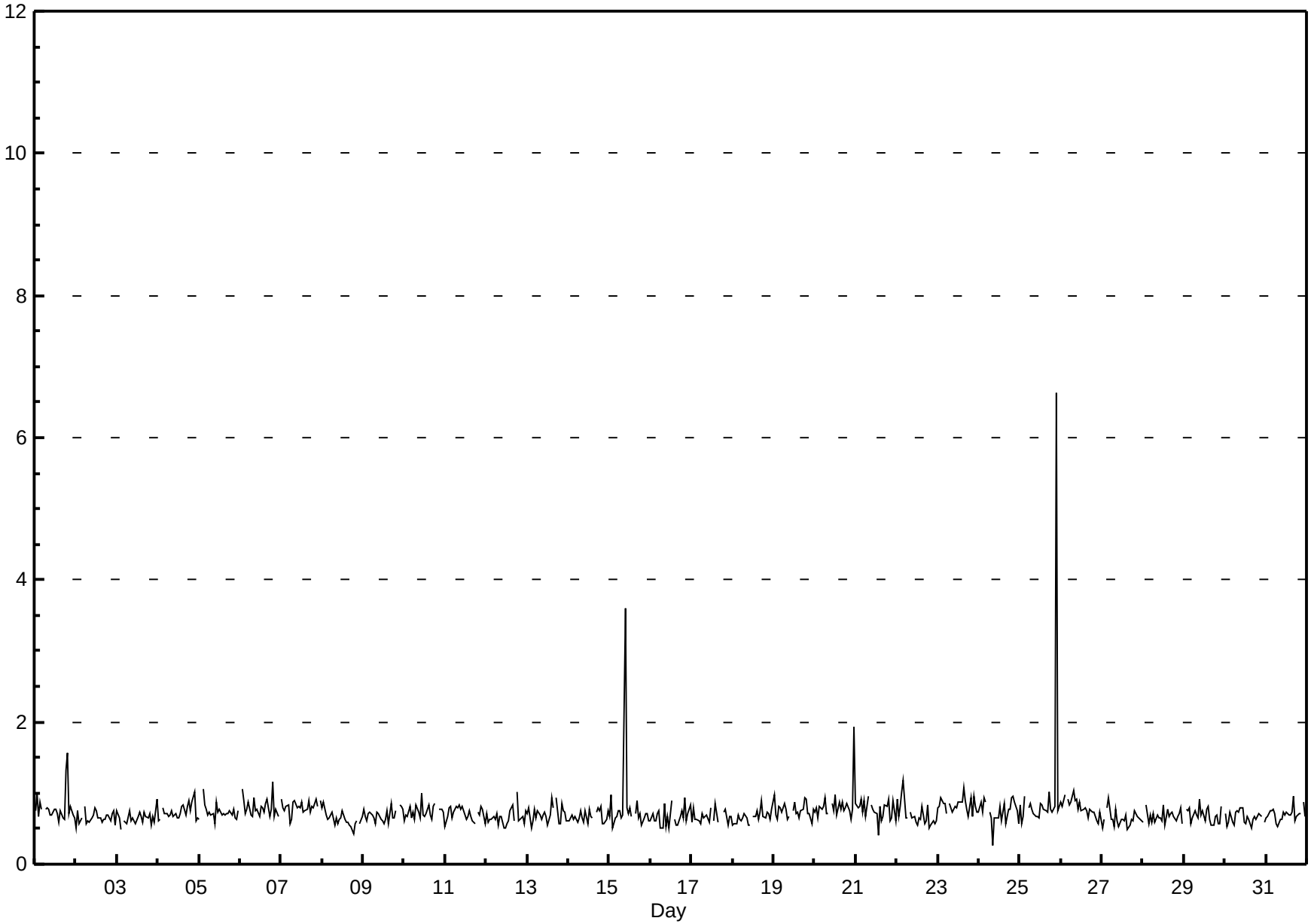
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Total Reduced Sulphur (TRS) - ppb

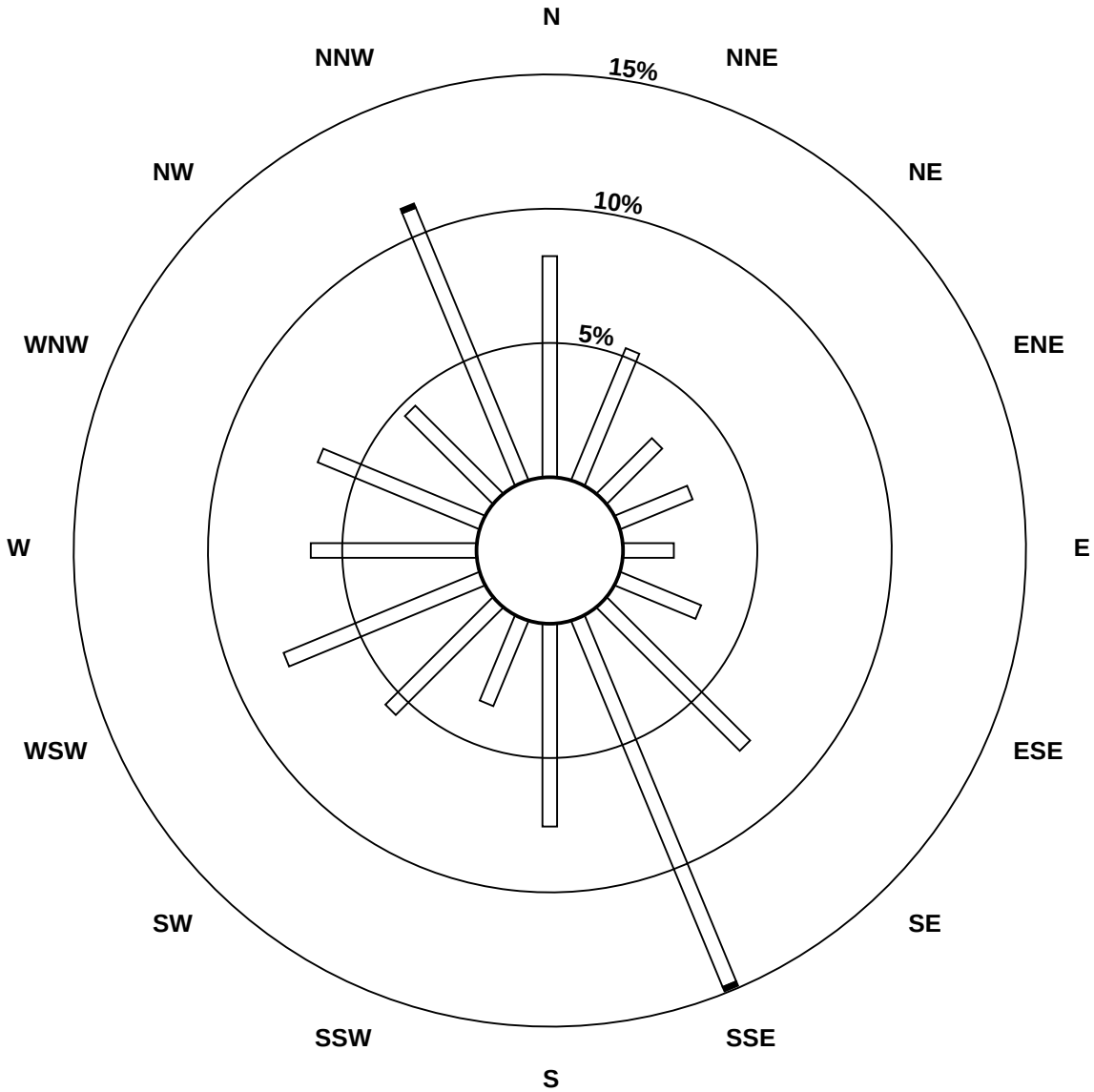
Portable Reno - December 2013



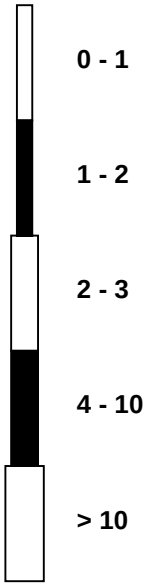
Pollutant Rose

Total Reduced Sulphur (TRS) - ppb

Portable Reno - December 2013



Pollutant Classes (ppb)

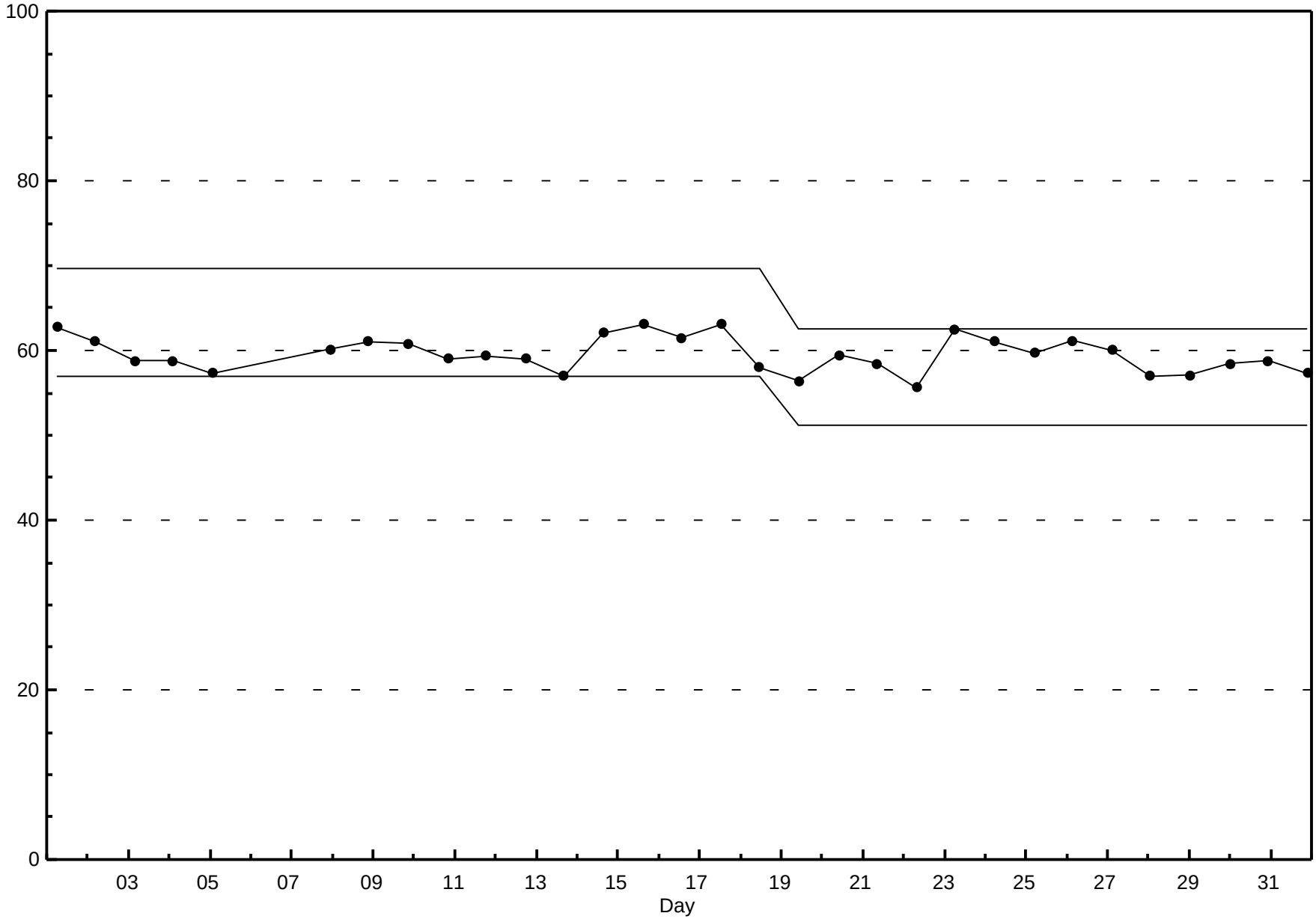


Peace Airshed Zone Association

Span Responses

Total Reduced Sulphur (TRS)

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

Nitrogen Dioxide (NO_2) - ppb

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 13.5 ppb on Dec 4 17:00 Maximum Daily Average: 7.8 ppb on Dec 7

Minimum Value: 0 ppb on Dec 2 09:00 Minimum Daily Average: 0.7 ppb on Dec 27
Maximum Diurnal Average: 3.4 ppb at hour 19 Minimum Diurnal Average: 2.1 ppb at hour 14
Monthly Average: 2.58 ppb Percentiles: $P_1 = 0.4$ $P_{10} = 0.6$ $Q_1 = 0.9$ Median = 1.6 $Q_3 = 3.4$ $P_{90} = 5.9$ $P_{99} = 10.7$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0.8	1.5
2-Dec	0	0	0	0	A	1	0	0	0	0	0	0	0	0	0	1	1	1	2	2	1	1	1	3	0.7	2.7
3-Dec	2	1	1	A	2	1	2	4	3	3	3	2	3	2	1	1	2	1	1	1	1	2	2	1	1.8	4.0
4-Dec	1	1	A	1	1	3	3	2	1	1	2	4	6	5	10	10	14	9	9	6	6	3	3	2	4.4	13.5
5-Dec	2	A	7	5	5	5	4	4	5	6	2	2	3	3	3	4	5	6	6	6	6	4	12	11	5.0	11.8
6-Dec	A	11	13	7	6	6	7	9	8	7	6	5	4	4	5	6	7	7	9	8	9	9	9	A	7.3	12.7
7-Dec	9	9	8	8	8	6	8	11	11	9	7	7	6	5	5	7	9	8	9	10	8	8	A	4	7.8	10.7
8-Dec	4	3	2	2	3	3	3	4	4	5	6	4	6	3	2	3	3	2	3	2	3	A	3	3	3.4	6.0
9-Dec	2	2	2	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0	0	1.1	2.7
10-Dec	0	0	0	1	1	1	1	1	3	4	4	2	1	1	1	1	1	1	1	A	1	1	2	1	1.4	4.4
11-Dec	1	2	2	2	2	3	5	5	3	2	2	3	2	1	1	1	2	1	A	2	3	2	1	1	2.1	5.2
12-Dec	1	1	1	1	1	1	0	1	1	1	1	0	0	0	1	1	1	A	2	3	3	3	3	3	1.3	3.3
13-Dec	3	3	3	3	3	2	2	3	2	3	4	3	3	3	3	3	A	3	3	3	3	2	2	2	2.7	4.1
14-Dec	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	A	5	4	4	5	4	5	3	3	2.9	5.5
15-Dec	2	2	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.9	2.4
16-Dec	1	1	1	1	1	1	1	2	2	1	1	1	2	A	5	2	2	4	4	4	2	2	1	1	1.7	4.9
17-Dec	1	1	2	1	1	1	1	1	1	C	C	C	C	C	C	1	4	1	1	1	1	1	1	1	1.1	4.4
18-Dec	1	1	1	1	1	1	1	2	1	1	1	A	1	2	2	2	4	10	10	10	7	7	4	5	3.2	10.4
19-Dec	5	5	5	4	4	4	4	5	5	7	A	5	5	6	6	10	9	7	6	5	4	3	4	4	5.3	10.3
20-Dec	3	2	4	6	3	2	1	2	1	A	2	1	4	5	6	3	1	1	2	2	2	2	1	3	2.6	5.8
21-Dec	5	5	5	5	4	4	3	3	A	13	6	2	5	3	3	5	3	3	11	10	8	6	4	4	5.1	13.3
22-Dec	4	3	2	2	2	3	2	A	1	1	1	0	0	1	1	1	1	1	1	1	2	2	2	3	1.5	3.6
23-Dec	3	4	4	5	5	5	A	4	3	3	2	1	2	1	2	2	2	2	1	3	2	2	2	4	2.7	5.0
24-Dec	6	5	3	1	1	A	1	1	1	1	1	0	1	1	1	1	1	1	2	1	9	6	1	1	2.0	9.2
25-Dec	1	0	1	1	A	1	1	1	1	2	1	1	1	1	1	1	1	2	3	1	1	1	1	1	1.1	2.7
26-Dec	2	2	1	A	3	2	1	1	4	2	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1.3	3.7
27-Dec	1	1	A	1	1	1	1	1	1	0	0	1	0	1	0	0	0	1	1	0	1	1	1	1	0.7	1.4
28-Dec	1	A	1	1	1	1	1	1	3	2	1	2	11	3	3	0	1	1	1	1	1	1	1	1	1.6	11.1
29-Dec	A	1	1	1	2	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	A	1.2	2.2
30-Dec	1	1	1	1	1	1	3	3	2	3	2	1	1	1	1	1	1	0	0	0	0	1	A	1	1.1	3.0
31-Dec	1	1	1	1	1	2	1	3	3	4	6	4	3	3	3	4	6	6	7	6	6	A	4	4	3.6	6.9
	2.3	2.4	2.6	2.3	2.3	2.3	2.2	2.5	2.6	3.1	2.3	2.1	2.6	2.1	2.5	2.5	3.0	2.9	3.4	3.2	3.1	2.7	2.5	2.4	Diurnal Average	
	9.4	11.2	12.7	7.7	7.5	6.5	7.6	10.6	10.7	13.3	7.2	6.9	11.1	5.6	9.7	10.3	13.5	10.1	10.9	10.3	9.2	8.8	11.8	10.9	Diurnal Maximum	

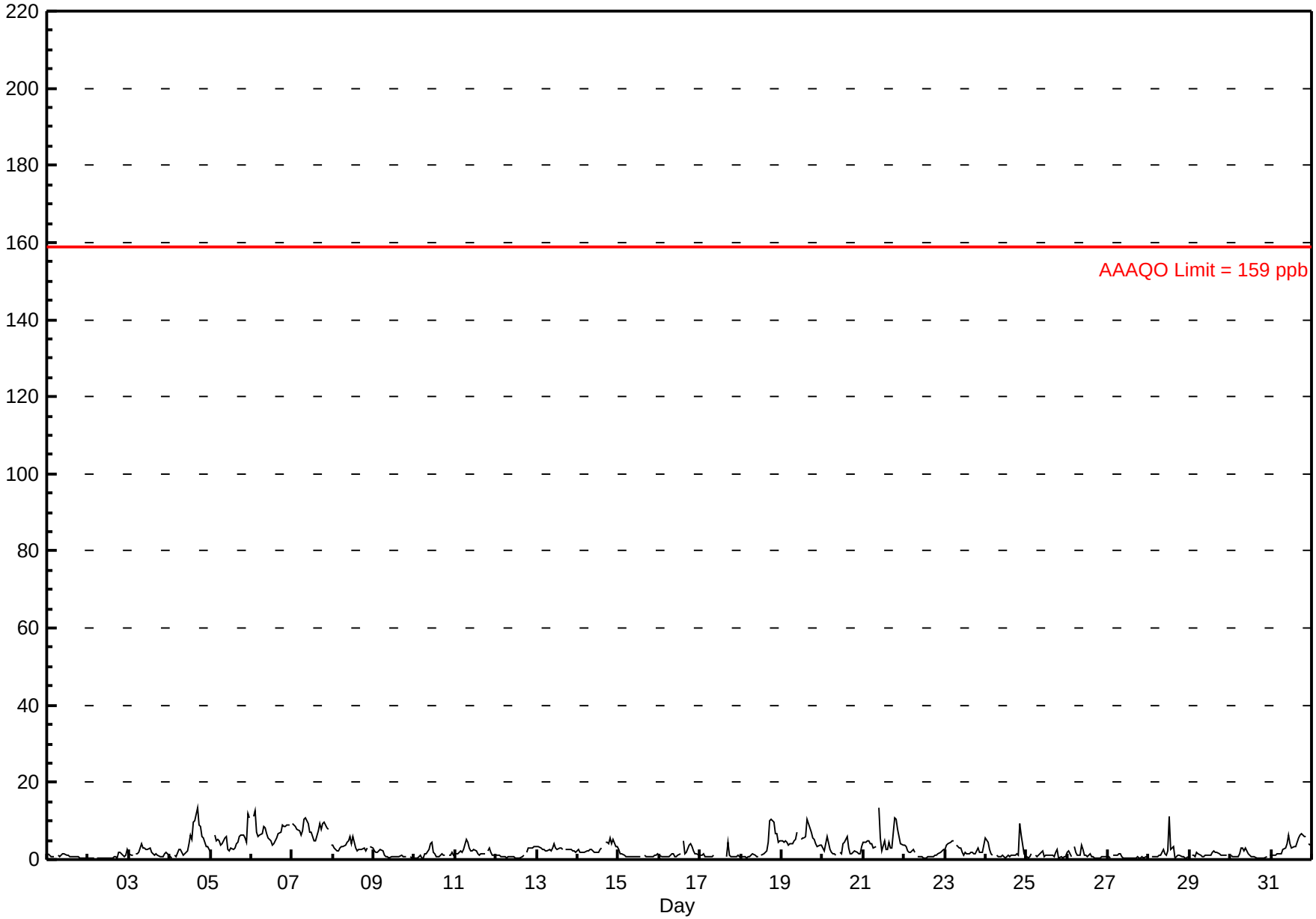
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

Peace Airshed Zone Association

Hourly Averages

Nitrogen Dioxide (NO_2) - ppb

Portable Reno - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Dioxide (NO_2) - ppb

Portable Reno - December 2013

Maximum Value: 72.3 ppb on Dec 28 13:00

Maximum Daily Average: 10.4 ppb on Dec 7

Minimum Value: 1 ppb on Dec 30 20:00

Minimum Daily Average: 1.6 ppb on Dec 1

Maximum Diurnal Average: 6.7 ppb at hour 13

Minimum Diurnal Average: 3.4 ppb at hour 2

Monthly Average: 4.56 ppb

Percentiles: $P_1 = 0.7$ $P_{10} = 1.0$ $Q_1 = 1.5$ Median = 2.8 $Q_3 = 5.7$ $P_{90} = 9.4$ $P_{99} = 23.7$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	2	2	1	1	1	A	2	1	2	2	2	2	2	1	2	2	1	2	2	2	2	1	1	1	1.6	2.2
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	2	2	2	2	3	2	4	3	2	2	3	4	1.9	4.4
3-Dec	3	1	1	A	2	2	4	6	3	4	3	4	14	5	6	2	2	2	1	1	2	3	3	4	3.4	13.8
4-Dec	3	1	A	1	1	4	4	4	3	2	3	8	9	7	21	14	19	10	12	7	6	5	5	4	6.6	21.0
5-Dec	3	A	12	8	9	7	8	7	9	8	6	3	7	5	7	8	7	7	8	7	6	5	23	18	8.1	23.2
6-Dec	A	17	15	13	8	8	9	22	9	8	7	6	4	5	5	7	7	8	10	9	9	14	10	A	9.5	21.8
7-Dec	10	9	9	21	22	7	10	12	12	11	8	7	7	5	5	11	14	10	12	12	9	9	A	7	10.4	21.9
8-Dec	8	6	5	7	4	4	4	5	6	7	8	7	8	6	2	4	3	4	4	3	6	A	3	4	5.2	8.2
9-Dec	2	3	2	4	4	4	2	1	1	1	5	1	1	1	1	1	2	3	1	1	A	3	1	1	2.0	4.9
10-Dec	1	1	1	5	1	1	12	2	11	5	6	3	3	1	1	2	2	1	1	A	1	5	5	2	3.1	11.8
11-Dec	2	2	6	4	3	4	6	6	4	3	2	3	3	3	2	5	3	3	A	3	11	2	2	1	3.6	11.4
12-Dec	2	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	A	2	5	4	3	3	3	1.8	5.0
13-Dec	4	3	3	3	3	3	3	6	6	9	7	5	5	5	5	5	A	6	3	3	3	3	2	2	4.2	8.7
14-Dec	7	2	2	2	3	3	3	3	3	3	2	2	2	3	4	A	5	5	6	12	8	10	4	4	4.2	11.9
15-Dec	4	2	5	1	1	1	1	1	1	2	1	1	1	1	A	2	1	1	1	1	2	2	3	2	1.7	4.9
16-Dec	3	1	1	1	1	2	1	6	11	1	1	2	3	A	16	10	4	5	24	4	3	2	2	1	4.7	24.3
17-Dec	1	1	6	1	1	1	2	1	1	C	C	C	C	C	C	2	19	4	1	2	1	1	2	2	2.8	19.1
18-Dec	2	2	1	1	3	3	4	3	4	1	3	A	1	2	3	5	8	16	14	15	13	14	5	6	5.5	16.3
19-Dec	5	5	6	5	5	5	10	5	5	9	A	7	9	9	8	13	15	11	6	20	5	4	9	9	8.1	20.4
20-Dec	3	3	7	11	4	2	2	9	2	A	4	3	7	8	11	8	2	2	5	8	2	2	2	7	4.9	11.4
21-Dec	7	7	7	9	9	10	4	4	A	20	12	3	23	3	4	16	4	4	18	13	9	7	6	5	8.9	23.4
22-Dec	4	5	3	2	2	8	5	A	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	2.2	7.7
23-Dec	5	5	5	5	5	25	A	5	4	3	2	2	3	2	3	2	3	2	2	5	3	5	3	9	4.8	25.4
24-Dec	9	6	4	4	2	A	2	1	1	1	2	1	2	1	1	3	2	1	3	2	45	24	7	1	5.5	44.9
25-Dec	1	1	1	2	A	2	1	1	2	4	2	3	3	1	1	5	1	4	9	1	1	1	1	1	2.2	9.3
26-Dec	6	6	1	A	6	2	2	2	7	5	4	6	1	3	2	2	2	1	1	1	1	2	1	1	2.8	6.7
27-Dec	1	1	A	2	2	1	2	2	2	1	1	1	1	2	1	1	1	3	2	2	2	2	3	2	1.6	3.4
28-Dec	3	A	4	3	3	3	4	3	8	3	1	13	72	12	52	1	1	2	1	1	1	1	1	1	8.5	72.3
29-Dec	A	1	1	1	7	4	1	1	1	3	2	2	3	3	3	3	2	4	3	2	3	3	3	A	2.5	7.1
30-Dec	3	2	3	2	1	2	4	4	5	5	3	2	1	1	1	1	1	1	1	1	1	1	A	1	1.9	5.4
31-Dec	2	1	1	2	2	4	2	6	19	5	24	8	4	7	6	6	9	10	13	11	9	A	6	6	7.1	23.7
	3.7	3.4	4.0	4.2	4.0	4.2	3.8	4.5	4.8	4.4	4.3	3.6	6.7	3.6	6.2	4.7	4.9	4.6	5.8	5.2	5.7	4.7	4.2	3.9	Diurnal Average	
	10.3	17.0	14.7	21.2	21.9	25.4	11.8	21.8	19.3	20.2	23.7	13.0	72.3	12.0	52.3	16.1	19.1	16.3	24.3	20.4	44.9	23.8	23.2	18.0	Diurnal Maximum	

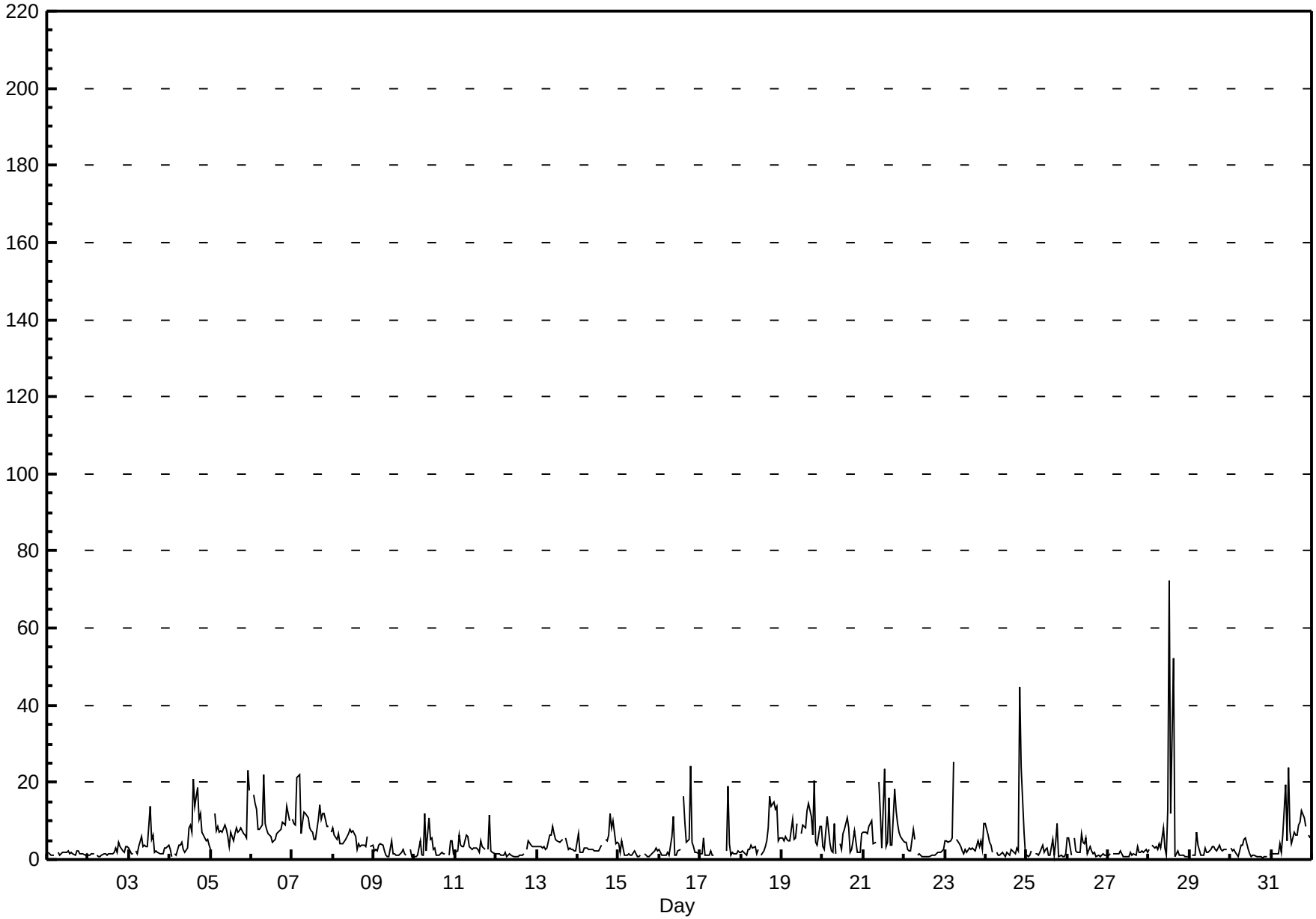
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Dioxide (NO_2) - ppb

Portable Reno - December 2013

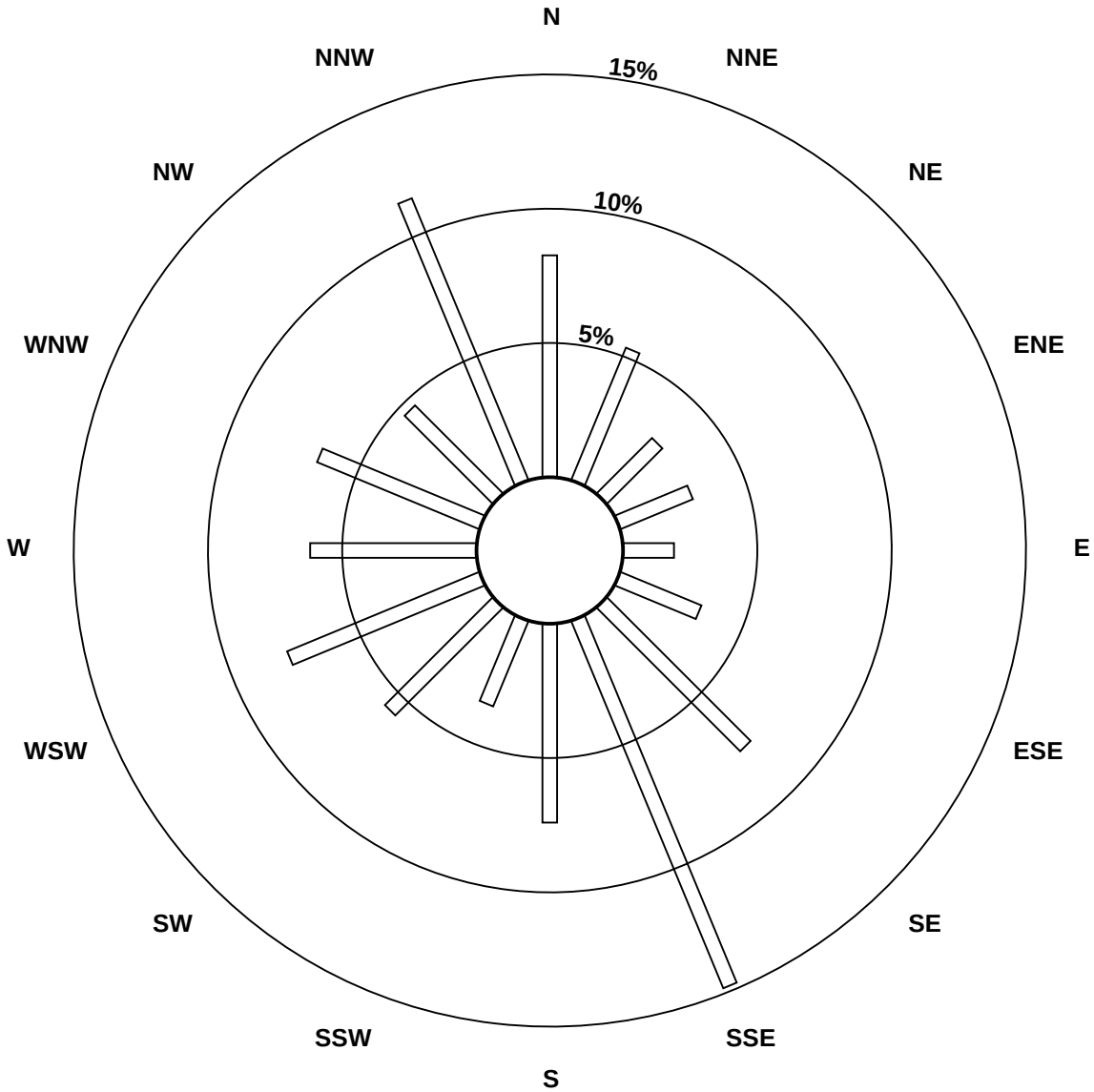


FOCUS AIR QUALITY MONITORING

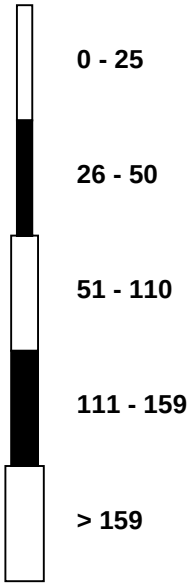
Pollutant Rose

Nitrogen Dioxide (NO_2) - ppb

Portable Reno - December 2013



Pollutant Classes (ppb)

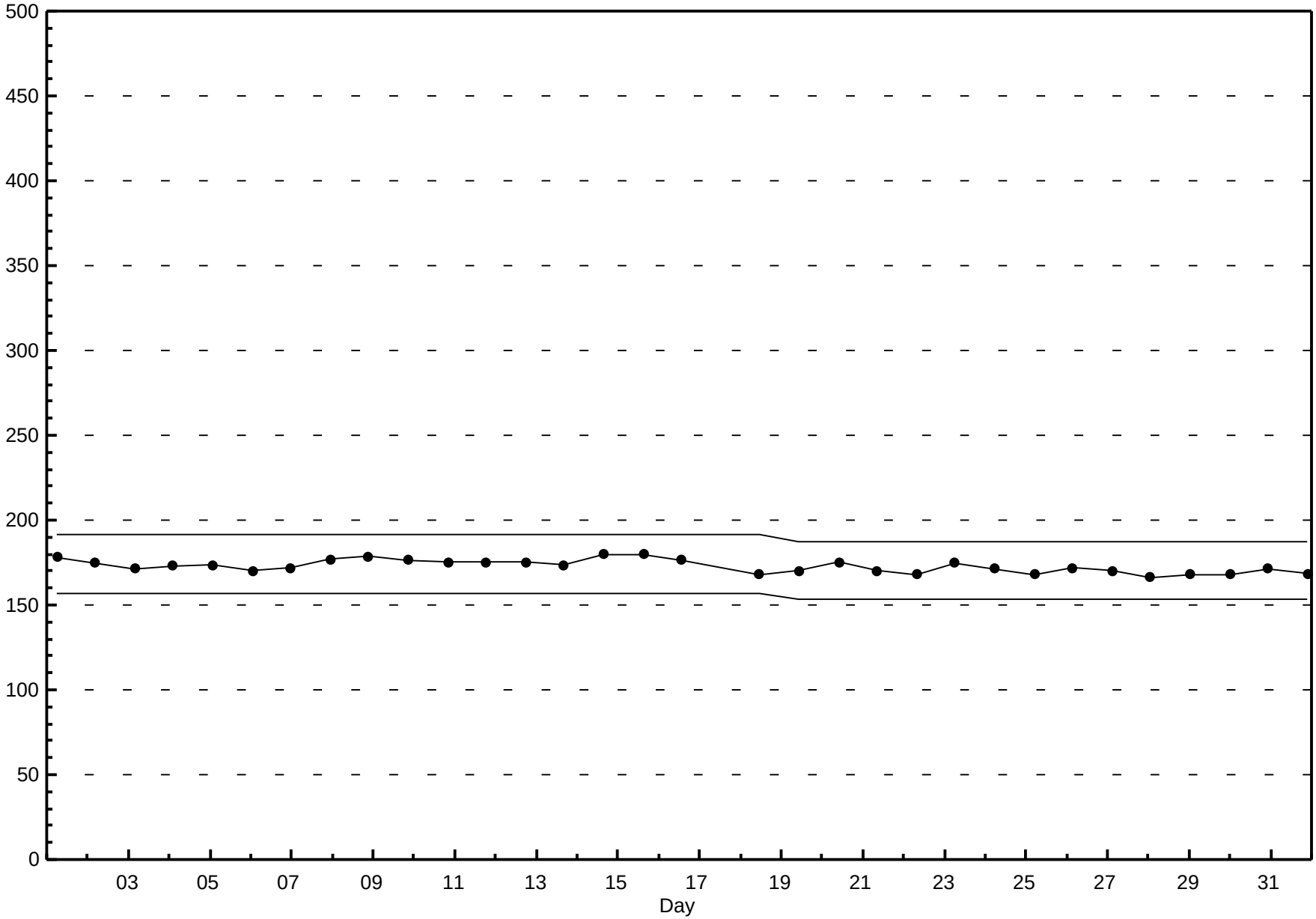


Peace Airshed Zone Association

Span Responses

Nitrogen Dioxide (NO_2)

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 31.0 ppb on Dec 28 13:00
Maximum Daily Average: 1.9 ppb on Dec 28

Minimum Value: 0 ppb on Dec 1 01:00
Maximum Diurnal Average: 2.4 ppb at hour 13
Monthly Average: 0.44 ppb

Minimum Daily Average: 0.0 ppb on Dec 15
Minimum Diurnal Average: 0.1 ppb at hour 2
Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.0$ Median = 0.1 $Q_3 = 0.4$ $P_{90} = 1.0$ $P_{99} = 4.2$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
3-Dec	0	0	0	A	0	0	0	0	0	0	1	1	2	1	2	0	0	0	0	0	0	0	0	0	0.3	2.0
4-Dec	0	0	A	0	0	0	0	0	0	0	1	2	5	3	6	3	1	0	0	0	0	0	0	0	0.9	5.7
5-Dec	0	A	1	1	1	1	0	1	1	1	1	1	2	2	2	2	1	0	0	0	0	0	1	0	0.8	2.5
6-Dec	A	0	0	0	0	0	0	0	0	1	3	4	3	4	3	1	0	0	0	0	0	0	0	A	0.9	3.8
7-Dec	0	0	0	0	0	0	0	0	0	1	2	3	3	2	2	1	0	0	0	0	0	0	A	1	0.7	3.0
8-Dec	1	0	0	0	0	0	0	0	0	1	2	2	4	2	1	0	0	0	0	0	0	A	0	0	0.6	4.0
9-Dec	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.5
10-Dec	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	A	0	0	0	0	0.2	1.2
11-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	A	0	0	0	0	0	0.2	0.9
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.0	0.1
13-Dec	0	0	0	0	0	0	0	0	0	1	1	2	2	2	1	1	A	0	0	0	0	0	0	0	0.5	2.1
14-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	A	0	0	0	0	0	0	0	0	0.2	1.1
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.0	0.2
16-Dec	0	0	0	0	0	0	0	0	0	0	0	0	1	A	8	1	0	0	1	0	0	0	0	0	0.5	8.5
17-Dec	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	0	4	1	0	0	0	0	0	0	0.4	4.3
18-Dec	0	0	0	0	0	0	1	0	0	0	0	A	0	1	1	1	0	0	0	0	0	0	0	0	0.3	0.9
19-Dec	0	0	0	0	0	0	0	0	0	1	A	2	3	3	2	2	0	0	0	0	0	0	0	0	0.7	3.2
20-Dec	0	0	0	0	0	0	0	0	0	A	1	0	3	2	3	1	0	0	0	0	0	0	0	1	0.5	2.8
21-Dec	1	1	1	1	1	1	0	0	A	2	1	1	6	1	1	1	0	0	0	0	0	0	0	0	0.9	6.5
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
23-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	4	0	0	0.8	12.8
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.2
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.2	0.6
28-Dec	1	A	1	1	1	1	1	0	0	0	0	2	31	2	3	0	0	0	0	0	0	0	0	0	1.9	31.0
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0	1	0	0	0	A	0.3	1.2
30-Dec	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.6
31-Dec	0	0	0	0	0	0	0	1	2	0	3	2	1	2	2	2	1	0	0	0	0	A	1	0	0.8	2.9
	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.3	0.7	1.0	2.4	1.1	1.4	0.6	0.3	0.2	0.1	0.1	0.5	0.2	0.1	0.1	Diurnal Average	
	0.8	0.5	0.7	0.7	0.8	1.1	0.6	0.8	2.1	1.7	2.9	3.8	31.0	3.6	8.5	2.6	4.3	0.8	0.6	0.5	12.8	3.7	0.8	0.7	Diurnal Maximum	

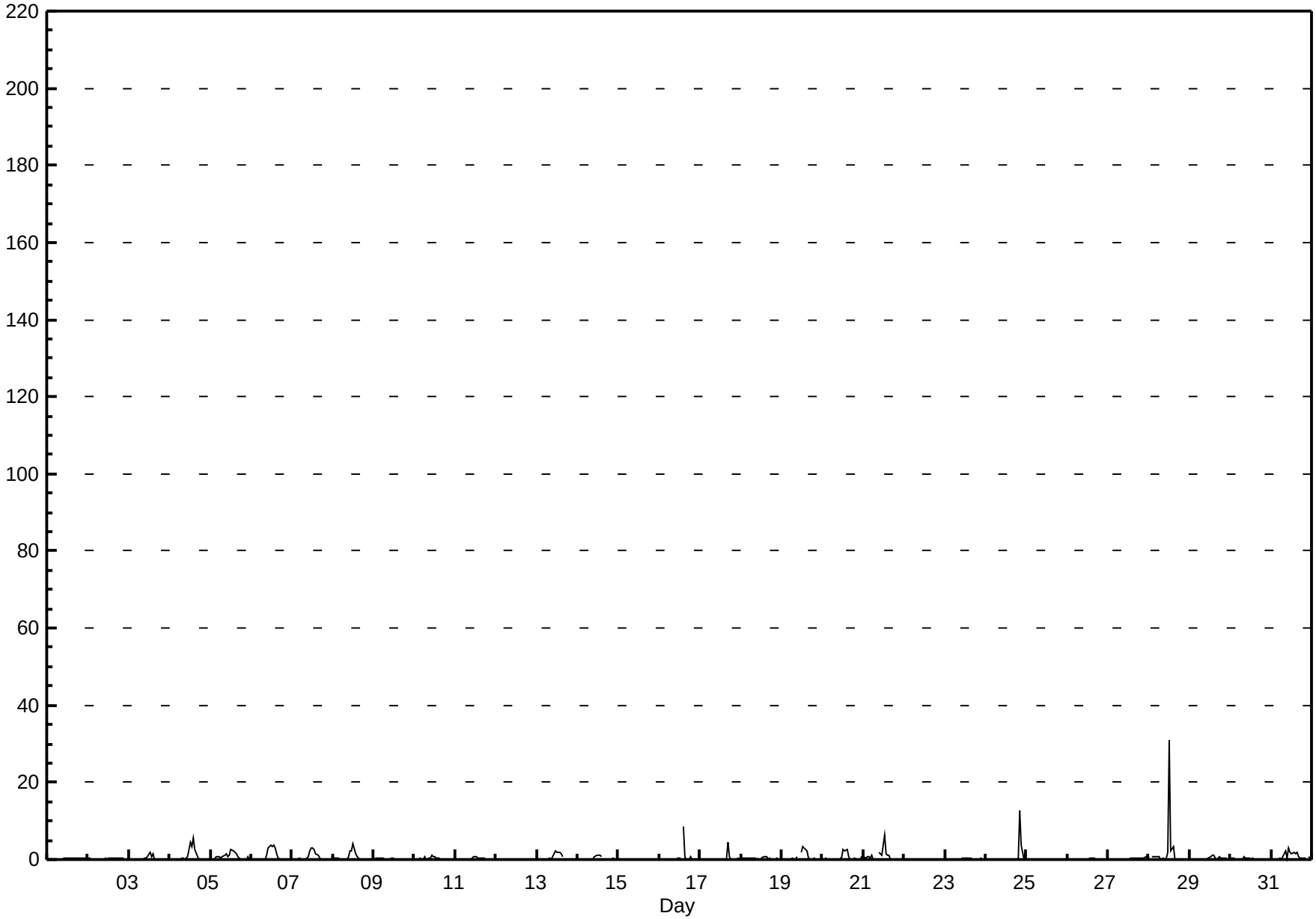
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Nitrogen Oxide (NO) - ppb

Portable Reno - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Oxide (NO) - ppb

Portable Reno - December 2013

Maximum Value: 159.8 ppb on Dec 28 13:00

Maximum Daily Average: 11.1 ppb on Dec 28

Minimum Value: 0 ppb on Dec 15 18:00

Minimum Daily Average: 0.2 ppb on Dec 22

Maximum Diurnal Average: 10.2 ppb at hour 13

Minimum Diurnal Average: 0.7 ppb at hour 2

Monthly Average: 2.30 ppb

Percentiles: $P_1 = 0.1$ $P_{10} = 0.1$ $Q_1 = 0.2$ Median = 0.4 $Q_3 = 2.1$ $P_{90} = 4.6$ $P_{99} = 23.5$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	1	2	2	2	2	2	2	2	2	2	2	2	1	1.1	2.3
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	2	1	3	3	2	3	2	1	0	0	1.4	3.3
3-Dec	0	0	0	A	0	0	0	0	0	1	2	1	16	7	18	0	0	1	1	0	0	0	0	0	2.2	17.7
4-Dec	1	0	A	0	1	0	0	3	2	0	1	6	7	5	17	6	5	0	0	0	0	0	1	0	2.5	16.7
5-Dec	0	A	5	5	4	4	5	3	5	5	3	3	7	6	5	6	6	4	3	0	0	0	3	1	3.6	7.2
6-Dec	A	0	0	0	0	0	0	5	0	2	4	4	4	4	4	2	1	0	0	0	0	1	0	A	1.6	5.0
7-Dec	0	0	0	7	7	0	0	0	0	2	3	3	3	3	2	2	1	0	0	0	0	0	A	4	1.7	7.2
8-Dec	7	3	5	4	1	0	0	0	0	1	4	4	5	4	1	1	0	0	0	0	0	A	0	0	1.8	7.1
9-Dec	1	1	1	3	2	3	0	0	2	0	5	7	1	2	1	0	1	1	2	0	A	0	0	0	1.5	7.4
10-Dec	1	0	1	4	0	1	11	1	8	1	2	1	2	0	0	0	0	0	0	A	0	0	0	0	1.5	11.1
11-Dec	0	0	4	1	3	0	0	0	1	0	1	1	2	2	1	3	2	2	A	0	0	0	0	0	1.1	4.4
12-Dec	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.2	1.2
13-Dec	0	0	0	0	0	0	0	3	1	8	5	5	5	4	4	3	A	3	0	0	0	0	0	0	1.9	8.4
14-Dec	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	A	0	0	0	0	0	2	0	0	0.5	2.1
15-Dec	0	0	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	1.5
16-Dec	0	0	0	0	0	1	0	0	10	0	0	1	5	A	41	11	0	1	15	0	0	0	0	0	3.8	40.6
17-Dec	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	1	29	7	1	1	1	1	1	1	2.6	29.5
18-Dec	2	2	1	2	3	3	3	2	3	1	2	A	1	1	2	4	0	5	1	0	0	2	0	0	1.7	5.0
19-Dec	0	0	0	0	0	0	8	0	0	2	A	3	5	6	4	4	1	0	0	19	0	0	0	0	2.3	18.5
20-Dec	0	0	5	0	0	0	0	4	0	A	3	1	7	5	7	3	0	0	2	6	0	0	1	6	2.3	7.2
21-Dec	5	4	4	4	4	8	0	0	A	4	3	2	59	3	4	7	1	0	1	0	0	0	0	0	4.9	58.8
22-Dec	0	0	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
23-Dec	0	0	0	0	0	5	A	0	0	0	1	0	1	0	1	0	0	0	0	0	1	3	0	0	0.7	4.6
24-Dec	0	0	0	0	0	A	0	0	1	0	0	0	0	0	0	0	0	0	0	2	153	26	3	0	8.2	153.1
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0.3	3.1
26-Dec	0	0	0	A	0	0	0	0	0	2	1	1	0	2	2	2	1	1	1	1	1	1	1	0	0.8	2.1
27-Dec	0	1	A	1	0	0	0	0	0	0	0	0	0	3	1	2	1	2	2	3	2	3	3	3	1.2	3.4
28-Dec	3	A	3	5	3	4	8	2	7	0	0	14	160	18	25	0	0	0	0	0	0	0	0	0	11.1	159.8
29-Dec	A	0	0	0	0	0	0	0	0	0	0	2	3	3	3	1	0	3	2	2	2	2	2	A	1.2	3.2
30-Dec	4	3	3	2	0	0	0	0	4	1	1	0	0	0	0	0	0	0	0	0	0	0	A	0	0.9	4.3
31-Dec	0	0	0	0	0	6	0	4	45	3	25	4	5	5	6	11	6	4	3	8	4	A	5	4	6.5	45.2
	1.0	0.7	1.3	1.5	1.1	1.3	1.3	1.1	3.1	1.3	2.5	2.3	10.2	3.0	5.3	2.6	2.1	1.3	1.4	1.7	5.7	1.6	0.9	0.8	Diurnal Average	
	7.1	4.0	5.4	7.2	7.0	7.6	11.1	5.0	45.2	8.4	25.2	14.1	159.8	17.8	40.6	10.9	29.5	7.4	15.3	18.5	153.1	25.6	4.6	5.6	Diurnal Maximum	

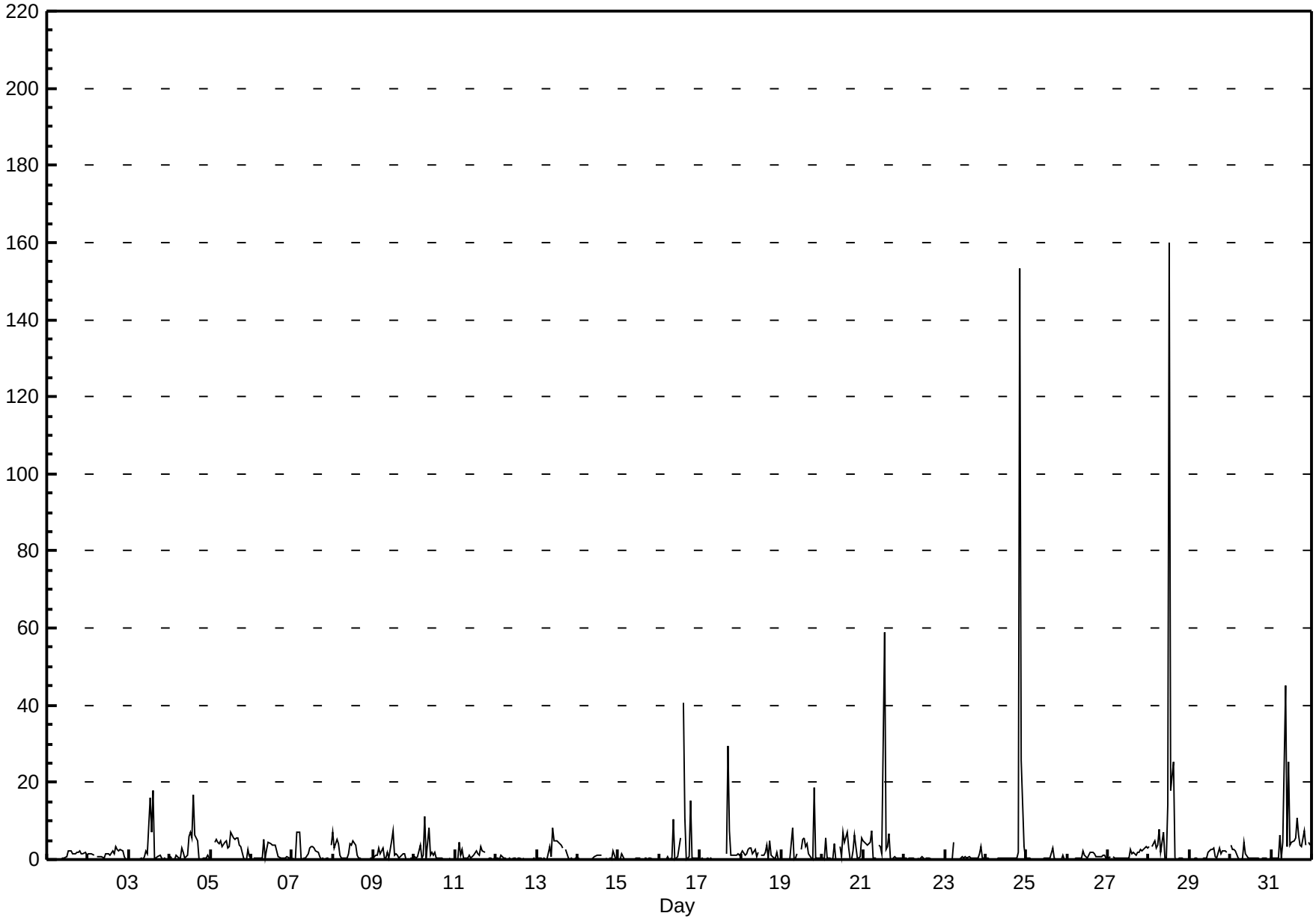
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Nitrogen Oxide (NO) - ppb

Portable Reno - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

Oxides of Nitrogen (NO_X) - ppb

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 42.1 ppb on Dec 28 13:00
Maximum Daily Average: 8.5 ppb on Dec 7

Minimum Value: 0 ppb on Dec 2 09:00
Maximum Diurnal Average: 5.0 ppb at hour 13
Monthly Average: 3.02 ppb

Minimum Daily Average: 0.9 ppb on Dec 15
Minimum Diurnal Average: 2.3 ppb at hour 7
Percentiles: P_1 = 0.5 P_{10} = 0.7 Q_1 = 1.0 Median = 1.8 Q_3 = 4.0 P_{90} = 7.2 P_{99} = 12.8

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1.1	1.7
2-Dec	1	1	1	1	A	1	0	0	0	0	1	1	1	1	1	1	1	1	2	2	1	1	1	3	0.9	2.7
3-Dec	2	1	1	A	2	1	2	4	3	3	3	3	5	3	3	1	2	1	1	1	1	2	2	1	2.1	5.0
4-Dec	1	1	A	1	1	3	3	2	2	2	3	6	11	8	15	13	14	9	9	6	6	4	3	2	5.4	15.5
5-Dec	2	A	7	6	6	6	4	5	6	7	3	3	6	5	5	6	5	6	6	6	6	4	13	11	5.8	12.7
6-Dec	A	11	13	7	6	6	7	9	8	8	9	9	7	8	8	7	7	7	9	9	9	9	9	A	8.3	13.0
7-Dec	9	9	8	8	8	7	8	11	11	10	9	10	9	7	6	8	10	8	9	10	8	8	A	4	8.5	10.9
8-Dec	5	3	3	3	3	3	4	4	5	6	8	7	10	5	3	3	3	2	3	2	3	A	3	3	4.0	10.1
9-Dec	2	2	2	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0	0	1.3	3.2
10-Dec	0	0	1	1	1	1	2	2	3	5	6	3	2	1	1	1	1	1	1	A	1	1	2	1	1.7	5.7
11-Dec	1	2	2	2	2	3	5	5	3	3	3	3	3	2	2	2	2	2	A	2	3	2	1	1	2.4	5.3
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	2	3	3	3	3	3	1.4	3.3
13-Dec	3	3	3	3	3	2	2	3	2	4	6	5	5	5	4	3	A	3	3	3	3	2	2	2	3.2	5.6
14-Dec	3	2	2	2	2	2	2	2	2	2	3	3	3	3	4	A	5	4	4	6	4	5	3	3	3.1	5.5
15-Dec	2	2	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.9	2.4
16-Dec	1	1	1	1	1	1	1	1	2	1	1	2	2	A	13	2	2	4	5	4	2	2	1	1	2.2	13.4
17-Dec	1	1	2	1	1	1	1	1	1	C	C	C	C	C	C	1	9	2	1	1	1	1	1	1	1.5	8.8
18-Dec	1	1	1	1	1	1	2	2	2	1	1	A	1	2	3	3	5	11	11	10	7	7	4	5	3.5	10.6
19-Dec	5	5	5	4	4	4	4	5	5	8	A	7	9	9	8	13	10	7	6	6	4	3	4	4	6.0	12.8
20-Dec	3	2	4	6	3	2	2	2	1	A	2	2	7	7	9	4	1	1	2	2	2	2	1	4	3.1	8.6
21-Dec	5	5	5	6	5	5	3	3	A	15	7	3	11	4	4	6	3	3	11	10	8	6	4	4	6.0	15.1
22-Dec	4	3	2	2	2	3	2	A	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	1.5	3.6
23-Dec	3	4	4	5	5	5	A	4	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2	4	2.8	5.2
24-Dec	6	5	3	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	2	1	22	10	2	1	2.8	22.0
25-Dec	1	1	1	1	A	1	1	1	1	2	1	1	1	1	1	1	1	2	3	1	1	0	1	1	1.1	2.7
26-Dec	2	2	1	A	3	2	1	1	4	3	1	1	1	2	1	1	1	1	1	0	1	1	1	1	1.4	3.7
27-Dec	1	1	A	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
28-Dec	1	A	2	1	1	1	2	1	3	2	1	4	42	5	7	1	1	1	1	1	1	1	1	1	3.5	42.1
29-Dec	A	1	1	1	2	1	1	1	1	1	1	1	2	3	3	2	2	2	2	2	1	1	1	A	1.5	3.3
30-Dec	2	1	1	1	1	1	3	3	3	3	2	1	1	1	1	1	1	1	0	0	1	1	A	1	1.3	3.2
31-Dec	1	1	1	1	1	2	1	3	5	5	9	6	4	5	5	6	7	7	7	6	6	A	5	4	4.4	9.3
	2.4	2.5	2.7	2.5	2.4	2.4	2.3	2.6	2.8	3.4	3.0	3.1	5.0	3.2	3.9	3.2	3.3	3.1	3.5	3.4	3.6	2.9	2.7	2.5	Diurnal Average	
	9.4	11.4	13.0	7.9	7.8	6.5	7.6	10.7	10.9	15.1	9.4	10.0	42.1	8.7	15.5	12.8	14.4	10.6	11.1	10.5	22.0	10.3	12.7	11.1	Diurnal Maximum	

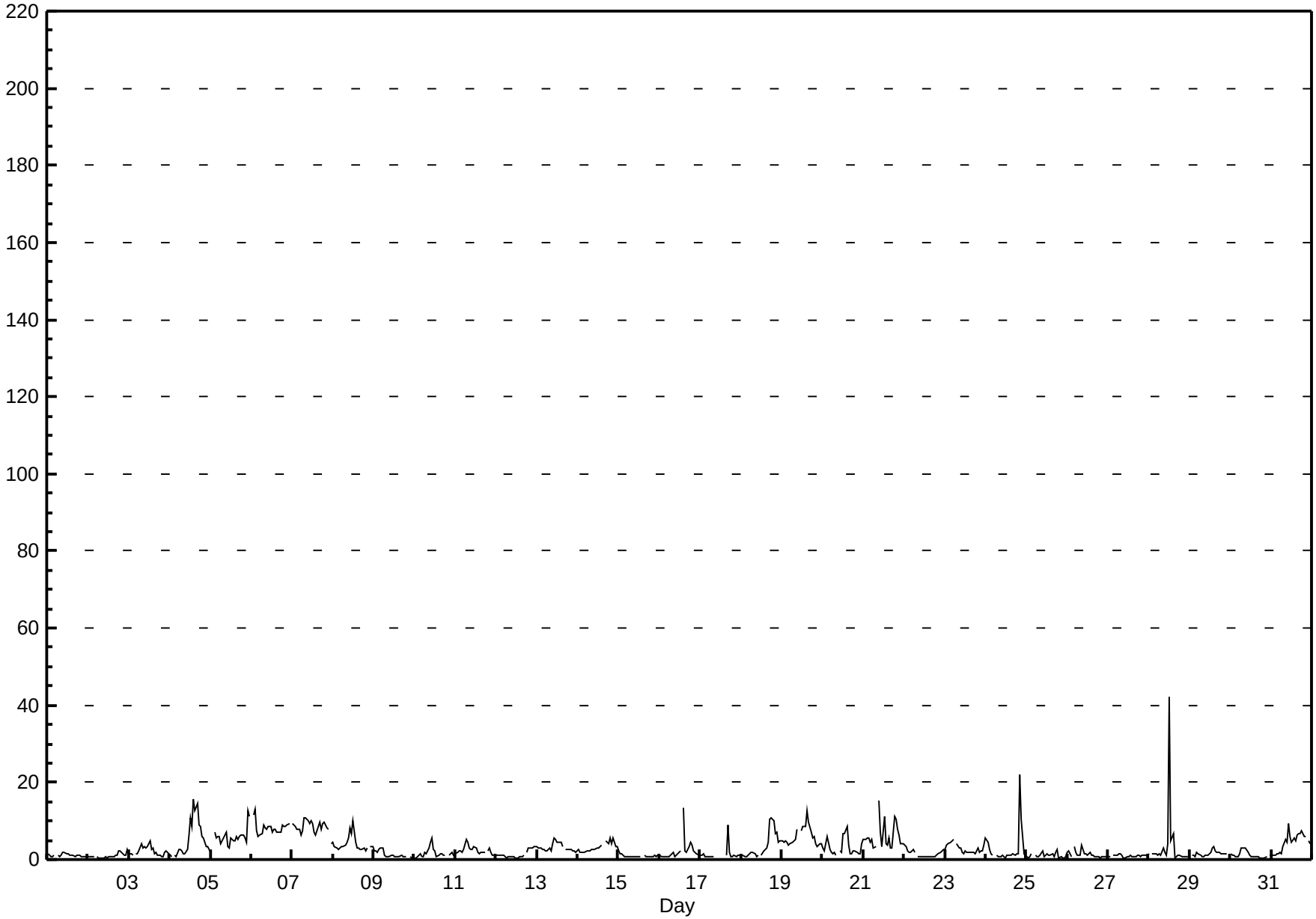
C - Calibration A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Oxides of Nitrogen (NO_X) - ppb

Portable Reno - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Oxides of Nitrogen (NO_X) - ppb

Portable Reno - December 2013

Maximum Value: 198.4 ppb on Dec 24 21:00

Maximum Daily Average: 16.5 ppb on Dec 28

Minimum Value: 1 ppb on Dec 30 20:00

Minimum Daily Average: 1.7 ppb on Dec 15

Maximum Diurnal Average: 15.3 ppb at hour 13

Minimum Diurnal Average: 3.9 ppb at hour 2

Monthly Average: 6.47 ppb

Percentiles: $P_1 = 0.7$ $P_{10} = 1.1$ $Q_1 = 1.9$ Median = 3.4 $Q_3 = 7.6$ $P_{90} = 12.4$ $P_{99} = 45.8$

Hours in Service:	744
Hours of Data:	706
Hours of Missing Data:	38
Hours of Calibration:	38
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	2	2	1	1	1	A	2	1	2	2	2	2	3	3	3	3	2	3	3	3	3	3	2	2	2.2	3.5
2-Dec	3	3	2	2	A	2	1	1	1	2	3	2	3	3	3	3	6	3	6	6	5	2	3	4	3.0	6.4
3-Dec	3	2	1	A	2	2	4	6	3	4	5	5	28	10	24	2	2	2	2	2	2	3	3	3	5.2	28.3
4-Dec	3	1	A	1	2	4	4	7	4	2	4	14	16	13	38	20	20	11	12	7	6	5	5	4	8.9	37.7
5-Dec	3	A	16	12	11	10	12	9	13	12	7	7	14	10	11	14	12	10	12	7	6	6	26	19	11.3	26.3
6-Dec	A	18	15	14	8	8	9	27	9	10	11	10	8	9	9	8	8	8	10	9	9	15	10	A	10.9	27.2
7-Dec	10	9	9	29	29	7	10	13	12	11	10	11	10	8	7	12	14	10	12	12	9	9	A	9	11.9	29.3
8-Dec	14	9	10	10	5	4	4	5	6	8	12	11	13	10	3	5	3	4	4	3	6	A	4	4	6.8	13.8
9-Dec	3	4	3	6	6	7	2	1	2	1	9	6	2	2	2	1	3	4	2	1	A	3	1	1	3.1	9.2
10-Dec	1	1	2	8	1	2	23	2	19	6	8	3	5	1	1	2	2	2	1	A	1	5	5	2	4.5	22.9
11-Dec	2	2	8	5	5	4	6	6	4	3	3	3	5	4	3	6	5	5	A	3	12	2	2	1	4.3	11.6
12-Dec	1	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	A	2	5	4	3	3	3	1.8	5.0
13-Dec	3	3	3	3	3	3	3	7	7	16	12	10	9	8	8	8	A	8	3	3	3	3	2	2	5.7	16.0
14-Dec	7	2	2	2	3	3	2	3	3	3	3	3	3	4	4	A	5	5	6	12	8	12	4	4	4.5	12.3
15-Dec	4	2	7	1	1	1	1	1	1	2	2	1	1	1	A	2	1	1	1	1	2	2	3	2	1.7	6.5
16-Dec	3	1	1	1	1	3	1	6	22	1	1	3	7	A	47	21	4	5	40	4	3	2	2	1	7.8	46.8
17-Dec	1	1	6	1	1	1	2	1	1	C	C	C	C	C	C	3	49	11	2	2	3	3	3	3	5.1	48.6
18-Dec	3	4	2	2	4	5	7	5	6	1	4	A	2	3	5	8	8	20	15	15	13	16	5	6	6.9	20.4
19-Dec	6	5	6	5	5	5	16	5	6	11	A	9	14	14	12	17	16	11	6	39	5	4	9	9	10.1	38.9
20-Dec	3	3	9	11	4	2	2	13	1	A	7	3	13	12	18	11	2	2	7	14	2	2	2	11	6.8	17.9
21-Dec	12	10	10	13	14	17	4	5	A	24	15	4	82	5	7	23	4	4	19	13	9	7	6	5	13.6	82.0
22-Dec	4	5	3	2	2	8	5	A	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	2.2	8.1
23-Dec	5	5	5	5	6	30	A	5	4	3	3	2	3	2	3	3	3	3	3	5	5	8	3	9	5.3	30.2
24-Dec	9	6	4	4	2	A	2	1	1	1	2	1	2	2	2	3	2	1	3	3	198	42	11	1	13.2	198.4
25-Dec	1	1	1	2	A	2	1	1	2	4	2	3	3	1	1	8	1	4	9	1	1	1	1	1	2.3	9.4
26-Dec	6	6	1	A	5	2	2	2	7	6	5	7	2	5	4	3	3	1	2	1	2	2	2	1	3.3	6.7
27-Dec	1	2	A	2	2	2	2	2	2	1	1	1	1	4	2	3	2	4	3	4	4	4	5	4	2.4	4.6
28-Dec	5	A	6	6	6	6	9	5	11	3	1	26	193	23	68	1	1	2	1	1	1	1	1	1	16.5	192.5
29-Dec	A	1	1	1	7	4	1	1	1	3	2	3	5	6	6	3	2	7	4	4	4	4	4	A	3.4	7.3
30-Dec	6	5	5	3	1	2	4	4	8	6	3	2	1	1	1	1	1	1	1	1	1	1	A	1	2.5	8.4
31-Dec	2	1	1	2	2	10	2	10	65	8	43	11	9	11	11	16	13	12	15	19	12	A	11	8	12.7	64.6
	4.3	3.9	4.9	5.4	4.8	5.3	4.8	5.3	7.5	5.5	6.2	5.7	15.3	6.1	10.6	7.0	6.6	5.5	6.9	6.7	11.3	5.8	4.8	4.4	Diurnal Average	
	13.8	17.7	16.4	28.6	29.3	30.2	22.9	27.2	64.6	24.2	43.0	25.8	192.5	23.4	68.3	23.0	48.6	20.4	39.8	38.9	198.4	42.2	26.3	19.3	Diurnal Maximum	

C - Calibration

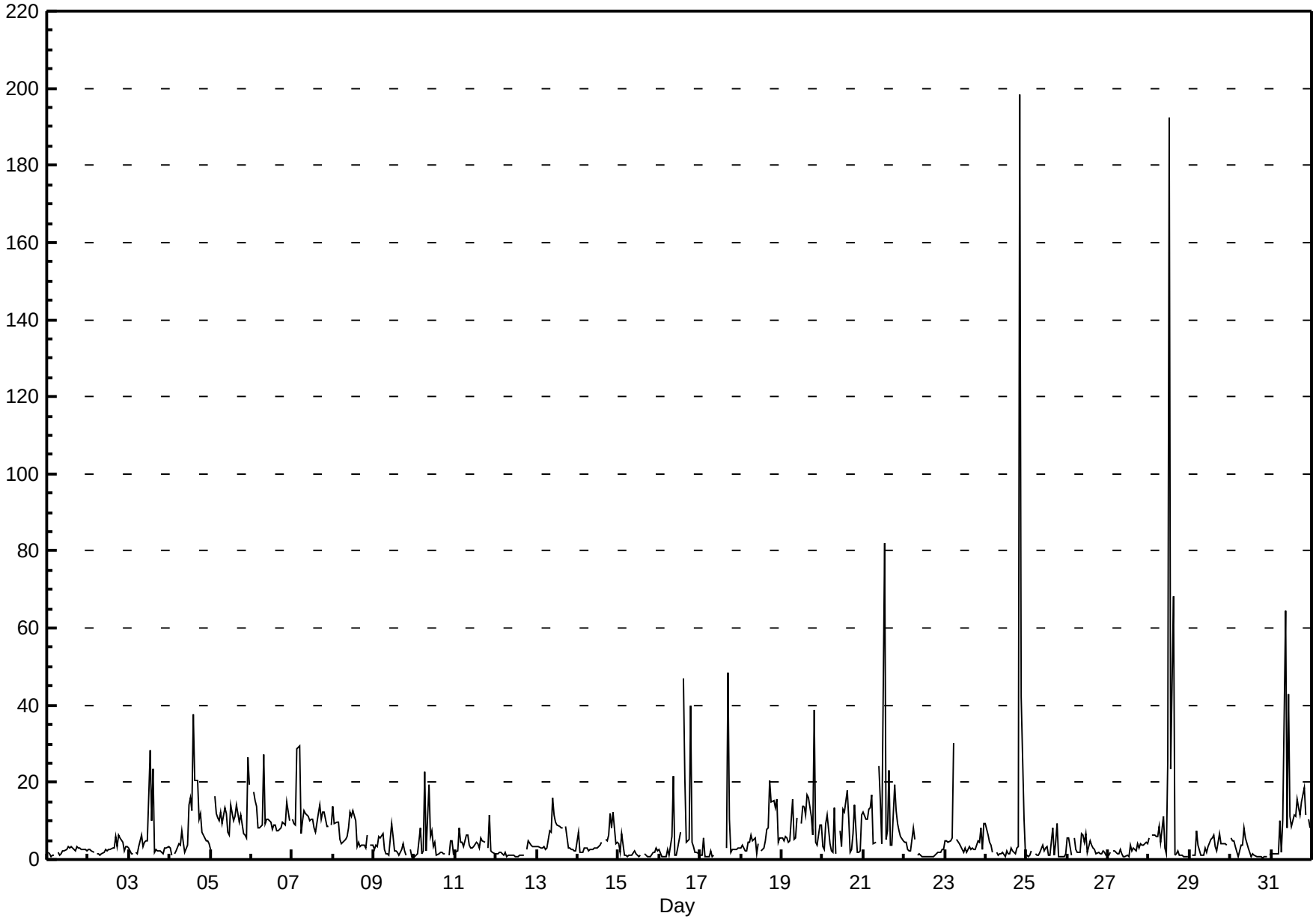
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Oxides of Nitrogen (NO_X) - ppb

Portable Reno - December 2013



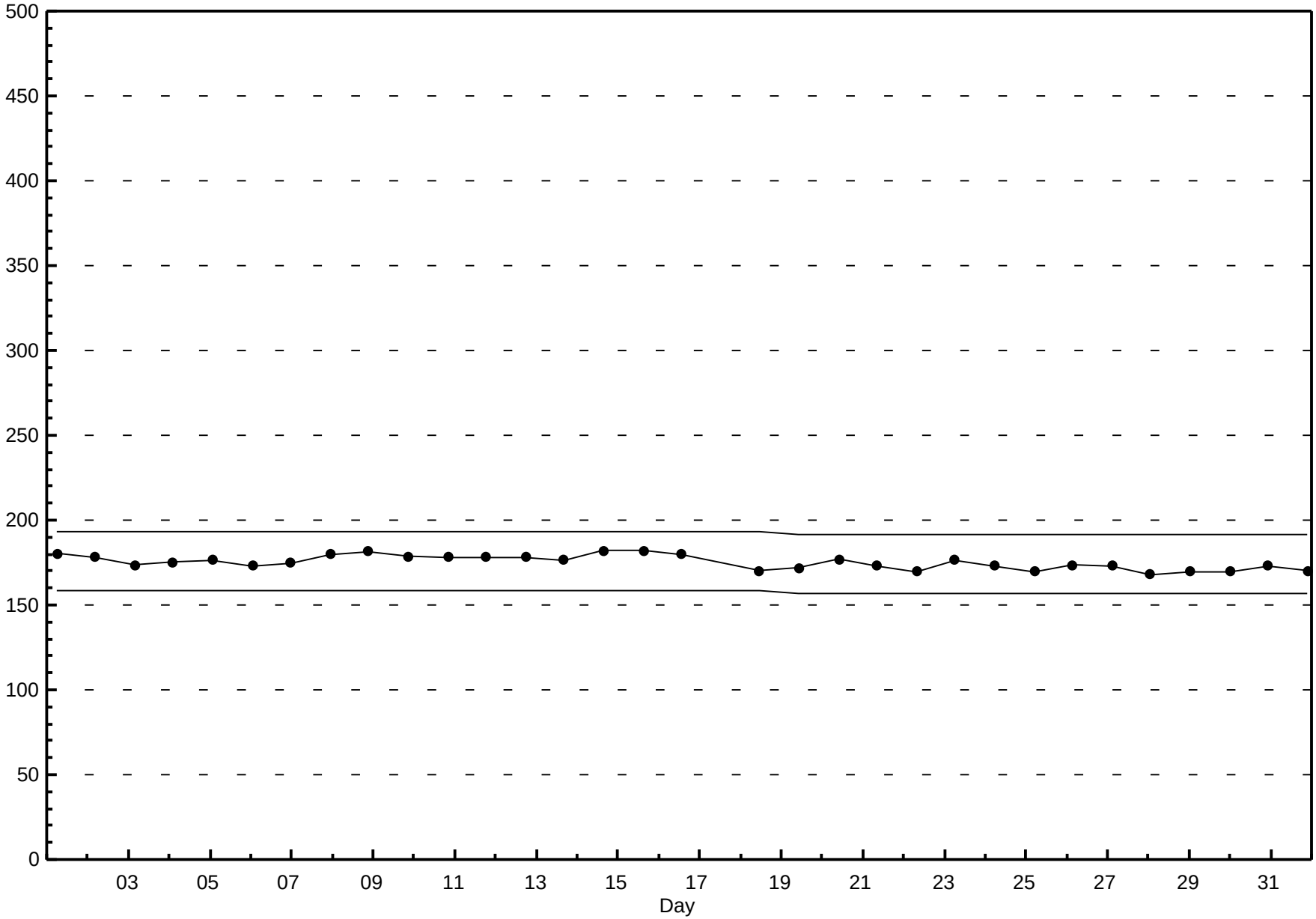
FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Span Responses

Oxides of Nitrogen (NO_X)

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

Ozone (O_3) - ppb

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 43.5 ppb on Dec 24 12:00

Maximum Daily Average: 38.4 ppb on Dec 25

Minimum Value: 14 ppb on Dec 21 10:00

Minimum Daily Average: 18.9 ppb on Dec 6

Maximum Diurnal Average: 29.5 ppb at hour 16

Minimum Diurnal Average: 28.0 ppb at hour 3

Monthly Average: 28.64 ppb

Percentiles: P_1 = 17.5 P_{10} = 21.5 Q_1 = 24.3 Median = 28.0 Q_3 = 32.7 P_{90} = 37.6 P_{99} = 40.7

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	22	22	22	21	21	A	22	23	21	20	19	18	19	20	20	22	22	22	22	23	23	24	25	25	21.6	25.4
2-Dec	26	25	26	26	A	26	27	27	27	27	28	28	28	29	29	29	29	29	29	28	29	29	30	28	27.8	29.6
3-Dec	28	29	31	A	31	31	30	28	29	28	29	30	30	33	33	33	33	34	35	35	35	33	33	34	31.4	34.9
4-Dec	34	34	A	34	35	30	30	32	33	32	31	29	26	28	24	24	20	25	25	26	24	28	27	26	28.6	34.8
5-Dec	29	A	21	25	26	26	28	27	25	24	26	26	25	25	25	23	23	21	21	21	22	24	16	17	23.8	29.2
6-Dec	A	16	14	19	20	20	19	17	18	19	20	21	21	21	22	22	20	19	17	18	18	17	17	A	18.9	21.7
7-Dec	19	19	20	21	21	22	21	19	19	21	23	22	23	24	25	22	21	23	21	22	24	24	A	31	22.0	30.7
8-Dec	29	30	31	30	29	28	28	28	26	25	26	27	26	30	30	31	31	30	30	32	32	A	32	31	29.3	32.1
9-Dec	33	33	33	32	31	31	34	37	38	38	37	37	37	37	37	37	37	38	38	37	A	36	34	33	35.4	38.3
10-Dec	33	33	33	32	32	32	31	30	29	27	28	31	32	34	33	31	31	31	31	A	30	30	29	30	30.9	33.7
11-Dec	30	29	28	27	28	26	23	23	25	25	24	23	25	28	30	30	31	31	A	30	29	30	30	30	27.7	30.9
12-Dec	30	30	30	29	29	29	30	29	29	29	29	29	29	29	28	28	28	A	27	25	24	23	23	23	27.9	30.4
13-Dec	22	22	23	23	23	23	23	23	23	22	22	23	23	23	23	23	A	23	23	22	22	22	22	22	22.7	23.4
14-Dec	21	22	22	22	22	21	21	21	20	20	21	22	22	23	22	A	23	24	28	31	33	30	33	32	24.2	33.4
15-Dec	34	35	36	36	37	37	38	40	41	40	39	39	39	39	A	38	38	38	39	38	38	37	37	36	37.7	40.6
16-Dec	37	38	39	39	39	40	40	39	40	40	40	40	39	A	37	39	39	37	37	36	36	35	35	37	38.1	40.5
17-Dec	36	36	36	37	36	36	36	36	36	35	34	30	A	C	C	C	23	25	25	25	25	25	24	26	31.2	37.5
18-Dec	27	27	27	27	27	27	26	27	28	28	28	A	29	27	26	26	24	18	19	20	23	22	24	24	25.3	28.9
19-Dec	25	26	26	26	26	25	25	25	24	23	A	25	26	27	27	24	24	26	27	27	25	26	26	27	25.7	27.5
20-Dec	26	28	24	21	24	27	29	30	30	A	29	30	23	25	25	29	32	31	30	28	28	28	28	24	27.4	31.6
21-Dec	19	18	19	19	19	19	20	21	A	14	23	27	25	28	28	26	27	27	19	19	22	24	26	26	22.4	28.0
22-Dec	27	27	29	30	29	27	29	A	32	31	33	35	37	37	37	38	38	38	38	38	38	37	36	34	33.6	38.2
23-Dec	33	31	29	28	27	27	A	30	33	32	30	29	28	28	27	27	29	30	29	26	25	22	22	25	28.1	33.2
24-Dec	27	31	35	37	38	A	39	39	39	39	38	43	41	39	40	41	40	40	40	40	33	35	41	42	38.2	43.5
25-Dec	38	36	33	34	A	37	38	40	40	40	42	41	41	41	39	38	38	37	36	38	39	39	40	40	38.4	41.8
26-Dec	37	36	38	A	35	35	31	33	31	30	31	35	32	31	32	32	32	33	33	32	31	30	31	31	32.7	38.3
27-Dec	32	33	A	34	33	34	33	33	33	33	32	32	31	31	31	31	30	29	29	29	28	28	29	28	31.2	33.6
28-Dec	28	A	28	28	27	27	26	26	24	25	26	25	21	25	26	28	27	27	26	27	27	27	27	27	26.3	28.2
29-Dec	A	26	26	26	25	26	27	27	27	28	28	29	27	25	25	25	25	24	24	24	24	25	25	A	25.9	29.5
30-Dec	26	26	25	25	25	24	22	23	24	25	26	28	32	33	34	34	34	33	34	35	33	31	A	29	28.7	34.8
31-Dec	29	28	28	28	28	27	27	26	25	23	22	24	25	25	25	24	22	22	21	21	21	A	23	23	24.6	28.5
	28.9	28.6	28.0	28.1	28.4	28.3	28.5	28.6	29.0	28.2	28.7	29.3	28.8	29.1	28.9	29.5	29.0	28.9	28.4	28.5	28.0	28.3	28.4	29.0	Diurnal Average	
	38.4	37.6	38.5	38.8	39.3	40.1	40.1	40.1	40.6	40.5	41.8	43.5	41.4	40.6	39.9	40.9	40.4	40.4	39.5	40.0	38.7	38.6	40.8	41.8	Diurnal Maximum	

C - Calibration A - Automated Daily Zero Span

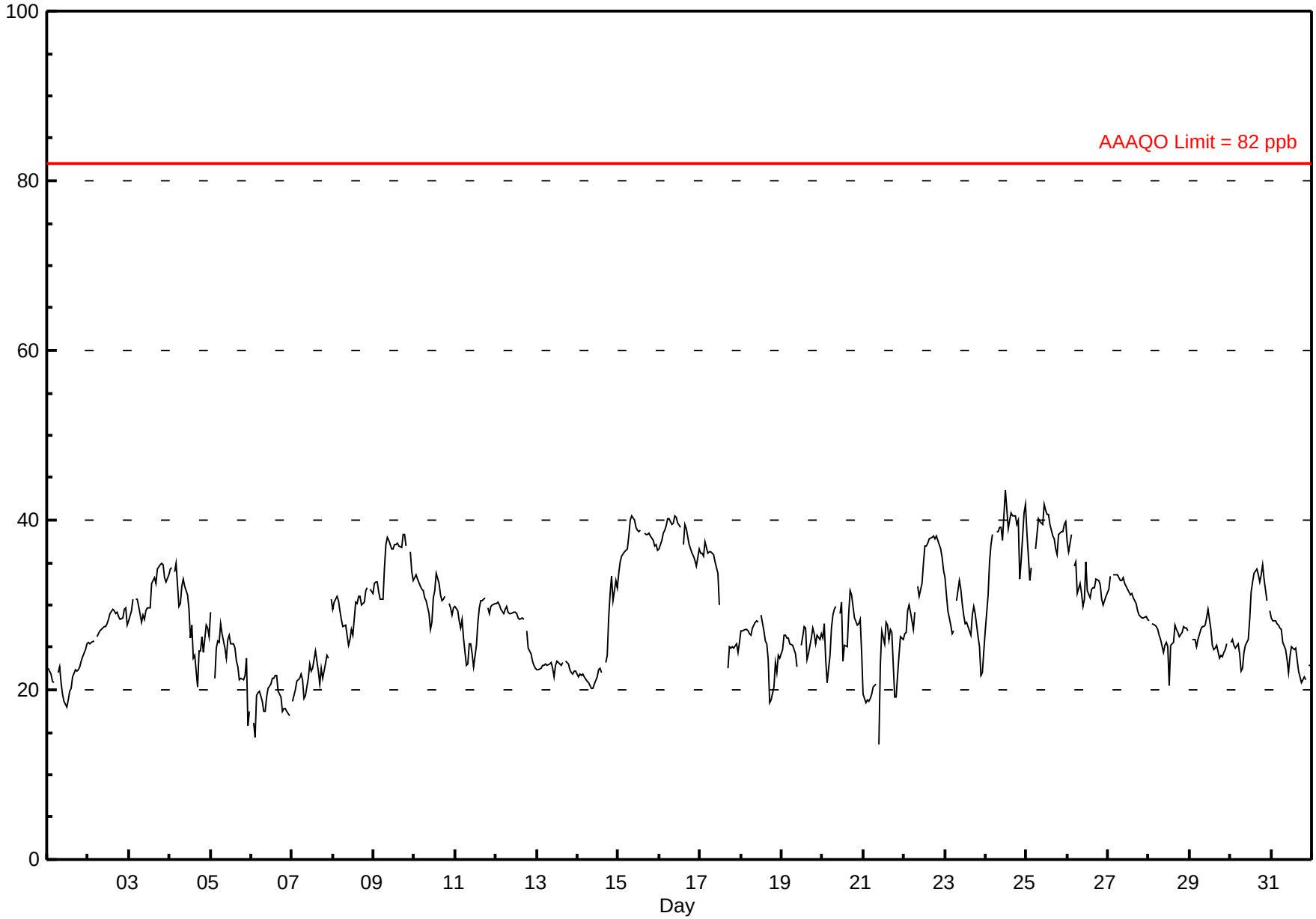
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82 ppb 24-hr na

Peace Airshed Zone Association

Hourly Averages

Ozone (O_3) - ppb

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Maximums

Ozone (O_3) - ppb

Portable Reno - December 2013

Maximum Value: 45.5 ppb on Dec 24 12:00

Maximum Daily Average: 40.0 ppb on Dec 25

Minimum Value: 18 ppb on Dec 6 23:00

Minimum Daily Average: 20.1 ppb on Dec 6

Maximum Diurnal Average: 30.6 ppb at hour 16

Minimum Diurnal Average: 29.1 ppb at hour 4

Monthly Average: 29.80 ppb

Percentiles: P_1 = 18.6 P_{10} = 22.5 Q_1 = 25.5 Median = 29.0 Q_3 = 33.9 P_{90} = 38.5 P_{99} = 41.7

Hours in Service:	744
Hours of Data:	708
Hours of Missing Data:	36
Hours of Calibration:	36
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	24	23	22	22	21	A	23	23	23	20	19	19	20	20	21	23	23	23	23	24	24	25	26	26	22.3	26.0
2-Dec	26	26	26	26	A	27	27	27	27	27	28	28	29	29	30	30	29	30	29	29	29	30	30	29	28.3	30.4
3-Dec	29	30	31	A	31	31	31	29	30	29	30	30	31	34	34	34	33	35	35	35	35	35	34	35	32.3	35.4
4-Dec	35	35	A	35	35	35	33	34	34	33	32	32	28	29	28	28	25	26	27	27	26	32	31	30	30.9	35.4
5-Dec	30	A	27	29	29	27	29	28	26	25	28	27	27	26	26	24	24	22	22	22	23	25	22	20	25.6	30.0
6-Dec	A	19	19	21	21	21	21	18	19	20	21	21	22	22	23	23	21	20	19	18	18	19	18	A	20.1	22.6
7-Dec	20	20	21	22	23	22	22	20	21	23	24	23	24	25	26	25	23	24	24	25	26	25	A	32	23.3	31.9
8-Dec	31	32	32	32	30	30	29	29	27	26	28	29	28	32	32	33	32	31	32	33	33	A	33	33	30.6	33.0
9-Dec	33	34	33	33	31	31	36	38	38	38	37	37	38	37	38	37	37	39	39	38	A	38	35	34	36.1	39.5
10-Dec	34	34	34	33	32	32	32	31	31	29	31	32	34	35	34	32	31	32	32	A	31	31	30	30	32.0	34.5
11-Dec	31	30	29	28	29	28	25	25	26	26	25	23	28	29	31	31	31	32	A	30	30	30	30	30	28.6	31.9
12-Dec	31	31	30	30	29	30	30	29	29	29	29	29	29	29	29	29	29	A	27	26	25	24	24	23	28.4	30.9
13-Dec	23	23	23	23	23	24	24	24	24	24	23	24	24	24	23	24	A	24	24	23	22	22	23	23	23.1	23.8
14-Dec	22	22	22	22	22	22	21	21	21	21	22	22	23	23	23	A	24	25	33	35	35	33	34	33	25.2	35.4
15-Dec	35	35	36	37	37	37	39	40	41	41	40	39	39	39	A	39	38	39	39	39	38	37	38	37	38.4	40.9
16-Dec	37	38	39	39	40	41	40	40	41	41	41	40	40	A	40	40	40	38	38	37	37	37	36	37	39.1	40.9
17-Dec	37	37	37	38	37	36	37	37	36	36	35	34	A	C	C	C	25	26	26	26	25	26	25	27	32.2	38.4
18-Dec	27	27	28	28	28	27	27	28	28	29	29	A	30	29	27	26	26	23	22	23	25	25	25	24	26.6	29.7
19-Dec	26	27	27	27	27	26	26	25	25	24	A	26	28	29	29	25	27	28	29	28	27	27	28	29	27.1	29.1
20-Dec	27	29	29	24	25	29	30	30	30	A	30	31	31	32	32	32	32	32	32	30	28	28	29	28	29.6	32.2
21-Dec	21	19	20	19	19	20	21	21	A	19	26	28	28	29	28	28	27	27	27	21	24	26	28	27	24.2	28.9
22-Dec	28	29	30	31	30	28	31	A	33	32	34	36	38	37	38	38	39	38	38	39	38	37	36	35	34.6	38.9
23-Dec	34	32	30	29	30	29	A	33	34	33	32	29	29	28	28	27	32	34	34	27	28	23	24	27	29.8	34.0
24-Dec	31	33	36	38	39	A	39	39	41	40	39	46	44	40	41	42	41	41	40	40	39	39	43	44	39.9	45.5
25-Dec	41	43	39	36	A	37	40	40	41	41	42	42	42	41	40	39	38	38	39	39	39	39	40	40	40.0	43.2
26-Dec	40	38	39	A	38	38	33	35	33	33	35	36	36	31	32	33	32	33	34	33	32	31	31	32	34.3	39.5
27-Dec	33	34	A	34	34	34	34	33	34	34	33	32	32	32	32	31	31	30	29	29	29	29	29	29	31.8	34.1
28-Dec	28	A	28	28	28	28	27	26	26	26	26	26	25	27	27	28	28	27	27	27	28	28	28	27	27.3	28.4
29-Dec	A	26	26	26	26	27	27	28	28	28	30	30	30	26	25	25	26	24	24	24	25	25	26	A	26.7	30.4
30-Dec	26	26	26	25	26	25	23	24	26	27	28	31	33	33	34	35	34	33	34	35	35	31	A	30	29.7	35.4
31-Dec	29	29	28	28	28	28	28	27	26	24	24	25	25	25	25	25	23	23	21	23	22	A	23	24	25.5	29.4
	30.0	29.8	29.3	29.1	29.3	29.4	29.5	29.5	30.0	29.3	30.0	30.4	30.4	30.2	30.2	30.6	30.1	29.9	30.0	29.6	29.3	29.6	29.6	30.2	Diurnal Average	
	41.2	43.2	38.9	39.4	39.9	40.9	40.4	40.5	40.9	41.5	42.5	45.5	44.2	41.4	41.0	42.0	41.3	41.0	40.5	40.5	39.5	39.4	43.0	43.5	Diurnal Maximum	

C - Calibration

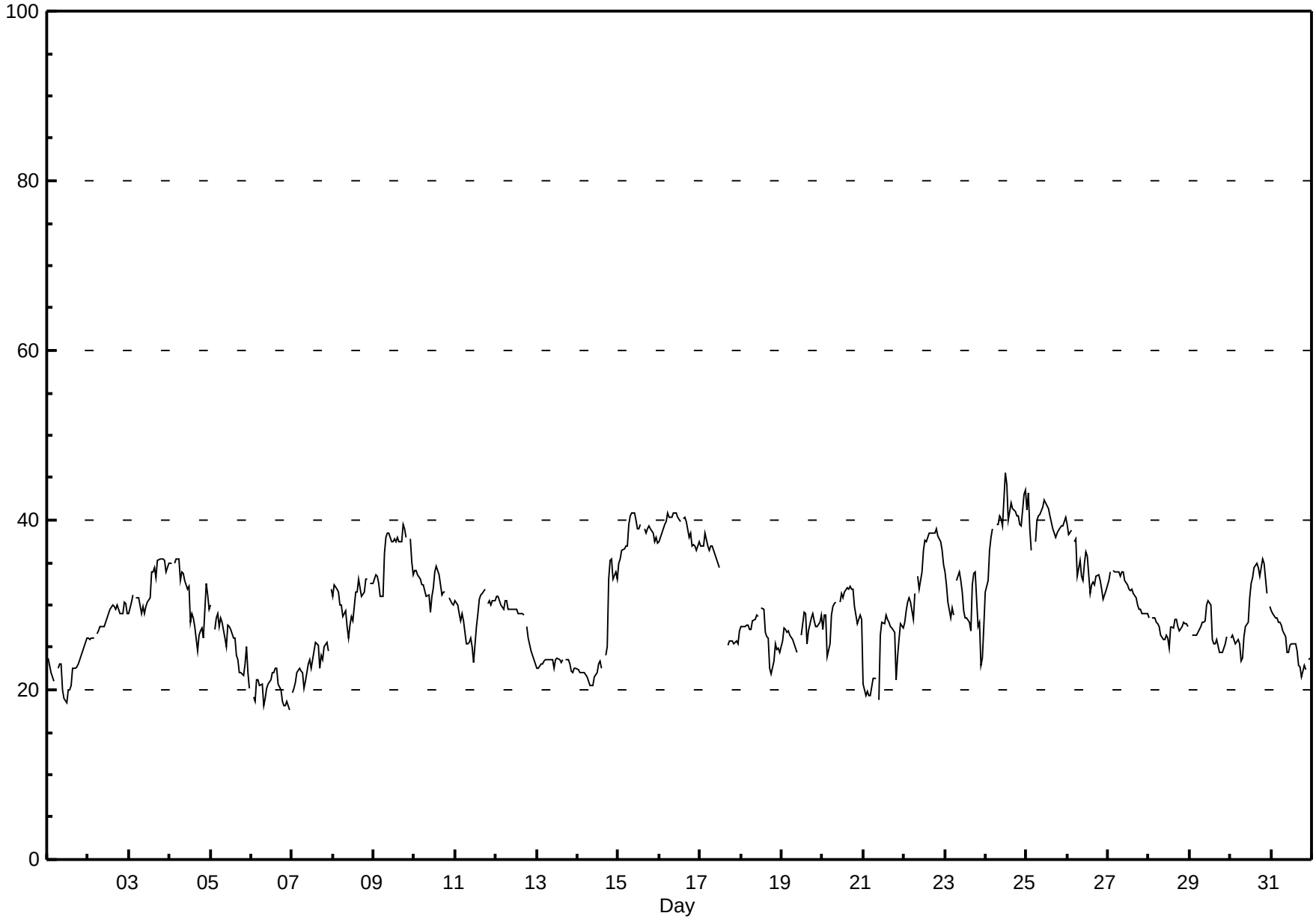
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Ozone (O_3) - ppb

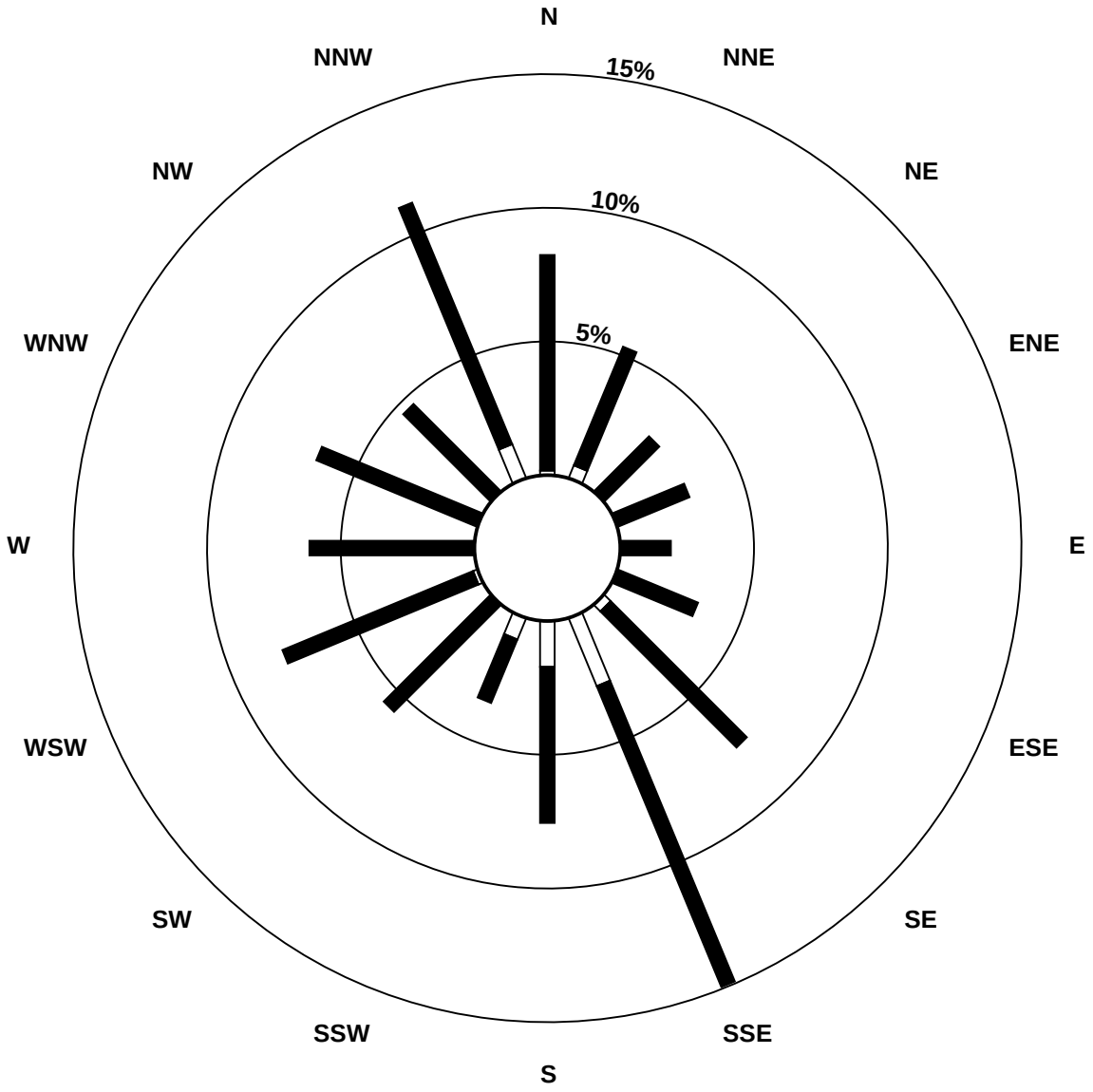
Portable Reno - December 2013



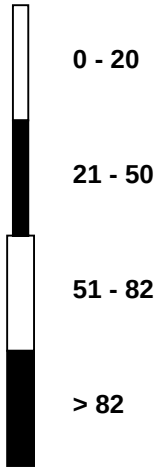
Pollutant Rose

Ozone (O_3) - ppb

Portable Reno - December 2013



Pollutant Classes (ppb)



Peace Airshed Zone Association

Eight Hour Running Averages

Ozone (O_3) - ppb

Portable Reno - December 2013

Maximum Value: 40.6 ppb on Dec 24 19:00

Minimum Value: 17.5 ppb on Dec 6 06:00

Percentiles: P_1 = 18.0 P_{10} = 21.9 Q_1 = 24.7 Median = 28.0 Q_3 = 32.2 P_{90} = 37.4 P_{99} = 40.1

Hours in Service:	744
Hours of Data:	737
Hours of Missing Data:	7
Hours of Calibration:	7
Percent Operational Time:	100.0

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-Dec	24	23	23	23	22	22	22	22	22	21	21	20	20	20	20	20	20	20	21	21	22	22	23	23	23.5
2-Dec	24	24	25	25	25	26	26	26	26	27	27	27	27	28	28	28	28	29	29	29	29	29	29	29	29.0
3-Dec	29	29	29	29	29	30	30	30	30	30	29	29	29	29	30	31	31	32	32	33	34	34	34	34	33.8
4-Dec	34	34	34	34	34	33	33	33	33	32	32	32	31	30	29	28	27	26	25	25	24	24	25	25	34.1
5-Dec	26	27	26	26	26	26	26	26	25	25	26	26	26	26	25	25	25	24	24	23	23	23	21	21	26.5
6-Dec	20	20	19	18	18	17	18	18	18	18	19	19	19	20	20	20	21	21	20	20	20	19	19	18	20.7
7-Dec	18	18	18	19	19	20	21	20	20	21	21	21	21	22	22	22	23	23	22	22	23	23	22	24	23.6
8-Dec	25	26	27	29	29	30	30	29	29	28	28	27	27	27	27	28	28	29	30	30	31	31	31	31	31.2
9-Dec	31	32	32	32	32	32	32	33	33	34	35	35	36	37	37	37	37	37	37	37	37	37	37	36	37.4
10-Dec	36	35	34	34	33	33	32	32	32	31	30	30	30	30	30	30	31	31	32	32	31	31	30	30	35.7
11-Dec	30	30	29	29	29	28	28	27	26	26	25	25	24	25	25	26	27	28	28	29	30	30	30	30	30.1
12-Dec	30	30	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	28	28	27	26	26	25	30.0
13-Dec	24	24	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	22	23.9
14-Dec	22	22	22	22	22	22	22	21	21	21	21	21	21	21	21	21	22	22	23	25	26	28	29	29	29.5
15-Dec	31	32	33	34	34	35	36	37	37	38	38	39	39	39	39	39	39	39	39	38	38	38	38	38	39.4
16-Dec	37	37	37	37	38	38	38	39	39	40	40	40	40	40	39	39	39	39	38	38	37	37	37	36	39.9
17-Dec	36	36	36	36	36	36	36	36	36	36	36	35	35	35	N	N	N	N	N	N	N	25	25	25	36.3
18-Dec	25	26	26	26	26	26	27	27	27	27	27	27	28	28	28	27	27	25	24	24	23	22	22	22	27.6
19-Dec	22	23	24	25	25	25	26	26	26	25	25	25	25	25	25	25	25	26	26	26	26	26	26	26	26.1
20-Dec	26	27	26	25	25	25	26	26	26	26	27	28	28	28	28	27	28	28	28	28	29	29	29	29	29.2
21-Dec	27	26	24	23	22	21	20	19	19	19	19	20	21	23	24	24	25	26	26	25	24	24	24	24	27.1
22-Dec	24	24	25	26	27	28	28	28	29	30	30	31	32	33	35	35	36	37	37	38	38	38	37	37	37.7
23-Dec	36	36	34	33	32	31	30	29	29	29	29	30	30	30	30	29	29	28	28	28	28	27	26	26	36.4
24-Dec	26	26	27	28	30	31	33	35	37	38	38	39	40	40	40	40	40	40	41	40	39	39	39	39	40.6
25-Dec	39	38	37	37	37	37	37	37	37	37	39	40	40	40	40	40	40	40	39	38	38	38	38	38	40.4
26-Dec	38	38	38	38	38	37	36	35	34	33	32	33	32	32	32	32	32	32	32	32	32	32	32	32	38.4
27-Dec	32	32	31	32	32	32	33	33	33	33	33	33	33	32	32	32	32	31	31	30	30	29	29	29	33.3
28-Dec	29	29	28	28	28	28	28	27	27	27	26	26	25	25	25	25	25	25	26	26	27	27	27	27	28.6
29-Dec	27	27	27	27	26	26	26	26	26	27	27	27	28	28	27	27	27	26	26	25	25	24	25	25	27.6
30-Dec	25	25	25	25	25	25	25	25	24	24	24	25	26	27	28	30	31	32	33	33	34	33	33	33	33.6
31-Dec	32	31	30	29	29	28	28	28	27	26	26	25	25	25	24	24	24	23	23	23	23	22	22	22	31.8
Diurnal Maximums	38.7	38.1	38.4	38.4	37.8	38.1	38.4	38.8	39.2	39.6	39.8	39.9	39.9	40.2	40.4	40.1	40.2	40.4	40.6	40.2	39.2	38.7	38.8	38.9	

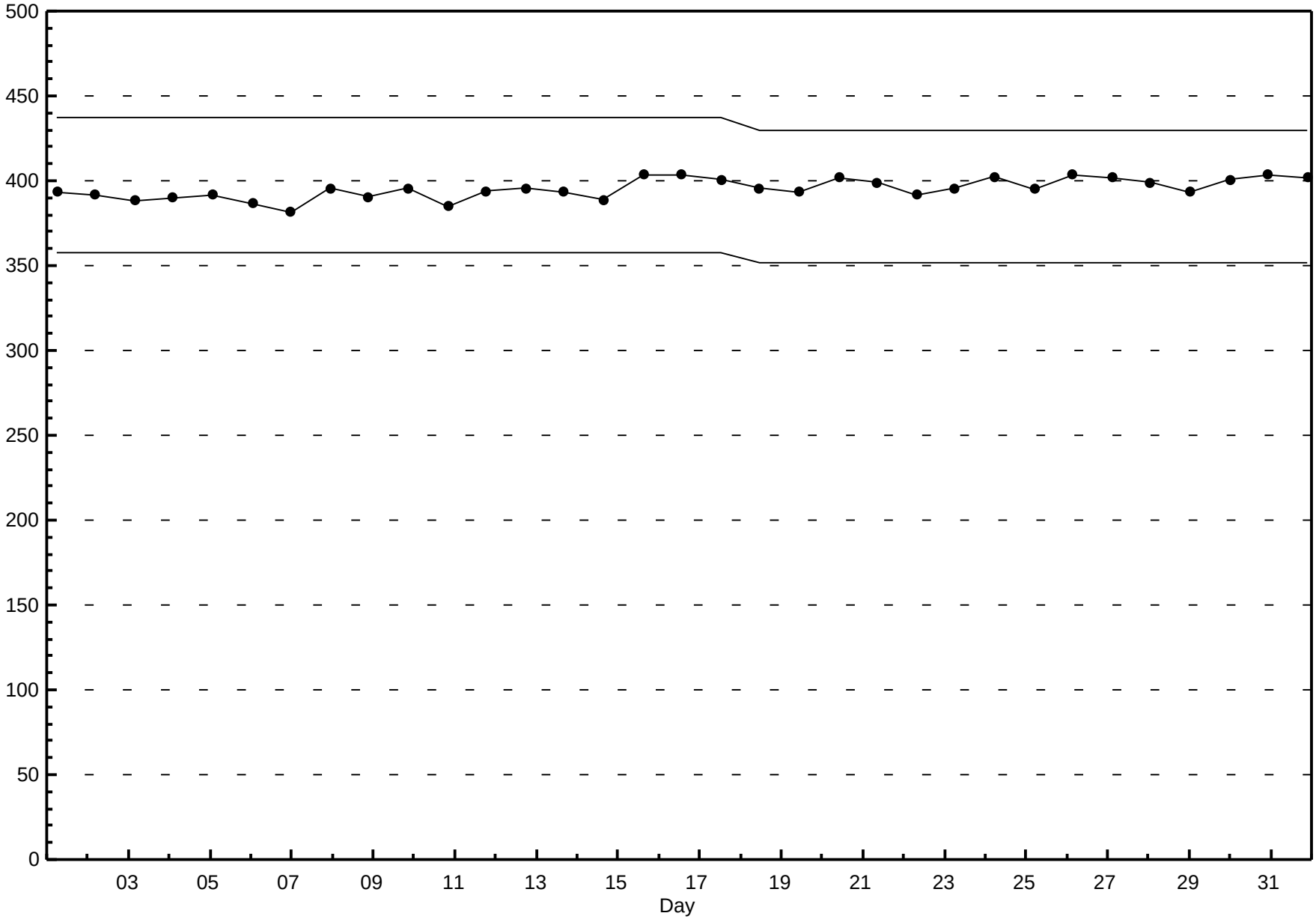
N - Not Valid

Peace Airshed Zone Association

Span Responses

Ozone (O_3)

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

Total Hydrocarbons (THC) - ppm

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 2.95 ppm on Dec 16 20:00

Maximum Daily Average: 2.50 ppm on Dec 17

Minimum Value: 2.0 ppm on Dec 26 13:00

Minimum Daily Average: 2.07 ppm on Dec 15

Maximum Diurnal Average: 2.25 ppm at hour 14

Minimum Diurnal Average: 2.21 ppm at hour 16

Monthly Average: 2.231 ppm

Percentiles: P_1 = 2.03 P_{10} = 2.12 Q_1 = 2.16 Median = 2.21 Q_3 = 2.27 P_{90} = 2.36 P_{99} = 2.73

Hours in Service:	660
Hours of Data:	621
Hours of Missing Data:	39
Hours of Calibration:	39
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
2-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
3-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
4-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	C	C	C	C	C	2.1	2.1	2.2	2.2	2.2	2.1	2.2	--	2.18
5-Dec	2.2	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	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.3	2.21	2.39
6-Dec	A	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	A	2.28	2.35
7-Dec	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	A	2.2	2.27	2.33
8-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.2	2.2	A	2.3	2.3	2.26	2.43
9-Dec	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.1	2.1	2.16	2.24
10-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	A	2.2	2.2	2.1	2.1	2.20	2.39
11-Dec	2.1	2.2	2.2	2.2	2.2	2.2	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	A	2.2	2.2	2.2	2.2	2.1	2.21	2.36
12-Dec	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	2.2	2.2	2.2	2.2	A	2.2	2.2	2.2	2.2	2.2	2.2	2.17	2.18
13-Dec	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	2.2	2.2	2.2	A	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.18	2.23
14-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.3	2.3	2.3	2.3	A	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.20	2.27
15-Dec	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.07	2.16
16-Dec	2.1	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	A	2.1	2.0	C	2.6	2.8	3.0	2.7	2.7	2.6	2.6	2.29	2.95
17-Dec	2.6	2.6	2.6	2.5	2.6	2.6	2.5	2.5	2.5	2.6	2.7	2.7	A	2.8	C	C	C	C	2.3	2.3	2.3	2.3	2.3	2.3	2.50	2.83
18-Dec	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.2	2.2	A	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.26	2.37
19-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	A	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.2	2.3	2.3	2.3	2.3	2.2	2.27	2.41
20-Dec	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	A	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.22	2.31
21-Dec	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	A	2.6	2.3	2.3	2.4	2.3	2.3	2.2	2.2	2.3	2.6	2.6	2.5	2.6	2.5	2.4	2.36	2.61
22-Dec	2.3	2.3	2.3	2.3	2.3	2.3	2.3	A	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.22	2.34
23-Dec	2.2	2.2	2.2	2.2	2.3	2.3	A	2.2	2.1	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.23	2.32
24-Dec	2.2	2.2	2.1	2.0	2.1	A	2.2	2.1	2.1	2.2	2.2	2.1	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.3	2.3	2.21	2.33
25-Dec	2.3	2.3	2.3	2.3	A	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	2.1	2.0	2.0	2.0	2.0	2.1	2.14	2.29
26-Dec	2.1	2.1	2.1	A	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.12	2.16
27-Dec	2.2	2.1	A	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	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.19	2.23
28-Dec	2.2	A	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.8	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.26	2.79
29-Dec	A	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	A	2.25	2.41
30-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.7	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	A	2.2	2.24	2.71
31-Dec	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	A	2.4	2.3	2.34	2.43
	2.21	2.22	2.22	2.22	2.22	2.22	2.23	2.25	2.23	2.25	2.23	2.24	2.24	2.25	2.23	2.21	2.22	2.22	2.25	2.24	2.24	2.23	2.23	2.22	Diurnal Average	
	2.57	2.60	2.59	2.54	2.56	2.56	2.55	2.71	2.55	2.60	2.66	2.73	2.79	2.83	2.41	2.41	2.40	2.65	2.83	2.95	2.73	2.68	2.61	2.55	Diurnal Maximum	

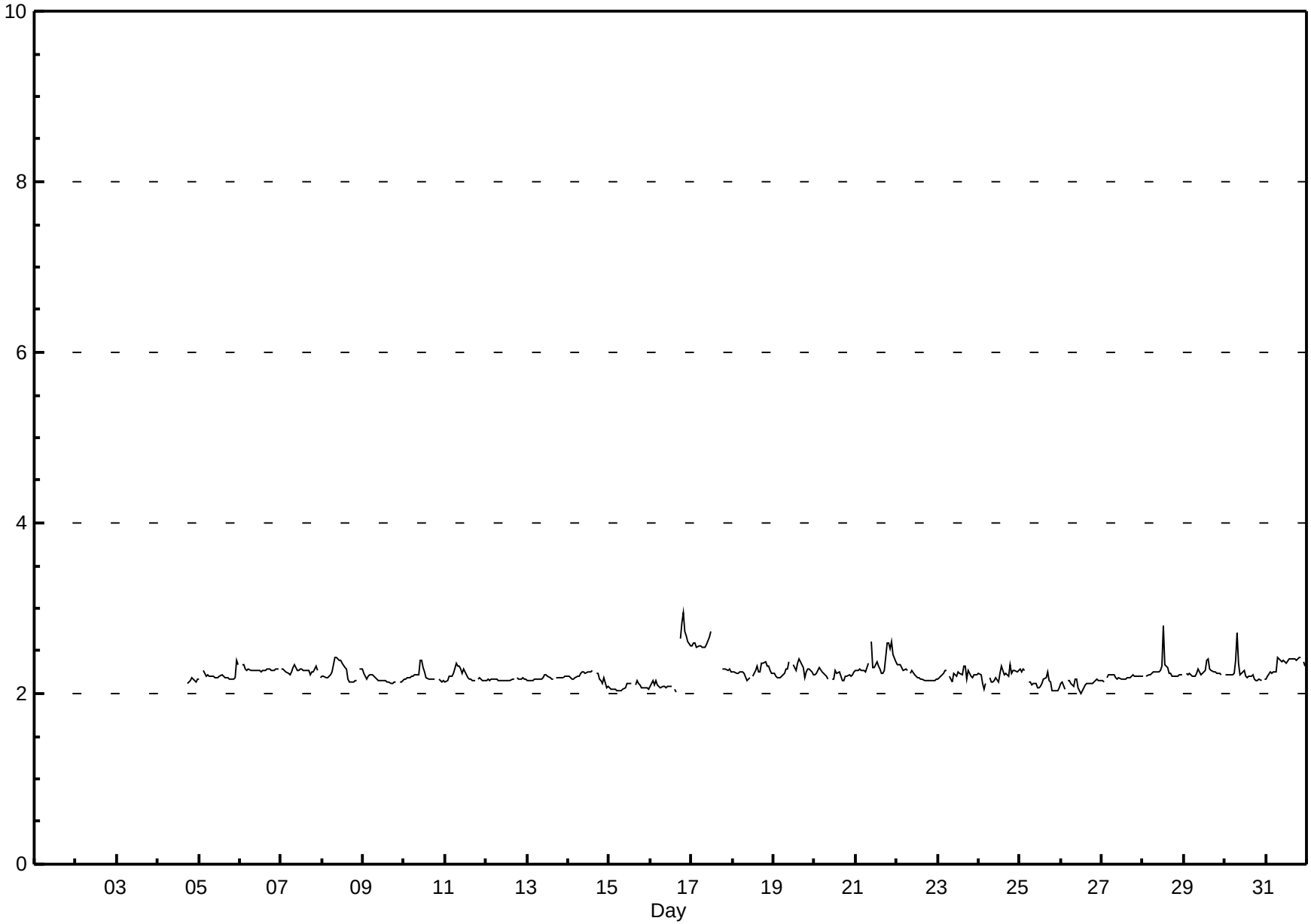
C - Calibration NS - Not in service A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Averages

Total Hydrocarbons (THC) - ppm

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Maximums

Total Hydrocarbons (THC) - ppm

Portable Reno - December 2013

Maximum Value: 4.42 ppm on Dec 28 13:00

Maximum Daily Average: 2.57 ppm on Dec 17

Minimum Value: 2.1 ppm on Dec 25 21:00

Minimum Daily Average: 2.14 ppm on Dec 15

Maximum Diurnal Average: 2.38 ppm at hour 13

Minimum Diurnal Average: 2.28 ppm at hour 24

Monthly Average: 2.308 ppm

Percentiles: P_1 = 2.07 P_{10} = 2.19 Q_1 = 2.22 Median = 2.27 Q_3 = 2.34 P_{90} = 2.48 P_{99} = 2.85

Hours in Service:	660
Hours of Data:	621
Hours of Missing Data:	39
Hours of Calibration:	39
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
2-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
3-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--
4-Dec	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	C	C	C	C	C	2.2	2.2	2.2	2.3	2.2	2.2	2.2	--	2.27
5-Dec	2.2	A	2.3	2.3	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.6	2.5	2.28	2.61
6-Dec	A	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	A	2.34	2.46
7-Dec	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.5	2.4	A	2.2	2.34	2.52
8-Dec	2.3	2.3	2.2	2.2	2.3	2.3	2.5	2.7	2.5	2.5	2.5	2.5	2.4	2.5	2.4	2.3	2.2	2.2	2.2	2.2	2.2	A	2.4	2.4	2.35	2.66
9-Dec	2.3	2.3	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	2.2	2.2	2.2	2.2	2.2	A	2.2	2.2	2.2	2.22	2.29
10-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	A	2.2	2.2	2.2	2.2	2.26	2.46
11-Dec	2.2	2.2	2.3	2.3	2.3	2.3	2.5	2.5	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	A	2.2	2.3	2.2	2.2	2.2	2.27	2.49
12-Dec	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	2.2	2.2	2.2	2.2	A	2.2	2.2	2.2	2.2	2.2	2.2	2.21	2.23
13-Dec	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	A	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.23	2.29
14-Dec	2.3	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	A	2.3	2.3	2.3	2.3	2.2	2.4	2.1	2.1	2.27	2.38
15-Dec	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	A	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.14	2.26
16-Dec	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.3	2.2	2.1	2.1	2.1	2.1	A	2.1	2.1	C	2.7	3.2	3.2	2.8	2.7	2.7	2.6	2.39	3.20
17-Dec	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.8	A	2.9	C	C	C	C	2.3	2.3	2.3	2.3	2.3	2.3	2.57	2.88
18-Dec	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	A	2.3	2.4	2.6	2.3	2.3	2.5	2.4	2.5	2.5	2.4	2.3	2.3	2.35	2.61
19-Dec	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.5	A	2.4	2.4	2.4	2.5	2.7	2.5	2.5	2.2	2.3	2.3	2.3	2.3	2.3	2.34	2.69
20-Dec	2.3	2.3	2.4	2.4	2.3	2.3	2.3	2.2	2.2	A	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.2	2.3	2.3	2.28	2.36
21-Dec	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.7	A	2.8	2.5	2.6	2.5	2.4	2.3	2.3	2.3	2.4	2.8	2.7	2.7	2.7	2.7	2.4	2.48	2.83
22-Dec	2.4	2.4	2.4	2.3	2.3	2.3	2.3	A	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.26	2.40
23-Dec	2.2	2.3	2.3	2.3	2.3	2.3	A	2.3	2.2	2.4	2.3	2.3	2.3	2.3	2.3	2.5	2.9	2.2	2.6	2.3	2.2	2.3	2.3	2.4	2.34	2.86
24-Dec	2.4	2.5	2.3	2.2	2.2	A	2.4	2.2	2.2	2.3	2.3	2.2	2.5	2.4	2.4	2.4	2.5	2.3	2.7	2.3	2.7	2.3	2.3	2.3	2.36	2.74
25-Dec	2.4	2.3	2.4	2.4	A	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.2	2.3	2.4	2.6	2.5	2.1	2.1	2.1	2.1	2.1	2.25	2.60
26-Dec	2.6	2.6	2.1	A	2.2	2.2	2.2	2.2	2.5	2.4	2.1	2.5	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.24	2.58
27-Dec	2.2	2.2	A	2.3	2.3	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	2.2	2.3	2.3	2.2	2.2	2.24	2.27
28-Dec	2.3	A	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	4.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.39	4.42
29-Dec	A	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	A	2.31	2.49
30-Dec	2.3	2.3	2.3	2.3	2.3	2.3	2.7	2.9	2.5	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	A	2.2	2.31	2.85
31-Dec	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.5	2.4	2.5	2.4	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.5	A	2.4	2.4	2.40	2.53
	2.29	2.30	2.28	2.28	2.28	2.28	2.31	2.34	2.31	2.33	2.30	2.33	2.38	2.33	2.30	2.29	2.31	2.30	2.35	2.31	2.33	2.29	2.30	2.28	Diurnal Average	
	2.64	2.69	2.69	2.60	2.64	2.62	2.68	2.85	2.62	2.83	2.74	2.81	4.42	2.88	2.61	2.69	2.86	2.73	3.20	3.16	2.84	2.75	2.70	2.61	Diurnal Maximum	

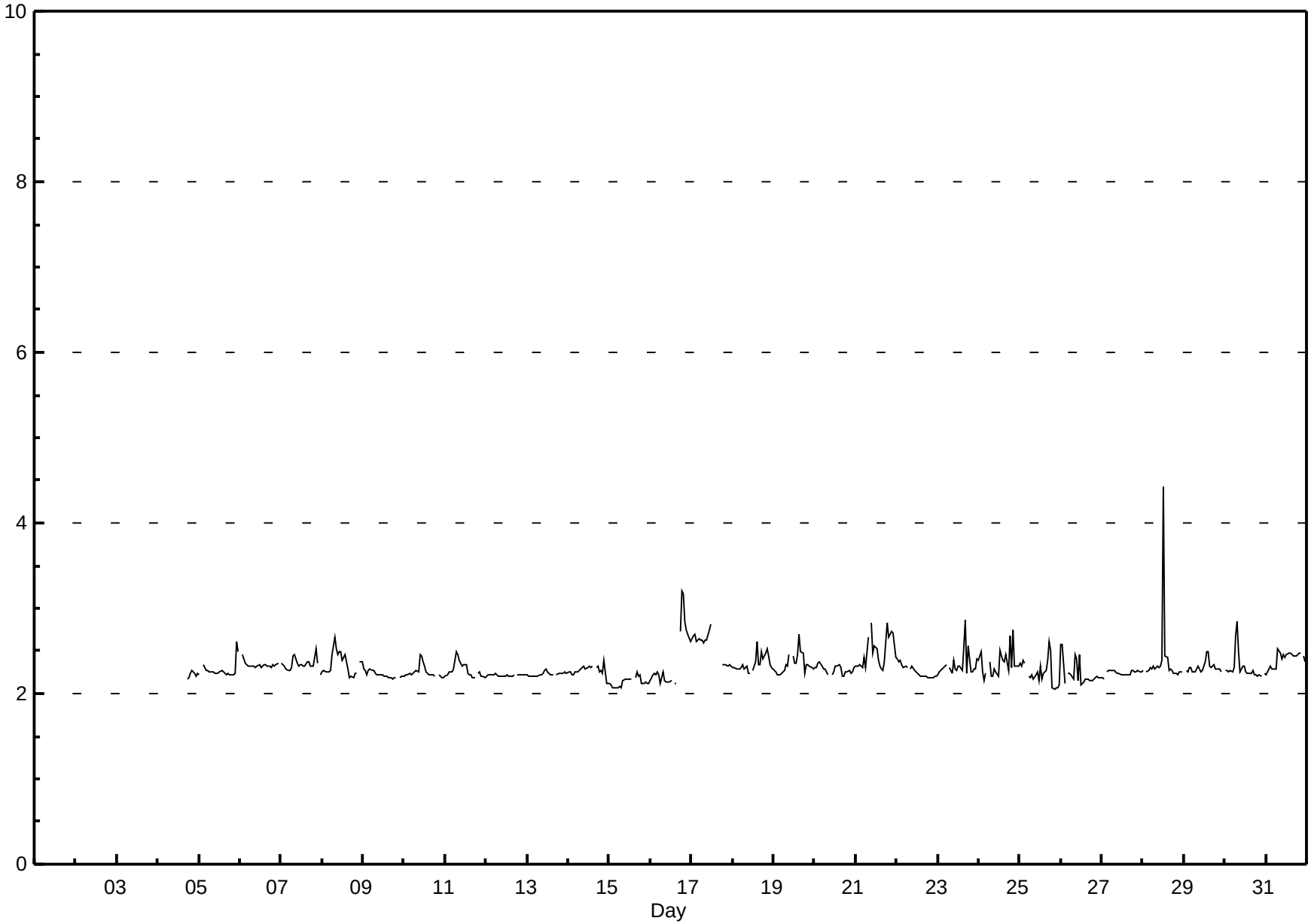
C - Calibration NS - Not in service A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Total Hydrocarbons (THC) - ppm

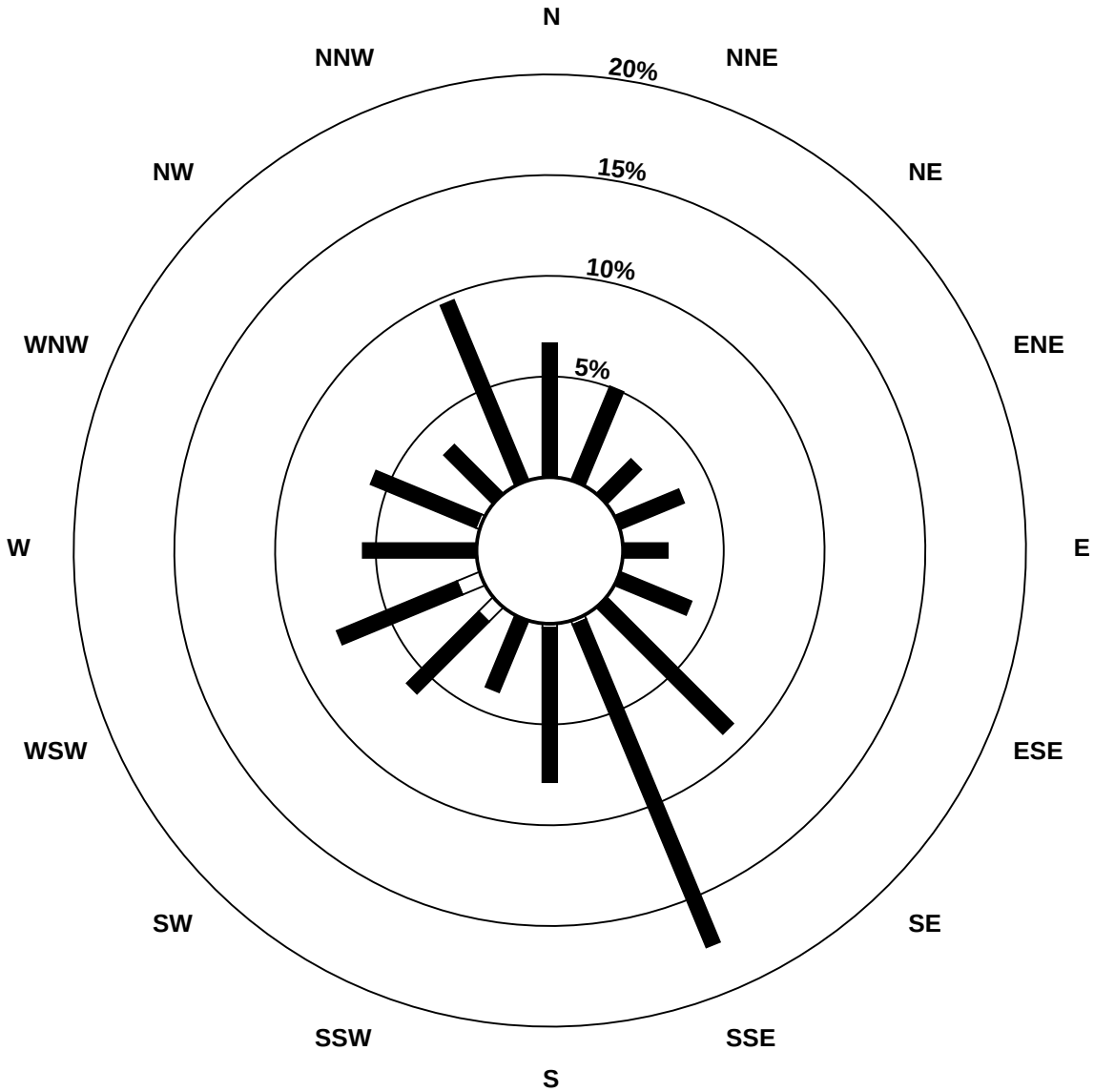
Portable Reno - December 2013



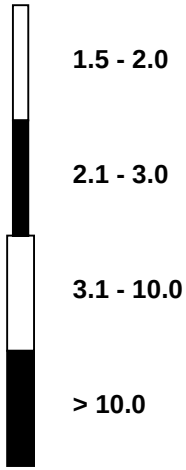
Pollutant Rose

Total Hydrocarbons (THC) - ppm

Portable Reno - December 2013



Pollutant Classes (ppm)

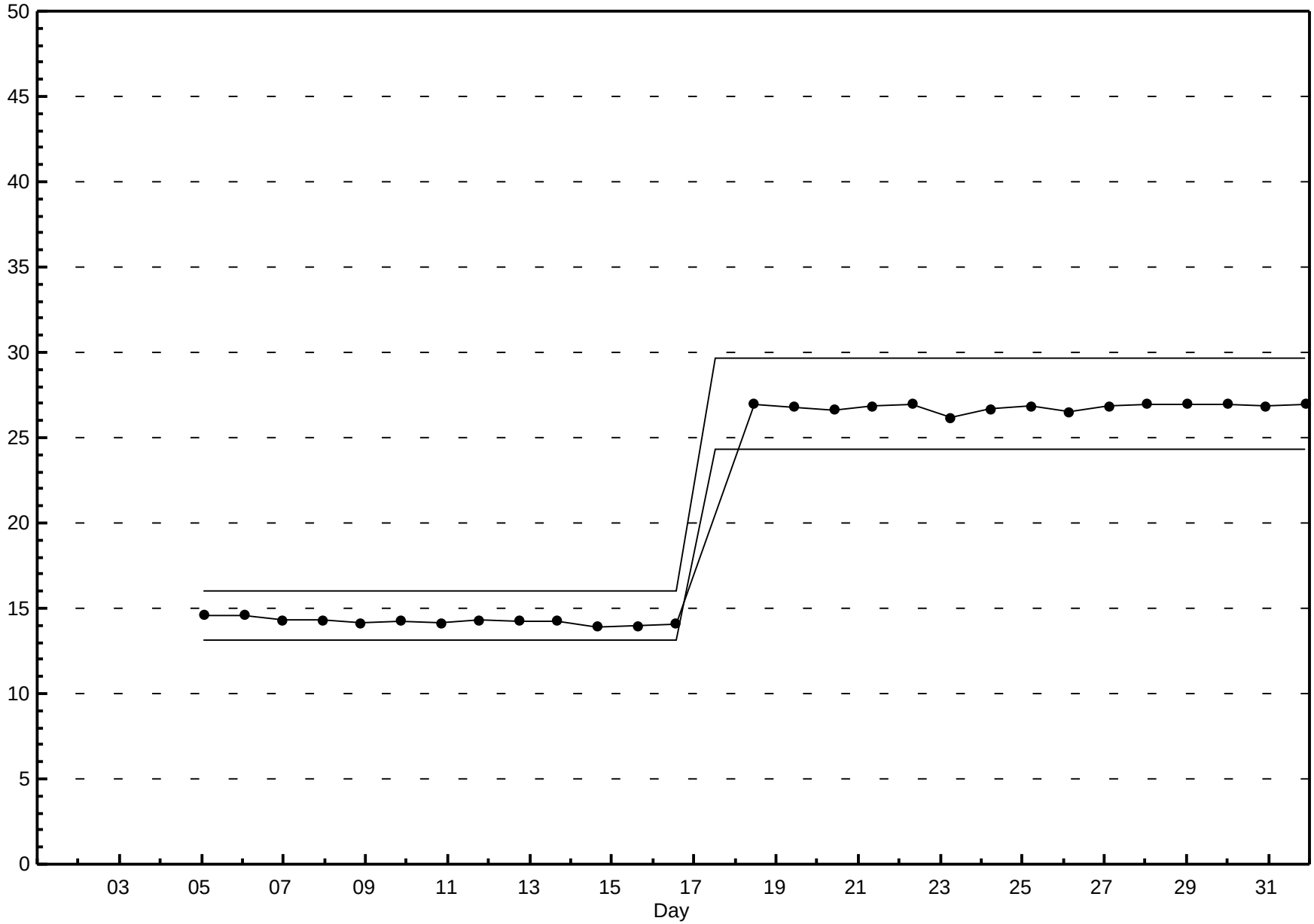


Peace Airshed Zone Association

Span Responses

Total Hydrocarbons (THC)

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$

Portable Reno - December 2013

Number of Exceedences: 1-hr: 0 24-hr: 0

Maximum Value: 14.8 $\mu g/m^3$ on Dec 5 20:00

Maximum Daily Average: 8.2 $\mu g/m^3$ on Dec 5

Minimum Value: 0 $\mu g/m^3$ on Dec 3 00:00

Minimum Daily Average: 0.0 $\mu g/m^3$ on Dec 25

Maximum Diurnal Average: 2.5 $\mu g/m^3$ at hour 19

Minimum Diurnal Average: 1.3 $\mu g/m^3$ at hour 5

Monthly Average: 1.78 $\mu g/m^3$

Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.1$ Median = 1.3 $Q_3 = 2.4$ $P_{90} = 3.9$ $P_{99} = 12.0$

Hours in Service:	744
Hours of Data:	740
Hours of Missing Data:	4
Hours of Calibration:	0
Percent Operational Time:	99.5

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	8	4	2	2	2	2	2	3	5	4	6	8	4	2	2	1	2	1	2	2	2	1	2	1	3.0	8.4
2-Dec	2	2	1	1	1	2	2	2	2	2	2	2	1	1	1	2	1	1	6	6	3	0	0	0	1.8	6.4
3-Dec	0	0	0	0	0	0	0	1	2	2	2	2	0	2	1	1	1	1	0	0	0	0	0	1	0.6	1.9
4-Dec	0	0	0	0	0	0	1	0	0	1	1	1	3	3	3	M	M	10	7	5	5	5	4	4	2.5	10.1
5-Dec	3	6	6	4	3	4	3	4	4	4	8	12	10	9	9	9	10	13	14	15	14	13	12	8	8.2	14.8
6-Dec	5	3	3	2	3	4	3	4	3	4	5	4	4	3	3	3	3	3	5	5	6	5	6	8	4.0	8.5
7-Dec	7	5	5	4	4	3	3	4	3	4	3	3	3	3	3	2	3	2	3	3	3	2	3	2	3.4	6.6
8-Dec	1	2	1	2	1	2	2	1	1	0	2	0	0	0	0	1	0	0	0	0	1	2	1	3	1.0	3.1
9-Dec	3	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.7	3.0
10-Dec	2	1	2	2	1	1	2	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0.8	2.5
11-Dec	1	2	1	1	2	1	2	2	1	2	2	5	5	3	1	1	2	0	0	0	0	0	1	1	1.5	5.1
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	1	1	2	0.5	1.7
13-Dec	1	3	3	3	3	3	2	3	1	3	2	3	2	3	3	2	2	1	2	0	1	0	0	0	1.9	3.2
14-Dec	0	0	1	0	1	1	2	2	2	2	2	2	3	2	2	1	3	2	6	1	0	0	0	0	1.5	6.2
15-Dec	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0.2	1.6
16-Dec	1	2	0	0	0	1	0	0	1	2	1	1	1	1	1	1	N	0	0	0	0	3	9	7	1.4	9.0
17-Dec	0	0	0	1	0	0	0	0	1	0	N	0	0	2	2	4	3	4	11	2	3	2	3	3	1.7	11.1
18-Dec	2	2	2	2	2	1	1	1	4	1	2	2	1	1	1	0	2	1	1	2	2	1	0	1	1.5	3.9
19-Dec	2	1	0	2	0	2	3	4	5	5	5	4	4	3	2	3	3	2	2	3	1	1	2	1	2.6	5.0
20-Dec	3	1	1	3	0	1	1	1	0	1	1	2	1	4	1	3	2	2	2	2	2	2	2	3	1.7	3.9
21-Dec	7	10	11	9	9	8	8	6	6	5	3	3	3	1	2	1	1	2	2	2	2	1	1	1	4.3	11.1
22-Dec	1	2	1	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0.4	1.7
23-Dec	1	1	1	2	3	2	2	2	2	2	3	2	2	1	0	1	1	0	0	0	0	1	0	0	1.2	2.7
24-Dec	0	0	0	0	0	1	1	1	3	0	1	1	0	0	0	0	1	0	2	1	2	1	0	0	0.6	2.5
25-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.0	0.6
26-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	2	2	2	2	1	0.5	1.8
27-Dec	1	1	0	0	0	0	0	0	0	1	1	0	1	1	2	2	3	3	3	3	3	3	2	3	1.3	3.0
28-Dec	1	2	2	2	2	2	3	3	2	2	3	6	5	2	1	2	1	1	1	1	0	0	0	0	1.8	6.1
29-Dec	0	0	1	0	0	0	0	0	1	1	2	2	1	2	4	4	4	3	3	4	2	3	2	2	1.8	4.4
30-Dec	2	1	2	2	1	1	2	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	2.5
31-Dec	1	1	1	1	2	2	1	0	1	2	3	2	2	1	2	2	3	1	3	2	2	2	2	2	1.7	2.9
	1.8	1.7	1.7	1.6	1.3	1.5	1.6	1.6	1.7	1.7	2.2	2.2	1.8	1.7	1.4	1.6	1.9	1.8	2.5	2.0	1.9	1.7	1.9	1.8	Diurnal Average	
	8.4	9.6	11.1	8.6	8.9	8.1	7.6	6.1	6.4	5.1	7.9	12.1	10.1	9.0	9.4	9.1	10.3	12.6	14.4	14.8	13.8	13.5	12.0	8.5	Diurnal Maximum	

M - Maintenance N - Not Valid

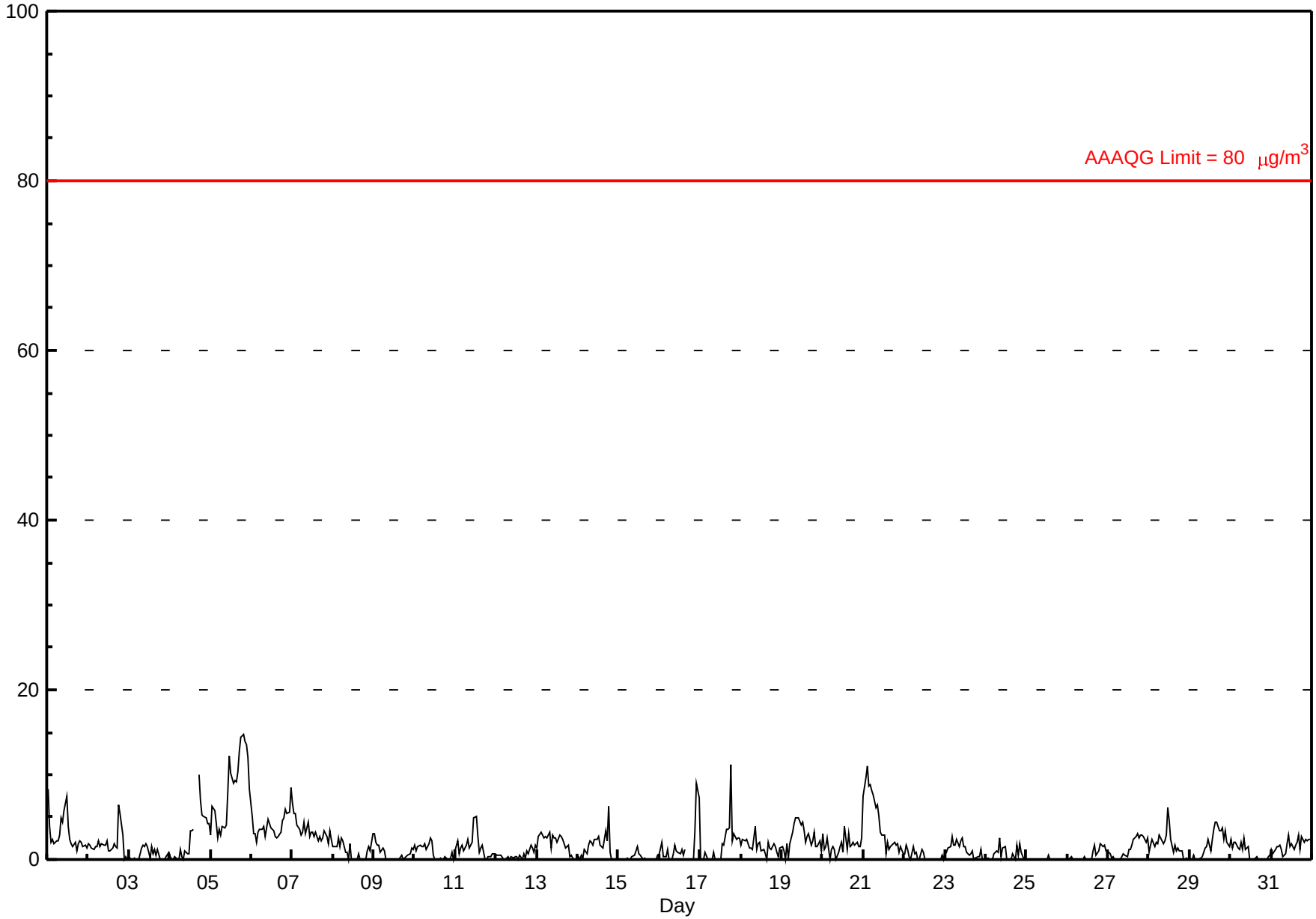
Alberta Ambient Air Quality Guideline (AAAQG): 1-hr 80 $\mu g/m^3$ Alberta Ambient Air Quality Objective (AAAQO): 24-hr 30 $\mu g/m^3$

Peace Airshed Zone Association

Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Maximums

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$

Portable Reno - December 2013

Maximum Value: 56.4 $\mu g/m^3$ on Dec 17 19:00

Maximum Daily Average: 11.1 $\mu g/m^3$ on Dec 5

Minimum Value: 0 $\mu g/m^3$ on Dec 14 22:00

Minimum Daily Average: 1.2 $\mu g/m^3$ on Dec 25

Maximum Diurnal Average: 6.5 $\mu g/m^3$ at hour 19

Minimum Diurnal Average: 3.8 $\mu g/m^3$ at hour 6

Monthly Average: 4.52 $\mu g/m^3$

Percentiles: $P_1 = 0.0$ $P_{10} = 1.2$ $Q_1 = 2.5$ Median = 3.9 $Q_3 = 5.5$ $P_{90} = 7.7$ $P_{99} = 16.8$

Hours in Service:	744
Hours of Data:	740
Hours of Missing Data:	4
Hours of Calibration:	0
Percent Operational Time:	99.5

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	12	8	4	4	5	5	4	4	9	6	8	11	7	4	4	3	3	3	4	4	3	4	4	3	5.2	11.9
2-Dec	4	3	3	3	3	3	4	3	3	4	4	3	2	3	3	4	3	3	10	7	5	4	2	2	3.7	10.3
3-Dec	2	2	2	2	1	1	2	3	5	4	4	5	2	5	4	5	3	3	2	1	0	2	2	3	2.7	5.1
4-Dec	2	2	2	3	2	2	3	3	2	3	4	7	7	7	14	M	M	13	9	8	8	7	6	7	5.5	14.4
5-Dec	5	8	8	7	5	6	6	6	6	6	11	15	15	12	12	11	13	17	18	17	17	16	16	13	11.1	17.5
6-Dec	8	6	5	7	6	7	7	8	6	9	8	7	6	7	7	5	6	7	8	8	10	8	9	13	7.3	12.6
7-Dec	12	8	9	7	7	6	6	8	8	7	6	5	7	7	6	5	5	4	5	5	4	4	6	4	6.2	12.4
8-Dec	3	4	4	5	4	5	6	5	3	4	5	1	3	3	1	3	1	1	3	1	3	4	4	7	3.4	7.3
9-Dec	6	3	4	5	4	6	3	2	2	2	1	1	1	2	1	0	3	1	2	2	2	4	4	3	2.7	5.8
10-Dec	4	3	4	4	3	3	5	4	6	6	6	3	0	0	3	3	2	3	3	1	2	3	3	3	3.2	6.0
11-Dec	5	6	3	4	4	3	3	4	3	4	4	6	7	5	4	4	4	3	2	3	5	3	4	3	3.9	7.1
12-Dec	2	2	3	3	2	2	2	2	2	2	2	2	3	2	3	2	2	3	3	3	4	4	3	4	2.6	3.9
13-Dec	4	4	6	6	5	5	5	5	4	5	7	5	4	5	5	6	4	5	4	3	3	4	2	2	4.4	6.5
14-Dec	3	1	3	2	3	3	4	5	5	4	5	5	5	4	4	4	6	6	14	4	2	0	0	1	3.8	13.6
15-Dec	0	2	1	1	0	1	1	1	4	4	3	3	2	3	1	1	1	2	1	1	1	1	3	2	1.7	3.9
16-Dec	3	4	2	1	2	3	1	1	5	4	3	2	2	3	2	16	N	7	8	11	16	24	34	22	7.7	34.4
17-Dec	12	0	18	15	0	0	0	1	5	1	N	4	2	5	5	10	7	8	56	5	8	5	7	7	7.9	56.4
18-Dec	4	4	5	5	4	4	4	4	9	7	4	5	3	3	6	4	7	6	4	5	4	4	3	4	4.6	9.5
19-Dec	4	4	2	6	4	3	8	8	10	10	8	7	7	7	6	7	6	6	6	8	4	4	4	4	6.0	10.3
20-Dec	6	4	4	5	4	4	5	4	2	3	5	5	7	10	6	6	4	4	4	4	4	4	4	8	4.8	10.1
21-Dec	10	13	13	11	12	11	10	9	8	8	6	7	7	4	4	5	4	5	5	3	5	5	6	4	7.3	13.5
22-Dec	4	7	5	3	4	5	5	6	3	7	4	6	1	1	1	2	1	0	1	1	2	1	4	2	3.2	7.4
23-Dec	4	3	5	4	11	9	4	6	4	4	4	3	3	2	2	3	2	1	1	3	3	4	2	3	3.7	10.7
24-Dec	2	1	2	1	2	2	3	2	5	3	3	4	3	1	2	2	2	1	3	3	5	2	1	3	2.4	5.4
25-Dec	2	0	3	2	1	1	1	0	0	0	1	2	1	2	1	3	2	0	2	1	1	1	0	1	1.2	2.6
26-Dec	0	1	2	2	3	0	0	0	0	1	4	1	1	0	4	4	4	2	4	5	4	5	4	3	2.3	4.8
27-Dec	4	4	3	5	2	2	3	2	4	4	4	3	3	4	5	5	6	4	4	5	5	5	4	7	4.0	6.6
28-Dec	4	5	5	4	4	6	7	6	5	6	7	14	13	7	4	5	5	5	4	5	4	2	3	6	5.6	14.4
29-Dec	1	3	3	1	2	2	3	3	3	4	4	4	4	5	6	7	8	8	7	6	5	7	4	5	4.4	8.1
30-Dec	4	4	4	4	5	4	5	4	6	5	4	3	3	2	2	3	1	2	2	2	1	1	3	4	3.1	5.7
31-Dec	4	3	3	4	4	4	4	3	3	6	6	7	4	3	4	6	7	4	6	6	5	5	5	5	4.6	6.8
	4.5	4.0	4.6	4.4	3.8	3.8	4.0	3.9	4.5	4.6	4.7	5.0	4.4	4.1	4.3	4.7	4.2	4.5	6.5	4.5	4.7	4.7	5.1	5.1	Diurnal Average	
	12.4	13.2	17.8	14.9	11.8	11.5	10.1	8.7	10.2	10.3	11.0	14.9	14.6	12.3	14.4	15.6	13.2	17.1	56.4	17.1	16.6	24.4	34.4	22.3	Diurnal Maximum	

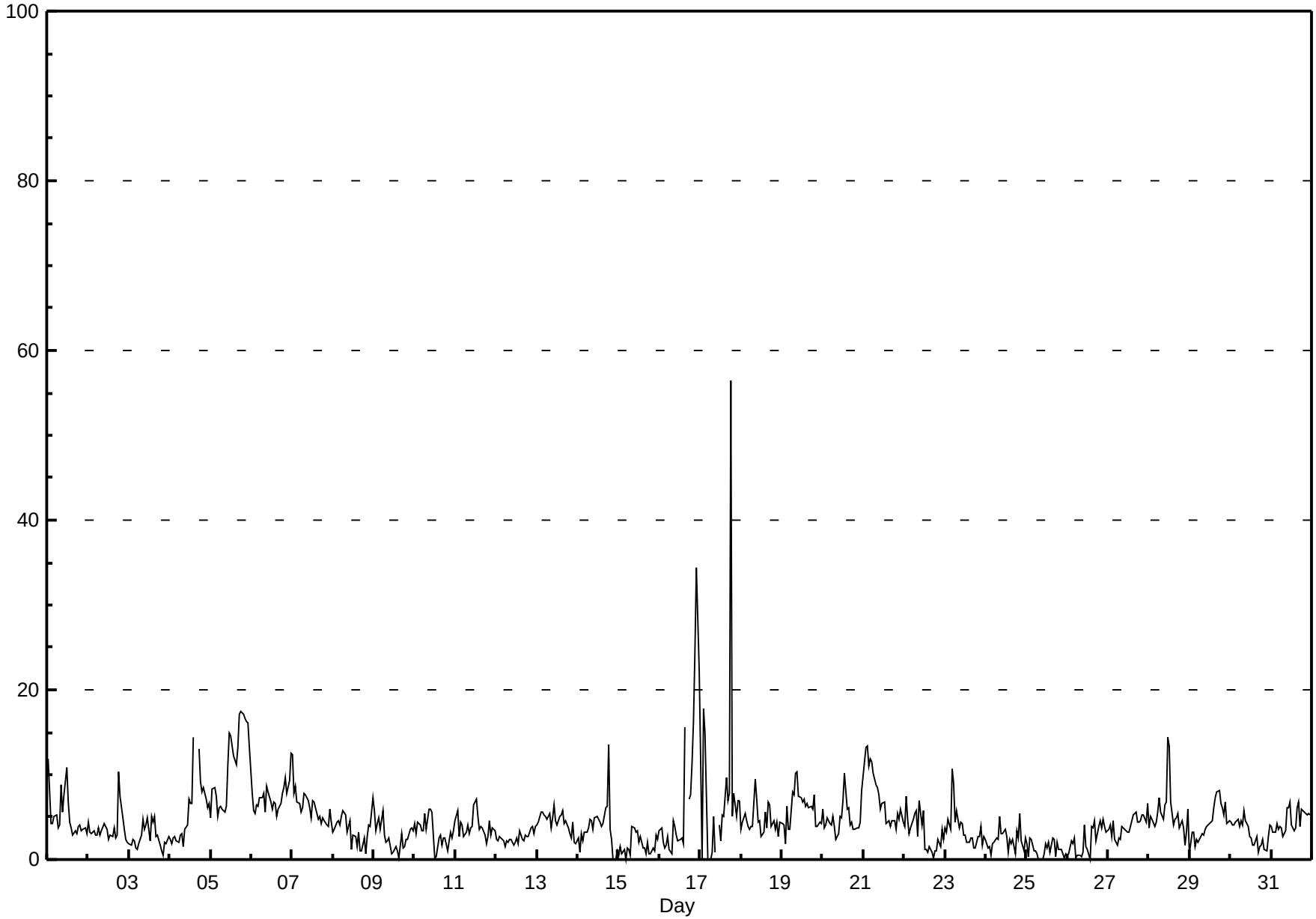
M - Maintenance N - Not Valid

Peace Airshed Zone Association

Hourly Maximums

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$

Portable Reno - December 2013

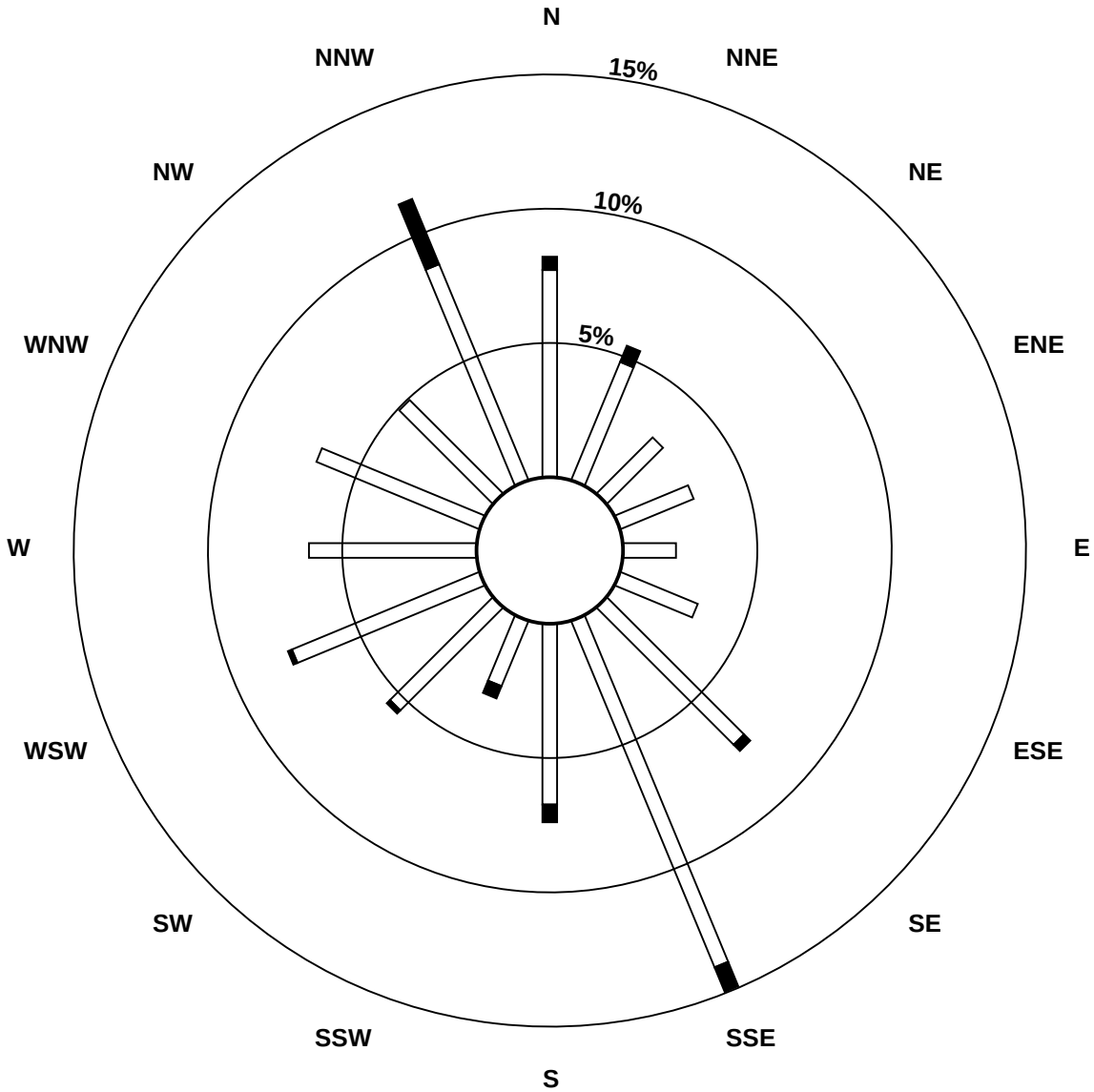


Peace Airshed Zone Association

Pollutant Rose

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$

Portable Reno - December 2013



Pollutant Classes ($\mu g/m^3$)

- 0 - 5
- 6 - 15
- 16 - 25
- 26 - 80
- > 80.0

FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Portable Reno - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 3.5 ^{o}C on Dec 15 04:00

Maximum Daily Average: 0.7 ^{o}C on Dec 15

Minimum Value: -33 ^{o}C on Dec 6 09:00

Minimum Daily Average: -30.3 ^{o}C on Dec 6

Maximum Diurnal Average: -15.2 ^{o}C at hour 12

Minimum Diurnal Average: -16.6 ^{o}C at hour 18

Monthly Average: -16.05 ^{o}C

Percentiles: P_1 = -31.3 P_{10} = -25.9 Q_1 = -22.2 Median = -18.8 Q_3 = -9.0 P_{90} = -1.4 P_{99} = 3.2

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

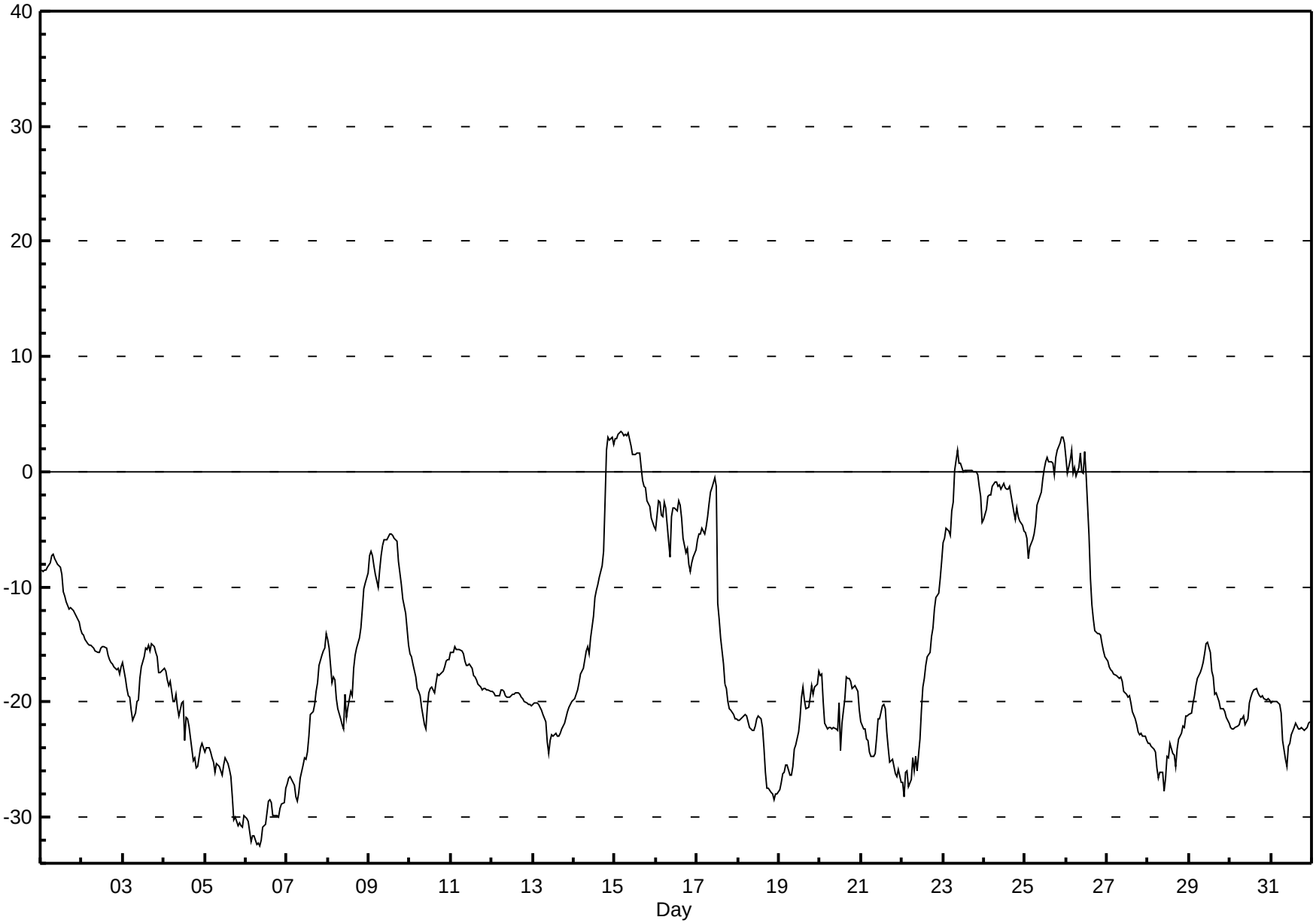
Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Dec	-9	-9	-8	-8	-8	-8	-7	-7	-8	-8	-8	-8	-9	-10	-11	-11	-12	-12	-12	-12	-12	-13	-13	-14	-9.9	-7.1
2-Dec	-14	-14	-15	-15	-15	-15	-15	-15	-16	-16	-16	-15	-15	-15	-15	-16	-16	-17	-17	-17	-17	-17	-18	-17	-15.7	-14.1
3-Dec	-17	-18	-19	-19	-20	-21	-22	-21	-20	-20	-18	-17	-16	-15	-15	-15	-16	-15	-15	-16	-16	-17	-17	-17	-17.6	-15.0
4-Dec	-17	-17	-18	-19	-18	-20	-20	-19	-20	-21	-20	-20	-23	-21	-21	-22	-24	-25	-25	-26	-26	-24	-24	-24	-21.5	-17.0
5-Dec	-24	-24	-24	-24	-25	-25	-26	-25	-26	-26	-26	-25	-25	-25	-26	-26	-28	-30	-30	-31	-30	-31	-31	-30	-26.9	-23.9
6-Dec	-30	-30	-31	-32	-32	-32	-32	-32	-33	-32	-31	-31	-30	-29	-28	-29	-30	-30	-30	-30	-29	-29	-29	-27	-30.3	-27.4
7-Dec	-27	-27	-27	-27	-27	-28	-29	-28	-27	-25	-25	-25	-24	-23	-21	-21	-20	-19	-18	-17	-16	-16	-15	-14	-22.7	-14.1
8-Dec	-15	-15	-18	-18	-18	-20	-21	-21	-22	-22	-19	-21	-20	-19	-19	-17	-16	-15	-14	-14	-12	-10	-10	-9	-16.9	-8.8
9-Dec	-7	-7	-7	-8	-9	-10	-9	-7	-6	-6	-6	-6	-5	-5	-5	-6	-6	-8	-9	-10	-11	-12	-14	-15	-8.1	-5.4
10-Dec	-16	-16	-17	-18	-19	-19	-19	-20	-22	-22	-20	-19	-19	-19	-19	-18	-18	-18	-18	-17	-17	-16	-16	-16	-18.3	-15.8
11-Dec	-16	-16	-15	-15	-15	-15	-16	-16	-16	-17	-17	-17	-17	-18	-18	-18	-18	-19	-19	-19	-19	-19	-19	-19	-17.2	-15.1
12-Dec	-19	-19	-19	-19	-19	-19	-19	-19	-19	-20	-20	-19	-19	-19	-19	-19	-19	-20	-20	-20	-20	-20	-20	-20	-19.5	-19.0
13-Dec	-20	-20	-20	-20	-20	-21	-21	-22	-23	-24	-23	-23	-23	-23	-23	-23	-23	-22	-22	-21	-21	-20	-20	-20	-21.7	-20.0
14-Dec	-20	-19	-19	-18	-18	-17	-16	-16	-15	-16	-14	-13	-11	-10	-10	-9	-8	-7	-3	2	3	3	3	2	-10.2	3.0
15-Dec	3	3	3	3	3	3	3	3	3	2	2	1	2	2	2	0	-1	-1	-1	-2	-3	-4	-4	-5	0.7	3.5
16-Dec	-5	-3	-3	-4	-4	-3	-3	-6	-7	-4	-3	-3	-3	-3	-3	-4	-6	-7	-7	-8	-9	-8	-7	-7	-4.9	-2.5
17-Dec	-6	-5	-5	-5	-5	-5	-4	-3	-2	-1	-1	-1	-11	-13	-14	-17	-18	-19	-20	-21	-21	-21	-21	-21	-10.9	-0.5
18-Dec	-22	-22	-21	-21	-21	-21	-22	-22	-23	-22	-22	-22	-21	-21	-22	-24	-26	-27	-27	-28	-28	-28	-28	-28	-23.8	-21.0
19-Dec	-28	-27	-26	-26	-25	-26	-26	-26	-26	-24	-24	-23	-21	-20	-19	-20	-21	-20	-20	-19	-19	-19	-18	-17	-22.5	-17.3
20-Dec	-18	-18	-20	-22	-22	-22	-22	-22	-22	-22	-22	-20	-24	-22	-20	-18	-18	-18	-18	-19	-19	-19	-19	-21	-20.3	-17.5
21-Dec	-22	-22	-22	-23	-23	-24	-25	-25	-24	-23	-21	-21	-20	-20	-21	-23	-24	-25	-25	-26	-26	-27	-26	-27	-23.6	-20.2
22-Dec	-27	-28	-26	-26	-27	-27	-25	-26	-25	-26	-23	-21	-19	-18	-17	-16	-16	-14	-13	-12	-11	-11	-9	-8	-19.6	-7.8
23-Dec	-6	-6	-5	-5	-5	-3	-3	0	2	1	1	0	0	0	0	0	0	0	0	0	0	-1	-2	-4	-1.5	1.9
24-Dec	-4	-3	-2	-2	-2	-1	-1	-1	-1	-1	-2	-1	-1	-1	-2	-1	-2	-4	-4	-3	-4	-4	-5	-5	-2.4	-0.9
25-Dec	-5	-6	-7	-7	-6	-5	-4	-3	-2	-2	-1	0	1	1	1	1	1	0	1	2	3	3	3	3	-1.2	3.1
26-Dec	1	0	1	2	0	0	0	0	2	0	0	2	0	-6	-9	-12	-13	-14	-14	-14	-14	-15	-16	-16	-5.6	1.9
27-Dec	-16	-17	-17	-17	-18	-18	-18	-18	-18	-18	-19	-19	-20	-19	-20	-21	-21	-22	-23	-23	-23	-23	-23	-23	-19.7	-16.4
28-Dec	-24	-24	-24	-24	-24	-26	-27	-26	-26	-28	-27	-25	-25	-24	-24	-25	-26	-24	-23	-23	-22	-22	-21	-21	-24.3	-21.2
29-Dec	-21	-21	-20	-19	-19	-18	-17	-17	-17	-16	-15	-15	-16	-17	-18	-19	-19	-20	-21	-21	-21	-21	-21	-22	-18.7	-14.7
30-Dec	-22	-22	-22	-22	-22	-22	-22	-21	-21	-22	-21	-20	-20	-19	-19	-19	-19	-19	-20	-19	-20	-20	-20	-20	-20.6	-18.8
31-Dec	-20	-20	-20	-20	-20	-20	-21	-23	-25	-26	-24	-24	-23	-22	-22	-22	-22	-22	-22	-23	-22	-22	-22	-22	-22.0	-20.0
	-15.8	-15.9	-16.0	-16.1	-16.3	-16.4	-16.4	-16.3	-16.3	-16.4	-15.7	-15.2	-15.5	-15.3	-15.4	-15.8	-16.3	-16.6	-16.4	-16.3	-16.2	-16.2	-16.2	-16.3	Diurnal Average	
	2.8	2.8	3.3	3.5	3.4	3.2	3.3	3.2	3.3	2.3	1.5	1.7	1.5	1.6	1.6	0.8	0.8	0.1	1.2	1.9	3.0	3.1	3.1	2.5	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Portable Reno - December 2013



Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Portable Reno - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	9	9	14	16	13	11	14	14	10	11	12	9	9	12	11	8	10	9	11	13	13	10	10	11	10.1	15.9
Dir	18	24	44	44	35	47	56	40	23	21	20	15	352	338	341	349	346	349	341	338	341	348	349	349	10.5	43.8
2 Spd	11	10	10	10	11	12	11	11	11	11	9	9	9	11	10	14	13	13	16	14	12	10	8	10	10.4	15.6
Dir	349	351	352	353	360	4	3	3	6	1	355	353	350	344	346	336	339	338	332	332	323	309	285	269	342.6	331.8
3 Spd	12	9	5	5	8	7	6	5	6	6	10	8	13	15	18	18	18	16	20	13	13	9	13	12	10.0	19.7
Dir	255	248	243	232	250	252	244	220	224	230	260	266	277	296	296	292	283	303	311	311	294	261	276	285	277.7	311.5
4 Spd	11	13	9	8	9	6	4	5	7	1	2	3	6	3	4	5	5	5	4	2	2	1	1	3	2.2	13.4
Dir	307	307	308	295	306	256	278	311	313	311	238	177	169	171	172	194	175	162	167	167	44	31	56	56	274.3	307.3
5 Spd	4	2	2	2	4	3	4	6	6	4	2	2	3	5	4	4	4	2	2	1	1	1	3	2	2.2	5.9
Dir	61	14	337	350	342	349	342	333	333	337	360	2	339	331	332	330	326	357	347	176	213	176	181	204	339.9	333.2
6 Spd	3	4	5	6	5	6	7	6	7	7	7	8	9	8	7	7	9	12	11	12	13	13	15	15	8.3	14.8
Dir	181	169	170	166	172	172	165	167	167	161	163	164	161	164	164	165	163	163	164	166	164	161	164	160	164.5	160.0
7 Spd	14	15	15	16	15	14	12	12	10	8	9	8	6	4	4	5	6	7	7	4	2	2	3	3	7.0	15.6
Dir	158	159	160	159	163	168	174	193	200	215	235	236	235	223	223	191	179	168	185	205	254	255	308	348	184.7	159.4
8 Spd	2	4	4	1	0	2	2	1	1	3	2	4	3	8	10	13	18	21	20	20	16	16	16	20	5.1	21.3
Dir	345	4	334	17	330	223	210	241	179	176	181	169	167	166	166	159	161	165	158	174	199	266	287	285	194.2	164.5
9 Spd	16	19	19	8	9	10	18	23	32	27	26	25	26	21	18	13	12	12	9	14	14	14	14	12	14.8	31.9
Dir	305	321	327	337	340	321	297	292	296	300	289	287	285	291	300	298	311	356	353	20	15	12	9	5	314.1	295.8
10 Spd	10	10	9	6	3	2	2	3	3	3	4	5	7	12	17	17	17	20	20	16	16	18	17	17	6.9	20.1
Dir	3	10	6	350	356	356	323	359	230	215	150	126	152	158	156	155	150	151	150	129	126	125	135	133	135.0	149.8
11 Spd	17	8	2	5	5	8	9	8	8	10	9	7	8	7	6	6	11	6	7	6	7	6	6	7	5.2	17.4
Dir	161	149	55	21	10	18	16	11	7	16	15	11	345	359	356	343	336	347	4	8	13	11	11	13	11.4	160.8
12 Spd	6	6	6	5	5	10	14	10	10	13	14	13	12	14	12	12	10	12	10	10	12	13	11	9	9.7	14.2
Dir	11	11	13	11	11	41	59	64	66	64	65	57	54	52	50	57	63	75	69	69	84	86	103	101	60.7	51.7
13 Spd	9	10	7	8	9	6	5	5	5	4	6	9	7	5	2	2	2	1	0	3	9	12	13	14	3.3	13.8
Dir	102	108	99	68	36	24	12	4	14	342	332	325	338	345	360	352	324	315	143	131	131	120	112	114	63.4	114.1
14 Spd	16	20	18	17	13	14	14	15	12	14	16	20	18	16	19	20	17	13	23	26	23	26	38	33	14.7	38.2
Dir	114	118	121	135	133	127	128	124	126	126	132	126	129	140	125	129	133	140	210	209	197	193	221	221	155.8	220.5
15 Spd	35	27	38	37	41	39	36	37	46	60	62	54	51	46	45	36	30	31	33	28	25	23	21	17	36.2	62.2
Dir	228	230	234	234	231	235	241	239	257	266	267	267	270	270	272	264	260	257	256	248	246	243	243	242	252.6	267.2
16 Spd	20	33	30	24	27	28	17	12	14	24	24	21	19	16	17	18	10	7	4	0	5	8	12	14	13.4	32.8
Dir	249	259	258	258	257	280	306	274	265	280	284	278	276	294	301	285	269	253	283	300	120	119	133	140	268.5	259.5
17 Spd	16	18	21	20	21	27	32	28	24	30	23	17	16	11	17	17	13	16	16	17	14	18	14	21	3.8	31.8
Dir	126	115	122	133	121	119	125	132	144	160	187	250	334	341	339	341	346	343	347	343	344	337	341	329	90.6	125.3
18 Spd	16	14	16	16	10	7	5	5	4	1	3	7	8	8	5	5	6	9	8	9	11	12	14	17	3.3	17.2
Dir	334	331	323	322	325	335	348	360	350	299	294	298	300	287	250	237	216	203	205	185	179	177	168	165	272.6	165.2
19 Spd	17	14	16	16	19	20	17	15	13	10	9	11	9	8	7	8	6	11	12	4	10	13	10	11	10.7	20.3
Dir	163	158	160	160	162	168	168	173	172	186	172	173	163	184	177	179	174	168	167	125	89	92	92	114	158.7	167.8
20 Spd	8	13	4	6	11	15	18	6	9	15	5	9	6	7	5	7	8	6	2	3	6	4	5	4	6.4	17.9
Dir	71	103	20	45	80	91	91	87	103	90	59	78	347	48	29	61	75	45	6	11	21	17	18	346	67.2	91.4
21 Spd	5	5	6	4	3	3	2	2	4	6	4	5	3	3	3	1	0	5	4	3	1	5	7	8	1.2	7.8
Dir	338	335	339	345	338	343	237	220	190	186	210	252	319	329	325	225	126	169	177	183	173	164	162	161	223.6	160.7
22 Spd	7	8	7	8	10	12	12	12	10	11	16	14	17	26	27	24	28	32	34	37	41	39	37	40	20.8	40.9
Dir	160	153	146	144	154	156	144	153	138	131	125	132	132	134	139	145	153	149	155	156	158	160	159	157	149.6	158.5

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Portable Reno - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	39	36	36	35	32	26	23	24	30	24	32	23	23	23	19	17	13	11	7	6	4	0	0	0	11.7	39.1
Dir	158	161	161	162	164	165	165	197	235	258	286	289	272	283	274	269	283	274	269	278	306	322	242	217	214.8	158.4
24 Spd	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	18	16	11	8	1	0	0	0	2.4	17.9
Dir	173	169	223	234	249	261	276	294	302	280	265	286	266	260	260	272	255	255	285	323	323	346	19	140	271.4	255.3
25 Spd	0	0	0	0	0	0	0	19	22	22	24	19	18	25	19	21	14	14	19	25	33	43	34	24	14.7	42.5
Dir	135	136	165	164	164	159	171	179	180	196	200	203	225	255	257	259	258	221	217	239	245	251	253	248	231.7	251.0
26 Spd	17	17	21	19	4	3	8	13	13	6	7	14	5	N	N	N	N	N	N	N	N	N	N	N	--	21.1
Dir	222	224	244	241	126	147	150	162	188	233	238	167	172	N	N	N	N	N	N	N	N	N	N	N	--	244.4
27 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
28 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
29 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
30 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
31 Spd	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Dir	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
Spd	3.1	2.5	2.4	2.6	2.4	2.3	2.4	3.3	4.0	4.1	5.2	4.5	4.8	4.6	3.9	3.8	3.3	3.2	3.9	3.1	3.0	3.4	3.9	3.7	Diurnal Average	
Dir	192.1	190.6	213.1	196.9	183.2	172.6	152.2	189.1	223.3	240.0	255.2	254.5	271.7	277.6	275.4	257.7	241.3	209.0	219.8	217.7	199.8	198.9	204.0	198.4		
Spd	39.1	36.4	37.8	37.1	40.6	38.7	35.7	37.0	45.5	60.4	62.2	54.4	51.0	46.3	45.4	36.1	30.4	31.6	33.9	36.8	40.9	42.5	38.2	39.6	Diurnal Maximum	
Dir	158.4	160.6	234.2	234.1	230.8	235.2	240.9	239.2	257.3	265.8	267.2	267.1	269.5	270.3	271.6	263.5	259.7	148.6	155.3	155.5	158.5	251.0	220.5	156.9		

Maximum Speed Value: 62 km/h on Dec 15 11:00
Maximum Daily Speed Average: 36.2 km/h on Dec 15
Maximum Diurnal Speed Average: 5.2 km/h at hour 11

Minimum Speed Value: 0 km/h on Dec 13 19:00
Minimum Daily Speed Average: 1.2 km/h on Dec 24
Minimum Diurnal Speed Average: 2.3 km/h at hour 6

Monthly Average Velocity: 2.92 km/h 224.12 deg

Speed Percentiles: $P_1 = 0.0$ $P_{10} = 2.2$ $Q_1 = 5.3$ Median = 10.2 $Q_3 = 16.2$ $P_{90} = 24.6$ $P_{99} = 45.0$

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	613
Hours of Missing Data:	131
Percent Operational Time:	82.4

N - Not Valid

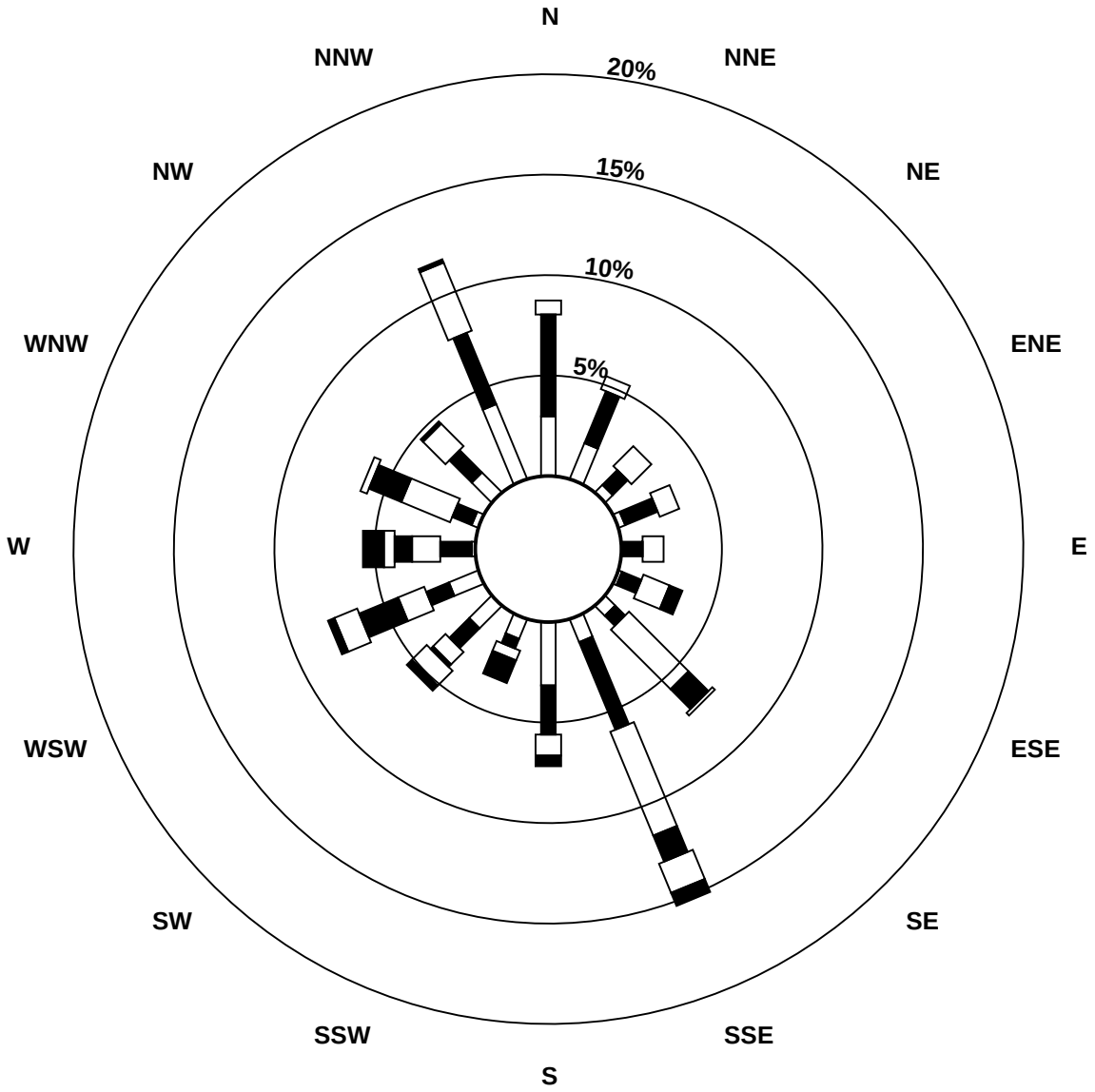
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	40	53	29	0	0	0	122
NorthEast	7	14	13	0	0	0	34
East	0	16	9	0	0	0	25
SouthEast	12	11	36	14	5	1	79
South	32	37	36	14	6	3	128
SouthWest	21	14	6	10	8	3	62
West	14	16	21	21	9	8	89
NorthWest	24	20	26	3	1	0	74
Total	150	181	176	62	29	15	613

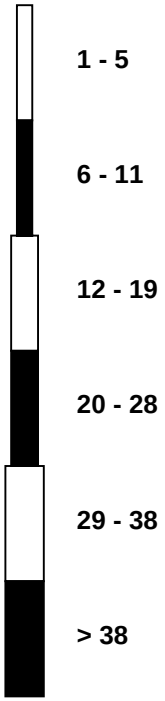
Wind Rose

Wind Speed (WS) (km/h)

Portable Reno - December 2013



Wind Speed Classes (km/h)



Peace Airshed Zone Association

Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Portable Reno - December 2013

Maximum Speed: 62 km/h on Dec 15 11:00

Maximum Daily Speed Average: 37.5 km/h on Dec 15

Minimum Speed: 0 km/h on Dec 13 19:00

Minimum Daily Speed Average: 2.6 km/h on Dec 24

Maximum Diurnal Speed Average: 13.1 km/h at hour 11

Minimum Diurnal Speed Average: 11.1 km/h at hour 5

Monthly Average Speed: 12.34 km/h

Percentiles: $P_1 = 0.0$ $P_{10} = 2.5$ $Q_1 = 5.5$ Median = 10.3 $Q_3 = 16.5$ $P_{90} = 25.1$ $P_{99} = 45.6$

Hours in Service:	744
Hours of Data:	613
Hours of Missing Data:	131
Percent Operational Time:	82.4

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	9	9	14	16	13	11	14	15	10	11	12	9	9	12	11	9	11	9	11	13	13	10	11	12	11.4	16.0
2-Dec	11	10	10	10	11	12	12	11	11	12	10	9	9	11	11	14	13	13	16	14	12	10	8	10	11.3	15.7
3-Dec	12	9	6	5	8	7	6	5	6	7	10	8	13	16	18	18	18	16	20	13	13	9	13	13	11.2	19.8
4-Dec	11	13	9	9	9	7	5	5	7	2	3	3	6	3	4	5	5	5	4	2	2	2	1	3	5.2	13.4
5-Dec	4	2	2	3	4	3	4	6	6	5	2	2	3	5	4	4	4	2	2	1	1	1	3	2	3.1	5.9
6-Dec	3	4	5	6	5	6	7	6	7	7	7	8	9	8	7	7	9	12	11	12	13	13	15	15	8.4	14.8
7-Dec	14	15	15	16	15	14	13	13	10	9	9	8	6	4	4	6	6	7	7	5	2	2	4	3	8.6	15.6
8-Dec	2	4	4	1	1	2	2	2	1	3	2	4	3	8	11	13	18	21	20	20	18	17	17	20	8.9	21.3
9-Dec	16	19	19	9	9	10	18	23	32	27	26	25	26	21	18	13	14	12	9	14	15	14	14	12	17.3	32.1
10-Dec	10	10	9	6	3	2	3	4	4	3	4	5	7	12	17	17	17	20	20	16	16	18	17	17	10.8	20.2
11-Dec	18	8	4	6	5	8	9	8	8	10	9	7	8	7	6	6	11	6	7	6	7	6	6	7	7.6	17.5
12-Dec	6	6	6	5	5	11	14	10	11	13	14	13	12	14	13	12	10	12	10	10	12	13	11	9	10.6	14.3
13-Dec	9	10	7	9	9	6	5	5	5	4	6	9	7	5	3	3	2	1	0	3	9	12	13	14	6.5	13.9
14-Dec	16	20	18	17	13	14	14	15	12	14	16	20	18	16	19	20	17	14	26	27	23	27	38	33	19.5	38.3
15-Dec	35	27	38	37	41	39	36	37	46	61	62	55	51	46	45	36	30	31	33	28	25	23	22	17	37.5	62.3
16-Dec	20	33	30	24	27	28	17	12	14	24	24	21	19	16	17	18	11	7	4	1	5	9	13	14	17.0	32.9
17-Dec	16	18	21	20	21	27	32	28	25	31	23	24	16	11	18	17	13	16	16	17	14	18	14	21	19.9	32.0
18-Dec	16	14	16	16	10	7	5	5	4	1	3	7	8	8	5	5	6	9	8	9	11	12	14	17	9.0	17.2
19-Dec	17	15	16	16	19	20	17	15	13	10	9	11	9	8	7	8	6	11	12	4	10	13	10	12	12.0	20.3
20-Dec	8	13	7	6	11	15	18	7	9	16	6	9	7	9	7	8	8	7	2	3	6	4	5	4	8.2	18.0
21-Dec	5	5	6	4	3	3	2	3	5	6	4	5	3	3	3	3	1	5	4	3	1	5	7	8	4.1	7.8
22-Dec	7	8	7	8	10	12	12	13	10	11	16	14	17	26	27	24	28	32	34	37	41	39	37	40	21.2	41.0
23-Dec	39	36	36	35	32	26	23	24	30	24	33	23	23	23	19	18	14	11	7	6	4	0	0	0	20.3	39.2
24-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	18	16	11	8	1	0	0	0	2.6	17.9
25-Dec	0	0	0	0	0	0	0	20	22	22	24	19	18	25	19	21	15	14	20	25	33	43	34	24	16.5	42.6
26-Dec	18	17	21	20	5	6	8	13	13	7	7	14	8	N	N	N	N	N	N	N	N	N	N	N	--	21.2
27-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
28-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
29-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
30-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
31-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--	--
	12.4	12.6	12.5	11.6	11.1	11.4	11.3	11.6	12.4	13.0	13.1	12.8	12.2	12.8	12.6	12.5	12.2	12.4	12.6	11.9	12.3	12.7	13.0	13.0	Diurnal Average	
	39.2	36.5	37.9	37.1	40.7	38.8	35.9	37.1	45.9	60.7	62.3	54.5	51.1	46.3	45.5	36.2	30.4	31.6	33.9	36.9	41.0	42.6	38.3	39.6	Diurnal Maximum	

N - Not Valid

All monthly, daily, and diurnal averages have been calculated using scalar methods

Peace Airshed Zone Association

Hourly Standard Deviations

Wind Direction (WD) - deg

Portable Reno - December 2013

Maximum Value: 91.5 deg on Dec 16 20:00

Minimum Value: 1.4 deg on Dec 6 23:00

Percentiles: P_1 = 1.9 P_{10} = 3.2 Q_1 = 5.1 Median = 8.0 Q_3 = 13.3 P_{90} = 26.2 P_{99} = 60.4

Hours in Service:	744
Hours of Data:	613
Hours of Missing Data:	131
Hours of Calibration:	0
Percent Operational Time:	82.4

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-Dec	6	8	9	6	8	9	8	14	6	5	6	8	17	6	8	12	9	10	8	6	7	10	9	9	17.3
2-Dec	11	10	10	9	8	8	8	7	9	10	10	10	10	8	10	7	7	6	3	4	5	6	11	6	11.1
3-Dec	4	8	37	26	4	8	6	20	9	13	9	10	10	9	4	6	5	7	7	4	8	13	8	10	36.9
4-Dec	12	5	8	10	8	27	20	24	28	65	41	30	6	15	10	16	17	10	18	13	26	41	45	7	65.5
5-Dec	11	15	34	24	9	16	9	5	5	13	16	14	11	7	5	8	8	21	21	54	49	45	17	19	54.0
6-Dec	10	7	6	6	6	6	3	4	4	4	5	3	2	3	3	3	2	2	2	2	3	2	1	2	10.5
7-Dec	2	3	2	2	3	3	7	8	6	12	10	8	10	19	12	28	9	8	10	28	16	17	33	27	33.4
8-Dec	25	18	9	17	87	23	35	52	13	5	8	5	9	8	7	3	4	3	5	7	24	17	14	10	87.1
9-Dec	8	7	3	14	8	8	6	4	5	6	4	4	6	7	7	5	26	12	11	9	9	11	8	8	26.2
10-Dec	8	8	10	11	12	24	41	21	45	24	19	7	8	7	5	4	4	4	6	5	7	3	6	5	44.5
11-Dec	9	11	62	28	20	7	6	9	7	7	7	8	14	13	12	14	7	12	11	8	7	8	7	6	62.1
12-Dec	7	7	7	6	7	15	6	7	7	6	5	6	6	5	11	6	7	10	15	9	8	8	9	11	15.3
13-Dec	10	9	16	17	10	9	8	16	8	10	18	7	8	30	27	29	27	77	44	14	7	8	7	7	76.8
14-Dec	6	5	6	6	8	4	5	8	10	6	4	3	4	16	5	7	7	20	34	9	6	12	5	4	33.7
15-Dec	3	4	3	4	3	3	6	4	7	5	3	3	4	3	3	3	3	4	2	4	3	2	5	5	7.1
16-Dec	4	2	3	2	3	12	6	16	12	3	3	10	9	18	8	3	22	18	35	91	24	18	19	11	91.5
17-Dec	4	5	6	5	5	4	7	5	6	12	7	50	7	14	9	8	10	9	10	9	11	7	9	5	50.1
18-Dec	6	6	5	5	8	8	13	10	14	58	17	16	10	15	15	13	16	8	10	14	6	9	5	3	58.1
19-Dec	3	6	5	3	3	3	4	3	6	6	4	4	7	11	9	8	17	6	13	49	11	6	6	17	48.8
20-Dec	21	11	48	23	4	3	4	49	12	51	42	18	35	36	38	35	10	18	21	14	5	7	11	13	50.5
21-Dec	7	15	11	14	52	39	55	36	17	8	17	18	27	17	8	63	74	6	10	12	45	8	7	6	73.6
22-Dec	5	11	5	4	4	3	6	8	4	15	3	3	5	5	3	5	5	3	3	4	3	3	3	3	15.2
23-Dec	4	3	4	2	8	5	3	13	9	5	8	7	6	4	8	5	21	6	10	13	19	24	11	23	24.4
24-Dec	10	14	8	4	5	3	12	5	11	25	17	10	5	3	3	6	4	3	10	10	14	13	17	64	63.9
25-Dec	37	25	5	4	2	3	7	5	10	4	5	5	15	5	4	3	8	6	15	5	6	3	3	5	36.9
26-Dec	10	8	5	11	62	61	17	7	11	35	28	13	86	N	N	N	N	N	N	N	N	N	N	N	85.8
27-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
28-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
29-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
30-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
31-Dec	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	--
	36.9	25.5	62.1	28.3	87.1	61.5	55.2	51.6	44.5	65.5	42.1	50.1	85.8	36.4	37.8	63.1	73.6	76.8	44.0	91.5	49.2	45.3	44.9	63.9	

N - Not Valid

PAZA
Falher Station
Monthly Summary Tables, Graphs and Roses

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Falher - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 0.8 ppb on Jan 1 00:00 Maximum Daily Average: 0.4 ppb on Dec 7

Minimum Value: 0 ppb on Dec 1 01:00 Minimum Daily Average: 0.0 ppb on Dec 20
Maximum Diurnal Average: 0.2 ppb at hour 15 Minimum Diurnal Average: 0.2 ppb at hour 2
Monthly Average: 0.20 ppb Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.1$ Median = 0.2 $Q_3 = 0.3$ $P_{90} = 0.4$ $P_{99} = 0.6$

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
4-Dec	0	0	A	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
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2
6-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0.2	0.6
7-Dec	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	A	0	0.4	0.6
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.2	0.4
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.2	0.3
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0.1	0.2
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.0	0.1
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.4
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.2	0.4
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.2	0.4
15-Dec	0	0	0	0	0	0	0	0	0	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.6
16-Dec	0	0	0	0	0	0	0	0	0	0	0	1	1	A	0	0	0	0	0	0	0	0	0	0	0.3	0.6
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
18-Dec	0	0	0	0	0	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0.2	0.4
19-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5
20-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
21-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
22-Dec	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
23-Dec	0	0	0	0	0	0	A	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
24-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
25-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
27-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
28-Dec	0	A	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.5
30-Dec	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.3	0.5
31-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	1	0.3	0.8
	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average	
	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.6	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.5	0.4	0.8	Diurnal Maximum	

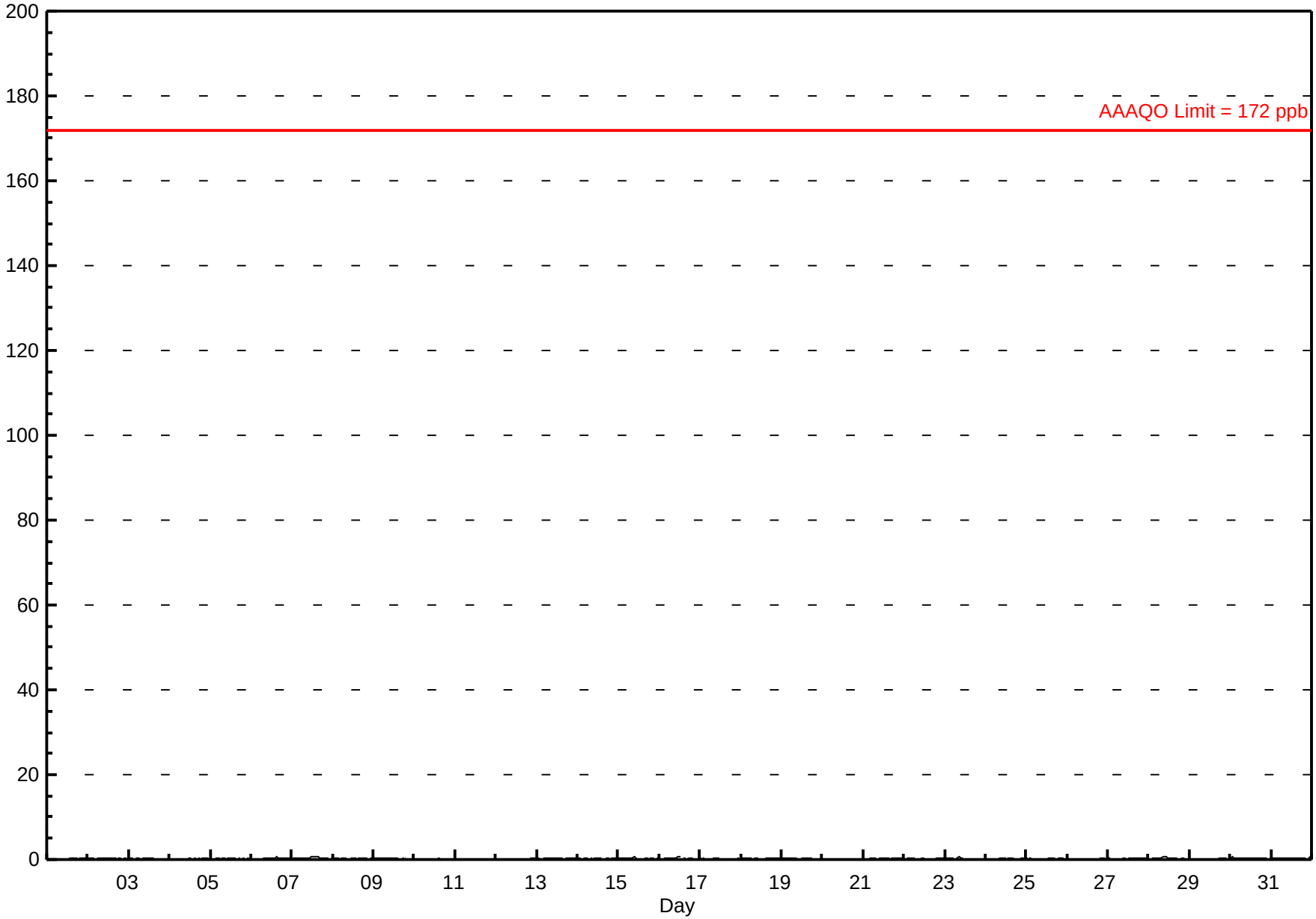
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb 30-day 11 ppb

Peace Airshed Zone Association

Hourly Averages

Sulphur Dioxide (SO_2) - ppb

Falher - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

Falher - December 2013

Maximum Value: 1.7 ppb on Jan 1 00:00

Maximum Daily Average: 0.8 ppb on Dec 7

Minimum Value: 0 ppb on Dec 1 01:00

Minimum Daily Average: 0.4 ppb on Dec 20

Maximum Diurnal Average: 0.7 ppb at hour 6

Minimum Diurnal Average: 0.6 ppb at hour 2

Monthly Average: 0.62 ppb

Percentiles: $P_1 = 0.3$ $P_{10} = 0.5$ $Q_1 = 0.5$ Median = 0.6 $Q_3 = 0.7$ $P_{90} = 0.8$ $P_{99} = 1.1$

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
3-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	0.6	0.8
4-Dec	0	0	A	0	0	0	0	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0.5	0.7
5-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.7
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.6	1.2
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.8	1.0
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.7	0.7
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.7	0.8
10-Dec	1	1	0	1	0	1	1	0	0	1	0	1	0	0	1	1	0	0	0	A	0	0	0	0	0.5	0.6
11-Dec	0	0	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	1	A	1	0	1	0	0	0.5	0.6
12-Dec	1	1	1	0	1	1	1	0	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.5	0.7
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.6	0.8
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.6	0.8
15-Dec	1	1	1	1	1	1	1	1	1	1	1	1	0	1	A	1	1	1	1	1	1	1	1	1	0.6	0.9
16-Dec	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	1	1	0.7	1.1
17-Dec	1	1	1	1	0	1	1	1	1	1	1	1	A	1	1	1	1	1	0	1	1	1	1	1	0.6	0.9
18-Dec	1	1	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	0.7	0.9
19-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	0	1	0	0.7	0.8
20-Dec	1	1	0	0	0	0	0	0	0	A	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0.4	0.5
21-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
22-Dec	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	0.6	0.7
23-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0	0	0	1	0	1	1	1	1	1	0.6	1.1
24-Dec	0	0	1	1	0	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.8
25-Dec	1	1	1	1	A	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.6	0.7
26-Dec	1	0	1	A	1	0	1	1	0	0	0	0	1	1	0	0	1	1	1	1	1	1	1	1	0.6	0.8
27-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.4
28-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0.7	1.3
29-Dec	A	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	A	0.6	0.9
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.7	1.0
31-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	2	0.7	1.7
	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	Diurnal Average	
	1.0	0.9	0.8	0.8	0.9	1.4	0.9	0.9	1.1	1.1	1.3	1.1	0.9	1.0	0.8	1.2	0.9	0.9	0.9	0.8	0.8	0.9	0.8	1.7	Diurnal Maximum	

C - Calibration

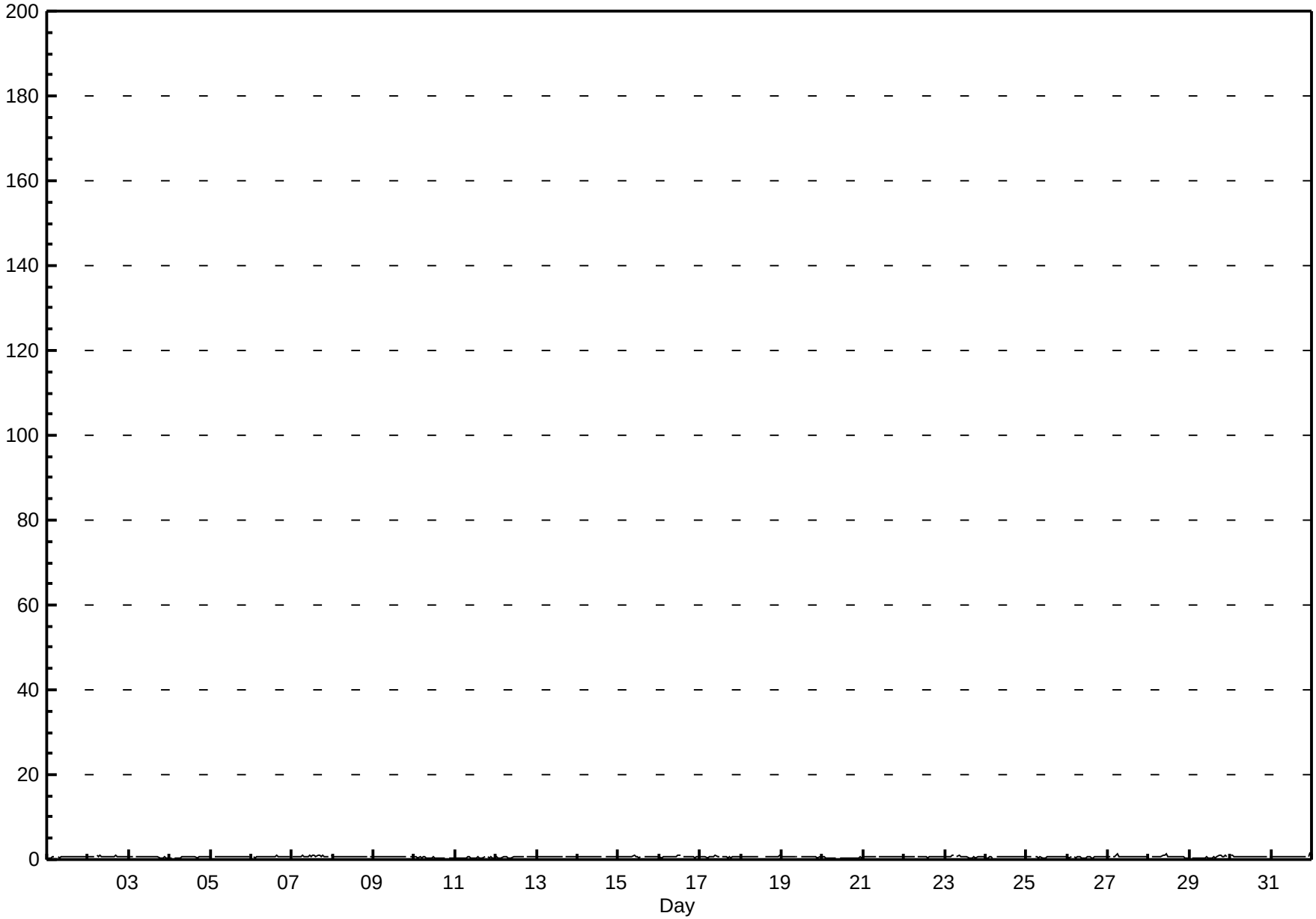
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Sulphur Dioxide (SO_2) - ppb

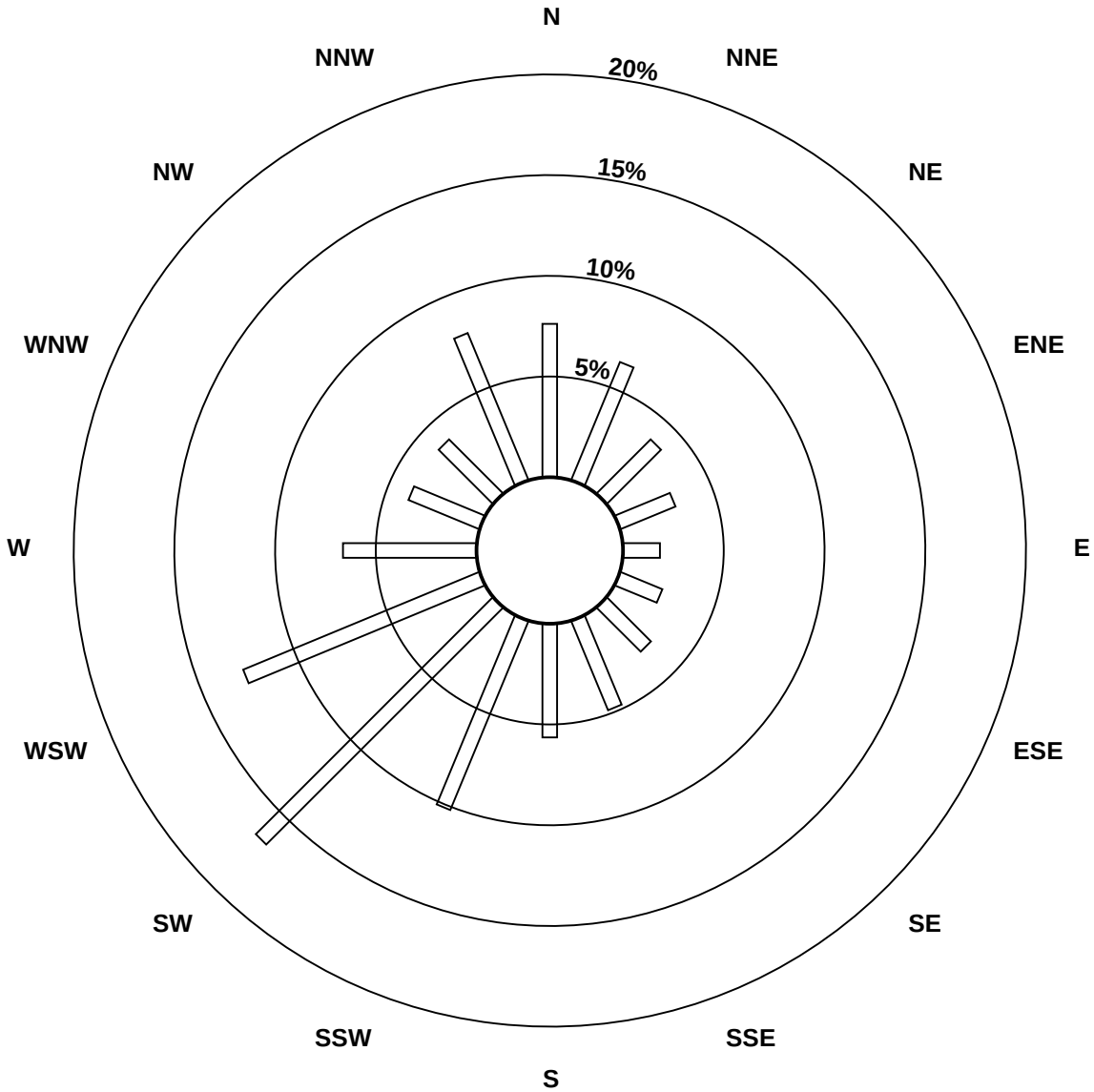
Falher - December 2013



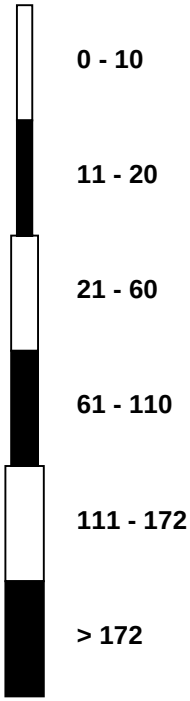
Pollutant Rose

Sulphur Dioxide (SO_2) - ppb

Falher - December 2013



Pollutant Classes (ppb)

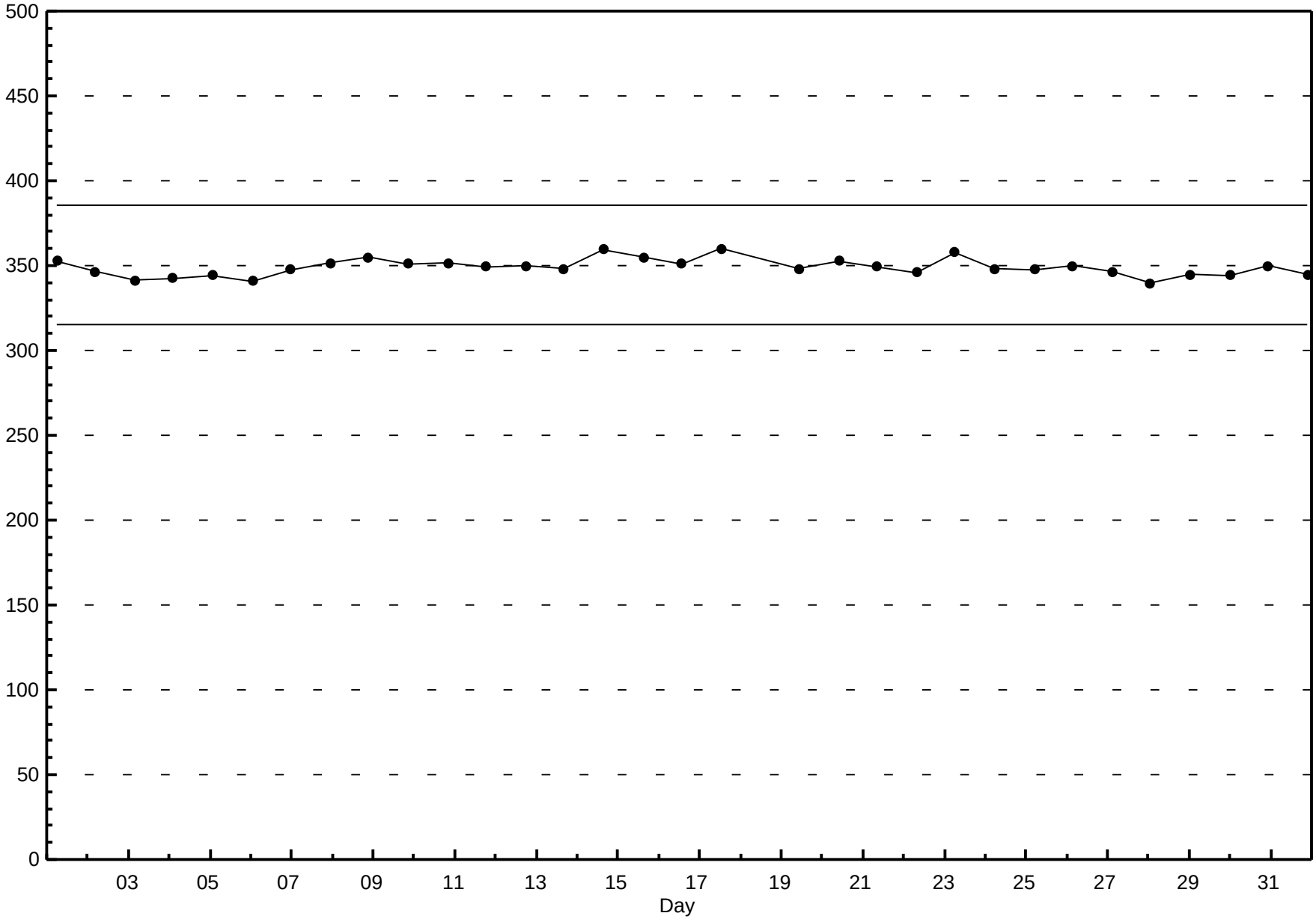


Peace Airshed Zone Association

Span Responses

Sulphur Dioxide (SO_2)

Falher - December 2013



Peace Airshed Zone Association

Hourly Averages

Hydrogen Sulphide (H_2S) - ppb

Falher - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0
Maximum Value: 0.7 ppb on Dec 16 22:00 Maximum Daily Average: 0.4 ppb on Dec 24

Minimum Value: 0 ppb on Dec 1 01:00 Minimum Daily Average: 0.0 ppb on Dec 13
Maximum Diurnal Average: 0.2 ppb at hour 22 Minimum Diurnal Average: 0.1 ppb at hour 5
Monthly Average: 0.17 ppb Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.1 Median = 0.2 Q_3 = 0.2 P_{90} = 0.3 P_{99} = 0.6

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.1
2-Dec	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
3-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3
4-Dec	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4
5-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.3
6-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.2	0.5
7-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.2	0.4
8-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.3	0.4
9-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0.1	0.2
10-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	A	0	0	0	0	0.2	0.6
11-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0.1	0.2
12-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0.1	0.1
13-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0.0	0.1
14-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0.1	0.3
15-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0.2	0.3
16-Dec	0	0	0	0	0	1	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	1	0	0	0.2	0.7
17-Dec	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
18-Dec	0	0	0	0	0	0	0	1	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.5
19-Dec	0	0	0	0	0	0	0	0	0	0	A	0	0	1	1	1	1	1	1	0	0	1	0	0	0.3	0.7
20-Dec	0	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4
21-Dec	0	0	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	0.4	0.7
22-Dec	1	1	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.6
23-Dec	0	0	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
24-Dec	1	0	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0.4	0.6
25-Dec	1	1	1	1	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.6
26-Dec	0	0	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2
27-Dec	0	0	A	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
28-Dec	0	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3
29-Dec	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0.1	0.3
30-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0.1	0.2
31-Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	A	0	0	0.1	0.2
	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	Diurnal Average	
	0.6	0.6	0.6	0.6	0.4	0.7	0.5	0.5	0.5	0.5	0.3	0.4	0.5	0.7	0.5	0.6	0.5	0.7	0.6	0.5	0.5	0.7	0.6	0.7	Diurnal Maximum	

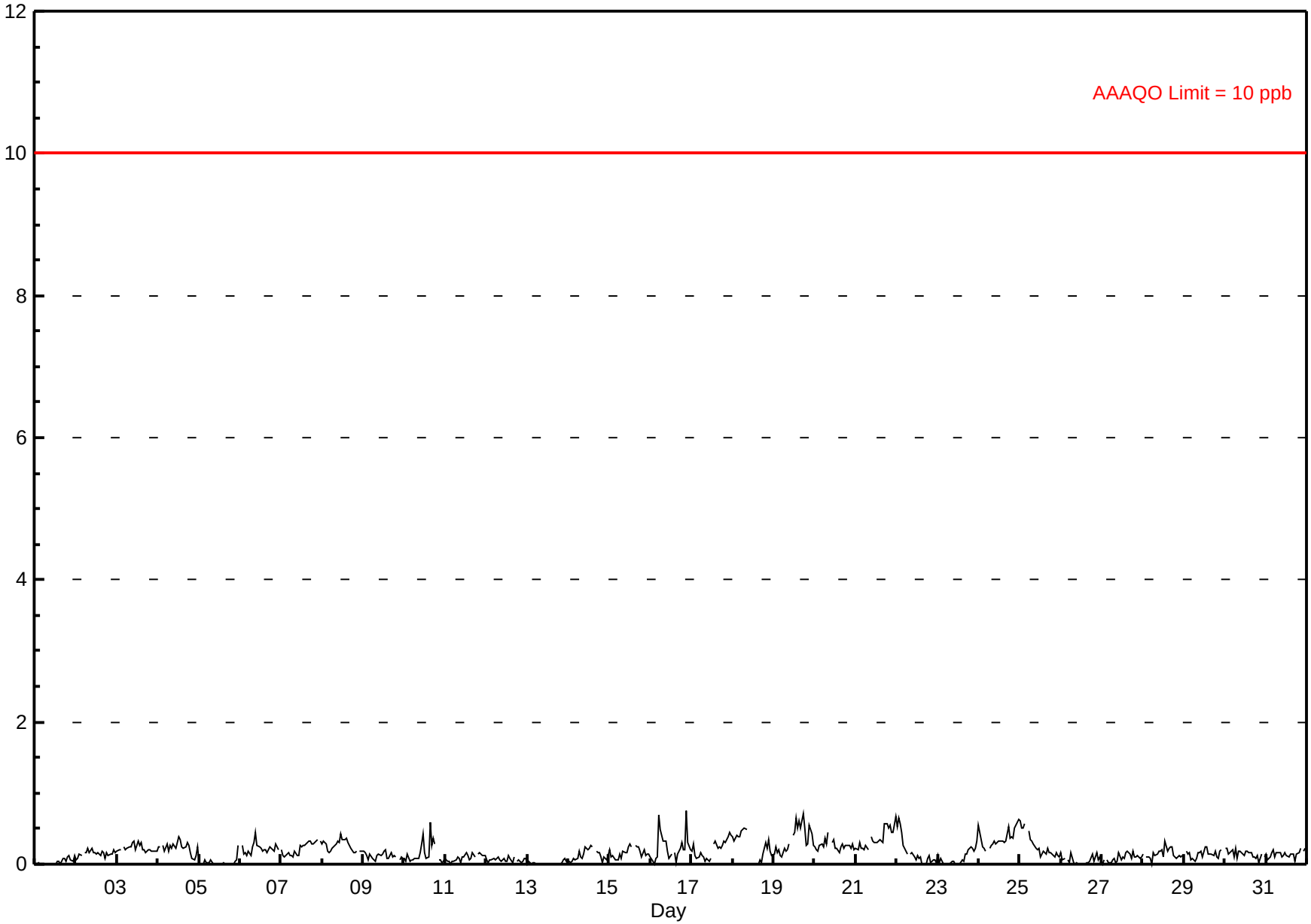
C - Calibration A - Automated Daily Zero Span
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb

Peace Airshed Zone Association

Hourly Averages

Hydrogen Sulphide (H_2S) - ppb

Falher - December 2013



FOCUS AIR QUALITY MONITORING

Peace Airshed Zone Association

Hourly Maximums

Hydrogen Sulphide (H_2S) - ppb

Falher - December 2013

Maximum Value: 1.6 ppb on Dec 16 22:00

Maximum Daily Average: 1.0 ppb on Dec 21

Minimum Value: 0 ppb on Dec 5 07:00

Minimum Daily Average: 0.7 ppb on Dec 5

Maximum Diurnal Average: 0.9 ppb at hour 22

Minimum Diurnal Average: 0.8 ppb at hour 4

Monthly Average: 0.86 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.6$ $Q_1 = 0.7$ Median = 0.8 $Q_3 = 1.0$ $P_{90} = 1.1$ $P_{99} = 1.4$

Hours in Service:	744
Hours of Data:	709
Hours of Missing Data:	35
Hours of Calibration:	35
Percent Operational Time:	100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	1	1	1	1	1	A	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
2-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.3
3-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
4-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
5-Dec	1	A	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.1
6-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.9	1.2
7-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.9	1.1
8-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.9	1.4
9-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	0.8	1.1
10-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	0.9	1.3
11-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	0.8	1.2
12-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	0.8	1.0
13-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	0.7	1.1
14-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	0.8	1.3
15-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	0.8	1.1
16-Dec	1	0	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	2	1	1	1.0	1.6
17-Dec	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	0.9	1.4
18-Dec	1	1	1	1	1	1	1	1	1	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.2
19-Dec	1	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	2	1	1	1	1	1	1	1.0	1.5
20-Dec	1	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.1
21-Dec	1	1	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4
22-Dec	1	2	1	1	2	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.5
23-Dec	1	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.2
24-Dec	1	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	1.4
25-Dec	1	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	1.3
26-Dec	1	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	0.9
27-Dec	1	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	1.0
28-Dec	1	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	1.0
29-Dec	A	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	0.8	1.0
30-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	0.8	1.0
31-Dec	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	A	1	1	0.8	1.1
	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.9	0.9	0.8	0.8	0.9	0.9	0.9	Diurnal Average	
	1.3	1.5	1.4	1.3	1.5	1.5	1.3	1.1	1.1	1.2	1.3	1.2	1.5	1.2	1.4	1.2	1.4	1.5	1.4	1.2	1.3	1.6	1.4	1.4	Diurnal Maximum	

C - Calibration

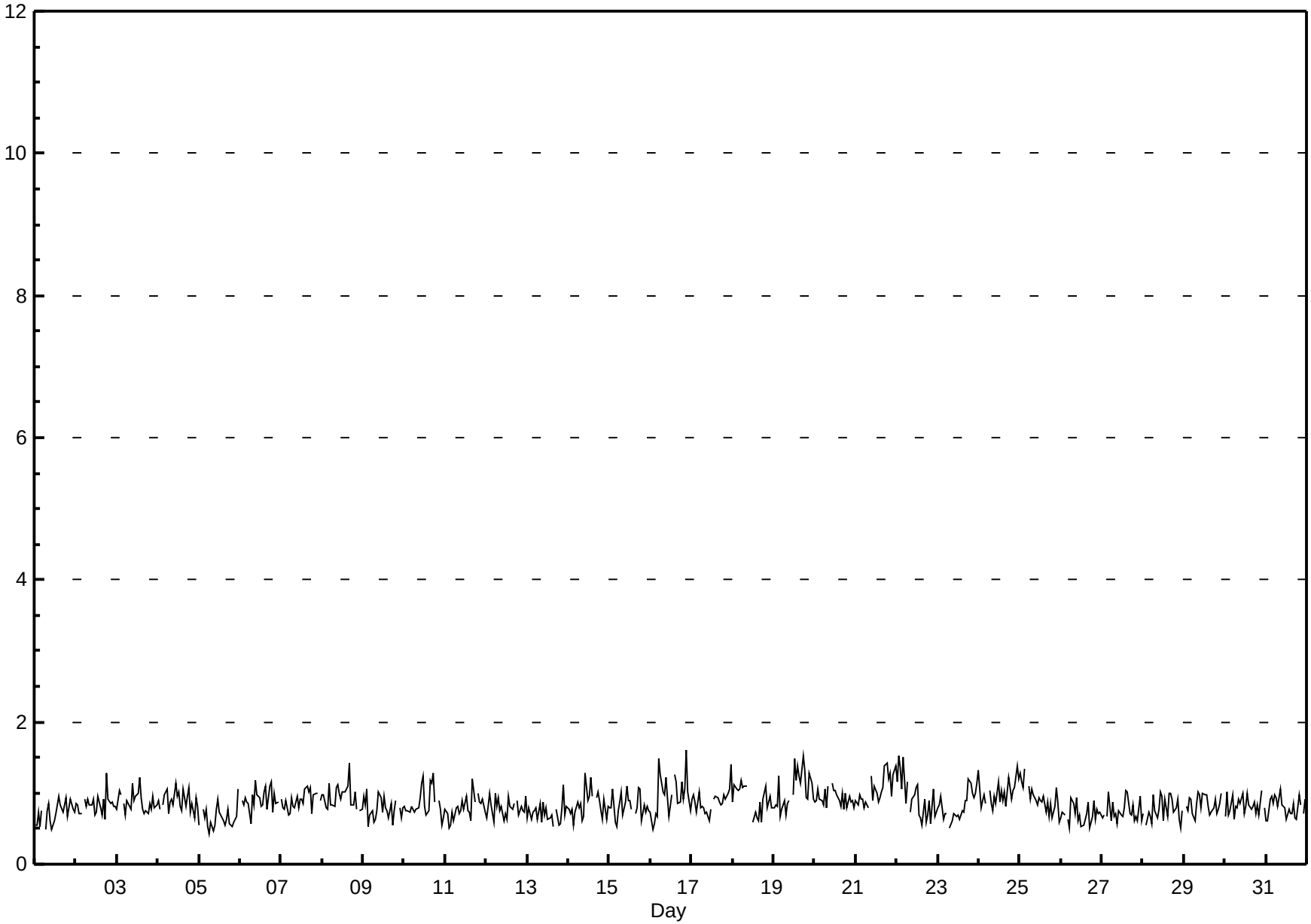
A - Automated Daily Zero Span

Peace Airshed Zone Association

Hourly Maximums

Hydrogen Sulphide (H_2S) - ppb

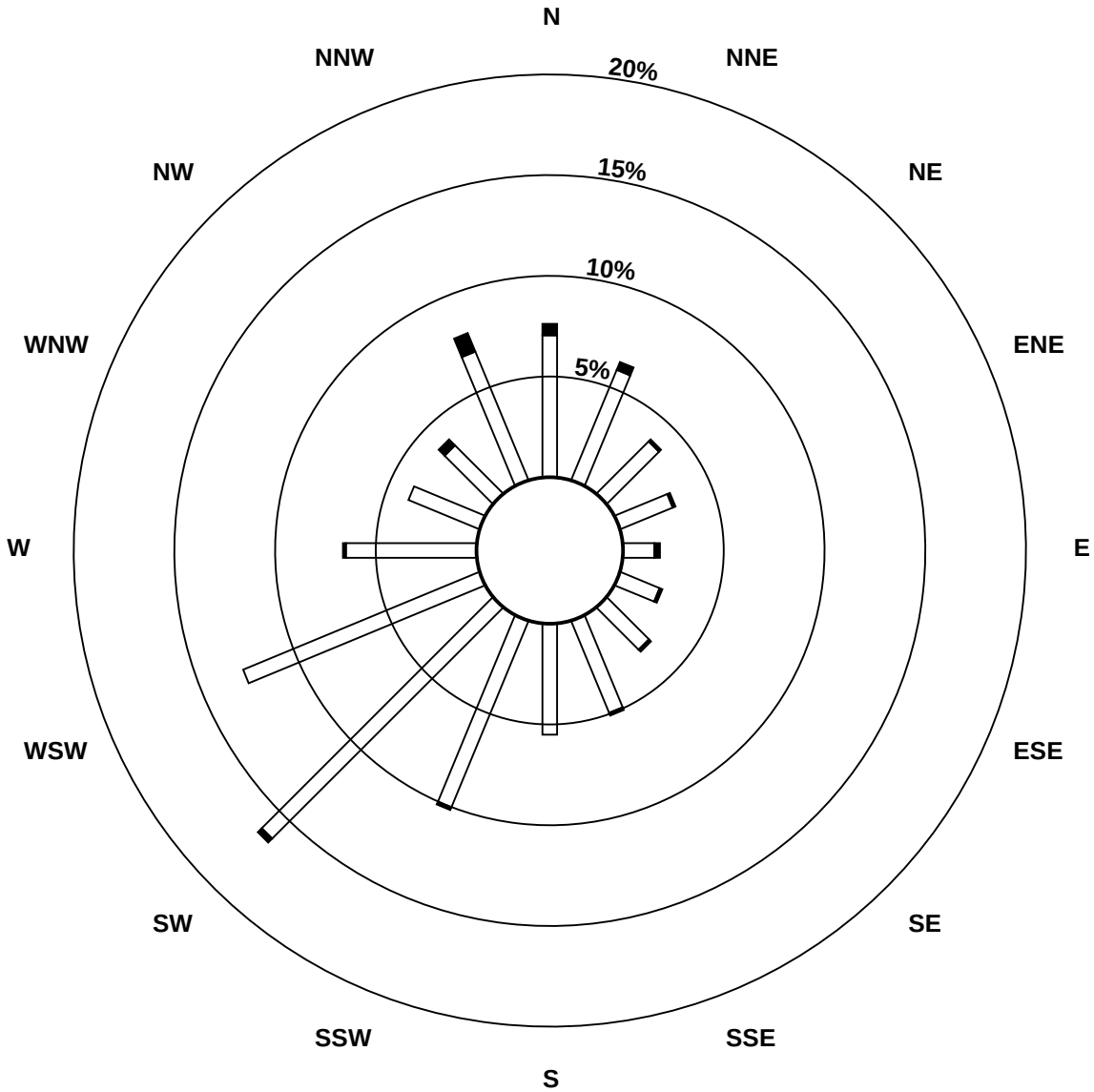
Falher - December 2013



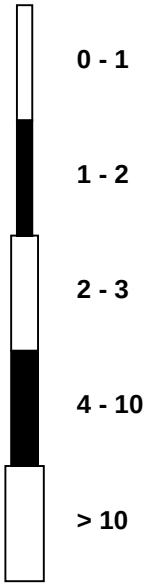
Pollutant Rose

Hydrogen Sulphide (H_2S) - ppb

Falher - December 2013



Pollutant Classes (ppb)

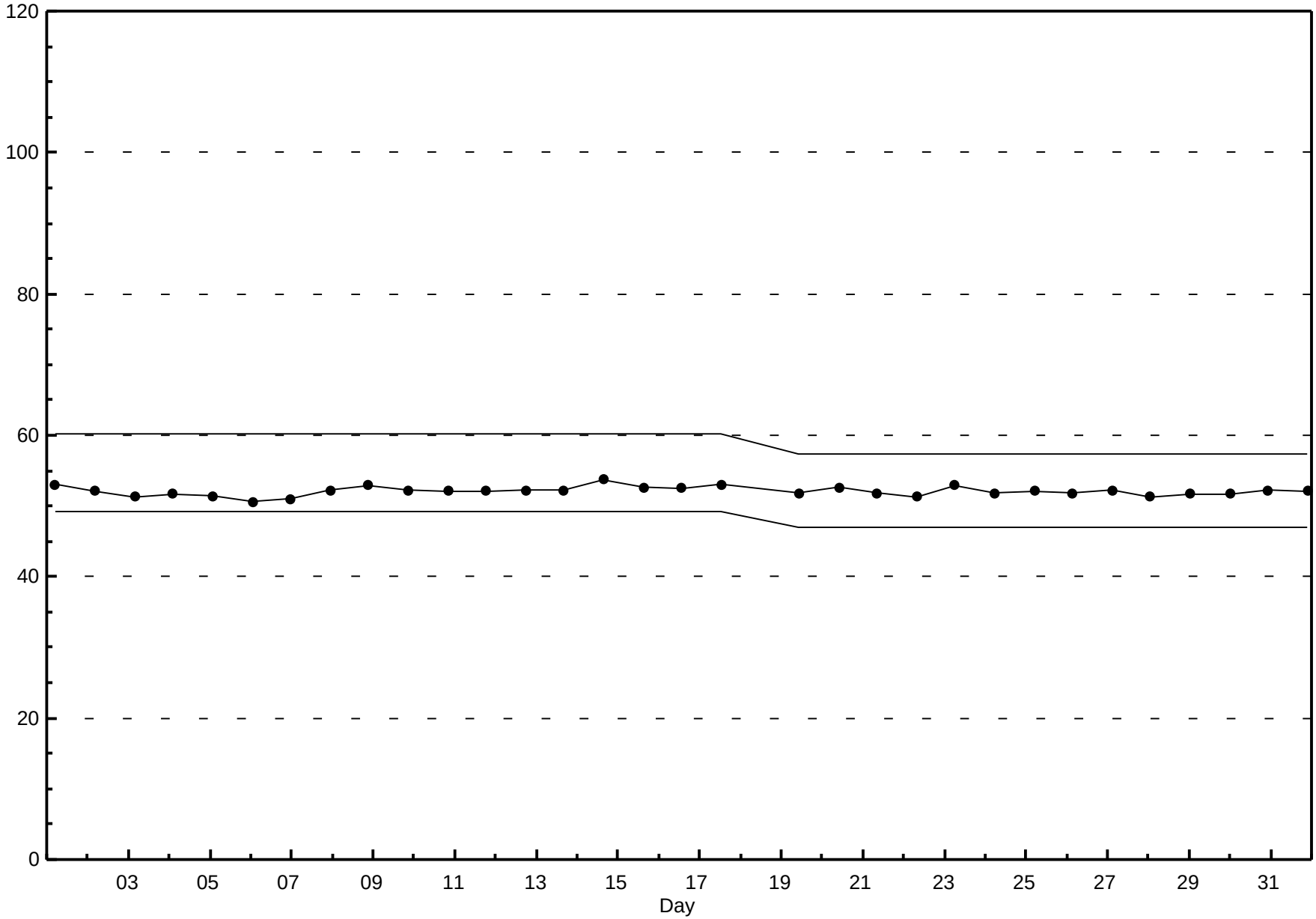


Peace Airshed Zone Association

Span Responses

Hydrogen Sulphide (H_2S)

Falher - December 2013



Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Falher - December 2013

Number of Exceedences (AAAQO): 1-hr: 0 24-hr: 0

Maximum Value: 4.3 ^{o}C on Dec 15 08:00

Maximum Daily Average: 1.7 ^{o}C on Dec 15

Minimum Value: -36 ^{o}C on Dec 6 07:00

Minimum Daily Average: -32.3 ^{o}C on Dec 6

Maximum Diurnal Average: -15.3 ^{o}C at hour 14

Minimum Diurnal Average: -16.8 ^{o}C at hour 10

Monthly Average: -16.20 ^{o}C

Percentiles: P_1 = -34.6 P_{10} = -28.1 Q_1 = -22.1 Median = -18.5 Q_3 = -9.7 P_{90} = -0.5 P_{99} = 3.8

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

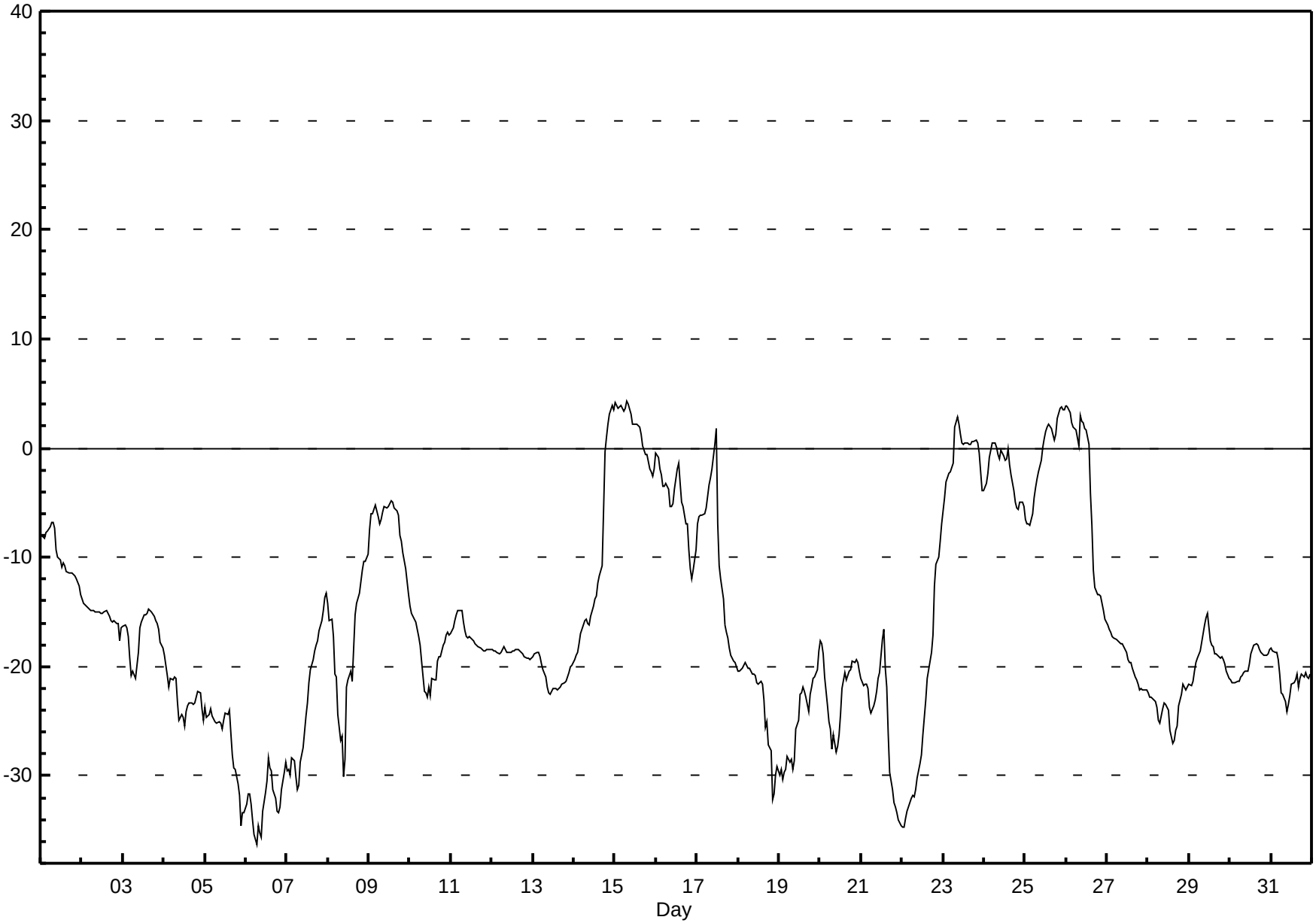
Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	-8	-8	-8	-8	-8	-7	-7	-7	-7	-9	-10	-10	-11	-11	-11	-11	-11	-11	-11	-12	-12	-12	-13	-13	-9.8	-6.7
2-Dec	-14	-14	-14	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-15	-16	-16	-16	-16	-16	-18	-16	-15.2	-13.8
3-Dec	-16	-16	-16	-17	-19	-21	-20	-21	-20	-19	-16	-16	-15	-15	-15	-15	-15	-15	-15	-16	-16	-17	-18	-18	-17.0	-14.7
4-Dec	-19	-20	-21	-22	-21	-21	-21	-21	-23	-25	-24	-25	-25	-24	-24	-23	-23	-24	-23	-23	-22	-22	-24	-25	-22.7	-18.9
5-Dec	-24	-25	-24	-24	-25	-25	-25	-25	-25	-25	-26	-25	-24	-24	-24	-26	-28	-29	-29	-31	-32	-35	-33	-33	-26.9	-23.7
6-Dec	-33	-32	-32	-33	-34	-35	-36	-35	-35	-36	-33	-31	-30	-28	-29	-29	-31	-32	-33	-33	-33	-31	-30	-29	-32.3	-28.3
7-Dec	-30	-29	-30	-28	-29	-30	-31	-31	-29	-27	-26	-25	-23	-21	-20	-19	-19	-18	-18	-17	-16	-15	-14	-13	-23.2	-13.3
8-Dec	-14	-16	-16	-17	-21	-21	-24	-27	-26	-30	-29	-22	-21	-20	-21	-18	-15	-14	-13	-12	-11	-10	-10	-10	-18.3	-9.7
9-Dec	-7	-6	-6	-6	-5	-6	-7	-7	-6	-5	-5	-5	-5	-5	-5	-5	-6	-6	-8	-9	-10	-11	-12	-13	-7.0	-4.8
10-Dec	-14	-15	-15	-16	-17	-17	-18	-20	-22	-22	-23	-22	-23	-21	-21	-21	-19	-19	-19	-18	-18	-17	-17	-17	-18.8	-14.4
11-Dec	-17	-16	-16	-15	-15	-15	-15	-16	-17	-17	-17	-17	-17	-18	-18	-18	-18	-18	-18	-19	-19	-18	-18	-18	-17.2	-14.8
12-Dec	-18	-19	-19	-19	-19	-19	-18	-18	-18	-19	-19	-19	-19	-19	-18	-18	-19	-19	-19	-19	-19	-19	-19	-19	-18.7	-18.1
13-Dec	-19	-19	-19	-19	-19	-20	-20	-21	-22	-22	-23	-22	-22	-22	-22	-22	-22	-22	-22	-21	-21	-21	-20	-20	-20.9	-18.7
14-Dec	-19	-19	-19	-18	-17	-16	-16	-16	-16	-16	-15	-14	-14	-13	-12	-12	-11	-6	0	1	2	3	4	4	-10.7	3.9
15-Dec	4	4	4	4	4	3	4	4	4	3	2	2	2	2	2	1	0	0	-1	-1	-2	-2	-3	-2	1.7	4.3
16-Dec	0	-1	-2	-2	-3	-3	-3	-4	-5	-5	-5	-4	-2	-1	-3	-5	-5	-7	-7	-9	-11	-12	-11	-9	-5.1	-0.4
17-Dec	-7	-6	-6	-6	-6	-6	-4	-3	-3	-2	0	2	-7	-11	-12	-14	-16	-17	-17	-18	-19	-20	-20	-20	-9.9	1.8
18-Dec	-20	-20	-20	-20	-20	-20	-20	-20	-21	-21	-21	-21	-22	-21	-22	-23	-26	-25	-27	-28	-32	-32	-30	-29	-23.3	-19.7
19-Dec	-30	-29	-30	-30	-29	-28	-29	-29	-29	-29	-26	-25	-23	-22	-22	-22	-23	-24	-23	-22	-21	-21	-20	-19	-25.2	-18.5
20-Dec	-18	-18	-19	-21	-24	-25	-26	-28	-26	-28	-27	-26	-24	-22	-21	-21	-21	-20	-20	-19	-20	-19	-20	-20	-22.2	-17.7
21-Dec	-21	-22	-22	-22	-22	-24	-24	-24	-23	-22	-21	-20	-17	-17	-20	-22	-26	-30	-31	-32	-33	-33	-34	-35	-24.9	-16.6
22-Dec	-35	-35	-34	-33	-33	-32	-32	-32	-31	-30	-29	-28	-26	-25	-23	-21	-20	-19	-17	-13	-11	-10	-8	-7	-24.3	-6.9
23-Dec	-6	-5	-3	-2	-2	-2	-1	2	3	2	1	1	0	1	0	0	0	1	1	1	1	0	-2	-4	-0.6	2.9
24-Dec	-4	-3	-2	-1	0	0	0	0	-1	-1	0	-1	-1	-1	0	-1	-2	-4	-5	-5	-6	-5	-5	-5	-2.2	0.5
25-Dec	-7	-7	-7	-7	-6	-5	-4	-3	-2	-1	0	1	1	2	2	2	1	1	1	3	4	4	4	4	-0.8	3.8
26-Dec	4	4	3	2	2	2	2	0	3	2	2	2	2	0	-4	-7	-11	-13	-13	-13	-14	-14	-15	-16	-3.7	3.9
27-Dec	-16	-17	-17	-17	-17	-17	-18	-18	-18	-18	-18	-19	-19	-20	-20	-20	-21	-21	-22	-22	-22	-22	-22	-22	-19.3	-16.3
28-Dec	-22	-23	-23	-23	-23	-24	-25	-25	-24	-23	-23	-24	-24	-26	-27	-27	-26	-25	-24	-23	-22	-22	-22	-22	-23.8	-21.7
29-Dec	-22	-22	-21	-20	-20	-19	-19	-18	-17	-16	-16	-15	-18	-18	-18	-19	-19	-19	-19	-19	-19	-20	-20	-21	-18.9	-15.2
30-Dec	-21	-21	-21	-21	-21	-21	-21	-21	-20	-20	-20	-20	-19	-18	-18	-18	-18	-18	-19	-19	-19	-19	-19	-18	-19.7	-17.9
31-Dec	-18	-19	-19	-19	-19	-21	-22	-22	-23	-24	-23	-23	-22	-21	-21	-21	-22	-21	-21	-21	-21	-21	-21	-21	-21.1	-18.3
	-15.9	-15.9	-15.9	-16.0	-16.2	-16.4	-16.7	-16.7	-16.6	-16.8	-16.3	-15.7	-15.6	-15.3	-15.6	-15.9	-16.3	-16.5	-16.4	-16.3	-16.4	-16.4	-16.5	-16.4	Diurnal Average	
	4.2	3.9	3.6	3.8	3.6	3.3	3.7	4.3	4.1	3.1	2.4	2.2	2.2	2.2	2.1	1.7	1.2	0.7	1.2	2.7	3.7	3.8	3.9	3.5	Diurnal Maximum	

Peace Airshed Zone Association

Hourly Averages

External Temperature (ET) - ^{o}C

Falher - December 2013



Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Falher - December 2013

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1 Spd	17	18	21	16	16	16	14	13	16	23	22	21	22	22	20	25	22	19	19	21	23	20	27	24	15.9	27.1
Dir	314	308	309	331	332	347	348	304	293	281	275	266	261	272	257	244	243	238	227	219	222	234	241	244	269	241
2 Spd	22	20	21	18	19	19	22	22	22	19	22	21	23	22	17	18	17	14	14	14	11	11	12	14	16.8	23.2
Dir	238	243	245	243	243	243	248	248	247	240	242	241	240	239	238	228	231	222	211	207	199	181	164	170	232	240
3 Spd	13	14	11	12	10	9	10	10	10	6	16	18	20	23	20	23	23	23	22	17	13	14	15	14	14.5	23.5
Dir	169	163	168	163	149	146	144	142	134	158	179	188	190	197	197	201	196	194	197	194	187	180	172	178	181	194
4 Spd	15	13	11	10	8	9	8	6	7	6	4	3	3	3	3	2	2	3	2	1	1	1	1	3	3.3	15.1
Dir	160	158	157	155	156	178	197	175	145	136	155	111	16	24	35	65	35	27	7	353	301	273	281	287	154	160
5 Spd	4	1	6	8	10	11	12	12	13	12	11	8	9	10	7	8	7	6	3	3	1	3	1	2	6.1	13.2
Dir	286	178	209	200	202	200	180	178	175	177	173	173	171	177	168	176	168	151	164	188	114	53	38	357	180	175
6 Spd	4	2	5	6	6	7	6	4	5	7	5	6	6	5	8	8	7	7	7	11	12	15	18	18	7.5	17.9
Dir	0	31	22	33	44	37	19	7	358	358	351	1	19	25	21	16	20	10	12	21	24	28	30	27	21	27
7 Spd	15	14	12	11	9	10	7	11	9	6	7	10	11	9	9	7	3	8	6	5	5	7	13	10	4.1	14.8
Dir	24	18	22	36	49	50	61	48	50	75	111	141	160	161	164	153	58	69	71	114	161	181	205	204	87	24
8 Spd	7	6	9	6	1	2	2	2	1	3	3	2	3	7	10	12	16	20	20	17	13	9	10	16	3.0	20.0
Dir	229	210	244	234	107	85	115	69	117	4	5	44	27	31	40	36	64	82	82	92	130	181	196	225	100	82
9 Spd	24	23	18	18	23	23	14	15	21	22	23	24	22	20	14	6	15	19	24	18	21	24	24	24	17.7	24.2
Dir	234	246	251	262	279	261	221	213	227	233	216	228	231	235	229	210	233	286	296	291	298	286	274	271	253	271
10 Spd	21	20	17	13	8	14	8	2	9	2	5	10	14	16	17	13	15	14	16	17	21	21	17	19	7.6	21.1
Dir	272	259	258	260	253	242	222	184	127	113	9	3	7	5	10	21	35	25	11	5	8	12	7	1	345	12
11 Spd	17	5	6	3	8	11	12	16	18	21	20	18	20	21	19	18	18	19	20	19	17	17	15	15	13.9	21.4
Dir	20	10	352	310	283	272	272	254	253	254	260	264	258	260	257	253	250	253	258	263	266	266	267	265	265	254
12 Spd	17	15	15	15	14	15	13	14	15	16	17	16	15	16	12	12	11	13	11	12	12	13	14	11	13.0	17.1
Dir	265	263	266	264	267	273	284	315	320	309	301	301	299	295	291	299	294	304	307	304	313	320	329	339	296	265
13 Spd	11	12	13	13	11	14	15	15	14	12	8	12	11	10	6	4	4	5	6	11	14	17	20	26	6.0	26.3
Dir	331	337	338	324	274	255	244	238	233	217	188	191	192	214	238	306	327	348	345	345	350	358	358	350	299	350
14 Spd	26	28	26	23	21	17	17	16	15	16	19	20	17	19	17	20	20	17	18	16	21	21	33	29	8.2	32.7
Dir	353	357	0	8	18	20	21	22	21	16	27	28	33	27	29	29	61	138	181	153	151	176	205	207	32	205
15 Spd	42	38	30	30	27	23	27	39	44	45	39	44	43	41	40	36	32	29	27	27	20	18	21	20	32.0	44.5
Dir	210	211	213	209	211	211	216	219	225	234	236	234	237	237	236	234	231	226	213	211	207	213	200	212	222	234
16 Spd	28	26	21	23	19	22	23	22	16	18	15	19	18	20	18	16	13	6	1	8	9	12	12	13	12.0	28.5
Dir	219	214	217	219	214	228	232	225	224	222	221	227	237	236	230	215	217	239	284	3	38	58	63	54	223	219
17 Spd	15	19	21	23	28	30	31	27	22	19	16	18	24	25	23	26	25	23	24	25	26	23	19	21	3.5	31.1
Dir	56	61	66	61	61	67	72	86	87	110	172	221	281	275	263	243	232	230	245	248	235	231	227	215	204	72
18 Spd	19	19	12	10	8	12	13	11	9	5	9	17	13	13	7	8	4	4	6	7	9	10	14	16	5.6	19.3
Dir	217	221	215	211	196	174	172	215	222	222	177	158	158	158	147	162	145	119	94	67	53	47	46	43	169	217
19 Spd	14	13	10	8	10	9	8	10	8	4	6	7	5	4	5	5	4	6	7	5	5	5	4	8	6.1	13.7
Dir	35	26	352	1	17	58	47	56	54	28	31	15	15	6	27	337	348	350	4	341	344	322	284	338	15	35
20 Spd	12	10	11	8	9	5	2	4	4	1	3	4	6	9	8	11	9	8	8	8	9	10	10	9	4.9	12.3
Dir	360	359	352	325	292	299	326	304	334	214	202	223	239	243	228	243	255	216	216	236	233	247	247	250	267	360
21 Spd	9	9	9	10	10	8	4	1	1	6	7	4	1	5	5	2	1	5	4	4	4	3	2	2	2.0	10.1
Dir	188	193	203	194	196	192	152	133	101	87	109	124	194	199	156	298	322	28	350	336	348	346	325	344	178	194
22 Spd	1	1	2	3	3	4	4	5	5	7	11	10	11	10	21	25	28	29	28	32	37	36	35	36	11.3	36.5
Dir	327	332	314	328	325	333	333	333	331	332	339	344	344	352	351	356	1	7	14	55	76	82	87	97	32	76

Peace Airshed Zone Association

Hourly Averages

Wind Speed (km/h)
Wind Direction (deg)
Falher - December 2013

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
23 Spd	41	33	30	32	30	23	23	25	33	22	34	22	20	20	15	17	14	10	10	10	9	12	11	11	13.5	40.9
Dir	114	117	119	133	133	131	140	191	210	224	245	248	241	246	232	232	234	227	204	197	215	216	208	185	184	114
24 Spd	9	6	8	15	21	26	29	28	18	14	24	20	11	15	21	14	12	9	11	10	8	8	5	3	12.4	28.8
Dir	165	138	191	212	225	236	238	245	272	259	253	261	248	219	242	203	194	199	206	202	221	272	312	36	233	238
25 Spd	5	7	10	10	16	20	22	24	24	21	24	18	18	19	14	17	16	16	19	23	28	27	27	25	14.1	27.9
Dir	92	117	128	101	120	130	128	137	147	161	169	179	199	223	231	246	217	198	195	221	225	221	216	215	185	225
26 Spd	26	25	20	16	13	17	6	8	10	16	11	17	18	8	13	20	27	29	27	22	20	19	23	22	13.6	28.6
Dir	218	220	223	225	215	207	184	102	214	205	174	124	142	238	272	298	287	266	256	254	253	258	252	247	236	266
27 Spd	23	23	22	21	20	21	19	22	21	23	22	21	22	22	21	21	20	20	18	12	16	14	12	10	18.8	23.3
Dir	248	247	250	248	245	247	251	252	255	251	256	248	240	235	230	226	221	220	220	217	207	213	222	226	238	247
28 Spd	9	8	10	9	8	7	6	3	2	1	5	6	6	5	6	9	10	11	10	12	13	13	15	17	4.6	16.7
Dir	232	222	221	227	216	206	199	162	158	235	318	0	9	327	321	343	339	337	341	343	352	341	350	346	319	346
29 Spd	19	20	20	21	23	24	20	18	13	5	3	9	17	22	24	24	23	20	14	11	14	14	18	14	9.9	23.9
Dir	345	345	350	347	348	355	356	352	340	333	157	235	236	245	251	248	249	243	231	211	224	234	243	242	286	355
30 Spd	13	11	9	10	8	8	3	5	8	9	10	10	13	13	14	14	16	17	19	19	21	26	24	22	10.6	26.3
Dir	235	229	231	244	259	267	272	265	269	272	283	284	307	317	336	354	334	332	332	343	340	335	338	339	312	335
31 Spd	22	21	20	8	7	8	12	9	8	6	5	6	5	6	3	2	5	3	2	3	2	4	3	4	4.2	21.6
Dir	336	328	328	310	277	261	238	231	222	199	183	183	194	230	258	223	207	235	155	229	216	221	212	200	266	336
Spd	4.9	4.7	4.7	4.3	3.9	4.5	4.2	5.1	6.0	6.8	7.6	7.6	8.1	9.3	7.9	7.4	6.5	5.5	5.3	4.2	3.7	4.3	5.0	4.6	Diurnal Average	
Dir	249	248	256	245	240	232	219	225	230	235	233	234	241	248	254	253	251	248	248	247	244	254	247	252		
Spd	42.4	38.0	30.4	31.5	30.5	30.4	31.1	39.2	44.0	44.5	39.2	43.9	42.7	40.9	39.8	35.9	32.3	29.3	28.2	31.6	36.5	35.9	35.2	36.5	Diurnal Maximum	
Dir	210	211	119	133	133	67	72	219	225	234	236	234	237	237	236	234	231	226	14	55	76	82	87	97		

Maximum Speed Value: 45 km/h on Dec 15 10:00
Maximum Daily Speed Average: 32.0 km/h on Dec 15
Maximum Diurnal Speed Average: 9.3 km/h at hour 14

Minimum Speed Value: 1 km/h on Dec 5 23:00
Minimum Daily Speed Average: 2.0 km/h on Dec 21
Minimum Diurnal Speed Average: 3.7 km/h at hour 21

Monthly Average Velocity: 5.59 km/h 243.1 deg

Speed Percentiles: $P_1 = 0.8$ $P_{10} = 3.9$ $Q_1 = 7.9$ Median = 13.6 $Q_3 = 20.1$ $P_{90} = 24.0$ $P_{99} = 40.9$

All monthly, daily, and diurnal averages have been calculated using vector methods

Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Percent Operational Time:	100.0

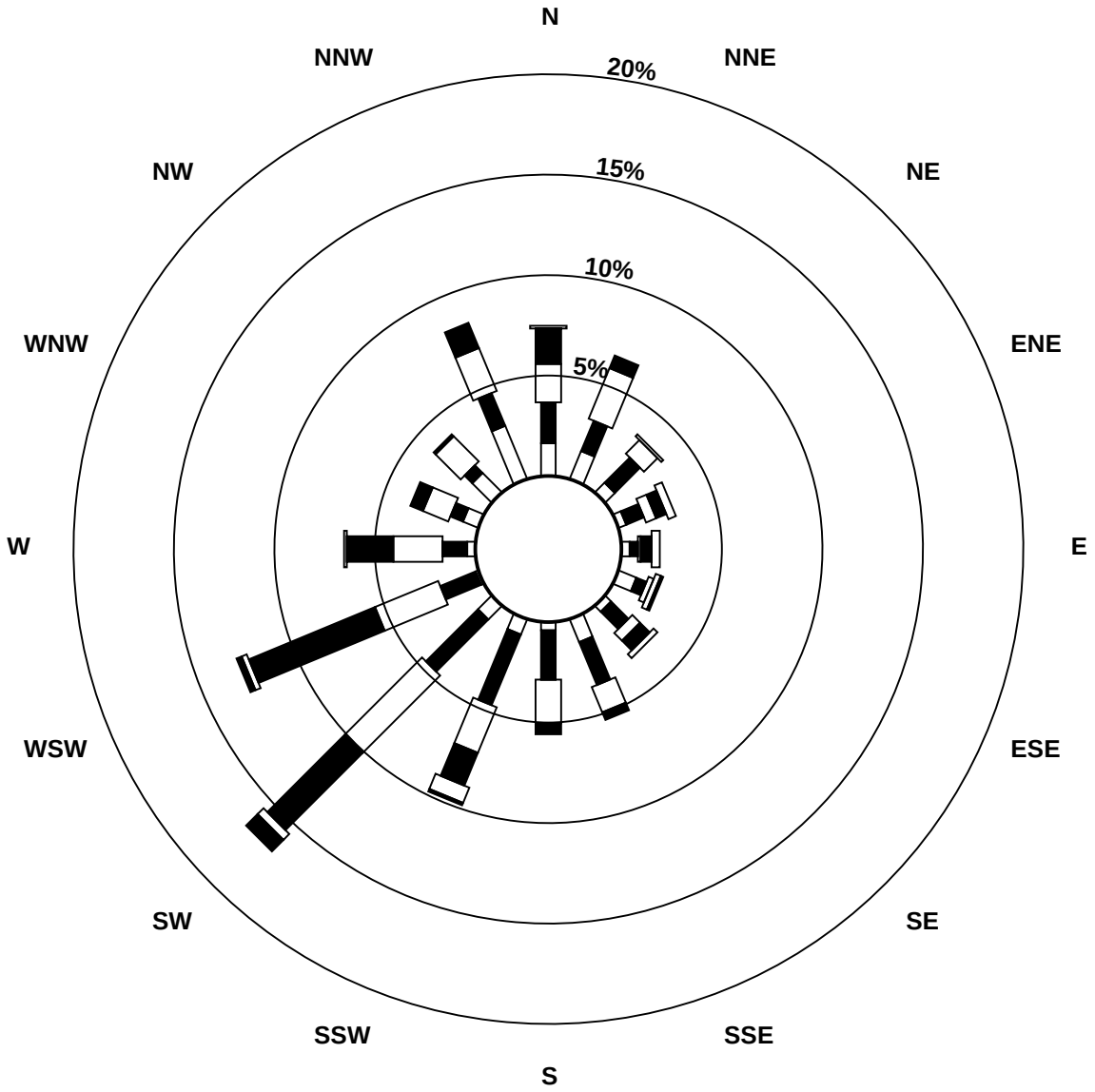
Frequency Distribution

Direction	Speed Range (km/h) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	18	36	32	22	4	0	112
NorthEast	15	21	22	5	3	0	66
East	5	10	1	5	5	0	26
SouthEast	14	18	6	7	4	1	50
South	11	43	33	13	0	0	100
SouthWest	10	45	66	75	12	9	217
West	8	16	32	46	1	0	103
NorthWest	22	10	30	8	0	0	70
Total	103	199	222	181	29	10	744

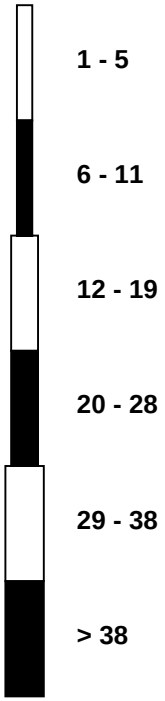
Wind Rose

Wind Speed (WS) (km/h)

Falher - December 2013



Wind Speed Classes (km/h)



Peace Airshed Zone Association

Hourly Averages - Wind Speed (Scalar)

Wind Speed (km/h)

Falher - December 2013

Maximum Speed: 45 km/h on Dec 15 10:00

Maximum Daily Speed Average: 32.7 km/h on Dec 15

Minimum Speed: 1 km/h on Dec 5 02:00

Minimum Daily Speed Average: 4.9 km/h on Dec 21

Maximum Diurnal Speed Average: 16.9 km/h at hour 1

Minimum Diurnal Speed Average: 12.9 km/h at hour 10

Monthly Average Speed: 14.40 km/h

Percentiles: P_1 = 1.3 P_{10} = 4.1 Q_1 = 8.1 Median = 13.6 Q_3 = 20.3 P_{90} = 24.1 P_{99} = 40.9

Hours in Service: 744

Hours of Data: 744

Hours of Missing Data: 0

Percent Operational Time: 100.0

Day	Hourly Period Ending At (MST) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Average	Daily Maximum
1-Dec	17	18	21	17	17	16	15	14	16	23	22	21	23	22	21	25	22	19	19	21	23	21	27	24	20.1	27.1
2-Dec	22	20	21	18	19	19	22	22	22	19	22	21	23	22	17	18	17	14	14	14	11	11	12	14	18.1	23.2
3-Dec	13	14	11	12	10	9	10	10	11	7	16	18	20	23	20	23	23	24	22	17	13	14	15	14	15.4	23.5
4-Dec	15	13	11	10	9	9	8	6	7	6	4	3	4	3	4	2	2	3	2	1	1	2	2	3	5.4	15.2
5-Dec	4	1	6	8	10	11	12	12	13	12	11	8	9	10	7	8	7	6	3	4	2	3	2	2	7.1	13.2
6-Dec	4	2	5	6	6	7	6	4	5	7	6	6	6	5	8	8	7	7	7	11	12	15	18	18	7.7	17.9
7-Dec	15	15	12	11	9	10	8	11	9	7	7	10	11	9	9	7	4	8	6	5	5	7	13	10	9.0	14.8
8-Dec	7	7	10	7	2	2	3	3	1	3	3	2	3	7	10	12	16	20	20	18	13	9	10	17	8.5	20.1
9-Dec	24	23	18	18	23	23	15	16	21	22	23	24	22	20	14	6	16	21	24	18	21	24	24	24	20.2	24.3
10-Dec	21	20	17	13	8	14	8	3	9	3	5	10	14	16	17	13	15	14	16	17	21	21	17	19	13.8	21.2
11-Dec	17	6	7	4	8	11	12	16	18	21	20	18	20	21	19	18	18	19	20	19	17	17	15	15	15.8	21.5
12-Dec	17	15	15	15	14	15	13	14	15	16	17	16	15	16	12	12	11	13	11	12	12	14	14	11	14.0	17.1
13-Dec	11	12	13	14	11	14	15	16	14	12	8	12	11	10	7	4	4	5	6	11	14	17	20	26	11.9	26.4
14-Dec	27	28	26	23	21	17	17	17	15	16	19	20	17	19	17	20	22	18	18	16	21	23	33	29	20.7	32.7
15-Dec	42	38	30	30	27	23	27	39	44	45	39	44	43	41	40	36	32	29	27	27	20	18	21	21	32.7	44.6
16-Dec	29	26	21	23	19	23	23	22	16	18	15	19	18	20	18	16	13	6	2	8	9	12	12	13	16.7	28.5
17-Dec	15	19	21	23	28	30	31	27	22	20	17	19	24	25	23	26	25	23	24	25	26	23	19	21	23.2	31.1
18-Dec	19	19	12	10	8	12	13	12	9	5	9	17	13	13	7	8	5	4	6	7	9	10	14	16	10.7	19.3
19-Dec	14	13	10	9	10	9	9	11	8	4	7	7	5	4	5	5	4	6	7	5	5	5	4	8	7.3	13.9
20-Dec	12	11	11	9	9	6	2	4	4	2	3	4	6	9	8	11	9	8	8	8	9	10	10	9	7.5	12.4
21-Dec	9	10	9	10	10	8	4	1	1	6	8	4	1	5	5	3	2	5	4	4	4	3	2	2	4.9	10.2
22-Dec	1	1	2	3	3	4	5	5	5	7	11	10	11	10	21	25	28	29	28	33	37	36	35	37	16.1	36.6
23-Dec	41	33	31	32	30	23	23	26	33	23	34	22	20	20	15	17	14	10	10	10	9	12	11	11	21.3	41.0
24-Dec	10	7	9	15	21	26	29	28	18	15	24	20	12	15	21	14	12	9	11	10	9	8	6	4	14.6	28.9
25-Dec	5	8	11	10	16	20	22	24	25	21	24	18	18	19	14	17	16	16	19	23	28	27	27	25	18.8	28.0
26-Dec	26	25	20	16	13	17	10	9	10	16	12	17	19	12	13	20	27	29	27	22	20	19	23	22	18.5	28.6
27-Dec	23	23	22	21	20	21	19	22	21	23	22	21	22	22	21	21	20	20	18	12	16	14	12	10	19.4	23.4
28-Dec	9	8	10	9	8	7	6	3	2	1	5	7	7	5	6	9	10	11	10	12	13	13	15	17	8.4	16.7
29-Dec	19	20	20	21	23	24	20	18	13	5	3	10	17	22	24	24	23	20	14	11	14	14	18	14	17.2	24.0
30-Dec	13	11	9	11	8	8	3	6	8	9	11	10	13	13	14	14	17	17	19	19	21	26	24	22	13.6	26.3
31-Dec	22	21	20	9	7	8	12	10	8	6	5	6	5	7	4	2	5	3	2	3	2	5	3	4	7.4	21.6
	16.9	15.7	14.8	14.1	13.8	14.4	13.6	13.9	13.7	12.9	13.9	14.3	14.6	15.0	14.1	14.3	14.4	14.1	13.8	13.7	14.1	14.6	15.5	15.6	Diurnal Average	
	42.4	38.0	30.8	31.6	30.5	30.4	31.1	39.3	44.1	44.6	39.2	43.9	42.7	40.9	39.8	36.0	32.4	29.3	28.3	32.8	36.6	36.0	35.4	36.6	Diurnal Maximum	

All monthly, daily, and diurnal averages have been calculated using scalar methods

Peace Airshed Zone Association

Hourly Standard Deviations

Wind Direction (WD) - deg

Falher - December 2013

Maximum Value: 81.7 deg on Dec 20 10:00

Minimum Value: 1.0 deg on Dec 22 15:00

Percentiles: P_1 = 1.7 P_{10} = 2.6 Q_1 = 3.5 Median = 5.8 Q_3 = 10.7 P_{90} = 19.6 P_{99} = 56.3

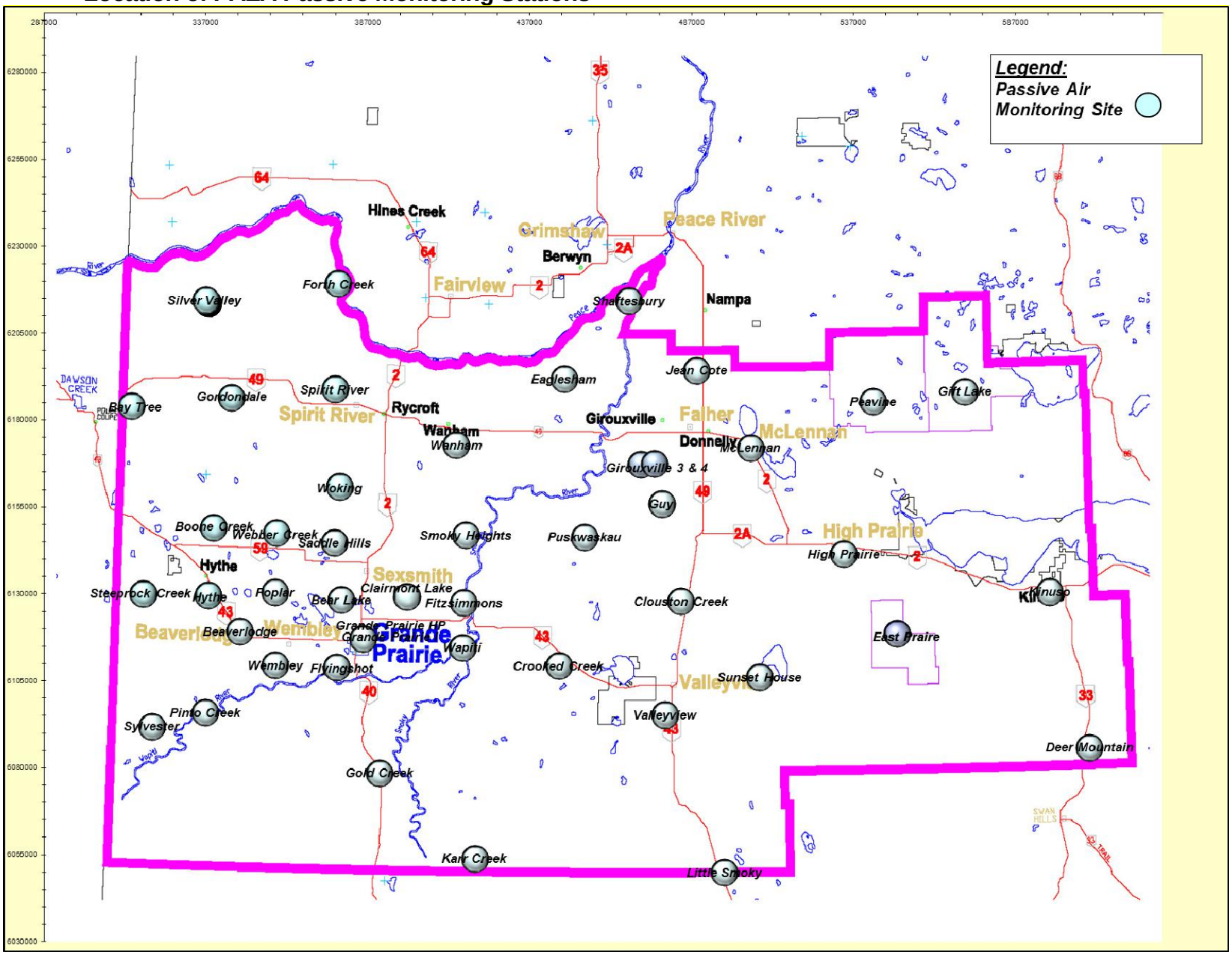
Hours in Service:	744
Hours of Data:	744
Hours of Missing Data:	0
Hours of Calibration:	0
Percent Operational Time:	100.0

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-Dec	5	2	5	9	8	8	12	15	8	4	3	7	11	4	9	3	4	3	3	3	3	8	3	4	15.3
2-Dec	3	4	4	4	4	4	6	6	5	5	3	4	3	3	6	6	6	4	5	4	3	9	7	4	9.3
3-Dec	5	6	9	3	6	3	3	11	7	5	8	3	2	4	6	4	2	2	3	2	4	4	4	7	10.5
4-Dec	6	6	9	6	9	12	6	10	10	10	12	32	8	18	25	23	21	20	35	44	53	39	30	21	52.9
5-Dec	13	51	9	3	4	7	7	4	3	2	5	6	4	3	7	5	9	6	8	34	45	19	73	54	72.6
6-Dec	9	19	17	22	10	8	19	20	11	5	12	11	10	8	2	3	5	4	11	6	2	4	2	2	21.6
7-Dec	1	2	3	6	7	10	24	4	8	19	9	9	8	12	6	8	61	8	10	29	11	11	4	8	61.5
8-Dec	15	12	13	30	80	28	43	41	25	11	7	12	14	7	8	3	11	6	7	12	14	10	7	7	80.2
9-Dec	3	4	5	9	7	8	15	15	3	7	5	3	4	4	5	18	7	27	6	3	8	8	6	3	26.7
10-Dec	7	4	5	5	11	9	18	43	5	19	19	10	4	3	5	3	10	10	3	5	3	3	4	3	43.0
11-Dec	6	33	21	71	10	4	9	4	3	2	3	2	3	4	3	3	3	3	2	3	3	3	3	3	70.9
12-Dec	3	3	3	4	3	3	10	6	5	7	4	4	3	3	8	7	4	5	6	8	6	4	5	6	9.7
13-Dec	3	5	4	15	7	6	5	3	8	6	12	13	9	9	14	14	19	15	11	4	5	5	4	3	19.4
14-Dec	3	4	4	5	4	3	3	4	4	3	5	3	4	4	4	5	24	17	11	7	5	24	2	3	24.4
15-Dec	2	2	2	3	2	4	2	3	3	3	2	2	2	2	2	3	3	2	5	2	4	4	5	8	8.0
16-Dec	2	2	4	1	2	7	2	3	9	9	5	4	2	2	3	3	3	21	67	14	11	12	9	7	67.4
17-Dec	10	3	2	4	2	3	3	5	5	23	22	16	5	6	7	5	5	6	7	7	5	3	8	4	22.5
18-Dec	4	7	5	5	5	13	3	18	8	7	17	3	5	5	13	13	27	16	22	15	8	9	4	6	27.0
19-Dec	10	10	6	7	18	19	19	10	20	18	17	17	17	13	18	11	19	15	9	16	19	20	18	4	19.8
20-Dec	9	14	6	27	5	23	21	19	16	82	12	9	8	3	8	4	7	10	7	7	6	5	3	17	81.7
21-Dec	9	10	5	7	7	10	22	16	22	9	7	23	41	18	6	54	60	27	29	11	12	9	11	9	59.8
22-Dec	11	9	10	8	4	2	4	4	2	2	5	2	4	2	1	2	3	2	4	17	3	3	6	3	16.6
23-Dec	3	4	9	3	2	3	8	18	3	7	6	4	4	3	3	5	7	8	11	8	3	2	5	11	17.9
24-Dec	24	18	26	7	5	2	3	7	7	11	5	3	15	8	8	4	5	7	6	7	19	5	26	45	44.6
25-Dec	6	16	6	14	8	4	2	3	4	6	3	2	9	5	4	3	15	5	10	5	2	2	2	2	16.5
26-Dec	3	2	2	2	4	8	67	31	20	8	24	4	13	41	5	7	9	4	4	4	5	5	3	4	66.9
27-Dec	4	4	4	4	4	3	3	3	3	2	6	6	4	3	3	5	3	4	5	6	4	4	5	5	6.5
28-Dec	7	9	6	8	9	8	7	31	28	33	13	17	13	17	8	4	5	3	4	5	3	3	4	3	33.3
29-Dec	2	4	4	2	3	3	2	3	5	52	17	30	7	5	4	3	3	3	6	11	10	5	5	7	52.2
30-Dec	5	6	7	10	9	9	50	11	7	4	6	10	7	5	10	7	4	3	3	8	5	2	3	3	49.9
31-Dec	3	2	2	41	15	17	5	12	7	12	18	17	18	16	15	29	11	30	48	29	26	14	15	18	48.3
	24.1	51.1	26.5	70.9	80.2	28.5	66.9	43.0	27.8	81.7	24.2	31.7	41.3	41.3	25.1	53.8	61.5	30.0	67.4	43.8	52.9	39.0	72.6	53.5	

PAZA

Monthly Passive Data Summary

Location of PAZA Passive Monitoring Stations



PAZA Passive Results for December 2013

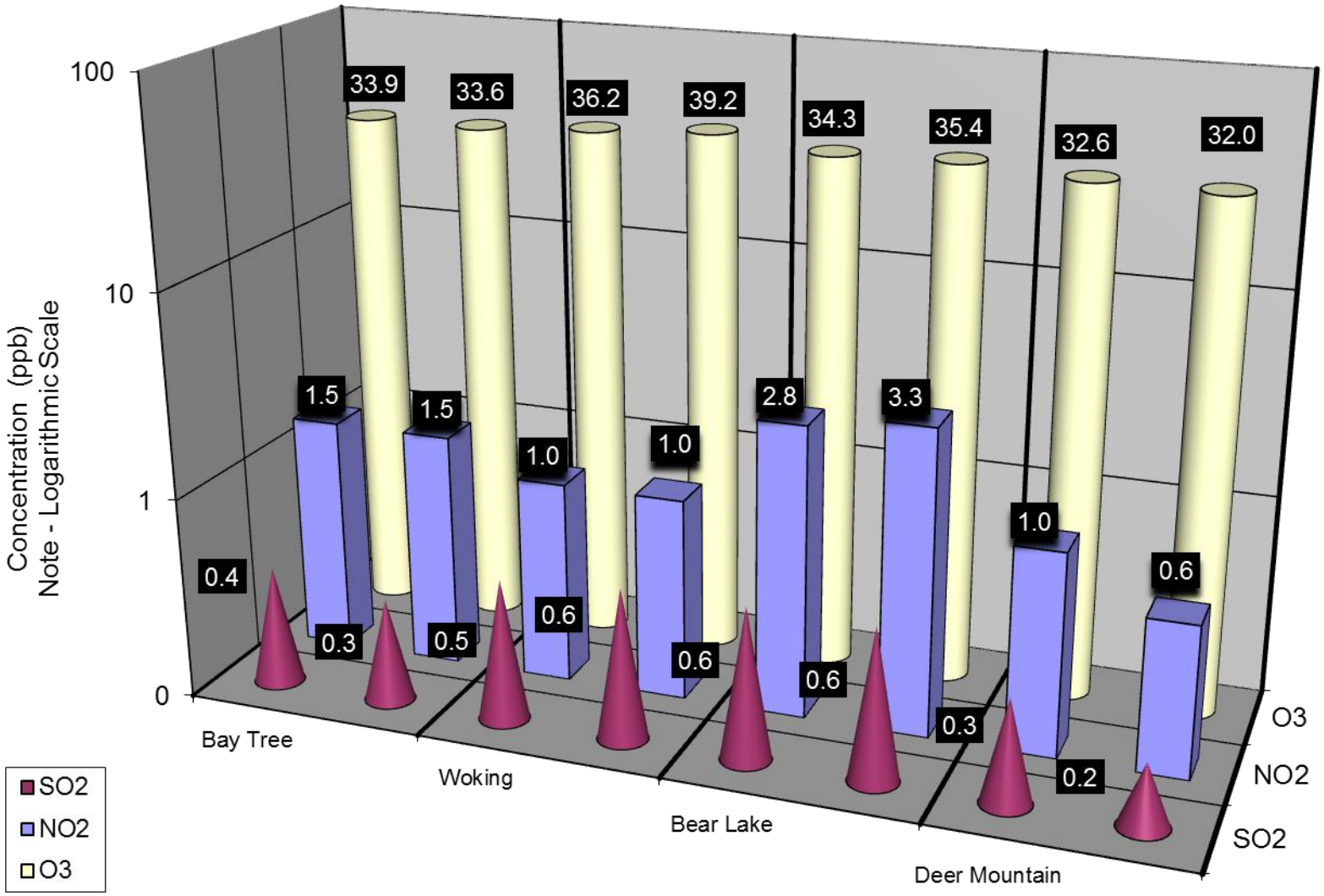
Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
Duplicates						
2a	Bay Tree	**0.4**	**33.9**	**1.5**		
2b	Bay Tree	**0.3**	**33.6**	**1.5**		
10a	Woking	**0.5**	**36.2**	**1.0**		
10b	Woking	**0.6**	**39.2**	**1.0**		
23a	Bear Lake	**0.6**	**34.3**	**2.8**		
23b	Bear Lake	**0.6**	**35.4**	**3.3**		
48a	Deer Mountain	**0.3**	**32.6**	**1.0**		
48b	Deer Mountain	**0.2**	**32.0**	**0.6**		
64a	Girouxville 4				**0.2**	
64b	Girouxville 4				**0.3**	
1	Silver Valley	**0.5**	**30.8**	**1.0**		08-27-081-11 W6M
2	Bay Tree	**0.4**	**33.7**	**1.5**		13-16-078-13 W6M
3	Fourth Creek	**N/S**	**N/S**	**N/S**		04-13-082-07 W6M
4	Gordondale	**0.5**	**42.5**	**1.0**		04-34-078-10 W6M
5	Boone Creek	**0.4**	**34.7**	**1.5**		16-36-074-11 W6M
7	Steeprock Creek	**0.3**	**37.8**	**1.0**		09-35-072-13 W6M
9	Spirit River	**0.3**	**37.1**	**1.5**		08-12-079-07 W6M
10	Woking	**0.5**	**37.7**	**1.0**		01-13-076-07 W6M
11	Webber Creek	**0.6**	**35.1**	**2.4**		09-36-074-09 W6M
12	Hythe	**0.4**	**38.0**	**1.9**		14-36-072-11 W6M
14	Sylvester	**0.1**	**31.3**	**1.5**		08-06-069-12 W6M
16	Beaverlodge	**0.3**	**N/S**	**2.8**		15-36-071-10 W6M
17	Poplar	**0.6**	**35.4**	**2.4**		13-06-073-08 W6M
18	Saddle Hills	**0.4**	**35.7**	**1.5**		04-25-074-07 W6M
19	Wanham	**0.5**	**36.8**	**1.5**		16-22-077-03 W6M
20	Shaftesbury	**N/S**	**N/S**	**N/S**		04-03-082-23 W5M
21	Eaglesham	**0.3**	**30.4**	**1.0**		16-21-079-25 W5M
23	Bear Lake	**0.6**	**34.9**	**3.0**		15-31-072-06 W6M
24	Wembley	**0.5**	**35.3**	**2.8**		12-31-070-08 W6M
25	Pinto Creek	**0.2**	**33.0**	**1.0**		04-24-069-11 W6M
26	Flyingshot	**0.4**	**30.6**	**3.7**		15-36-070-07 W6M
27	Grande Prairie I	**0.5**	**26.3**	**12.6**		08-15-071-06 W6M

PAZA Passive Results for December 2013 (Continued)

28	Clairmont Lake	**0.6**	**35.5**	**2.4**		09-06-073-04 W6M
29	Smoky Heights	**0.6**	**48.8**	**2.0**		04-06-075-02 W6M
30	Fitzsimmons	**0.3**	**30.8**	**2.4**		15-36-072-03 W6M
32	Gold Creek	**0.3**	**26.2**	**3.6**		06-33-067-05 W6M
33	Wapiti	**0.5**	**32.1**	**1.9**		02-25-071-03 W6M
34	Puskwaskau	**0.3**	**29.2**	**1.0**		15-35-074-25 W5M
35	Jean Cote	**N/S**	**N/S**	**N/S**		12-35-079-21 W5M
36	Guy	**0.3**	**38.2**	**1.5**		03-04-076-22 W5M
37	Crooked Creek	**0.3**	**34.1**	**1.5**		16-01-071-26 W5M
38	Karr Creek	**0.2**	**25.4**	**1.3**		10-16-065-02 W6M
39	Clouston Creek	**0.3**	**33.7**	**1.5**		12-01-073-22 W5M
40	McLennan	**0.5**	**35.1**	**1.5**		03-29-077-19 W5M
41	Valleyview	**0.5**	**39.3**	**1.5**		09-30-069-22 W5M
42	Sunset House	**0.4**	**37.9**	**1.0**		05-32-070-19 W5M
43	High Prairie	**0.3**	**35.9**	**1.9**		16-13-074-17 W5M
44	Peavine	**0.2**	**27.8**	**1.0**		03-05-079-15 W5M
45	Gift Lake	**0.3**	**30.0**	**1.0**	**0.1**	10-07-079-12 W5M
46	Little Smoky	**0.4**	**29.9**	**3.3**		12-01-065-21 W5M
47	Kinuso	**0.2**	**31.8**	**1.5**		12-10-073-10 W5M
48	Deer Mountain	**0.3**	**32.3**	**0.8**		15-22-068-09 W5M
49	Grande Prairie HP	**0.5**	**23.9**	**8.3**		17-26-071-06 W6M
50	East Prairie	**0.2**	**28.2**	**0.6**		13-02-072-15 W5M
63	Girouxville 3				**BDL**	14-02-077-23 W5M
64	Girouxville 4				**0.3**	4-08-077-22 W5M

*BDL = Below Detection Level

*N/S - No sample



Duplicate Summary Chart

Passive Summary for December 2013

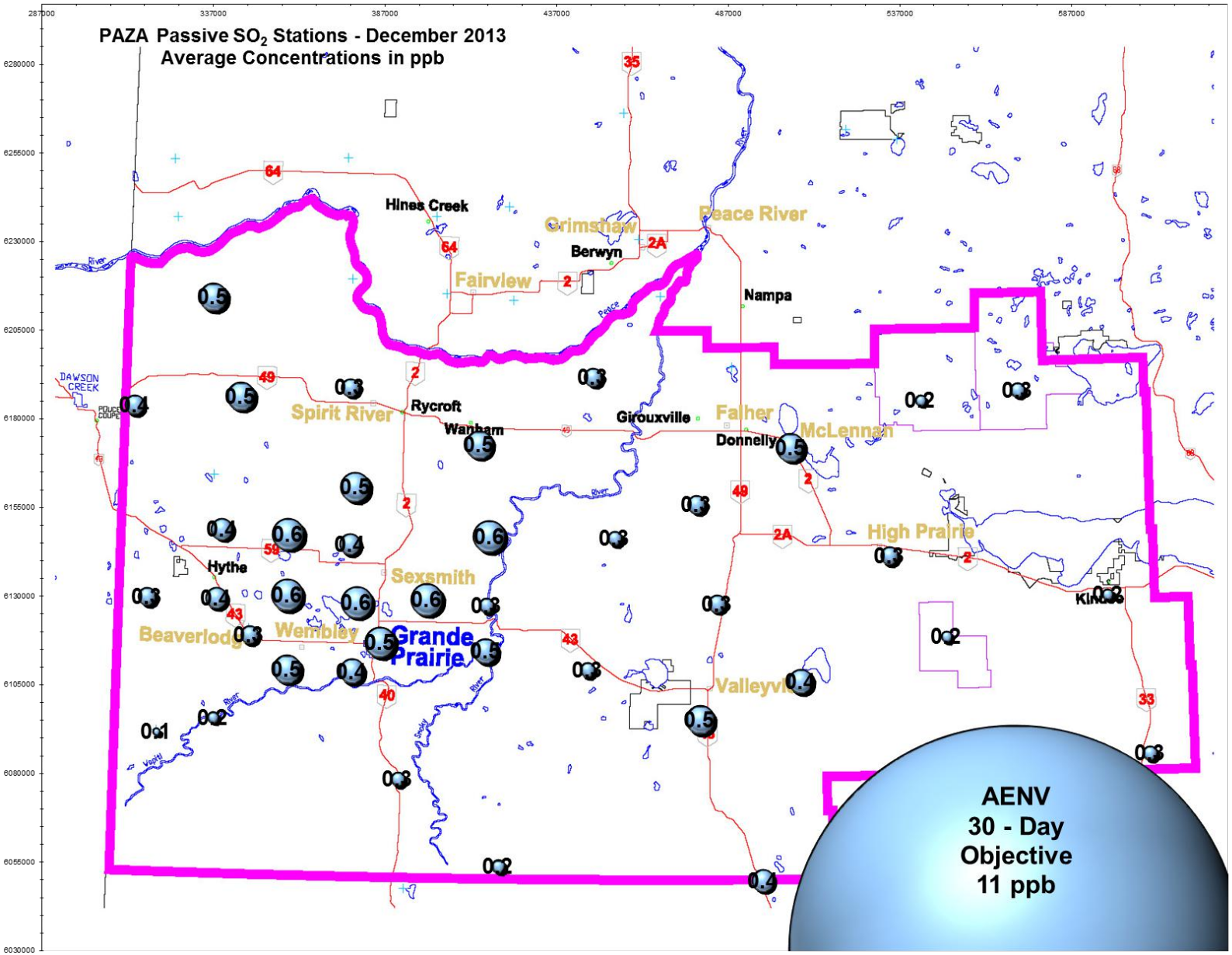
Stats	Sulphur Dioxide SO_2	Ozone O_3	Nitrogen Dioxide NO_2	Hydrogen Sulphide H_2S
	ppb	ppb	ppb	ppb
	Passive Summary for December 2013 (PAZA Zone)			
Mean	**0.4**	**33.6**	**2.1**	**0.2**
Standard Deviation	**0.1**	**4.8**	**2.1**	**0.1**
Minimum	**0.1**	**23.9**	**0.6**	**0.1**
Minimum At	**Sylvester (#14)**	**Grande Prairie HP**	**East Prairie (#50)**	**Gift Lake (#45)**
Maximum	**0.6**	**48.8**	**12.6**	**0.3**
Maximum At	**Smoky Heights (#29)**	**Smoky Heights (#29)**	**Grande Prairie I (#27)**	**Girouxville 4 (#64)**

Comparison between Continuous and Passive monitoring at Beaverlodge (passive #16 Beaverlodge)

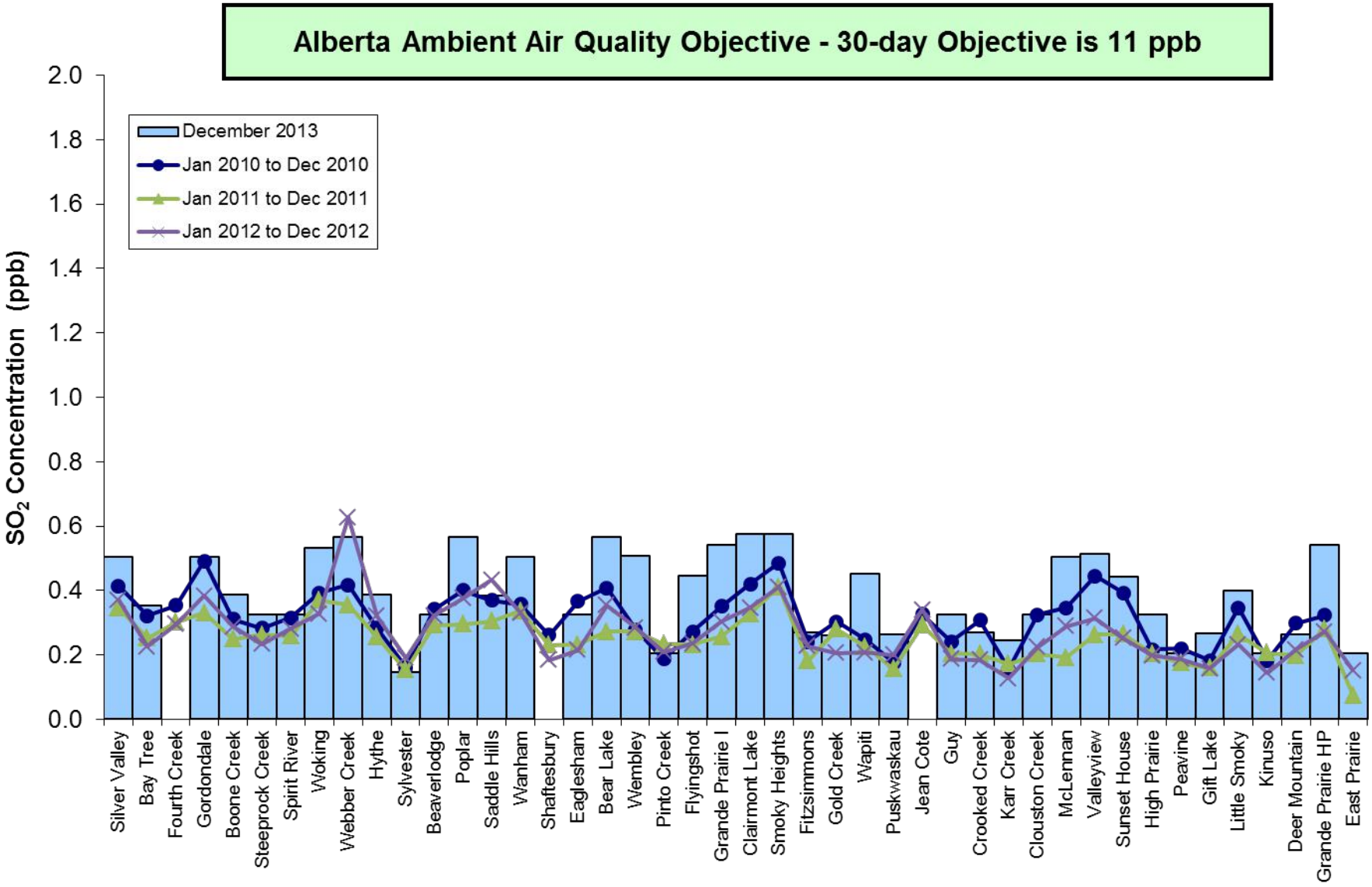
	SO_2	O_3	NO_2
PAZA Beaverlodge station	**0.5**	**28.2**	**5.9**
PAZA Beaverlodge passive	**0.3**	**N/S**	**2.8**

Comparison between Continuous and Passive monitoring at Henry Pirker (passive #49 Grande Prairie HP)

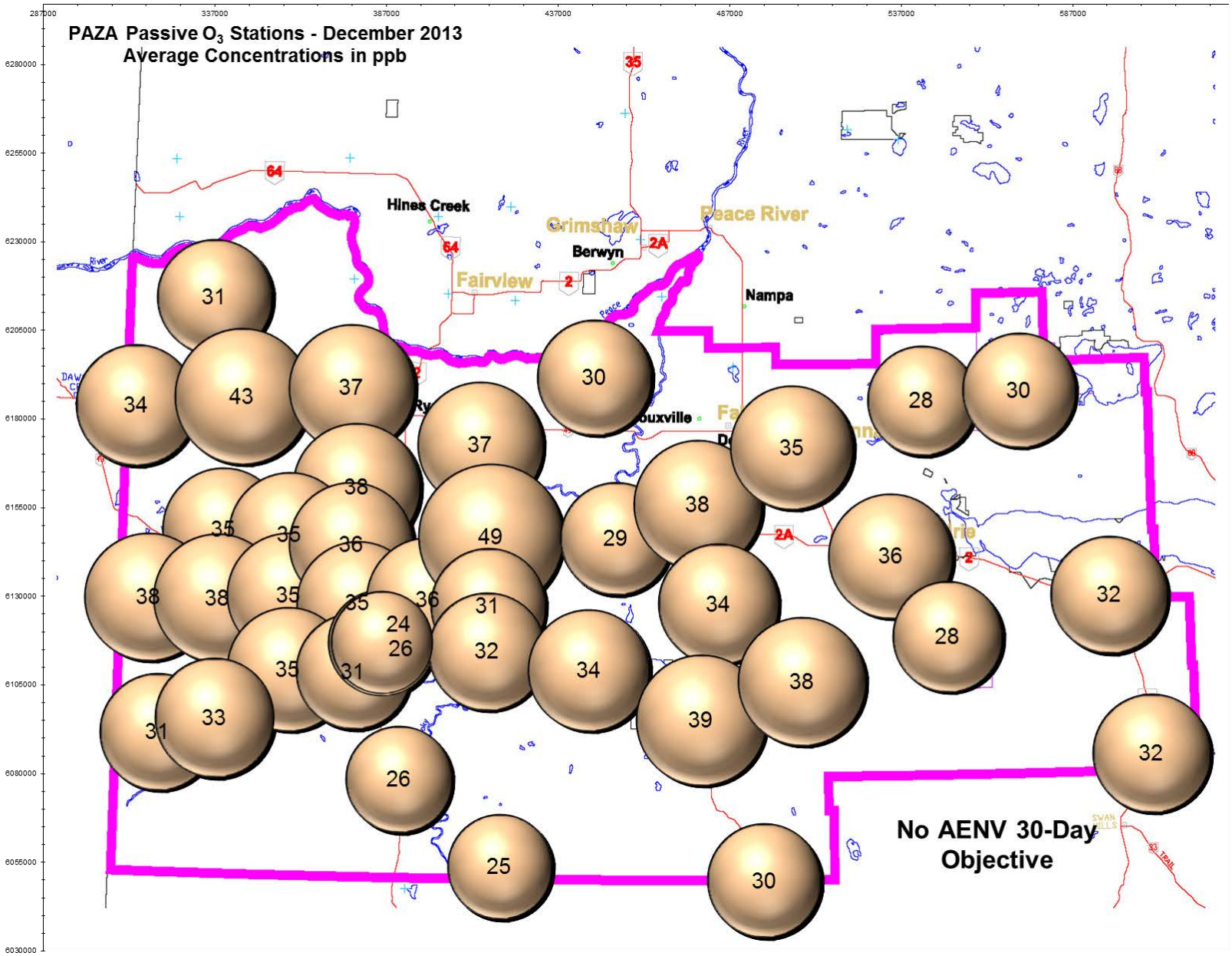
	SO_2	O_3	NO_2
PAZA Henry Pirker station	**0.5**	**20.0**	**15.5**
PAZA Grande Prairie passive	**0.5**	**23.9**	**8.3**



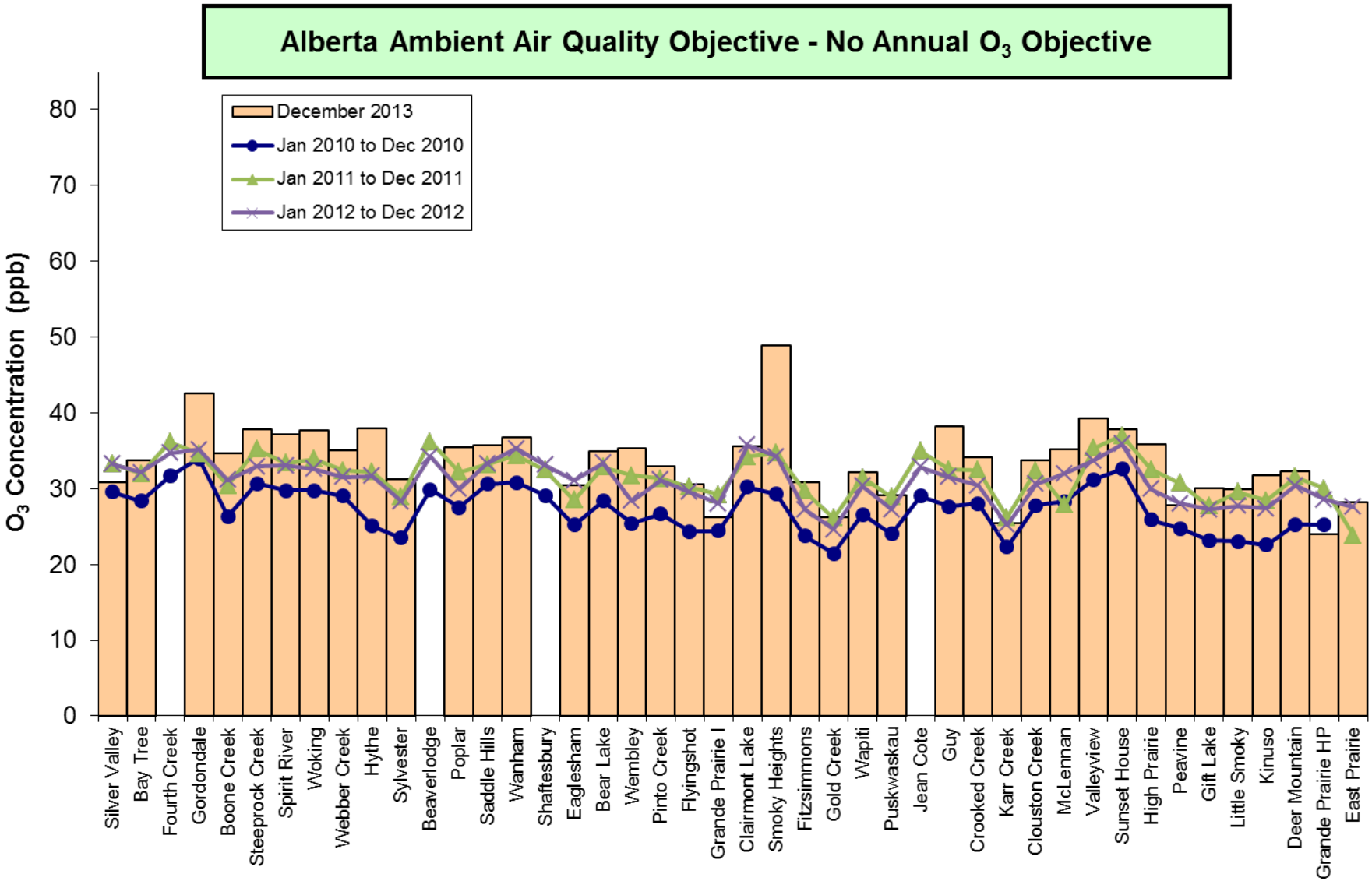
SO_2 Bubble Chart



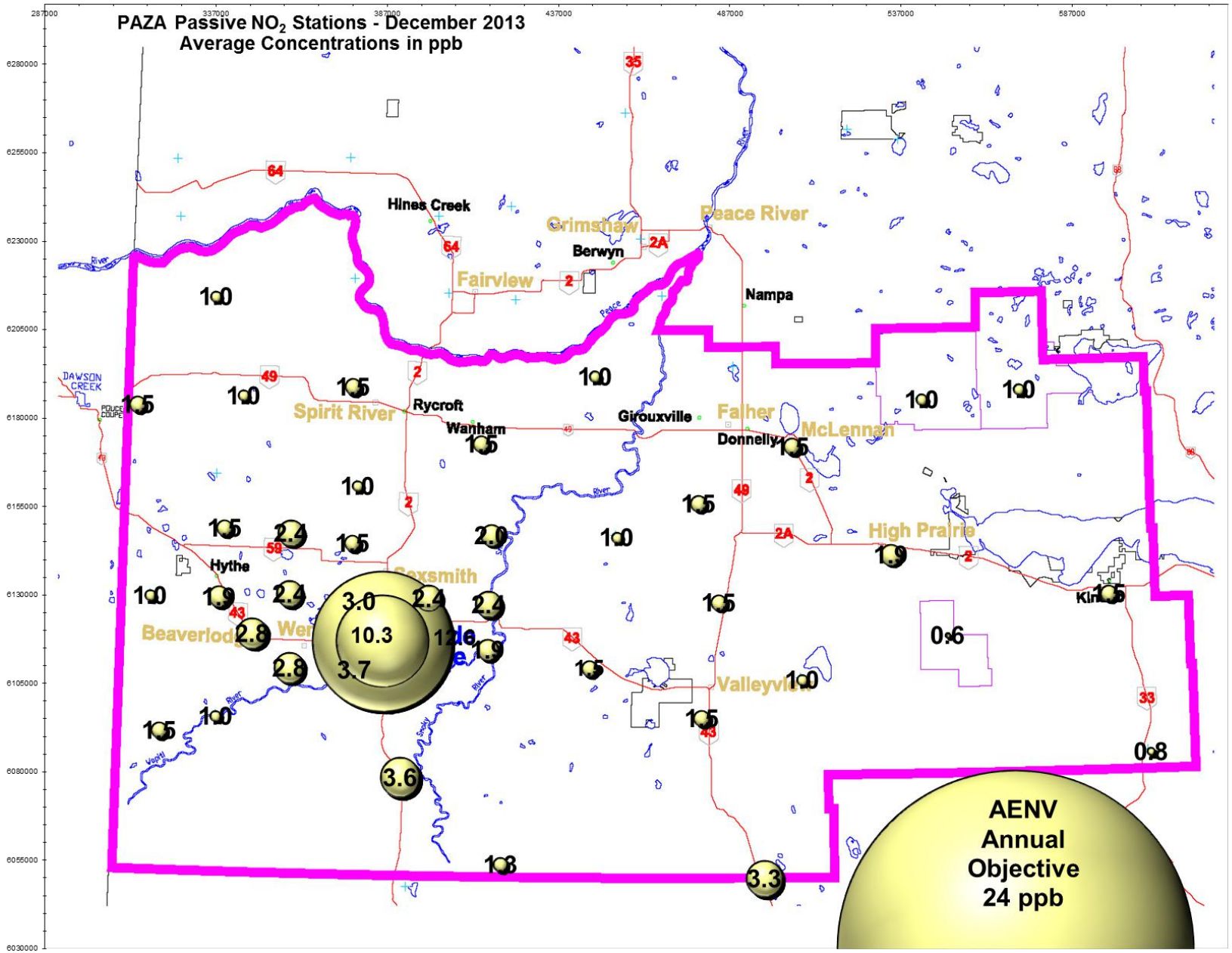
SO_2 Summary Chart



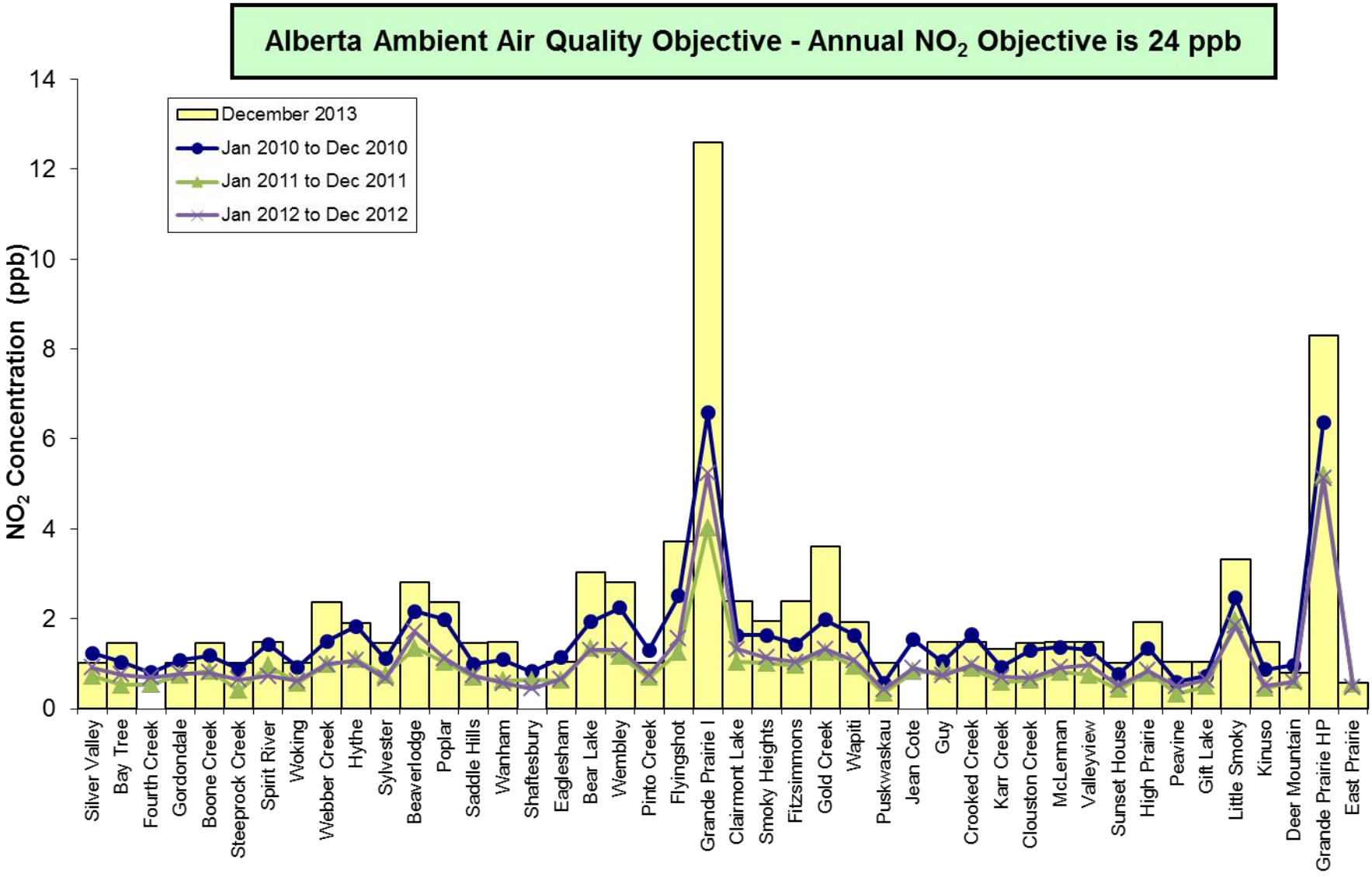
O_3 Bubble Chart



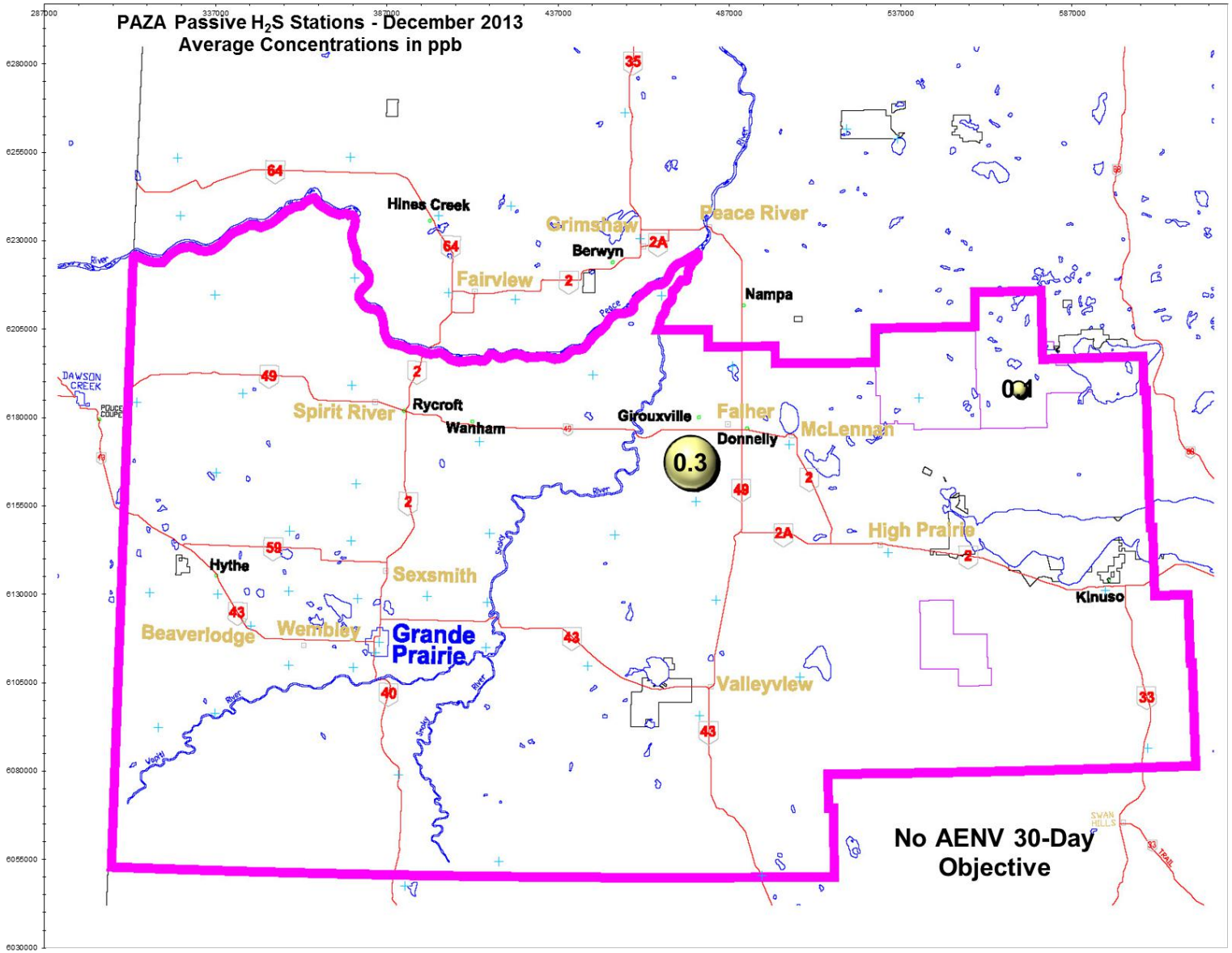
O_3 Summary Chart



NO_2 Bubble Chart



NO_2 Summary Chart



H_2S Bubble Chart

December 2013 Calibration Reports

PAZA - Henry Pirker Station with the following calibrations:
SO_2, NO, NO_2, NO_x, O_3, CO, THC, TRS

PAZA – Evergreen Park Station with the following calibrations:
SO_2, TRS

PAZA – Smoky Heights Station with the following calibrations:
SO_2, TRS

PAZA – Beaverlodge Station with the following calibrations:
SO_2, NO, NO_2, NO_x, O_3

PAZA – Valleyview Station with the following calibrations:
SO_2 & H_2S

PAZA – Reno Station with the following calibrations:
SO_2, NO, NO_2, NO_x, O_3, TRS, $PM_{2.5}$

PAZA – Falher Station with the following calibrations:
SO_2 & H_2S

Calibration Report

Parameter **SO2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Reason:	Routine / Install	Removal	Other:
Start Time (MST)	9:10	End Time (MST)	12:29
Barometric Pressure	717.000 mm	Station Temperature	20.5 Deg C
Calibrator		Serial Number	3016
Cal Gas Conc	51.5 ppm	Cal Gas Cert Date	March 12, 2014
		Cal Gas Cylinder #	LL105159
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	10
	Before		After
Calculated slope	1.003289	Calculated slope	0.997884
Calculated intercept	2.092414	Calculated intercept	1.910377
Analyzer make	TEI 43C	Analyzer serial #	610816292

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	9.1		9.3	
Coefficient	0.769		0.781	
Pressure	660.0	mm Hg	656.1	mm Hg
Flow	0.489	lpm	0.486	lpm
Lamp intensity	44080	Hz	44371	Hz

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)
4995	0.00	0.0	0.0	N/A
4995	39.93	408.4	408.4	1.0001
4995	19.97	205.1	202.5	1.0128
4995	9.97	102.6	99.1	1.0357
4995	0.00	0.0	0.0	As Found Zero
4995	39.93	408.4	401.5	As Found Span
			Average Correction Factor	1.0162

Calculated value of As Found Response: 404.9 ppb Percent Change of As Found: 0.9%

	before calibration		after calibration	
Auto zero	0.1	ppb	0.1	ppb
Auto span	250.7	ppb	244.9	ppb

Notes: Slight span adjust

Calibration Performed By: Grover Christiansen,Dmytro Dolotii

Calibration Summary

Parameter **SO2**

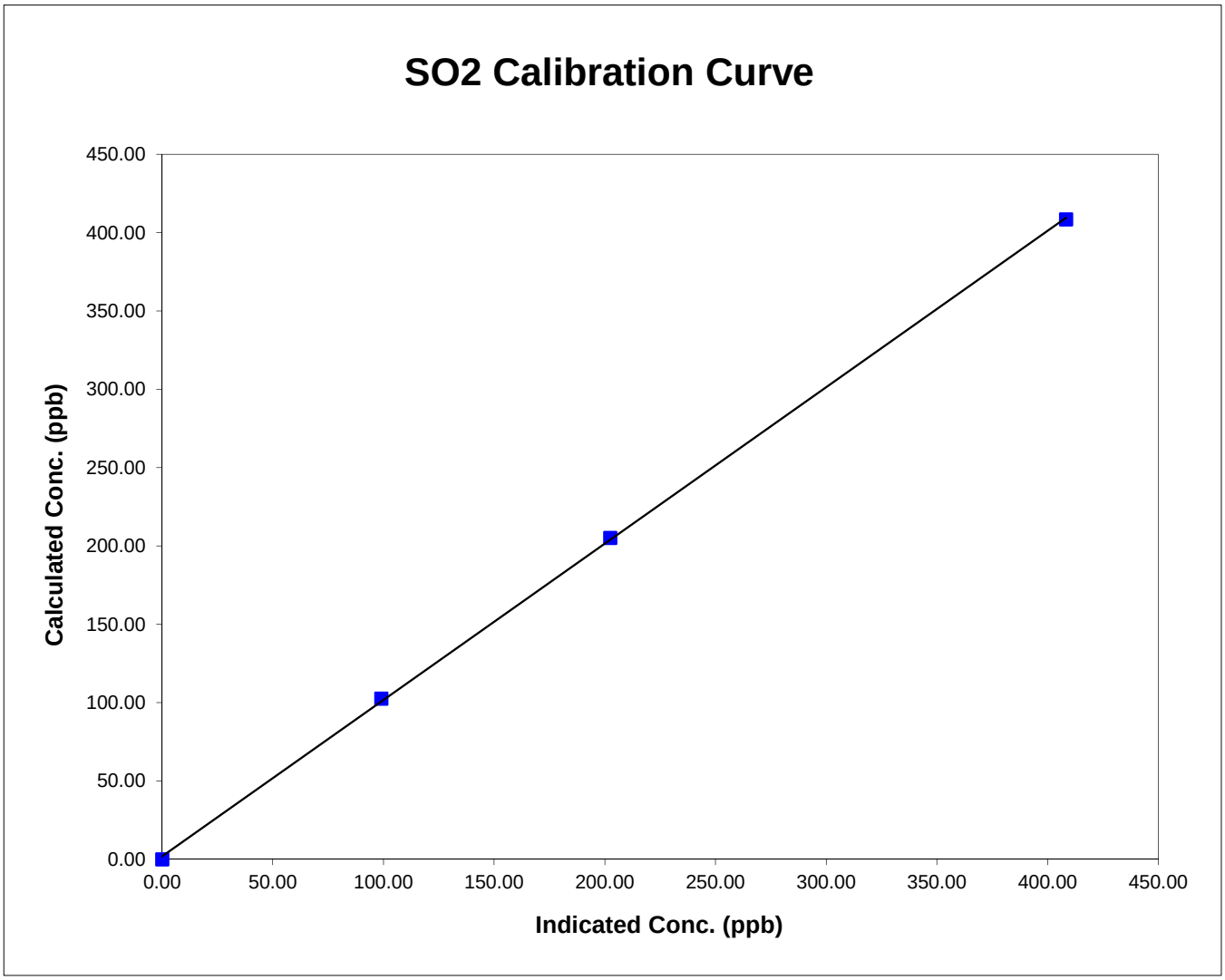
Air Monitoring Network **PAZA**

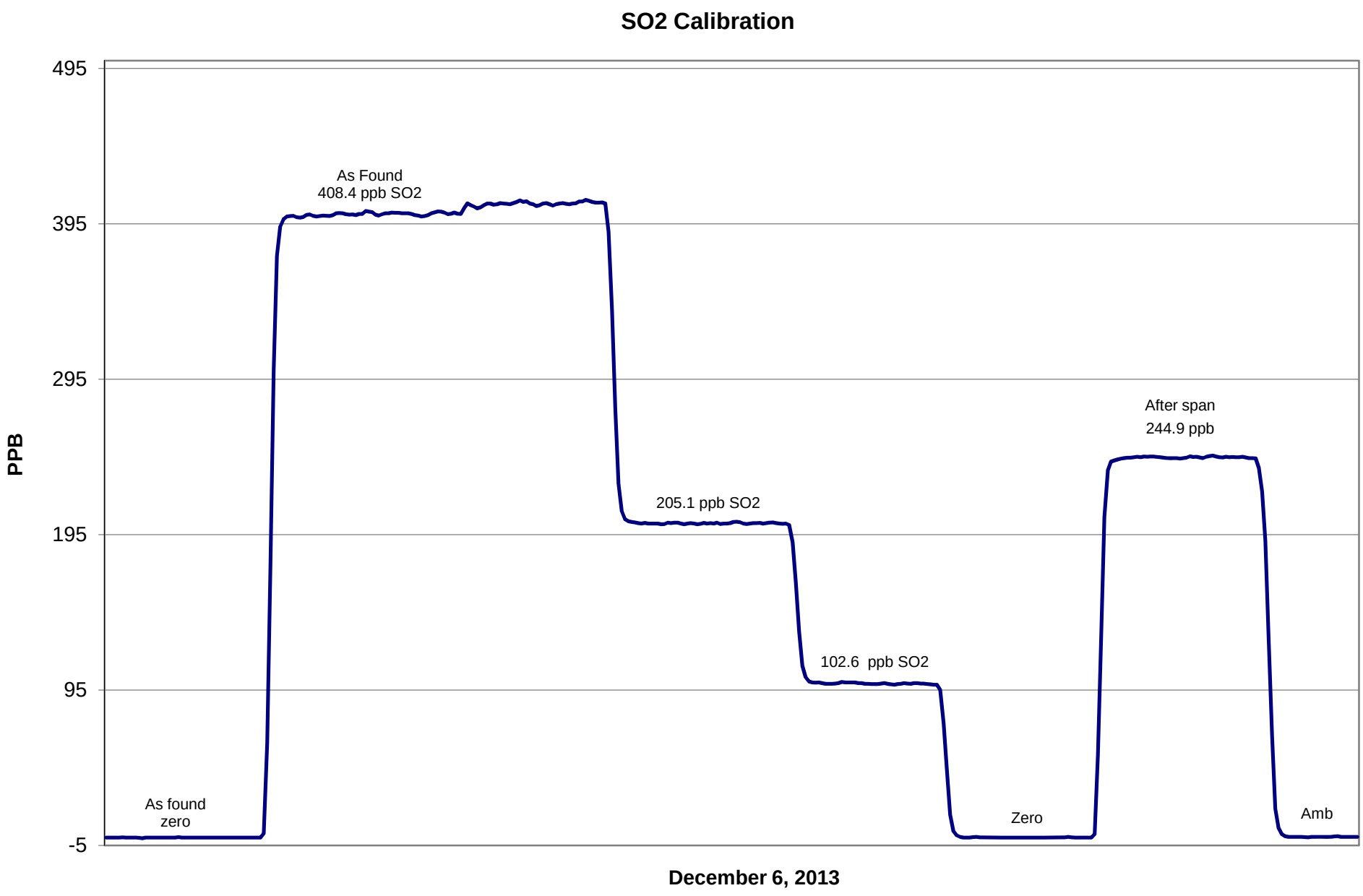
Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:10	End Time (MST)	12:29
Analyzer make/model	TEI 43C	Analyzer serial #	610816292

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
408.4	408.4	1.0001	Correlation Coefficient	0.999897
205.1	202.5	1.0128		
102.6	99.1	1.0357	Slope	0.997884
			Intercept	1.910377




SO2 Calibration
495
395
295
195
95
-5
PPB
As Found
408.4 ppb SO2
205.1 ppb SO2
102.6 ppb SO2
After span
244.9 ppb
As found
zero
Zero
Amb
December 6, 2013

Calibration Report

Parameter **NO_X-NO-NO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker

Reason: Routine Installation Removal Other:

Start Time (MST)	9:10		End Time (MST)	14:14	
Barometric Pressure	717.000	mm	Station Temperature	20.5	Deg C
Calibrator	Environics		Serial Number	3016	
NO Cal Gas Conc	51.3	ppm	Cal Gas Expiry Date	March 12, 2014	
NOx Cal Gas Conc	51.4	ppm	Cal Gas Serial #	LL105159	

DACS Information

DACS make	CR3000	DACS serial No.	5408

Parameter		NO2	NOx	NO
Before	Data Slope	1.004574	1.005732	1.001331
	Data Offset	0.351218	1.161118	1.755908
After	Data Slope	1.001646	1.001732	0.999730
	Data Offset	0.321365	1.131226	1.962583
Channel #		8	6	7
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model	TEI 42C	Analyzer serial #	508011073

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	13.7	mV	13.9	mV
NOx bkgnd	13.8	mV	14.3	mV
NO coefficient	1.070		1.086	
NOx coefficient	0.996		0.999	
NO2 conv temp	318.0	Deg C	318.0	Deg C
Cooler	-2.4	Deg C	-2.5	Deg C
PMT Volt	-774.0	mV	-774.0	mV
R Cell Press	198.7	in Hg	199.9	in Hg

Calibration Report

Parameter **NOx-NO-NO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Calibration Date: December 6, 2013 Station Location: Henry Pirker

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4995	0.00	0.0	0.0	0.0	0.5	0.1	0.1	N/A	N/A
1	4995	39.93	407.6	406.8	0.8	406.8	406.2	0.4	1.0020	1.0015
2	4995	19.97	204.7	204.3	0.4	201.7	200.6	1.1	1.0145	1.0182
3	4995	9.97	102.4	102.2	0.2	99.9	98.7	1.0	1.0251	1.0357
AFZ	4995	0.00	0.0	0.0	0.0	0.5	0.1	0.1	0.0000	0.0000
AFS	4995	39.93	407.6	406.8	0.8	398.0	401.1	-3.2	1.0242	1.0143
							Average Correction Factor		1.0139	1.0185

As Found Concentrations: NO_X= 398.7 NO= 402.7 As Found Percent Change NO_X= -2.2% NO= -1.0%

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	0.1	0.1	0.0	0.5	0.1	0.1	N/A	N/A	N/A	N/A
NO point	408.0	408.0	0.0	407.8	408.0	-0.3	1.0004	1.0000	N/A	N/A
300	408.0	99.6	308.4	407.3	99.6	307.8	1.0018	1.0000	1.0020	99.8%
200	408.0	199.9	208.1	407.2	199.9	207.5	1.0019	1.0000	1.0031	99.7%
100	408.0	300.5	107.5	406.8	300.5	106.3	1.0029	1.0000	1.0110	98.9%
					Average Correction Factor		1.0022	1.0000	1.0054	99.5%

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.0	0.0	-0.1	ppb	-0.2	-0.3	-0.1	ppb
Auto span	329.9	327.5	2.4	ppb	327.5	326.0	1.4	ppb

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **NO_2**

Air Monitoring Network **PAZA**

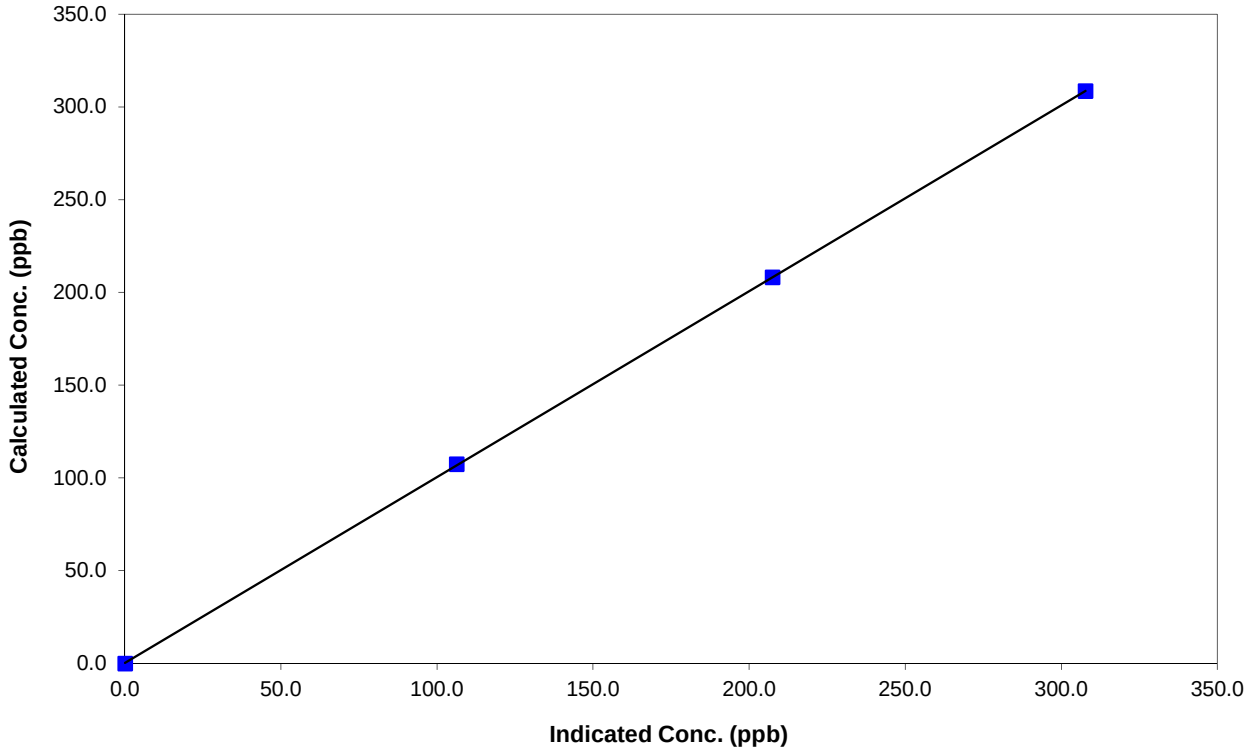
Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:10	End Time (MST)	14:14
Analyzer make	TEI 42C	Analyzer serial #	508011073

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
308.4	307.8	1.0020	Correlation Coefficient	0.999987
208.1	207.5	1.0031		
107.5	106.3	1.0110	Slope	1.001646
			Intercept	0.321365

NO_2 Calibration Curve



Calibration Summary

Parameter **NO_x**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

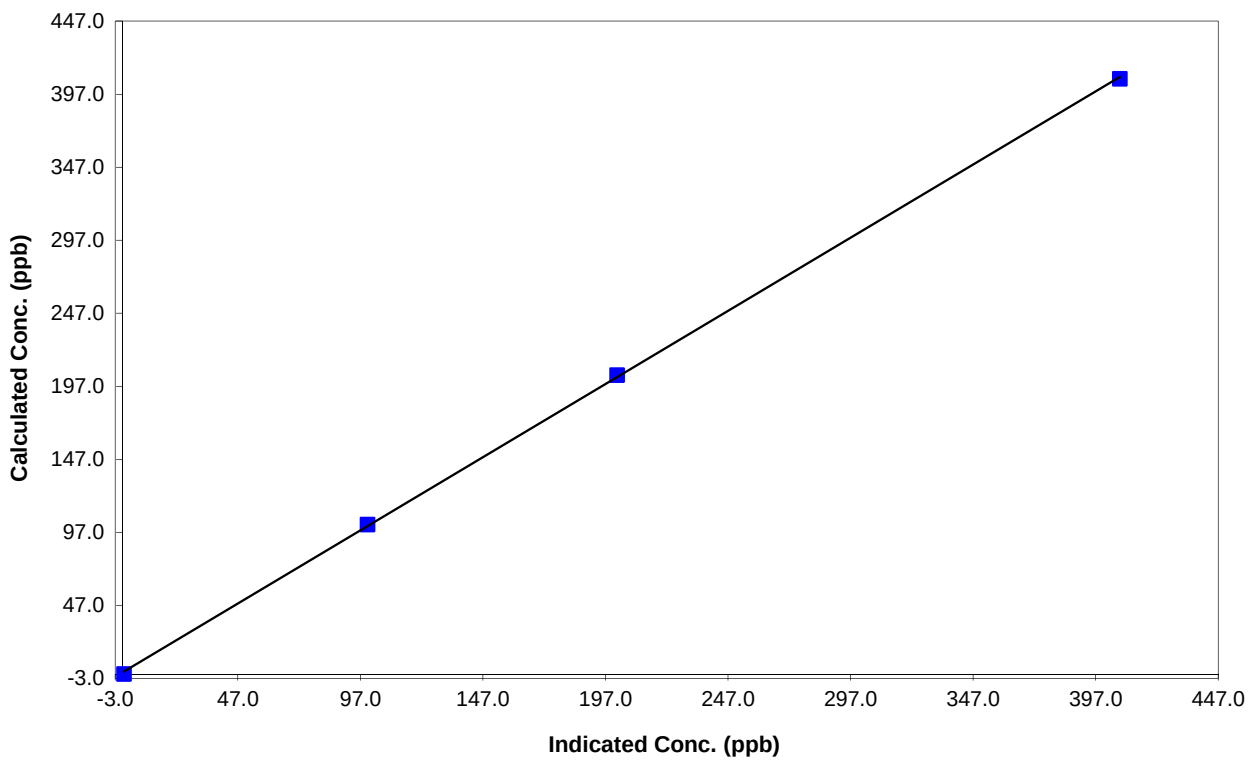
Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:10	End Time (MST)	14:14
Analyzer make	TEI 42C	Analyzer serial #	508011073

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A		
407.6	406.8	1.0020	Correlation Coefficient	0.999920
204.7	201.7	1.0145		
102.4	99.9	1.0251	Slope	1.001732
			Intercept	1.131226

NOx Calibration Curve



Calibration Summary

Parameter **NO**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

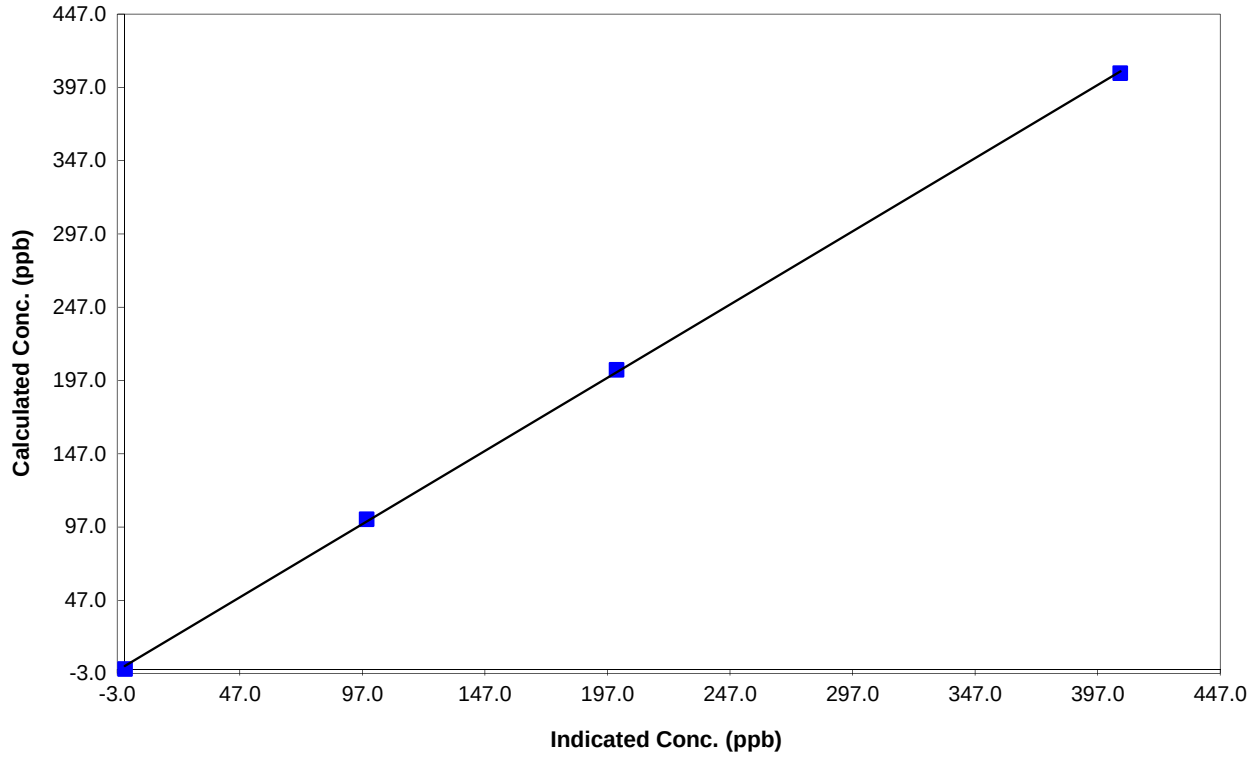
Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:10	End Time (MST)	14:14
Analyzer make	TEI 42C	Analyzer serial #	508011073

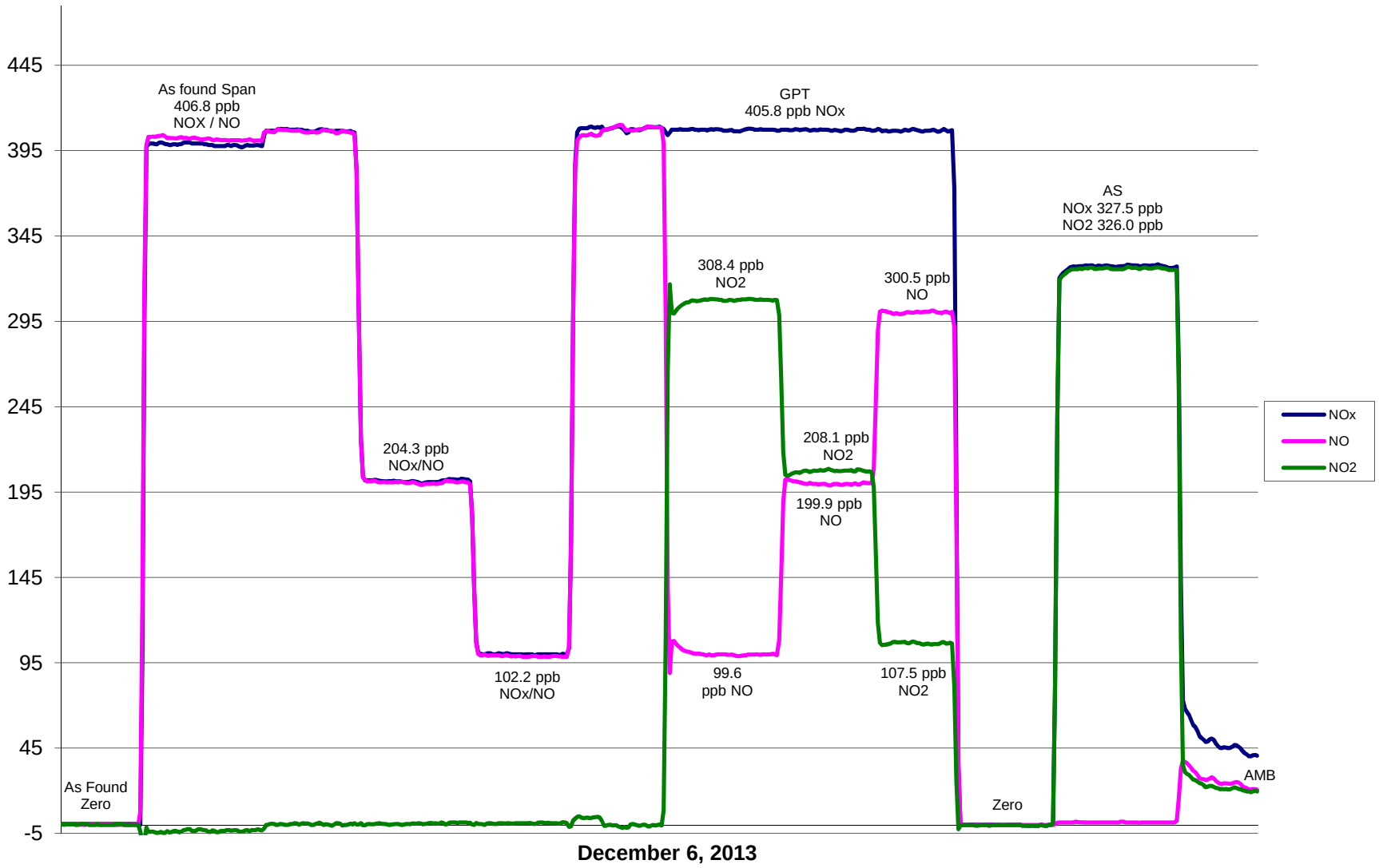
Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
406.8	406.2	1.0015	Correlation Coefficient	0.999873
204.3	200.6	1.0182		
102.2	98.7	1.0357	Slope	0.999730
			Intercept	1.962583

NO Calibration Curve



PAZA
NO_X Calibration



December 6, 2013

Calibration Report

Parameter **O3**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Reason: Routine	Install	Removal	Other:
Start Time (MST)	13:05:00 PM	End Time (MST)	16:10
Barometric Pressure	717.000 mm	Station Temperature	20.5 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	1.012733	Calculated slope	0.996376
Calculated intercept	1.414004	Calculated intercept	-0.380515
Analyzer make	Teco 49C	Analyzer serial #	607415761

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-0.20	ppb	-0.20	ppb
slope	0.994		1.011	
Lamp temp	56.9	mV	57	mV
Lamp Intensity A/B	104854/94091	mV	106845/95879	mV
Pressure	689.7	mm Hg	679.8	mm Hg
Flow A	0.727	ccm	0.72	ccm
Flow B	0.731	ccm	0.724	ccm

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	0.0	0.0	0.4	N/A
4995	0.3	308.4	310.1	0.9946
4995	0.2	208.1	209.0	0.9959
4995	0.1	107.5	108.3	0.9923
4995	0.0	0.0	0.4	As found zero
4995	0.3	308.4	301.2	As found span
			Average Correction Factor	0.9943

Calculated value of As Found Response: 306.0 ppm Percent Change of As Found: -0.8%

	before calibration		after calibration	
Auto zero	1.0	ppb	1.5	ppb
Auto span	355.0	ppb	369.0	ppb

Notes: Slight span adjust

Calibration Performed By: Grover Christiansen,Dmytro Dolotii

Calibration Summary

Parameter **O3**

Air Monitoring Network **PAZA**

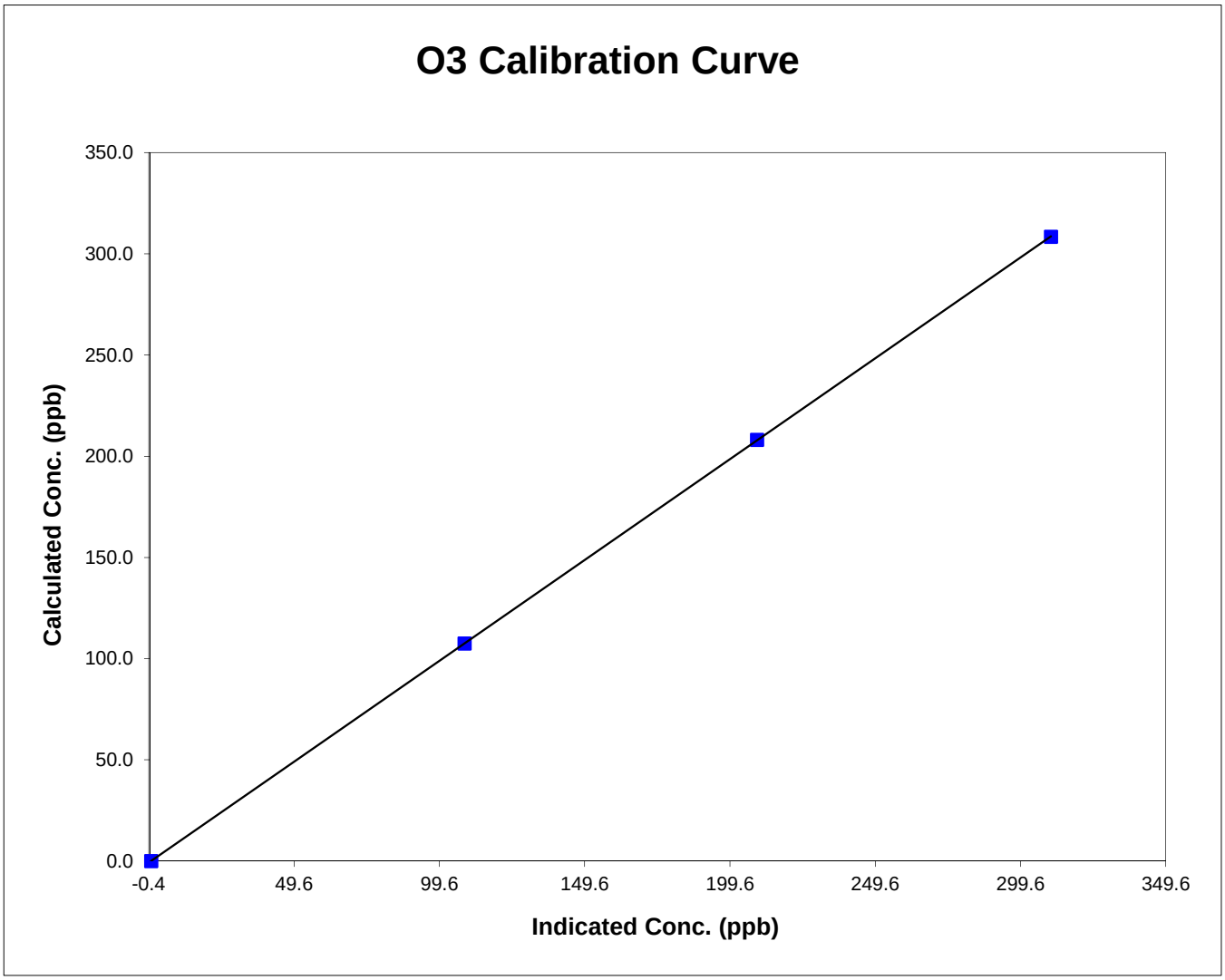
FOCUS AIR QUALITY MONITORING

Station Information

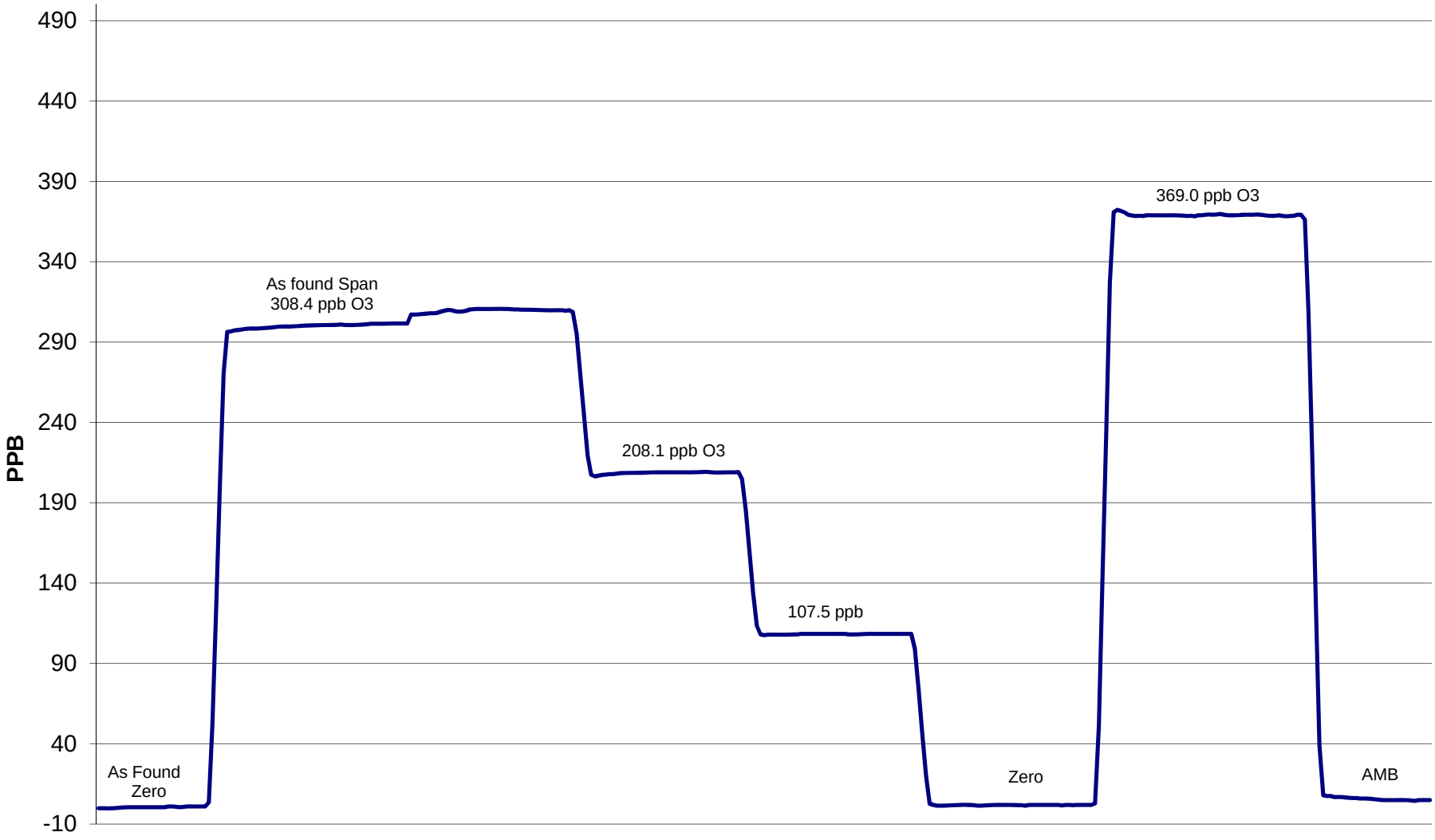
Calibration Date	December 6, 2013	Previous Calibration	November 7, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	13:05:00 PM	End Time (MST)	16:10
Analyzer make/model	Teco 49C	Analyzer serial #	607415761

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	NA		
308.4	310.1	0.9946	Correlation Coefficient	0.999998
208.1	209.0	0.9959		
107.5	108.3	0.9923	Slope	0.996376
			Intercept	-0.380515



O3 Calibration



December 6, 2013

Calibration Report

Parameter **CO**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Reason: Routine	Install	Removal	Other:
Start Time (MST)	8:50	End Time (MST)	11:55
Barometric Pressure	704.0 mm/hg	Station Temperature	21.0 Deg C
Calibrator	Environics 6100	Serial Number	3016
Cal Gas Conc	2898 ppm	Cal Gas Expiry Date	04/02/2013
		Cal Gas Cylinder #	LL83909
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	1.001644	Calculated slope	0.990051
Calculated intercept	0.081368	Calculated intercept	-0.174126
Analyzer make	TEI Model 48C	Analyzer serial #	508011062

	before		after	
Concentration range	0 - 50	ppm	0 - 50	ppm
CO span setting	1.005		1.005	
CO zero setting	-0.543		-0.236	
Sample pressure	691.9	mm Hg	690.8	mm Hg
Sample Flow	1.127	LPM	1.125	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)
4995	0.00	0.00	0.36	N/A
4995	69.94	40.02	40.70	0.9832
4995	34.96	20.14	20.39	0.9880
4995	17.96	10.38	10.51	0.9880
4995	0.00	0.00	0.36	As Found Zero
4995	69.94	40.02	40.70	As Found Span
			Average Correction Factor	0.9864

Calculated value of As Found Response: 40.490 ppm Percent Change of As Found: -1.2%

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	19.81	ppm	19.39	ppm

Notes: Slight zero adjustment made following calibration.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **CO**

Air Monitoring Network **PAZA**

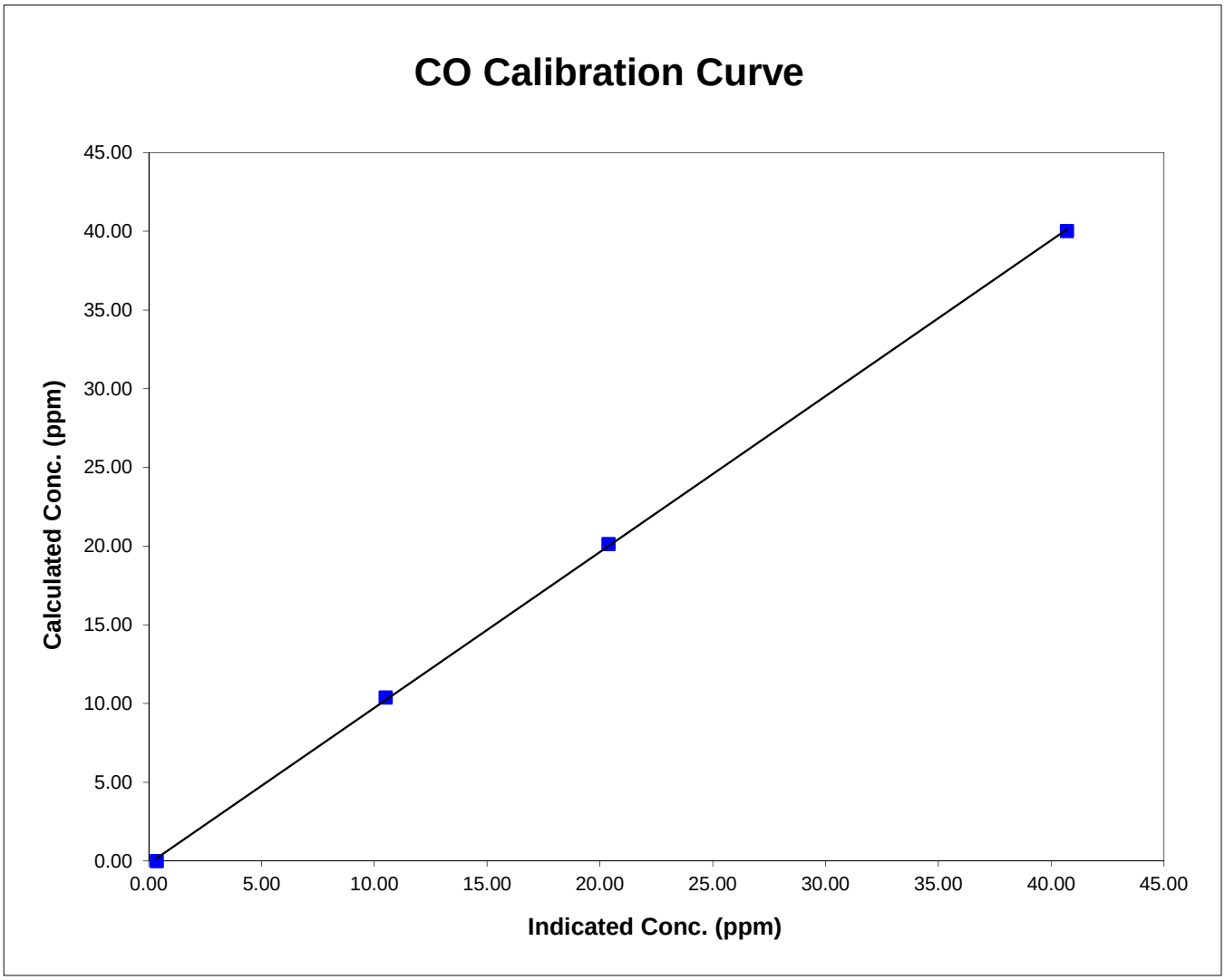
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	8:50	End Time (MST)	11:55
Analyzer make/model	TEI Model 48C	Analyzer serial #	508011062

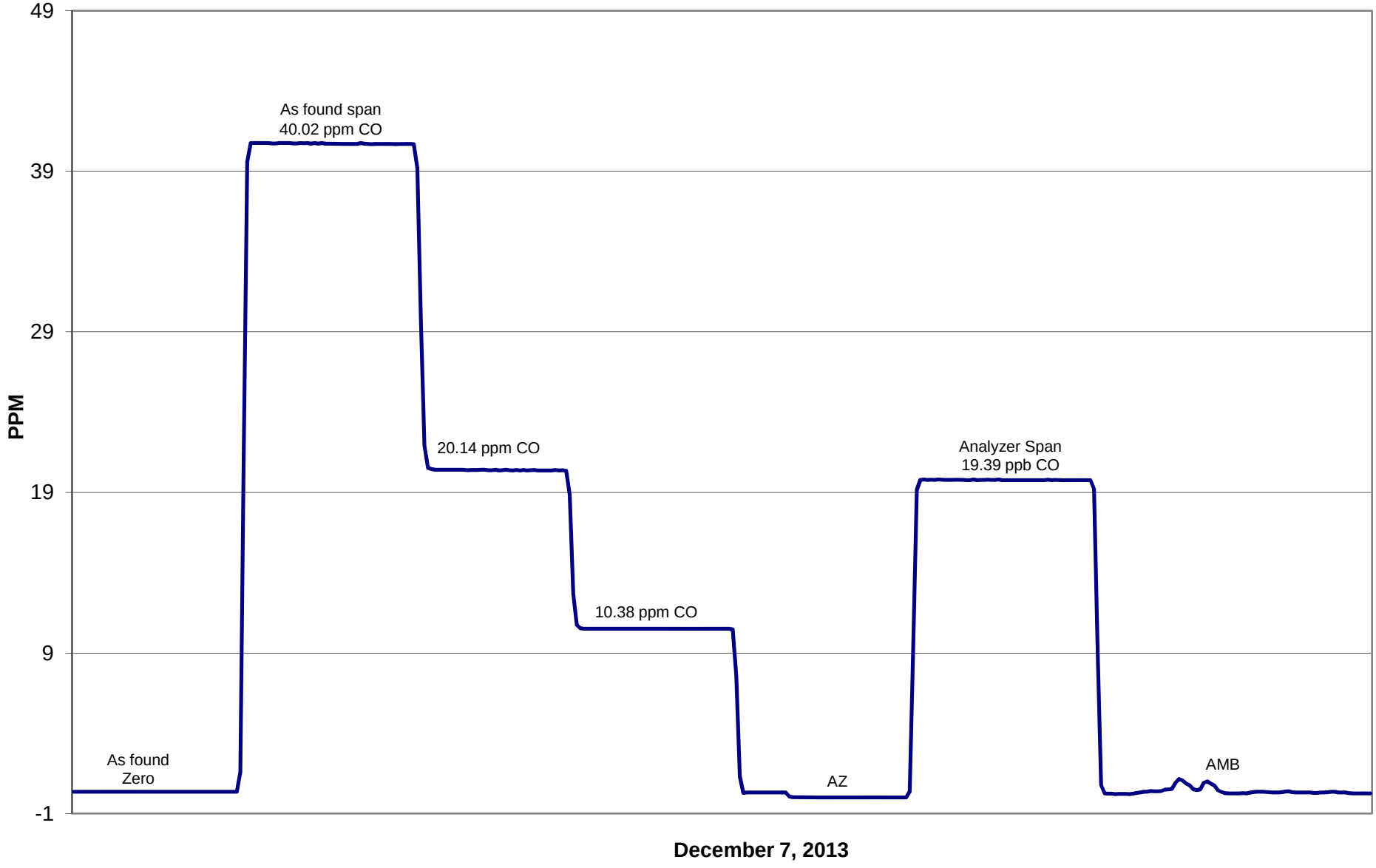
Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.359	N/A		
40.017	40.701	0.9832	Correlation Coefficient	0.999903
20.142	20.386	0.9880		
10.383	10.509	0.9880	Slope	0.990051
			Intercept	-0.174126



11.15 ppm CO

CO Calibration



Calibration Report

Parameter **CH4 / NMHC / THC**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker

Reason: Routine | Install | Removal | Other:

Start Time (MST)	9:00	End Time (MST)	14:01:00 PM
Barometric Pressure	NA inches Hg	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas CH4 Conc	404 ppm CH4	Cal Gas Expiry Date	28/03/2014
Cal Gas C3H8 Conc	201 552.75 ppm CH4	Cal Gas Cylinder #	LL34989
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 5 volt	DACS channel #	SE 11,12,13

Analyzer make	TEI 55I	Analyzer serial #	1134650658

	before		after	
Concentration range	0-20 (CH4, NMHC); 0-40 (THC)	ppm	0-20 (CH4, NMHC); 0-40 (THC)	ppm
Air pressure	27.8	PSI	28	PSI
Fuel pressure	42.1	PSI	42.5	PSI
Carrier pressure	30.3	PSI	30.5	PSI
CH4 cal factor	5.68		5.68	E^{-4}
NMHC cal factor	1.64		1.64	E^{-4}
Rt	12.60	Sec	12.60	Sec
Pk Index	23.00		23.00	

CH4 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)
1996	0.00	0.00	0.02	N/A
1996	64.93	12.73	12.81	0.9933
1996	39.93	7.92	7.93	0.9992
1996	14.95	3.00	2.98	1.0082
1996	0.00	0.00	0.02	As Found Zero
1996	64.93	12.73	12.81	As Found Span
			Average Correction Factor	1.0002

Calculated value of As Found Response: 12.788 ppm Percent Change of As Found: -0.5%

	Before		After
Calculated slope	0.998398	Calculated slope	0.994093
Calculated intercept	0.013550	Calculated intercept	0.013369

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.03	ppm	0.03	ppm
Auto span	9.01	ppm	9.13	ppm

NMHC 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)
1996	0.00	0.00	0.02	N/A
1996	64.93	17.41	17.63	0.9878
1996	39.93	10.84	10.97	0.9887
1996	14.95	4.11	4.07	1.0087
1996	0.00	0.00	0.02	As Found Zero
1996	64.93	17.41	17.63	As Found Span
			Average Correction Factor	0.9950

Calculated value of As Found Response: 17.618 ppm Percent Change of As Found: -1.2%

	Before		After
Calculated slope	1.004419	Calculated slope	0.986912
Calculated intercept	-0.068983	Calculated intercept	0.026249

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	12.54	ppm	12.79	ppm

THC 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)
1996	0.00	0.00	0.03	N/A
1996	64.93	30.14	30.42	0.9910
1996	39.93	18.76	18.87	0.9943
1996	14.95	7.11	7.05	1.0092
1996	0.00	0.00	0.03	As Found Zero
1996	64.93	30.14	30.42	As Found Span
			Average Correction Factor	0.9982

Calculated value of As Found Response: 30.410 ppm Percent Change of As Found: -0.9%

	Before		After
Calculated slope	1.002488	Calculated slope	0.990734
Calculated intercept	-0.048971	Calculated intercept	0.043708

Final Zero/Span Data

	before calibration		after calibration	
Auto zero	0.02	ppm	0.02	ppm
Auto span	21.54	ppm	21.91	ppm

Notes: Run as found span. Run adjustment point.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **CH4**

Air Monitoring Network **PAZA**

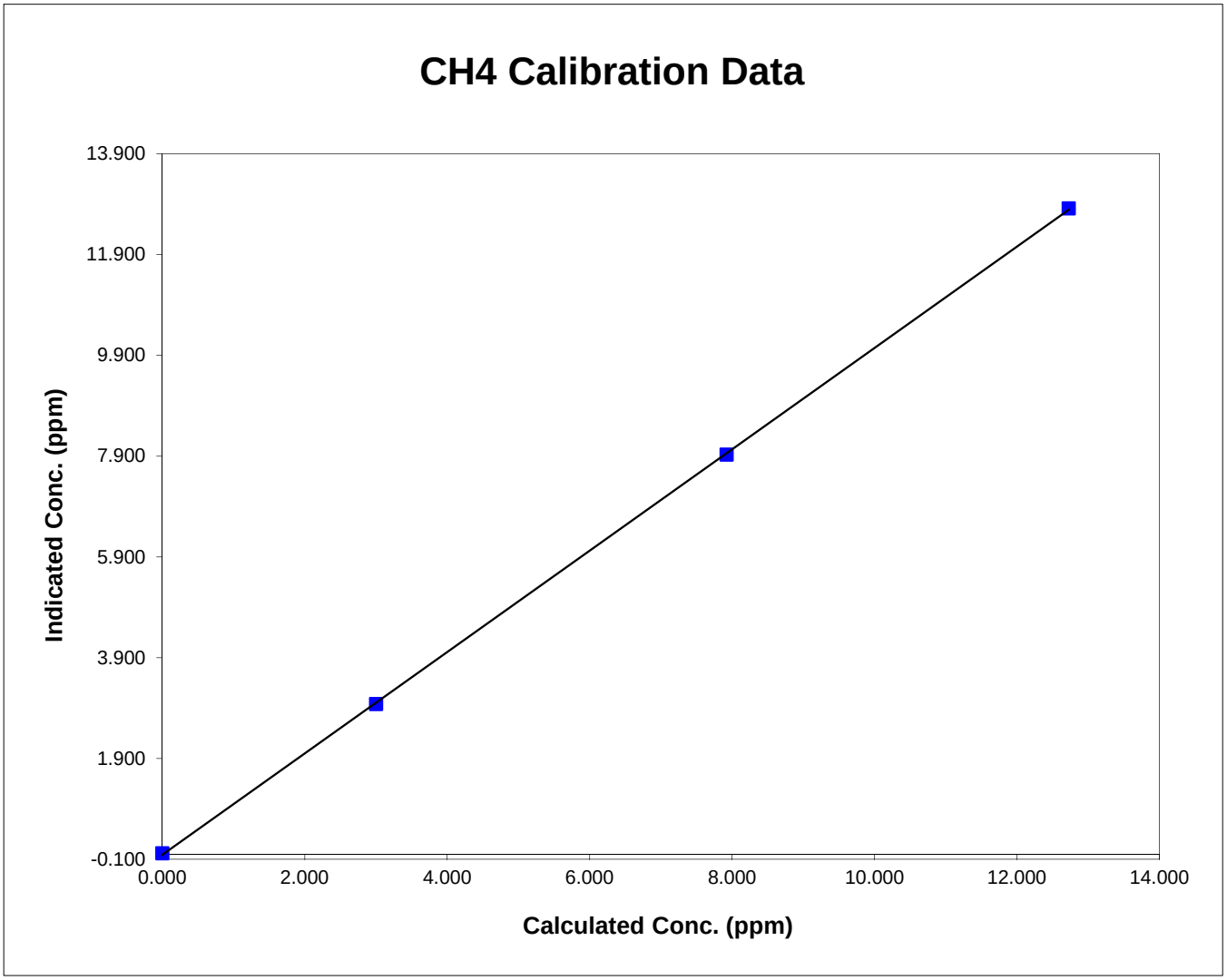
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:00	End Time (MST)	14:01:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.019	N/A		
12.728	12.814	0.9933	Correlation Coefficient	0.999966
7.924	7.930	0.9992		
3.003	2.979	1.0082	Slope	0.994093
			Intercept	0.013369



Calibration Summary

Parameter **NMHC**

Air Monitoring Network **PAZA**

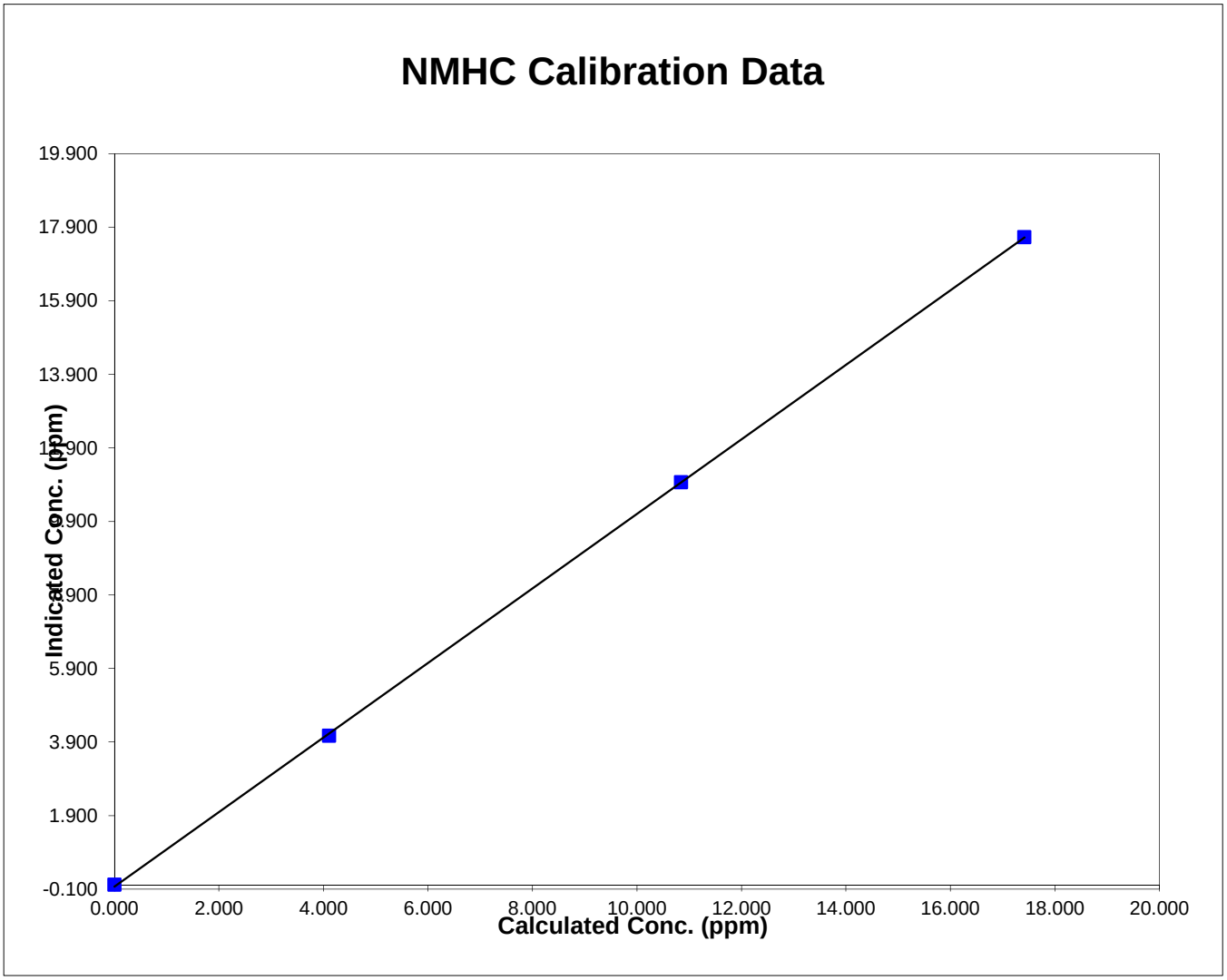
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:00	End Time (MST)	14:01:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.019	N/A		
17.414	17.629	0.9878	Correlation Coefficient	0.999965
10.841	10.965	0.9887		
4.109	4.074	1.0087	Slope	0.986912
			Intercept	0.026249



Calibration Summary

Parameter **THC**

Air Monitoring Network **PAZA**

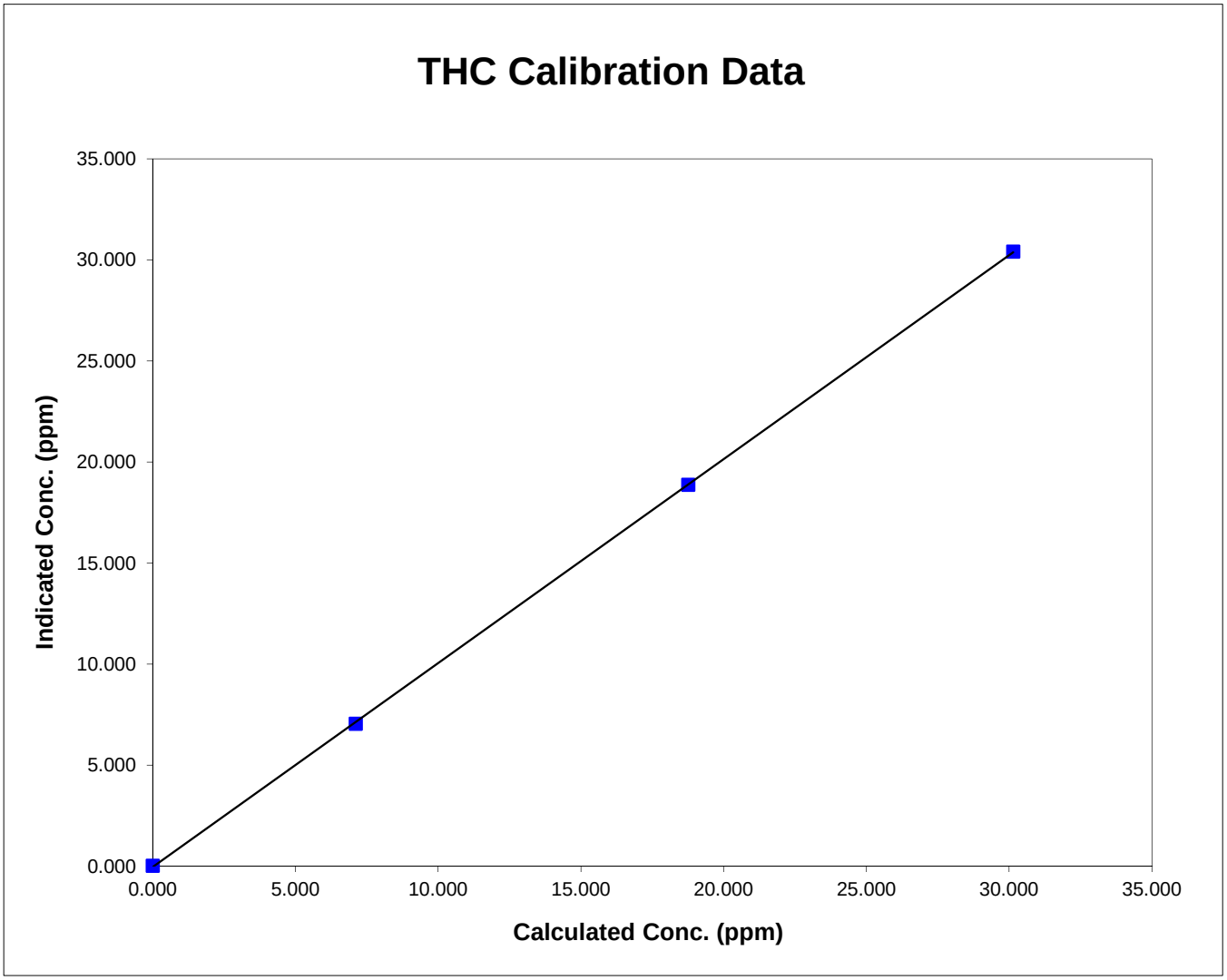
FOCUS AIR QUALITY MONITORING

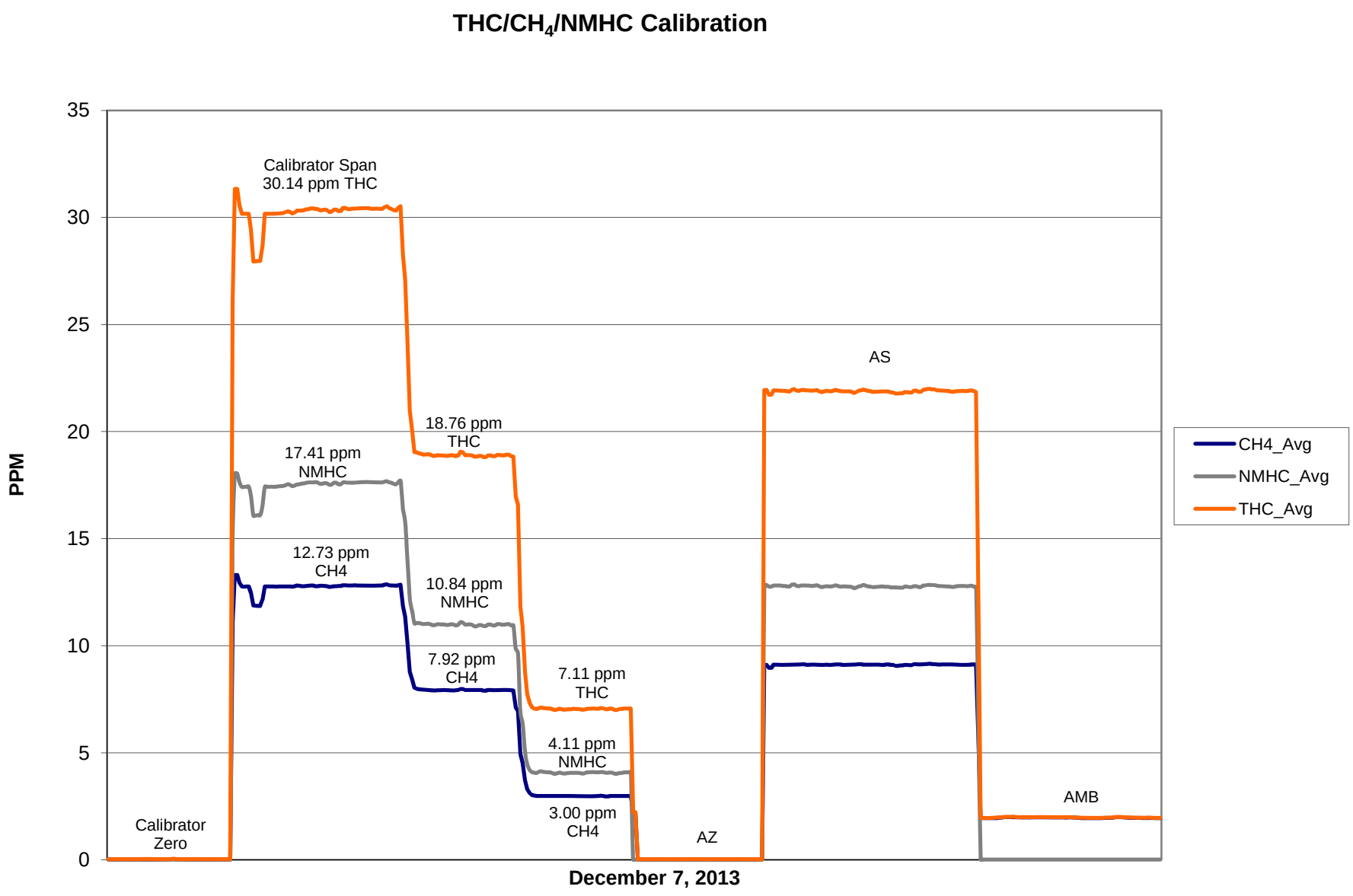
Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	9:00	End Time (MST)	14:01:00 PM
Analyzer make/model	TEI 55I	Analyzer serial #	1134650658

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.032	N/A		
30.143	30.416	0.9910	Correlation Coefficient	0.999971
18.764	18.872	0.9943		
7.113	7.048	1.0092	Slope	0.990734
			Intercept	0.043708




THC/CH4/NMHC Calibration
35
30
25
20
15
10
5
0
PPM
Calibrator Span
30.14 ppm THC
17.41 ppm
NMHC
12.73 ppm
CH4
18.76 ppm
THC
10.84 ppm
NMHC
7.92 ppm
CH4
7.11 ppm
THC
4.11 ppm
NMHC
3.00 ppm
CH4
Calibrator
Zero
AZ
AS
AMB
CH4_Avg
NMHC_Avg
THC_Avg
December 7, 2013

Calibration Report

Parameter **TRS**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Reason: Routine	Install	Removal	Other:
Start Time (MST)	12:40	End Time (MST)	18:48
Barometric Pressure	704.000 mm/Hg	Station Temperature	20.0 Deg C
Calibrator	Environics 6100	Serial Number	3474
Cal Gas Conc	10.4 ppb	Cal Gas Expiry Date	08/07/2016
		Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5408
DACS voltage range	0 - 1 volt	DACS channel #	9
	Before		After
Calculated slope	0.989114	Calculated slope	0.982830
Calculated intercept	-0.156304	Calculated intercept	0.228153
Analyzer make	TEI 45C	Analyzer serial #	630718528

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Coefficient	1.145		0.988	
Background	11.5		17.9	
Pressure	667.3	mm Hg	667.6	mm Hg
Flow	0.454	ccm	0.456	ccm
Lamp Voltage	827	V	867	V

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)		Correction factor (Cc/Ic)
4995	0.00	0.00	0.12	N/A
4995	39.93	82.48	83.86	0.9835
4995	19.95	41.37	41.57	0.9952
8995	8.95	10.34	10.05	1.0286
4995	0.00	0.00	0.32	As Found Zero
4995	39.93	82.48	75.70	As Found Span
			Average Correction Factor	1.0024

Calculated value of As Found Response: 74.4 ppb Percent Change of As Found: 9.8%

	before calibration		after calibration	
Auto zero	-0.92	ppb	0.03	ppb
Auto span	33.06	ppb	31.46	ppb

Notes: New socket installed. Adjustments made to zero, span, PMT & lamp voltage.
New lamp & socket were installed however new lamp was faulty. Used old lamp & analyzer settled in. Optics are starting to go on this analyzer.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **TRS**

Air Monitoring Network **PAZA**

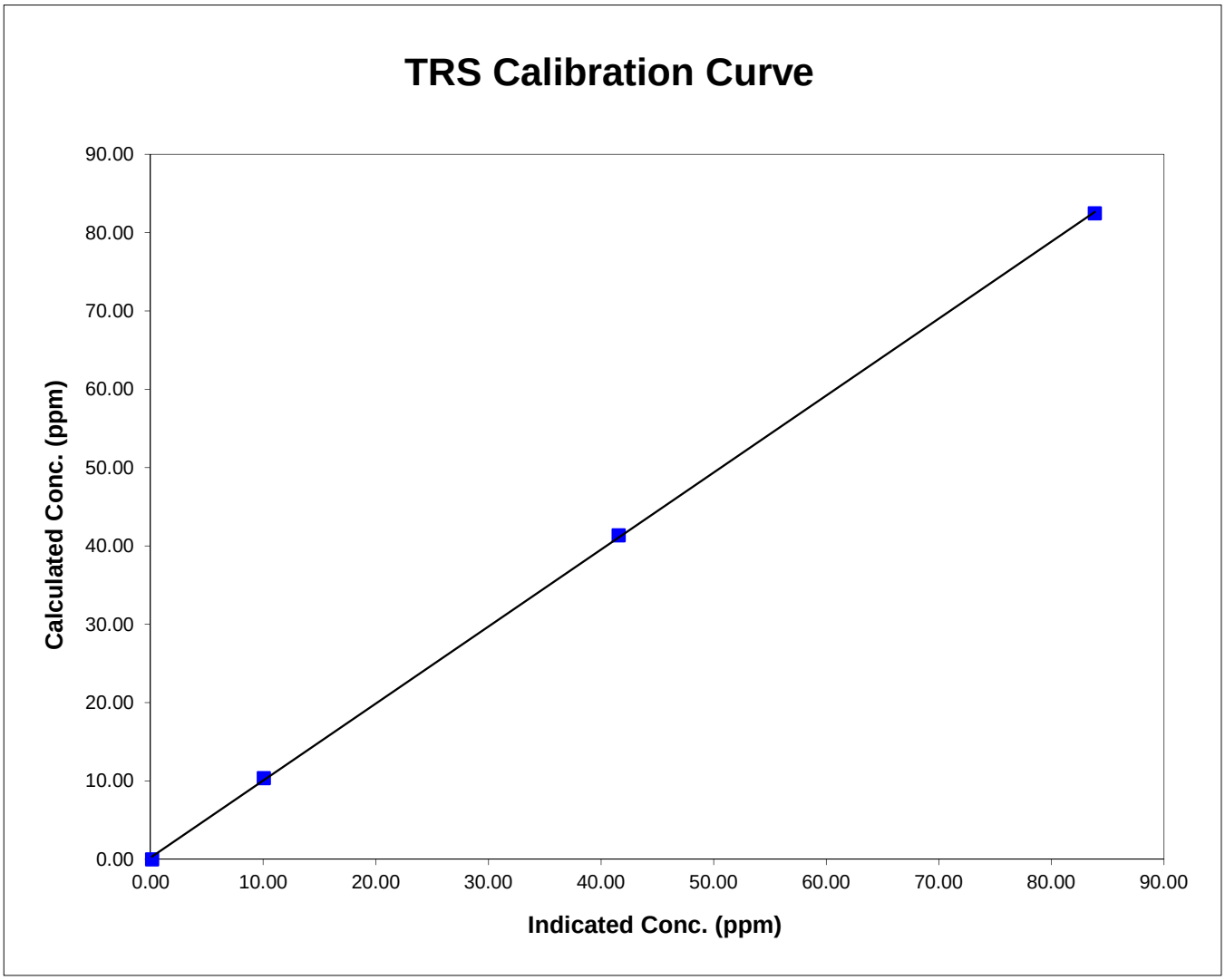
FOCUS AIR QUALITY MONITORING

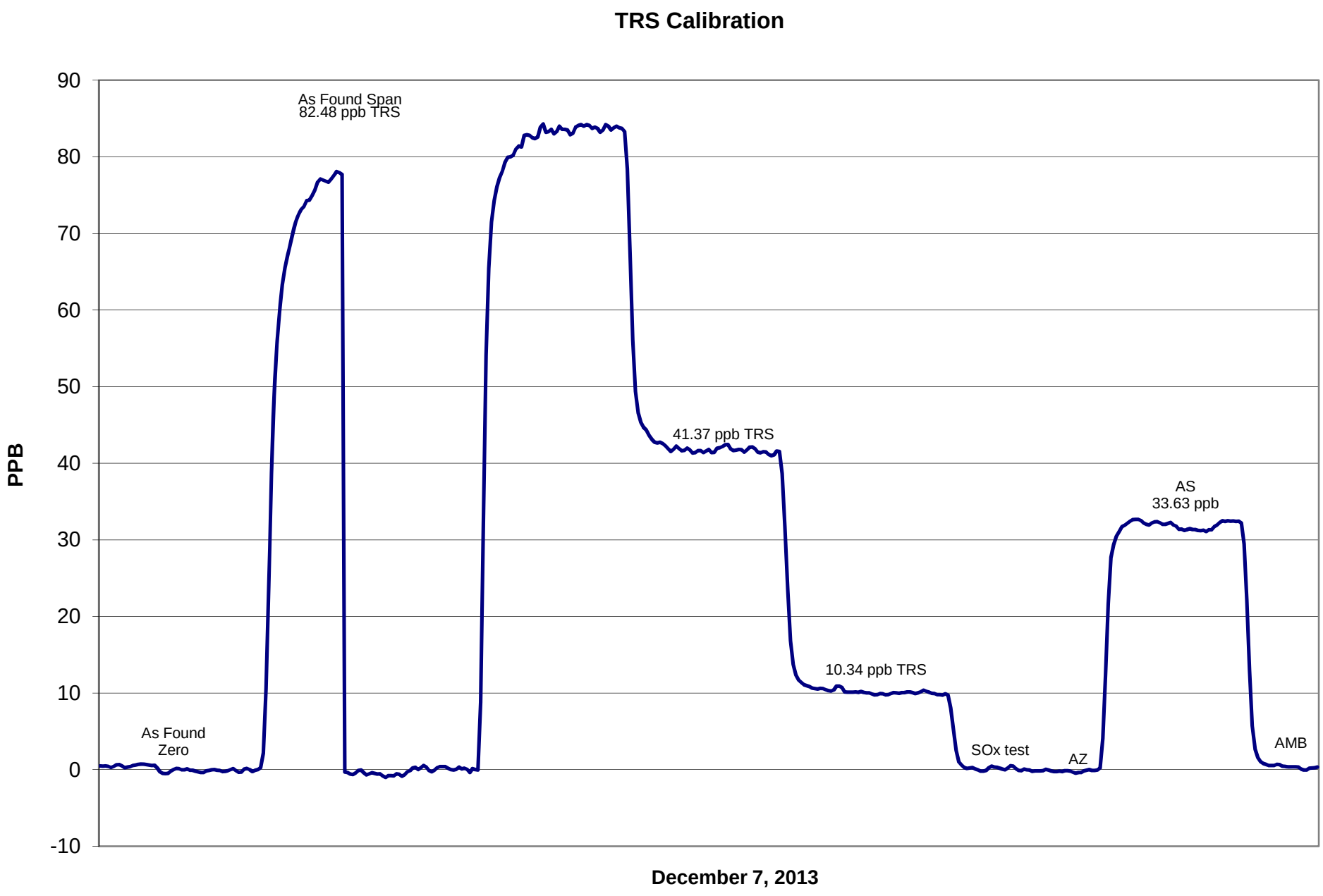
Station Information

Calibration Date	December 7, 2013	Previous Calibration	November 6, 2013
Station Number	1	Station Location	Henry Pirker
Start Time (MST)	12:40	End Time (MST)	18:48
Analyzer make/model	TEI 45C	Analyzer serial #	630718528

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.122	N/A		
82.478	83.859	0.9835	Correlation Coefficient	0.999931
41.372	41.572	0.9952		
10.338	10.051	1.0286	Slope	0.982830
			Intercept	0.228153




TRS Calibration
PPB
90
80
70
60
50
40
30
20
10
0
-10
As Found Span
82.48 ppb TRS
41.37 ppb TRS
10.34 ppb TRS
AS
33.63 ppb
As Found
Zero
SOx test
AZ
AMB
December 7, 2013

Calibration Report

Parameter **SO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 10 2013	Previous Calibration	November 13 2013
Station Number	2	Station Location	Evergreen Park
Reason: Routine	Install	Removal	Other:

Start Time (MST)	12:01	End Time (MST)	14:53
Barometric Pressure	0.924 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentratior	51.5 ppm	Cal Gas Expiry Date	25/02/2025
Correction factor	0.031409	Cal Gas Cylinder #	LL105159
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	1.003471	Calculated slope	1.005063
Calculated intercept	1.376699	Calculated intercept	0.442718

Analyzer make	Teco 43i	Analyzer serial #	701120008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.3		11.4	
coefficient	1.203		1.203	
Lamp Voltage	831	volts	831	volts
Chamber Temp	45.2	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	674.3	mm Hg	674	mm Hg
Sample Flow	0.455	ccm	0.455	ccm
Lamp Intensity	90	%	90	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.4	N/A
4995	39.93	408.4	406.3	1.0053
4995	19.97	205.1	203.4	1.0084
4995	9.97	102.6	100.7	1.0191
4995	0.0	0.0	0.4	As Found Zero
4995	39.93	408.4	406.3	As Found Span
			Average Correction Factor	1.0109

Calculated value of As Found Response: 408.663 ppm Percent Change of As Found: -0.1%

	before calibration		after calibration	
Auto zero	0.2	ppm	0.4	ppm
Auto span	277.4	ppm	277.0	ppm

Notes: No adustment made

Calibration Performed By: Grover Christiansen,Dmytro Dolotii

Calibration Summary

Parameter **SO2**

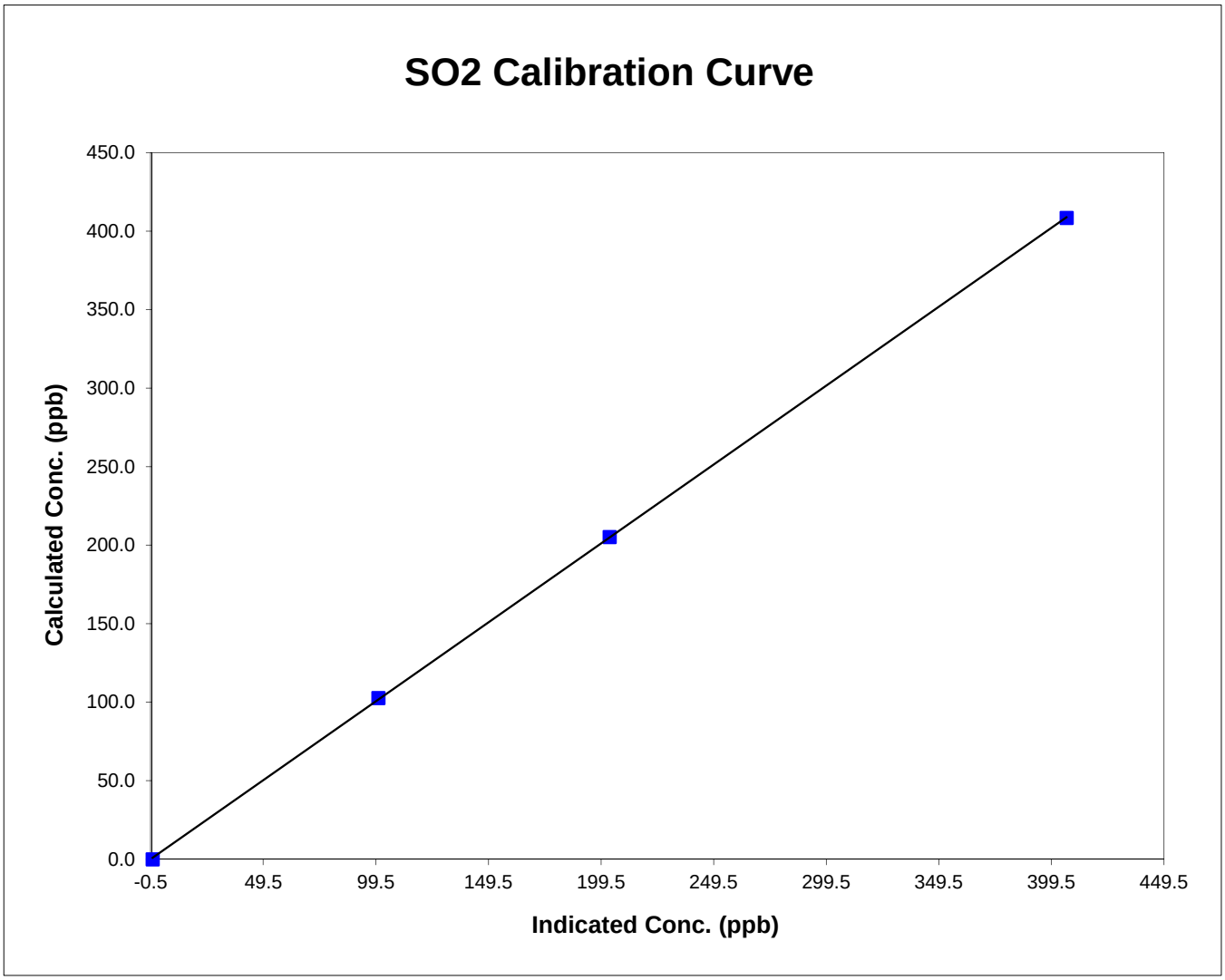
Air Monitoring Network **PAZA**

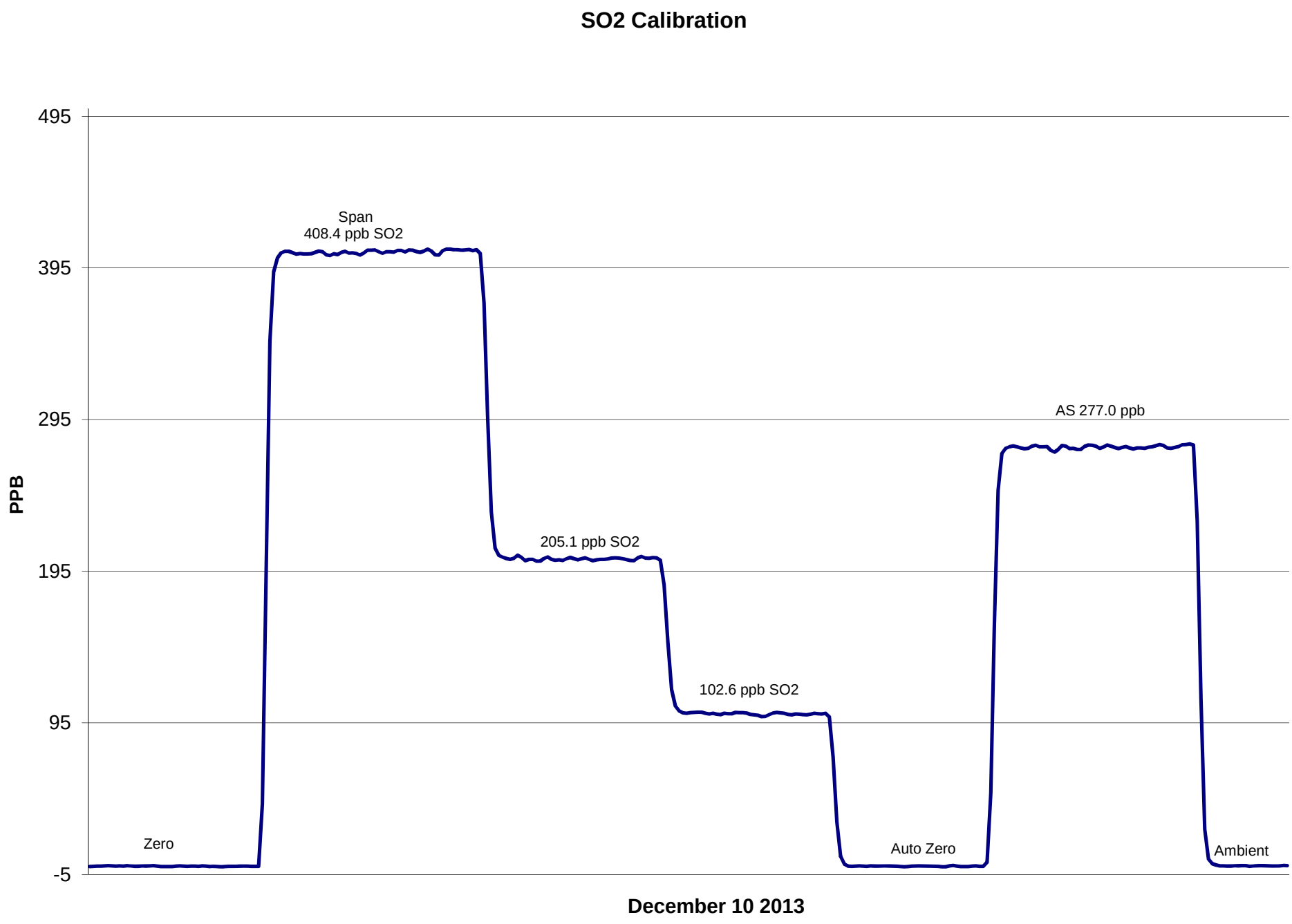
Station Information

Calibration Date	December 10 2013	Previous Calibration	November 13 2013
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	12:01	End Time (MST)	14:53
Analyzer make/model	Teco 43i	Analyzer serial #	701120008

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A		
408.4	406.3	1.0053	Correlation Coefficient	0.999980
205.1	203.4	1.0084		
102.6	100.7	1.0191	Slope	1.005063
			Intercept	0.442718




SO2 Calibration
495
395
295
195
95
-5
PPB
Span
408.4 ppb SO2
205.1 ppb SO2
102.6 ppb SO2
AS 277.0 ppb
Zero
Auto Zero
Ambient
December 10 2013

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter **TRS**

Air Monitoring Network **PAZA**

Station Information

Calibration Date	December 10 2013	Previous Calibration	November 13 2013
Station Number	2	Station Location	Evergreen Park
Reason: Routine	Install	Removal	Other:
Start Time (MST)	9:50	End Time (MST)	13:18
Barometric Pressure	0.934 ATM	Station Temperature	22.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Conc	10.4 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031534	Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5236
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	1.020247	Calculated slope	0.990925
Calculated intercept	-0.373881	Calculated intercept	0.048514
Analyzer make	TEI Model 43C	Analyzer serial #	3.199E+13

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	35.7	ppb	37.6	ppb
coefficient	1.014		1.043	
Lamp Voltage	1033	volts	1034	volts
Chamber Temp	44.2	Deg C	44.2	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	649.7	mm Hg	650.4	mm Hg
Sample Flow	0.606	ccm	0.599	ccm
Lamp Intensity	31,039	mv	31,771	mv

Calibration Data

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.00	0.0	N/A
4995	39.93	82.48	83.2	0.9911
4995	19.97	41.41	41.7	0.9934
8995	8.97	10.36	10.4	1.0010
4995	9.97	102.79	0.3	Sox Test
4995	0.00	0.00	0.0	As Found Zero
4995	39.93	82.48	80.0	As Found Span
			Average Correction Factor	0.9952

Calculated value of As Found Response: 81.23 ppm Percent Change of As Found: 1.5%

	before calibration		after calibration	
Auto zero	0.4	ppm	0.2	ppm
Auto span	76.8	ppm	77.9	ppm

Notes: **Slight span adjust.**

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **TRS**

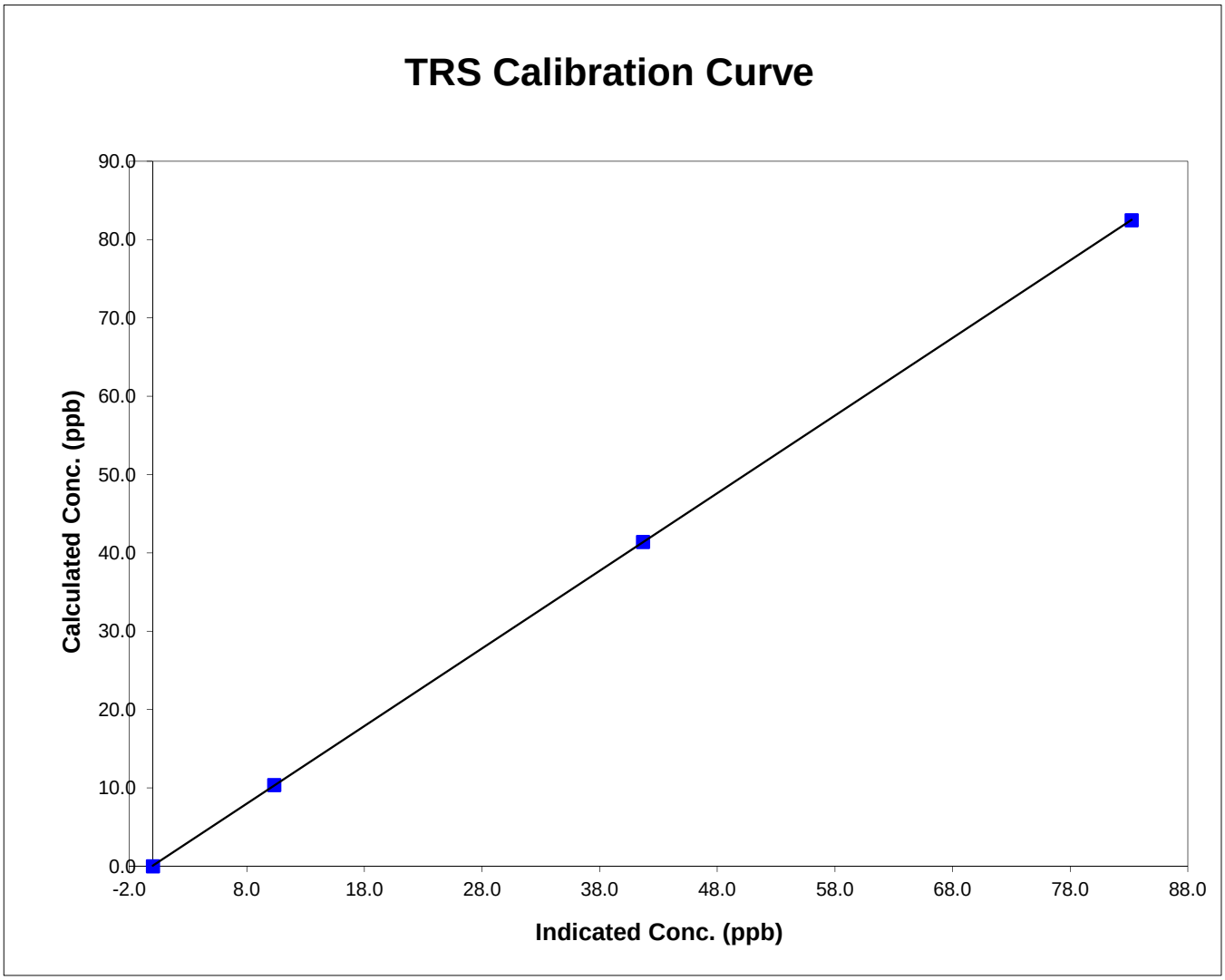
Air Monitoring Network **PAZA**

Station Information

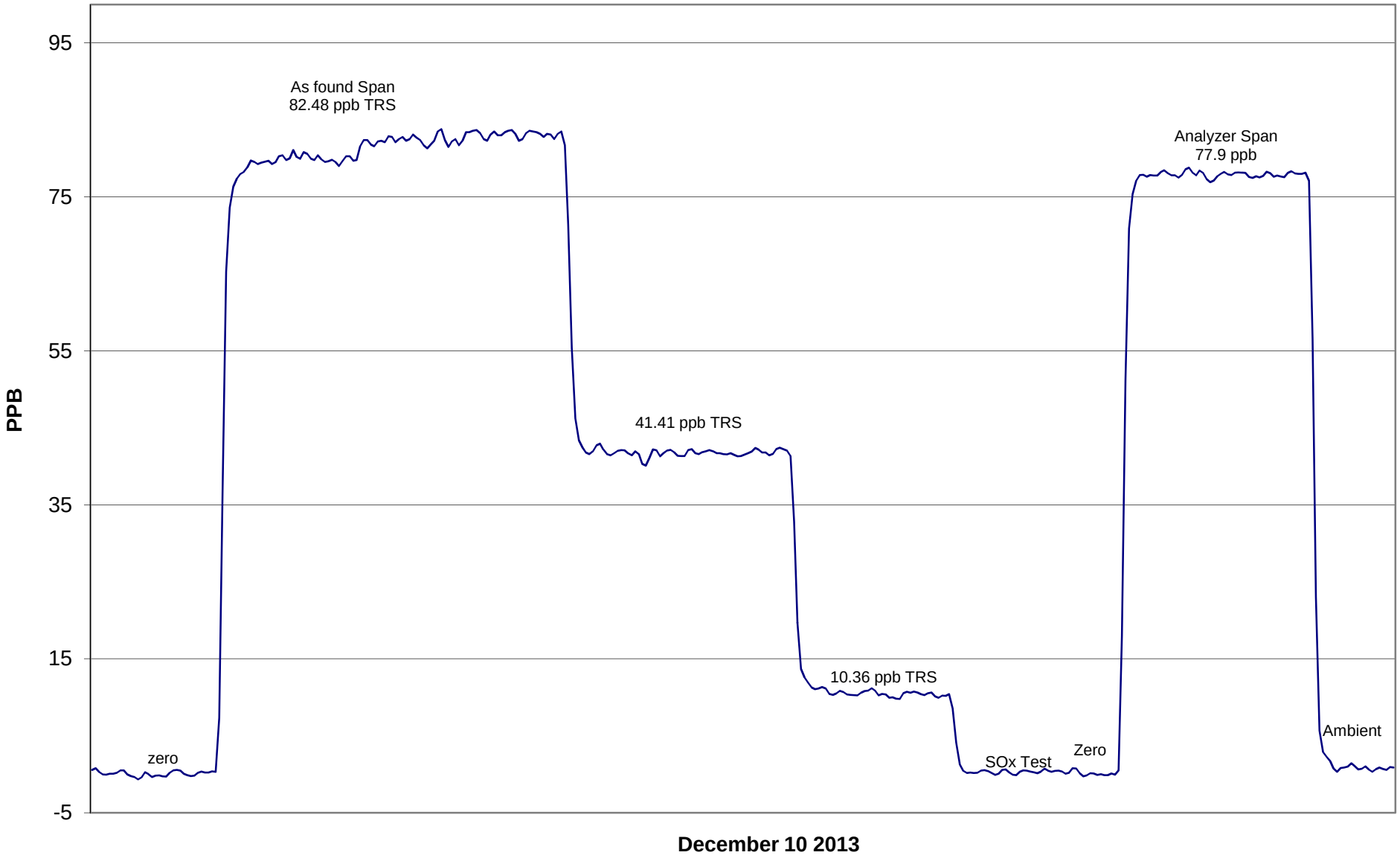
Calibration Date	December 10 2013	Previous Calibration	November 13 2013
Station Number	2	Station Location	Evergreen Park
Start Time (MST)	9:50	End Time (MST)	13:18
Analyzer make/model	TEI Model 43C	Analyzer serial #	31990000000491

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
82.5	83.2	0.9911	Correlation Coefficient	0.999997
41.4	41.7	0.9934		
10.4	10.4	1.0010	Slope	0.990925
			Intercept	0.048514



TRS Calibration



Calibration Report

Parameter **SO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 19, 2013	Previous Calibration	November 15, 2013
Station Number	3	Station Location	Smokey Heights

Reason: Routine | Install | Removal | Other:

Start Time (MST)	11:30	End Time (MST)	14:28
Barometric Pressure	0.927 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentration	51.5 ppm	Cal Gas Cert Date	20/01/2016
Correction factor	0.031511	Cal Gas Cylinder #	LL1105159
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	1.001564	Calculated slope	1.001172
Calculated intercept	1.131803	Calculated intercept	0.082377

Analyzer make	Teco 43i	Analyzer serial #	701120009

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	11.3		11.3	
coefficient	0.952		0.973	
Lamp Voltage	933	volts	934	volts
Chamber Temp	44.8	Deg C	44.9	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	669	mm Hg	669.9	mm Hg
Sample Flow	0.448	ccm	0.446	ccm
Lamp Intensity	87	%	87	%

Calibration Data

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.5	N/A
4995	39.93	408.43	408.2	1.0007
4995	19.97	205.08	204.5	1.0030
4995	9.97	102.59	101.8	1.0079
4995	0.0	0.00	0.5	As Found Zero
4995	39.93	408.43	398.5	As Found Span
			Average Correction Factor	1.0039

Calculated value of As Found Response: 399.763 ppm Percent Change of As Found: 2.1%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.5	ppb
Auto span	253.7	ppb	255.3	ppb

Notes: Slight span adjust 80% point.

Calibration Performed By: Grover Christiansen,Dmytro Dolotii

Calibration Summary

Parameter **SO2**

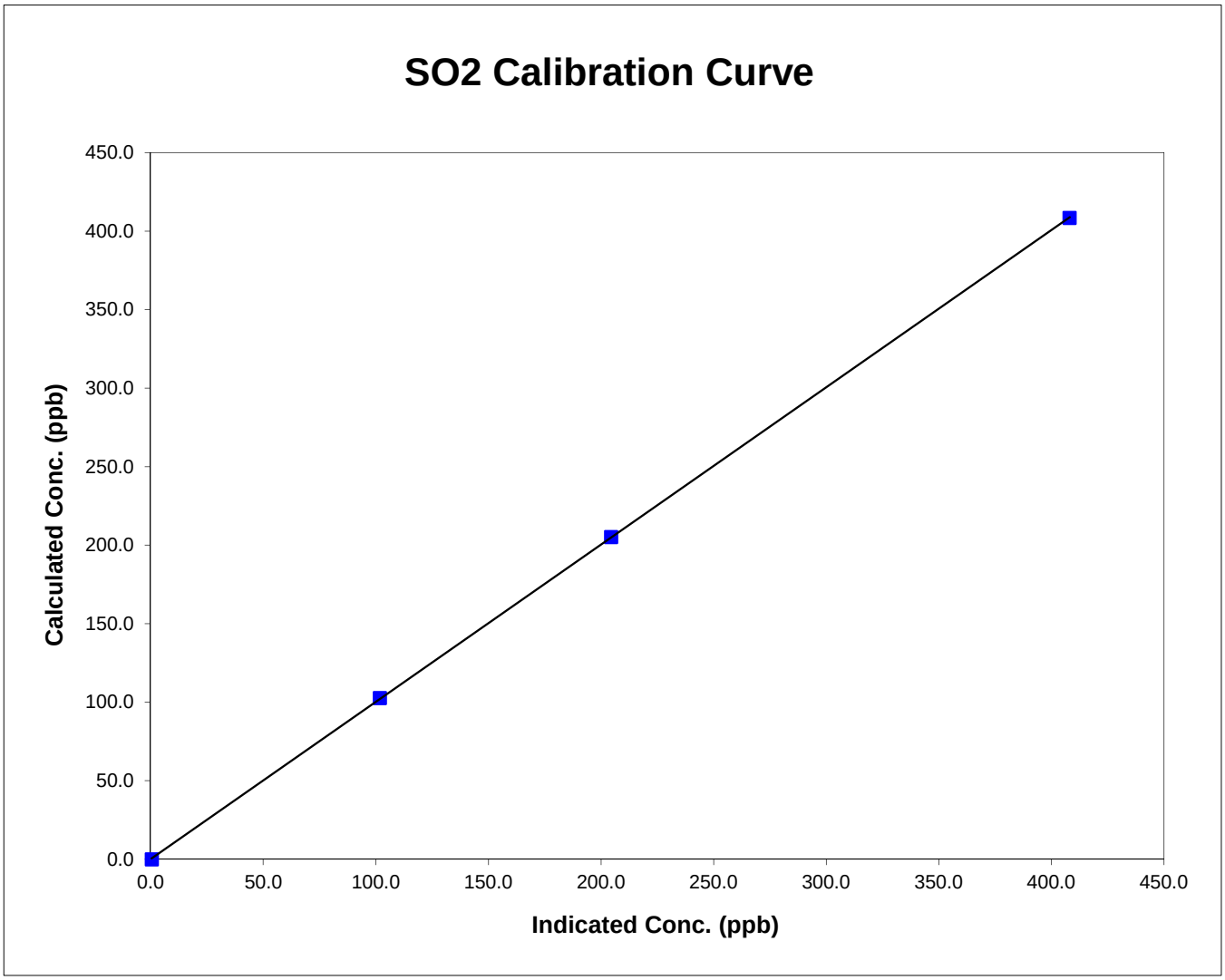
Air Monitoring Network **PAZA**

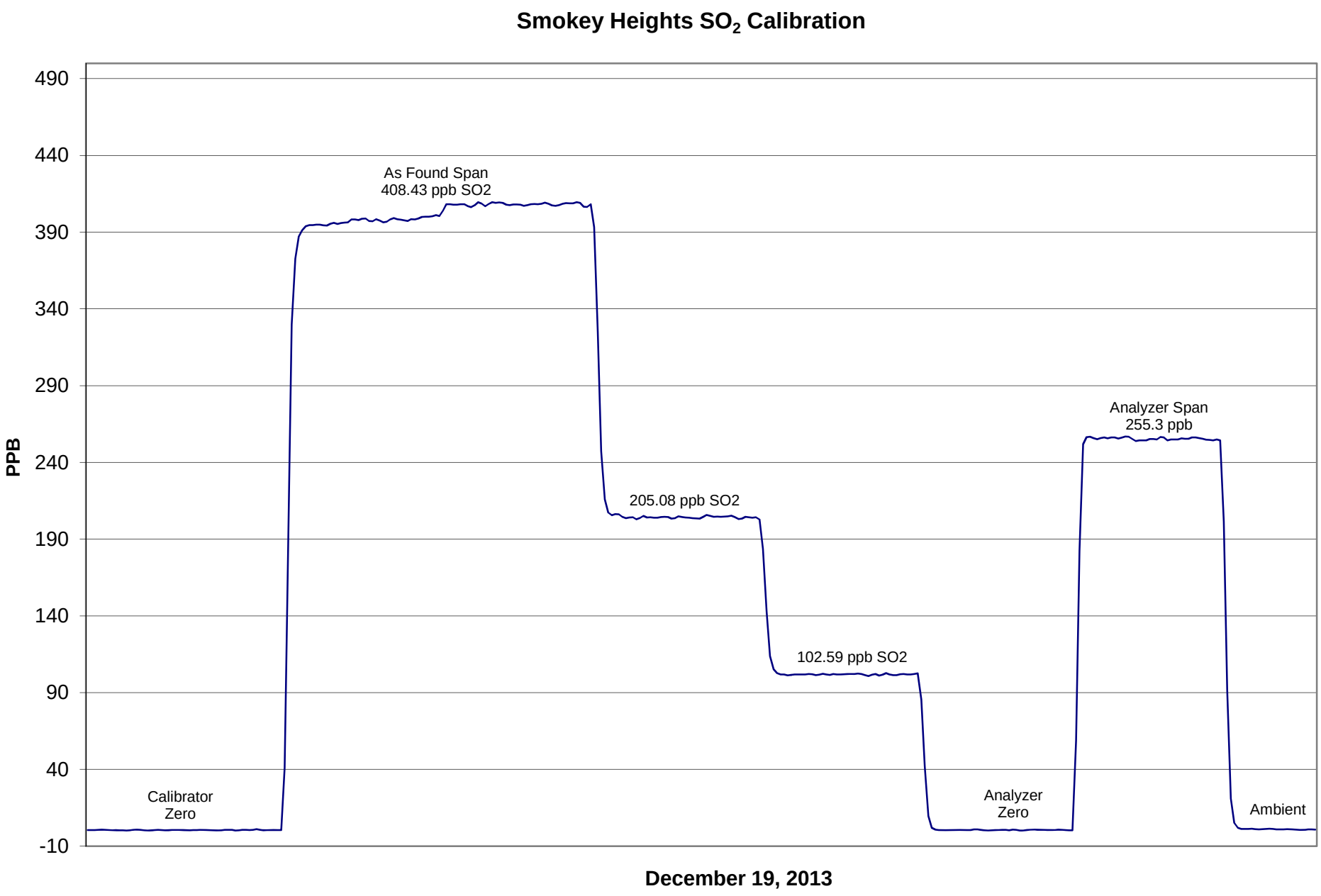
Station Information

Calibration Date	December 19, 2013	Previous Calibration	November 15, 2013
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	11:30	End Time (MST)	14:28
Analyzer make/model	Teco 43i	Analyzer serial #	701120009

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.5	N/A		
408.4	408.2	1.0007	Correlation Coefficient	0.999990
205.1	204.5	1.0030		
102.6	101.8	1.0079	Slope	1.001172
			Intercept	0.082377




Smokey Heights SO_2 Calibration
490
440
390
340
290
240
190
140
90
40
-10
PPB
As Found Span
408.43 ppb SO2
205.08 ppb SO2
102.59 ppb SO2
Analyzer Span
255.3 ppb
Calibrator
Zero
Analyzer
Zero
Ambient
December 19, 2013

Calibration Report

Parameter **TRS**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 19, 2013	Previous Calibration	November 15, 2013
Station Number	3	Station Location	Smokey Heights
Reason: Routine	Install	Removal	Other:

Start Time (MST)	9:45	End Time (MST)	13:08
Barometric Pressure	0.927 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Conc	10.4 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031511	Cal Gas Cylinder #	LL110781
DACS make	CR3000	DACS serial No.	5238
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	1.014016	Calculated slope	1.029595
Calculated intercept	0.165521	Calculated intercept	-0.712595

Analyzer make	TEI Model 43C	Analyzer serial #	0436610005

	before		after	
Concentration range	100	ppb	100	ppb
Background	17.2	ppb	17.5	ppb
coefficient	0.956		0.956	
Lamp Voltage	829	volts	830	volts
Chamber Temp	43.2	Deg C	43.9	Deg C
Perm Gas Temp	45	Deg C	44.99	Deg C
Pressure	606.7	mm Hg	590.7	mm Hg
Sample Flow	0.629	ccm	0.631	ccm
Lamp Intensity	34,883	mv	35,385	mv

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.4	N/A
4995	39.93	82.48	80.7	1.0225
4995	19.97	41.41	41.1	1.0068
8995	8.97	10.36	10.9	0.9484
4995	0.0	0.00	0.4	As Found Zero
4995	39.93	82.48	80.7	As Found Span
			Average Correction Factor	0.9925

Calculated value of As Found Response: 81.52 ppm Percent Change of As Found: 1.2%

	before calibration		after calibration	
Auto zero	1.2	ppm	0.0	ppm
Auto span	31.0	ppm	32.8	ppm

Notes: No span adjust. Scrubber check done submitting 102.59 ppb SO2.

Calibration Performed By: Grover Christiansen,Dmytro Dolotii

Calibration Summary

Parameter **TRS**

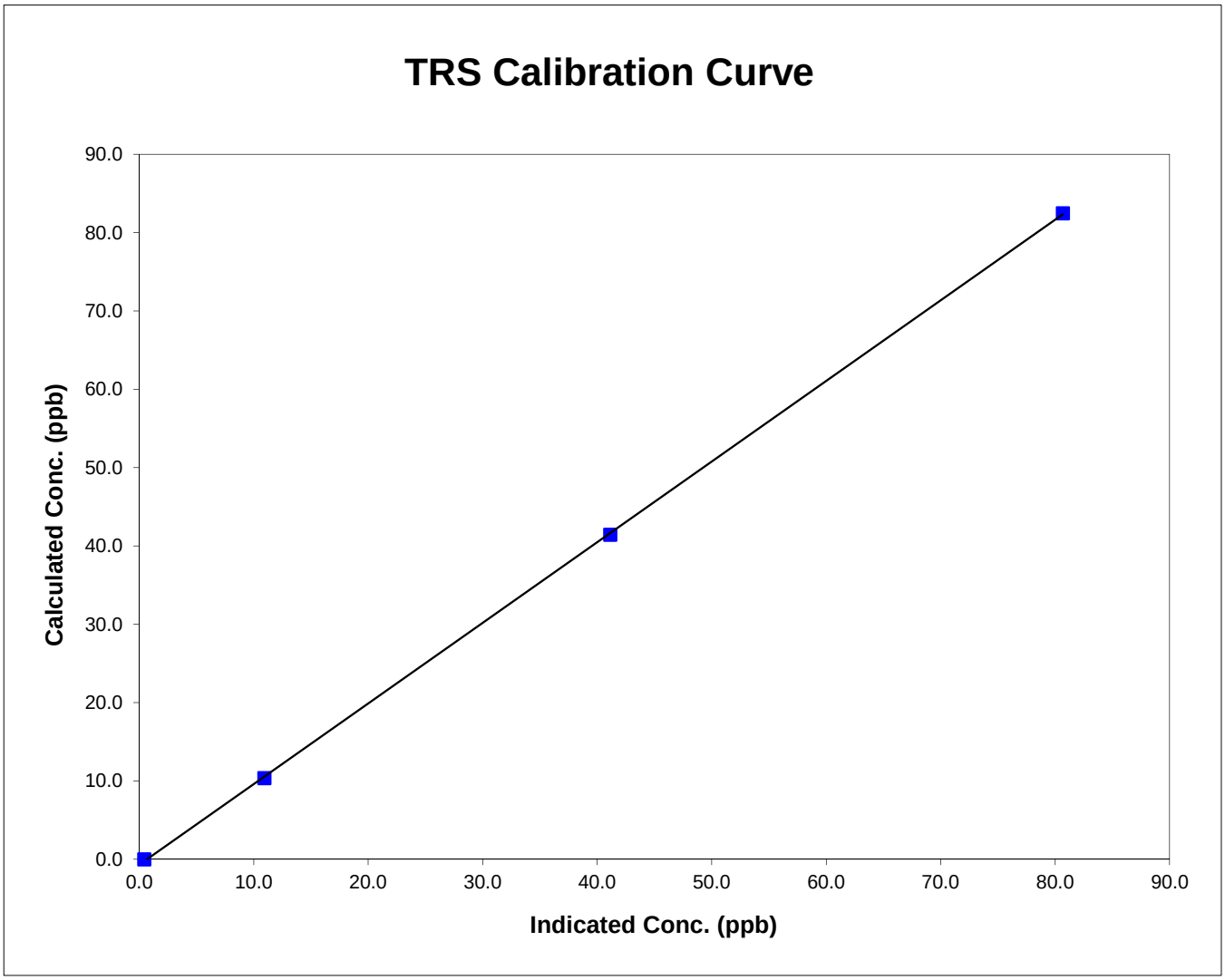
Air Monitoring Network **PAZA**

Station Information

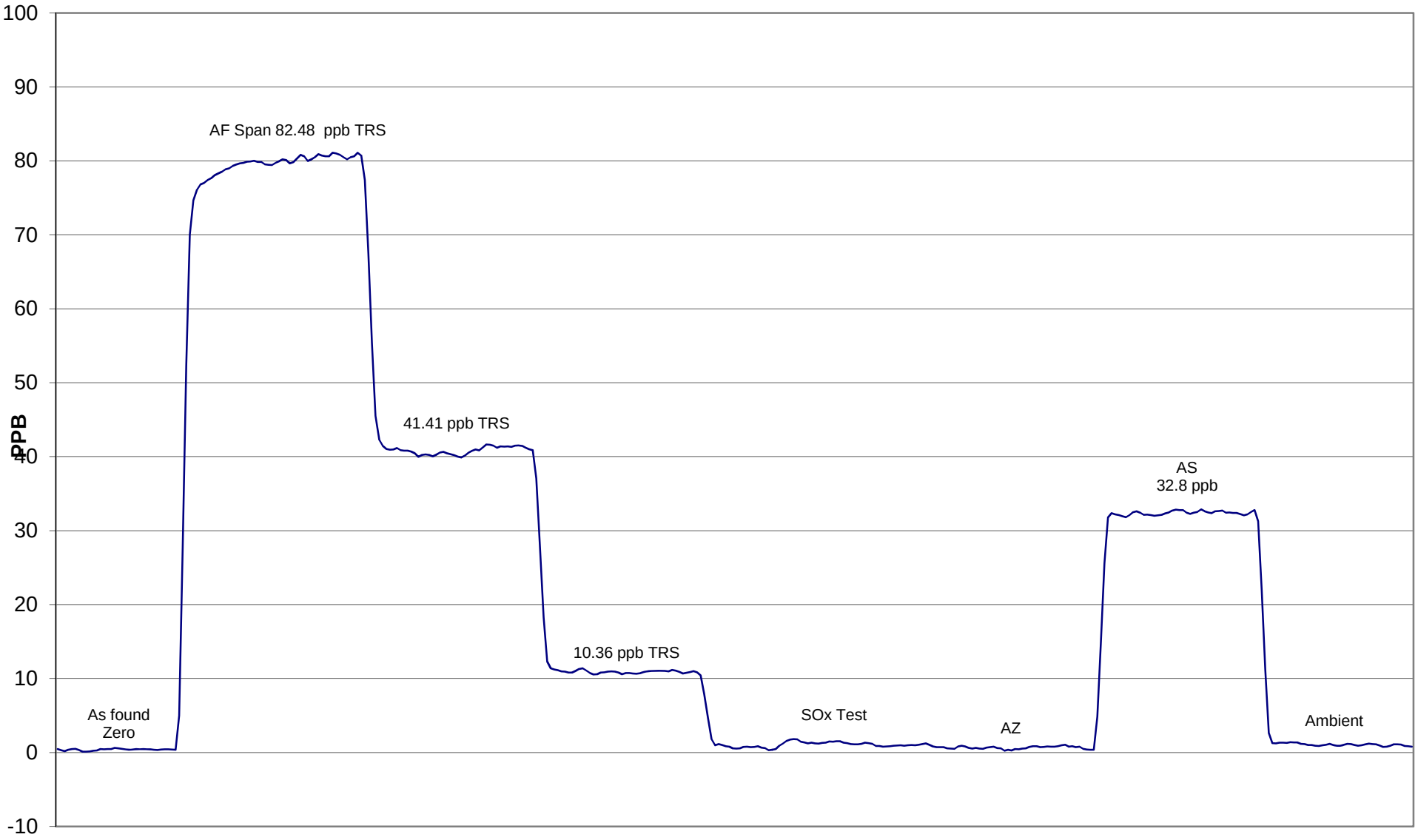
Calibration Date	December 19, 2013	Previous Calibration	November 15, 2013
Station Number	3	Station Location	Smokey Heights
Start Time (MST)	9:45	End Time (MST)	13:08
Analyzer make/model	TEI Model 43C	Analyzer serial #	0436610005

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A		
82.5	80.7	1.0225	Correlation Coefficient	0.999959
41.4	41.1	1.0068		
10.4	10.9	0.9484	Slope	1.029595
			Intercept	-0.712595



Smokey Heights TRS Calibration



December 19, 2013

Calibration Report

Parameter **SO2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Reason: Routine	Install	Removal	Other:
Start Time (MST)	15:05:00 PM	End Time (MST)	17:49
Barometric Pressure	0.911 atm	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentration	10.8 ppm	Cal Gas Expiry Date	28/09/2012
Gas Cert Reference	FF14871		
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.004489	Calculated slope	1.020670
Calculated intercept	-0.352225	Calculated intercept	-0.061119
Analyzer make	TEI Model 43i-TLE	Analyzer serial #	713021137

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	2.36		2.71	
Coefficient	1.042		1.042	
PMT	-767.4	V	-767.4	V
UV Lamp Voltage	1067	V	1067	V
Chamber Temp	45	Deg C	45	Deg C
Pressure	663.4	mm Hg	667	mm Hg
Sample Flow	0.481	LPM	0.485	LPM
Lamp Intesity	96	%	96	%

Calibration Data

Dilution air flow rate (cc/min)	Source gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.0	0.3	N/A
4995	39.93	85.7	84.1	1.0186
4995	19.97	43.0	42.1	1.0223
4995	9.97	21.5	21.0	1.0267
4995	0.00	0.0	0.3	As found zero
4995	39.93	85.7	84.1	As found span
			Average Correction Factor	1.0225

Calculated value of As Found Response: 83.847 ppm Percent Change of As Found: 2.1%

	before calibration		after calibration	
Auto zero	0.2	ppb	0.0	ppb
Auto span	59.9	ppb	59.9	ppb

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **SO2**

Air Monitoring Network **PAZA**

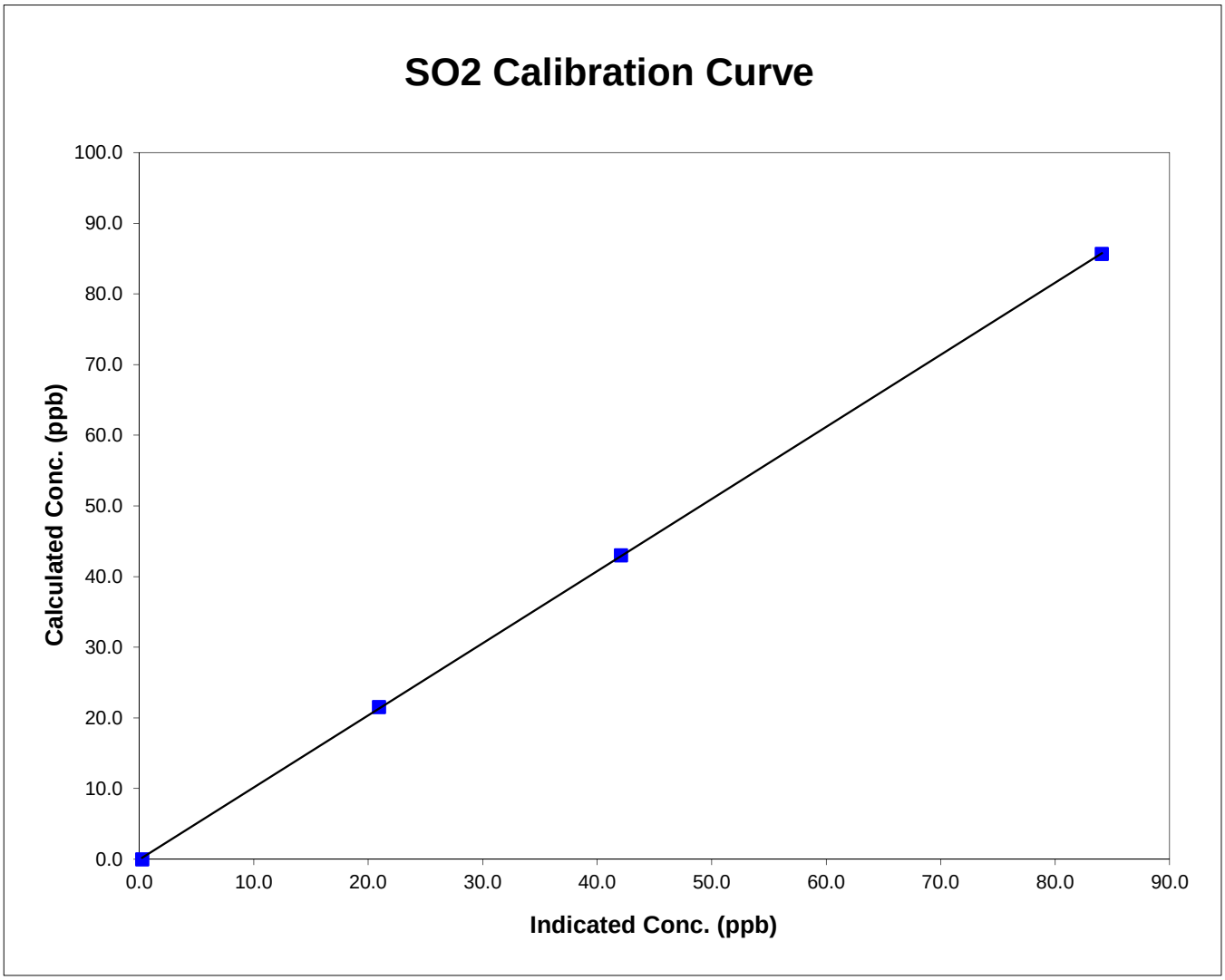
FOCUS AIR QUALITY MONITORING

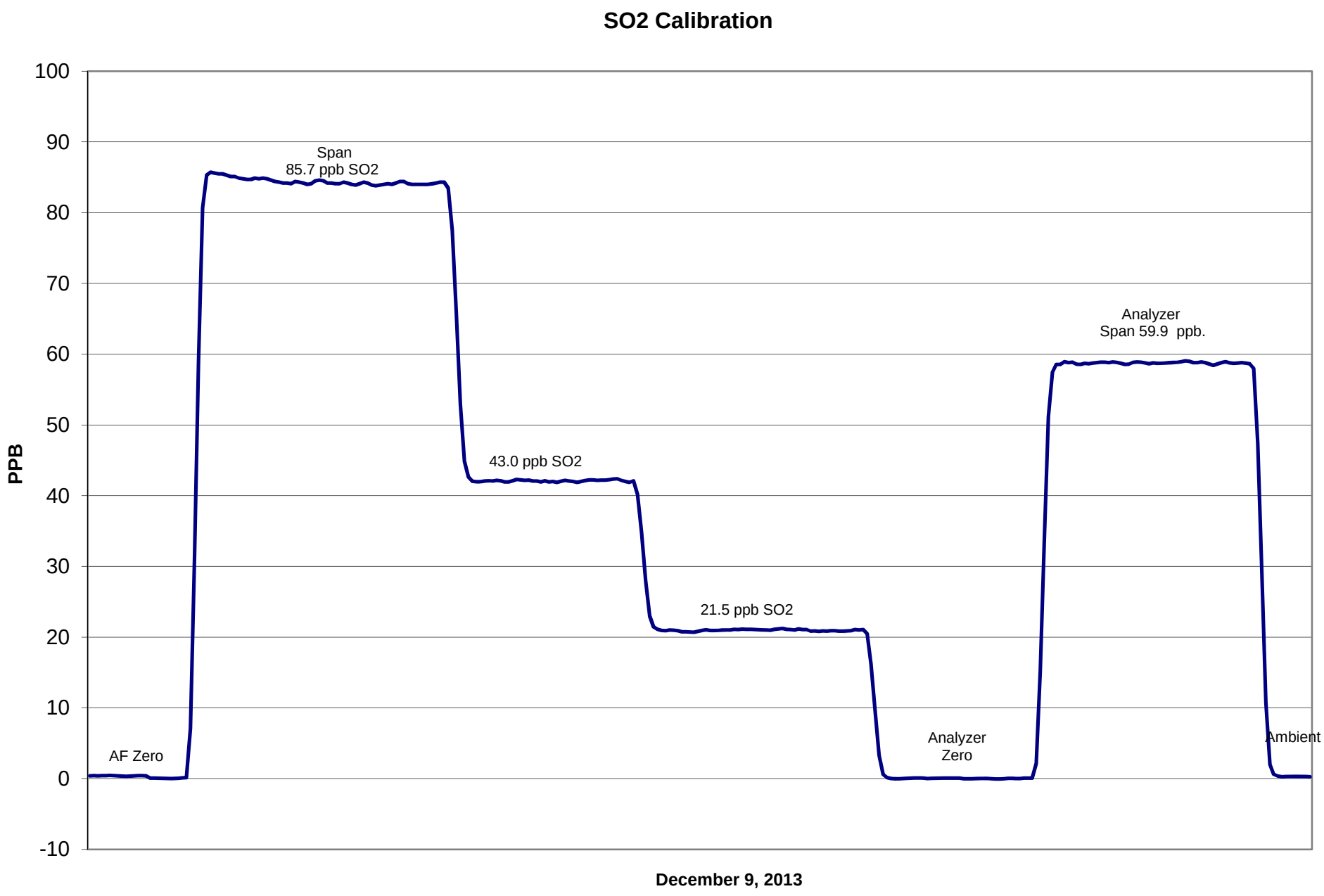
Station Information

Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	15:05:00 PM	End Time (MST)	17:49
Analyzer make/model	TEI Model 43i-TLE	Analyzer serial #	713021137

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A		
85.7	84.1	1.0186	Correlation Coefficient	0.999973
43.0	42.1	1.0223		
21.5	21.0	1.0267	Slope	1.020670
			Intercept	-0.061119




SO2 Calibration
100
90
80
70
60
50
40
30
20
10
0
-10
PPB
Span
85.7 ppb SO2
43.0 ppb SO2
21.5 ppb SO2
Analyzer
Span 59.9 ppb.
AF Zero
Analyzer
Zero
Ambient
December 9, 2013

Calibration Report

Parameter **NO_X-NO-NO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge

Reason: Routine Installation Removal Other:

Start Time (MST)	9:15		End Time (MST)	14:49	
Barometric Pressure	0.911	Atm	Station Temperature	20.0	Deg C
Calibrator	Environics		Serial Number	3016	
NO Cal Gas Conc	51.3	ppm	Cal Gas Expiry Date	February 25, 2021	
NOx Cal Gas Conc	51.4	ppm	Cal Gas Serial #	LL105159	

DACS Information

DACS make: CR3000 DACS serial No.: 5237

Parameter		NO2	NOx	NO
Before	Data Slope	1.002324	1.000038	0.997017
	Data Offset	-0.172702	1.169174	1.638567
After	Data Slope	1.001238	1.003193	0.999226
	Data Offset	0.427803	0.653400	0.992680
Channel #		8	6	7
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model: TEI 42i Analyzer serial #: 906535068

Test Point	before		after	
Concentration range	0-500	ppb	0-500	ppb
NO offset	2.5	mV	2.8	mV
NOx bkgnd	2.8	mV	2.9	mV
NO coefficient	1.207		1.192	
NOx coefficient	0.995		0.995	
NO2 conv temp	326.8	Deg C	326.8	Deg C
PMT Temp	-3.0	Deg C	-3.0	Deg C
PMT Volt	-716.3	mV	-726.7	mV
R Cell Press	220.2	in Hg	220.2	in Hg
Sample Flow	0.636	LPM	0.641	LPM

Notes: PMT & span were adjusted following as found span.
Check orrifices and sample pump - both appear good. Finish cal.

Calibration Report

Parameter **NOX-NO-NO2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date: December 9, 2013 Station Location: Beaverlodge

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4995	0.00	0.0	0.0	0.0	0.0	-0.1	0.0	N/A	N/A
1	4995	39.93	407.6	406.8	0.8	405.9	406.6	-1.4	1.0043	1.0005
2	4995	19.97	204.7	204.3	0.4	203.4	203.0	-0.4	1.0065	1.0064
3	4995	9.97	102.4	102.2	0.2	100.6	100.4	0.1	1.0183	1.0183
AFZ	4995	0.00	0.0	0.0	0.0	0.0	-0.1	0.0	0.0000	0.0000
AFS	4995	39.93	407.6	406.8	0.8	369.4	369.3	-0.7	1.1035	1.1017
							Average Correction Factor		1.0097	1.0084

As Found Concentrations: NO_X= 370.6 NO= 371.0 As Found Percent Change NO_X= -9.1% NO= -8.8%

GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	-0.1	-0.1	0.0	0.0	-0.1	0.0	N/A	N/A	N/A	N/A
NO point	410.4	410.4	0.0	409.9	410.4	-1.2	1.0012	1.0000	N/A	N/A
300	410.4	98.9	311.5	410.3	98.9	310.9	1.0004	1.0000	1.0019	99.8%
200	410.4	199.5	211.0	410.7	199.5	210.2	0.9993	1.0000	1.0035	99.7%
100	410.4	301.6	108.8	409.7	301.6	107.7	1.0017	1.0000	1.0104	99.0%
					Average Correction Factor		1.0005	1.0000	1.0053	99.5%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	-0.1	-0.1	-0.1	ppb	0.2	-0.1	0.1	ppb
Auto span	168.3	166.9	1.1	ppb	185.6	184.2	0.9	ppb

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **NO_2**

Air Monitoring Network **PAZA**

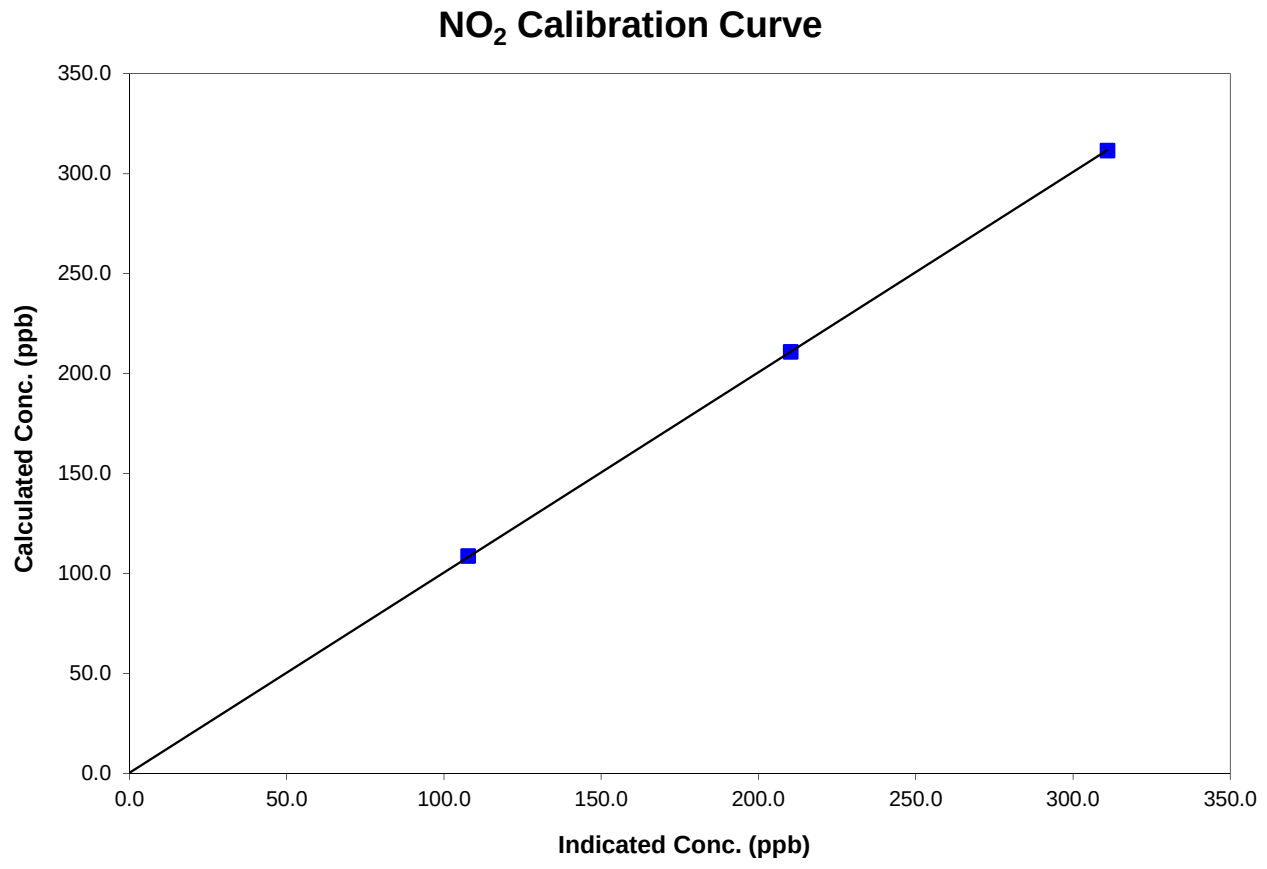
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:15	End Time (MST)	14:49
Analyzer make	TEI 42i	Analyzer serial #	906535068

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
311.5	310.9	1.0019	Correlation Coefficient	0.999990
211.0	210.2	1.0035		
108.8	107.7	1.0104	Slope	1.001238
			Intercept	0.427803



Calibration Summary

Parameter **NO_x**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

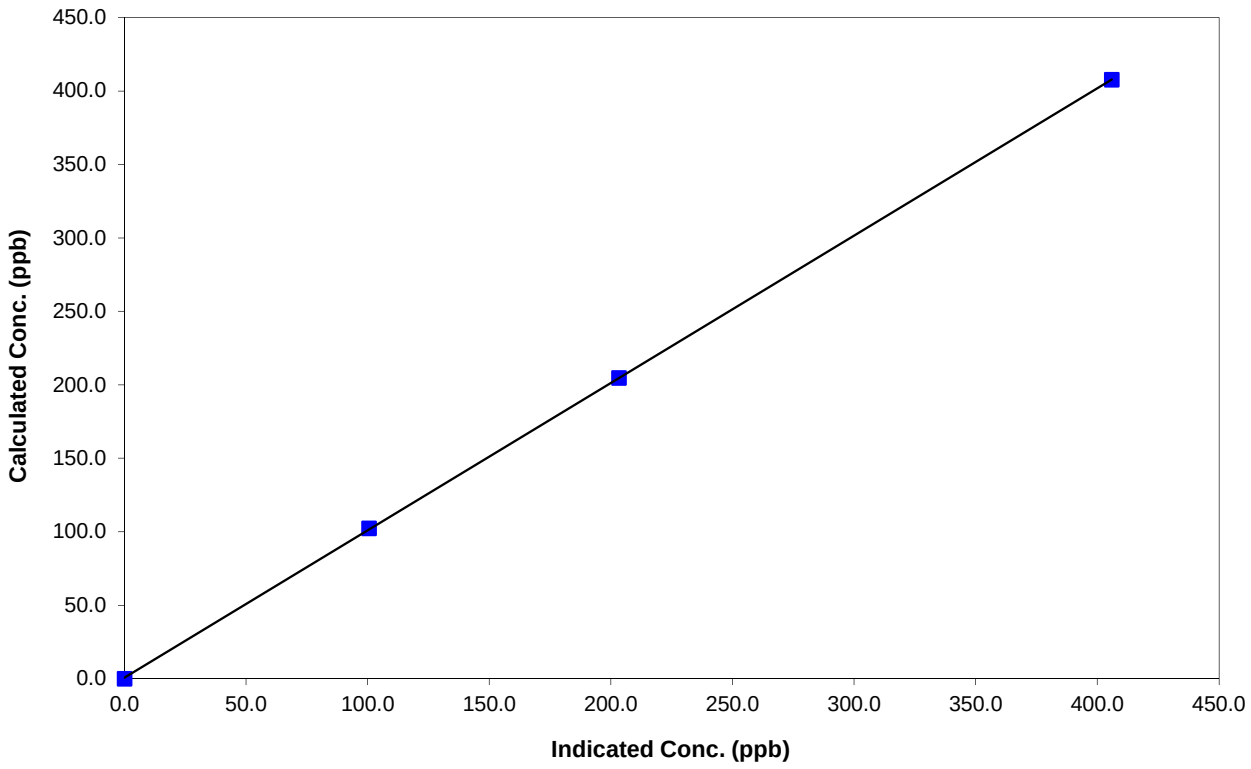
Station Information

Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:15	End Time (MST)	14:49
Analyzer make	TEI 42i	Analyzer serial #	906535068

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
407.6	405.9	1.0043	Correlation Coefficient	0.999986
204.7	203.4	1.0065		
102.4	100.6	1.0183	Slope	1.003193
			Intercept	0.653400

NOx Calibration Curve



Calibration Summary

Parameter **NO**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

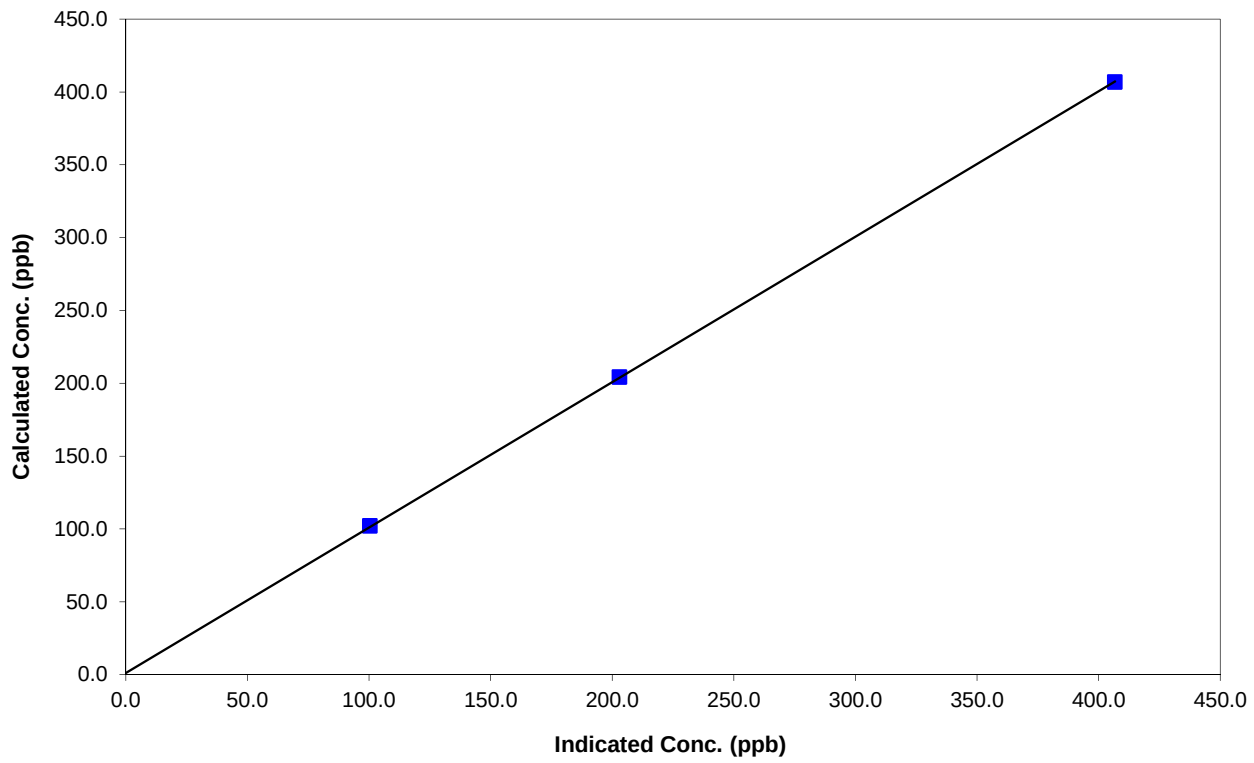
Station Information

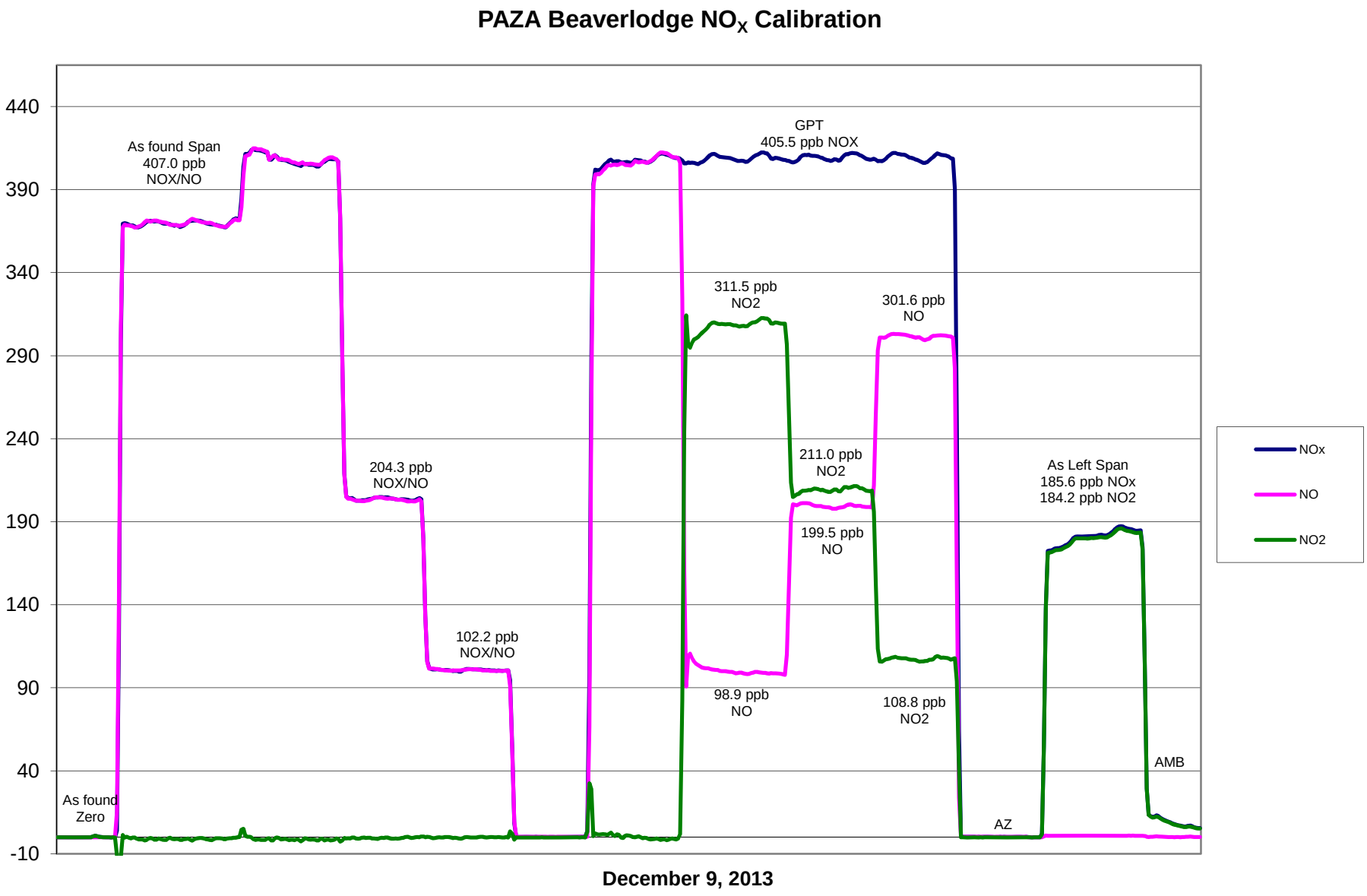
Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	9:15	End Time (MST)	14:49
Analyzer make	TEI 42i	Analyzer serial #	906535068

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A		
406.8	406.6	1.0005	Correlation Coefficient	0.999976
204.3	203.0	1.0064		
102.2	100.4	1.0183	Slope	0.999226
			Intercept	0.992680

NO Calibration Curve




PAZA Beaverlodge NOx Calibration
440
390
340
290
240
190
140
90
40
-10
As found Span
407.0 ppb
NOX/NO
204.3 ppb
NOX/NO
102.2 ppb
NOX/NO
As found
Zero
GPT
405.5 ppb NOX
311.5 ppb
NO2
98.9 ppb
NO
211.0 ppb
NO2
199.5 ppb
NO
301.6 ppb
NO
108.8 ppb
NO2
AZ
As Left Span
185.6 ppb NOx
184.2 ppb NO2
AMB
NOx
NO
NO2
December 9, 2013

Calibration Report

Parameter **O3**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Reason: Routine	Install	Removal	Other:
Start Time (MST)	13:40 PM	End Time (MST)	16:47
Barometric Pressure	0.911 atm	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentration	NA	Cal Gas Expiry Date	NA
DACS make	CR3000	DACS serial No.	5237
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
Calculated slope	1.007881	Calculated slope	1.025810
Calculated intercept	-1.506238	Calculated intercept	-0.597926
Analyzer make	Teco 49i	Analyzer serial #	1136451236

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
offset	-1.20	ppb	-1.20	ppb
slope	1.012		1.012	
Lamp temp	53.8	mV	53.8	mV
Lamp Intensity A/B	67594/71565	mV	67594/71565	mV
Pressure	689.3	mm Hg	689.4	mm Hg
Flow A	0.760	LPM	0.76	LPM
Flow B	0.750	LPM	0.750	LPM

Calibration Data

Dilution air flow rate (cc/min)	Calibrator Setting	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
5035	0.00	0.0	0.6	N/A
5035	0.30	311.5	304.6	1.0226
5035	0.20	211.0	205.5	1.0266
5035	0.10	108.8	107.0	1.0170
5035	0.00	0.0	0.6	As found zero
5035	0.30	311.5	304.6	As found span
			Average Correction Factor	1.0221

Calculated value of As Found Response: 304.9 ppm Percent Change of As Found: -2.1%

	before calibration		after calibration	
Auto zero	1.0	ppb	-0.5	ppb
Auto span	268.4	ppb	273.3	ppb

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **O3**

Air Monitoring Network **PAZA**

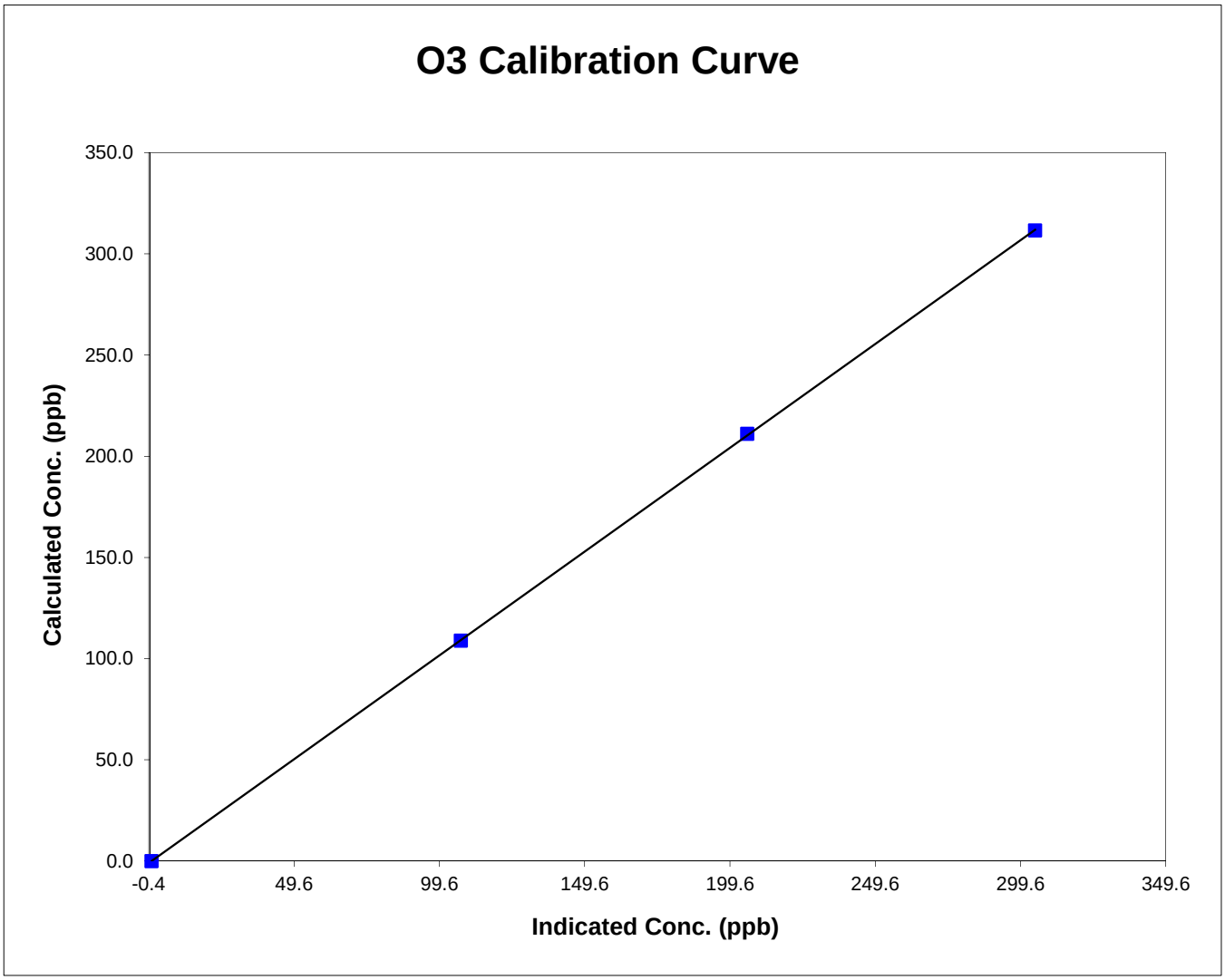
FOCUS AIR QUALITY MONITORING

Station Information

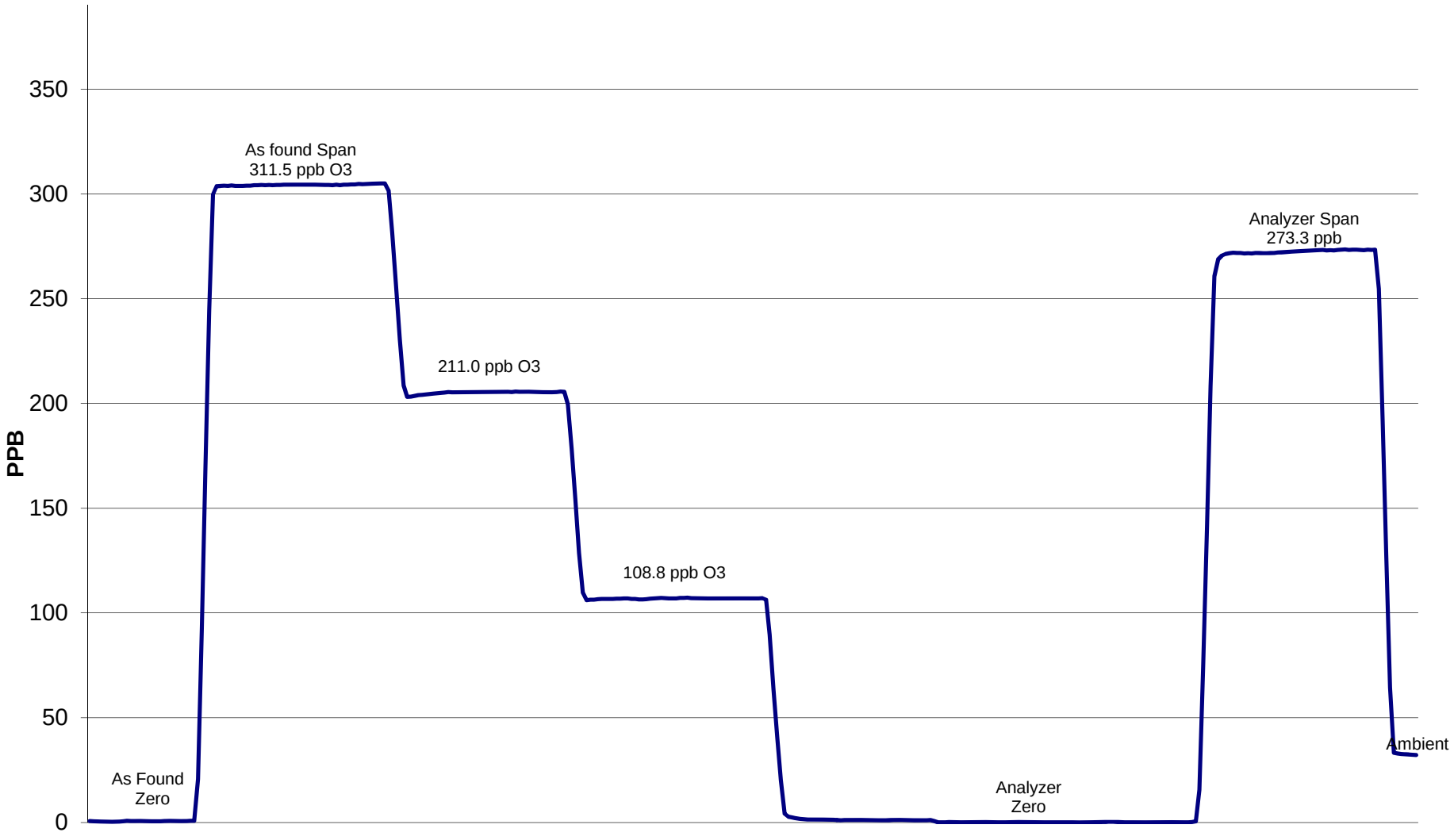
Calibration Date	December 9, 2013	Previous Calibration	November 12, 2013
Station Number	4	Station Location	Beaverlodge
Start Time (MST)	13:40 PM	End Time (MST)	16:47
Analyzer make/model	Teco 49i	Analyzer serial #	1136451236

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	NA		
311.5	304.6	1.0226	Correlation Coefficient	0.999984
211.0	205.5	1.0266		
108.8	107.0	1.0170	Slope	1.025810
			Intercept	-0.597926



O3 Calibration



December 9, 2013

Calibration Report

Parameter **SO2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 19 2013	Previous Calibration	November 19 2013
Station Number	6	Station Location	Valleyview
Reason: Routine	Install	Removal	Other:
Start Time (MST)	12:05	End Time (MST)	14:34
Barometric Pressure	702.00 mmHg	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentratior	51.5 ppm	Cal Gas Exp Date	February 25, 2021
Gas Cylinder Num.	LL105159		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	4
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.998634	Calculated slope	0.991459
Calculated intercept	1.576326	Calculated intercept	0.615268
Analyzer make	TEI 45C	Analyzer serial #	45C-57531-313

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	59.2		59	
Coefficient	1.038		1.038	
UV Lamp Voltage	831	LPM	833	LPM
Chamber Temp	44.4	V	44.6	V
Perm Gas Temp	na	C	na	C
Pressure	602.6	in Hg	604.5	in Hg
Sample Flow	0.541	LPM	0.543	LPM
Lamp Intensity	41740	Hz	42098	Hz

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	0.9	N/A
4995	39.93	408.4	411.9	0.9917
4995	19.97	205.1	206.1	0.9952
4995	9.97	102.6	101.0	1.0157
4995	0.00	0.0	0.9	As found zero
4995	39.93	408.4	411.9	As found span
			Average Correction Factor	1.0009

Calculated value of As Found Response: 412.0 ppm Percent Change of As Found: -0.9%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.0	ppm
Auto span	150.2	ppm	163.6	ppm

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii.

Calibration Summary

Parameter **SO2**

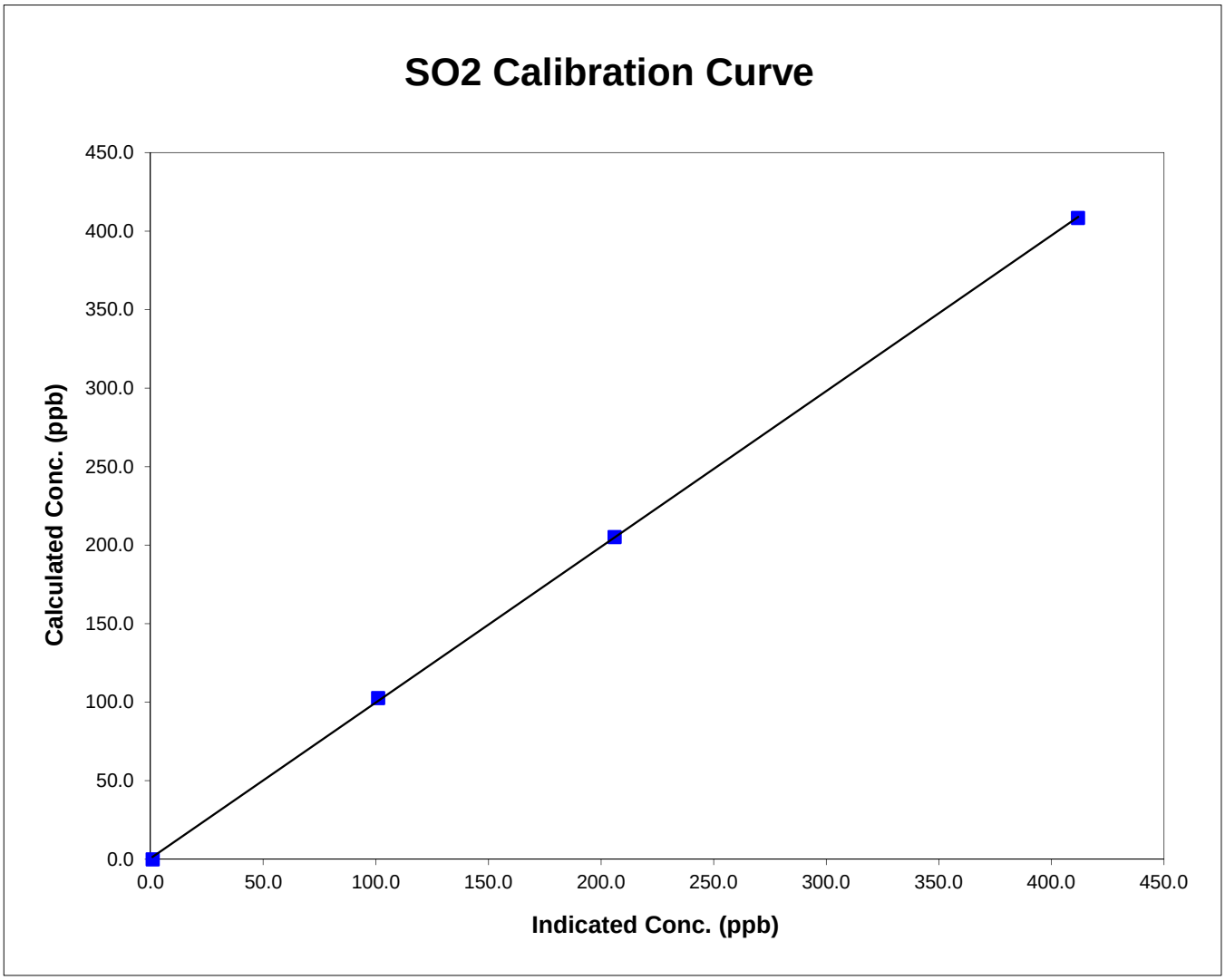
Air Monitoring Network **PAZA**

Station Information

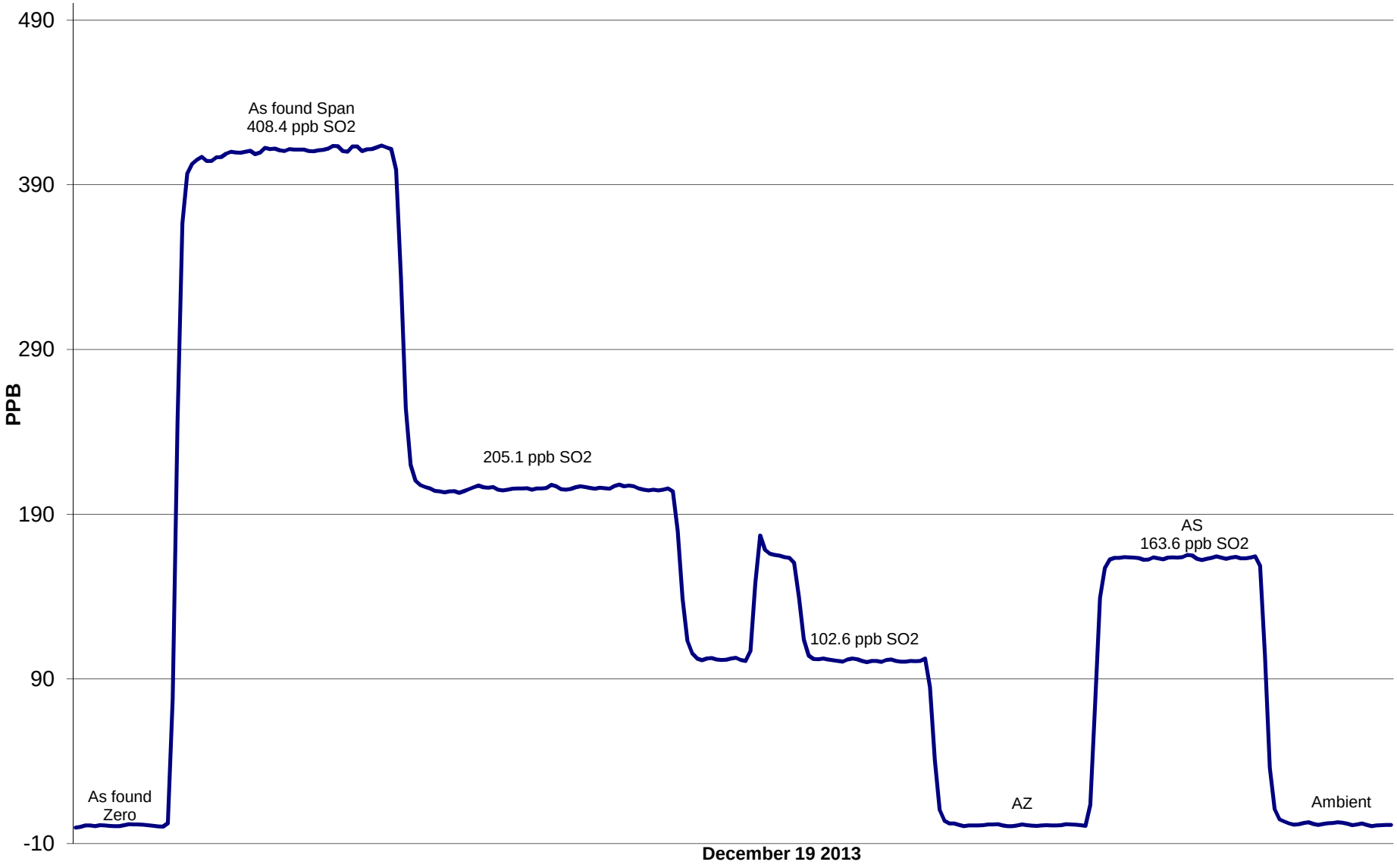
Calibration Date	December 19 2013	Previous Calibration	November 19 2013
Station Number	6	Station Location	Valleyview
Start Time (MST)	12:05	End Time (MST)	14:34
Analyzer make/model	TEI 45C	Analyzer serial #	45C-57531-313

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.9	N/A		
408.4	411.9	0.9917	Correlation Coefficient	0.999936
205.1	206.1	0.9952		
102.6	101.0	1.0157	Slope	0.991459
			Intercept	0.615268



SO2 Calibration



Calibration Report

Parameter **H2S**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 16 2013	Previous Calibration	November 19 2013
Station Number	6	Station Location	Valleyview
Reason: Routine	Install	Removal	Other:
Start Time (MST)	10:30	End Time (MST)	13:48
Barometric Pressure	702.00 mm	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentration	10.4 ppm	Cal Gas Expiry Date	July 03 2016
Gas Cert Reference	LL110781		
DACS make	CR3000	DACS serial No.	5409
DACS voltage range	0 - 5 volt	DACS channel #	9
	Before		After
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.014476	Calculated slope	1.009362
Calculated intercept	-0.080979	Calculated intercept	0.090472
Analyzer make	TEI Model 43i - APSCB	Analyzer serial #	701120010

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Back Ground	7.2	ppb	7.1	ppb
Coefficient	0.915		0.915	
Lamp Voltage	790	V	790	V
Chamber Temp	44.9	c	44.9	c
Perm Oven Temp	45	c	45	c
Pressure	590.20	mm Hg	588.10	mm Hg
Sample Flow	0.403	ccm	0.403	lpm
Lamp Intensity	91.0	%	91.0	%

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	0.3	N/A
4995	39.93	82.5	81.8	1.0079
4995	19.97	41.4	40.6	1.0210
8995	8.97	10.4	10.0	1.0369
				Sox Test
4995	0.00	0.0	0.3	As found zero
4995	39.93	82.5	81.8	As found span
			Average Correction Factor	1.0219

Calculated value of As Found Response: 82.67 ppm Percent Change of As Found: -0.2%

	before calibration		after calibration	
Auto zero	0.5	ppm	0.5	ppm
Auto span	67.3	ppm	67.0	ppm

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii.

Calibration Summary

Parameter **H2S**

Air Monitoring Network **PAZA**

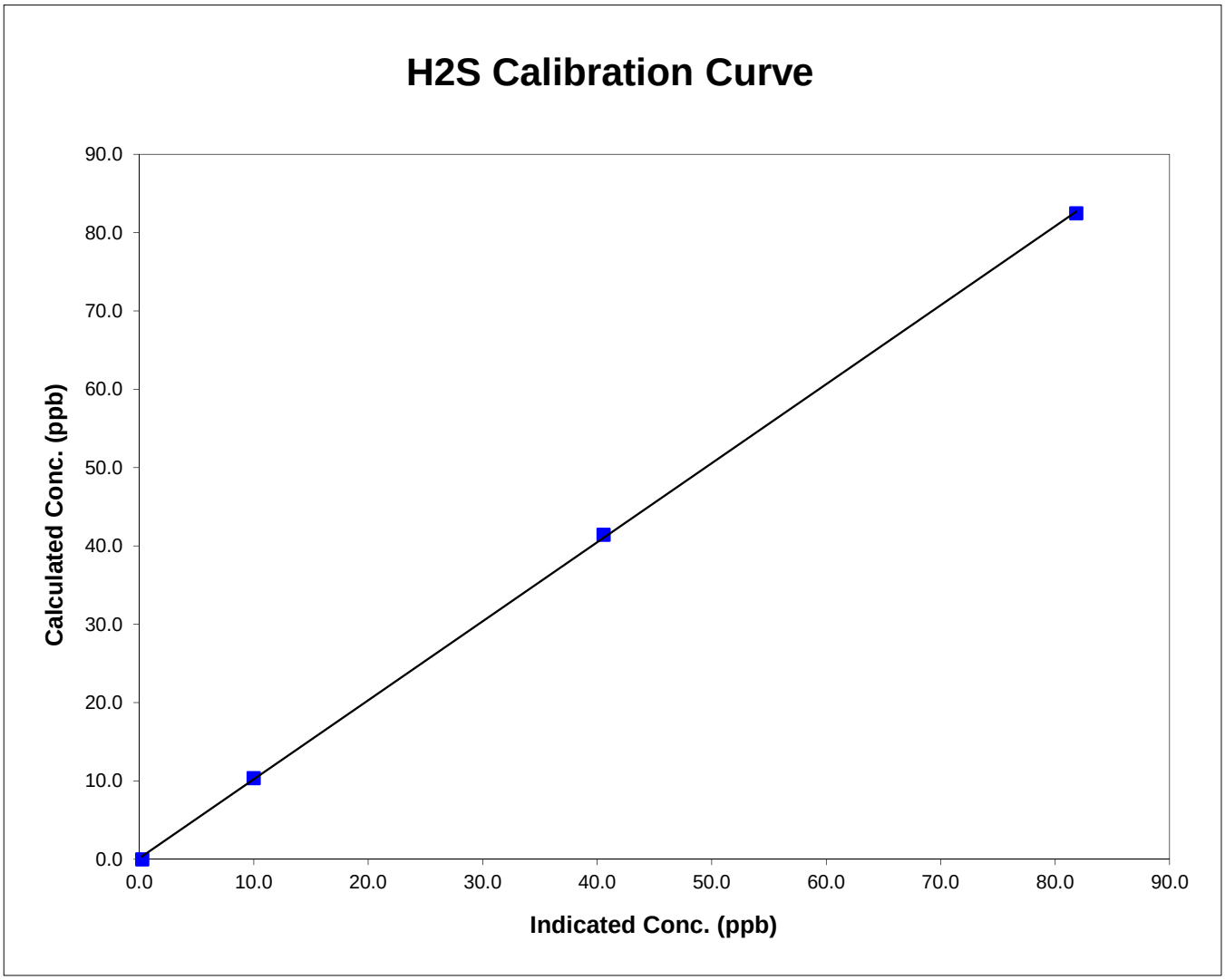
FOCUS AIR QUALITY MONITORING

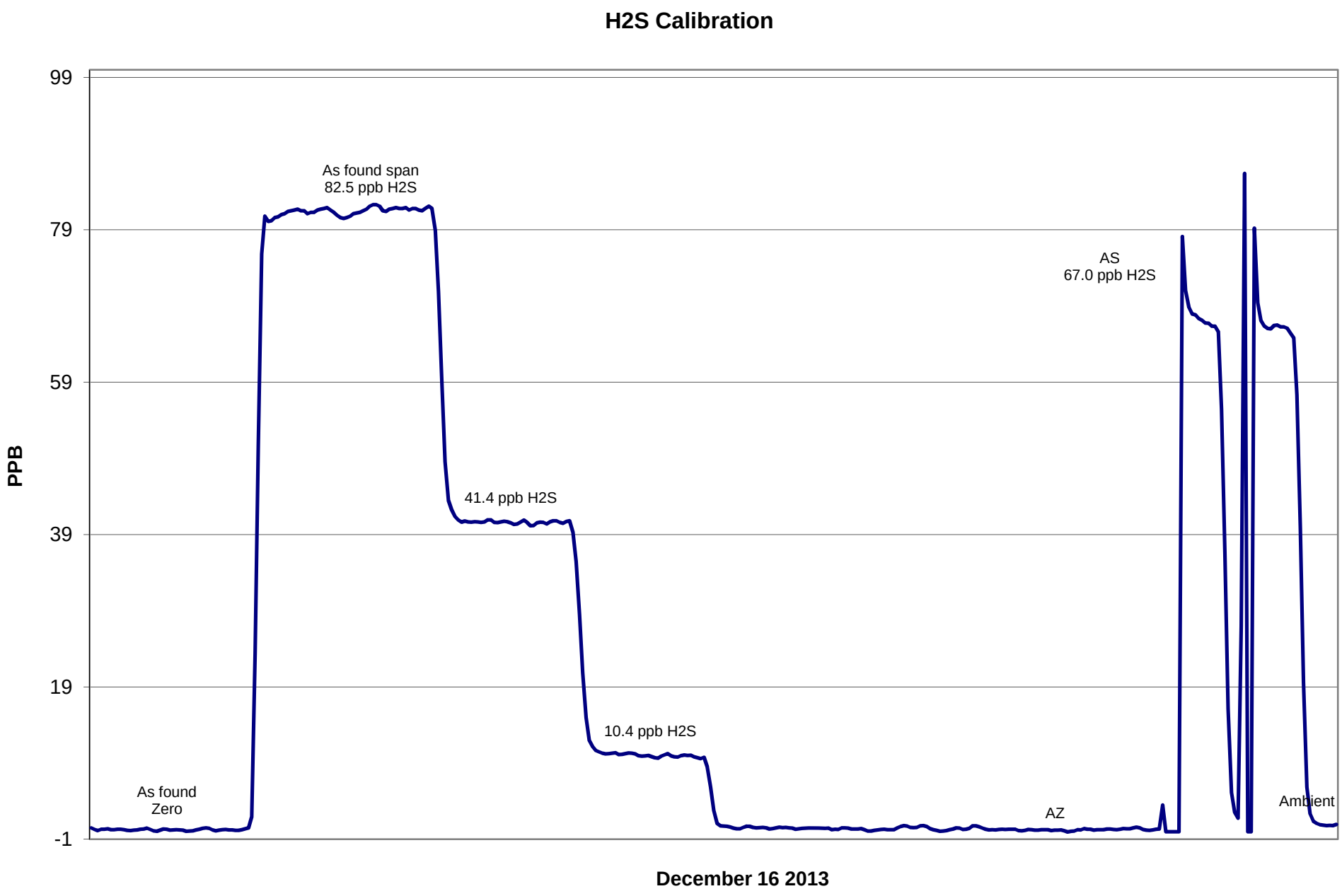
Station Information

Calibration Date	December 16 2013	Previous Calibration	November 19 2013
Station Number	6	Station Location	Valleyview
Start Time (MST)	10:30	End Time (MST)	13:48
Analyzer make/model	TEI Model 43i - APSCB	Analyzer serial #	701120010

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.3	N/A		
82.5	81.8	1.0079	Correlation Coefficient	0.999915
41.4	40.6	1.0210		
10.4	10.0	1.0369	Slope	1.009362
			Intercept	0.090472




H2S Calibration
99
79
59
39
19
-1
PPB
As found span
82.5 ppb H2S
41.4 ppb H2S
10.4 ppb H2S
As found
Zero
AZ
AS
67.0 ppb H2S
Ambient
December 16 2013

Calibration Report

Parameter **SO2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 17, 2013	Previous Calibration	November 27, 2013
Station Number	10	Station Location	Reno
Reason: Routine	Install	Removal	Other:
Start Time (MST)	9:00	End Time (MST)	12:49
Barometric Pressure	0.935 Atm	Station Temperature	20.0 Deg C
Calibrator	Environics 6100	Serial Number	3016
Cal Gas Concentratior	51.5 ppm	Cal Gas Expiry Date	12/03/2014
Gas Cert Reference	LL105159		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	2
	Before		After
DACS Scale High	500	DACS slope	500
DACS Scale Low	0	DACS intercept	0
Calculated slope	0.994183	Calculated slope	0.993556
Calculated intercept	1.848951	Calculated intercept	-2.730376
Analyzer make	TEI 43C	Analyzer serial #	609716238

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Background	52.2		59.6	
Coefficient	1.002		0.950	
UV Lamp Voltage	840	V	839	V
Chamber Temp	45.3	C	43.4	C
Perm Gas Temp	45	C	45	C
Pressure	676.3	mm Hg	661.8	mm Hg
Sample Flow	0.489	LPM	0.482	LPM
Lamp Intesity	37205	Hz	37119	Hz

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	1.3	N/A
4995	39.93	408.4	413.5	0.9878
4995	19.97	205.1	208.8	0.9824
4995	9.97	102.6	108.2	0.9482
4995	0.00	0.0	1.4	As found zero
4995	39.93	408.4	352.1	As found span
			Average Correction Factor	0.9728

Calculated value of As Found Response: 350.563 ppm Percent Change of As Found: 14.2%

	before calibration		after calibration	
Auto zero	0.3	ppm	0.3	ppm
Auto span	259.1	ppm	221.8	ppm

Notes: As found span came in low & noisy. Optics & power supply boards need replacement. Paza will receive quote from CD Nova for parts needed, they will be ordered & installed next calibration. Calibration was completed as is for now.

Calibration Performed By: Grover Christiansen,Dmytro Dolotii.

Calibration Summary

Parameter **SO2**

Air Monitoring Network **PAZA**

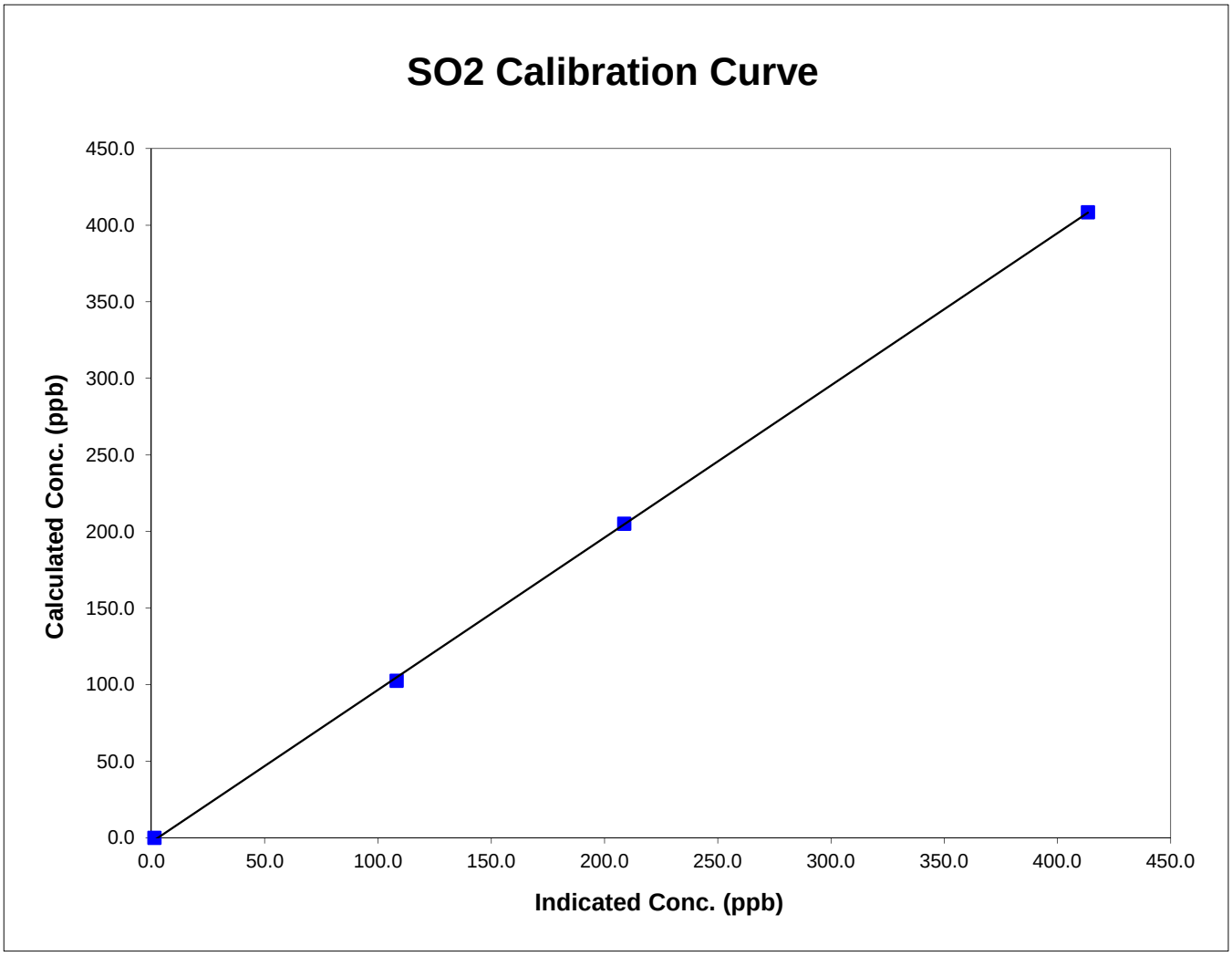
FOCUS AIR QUALITY MONITORING

Station Information

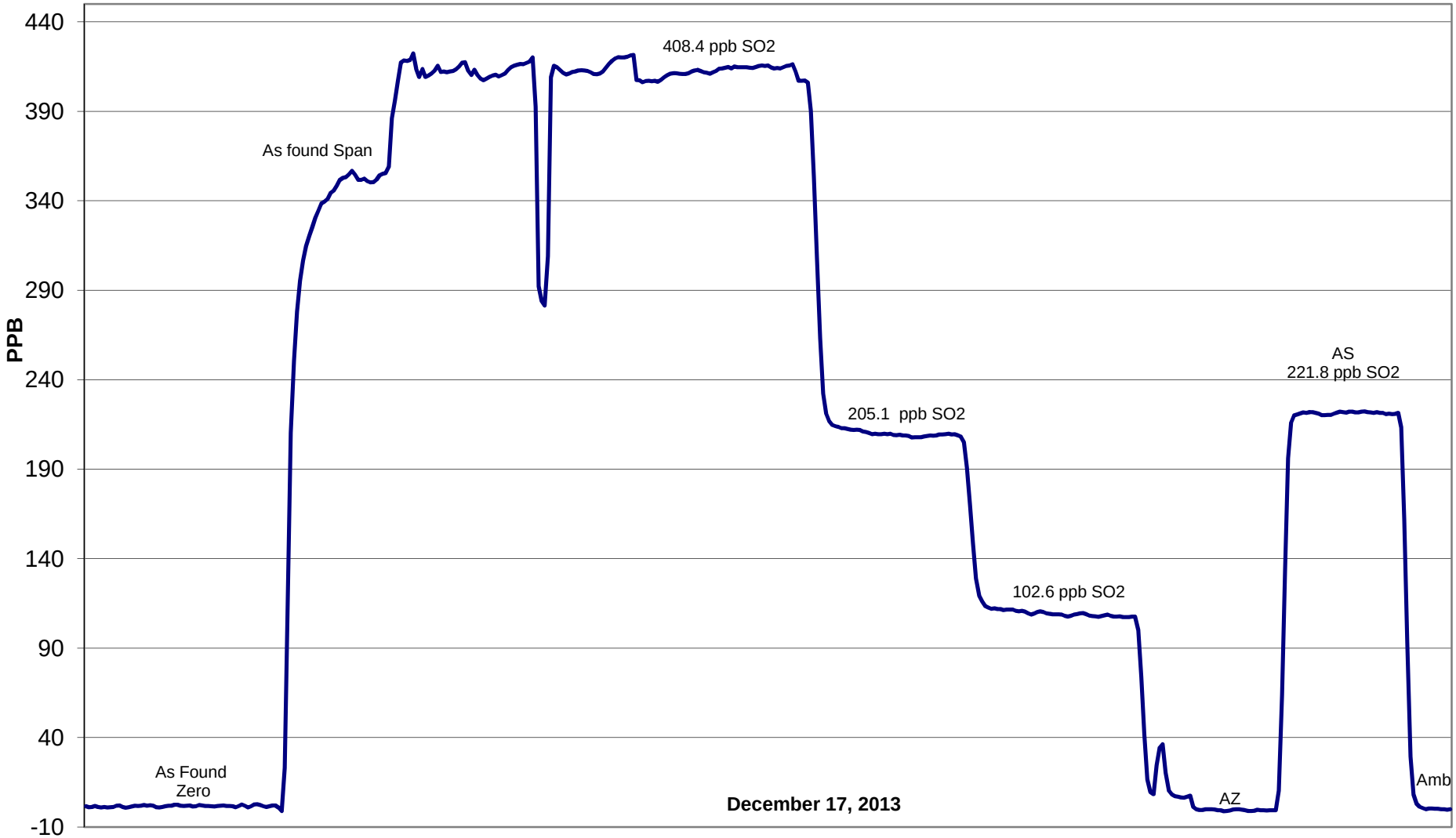
Calibration Date	December 17, 2013	Previous Calibration	November 27, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:00	End Time (MST)	12:49
Analyzer make/model	TEI 43C	Analyzer serial #	609716238

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	1.3	N/A		
408.4	413.5	0.9878	Correlation Coefficient	0.999923
205.1	208.8	0.9824		
102.6	108.2	0.9482	Slope	0.993556
			Intercept	-2.730376



SO2 Calibration



Calibration Report

Parameter **NO_X-NO-NO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 17, 2013	Previous Calibration	November 27, 2013
Station Number	10	Station Location	Reno

Reason: Routine Install Removal Other:

Start Time (MST)	9:00		End Time (MST)	14:33	
Barometric Pressure	0.910	Atm	Station Temperature	20.0	Deg C
Calibrator	Environics		Serial Number	3016	
NO Cal Gas Conc	51.3	ppm	Cal Gas Expiry Date	March 12, 2014	
NOx Cal Gas Conc	51.4	ppm	Cal Gas Serial #	LL105159	

DACS Information

DACS make CR3000 DACS serial No. 5407

Parameter		NO2	NOx	NO
Before	Data Slope	1.000175	0.997437	0.999531
	Data Offset	0.016602	1.232623	1.305065
After	Data Slope	1.000715	0.996370	0.999014
	Data Offset	-0.102889	0.844014	0.958885
Channel #		5	3	4
Voltage Range		0 - 5 VDC	0 - 5 VDC	0 - 5 VDC

Analyzer Information

Analyzer make/model TEI 42i Analyzer serial # 0701120011

Test Point	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
NO offset	5.8	mV	5.9	mV
NOx bkgnd	5.9	mV	5.8	mV
NO coefficient	1.167		1.129	
NOx coefficient	0.998		0.994	
NO2 conv temp	324.2	Deg C	326.3	Deg C
Cooler Temp	-2.7	Deg C	-2.8	Deg C
PMT Volt	-828.8	mV	-828.8	mV
R Cell Press	211.3	in Hg	203.8	in Hg
Sample Flow	0.691	ccm	0.692	ccm

NOTES: Slight span adjust. Run adjustment point.

Calibration Report

Parameter **NOX-NO-NO2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date: December 17, 2013 Station Location: Reno

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NOx conc (ppb)	Calculated NO conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor
zero	4995	0.00	0.0	0.0	0.0	-0.2	-0.1	0.0	N/A	N/A
1	4995	39.93	407.6	406.8	0.8	408.5	406.7	0.1	0.9980	1.0003
2	4995	19.97	204.7	204.3	0.4	204.6	203.1	0.8	1.0003	1.0060
3	4995	9.97	102.4	102.2	0.2	101.0	100.5	0.7	1.0135	1.0170
AFZ	4995	0.00	0.0	0.0	0.0	-0.2	-0.1	0.0	0.0000	0.0000
AFS	4995	39.93	407.6	406.8	0.8	424.3	421.9	0.7	0.9607	0.9644
							Average Correction Factor		1.0039	1.0078

As Found Concentrations: NO_X= 425.8 NO= 423.3 As Found Percent Change NO_X= 4.4% NO= 4.0%

GPT Calibration Data

Dilution Flow 4995 ccm Source Gas Flow 39.93 ccm

O3 Setpoint (ppb)	Indicated NO high point (ppb)	Indicated NO drop conc (ppb)	Calculated NO2 conc (ppb)	Indicated NOx conc (ppb)	Indicated NO conc (ppb)	Indicated NO2 conc (ppb)	NOx Correction factor	NO Correction factor	NO2 Correction factor	Converter Efficiency
0	-0.1	-0.1	0.0	-0.2	-0.1	0.0	N/A	N/A	N/A	N/A
NO point	406.0	406.0	0.0	408.5	406.0	0.4	0.9939	1.0000	N/A	N/A
300	406.0	88.3	317.8	407.7	88.3	317.6	0.9959	1.0000	1.0005	99.9%
200	406.0	190.9	215.1	408.0	190.9	215.1	0.9952	1.0000	1.0002	100.0%
100	406.0	296.0	110.0	408.3	296.0	110.2	0.9946	1.0000	0.9986	100.1%
					Average Correction Factor		0.9952	1.0000	0.9998	100.0%

AIC Data

	Previous calibration				Current calibration			
Parameter	NOx	NO2	NO		NOx	NO2	NO	
Auto zero	0.8	0.9	0.0	ppb	0.1	0.1	0.2	ppb
Auto span	166.3	164.3	1.4	ppb	170.0	168.2	1.2	ppb

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **NO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

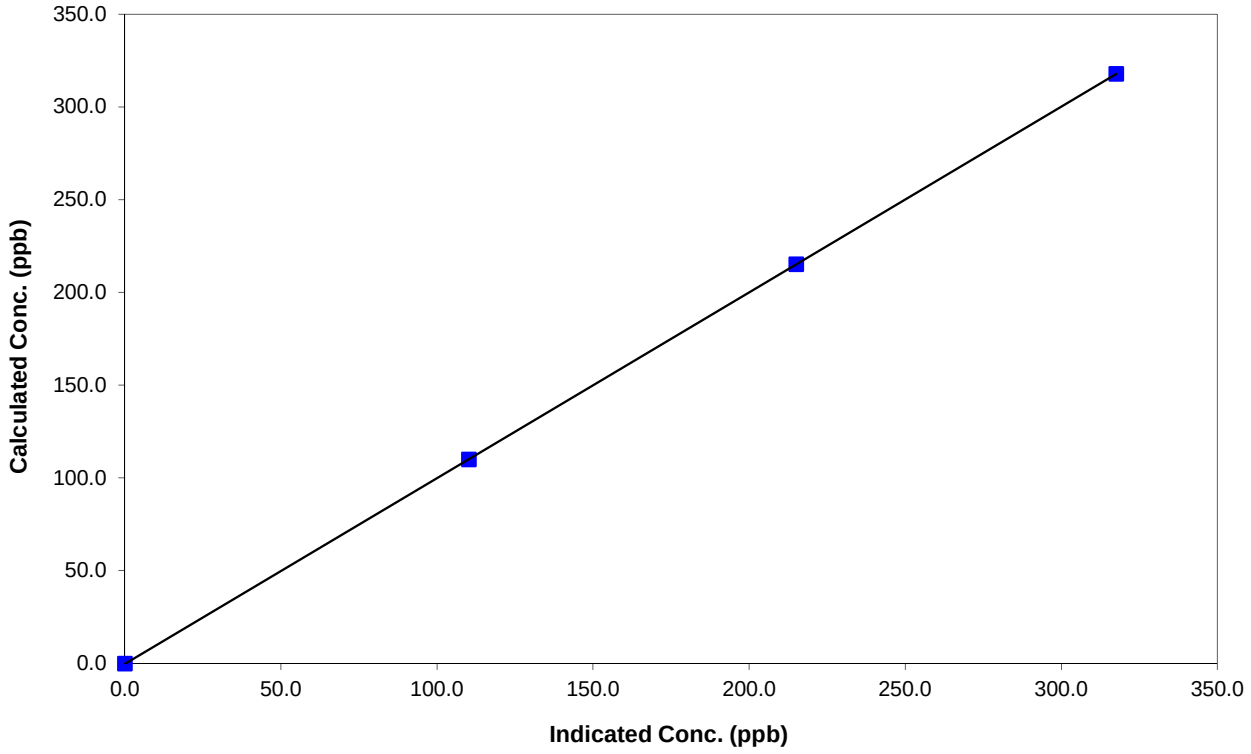
Station Information

Calibration Date	December 17, 2013	Previous Calibration	November 27, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:00	End Time (MST)	14:33
Analyzer make	TEI 42i	Analyzer serial #	0701120011

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
317.8	317.6	1.0005	Correlation Coefficient	1.000000
215.1	215.1	1.0002		
110.0	110.2	0.9986	Slope	1.000715
			Intercept	-0.102889

NO_2 Calibration Curve



Calibration Summary

Parameter **NO_x**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

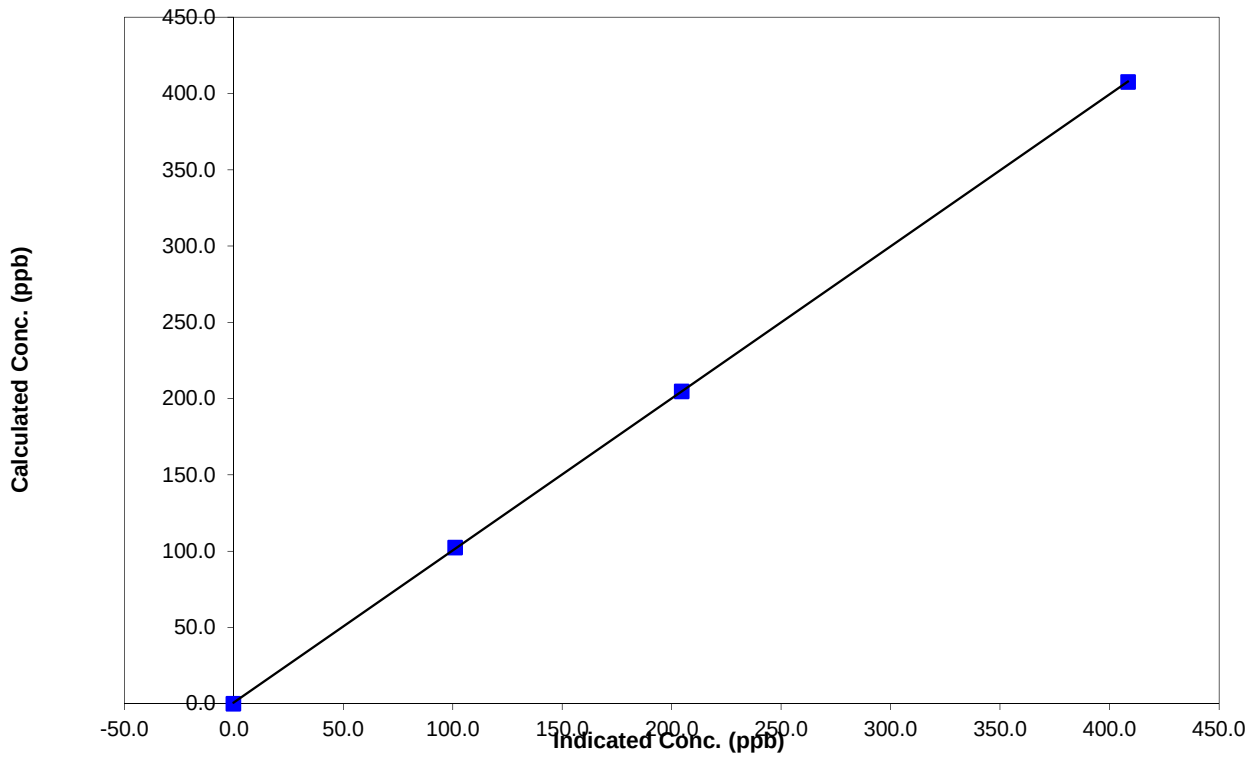
Station Information

Calibration Date	December 17, 2013	Previous Calibration	November 27, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:00	End Time (MST)	14:33
Analyzer make	TEI 42i	Analyzer serial #	0701120011

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.2	N/A		
407.6	408.5	0.9980	Correlation Coefficient	0.999986
204.7	204.6	1.0003		
102.4	101.0	1.0135	Slope	0.996370
			Intercept	0.844014

NOx Calibration Curve



Calibration Summary

Parameter **NO**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

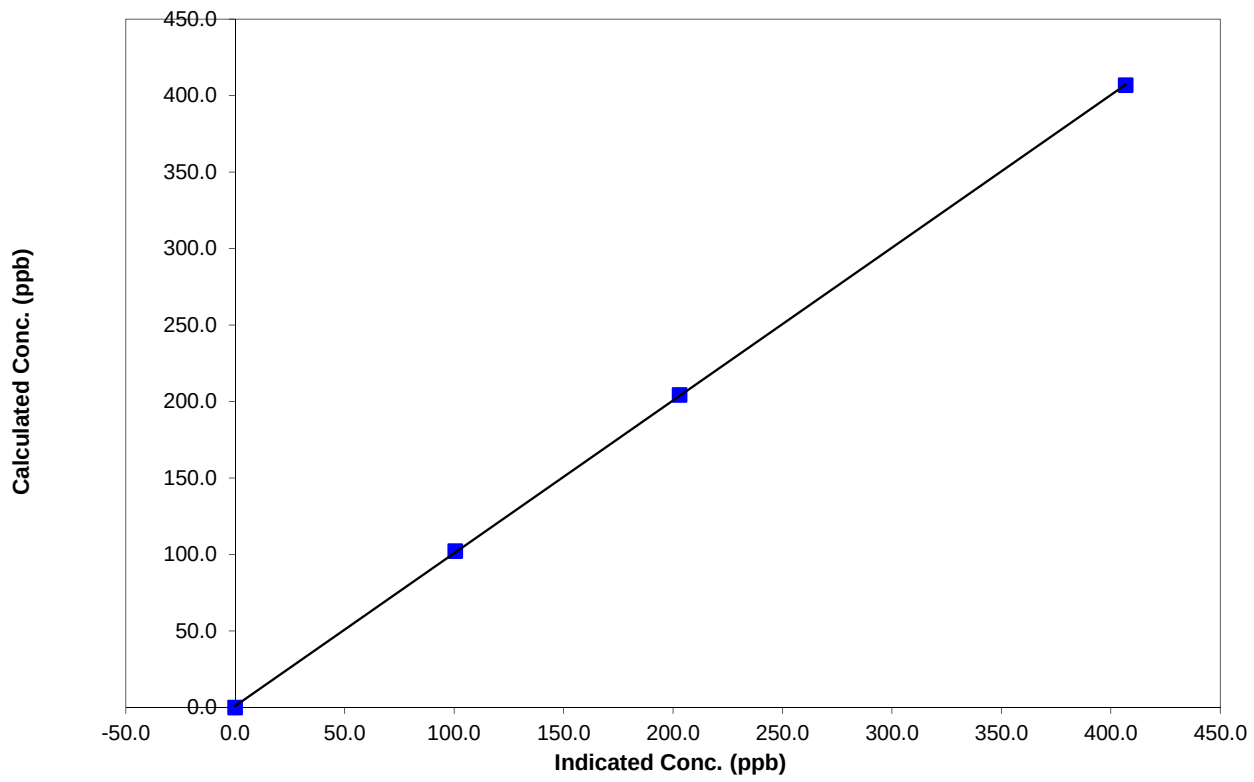
Station Information

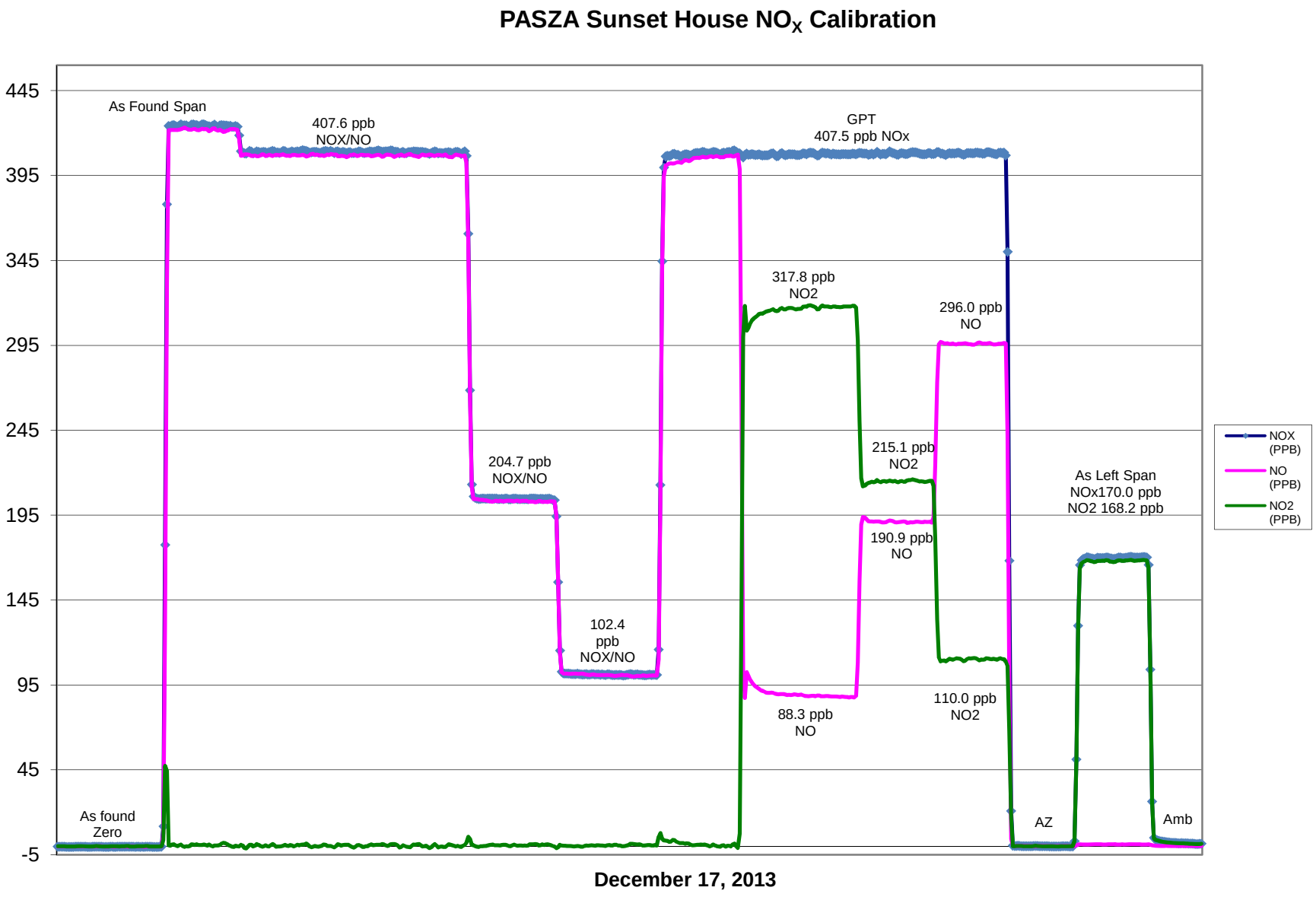
Calibration Date	December 17, 2013	Previous Calibration	November 27, 2013
Station Number	10	Station Location	Reno
Start Time (MST)	9:00	End Time (MST)	14:33
Analyzer make	TEI 42i	Analyzer serial #	0701120011

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	-0.1	N/A		
406.8	406.7	1.0003	Correlation Coefficient	0.999979
204.3	203.1	1.0060		
102.2	100.5	1.0170	Slope	0.999014
			Intercept	0.958885

NO Calibration Curve




PASZA Sunset House NOx Calibration
445
395
345
295
245
195
145
95
45
-5
As Found Span
407.6 ppb
NOX/NO
204.7 ppb
NOX/NO
102.4
ppb
NOX/NO
GPT
407.5 ppb NOx
317.8 ppb
NO2
88.3 ppb
NO
215.1 ppb
NO2
190.9 ppb
NO
296.0 ppb
NO
110.0 ppb
NO2
As Left Span
NOx170.0 ppb
NO2 168.2 ppb
As found
Zero
AZ
Amb
NOX
(PPB)
NO
(PPB)
NO2
(PPB)
December 17, 2013

Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter **O3**

Air Monitoring Network **PAZA**

Station Information

Calibration Date	December 17 2013	Previous Calibration	November 27 2013
Station Number	10	Station Location	Reno
Reason: Routine	Install	Removal remove	Other:
Start Time (MST)	13:27:00 PM	End Time (MST)	16:00
Barometric Pressure	0.911 atm	Station Temperature	15.7 Deg C
Calibrator	Environics 6100	Serial Number	3016
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volts	DACS channel #	6
	Before		After
Calculated slope	0.990932	Calculated slope	1.004382
Calculated intercept	0.679621	Calculated intercept	-0.143072
Analyzer make	TEI Model 49C	Analyzer serial #	49C-0609716240

	before		after	
Concentration range	0-500	ppb	0-500	ppb
Offset	0	ppb	0	ppb
Span	0.988		0.988	
Cell A intensity	128660	Hz	128632	Hz
Cell B intensity	123792	Hz	123778	Hz
Pressure	654.60	in Hg	662.50	in Hg
CellA Flow	0.693	ccm	0.700	ccm
Cell B Flow	0.694	cmm	0.698	cmm

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)
5035	0.00	0.0	0.2	N/A
5035	0.30	317.8	317.1	1.0022
5035	0.20	215.1	213.2	1.0088
5035	0.10	110.0	110.2	0.9985
5035	0.00	0.0	0.2	As found zero
5035	0.30	317.8	317.1	As found span
			Average Correction Factor	1.0032

Calculated value of As Found Response: 314.8 ppm Percent Change of As Found: -1.0%

	before calibration		after calibration	
Auto zero	0.6	ppb	-0.1	ppb
Auto span	297.5	ppb	403.2	ppb

Notes: No adjustment made.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii.

Calibration Summary

Parameter **O3**

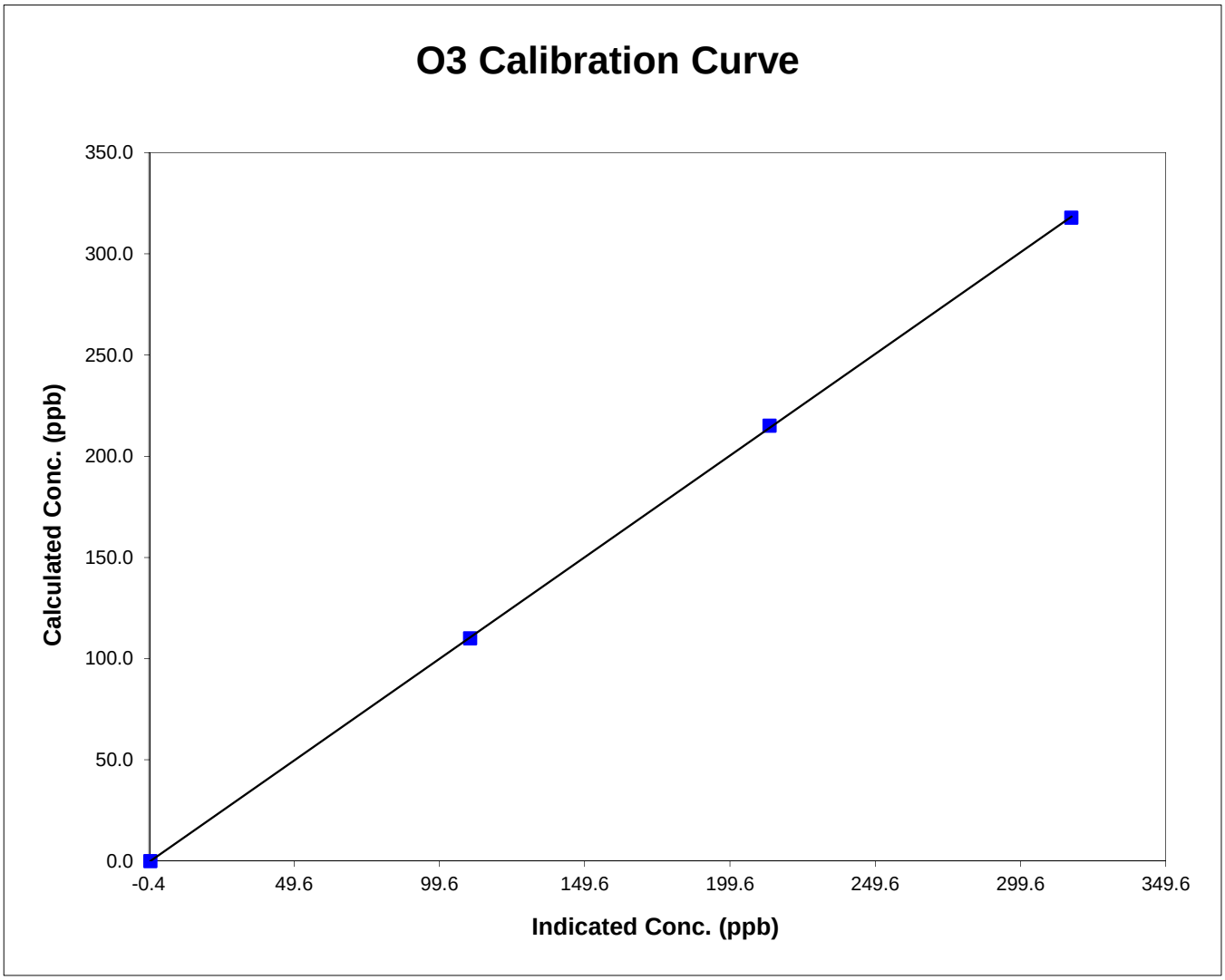
Air Monitoring Network **PAZA**

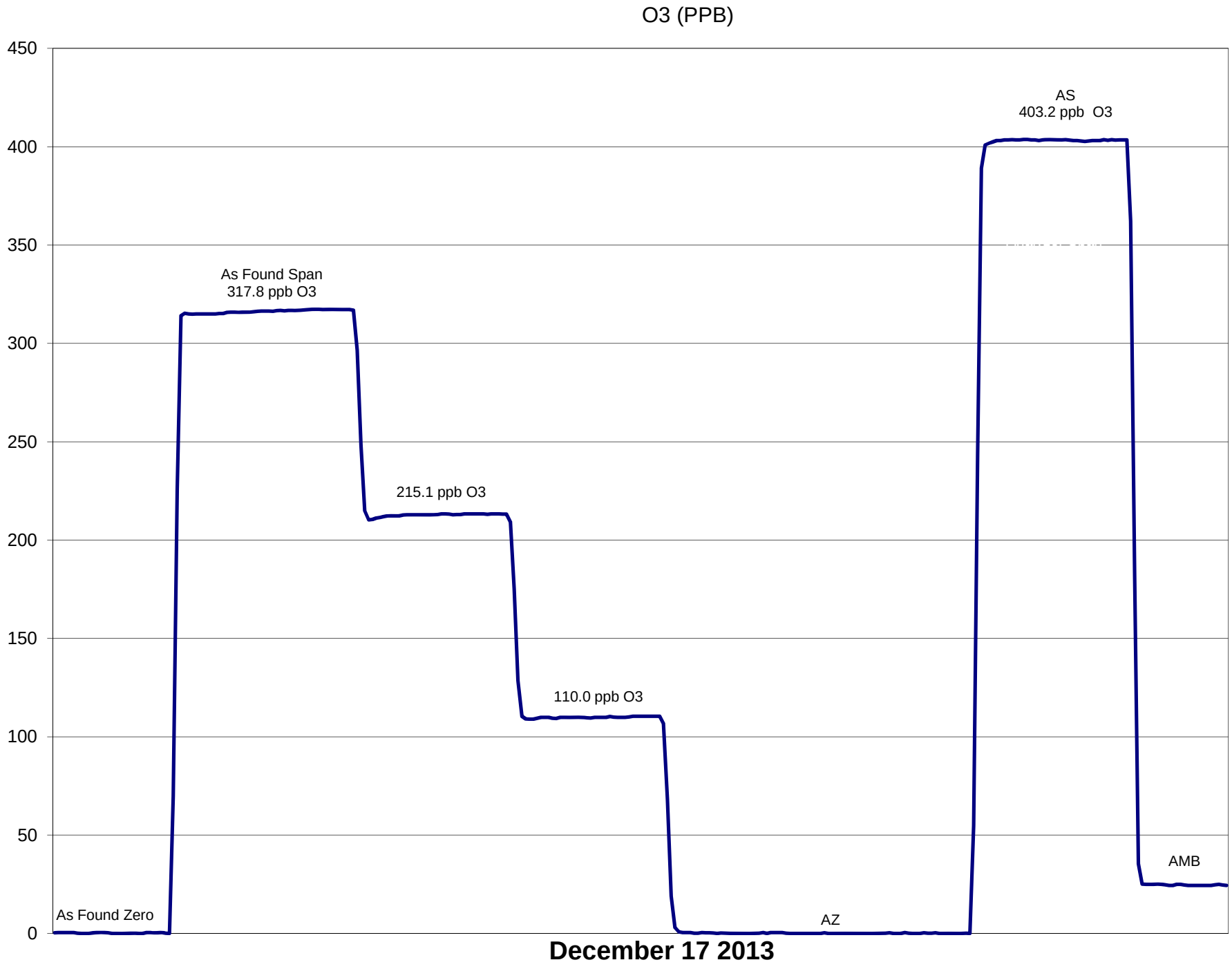
Station Information

Calibration Date	December 17 2013	Previous Calibration	November 27 2013
Station Number	10	Station Location	Reno
Start Time (MST)	13:27:00 PM	End Time (MST)	16:00
Analyzer make/model	TEI Model 49C	Analyzer serial #	49C-0609716240

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.2	NA		
317.8	317.1	1.0022	Correlation Coefficient	0.999969
215.1	213.2	1.0088		
110.0	110.2	0.9985	Slope	1.004382
			Intercept	-0.143072




O3 (PPB)
450
400
350
300
250
200
150
100
50
0
As Found Zero
As Found Span
317.8 ppb O3
215.1 ppb O3
110.0 ppb O3
AZ
AS
403.2 ppb O3
AMB
December 17 2013

Calibration Report

Parameter **THC**

Air Monitoring Network **PASZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 4, 2013	Previous Calibration	N/A
Station Number	10	Station Location	Rover Reno
Reason: Routine	Install	Removal	Other:
Start Time (MST)	12:00	End Time (MST)	17:00
Barometric Pressure	0.944 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics 6100	Serial Number	3474
Cal Gas Concentratior	404 ppm CH4/ 201 ppm C3H8	Cal Gas Expiry Date	28/03/2014
Cal Gas CH4 equiv	552.75 ppm	Cal Gas Cylinder #	LL34989
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 1 volt	DACS channel #	12
	Before		After
Calculated slope	N/A	Calculated slope	0.998608
Calculated intercept	N/A	Calculated intercept	0.072206
Analyzer make	TEI Model 51C-LT	Analyzer serial #	51CLT-79009-390

	before		after	
Concentration range	0 - 25	ppm	0 - 25	ppm
THC sample pressure	6.50	psi	6.50	psi
THC span counts	14148	capture	9616	capture
THC zero counts	907	capture	447	capture

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)
1996	0.00	0.00	0.01	N/A
1996	69.93	18.71	18.69	1.0009
1996	29.96	8.17	8.06	1.0136
1996	9.97	2.75	2.62	1.0492
1996	0.00	0.00	0.01	As Found Zero
1996	69.93	18.71	18.69	As Found Span
			Average Correction Factor	1.0212

Calculated value of As Found Response: NA ppm Percent Change of As Found: NA

	before calibration		after calibration	
Auto zero	0.10	ppm	0.06	ppm
Auto span	21.83	ppm	14.35	ppm

Notes: Set up calibration performed. Dropped a little low on bottom point.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **THC**

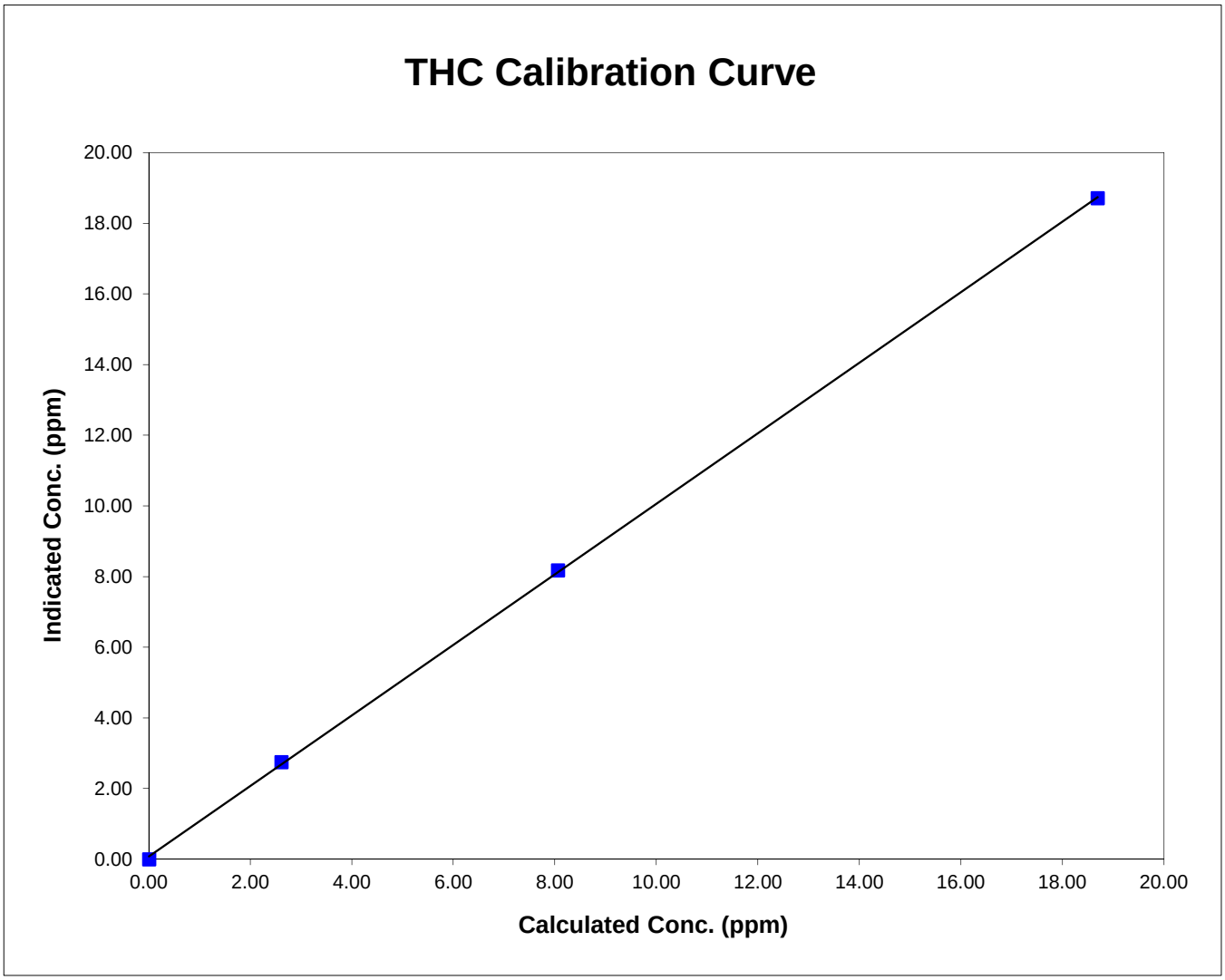
Air Monitoring Network **PASZA**

Station Information

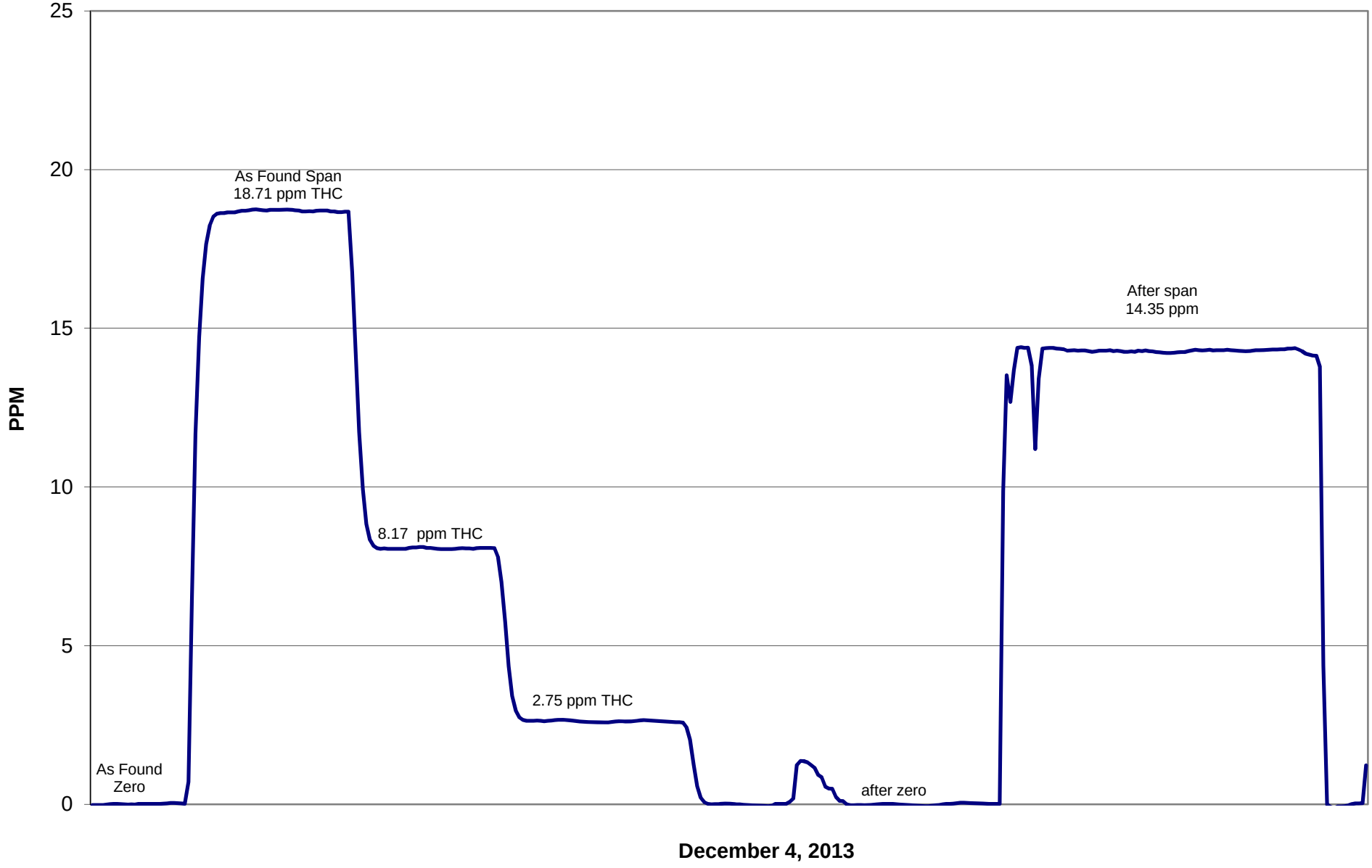
Calibration Date	December 4, 2013	Previous Calibration	N/A
Station Number	10	Station Location	Rover Reno
Start Time (MST)	12:00	End Time (MST)	17:00
Analyzer make/model	TEI Model 51C-LT	Analyzer serial #	51CLT-79009-390

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.007	N/A		
18.71	18.69	1.0009	Correlation Coefficient	0.999936
8.17	8.06	1.0136		
2.75	2.62	1.0492	Slope	0.998608
			Intercept	0.072206



THC Calibration



Calibration Report

FOCUS AIR QUALITY MONITORING

Parameter **THC**

Air Monitoring Network **PASZA**

Station Information

Calibration Date	December 17, 2013	Previous Calibration	December 4, 2013
Station Number	10	Station Location	Rover Reno
Reason: Routine	Install	Removal	Other:
Start Time (MST)	15:28:00 PM	End Time (MST)	17:48
Barometric Pressure	0.944 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics 6100	Serial Number	3474
Cal Gas Concentratior	404 ppm CH4/ 201 ppm C3H8	Cal Gas Expiry Date	28/03/2014
Cal Gas CH4 equiv	956.75 ppm	Cal Gas Cylinder #	LL34989
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 1 volt	DACS channel #	12
	Before		After
Calculated slope	0.998608	Calculated slope	0.998819
Calculated intercept	0.072206	Calculated intercept	0.051900
Analyzer make	TEI Model 51C-LT	Analyzer serial #	51CLT-79009-390

	before		after	
Concentration range	0 - 25	ppm	0 - 25	ppm
THC sample pressure	6.50	psi	6.50	psi
THC span counts	14148	capture	9616	capture
THC zero counts	907	capture	447	capture

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)
2996	0.00	0.00	0.02	N/A
2996	69.93	21.82	21.83	0.9997
2996	29.96	9.47	9.37	1.0112
2996	9.97	3.17	3.08	1.0290
2996	0.00	0.00	0.02	As Found Zero
2996	69.93	21.82	21.83	As Found Span
			Average Correction Factor	1.0133

Calculated value of As Found Response: 21.851 ppm Percent Change of As Found: -0.1%

	before calibration		after calibration	
Auto zero	0.10	ppm	0.08	ppm
Auto span	21.83	ppm	26.74	ppm

Notes: Flows were adjusted and full calibration completed.Daily span came at 26.7 ppm
Although daily span cylinder concentration says 21.7 ppm +/- 5%, it is obviously higher than that.
Stll 700 psi left in cylinder,will change cylinder out next on the next calibration.

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **THC**

Air Monitoring Network **PASZA**

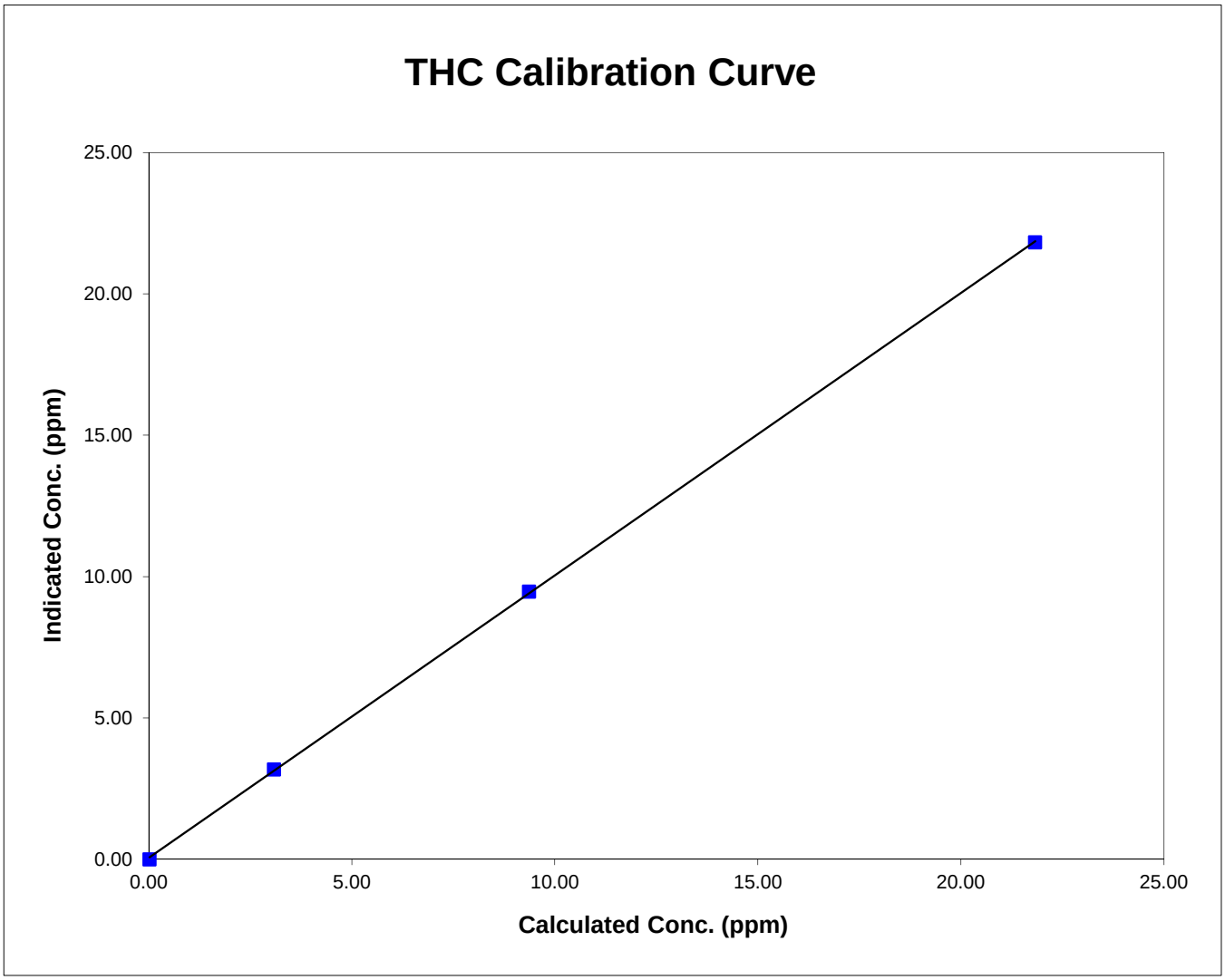
FOCUS AIR QUALITY MONITORING

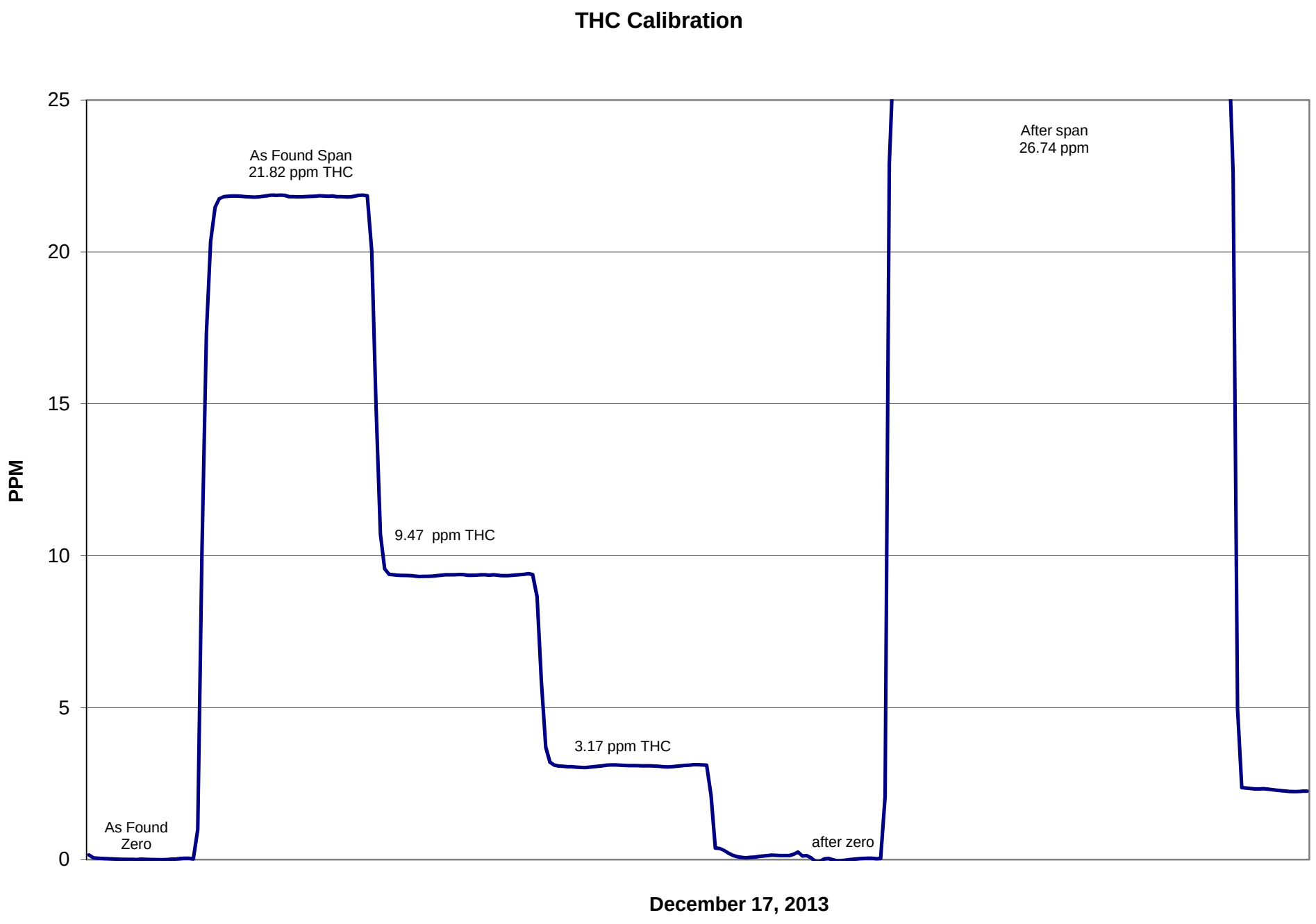
Station Information

Calibration Date	December 17, 2013	Previous Calibration	December 4, 2013
Station Number	10	Station Location	Rover Reno
Start Time (MST)	15:28:00 PM	End Time (MST)	17:48
Analyzer make/model	TEI Model 51C-LT	Analyzer serial #	51CLT-79009-390

Calibration Data

Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.000	0.020	N/A		
21.82	21.83	0.9997	Correlation Coefficient	0.999957
9.47	9.37	1.0112		
3.17	3.08	1.0290	Slope	0.998819
			Intercept	0.051900




THC Calibration
25
20
15
10
5
0
PPM
As Found Span
21.82 ppm THC
9.47 ppm THC
3.17 ppm THC
As Found
Zero
after zero
After span
26.74 ppm
December 17, 2013

Calibration Report

Parameter **TRS**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 17 2013	Previous Calibration	November 28 2013
Station Name	PAZA Rover	Station Location	Reno
Reason:	Routine / Install	Removal	Other:
Start Time (MST)	16:40:00 PM	End Time (MST)	19:00
Barometric Pressure	0.921 Atm	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Concentratior	10.44 ppm	Cal Gas Expiry Date	July/08/2016
Gas Cert Reference	LL110781		
DACS make	CR3000	DACS serial No.	5407
DACS voltage range	0 - 5 Volt	DACS channel #	1
	Before		After
DACS Scale High	100	DACS slope	100
DACS Scale Low	0	DACS intercept	0
Calculated slope	1.003699	Calculated slope	0.996792
Calculated intercept	-0.278286	Calculated intercept	-0.214409
Analyzer make	TEI 43C	Analyzer serial #	609716238

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	15,5	ppb	15,7	ppb
Coefficient	1.015		1.015	
Lamp Voltage	780	V	776	V
Chamber Temp	44	C	44	C
Perm gas Temp	45	C	45	C
Pressure	645.9	mmHg	654.6	mmHg
Sample Flow	0.438	lpm	0.442	lpm
Lamp Intensity	39294	Hz	39288	Hz

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	0.0	0.0	0.4	N/A
4995	39.93	82.8	83.4	0.9932
4995	19.97	41.6	41.8	0.9952
8995	8.97	10.4	10.6	0.9849
4995	9.97	102.8	0.9	Sox Test
4995	0.00	0.0	0.4	As found zero
4995	39.93	82.8	83.4	As found span
			Average Correction Factor	0.9911

Calculated value of As Found Response: 83.02 ppm Percent Change of As Found: -0.3%

	before calibration		after calibration	
Auto zero	0.1	ppm	0.3	ppm
Auto span	65.4	ppm	63.5	ppm

Notes: No span adjust. Due to weather after zero and span were not done.Will use next daily span as referenc

Calibration Performed By: Grover Christiansen

Calibration Summary

Parameter **TRS**

Air Monitoring Network **PAZA**

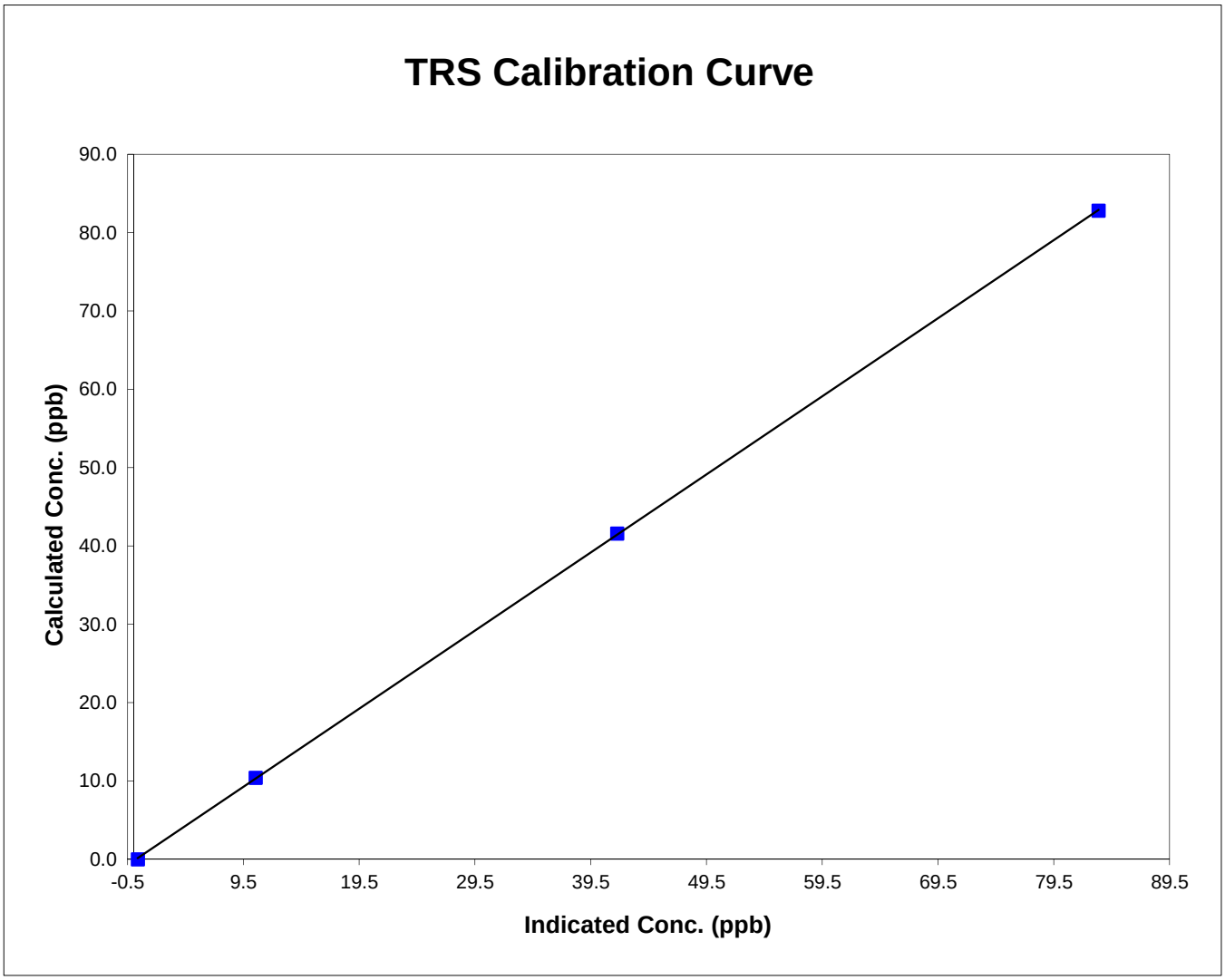
FOCUS AIR QUALITY MONITORING

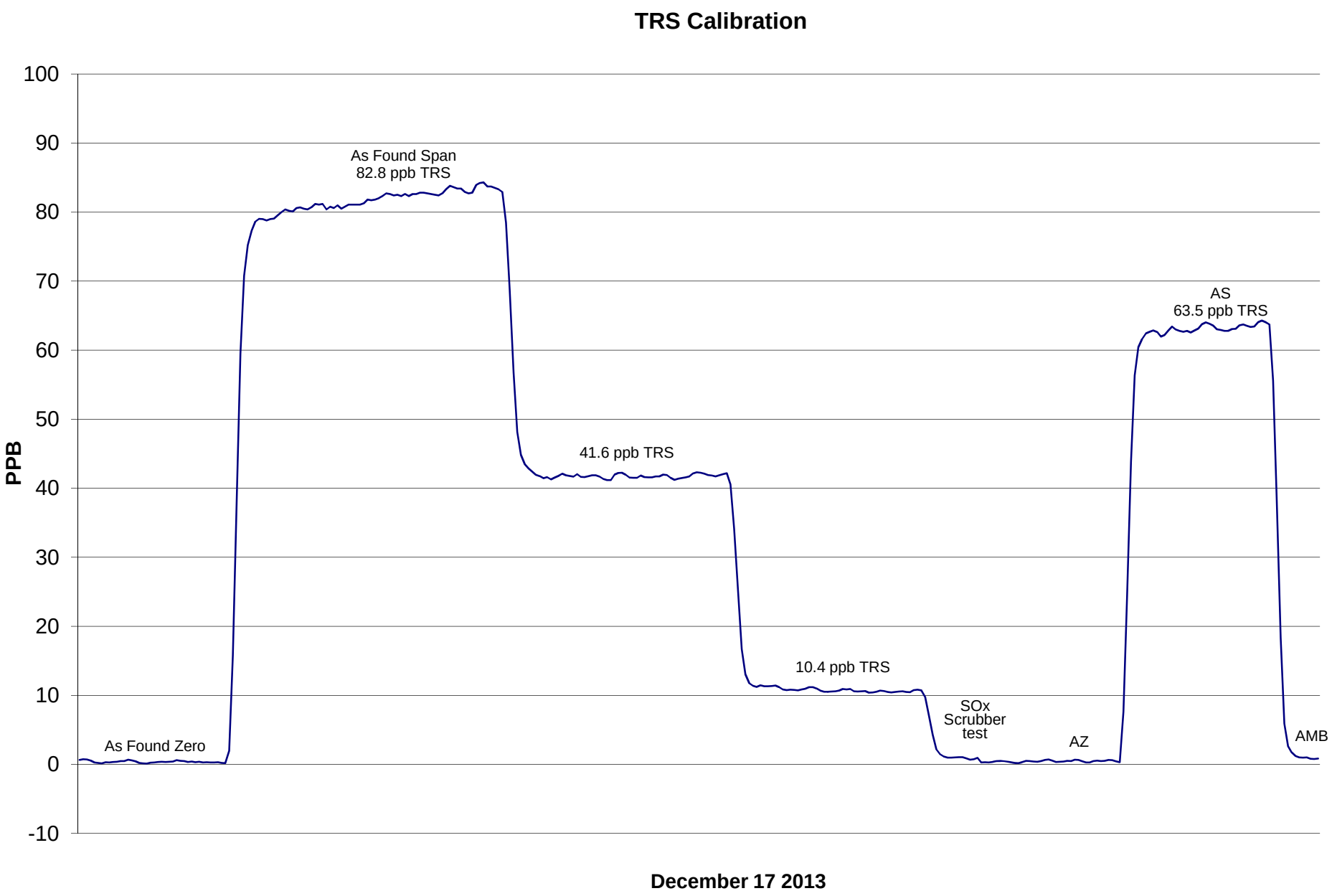
Station Information

Calibration Date	December 17 2013	Previous Calibration	November 28 2013
Station Number	PAZA Rover	Station Location	Reno
Start Time (MST)	16:40:00 PM	End Time (MST)	19:00
Analyzer make/model	TEI 43C	Analyzer serial #	609716238

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.4	N/A		
82.8	83.4	0.9932	Correlation Coefficient	0.999986
41.6	41.8	0.9952		
10.4	10.6	0.9849	Slope	0.996792
			Intercept	-0.214409




TRS Calibration
100
90
80
70
60
50
40
30
20
10
0
-10
PPB
As Found Span
82.8 ppb TRS
41.6 ppb TRS
10.4 ppb TRS
SOx
Scrubber
test
AZ
AS
63.5 ppb TRS
AMB
As Found Zero
December 17 2013

AB TEOM PM2.5 Calibration

FOCUS AIR QUALITY MONITORING

STATION: **Rover-Reno**

LOCATION: PAZA - Grande Prairie

OPERATOR: Grover Christiansen

DATE: 04-Dec-13

MONITOR INFO / PARAMETER VALUES:

Make/Model	TEOM AB
Configuration	PM2.5
Serial Number	21551
Site Number	2
Inlet Type	PM 10 / SCC
FAdj. Main Setting	1.000
FAdj. Aux. Setting	1.000
T-Case Indicated / Set Point	40/40
T-Air Indicated / Set Point	40/40
T-Cap Indicated / Set Point	40/40
Splitter Assembly Alignment (cm)	15.5

(vs. specified depth of 15.5 cm from top of flow tube to top of concentric 1/2 in. tube)

RECENT CALIBRATION AND AUDIT HISTORY

Previous Audit	27-Apr-13
Previous Calibration	

PUMP CAPACITY CHECK *	PASS

* capacity test or pump on timed test utilized to verify pump integrity

"FAIL" indicates that pump requires service.

LEAK CHECK	Indicated Flow (lpm)	
	Main	Auxiliary
PUMP ON	0.164	0.152
PUMP OFF	0.135	0.100
NET	0.029	0.052
LIMITS	*<0.15*	*<0.60*

		Ambient Temp. (^{0} C)	Ambient Pres. (atm)	Ko *	Bypass flow (lpm)	Sample flow (lpm)
	SET POINT (S)	na	na	13810	13.67	3.000
	INDICATED (I)	-21.7	0.943		13.67	2.990
As Found Data	MEASURED (AF)	-22.1	0.942		13.68	3.020
Adjusted Data	MEASURED (M)	-22.1	0.942	14053	13.68	3.020
	DIFFERENCE (M-I)	-0.4	-0.001	1.8%	0.01	0.02
	LIMITS	*± 2 ^{0} C*	*± 0.005 atm*	*± 2.5 %*	*± 1.0 L/min*	*± 0.2 L/min*

Ko Audit Filter data *Weight:* 0.11251 *Serial #:* *CVK 3316*

COMMENTS: Pass

Full audit was performed.

Used sensor unit was installed. Serial number listed below.

TEOM control unit S/N: 140AB215519705

TEOM sensor unit S/N: 1200C158380009

Sample Head Inspection/Cleaning: Large In Line Filter Inspection & Or Cleaning:

Calibration Report

Parameter **SO_2**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 18, 2013	Previous Calibration	November 30, 2013
Station Number	1	Station Location	Falher

Reason: Routine | Install | Removal | Other:

Start Time (MST)	10:50	End Time (MST)	15:41
Barometric Pressure	0.931 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3474
Cal Gas Concentration	51.5 ppm	Cal Gas Expiry Date	25/02/2025
Correction factor	0.031647	Cal Gas Cylinder #	LL105159
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	6
	Before		After
Calculated slope	1.000446	Calculated slope	1.005233
Calculated intercept	0.146119	Calculated intercept	0.171164

Analyzer make	Teco 43i	Analyzer serial #	1207452008

	before		after	
Concentration range	0 - 500	ppb	0 - 500	ppb
Background	7.3		7.1	
coefficient	0.903		0.888	
Lamp Voltage	864	volts	861	volts
Chamber Temp	45	Deg C	45	Deg C
Perm Gas Temp	45	Deg C	45	Deg C
Pressure	684.1	mm Hg	688	mm Hg
Sample Flow	0.421	ccm	0.422	ccm
Lamp Intensity	97	%	97	%

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.0	0.00	0.1	N/A
4995	39.93	408.4	406.2	1.0055
4995	19.96	205.0	203.8	1.0056
4995	9.97	102.6	101.4	1.0117
4995	0.0	0.0	0.1	As Found Zero
4995	39.93	408.4	411.5	As Found Span
			Average Correction Factor	1.0076

Calculated value of As Found Response: 411.724 ppm Percent Change of As Found: -0.8%

	before calibration		after calibration	
Auto zero	0.5	ppm	0.4	ppm
Auto span	359.4	ppm	339.9	ppm

Notes: Slight span adjust, calibrator kicked out, reset calibrator & run adjustment point.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii

Calibration Summary

Parameter **SO2**

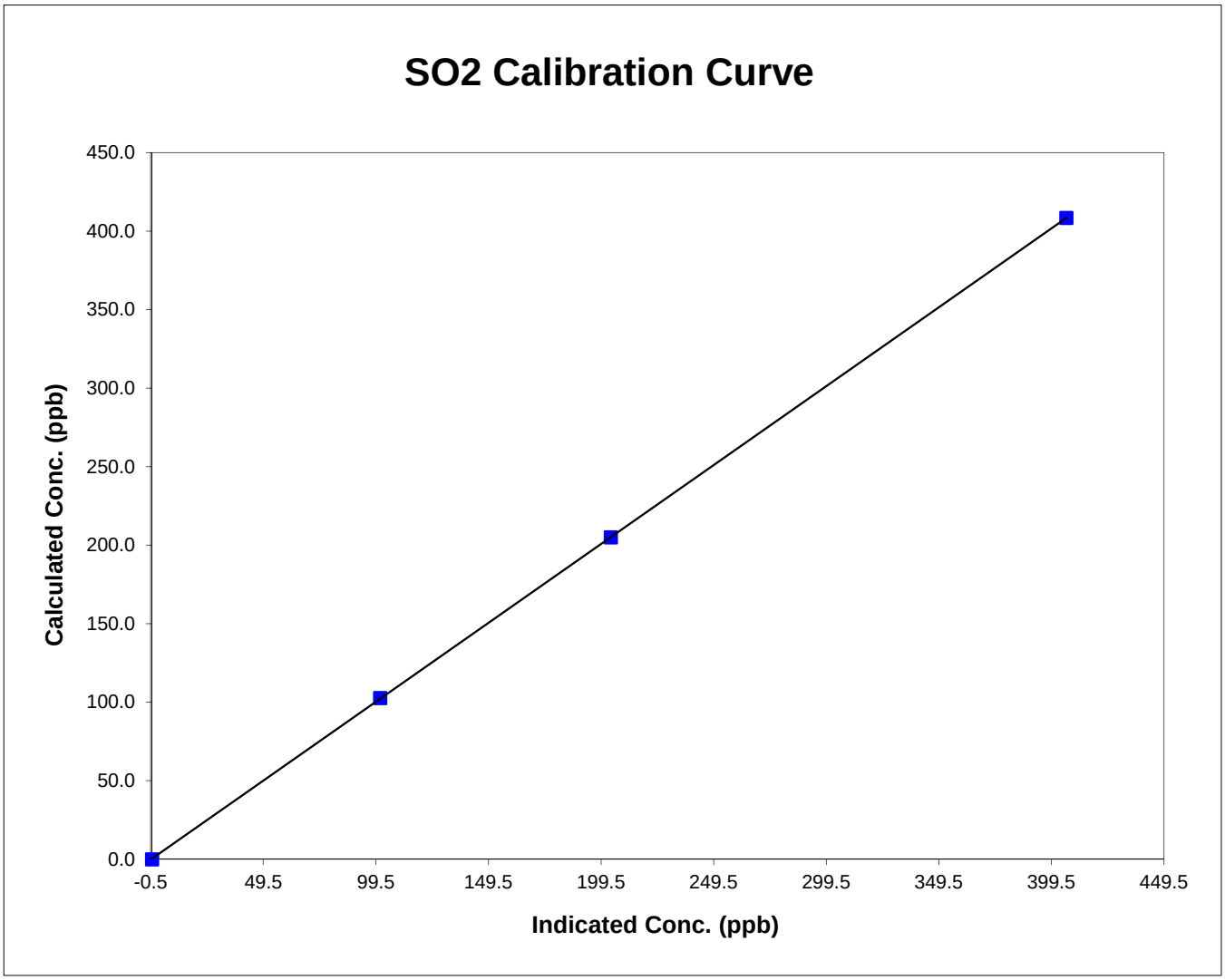
Air Monitoring Network **PAZA**

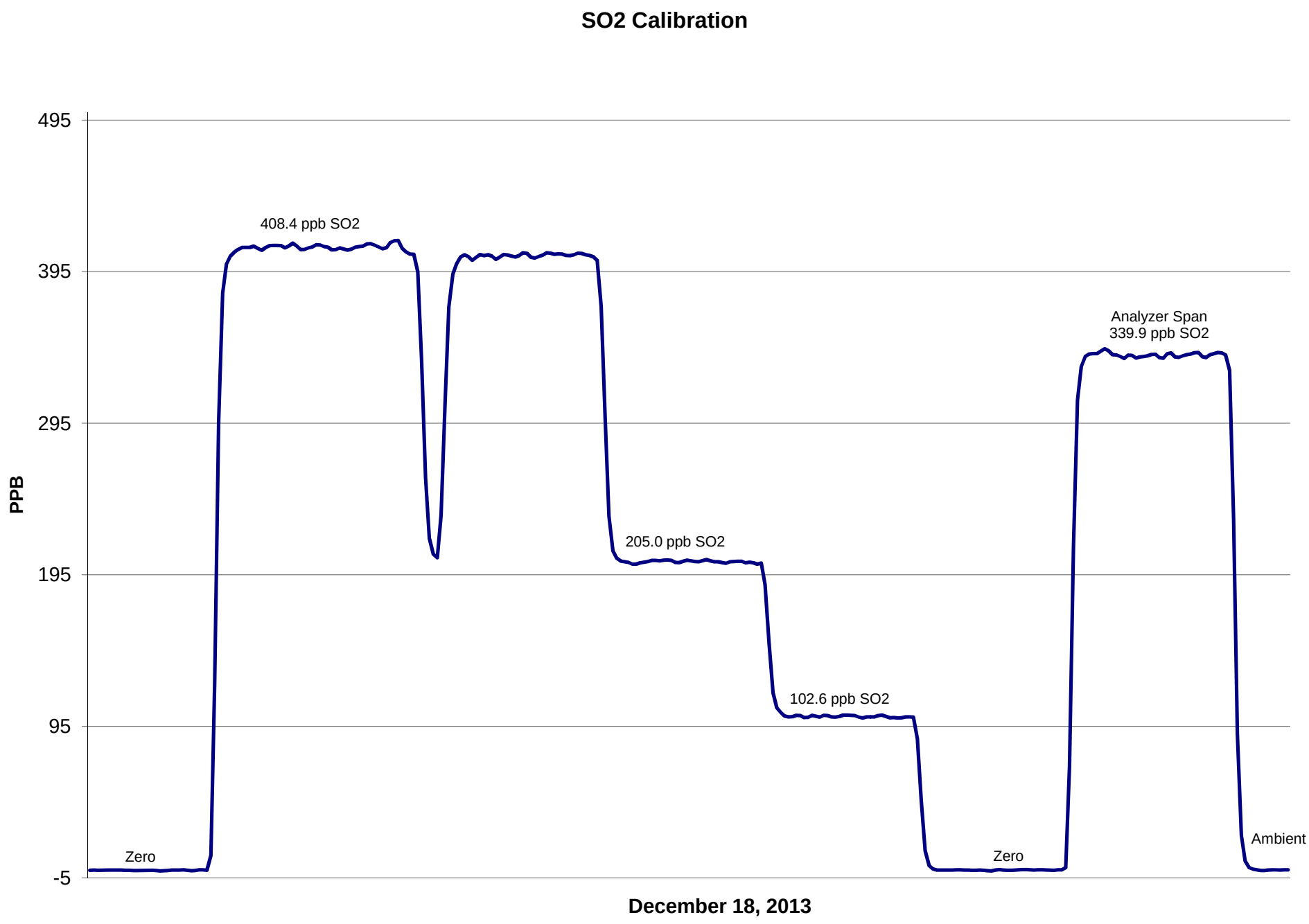
Station Information

Calibration Date	December 18, 2013	Previous Calibration	November 30, 2013
Station Number	1	Station Location	Falher
Start Time (MST)	10:50	End Time (MST)	15:41
Analyzer make/model	Teco 43i	Analyzer serial #	1207452008

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.1	N/A		
408.4	406.2	1.0055	Correlation Coefficient	0.999996
205.0	203.8	1.0056		
102.6	101.4	1.0117	Slope	1.005233
			Intercept	0.171164




SO2 Calibration
495
395
295
195
95
-5
PPB
408.4 ppb SO2
205.0 ppb SO2
102.6 ppb SO2
Analyzer Span
339.9 ppb SO2
Zero
Zero
Ambient
December 18, 2013

Calibration Report

Parameter **H2S**

Air Monitoring Network **PAZA**

FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 18, 2013	Previous Calibration	November 30, 2013
Station Number	1	Station Location	Falher
Reason: Routine	Install	Removal	Other:

Start Time (MST)	9:30	End Time (MST)	12:04
Barometric Pressure	0.931 ATM	Station Temperature	20.0 Deg C
Calibrator	Environics	Serial Number	3016
Cal Gas Conc	10.4 ppm	Cal Gas Expiry Date	08/07/2016
Correction factor	0.031647	Cal Gas Cylinder #	LL110781
DACS make	CR1000	DACS serial No.	3980
DACS voltage range	0 - 5 volt	DACS channel #	5
	Before		After
Calculated slope	0.966541	Calculated slope	0.965526
Calculated intercept	-0.152629	Calculated intercept	-0.322158

Analyzer make	Thermo 450i	Analyzer serial #	1207452006

	before		after	
Concentration range	0 - 100	ppb	0 - 100	ppb
Background	13	ppb	13.4	ppb
coefficient	1.169		1.169	
Lamp Voltage	804	volts	805	volts
Chamber Temp	45	Deg C	45.2	Deg C
Perm Gas Temp	45	Deg C	45.01	Deg C
Pressure	572.4	mm Hg	574	mm Hg
Sample Flow	0.932	ccm	0.929	ccm
Lamp Intensity	90	mv	90	mv

Calibration Data

Dilution air flow rate (cc/min)	Corrected gas flow rate (cc/min)	Calculated concentration (ppb) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
4995	0.00	0.00	0.6	N/A
4995	39.93	82.48	85.8	0.9614
4995	19.96	41.39	43.2	0.9580
8994	8.97	10.36	10.8	0.9585
4995	0.00	0.00	0.6	As Found Zero
4995	39.93	82.48	85.8	As Found Span
			Average Correction Factor	0.9593

Calculated value of As Found Response: 82.20 ppm Percent Change of As Found: 0.3%

	before calibration		after calibration	
Auto zero	0.0	ppm	0.0	ppm
Auto span	51.2	ppm	53.5	ppm

Notes: No span adjust.

Calibration Performed By: Grover Christiansen, Dmytro Dolotii

Calibration Summary

Parameter **H2S**

Air Monitoring Network **PAZA**

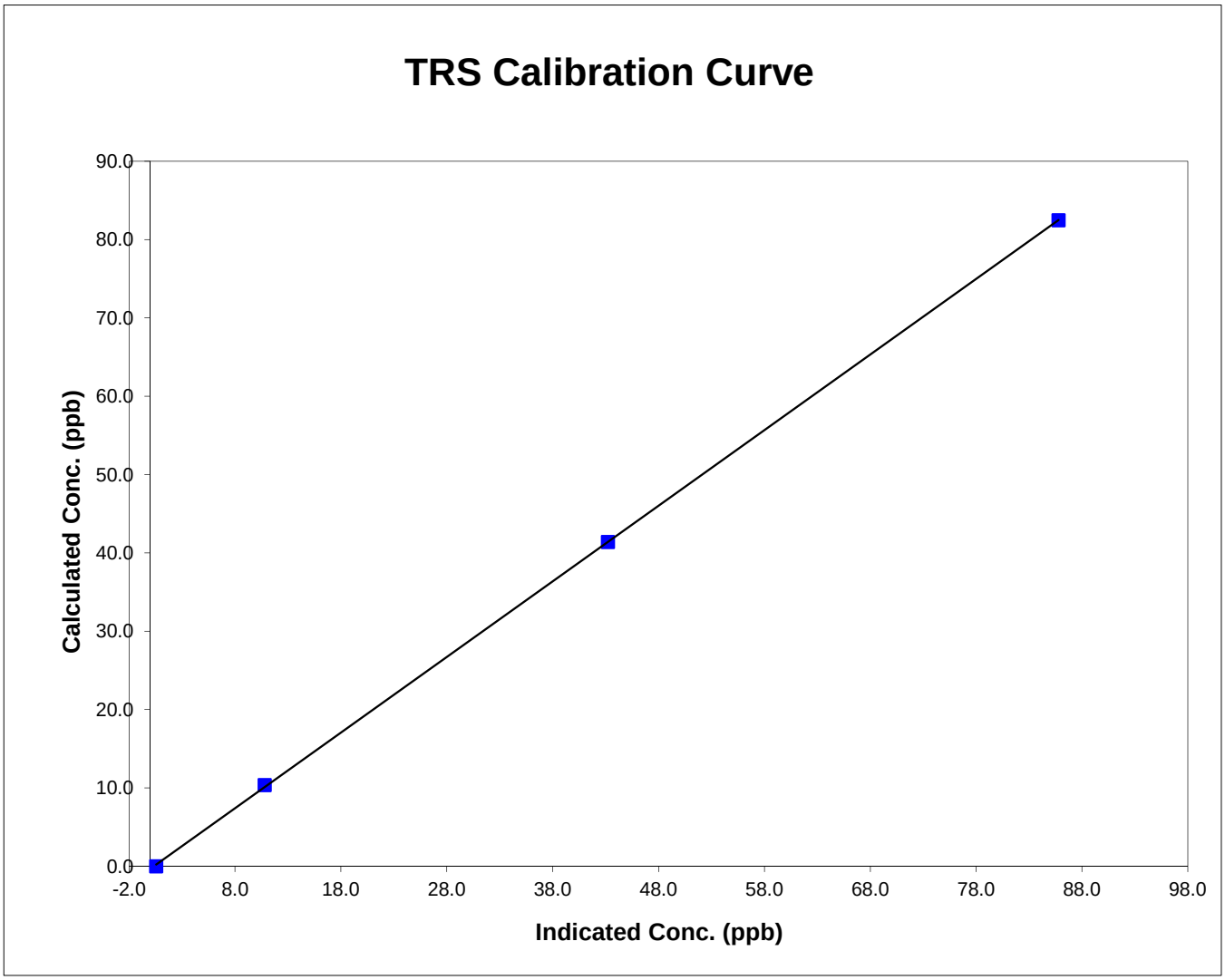
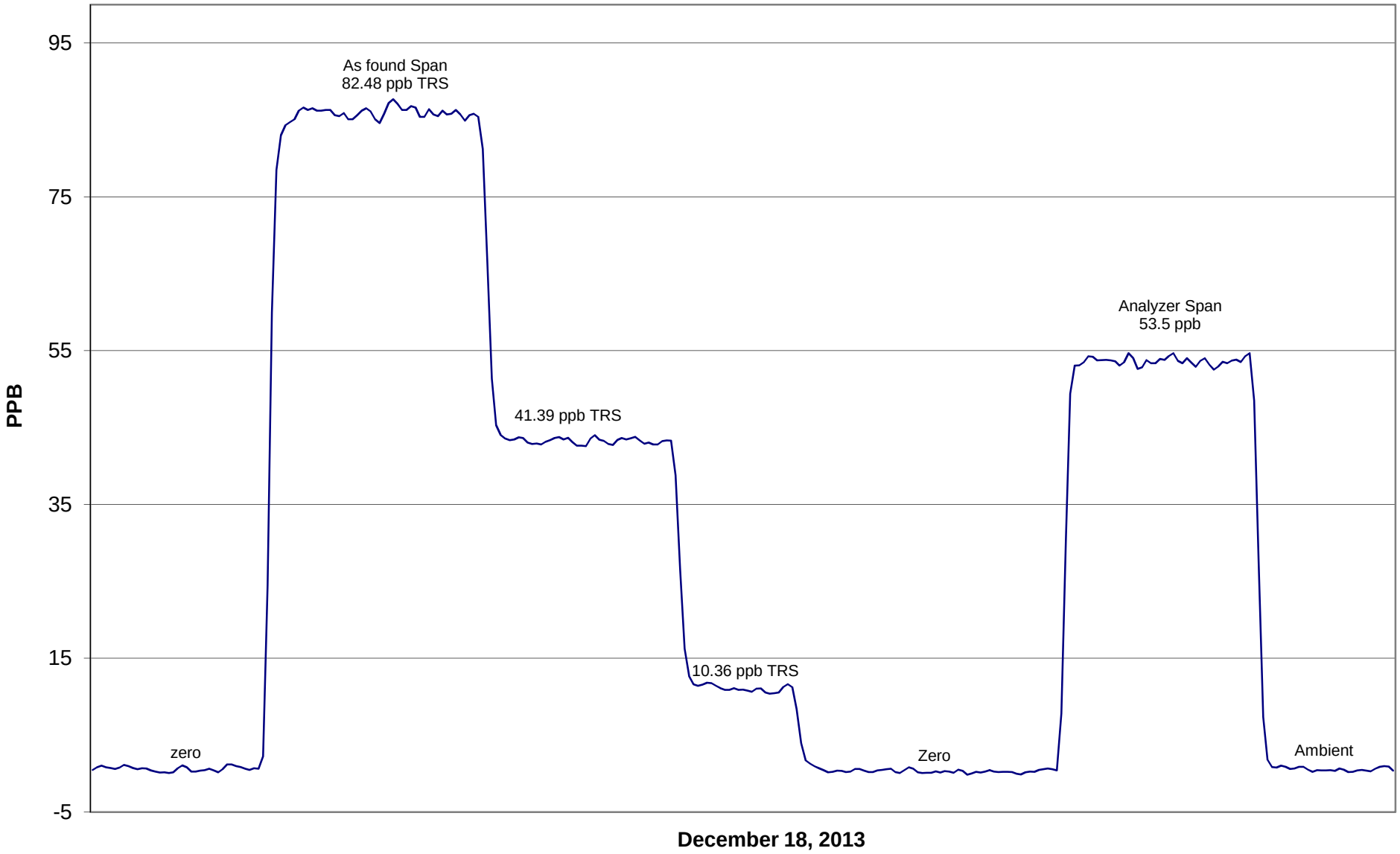
FOCUS AIR QUALITY MONITORING

Station Information

Calibration Date	December 18, 2013	Previous Calibration	November 30, 2013
Station Number	1	Station Location	Falher
Start Time (MST)	9:30	End Time (MST)	12:04
Analyzer make/model	Thermo 450i	Analyzer serial #	1207452006

Calibration Data

Calculated concentration (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.6	N/A		
82.5	85.8	0.9614	Correlation Coefficient	0.999974
41.4	43.2	0.9580		
10.4	10.8	0.9585	Slope	0.965526
			Intercept	-0.322158



H2S Calibration