

Fox Creek

AIR QUALITY MONITORING March 2016 Monthly Report

Prepared by:

**West Central Airshed Society
Drayton Valley, Alberta**





April 19th, 2016

Director, Central Region
Alberta Environmental Protection
4th Floor, Oxbridge Place
9820 106 Street
Edmonton, Alberta T5K 2J6

Dear Sir:

Monthly Ambient Air Quality Monitoring Report for March 2016 for Fox Creek

Enclosed is the report for the Fox Creek continuous ambient air quality monitoring station of the West Central Airshed Society network.

The person responsible for this reporting is Robert Scotten, Executive Director of West Central Airshed Society.

The following operational notes are included as required by the Air Monitoring Directive:

1. Concentrations in excess of the Clean Air (Maximum Levels) Regulation:

There were no readings in excess of guidelines as indicated in Air Monitoring Directive Section III.A.3. (a&b) for SO₂, NO₂, O₃, and PM_{2.5}.

2. Operational times less than 90 percent:

There were no operational times less than 90 percent in March.

3. Monitoring Notes:

The wind head failed to return valid data with an uptime of 99.7%. All other analyzers and meteorological equipment returned uptimes of 100% in March.

If additional information is required please contact Patrick Andersen at (780) 514-3533 or (403) 505-1041.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Scotten'.

Robert Scotten
Executive Director

A handwritten signature in black ink, appearing to read 'Patrick Andersen'.

Patrick Andersen
Environmental Specialist

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
CONTINUOUS AIR MONITORING DATA**

**FOX CREEK
MARCH 2016**

Operations and Data Collection by:
West Central Airshed Society
Drayton Valley, Alberta

QA/QC, Data Validation and Reporting by:
West Central Airshed Society
Drayton Valley, Alberta

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

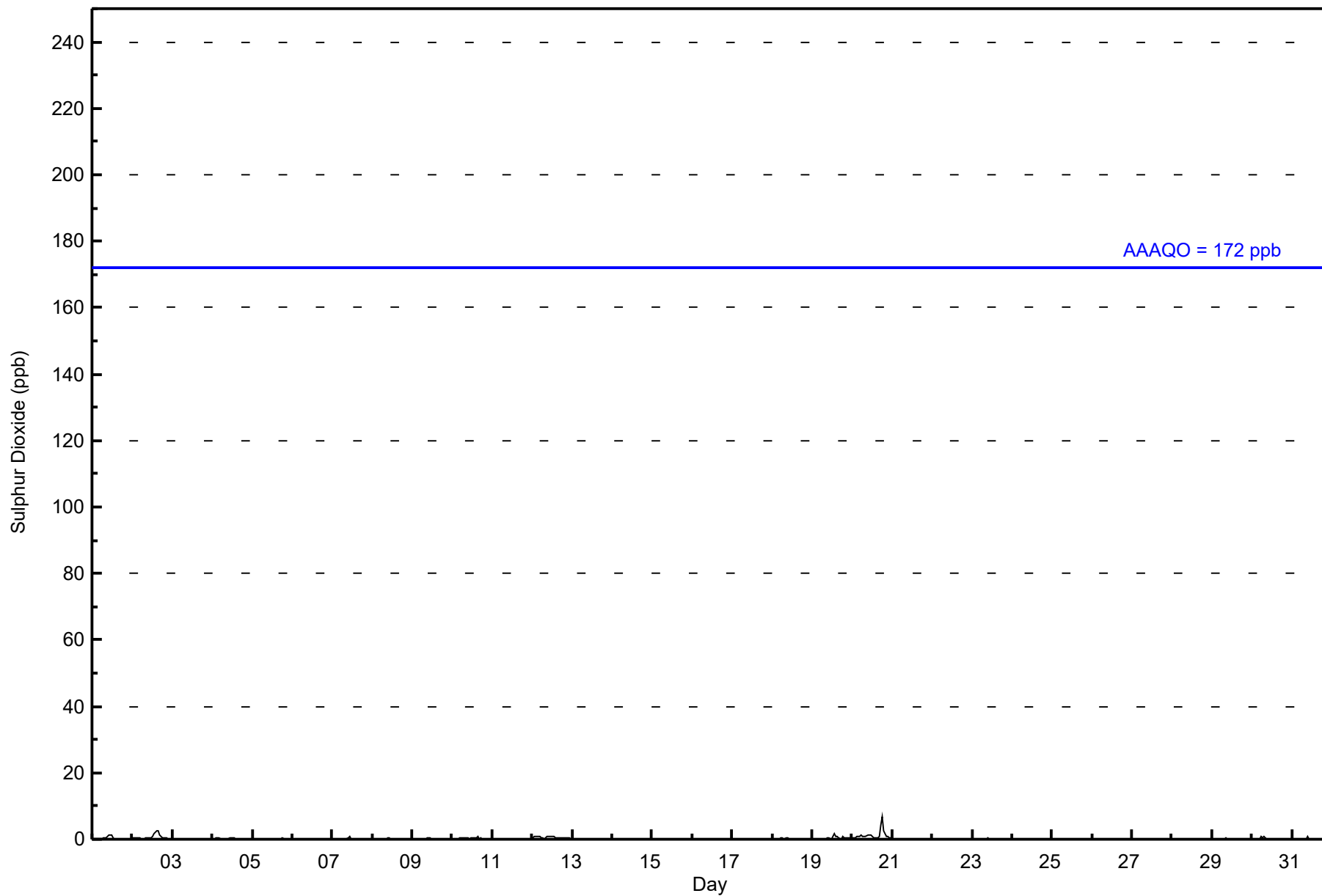
WCAS / Fox Creek													March 2016		
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile					Exceedences		24 Hour Average Max (ppm)	
							P10	Q1	Median	Q3	P90	1-hour	24-hour		
SO ₂ (ppb)	3	741	100.0	0.121	0.0	6.6	0.0	0.0	0.0	0.0	0.4	0	0	0.001	
H ₂ S (ppb)	3	741	100.0	0.098	0.0	4.0	0.0	0.0	0.1	0.1	0.2	0	0	0.000	
O ₃ (ppb)	3	741	100.0	26.2	0.0	47.5	8.2	18.1	27.7	35.0	41.4	0	-	0.038	
NO (ppb)	4	740	100.0	1.5	0.0	49.3	0.0	0.0	0.2	1.0	2.7	-	-	-	
NO ₂ (ppb)	4	740	100.0	6.2	0.0	35.4	0.2	2.0	4.1	8.4	14.5	0	0	0.017	
NO _x (ppb)	4	740	100.0	8.1	0.0	79.2	0.8	2.9	5.1	10.1	17.7	-	-	-	
Particulate Matter 2.5 microns (μ/m ³)	3	741	100.0	2.1	0.0	14.8	0.0	0.6	1.7	3.1	5.0	0	0	4.86 ug/m3	
Temperature (°C)	0	744	100.0	1.6	-11.3	16.4	-3.5	-1.7	0.4	5.0	8.9	-	-	-	
Wind Speed (kph)	0	742	99.7	7.1	0.1	25.3	2.0	3.9	6.3	9.3	12.8	-	-	-	

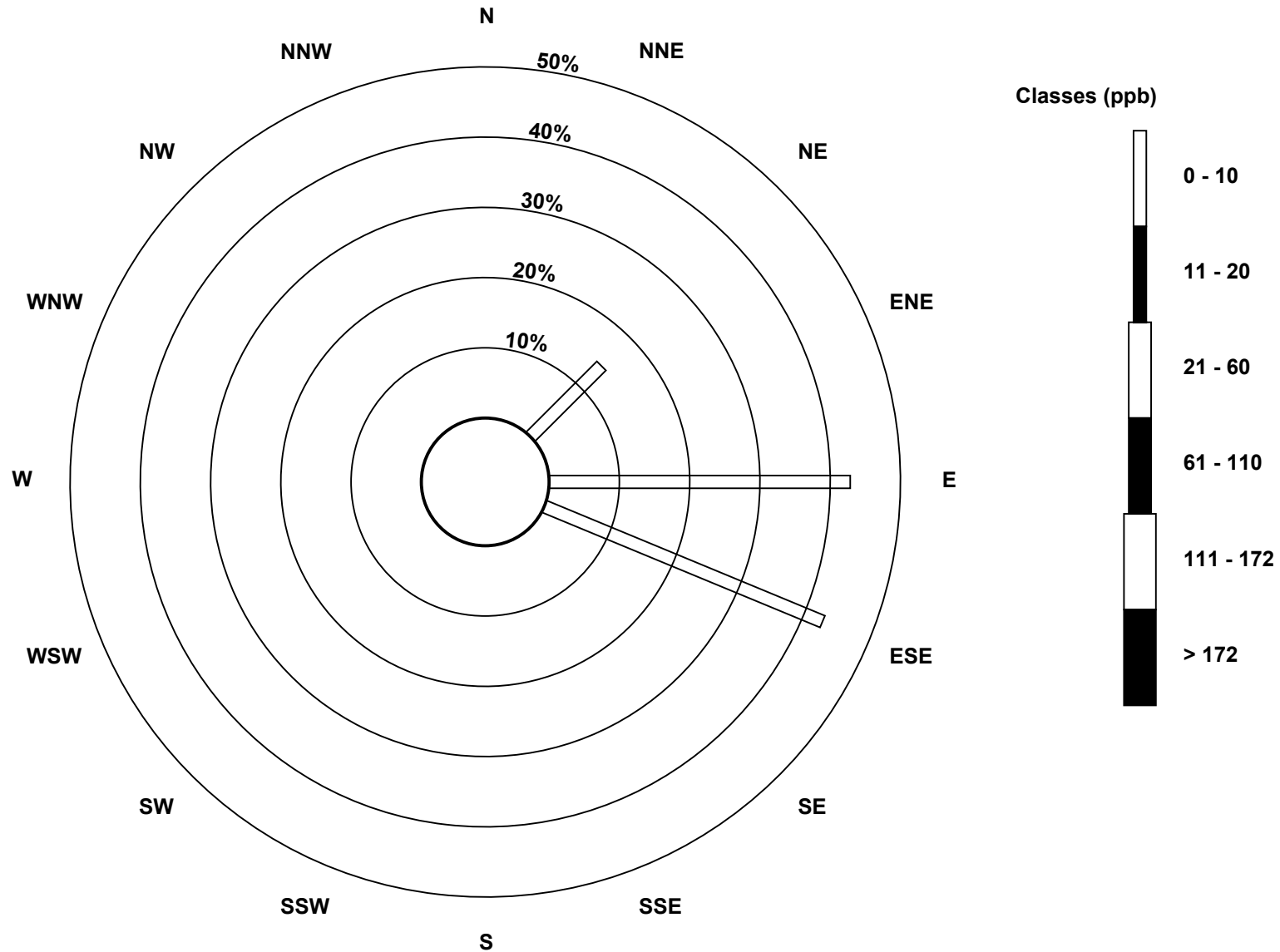


WCAS - Fox Creek
Summary of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
March 2016

Maximum Value: 6.63 ppb on Mar 20 19:00		Maximum Daily Average: 1.16 ppb on Mar 20		Hours in Service: 744																																																																					
Minimum Value: 0.0 ppb on Mar 1 04:00		Minimum Daily Average: 0.00 ppb on Mar 6		Hours of Data: 741																																																																					
Maximum Diurnal Average: 0.29 ppb at hour 19		Minimum Diurnal Average: 0.04 ppb at hour 23		Hours of Missing Data: 3																																																																					
Monthly Average: 0.121 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.0 Q ₃ = 0.0 P ₉₀ = 0.4 P ₉₉ = 1.6		Hours of Calibration: 3																																																																					
				Percent Operational Time: 100.0																																																																					
Day	Hourly Period Ending At																								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-Mar	0.1	0.0	0.0	0.0	0.1	0.0	0.4	0.3	0.4	0.7	1.3	1.2	0.3	0.2	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.24	1.31																																															
2-Mar	0.5	0.4	0.4	0.4	0.2	0.0	0.0	0.0	0.3	0.2	0.2	0.4	0.7	1.7	2.4	2.5	1.3	0.8	0.3	0.4	0.4	0.2	0.0	0.0	0.57	2.46																																															
3-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01																																															
4-Mar	0.0	0.1	0.3	0.3	0.2	0.2	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	0.33																																															
5-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.02	0.35																																															
6-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																																															
7-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.96																																															
8-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.36																																															
9-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.60																																															
10-Mar	0.0	0.0	0.0	0.1	0.3	0.4	0.3	0.4	0.3	0.2	0.2	0.4	0.6	0.5	0.5	0.7	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.22	0.67																																															
11-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.00	0.09																																																
12-Mar	0.6	0.8	0.8	0.8	0.7	0.6	0.4	0.2	0.4	0.8	1.1	0.8	0.8	0.7	0.4	0.3	0.4	0.4	0.6	0.5	0.5	0.5	0.4	0.1	0.55	1.05																																															
13-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																																															
14-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																																															
15-Mar	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	0.0	0.0	0.0	0.01	0.12																																															
16-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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	0.01	0.12																																															
17-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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																																															
18-Mar	0.0	0.0	0.0	0.0	0.2	0.5	0.4	0.1	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.46																																															
19-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.2	0.9	1.6	0.7	0.7	0.3	0.2	0.7	0.3	0.2	0.3	0.2	0.3	0.31	1.63																																															
20-Mar	0.4	0.3	0.4	0.7	1.1	1.1	1.0	0.7	0.8	1.1	1.1	1.1	0.8	0.4	0.3	0.5	0.8	4.1	6.6	2.4	0.7	0.8	0.4	0.3	1.16	6.63																																															
21-Mar	0.2	0.2	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	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.19																																															
22-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01																																															
23-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.04	0.32																																															
24-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.04																																															
26-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.15																																															
28-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.05																																															
29-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.48																																															
30-Mar	0.0	0.0	0.0	0.0	0.0	0.8	0.6	0.8	0.3	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.12	0.82																																															
31-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.81																																															
																								0.06		0.06		0.06		0.07		0.09		0.11		0.09		0.08		0.11		0.22		0.23		0.16		0.16		0.18		0.15		0.17		0.10		0.21		0.29		0.11		0.06		0.06		0.04		0.04		Diurnal Average	
																								0.59		0.76		0.79		0.78		1.06		1.14		0.95		0.82		0.80		1.10		1.31		1.22		0.91		1.65		2.43		2.46		1.32		4.10		6.63		2.36		0.73		0.81		0.44		0.33		Diurnal Maximum	
C - Calibration																																																																									
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb																																																																									



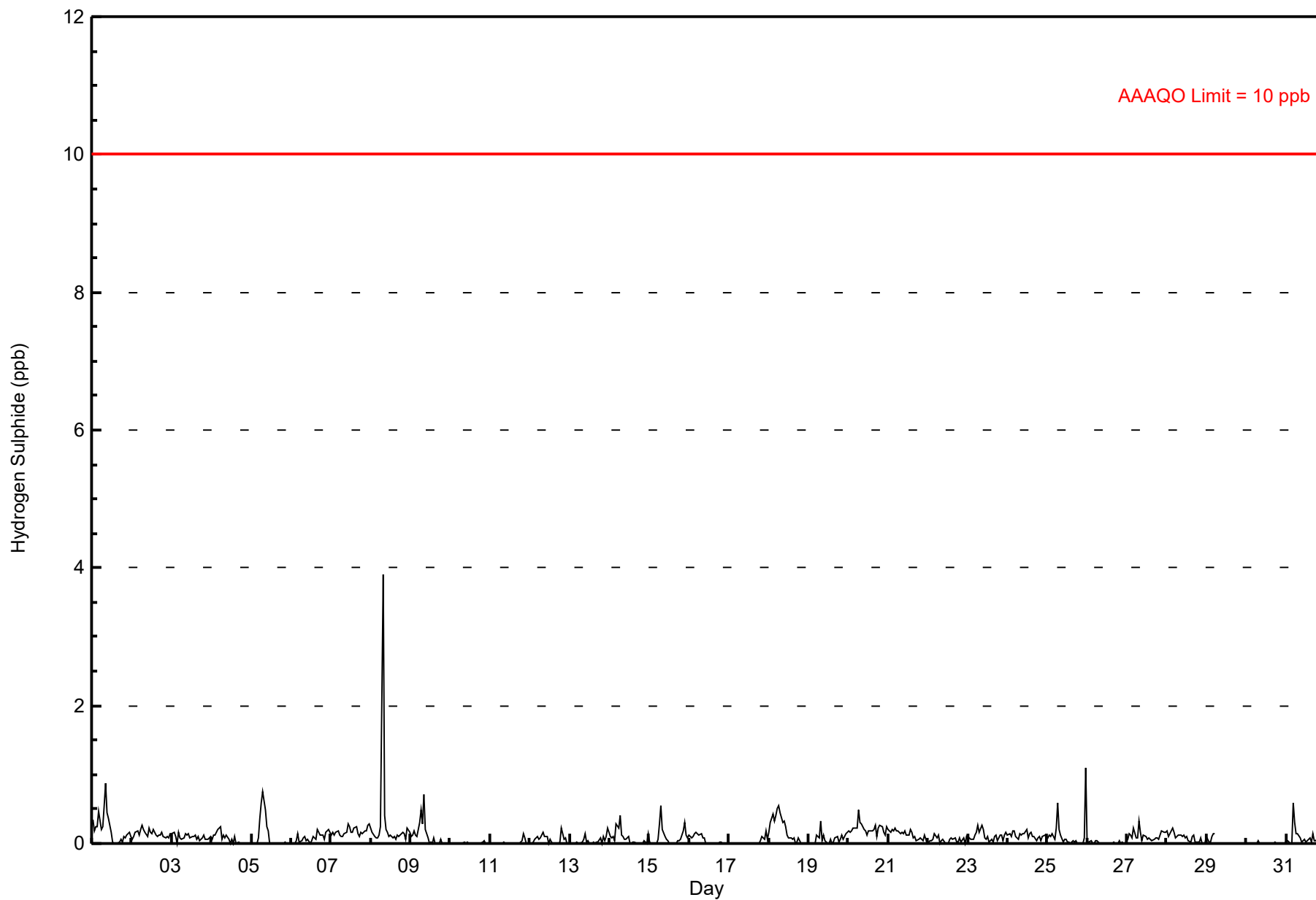


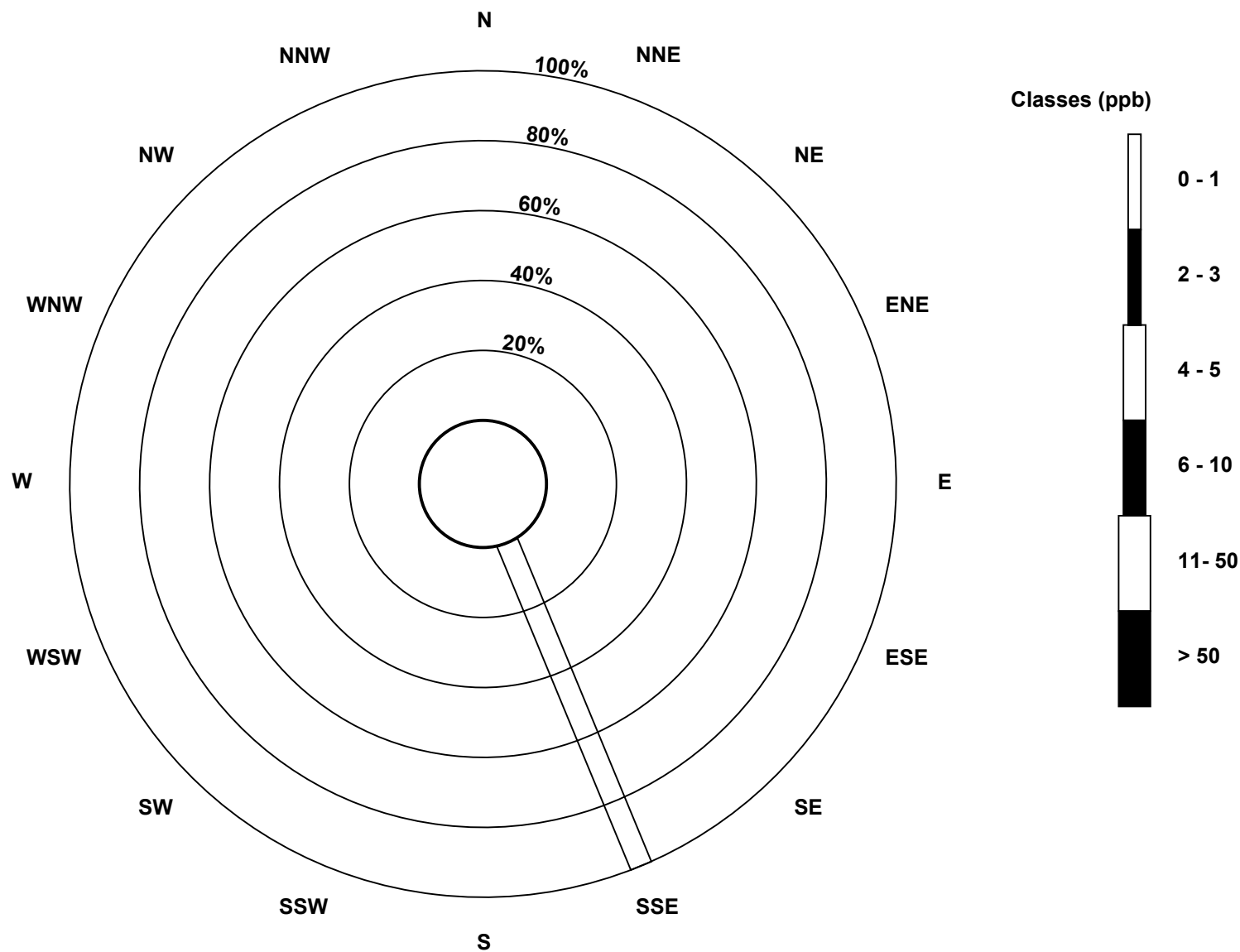


WCAS - Fox Creek
Summary of Hourly Averages

Hydrogen Sulphide (H₂S) - ppb
March 2016

Maximum Value: 3.90 ppb on Mar 8 08:00 Maximum Daily Average: 0.31 ppb on Mar 8		Hours in Service: 744 Hours of Data: 741 Hours of Missing Data: 3 Hours of Calibration: 3 Percent Operational Time: 100.0																								
Minimum Value: 0 ppb on Mar 1 15:00 Maximum Diurnal Average: 0.31 ppb at hour 8 Monthly Average: 0.098 ppb		Minimum Daily Average: 0.00 ppb on Mar 30 Minimum Diurnal Average: 0.04 ppb at hour 18 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.1 Q ₃ = 0.1 P ₉₀ = 0.2 P ₉₉ = 0.6																								
Day	Hourly Period Ending At																								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-Mar	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.21	0.88
2-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.14	0.27
3-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.10	0.17
4-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0.24
5-Mar	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.76
6-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0.20
7-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.17	0.29
8-Mar	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.31	3.90
9-Mar	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12	0.71
10-Mar	0	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	0.04
11-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.14
12-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06	0.23
13-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04	0.21
14-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.08	0.40
15-Mar	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.56
16-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.16
17-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.18
18-Mar	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.19	0.55
19-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.07	0.34
20-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22	0.48
21-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.13	0.23
22-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.13
23-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.27
24-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12	0.20
25-Mar	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.13	1.10
26-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.04
27-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.33
28-Mar	0	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	0.22
29-Mar	0	0	0	0	0	0	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.13
30-Mar	0	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	0.04
31-Mar	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.58
																								Diurnal Average		
																								Diurnal Maximum		
0.08 0.08 0.09 0.09 0.15 0.14 0.19 0.31 0.18 0.11 0.10 0.06 0.05 0.05 0.06 0.04 0.06 0.04 0.05 0.07 0.07 0.07 0.08 0.12 0.35 0.30 0.42 0.32 0.58 0.52 0.59 3.90 0.88 0.45 0.36 0.25 0.18 0.21 0.23 0.25 0.26 0.13 0.23 0.27 0.24 0.31 0.26 1.10																										
C - Calibration Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 10 ppb 24-hr 3 ppb																										



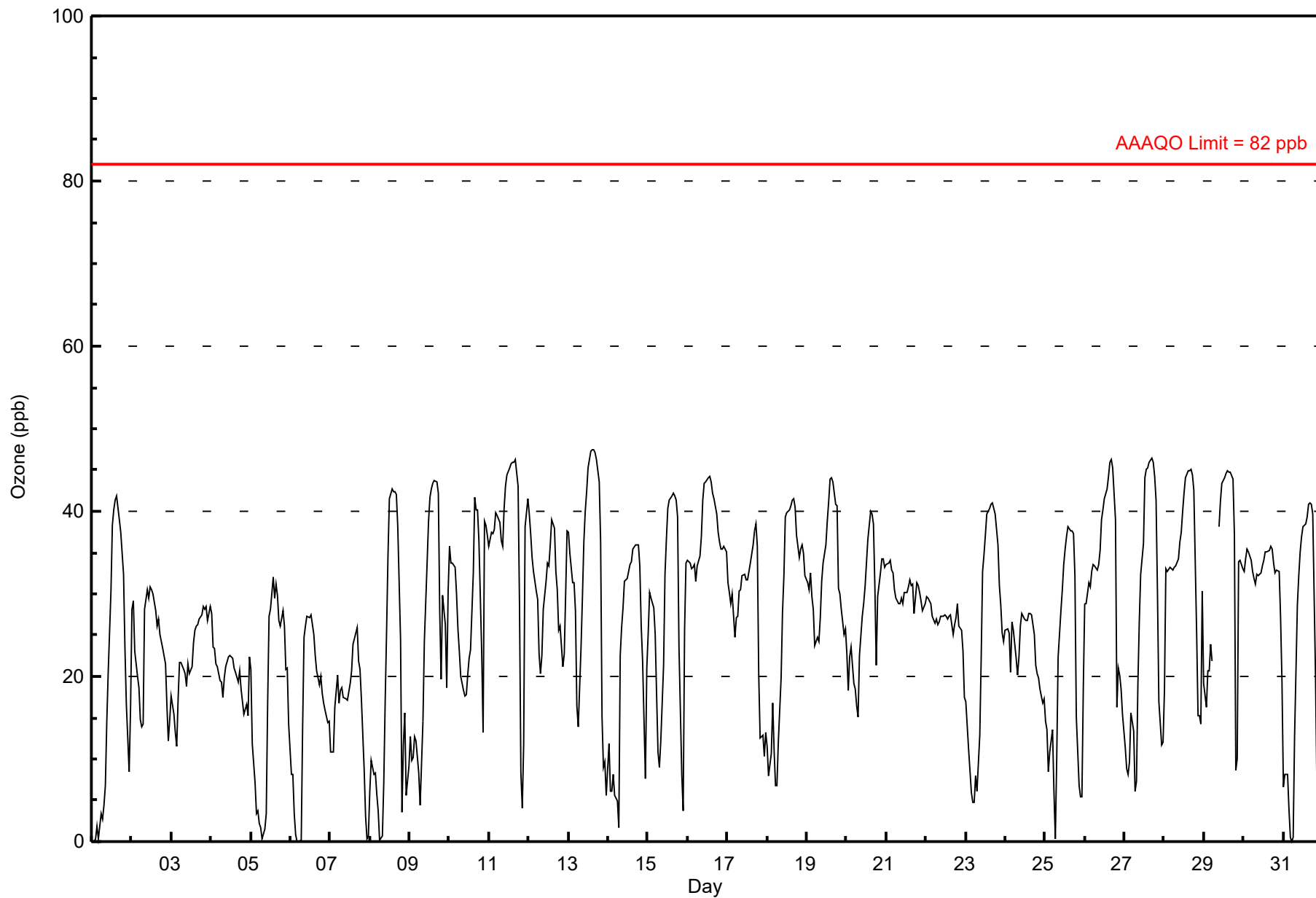


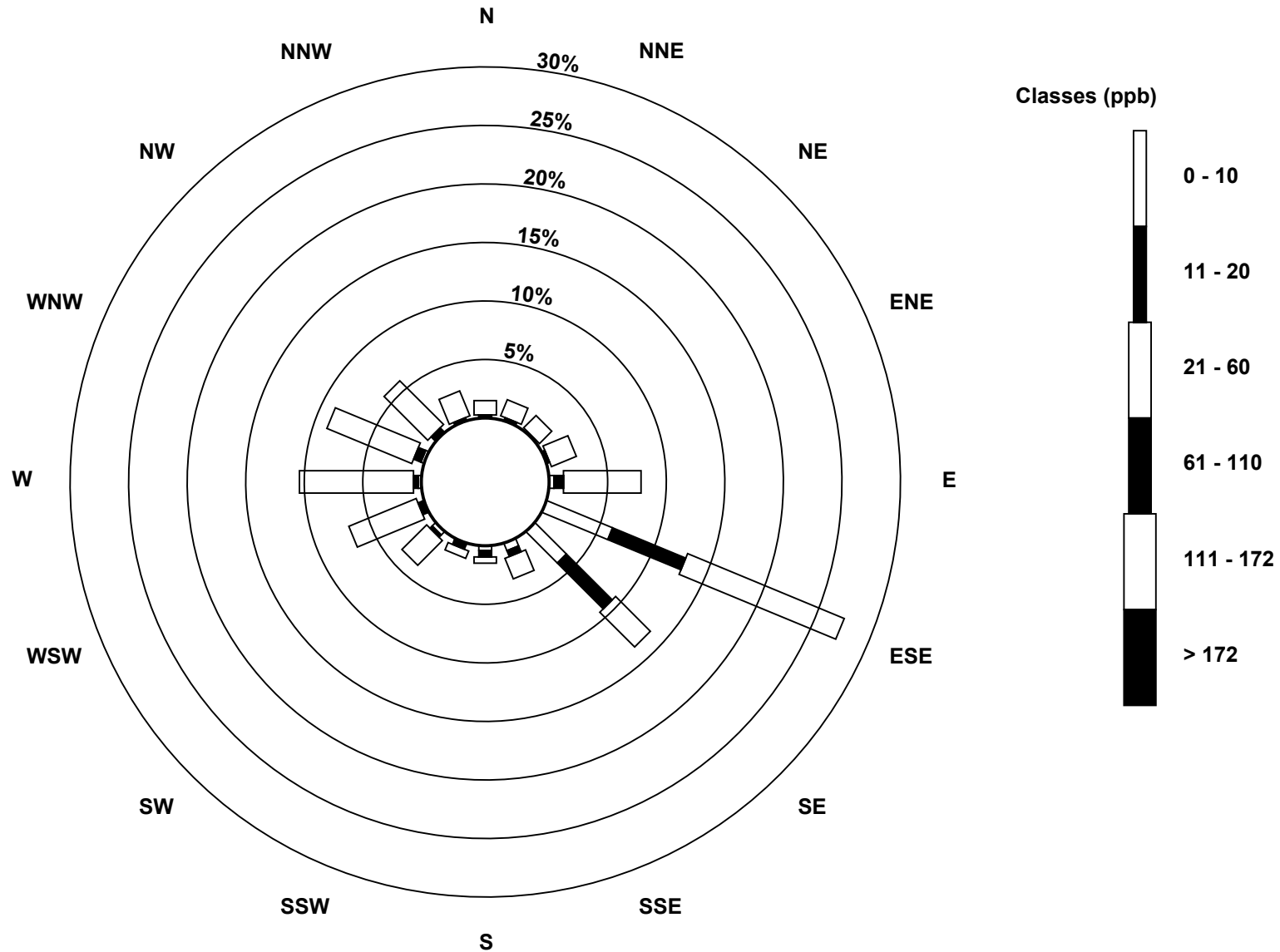


WCAS - Fox Creek
Summary of Hourly Averages

Ozone (O₃) - ppb
March 2016

Maximum Value: 47.51 ppb on Mar 13 16:00		Maximum Daily Average: 37.63 ppb on Mar 16		Hours in Service: 744																																													
Minimum Value: 0.0 ppb on Mar 6 05:00		Minimum Daily Average: 15.84 ppb on Mar 7		Hours of Data: 741																																													
Maximum Diurnal Average: 37.29 ppb at hour 16		Minimum Diurnal Average: 16.45 ppb at hour 7		Hours of Missing Data: 3																																													
Monthly Average: 26.225 ppb		Percentiles: P ₁ = 0.3 P ₁₀ = 8.2 Q ₁ = 18.1 Median = 27.7 O ₃ = 35.0 P ₉₀ = 41.4 P ₉₉ = 46.3		Hours of Calibration: 3																																													
				Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								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-Mar	0.1	0.0	0.3	1.8	0.4	3.4	2.8	4.3	6.8	14.3	20.4	30.3	38.3	40.3	41.3	41.8	39.0	37.5	35.0	32.3	23.4	16.6	8.4	16.2	18.95	41.79																							
2-Mar	28.1	29.2	23.1	20.1	18.7	14.7	13.8	14.3	28.1	30.5	29.5	30.8	30.5	30.0	28.0	26.1	27.0	25.1	24.3	23.4	21.5	16.5	12.2	14.8	23.34	30.83																							
3-Mar	17.7	15.5	13.2	11.5	17.2	21.7	21.7	20.9	20.4	18.7	21.5	20.4	21.2	24.1	25.5	26.0	26.3	26.9	27.5	28.4	28.1	28.4	26.9	28.4	22.43	28.44																							
4-Mar	27.6	23.5	23.3	21.6	21.2	19.4	19.3	17.5	19.8	21.3	22.3	22.5	22.3	22.2	21.0	20.5	19.3	20.7	18.6	17.0	15.4	16.6	15.2	22.4	20.43	27.61																							
5-Mar	20.9	11.9	7.1	3.4	3.7	2.3	1.7	0.4	1.5	3.4	16.7	27.3	28.1	32.0	29.4	31.2	29.8	26.8	26.1	28.0	26.1	20.8	21.1	14.3	17.25	31.97																							
6-Mar	8.1	8.2	3.4	0.9	0.0	0.0	0.2	13.9	24.8	26.1	27.4	27.1	27.5	26.3	25.1	22.5	20.7	19.0	20.0	17.9	16.8	15.9	14.4	14.6	15.87	27.49																							
7-Mar	10.8	10.8	10.8	16.3	20.1	16.8	18.3	18.7	17.5	17.3	17.1	18.1	19.2	20.6	23.9	25.3	25.9	21.9	20.8	17.3	8.6	3.1	0.3	0.7	15.84	25.93																							
8-Mar	6.1	9.9	8.2	8.3	5.8	3.8	0.2	0.6	7.2	17.0	25.5	34.6	41.5	42.7	42.3	42.4	42.0	38.1	24.4	3.6	11.6	15.6	5.6	9.2	18.59	42.65																							
9-Mar	12.8	9.7	10.2	12.7	12.2	8.3	4.5	9.5	14.5	24.2	34.0	38.9	41.6	42.8	43.4	43.7	43.6	42.2	27.7	19.7	29.8	26.4	18.7	30.4	25.07	43.73																							
10-Mar	35.8	33.7	33.6	33.3	29.9	25.8	23.0	20.0	18.3	17.6	17.9	20.2	22.2	23.2	32.5	41.7	40.2	40.2	36.5	22.9	13.3	38.8	38.3	37.1	29.00	41.68																							
11-Mar	35.7	37.5	37.3	37.7	39.8	39.5	38.7	36.4	35.7	40.4	43.1	44.4	45.2	45.8	45.9	45.9	46.2	43.0	28.8	8.4	4.0	11.9	38.1	41.5	36.29	46.20																							
12-Mar	39.7	37.3	34.5	32.7	30.3	29.3	22.7	20.3	22.6	28.2	31.6	33.8	33.3	35.9	39.0	38.0	32.7	30.6	25.7	26.1	21.2	22.8	30.1	37.6	30.66	39.74																							
13-Mar	37.4	34.8	31.3	31.4	28.0	16.4	13.8	23.5	29.6	36.2	40.0	42.4	45.3	47.2	47.5	47.5	47.1	46.3	43.5	36.2	15.0	9.0	9.6	5.7	31.87	47.51																							
14-Mar	11.8	6.0	6.1	8.2	5.6	4.9	1.7	22.5	25.9	28.3	31.4	31.9	32.7	33.5	33.9	35.4	36.0	36.0	35.9	33.4	26.1	21.8	7.7	20.9	22.41	36.00																							
15-Mar	25.2	30.2	29.5	28.3	25.0	17.8	10.8	8.9	12.2	21.4	32.3	36.6	40.4	41.3	41.9	42.2	41.9	41.3	39.3	23.6	8.1	3.8	25.6	33.7	27.56	42.24																							
16-Mar	34.2	33.8	33.0	33.3	33.5	31.5	33.4	34.5	37.0	41.4	43.4	43.6	44.0	44.3	43.5	42.2	41.5	39.6	37.5	36.3	35.4	35.5	35.8	35.1	37.63	44.30																							
17-Mar	31.3	30.2	28.9	30.1	24.7	27.1	27.2	30.4	30.4	32.2	32.3	31.7	31.6	32.6	33.7	35.9	37.6	38.4	35.7	20.1	12.5	12.9	10.3	13.2	27.97	38.44																							
18-Mar	11.5	7.9	10.7	16.7	11.1	6.7	6.8	12.0	19.9	27.7	32.2	39.3	39.8	40.2	40.6	41.4	41.5	40.5	37.2	34.5	35.5	35.9	34.8	32.2	27.36	41.50																							
19-Mar	31.3	30.6	32.6	29.7	28.2	23.7	24.8	24.2	27.1	31.5	33.8	36.0	38.8	41.2	43.9	44.1	43.5	40.8	40.7	30.7	30.1	28.2	25.1	25.7	32.76	44.15																							
20-Mar	22.7	18.4	22.3	23.6	19.2	18.4	16.5	15.1	22.6	27.4	28.8	30.8	33.8	36.7	40.0	39.7	38.5	31.0	21.4	29.6	32.6	34.2	34.3	33.3	27.95	39.95																							
21-Mar	33.6	33.8	34.0	32.9	32.6	30.6	29.5	28.7	28.7	29.5	28.8	30.2	30.2	30.9	31.7	31.0	31.2	27.6	31.4	30.9	30.2	29.1	28.0	28.7	30.58	33.99																							
22-Mar	29.7	29.5	29.1	28.8	27.2	26.4	26.9	26.4	26.6	27.3	27.4	27.4	27.2	27.0	27.3	27.4	25.1	26.3	27.1	28.8	26.2	25.6	23.0	17.4	26.71	29.67																							
23-Mar	16.9	14.1	11.2	6.0	4.7	4.8	8.0	6.1	12.8	22.2	32.6	34.8	37.2	39.6	40.3	40.8	41.1	40.3	39.6	36.0	31.0	28.7	25.3	24.3	24.93	41.08																							
24-Mar	25.6	25.8	25.2	20.5	26.6	25.6	22.2	20.2	22.4	26.2	27.7	26.9	26.7	26.7	27.7	27.6	27.5	25.0	21.4	20.4	19.9	18.5	16.8	17.3	23.77	27.71																							
25-Mar	14.6	13.5	8.5	10.8	13.6	6.0	0.3	10.1	22.3	27.9	30.5	33.6	35.5	37.0	38.1	37.7	37.7	37.2	32.2	15.0	6.7	5.4	5.5	18.7	20.77	38.15																							
26-Mar	28.7	28.8	31.4	30.9	32.7	33.6	33.4	33.0	33.6	35.3	39.0	40.2	41.6	42.8	44.3	46.0	46.3	45.2	39.1	16.3	21.0	20.2	18.4	15.5	33.21	46.34																							
27-Mar	11.3	8.9	8.2	9.6	15.6	13.4	6.1	7.4	18.9	26.6	32.5	36.0	44.1	45.1	45.2	46.0	46.5	45.9	44.3	41.4	30.1	16.9	11.6	12.1	25.98	46.45																							
28-Mar	18.3	33.1	32.7	33.2	33.0	32.9	33.1	33.4	34.3	36.3	37.5	39.9	42.2	44.1	44.9	44.9	45.0	44.5	42.5	25.2	15.2	15.3	14.3	30.4	33.60	45.05																							
29-Mar	19.1	16.3	20.7	20.8	23.8	21.9	C	C	C	38.2	41.2	43.4	44.1	44.5	44.9	44.8	44.7	43.9	37.1	8.7	10.0	33.9	34.1	33.1	31.87	44.87																							
30-Mar	32.7	34.2	35.4	35.1	34.1	32.7	31.9	31.2	32.4	32.2	32.6	33.3	34.1	35.0	35.0	35.2	35.8	35.4	33.7	32.5	33.0	32.7	27.2	19.2	32.78	35.77																							
31-Mar	6.5	8.1	8.1	3.8	0.5	0.0	0.4	12.7	28.7	32.2	35.1	37.0	38.2	38.5	39.3	40.8	41.0	40.9	39.6	19.6	5.8	3.8	1.8	4.3	20.28	41.03																							
																								22.12	21.46	20.76	20.45	19.97	18.04	16.45	18.57	22.76	27.06	30.51	33.03	34.79	35.93	36.81	37.29	36.85	35.43	32.08	24.65	20.78	20.80	19.95	22.19	Diurnal Average	
																								39.74	37.53	37.30	37.72	39.83	39.45	38.70	36.41	36.96	41.44	43.38	44.45	45.33	47.21	47.48	47.51	47.06	46.35	44.29	41.44	35.45	38.77	38.31	41.46	Diurnal Maximum	
C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb																																																	



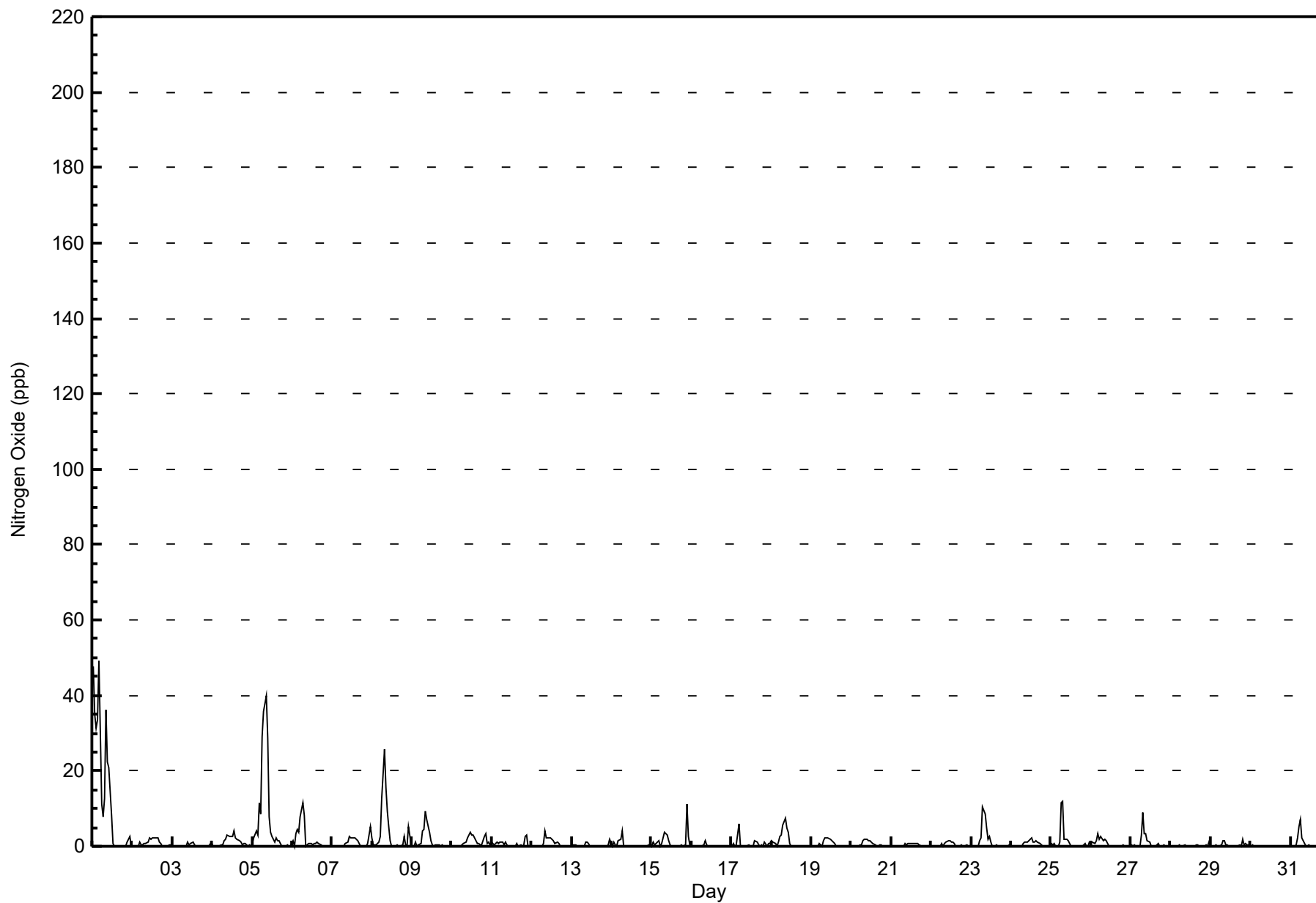


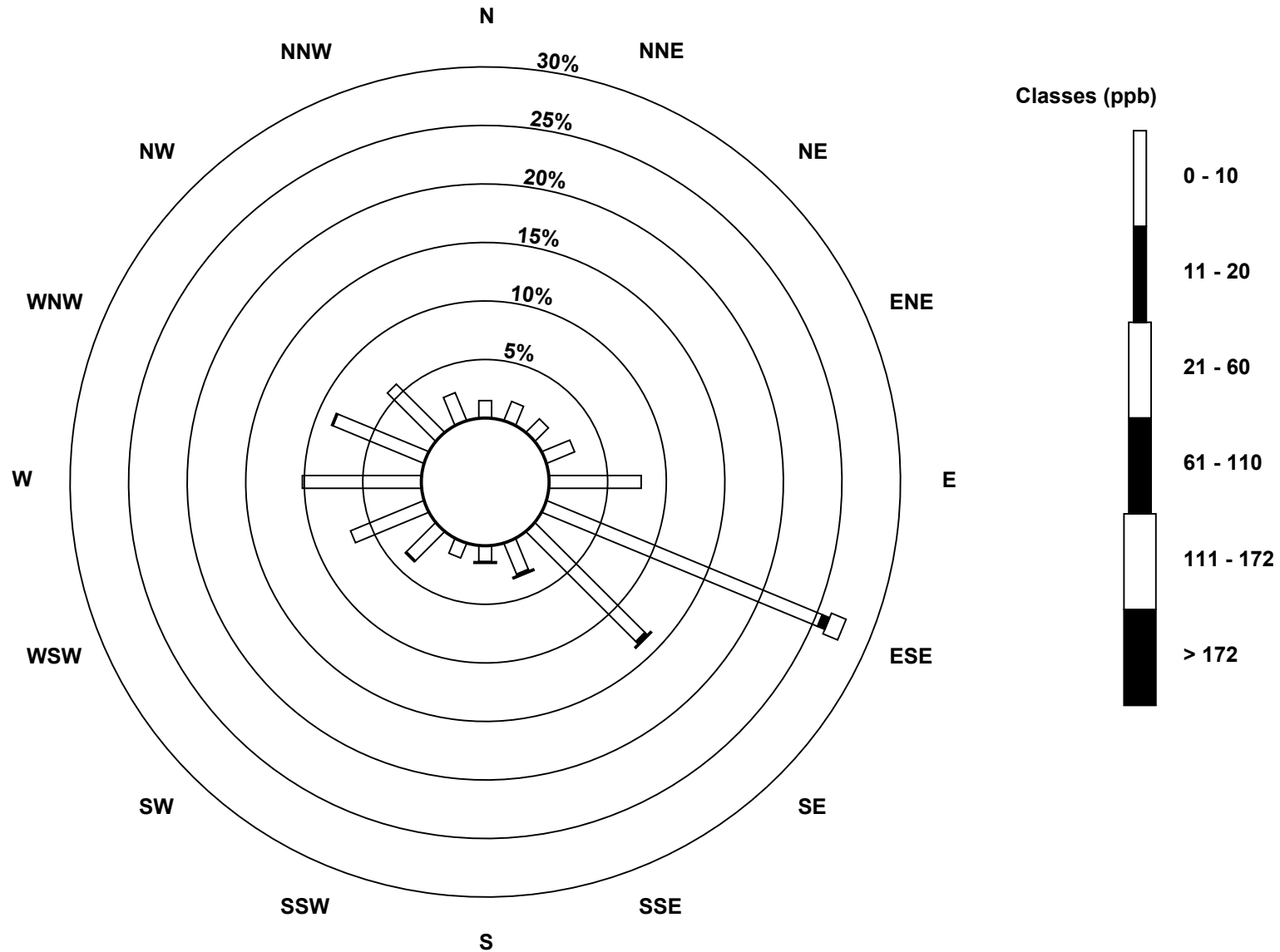


WCAS - Fox Creek
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
March 2016

Maximum Value: 49.33 ppb on Mar 1 05:00 Minimum Value: 0.0 ppb on Mar 1 14:00 Maximum Diurnal Average: 4.80 ppb at hour 9 Monthly Average: 1.504 ppb		Maximum Daily Average: 13.36 ppb on Mar 1 Minimum Daily Average: 0.01 ppb on Mar 30 Minimum Diurnal Average: 0.11 ppb at hour 19 Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.0 Median = 0.2 Q ₃ = 1.0 P ₉₀ = 2.7 P ₉₉ = 32.1		Hours in Service: 744 Hours of Data: 740 Hours of Missing Data: 4 Hours of Calibration: 4 Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								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-Mar	47.8	34.9	31.4	33.5	49.3	11.1	7.7	12.6	36.1	22.5	20.8	8.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.7	0.2	13.36	49.33																								
2-Mar	0.0	0.0	0.0	0.0	1.0	0.6	0.5	0.7	0.7	1.0	2.2	1.8	2.1	2.4	2.3	2.1	1.0	0.9	0.0	0.0	0.0	0.0	0.3	0.2	0.83	2.39																							
3-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.3	0.9	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.20	1.21																							
4-Mar	0.0	0.0	0.0	0.0	0.0	0.3	0.5	1.6	1.8	3.1	2.7	2.6	2.7	4.0	2.4	1.8	1.5	1.0	0.5	0.6	0.7	0.1	0.2	0.0	1.17	4.01																							
5-Mar	0.6	2.4	4.1	3.1	11.5	8.7	29.0	36.0	40.0	28.7	7.8	3.6	2.5	1.0	2.1	1.5	1.4	0.9	0.0	0.0	0.0	0.5	0.0	0.0	7.72	39.98																							
6-Mar	1.6	0.1	3.2	4.7	3.8	7.9	11.6	8.0	0.0	0.4	0.8	0.9	0.3	0.8	0.9	0.9	0.6	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.97	11.58																							
7-Mar	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.3	2.5	2.3	2.1	2.3	2.1	1.6	0.6	0.0	0.0	0.0	0.1	0.8	3.1	5.3	1.04	5.34																							
8-Mar	2.3	0.3	0.4	0.6	1.0	2.7	12.6	25.7	15.6	9.3	5.2	1.5	0.0	0.0	0.0	0.4	0.0	0.2	0.2	2.6	0.3	0.1	5.3	0.4	3.62	25.73																							
9-Mar	0.0	0.2	1.2	0.1	0.5	0.8	4.1	4.5	9.4	6.9	3.8	1.5	0.2	0.0	0.5	0.5	0.3	0.0	0.4	0.1	0.0	0.0	0.1	0.0	1.45	9.38																							
10-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	1.3	2.2	3.1	3.7	3.1	3.2	1.6	0.7	0.6	0.5	0.3	2.5	3.5	0.8	1.2	0.2	1.23	3.73																							
11-Mar	1.0	0.4	0.6	1.1	0.7	1.3	1.1	0.2	1.0	0.2	0.1	0.0	0.0	0.0	0.1	0.6	0.0	0.3	0.0	0.5	2.7	3.0	0.0	0.0	0.62	3.00																							
12-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.9	2.3	2.1	2.2	1.8	1.6	0.9	1.0	0.8	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.74	3.94																							
13-Mar	0.0	0.5	0.5	0.0	0.0	0.0	0.2	0.1	0.9	1.2	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	1.9	0.28	1.86																							
14-Mar	0.0	1.2	0.3	0.1	1.6	1.7	4.2	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	0.6	0.44	4.24																							
15-Mar	0.0	1.1	0.2	0.9	1.5	0.0	0.7	2.2	3.8	3.1	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	11.2	2.7	0.3	1.26	11.15																							
16-Mar	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4	1.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	1.46																							
17-Mar	0.0	0.6	0.1	0.5	5.9	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	1.5	1.0	0.3	0.0	0.5	0.0	1.1	0.0	0.6	0.8	0.56	5.87																							
18-Mar	1.5	1.1	0.7	0.0	1.0	2.5	3.2	5.5	7.3	4.8	3.8	0.6	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.35	7.32																							
19-Mar	0.0	0.0	0.0	0.0	0.0	0.8	0.0	1.6	2.1	2.1	2.2	1.9	1.5	1.0	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.58	2.19																							
20-Mar	0.0	0.0	0.0	0.0	0.0	0.3	0.4	1.7	1.9	2.0	1.6	1.4	1.1	0.9	0.5	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.53	2.01																							
21-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.9	0.9	0.8	0.7	0.7	0.9	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.30	0.93																							
22-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.7	1.1	1.5	1.5	1.1	1.0	0.8	0.1	0.1	0.1	0.4	0.0	0.0	0.3	0.0	0.0	0.39	1.52																							
23-Mar	0.0	0.0	0.0	0.0	0.0	1.3	2.2	10.5	8.7	4.9	1.9	2.7	1.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.42	10.54																							
24-Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.0	1.0	1.0	2.0	2.3	1.2	1.3	1.4	1.2	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.59	2.35																							
25-Mar	0.9	0.4	0.6	0.0	0.0	1.2	11.6	11.9	1.8	2.0	1.7	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.2	1.0	1.46	11.95																							
26-Mar	1.1	1.0	0.9	1.5	3.4	1.7	2.5	1.4	1.8	1.5	0.6	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.75	3.44																							
27-Mar	0.3	0.1	0.3	0.0	0.0	0.0	2.9	9.1	3.5	3.2	1.7	1.0	0.0	0.0	0.2	0.0	0.6	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.96	9.13																							
28-Mar	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.3	0.1	C	C	C	C	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.3	0.0	1.2	0.15	1.24																							
29-Mar	0.2	0.0	0.0	0.3	0.1	0.0	0.3	1.6	1.6	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.7	0.4	0.6	0.5	0.4	0.36	1.70																							
30-Mar	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.28																							
31-Mar	0.1	0.0	0.0	0.2	2.1	5.1	7.2	2.4	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	1.4	1.7	1.2	0.95	7.16																							
																								1.85	1.44	1.44	1.51	2.69	1.56	3.32	4.52	4.80	3.47	2.37	1.44	0.83	0.70	0.61	0.49	0.32	0.23	0.11	0.29	0.34	0.66	0.62	0.48	Diurnal Average	
																								47.78	34.93	31.45	33.46	49.33	11.14	29.02	35.97	39.98	28.73	20.79	8.22	3.08	4.01	2.42	2.11	1.51	1.00	0.52	2.64	3.48	11.15	5.26	5.34	Diurnal Maximum	
C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	



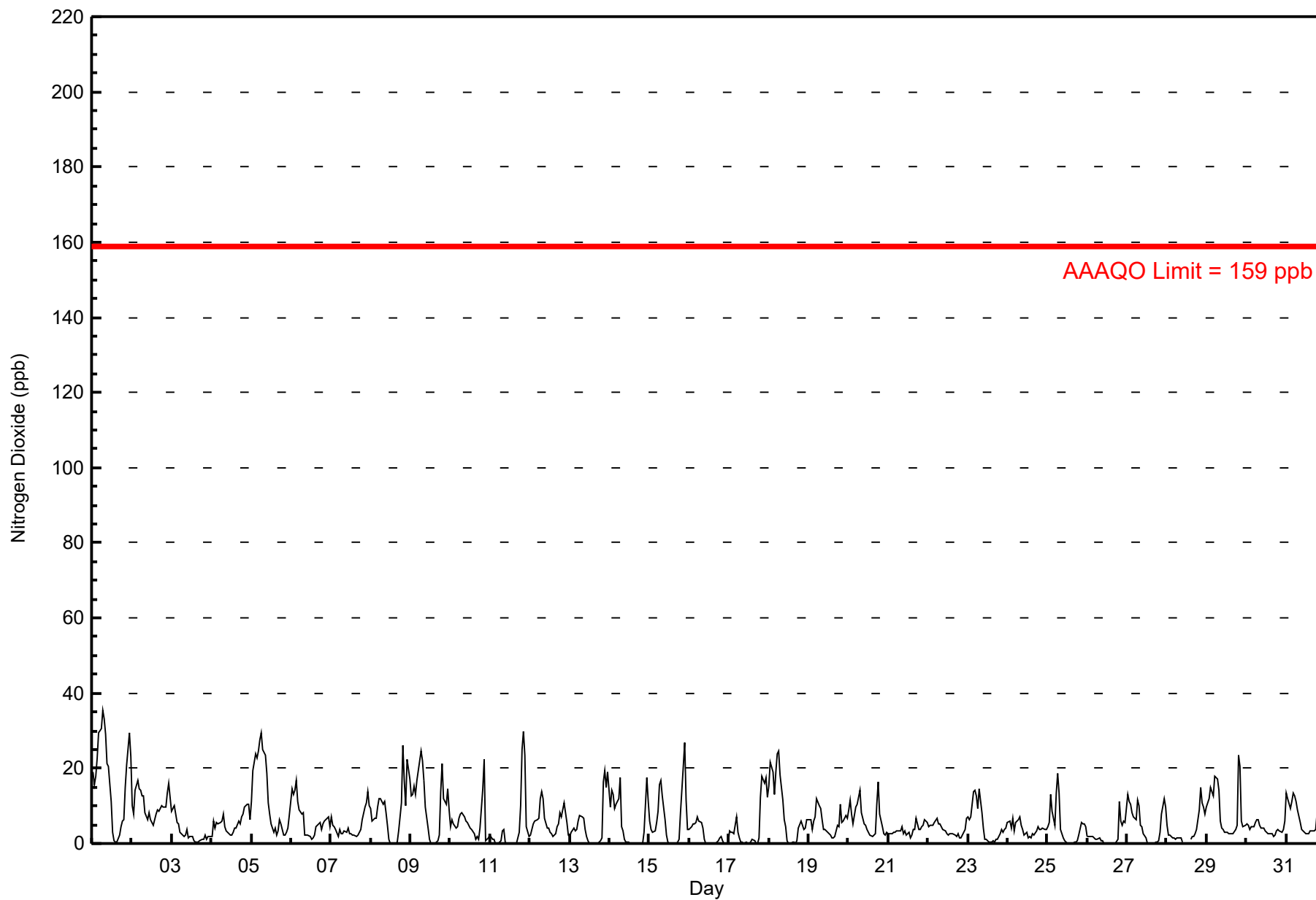


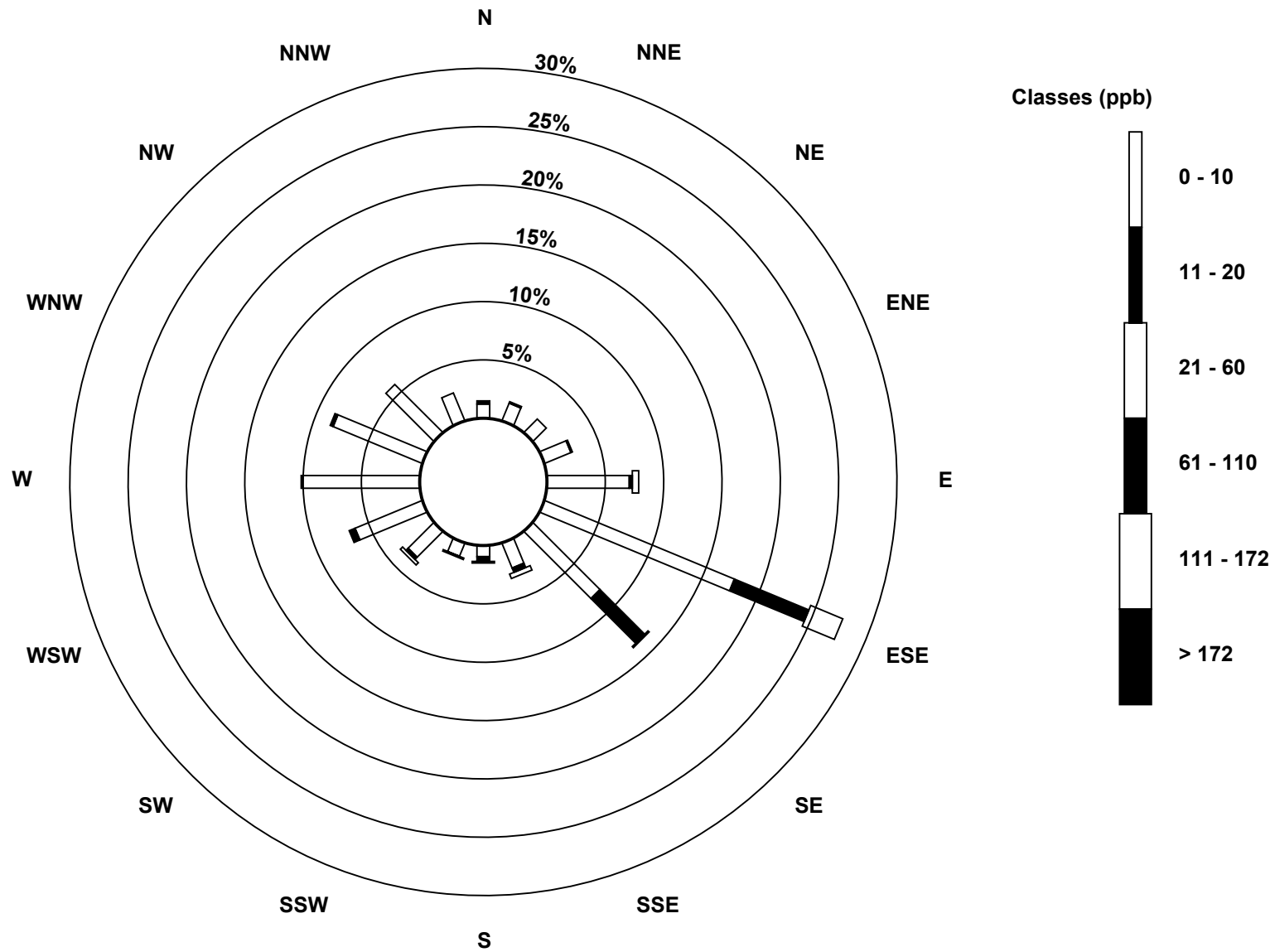


WCAS - Fox Creek
Summary of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
March 2016

Maximum Value: 35.42 ppb on Mar 1 07:00 Maximum Daily Average: 16.61 ppb on Mar 1																				Hours in Service: 744 Hours of Data: 740																													
Minimum Value: 0.0 ppb on Mar 8 13:00 Minimum Daily Average: 2.05 ppb on Mar 26 Maximum Diurnal Average: 10.96 ppb at hour 7 Minimum Diurnal Average: 1.38 ppb at hour 14 Monthly Average: 6.203 ppb Percentiles: P₁ = 0.0 P₁₀ = 0.2 Q₁ = 2.0 Median = 4.1 Q₃ = 8.4 P₉₀ = 14.5 P₉₉ = 29.1																				Hours of Missing Data: 4 Hours of Calibration: 4 Percent Operational Time: 100.0																													
Day	Hourly Period Ending At																								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-Mar	19.1	15.6	18.0	22.6	29.3	30.7	35.4	33.0	29.0	21.4	20.5	11.3	3.1	0.6	0.4	0.4	2.4	4.5	6.2	6.5	15.0	21.0	29.6	23.1	16.61	35.42																							
2-Mar	9.9	7.7	14.1	16.8	14.4	14.1	12.6	12.8	8.2	6.4	8.2	6.4	5.5	4.9	7.7	9.0	8.5	9.2	9.9	9.8	9.7	13.4	16.0	12.4	10.31	16.79																							
3-Mar	8.8	9.9	7.9	5.4	5.1	2.9	2.5	2.0	2.4	3.9	1.6	2.0	2.0	0.6	0.4	0.4	0.6	0.9	1.3	2.1	1.1	1.8	1.7	2.83	9.92																								
4-Mar	2.0	6.1	4.1	5.8	5.1	5.6	6.1	7.9	4.4	3.4	2.5	2.2	2.2	3.0	4.0	4.1	6.1	5.0	7.1	7.8	9.9	10.4	10.3	6.2	5.47	10.44																							
5-Mar	11.1	19.2	23.9	22.7	24.5	27.4	29.6	24.8	23.3	18.5	10.9	7.7	5.1	3.0	4.0	2.4	3.3	6.2	5.2	2.4	2.4	3.1	4.2	7.5	12.18	29.56																							
6-Mar	14.4	13.2	14.1	16.7	11.2	9.0	7.7	8.1	2.1	2.2	2.3	1.9	1.0	1.6	2.2	4.3	4.8	5.6	3.6	5.3	5.9	6.3	7.1	4.4	6.46	16.72																							
7-Mar	6.9	4.7	4.6	3.7	2.0	3.6	2.6	2.5	3.4	3.0	4.1	2.6	2.5	2.4	2.2	1.8	2.2	3.1	3.7	6.3	9.8	11.0	13.7	9.9	4.68	13.71																							
8-Mar	9.2	5.9	6.6	6.8	9.8	11.8	11.8	10.6	11.1	8.1	4.9	1.0	0.0	0.0	0.0	0.0	0.2	3.3	10.8	26.2	16.6	10.2	22.5	17.1	8.52	26.21																							
9-Mar	12.7	13.1	15.4	13.1	16.8	22.0	24.5	21.9	16.8	9.6	4.0	1.1	0.2	0.0	0.0	0.0	0.6	2.2	13.6	21.4	11.8	10.5	14.5	9.0	10.62	24.55																							
10-Mar	4.4	6.3	5.2	4.1	4.5	6.6	7.9	8.1	7.2	6.1	5.7	4.7	4.0	3.8	2.5	1.1	1.8	1.3	4.1	14.4	22.5	0.9	1.2	1.4	5.41	22.54																							
11-Mar	2.1	1.0	1.0	0.1	0.0	0.2	0.9	3.4	3.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	10.1	25.1	29.8	23.7	4.6	1.9	4.62	29.84																							
12-Mar	2.3	3.8	5.4	5.8	6.4	6.5	12.1	13.7	12.1	6.7	4.2	4.1	3.1	2.7	2.0	2.6	4.6	5.2	8.1	7.2	10.9	8.1	5.6	2.1	6.05	13.70																							
13-Mar	1.9	3.0	4.0	3.3	3.9	5.9	7.4	7.0	6.8	3.6	1.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.5	16.4	19.6	14.9	19.2	5.06	19.56																							
14-Mar	9.7	14.0	13.1	9.2	10.5	12.1	17.5	4.7	3.2	1.1	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	3.0	17.4	11.1	5.31	17.47																							
15-Mar	5.9	3.8	3.1	3.5	5.7	8.5	15.5	16.7	12.6	6.3	2.4	0.5	0.0	0.0	0.0	0.0	0.0	0.4	1.0	8.2	20.5	27.0	11.4	3.7	6.53	27.00																							
16-Mar	3.6	4.5	5.3	5.2	5.8	7.0	5.9	5.4	3.9	1.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.5	2.0	0.8	0.0	0.0	0.0	2.20	7.04																							
17-Mar	3.2	3.1	3.0	2.5	7.0	3.1	1.5	0.4	0.3	0.0	0.5	0.1	0.0	0.3	1.0	0.8	0.0	0.0	1.7	12.2	17.9	15.9	17.6	12.4	4.36	17.90																							
18-Mar	15.3	21.8	19.1	12.9	19.1	23.8	24.6	18.3	11.4	6.4	4.6	0.6	0.1	0.0	0.4	0.3	0.0	0.8	4.1	5.9	4.7	3.7	4.1	6.2	8.68	24.59																							
19-Mar	6.2	6.4	3.6	5.8	7.0	12.1	10.0	9.3	6.3	3.7	3.6	3.1	2.4	2.2	1.4	1.4	1.7	4.8	4.3	10.6	5.6	5.8	7.5	6.8	5.49	12.06																							
20-Mar	9.0	11.4	7.7	5.4	9.7	10.3	12.2	14.3	8.2	5.4	4.7	3.8	3.0	2.4	1.7	2.1	2.8	10.4	16.4	8.0	4.4	2.8	2.2	2.9	6.71	16.39																							
21-Mar	2.6	2.6	2.6	3.1	2.9	3.4	3.5	3.4	4.3	2.6	3.3	2.4	2.8	1.6	2.1	3.6	3.9	6.7	3.7	3.6	4.6	4.9	6.2	5.7	3.58	6.70																							
22-Mar	4.4	4.8	4.8	4.8	5.6	6.6	5.2	5.1	4.6	3.9	3.4	2.5	2.2	2.6	2.7	2.8	2.3	1.9	2.5	1.6	1.5	3.1	3.7	6.6	3.72	6.63																							
23-Mar	6.9	6.3	7.0	13.6	14.2	12.8	9.2	14.7	8.2	4.2	1.2	1.1	0.6	0.4	0.5	0.6	0.5	1.2	1.1	2.6	3.6	3.0	3.9	4.1	5.06	14.65																							
24-Mar	5.5	5.8	4.1	6.6	3.5	5.5	6.3	7.0	4.8	3.6	2.4	3.2	1.6	1.7	1.6	2.6	2.3	3.4	4.5	3.6	3.6	4.0	3.6	3.7	3.94	7.00																							
25-Mar	4.4	5.4	12.9	8.5	4.8	13.4	18.6	13.5	3.7	1.4	0.8	0.5	0.0	0.0	0.0	0.0	0.2	0.4	0.6	2.4	5.6	5.2	5.3	4.4	4.67	18.60																							
26-Mar	1.9	2.0	1.7	2.0	1.6	1.0	1.1	1.5	0.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	11.4	6.1	4.8	6.0	5.6	2.05	11.37																							
27-Mar	12.9	11.3	10.3	8.1	6.9	6.3	11.7	9.9	5.0	4.4	2.8	1.6	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.9	3.1	7.9	12.0	9.7	5.23	12.90																							
28-Mar	4.7	2.2	2.1	1.6	1.4	1.3	1.3	1.6	1.4	0.4	C	C	C	C	0.9	1.9	1.8	2.7	3.7	9.1	14.9	10.8	9.5	7.7	4.06	14.94																							
29-Mar	9.7	11.8	14.9	13.8	12.6	17.8	17.0	14.0	6.0	4.1	3.8	2.9	3.0	2.7	2.7	2.7	2.7	3.6	4.9	23.5	20.6	5.9	4.4	4.7	8.73	23.51																							
30-Mar	5.1	4.8	3.8	4.4	4.5	5.7	6.3	6.5	4.7	4.2	4.0	3.3	2.9	2.4	2.5	2.5	2.0	2.2	3.2	3.8	3.3	3.0	3.6	6.0	3.95	6.48																							
31-Mar	13.6	12.1	9.2	11.3	13.4	12.6	11.4	9.1	5.6	3.9	3.5	3.1	2.5	2.5	3.4	3.4	3.4	3.4	3.8	12.8	20.0	17.8	16.6	13.8	8.84	19.98																							
																								7.40	7.86	8.14	8.03	8.68	9.99	10.96	10.04	7.28	4.86	3.73	2.48	1.66	1.38	1.50	1.64	1.89	2.97	4.61	8.29	9.81	8.64	9.07	7.45	Diurnal Average	
																								19.12	21.81	23.86	22.65	29.34	30.70	35.42	33.02	28.98	21.38	20.47	11.31	5.51	4.94	7.67	9.00	8.49	10.37	16.39	26.21	29.84	27.00	29.62	23.06	Diurnal Maximum	
C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb																																																	



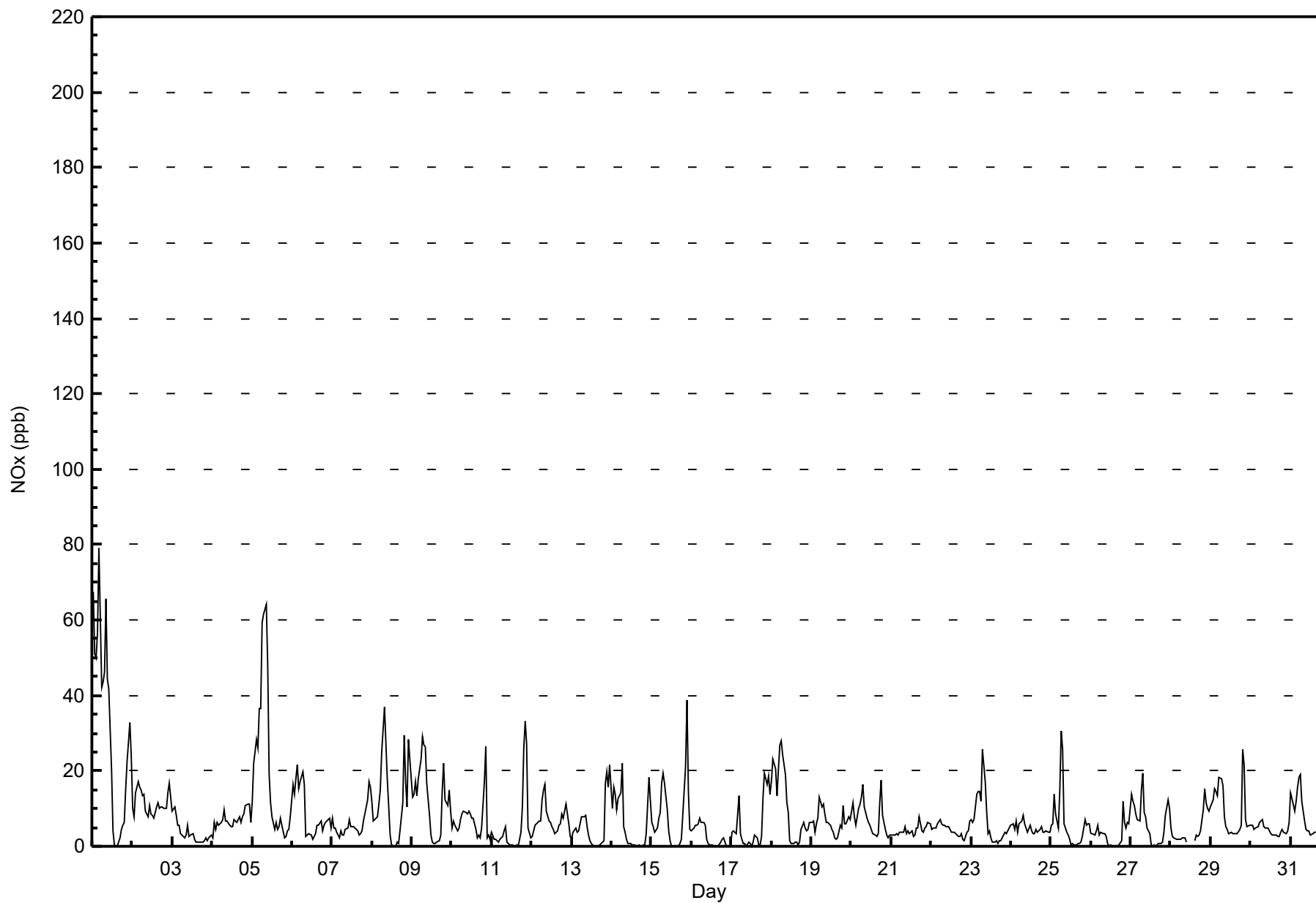


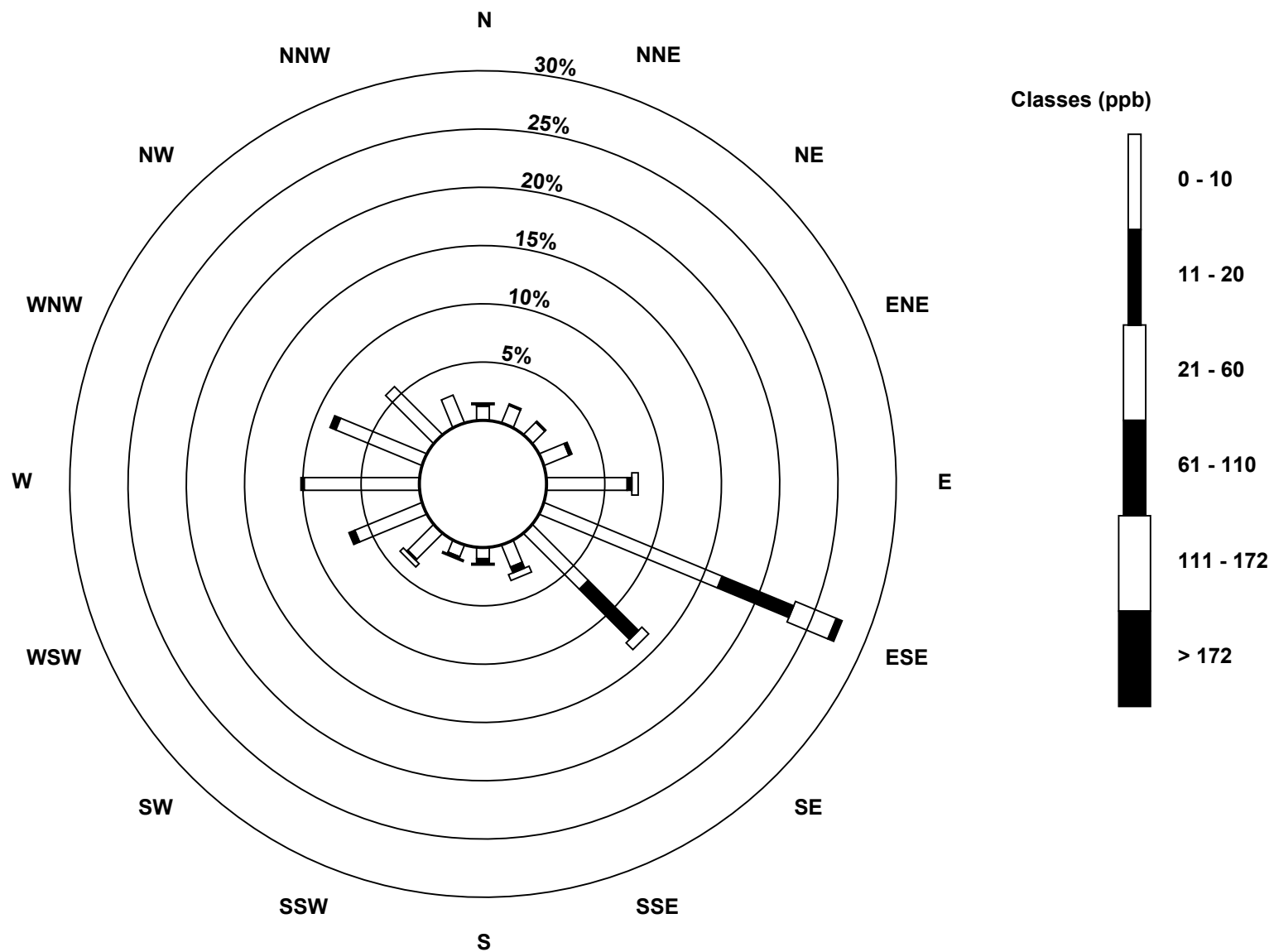


WCAS - Fox Creek
Summary of Hourly Averages

NOx (NO_x) - ppb
March 2016

Maximum Value: 79.19 ppb on Mar 1 05:00		Maximum Daily Average: 30.24 ppb on Mar 1		Hours in Service: 744																																													
Minimum Value: 0.0 ppb on Mar 1 15:00		Minimum Daily Average: 2.59 ppb on Mar 16		Hours of Data: 740																																													
Maximum Diurnal Average: 15.00 ppb at hour 8		Minimum Diurnal Average: 2.42 ppb at hour 15		Hours of Missing Data: 4																																													
Monthly Average: 8.078 ppb		Percentiles: P ₁ = 0.0 P ₁₀ = 0.8 Q ₁ = 2.9 Median = 5.1 Q ₃ = 10.1 P ₉₀ = 17.7 P ₉₉ = 54.4		Hours of Calibration: 4																																													
				Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								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-Mar	67.5	51.2	50.0	56.6	79.2	42.3	43.7	46.2	65.6	44.4	41.8	20.0	4.2	0.4	0.0	0.1	2.3	4.5	5.7	6.2	14.8	22.5	32.9	23.7	30.24	79.19																							
2-Mar	9.9	7.7	14.3	17.0	15.8	15.0	13.5	13.8	9.3	7.8	10.8	8.5	8.0	7.6	10.5	11.6	10.1	10.3	10.4	10.2	10.1	14.0	16.8	13.1	11.50	16.97																							
3-Mar	9.2	10.4	8.3	5.7	5.5	3.3	3.0	2.4	3.0	5.5	2.5	3.1	3.2	1.7	1.1	1.0	0.9	1.0	1.2	1.5	2.4	1.3	2.1	2.9	3.43	10.38																							
4-Mar	2.3	6.3	4.4	6.2	5.6	6.4	7.1	9.8	6.6	6.9	5.6	5.2	5.1	7.3	6.8	6.3	7.9	6.3	7.9	8.7	11.0	11.0	11.0	6.5	7.00	11.04																							
5-Mar	12.1	22.0	28.4	26.1	36.4	36.6	59.1	61.3	64.0	47.8	19.1	11.6	8.0	4.4	6.4	4.4	5.1	7.4	5.6	2.4	2.8	4.0	4.4	7.7	20.30	63.96																							
6-Mar	16.4	13.6	17.7	21.8	15.4	17.3	19.7	16.6	2.6	2.9	3.2	3.1	2.0	2.6	3.5	5.7	5.6	6.6	4.1	5.7	6.3	6.6	7.6	4.7	8.81	21.75																							
7-Mar	7.4	4.9	4.8	3.8	2.3	3.9	2.9	2.8	4.5	4.8	7.0	5.3	5.1	5.3	4.7	4.0	3.0	3.5	4.0	6.6	10.3	12.2	17.2	15.6	6.08	17.18																							
8-Mar	11.9	6.6	7.5	7.8	11.0	14.8	24.9	36.8	27.1	17.7	10.4	2.9	0.5	0.0	0.1	1.0	0.6	4.0	11.6	29.3	17.3	10.6	28.2	18.0	12.52	36.77																							
9-Mar	13.1	13.7	17.0	13.6	17.7	23.2	29.0	26.9	26.7	16.9	8.2	3.0	1.0	0.6	0.6	1.2	1.5	2.8	14.6	22.0	12.2	10.9	15.0	9.3	12.52	29.02																							
10-Mar	4.7	6.6	5.5	4.3	4.7	7.0	8.6	9.2	9.1	8.5	9.2	8.7	7.4	7.4	4.6	2.4	2.9	2.3	4.9	17.3	26.5	2.2	2.8	2.0	7.03	26.47																							
11-Mar	3.6	1.8	2.0	1.6	1.1	1.8	2.5	4.1	5.2	1.1	0.6	0.2	0.2	0.1	0.2	0.5	0.0	3.7	10.6	26.1	33.1	27.1	4.8	2.2	5.59	33.05																							
12-Mar	2.7	4.0	5.6	6.1	6.7	6.9	12.5	15.0	16.4	9.4	6.8	6.5	5.1	4.6	3.4	4.0	5.7	6.0	8.5	7.5	11.3	8.6	5.9	2.5	7.15	16.41																							
13-Mar	2.2	3.8	5.0	3.7	4.2	6.1	8.0	7.7	8.2	5.1	2.9	1.5	0.6	0.0	0.0	0.0	0.1	0.3	1.0	1.7	16.9	19.8	15.6	21.5	5.66	21.46																							
14-Mar	10.0	15.6	13.9	9.6	12.5	14.2	22.2	5.1	3.8	1.8	0.8	0.6	0.4	0.3	0.4	0.2	0.3	0.0	0.0	0.4	0.3	3.4	18.3	12.0	6.08	22.16																							
15-Mar	6.2	5.2	3.7	4.9	7.6	8.8	16.6	19.3	16.7	9.7	4.2	1.3	0.1	0.0	0.0	0.0	0.1	0.8	1.9	8.4	21.4	38.7	14.6	4.4	8.11	38.69																							
16-Mar	3.9	4.9	5.7	5.6	6.2	7.5	6.4	6.3	5.7	2.0	0.7	0.3	0.3	0.0	0.0	0.0	0.0	1.0	1.9	2.4	1.1	0.1	0.0	0.1	2.59	7.52																							
17-Mar	3.6	4.2	3.6	3.5	13.3	3.4	1.8	0.7	0.6	0.0	1.2	0.7	0.0	1.3	2.9	2.4	0.5	0.3	2.5	12.6	19.4	16.4	18.7	13.7	5.29	19.37																							
18-Mar	17.3	23.3	20.4	13.3	20.3	26.7	28.1	24.3	19.2	11.6	8.8	1.6	0.9	0.9	1.3	0.9	0.5	1.3	4.5	6.3	5.0	4.0	4.4	6.5	10.48	28.15																							
19-Mar	6.5	6.7	3.8	6.1	7.3	13.2	10.5	11.3	8.7	6.2	6.4	5.5	4.6	3.7	2.1	1.8	2.4	5.7	4.7	10.8	5.9	6.0	7.7	7.2	6.45	13.17																							
20-Mar	9.3	11.7	8.0	5.7	10.2	11.1	12.9	16.2	10.3	7.6	6.4	5.6	4.5	3.4	2.8	2.7	3.4	11.4	17.3	8.2	4.6	3.0	2.4	3.2	7.58	17.35																							
21-Mar	2.9	2.9	2.9	3.3	3.1	3.6	3.7	3.8	5.2	3.5	4.2	3.5	3.9	2.6	2.9	4.9	4.9	7.7	4.1	3.9	4.8	5.1	6.4	5.9	4.16	7.65																							
22-Mar	4.6	5.0	5.0	4.9	6.0	7.0	6.0	5.7	5.7	5.4	5.2	4.4	3.7	3.7	3.9	3.4	2.8	2.6	3.4	1.8	1.7	3.8	4.1	6.8	4.43	7.00																							
23-Mar	7.1	6.5	7.2	13.9	14.6	14.6	11.8	25.6	17.2	9.5	3.4	4.1	2.2	1.0	1.2	1.5	0.9	1.6	1.4	2.9	3.8	3.2	4.1	4.7	6.83	25.60																							
24-Mar	5.6	6.0	4.3	6.8	3.8	5.9	6.8	8.1	6.0	4.9	3.7	5.5	4.2	3.3	3.2	4.3	3.9	4.6	5.1	3.8	3.9	4.3	3.8	3.9	4.82	8.10																							
25-Mar	5.6	6.1	13.8	8.7	5.0	14.9	30.7	25.9	5.9	3.9	2.8	1.9	0.5	0.9	0.3	0.4	0.6	0.8	0.9	2.6	6.9	5.5	5.8	5.9	6.51	30.68																							
26-Mar	3.4	3.4	3.0	3.9	5.4	3.1	3.9	3.4	3.3	2.7	0.8	0.0	0.3	0.0	0.2	0.0	0.0	0.3	1.5	12.1	6.4	5.0	6.2	5.9	3.09	12.10																							
27-Mar	13.7	11.8	10.9	8.5	7.2	6.7	15.0	19.4	8.9	7.9	4.8	3.4	0.5	0.1	0.5	0.2	0.9	0.6	0.8	1.3	3.6	8.2	12.3	10.0	6.54	19.39																							
28-Mar	5.0	2.6	2.3	2.0	1.8	1.9	1.8	2.1	2.4	1.2	C	C	C	C	1.5	2.9	2.7	3.2	4.2	9.7	15.4	11.6	10.0	9.4	4.68	15.40																							
29-Mar	10.4	12.2	15.4	14.5	13.3	18.3	17.8	16.1	8.0	5.2	4.5	3.4	3.6	3.4	3.2	3.2	3.2	4.5	5.4	25.9	21.8	7.0	5.4	5.7	9.64	25.88																							
30-Mar	5.6	5.6	4.4	4.9	5.0	6.2	6.8	7.1	5.3	5.0	4.9	4.0	3.5	3.0	3.0	3.0	2.4	2.5	3.8	4.3	3.7	3.3	3.9	6.5	4.49	7.14																							
31-Mar	14.2	12.7	9.5	12.0	15.7	18.1	18.9	12.1	6.6	4.4	4.2	4.0	3.1	3.2	3.8	3.8	3.7	3.8	4.2	13.8	20.6	19.7	18.8	15.4	10.26	20.57																							
																								9.60	9.64	9.94	9.88	11.74	11.92	14.70	15.00	12.51	8.75	6.51	4.32	2.90	2.42	2.42	2.50	2.55	3.59	5.09	8.91	10.49	9.66	10.04	8.28	Diurnal Average	
																								67.51	51.15	50.02	56.63	79.19	42.31	59.12	61.35	65.59	47.76	41.81	19.97	8.02	7.59	10.47	11.57	10.06	11.38	17.35	29.28	33.05	38.69	32.85	23.72	Diurnal Maximum	
C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ppb 24-hr --- ppb																																																	



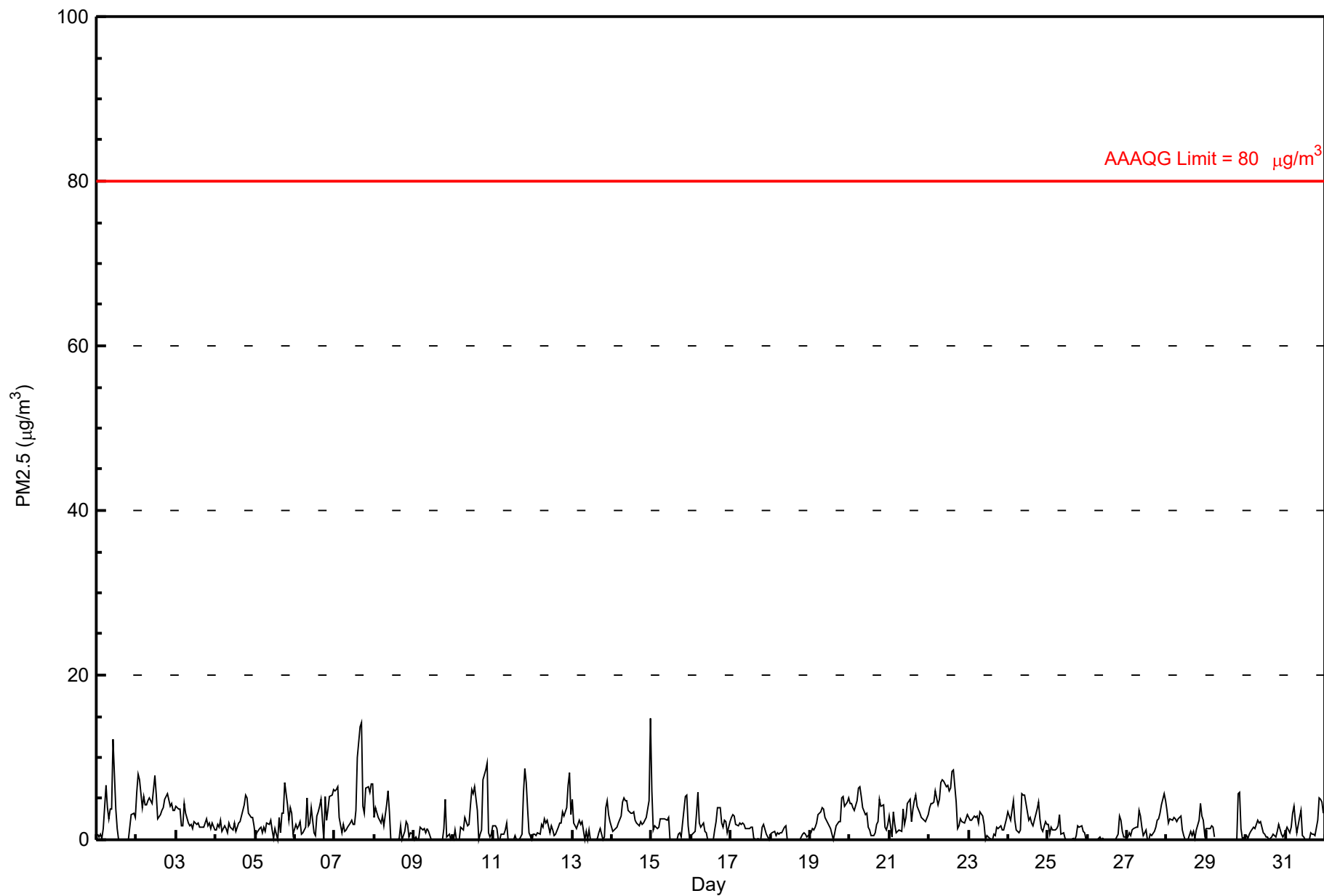


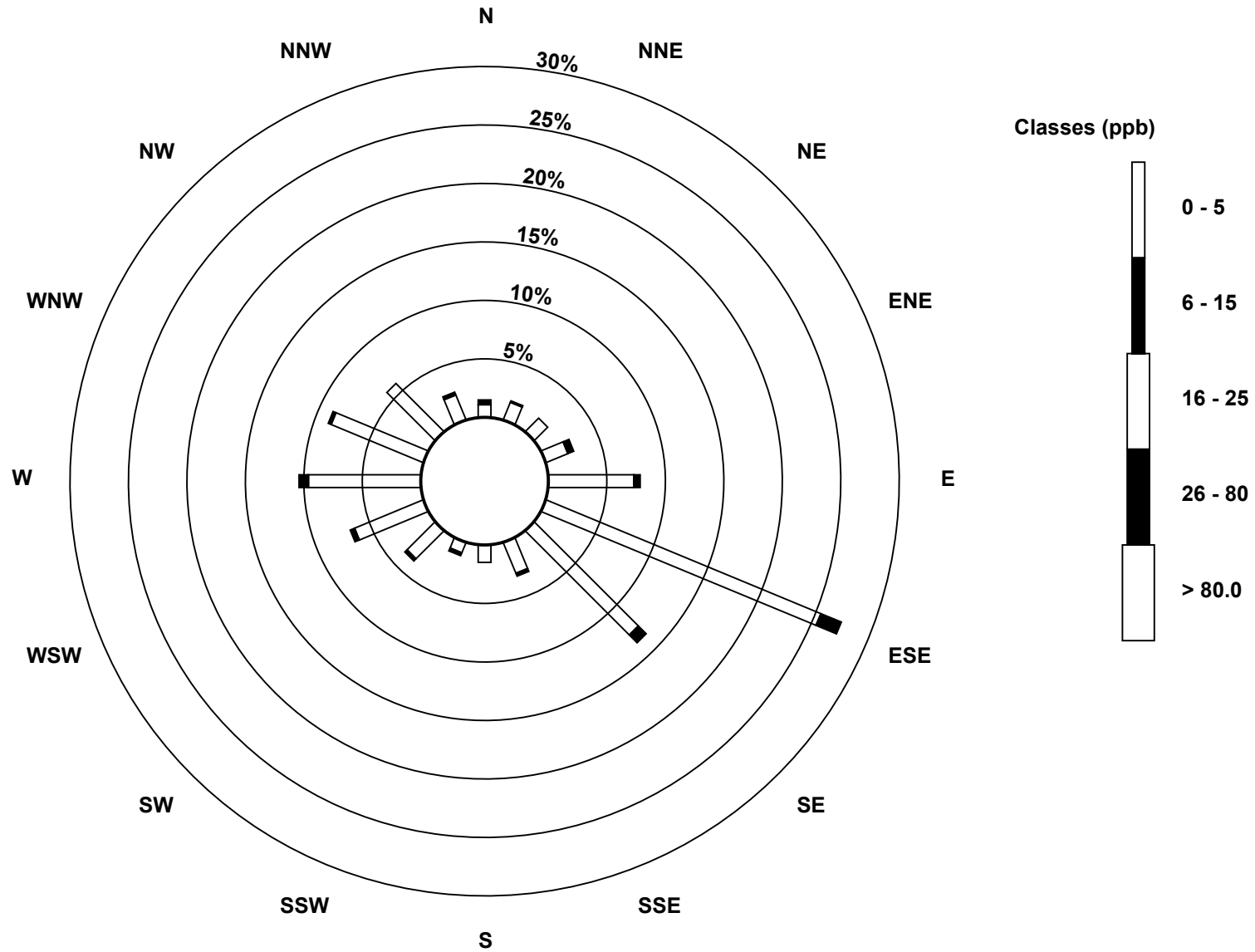


WCAS - Fox Creek
Summary of Hourly Averages

PM2.5 (PM_{2.5}) - µg/m³
March 2016

Maximum Value: 14.77 µg/m ³ on Mar 15 00:00		Maximum Daily Average: 4.86 µg/m ³ on Mar 7		Hours in Service: 744																																													
Minimum Value: 0.0 µg/m ³ on Mar 1 14:00		Minimum Daily Average: 0.34 µg/m ³ on Mar 26		Hours of Data: 741																																													
Maximum Diurnal Average: 3.34 µg/m ³ at hour 21		Minimum Diurnal Average: 1.22 µg/m ³ at hour 14		Hours of Missing Data: 3																																													
Monthly Average: 2.148 µg/m ³		Percentiles: P ₁ = 0.0 P ₁₀ = 0.0 Q ₁ = 0.6 Median = 1.7 Q ₃ = 3.1 P ₉₀ = 5.0 P ₉₉ = 7.9		Hours of Calibration: 3																																													
				Percent Operational Time: 100.0																																													
Day	Hourly Period Ending At																								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-Mar	0.6	0.3	0.7	0.1	1.3	6.6	3.9	2.5	3.7	3.8	12.2	3.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	3.1	3.2	2.8	2.14	12.20																							
2-Mar	5.8	7.9	7.2	3.9	5.3	4.2	4.3	4.8	5.1	4.4	6.1	7.7	5.4	2.5	3.1	3.6	3.8	4.9	5.3	5.5	4.1	4.4	3.6	3.5	4.86	7.91																							
3-Mar	4.0	3.8	3.7	1.7	1.7	4.5	3.3	2.0	1.7	1.8	1.3	2.2	1.9	2.1	1.5	1.5	1.6	1.5	2.5	1.7	2.0	1.3	2.0	1.2	2.18	4.45																							
4-Mar	1.3	1.8	1.6	2.4	1.0	1.7	1.3	0.9	2.1	1.5	1.2	2.0	1.0	1.5	2.1	2.2	3.6	4.2	5.5	5.1	3.2	2.6	2.8	1.6	2.25	5.48																							
5-Mar	0.4	0.9	1.4	1.5	0.9	1.6	1.0	2.0	1.9	2.3	1.1	0.2	1.4	0.0	2.8	0.9	3.2	3.3	6.9	4.3	2.4	3.9	3.2	0.7	2.01	6.94																							
6-Mar	1.8	1.3	1.7	2.2	0.6	0.8	1.6	5.2	1.7	2.1	3.8	0.9	0.5	2.8	3.4	4.0	4.8	0.0	5.2	2.5	3.7	5.3	5.4	6.2	2.81	6.15																							
7-Mar	5.9	6.1	6.4	2.7	0.8	1.9	1.0	1.2	1.6	2.0	2.4	1.9	1.9	3.6	9.9	13.7	14.2	4.0	3.3	6.3	6.5	5.7	6.8	6.8	4.86	14.24																							
8-Mar	2.7	3.9	2.7	2.3	2.0	2.9	1.7	4.2	5.9	3.4	0.0	0.0	0.0	0.0	0.0	0.1	1.7	0.0	1.1	2.3	1.9	0.4	0.8	0.7	1.69	5.87																							
9-Mar	0.0	0.3	0.0	0.1	1.6	1.2	1.4	0.8	1.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	5.0	0.4	0.6	0.1	0.2	0.65	4.96																							
10-Mar	0.0	1.1	0.1	0.0	1.5	1.4	1.2	2.7	1.7	1.9	4.1	6.1	5.6	6.4	3.6	0.0	0.7	1.2	7.3	8.5	9.3	0.9	0.3	0.7	2.76	9.33																							
11-Mar	1.7	1.8	1.3	0.0	0.0	0.7	0.7	1.2	2.1	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.7	5.6	8.6	7.0	3.8	0.9	0.0	1.53	8.60																							
12-Mar	0.7	0.6	0.5	0.8	0.6	1.9	1.5	2.5	2.1	2.4	0.9	1.8	1.2	0.5	0.6	1.6	2.1	2.0	3.4	2.8	4.0	6.5	8.1	3.0	2.17	8.13																							
13-Mar	4.8	2.0	1.4	1.8	2.4	1.9	2.2	0.0	0.9	0.0	1.2	0.0	0.0	0.0	0.0	0.2	0.8	1.3	0.0	0.4	3.8	4.8	3.0	2.3	1.46	4.83																							
14-Mar	1.0	1.2	1.4	1.5	2.1	2.8	4.6	5.2	4.8	4.7	3.5	3.2	3.2	3.3	2.3	2.0	1.6	2.2	1.8	2.0	2.3	2.6	4.7	14.8	3.29	14.77																							
15-Mar	5.9	1.2	1.6	1.4	1.6	2.5	2.6	2.5	2.6	2.4	2.8	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.3	2.1	5.2	5.4	1.7	0.2	1.82	5.89																							
16-Mar	0.5	0.9	1.1	3.2	5.8	2.1	1.6	2.0	1.0	0.9	0.0	0.0	0.0	0.0	1.2	2.3	3.9	4.0	2.1	1.5	2.4	2.2	0.8	2.3	1.74	5.81																							
17-Mar	2.7	3.1	2.9	1.9	1.7	2.0	1.8	2.0	1.8	1.4	1.3	1.4	1.5	1.5	0.2	0.0	0.2	0.0	0.0	1.5	1.9	0.6	0.4	0.0	1.33	3.07																							
18-Mar	0.6	0.8	1.0	0.5	0.9	0.7	0.8	0.9	1.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.7	0.3	0.6	0.52	1.64																							
19-Mar	0.9	1.4	1.1	1.6	2.1	3.1	3.3	3.9	3.8	2.6	2.4	1.8	1.3	0.6	0.0	0.8	1.7	2.3	2.2	5.1	5.2	4.1	4.7	5.1	2.55	5.24																							
20-Mar	4.4	4.4	3.9	3.5	4.8	6.2	6.4	5.2	3.8	3.0	3.3	1.6	1.2	0.4	0.5	0.9	1.8	2.3	4.9	4.1	4.3	1.6	1.2	1.9	3.15	6.42																							
21-Mar	2.8	0.4	3.4	1.9	0.9	1.1	1.3	1.1	3.7	1.8	2.7	4.4	4.9	2.2	3.7	4.7	5.5	4.1	3.3	2.7	2.5	2.4	2.2	3.1	2.79	5.45																							
22-Mar	3.9	4.4	4.4	4.6	6.0	4.2	4.9	6.9	7.3	7.0	6.4	6.7	6.0	6.2	8.3	8.5	4.6	1.4	1.6	2.6	2.2	2.0	2.5	3.0	4.82	8.54																							
23-Mar	2.7	2.5	2.3	2.9	2.7	2.9	2.0	3.4	2.9	1.9	0.0	0.6	0.3	0.2	0.0	0.6	0.5	1.5	1.3	1.7	1.2	1.2	1.9	2.5	1.66	3.44																							
24-Mar	3.3	2.4	3.6	4.7	2.4	1.2	0.8	1.2	5.7	5.4	5.5	3.4	2.3	2.7	2.0	1.7	2.4	3.7	4.5	2.5	1.3	1.0	2.2	1.8	2.83	5.65																							
25-Mar	1.8	0.7	1.6	1.2	1.2	1.3	1.8	3.1	0.7	0.9	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.4	1.7	1.5	1.7	1.0	0.9	0.0	0.90	3.07																							
26-Mar	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.9	2.5	1.0	0.3	0.4	0.34	2.95																							
27-Mar	0.3	0.8	0.5	1.2	1.3	1.5	1.5	3.5	2.8	1.5	0.5	1.2	0.0	0.0	0.8	0.6	1.0	1.5	2.4	2.5	3.3	4.2	5.7	4.7	1.80	5.66																							
28-Mar	3.6	2.1	2.5	2.5	2.8	2.5	2.2	2.6	2.8	1.2	0.5	0.0	0.0	0.0	1.0	0.5	1.0	0.2	1.1	2.5	4.4	2.9	2.4	0.7	1.74	4.36																							
29-Mar	1.3	1.4	1.3	1.7	1.5	0.4	C	C	C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	5.8	1.3	0.2	0.3	0.99	5.76																							
30-Mar	0.5	0.1	0.6	1.1	1.5	1.4	1.9	2.3	2.0	2.1	0.8	0.7	0.3	0.4	0.0	0.3	0.6	0.5	0.3	1.0	1.8	0.7	0.4	0.7	0.93	2.33																							
31-Mar	1.1	1.5	0.9	1.5	3.2	4.1	2.2	0.9	2.7	3.5	0.5	0.3	0.0	0.0	0.0	0.9	0.7	0.7	0.5	2.4	5.0	5.0	4.6	3.2	1.88	5.01																							
																								2.17	1.97	2.03	1.82	2.01	2.30	2.16	2.56	2.73	2.22	2.08	1.66	1.33	1.22	1.52	1.67	2.03	1.57	2.45	3.16	3.34	2.69	2.49	2.42	Diurnal Average	
																								5.89	7.91	7.22	4.73	6.01	6.62	6.42	6.92	7.32	7.04	12.20	7.74	6.00	6.44	9.93	13.67	14.24	4.92	7.31	8.60	9.33	6.55	8.13	14.77	Diurnal Maximum	
C - Calibration																																																	
Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m ³ 24-hr 30 ul/m ³																																																	



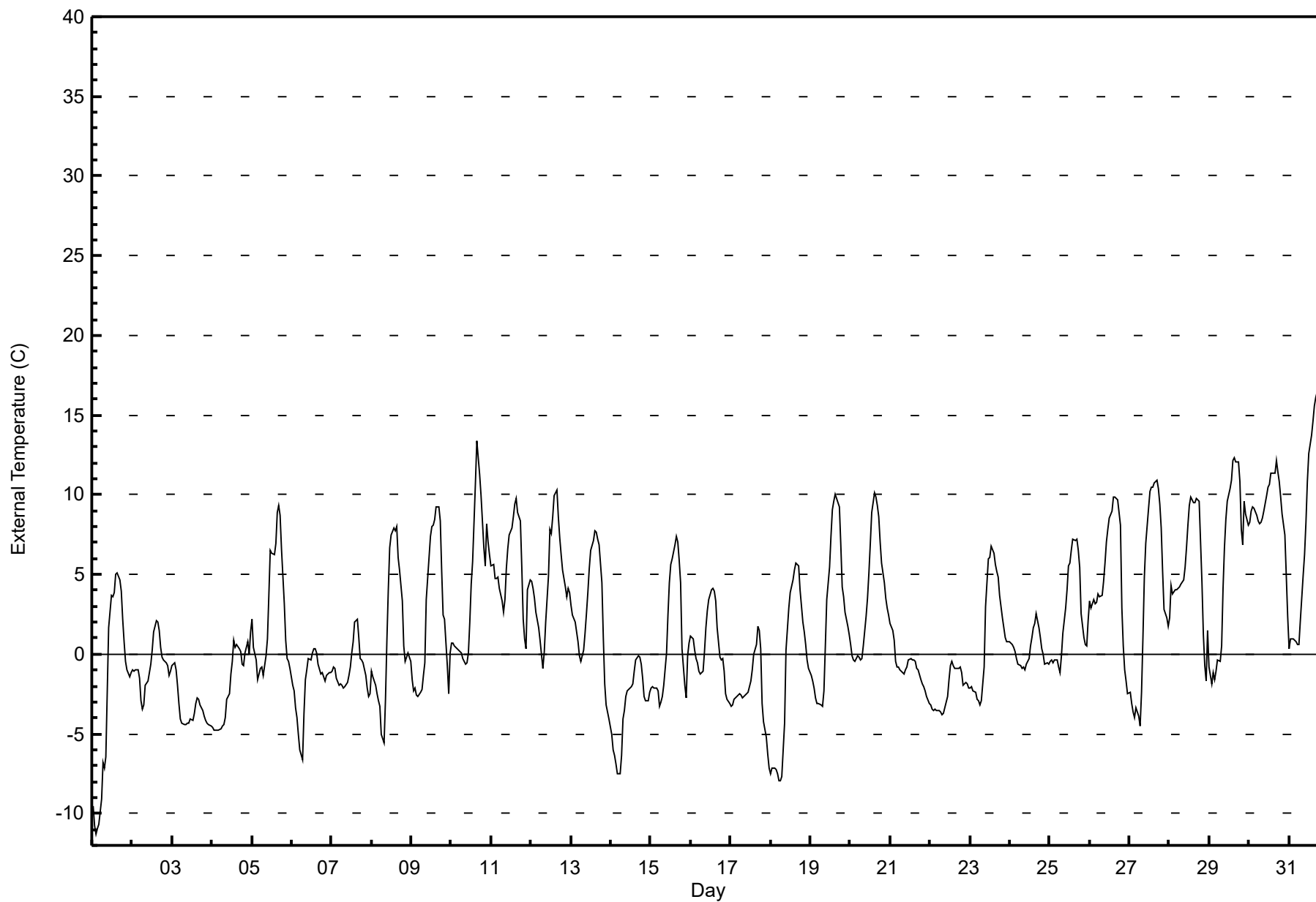




WCAS - Fox Creek
Summary of Hourly Averages

External Temperature (ET) - C
March 2016

Maximum Value: 16.45 C on Mar 31 18:00		Maximum Daily Average: 9.15 C on Mar 30		Hours in Service: 744																							
Minimum Value: -11.3 C on Mar 1 03:00		Minimum Daily Average: -3.42 C on Mar 3		Hours of Data: 744																							
Maximum Diurnal Average: 6.25 C at hour 16		Minimum Diurnal Average: -1.79 C at hour 7		Hours of Missing Data: 0																							
Monthly Average: 1.626 C		Percentiles: P ₁ = -8.0 P ₁₀ = -3.5 Q ₁ = -1.7 Median = 0.4 Q ₃ = 5.0 P ₉₀ = 8.9 P ₉₉ = 13.0		Hours of Calibration: 0																							
				Percent Operational Time: 100.0																							
Day	Hourly Period Ending At																								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-Mar	-9.5	-10.8	-11.3	-11.0	-10.7	-9.1	-6.8	-7.2	-6.4	-2.4	1.7	3.7	3.6	3.9	5.0	5.1	4.7	4.0	2.2	0.8	-0.5	-1.0	-1.4	-1.2	-2.28	5.11	
2-Mar	-1.0	-1.1	-0.9	-1.0	-1.5	-2.9	-3.4	-3.2	-2.0	-1.7	-1.1	-0.6	0.2	1.4	2.1	2.0	1.5	0.4	-0.2	-0.4	-0.5	-0.7	-1.3	-1.1	-0.71	2.14	
3-Mar	-0.7	-0.5	-1.0	-2.0	-3.1	-4.1	-4.3	-4.4	-4.4	-4.4	-4.3	-4.0	-4.2	-3.7	-3.1	-2.7	-2.9	-3.2	-3.6	-3.9	-4.2	-4.4	-4.5	-4.5	-3.42	-0.53	
4-Mar	-4.6	-4.7	-4.8	-4.7	-4.8	-4.7	-4.5	-4.5	-4.0	-2.9	-2.5	-1.2	-0.5	0.8	0.4	0.6	0.4	0.2	-0.6	-0.7	0.0	0.7	0.0	1.4	-1.88	1.40	
5-Mar	2.2	0.4	-0.4	-1.6	-1.3	-0.9	-0.8	-1.3	-0.1	1.0	3.7	6.5	6.3	6.3	7.0	8.9	9.4	8.7	6.6	3.2	0.9	-0.2	-0.5	-0.9	2.63	9.35	
6-Mar	-2.0	-2.3	-3.4	-4.0	-5.1	-6.0	-6.6	-3.7	-1.6	-1.0	-0.3	-0.4	0.1	0.4	0.3	0.1	-0.7	-1.2	-1.1	-1.5	-1.7	-1.4	-1.2	-1.2	-1.89	0.37	
7-Mar	-1.1	-0.8	-0.9	-1.5	-1.9	-1.9	-2.0	-2.1	-2.0	-1.8	-1.3	-0.8	0.1	0.8	2.0	2.1	1.1	-0.2	-0.4	-0.5	-1.3	-2.1	-2.7	-2.5	-0.91	2.15	
8-Mar	-1.1	-1.4	-2.0	-2.5	-2.9	-3.2	-5.0	-5.6	-2.9	0.9	4.1	6.7	7.5	7.9	7.7	8.0	6.0	5.3	3.3	0.5	-0.5	-0.2	0.1	-0.4	1.27	8.04	
9-Mar	-1.6	-2.3	-2.2	-2.6	-2.7	-2.4	-2.2	-1.4	-0.6	3.4	6.0	7.4	8.0	8.1	8.4	9.2	9.2	8.3	5.2	2.5	2.2	-0.8	-2.4	0.0	2.37	9.24	
10-Mar	0.7	0.7	0.5	0.3	0.2	0.2	0.1	-0.3	-0.6	-0.5	0.1	2.0	4.4	5.8	10.8	13.3	12.4	11.3	9.9	6.7	5.5	8.2	7.0	6.2	4.37	13.35	
11-Mar	5.5	5.6	4.7	4.8	4.8	4.1	3.3	2.6	3.4	5.4	6.6	7.4	7.9	8.7	9.4	9.8	8.9	8.3	5.4	2.2	1.0	0.3	4.0	4.6	5.37	9.76	
12-Mar	4.6	4.1	3.5	2.6	1.7	0.9	-0.1	-0.9	0.2	2.0	4.9	7.9	7.6	8.6	9.9	10.3	8.6	7.3	6.2	5.3	4.3	3.6	4.1	3.8	4.62	10.26	
13-Mar	3.0	2.4	2.0	1.4	0.8	-0.1	-0.4	0.3	1.3	2.5	3.9	5.4	6.5	7.1	7.8	7.7	7.2	6.9	4.5	1.1	-1.9	-3.2	-3.6	-4.0	2.44	7.76	
14-Mar	-5.0	-6.0	-6.4	-6.9	-7.5	-7.5	-6.3	-4.1	-3.5	-2.7	-2.3	-2.1	-2.0	-1.8	-1.1	-0.3	-0.1	-0.2	-0.6	-1.5	-2.6	-2.9	-2.9	-2.4	-3.29	-0.06	
15-Mar	-2.2	-2.1	-2.1	-2.2	-2.3	-3.3	-3.0	-2.7	-2.0	0.1	2.4	4.5	5.6	5.9	6.9	7.4	7.0	5.9	4.5	0.3	-1.9	-2.7	-0.1	0.7	1.03	7.37	
16-Mar	1.1	1.0	0.3	-0.3	-0.5	-1.0	-1.3	-1.1	0.2	1.7	2.8	3.4	4.0	4.1	4.0	3.3	1.7	-0.2	-0.4	-0.3	-1.1	-2.5	-2.8	-3.1	0.54	4.11	
17-Mar	-3.3	-3.1	-2.8	-2.7	-2.6	-2.5	-2.6	-2.8	-2.7	-2.6	-2.4	-2.0	-1.7	-1.0	0.0	0.6	1.8	1.5	0.4	-3.1	-4.3	-5.2	-6.3	-7.2	-2.35	1.76	
18-Mar	-7.5	-7.2	-7.1	-7.2	-7.5	-8.0	-8.0	-7.7	-4.4	0.3	1.6	2.9	3.8	4.7	5.3	5.7	5.7	5.6	4.1	2.0	1.4	0.6	-0.4	-0.9	-0.93	5.72	
19-Mar	-1.4	-1.7	-2.1	-2.8	-3.1	-3.1	-3.2	-3.2	-2.3	0.5	3.4	5.4	7.4	9.1	9.6	10.0	9.7	9.3	6.8	4.3	3.6	2.6	1.8	1.2	2.57	10.01	
20-Mar	0.6	-0.1	-0.3	-0.5	-0.1	-0.2	-0.4	-0.3	0.5	2.3	3.5	5.1	6.9	8.9	10.1	9.9	9.3	8.6	7.1	5.7	4.5	3.5	2.9	2.5	3.75	10.11	
21-Mar	1.9	1.5	0.9	-0.5	-0.8	-0.8	-0.9	-1.1	-1.2	-1.0	-0.8	-0.3	-0.2	-0.3	-0.3	-0.5	-0.9	-1.0	-1.6	-1.9	-2.1	-2.3	-2.6	-3.1	-0.83	1.94	
22-Mar	-3.2	-3.4	-3.5	-3.5	-3.5	-3.5	-3.7	-3.8	-3.7	-3.3	-2.6	-1.6	-0.7	-0.5	-0.7	-0.9	-0.9	-0.9	-0.8	-1.2	-2.0	-1.8	-1.9	-2.1	-2.23	-0.49	
23-Mar	-2.1	-2.0	-2.3	-2.4	-2.8	-2.9	-3.2	-2.9	-0.8	3.0	4.5	6.0	6.1	6.8	6.3	5.7	5.2	4.8	3.7	2.3	1.7	1.1	0.7	0.8	1.54	6.77	
24-Mar	0.8	0.6	0.5	0.2	-0.2	-0.6	-0.7	-0.9	-0.8	-1.0	-0.7	-0.3	0.5	1.0	1.6	1.9	2.5	1.7	1.0	0.4	0.0	-0.6	-0.6	-0.6	0.24	2.51	
25-Mar	-0.4	-0.4	-0.6	-0.3	-0.3	-0.8	-1.1	-0.1	1.3	2.9	4.0	5.5	5.7	6.5	7.2	7.1	7.2	6.5	5.5	2.5	1.0	0.6	0.5	2.1	2.59	7.20	
26-Mar	3.4	2.9	3.4	3.2	3.3	3.8	3.6	3.7	4.5	5.7	7.0	7.8	8.6	9.0	9.9	9.8	9.8	9.7	8.1	2.9	0.5	-0.9	-1.7	-2.5	4.81	9.86	
27-Mar	-2.4	-3.1	-3.7	-4.0	-3.4	-3.9	-4.5	-2.4	1.0	4.8	7.0	9.1	10.2	10.4	10.4	10.7	10.9	10.4	9.4	8.0	5.2	2.8	2.2	1.7	3.63	10.91	
28-Mar	2.3	4.3	3.8	4.0	4.1	4.1	4.2	4.4	4.6	5.5	6.7	8.1	9.3	9.8	9.5	9.5	9.8	9.7	9.6	4.4	1.3	-0.8	-1.7	1.5	5.33	9.85	
29-Mar	-0.8	-1.9	-1.2	-1.6	-1.1	-0.4	-0.5	0.5	4.1	6.7	8.4	9.6	10.4	11.0	12.1	12.3	12.0	12.0	10.8	7.8	6.8	9.6	8.8	8.1	5.99	12.30	
30-Mar	8.3	8.9	9.3	9.2	8.8	8.3	8.1	8.2	8.5	9.0	9.9	10.5	10.6	11.4	11.3	11.4	12.1	11.5	10.8	9.9	8.8	7.5	4.9	2.4	9.15	12.14	
31-Mar	0.3	0.9	1.0	0.8	0.8	0.6	0.6	2.1	5.0	6.2	8.2	10.8	12.5	13.7	14.7	15.5	16.1	16.4	15.7	10.4	5.7	3.6	2.0	1.0	6.87	16.45	
		-0.49	-0.69	-0.94	-1.26	-1.46	-1.67	-1.79	-1.47	-0.36	1.25	2.65	3.94	4.67	5.32	5.95	6.25	5.97	5.40	4.24	2.19	0.96	0.35	0.01	0.01	Diurnal Average	
		8.25	8.93	9.25	9.18	8.75	8.33	8.14	8.23	8.55	9.01	9.91	10.85	12.55	13.74	14.66	15.55	16.14	16.45	15.70	10.36	8.79	9.56	8.81	8.06	Diurnal Maximum	





WCAS - Fox Creek
Summary of Hourly Averages

Wind Speed (WS) - kph
March 2016

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 Spd	5.0	4.2	4.5	7.0	5.9	6.6	6.8	6.9	6.0	6.2	2.3	3.0	6.4	6.7	5.7	7.5	10.8	10.1	6.6	5.4	5.6	2.5	4.4	4.5	5.04	10.78
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	NNE	NNE	N	ENE	NE	E	ESE	E	E	ESE	E	E	E	E	E
2 Spd	6.2	5.7	5.1	2.9	1.6	0.6	1.6	0.6	6.1	5.2	6.6	9.2	10.3	10.0	8.5	10.6	12.1	12.1	10.1	9.3	7.9	7.7	5.5	6.8	6.46	12.11
Dir	E	E	ESE	ESE	ESE	SW	WNW	N	ENE	E	ESE	ESE	ESE	E	E	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE
3 Spd	7.1	4.5	3.7	5.9	6.6	6.8	5.2	4.7	6.2	6.7	6.6	8.5	8.5	9.6	9.1	7.3	8.4	7.5	5.7	5.6	4.3	4.5	2.6	1.7	4.98	9.62
Dir	ESE	ESE	NW	WNW	W	WNW	WNW	WNW	NW	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	W	WNW	WNW
4 Spd	2.2	5.6	7.5	9.9	10.5	10.1	11.4	11.6	13.8	14.3	19.4	17.9	19.8	17.8	16.3	17.5	15.9	14.7	13.9	14.4	12.5	11.0	8.5	7.5	12.49	19.76
Dir	ESE	ESE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE	SE	SE	SE	SSE	ESE	ESE
5 Spd	6.6	7.5	5.3	5.2	5.8	5.8	4.8	3.0	0.7	1.3	2.0	4.6	8.3	10.5	6.6	8.9	10.5	10.0	5.0	12.7	2.8	3.8	4.6	2.8	3.73	12.66
Dir	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	S	ESE	ESE	NE	ESE	ESE	ESE	E	E	ESE	W	NW	NW	SW	SE	SE	ESE	NW
6 Spd	4.5	2.7	2.9	0.6	0.2	0.8	1.0	9.3	16.1	16.0	16.5	17.5	19.2	19.2	16.5	12.8	10.9	12.9	11.0	8.7	5.6	4.6	5.8	4.7	8.81	19.24
Dir	ESE	SE	SE	N	S	W	WNW	ESE	E	E	ESE	ESE	E	ESE	ESE	ESE	ESE	ESE	SE	ESE	SE	ESE	ESE	SE	ESE	ESE
7 Spd	5.0	2.2	3.9	6.2	3.3	3.5	3.2	2.5	2.2	1.8	3.3	3.4	3.2	2.9	2.8	7.0	6.2	5.0	2.7	2.4	0.9	0.7	0.1	0.8	1.72	7.02
Dir	SE	WNW	WNW	NNW	NW	W	NW	NNE	SE	E	E	NNE	NE	NNW	N	N	N	NW	NNW	ENE	W	SE	ENE	SSW	N	N
8 Spd	9.0	6.1	8.2	7.9	6.7	5.3	4.0	3.5	5.0	6.5	1.0	3.5	11.4	9.2	7.3	2.3	7.5	2.8	0.8	1.2	3.0	0.8	2.9	2.0	1.23	11.36
Dir	ESE	SE	SE	SE	SE	SE	SE	SSE	SE	SE	E	WNW	WNW	NW	N	W	NW	N	ESE	SE	SE	SE	ESE	WNW	ESE	WNW
9 Spd	2.7	3.9	7.7	4.7	7.1	5.7	5.4	4.9	5.1	4.5	7.6	6.8	6.9	6.6	3.9	4.1	5.0	7.0	5.3	4.7	7.6	3.5	4.7	7.1	4.10	7.72
Dir	SE	SE	SE	ESE	ESE	ESE	ESE	ESE	ESE	SSE	SSW	WSW	SSW	SW	WSW	S	SE	ESE	ESE	ESE	SE	SE	E	ESE	SE	SE
10 Spd	12.3	11.5	12.6	12.9	17.4	17.0	16.9	15.5	17.2	19.8	18.5	19.0	17.2	17.3	14.7	20.3	13.3	13.2	6.9	0.9	3.8	13.5	8.5	7.7	9.15	20.30
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SE	SSW	SW	SW	W	WSW	SSW	SW	SW	SW	SE	SSW
11 Spd	9.1	16.6	10.5	15.9	15.9	11.6	8.6	6.4	7.3	14.3	16.5	17.7	16.7	12.3	8.4	4.1	7.3	4.1	1.5	1.1	1.5	3.0	11.4	18.0	6.47	18.05
Dir	WSW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	W	W	W	WSW	WSW	NNW	N	ENE	SW	SSE	E	ESE	E	WSW	E
12 Spd	17.8	14.4	10.4	10.4	8.0	7.8	6.0	5.0	7.7	10.8	7.1	4.3	11.6	10.7	10.7	11.0	11.7	9.5	4.5	6.0	5.7	5.5	8.1	11.0	6.58	17.76
Dir	ESE	ESE	ESE	SE	ESE	SE	SE	SE	SE	ESE	ESE	E	E	E	E	E	ENE	E	ESE	ENE	SE	W	W	W	ESE	ESE
13 Spd	10.7	7.1	4.6	4.9	1.0	1.8	1.6	4.7	6.6	7.9	11.4	12.8	13.3	15.9	12.2	10.7	9.7	7.9	5.2	1.6	0.4	0.9	1.6	2.2	5.34	15.95
Dir	W	W	W	W	NW	SSW	WSW	W	WSW	WSW	W	W	W	W	WNW	NW	NNW	NNW	NNW	N	S	SE	ESE	ESE	WNW	W
14 Spd	1.0	1.3	0.9	1.6	2.3	1.4	0.1	4.0	3.3	4.3	6.2	6.9	7.3	7.1	7.1	7.1	7.9	7.2	6.1	3.4	1.0	0.5	1.8	2.5	2.92	7.88
Dir	SE	SE	ESE	ESE	ESE	SE	ESE	NW	NW	W	WNW	NW	WNW	NW	NNW	NNW	NW	NW	WNW	WNW	WSW	WSW	WSW	WSW	NW	NW
15 Spd	2.3	4.3	6.0	5.2	2.5	2.1	3.7	2.9	2.9	4.0	10.4	12.2	15.1	15.6	13.9	13.7	11.6	8.9	4.1	1.0	2.0	1.5	5.8	7.4	4.65	15.58
Dir	WSW	WSW	WSW	SW	SSW	SE	ESE	SE	SE	SW	W	WNW	NW	WNW	WNW	NW	NW	NW	WNW	SSE	ESE	SSE	WSW	WSW	WNW	WNW
16 Spd	10.1	10.5	10.9	10.2	10.6	7.9	7.8	7.4	10.7	15.8	20.1	18.6	18.2	17.2	17.9	18.1	17.4	11.9	9.8	7.0	10.2	11.0	8.1	5.8	11.63	20.05
Dir	WSW	W	W	W	W	W	W	W	W	W	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	W	W
17 Spd	5.6	4.5	5.0	6.5	5.2	4.0	4.7	6.1	7.2	9.4	7.6	8.2	9.6	8.4	9.9	8.8	8.8	9.3	3.1	1.6	3.8	3.5	5.3	7.2	4.30	9.93
Dir	W	WSW	W	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	NW	WNW	WNW	WNW	NNW	NNW	SE	ESE	ESE	ESE	ESE	WNW	WNW
18 Spd	6.9	7.0	7.8	7.2	6.8	7.7	7.4	8.5	5.4	3.0	8.8	11.3	10.2	9.2	9.4	8.8	11.3	10.5	9.5	7.6	10.9	10.7	8.9	7.2	8.01	11.33
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	SSE	S	SSE	SSE	SSE	SSE	SE	SE	SE	ESE	SE	ESE	ESE	SE	SE	SE	SE
19 Spd	8.8	7.3	5.8	5.4	6.4	7.0	8.0	8.0	9.0	6.4	5.2	4.1	3.4	2.8	3.5	4.1	4.2	6.8	8.7	6.1	11.0	12.1	8.6	12.3	6.10	12.28
Dir	ESE	ESE	SE	ESE	ESE	SE	SE	SE	SE	SSE	ESE	NE	NNE	NE	NE	NE	NE	NNE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE
20 Spd	6.4	3.6	7.9	7.9	7.9	4.8	4.4	5.3	8.1	9.2	8.9	6.9	7.5	8.5	9.4	9.6	10.8	10.8	11.6	11.6	13.6	13.7	10.9	10.1	7.88	13.73
Dir	ESE	SE	SE	SE	SE	SE	SE	ESE	ESE	ESE	E	ENE	NE	NE	NE	ENE	E	E	ESE	ESE	E	E	E	E	E	E
21 Spd	11.6	11.5	9.4	6.9	5.6	4.4	4.9	4.6	7.4	9.2	9.0	10.5	9.8	19.2	3.4	8.6	24.4	25.3	17.9	10.5	10.4	5.6	6.0	6.0	1.33	25.25
Dir	ESE	ESE	ESE	E	E	ENE	ENE	E	E	E	E	E	E	W	E	WSW	W	WSW	W	W	WSW	E	SE	E	SSE	WSW
22 Spd	9.2	8.7	8.2	6.1	5.7	7.0	8.8	8.5	8.0	9.2	8.6	7.5	5.3	3.4	5.5	3.8	6.4	5.5	4.8	4.9	1.7	2.2	1.4	1.4	2.92	9.25
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	ENE	NNE	N	NNW	WNW	W	WSW	WNW	W	W	WSW	SSW	ESE	ESE



WCAS - Fox Creek
Summary of Hourly Averages

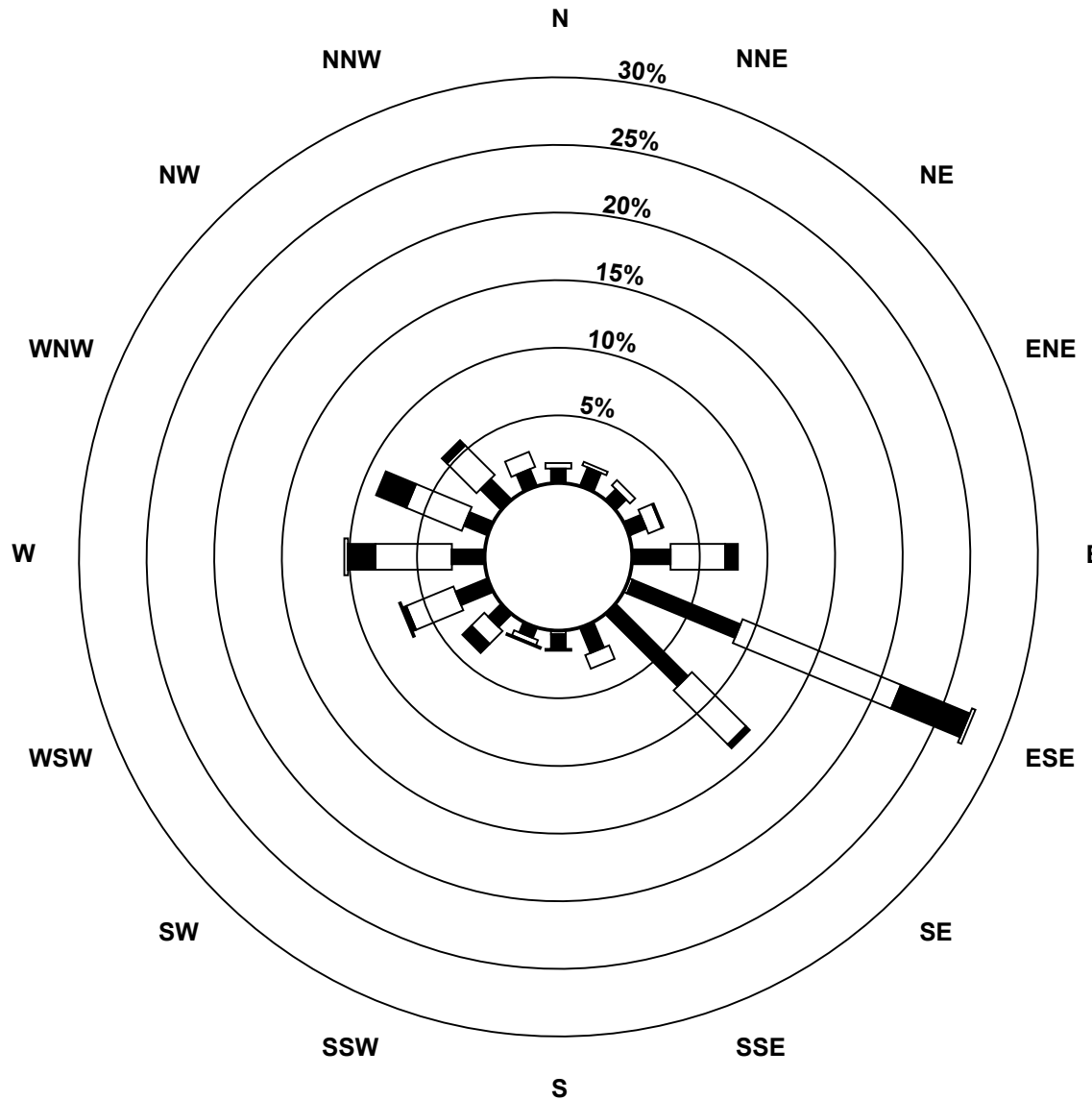
Wind Speed (WS) - kph
March 2016

Day	Hourly Period Ending At (MST)																								Daily Average	Daily Maximum
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
23 Spd	0.7	1.5	2.2	1.4	2.3	3.6	4.7	3.5	4.8	3.9	4.5	3.7	2.3	2.2	1.2	5.3	3.7	2.1	3.2	5.5	4.5	5.7	3.2	3.5	1.50	5.70
Dir	SSE	ESE	SE	E	ESE	SE	SE	ESE	ESE	S	WSW	WSW	ENE	E	WSW	SW	N	NNE	ENE	ENE	E	E	NNE	ENE	ESE	E
24 Spd	6.2	6.0	7.1	6.6	11.0	10.2	8.2	8.0	7.6	12.0	7.2	4.7	2.5	1.8	1.8	3.0	5.0	4.9	5.4	5.3	6.0	5.5	4.2	4.9	5.30	12.00
Dir	ESE	ESE	ESE	ESE	ESE	ESE	ESE	ESE	E	E	W	ESE	E	NE	E	ESE	SE	ESE	ESE	SE	SE	SE	SE	SE	ESE	E
25 Spd	4.2	5.0	3.8	2.8	2.5	2.8	3.3	2.2	5.9	6.6	6.2	10.0	11.5	11.5	10.2	5.4	4.9	6.6	2.2	1.2	1.6	2.4	1.9	5.0	2.31	11.52
Dir	SE	SE	ESE	S	S	ESE	ESE	SW	WSW	WSW	WSW	W	W	WSW	W	NW	NNW	NNW	NW	SSE	SE	ESE	SE	SW	WSW	W
26 Spd	5.9	4.7	6.6	6.3	6.3	7.8	5.7	5.7	7.1	7.1	7.3	7.8	8.8	10.5	10.7	8.8	5.9	2.0	0.5	1.0	3.9	4.4	3.6	3.0	4.17	10.68
Dir	WSW	SSW	SW	SW	SW	SW	SW	SW	SW	WSW	W	NW	WNW	W	WSW	WNW	NW	WNW	ESE	SSE	ESE	ESE	ESE	ESE	WSW	WSW
27 Spd	3.4	3.6	2.6	5.1	6.2	5.6	2.9	2.6	4.2	5.2	5.8	3.8	6.1	5.8	5.4	6.0	1.2	4.4	4.1	4.3	0.7	1.0	2.1	1.2	2.69	6.21
Dir	SE	SE	ESE	SE	SE	SE	SE	SE	SE	E	ENE	ENE	ESE	ESE	E	SSE	SSE	N	NNW	NNW	W	SSE	ESE	SE	ESE	SE
28 Spd	2.1	5.3	3.9	6.6	7.3	6.3	7.3	7.7	9.6	11.6	12.2	10.5	9.4	12.0	7.0	5.6	4.9	3.5	2.5	0.9	2.0	2.9	2.9	4.7	4.61	12.24
Dir	WSW	W	W	WSW	W	WSW	W	W	W	W	W	WNW	WNW	W	NW	WNW	NNE	NNE	ESE	S	SE	ESE	SE	WSW	W	W
29 Spd	2.1	5.6	3.6	5.6	5.8	6.1	6.2	6.0	6.6	7.9	9.0	12.3	11.5	10.2	7.9	8.9	8.2	5.1	1.4	1.2	2.0	6.9	6.6	5.0	3.24	12.28
Dir	S	SE	SE	ESE	SE	ESE	ESE	SE	SSW	WSW	W	W	WNW	W	W	W	WNW	WNW	SW	SSE	SW	WSW	WSW	WSW	WSW	W
30 Spd	10.0	AF	AF	9.4	10.6	8.4	7.0	7.7	8.8	8.9	11.3	14.4	14.2	15.3	15.6	16.8	16.3	13.7	9.1	7.2	9.2	7.1	2.8	1.2	10.07	16.81
Dir	W	AF	AF	W	W	W	W	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	W	WNW	WNW	W	NNW	WNW	WNW
31 Spd	1.6	2.5	1.1	0.6	0.6	1.1	1.7	4.1	4.2	5.1	8.3	6.3	5.6	7.9	7.3	4.4	4.8	5.7	5.1	2.0	2.0	2.6	2.8	4.0	2.22	8.30
Dir	SE	ESE	E	S	SSE	SE	ESE	SE	SSE	SSE	SE	SE	ESE	E	ENE	NE	NNE	NNW	NW	W	SE	ESE	ESE	ESE	ESE	SE
Spd	3.19	3.39	3.05	2.51	2.78	2.78	2.56	2.58	2.74	2.50	1.48	0.98	0.83	1.94	1.12	0.98	1.70	0.74	0.33	1.01	2.29	2.07	2.35	2.37	Diurnal Average	
Dir	SE	SE	SE	SSE	SE	SE	SE	SE	SE	SSE	SSW	W	NW	WNW	NW	WNW	NNW	N	ESE	ESE	SE	SE	SE	SE	Diurnal Maximum	
Spd	17.76	16.56	12.64	15.94	17.39	17.04	16.91	15.48	17.15	19.77	20.05	19.04	19.76	19.24	17.91	20.30	24.44	25.25	17.88	14.44	13.56	13.73	11.42	18.05	Diurnal Maximum	
Dir	103.64	230.99	103.25	223.12	111.93	113.33	117.72	118.84	106.01	107.91	275.38	116.73	104.78	274.37	290.42	197.98	260.47	255.59	265.57	130.56	97.01	97.67	102.91	100.15	Diurnal Maximum	
Maximum Speed Value: 25.3 kph on Mar 21 18:00		Minimum Speed Value: 0.1 kph on Mar 7 23:00																Hours in Service: 744								
Maximum Daily Speed Average: 12.49 kph on Mar 10		Minimum Daily Speed Average: 1.23 kph on Mar 7																Hours of Data: 742								
Maximum Diurnal Speed Average: 3.39 kph at hour 2		Minimum Diurnal Speed Average: 0.33 kph at hour 19																Hours of Missing Data: 2								
Monthly Average Velocity: 1.299 kph 143.72 deg		Speed Percentiles: P ₁ = 0.6 P ₁₀ = 2.0 Q ₁ = 3.9 Median = 6.3 Q ₃ = 9.3 P ₉₀ = 12.8 P ₉₉ = 19.0																Percent Operational Time: 99.7								
All monthly, daily, and diurnal averages have been calculated using vector methods																										
AF - Analyzer Failure																										
Frequency Distribution																										
		Speed Range (kph)																								
Direction	0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total																			
North	16	12	0	0	0	0	28																			
NorthEast	19	8	0	0	0	0	27																			
East	35	78	32	5	0	0	150																			
SouthEast	101	114	24	1	0	0	240																			
South	14	4	0	1	0	0	19																			
SouthWest	21	30	7	0	0	0	58																			
West	29	72	31	4	0	0	136																			
NorthWest	25	47	12	0	0	0	84																			
Total	260	365	106	11	0	0	742																			

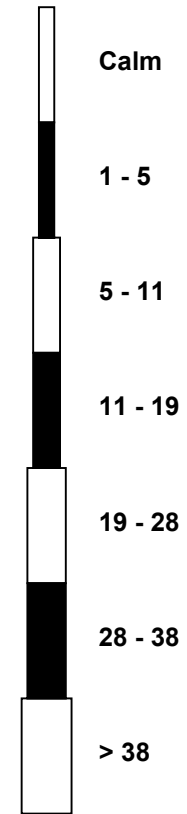
**WCAS - Fox Creek
Wind Speed Rose**



**Wind Speed (WS) - kph
March 2016**



Wind Frequency (kph)



WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
MONITORING PROGRAM
MONTHLY REPORT
CALIBRATIONS**

**FOX CREEK
MARCH 2016**

Calibration Report



Parameter SO2
 Air Monitoring Network Fox Creek

Station Information

Calibration Date	March 28, 2016	Previous Calibration	January 13, 2016
Station Number	Pam12	Station Location	Fox Creek
Reason:	<input checked="" type="checkbox"/> Routine	<input checked="" type="checkbox"/> Calibration	<input type="checkbox"/> Removal
			Fox Creek

Start Time (MST)	11:00	End Time (MST)	14:00
Barometric Pressure	27.20 inches Hg	Station Temperature	22.0 Deg C
Calibrator	Sabio 2010	Serial Number	SX17611
Cal Gas Concentration	25400 ppb SO2	Cal Gas Verified	Dec 2/15

DACS make		DACS serial No.	
DACS voltage range		DACS channel #	
	Before		After
Calculated slope	0.998438	Calculated slope	0.993462
Calculated intercept	1.556506	Calculated intercept	1.205304

Analyzer make Teco 431 Analyzer serial # 0700419950

	before		after	
Concentration range	500	ppb	500	ppb
Background	13.7	ppb	14	ppb
Coefficient	0.891		0.883	
Intensity A		Hz		Hz
Intensity B		Hz		Hz
Pressure		mmHg		mmHg
Sample Flow A		Lpm		Lpm
Sample Flow B		Lpm		Lpm

Calibration Data

Dilution air flow rate (cc/min)		Source Gas Flow	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
zero	5000	0.0	0.0	0.00	N/A
P1	5091	91.0	446.0	449.00	0.9933
P2	5057	51.0	253.6	252.00	1.0063
P3	5033	25.7	129.0	128.20	1.0062
AFZ	5000	0.0	0.0	-0.20	0.0000
AFS	5091	91.0	446.0	451.00	0.9889
Average Correction Factor					1.0020

Calculated value of As Found Response: 452.1 ppm Percent Change of As Found: 1.4%

	before calibration		after calibration	
Auto zero	-0.30	ppb	0.00	ppb
Auto span	294.00	ppb	295.00	ppb

Notes: _____

Calibration Performed By: _____

Calibration Report

Parameter **NOx-NO-NO₂**
 Air Monitoring Network **Fox Creek**



Station Information

Calibration Date	March 28,2016	Previous Calibration	February 10,2016				
Station Number	PamI2	Station Location	Fox Creek				
Reason:	<table border="1"> <tr> <td><input type="checkbox"/> Routine</td> <td><input type="checkbox"/> Installation</td> <td><input type="checkbox"/> Removal</td> <td><input type="checkbox"/> Other:</td> </tr> </table>			<input type="checkbox"/> Routine	<input type="checkbox"/> Installation	<input type="checkbox"/> Removal	<input type="checkbox"/> Other:
<input type="checkbox"/> Routine	<input type="checkbox"/> Installation	<input type="checkbox"/> Removal	<input type="checkbox"/> Other:				
Start Time (MST)	11:00	End Time (MST)	15:05				
Barometric Pressure	27.28 inches Hg	Station Temperature	21.0 Deg C				
Calibrator	Sabio 2010	Serial Number	42C 60475 327				
NO Cal Gas Conc	25.4 ppm	Cal Gas Verif. Date	Dec 2,2015				
NOx Cal Gas Conc	25.4 ppm	Cal Gas Serial #	SX17611				

DACS Information

DACS make	ESC	DACS serial No.	
Parameter	NO	NO2	NOx
Before	Data Slope	0.997474	
	Data Offset	0.099747	
After	Data Slope	1.001621	1.001621
	Data Offset	1.188374	1.188374
Channel #			
Voltage Range			

Analyzer Information

Analyzer make/model **42C** Analyzer serial # **60475327**

Test Point	before		after	
Concentration range	1000	ppb	1000	ppb
NO background	1.3	mV	1.5	mV
NOx background	1.8	mV	1.5	mV
NO coefficient	1.205		1.183	
NO2 coefficient	1.000		0.978	
NOx coefficient	1.000		1.001	
Internal Temp		Deg C		Deg C
Chamber Temp		Deg C		Deg C
Cooler Temp				
Perm Temp		Deg C		Deg C
Pressure		inches Hg		inches Hg
Sample Flow		ccm		ccm

Notes: _____

Calibration Report

Parameter **NOx-NO-NO₂**
 Air Monitoring Network **Fox Creek**



Station Information

Calibration Date: **March 28, 2016** Station Location: **Fox Creek**
AUGUST 30, 2010

Calibration Data

	Dilution flow rate (ccm)	Source gas flow rate (ccm)	Calculated NO conc (ppb)	Calculated NO ₂ conc (ppb)	Calculated NO _x conc (ppb)	Indicated NO conc (ppb)	Indicated NO ₂ conc (ppb)	Indicated NO _x conc (ppb)	NO Correction factor	NO _x Correction factor
zero	5000	0.00	0.0	0.0	0.0	0.00	0.00	0.00	N/A	N/A
P1	5091	91.00	446.0	0.0	446.0	445.00	0.00	445.00	1.002	1.002
P2	5057	51.00	253.6	0.0	253.6	251.00	0.00	251.00	1.010	1.010
P3	5033	25.70	129.0	0.0	129.0	126.60	0.00	126.60	1.019	1.019
AFZ	5000	0.00	0.0	0.0	0.0	-0.10	-0.30	-0.40	0.000	0.000
AFS	5091	91.00	446.0	0.0	446.0	460.00	-2.00	458.00	0.970	0.974
								Average Correction Factor	1.011	1.011

As Found Concentrations
 As Found Percent Change

NO= 459.0 ppb
 NO= 2.9%

NO_x= 457.3 ppb
 NO_x= 2.5%

GPT Calibration Data

O ₃ Setpoint (ppb)	Indicated NO _x ref (ppb)	Calculated NO conc (ppb)	Calculated NO ₂ conc (ppb)	Calculated NO _x conc (ppb)	Indicated NO conc (ppb)	Indicated NO ₂ conc (ppb)	Indicated NO _x conc (ppb)	NO ₂ Correction factor	Converter Efficiency	
0	442.0	0.0	0.0	0.0	442.00	0.00	442.00	N/A	N/A	
1.05	442.0	103.4	338.5	441.9	102.00	339.00	440.00	0.9987	100.1%	
0.7 v	442.0	232.6	210.3	442.9	231.00	210.00	441.00	1.0016	99.8%	
0.4	442.0	346.7	95.2	441.9	345.00	96.00	440.00	0.9912	100.9%	
								Average Correction Factor	0.997	1.003

AIC Data

Parameter	Previous calibration				Current calibration			
	NO	NO ₂	NO _x		NO	NO ₂	NO _x	
Auto zero	-0.10	0.20	0.10	ppb	0.00	0.00	0.00	ppb
Auto span	444.00	-1.00	443.00	ppb	426.00	-1.00	425.00	ppb

Calibration Performed By: Jeff McClintock

Calibration Summary

Parameter NO

Air Monitoring Network Fox Creek



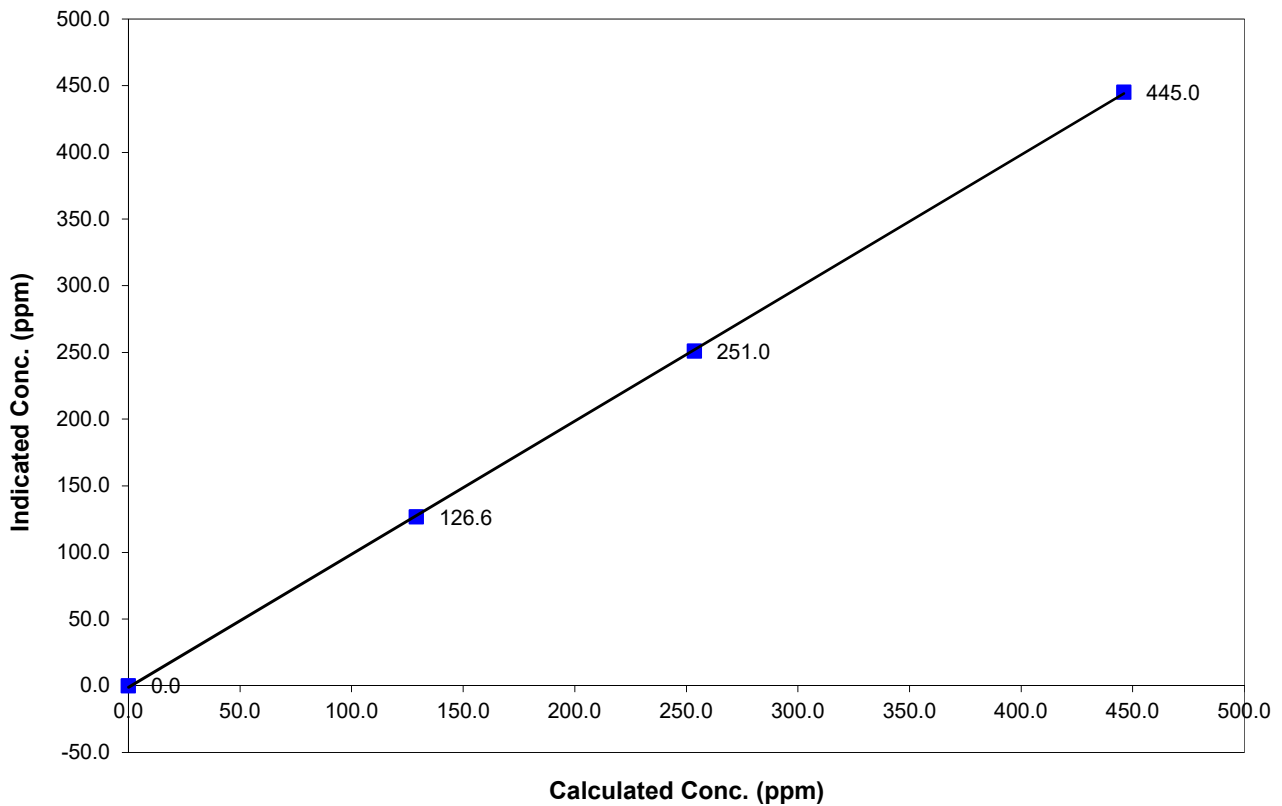
Station Information

Calibration Date	<u> March 28,2016 </u>	Previous Calibration	<u> February 10,2016 </u>
Station Number	<u> Pam12 </u>	Station Location	<u> Fox Creek </u>
Start Time (MST)	<u> 11:00 </u>	End Time (MST)	<u> 15:05 </u>
Analyzer make	<u> 42C </u>	Analyzer serial #	<u> 60475327 </u>

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
446.0	445.0	1.0023	Correlation Coefficient	0.999961
253.6	251.0	1.0104		
129.0	126.6	1.0193	Slope	1.001621
			Intercept	1.188374

NO Calibration Curve



Calibration Summary

Parameter NO₂

Air Monitoring Network Fox Creek



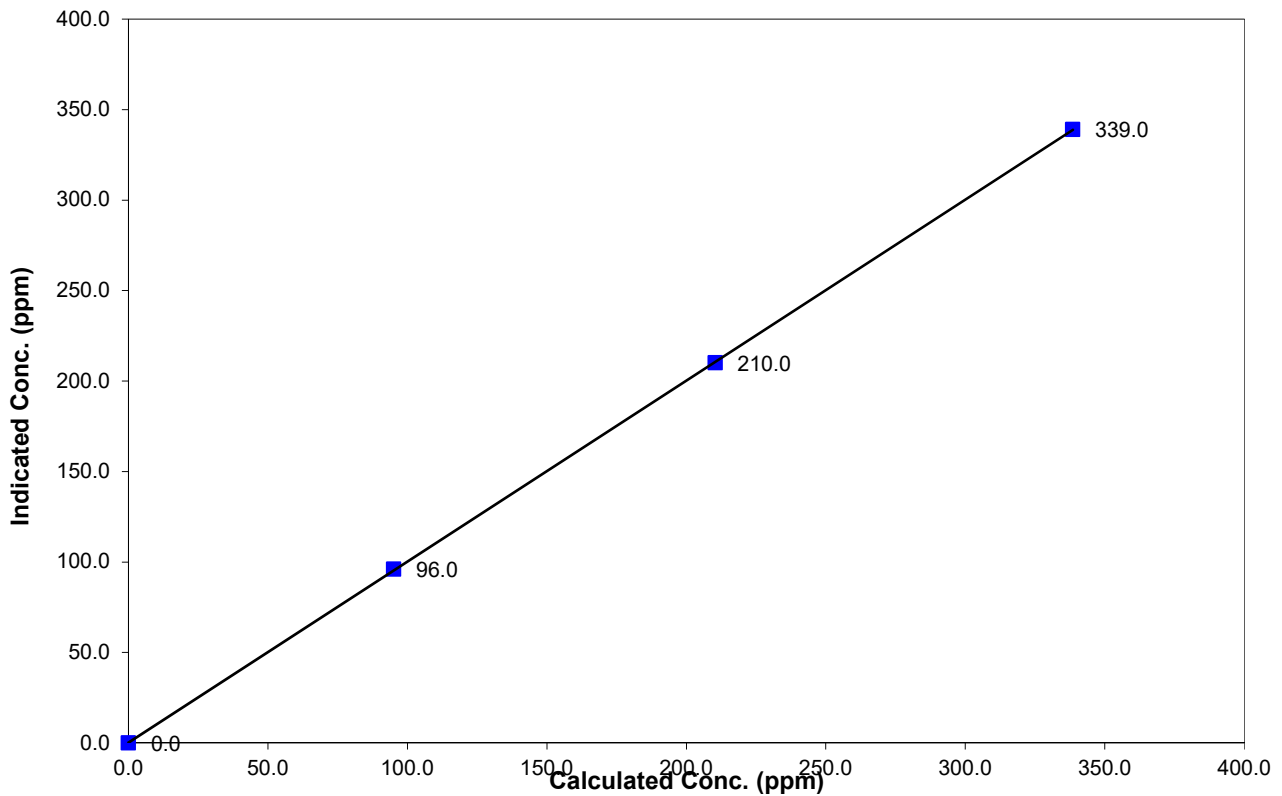
Station Information

Calibration Date	March 28,2016	Previous Calibration	February 10,2016
Station Number		Station Location	Fox Creek
Start Time (MST)	11:00	End Time (MST)	15:05
Analyzer make	42C	Analyzer serial #	60475327

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
338.5	339.0	0.9987	Correlation Coefficient	0.999987
210.3	210.0	1.0016		
95.2	96.0	0.9912	Slope	0.999867
			Intercept	-0.217924

NO₂ Calibration Curve



Calibration Summary

Parameter NO_x

Air Monitoring Network Fox Creek



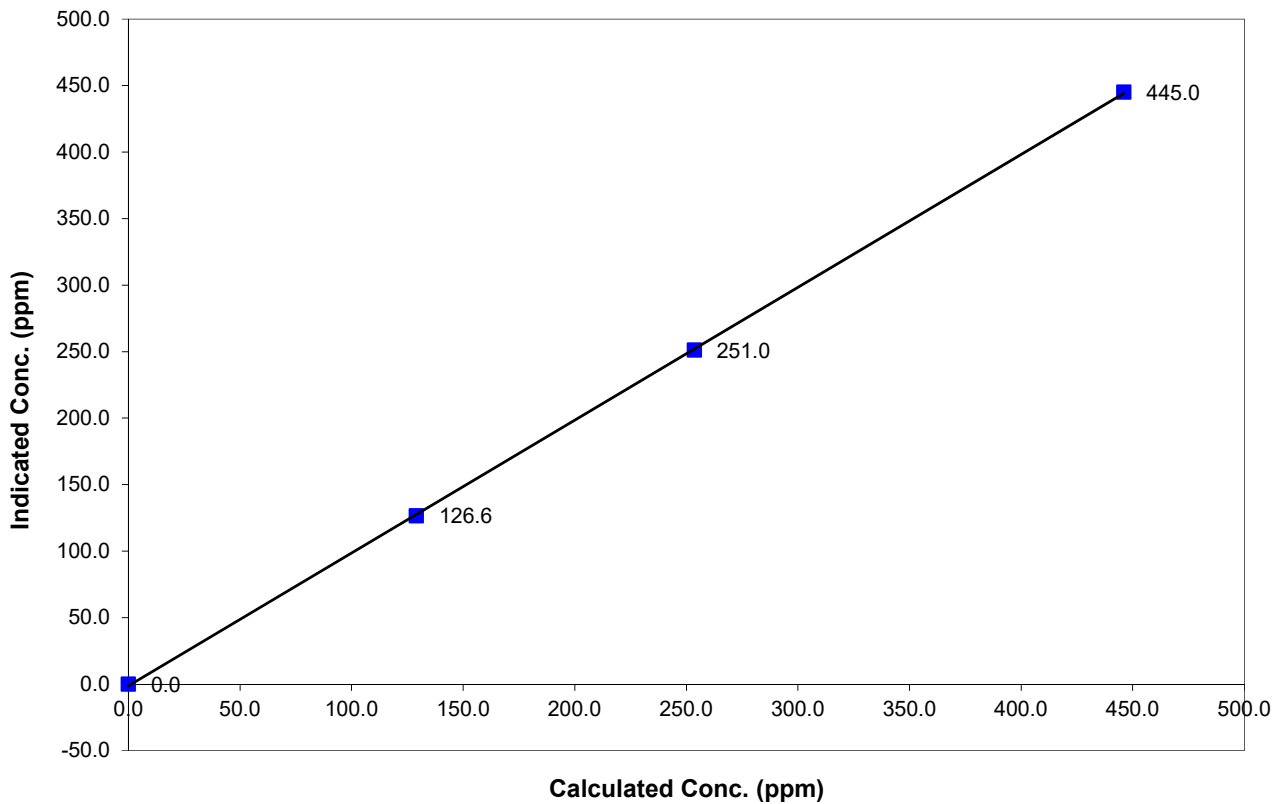
Station Information

Calibration Date	March 28,2016	Previous Calibration	February 10,2016
Station Number	Pam1 2	Station Location	Fox Creek
Start Time (MST)	11:00	End Time (MST)	15:05
Analyzer make	42C	Analyzer serial #	60475327

Calibration Data

Calculated conc (ppb) (Cc)	Indicated concentration (ppb) (Ic)	Correction factor (Cc/Ic)	Statistical Evaluation	
0.0	0.0	N/A		
446.0	445.0	1.0023	Correlation Coefficient	0.999961
253.6	251.0	1.0104		
129.0	126.6	1.0193	Slope	1.001621
			Intercept	1.188374

NOx Calibration Curve



Calibration Report

Parameter 03

Air Monitoring Network Fox Creek



Station Information

Calibration Date	March 29, 2016	Previous Calibration	February 10, 2016
Station Number	Paml 2	Station Location	Fox Creek
Reason:	<input checked="" type="checkbox"/> Routine	<input checked="" type="checkbox"/> Calibration	<input type="checkbox"/> Removal

Start Time (MST)	7:00	End Time (MST)	9:50
Barometric Pressure	27.40 inches Hg	Station Temperature	22.0 Deg C
Calibrator	2B Tech 306	Serial Number	145
Cal Gas Concentration		Cal Gas Expiry Date	

DACS make		DACS serial No.	
DACS voltage range		DACS channel #	1

	Before		After
Calculated slope	0.998643	Calculated slope	1.000744
Calculated intercept	0.689593	Calculated intercept	0.986389

Analyzer make	TECO 49i	Analyzer serial #	0630718533
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	before		after	
Concentration range	500	ppb	500	ppb
Background	-0.2	ppb	0	ppb
Coefficient	0.989		0.971	
Intensity A		Hz		Hz
Intensity B		Hz		Hz
Pressure		mmHg		mmHg
Sample Flow A		Lpm		Lpm
Sample Flow B		Lpm		Lpm

Calibration Data

Dilution air flow rate (cc/min)	Ozone Set Point	Calculated concentration (ppm) (Cc)	Indicated concentration (ppm) (Ic)	Correction factor (Cc/Ic)
zero	3000	0.0	0.10	N/A
P1	3000	400.0	397.00	1.0000
P2	3000	250.0	249.00	1.0120
P3	3000	100.0	99.40	1.0161
AFZ	3000	0.0	0.40	0.0000
AF	3000	400.0	405.00	0.9802
Average Correction Factor				1.0094

Calculated value of As Found Response: 404.7 ppm Percent Change of As Found: 1.9%

	before calibration		after calibration	
Auto zero	0.30	ppb	0.00	ppb
Auto span	377.00	ppb	369.00	ppb

Notes:

Calibration Performed By: Jeff McClintock

WEST CENTRAL AIRSHED SOCIETY

**CONTINUOUS AMBIENT AIR QUALITY
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**END OF REPORT
MARCH 2016**