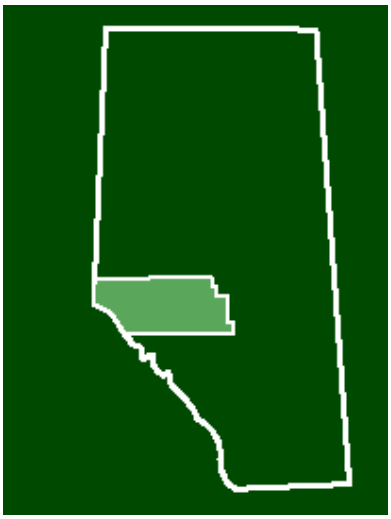


WEST CENTRAL AIRSHED SOCIETY
July 2016
Monthly Report

TOMAHAWK
STATION #901

CONTINUOUS AIR MONITORING DATA

JULY 2016

Summary Report **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

WCAS / Tomahawk **July 2016**
Station 901

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	P10	Q1	Median	Q3	P90	Exceedences 1-hour	Exceedences 24-hour	24 Hour Average Max (ppm)
							-------	-------	Percentile	---------	-------			
SO_2 (ppb)	36	708	100.0	0.375	0.0	12.8	0.0	0.0	0.1	0.2	0.6	0	0	0.003
O_3 (ppb)	36	708	100.0	25.3	2.0	60.9	11.8	17.3	25.5	32.1	37.4	0	-	0.033
NO (ppb)	38	706	100.0	0.4	0.0	6.0	0.1	0.1	0.2	0.3	0.9	-	-	-
NO_2 (ppb)	38	706	100.0	2.6	0.9	18.6	1.4	1.7	2.3	3.1	4.3	0	0	0.006
NO_x (ppb)	38	706	100.0	3.1	1.1	23.4	1.5	1.9	2.6	3.6	5.1	-	-	-
Particulate Matter 2.5 microns (μ/m^3)	36	708	100.0	3.7	0.6	11.5	1.5	2.2	3.4	4.8	6.0	0	0	7.74 ug/m3
Wind Speed (kph)	0	739	99.3	7.4	0.1	23.1	3.2	4.7	6.8	9.5	12.2	-	-	-
Temperature (^oC)	0	694	93.3	16.8	6.6	28.6	11.3	13.1	16.2	20.5	23.3	-	-	-
Relative Humidity (%)	0	739	99.3	71.5	26.7	96.0	42.0	56.9	75.7	88.4	93.2	-	-	-
Photosynthetically Active Radiation (W/m^2)	0	744	100.0	88.9	0.0	370.9	0.0	0.0	42.7	164.0	259.5	-	-	-
Std Dev Wind Direction (deg)	0	739	99.3	29.8	4.0	98.8	13.5	17.6	24.4	36.7	55.4	-	-	-
Std Dev Wind Speed (kph)	0	739	99.3	2.6	0.3	12.1	1.1	1.6	2.3	3.3	4.3	-	-	-

West Central Airshed Society

WCAS - Tomahawk
Summary of Hourly Averages

Sulphur Dioxide (SO_2) - ppb
July 2016

Maximum Value: 12.78 ppb on Jul 8 15:00

Maximum Daily Average: 2.67 ppb on Jul 8

Minimum Value: 0.0 ppb on Jul 1 17:00

Minimum Daily Average: 0.05 ppb on Jul 29

Maximum Diurnal Average: 0.83 ppb at hour 15

Minimum Diurnal Average: 0.11 ppb at hour 5

Monthly Average: 0.375 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.2 P_{90} = 0.6 P_{99} = 7.0

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																								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-Jul	0.0	0.1	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	1.6	0.6	1.7	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.25	1.68
2-Jul	0.0	0.0	Z	0.1	0.4	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.1	0.1	0.0	0.0	0.0	0.0	0.1	0.14	1.13
3-Jul	0.3	0.2	Z	2.6	0.7	0.4	0.3	0.2	0.2	0.3	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	0.22	2.57
4-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.14	0.32
5-Jul	0.2	0.2	Z	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.15	0.32
6-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.26
7-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.6	1.3	0.8	0.1	0.1	0.2	0.18	1.29
8-Jul	0.3	0.4	Z	0.2	0.1	0.1	0.1	0.2	0.5	0.4	0.3	0.2	0.4	8.8	12.8	6.7	3.2	1.7	8.8	12.2	1.6	0.9	1.2	0.4	2.67	12.78
9-Jul	0.2	0.4	Z	0.2	0.2	0.2	0.2	0.8	1.7	1.1	3.4	7.2	3.0	6.2	4.5	3.4	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	1.46	7.19
10-Jul	0.1	0.1	Z	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	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	0.10	0.22
11-Jul	0.1	0.1	Z	0.1	0.0	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.1	0.0	0.3	0.12	0.27
12-Jul	0.3	0.2	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.28
13-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	C	C	C	C	C	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.07	0.20
14-Jul	0.1	0.2	Z	0.0	0.0	0.1	0.1	0.1	0.5	1.5	2.9	1.6	0.4	0.4	3.4	2.3	1.7	1.5	1.1	0.2	0.1	0.0	0.1	0.0	0.79	3.38
15-Jul	0.1	0.0	Z	0.1	0.0	0.0	0.1	0.1	1.5	8.8	7.6	0.9	0.5	0.2	0.1	0.4	0.8	0.8	0.3	0.6	1.0	0.4	0.4	0.3	1.09	8.78
16-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.4	1.3	6.3	6.8	0.6	0.9	0.1	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.2	0.2	0.81	6.80
17-Jul	0.2	0.2	Z	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	2.1	1.7	2.1	1.9	0.6	0.50	2.13
18-Jul	0.3	0.2	Z	0.1	0.2	0.3	0.5	0.5	0.4	0.3	0.2	0.4	0.6	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.24	0.59
19-Jul	0.1	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.11	0.27
20-Jul	0.1	0.3	Z	0.1	0.1	0.1	0.2	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.20	0.37
21-Jul	0.1	0.2	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.08	0.20
22-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.3	0.6	0.9	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.6	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.18	0.89
23-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.06	0.24
24-Jul	0.1	0.2	Z	0.1	0.0	0.1	0.1	0.2	0.1	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	0.12	0.23
25-Jul	0.1	0.0	Z	0.0	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.15	0.34
26-Jul	0.2	0.2	Z	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.0	0.0	0.3	3.0	4.0	2.8	1.4	0.7	0.4	0.64	3.96
27-Jul	0.4	0.3	Z	0.3	0.1	0.2	0.1	0.1	0.1	0.2	0.3	0.1	0.0	0.1	0.1	0.1	2.8	2.7	1.0	0.5	0.4	0.1	0.1	0.0	0.44	2.78
28-Jul	0.0	0.1	Z	0.0	0.1	0.1	0.1	0.0	0.2	0.3	0.3	0.2	1.0	1.1	1.1	0.9	0.2	0.9	0.1	0.1	0.1	0.1	0.0	0.0	0.30	1.13
29-Jul	0.0	0.1	Z	0.0	0.1	0.1	0.1	0.1	0.2	0.2	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	0.0	0.05	0.23
30-Jul	0.0	0.2	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.10	1.81
31-Jul	0.0	0.0	Z	0.5	0.1	0.1	0.3	0.1	0.2	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	0.06	0.46
	0.11	0.13	--	0.17	0.11	0.11	0.13	0.17	0.30	0.57	0.81	0.72	0.30	0.77	0.83	0.51	0.40	0.37	0.54	0.72	0.34	0.22	0.19	0.13	Diurnal Average	
	0.42	0.42	--	2.57	0.66	0.48	0.49	0.78	1.67	8.78	7.56	7.19	3.02	8.81	12.78	6.74	3.20	2.74	8.81	12.22	2.77	2.10	1.94	0.59	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb

WCAS - Tomahawk
Summary of Hourly Averages

Ozone (O_3) - ppb
July 2016

Maximum Value: 60.94 ppb on Jul 28 15:00

Maximum Daily Average: 32.53 ppb on Jul 1

Minimum Value: 2.0 ppb on Jul 29 04:00

Minimum Daily Average: 16.71 ppb on Jul 13

Maximum Diurnal Average: 35.25 ppb at hour 15

Minimum Diurnal Average: 11.97 ppb at hour 6

Monthly Average: 25.255 ppb

Percentiles: P_1 = 5.8 P_{10} = 11.8 Q_1 = 17.3 Median = 25.5 Q_3 = 32.1 P_{90} = 37.4 P_{99} = 48.5

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																								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-Jul	32.3	28.7	Z	16.3	14.1	9.4	11.9	16.4	24.7	35.0	43.3	47.6	47.7	56.3	52.4	46.8	42.4	40.1	36.2	36.7	35.9	27.5	25.7	20.9	32.53	56.31
2-Jul	19.7	16.1	Z	27.9	27.3	23.6	28.4	29.4	30.3	31.7	34.5	35.2	36.5	37.0	37.4	37.3	38.7	39.0	35.3	27.7	22.8	20.8	25.2	25.5	29.87	38.96
3-Jul	24.6	29.0	Z	19.7	18.8	16.6	19.4	27.3	23.4	20.1	20.6	25.0	25.8	26.6	27.6	29.6	31.0	30.0	28.4	28.9	26.1	24.1	19.9	19.5	24.44	31.04
4-Jul	17.6	15.4	Z	15.0	14.0	9.9	10.8	15.0	21.8	25.8	29.0	31.0	32.5	32.5	31.8	31.4	31.8	31.1	30.1	25.1	22.5	22.9	21.0	21.5	23.46	32.53
5-Jul	19.9	18.2	Z	16.0	12.3	13.2	13.1	15.1	15.7	17.4	19.9	21.3	21.9	23.1	24.0	24.0	24.8	25.5	23.2	23.3	21.7	20.4	15.4	14.1	19.29	25.51
6-Jul	12.8	13.5	Z	12.1	12.0	13.2	14.6	16.3	18.4	20.1	23.5	26.1	27.7	30.7	33.6	31.1	30.4	39.0	38.6	31.2	30.8	34.4	31.4	28.9	24.80	39.03
7-Jul	24.9	27.3	Z	22.5	19.1	16.0	15.0	20.3	25.4	30.7	27.5	26.4	26.1	26.3	26.6	26.4	27.7	29.3	29.5	27.6	24.8	21.9	20.2	19.3	24.38	30.74
8-Jul	16.3	15.3	Z	8.8	7.1	6.9	5.8	10.8	17.9	22.1	27.0	33.2	40.3	36.6	35.2	45.5	46.2	34.4	23.7	13.6	28.2	27.0	23.2	25.3	23.93	46.15
9-Jul	19.2	16.6	Z	11.5	8.3	7.1	9.4	19.1	20.4	19.1	22.4	24.2	39.0	40.3	43.8	46.3	39.7	35.9	30.9	29.3	22.1	21.1	19.6	22.9	24.71	46.34
10-Jul	17.4	20.0	Z	17.2	17.3	17.0	19.9	30.5	27.5	25.8	25.4	30.3	30.9	30.5	35.2	33.8	35.2	34.9	35.2	31.4	25.8	24.2	20.8	20.6	26.38	35.22
11-Jul	16.5	13.4	Z	11.5	11.5	11.8	13.7	15.7	19.8	22.8	25.8	30.3	31.4	31.2	31.3	32.2	26.3	29.7	28.5	27.1	20.7	21.7	21.7	20.7	22.41	32.20
12-Jul	16.6	13.4	Z	14.7	14.0	13.8	13.8	16.6	20.9	24.3	26.4	27.3	28.2	28.6	27.3	33.4	34.6	28.7	25.0	19.5	16.2	13.8	11.7	12.7	20.93	34.62
13-Jul	13.6	12.8	Z	11.9	10.4	11.4	11.9	13.0	15.8	15.9	C	C	C	C	C	24.7	22.8	27.7	25.6	22.0	17.3	18.2	13.7	12.0	16.71	27.65
14-Jul	10.0	12.6	Z	10.1	9.5	9.3	11.3	14.1	16.4	20.9	23.7	36.2	36.9	34.2	29.4	27.7	33.8	34.7	27.4	25.6	24.2	20.3	17.9	18.0	21.93	36.89
15-Jul	14.1	20.7	Z	19.1	17.1	13.5	16.8	16.4	22.4	22.6	26.2	35.9	32.5	31.3	34.4	34.5	33.7	36.5	37.1	34.3	28.1	24.2	20.5	17.6	25.64	37.11
16-Jul	16.9	13.4	Z	11.5	9.8	9.7	11.0	16.2	18.1	24.6	27.0	31.4	39.3	38.9	33.2	34.3	34.8	36.4	36.1	32.5	30.7	27.4	22.7	16.9	24.90	39.27
17-Jul	16.1	21.7	Z	21.8	22.1	21.7	20.5	20.5	21.6	23.7	27.1	25.2	23.5	22.0	28.0	33.1	30.6	27.7	30.8	24.7	19.2	16.0	13.5	12.5	22.77	33.13
18-Jul	13.0	11.9	Z	7.1	6.2	5.3	5.3	11.6	19.1	31.5	40.3	43.8	45.0	45.1	47.3	47.1	44.5	43.6	42.5	40.1	33.6	29.8	30.2	28.1	29.21	47.28
19-Jul	23.6	20.9	Z	9.7	10.1	5.9	8.4	10.0	17.9	25.9	33.0	33.8	35.8	39.0	38.0	37.6	39.2	39.8	37.7	35.5	31.1	30.1	31.8	30.4	27.19	39.77
20-Jul	29.8	33.1	Z	28.5	24.7	17.7	15.9	22.7	24.4	26.2	26.7	27.8	32.5	32.8	34.0	32.8	30.7	31.8	30.9	29.8	27.4	22.9	20.6	17.5	27.00	33.95
21-Jul	16.7	15.7	Z	11.3	10.0	10.4	12.0	13.2	16.4	22.4	25.7	29.3	32.4	31.9	26.8	30.7	34.0	33.5	32.6	29.1	26.9	23.6	25.1	25.3	23.25	33.99
22-Jul	21.5	21.2	Z	9.3	7.6	6.3	12.4	19.1	28.9	35.0	38.9	43.0	43.1	42.4	43.0	43.3	43.8	46.3	36.8	43.3	37.6	31.6	29.9	33.3	31.20	46.28
23-Jul	28.9	27.5	Z	19.6	19.8	16.3	13.1	14.8	27.0	30.6	33.0	35.0	36.2	36.4	38.4	39.3	38.1	35.1	31.9	29.4	30.0	25.5	23.9	18.6	28.18	39.27
24-Jul	17.3	13.3	Z	6.6	7.1	8.1	9.3	15.7	22.2	29.0	34.1	35.2	34.9	31.0	30.3	28.3	28.1	28.0	24.9	22.2	21.8	20.8	17.4	15.1	21.78	35.17
25-Jul	13.4	11.8	Z	8.7	8.9	7.9	9.2	14.5	23.7	27.8	29.6	31.5	31.7	32.1	34.3	36.4	37.9	37.4	36.8	34.3	31.7	30.1	26.6	24.8	25.27	37.95
26-Jul	23.8	21.3	Z	15.9	13.7	10.3	9.3	13.5	22.1	26.6	31.1	35.9	37.0	37.3	37.3	36.1	36.4	40.3	41.3	44.1	45.6	39.8	34.4	34.5	29.89	45.57
27-Jul	32.8	27.8	Z	25.1	21.8	18.7	19.6	20.3	21.7	30.5	36.0	33.6	35.7	35.8	39.7	40.1	43.9	51.0	48.2	39.8	33.9	31.7	26.1	22.5	32.02	51.03
28-Jul	22.1	16.7	Z	8.5	8.5	6.6	6.9	9.3	16.3	27.1	36.1	42.0	49.4	57.0	60.9	52.5	33.4	26.0	25.9	25.7	22.4	14.9	9.9	8.2	25.50	60.94
29-Jul	9.3	8.3	Z	2.0	2.7	3.7	5.7	7.6	12.4	21.7	30.4	30.9	30.7	31.1	31.7	33.8	36.8	36.2	32.3	29.4	39.2	38.3	31.9	32.1	23.40	39.16
30-Jul	29.5	22.2	Z	18.9	14.5	12.4	9.2	11.5	14.7	24.5	28.2	32.1	35.4	32.8	35.1	26.4	30.0	34.2	34.3	28.2	25.1	20.6	20.3	17.2	24.23	35.42
31-Jul	14.3	13.8	Z	16.4	16.1	17.3	19.7	22.4	26.7	29.7	32.7	32.6	29.7	29.2	29.4	26.8	24.8	26.3	24.2	23.6	22.6	25.1	23.6	22.1	23.87	32.66
	19.50	18.51	--	14.68	13.42	11.97	13.01	16.74	21.10	25.51	29.50	32.44	34.33	34.67	35.25	34.95	34.39	34.51	32.32	29.52	27.30	24.86	22.45	21.24	Diurnal Average	
	32.82	33.06	--	28.51	27.28	23.61	28.38	30.46	30.26	35.03	43.26	47.58	49.44	57.02	60.94	52.53	46.15	51.03	48.20	44.09	45.57	39.83	34.39	34.46	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb

WCAS - Tomahawk
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
July 2016

Maximum Value: 5.99 ppb on Jul 15 10:00

Maximum Daily Average: 1.46 ppb on Jul 8

Minimum Value: 0.0 ppb on Jul 20 01:00

Minimum Daily Average: 0.11 ppb on Jul 23

Maximum Diurnal Average: 1.02 ppb at hour 7

Minimum Diurnal Average: 0.10 ppb at hour 24

Monthly Average: 0.381 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.1 Q_1 = 0.1 Median = 0.2 Q_3 = 0.3 P_{90} = 0.9 P_{99} = 4.8

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																								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-Jul	0.2	0.1	Z	0.1	0.2	0.9	1.2	1.8	1.1	0.6	0.3	0.7	0.3	0.4	0.3	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.2	0.42	1.79
2-Jul	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.4	0.5	0.1	0.2	0.2	0.1	0.1	0.1	0.24	0.52
3-Jul	0.1	0.1	Z	0.2	0.3	0.9	0.9	0.6	0.5	0.6	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.30	0.90
4-Jul	0.1	0.1	Z	0.1	0.2	1.4	1.8	1.4	1.0	0.5	0.4	0.3	0.2	0.2	0.2	0.2	0.1	0.1	1.2	0.3	0.1	0.1	0.1	0.1	0.44	1.83
5-Jul	0.1	0.1	Z	0.1	0.1	0.2	0.5	0.4	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.16	0.48
6-Jul	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.17	0.30
7-Jul	0.1	0.1	Z	0.1	0.1	0.3	0.5	0.5	0.6	0.5	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.6	0.3	0.2	0.2	0.1	0.25	0.60
8-Jul	0.2	0.2	Z	0.2	0.3	0.7	2.9	1.3	1.1	0.9	0.7	0.6	0.5	4.3	5.3	2.0	0.8	1.2	4.9	4.8	0.3	0.1	0.1	0.1	1.46	5.29
9-Jul	0.1	0.1	Z	0.1	0.3	0.5	1.0	1.3	1.1	1.9	3.1	4.9	1.2	2.2	1.1	0.6	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.93	4.86
10-Jul	0.2	0.2	Z	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.22	0.31
11-Jul	0.2	0.1	Z	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.3	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	0.23	0.41
12-Jul	0.1	0.2	Z	0.2	0.2	0.3	0.5	0.5	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	0.2	0.24	0.54
13-Jul	0.2	0.2	Z	0.2	0.2	0.3	0.4	0.5	0.4	0.3	C	C	C	C	C	C	C	0.3	0.2	0.2	0.2	0.1	0.1	0.1	--	0.47
14-Jul	0.1	0.1	Z	0.2	0.2	0.4	0.5	0.5	0.8	1.2	1.9	0.7	0.2	0.2	1.6	0.9	0.6	0.4	0.4	0.1	0.1	0.1	0.0	0.1	0.50	1.93
15-Jul	0.1	0.0	Z	0.0	0.1	0.3	0.8	1.6	2.0	6.0	5.4	0.5	0.2	0.2	0.2	0.5	0.5	0.5	0.2	0.2	0.1	0.0	0.0	0.1	0.86	5.99
16-Jul	0.1	0.1	Z	0.2	0.2	0.3	0.5	0.4	0.8	1.5	3.9	4.3	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.61	4.29
17-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.6	0.3	0.1	0.1	0.1	0.17	0.57
18-Jul	0.1	0.1	Z	0.1	0.3	0.7	4.8	2.0	1.4	0.9	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.53	4.78
19-Jul	0.1	0.1	Z	0.1	0.1	0.6	1.3	1.8	0.9	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.28	1.83
20-Jul	0.0	0.0	Z	0.0	0.1	0.3	0.5	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.13	0.53
21-Jul	0.0	0.0	Z	0.1	0.1	0.3	0.5	0.7	0.6	0.3	0.3	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.20	0.67
22-Jul	0.1	0.1	Z	0.2	0.3	1.6	1.9	1.2	0.9	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.37	1.86
23-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.4	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	0.0	0.11	0.39
24-Jul	0.1	0.1	Z	0.1	0.1	0.6	1.4	1.1	0.9	0.5	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.28	1.42
25-Jul	0.1	0.1	Z	0.1	0.2	0.5	1.4	1.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.26	1.42
26-Jul	0.1	0.2	Z	0.2	0.2	0.6	1.5	1.3	0.8	0.4	0.4	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.8	0.5	0.1	0.1	0.2	0.1	0.38	1.47
27-Jul	0.1	0.1	Z	0.1	0.1	0.4	0.4	0.4	1.5	0.4	0.4	2.8	0.7	0.2	0.2	0.1	0.9	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.43	2.75
28-Jul	0.1	0.2	Z	0.2	0.1	0.6	1.5	2.0	1.5	0.9	0.6	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.5	0.3	0.1	0.2	0.2	0.1	0.46	1.99
29-Jul	0.1	0.1	Z	0.4	0.3	1.1	2.4	2.3	1.6	0.9	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.50	2.37
30-Jul	0.1	0.1	Z	0.1	0.2	0.3	0.6	0.6	0.7	0.4	0.3	0.3	0.2	0.5	0.1	0.2	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.26	0.73
31-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.3	0.4	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.15	0.37
	0.11	0.12	--	0.15	0.18	0.50	1.02	0.90	0.75	0.73	0.74	0.63	0.24	0.38	0.41	0.25	0.22	0.25	0.40	0.35	0.14	0.11	0.11	0.10	Diurnal Average	
	0.20	0.24	--	0.39	0.34	1.63	4.78	2.29	1.98	5.99	5.41	4.86	1.18	4.28	5.29	1.98	0.85	1.20	4.87	4.81	0.34	0.24	0.25	0.19	Diurnal Maximum	

Z - zerospan C - Calibration

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

WCAS - Tomahawk
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
July 2016

Maximum Value: 18.63 ppb on Jul 8 20:00

Maximum Daily Average: 6.36 ppb on Jul 8

Minimum Value: 0.9 ppb on Jul 26 17:00

Minimum Daily Average: 1.47 ppb on Jul 31

Maximum Diurnal Average: 3.37 ppb at hour 4

Minimum Diurnal Average: 1.82 ppb at hour 13

Monthly Average: 2.647 ppb

Percentiles: P_1 = 1.1 P_{10} = 1.4 Q_1 = 1.7 Median = 2.3 Q_3 = 3.1 P_{90} = 4.3 P_{99} = 8.1

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																								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-Jul	2.3	2.4	Z	2.5	2.6	2.4	2.3	3.0	2.7	2.2	1.9	3.1	2.1	2.9	2.3	1.5	1.7	2.1	2.4	2.0	1.6	2.1	2.2	2.6	2.30	3.11
2-Jul	2.6	2.8	Z	3.1	3.7	4.0	3.2	2.9	2.1	2.0	1.9	1.9	1.9	1.5	1.3	1.2	2.6	3.0	1.9	1.9	2.0	2.3	2.3	3.0	2.39	3.97
3-Jul	3.4	2.8	Z	9.7	5.9	4.4	3.1	2.9	3.3	3.8	1.7	1.4	1.4	1.2	1.1	1.1	1.1	1.1	1.3	1.3	1.2	1.3	1.8	1.8	2.53	9.73
4-Jul	2.0	2.4	Z	2.9	3.5	3.6	3.0	2.7	2.3	1.9	1.8	1.7	1.6	1.6	1.6	1.6	1.6	1.7	2.8	2.7	2.4	2.5	2.7	2.9	2.34	3.61
5-Jul	2.9	3.1	Z	2.5	2.4	2.0	2.0	1.8	1.8	2.0	2.0	1.8	1.8	1.7	1.6	1.5	1.4	1.4	1.8	1.7	3.0	2.8	3.6	4.0	2.21	4.04
6-Jul	5.5	4.6	Z	2.2	2.5	2.1	2.0	2.2	2.4	2.4	2.3	2.0	1.9	1.8	1.9	1.8	1.9	2.5	2.4	2.5	2.5	2.5	2.8	2.6	2.48	5.50
7-Jul	2.5	2.3	Z	2.3	2.5	3.6	2.9	2.5	2.6	2.6	1.6	1.5	1.4	1.4	1.3	1.4	1.4	1.4	2.3	4.3	5.0	4.6	4.6	4.3	2.63	5.04
8-Jul	6.0	6.4	Z	5.4	5.5	4.5	4.7	3.4	3.3	3.3	3.0	3.2	3.3	9.8	12.7	7.8	4.7	4.2	12.9	18.6	5.3	5.9	6.7	5.4	6.36	18.63
9-Jul	5.9	5.4	Z	5.0	4.9	4.5	4.2	4.8	5.6	5.7	6.9	8.7	4.7	7.8	7.0	5.4	3.3	2.8	2.8	3.0	3.5	3.0	2.7	2.8	4.80	8.69
10-Jul	3.0	2.9	Z	2.6	2.9	3.1	2.7	2.1	2.1	2.0	1.9	2.0	2.2	1.7	1.6	1.6	1.5	1.7	1.7	1.8	1.8	2.1	2.1	2.3	2.15	3.15
11-Jul	2.5	2.6	Z	2.8	2.8	2.7	2.6	2.3	2.2	2.0	1.8	1.7	1.6	1.6	1.6	1.5	1.8	1.7	1.7	1.6	1.6	1.8	2.0	2.1	2.02	2.76
12-Jul	2.3	2.5	Z	2.3	2.4	2.4	2.3	2.0	1.9	1.8	1.8	1.8	1.6	1.6	1.5	1.6	1.6	1.7	1.6	1.6	1.6	1.9	1.9	1.8	1.91	2.47
13-Jul	1.8	1.8	Z	2.1	2.1	2.0	1.8	1.9	1.7	1.6	C	C	C	C	C	C	C	2.2	1.9	1.9	1.8	2.0	2.7	3.0	--	3.00
14-Jul	3.1	2.6	Z	2.9	2.8	2.7	2.4	2.1	2.3	3.3	4.5	2.7	1.7	1.9	5.7	5.8	4.0	4.0	3.5	1.8	2.5	2.6	2.3	2.3	3.01	5.76
15-Jul	3.0	2.9	Z	3.0	2.9	2.8	2.9	3.8	4.1	8.3	7.9	2.5	2.8	2.4	1.9	2.7	3.3	2.8	2.1	2.6	3.8	3.1	3.8	3.3	3.42	8.30
16-Jul	2.9	3.0	Z	2.5	2.4	2.2	2.0	1.8	2.0	3.2	7.4	7.6	2.0	2.1	1.5	1.3	1.3	1.2	1.3	1.9	2.6	3.1	2.5	3.7	2.67	7.63
17-Jul	3.1	2.1	Z	2.3	2.0	2.0	2.0	2.0	2.0	1.8	1.7	1.6	1.5	1.6	1.3	1.5	1.6	1.9	1.5	5.1	5.8	6.6	6.8	4.0	2.69	6.83
18-Jul	3.0	2.9	Z	4.9	5.2	4.5	5.9	3.6	3.3	3.1	2.0	1.8	1.9	1.8	1.8	1.7	2.0	2.3	2.4	2.1	2.8	4.7	3.1	2.8	3.03	5.87
19-Jul	3.2	3.1	Z	4.5	3.6	3.1	3.6	3.8	2.9	2.2	1.9	1.5	1.3	1.2	1.3	1.4	1.4	1.3	1.5	1.8	2.7	1.7	1.7	2.0	2.29	4.50
20-Jul	2.2	2.1	Z	2.4	3.7	4.1	3.5	2.0	2.0	1.9	1.9	2.2	1.4	1.5	1.4	1.7	1.5	1.4	1.5	1.6	1.5	2.2	3.0	2.4	2.13	4.11
21-Jul	2.6	2.8	Z	3.2	3.9	3.3	3.3	3.4	3.3	2.1	1.7	1.3	1.2	1.3	1.8	1.3	1.1	1.1	1.4	1.9	1.9	3.5	1.8	1.6	2.21	3.95
22-Jul	2.3	2.3	Z	4.0	4.9	4.8	4.1	3.1	3.1	2.4	2.0	1.6	1.3	1.2	1.2	1.4	2.2	2.2	2.3	1.7	2.2	2.2	1.7	1.7	2.43	4.93
23-Jul	1.7	1.6	Z	2.3	2.3	2.2	2.4	2.3	1.4	1.3	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.5	1.5	1.6	3.5	2.8	3.3	1.76	3.49
24-Jul	3.6	4.2	Z	3.9	3.7	3.3	2.7	2.5	2.6	2.4	2.0	1.7	1.5	1.2	1.3	1.2	1.2	1.5	1.5	1.7	1.5	1.5	1.9	2.1	2.20	4.19
25-Jul	2.0	2.0	Z	2.4	2.8	3.0	2.9	2.6	1.6	1.1	1.0	1.1	1.2	1.2	1.3	1.6	1.6	1.9	2.1	2.2	2.3	2.5	3.2	3.1	2.03	3.17
26-Jul	2.8	3.4	Z	3.0	3.6	4.0	3.1	3.0	2.6	2.2	2.3	2.1	1.6	1.4	1.3	1.0	0.9	1.4	5.5	7.5	5.5	4.0	4.7	3.2	3.04	7.47
27-Jul	3.8	4.1	Z	3.6	3.7	5.8	3.5	2.5	3.5	2.4	2.6	3.3	1.9	1.6	1.8	1.5	4.2	4.4	2.9	2.6	2.9	2.6	3.4	3.9	3.15	5.82
28-Jul	3.7	4.3	Z	5.8	3.5	3.8	3.2	3.5	2.7	3.1	2.9	2.3	2.7	2.8	2.9	2.6	2.1	2.3	2.5	2.2	2.6	4.4	6.6	6.6	3.44	6.64
29-Jul	3.9	3.8	Z	4.3	3.9	3.5	2.9	2.4	2.4	2.7	2.2	1.5	1.2	1.1	1.1	1.1	1.2	1.5	2.4	2.4	3.6	3.4	2.6	1.9	2.47	4.25
30-Jul	2.5	4.2	Z	1.9	2.4	3.4	3.1	2.7	2.1	1.7	1.7	1.6	1.8	4.8	2.6	2.4	2.2	1.9	1.6	1.7	1.5	1.6	1.5	1.9	2.29	4.82
31-Jul	2.2	2.0	Z	2.3	2.1	1.7	1.6	1.4	1.3	1.3	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.3	1.5	1.4	1.4	1.5	1.47	2.31
	3.04	3.08	--	3.37	3.33	3.28	2.96	2.67	2.56	2.57	2.56	2.31	1.82	2.19	2.27	2.02	1.95	2.03	2.45	2.86	2.66	2.88	3.00	2.90	Diurnal Average	
	6.04	6.44	--	9.73	5.90	5.82	5.87	4.81	5.61	8.30	7.87	8.69	4.69	9.79	12.72	7.84	4.75	4.39	12.86	18.63	5.78	6.59	6.83	6.60	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

WCAS - Tomahawk
Summary of Hourly Averages

NOx (NO_x) - ppb
July 2016

Maximum Value: 23.44 ppb on Jul 8 20:00

Maximum Daily Average: 7.85 ppb on Jul 8

Minimum Value: 1.1 ppb on Jul 26 17:00

Minimum Daily Average: 1.67 ppb on Jul 31

Maximum Diurnal Average: 4.03 ppb at hour 7

Minimum Diurnal Average: 2.11 ppb at hour 13

Monthly Average: 3.077 ppb

Percentiles: P_1 = 1.2 P_{10} = 1.5 Q_1 = 1.9 Median = 2.6 Q_3 = 3.6 P_{90} = 5.1 P_{99} = 13.2

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																								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-Jul	2.5	2.6	Z	2.7	2.8	3.4	3.6	4.8	3.8	2.8	2.3	3.8	2.4	3.3	2.6	1.7	2.0	2.4	2.7	2.2	1.7	2.3	2.5	2.8	2.77	4.83
2-Jul	2.8	3.1	Z	3.3	4.0	4.3	3.5	3.3	2.5	2.3	2.3	2.2	2.2	1.7	1.5	1.3	3.0	3.5	2.0	2.1	2.3	2.5	2.4	3.2	2.66	4.30
3-Jul	3.5	3.0	Z	10.0	6.2	5.3	4.0	3.5	3.9	4.4	2.1	1.7	1.7	1.4	1.3	1.3	1.2	1.3	1.5	1.5	1.4	1.5	1.9	1.9	2.85	10.00
4-Jul	2.2	2.6	Z	3.1	3.6	5.1	4.9	4.1	3.4	2.5	2.3	2.0	1.8	1.8	1.8	1.8	1.8	1.9	4.0	3.0	2.6	2.7	2.9	3.1	2.82	5.06
5-Jul	3.0	3.2	Z	2.6	2.5	2.3	2.6	2.2	2.2	2.5	2.4	2.0	2.0	1.8	1.8	1.6	1.5	1.6	2.0	1.9	3.2	2.9	3.7	4.2	2.42	4.17
6-Jul	5.6	4.7	Z	2.4	2.6	2.4	2.2	2.6	2.7	2.7	2.6	2.2	2.1	2.0	2.1	2.0	2.0	2.7	2.6	2.7	2.7	2.7	2.9	2.8	2.70	5.63
7-Jul	2.7	2.5	Z	2.5	2.7	4.0	3.5	3.1	3.2	3.1	1.9	1.7	1.6	1.6	1.4	1.5	1.6	1.6	2.6	4.9	5.4	4.9	4.8	4.4	2.92	5.41
8-Jul	6.2	6.6	Z	5.7	5.8	5.2	7.6	4.7	4.4	4.2	3.8	3.8	3.9	14.1	18.0	9.9	5.6	5.4	17.8	23.4	5.7	6.1	6.9	5.6	7.85	23.44
9-Jul	6.0	5.6	Z	5.1	5.2	5.1	5.3	6.1	6.7	7.6	10.1	13.6	5.9	10.0	8.1	6.1	3.5	3.1	3.2	3.3	3.7	3.3	3.0	3.0	5.77	13.59
10-Jul	3.2	3.2	Z	2.9	3.2	3.4	3.0	2.4	2.4	2.4	2.3	2.3	2.5	2.0	1.9	1.8	1.7	1.9	1.9	2.0	2.0	2.3	2.3	2.5	2.41	3.43
11-Jul	2.8	2.8	Z	3.0	3.1	3.1	3.1	2.8	2.6	2.4	2.2	1.9	1.8	1.8	1.8	1.7	2.1	1.9	1.9	1.8	1.8	2.0	2.1	2.3	2.30	3.07
12-Jul	2.5	2.7	Z	2.5	2.7	2.7	2.9	2.6	2.4	2.2	2.2	2.0	1.9	1.8	1.7	1.8	1.8	2.0	1.8	1.8	1.9	2.2	2.2	2.0	2.18	2.91
13-Jul	2.0	2.1	Z	2.4	2.4	2.3	2.3	2.4	2.1	2.0	C	C	C	C	C	C	C	2.5	2.2	2.1	2.0	2.1	2.8	3.1	--	3.14
14-Jul	3.2	2.7	Z	3.1	3.0	3.1	2.9	2.7	3.1	4.5	6.5	3.5	2.0	2.2	7.4	6.7	4.6	4.5	3.9	1.9	2.7	2.7	2.4	2.5	3.56	7.36
15-Jul	3.1	3.0	Z	3.1	3.1	3.2	3.7	5.5	6.1	14.4	13.3	3.1	3.1	2.6	2.2	3.2	3.8	3.4	2.4	2.8	4.0	3.2	3.8	3.5	4.33	14.35
16-Jul	3.0	3.2	Z	2.7	2.7	2.6	2.6	2.3	2.9	4.7	11.4	12.0	2.3	2.6	1.7	1.4	1.4	1.3	1.4	2.1	2.8	3.2	2.6	3.8	3.33	11.97
17-Jul	3.2	2.2	Z	2.5	2.2	2.2	2.2	2.3	2.2	2.0	1.9	1.8	1.7	1.8	1.5	1.7	1.8	2.2	1.7	5.8	6.1	6.8	7.0	4.1	2.91	6.96
18-Jul	3.1	3.0	Z	5.1	5.6	5.2	10.7	5.6	4.7	4.0	2.3	2.0	2.2	2.0	2.0	1.9	2.1	2.6	2.6	2.3	3.0	4.8	3.2	2.9	3.61	10.67
19-Jul	3.3	3.2	Z	4.6	3.8	3.8	5.0	5.7	3.8	2.6	2.2	1.6	1.4	1.3	1.4	1.6	1.5	1.4	1.6	1.9	2.8	1.8	1.8	2.1	2.62	5.71
20-Jul	2.3	2.2	Z	2.5	3.8	4.4	4.1	2.3	2.2	2.2	2.2	2.6	1.5	1.6	1.5	1.9	1.6	1.6	1.6	1.7	1.6	2.3	3.1	2.5	2.32	4.42
21-Jul	2.7	2.9	Z	3.3	4.1	3.7	3.9	4.1	4.0	2.4	2.0	1.5	1.3	1.4	2.1	1.5	1.2	1.3	1.5	2.1	2.1	3.6	1.9	1.8	2.46	4.09
22-Jul	2.5	2.5	Z	4.2	5.2	6.5	6.0	4.4	4.0	2.9	2.2	1.8	1.5	1.3	1.3	1.5	2.6	2.5	2.6	1.9	2.4	2.3	1.9	1.8	2.86	6.49
23-Jul	1.8	1.7	Z	2.5	2.4	2.4	2.7	2.8	1.6	1.4	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.4	1.7	1.7	1.7	3.6	2.9	3.3	1.92	3.61
24-Jul	3.7	4.3	Z	4.1	3.8	3.9	4.2	3.7	3.6	2.9	2.3	1.8	1.6	1.4	1.5	1.4	1.3	1.7	1.6	1.9	1.6	1.7	2.0	2.2	2.53	4.32
25-Jul	2.1	2.2	Z	2.6	3.1	3.5	4.3	3.9	2.0	1.2	1.1	1.3	1.3	1.3	1.5	1.8	1.8	2.1	2.3	2.5	2.5	2.7	3.3	3.3	2.34	4.32
26-Jul	3.0	3.6	Z	3.2	3.8	4.7	4.6	4.3	3.4	2.7	2.8	2.4	1.8	1.6	1.6	1.1	1.1	1.6	6.4	8.1	5.7	4.2	5.0	3.4	3.48	8.11
27-Jul	3.9	4.3	Z	3.8	3.9	6.3	3.9	3.0	5.1	2.9	3.0	6.1	2.6	1.8	2.0	1.7	5.1	4.9	3.1	2.8	3.1	2.7	3.6	4.0	3.64	6.27
28-Jul	3.8	4.6	Z	6.0	3.7	4.4	4.8	5.5	4.3	4.1	3.6	2.6	3.0	3.0	3.2	2.8	2.3	2.7	3.1	2.6	2.8	4.7	6.9	6.8	3.97	6.91
29-Jul	4.1	4.0	Z	4.7	4.3	4.6	5.3	4.7	4.1	3.7	2.7	1.7	1.4	1.3	1.3	1.3	1.4	1.7	2.7	2.6	3.8	3.5	2.8	2.1	3.03	5.27
30-Jul	2.6	4.3	Z	2.1	2.7	3.7	3.7	3.4	2.9	2.2	2.1	1.9	2.1	5.4	2.8	2.6	2.5	2.3	1.8	2.0	1.6	1.7	1.7	2.0	2.62	5.39
31-Jul	2.4	2.2	Z	2.5	2.2	1.9	2.0	1.9	1.7	1.6	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.2	1.3	1.4	1.7	1.5	1.6	1.7	1.67	2.46
	3.20	3.24	--	3.57	3.55	3.83	4.03	3.63	3.36	3.35	3.36	2.98	2.11	2.62	2.73	2.31	2.22	2.32	2.90	3.26	2.85	3.04	3.15	3.05	Diurnal Average	
	6.25	6.64	--	10.00	6.22	6.49	10.67	6.11	6.72	14.35	13.33	13.59	5.90	14.10	18.04	9.85	5.60	5.44	17.76	23.44	6.15	6.75	6.96	6.81	Diurnal Maximum	

Z - zerospan C - Calibration

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

West Central Airshed Society

WCAS - Tomahawk
Summary of Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$
July 2016

Maximum Value: 11.46 $\mu g/m^3$ on Jul 17 10:00

Maximum Daily Average: 7.74 $\mu g/m^3$ on Jul 17

Minimum Value: 0.6 $\mu g/m^3$ on Jul 25 01:00

Minimum Daily Average: 1.26 $\mu g/m^3$ on Jul 5

Maximum Diurnal Average: 4.38 $\mu g/m^3$ at hour 7

Minimum Diurnal Average: 2.87 $\mu g/m^3$ at hour 13

Monthly Average: 3.655 $\mu g/m^3$

Percentiles: P_1 = 0.8 P_{10} = 1.5 Q_1 = 2.2 Median = 3.4 Q_3 = 4.8 P_{90} = 6.0 P_{99} = 10.7

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																								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-Jul	4.6	5.0	Z	4.0	4.2	5.8	9.3	8.3	5.9	4.5	3.9	3.9	4.1	4.3	4.4	4.2	4.3	4.5	4.1	3.9	4.4	4.2	3.8	4.6	4.79	9.33
2-Jul	5.2	5.4	Z	7.4	9.2	6.6	6.2	5.7	5.4	4.9	4.2	3.6	3.2	2.3	2.2	2.3	3.9	3.7	3.3	2.8	2.5	2.5	2.7	3.4	4.28	9.17
3-Jul	2.7	2.2	Z	3.5	4.6	3.8	3.3	2.7	3.1	7.2	2.2	1.4	1.5	1.3	1.3	1.3	1.4	1.3	1.2	1.4	2.2	3.2	3.3	2.5	2.55	7.24
4-Jul	2.3	2.0	Z	2.1	1.9	2.3	2.4	2.1	1.9	2.0	2.0	1.9	1.8	1.6	1.5	1.5	1.6	1.3	1.1	1.2	1.3	1.3	1.4	1.4	1.74	2.43
5-Jul	1.4	1.4	Z	1.7	1.8	1.4	1.1	0.9	0.8	0.9	1.1	1.1	1.0	1.1	1.0	1.0	1.1	1.3	1.1	0.9	1.0	1.6	2.0	2.3	1.26	2.35
6-Jul	2.5	2.4	Z	1.9	2.2	2.2	2.1	2.4	2.9	2.7	2.0	1.6	2.1	3.2	4.0	2.9	3.4	6.5	7.2	6.4	6.1	5.9	5.2	5.8	3.64	7.20
7-Jul	6.2	5.6	Z	4.2	4.2	4.3	4.6	4.0	3.2	3.1	1.9	1.4	1.4	1.6	1.9	1.7	2.0	2.2	2.7	3.4	3.8	6.6	6.8	6.9	3.64	6.88
8-Jul	6.2	5.1	Z	3.6	3.8	4.2	4.1	3.8	3.1	2.4	2.3	2.1	1.9	2.3	2.9	3.4	3.4	2.8	3.5	6.0	5.9	5.6	6.2	6.2	3.95	6.24
9-Jul	7.5	7.2	Z	8.4	8.6	8.2	8.2	8.1	6.6	6.0	4.6	4.8	4.4	4.1	4.5	3.9	3.1	2.5	2.2	1.8	1.6	1.6	1.7	1.6	4.83	8.60
10-Jul	1.5	1.9	Z	2.8	3.1	3.4	3.1	2.8	3.0	3.0	2.9	2.6	2.2	2.4	1.8	1.8	1.6	1.5	1.6	1.5	1.6	1.5	1.8	1.8	2.23	3.37
11-Jul	2.0	2.4	Z	2.7	2.7	2.9	3.3	3.2	3.1	3.3	3.0	2.8	3.2	3.0	2.9	2.2	2.4	1.9	1.6	1.5	1.5	1.8	2.0	2.3	2.50	3.33
12-Jul	2.4	2.6	Z	3.9	4.4	4.9	5.0	4.8	5.0	5.1	4.8	4.2	4.3	4.0	3.6	3.8	3.0	2.6	3.2	3.3	2.9	2.6	2.5	2.6	3.71	5.07
13-Jul	2.4	2.4	Z	3.0	3.1	3.3	3.4	3.3	3.3	3.2	C	C	C	C	C	2.6	2.7	3.1	3.4	3.1	3.5	3.7	4.1	4.1	3.20	4.06
14-Jul	3.8	4.1	Z	4.2	4.2	3.9	4.2	4.0	3.9	4.1	4.5	5.1	4.9	4.7	5.5	6.9	7.7	7.3	5.5	4.3	3.9	3.9	4.0	4.6	4.74	7.65
15-Jul	4.9	5.3	Z	5.5	5.8	5.9	5.6	5.1	5.0	5.2	4.2	3.8	4.0	4.9	4.2	3.8	3.2	3.2	2.8	2.8	2.8	3.5	4.4	4.5	4.37	5.93
16-Jul	4.0	3.7	Z	4.1	4.1	4.3	4.3	4.5	4.4	3.5	4.2	5.1	5.5	6.0	5.0	4.9	5.1	5.5	5.0	5.3	6.4	7.9	7.9	8.2	5.16	8.16
17-Jul	7.9	7.2	Z	9.1	10.7	11.2	10.7	10.9	11.0	11.5	11.0	8.6	8.8	8.0	6.5	5.4	5.1	4.8	4.4	4.5	5.1	5.0	5.5	4.8	7.74	11.46
18-Jul	4.1	4.1	Z	4.2	4.4	4.4	5.1	5.5	5.6	4.7	3.9	3.4	3.0	2.9	2.6	2.5	2.4	2.6	2.3	2.0	2.2	2.4	2.3	2.9	3.46	5.62
19-Jul	3.3	3.6	Z	3.4	3.2	3.4	5.2	5.4	5.7	5.9	5.3	4.3	4.2	4.7	4.8	3.5	4.6	5.2	5.6	5.6	7.1	10.1	9.6	9.2	5.34	10.06
20-Jul	8.7	7.2	Z	6.3	5.6	6.0	4.6	3.5	3.6	3.6	3.1	2.8	1.3	1.2	0.9	0.9	0.8	0.8	0.9	0.9	1.2	1.8	1.6	2.3	3.04	8.69
21-Jul	2.5	2.7	Z	1.9	1.8	1.8	1.5	1.7	1.7	1.6	1.7	1.6	1.6	2.2	2.8	2.6	3.0	3.4	4.0	4.8	4.9	5.2	5.2	5.6	2.87	5.64
22-Jul	5.8	5.3	Z	5.3	4.9	4.1	4.1	3.0	2.4	2.0	1.7	1.6	1.8	2.2	2.6	2.7	3.4	3.7	5.0	4.3	5.1	6.6	5.3	3.9	3.78	6.65
23-Jul	4.0	5.3	Z	5.6	5.1	4.7	4.0	3.6	3.3	2.9	2.9	3.0	3.1	3.4	3.6	3.6	3.6	4.2	5.4	5.6	6.0	7.3	7.7	7.4	4.58	7.71
24-Jul	6.7	6.6	Z	5.3	4.7	4.4	4.5	3.6	3.1	2.2	1.4	1.1	1.0	0.9	1.0	1.0	1.0	1.3	1.6	1.2	0.8	0.7	0.7	0.7	2.41	6.73
25-Jul	0.6	0.9	Z	1.0	1.0	1.2	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.2	1.4	2.2	2.1	2.4	2.5	2.6	2.6	2.4	2.5	2.4	1.60	2.63
26-Jul	2.1	1.9	Z	1.8	1.9	1.8	2.2	2.5	2.8	2.6	2.7	2.7	2.4	2.5	2.4	2.4	2.3	2.8	4.3	6.8	6.5	8.0	7.9	5.7	3.44	8.03
27-Jul	4.9	5.0	Z	4.0	4.2	5.3	4.7	3.5	3.9	3.5	3.7	3.8	2.6	2.7	3.2	2.7	3.4	4.1	4.7	5.2	4.9	5.1	5.4	5.6	4.18	5.62
28-Jul	5.5	5.7	Z	5.7	5.8	6.0	6.4	6.6	5.9	5.1	4.2	3.1	2.8	2.9	3.3	3.5	3.6	4.1	4.2	3.8	4.0	4.0	3.8	4.0	4.51	6.57
29-Jul	3.8	3.9	Z	2.8	3.7	3.7	4.7	4.9	4.3	3.7	3.0	2.4	2.6	2.9	3.3	3.9	4.5	5.0	5.5	6.5	5.8	3.7	7.7	5.8	4.27	7.72
30-Jul	4.4	4.4	Z	3.1	2.9	2.8	2.6	2.3	2.1	2.7	2.8	2.5	2.3	2.2	2.3	2.5	2.0	1.5	1.6	1.7	2.4	2.6	2.8	2.8	2.57	4.44
31-Jul	3.2	3.6	Z	4.2	4.6	5.2	4.1	3.4	3.1	2.5	2.3	2.2	2.0	2.2	2.4	2.1	2.4	2.4	2.0	1.9	2.0	2.2	2.6	2.7	2.83	5.21
	4.11	4.07	--	4.09	4.27	4.31	4.38	4.10	3.88	3.77	3.29	2.99	2.87	2.97	2.99	2.89	3.03	3.20	3.34	3.45	3.61	4.01	4.21	4.14	Diurnal Average	
	8.69	7.25	--	9.10	10.75	11.22	10.75	10.89	11.05	11.46	10.97	8.57	8.78	8.01	6.53	6.91	7.65	7.30	7.20	6.79	7.11	10.06	9.63	9.21	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m^3 24-hr 30 ul/m^3

TOMAHAWK
STATION #901

METEOROLOGICAL DATA

JULY 2016

WCAS - Tomahawk
Summary of Hourly Averages

External Temperature (ET) - C
July 2016

Maximum Value: 28.55 C on Jul 29 17:00

Maximum Daily Average: 20.09 C on Jul 26

Minimum Value: 6.6 C on Jul 4 05:00

Minimum Daily Average: 12.08 C on Jul 31

Maximum Diurnal Average: 21.98 C at hour 15

Minimum Diurnal Average: 11.28 C at hour 5

Monthly Average: 16.841 C

Percentiles: P_1 = 8.6 P_{10} = 11.3 Q_1 = 13.1 Median = 16.2 Q_3 = 20.5 P_{90} = 23.3 P_{99} = 27.2

Hours in Service:	744
Hours of Data:	694
Hours of Missing Data:	50
Hours of Calibration:	0
Percent Operational Time:	93.3

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-Jul	11.2	10.7	10.0	9.4	8.9	9.0	10.6	12.7	16.4	19.3	21.2	22.4	23.4	23.7	23.6	23.7	22.1	21.6	20.9	19.2	15.2	14.5	14.1	AF	16.69	23.70
2-Jul	AF	AF	AF	13.7	13.5	13.2	13.3	13.9	14.5	15.7	18.3	19.2	21.0	22.0	22.9	23.1	22.4	22.3	19.6	16.7	15.9	15.2	AF	AF	17.71	23.11
3-Jul	AF	AF	AF	AF	AF	AF	AF	AF	AF	15.2	15.5	17.3	18.5	19.2	20.1	20.9	18.4	19.9	20.4	19.5	15.9	12.2	10.1	10.2	--	20.85
4-Jul	9.5	8.6	8.3	7.7	6.6	7.1	9.8	13.2	15.4	16.9	18.3	18.8	19.8	20.5	21.9	21.0	20.5	17.6	19.1	17.8	14.9	12.6	11.8	12.2	14.58	21.86
5-Jul	11.6	11.0	9.7	8.6	7.9	9.4	11.2	12.9	14.0	15.9	17.7	19.6	19.7	19.9	20.9	20.2	21.1	21.6	19.6	21.6	16.2	14.2	13.2	11.8	15.39	21.59
6-Jul	10.8	9.8	9.7	8.8	9.3	9.9	11.1	12.7	15.4	17.2	18.6	19.6	21.0	21.6	22.1	21.8	20.3	15.9	14.4	14.0	13.4	AF	AF	AF	15.12	22.09
7-Jul	AF	AF	11.8	11.3	11.0	11.1	12.1	14.2	17.0	18.8	20.0	20.6	20.2	22.0	21.8	21.8	22.4	23.8	22.7	20.9	17.6	15.3	13.9	12.3	17.39	23.81
8-Jul	12.1	11.9	11.0	10.7	10.2	10.5	12.2	14.0	17.0	19.1	20.5	21.4	22.6	23.4	23.8	23.8	23.5	20.2	18.1	16.7	15.4	13.4	11.8	11.4	16.45	23.85
9-Jul	10.2	10.1	10.1	10.3	10.2	11.7	12.5	14.9	15.6	16.3	17.9	18.8	20.0	21.2	20.5	19.5	12.5	AF	AF	AF	AF	AF	AF	AF	--	21.16
10-Jul	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	12.1	--	12.08
11-Jul	12.0	12.2	12.5	12.6	12.3	12.4	12.9	13.5	14.6	15.8	17.5	19.2	19.1	19.4	20.5	17.3	15.7	17.7	19.1	18.4	16.5	15.1	14.0	13.3	15.57	20.55
12-Jul	12.3	11.4	11.3	12.0	11.9	12.4	13.6	15.6	17.9	19.3	20.5	20.1	20.3	20.4	18.9	16.0	15.5	16.2	15.6	15.6	15.2	14.0	13.8	14.1	15.58	20.48
13-Jul	13.9	13.6	13.5	13.3	12.9	13.1	13.5	14.5	15.6	15.4	15.8	17.5	18.0	19.6	20.8	18.7	17.4	18.6	17.8	17.3	15.6	14.0	12.8	12.0	15.64	20.80
14-Jul	11.9	12.5	11.9	11.5	11.5	11.9	12.8	14.3	16.4	17.7	18.7	20.8	21.5	20.1	19.0	17.1	17.3	17.5	16.7	16.2	14.6	13.0	12.2	12.0	15.38	21.46
15-Jul	11.3	11.2	10.3	9.7	9.1	9.9	13.4	14.0	16.4	18.3	19.9	20.4	15.9	13.5	15.6	16.4	15.5	17.3	18.0	17.9	16.2	13.1	12.2	11.5	14.47	20.35
16-Jul	12.0	11.8	11.7	11.8	11.2	11.1	12.4	14.9	16.7	19.1	20.4	21.4	22.4	22.8	21.9	23.3	23.3	23.9	23.1	21.0	17.5	15.1	14.1	12.9	17.34	23.89
17-Jul	13.2	14.4	13.5	13.0	12.3	12.5	13.5	14.8	15.0	15.9	18.0	16.8	16.8	16.8	19.8	20.5	19.3	19.0	20.9	18.6	16.3	15.3	14.6	14.1	16.04	20.85
18-Jul	13.0	12.1	12.1	11.8	11.7	12.0	13.1	14.7	16.3	18.9	20.7	21.9	22.3	22.9	23.3	23.9	22.3	22.0	21.9	21.9	19.6	17.5	16.4	15.7	17.83	23.86
19-Jul	13.9	12.8	11.7	11.0	11.3	11.1	13.1	14.4	16.5	19.1	21.6	23.0	24.0	24.8	24.9	25.2	25.6	25.3	25.3	25.0	20.7	18.3	17.7	16.6	18.87	25.56
20-Jul	16.1	15.5	15.1	14.2	13.8	13.7	14.7	16.2	16.9	17.8	19.0	19.8	21.4	22.1	21.8	20.6	21.5	22.2	20.8	20.2	18.4	17.1	16.8	15.5	17.96	22.21
21-Jul	15.3	15.1	14.7	14.7	14.3	14.1	15.1	16.0	16.9	18.0	19.2	21.0	22.5	21.9	20.4	21.3	21.5	22.0	20.8	19.1	17.1	16.2	14.9	14.6	17.77	22.45
22-Jul	14.2	13.1	12.2	11.8	11.5	11.6	13.8	16.8	19.8	21.3	22.8	24.5	25.5	26.2	26.7	25.8	26.7	26.1	21.9	20.0	18.4	16.6	16.7	14.9	19.12	26.75
23-Jul	13.5	14.0	14.1	13.4	12.0	12.4	13.3	14.5	16.6	17.5	19.0	20.7	21.1	22.3	22.4	22.7	22.5	21.9	22.0	20.6	17.8	15.3	14.7	13.8	17.41	22.73
24-Jul	13.1	12.0	10.7	9.7	8.7	9.4	11.4	14.9	18.1	20.7	23.1	24.9	25.9	25.7	25.7	25.7	26.9	24.6	23.2	22.4	19.0	17.2	15.7	14.7	18.47	26.87
25-Jul	13.9	13.8	14.7	13.0	12.2	11.9	13.6	17.2	19.7	20.7	22.1	23.2	24.1	24.5	24.4	25.3	25.0	24.1	23.3	22.8	20.3	18.6	16.7	15.5	19.20	25.34
26-Jul	14.6	14.1	13.0	13.3	12.9	12.5	13.9	16.1	20.2	21.1	22.4	23.7	26.0	25.7	26.4	26.8	27.8	27.3	26.1	23.8	20.9	18.9	17.9	16.9	20.09	27.81
27-Jul	16.1	14.4	14.3	15.7	15.8	14.9	15.5	17.1	18.5	22.1	22.7	22.3	24.3	23.5	25.5	26.3	26.3	23.3	21.7	20.4	18.5	17.7	17.1	15.4	19.56	26.32
28-Jul	14.1	12.4	12.7	12.8	12.4	12.5	13.2	14.7	18.2	20.6	22.6	23.8	25.5	26.4	27.4	23.3	16.8	16.2	17.8	19.1	17.1	14.8	13.6	13.5	17.56	27.37
29-Jul	13.3	12.4	11.6	11.0	10.8	10.4	11.9	14.4	17.5	21.0	23.8	25.5	26.6	27.0	27.5	28.4	28.6	28.1	24.8	22.2	15.8	16.1	15.3	13.9	19.08	28.55
30-Jul	13.4	12.5	12.2	12.3	12.1	12.5	12.8	14.1	15.6	18.8	20.3	22.5	22.3	17.8	13.3	13.5	14.4	16.3	16.7	15.3	12.3	11.5	11.9	11.1	14.82	22.51
31-Jul	10.0	9.7	9.6	9.5	8.7	8.6	9.7	11.2	12.6	13.6	14.7	14.9	14.3	15.0	15.6	13.2	14.6	14.7	13.5	12.2	11.3	10.8	10.7	10.9	12.08	15.56
	12.84	12.35	11.93	11.67	11.28	11.48	12.75	14.57	16.60	18.23	19.75	20.85	21.53	21.73	21.98	21.58	20.92	20.94	20.19	19.18	16.69	15.14	14.25	13.44	Diurnal Average	
	16.09	15.48	15.10	15.66	15.80	14.94	15.52	17.22	20.16	22.05	23.82	25.54	26.59	26.98	27.52	28.40	28.55	28.14	26.08	25.00	20.89	18.94	17.85	16.95	Diurnal Maximum	

AF - Analyzer Failure

WCAS - Tomahawk

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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	6.3	6.5	7.0	7.5	4.5	4.3	6.7	4.4	2.0	2.8	3.2	5.9	6.3	8.4	11.9	12.5	11.1	9.6	5.9	5.2	8.5	3.1	2.5	2.3	3.65	12.47
Dir	WSW	SW	WSW	WSW	SW	WSW	SW	WSW	WSW	SW	SSW	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	W	NNW	NE	E	WNW	SSW	SSE
2 Spd	2.1	2.8	4.2	5.5	5.5	6.0	5.4	4.4	4.9	2.9	1.4	2.4	3.7	2.1	3.9	6.3	8.8	10.2	6.4	3.4	4.7	5.1	8.5	5.4	1.67	10.16
Dir	W	W	SSW	S	S	SW	WSW	SSW	SW	WSW	SE	S	SSE	SSE	ESE	ESE	ESE	SSE	SSW	WNW	N	N	NE	NNE	S	SSE
3 Spd	9.0	9.4	9.3	9.4	6.2	1.9	2.6	6.1	10.0	16.6	17.2	18.4	19.4	21.4	19.3	17.9	11.3	10.4	9.8	8.0	10.4	4.2	7.7	7.9	7.00	21.43
Dir	N	E	SE	SE	SE	S	S	S	NW	NNW	N	N	NNW	NNW	N	N	N	N	NNE	N	N	NNW	WSW	W	N	NNW
4 Spd	8.8	6.3	5.3	5.8	5.1	2.0	5.7	3.7	6.5	1.3	5.3	6.1	2.0	4.8	4.2	0.3	5.2	7.2	3.6	3.8	6.5	6.7	8.8	6.3	2.48	8.80
Dir	W	WSW	SW	SW	WSW	SSE	SW	SSW	SSE	SSE	SE	E	SE	ESE	NE	S	W	N	SSE	SSW	SW	SW	WSW	W	SW	W
5 Spd	6.7	6.0	0.9	5.0	7.6	12.1	12.0	15.0	12.9	11.0	9.5	5.1	10.0	8.2	8.5	9.4	10.9	10.3	8.0	2.4	3.2	5.3	6.9	7.8	6.10	14.96
Dir	W	WSW	NNE	NNW	NNW	NNW	N	N	N	N	N	NNE	NNE	NNE	NNE	N	N	N	NE	NNE	WSW	W	WSW	WSW	NNW	N
6 Spd	6.5	4.8	7.0	8.6	7.7	10.0	12.2	11.8	14.1	13.2	12.4	16.2	13.2	17.1	15.2	11.4	10.2	14.9	9.0	2.0	5.5	7.7	9.8	7.9	8.19	17.10
Dir	WSW	W	N	N	N	NNW	NNW	N	N	NNW	NNW	N	N	NNW	N	NNW	NW	NE	E	NNW	NNW	WSW	WSW	NW	NNW	NNW
7 Spd	4.3	10.6	6.5	7.2	6.8	5.8	3.0	7.4	6.2	7.8	8.5	10.6	9.8	8.9	7.1	6.2	3.0	3.6	6.9	8.0	9.4	9.6	7.8	7.7	2.05	10.64
Dir	WSW	NNW	NW	W	WSW	SW	SW	WSW	WSW	WSW	NW	NW	NW	NNW	NW	WSW	SW	NE	ESE	ESE	ESE	ESE	E	NE	WNW	NW
8 Spd	6.2	4.1	5.1	3.2	1.2	2.4	3.6	5.8	6.4	8.8	9.8	8.0	8.0	8.3	8.7	10.4	9.8	15.0	14.2	12.0	6.1	5.4	5.4	3.4	5.23	14.99
Dir	ENE	E	S	E	ESE	NW	NNE	N	N	NNE	NNE	NNE	NE	NE	NNE	NNE	NE	E	ESE	ESE	ESE	E	NE	ENE	ENE	E
9 Spd	7.0	3.3	3.2	2.4	2.0	1.0	0.6	2.3	4.1	3.3	5.8	8.7	11.1	10.0	5.7	1.8	11.0	AF	AF	AF	AF	AF	6.0	5.1	1.68	11.11
Dir	NE	NNE	WNW	WSW	NE	SE	NNW	NE	ESE	SE	E	E	ESE	ESE	ESE	SSE	W	AF	AF	AF	AF	AF	NW	NW	E	ESE
10 Spd	5.8	5.8	6.8	8.5	5.1	4.9	8.0	10.0	10.7	10.2	12.2	10.3	3.2	10.4	11.2	12.6	10.7	9.5	12.2	9.0	7.1	6.7	6.8	5.0	7.83	12.56
Dir	WNW	NW	NNW	N	ENE	N	NNW	NNW	NNW	NW	NNW	NE	NW	NNW	NNW	NNW	NNW	N	N	N	NNW	N	N	N	NNW	NNW
11 Spd	4.4	6.7	10.0	8.0	8.9	7.8	9.5	10.3	9.7	10.9	10.7	10.3	11.0	8.3	6.2	12.5	5.3	9.5	8.4	9.6	7.4	5.4	5.9	7.3	7.48	12.46
Dir	NNW	NNW	NNW	N	N	N	NNW	N	N	N	NNW	NNW	NNW	N	ENE	N	W	W	W	NW	NW	NW	NW	NW	NNW	N
12 Spd	7.0	4.9	5.3	7.1	6.5	6.8	9.1	11.2	11.0	7.0	3.7	2.6	8.6	6.6	13.0	22.1	11.9	5.9	9.9	8.8	6.5	7.9	8.0	10.1	7.06	22.06
Dir	NW	WNW	NW	NNW	NW	NNW	NNW	N	N	N	NNE	W	WSW	WSW	WNW	N	N	N	NW	WNW	WNW	W	WNW	NNW	NW	N
13 Spd	9.6	7.2	7.5	8.8	6.1	9.7	9.4	10.0	9.1	7.2	7.4	6.7	7.4	4.2	4.8	9.2	5.7	3.0	4.3	6.1	5.6	7.3	6.8	5.9	6.08	9.99
Dir	NNW	NNW	NNW	N	NNW	NNW	NNW	N	N	NNW	NNW	NNW	NW	WNW	NW	NNE	NE	N	NNW	NNW	NW	WNW	W	W	NNW	N
14 Spd	4.7	5.2	3.1	3.6	5.2	5.0	6.2	8.0	5.4	5.0	5.1	8.4	9.9	9.3	6.4	7.4	7.7	8.4	6.6	8.1	3.6	3.0	4.1	5.2	2.83	9.90
Dir	W	NNW	NW	WNW	NNW	N	N	N	NNE	N	N	ENE	E	E	SW	W	SW	W	N	NNE	NNE	NNW	NW	N	N	E
15 Spd	6.5	4.0	6.2	3.0	3.2	4.6	1.6	3.3	0.9	4.8	9.3	13.3	8.7	10.9	8.5	12.8	7.9	5.0	2.5	3.8	4.7	3.3	4.2	4.4	1.65	13.28
Dir	N	NNE	NNE	N	NNW	N	NNE	WSW	SE	E	E	ESE	SW	W	NW	E	SE	S	ESE	E	N	N	N	N	NE	ESE
16 Spd	4.7	2.7	4.0	6.8	8.0	6.5	5.7	8.3	10.0	6.0	5.6	8.3	8.5	7.7	7.1	8.9	9.9	10.1	10.4	5.4	5.3	5.4	6.9	8.0	5.14	10.40
Dir	N	NNW	NNW	N	N	N	N	N	N	NNE	NE	NE	NE	NE	NNE	N	N	NNE	N	NNE	SW	WSW	WSW	W	N	N
17 Spd	5.8	8.4	8.6	9.2	9.5	10.6	9.9	9.6	9.7	7.9	5.1	11.0	4.8	4.1	3.5	5.7	4.8	4.4	3.5	3.8	3.0	2.3	3.2	3.7	4.33	11.05
Dir	WNW	NNW	N	N	NNW	N	NNW	N	N	N	NW	NNE	N	WSW	NE	NNE	NNE	ENE	ESE	S	S	S	WSW	WSW	N	NNE
18 Spd	4.7	4.6	4.0	2.9	4.2	3.9	2.8	5.0	6.8	8.4	10.1	11.1	12.3	12.4	12.0	9.6	9.3	9.4	9.0	7.9	7.5	5.6	3.9	5.5	6.44	12.39
Dir	SW	SW	SW	S	SSE	S	S	S	S	SSE	SSE	SSE	SSE	SSE	SSE	S	SSE	S	S	S	S	SSW	SW	WNW	S	SSE
19 Spd	4.6	1.4	2.4	3.8	4.6	4.9	4.0	6.8	7.6	6.4	7.6	11.9	13.2	12.9	11.9	13.0	13.3	11.5	7.5	2.8	7.6	9.7	9.4	8.3	7.21	13.26
Dir	NNW	W	SW	WSW	SW	WSW	W	W	W	W	WSW	W	W	WNW	W	WSW	WSW	WSW	WSW	WSW	WNW	WNW	W	WSW	W	WSW
20 Spd	6.8	9.6	9.1	7.7	6.2	5.7	6.4	9.5	8.8	9.0	7.9	7.0	15.4	14.1	14.7	11.7	9.1	12.4	14.3	14.8	5.4	5.2	2.3	0.8	7.50	15.38
Dir	SW	SW	WSW	WSW	WSW	WSW	W	NW	NW	WNW	WSW	WSW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	WSW	WSW	NNW	WNW	WNW
21 Spd	3.9	4.4	6.0	6.0	5.2	6.1	7.2	7.2	6.3	10.0	12.4	13.2	16.8	10.9	0.9	10.6	11.4	10.9	9.3	4.7	6.2	1.4	3.4	3.9	5.06	16.82
Dir	W	W	WSW	WSW	SW	SW	SW	WSW	W	WNW	WNW	WNW	WNW	WNW	WSW	NNW	NNW	NNW	NE	NE	NNE	NNE	N	N	WNW	WNW
22 Spd	2.1	0.1	3.5	1.0	2.9	4.2	6.2	6.7	11.3	11.8	11.1	9.3	5.3	4.9	4.4	6.2	2.8	5.9	13.0	11.3	3.6	7.9	10.5	11.1	2.78	13.01
Dir	NE	ENE	SW	WSW	S	S	SSW	SSW	SSW	SW	SW	SW	W	WSW	W	SW	ESE	E	N	NNE	ENE	NW	W	WNW	WSW	N

WCAS - Tomahawk
Summary of Hourly Averages

Wind Speed (WS) - kph
July 2016

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
23 Spd	4.2	7.4	6.4	6.1	6.6	2.9	5.4	4.5	6.3	5.7	9.9	13.4	11.0	8.0	10.4	12.4	10.4	6.9	7.2	3.0	1.4	2.5	4.4	5.0	5.58	13.44
Dir	NNW	NNW	NNW	N	N	SW	W	WNW	NW	NW	NW	NW	NW	NNW	NW	WNW	NW	NNW	NNE	NNE	NNE	SW	WSW	WSW	NW	NW
24 Spd	4.8	6.0	5.9	5.1	7.9	6.9	7.1	8.3	8.6	9.2	8.4	7.2	9.8	11.8	9.8	8.7	8.1	12.2	12.1	12.4	9.2	4.6	4.9	5.8	4.96	12.41
Dir	WSW	SW	SW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	WSW	WSW	W	W	WNW	NNW	N	N	N	N	NNW	WNW	NW	W	N
25 Spd	5.8	3.6	6.0	3.7	5.5	7.3	5.8	3.5	4.7	6.6	4.3	4.7	5.7	9.2	4.8	5.7	8.0	12.0	10.4	11.4	9.9	8.1	5.5	6.8	4.44	11.96
Dir	N	W	NW	W	WSW	W	WSW	WSW	WSW	WSW	SW	SW	SSW	SW	SSW	SE	S	S	S	S	SSE	SSE	SSE	SSE	SSW	S
26 Spd	7.4	4.4	4.6	3.2	3.9	3.7	2.2	4.3	9.8	8.7	7.5	3.9	4.9	3.8	5.4	4.4	6.8	3.8	8.9	9.2	8.7	8.4	5.7	3.3	1.73	9.82
Dir	SSE	S	SSE	SE	SSE	S	SW	NW	NNE	N	N	N	NE	N	NNW	N	N	NE	ESE	SE	SE	SE	SE	SSE	E	NNE
27 Spd	2.7	2.9	1.4	8.0	3.3	3.4	6.4	4.7	2.6	2.8	9.1	11.7	8.5	7.1	4.7	4.9	11.3	14.8	7.1	7.6	8.8	12.6	6.4	5.3	2.86	14.75
Dir	S	SSE	NE	NE	S	SSW	NNW	WSW	W	W	W	WNW	WSW	WSW	SE	SE	SE	SSE	SSE	SW	WSW	W	WSW	SSE	SW	SSE
28 Spd	2.7	2.8	3.1	4.2	6.1	5.7	6.9	3.7	4.3	5.9	5.4	6.9	3.5	2.2	6.2	8.2	11.9	7.0	8.6	5.7	4.9	4.2	5.9	5.3	4.83	11.92
Dir	SSW	ENE	SW	WSW	WSW	SW	WSW	SW	SSW	SSW	SW	WSW	WSW	W	WSW	WSW	W	SSW	WSW	SW	SW	S	SSW	SW	SW	W
29 Spd	5.5	4.9	7.8	6.3	5.6	5.4	3.4	4.7	5.5	5.1	4.8	6.5	8.1	6.0	4.6	4.9	5.2	9.7	8.1	4.1	14.1	13.7	15.9	13.7	2.18	15.95
Dir	WSW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	SW	W	W	W	SSW	SSW	SSW	SSE	SSE	E	NE	ESE	NNW	ENE	SW	NNW
30 Spd	3.9	2.5	6.4	4.7	7.0	4.0	2.7	3.3	3.1	6.3	3.8	4.7	8.7	16.4	18.3	1.4	4.7	6.0	8.1	7.9	7.1	8.8	10.2	6.4	4.11	18.33
Dir	ESE	NNW	NW	NW	WSW	SW	SW	NNW	NW	NW	N	ENE	E	N	N	E	ENE	NNE	N	NNW	NNE	WNW	NW	WNW	NNW	N
31 Spd	7.4	10.0	12.3	13.1	9.9	9.8	11.4	13.7	18.3	21.2	17.3	18.3	20.1	18.6	23.1	18.0	19.9	19.9	15.5	13.2	17.4	21.3	22.0	20.2	15.83	23.06
Dir	W	WNW	NW	NNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NNW	NW	NW	NW	NNW	NNW	NNW	NW	WNW	WNW	NW	NW	NW	NW
Spd	2.52	2.41	2.78	2.45	2.28	2.76	3.46	3.76	3.93	4.32	3.67	3.21	3.55	4.41	4.17	3.85	2.79	1.99	2.08	1.98	2.02	2.34	3.80	3.24	Diurnal Average	
Dir	WNW	WNW	WNW	NW	WNW	WNW	WNW	NW	NW	NW	NW	NNW	NW	NW	NNW	NNW	NNW	N	NNE	N	NNW	W	WNW	NW		
Spd	9.58	10.56	12.27	13.14	9.91	12.05	12.24	14.96	18.28	21.21	17.28	18.43	20.09	21.43	23.06	22.06	19.89	19.86	15.50	14.77	17.36	21.34	21.96	20.19	Diurnal Maximum	
Dir	343.75	329.78	316.61	330.59	318.47	346.88	340.76	352.42	331.83	333.37	330.74	354.21	331.27	340.45	316.87	351.92	326.74	338.14	343.63	315.99	301.57	298.90	314.29	324.91		

Maximum Speed Value: 23.1 kph on Jul 31 15:00
Maximum Daily Speed Average: 15.83 kph on Jul 31
Maximum Diurnal Speed Average: 4.41 kph at hour 14

Minimum Speed Value: 0.1 kph on Jul 22 02:00
Minimum Daily Speed Average: 1.65 kph on Jul 2
Minimum Diurnal Speed Average: 1.98 kph at hour 20

Monthly Average Velocity: 2.875 kph 315.56 deg
All monthly, daily, and diurnal averages have been calculated using vector methods

Speed Percentiles: P_1 = 1.0 P_{10} = 3.2 Q_1 = 4.7 Median = 6.8 Q_3 = 9.5 P_{90} = 12.2 P_{99} = 19.3

Hours in Service:	744
Hours of Data:	739
Hours of Missing Data:	5
Percent Operational Time:	99.3

AF - Analyzer Failure

Frequency Distribution

Direction	Speed Range (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	33	107	37	5	0	0	182
NorthEast	23	26	3	0	0	0	52
East	15	19	5	0	0	0	39
SouthEast	18	20	8	0	0	0	46
South	26	34	7	0	0	0	67
SouthWest	46	69	5	0	0	0	120
West	32	72	10	0	0	0	114
NorthWest	17	69	26	7	0	0	119
Total	210	416	101	12	0	0	739

WCAS - Tomahawk
Summary of Hourly Averages

Relative Humidity (RH) - %
July 2016

Maximum Value: 95.97 % on Jul 29 07:00

Maximum Daily Average: 85.73 % on Jul 10

Minimum Value: 26.7 % on Jul 29 17:00

Minimum Daily Average: 58.79 % on Jul 4

Maximum Diurnal Average: 90.47 % at hour 5

Minimum Diurnal Average: 50.14 % at hour 15

Monthly Average: 71.515 %

Percentiles: P_1 = 29.8 P_{10} = 42.0 Q_1 = 56.9 Median = 75.7 Q_3 = 88.4 P_{90} = 93.2 P_{99} = 95.5

Hours in Service:	744
Hours of Data:	739
Hours of Missing Data:	5
Hours of Calibration:	0
Percent Operational Time:	99.3

Day	Hourly Period Ending At																								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-Jul	92.4	93.4	94.3	95.1	95.4	95.7	95.8	95.5	81.7	65.3	55.7	49.9	47.1	46.7	46.4	44.5	51.7	56.9	62.4	66.9	85.3	91.4	92.7	93.4	74.82	95.81
2-Jul	94.0	94.3	94.4	94.5	94.4	94.8	95.0	94.0	90.9	84.7	73.9	71.2	64.8	52.9	47.1	44.0	54.7	55.2	68.0	81.4	84.3	86.0	85.8	87.2	78.64	95.03
3-Jul	88.5	88.5	86.3	90.7	92.9	92.5	86.9	79.7	83.2	87.6	79.5	68.5	65.6	56.9	52.1	47.6	48.6	48.0	51.2	48.9	53.0	65.2	75.4	74.9	71.34	92.92
4-Jul	77.2	81.5	82.2	86.2	88.9	88.0	86.1	72.1	54.6	46.6	42.8	39.1	36.3	34.1	32.4	33.1	33.4	46.8	38.9	49.0	58.9	64.7	70.3	67.6	58.79	88.92
5-Jul	71.3	74.5	80.0	84.8	86.4	75.7	70.8	63.4	61.5	59.4	55.0	47.7	47.7	44.5	41.4	39.2	36.1	34.6	42.1	38.8	54.8	61.7	69.1	74.3	58.95	86.37
6-Jul	77.7	80.2	79.8	82.7	81.8	76.8	72.5	71.4	65.8	62.9	59.6	53.9	48.1	45.3	44.4	43.9	48.2	68.3	79.4	81.6	83.0	84.8	87.5	88.4	69.50	88.35
7-Jul	89.7	86.2	86.8	89.2	90.2	90.2	88.5	79.4	69.0	59.2	48.9	45.1	46.1	40.2	38.3	39.3	37.5	34.4	38.2	50.4	63.8	78.8	84.7	89.9	65.17	90.20
8-Jul	92.2	92.1	93.3	93.6	94.0	94.4	94.3	90.8	77.2	69.3	65.5	62.2	58.6	53.0	51.5	54.1	53.3	60.0	66.9	78.0	80.7	85.6	88.7	92.2	76.74	94.44
9-Jul	93.1	94.1	94.2	94.4	94.3	94.0	93.1	86.9	79.8	79.2	72.9	70.3	64.0	57.6	60.1	62.1	88.5	AF	AF	AF	AF	AF	92.9	91.0	82.23	94.42
10-Jul	92.1	92.8	91.8	91.9	93.2	93.7	94.0	92.9	91.5	88.6	85.5	85.0	89.9	86.0	75.9	70.6	69.9	71.9	71.7	77.1	84.0	87.5	89.4	90.7	85.73	93.96
11-Jul	92.0	93.2	93.3	92.7	92.9	92.4	90.7	88.8	84.6	80.6	76.2	68.8	66.1	66.2	59.9	72.8	86.5	76.9	71.6	72.0	80.7	83.5	84.6	84.6	81.33	93.30
12-Jul	88.4	89.9	91.3	88.6	88.3	87.3	84.7	79.5	73.3	68.9	65.0	65.2	65.9	64.5	68.5	75.6	82.0	81.7	82.8	85.3	87.7	91.2	92.6	90.9	80.79	92.57
13-Jul	90.0	90.5	90.4	91.5	92.2	91.8	90.7	88.4	83.9	85.2	84.6	74.9	70.8	61.2	52.7	66.1	73.7	65.2	70.8	76.2	83.5	85.4	90.0	92.6	80.92	92.58
14-Jul	93.0	92.1	91.3	92.1	92.5	92.1	90.0	84.5	78.3	72.8	68.9	55.9	51.0	54.5	61.7	73.4	74.0	70.5	74.6	78.1	82.7	88.3	92.2	92.6	79.04	93.02
15-Jul	92.8	93.5	93.9	93.9	94.2	94.8	91.4	86.5	76.6	70.0	63.6	58.7	71.8	86.3	80.2	72.2	75.0	66.0	62.3	65.4	74.5	87.4	90.6	92.7	80.60	94.80
16-Jul	93.5	93.3	93.5	93.4	93.4	93.2	91.4	80.6	75.2	66.0	58.9	55.2	49.7	46.1	50.7	44.4	44.0	39.6	42.8	52.6	70.2	79.4	84.1	88.4	69.99	93.50
17-Jul	87.4	79.1	80.9	82.5	84.3	83.5	82.1	80.2	79.7	78.6	70.7	78.0	79.8	83.0	63.8	57.4	60.8	64.2	50.5	61.4	76.2	81.7	85.9	89.8	75.89	89.81
18-Jul	92.3	93.7	94.3	94.4	94.5	94.6	94.2	87.5	77.9	65.7	56.6	51.7	50.4	49.4	47.4	46.0	51.6	56.8	59.9	60.1	71.0	77.7	82.3	85.2	72.28	94.55
19-Jul	87.9	91.6	92.8	94.1	94.5	95.0	94.5	91.6	80.9	67.5	57.2	50.3	44.7	38.6	38.9	39.9	35.6	33.6	35.8	41.0	57.9	63.7	60.6	64.6	64.71	94.98
20-Jul	67.1	72.5	75.8	81.4	84.8	87.7	81.7	70.5	69.9	68.7	67.1	65.8	50.7	50.2	48.0	56.4	54.6	51.4	54.6	54.7	63.0	70.4	72.2	80.2	66.63	87.72
21-Jul	80.9	81.3	84.4	82.4	80.5	81.4	77.8	75.0	71.1	63.2	58.6	50.8	42.9	47.8	63.9	55.3	47.2	46.2	51.7	60.4	67.1	69.9	75.4	75.8	66.30	84.45
22-Jul	79.0	83.7	87.6	90.6	92.8	93.7	87.1	74.1	62.3	56.0	49.6	38.4	32.1	29.6	28.9	31.8	31.9	32.6	47.4	49.0	57.3	66.2	69.6	76.0	60.30	93.67
23-Jul	81.7	76.7	77.9	81.0	83.4	83.3	83.7	78.9	62.3	57.0	49.8	43.6	42.3	39.6	38.1	36.5	37.9	41.8	45.4	49.4	56.7	67.9	72.7	78.9	61.11	83.67
24-Jul	83.8	88.1	92.3	93.8	94.3	93.0	88.0	72.2	59.9	52.8	44.7	36.9	33.1	32.4	34.4	32.8	30.6	40.0	45.4	48.3	55.4	62.2	71.0	79.1	61.03	94.27
25-Jul	83.3	84.1	73.6	84.3	85.6	90.2	83.4	67.9	51.3	42.8	37.6	35.1	35.6	34.6	35.4	34.7	35.7	40.5	46.6	51.8	61.3	66.8	75.5	81.3	59.13	90.21
26-Jul	85.1	87.8	91.6	92.8	93.1	93.5	93.3	86.3	72.8	67.7	64.9	58.5	43.9	36.5	31.3	29.3	28.0	29.8	34.9	47.1	59.4	72.5	78.4	83.3	65.08	93.53
27-Jul	87.3	91.5	92.0	82.2	78.2	87.0	84.2	75.0	72.8	59.5	57.5	52.7	42.3	48.7	43.3	38.4	40.6	52.1	57.4	62.8	69.3	72.0	75.6	83.8	66.92	91.96
28-Jul	89.3	91.8	93.1	93.3	94.2	94.6	94.5	90.6	75.6	64.2	56.4	49.3	40.6	39.0	36.0	48.9	77.1	85.2	77.8	70.0	78.7	89.0	92.2	93.8	75.63	94.59
29-Jul	94.3	94.6	95.0	95.5	95.7	95.8	96.0	94.5	80.6	68.3	55.6	41.8	34.3	31.9	29.8	27.9	26.7	28.7	37.0	48.8	79.6	68.3	80.2	91.4	66.35	95.97
30-Jul	89.7	91.3	92.9	92.8	93.9	94.2	94.1	93.4	88.4	73.0	68.3	60.0	60.1	72.3	88.1	90.1	90.6	83.4	77.7	81.6	88.1	90.4	88.6	89.1	84.67	94.20
31-Jul	91.9	92.0	89.9	88.7	89.7	89.1	85.0	80.6	75.3	69.8	63.9	61.4	64.8	63.4	63.5	75.8	70.3	67.7	73.2	79.4	85.9	87.6	89.0	88.5	78.60	91.99
	87.06	88.05	88.74	89.84	90.47	90.44	88.24	82.35	74.45	67.78	61.78	56.32	52.94	51.39	50.14	51.10	54.07	54.33	57.30	62.25	71.79	77.57	81.93	84.91	Diurnal Average	
	94.27	94.58	95.04	95.48	95.71	95.82	95.97	95.48	91.49	88.59	85.52	84.98	89.88	86.31	88.12	90.10	90.55	85.23	82.82	85.32	88.10	91.43	92.87	93.76	Diurnal Maximum	

AF - Analyzer Failure

WCAS - Tomahawk
Summary of Hourly Averages

Photosynthetically Active Radiation (PAR) - W/m2
July 2016

Maximum Value: 370.92 W/m2 on Jul 5 12:00

Maximum Daily Average: 125.99 W/m2 on Jul 4

Minimum Value: 0.0 W/m2 on Jul 1 01:00

Minimum Daily Average: 49.89 W/m2 on Jul 10

Maximum Diurnal Average: 252.63 W/m2 at hour 13

Minimum Diurnal Average: 0.00 W/m2 at hour 1

Monthly Average: 88.941 W/m2

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 42.7 Q_3 = 164.0 P_{90} = 259.5 P_{99} = 338.7

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																								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-Jul	0.0	0.0	0.0	0.0	2.6	36.9	77.5	154.2	221.8	270.4	309.6	338.8	358.3	268.4	233.5	224.9	71.2	49.6	26.9	10.4	0.0	0.0	0.0	0.0	110.62	358.30
2-Jul	0.0	0.0	0.0	0.0	0.0	6.7	23.7	39.3	59.4	122.1	265.8	223.3	338.2	218.8	226.7	215.4	125.6	125.3	21.7	12.8	1.7	0.0	0.0	0.0	84.43	338.20
3-Jul	0.0	0.0	0.0	0.0	1.7	35.9	84.2	105.7	46.2	36.3	71.6	210.5	311.5	334.4	296.6	232.0	61.3	132.9	119.4	64.8	17.1	0.0	0.0	0.0	90.09	334.35
4-Jul	0.0	0.0	0.0	0.0	2.6	43.6	96.6	158.4	217.5	238.5	303.2	256.5	338.9	349.2	336.8	225.6	177.5	140.4	81.0	46.4	11.2	0.0	0.0	0.0	125.99	349.24
5-Jul	0.0	0.0	0.0	0.0	2.7	32.1	82.4	127.3	171.5	225.0	298.7	370.9	282.5	270.2	306.6	217.7	207.8	177.4	81.7	58.1	8.4	0.0	0.0	0.0	121.71	370.92
6-Jul	0.0	0.0	0.0	0.0	2.0	18.1	52.8	74.6	164.3	216.9	264.0	258.7	305.5	338.1	323.9	239.2	144.5	65.1	70.8	24.8	2.7	0.0	0.0	0.0	106.91	338.12
7-Jul	0.0	0.0	0.0	0.0	0.0	7.8	42.9	129.6	199.4	247.7	286.1	268.6	139.0	311.5	162.6	162.1	164.8	145.8	98.8	50.8	10.4	0.0	0.0	0.0	101.16	311.54
8-Jul	0.0	0.0	0.0	0.0	0.0	10.9	36.5	80.8	162.1	209.7	273.2	298.7	312.9	339.1	272.6	258.6	179.8	92.7	48.8	23.1	6.0	0.0	0.0	0.0	108.55	339.07
9-Jul	0.0	0.0	0.0	0.0	2.4	17.8	36.4	80.0	51.1	93.2	141.4	174.7	237.7	211.8	94.0	69.1	9.5	49.3	49.8	26.3	1.0	0.0	0.0	0.0	56.07	237.73
10-Jul	0.0	0.0	0.0	0.0	0.0	0.0	7.9	32.3	61.2	67.0	80.8	23.5	63.2	130.2	250.8	225.7	91.6	60.8	62.5	33.8	6.0	0.0	0.0	0.0	49.89	250.77
11-Jul	0.0	0.0	0.0	0.0	0.0	4.8	22.0	38.5	49.0	111.7	190.0	230.1	119.8	149.5	136.2	62.1	50.3	128.5	102.8	49.5	10.3	0.0	0.0	0.0	60.63	230.06
12-Jul	0.0	0.0	0.0	0.0	0.0	7.2	64.2	88.0	173.1	169.3	201.0	120.5	228.9	106.3	81.0	64.3	86.6	65.0	47.5	23.1	7.5	0.0	0.0	0.0	63.89	228.92
13-Jul	0.0	0.0	0.0	0.0	0.0	5.4	24.7	49.5	57.9	56.6	70.8	147.0	165.4	282.7	238.9	91.4	104.9	104.8	55.6	34.1	5.7	0.0	0.0	0.0	62.31	282.65
14-Jul	0.0	0.0	0.0	0.0	0.0	10.0	44.5	85.6	150.9	156.5	212.3	338.7	323.0	126.7	128.4	48.9	99.0	70.1	35.5	27.5	4.6	0.0	0.0	0.0	77.60	338.69
15-Jul	0.0	0.0	0.0	0.0	0.7	21.9	67.0	99.9	171.1	224.1	260.6	242.2	30.4	38.1	174.8	135.8	79.7	165.6	88.0	55.8	10.6	0.0	0.0	0.0	77.76	260.61
16-Jul	0.0	0.0	0.0	0.0	0.7	15.8	61.2	115.7	240.5	248.8	226.1	315.5	351.5	276.4	155.5	231.9	200.1	163.9	108.9	39.7	6.2	0.0	0.0	0.0	114.93	351.49
17-Jul	0.0	0.0	0.0	0.0	0.0	14.6	30.3	53.0	33.2	95.3	192.9	74.0	53.9	109.4	235.2	173.3	69.0	62.1	114.0	32.7	3.7	0.0	0.0	0.0	56.11	235.17
18-Jul	0.0	0.0	0.0	0.0	0.0	8.3	41.8	76.2	155.4	243.5	285.9	319.7	293.9	272.1	244.1	231.6	69.7	68.5	93.3	62.6	10.6	0.0	0.0	0.0	103.22	319.68
19-Jul	0.0	0.0	0.0	0.0	0.0	18.2	38.8	67.7	114.9	231.4	282.3	312.1	327.6	287.6	243.5	269.1	223.5	143.3	94.4	37.4	2.3	0.0	0.0	0.0	112.25	327.60
20-Jul	0.0	0.0	0.0	0.0	0.0	10.7	29.9	44.1	66.7	109.1	126.2	142.9	231.1	176.1	151.1	118.8	119.9	123.5	56.8	39.1	1.0	0.0	0.0	0.0	64.46	231.11
21-Jul	0.0	0.0	0.0	0.0	0.0	6.9	24.1	42.5	43.5	87.1	153.5	257.4	305.9	186.2	119.3	187.4	115.9	110.4	58.2	19.1	1.8	0.0	0.0	0.0	71.64	305.89
22-Jul	0.0	0.0	0.0	0.0	0.0	17.5	70.9	130.8	189.9	239.7	278.5	311.2	316.5	320.6	306.8	154.8	214.0	122.9	39.0	29.5	8.5	0.0	0.0	0.0	114.63	320.60
23-Jul	0.0	0.0	0.0	0.0	0.0	5.5	15.5	45.6	100.2	103.0	208.4	303.2	252.0	300.3	221.3	216.9	134.3	77.1	79.8	31.3	4.0	0.0	0.0	0.0	87.43	303.22
24-Jul	0.0	0.0	0.0	0.0	0.0	18.4	72.5	135.2	193.4	243.2	270.1	313.7	283.0	213.0	180.8	175.2	194.7	86.2	50.1	42.8	4.2	0.0	0.0	0.0	103.19	313.66
25-Jul	0.0	0.0	0.0	0.0	0.0	15.1	69.0	131.3	188.2	237.5	281.6	307.0	313.0	310.8	188.0	240.9	183.1	115.4	82.3	50.7	5.3	0.0	0.0	0.0	113.30	313.00
26-Jul	0.0	0.0	0.0	0.0	0.0	9.9	68.4	104.2	171.8	201.6	261.8	261.9	336.5	234.8	245.6	200.5	222.1	159.8	95.4	39.1	3.9	0.0	0.0	0.0	109.05	336.46
27-Jul	0.0	0.0	0.0	0.0	0.0	3.3	26.0	41.2	105.4	140.0	112.9	133.4	219.4	167.7	235.6	244.3	224.9	69.2	24.9	15.9	0.8	0.0	0.0	0.0	73.53	244.30
28-Jul	0.0	0.0	0.0	0.0	0.0	5.8	39.7	52.5	185.4	184.2	256.6	262.2	324.7	268.8	329.9	13.9	5.3	27.7	74.2	40.9	3.0	0.0	0.0	0.0	86.45	329.92
29-Jul	0.0	0.0	0.0	0.0	0.0	10.4	58.4	125.7	182.8	231.2	271.9	301.4	315.1	255.3	264.0	258.2	207.9	150.0	27.3	2.4	0.0	0.0	0.0	0.0	110.91	315.05
30-Jul	0.0	0.0	0.0	0.0	0.0	2.2	10.7	30.0	114.6	236.6	162.8	318.2	195.4	25.5	3.1	9.2	40.0	106.2	72.8	13.7	0.0	0.0	0.0	0.0	55.87	318.23
31-Jul	0.0	0.0	0.0	0.0	0.0	12.2	62.0	124.9	183.1	234.7	248.5	179.0	157.0	235.2	226.8	65.9	148.9	76.3	24.1	3.6	0.0	0.0	0.0	0.0	82.59	248.48
	0.00	0.00	0.00	0.00	0.50	14.00	47.82	85.94	136.30	177.80	220.94	245.65	252.63	229.51	213.35	169.83	129.92	104.38	67.30	33.61	5.11	0.00	0.00	0.00	Diurnal Average	
	0.00	0.00	0.00	0.00	2.71	43.61	96.59	158.40	240.53	270.38	309.55	370.92	358.30	349.24	336.77	269.09	224.93	177.40	119.41	64.84	17.06	0.00	0.00	0.00	Diurnal Maximum	

WCAS - Tomahawk
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
July 2016

Maximum Value: 12.06 kph on Jul 29 23:00

Maximum Daily Average: 3.80 kph on Jul 31

Minimum Value: 0.3 kph on Jul 22 02:00

Minimum Daily Average: 2.10 kph on Jul 17

Maximum Diurnal Average: 4.10 kph at hour 16

Minimum Diurnal Average: 1.51 kph at hour 6

Monthly Average: 2.609 kph

Percentiles: P_1 = 0.7 P_{10} = 1.1 Q_1 = 1.6 Median = 2.3 Q_3 = 3.3 P_{90} = 4.3 P_{99} = 8.2

Hours in Service:	744
Hours of Data:	739
Hours of Missing Data:	5
Hours of Calibration:	0
Percent Operational Time:	99.3

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-Jul	1.0	0.7	1.0	1.4	1.6	1.0	1.6	1.4	1.7	2.2	2.3	3.3	2.9	3.0	3.3	3.3	2.8	2.3	1.6	4.4	4.3	2.7	2.2	1.2	2.22	4.44
2-Jul	1.3	1.0	1.3	2.0	1.9	1.9	2.0	1.6	1.5	1.9	2.1	2.0	2.3	2.4	3.2	2.9	3.0	2.5	3.1	3.0	2.0	2.2	2.0	2.2	2.14	3.15
3-Jul	2.6	1.9	1.8	1.8	1.9	1.0	2.0	2.3	4.1	4.4	5.3	4.9	5.2	5.9	5.3	5.1	3.7	4.0	3.2	2.3	5.8	1.3	2.1	1.7	3.32	5.88
4-Jul	1.6	2.1	1.3	0.6	1.6	1.8	1.3	1.7	2.3	2.7	3.9	3.5	3.3	3.4	3.5	2.7	3.6	10.2	1.0	1.3	1.8	2.9	2.7	1.9	2.62	10.20
5-Jul	1.4	1.3	1.5	1.2	3.3	2.6	3.0	3.8	3.7	3.3	3.3	3.7	4.1	3.8	4.3	3.6	3.8	3.9	2.6	2.3	1.7	0.6	1.5	1.1	2.73	4.31
6-Jul	1.6	1.8	2.4	1.4	1.9	2.5	2.4	2.8	3.8	3.6	3.7	4.6	4.9	4.9	5.1	4.7	5.4	6.9	3.8	1.4	1.6	2.0	1.6	2.5	3.22	6.86
7-Jul	1.6	2.6	1.9	1.8	1.9	1.3	1.6	1.7	2.2	3.3	4.0	4.3	2.7	3.8	2.8	2.5	2.5	1.5	2.3	1.2	1.6	1.2	1.1	1.8	2.22	4.26
8-Jul	1.0	0.9	1.2	1.7	1.7	1.2	2.1	1.3	2.0	2.8	3.4	3.5	3.4	4.2	4.1	4.0	5.3	5.2	5.3	3.8	2.0	1.0	1.9	1.1	2.67	5.33
9-Jul	2.0	1.9	1.7	1.1	1.2	2.3	1.5	1.7	2.2	2.0	2.8	3.2	3.5	3.4	2.8	6.8	4.1	AF	AF	AF	AF	AF	1.9	1.6	2.50	6.76
10-Jul	1.4	1.5	2.0	2.3	2.0	1.7	2.6	3.4	2.5	2.1	3.3	4.3	1.9	2.1	3.2	3.0	3.1	2.9	2.8	1.9	1.7	1.3	1.5	1.2	2.31	4.32
11-Jul	1.9	2.6	2.4	2.9	1.9	2.0	1.9	2.4	2.6	2.8	2.9	3.5	3.1	2.7	3.3	5.6	1.7	2.1	2.5	2.2	1.4	1.2	1.2	1.8	2.46	5.65
12-Jul	2.0	2.0	1.7	1.7	1.9	1.6	2.8	2.7	3.1	2.9	2.6	3.4	3.0	3.3	4.7	4.8	4.7	2.1	2.2	2.4	1.0	0.9	1.2	2.3	2.54	4.76
13-Jul	2.2	1.6	1.5	2.5	2.3	2.0	2.2	2.6	2.3	2.0	1.9	2.2	2.2	2.5	4.1	3.4	2.8	2.1	2.2	1.5	1.2	1.2	1.2	1.0	2.12	4.06
14-Jul	1.3	1.7	1.2	1.0	1.1	1.4	1.7	2.4	1.9	2.2	3.2	3.6	4.0	3.2	4.7	4.1	2.1	2.2	2.2	1.6	1.1	1.6	0.9	1.6	2.17	4.71
15-Jul	0.6	1.4	1.7	2.6	1.4	1.4	1.7	1.5	2.0	3.3	3.7	3.8	2.9	3.4	3.0	4.4	3.1	2.8	2.1	1.6	1.0	2.0	1.1	1.8	2.26	4.41
16-Jul	1.8	1.1	1.3	1.3	1.3	1.5	2.3	2.0	3.6	3.0	2.6	4.3	4.3	3.4	3.2	4.6	3.3	3.4	2.7	3.8	2.1	1.6	1.1	1.1	2.52	4.56
17-Jul	1.6	1.8	1.7	1.9	1.9	2.1	2.3	2.4	2.5	2.2	3.0	4.0	1.9	2.7	2.5	3.1	2.9	2.3	2.6	1.4	1.2	1.0	0.8	0.7	2.10	4.01
18-Jul	0.6	0.8	1.7	1.6	0.8	1.1	1.4	1.7	2.5	3.1	5.1	4.8	3.8	4.6	4.4	3.8	3.5	3.0	2.8	2.6	1.8	1.5	0.9	2.0	2.50	5.09
19-Jul	2.9	1.8	1.9	0.9	1.4	1.5	1.6	1.7	2.2	2.3	2.8	4.1	4.6	3.8	4.5	4.0	3.5	3.3	4.0	0.8	6.7	2.2	2.9	1.8	2.80	6.72
20-Jul	1.8	2.3	2.0	2.8	1.8	1.4	1.9	2.1	2.0	2.1	2.5	2.5	4.3	3.7	3.6	6.6	3.6	3.6	6.4	4.9	1.5	1.0	2.9	1.3	2.85	6.58
21-Jul	1.0	0.9	0.7	0.7	1.1	1.2	1.8	2.0	1.5	2.2	3.0	3.4	4.4	5.2	1.8	7.3	3.8	3.5	2.7	1.9	3.3	1.7	1.1	1.7	2.41	7.27
22-Jul	2.2	0.3	2.1	1.4	0.8	0.8	1.7	2.3	4.0	3.5	3.3	3.4	4.6	4.0	4.5	2.3	4.2	3.0	6.8	3.8	2.8	5.5	3.2	2.1	3.03	6.81
23-Jul	1.8	2.1	3.5	1.4	1.4	0.9	1.6	2.0	2.8	1.9	4.0	5.1	5.4	4.0	5.1	5.1	4.4	2.0	2.5	2.5	1.1	1.4	0.6	0.9	2.65	5.43
24-Jul	0.8	1.0	1.0	1.1	1.1	1.2	1.8	2.2	2.5	2.9	2.9	3.7	4.2	4.2	2.6	2.3	3.6	2.8	2.8	2.9	2.8	2.1	2.3	2.1	2.37	4.22
25-Jul	1.6	2.0	1.3	1.1	1.1	1.0	1.0	1.5	2.2	3.2	3.1	3.5	4.3	4.2	3.7	3.1	3.7	3.5	2.6	2.7	2.2	2.4	1.9	1.7	2.44	4.32
26-Jul	0.9	2.1	1.7	1.5	1.8	1.1	1.3	2.4	2.9	2.9	3.0	3.1	3.7	3.0	4.3	3.2	3.7	3.7	2.5	1.7	1.3	0.9	1.0	1.7	2.31	4.33
27-Jul	1.3	1.7	3.9	4.1	3.2	2.2	1.7	1.4	1.1	2.4	3.8	4.4	3.1	4.2	2.9	2.9	9.6	5.1	1.9	2.2	2.2	2.7	2.5	2.2	3.03	9.57
28-Jul	0.7	1.8	0.8	1.1	1.0	1.1	1.9	1.4	2.3	2.3	3.0	3.1	3.1	3.0	3.5	8.2	4.6	1.6	2.3	2.9	1.3	0.9	0.9	1.2	2.26	8.24
29-Jul	1.1	2.0	1.1	1.1	1.5	0.7	1.2	1.1	1.5	1.9	2.4	4.0	4.3	4.3	2.9	3.3	2.9	2.5	2.0	3.8	9.2	4.0	12.1	4.0	3.12	12.06
30-Jul	3.2	2.5	2.2	3.0	1.7	1.2	1.7	2.2	1.4	2.6	2.4	3.3	3.1	11.3	8.2	2.5	2.5	2.5	2.3	5.4	3.5	4.0	2.5	1.6	3.20	11.30
31-Jul	1.2	2.3	2.3	3.9	1.6	2.0	2.6	3.3	4.1	4.8	4.8	5.7	4.9	3.9	5.6	4.1	4.1	5.1	5.0	3.0	4.4	4.2	4.5	4.0	3.80	5.66
	1.55	1.67	1.73	1.77	1.65	1.51	1.87	2.10	2.49	2.74	3.23	3.74	3.65	3.92	3.89	4.10	3.72	3.39	2.96	2.58	2.52	1.97	2.11	1.77	Diurnal Average	
	3.22	2.64	3.94	4.11	3.27	2.59	3.00	3.85	4.09	4.84	5.25	5.66	5.43	11.30	8.25	8.24	9.57	10.20	6.81	5.43	9.23	5.51	12.06	3.98	Diurnal Maximum	

AF - Analyzer Failure

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

West Central Airshed Society

WCAS - Tomahawk

Summary of Hourly Standard Deviations

Wind Direction (WD) - deg

July 2016

Maximum Value: 98.81 deg on Jul 4 16:00

Maximum Daily Average: 45.63 deg on Jul 9

Minimum Value: 4.0 deg on Jul 23 23:00

Minimum Daily Average: 18.43 deg on Jul 18

Maximum Diurnal Average: 42.02 deg at hour 15

Minimum Diurnal Average: 22.63 deg at hour 8

Monthly Average: 29.761 deg

Percentiles: P_1 = 7.6 P_{10} = 13.5 Q_1 = 17.6 Median = 24.4 Q_3 = 36.7 P_{90} = 55.4 P_{99} = 88.5

Hours in Service:	744
Hours of Data:	739
Hours of Missing Data:	5
Hours of Calibration:	0
Percent Operational Time:	99.3

Day	Hourly Period Ending At																								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-Jul	12.8	10.5	6.4	6.9	17.6	14.9	16.0	22.5	51.8	47.7	50.6	40.5	40.9	26.3	23.2	22.0	18.2	19.2	21.5	49.7	24.4	73.8	72.0	72.2	31.73	73.83
2-Jul	45.5	37.5	25.0	19.3	18.2	22.9	25.4	27.4	24.0	54.8	85.1	61.5	50.1	58.4	66.4	33.4	26.1	22.0	29.7	60.6	36.6	44.3	23.3	52.7	39.59	85.11
3-Jul	29.0	25.2	25.3	19.7	24.6	25.4	37.0	20.9	33.8	14.8	16.3	18.8	15.2	18.1	15.7	19.2	12.9	30.3	30.4	21.6	10.9	44.8	19.3	16.4	22.72	44.76
4-Jul	14.9	19.5	12.1	13.2	26.2	68.4	12.3	26.3	23.9	90.8	52.4	46.0	91.9	54.7	68.5	98.8	48.0	75.4	32.9	25.1	17.6	31.0	20.7	14.7	41.05	98.81
5-Jul	22.1	10.9	87.0	24.3	34.2	12.0	18.7	13.4	17.6	19.3	27.1	66.0	32.0	37.4	37.4	23.1	24.4	25.1	33.6	41.4	20.4	10.9	12.1	15.5	27.75	87.02
6-Jul	11.8	29.8	19.9	15.8	10.1	16.3	17.6	10.9	12.2	16.8	25.1	15.6	23.5	17.6	28.4	32.2	27.2	46.2	42.2	60.8	23.9	35.9	14.5	31.5	24.40	60.83
7-Jul	46.7	21.3	31.9	24.2	15.0	9.2	33.7	16.1	21.9	34.5	32.9	33.6	24.4	35.3	36.7	35.7	70.9	41.5	31.6	24.1	24.5	25.3	29.9	23.8	30.20	70.86
8-Jul	28.0	32.3	21.6	66.3	80.4	42.4	37.3	21.6	22.3	31.0	32.7	35.4	37.8	43.5	41.4	32.0	36.6	36.5	35.2	35.3	30.6	25.0	33.3	26.2	36.03	80.40
9-Jul	30.3	63.7	39.3	19.6	74.6	72.5	96.5	74.9	33.2	50.8	38.1	25.4	22.1	24.5	45.9	72.4	34.5	AF	AF	AF	AF	AF	19.2	29.5	45.63	96.50
10-Jul	19.9	23.7	27.9	24.7	38.3	36.0	15.3	18.6	19.3	24.4	16.3	45.4	50.3	23.4	18.0	19.4	21.2	14.9	8.4	9.2	13.4	8.0	9.6	21.2	21.96	50.33
11-Jul	15.4	19.0	12.7	13.4	6.7	8.6	13.6	8.7	15.7	10.8	19.4	23.8	20.2	28.2	36.7	23.0	36.8	23.7	27.8	23.3	22.2	19.5	25.9	24.3	19.98	36.84
12-Jul	29.4	48.8	28.7	15.4	22.3	22.9	22.6	10.8	21.5	26.5	64.8	94.2	23.0	40.7	27.5	13.4	7.3	34.4	29.5	17.8	20.5	16.2	18.5	15.6	28.02	94.22
13-Jul	13.5	14.4	18.6	9.8	15.5	11.9	16.2	13.1	17.1	21.2	16.2	24.2	25.6	50.5	57.3	39.5	32.4	54.8	22.8	21.6	20.6	18.6	13.5	16.9	23.58	57.31
14-Jul	24.4	17.4	33.7	36.7	23.5	13.2	12.5	22.5	30.7	34.7	40.3	36.5	38.0	26.3	61.3	22.9	18.8	23.9	31.6	22.7	24.5	40.9	17.0	14.9	27.86	61.26
15-Jul	19.6	31.7	19.5	57.3	36.2	29.7	71.7	28.3	84.7	56.3	26.8	22.3	43.2	17.3	54.5	28.5	39.9	42.9	60.6	37.4	20.3	29.5	14.8	14.6	36.98	84.69
16-Jul	20.9	43.0	27.0	19.1	24.0	15.1	14.3	22.1	24.3	36.0	44.1	38.1	42.6	33.4	38.4	37.0	25.0	27.7	27.1	54.7	18.4	18.3	9.2	10.6	27.94	54.72
17-Jul	17.5	13.5	7.7	10.2	17.0	9.9	13.7	15.9	17.0	19.1	54.4	37.7	39.9	53.6	45.2	40.2	37.2	26.5	49.1	29.0	23.4	19.5	20.8	12.0	26.25	54.39
18-Jul	12.6	8.8	9.7	18.1	15.9	13.1	19.6	14.4	17.6	21.3	21.2	29.7	18.9	23.8	20.3	26.2	16.8	19.8	15.1	14.3	17.2	10.5	16.3	41.1	18.43	41.06
19-Jul	76.5	68.7	64.3	28.4	14.8	21.8	25.8	14.4	22.4	30.6	26.9	24.6	22.5	24.6	33.0	25.2	18.3	15.7	16.4	16.1	26.3	11.9	26.0	18.7	28.08	76.54
20-Jul	19.5	14.9	21.6	26.3	17.4	18.0	20.4	15.5	16.2	17.5	25.4	28.2	18.4	17.5	15.8	25.5	17.7	28.4	15.5	15.3	28.3	23.9	53.7	66.9	23.66	66.87
21-Jul	16.1	20.8	10.7	14.0	11.7	10.0	11.8	21.2	22.4	22.0	26.1	23.4	24.9	44.1	89.5	58.6	17.1	21.1	26.4	22.4	19.3	91.9	19.4	22.8	27.82	91.94
22-Jul	68.6	72.7	58.3	50.2	15.5	9.5	15.4	17.2	16.9	19.1	20.9	29.3	65.7	67.0	67.2	28.1	85.5	28.4	39.3	31.4	77.4	29.9	30.9	15.5	39.99	85.53
23-Jul	49.7	18.0	33.2	26.1	17.2	51.4	18.8	31.2	29.5	30.2	31.4	25.5	42.3	34.6	33.6	28.6	34.7	22.5	30.8	24.0	17.7	69.9	4.0	15.8	30.03	69.86
24-Jul	17.2	15.7	13.1	11.9	6.2	9.3	13.5	19.0	21.8	21.5	25.3	40.5	29.1	26.2	21.5	25.4	43.7	21.1	24.5	24.9	12.2	16.2	40.7	30.6	22.13	43.72
25-Jul	24.5	40.2	19.8	21.3	13.4	9.3	9.0	21.0	26.6	28.5	59.8	57.9	50.0	33.6	65.2	49.6	35.2	18.5	14.7	15.3	15.8	13.6	20.7	15.7	28.31	65.22
26-Jul	16.8	16.4	25.9	23.6	14.5	33.1	26.8	34.6	29.5	22.0	29.8	66.6	55.6	61.5	65.5	55.9	43.5	73.4	20.9	17.5	16.3	13.6	16.8	19.5	33.32	73.38
27-Jul	27.3	67.8	73.7	34.5	48.0	58.1	22.7	38.9	37.8	54.4	34.7	23.5	27.6	50.3	45.0	54.6	53.2	17.7	18.2	14.0	15.0	12.2	31.2	25.6	36.92	73.69
28-Jul	21.9	71.2	44.4	34.4	12.3	16.3	15.4	21.3	34.1	27.7	37.3	35.6	63.6	87.1	41.6	58.3	46.9	19.7	13.1	20.1	12.0	37.8	14.7	13.3	33.34	87.11
29-Jul	11.5	14.6	7.6	10.9	12.0	11.1	20.2	15.2	21.4	25.8	38.9	44.8	54.0	53.5	53.7	58.3	49.5	19.7	18.9	66.9	58.0	24.5	61.0	26.0	32.42	66.88
30-Jul	59.5	81.4	30.8	54.1	20.5	26.8	55.0	46.3	37.2	29.4	49.6	51.5	42.5	30.3	25.8	82.4	38.0	32.4	16.5	20.6	51.9	32.7	21.3	32.2	40.36	82.42
31-Jul	18.4	23.7	16.5	17.7	18.7	16.7	14.5	17.4	17.1	18.6	20.9	22.5	20.0	24.5	22.4	19.8	18.7	16.6	13.9	25.2	21.9	21.5	20.9	18.4	19.45	25.25
	27.16	32.16	28.19	24.75	23.30	23.74	24.62	22.63	26.50	30.91	35.19	37.70	37.29	37.66	42.02	38.37	33.42	30.00	26.61	28.75	24.72	29.05	24.22	24.98	Diurnal Average	
	76.54	81.37	87.02	66.30	80.40	72.54	96.50	74.91	84.69	90.76	85.11	94.22	91.94	87.11	89.54	98.81	85.53	75.36	60.58	66.88	77.43	91.94	71.98	72.17	Diurnal Maximum	

AF - Analyzer Failure

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

VIOLET GROVE
STATION #902

CONTINUOUS AIR MONITORING DATA

JULY 2016

Summary Report **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

WCAS / Violet Grove **June 2016**
Station 902

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile P10	Q1	Median	Q3	P90	Exceedences 1-hour	Exceedences 24-hour	24 Hour Average Max (ppm)
SO_2 (ppb)	35	709	100.0	0.2	0.0	8.7	0.0	0.1	0.1	0.2	0.4	0	0	0.001
O_3 (ppb)	35	709	100.0	22.8	4.0	43.7	11.4	15.9	22.7	29.5	33.8	0	-	0.030
NO (ppb)	37	707	100.0	0.2	0.0	7.3	0.0	0.0	0.1	0.2	0.6	-	-	-
NO_2 (ppb)	37	707	100.0	2.3	0.8	11.7	1.3	1.5	2.0	2.6	3.6	0	0	0.004
NO_x (ppb)	37	707	100.0	2.5	0.7	18.2	1.2	1.5	2.0	2.9	4.1	-	-	-
THC (ppm)	35	709	100.0	2.1	1.9	4.3	2.0	2.0	2.1	2.2	2.3	-	-	2.33
Wind Speed (kph)	0	744	100.0	7.1	0.2	22.0	2.3	4.4	6.9	9.3	11.4	-	-	-
Temperature (^{o}C)	0	744	100.0	15.1	6.9	25.2	10.9	12.3	14.5	17.8	20.4	-	-	-
Delta Temperature (oC)	0	744	100.0	0.7	-2.5	1.9	-0.2	0.4	0.8	1.1	1.3	-	-	-
Relative Humidity (%)	0	744	100.0	78.4	35.2	102.0	51.1	65.1	82.9	93.6	97.7	-	-	-
Global Solar Radiation (W/m^2)	0	744	100.0	230.9	0.0	920.5	0.6	2.1	106.6	413.0	707.5	-	-	-
Photosynthetically Active Radiation (W	0	744	100.0	79.2	0.0	329.2	0.0	1.0	37.0	142.0	239.7	-	-	-
Std Dev Wind Direction (deg)	0	744	100.0	29.1	5.7	97.3	9.4	14.0	22.3	41.0	59.3	-	-	-
Std Dev Wind Speed (kph)	0	744	100.0	2.7	0.4	13.1	1.4	1.8	2.4	3.4	4.5	-	-	-

WCAS - Violet Grove
Summary of Hourly Averages

Sulphur Dioxide (SO_2) - ppb
July 2016

Maximum Value: 8.68 ppb on Jul 9 11:00

Maximum Daily Average: 1.18 ppb on Jul 9

Minimum Value: 0.0 ppb on Jul 27 05:00

Minimum Daily Average: 0.02 ppb on Jul 30

Maximum Diurnal Average: 0.75 ppb at hour 11

Minimum Diurnal Average: 0.14 ppb at hour 17

Monthly Average: 0.241 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.1 Median = 0.1 Q_3 = 0.2 P_{90} = 0.4 P_{99} = 1.8

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																								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-Jul	0.2	Z	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.23
2-Jul	0.0	Z	0.1	0.0	0.0	0.0	0.0	0.0	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	0.08	0.14
3-Jul	0.1	Z	0.2	0.8	0.4	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.13	0.77
4-Jul	0.0	Z	0.0	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.11	0.24
5-Jul	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.07	0.15
6-Jul	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.6	0.8	0.5	0.3	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.31	0.83
7-Jul	0.5	Z	0.3	0.4	0.3	0.4	0.7	0.6	0.7	0.6	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.32	0.72
8-Jul	0.4	Z	0.2	0.3	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	1.9	1.2	1.6	1.4	1.5	1.6	0.60	1.88
9-Jul	0.6	Z	0.8	0.9	0.7	0.5	0.5	0.4	0.4	1.0	8.7	4.1	3.4	2.3	1.8	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.18	8.68
10-Jul	0.1	Z	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.15
11-Jul	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.11	0.22
12-Jul	0.2	Z	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.15	0.23
13-Jul	0.1	Z	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	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.14	0.22
14-Jul	0.1	Z	0.2	0.1	0.2	0.2	0.1	0.1	0.2	0.5	1.0	1.3	0.3	0.2	0.4	1.1	0.3	0.3	0.4	0.3	0.4	0.2	0.1	0.1	0.35	1.30
15-Jul	0.1	Z	0.1	0.1	0.2	0.2	0.3	0.3	0.6	3.1	0.9	0.5	0.4	0.1	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.35	3.05
16-Jul	0.7	Z	0.2	0.1	0.2	0.1	0.1	0.1	0.5	0.2	6.8	5.9	1.9	1.2	0.7	0.4	0.2	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.92	6.77
17-Jul	0.2	Z	0.2	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.6	0.6	0.6	0.3	0.3	0.4	0.5	0.4	0.6	0.7	0.5	0.4	0.3	0.4	0.42	0.67
18-Jul	0.4	Z	0.4	0.3	0.4	0.4	0.4	0.5	0.7	0.9	0.9	0.8	0.4	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.38	0.88
19-Jul	0.2	Z	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.2	0.1	0.0	0.1	0.1	0.2	0.2	0.2	0.4	0.2	0.2	0.2	0.18	0.37
20-Jul	0.1	Z	0.2	0.1	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.14	0.24
21-Jul	0.2	Z	0.2	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.18	0.30
22-Jul	0.2	Z	0.2	0.3	0.4	0.4	0.4	0.5	0.7	0.7	0.6	0.5	0.2	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.30	0.73
23-Jul	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.8	0.6	0.3	0.2	0.2	0.5	0.2	0.4	0.2	0.1	0.3	0.1	0.1	0.2	0.1	0.24	0.84
24-Jul	0.1	Z	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.13	0.29
25-Jul	0.3	Z	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.5	0.3	0.4	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.22	0.51
26-Jul	0.1	Z	0.1	0.1	0.1	0.1	0.3	0.2	0.2	0.1	0.1	0.1	C	C	C	C	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.10	0.30
27-Jul	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.05	0.22
28-Jul	0.1	Z	0.1	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05	0.18
29-Jul	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.02	0.13
30-Jul	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.02	0.10
31-Jul	0.0	Z	0.0	0.1	0.1	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	0.1	0.0	0.0	0.0	0.03	0.09
	0.17	--	0.16	0.18	0.18	0.16	0.18	0.20	0.26	0.36	0.75	0.55	0.35	0.26	0.23	0.17	0.14	0.15	0.22	0.19	0.20	0.16	0.16	0.17	Diurnal Average	
	0.68	--	0.77	0.89	0.71	0.49	0.72	0.58	0.73	3.05	8.68	5.85	3.37	2.28	1.81	1.10	0.46	0.51	1.88	1.23	1.57	1.43	1.51	1.58	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb

WCAS - Violet Grove
Summary of Hourly Averages

Ozone (O_3) - ppb
July 2016

Maximum Value: 43.67 ppb on Jul 1 14:00

Maximum Daily Average: 30.28 ppb on Jul 1

Minimum Value: 4.0 ppb on Jul 15 05:00

Minimum Daily Average: 17.47 ppb on Jul 14

Maximum Diurnal Average: 31.33 ppb at hour 16

Minimum Diurnal Average: 12.16 ppb at hour 6

Monthly Average: 22.754 ppb

Percentiles: P_1 = 7.0 P_{10} = 11.4 Q_1 = 15.9 Median = 22.7 Q_3 = 29.5 P_{90} = 33.8 P_{99} = 40.4

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																								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-Jul	27.1	24.8	Z	20.0	14.5	10.1	14.9	17.0	24.8	35.3	33.7	39.7	42.2	43.7	43.1	43.5	41.7	38.6	40.1	37.5	32.1	28.0	25.5	18.3	30.28	43.67
2-Jul	13.5	12.3	Z	19.9	20.3	21.2	19.8	18.0	20.6	23.5	28.1	30.7	31.8	33.6	34.5	35.0	33.9	32.6	36.3	31.8	23.8	16.0	14.3	14.3	24.60	36.27
3-Jul	20.4	25.1	Z	22.5	17.9	16.5	17.0	16.3	15.9	18.6	22.7	28.6	27.3	25.5	28.0	28.8	29.3	29.1	31.7	30.4	26.4	22.2	20.3	19.3	23.47	31.74
4-Jul	18.4	16.2	Z	16.2	12.8	9.2	10.8	13.5	19.7	23.8	26.7	28.3	27.3	27.5	27.4	26.5	27.3	25.9	22.7	22.7	21.9	22.0	21.7	22.8	21.35	28.29
5-Jul	19.8	14.2	Z	12.5	12.1	10.6	11.2	12.1	15.2	17.8	19.2	20.4	22.1	21.8	23.1	22.0	23.6	23.5	22.8	19.5	20.9	20.0	21.3	17.1	18.38	23.58
6-Jul	16.5	14.1	Z	9.1	7.8	8.5	9.5	13.7	17.1	18.3	21.7	23.9	27.0	27.7	27.0	31.1	31.6	30.3	34.4	37.3	33.5	29.8	27.9	29.7	22.93	37.33
7-Jul	31.2	28.1	Z	19.1	16.6	14.7	16.4	22.8	25.7	26.6	25.4	24.6	25.8	25.1	26.5	27.2	26.8	27.1	25.4	26.4	23.2	19.6	19.9	18.2	23.59	31.23
8-Jul	15.2	11.5	Z	11.4	7.5	5.7	7.1	9.3	14.5	17.8	25.2	26.7	29.4	31.8	31.8	35.6	36.6	35.4	33.6	33.5	28.1	25.6	23.9	20.0	22.48	36.65
9-Jul	16.6	12.5	Z	11.8	10.6	8.3	8.4	12.1	16.7	24.8	21.8	27.5	30.8	34.4	34.3	41.0	35.1	36.7	36.5	29.5	21.6	15.2	11.0	13.6	22.22	41.02
10-Jul	27.2	28.7	Z	16.2	16.6	20.4	18.9	16.0	14.7	17.8	20.4	20.4	21.8	25.4	30.6	27.5	30.2	28.2	26.3	29.0	25.3	21.2	20.8	16.6	22.62	30.57
11-Jul	18.0	18.1	Z	15.7	13.2	13.2	13.1	14.1	15.2	19.3	22.5	26.3	29.8	29.7	29.1	30.3	24.9	22.7	23.9	23.4	19.7	17.3	14.8	14.3	20.37	30.27
12-Jul	13.6	13.2	Z	10.7	9.9	10.1	11.6	13.2	17.1	21.9	22.0	23.6	26.7	22.3	21.6	25.5	31.5	31.4	25.1	22.6	19.0	19.1	16.6	13.7	19.22	31.51
13-Jul	13.9	11.6	Z	9.6	10.1	9.3	9.4	10.3	12.1	14.2	19.0	20.8	20.7	21.5	23.8	25.5	24.6	25.3	25.8	26.3	23.4	19.7	16.7	11.6	17.61	26.30
14-Jul	10.1	8.1	Z	7.5	7.7	7.9	7.8	11.1	14.1	17.2	22.6	23.0	26.5	26.3	28.7	24.5	25.5	27.0	30.2	18.5	19.2	14.9	11.2	12.2	17.47	30.16
15-Jul	13.1	11.8	Z	6.6	4.0	9.3	14.6	16.8	18.4	27.0	28.8	26.1	27.8	31.1	30.7	32.5	33.9	34.1	33.1	30.7	24.4	18.4	16.8	15.5	21.98	34.10
16-Jul	13.8	13.8	Z	10.5	11.0	10.0	9.6	11.3	13.2	21.8	23.1	29.6	37.4	39.4	39.2	36.9	33.2	37.3	34.7	30.6	26.5	21.9	18.7	17.2	23.51	39.41
17-Jul	15.6	16.5	Z	15.4	15.0	15.6	15.9	17.4	18.1	18.4	18.7	19.7	22.2	29.2	29.2	27.8	26.1	23.3	23.5	19.3	21.5	22.9	17.3	12.4	20.04	29.23
18-Jul	11.8	9.0	Z	8.2	4.9	7.1	9.8	13.1	22.9	26.7	33.2	37.5	39.7	40.2	40.6	39.2	33.7	31.6	37.0	35.1	32.2	24.0	20.7	24.7	25.34	40.60
19-Jul	23.6	19.7	Z	13.1	13.5	10.3	9.9	15.3	18.2	21.9	27.7	32.7	33.8	34.0	31.6	34.2	36.0	36.0	38.6	34.5	31.8	32.4	32.5	30.9	26.62	38.57
20-Jul	25.5	27.2	Z	17.6	20.8	18.2	18.0	17.5	19.5	22.2	26.9	30.5	33.0	32.5	32.2	31.8	31.3	29.6	28.0	26.8	20.3	18.6	20.0	17.9	24.60	32.99
21-Jul	18.7	17.4	Z	14.7	17.2	16.0	16.6	20.0	17.9	22.3	28.8	33.5	33.6	32.3	29.9	30.0	29.7	30.4	29.8	30.0	26.4	25.7	25.3	20.0	24.61	33.60
22-Jul	17.0	15.1	Z	14.6	17.1	15.9	14.5	20.3	24.1	29.1	32.8	37.8	38.7	39.3	39.8	39.4	40.4	36.5	35.9	31.4	29.8	28.8	38.0	31.8	29.05	40.41
23-Jul	25.7	19.3	Z	11.4	12.4	12.1	13.5	14.6	16.9	27.9	31.1	32.5	34.2	34.6	34.8	32.8	36.4	34.8	29.8	24.1	19.9	13.5	13.3	12.2	23.38	36.41
24-Jul	15.1	14.1	Z	16.0	17.4	16.9	16.3	20.7	22.5	23.8	30.1	32.3	31.9	30.5	27.3	25.3	26.7	24.7	22.9	21.1	18.9	16.4	13.0	11.8	21.56	32.27
25-Jul	13.9	13.1	Z	7.9	11.5	12.3	13.6	20.4	24.4	24.7	25.3	26.7	26.4	27.0	35.4	33.0	33.8	32.6	28.9	29.6	29.5	26.5	23.1	21.2	23.52	35.36
26-Jul	15.9	14.4	Z	11.9	10.4	9.1	9.3	12.7	18.2	25.6	29.0	31.3	C	C	C	C	32.7	33.2	33.8	29.8	21.3	20.3	25.9	24.9	21.56	33.78
27-Jul	18.0	14.8	Z	22.0	15.6	13.5	10.7	10.5	12.0	18.3	31.4	29.4	28.9	28.6	33.4	37.8	36.3	30.4	31.7	29.7	28.2	25.2	22.3	20.2	23.87	37.83
28-Jul	16.7	10.8	Z	8.6	8.7	8.9	8.8	10.6	15.2	22.9	31.3	35.9	37.5	39.3	35.8	30.7	27.5	24.5	23.5	21.9	11.5	9.7	14.1	15.8	20.44	39.35
29-Jul	15.8	13.5	Z	7.5	7.7	6.7	7.0	10.0	15.1	21.8	28.3	28.4	29.4	30.2	30.4	31.8	31.1	32.7	33.8	30.8	28.8	28.0	28.2	28.7	22.86	33.83
30-Jul	30.1	24.6	Z	15.9	11.1	10.9	9.0	15.2	20.9	26.1	32.0	31.4	30.8	30.8	21.7	24.8	22.7	23.7	27.2	26.0	23.7	17.5	14.9	15.4	22.03	31.98
31-Jul	15.0	12.8	Z	18.6	18.4	18.4	15.4	18.9	26.0	31.3	34.9	33.5	29.9	27.5	29.2	27.6	24.8	25.9	25.4	24.2	21.8	21.3	22.4	20.9	23.66	34.94
	18.28	16.33	--	13.63	12.72	12.16	12.53	15.00	18.28	22.87	26.59	28.81	30.15	30.76	31.03	31.33	30.93	30.16	30.07	27.87	24.35	21.35	20.40	18.81	Diurnal Average	
	31.23	28.75	--	22.49	20.81	21.22	19.82	22.83	26.04	35.32	34.94	39.72	42.23	43.67	43.14	43.51	41.74	38.60	40.13	37.47	33.45	32.44	38.00	31.85	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb

WCAS - Violet Grove
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
July 2016

Maximum Value: 7.26 ppb on Jul 15 11:00

Maximum Daily Average: 0.94 ppb on Jul 15

Minimum Value: 0.0 ppb on Jul 1 01:00

Minimum Daily Average: 0.07 ppb on Jul 31

Maximum Diurnal Average: 0.82 ppb at hour 9

Minimum Diurnal Average: 0.02 ppb at hour 23

Monthly Average: 0.236 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.2 P_{90} = 0.6 P_{99} = 3.5

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																								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-Jul	0.0	Z	0.0	0.0	0.0	0.3	0.5	0.7	0.4	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	0.09	0.72
2-Jul	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.3	0.7	0.6	0.4	0.2	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.12	0.66
3-Jul	0.2	Z	0.0	0.0	0.0	0.2	0.5	0.6	0.6	0.3	0.2	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	0.13	0.63
4-Jul	0.0	Z	0.0	0.0	0.1	0.6	1.2	1.3	0.7	0.3	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.22	1.26
5-Jul	0.1	Z	0.0	0.1	0.1	0.4	1.0	1.3	0.6	0.3	0.1	0.1	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.20	1.28
6-Jul	0.0	Z	0.0	0.0	0.0	0.4	0.9	1.1	0.6	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.17	1.11
7-Jul	0.0	Z	0.0	0.0	0.0	0.2	0.7	0.6	0.3	0.3	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.12	0.71
8-Jul	0.0	Z	0.0	0.0	0.3	0.8	1.3	1.8	1.1	0.6	0.3	0.3	0.2	0.1	0.2	0.0	0.0	0.0	0.8	0.4	0.2	0.1	0.0	0.2	0.38	1.76
9-Jul	0.1	Z	0.1	0.1	0.1	0.3	1.3	1.0	1.2	1.4	5.8	2.7	2.0	1.0	0.4	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.80	5.84
10-Jul	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.13	0.37
11-Jul	0.0	Z	0.0	0.0	0.0	0.2	0.4	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.14	0.48
12-Jul	0.1	Z	0.1	0.1	0.1	0.3	0.4	0.7	0.5	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.16	0.71
13-Jul	0.0	Z	0.0	0.0	0.1	0.2	0.4	0.6	0.4	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.12	0.56
14-Jul	0.0	Z	0.0	0.0	0.1	0.2	0.6	0.8	0.6	0.5	0.7	0.5	0.2	0.3	0.3	0.5	0.2	0.4	0.6	0.3	0.3	0.1	0.0	0.0	0.30	0.80
15-Jul	0.1	Z	0.1	0.1	0.2	0.2	0.4	0.2	4.4	5.2	7.3	0.7	0.5	0.2	0.1	0.1	1.4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.94	7.26
16-Jul	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.5	1.6	0.3	5.4	3.1	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.54	5.42
17-Jul	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.3	0.2	0.2	0.4	0.2	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.12	0.40
18-Jul	0.1	Z	0.0	0.1	0.5	0.3	0.8	1.5	1.2	0.4	0.1	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	0.23	1.45
19-Jul	0.0	Z	0.0	0.0	0.1	0.5	0.7	0.9	1.1	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.18	1.06
20-Jul	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.5	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.09	0.48
21-Jul	0.0	Z	0.1	0.1	0.0	0.1	0.1	0.4	0.6	0.3	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.0	0.15	0.63
22-Jul	0.0	Z	0.1	0.0	0.0	0.2	0.7	0.6	0.6	0.3	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.74
23-Jul	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.3	0.8	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.12	0.75
24-Jul	0.0	Z	0.0	0.0	0.0	0.3	0.6	0.8	0.8	0.7	0.3	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	0.16	0.80
25-Jul	0.0	Z	0.0	0.0	0.0	5.6	0.3	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	0.27	5.57
26-Jul	0.0	Z	0.0	0.0	0.0	0.2	1.6	0.9	0.7	0.1	0.1	0.0	C	C	C	C	C	C	0.1	0.2	0.5	0.0	0.0	0.0	--	1.64
27-Jul	0.0	Z	0.1	0.0	0.1	3.8	0.6	0.7	0.7	0.5	0.3	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.33	3.83
28-Jul	0.1	Z	0.0	0.1	0.1	0.3	0.9	1.7	1.8	1.0	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.4	0.0	0.0	0.31	1.80
29-Jul	0.0	Z	0.1	0.1	0.1	0.3	1.5	1.7	1.3	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.25	1.66
30-Jul	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.2	0.8	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	0.76
31-Jul	0.0	Z	0.0	0.0	0.0	0.0	0.3	0.4	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.43
	0.03	--	0.03	0.03	0.07	0.53	0.62	0.74	0.82	0.56	0.80	0.31	0.17	0.11	0.06	0.06	0.09	0.07	0.10	0.06	0.06	0.04	0.02	0.03	Diurnal Average	
	0.17	--	0.14	0.11	0.48	5.57	1.64	1.76	4.35	5.19	7.26	3.07	1.97	0.97	0.43	0.46	1.36	0.39	0.78	0.38	0.47	0.38	0.11	0.16	Diurnal Maximum	

Z - zerospan C - Calibration

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

WCAS - Violet Grove
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
July 2016

Maximum Value: 11.67 ppb on Jul 9 11:00

Maximum Daily Average: 4.21 ppb on Jul 9

Minimum Value: 0.8 ppb on Jul 31 18:00

Minimum Daily Average: 1.19 ppb on Jul 31

Maximum Diurnal Average: 3.37 ppb at hour 5

Minimum Diurnal Average: 1.50 ppb at hour 16

Monthly Average: 2.266 ppb

Percentiles: P_1 = 0.9 P_{10} = 1.3 Q_1 = 1.5 Median = 2.0 Q_3 = 2.6 P_{90} = 3.6 P_{99} = 6.4

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																								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-Jul	3.1	Z	2.2	2.5	2.4	2.3	2.2	2.2	1.9	1.7	1.6	1.3	1.3	1.4	1.2	1.2	1.3	1.6	1.6	2.0	1.5	1.8	2.5	3.0	1.91	3.15
2-Jul	2.5	Z	1.8	1.7	2.2	2.1	1.7	2.2	2.9	2.5	2.2	1.8	1.5	1.3	1.3	1.4	1.5	1.4	1.4	1.5	1.8	2.0	2.7	2.7	1.91	2.87
3-Jul	2.2	Z	2.5	5.2	4.0	3.3	3.5	4.0	3.6	2.4	1.5	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.0	1.1	1.4	1.3	2.0	3.3	2.19	5.21
4-Jul	3.2	Z	3.5	4.6	4.1	3.5	3.0	2.4	2.1	1.7	1.6	1.5	1.2	1.2	1.3	1.5	1.5	1.0	1.9	1.3	1.5	2.5	3.0	2.2	2.22	4.59
5-Jul	2.6	Z	2.7	2.5	2.9	3.0	2.7	2.3	1.6	1.4	1.4	1.4	1.3	1.4	1.2	1.3	1.3	1.4	1.5	1.5	2.3	2.1	1.9	2.3	1.90	2.98
6-Jul	3.0	Z	4.3	4.9	4.5	3.6	2.8	2.8	2.4	2.0	1.8	1.7	1.7	1.5	1.5	1.6	1.7	1.5	1.9	2.2	2.2	2.1	2.0	2.3	2.44	4.87
7-Jul	2.4	Z	2.7	2.4	2.6	3.4	4.2	2.6	2.2	2.1	1.7	1.4	1.4	1.7	1.6	1.3	1.4	1.4	1.5	1.9	2.2	2.3	2.4	2.7	2.15	4.18
8-Jul	3.2	Z	3.5	3.9	5.0	4.1	3.9	3.8	3.0	2.6	2.1	2.1	2.1	1.8	2.0	1.5	1.6	1.9	4.7	4.0	5.0	5.2	5.5	6.3	3.43	6.33
9-Jul	4.6	Z	5.3	5.3	5.1	4.6	4.9	4.1	4.0	4.1	11.7	6.9	6.3	5.2	5.1	2.4	2.6	2.5	2.1	2.3	1.7	1.9	2.1	2.0	4.21	11.67
10-Jul	2.5	Z	2.5	3.0	2.6	2.2	2.5	2.3	2.3	2.1	2.2	2.4	2.4	2.0	1.7	1.9	1.7	1.6	2.0	1.8	2.0	2.1	2.0	1.7	2.15	2.97
11-Jul	2.3	Z	2.6	2.9	3.0	2.9	3.0	2.6	2.3	2.0	1.8	1.6	1.4	1.5	1.6	1.6	1.8	1.7	1.5	1.8	1.7	2.0	2.3	2.1	2.07	3.02
12-Jul	2.4	Z	2.7	3.1	3.2	3.0	2.7	2.3	1.8	1.6	1.6	1.5	1.5	1.7	1.7	1.5	1.6	2.0	1.6	1.7	1.7	1.8	2.6	2.9	2.10	3.24
13-Jul	2.7	Z	2.6	2.9	3.1	3.1	2.8	2.5	2.3	2.0	1.6	1.4	1.4	1.4	1.3	1.3	1.3	1.5	1.7	1.6	2.0	3.0	2.6	3.8	2.17	3.81
14-Jul	2.5	Z	3.0	3.1	3.1	2.9	2.8	2.3	2.0	2.1	2.6	3.7	2.6	2.1	2.5	3.6	2.4	2.4	2.8	2.2	2.9	2.2	1.9	2.1	2.61	3.69
15-Jul	2.5	Z	3.4	3.3	2.1	2.1	3.3	3.4	5.4	5.3	10.9	3.5	3.2	2.0	1.6	1.6	1.7	1.7	2.1	1.9	5.0	2.6	3.3	2.6	3.24	10.94
16-Jul	2.3	Z	1.8	2.0	2.6	2.8	2.3	2.0	3.0	1.7	8.2	7.0	3.3	2.7	2.0	1.5	1.4	2.0	1.9	1.8	1.7	2.0	2.3	2.4	2.66	8.17
17-Jul	3.2	Z	2.3	2.2	2.3	2.4	2.5	2.3	2.2	2.2	2.4	1.9	1.8	1.3	1.2	1.4	1.1	1.5	1.3	1.4	1.2	1.4	1.7	1.9	1.88	3.22
18-Jul	1.9	Z	1.8	4.0	6.3	4.0	3.8	3.9	3.4	2.1	1.7	1.5	1.6	1.5	1.5	1.5	1.9	1.9	1.9	2.0	1.6	1.8	1.8	2.5	2.43	6.33
19-Jul	3.3	Z	3.6	4.4	6.6	6.0	4.3	3.3	3.3	2.2	1.9	1.6	1.4	1.3	1.5	1.7	1.3	1.2	1.2	1.4	1.6	1.5	2.1	2.0	2.56	6.63
20-Jul	1.8	Z	2.1	2.1	3.2	3.4	2.9	2.9	2.5	2.2	2.0	1.8	1.5	1.5	1.7	1.4	1.5	1.4	1.4	1.6	1.6	1.6	1.8	2.6	2.02	3.36
21-Jul	2.3	Z	2.5	2.8	2.6	3.1	2.5	3.1	3.0	2.2	1.7	1.4	1.3	1.5	1.5	1.6	1.4	1.6	1.5	1.6	1.9	2.1	1.9	2.2	2.05	3.10
22-Jul	1.4	Z	1.7	2.4	3.7	3.6	3.5	2.7	2.6	2.2	1.8	1.7	1.6	1.2	1.1	1.1	1.3	1.5	1.9	2.0	2.8	1.9	1.6	1.4	2.02	3.69
23-Jul	1.4	Z	2.3	2.1	2.0	2.5	2.2	2.4	2.9	2.4	2.2	1.3	1.2	1.2	1.2	1.4	1.2	1.2	1.6	2.0	1.6	2.1	1.7	1.9	1.83	2.92
24-Jul	2.3	Z	5.5	6.5	4.3	4.0	3.0	2.8	2.5	2.6	2.3	1.5	1.3	1.1	1.2	1.4	1.3	1.4	1.4	1.8	2.2	1.7	1.6	1.7	2.41	6.49
25-Jul	1.9	Z	1.9	1.9	2.8	4.0	2.0	1.3	1.3	1.1	1.1	1.2	1.1	1.1	1.4	1.3	1.5	1.7	2.1	1.8	1.8	1.8	1.7	1.8	1.71	4.05
26-Jul	1.8	Z	1.7	2.8	2.9	3.7	4.4	3.0	2.7	2.1	2.0	1.7	C	C	C	C	C	C	1.6	2.1	3.1	1.7	1.7	2.5	--	4.36
27-Jul	2.8	Z	2.5	2.6	3.1	4.2	3.3	3.8	3.1	2.8	2.2	1.9	1.5	1.1	1.3	1.5	1.6	3.6	1.7	1.6	1.8	2.2	2.8	3.2	2.45	4.22
28-Jul	3.5	Z	2.4	2.4	2.5	3.9	3.0	2.9	3.1	2.6	1.7	1.4	1.4	1.6	1.4	1.5	2.3	1.4	1.2	1.1	1.2	2.2	1.4	3.8	2.17	3.86
29-Jul	3.1	Z	4.7	4.4	3.7	4.3	3.1	2.5	2.5	2.0	1.5	1.0	1.0	0.8	0.9	0.8	0.8	0.9	1.1	1.3	1.8	1.7	1.6	1.8	2.05	4.72
30-Jul	1.5	Z	1.5	1.9	3.8	3.7	2.5	2.0	2.3	1.7	1.5	1.3	1.2	1.5	1.6	1.2	1.3	1.1	1.1	1.2	1.1	1.3	1.7	1.7	1.73	3.79
31-Jul	1.7	Z	2.0	1.8	1.8	1.9	1.7	1.4	1.1	1.0	1.0	0.9	1.0	0.9	0.9	0.8	0.9	0.8	1.0	1.0	1.0	1.0	0.9	1.0	1.19	1.97
	2.51	--	2.77	3.15	3.37	3.34	3.00	2.72	2.62	2.22	2.63	2.01	1.75	1.59	1.57	1.50	1.50	1.59	1.72	1.76	2.03	2.02	2.17	2.46	Diurnal Average	
	4.64	--	5.50	6.49	6.63	6.05	4.88	4.11	5.35	5.35	11.67	6.99	6.26	5.19	5.08	3.63	2.56	3.60	4.71	4.03	5.03	5.19	5.50	6.33	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

West Central Airshed Society

WCAS - Violet Grove
Summary of Hourly Averages

NOx (NO_x) - ppb
July 2016

Maximum Value: 18.19 ppb on Jul 15 11:00

Maximum Daily Average: 4.98 ppb on Jul 9

Minimum Value: 0.7 ppb on Jul 29 16:00

Minimum Daily Average: 1.24 ppb on Jul 31

Maximum Diurnal Average: 3.84 ppb at hour 6

Minimum Diurnal Average: 1.52 ppb at hour 16

Monthly Average: 2.469 ppb

Percentiles: $P_1 = 0.9$ $P_{10} = 1.2$ $Q_1 = 1.5$ Median = 2.0 $Q_3 = 2.9$ $P_{90} = 4.1$ $P_{99} = 9.7$

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																								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-Jul	3.1	Z	2.2	2.5	2.4	2.6	2.6	2.9	2.3	1.8	1.7	1.3	1.2	1.3	1.1	1.1	1.2	1.5	1.6	1.9	1.5	1.8	2.4	3.0	1.96	3.11
2-Jul	2.5	Z	1.8	1.7	2.2	2.1	1.8	2.5	3.5	3.0	2.6	2.0	1.6	1.2	1.3	1.3	1.5	1.3	1.4	1.5	1.8	2.0	2.8	2.7	2.01	3.51
3-Jul	2.3	Z	2.5	5.2	4.0	3.5	3.9	4.6	4.1	2.7	1.7	1.2	1.3	1.3	1.2	1.1	1.1	1.1	1.0	1.0	1.4	1.2	2.0	3.3	2.29	5.24
4-Jul	3.2	Z	3.5	4.5	4.1	4.0	4.2	3.6	2.8	1.9	1.9	1.6	1.3	1.2	1.3	1.6	1.5	1.1	2.0	1.3	1.5	2.4	3.0	2.2	2.42	4.55
5-Jul	2.6	Z	2.7	2.6	3.0	3.3	3.6	3.5	2.2	1.7	1.5	1.5	1.3	1.5	1.2	1.4	1.2	1.4	1.6	1.5	2.3	2.0	1.8	2.3	2.07	3.60
6-Jul	2.9	Z	4.2	4.8	4.4	4.0	3.7	3.9	2.9	2.3	1.9	1.7	1.7	1.5	1.5	1.6	1.8	1.5	1.9	2.3	2.2	2.1	1.9	2.3	2.57	4.82
7-Jul	2.3	Z	2.7	2.4	2.6	3.5	4.9	3.2	2.5	2.3	1.8	1.5	1.4	1.7	1.7	1.3	1.4	1.4	1.5	2.0	2.2	2.3	2.4	2.7	2.24	4.87
8-Jul	3.2	Z	3.5	3.9	5.3	4.9	5.2	5.5	4.1	3.1	2.4	2.4	2.3	1.9	2.1	1.5	1.5	1.9	5.5	4.4	5.2	5.3	5.5	6.5	3.78	6.48
9-Jul	4.7	Z	5.4	5.3	5.2	4.9	6.1	5.0	5.1	5.5	17.5	9.7	8.2	6.1	5.5	2.4	2.6	2.6	2.2	2.4	1.7	2.0	2.2	2.1	4.98	17.52
10-Jul	2.5	Z	2.5	2.9	2.6	2.2	2.6	2.4	2.6	2.4	2.5	2.7	2.6	2.2	1.8	2.0	1.7	1.7	2.2	1.8	2.0	2.1	2.0	1.7	2.24	2.94
11-Jul	2.3	Z	2.6	2.9	3.0	3.1	3.4	3.0	2.7	2.2	1.9	1.6	1.5	1.5	1.6	1.6	1.8	1.8	1.5	1.9	1.7	2.0	2.4	2.2	2.18	3.35
12-Jul	2.4	Z	2.8	3.1	3.3	3.2	3.0	2.9	2.2	1.8	1.8	1.5	1.5	1.8	1.8	1.7	1.8	2.1	1.6	1.7	1.8	1.8	2.6	2.9	2.22	3.30
13-Jul	2.7	Z	2.6	2.9	3.2	3.3	3.2	3.1	2.6	2.3	1.7	1.5	1.4	1.4	1.3	1.3	1.3	1.5	1.8	1.6	2.0	2.9	2.6	3.8	2.26	3.80
14-Jul	2.5	Z	3.0	3.1	3.1	3.0	3.3	3.1	2.5	2.5	3.2	4.1	2.7	2.4	2.8	4.1	2.6	2.8	3.4	2.4	3.1	2.2	1.9	2.1	2.88	4.12
15-Jul	2.6	Z	3.5	3.3	2.3	2.2	3.6	3.6	9.7	10.5	18.2	4.2	3.7	2.1	1.6	1.6	3.0	1.8	2.2	2.0	5.1	2.6	3.2	2.5	4.15	18.19
16-Jul	2.3	Z	1.8	2.0	2.6	2.9	2.6	2.5	4.7	2.0	13.6	10.1	3.9	3.0	2.1	1.5	1.3	2.0	1.9	1.8	1.7	2.0	2.3	2.4	3.17	13.60
17-Jul	3.2	Z	2.3	2.1	2.3	2.5	2.8	2.6	2.4	2.4	2.8	2.0	2.0	1.4	1.2	1.7	1.2	1.5	1.4	1.5	1.2	1.4	1.7	1.9	1.98	3.20
18-Jul	2.0	Z	1.8	4.0	6.8	4.3	4.6	5.3	4.6	2.4	1.9	1.5	1.5	1.4	1.4	1.4	1.8	1.9	2.0	2.0	1.5	1.7	1.8	2.5	2.62	6.77
19-Jul	3.2	Z	3.6	4.4	6.7	6.5	5.0	4.1	4.4	2.6	2.1	1.7	1.3	1.3	1.5	1.8	1.3	1.1	1.2	1.3	1.5	1.4	2.1	1.9	2.70	6.67
20-Jul	1.7	Z	2.1	2.1	3.2	3.4	3.0	3.3	2.9	2.5	2.2	1.9	1.5	1.6	1.7	1.4	1.5	1.4	1.3	1.6	1.6	1.6	1.8	2.6	2.09	3.36
21-Jul	2.3	Z	2.5	2.8	2.6	3.2	2.6	3.4	3.6	2.5	1.9	1.5	1.3	1.6	1.6	1.7	1.5	1.7	1.6	1.6	1.9	2.2	1.9	2.2	2.17	3.57
22-Jul	1.4	Z	1.7	2.4	3.7	3.8	4.2	3.2	3.2	2.5	1.9	1.7	1.8	1.1	1.0	1.0	1.2	1.4	1.9	2.0	2.7	1.8	1.5	1.4	2.10	4.19
23-Jul	1.3	Z	2.2	2.1	1.9	2.5	2.4	2.7	3.6	2.9	2.5	1.3	1.3	1.1	1.2	1.4	1.1	1.1	1.6	2.0	1.6	2.3	1.7	1.9	1.91	3.64
24-Jul	2.3	Z	5.5	6.5	4.3	4.3	3.6	3.6	3.3	3.3	2.5	1.5	1.1	0.9	1.0	1.3	1.2	1.3	1.4	1.7	2.2	1.6	1.5	1.7	2.50	6.48
25-Jul	1.8	Z	1.8	1.9	2.9	9.6	2.3	1.4	1.4	1.1	1.0	1.1	1.0	0.9	1.3	1.2	1.4	1.6	2.0	1.7	1.8	1.7	1.7	1.7	1.93	9.60
26-Jul	1.7	Z	1.7	2.7	2.9	3.9	6.0	4.0	3.4	2.3	2.1	1.7	C	C	C	C	C	C	1.9	2.4	3.6	1.7	1.7	2.4	--	6.01
27-Jul	2.8	Z	2.5	2.6	3.2	8.0	3.9	4.5	3.7	3.3	2.5	2.1	1.6	1.1	1.3	1.5	1.6	3.7	1.7	1.6	1.8	2.2	2.8	3.2	2.74	7.98
28-Jul	3.5	Z	2.4	2.4	2.6	4.1	3.9	4.6	4.9	3.6	1.9	1.4	1.6	1.5	1.4	1.4	2.3	1.4	1.3	1.1	1.2	2.5	1.4	3.8	2.44	4.87
29-Jul	3.1	Z	4.8	4.4	3.7	4.6	4.6	4.1	3.8	2.5	1.6	1.0	0.9	0.7	0.8	0.7	0.7	0.8	1.0	1.2	1.7	1.6	1.5	1.8	2.24	4.78
30-Jul	1.5	Z	1.5	1.9	3.8	3.8	2.6	2.2	3.0	2.1	1.6	1.2	1.1	1.5	1.6	1.2	1.3	1.2	1.1	1.2	1.1	1.2	1.7	1.6	1.79	3.80
31-Jul	1.7	Z	1.9	1.8	1.8	1.8	1.9	1.8	1.4	1.0	1.0	0.9	1.1	1.0	0.9	0.8	1.0	0.8	1.0	1.0	0.9	1.0	0.9	1.0	1.24	1.94
	2.51	--	2.77	3.15	3.41	3.84	3.58	3.43	3.42	2.75	3.40	2.30	1.89	1.64	1.59	1.52	1.55	1.62	1.79	1.79	2.05	2.02	2.15	2.46	Diurnal Average	
	4.73	--	5.52	6.48	6.77	9.60	6.12	5.52	9.68	10.52	18.19	10.07	8.21	6.14	5.48	4.06	3.00	3.70	5.46	4.38	5.21	5.27	5.53	6.48	Diurnal Maximum	

Z - zerospan C - Calibration

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

WCAS - Violet Grove
Summary of Hourly Averages

Total Hydrocarbon (THC) - ppm
July 2016

Maximum Value: 4.31 ppm on Jul 28 03:00

Maximum Daily Average: 2.33 ppm on Jul 27

Minimum Value: 1.9 ppm on Jul 24 16:00

Minimum Daily Average: 2.06 ppm on Jul 3

Maximum Diurnal Average: 2.38 ppm at hour 3

Minimum Diurnal Average: 1.99 ppm at hour 14

Monthly Average: 2.144 ppm

Percentiles: P_1 = 1.9 P_{10} = 2.0 Q_1 = 2.0 Median = 2.1 Q_3 = 2.2 P_{90} = 2.3 P_{99} = 3.2

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																								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-Jul	2.0	2.1	2.1	Z	2.1	2.2	2.2	2.6	2.5	2.2	2.1	2.0	1.9	1.9	1.9	1.9	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.10	2.63
2-Jul	2.1	2.2	2.1	Z	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.1	2.1	2.1	2.10	2.34
3-Jul	2.1	2.1	2.1	Z	2.1	2.1	2.2	2.4	2.2	2.1	2.0	2.0	1.9	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.06	2.35
4-Jul	2.3	2.2	2.0	Z	2.1	2.1	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.0	2.08	2.30
5-Jul	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.08	2.23
6-Jul	2.2	2.2	2.2	Z	2.3	2.3	2.3	2.3	2.2	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	2.1	2.2	2.10	2.31
7-Jul	2.1	2.1	2.1	Z	2.1	2.1	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.3	2.5	2.08	2.52
8-Jul	4.2	2.7	3.3	Z	2.8	2.6	2.4	2.4	2.3	2.2	2.1	2.1	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.32	4.22
9-Jul	2.2	2.2	2.2	Z	2.3	4.2	2.6	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.24	4.19
10-Jul	2.1	2.1	2.2	Z	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.1	2.10	2.19
11-Jul	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.12	2.23
12-Jul	2.2	2.2	2.2	Z	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.11	2.23
13-Jul	2.2	2.2	2.3	Z	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.2	2.0	2.2	2.4	2.3	2.4	2.18	2.44
14-Jul	2.3	2.3	2.3	Z	2.3	2.3	2.4	2.3	2.3	2.2	2.1	2.1	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.17	2.40
15-Jul	2.1	2.2	2.2	Z	2.5	2.3	2.3	2.3	2.4	2.2	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.2	2.15	2.52
16-Jul	2.2	2.2	2.3	Z	2.3	2.3	2.3	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.12	2.32
17-Jul	2.2	2.2	2.2	Z	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.13	2.27
18-Jul	2.2	2.2	2.1	Z	3.2	2.6	2.2	2.8	2.5	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.2	2.0	2.0	2.2	2.1	2.1	2.22	3.19
19-Jul	2.1	2.2	2.3	Z	2.4	2.3	2.4	2.3	2.4	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.13	2.39
20-Jul	2.1	2.1	2.2	Z	2.1	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.08	2.25
21-Jul	2.1	2.2	2.2	Z	2.2	2.2	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.08	2.23
22-Jul	2.2	4.3	3.3	Z	3.5	3.2	2.3	2.2	2.2	2.2	2.1	2.0	2.0	1.9	1.9	2.0	1.9	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.31	4.26
23-Jul	2.0	2.1	2.1	Z	2.2	2.3	2.2	2.2	2.2	2.2	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.4	2.2	2.10	2.38
24-Jul	2.3	2.4	2.3	Z	2.4	2.2	2.2	2.1	2.1	2.2	2.2	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.07	2.36
25-Jul	2.1	2.2	2.2	Z	2.1	2.1	2.0	2.3	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	2.0	1.9	2.0	2.0	2.1	2.3	3.0	2.4	2.10	2.97
26-Jul	2.3	2.1	2.2	Z	2.2	2.2	2.4	2.3	2.3	2.1	2.1	2.0	2.0	2.0	2.1	2.1	C	C	C	C	3.3	3.1	2.6	2.8	2.32	3.32
27-Jul	2.6	2.6	3.8	Z	2.6	2.5	2.7	2.7	2.6	2.4	2.2	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.2	2.1	2.33	3.83
28-Jul	2.2	2.3	4.3	Z	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.0	1.9	2.0	2.0	2.0	2.0	2.1	2.2	2.0	2.1	2.6	2.3	2.1	2.25	4.31
29-Jul	2.1	2.2	2.2	Z	2.3	2.3	2.4	2.3	2.3	2.2	2.0	2.0	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.10	2.39
30-Jul	2.0	2.1	2.1	Z	2.2	2.2	2.6	2.2	2.3	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.12	2.57
31-Jul	2.1	2.2	2.2	Z	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.0	2.1	2.1	2.07	2.17
	2.24	2.27	2.38	--	2.34	2.34	2.29	2.28	2.23	2.16	2.08	2.04	2.01	1.99	1.99	1.99	2.00	2.01	2.04	2.03	2.10	2.15	2.17	2.17	Diurnal Average	
	4.22	4.26	4.31	--	3.55	4.19	2.67	2.81	2.58	2.45	2.19	2.16	2.16	2.08	2.09	2.14	2.14	2.12	2.21	2.19	3.32	3.06	2.97	2.83	Diurnal Maximum	

Z - zerospan C - Calibration

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

VIOLET GROVE
STATION #902

METEOROLOGICAL DATA

JULY 2016

WCAS - Violet Grove
Summary of Hourly Averages

External Temperature (ET) - C
July 2016

Maximum Value: 25.25 C on Jul 29 17:00

Maximum Daily Average: 18.68 C on Jul 29

Minimum Value: 6.9 C on Jul 5 06:00

Minimum Daily Average: 10.61 C on Jul 31

Maximum Diurnal Average: 18.64 C at hour 15

Minimum Diurnal Average: 11.13 C at hour 6

Monthly Average: 15.103 C

Percentiles: P_1 = 7.7 P_{10} = 10.9 Q_1 = 12.3 Median = 14.5 Q_3 = 17.8 P_{90} = 20.4 P_{99} = 23.9

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																								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-Jul	11.0	10.6	10.7	9.9	9.5	9.0	10.7	12.8	15.4	16.8	18.1	19.5	20.4	21.2	21.8	21.9	21.1	20.3	19.1	15.6	13.4	13.0	12.8	12.6	15.30	21.93
2-Jul	12.1	11.8	12.0	11.1	11.2	11.4	11.4	11.8	12.5	13.9	16.3	17.6	18.6	19.4	20.1	20.4	20.3	18.2	14.8	15.0	14.6	14.0	14.0	13.9	14.85	20.41
3-Jul	13.5	12.9	12.5	12.3	11.4	11.5	12.6	12.5	12.1	12.5	14.7	15.8	16.3	16.5	17.6	18.2	18.2	17.6	17.8	17.5	15.2	13.1	12.0	11.5	14.42	18.20
4-Jul	10.9	9.9	10.0	9.2	8.0	7.0	8.6	10.7	13.2	14.4	15.4	16.2	16.6	17.1	17.2	16.8	16.9	16.6	14.6	12.9	11.9	11.2	10.7	10.6	12.78	17.23
5-Jul	10.3	9.2	8.7	7.7	7.4	6.9	7.6	9.5	11.6	13.4	14.6	15.6	16.4	16.7	17.8	17.6	18.3	18.2	17.8	16.8	15.8	14.3	13.5	12.1	13.25	18.26
6-Jul	11.3	10.7	9.6	8.6	7.5	7.8	8.8	11.2	13.4	14.6	16.0	17.0	17.9	18.2	17.4	16.9	18.2	19.3	15.5	14.0	13.5	12.4	11.8	11.6	13.47	19.27
7-Jul	11.6	11.2	11.0	10.6	10.4	10.2	10.6	12.9	14.8	16.4	17.5	18.5	19.4	18.7	19.7	20.1	20.2	20.5	19.6	19.0	17.5	15.5	14.5	13.3	15.57	20.49
8-Jul	12.1	11.0	10.6	11.2	9.7	9.0	10.2	11.5	14.1	15.6	17.8	18.3	19.1	19.6	18.9	20.6	21.0	20.7	19.6	17.2	15.0	13.7	12.8	11.9	15.05	20.96
9-Jul	11.4	10.7	11.4	11.8	11.6	11.5	11.4	12.5	13.3	15.1	15.9	16.3	16.9	17.9	16.5	12.1	11.7	12.7	13.5	13.5	12.9	12.6	12.3	12.1	13.23	17.85
10-Jul	12.3	11.6	11.8	11.6	10.8	10.4	10.5	10.8	11.2	12.0	12.7	13.1	13.3	12.4	11.7	13.1	14.1	14.6	14.8	14.5	13.7	12.7	12.1	11.9	12.41	14.80
11-Jul	11.7	11.6	11.4	11.3	11.1	11.3	11.4	12.2	12.7	13.8	14.8	15.9	17.2	16.7	14.7	14.5	13.5	13.9	15.0	15.4	14.4	13.7	12.9	12.4	13.48	17.19
12-Jul	11.5	11.0	10.4	10.2	10.0	9.9	10.6	12.2	14.0	15.8	16.9	17.6	13.9	15.4	16.5	16.6	16.1	15.7	15.4	14.9	14.3	13.7	12.9	12.1	13.66	17.64
13-Jul	11.8	11.4	11.3	11.2	11.3	11.3	11.8	12.4	13.0	13.8	15.1	15.2	15.0	15.7	16.4	15.9	15.8	16.9	14.8	13.8	13.3	12.8	12.4	12.0	13.53	16.91
14-Jul	11.8	11.5	10.9	10.4	10.1	10.4	10.4	11.8	12.9	14.2	15.5	14.6	12.9	14.0	14.8	14.8	14.1	14.5	15.2	14.5	14.5	13.1	12.0	11.5	12.93	15.55
15-Jul	11.6	11.0	10.8	10.5	9.9	10.1	11.6	11.4	10.9	12.1	14.3	13.9	13.5	12.1	11.8	14.7	15.3	14.5	14.1	14.2	13.3	12.5	12.1	12.0	12.42	15.32
16-Jul	11.8	11.7	11.3	10.8	10.7	10.6	10.5	11.6	12.6	15.4	17.0	17.8	18.3	19.4	20.0	20.1	18.9	18.1	16.9	16.1	15.1	14.2	13.7	13.3	14.84	20.11
17-Jul	13.0	13.0	12.5	11.8	11.6	11.4	12.0	12.8	13.1	13.4	13.7	13.5	14.6	14.8	15.4	16.4	17.1	15.9	16.0	15.6	14.7	13.7	13.2	12.8	13.84	17.09
18-Jul	12.4	12.1	12.2	11.8	11.5	11.2	11.9	12.9	14.8	16.0	17.4	18.6	19.4	20.1	20.9	20.7	18.8	17.6	20.0	20.0	18.8	16.5	15.5	15.9	16.14	20.93
19-Jul	15.4	13.7	13.2	12.5	12.6	12.3	12.4	14.1	15.1	17.4	18.6	20.3	21.5	21.8	18.2	21.6	22.8	23.5	23.6	22.5	20.4	18.8	18.1	15.6	17.75	23.59
20-Jul	13.6	14.7	14.5	13.3	13.7	13.6	13.3	13.9	15.0	15.9	17.3	18.9	20.3	20.9	20.4	20.3	20.4	20.6	20.2	19.0	18.0	17.3	17.1	16.9	17.05	20.87
21-Jul	16.9	16.3	15.1	15.0	15.3	14.8	14.6	15.4	15.9	17.2	18.6	19.4	20.1	20.6	20.4	21.3	20.4	20.4	20.1	18.8	17.7	16.6	15.2	14.4	17.52	21.31
22-Jul	14.2	13.8	13.1	13.1	12.8	12.4	13.1	15.2	16.6	18.5	20.2	21.7	22.8	23.3	23.7	23.8	23.7	23.1	22.6	20.1	18.2	15.7	11.5	12.4	17.73	23.84
23-Jul	13.1	12.1	12.0	12.3	12.2	12.0	12.4	12.9	13.9	15.9	16.9	17.8	18.7	19.4	19.8	19.6	20.0	20.1	19.7	18.8	16.9	15.3	14.8	14.2	15.86	20.15
24-Jul	14.0	13.3	12.6	12.4	11.5	12.1	12.2	14.2	16.2	18.3	20.8	22.2	23.1	23.7	23.4	23.3	23.5	23.7	22.3	20.8	18.9	16.9	15.2	15.2	17.90	23.66
25-Jul	15.0	14.0	13.7	13.5	13.6	13.9	14.5	16.7	17.5	18.2	19.0	19.6	20.5	21.0	21.7	21.7	21.7	20.8	20.0	19.8	18.8	17.0	15.7	15.1	17.62	21.73
26-Jul	13.9	13.4	12.7	13.4	13.6	13.4	13.1	13.9	16.4	18.1	19.5	21.0	22.2	22.9	23.3	23.7	24.0	24.2	23.9	22.6	20.3	18.8	18.6	17.7	18.52	24.17
27-Jul	16.1	15.2	15.0	15.7	14.3	14.2	14.1	14.6	15.4	17.2	20.2	19.2	18.0	20.3	22.1	22.7	21.8	20.8	18.6	16.5	16.3	16.5	15.9	16.1	17.36	22.73
28-Jul	15.4	14.3	13.8	13.0	12.8	12.9	12.5	13.9	16.6	18.5	19.7	21.0	22.1	23.1	22.9	18.8	16.2	14.5	16.8	17.8	16.5	15.7	15.4	16.0	16.68	23.15
29-Jul	15.4	14.4	13.0	12.5	12.6	12.6	12.4	13.9	16.3	19.0	21.3	22.5	23.5	23.9	24.6	25.0	25.2	24.9	24.1	22.4	20.7	18.3	16.2	13.7	18.68	25.25
30-Jul	13.7	13.0	12.6	12.5	12.4	12.6	12.5	13.3	15.2	17.4	18.8	19.6	20.1	16.2	13.1	11.3	13.3	13.8	14.5	12.4	10.9	10.5	10.3	10.1	13.76	20.10
31-Jul	10.0	9.5	8.9	8.5	7.7	7.4	6.9	8.2	9.9	11.5	12.3	12.7	11.9	12.7	14.9	12.5	12.7	13.1	12.6	12.1	11.5	9.7	8.8	8.8	10.61	14.89
	12.86	12.28	11.91	11.61	11.25	11.13	11.51	12.70	14.05	15.56	17.00	17.77	18.22	18.58	18.64	18.62	18.55	18.36	17.86	16.90	15.71	14.50	13.68	13.22	Diurnal Average	
	16.92	16.34	15.07	15.69	15.34	14.77	14.61	16.66	17.51	19.05	21.29	22.46	23.45	23.92	24.62	25.02	25.25	24.90	24.12	22.62	20.67	18.78	18.60	17.73	Diurnal Maximum	

WCAS - Violet Grove

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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	7.9	5.4	7.2	4.1	3.3	4.0	1.9	2.3	3.8	4.9	5.9	8.0	8.9	9.8	10.7	10.6	9.3	8.2	6.4	10.0	8.8	6.1	5.1	0.5	3.19	10.72
Dir	W	WSW	WSW	WSW	WSW	WSW	W	SSW	S	S	S	SSE	SE	SE	ESE	SE	SE	SE	S	W	W	WNW	W	ESE	S	ESE
2 Spd	0.6	0.8	2.2	2.9	4.4	4.1	5.8	6.0	3.8	1.2	3.1	3.9	4.8	4.5	8.3	9.0	8.5	3.7	5.8	8.9	1.3	1.8	0.3	3.1	1.66	8.96
Dir	SSW	SE	SW	S	S	SSW	SW	WSW	WSW	S	E	E	E	ESE	E	E	E	NNE	SSW	SSE	NNE	N	SW	NNW	SE	E
3 Spd	4.4	5.8	8.9	10.2	7.7	2.6	5.7	4.6	16.8	17.9	15.9	16.9	14.9	13.0	14.3	19.0	14.8	11.7	10.1	5.9	10.4	5.9	7.0	7.7	6.17	18.99
Dir	ENE	ESE	ESE	SE	SE	SE	SE	WSW	WNW	NW	NNW	NNW	NW	NNW	NNW	NW	NW	NNW	NNW	NNW	NNW	WNW	WSW	WSW	NW	NW
4 Spd	8.4	3.2	7.3	9.3	2.2	2.2	2.3	2.7	4.0	2.7	2.8	4.1	3.4	5.0	4.1	6.7	3.4	5.7	7.2	10.4	11.9	13.2	10.8	9.9	3.51	13.19
Dir	WSW	WSW	SW	SW	SW	WSW	SSW	SSE	SE	SSE	NE	ESE	ESE	SE	ENE	ENE	N	SW	SSW	SW	SW	WSW	WSW	SW	SW	WSW
5 Spd	5.9	2.9	11.5	14.4	10.9	10.7	11.8	13.7	11.2	9.0	7.5	4.9	4.1	4.1	4.3	6.1	4.6	7.5	2.7	3.0	5.1	6.5	8.3	11.1	5.07	14.42
Dir	WSW	W	WNW	WNW	WNW	WNW	WNW	WNW	NW	NNW	NNW	NNW	N	NNE	NNW	NE	N	ENE	ENE	SSW	W	SW	SW	SW	WNW	WNW
6 Spd	7.8	10.2	10.5	8.1	8.1	9.4	9.4	10.3	13.0	10.5	12.0	11.4	10.0	8.9	7.0	3.4	3.7	5.0	16.8	11.5	0.7	0.9	4.8	9.3	5.67	16.83
Dir	WSW	W	W	W	W	W	W	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	ENE	N	NE	ENE	NE	WNW	SSW	W	WNW	NE
7 Spd	10.4	10.3	6.8	7.4	8.0	8.2	6.9	5.6	8.2	8.6	7.0	7.7	7.2	7.3	1.4	0.4	4.3	6.8	6.0	9.9	6.2	5.8	3.8	2.1	3.11	10.45
Dir	W	WNW	WNW	W	W	WSW	WSW	WSW	W	WNW	WNW	W	WNW	WNW	W	NW	E	ESE	SE	SE	SE	SE	SE	SSE	W	W
8 Spd	1.6	1.0	2.3	4.6	3.0	3.1	2.4	7.6	8.4	8.2	6.7	7.6	8.4	9.8	5.6	5.4	3.6	3.4	14.2	16.5	12.3	5.5	4.4	4.3	3.34	16.55
Dir	SSE	WSW	SSE	S	W	WNW	WNW	WNW	NW	NW	N	NE	NE	NE	NNE	NE	E	NE	ENE	ENE	E	ESE	ESE	ENE	NE	ENE
9 Spd	0.8	5.3	2.9	5.6	1.9	1.7	1.8	1.9	3.5	5.1	9.3	9.9	8.8	8.0	6.2	11.8	4.5	4.9	9.7	3.6	1.1	0.4	0.8	4.3	0.33	11.84
Dir	S	NW	WSW	W	SW	S	NNE	ESE	ESE	E	E	E	E	ENE	WNW	W	WNW	W	W	S	WSW	NE	SW	SW	W	W
10 Spd	5.7	8.3	9.6	9.1	9.9	10.2	6.3	5.5	9.9	11.9	12.7	12.3	8.5	7.3	10.4	12.7	9.6	9.3	6.9	8.7	7.0	5.8	5.6	8.9	8.46	12.75
Dir	W	W	W	WNW	WNW	W	NW	NW	WNW	WNW	WNW	WNW	NW	NNW	WNW	NW	NW	WNW	NW	NNW	NW	NW	WNW	WNW	WNW	NW
11 Spd	8.2	7.9	8.0	9.3	10.2	10.8	9.9	10.7	9.8	7.7	7.5	7.2	6.4	9.4	12.8	12.4	3.7	7.8	11.2	8.4	9.4	9.0	7.9	10.2	8.71	12.81
Dir	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	WNW	WSW	NW	WNW	W	W	W	W	WNW	W	W	WNW	WSW
12 Spd	10.8	11.1	11.0	11.2	10.1	9.7	11.4	9.9	7.3	9.5	8.9	8.6	10.9	7.5	7.3	16.7	7.5	4.6	12.1	7.3	5.9	7.8	8.8	9.6	8.61	16.74
Dir	W	W	W	W	W	W	WNW	WNW	NW	WNW	WNW	WNW	NW	W	NNW	NNW	NNE	NW	WNW	WNW	WNW	W	W	WNW	WNW	NNW
13 Spd	10.2	9.0	8.5	9.2	9.5	9.5	10.5	11.7	8.9	7.9	5.3	5.3	8.1	10.9	10.0	10.9	8.8	6.5	5.1	6.9	8.4	7.2	6.3	6.8	7.34	11.65
Dir	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NNW	WNW	W	W	WNW	NW	NW	NNE	S	WSW	WSW	WSW	W	W	WNW	WNW
14 Spd	8.1	8.5	6.4	7.7	7.6	8.5	8.4	8.4	6.8	4.6	1.8	6.4	5.9	3.7	4.5	4.0	6.4	3.4	3.0	0.8	1.7	0.2	0.4	1.3	4.41	8.54
Dir	W	W	W	W	W	WNW	WNW	WNW	WNW	NW	NW	WSW	SW	W	NW	SW	WSW	WNW	WNW	WSW	NE	SSE	SSW	WSW	W	WNW
15 Spd	0.6	1.6	1.3	2.9	2.5	0.6	2.8	5.4	6.8	5.9	4.1	1.6	2.5	5.6	6.7	4.8	5.3	8.8	1.7	5.3	2.2	1.1	3.0	4.8	1.18	8.84
Dir	NNW	W	W	W	WNW	NNW	SSW	W	WNW	NW	NNW	S	E	S	W	WNW	ENE	ESE	NNE	NE	NE	SSE	WNW	WNW	WNW	ESE
16 Spd	3.5	4.3	5.8	6.6	7.4	8.8	8.7	7.1	6.1	5.7	5.6	9.2	11.9	10.7	10.6	6.7	2.4	13.7	12.4	10.1	11.9	9.9	7.3	10.4	3.47	13.65
Dir	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NNW	NE	NE	NE	NE	NE	NE	ENE	WSW	WSW	SW	SW	SW	WSW	W	WNW	WSW
17 Spd	10.2	10.6	9.9	10.7	10.3	10.6	11.0	9.5	8.7	8.2	7.0	4.6	8.4	7.3	4.7	3.5	5.0	6.4	1.6	2.3	5.3	5.4	3.9	2.1	6.05	11.00
Dir	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW	WNW	N	NNW	NNW	NNW	N	NE	WNW	SSW	SW	W	WSW	WNW	WNW
18 Spd	1.3	1.9	2.7	4.5	3.4	4.8	5.1	6.2	10.5	8.7	11.0	9.8	9.1	9.4	7.7	3.5	8.3	7.1	10.5	9.1	6.0	1.5	3.5	6.2	5.48	11.02
Dir	S	S	S	SSE	SSE	S	SSW	SSE	S	SSE	SSE	SSE	SE	ESE	SE	SE	SE	SE	SSE	S	SW	S	SW	WSW	SSE	SSE
19 Spd	6.3	6.9	7.9	8.6	9.5	3.9	5.8	5.3	9.3	8.8	9.0	9.2	12.7	12.1	9.4	11.3	10.4	8.9	10.9	5.3	10.7	7.6	11.1	5.1	8.32	12.71
Dir	W	W	W	WSW	W	W	SW	W	WNW	W	W	W	W	W	W	W	WSW	WSW	WNW	WNW	WNW	W	W	WNW	W	W
20 Spd	4.9	7.7	5.4	4.6	8.8	8.0	8.3	9.6	8.6	6.2	6.2	7.4	11.4	9.4	11.3	11.3	9.1	7.0	5.0	5.3	1.3	4.4	3.9	5.7	5.75	11.38
Dir	SSW	SSW	S	SSW	SW	WSW	W	W	W	WSW	WSW	WSW	W	WNW	NW	WNW	WNW	WNW	W	NNW	W	SW	SW	SW	W	W
21 Spd	5.6	4.9	2.1	5.2	4.7	6.1	9.1	6.2	6.2	7.5	8.0	7.7	12.5	13.5	8.7	12.7	9.6	13.0	9.2	6.4	4.6	4.8	2.9	0.7	4.89	13.53
Dir	WSW	WNW	W	WSW	W	SSW	SSW	SW	W	WSW	W	WNW	W	WNW	NW	WNW	N	NNW	NNW	NNW	NE	ENE	NNE	SSE	WNW	WNW
22 Spd	2.2	1.9	1.1	1.7	6.5	8.0	6.2	8.9	11.3	11.0	8.3	5.5	4.5	4.1	5.9	5.0	6.0	5.4	3.2	5.3	3.6	13.1	15.9	3.1	3.16	15.93
Dir	S	S	SSW	SSE	S	S	SSW	SSW	SSW	SSW	SW	SSW	S	SSE	SE	SSE	SE	ESE	E	NNE	SE	NW	WNW	E	SSW	WNW

WCAS - Violet Grove
Summary of Hourly Averages

Wind Speed (WS) - kph
July 2016

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
23 Spd	8.4	8.9	7.0	4.0	5.1	6.5	6.1	7.0	5.7	4.6	4.8	4.4	5.7	4.2	4.7	4.0	4.7	4.1	3.7	3.9	0.3	2.6	2.3	3.9	4.07	8.88
Dir	W	W	W	W	W	W	W	W	WNW	NNW	WNW	NW	NNW	W	NNW	N	SW	W	WNW	NNW	WNW	S	S	WSW	WNW	W
24 Spd	8.2	9.0	8.5	8.4	5.5	9.0	10.4	10.0	8.8	7.4	5.3	6.3	5.4	5.7	5.5	3.1	0.9	5.3	7.7	4.3	4.6	2.3	2.0	3.9	4.25	10.35
Dir	W	W	WSW	W	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	WNW	NNW	N	NE	NNW	NNW	NNE	N	WNW	SW	WSW	WSW	SW
25 Spd	5.5	5.9	1.7	3.4	4.5	3.4	2.7	2.5	3.1	5.1	6.6	8.1	9.9	8.6	8.3	7.5	10.9	10.0	7.4	11.4	11.3	7.3	5.1	2.9	4.99	11.36
Dir	WNW	WNW	WSW	WSW	SW	WSW	SSW	SSE	SE	SE	SSE	S	SSE	SSE	SE	SE	SSE	SE	SE	SSE	SSE	S	SSE	S	SSE	SSE
26 Spd	3.8	4.9	5.3	5.3	6.4	6.4	9.2	10.2	5.9	8.4	5.0	3.4	4.8	4.7	4.6	4.9	5.7	2.1	4.7	4.9	4.0	4.7	7.1	4.5	0.44	10.19
Dir	ESE	SE	SE	S	SSW	WSW	WNW	WNW	NW	NNW	NNW	NNE	NNE	NNE	ENE	E	E	ESE	ESE	SE	SSE	SSE	S	S	SE	WNW
27 Spd	2.1	0.6	3.7	2.8	2.2	4.0	5.9	3.5	4.5	4.0	6.6	5.4	7.3	7.3	7.5	6.8	8.0	5.0	12.1	8.2	9.0	9.6	9.3	8.6	2.16	12.12
Dir	SSW	ESE	SSE	S	ESE	W	W	W	NW	NW	N	N	ESE	SSE	SSE	ESE	E	E	SSE	SSW	SW	WSW	WSW	SW	S	SSE
28 Spd	4.3	3.6	3.9	5.9	7.1	9.0	8.0	5.0	5.1	4.3	2.8	1.9	1.4	1.3	1.2	14.3	9.3	5.1	6.0	3.7	1.8	4.5	4.6	8.7	4.22	14.26
Dir	W	NW	SSE	SSW	SW	SW	W	W	W	W	W	W	W	WNW	SW	WSW	NW	SSW	SSW	WSW	SSW	SSW	SSW	SW	WSW	WSW
29 Spd	8.8	7.8	5.1	5.0	9.6	10.3	8.2	10.4	8.0	2.7	1.2	0.8	1.1	3.3	2.3	2.5	7.1	11.6	13.8	5.2	8.5	9.3	18.1	7.9	1.59	18.09
Dir	SW	WSW	WSW	WSW	W	W	W	W	W	W	ESE	E	NW	SSE	E	E	SE	SE	SE	SE	E	ESE	NW	ENE	SW	NW
30 Spd	9.8	4.9	8.1	9.3	8.2	2.2	2.1	5.0	5.8	7.6	4.9	5.3	5.6	12.9	12.5	7.7	2.3	9.0	7.1	8.2	3.7	4.5	11.7	10.3	5.21	12.89
Dir	ENE	W	W	WNW	WSW	SW	SSW	WSW	WNW	NW	NNW	NNW	NNE	NNW	NW	NNW	N	NNW	NW	NW	NW	WSW	WNW	WNW	NW	NNW
31 Spd	11.9	10.1	11.3	14.4	13.2	12.9	13.1	16.0	18.3	19.4	19.2	19.5	16.2	12.6	18.0	16.9	17.4	21.8	18.8	14.0	14.9	19.8	22.0	21.3	16.19	21.97
Dir	W	W	W	WNW	WNW	WNW	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW
Spd	4.39	4.78	4.52	4.93	5.11	5.50	5.56	5.87	5.95	5.08	3.74	2.82	2.43	2.31	3.02	3.45	1.36	1.50	1.38	1.22	2.11	3.43	4.84	4.58	Diurnal Average	
Dir	W	W	W	W	W	W	W	W	WNW	WNW	WNW	WNW	NW	NW	NW	NW	NNW	NW	W	WSW	W	WSW	W	W		
Spd	11.91	11.06	11.50	14.42	13.20	12.92	13.10	16.03	18.35	19.43	19.16	19.50	16.17	13.53	18.03	18.99	17.39	21.78	18.81	16.55	14.95	19.78	21.97	21.27	Diurnal Maximum	
Dir	280.36	275.91	288.89	296.48	300.16	293.61	276.75	285.32	298.81	301.36	295.95	300.34	298.99	299.17	304.99	307.84	298.78	299.13	299.32	74.73	292.97	290.65	284.26	284.55		

Maximum Speed Value: 22.0 kph on Jul 31 23:00
Maximum Daily Speed Average: 16.19 kph on Jul 31
Maximum Diurnal Speed Average: 5.95 kph at hour 9

Minimum Speed Value: 0.2 kph on Jul 14 22:00
Minimum Daily Speed Average: 0.33 kph on Jul 15
Minimum Diurnal Speed Average: 1.22 kph at hour 20

Monthly Average Velocity: 3.507 kph 278.54 deg
All monthly, daily, and diurnal averages have been calculated using vector methods

Speed Percentiles: P_1 = 0.6 P_{10} = 2.3 Q_1 = 4.4 Median = 6.9 Q_3 = 9.3 P_{90} = 11.4 P_{99} = 18.9

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

Frequency Distribution

Direction	Speed Range (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	18	20	3	0	0	0	41
NorthEast	17	18	4	0	0	0	39
East	25	17	2	0	0	0	44
SouthEast	22	40	5	0	0	0	67
South	43	26	1	0	0	0	70
SouthWest	36	53	5	0	0	0	94
West	44	147	26	3	0	0	220
NorthWest	33	91	41	4	0	0	169
Total	238	412	87	7	0	0	744

WCAS - Violet Grove
Summary of Hourly Averages

Delta Temperature (ET_D) - C
July 2016

Maximum Value: 1.90 C on Jul 2 10:00

Maximum Daily Average: 0.92 C on Jul 13

Minimum Value: -2.5 C on Jul 26 22:00

Minimum Daily Average: 0.32 C on Jul 24

Maximum Diurnal Average: 1.29 C at hour 11

Minimum Diurnal Average: -0.03 C at hour 24

Monthly Average: 0.673 C

Percentiles: P_1 = -1.4 P_{10} = -0.2 Q_1 = 0.4 Median = 0.8 Q_3 = 1.1 P_{90} = 1.3 P_{99} = 1.5

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																								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-Jul	0.2	0.2	0.1	0.0	-0.4	-0.2	0.7	1.0	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.1	0.5	0.6	0.6	0.6	0.8	0.8	0.5	0.6	0.73	1.51
2-Jul	0.1	0.3	0.8	0.8	0.9	0.9	1.0	1.2	1.2	1.9	1.3	1.3	1.4	1.2	1.3	1.1	1.0	0.7	0.7	0.6	0.7	0.7	0.3	0.5	0.92	1.90
3-Jul	0.6	0.4	0.3	0.4	0.1	0.2	1.0	1.0	1.2	1.6	1.1	1.4	1.3	1.2	1.3	1.3	1.2	1.0	1.0	0.9	0.8	-0.2	-0.3	0.0	0.77	1.55
4-Jul	0.2	-0.4	-0.7	0.1	-0.1	-0.2	0.7	1.1	1.2	1.4	1.3	1.3	1.3	1.3	1.1	1.2	0.9	0.9	0.5	0.6	0.6	0.5	0.4	0.4	0.66	1.43
5-Jul	0.5	-0.4	0.1	0.5	0.4	0.2	0.7	1.0	1.2	1.3	1.4	1.4	1.3	1.1	1.4	1.3	1.2	1.1	0.9	0.4	0.4	-0.6	-0.3	0.1	0.69	1.41
6-Jul	0.1	0.1	0.1	0.2	0.1	0.3	0.7	1.0	1.1	1.2	1.2	1.4	1.4	1.2	1.1	0.9	1.1	1.1	0.9	0.9	0.4	0.0	0.0	0.5	0.71	1.39
7-Jul	0.6	0.6	0.6	0.5	0.7	0.7	0.8	1.1	1.3	1.3	1.4	1.4	1.3	0.8	1.1	0.9	1.0	1.1	0.3	0.4	-0.3	-0.9	-0.9	-1.3	0.60	1.41
8-Jul	-0.6	-0.8	-1.3	-1.0	-0.3	0.5	0.8	1.0	1.2	1.0	1.2	1.2	1.4	1.4	1.1	1.3	1.2	1.0	1.0	0.9	0.8	0.3	-0.3	-0.1	0.54	1.42
9-Jul	-0.5	0.7	0.2	0.3	0.3	0.2	0.9	0.9	1.1	1.3	1.3	1.4	1.4	1.2	0.8	0.7	0.9	1.0	1.1	1.0	0.7	0.6	0.3	0.4	0.75	1.43
10-Jul	0.4	0.5	0.7	0.7	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.1	0.9	1.4	1.7	1.7	1.2	1.0	0.9	0.9	0.7	0.6	0.5	0.6	0.91	1.73
11-Jul	0.6	0.7	0.6	0.7	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.2	1.1	1.0	0.8	1.0	1.2	0.9	0.6	0.4	0.3	0.5	0.88	1.43
12-Jul	0.4	0.3	0.4	0.5	0.6	0.6	0.7	1.1	1.3	1.4	1.5	1.4	1.9	0.8	1.1	1.2	1.0	0.9	0.8	0.8	0.6	0.3	0.3	0.4	0.84	1.89
13-Jul	0.6	0.7	0.7	0.7	0.7	0.8	0.9	1.0	0.9	1.1	1.3	1.2	1.2	1.4	1.4	1.3	1.1	1.1	1.0	0.9	0.7	0.5	0.4	0.4	0.92	1.41
14-Jul	0.5	0.4	0.1	0.2	0.5	0.7	0.9	1.1	1.2	1.3	1.3	0.9	0.6	1.2	1.0	1.0	1.0	1.1	1.1	0.6	0.7	0.0	-0.6	-0.8	0.67	1.32
15-Jul	-0.1	0.5	0.5	0.4	0.5	0.8	0.9	1.0	1.3	1.7	1.2	0.8	0.9	1.2	1.9	1.3	1.1	1.0	1.0	0.9	0.8	0.0	0.4	0.7	0.87	1.86
16-Jul	0.6	0.6	0.7	0.8	0.8	0.8	0.9	1.0	1.1	1.3	1.4	1.4	1.2	1.3	1.3	1.2	1.0	1.3	0.8	0.7	0.6	0.4	0.4	0.4	0.91	1.41
17-Jul	0.3	0.5	0.6	0.6	0.5	0.6	0.8	1.0	1.0	1.0	1.0	0.9	1.0	1.2	1.2	1.5	1.3	1.1	1.0	0.8	0.6	0.5	0.3	0.2	0.81	1.45
18-Jul	0.2	0.0	0.4	0.5	0.3	0.5	0.9	1.0	1.4	1.5	1.6	1.6	1.6	1.4	1.4	0.7	0.6	0.8	1.2	0.8	0.3	-0.2	-1.4	-0.6	0.68	1.58
19-Jul	-0.9	-1.0	-0.6	0.0	0.1	0.5	0.8	1.0	1.2	1.3	1.4	1.4	1.4	1.0	0.6	1.3	1.2	0.9	0.6	0.2	0.0	-0.2	0.2	-0.1	0.51	1.43
20-Jul	-0.9	-0.6	-0.1	-0.4	0.1	0.3	0.4	0.6	0.8	1.0	1.1	1.3	1.4	1.1	0.8	0.9	0.9	0.7	0.7	0.7	0.1	-0.6	-0.1	-0.2	0.41	1.39
21-Jul	-0.1	-0.2	-0.5	-0.2	-0.3	-0.2	0.5	0.7	1.0	1.0	1.2	1.2	1.3	0.9	0.9	0.9	1.1	0.9	0.8	0.6	0.3	0.4	0.2	-0.7	0.48	1.31
22-Jul	-0.6	-0.2	-0.2	-0.2	-0.2	0.2	0.7	1.0	1.2	1.3	1.4	1.4	1.2	1.0	1.0	0.9	0.6	0.5	0.3	0.7	0.3	0.5	0.7	0.0	0.57	1.41
23-Jul	-0.2	0.4	0.6	-0.1	0.0	0.5	0.6	0.8	1.0	1.2	1.4	1.3	1.4	1.4	1.1	1.0	1.0	0.8	0.7	0.6	-0.7	-1.0	-1.6	-1.9	0.44	1.38
24-Jul	-0.8	-0.5	-0.6	-0.7	-0.3	-0.1	0.5	0.9	1.2	1.3	1.3	1.3	1.3	1.0	1.0	0.9	0.9	0.9	0.6	0.7	0.5	-0.5	-0.9	-2.0	0.32	1.34
25-Jul	-1.5	-0.2	-0.1	-0.6	-0.2	-0.1	0.2	0.9	1.1	1.3	1.4	1.3	1.5	1.2	1.1	0.8	0.9	0.5	0.4	0.6	0.4	0.2	0.2	-0.3	0.46	1.54
26-Jul	-0.6	-0.3	0.2	0.3	0.4	0.5	0.7	0.9	1.1	1.0	1.2	1.3	1.3	1.2	1.3	1.4	1.4	1.2	1.0	0.4	-0.5	-2.5	-0.7	-0.3	0.49	1.40
27-Jul	-1.3	-1.5	-0.9	-0.9	-0.1	-0.3	0.9	0.8	0.9	1.0	1.1	0.9	0.5	1.2	1.5	1.4	0.8	0.7	0.6	0.6	0.6	0.4	0.4	0.5	0.41	1.45
28-Jul	0.5	0.4	0.1	0.5	0.4	0.5	0.6	0.9	1.1	1.3	1.3	1.3	1.2	1.3	0.6	0.4	0.5	0.5	1.0	0.8	-0.6	-1.5	-0.5	-0.2	0.52	1.32
29-Jul	0.0	0.0	0.1	0.3	0.1	0.1	0.6	0.9	1.1	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.2	0.9	0.6	0.4	0.5	0.1	0.7	0.8	0.71	1.24
30-Jul	0.8	0.6	0.6	0.7	0.7	0.5	0.5	0.8	1.1	1.3	1.3	1.2	1.4	0.9	0.4	1.0	0.9	1.1	1.1	1.0	0.7	0.5	0.3	0.1	0.81	1.40
31-Jul	0.3	0.6	0.5	0.6	0.6	0.5	0.7	0.9	1.1	1.3	1.5	1.3	1.1	1.4	1.5	1.0	1.2	0.9	0.8	0.7	0.6	0.8	0.8	0.8	0.90	1.50
	-0.01	0.08	0.13	0.19	0.27	0.38	0.73	0.96	1.12	1.27	1.29	1.27	1.26	1.18	1.15	1.09	0.99	0.91	0.81	0.70	0.41	0.00	0.00	-0.03	Diurnal Average	
	0.77	0.72	0.83	0.81	0.86	0.93	1.05	1.16	1.38	1.90	1.56	1.56	1.89	1.45	1.86	1.73	1.37	1.26	1.18	1.03	0.84	0.76	0.82	0.82	Diurnal Maximum	

WCAS - Violet Grove
Summary of Hourly Averages

Relative Humidity (RH) - %
July 2016

Maximum Value: 102.04 % on Jul 2 08:00

Maximum Daily Average: 94.13 % on Jul 10

Minimum Value: 35.2 % on Jul 22 15:00

Minimum Daily Average: 63.97 % on Jul 24

Maximum Diurnal Average: 94.25 % at hour 4

Minimum Diurnal Average: 60.90 % at hour 16

Monthly Average: 78.420 %

Percentiles: P_1 = 39.8 P_{10} = 51.1 Q_1 = 65.1 Median = 82.9 Q_3 = 93.6 P_{90} = 97.7 P_{99} = 100.3

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																								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-Jul	95.8	96.1	96.3	97.7	98.2	98.3	92.1	86.8	78.9	69.9	67.4	58.2	53.5	52.3	47.3	47.8	54.5	61.1	68.2	87.3	95.7	97.6	98.2	98.9	79.09	98.93
2-Jul	99.0	100.2	100.7	100.8	101.4	101.8	101.9	102.0	101.8	91.1	80.7	73.9	67.3	59.7	58.5	55.2	58.9	71.0	82.7	89.7	93.8	97.3	97.9	97.5	86.87	102.04
3-Jul	93.1	93.5	96.2	97.5	100.0	100.8	101.5	100.8	99.3	92.4	77.0	66.8	66.5	65.7	55.5	51.9	48.4	47.4	41.0	44.1	55.7	70.5	76.4	75.6	75.73	101.47
4-Jul	76.1	82.9	85.3	85.8	91.1	95.8	88.5	77.6	63.4	53.0	45.3	42.4	41.9	41.7	42.4	47.7	46.3	45.3	58.2	67.3	72.3	76.2	77.4	76.4	65.85	95.78
5-Jul	76.9	88.3	84.1	82.9	82.9	86.1	81.6	75.0	65.5	59.8	56.9	54.5	48.4	47.8	44.1	46.5	43.0	43.3	46.6	61.2	58.9	70.0	69.3	78.8	64.68	88.29
6-Jul	78.8	79.5	82.8	86.3	89.2	87.6	82.8	76.8	73.2	68.9	63.7	60.1	55.6	52.9	62.0	62.9	54.5	50.5	66.7	72.7	78.4	87.5	89.9	86.7	72.91	89.88
7-Jul	86.2	88.7	91.7	94.5	95.3	95.6	93.1	80.3	72.6	64.9	56.2	52.1	47.2	50.3	41.7	41.4	43.2	43.2	51.4	59.5	71.1	80.3	84.2	89.5	69.76	95.65
8-Jul	91.1	97.3	98.4	99.4	98.0	99.1	98.7	95.6	85.4	78.5	65.0	62.2	61.9	58.9	63.9	46.9	48.8	56.1	62.4	71.4	84.8	91.1	92.5	94.7	79.26	99.40
9-Jul	98.1	99.3	98.2	97.5	97.5	98.9	98.3	94.7	89.0	75.9	72.7	71.7	71.6	70.5	75.6	88.8	96.2	92.4	90.0	93.2	97.0	98.8	99.4	100.0	90.22	99.97
10-Jul	95.4	95.6	98.9	97.9	97.5	97.5	97.0	97.7	98.0	97.3	94.7	93.9	94.3	95.0	93.3	91.7	89.0	87.2	87.9	85.0	89.6	93.6	94.4	96.6	94.13	98.92
11-Jul	96.1	95.4	96.4	96.6	98.2	97.6	96.8	93.8	91.9	87.3	83.7	78.8	70.8	76.6	88.4	88.7	94.2	93.1	87.7	85.9	92.4	94.9	95.9	95.2	90.69	98.23
12-Jul	95.8	95.9	96.4	96.1	96.0	95.7	93.8	89.7	84.8	81.3	78.8	75.6	84.7	87.8	84.8	79.3	75.4	75.8	82.5	84.2	88.6	90.4	92.4	95.0	87.53	96.40
13-Jul	95.1	96.3	96.7	97.7	97.4	97.5	96.1	94.1	92.9	89.6	81.1	82.6	85.5	82.1	77.0	76.9	78.0	72.3	82.6	85.7	87.0	89.6	92.9	96.3	88.45	97.69
14-Jul	98.2	98.1	98.7	99.0	98.8	98.1	97.2	92.5	87.4	82.9	76.7	82.3	89.3	85.3	82.1	86.1	85.4	81.3	74.4	86.5	88.8	95.0	98.7	99.6	90.10	99.59
15-Jul	100.3	100.1	99.9	100.1	100.3	100.5	96.5	97.0	97.6	89.9	81.2	89.4	90.5	91.2	90.9	79.5	73.8	77.7	74.6	76.8	85.0	92.7	96.2	98.3	90.83	100.51
16-Jul	99.4	98.6	98.4	98.7	98.3	98.1	97.3	93.0	89.1	75.9	66.5	61.6	58.8	53.4	50.5	49.5	58.6	67.5	73.5	77.2	83.9	90.2	91.0	90.1	79.97	99.36
17-Jul	89.9	87.7	87.8	89.7	90.8	91.8	89.3	86.9	86.7	86.7	86.7	91.6	88.9	80.0	76.5	71.1	70.4	81.0	79.0	85.7	85.1	86.6	92.3	95.7	85.74	95.72
18-Jul	96.8	98.1	96.9	98.4	98.5	99.6	95.4	90.0	80.3	75.4	67.9	63.8	61.7	59.7	54.5	56.8	74.5	78.9	70.4	66.3	70.3	84.9	93.7	88.0	80.03	99.62
19-Jul	85.8	92.0	92.5	93.4	90.8	91.7	91.7	84.3	78.4	71.9	64.3	57.5	52.1	50.1	70.6	53.4	43.7	41.1	39.9	46.7	54.6	58.4	58.7	78.0	68.39	93.42
20-Jul	95.0	86.1	85.9	93.4	84.8	81.6	81.5	78.9	77.4	76.1	70.0	61.6	54.9	55.2	54.6	56.3	56.1	55.2	58.1	65.0	74.8	81.5	77.8	77.0	72.44	95.04
21-Jul	71.5	72.5	84.3	80.0	75.2	78.5	76.3	73.4	76.3	70.8	60.4	52.4	51.3	50.0	53.4	49.1	53.0	50.7	52.9	57.3	69.8	72.0	73.5	85.1	66.23	85.05
22-Jul	88.5	88.6	94.0	92.0	90.3	89.1	86.2	78.1	71.2	65.1	57.6	48.6	39.8	37.1	35.2	36.4	40.2	48.7	50.4	57.9	66.9	78.5	88.8	90.3	67.48	93.98
23-Jul	92.0	95.5	96.4	96.8	95.1	93.3	90.4	87.1	81.5	65.2	58.4	56.3	54.0	53.5	52.4	53.9	49.0	51.8	62.4	67.1	76.3	87.9	91.3	94.6	75.10	96.80
24-Jul	85.9	80.4	80.1	77.0	78.9	76.3	75.0	67.0	63.4	60.7	53.1	47.3	44.4	42.0	42.6	43.7	40.8	44.0	52.3	61.1	64.9	76.7	88.4	89.1	63.97	89.09
25-Jul	85.6	83.8	88.8	92.4	85.6	82.6	80.1	61.8	54.4	52.3	51.6	53.9	52.4	52.2	49.7	51.1	54.7	60.9	68.9	70.3	73.7	84.7	91.4	94.4	69.90	94.44
26-Jul	97.7	100.2	100.3	100.0	98.9	98.0	97.0	91.5	83.0	76.8	70.9	62.8	50.5	46.6	42.8	41.5	38.8	37.9	42.0	53.0	68.8	80.7	78.1	82.6	72.51	100.26
27-Jul	91.8	95.6	97.9	96.8	97.0	98.4	95.1	93.9	91.7	84.8	69.7	70.5	75.8	66.5	61.9	60.7	69.5	74.8	71.4	80.5	83.4	84.3	85.4	85.6	82.62	98.39
28-Jul	88.6	95.1	98.4	98.7	98.1	96.1	94.6	89.5	80.4	73.0	64.2	58.3	53.5	50.5	54.8	69.0	83.7	93.5	81.7	76.3	87.4	97.5	93.5	87.2	81.81	98.69
29-Jul	86.6	89.3	94.8	94.9	92.5	89.7	88.7	84.0	76.9	65.9	48.8	46.1	43.5	40.8	40.5	36.8	40.7	44.0	46.3	57.8	61.4	72.7	80.9	92.5	67.35	94.87
30-Jul	92.7	95.8	97.6	97.4	97.5	96.9	97.5	94.2	85.4	74.8	65.3	62.7	59.4	79.3	91.7	91.3	88.1	85.1	83.8	90.3	94.8	97.3	97.5	96.4	88.03	97.65
31-Jul	94.9	96.1	95.8	92.4	93.4	93.2	94.1	89.2	82.8	76.0	71.7	69.2	74.3	72.7	63.4	76.1	79.1	71.1	73.4	77.1	81.5	92.9	94.8	95.7	83.37	96.15
	90.92	92.34	93.89	94.25	93.79	93.73	91.81	87.01	81.96	75.30	68.01	64.79	62.72	61.54	61.37	60.90	62.27	63.99	66.56	72.26	78.61	85.56	88.15	90.37	Diurnal Average	
	100.32	100.19	100.70	100.83	101.43	101.75	101.88	102.04	101.82	97.29	94.74	93.92	94.29	95.05	93.28	91.66	96.18	93.49	89.99	93.20	96.97	98.84	99.43	99.97	Diurnal Maximum	

WCAS - Violet Grove
Summary of Hourly Averages

Global Solar Radiation (GSR) - W/m2
July 2016

Maximum Value: 920.45 W/m2 on Jul 1 14:00

Maximum Daily Average: 315.22 W/m2 on Jul 5

Minimum Value: 0.0 W/m2 on Jul 1 02:00

Minimum Daily Average: 102.86 W/m2 on Jul 10

Maximum Diurnal Average: 655.37 W/m2 at hour 13

Minimum Diurnal Average: 0.32 W/m2 at hour 2

Monthly Average: 230.91 W/m2

Percentiles: P_1 = 0.0 P_{10} = 0.6 Q_1 = 2.1 Median = 106.6 Q_3 = 413.0 P_{90} = 707.5 P_{99} = 903.7

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																								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-Jul	1.2	0.0	1.8	1.5	4.9	31.5	181.5	351.9	510.8	653.5	780.7	885.6	895.8	920.5	901.8	587.0	201.3	138.1	73.2	24.0	10.1	4.8	2.8	3.5	298.66	920.45
2-Jul	1.5	3.1	4.2	3.4	6.2	29.6	95.4	156.5	267.8	524.7	592.3	774.4	815.1	614.3	689.1	407.5	296.7	56.6	54.5	57.3	19.5	3.2	1.8	1.9	228.19	815.11
3-Jul	0.2	0.0	1.4	1.2	4.2	38.1	114.5	103.5	108.0	219.7	445.9	907.4	652.0	626.9	773.1	756.7	622.7	300.9	352.4	200.5	68.5	6.6	0.9	0.3	262.73	907.40
4-Jul	0.0	0.0	0.0	0.0	1.1	38.8	146.5	350.7	508.4	665.9	794.8	837.4	667.3	720.2	539.2	546.5	296.3	256.9	66.7	22.5	32.5	5.2	0.9	1.1	270.78	837.44
5-Jul	1.0	0.0	0.4	0.0	2.1	25.6	140.0	344.4	504.3	652.1	779.2	806.3	797.7	662.8	900.9	582.9	531.7	468.8	210.2	90.6	62.2	2.2	0.0	0.0	315.22	900.92
6-Jul	0.1	0.1	0.6	0.6	2.9	40.0	137.3	330.1	365.2	507.7	562.0	762.7	827.0	648.7	429.6	541.4	471.3	418.6	192.9	117.0	47.1	2.5	1.2	0.8	266.97	826.99
7-Jul	1.4	0.0	1.6	1.6	3.1	23.5	107.8	319.8	477.3	632.2	759.9	865.0	839.9	226.0	685.2	354.3	376.5	457.1	155.9	153.1	46.5	1.3	0.0	0.0	270.37	864.96
8-Jul	0.1	0.0	1.1	1.4	2.8	30.7	102.7	243.0	414.9	346.7	611.4	528.4	909.7	902.2	585.4	762.1	576.8	312.7	305.6	118.3	49.9	0.9	0.0	0.3	283.63	909.74
9-Jul	1.6	1.1	2.2	2.8	3.9	21.5	78.0	111.7	266.5	515.7	419.5	588.0	535.2	392.6	64.5	18.9	75.9	179.3	206.9	71.5	13.6	3.0	2.1	2.6	149.10	587.95
10-Jul	2.3	0.7	2.5	2.1	3.0	19.7	43.7	56.4	124.5	214.9	179.7	239.6	101.2	131.0	195.2	365.4	289.8	217.1	125.2	118.6	31.4	2.4	0.9	1.4	102.86	365.44
11-Jul	0.8	0.0	1.6	0.9	3.4	15.6	67.0	152.5	170.8	274.6	347.6	467.5	708.1	429.6	309.6	236.8	46.6	157.0	262.4	141.1	36.7	2.4	0.0	0.5	159.71	708.08
12-Jul	0.5	0.0	0.7	1.2	3.2	22.5	65.5	269.8	460.0	557.9	651.3	625.8	162.8	184.7	310.6	513.2	389.1	213.4	148.6	99.9	32.8	2.5	0.7	0.8	196.56	651.25
13-Jul	1.3	0.3	1.9	1.9	2.7	28.2	102.3	121.0	107.0	228.0	533.3	349.1	346.6	505.6	565.1	438.0	351.0	331.7	143.2	89.3	25.6	2.5	0.8	0.9	178.22	565.10
14-Jul	1.4	0.0	0.8	1.0	3.9	19.7	78.0	286.0	357.5	458.2	575.8	120.7	93.4	361.1	225.1	150.6	173.3	281.0	269.6	75.1	23.1	0.6	0.0	1.9	148.25	575.81
15-Jul	3.2	0.6	2.5	1.3	6.2	68.6	84.8	69.5	92.5	334.1	385.7	78.8	199.9	159.6	328.4	614.8	342.1	155.5	196.8	161.6	31.7	2.1	2.3	2.0	138.52	614.81
16-Jul	2.4	0.4	2.5	2.4	4.8	24.5	93.4	180.5	293.8	651.2	708.9	749.9	564.2	895.0	847.3	622.3	352.7	434.5	155.6	110.0	33.5	3.9	1.3	1.2	280.68	895.01
17-Jul	1.7	0.3	1.6	1.4	2.0	31.0	124.0	195.6	137.6	158.6	133.5	191.0	343.9	421.8	421.9	712.6	420.1	243.1	152.6	54.2	21.5	1.9	0.9	1.0	157.24	712.56
18-Jul	1.7	0.7	2.6	2.3	2.1	24.8	92.4	228.0	478.3	607.8	736.3	847.7	911.1	784.7	781.7	242.4	202.8	199.0	384.6	218.0	63.5	2.9	0.0	1.1	284.01	911.10
19-Jul	0.0	0.0	0.3	0.8	1.9	28.6	87.2	201.5	413.8	496.4	720.9	859.7	903.9	605.8	282.2	778.6	630.1	449.0	287.1	122.0	26.8	1.2	1.7	0.0	287.48	903.87
20-Jul	2.9	1.0	2.4	1.2	3.3	22.2	42.4	138.9	177.5	256.4	393.4	636.7	837.0	544.5	325.1	419.8	388.2	264.6	165.0	88.7	20.5	1.5	2.2	2.6	197.41	836.98
21-Jul	2.3	0.0	0.6	1.8	1.3	11.2	36.8	132.1	204.9	251.3	537.2	588.3	780.1	469.9	404.5	501.7	486.8	353.3	217.0	59.6	13.8	1.5	0.3	1.2	210.73	780.07
22-Jul	2.5	0.8	1.8	0.9	1.4	16.8	126.9	297.9	461.4	629.0	741.7	844.1	907.8	751.9	663.2	589.1	343.1	281.2	153.8	141.4	34.0	1.2	3.5	3.3	291.61	907.76
23-Jul	2.2	0.6	2.9	1.8	2.2	21.5	62.8	118.5	282.4	530.5	742.7	816.2	842.4	817.2	495.7	402.8	403.7	273.9	144.4	72.9	16.8	0.0	0.4	0.1	252.28	842.44
24-Jul	0.1	0.0	0.4	0.2	0.8	13.6	133.1	302.9	463.5	612.6	740.7	845.5	892.6	631.0	440.7	387.6	349.1	364.6	170.4	101.4	35.0	0.0	0.0	0.0	270.24	892.61
25-Jul	1.5	0.1	1.4	1.1	2.7	28.2	78.7	318.6	454.9	596.4	708.5	734.5	904.0	672.1	664.5	350.9	413.9	184.0	95.4	138.7	39.7	0.0	0.0	0.1	266.24	904.00
26-Jul	0.6	0.2	1.6	2.3	2.3	16.1	75.7	212.4	376.1	303.5	618.0	728.1	873.5	902.4	799.7	726.2	581.9	425.6	266.3	120.6	21.2	0.0	1.4	0.5	294.00	902.36
27-Jul	0.0	0.0	2.3	2.1	2.0	18.3	140.5	63.1	124.4	222.9	540.1	228.0	229.4	670.2	785.2	721.2	145.2	64.8	50.9	30.8	8.7	1.1	1.1	1.5	168.90	785.21
28-Jul	0.8	0.0	1.5	1.1	1.1	15.0	67.9	244.2	429.8	568.9	703.7	767.7	865.8	848.0	290.3	41.0	24.6	60.1	234.1	141.6	18.0	0.0	0.0	0.0	221.88	865.77
29-Jul	0.0	0.0	0.0	0.0	0.0	10.1	113.4	276.2	442.3	584.9	713.0	812.2	868.9	879.2	681.2	707.8	571.5	402.2	245.8	61.8	10.3	0.0	0.0	0.7	307.56	879.16
30-Jul	1.5	0.0	1.6	1.8	1.8	9.9	18.5	75.0	458.4	556.0	704.4	644.2	759.3	119.7	10.0	254.4	142.1	320.6	229.4	15.5	5.9	1.4	1.2	0.7	180.54	759.27
31-Jul	0.7	0.0	0.5	0.0	0.4	10.4	92.6	266.8	425.6	607.6	741.9	487.6	281.4	548.1	754.9	216.8	425.4	213.1	104.5	30.4	5.1	1.9	1.9	2.1	217.49	754.85
	1.21	0.32	1.52	1.37	2.70	24.39	94.55	210.28	334.20	465.15	600.12	632.85	655.37	582.16	520.99	469.39	352.33	273.49	187.77	98.32	29.21	1.96	0.98	1.10	Diurnal Average	
	3.15	3.06	4.15	3.43	6.21	68.64	181.54	351.88	510.81	665.85	794.78	907.40	911.10	920.45	901.75	778.56	630.09	468.78	384.56	217.96	68.53	6.65	3.53	3.45	Diurnal Maximum	

WCAS - Violet Grove
Summary of Hourly Averages

Photosynthetically Active Radiation (PAR) - W/m2
July 2016

Maximum Value: 329.21 W/m2 on Jul 1 14:00

Maximum Daily Average: 113.44 W/m2 on Jul 29

Minimum Value: 0.0 W/m2 on Jul 1 01:00

Minimum Daily Average: 36.18 W/m2 on Jul 10

Maximum Diurnal Average: 219.59 W/m2 at hour 13

Minimum Diurnal Average: 0.66 W/m2 at hour 2

Monthly Average: 79.151 W/m2

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 1.0 Median = 37.0 Q_3 = 142.0 P_{90} = 239.7 P_{99} = 309.3

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																								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-Jul	0.0	0.0	0.0	0.0	1.3	26.0	77.0	130.9	185.3	240.4	279.5	315.3	318.4	329.2	323.7	214.0	76.6	53.0	29.0	9.7	3.1	1.2	0.4	0.4	108.93	329.21
2-Jul	0.3	0.0	0.2	0.1	1.0	9.6	33.9	54.6	95.9	173.7	215.2	273.0	287.8	219.1	245.6	146.6	108.3	21.8	22.3	20.3	6.4	0.7	0.2	0.3	80.69	287.75
3-Jul	0.3	0.0	0.2	0.1	1.5	13.8	37.8	35.5	37.1	76.8	154.2	311.1	222.4	213.7	265.2	262.3	215.9	106.0	127.2	72.8	20.5	3.4	0.4	0.2	90.76	311.11
4-Jul	0.1	0.0	0.0	0.0	1.0	21.2	56.1	120.8	173.9	226.5	265.4	280.4	226.2	242.0	183.9	187.3	104.0	89.1	23.8	7.7	10.7	1.6	0.1	0.0	92.58	280.37
5-Jul	3.1	3.4	3.6	3.6	4.7	15.6	55.7	122.5	176.6	226.4	267.1	277.6	274.2	229.1	309.5	205.4	191.8	168.3	80.8	37.4	24.7	5.8	4.2	4.1	112.30	309.52
6-Jul	0.9	0.0	0.0	0.0	0.9	17.1	51.3	112.3	127.0	177.2	193.5	256.8	276.4	219.9	148.6	177.5	165.4	148.1	68.6	39.9	15.6	0.0	0.0	0.0	91.54	276.37
7-Jul	0.0	0.0	0.0	0.0	0.0	6.9	36.9	108.0	162.5	212.4	253.5	287.4	277.4	77.3	230.4	120.3	129.8	160.5	59.1	55.7	18.5	1.5	0.0	0.0	91.59	287.41
8-Jul	0.0	0.0	0.0	0.0	0.2	9.8	35.6	85.4	143.0	122.0	206.8	178.2	302.4	298.9	197.9	262.8	206.9	112.6	111.4	42.1	16.7	0.5	0.0	0.0	97.21	302.35
9-Jul	0.0	0.0	0.0	0.0	0.0	5.4	25.5	37.8	91.2	179.5	146.3	202.6	186.2	138.9	25.6	8.0	28.2	62.2	73.3	24.9	4.4	0.5	0.0	0.0	51.69	202.62
10-Jul	0.0	0.0	0.0	0.0	0.3	6.3	14.4	19.7	44.1	75.6	63.1	86.4	37.4	50.2	70.2	127.1	101.2	75.8	44.2	41.2	10.5	0.8	0.0	0.0	36.18	127.09
11-Jul	3.2	3.6	3.9	3.9	4.3	8.4	26.5	56.9	63.4	97.9	122.2	162.9	243.6	149.5	107.9	86.9	21.3	57.7	95.0	56.3	18.1	5.4	4.3	4.2	58.64	243.59
12-Jul	0.9	0.0	0.0	0.0	0.4	7.7	22.3	91.7	155.4	189.2	215.2	204.1	57.4	64.7	105.6	172.6	133.2	74.0	50.1	33.5	11.0	1.3	0.4	0.2	66.29	215.20
13-Jul	0.2	0.0	0.0	0.0	0.1	8.1	33.6	39.8	35.7	75.8	176.4	119.9	115.6	165.7	184.8	147.5	119.5	114.7	49.4	30.2	8.2	0.9	0.4	0.5	59.46	184.81
14-Jul	0.3	0.0	0.1	0.0	0.4	5.4	25.6	92.2	120.6	152.4	190.2	43.3	32.3	120.9	78.9	51.9	59.1	94.2	94.1	28.5	8.7	1.1	0.3	0.2	50.02	190.21
15-Jul	0.1	0.0	0.0	0.0	0.6	19.5	27.1	23.1	29.8	110.6	128.1	29.0	70.1	56.1	108.6	201.7	114.4	52.3	68.3	56.5	9.9	1.2	0.4	0.3	46.16	201.72
16-Jul	0.3	0.0	0.2	0.1	0.5	6.7	30.5	59.4	89.7	214.6	241.8	247.6	185.4	290.6	280.2	206.7	120.0	147.2	54.4	39.4	9.6	1.6	0.7	0.6	92.82	290.55
17-Jul	3.9	4.1	4.4	4.3	4.7	15.3	43.1	66.0	48.8	56.1	48.4	68.2	115.5	140.9	147.2	249.5	153.6	88.7	56.2	22.7	11.6	5.0	4.5	4.5	56.97	249.50
18-Jul	1.2	0.1	0.5	0.5	0.8	8.1	30.8	73.9	152.9	193.0	233.7	268.6	287.5	250.0	250.8	83.2	68.5	66.6	129.7	71.8	20.0	0.8	0.0	0.0	91.37	287.54
19-Jul	0.0	0.0	0.0	0.0	0.0	7.3	27.4	66.7	133.5	157.1	227.1	270.3	282.8	192.0	91.5	250.4	210.0	154.1	100.3	43.4	9.7	0.4	0.0	0.0	92.68	282.83
20-Jul	0.0	0.0	0.0	0.0	0.0	4.9	12.8	45.3	56.8	83.7	129.8	206.0	266.5	176.7	107.9	138.2	129.1	88.3	54.6	29.4	6.7	0.0	0.0	0.0	64.03	266.52
21-Jul	0.0	0.0	0.0	0.0	0.0	2.7	11.2	43.2	67.7	81.7	172.7	177.3	248.7	153.8	132.5	165.5	168.8	121.6	73.7	20.4	5.7	1.2	1.0	1.0	68.76	248.65
22-Jul	0.9	0.2	0.5	0.5	0.7	9.8	44.1	95.0	141.7	174.1	229.9	265.8	288.0	242.9	215.8	194.9	119.4	95.7	55.3	47.7	11.7	0.7	0.5	0.4	93.17	288.02
23-Jul	3.8	4.0	4.4	4.2	4.3	9.9	24.2	41.6	95.5	181.7	249.0	275.0	286.3	276.1	171.6	139.6	145.1	98.7	52.9	29.5	12.5	4.8	4.4	4.5	88.47	286.28
24-Jul	1.0	0.0	0.2	0.1	0.4	8.9	44.7	98.6	152.1	197.8	238.8	272.1	286.6	205.2	147.1	131.3	121.9	128.4	62.1	35.6	13.0	0.9	0.5	0.6	89.50	286.59
25-Jul	0.5	0.1	0.5	0.5	0.6	10.4	28.1	103.7	152.2	195.8	231.3	240.1	294.2	222.1	220.3	119.2	143.0	63.8	34.2	46.7	14.8	1.4	1.1	1.1	88.56	294.17
26-Jul	1.0	0.4	0.8	0.8	0.9	7.3	30.4	76.0	130.0	104.1	208.4	244.4	298.0	309.8	273.6	256.1	214.3	164.2	106.7	52.1	12.7	2.0	1.6	1.1	104.02	309.75
27-Jul	1.4	0.7	1.4	1.0	1.4	6.8	46.9	22.3	44.5	79.0	188.4	84.4	82.9	235.1	272.3	257.6	56.1	24.8	18.7	11.9	3.0	0.9	0.5	0.6	60.12	272.33
28-Jul	0.6	0.0	0.7	0.4	0.5	6.3	27.9	86.7	153.4	198.8	243.0	265.2	298.0	295.1	106.0	18.9	11.6	22.6	87.9	56.2	10.1	0.8	0.5	0.5	78.82	297.95
29-Jul	3.7	3.9	4.4	4.3	4.3	10.9	45.5	100.9	159.2	207.1	249.3	282.6	302.2	307.4	245.5	261.1	219.1	159.3	100.5	29.0	8.8	4.5	4.5	4.5	113.44	307.37
30-Jul	1.0	0.0	0.2	0.1	0.4	3.4	6.3	27.1	145.1	199.5	242.0	223.1	258.2	46.8	4.1	88.8	52.1	108.0	84.1	5.5	2.0	0.4	0.2	0.3	62.44	258.21
31-Jul	0.2	0.0	0.0	0.0	0.1	5.0	31.3	94.9	152.8	204.2	246.7	165.2	98.9	184.6	254.1	76.5	149.6	74.8	36.3	10.6	1.9	0.3	0.1	0.0	74.50	254.12
	0.93	0.66	0.84	0.79	1.17	9.82	33.69	72.01	113.46	156.92	201.85	212.37	219.59	196.90	177.64	161.58	124.44	96.68	67.88	35.76	10.99	1.66	1.01	0.97	Diurnal Average	
	3.86	4.05	4.40	4.29	4.69	26.05	77.01	130.88	185.31	240.38	279.45	315.29	318.38	329.21	323.65	262.76	219.09	168.29	129.66	72.76	24.67	5.84	4.53	4.53	Diurnal Maximum	

WCAS - Violet Grove
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
July 2016

Maximum Value: 13.09 kph on Jul 30 14:00

Maximum Daily Average: 4.46 kph on Jul 31

Minimum Value: 0.4 kph on Jul 23 22:00

Minimum Daily Average: 1.90 kph on Jul 14

Maximum Diurnal Average: 4.11 kph at hour 16

Minimum Diurnal Average: 1.75 kph at hour 3

Monthly Average: 2.749 kph

Percentiles: P_1 = 0.9 P_{10} = 1.4 Q_1 = 1.8 Median = 2.4 Q_3 = 3.4 P_{90} = 4.5 P_{99} = 7.6

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-Jul	2.1	1.4	1.9	2.9	1.8	2.7	2.2	1.9	1.2	1.7	2.4	2.9	3.3	3.5	4.0	3.7	2.4	2.2	2.0	3.3	4.0	1.2	1.1	1.6	2.40	4.02
2-Jul	1.0	1.1	1.7	2.4	1.6	1.9	1.8	1.7	1.9	1.7	2.5	2.5	2.8	2.5	3.1	2.4	2.7	6.9	4.8	2.4	3.8	1.6	1.2	3.5	2.48	6.85
3-Jul	2.6	1.5	1.7	1.9	2.1	1.1	1.9	4.4	5.0	7.3	7.4	6.7	5.6	6.5	6.0	7.3	6.9	5.2	5.5	3.7	6.5	2.1	1.9	1.7	4.27	7.36
4-Jul	3.7	2.7	2.5	2.0	2.1	1.9	2.5	2.0	2.2	2.0	2.8	2.5	3.2	3.0	4.5	3.6	3.2	2.8	2.1	2.8	2.9	2.9	2.3	2.3	2.69	4.54
5-Jul	3.7	2.8	2.5	2.3	1.9	2.1	2.4	3.1	4.4	4.2	3.9	3.7	3.9	3.8	3.6	3.8	3.6	2.8	2.4	1.7	2.7	2.7	1.6	2.2	2.99	4.42
6-Jul	2.2	1.6	1.4	0.9	1.0	2.1	1.6	2.5	4.1	3.8	5.0	5.4	4.7	5.2	5.5	6.9	2.5	3.2	7.9	3.6	2.2	2.0	2.7	2.2	3.34	7.95
7-Jul	2.7	4.0	1.9	1.6	1.7	1.8	1.8	1.8	3.3	2.9	3.6	4.1	3.9	2.9	2.1	2.5	1.9	2.3	2.0	2.6	1.5	1.0	1.3	1.6	2.37	4.12
8-Jul	2.3	1.4	1.7	0.8	1.9	2.8	2.1	2.2	3.6	3.7	4.0	3.8	5.1	4.7	4.3	3.4	3.0	3.2	5.8	4.5	4.3	1.3	1.9	2.0	3.07	5.76
9-Jul	2.0	2.6	2.3	3.7	1.9	2.0	2.7	1.7	1.7	2.7	2.8	3.2	3.1	2.9	6.4	5.2	3.0	1.6	3.4	1.5	1.3	1.9	1.1	1.5	2.60	6.40
10-Jul	1.4	2.1	2.4	2.5	1.9	1.9	2.6	2.8	2.7	2.4	2.8	2.8	4.7	3.5	2.9	4.6	4.3	3.0	3.4	4.2	2.7	1.8	1.7	1.5	2.77	4.73
11-Jul	1.3	1.3	1.1	1.9	2.0	2.5	2.2	2.8	2.8	3.0	3.4	3.0	3.3	4.2	3.6	4.8	1.8	2.5	2.5	1.6	1.7	1.4	1.2	1.7	2.41	4.80
12-Jul	1.4	1.5	1.5	1.9	1.5	1.4	2.2	2.3	3.1	2.7	3.4	4.1	5.8	2.4	3.5	7.8	6.3	4.4	2.9	2.1	1.6	1.2	1.3	1.2	2.81	7.75
13-Jul	1.5	1.4	1.3	1.5	1.9	1.6	1.9	2.7	3.0	2.7	3.2	3.7	1.6	3.1	3.8	4.0	3.4	4.3	2.5	1.8	1.8	2.3	1.3	1.6	2.41	4.31
14-Jul	1.5	1.4	0.9	0.9	1.1	1.5	1.6	2.2	2.5	2.8	2.6	4.1	3.4	2.2	2.3	1.9	2.3	1.6	2.2	1.2	2.2	1.5	0.6	1.2	1.90	4.12
15-Jul	1.1	1.2	1.5	1.4	1.5	1.2	2.8	3.3	2.7	2.8	2.7	1.8	2.2	3.2	1.9	2.8	2.2	3.0	1.8	3.4	2.2	1.2	2.2	0.8	2.13	3.42
16-Jul	2.1	1.4	1.0	1.4	1.3	1.9	2.1	2.7	3.1	3.6	3.4	4.5	5.0	5.3	4.9	4.5	3.4	4.5	4.0	2.9	2.6	1.9	1.9	1.9	2.97	5.30
17-Jul	1.4	2.2	1.9	1.9	1.5	1.9	2.2	3.4	3.3	3.0	3.1	2.5	3.2	4.2	2.4	3.0	3.5	4.1	2.0	1.4	1.5	1.1	0.9	1.6	2.38	4.16
18-Jul	1.5	1.3	2.3	0.9	1.3	1.8	2.2	2.8	3.4	2.8	3.5	3.4	4.0	3.4	3.3	1.8	2.2	1.8	3.2	3.2	1.9	1.7	1.7	1.8	2.38	3.95
19-Jul	1.7	1.9	1.6	1.5	1.6	2.3	2.2	1.6	2.6	2.2	3.0	4.5	3.8	5.4	5.2	3.5	3.0	2.8	3.0	1.9	3.9	2.3	2.6	3.8	2.83	5.43
20-Jul	1.6	1.6	2.2	2.1	1.8	1.8	1.8	1.7	1.7	1.7	2.2	3.0	3.7	4.2	4.2	4.5	3.1	3.3	3.5	2.5	1.2	1.8	1.4	1.7	2.43	4.48
21-Jul	1.1	1.7	1.7	2.4	0.8	2.3	2.3	1.9	1.7	2.3	2.8	3.6	4.0	4.6	3.4	5.3	6.2	5.0	4.1	4.3	3.6	1.8	2.0	1.3	2.92	6.19
22-Jul	2.0	1.8	1.5	1.5	2.2	1.4	2.0	2.9	3.5	3.8	2.6	2.8	3.4	3.2	3.4	2.8	2.7	1.8	2.3	4.1	2.7	12.1	8.7	4.6	3.31	12.13
23-Jul	2.1	1.7	2.2	1.7	2.6	2.1	1.1	1.5	1.9	2.8	3.9	3.6	4.2	3.5	4.0	2.9	3.2	2.2	1.7	2.0	1.3	0.4	1.4	1.4	2.31	4.15
24-Jul	1.6	1.1	1.2	1.2	2.4	2.0	2.6	2.4	2.5	2.4	2.1	2.8	2.9	3.4	2.6	2.4	1.4	6.0	3.8	3.3	3.8	1.5	1.3	1.5	2.42	5.99
25-Jul	1.7	1.0	1.7	1.4	1.9	1.5	1.1	1.3	1.9	2.5	3.0	3.3	3.6	3.5	3.2	3.4	3.2	2.7	1.7	3.8	3.1	2.2	1.9	1.8	2.35	3.75
26-Jul	1.5	1.8	1.7	1.8	1.6	1.2	2.9	3.5	2.9	4.7	3.5	3.0	3.9	4.5	3.3	3.0	2.7	1.8	1.5	1.3	1.1	0.9	1.1	2.8	2.41	4.65
27-Jul	1.7	1.2	1.4	1.9	2.9	1.5	2.6	2.1	2.2	2.7	5.0	5.2	3.7	2.6	3.1	3.4	2.1	1.6	4.1	2.9	2.9	3.0	1.8	1.9	2.63	5.22
28-Jul	3.0	1.8	2.3	2.2	2.1	2.1	1.4	1.8	2.2	2.2	2.3	2.2	2.2	2.4	1.9	7.0	5.5	3.0	2.1	1.7	1.3	1.5	1.5	2.4	2.42	6.98
29-Jul	2.0	1.9	1.3	1.8	2.3	2.1	1.7	1.9	2.1	2.1	1.3	2.0	2.3	2.5	2.1	3.1	3.2	3.8	3.4	4.8	3.0	2.4	10.3	4.5	2.82	10.27
30-Jul	3.5	3.4	1.5	1.8	2.3	1.6	1.7	1.6	2.9	3.2	3.4	3.5	3.6	13.1	7.0	4.4	3.7	3.4	3.3	5.5	3.8	2.4	2.4	2.4	3.56	13.09
31-Jul	2.5	2.0	2.6	3.6	2.2	2.6	2.4	3.3	4.7	5.5	5.7	5.6	5.6	4.4	6.7	7.9	5.1	5.7	4.9	3.8	6.7	5.1	4.3	4.1	4.46	7.89
	1.97	1.80	1.75	1.86	1.83	1.89	2.08	2.36	2.79	3.03	3.33	3.55	3.73	3.99	3.82	4.11	3.36	3.30	3.22	2.89	2.77	2.22	2.21	2.13	Diurnal Average	
	3.71	4.04	2.59	3.74	2.92	2.82	2.92	4.44	4.95	7.28	7.36	6.68	5.79	13.09	6.95	7.89	6.95	6.85	7.95	5.48	6.68	12.13	10.27	4.59	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WCAS - Violet Grove
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
July 2016

Maximum Value: 97.25 deg on Jul 7 16:00

Maximum Daily Average: 44.47 deg on Jul 2

Minimum Value: 5.7 deg on Jul 23 22:00

Minimum Daily Average: 12.95 deg on Jul 31

Maximum Diurnal Average: 40.97 deg at hour 12

Minimum Diurnal Average: 17.58 deg at hour 4

Monthly Average: 29.069 deg

Percentiles: P_1 = 6.7 P_{10} = 9.4 Q_1 = 14.0 Median = 22.3 Q_3 = 41.0 P_{90} = 59.3 P_{99} = 89.2

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																								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-Jul	10.4	13.9	15.6	28.3	18.9	32.4	44.3	57.7	25.3	22.1	23.3	22.4	21.4	23.2	22.6	16.3	14.5	21.6	30.3	22.6	28.1	11.8	13.0	71.3	25.47	71.32
2-Jul	25.9	41.6	35.4	41.8	16.0	27.0	20.1	17.0	42.0	73.2	55.1	43.7	45.2	40.9	22.0	14.6	14.4	81.9	89.8	12.9	89.2	74.4	60.8	82.3	44.47	89.80
3-Jul	46.6	20.5	10.0	12.6	7.3	15.8	17.5	44.7	13.7	22.1	26.5	26.0	26.4	36.4	29.3	21.2	29.0	26.5	39.0	43.1	24.7	25.3	15.2	10.8	24.59	46.58
4-Jul	30.3	55.4	11.9	11.7	66.3	41.7	52.8	37.5	24.9	56.7	85.3	38.5	76.5	43.5	63.6	41.4	69.1	30.2	14.7	12.6	17.4	13.2	13.6	12.5	38.39	85.27
5-Jul	77.4	47.6	12.9	7.2	7.4	9.1	9.6	11.9	21.5	33.3	33.4	61.7	67.2	56.5	65.4	48.2	57.5	28.7	37.5	55.9	21.3	9.9	9.7	8.6	33.31	77.44
6-Jul	17.4	6.9	6.7	6.3	8.1	8.7	9.1	13.7	15.7	22.3	26.2	29.3	31.8	39.8	47.6	74.5	47.2	48.0	29.9	14.3	88.6	84.5	30.4	26.5	30.56	88.64
7-Jul	18.8	26.5	16.7	8.2	10.4	10.3	14.8	23.1	22.2	23.9	36.6	45.9	36.7	16.8	89.1	97.3	28.1	17.8	28.0	10.8	11.9	13.1	18.9	21.1	26.96	97.25
8-Jul	74.4	61.5	28.4	10.2	59.1	46.7	52.9	16.6	25.3	26.8	42.9	36.3	39.1	36.4	50.4	44.1	54.7	59.5	21.5	15.0	13.9	14.1	22.3	29.1	36.71	74.40
9-Jul	80.1	26.5	26.2	30.8	50.6	40.3	91.6	62.3	30.8	41.0	16.6	17.2	20.5	23.9	64.1	17.9	55.8	23.0	22.3	21.6	49.2	89.2	53.8	20.9	40.68	91.64
10-Jul	21.1	19.3	11.7	12.8	8.8	9.1	21.8	22.0	14.7	10.8	11.4	12.3	39.3	33.1	11.5	19.2	23.4	17.6	33.6	29.5	19.8	16.1	11.4	6.7	18.21	39.32
11-Jul	6.4	7.6	8.3	9.8	9.1	11.1	10.8	12.6	13.5	19.9	26.8	27.3	37.9	32.1	25.5	19.5	40.0	14.7	12.0	10.5	9.0	8.6	6.7	8.1	16.17	40.03
12-Jul	6.3	7.2	6.7	7.1	6.9	8.0	8.4	12.6	24.1	20.6	26.5	35.2	23.2	16.0	31.7	28.6	55.2	58.3	12.2	10.8	19.4	8.5	6.8	6.4	18.61	58.26
13-Jul	8.2	7.7	7.5	8.3	7.4	7.8	10.1	10.8	14.2	18.5	42.8	61.6	14.7	18.0	26.2	20.4	22.6	51.8	32.1	27.2	15.0	9.4	11.1	12.5	19.41	61.58
14-Jul	8.3	7.3	8.9	13.0	9.0	8.8	10.4	14.4	21.3	45.1	88.8	61.3	27.0	53.9	32.7	32.1	22.3	33.1	48.7	73.9	63.4	50.7	21.9	26.0	32.60	88.78
15-Jul	80.9	55.2	45.1	27.9	54.4	68.2	37.1	28.0	18.7	25.1	51.8	73.3	68.9	49.5	20.7	45.8	44.9	15.3	67.3	42.0	60.4	28.0	37.4	9.4	43.97	80.92
16-Jul	20.7	13.6	7.7	9.8	8.7	8.6	12.1	20.4	30.8	45.5	44.0	31.9	28.0	34.4	33.4	45.9	78.5	16.1	15.0	14.9	12.0	10.0	15.3	8.4	23.57	78.54
17-Jul	6.8	9.2	9.6	7.2	6.8	9.4	9.7	20.4	21.2	17.6	23.3	34.4	23.1	41.1	42.7	69.0	50.1	44.4	84.6	34.3	20.3	10.8	24.8	34.8	27.31	84.55
18-Jul	36.5	16.0	15.0	17.0	11.6	15.8	17.7	16.9	16.6	18.5	16.2	25.6	30.4	21.2	35.5	37.5	22.0	11.1	15.6	17.3	13.2	73.0	26.5	21.4	22.84	73.05
19-Jul	12.6	20.5	10.9	7.9	7.7	52.2	16.7	23.4	15.1	20.6	24.1	29.8	20.5	24.8	15.1	14.7	16.2	18.6	20.1	23.3	12.3	20.1	13.6	42.2	20.12	52.17
20-Jul	39.5	9.4	41.6	45.1	10.8	18.6	11.1	8.5	11.9	14.4	20.0	26.4	21.2	24.0	23.1	21.4	18.8	30.8	39.6	28.3	66.4	10.4	15.1	11.3	23.65	66.39
21-Jul	20.1	32.6	43.9	24.3	10.9	11.8	13.0	29.1	21.6	19.8	25.9	25.6	18.8	18.6	21.1	30.2	44.1	23.8	23.8	45.4	45.3	28.4	43.9	65.6	28.64	65.57
22-Jul	23.3	35.4	66.3	17.5	11.9	9.7	17.3	17.4	17.2	21.6	22.7	39.3	60.6	49.0	44.3	34.9	22.3	16.9	49.0	49.4	52.9	61.3	28.1	67.8	34.84	67.76
23-Jul	9.3	13.1	13.2	21.8	17.3	7.4	10.9	16.3	17.4	49.0	64.4	55.6	46.3	62.0	54.3	54.2	42.7	30.2	25.0	30.5	74.8	5.7	30.5	26.9	32.45	74.80
24-Jul	8.3	8.0	7.0	6.2	21.9	11.4	13.3	14.5	17.1	22.3	25.0	36.9	40.9	44.8	33.8	48.9	72.5	75.3	23.7	49.7	52.5	51.4	38.4	26.1	31.25	75.28
25-Jul	19.2	9.5	42.8	23.0	10.3	36.1	28.5	21.7	28.6	32.4	21.3	23.7	28.2	23.2	28.0	27.7	16.9	14.8	15.6	13.7	13.2	14.4	15.1	22.3	22.09	42.84
26-Jul	19.8	17.9	23.9	19.4	14.8	19.8	13.0	15.6	30.9	37.7	50.6	59.4	51.7	59.3	60.9	61.4	33.9	52.7	14.7	22.9	12.7	18.2	8.4	38.2	31.56	61.36
27-Jul	51.4	59.3	15.5	41.6	55.0	25.1	19.0	31.7	30.9	45.0	48.6	56.0	50.8	16.5	26.0	31.7	14.4	12.0	19.3	18.9	20.1	17.7	11.2	16.0	30.57	59.26
28-Jul	53.7	55.2	20.8	30.9	14.0	14.3	12.4	21.3	22.8	36.8	61.4	82.5	89.2	85.4	93.3	22.1	33.6	43.1	19.6	14.0	25.5	19.6	16.7	14.7	37.62	93.31
29-Jul	9.2	13.6	11.1	12.7	9.0	8.6	11.8	8.5	15.7	42.7	71.6	85.9	92.6	54.2	61.8	72.1	25.6	17.2	11.7	69.0	24.0	15.6	43.0	46.3	34.72	92.62
30-Jul	24.6	74.0	10.6	11.2	10.9	37.8	49.1	17.8	25.0	33.1	47.8	49.9	46.4	50.5	39.2	42.3	72.2	26.2	31.1	43.9	69.0	47.3	13.1	11.7	36.86	74.00
31-Jul	9.4	15.4	15.7	13.4	8.5	10.2	9.2	10.3	13.3	15.3	17.8	14.8	14.3	16.7	19.3	18.6	14.0	11.7	11.5	10.3	12.7	10.1	9.3	9.1	12.95	19.29
	28.29	26.04	19.60	17.58	18.38	20.70	21.81	21.90	21.42	30.12	38.02	40.97	39.97	36.96	39.82	37.85	37.31	31.37	30.28	28.66	34.14	28.08	22.12	26.28	Diurnal Average	
	80.92	74.00	66.26	45.14	66.28	68.21	91.64	62.31	41.97	73.19	88.78	85.93	92.62	85.41	93.31	97.25	78.54	81.90	89.80	73.87	89.22	89.19	60.83	82.33	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

CARROT CREEK
STATION #903

CONTINUOUS AIR MONITORING DATA

JULY 2016

CARROT CREEK
STATION #903

METEOROLOGICAL DATA

JULY 2016

STEEPER
STATION #905

CONTINUOUS AIR MONITORING DATA

JULY 2016

Summary Report **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

WCAS / Steeper **July 2016**
Station 905

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	P10	Q1	Median	Q3	P90	Exceedences 1-hour	Exceedences 24-hour	24 Hour Average Max (ppm)
							-------	-------	Percentile	---------	-------			
SO_2 (ppb)	35	709	100.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0	0	0.000
O_3 (ppb)	35	709	100.0	25.6	6.2	46.3	15.3	20.9	26.2	30.4	34.1	0	-	0.035
NO (ppb)	36	708	100.0	0.2	0.0	6.2	0.0	0.1	0.1	0.1	0.2	-	-	-
NO_2 (ppb)	36	708	100.0	0.8	0.1	5.9	0.3	0.4	0.6	0.9	1.5	0	0	0.001
NO_x (ppb)	36	708	100.0	0.9	0.2	8.3	0.4	0.5	0.7	1.0	1.7	-	-	-
CO (ppm)	35	709	100.0	0.2	0.1	0.3	0.1	0.2	0.2	0.2	0.2	0	0	0.000
Particulate Matter 2.5 microns (μ/m^3)	3	740	99.9	1.8	0.0	10.6	0.0	0.4	1.3	2.8	4.5	0	0	4.72 ug/m3
Wind Speed (kph)	0	744	100.0	2.6	0.1	8.0	0.9	1.5	2.5	3.6	4.6	-	-	-
Temperature (^oC)	0	744	100.0	13.1	2.1	25.5	8.4	9.9	12.6	15.9	19.1	-	-	-
Relative Humidity (%)	0	744	100.0	73.1	28.8	99.4	44.4	57.8	76.0	90.8	97.3	-	-	-
Std Dev Wind Direction (deg)	0	744	100.0	1.1	0.2	4.0	0.6	0.8	1.0	1.3	1.9	-	-	-
Std Dev Wind Speed (kph)	0	744	100.0	33.0	7.3	101.1	11.2	13.7	26.1	46.9	66.6	-	-	-

WCAS - Steeper
Summary of Hourly Averages

Sulphur Dioxide (SO_2) - ppb
July 2016

Maximum Value: 0.83 ppb on Jul 2 19:00

Maximum Daily Average: 0.10 ppb on Jul 2

Minimum Value: 0.0 ppb on Jul 1 01:00

Minimum Daily Average: 0.00 ppb on Jul 31

Maximum Diurnal Average: 0.04 ppb at hour 19

Minimum Diurnal Average: 0.01 ppb at hour 17

Monthly Average: 0.019 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.0 Q_3 = 0.0 P_{90} = 0.0 P_{99} = 0.2

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																								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-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.04
2-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.0	0.1	0.8	0.3	0.1	0.1	0.0	0.0	0.10	0.83
3-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	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
4-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01
5-Jul	0.0	0.0	0.0	Z	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	0.02	0.05
6-Jul	0.0	0.0	0.1	Z	0.1	0.0	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	0.1	0.0	0.1	0.03	0.08
7-Jul	0.0	0.0	0.0	Z	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	0.01	0.06
8-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.03	0.20
9-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.05
10-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01
12-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.04
13-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
14-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.07
15-Jul	0.0	0.0	0.0	Z	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	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.05	0.22
16-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.0	0.1	0.1	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	0.04	0.10
17-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.03
18-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.02	0.25
19-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.02
20-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01
21-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.03	0.36
22-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.03
23-Jul	0.0	0.0	0.0	Z	0.0	0.2	0.3	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	0.03	0.28
24-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.01	0.10
25-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.03	0.28
26-Jul	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.05	0.16
27-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.08
28-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	C	C	C	C	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.09
30-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01
31-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.01
	0.01	0.01	0.01	--	0.02	0.02	0.02	0.03	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.04	0.02	0.01	0.01	0.02	0.03	Diurnal Average	
	0.10	0.10	0.08	--	0.17	0.23	0.28	0.28	0.15	0.08	0.08	0.07	0.09	0.16	0.23	0.31	0.07	0.22	0.83	0.26	0.08	0.16	0.25	0.36	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb

West Central Airshed Society

WCAS - Steeper
Summary of Hourly Averages

Ozone (O_3) - ppb
July 2016

Maximum Value: 46.33 ppb on Jul 22 16:00

Maximum Daily Average: 35.10 ppb on Jul 22

Minimum Value: 6.2 ppb on Jul 18 05:00

Minimum Daily Average: 18.35 ppb on Jul 14

Maximum Diurnal Average: 31.46 ppb at hour 15

Minimum Diurnal Average: 18.56 ppb at hour 7

Monthly Average: 25.580 ppb

Percentiles: P_1 = 8.7 P_{10} = 15.3 Q_1 = 20.9 Median = 26.2 Q_3 = 30.4 P_{90} = 34.1 P_{99} = 43.9

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																								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-Jul	23.2	24.1	24.8	Z	24.9	25.1	26.1	26.8	27.3	24.1	24.1	37.1	41.1	37.5	37.2	31.8	27.9	28.1	29.2	22.5	18.0	26.4	24.4	17.0	27.34	41.13
2-Jul	16.3	15.0	14.1	Z	16.8	19.0	20.4	23.6	17.7	15.2	27.9	31.6	32.1	27.8	32.5	31.1	32.8	30.7	28.2	32.2	31.2	24.2	23.7	20.1	24.54	32.78
3-Jul	17.2	16.6	17.6	Z	15.4	16.8	15.6	19.5	25.8	26.3	27.0	25.3	23.6	23.3	26.5	29.7	30.2	29.2	28.6	28.0	24.3	25.5	29.6	28.3	23.91	30.20
4-Jul	27.1	24.1	23.4	Z	20.8	21.2	20.7	24.1	22.6	22.8	22.4	26.0	26.6	25.5	27.2	24.9	24.0	24.0	24.6	23.0	21.6	20.9	21.9	22.1	23.54	27.23
5-Jul	24.2	18.7	15.6	Z	14.3	13.8	12.7	11.5	17.9	21.8	23.7	24.2	24.4	23.4	24.1	23.8	22.9	22.3	21.2	21.9	20.2	19.6	14.2	11.3	19.46	24.40
6-Jul	11.0	9.8	10.2	Z	15.9	15.9	13.8	16.0	19.2	20.8	20.6	20.7	21.0	23.1	23.6	22.6	23.4	21.9	20.9	21.0	19.8	20.5	33.7	33.7	19.95	33.72
7-Jul	32.6	26.9	27.8	Z	12.5	11.4	12.6	12.7	20.8	24.2	25.3	26.2	30.3	30.1	30.0	29.0	28.5	29.1	26.9	27.0	28.7	28.2	25.9	26.7	24.94	32.61
8-Jul	24.4	26.4	27.4	Z	27.7	27.8	26.6	17.8	21.7	26.3	29.9	31.2	30.1	30.1	31.1	30.7	28.6	30.4	31.4	31.0	31.0	31.8	25.0	25.8	28.01	31.77
9-Jul	29.4	29.6	28.8	Z	30.1	32.3	31.0	24.4	22.9	28.4	30.0	33.3	33.8	37.9	45.3	43.8	39.1	37.6	36.2	35.1	31.6	25.9	31.2	33.3	32.65	45.27
10-Jul	35.2	18.0	13.1	Z	14.6	15.6	14.3	15.3	28.2	27.3	27.1	30.4	29.5	32.6	33.4	35.1	33.5	35.6	35.0	29.6	27.3	31.6	27.8	30.4	26.99	35.63
11-Jul	26.4	20.0	19.7	Z	18.0	19.1	19.3	19.5	26.9	25.1	28.1	28.1	31.5	32.7	32.8	29.4	27.7	26.6	24.5	25.5	23.9	23.2	21.2	16.4	24.59	32.80
12-Jul	14.7	12.6	12.2	Z	12.1	11.1	13.2	18.0	21.4	22.1	19.2	25.9	28.6	31.0	30.3	21.3	27.5	23.3	26.3	26.6	24.9	26.3	20.4	18.6	21.21	31.04
13-Jul	22.8	23.6	18.4	Z	14.1	14.8	21.4	25.8	26.3	25.0	23.8	24.7	27.3	27.1	25.3	22.7	23.4	23.9	22.3	20.1	18.3	21.5	17.1	14.0	21.90	27.26
14-Jul	10.1	10.9	8.1	Z	8.9	9.3	8.1	9.6	10.3	17.5	23.0	26.7	27.4	27.8	29.1	27.2	26.1	21.9	22.3	22.4	18.5	23.4	16.3	17.3	18.35	29.07
15-Jul	22.1	21.3	24.9	Z	25.8	23.8	24.0	22.8	26.5	30.5	34.0	33.5	31.1	30.1	30.5	31.9	32.1	32.7	27.7	28.1	22.4	22.2	24.0	19.6	27.02	33.96
16-Jul	19.4	18.7	20.2	Z	23.5	22.0	20.9	20.0	21.9	28.0	29.6	30.1	34.9	39.9	38.6	36.6	35.1	32.9	34.4	33.2	32.1	26.8	26.1	25.8	28.27	39.86
17-Jul	27.6	23.2	25.5	Z	17.8	16.6	12.3	15.7	22.2	23.6	27.9	29.8	32.3	29.2	27.8	29.1	29.7	28.6	30.1	26.1	31.4	32.2	25.8	17.8	25.32	32.32
18-Jul	12.4	12.5	12.0	Z	6.2	6.7	7.0	7.3	8.8	12.7	20.0	23.9	23.3	28.2	32.1	36.4	34.8	35.9	30.0	28.0	29.7	32.9	24.7	17.0	20.99	36.39
19-Jul	12.3	14.3	14.8	Z	15.5	16.4	18.3	26.5	29.4	35.5	38.2	37.3	38.8	39.5	38.0	38.7	34.1	38.2	35.9	35.9	34.6	31.4	34.4	35.4	30.15	39.55
20-Jul	33.9	34.0	34.8	Z	33.7	32.8	31.8	30.6	30.9	33.1	33.9	32.4	33.0	30.0	32.5	31.6	30.2	30.0	29.1	27.0	27.2	26.3	28.0	28.3	31.09	34.79
21-Jul	29.5	30.6	30.4	Z	32.0	34.2	32.8	27.6	30.2	30.2	32.8	32.0	30.3	30.1	30.5	31.6	31.0	30.5	31.0	30.0	31.5	29.4	30.8	24.7	30.60	34.22
22-Jul	30.0	23.7	20.8	Z	19.6	19.6	19.2	19.7	29.4	38.7	40.8	43.0	44.4	44.1	43.2	46.3	45.0	45.5	44.4	42.8	40.6	37.8	33.7	34.7	35.10	46.33
23-Jul	34.3	30.2	28.5	Z	30.3	27.3	28.2	25.9	34.0	39.3	39.9	40.0	37.8	38.4	40.1	40.2	39.2	39.3	37.8	36.1	36.0	34.0	33.9	35.2	35.04	40.22
24-Jul	35.4	34.2	32.9	Z	32.3	30.6	28.0	26.5	25.1	25.0	23.3	26.1	26.9	27.5	27.7	27.4	26.5	26.2	26.4	27.0	25.4	21.8	20.6	17.1	26.96	35.39
25-Jul	19.5	20.5	16.4	Z	12.0	14.3	16.1	22.4	28.0	28.4	29.7	31.3	30.6	29.8	28.8	27.6	28.0	29.0	29.4	28.8	23.9	27.7	25.7	27.7	25.03	31.34
26-Jul	26.5	24.1	21.6	Z	15.8	13.8	15.4	21.2	29.2	28.9	30.8	30.7	30.9	31.9	32.3	33.6	32.1	32.1	31.7	29.4	27.8	25.2	28.8	27.5	27.01	33.63
27-Jul	24.9	26.8	29.7	Z	24.1	15.8	14.4	17.8	24.8	26.8	27.5	27.2	28.4	32.5	30.3	28.0	26.9	29.2	27.2	23.9	26.0	26.5	25.9	18.0	25.33	32.54
28-Jul	12.0	10.6	10.3	Z	10.2	12.7	12.8	16.9	21.2	26.7	25.8	25.2	25.1	24.4	25.2	28.6	24.3	24.2	23.1	25.4	23.1	30.6	19.6	22.2	20.89	30.57
29-Jul	18.5	16.5	21.0	Z	15.1	13.0	12.1	12.8	16.6	C	C	C	C	31.7	34.9	32.8	31.9	31.4	31.8	32.1	29.5	24.6	21.8	20.5	23.61	34.95
30-Jul	12.5	14.0	18.0	Z	20.8	18.2	14.4	19.3	23.9	25.1	27.0	25.7	26.9	28.4	30.1	26.5	25.3	24.1	25.2	21.4	20.8	17.2	24.6	24.8	22.36	30.12
31-Jul	24.8	18.6	15.5	Z	17.3	10.9	12.0	12.4	18.1	25.0	25.8	23.9	26.4	26.5	24.0	24.7	24.1	22.4	21.7	19.3	18.4	17.0	21.6	20.8	20.49	26.53
	22.91	20.97	20.61	--	19.29	18.77	18.56	19.68	23.53	26.15	27.97	29.45	30.28	30.73	31.46	30.80	29.87	29.57	28.86	27.75	26.45	26.21	25.25	23.61	Diurnal Average	
	35.39	34.15	34.79	--	33.69	34.22	32.84	30.63	34.01	39.30	40.84	43.01	44.41	44.06	45.27	46.33	45.03	45.55	44.38	42.79	40.62	37.85	34.43	35.41	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb

West Central Airshed Society

WCAS - Steeper
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
July 2016

Maximum Value: 6.20 ppb on Jul 24 23:00

Maximum Daily Average: 0.46 ppb on Jul 24

Minimum Value: 0.0 ppb on Jul 29 14:00

Minimum Daily Average: 0.06 ppb on Jul 13

Maximum Diurnal Average: 0.28 ppb at hour 24

Minimum Diurnal Average: 0.06 ppb at hour 3

Monthly Average: 0.151 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.1 Median = 0.1 Q_3 = 0.1 P_{90} = 0.2 P_{99} = 1.7

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																								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-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.2	2.3	0.2	0.1	0.1	0.1	0.24	2.29
2-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.15	0.30
3-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.6	0.1	0.0	0.0	0.13	0.64
4-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7	0.1	0.4	0.1	0.1	0.1	0.1	0.10	0.65
5-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.39
6-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.3	0.1	0.1	1.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.0	0.1	0.1	0.1	0.1	0.16	1.32
7-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.1	0.2	0.2	1.6	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.18	1.61
8-Jul	1.3	0.1	0.1	Z	0.4	0.1	0.1	0.1	0.3	0.3	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	0.19	1.25
9-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.4	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.7	0.17	0.73
10-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.5	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	0.55
11-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.10	0.58
12-Jul	0.0	0.0	0.1	Z	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.09	0.24
13-Jul	0.1	0.0	0.1	Z	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	0.0	0.1	0.1	0.0	0.0	0.0	0.06	0.14
14-Jul	0.0	0.0	0.0	Z	0.1	0.1	0.3	0.3	0.4	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.11	0.38
15-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.11	0.20
16-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.4	0.2	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.13	0.45
17-Jul	0.1	0.1	0.1	Z	0.1	1.7	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1	0.16	1.67
18-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.4	0.7	1.1	0.5	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.20	1.06
19-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.3	0.3	0.1	0.1	0.0	0.1	0.1	0.1	1.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.16	1.60
20-Jul	0.1	0.0	0.0	Z	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	1.7	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.13	1.66
21-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.1	1.4	0.1	0.1	0.1	0.1	0.2	0.5	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.18	1.44
22-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.09	0.29
23-Jul	0.0	0.1	0.1	Z	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	1.5	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.13	1.48
24-Jul	0.1	0.0	0.0	Z	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	6.2	3.1	0.46	6.20
25-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.0	0.0	0.0	0.1	2.0	0.0	0.0	0.0	0.16	1.99
26-Jul	0.0	0.0	0.0	Z	0.1	0.2	0.3	0.3	0.1	0.1	0.1	0.1	1.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.14	1.21
27-Jul	0.1	0.1	0.1	Z	0.3	0.1	0.3	0.5	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.14	0.51
28-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	2.5	0.24	2.49
29-Jul	0.1	0.1	0.1	Z	0.0	0.1	0.2	0.1	C	C	C	C	C	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.07	0.23
30-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.8	0.1	0.0	0.14	0.84
31-Jul	0.0	0.1	0.1	Z	0.1	0.1	0.3	0.6	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.12	0.55
	0.10	0.06	0.06	--	0.10	0.16	0.20	0.25	0.20	0.15	0.21	0.12	0.17	0.16	0.14	0.09	0.13	0.11	0.10	0.15	0.15	0.09	0.27	0.28	Diurnal Average	
	1.25	0.10	0.10	--	0.36	1.67	0.55	1.44	1.06	0.54	1.61	0.41	1.48	1.66	1.60	0.17	0.58	0.65	0.34	2.29	1.99	0.84	6.20	3.13	Diurnal Maximum	

Z - zerospan C - Calibration

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

West Central Airshed Society

WCAS - Steeper
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
July 2016

Maximum Value: 5.91 ppb on Jul 1 20:00

Maximum Daily Average: 1.28 ppb on Jul 1

Minimum Value: 0.1 ppb on Jul 25 14:00

Minimum Daily Average: 0.35 ppb on Jul 4

Maximum Diurnal Average: 1.40 ppb at hour 24

Minimum Diurnal Average: 0.50 ppb at hour 16

Monthly Average: 0.775 ppb

Percentiles: $P_1 = 0.2$ $P_{10} = 0.3$ $Q_1 = 0.4$ Median = 0.6 $Q_3 = 0.9$ $P_{90} = 1.5$ $P_{99} = 2.7$

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																								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-Jul	0.7	0.9	1.4	Z	1.9	2.1	1.3	1.0	1.4	1.4	1.1	0.7	0.6	0.7	0.6	0.7	0.7	1.1	1.5	5.9	1.6	0.6	1.1	0.8	1.28	5.91
2-Jul	0.5	0.4	0.4	Z	0.6	1.4	1.4	0.7	0.6	0.7	1.1	0.6	0.6	0.7	0.7	0.6	0.7	0.8	0.8	1.2	0.7	1.6	1.5	0.8	0.84	1.55
3-Jul	0.5	0.4	0.4	Z	0.4	0.6	0.7	0.7	0.5	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	1.4	0.4	0.3	0.3	0.46	1.40
4-Jul	0.2	0.2	0.3	Z	0.3	0.3	0.3	0.3	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.8	0.2	0.7	0.3	0.3	0.3	0.3	0.35	0.82
5-Jul	0.3	0.2	0.4	Z	0.9	0.7	0.6	0.5	0.7	0.6	0.6	0.5	0.4	0.5	0.5	0.5	0.6	0.4	0.4	0.4	0.3	0.4	0.7	2.3	0.58	2.30
6-Jul	2.3	2.2	2.1	Z	1.0	0.8	1.0	1.0	0.5	0.5	0.5	0.4	0.3	0.3	0.5	0.5	0.3	0.4	0.9	0.4	0.4	0.8	1.3	1.5	0.87	2.30
7-Jul	1.5	1.1	1.0	Z	1.0	0.7	0.6	0.4	0.6	0.7	1.1	1.0	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.6	0.62	1.46
8-Jul	2.6	0.5	0.4	Z	0.9	0.7	0.5	0.4	1.0	1.1	0.4	0.4	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.9	1.4	2.1	0.79	2.62
9-Jul	2.2	1.5	1.3	Z	0.9	0.9	0.9	1.2	1.3	1.2	0.9	0.9	0.8	1.1	0.9	0.9	0.7	0.7	0.7	0.9	0.8	0.7	2.5	5.2	1.26	5.18
10-Jul	1.4	1.1	0.9	Z	0.9	1.0	1.8	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.5	0.5	1.3	2.6	1.4	0.6	0.83	2.65
11-Jul	0.5	0.5	1.1	Z	1.2	1.3	0.9	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.5	1.8	0.4	0.7	0.6	0.6	0.8	0.9	1.5	0.76	1.80
12-Jul	1.5	2.0	2.1	Z	1.7	2.1	1.5	0.6	0.5	0.5	0.4	0.4	0.4	0.5	0.6	0.4	0.5	0.6	0.5	0.7	1.8	2.6	0.9	0.5	1.02	2.58
13-Jul	0.4	0.4	0.5	Z	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.42	0.49
14-Jul	0.3	0.7	1.3	Z	1.8	1.6	1.6	1.7	1.2	0.7	0.5	0.5	0.6	0.6	0.7	0.7	0.9	0.7	0.4	0.4	0.4	0.8	1.9	2.9	0.99	2.89
15-Jul	1.9	2.0	1.4	Z	1.4	1.6	1.6	1.5	1.0	1.0	1.0	0.7	0.8	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.7	0.5	0.5	0.5	0.99	2.01
16-Jul	0.7	0.7	0.7	Z	0.6	0.6	0.6	0.5	0.6	0.8	0.5	1.0	0.7	0.6	0.5	0.5	0.9	0.5	0.5	0.5	0.5	0.6	0.8	1.1	0.65	1.08
17-Jul	0.8	0.8	0.5	Z	0.9	1.9	1.8	0.9	0.5	0.6	0.6	0.5	0.6	0.9	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.3	0.68	1.93
18-Jul	0.5	1.1	0.5	Z	1.1	0.8	1.2	1.6	1.7	1.0	0.8	1.0	0.8	0.5	0.7	0.5	0.5	0.5	0.5	0.8	0.8	0.9	0.6	0.5	0.82	1.69
19-Jul	1.7	1.1	1.5	Z	1.7	1.6	1.4	1.1	0.6	0.4	0.4	0.5	0.4	0.4	2.1	0.8	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.83	2.14
20-Jul	0.4	0.4	0.4	Z	0.4	0.5	0.8	0.8	0.5	0.5	0.4	0.4	0.4	2.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.0	0.54	2.17
21-Jul	0.7	0.4	0.4	Z	0.4	0.4	0.4	3.1	0.6	0.5	0.5	0.4	0.6	0.3	0.4	0.4	0.8	0.4	0.4	0.3	0.3	0.3	0.8	5.2	0.79	5.25
22-Jul	2.4	0.9	0.8	Z	1.4	1.4	1.1	0.9	0.6	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.5	0.4	0.4	0.3	0.3	1.0	2.0	1.2	0.79	2.37
23-Jul	0.6	0.7	0.5	Z	0.5	2.1	1.3	1.1	0.5	0.2	0.2	0.2	1.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.52	2.10
24-Jul	0.3	0.3	0.3	Z	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.5	0.4	0.4	1.0	2.2	3.9	0.56	3.95
25-Jul	1.2	1.2	0.9	Z	0.9	0.7	0.8	0.5	0.4	0.4	0.5	0.4	0.3	0.1	0.3	0.5	0.3	0.3	0.2	0.6	4.2	0.7	0.6	0.6	0.73	4.16
26-Jul	0.6	0.7	1.5	Z	2.2	2.5	1.8	1.3	0.7	0.6	0.6	0.7	0.5	0.6	0.6	0.5	0.6	0.6	0.4	0.4	0.4	0.7	0.5	1.2	0.88	2.53
27-Jul	1.9	0.8	0.5	Z	0.9	1.2	2.0	1.7	0.9	0.5	0.5	0.5	0.8	0.9	0.8	0.7	0.6	0.5	0.5	0.6	0.6	0.5	0.4	0.7	0.83	2.04
28-Jul	2.1	1.7	2.7	Z	2.6	1.7	1.9	1.2	0.9	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.5	0.4	0.5	0.6	0.4	4.3	1.11	4.27
29-Jul	0.8	0.8	0.7	Z	1.4	1.8	1.3	0.7	C	C	C	C	C	0.5	0.5	0.5	0.5	0.5	0.6	0.8	0.9	0.7	0.8	1.5	0.84	1.84
30-Jul	1.5	2.2	1.1	Z	0.5	0.6	0.6	0.5	0.8	0.8	0.6	0.5	0.6	0.7	0.8	0.9	0.5	0.5	1.0	1.0	0.4	2.5	0.6	0.5	0.85	2.54
31-Jul	0.7	0.5	1.0	Z	0.9	1.0	1.6	1.6	0.7	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.56	1.61
	1.08	0.92	0.93	--	1.03	1.13	1.10	0.96	0.72	0.62	0.55	0.53	0.52	0.55	0.54	0.50	0.56	0.50	0.53	0.71	0.73	0.81	0.88	1.40	Diurnal Average	
	2.62	2.22	2.69	--	2.56	2.53	2.04	3.15	1.69	1.36	1.10	1.03	1.28	2.17	2.14	0.90	1.80	1.09	1.46	5.91	4.16	2.65	2.49	5.25	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

WCAS - Steeper
Summary of Hourly Averages

NOx (NO_x) - ppb
July 2016

Maximum Value: 8.29 ppb on Jul 24 23:00

Maximum Daily Average: 1.53 ppb on Jul 1

Minimum Value: 0.2 ppb on Jul 23 17:00

Minimum Daily Average: 0.44 ppb on Jul 4

Maximum Diurnal Average: 1.64 ppb at hour 24

Minimum Diurnal Average: 0.58 ppb at hour 16

Monthly Average: 0.908 ppb

Percentiles: $P_1 = 0.3$ $P_{10} = 0.4$ $Q_1 = 0.5$ Median = 0.7 $Q_3 = 1.0$ $P_{90} = 1.7$ $P_{99} = 5.2$

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																								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-Jul	0.7	0.9	1.4	Z	2.0	2.3	1.5	1.2	1.7	1.7	1.3	0.9	0.7	0.8	0.7	0.8	0.9	1.3	1.6	8.1	1.7	0.7	1.2	0.9	1.53	8.07
2-Jul	0.6	0.4	0.4	Z	0.7	1.5	1.6	0.9	0.8	0.9	1.3	0.8	0.7	0.8	0.9	0.8	0.8	0.9	1.0	1.3	0.8	1.6	1.5	0.9	0.96	1.65
3-Jul	0.6	0.5	0.5	Z	0.5	0.7	0.9	0.9	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.4	0.6	0.3	2.0	0.4	0.3	0.3	0.57	2.01
4-Jul	0.2	0.3	0.3	Z	0.3	0.3	0.3	0.3	0.5	0.7	0.5	0.3	0.3	0.3	0.4	0.3	0.4	1.4	0.3	1.0	0.3	0.3	0.3	0.4	0.44	1.45
5-Jul	0.3	0.3	0.5	Z	1.0	0.8	0.7	0.7	1.1	0.9	0.7	0.6	0.5	0.5	0.6	0.6	0.7	0.5	0.5	0.4	0.4	0.4	0.8	2.3	0.69	2.32
6-Jul	2.3	2.2	2.1	Z	1.0	0.9	1.2	1.2	0.6	0.6	1.8	0.5	0.4	0.4	0.5	0.6	0.4	0.6	1.2	0.4	0.4	0.9	1.3	1.6	1.00	2.29
7-Jul	1.5	1.2	1.0	Z	1.1	0.8	0.7	0.6	0.8	0.9	2.7	1.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.7	0.78	2.67
8-Jul	3.8	0.6	0.4	Z	1.2	0.8	0.7	0.6	1.3	1.4	0.5	0.5	0.5	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.7	1.0	1.5	2.1	0.95	3.79
9-Jul	2.2	1.5	1.4	Z	1.0	0.9	1.0	1.4	1.7	1.5	1.0	1.0	0.9	1.3	1.0	1.0	0.8	0.8	0.8	1.0	0.9	0.7	2.8	5.8	1.40	5.79
10-Jul	1.4	1.1	1.0	Z	1.0	1.1	2.3	0.7	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	1.4	2.7	1.4	0.6	0.92	2.66
11-Jul	0.6	0.5	1.1	Z	1.3	1.3	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	2.3	0.5	0.9	0.7	0.6	0.9	0.9	1.5	0.84	2.33
12-Jul	1.5	2.0	2.1	Z	1.7	2.2	1.7	0.8	0.5	0.6	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.8	0.6	0.7	1.8	2.6	1.0	0.5	1.08	2.59
13-Jul	0.5	0.5	0.5	Z	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.4	0.5	0.4	0.4	0.4	0.4	0.3	0.47	0.59
14-Jul	0.4	0.7	1.3	Z	1.8	1.7	1.8	1.9	1.5	0.8	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.7	0.5	0.4	0.4	0.8	1.9	2.9	1.07	2.90
15-Jul	1.9	2.0	1.4	Z	1.4	1.6	1.7	1.6	1.1	1.1	1.2	0.8	0.9	0.7	0.6	0.7	0.7	0.8	0.7	0.9	0.7	0.6	0.6	0.6	1.06	2.02
16-Jul	0.8	0.8	0.8	Z	0.7	0.7	0.7	0.6	0.8	1.0	0.6	1.3	0.8	0.7	0.6	0.6	1.3	0.6	0.6	0.5	0.5	0.7	0.9	1.1	0.76	1.35
17-Jul	0.8	0.8	0.6	Z	1.0	3.5	2.2	1.0	0.6	0.7	0.6	0.6	0.7	0.9	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.82	3.54
18-Jul	0.6	1.1	0.5	Z	1.2	0.9	1.5	2.2	2.7	1.5	1.0	1.3	0.9	0.6	0.8	0.6	0.5	0.6	0.5	0.8	0.9	0.9	0.7	0.6	0.99	2.67
19-Jul	1.7	1.1	1.5	Z	1.7	1.7	1.6	1.3	0.7	0.5	0.4	0.6	0.5	0.4	3.7	1.0	0.5	0.5	0.6	0.5	0.5	0.4	0.4	0.4	0.97	3.69
20-Jul	0.4	0.4	0.4	Z	0.5	0.5	0.8	0.8	0.5	0.6	0.4	0.4	0.5	3.8	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.1	0.65	3.77
21-Jul	0.8	0.5	0.5	Z	0.4	0.4	0.5	4.5	0.7	0.6	0.5	0.5	0.7	0.8	0.5	0.5	1.3	0.5	0.5	0.4	0.4	0.4	0.9	5.4	0.96	5.44
22-Jul	2.4	1.0	0.9	Z	1.5	1.5	1.3	1.2	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.4	0.4	0.4	0.3	1.0	2.0	1.3	0.86	2.38
23-Jul	0.7	0.7	0.5	Z	0.5	2.1	1.3	1.3	0.5	0.3	0.3	0.3	2.7	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.63	2.73
24-Jul	0.3	0.3	0.3	Z	0.2	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.6	0.4	0.4	1.0	8.3	7.0	1.00	8.29
25-Jul	1.2	1.2	0.9	Z	0.9	0.8	0.9	0.6	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.6	0.4	0.3	0.2	0.7	6.0	0.7	0.6	0.7	0.87	6.03
26-Jul	0.6	0.8	1.5	Z	2.2	2.6	2.0	1.5	0.8	0.7	0.7	0.8	1.6	0.7	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.7	0.6	1.2	0.99	2.60
27-Jul	1.9	0.8	0.6	Z	1.2	1.2	2.3	2.2	1.1	0.5	0.6	0.5	0.9	1.0	0.9	0.8	0.7	0.6	0.6	0.7	0.6	0.5	0.5	0.8	0.95	2.30
28-Jul	2.1	1.8	2.7	Z	2.6	1.7	2.2	1.5	1.2	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.8	0.5	0.5	0.5	0.6	0.7	0.5	6.6	1.30	6.65
29-Jul	0.8	0.9	0.7	Z	1.4	1.9	1.6	0.9	C	C	C	C	C	0.4	0.7	0.6	0.7	0.7	0.7	1.0	1.0	0.8	0.9	1.6	0.97	1.93
30-Jul	1.7	2.3	1.1	Z	0.6	0.7	0.7	0.6	1.0	0.9	0.7	0.6	0.7	0.8	0.9	1.0	0.6	0.6	1.2	1.2	0.5	3.4	0.7	0.6	1.00	3.39
31-Jul	0.7	0.6	1.1	Z	1.0	1.1	1.9	2.2	1.0	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.4	0.4	0.4	0.4	0.4	0.3	0.68	2.16
	1.16	0.97	0.97	--	1.10	1.26	1.28	1.19	0.90	0.76	0.74	0.63	0.68	0.70	0.68	0.58	0.68	0.60	0.61	0.85	0.87	0.89	1.13	1.64	Diurnal Average	
	3.79	2.32	2.69	--	2.58	3.54	2.30	4.51	2.67	1.69	2.67	1.38	2.73	3.77	3.69	0.98	2.33	1.45	1.64	8.07	6.03	3.39	8.29	6.96	Diurnal Maximum	

Z - zerospan C - Calibration

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

WCAS - Steeper
Summary of Hourly Averages

Carbon Monoxide (CO) - ppm
July 2016

Maximum Value: 0.27 ppm on Jul 8 23:00

Maximum Daily Average: 0.23 ppm on Jul 17

Minimum Value: 0.1 ppm on Jul 3 20:00

Minimum Daily Average: 0.12 ppm on Jul 4

Maximum Diurnal Average: 0.18 ppm at hour 15

Minimum Diurnal Average: 0.17 ppm at hour 5

Monthly Average: 0.176 ppm

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

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																								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-Jul	0.2	0.2	0.2	Z	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	0.20	0.24
2-Jul	0.2	0.2	0.2	Z	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	0.2	0.18	0.22
3-Jul	0.2	0.2	0.2	Z	0.1	0.2	0.2	0.3	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	0.1	0.16	0.25
4-Jul	0.1	0.1	0.1	Z	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	0.12	0.14
5-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.14	0.16
6-Jul	0.2	0.2	0.1	Z	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	0.2	0.17	0.22
7-Jul	0.2	0.2	0.2	Z	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	0.2	0.2	0.18	0.22
8-Jul	0.2	0.1	0.1	Z	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	0.3	0.3	0.19	0.27
9-Jul	0.2	0.2	0.2	Z	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	0.20	0.22
10-Jul	0.2	0.2	0.2	Z	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	0.17	0.18
11-Jul	0.2	0.2	0.2	Z	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	0.17	0.18
12-Jul	0.2	0.2	0.2	Z	0.2	0.2	0.1	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	0.21	0.25
13-Jul	0.2	0.2	0.2	Z	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	0.22	0.24
14-Jul	0.2	0.2	0.2	Z	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	0.20	0.22
15-Jul	0.2	0.2	0.2	Z	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	0.20	0.25
16-Jul	0.2	0.2	0.2	Z	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	0.20	0.25
17-Jul	0.2	0.2	0.2	Z	0.2	0.2	0.2	0.2	0.2	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	0.23	0.26
18-Jul	0.2	0.2	0.2	Z	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	0.21	0.24
19-Jul	0.2	0.2	0.2	Z	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	0.18	0.22
20-Jul	0.2	0.2	0.2	Z	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	0.18	0.20
21-Jul	0.2	0.2	0.2	Z	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	0.1	0.1	0.17	0.20
22-Jul	0.1	0.1	0.2	Z	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	0.16	0.17
23-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.15	0.17
24-Jul	0.1	0.1	0.1	Z	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	0.1	0.1	0.1	0.2	0.2	0.2	0.14	0.18
25-Jul	0.2	0.2	0.2	Z	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	0.15	0.18
26-Jul	0.2	0.2	0.2	Z	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	0.18	0.20
27-Jul	0.2	0.1	0.2	Z	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	0.16	0.20
28-Jul	0.2	0.2	0.2	Z	0.2	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	0.2	0.2	0.2	0.2	0.2	0.2	0.16	0.17
29-Jul	0.2	0.1	0.1	Z	0.1	0.1	0.1	0.1	C	C	C	C	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	0.19
30-Jul	0.2	0.2	0.2	Z	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	0.17	0.21
31-Jul	0.1	0.1	0.1	Z	0.2	0.2	0.2	0.1	0.1	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	0.13	0.19
	0.17	0.17	0.17	--	0.17	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.17	Diurnal Average	
	0.23	0.25	0.25	--	0.23	0.23	0.24	0.25	0.24	0.25	0.26	0.26	0.24	0.25	0.25	0.24	0.24	0.24	0.23	0.23	0.24	0.23	0.27	0.26	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 13000 ppb 24-hr 5000 ppb

West Central Airshed Society

WCAS - Steeper
Summary of Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$
July 2016

Maximum Value: 10.58 $\mu g/m^3$ on Jul 17 11:00

Maximum Daily Average: 4.72 $\mu g/m^3$ on Jul 17

Minimum Value: 0.0 $\mu g/m^3$ on Jul 1 01:00

Minimum Daily Average: 0.26 $\mu g/m^3$ on Jul 4

Maximum Diurnal Average: 3.15 $\mu g/m^3$ at hour 8

Minimum Diurnal Average: 1.19 $\mu g/m^3$ at hour 18

Monthly Average: 1.819 $\mu g/m^3$

Percentiles: $P_1 = 0.0$ $P_{10} = 0.0$ $Q_1 = 0.4$ Median = 1.3 $Q_3 = 2.8$ $P_{90} = 4.5$ $P_{99} = 7.7$

Hours in Service:	744
Hours of Data:	740
Hours of Missing Data:	4
Hours of Calibration:	3
Percent Operational Time:	99.9

Day	Hourly Period Ending At																								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-Jul	0.0	0.1	0.1	0.6	0.9	1.2	2.2	3.2	3.6	5.4	4.6	0.0	0.8	5.3	4.6	3.8	2.7	1.5	1.7	3.1	1.9	1.1	0.2	0.0	2.03	5.38
2-Jul	0.0	0.0	0.0	0.0	0.0	0.7	1.6	3.1	3.6	1.9	0.0	0.2	0.1	4.2	0.4	2.8	0.0	1.7	2.8	1.4	0.4	2.1	0.0	0.0	1.13	4.19
3-Jul	0.0	0.0	0.0	0.0	1.5	3.9	4.7	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.5	0.0	0.0	0.0	0.57	4.74
4-Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.4	0.0	0.0	0.0	0.6	0.3	0.7	0.0	0.0	0.0	1.2	1.3	0.0	0.0	0.3	0.26	1.43
5-Jul	0.0	0.2	0.0	0.5	0.2	0.8	2.2	2.5	0.7	1.5	0.6	1.2	1.0	0.6	0.6	1.7	1.2	0.9	0.0	0.0	0.8	0.7	0.8	0.5	0.80	2.46
6-Jul	0.9	1.2	1.5	3.5	2.3	1.6	2.0	1.8	0.4	1.0	1.0	0.0	0.0	0.0	3.1	1.8	0.6	1.8	1.1	1.1	1.7	6.5	7.7	7.8	2.10	7.76
7-Jul	7.0	6.6	6.6	4.8	4.2	3.3	3.2	3.1	1.2	1.6	1.4	1.7	0.0	1.1	0.0	1.2	0.0	0.0	1.4	0.0	0.7	1.5	1.4	1.3	2.22	6.96
8-Jul	1.1	0.5	0.0	0.8	2.7	2.6	3.9	4.3	2.3	0.7	1.3	0.6	0.4	2.4	1.9	2.3	3.0	0.0	1.8	4.1	5.0	0.8	7.7	2.3	2.18	7.71
9-Jul	2.2	3.2	2.5	2.7	0.6	0.1	0.9	3.3	4.0	3.0	2.9	1.5	1.0	1.7	0.0	0.3	0.4	0.2	1.2	0.9	3.0	2.2	0.6	0.0	1.60	3.97
10-Jul	0.4	0.0	0.0	0.3	0.5	0.8	1.6	1.5	0.3	0.5	1.6	0.0	0.0	0.0	0.5	0.2	0.9	0.0	1.1	1.5	1.2	1.4	2.2	0.8	0.72	2.23
11-Jul	0.3	0.1	1.8	1.1	1.3	1.6	2.2	2.3	1.2	1.5	1.5	2.1	0.0	0.0	2.4	1.2	2.0	0.2	0.7	0.2	0.3	0.2	0.4	0.6	1.05	2.44
12-Jul	0.8	2.5	2.4	2.8	3.2	3.0	4.0	3.3	3.5	2.7	3.3	1.8	1.1	0.0	1.7	2.7	2.8	3.1	1.5	1.4	1.9	2.2	3.0	1.7	2.35	3.99
13-Jul	1.0	0.5	0.8	0.6	0.3	0.0	0.0	0.9	1.3	1.2	2.7	1.7	1.6	0.8	1.4	1.3	2.2	0.6	1.5	2.0	1.8	0.7	0.6	0.7	1.08	2.74
14-Jul	1.3	0.9	1.4	1.4	2.1	2.8	2.7	3.2	4.5	2.8	2.5	1.7	2.3	4.1	0.9	1.3	0.5	0.5	0.0	0.0	0.5	0.3	0.1	0.0	1.58	4.48
15-Jul	0.7	0.2	AF	0.0	0.4	2.5	2.2	1.6	0.0	0.0	0.0	1.7	0.4	0.9	0.5	0.3	1.6	1.9	4.0	1.5	1.9	1.3	1.6	1.6	1.16	4.00
16-Jul	2.4	3.1	3.0	2.1	2.5	2.8	3.0	3.0	3.6	2.1	1.7	3.2	0.3	2.1	2.8	3.8	5.2	4.6	2.4	3.6	3.3	4.9	3.2	3.3	3.00	5.15
17-Jul	4.5	3.1	3.0	3.2	4.1	5.2	5.8	5.6	7.2	9.3	10.6	7.9	5.7	3.1	3.0	3.2	1.5	3.1	3.2	4.3	2.9	3.9	5.0	5.0	4.72	10.58
18-Jul	5.5	4.8	4.4	3.3	3.7	4.4	4.5	6.1	5.7	7.5	5.3	6.7	5.6	1.8	0.0	0.0	1.3	0.6	4.5	3.2	1.2	2.2	3.6	2.2	3.68	7.51
19-Jul	2.1	1.5	1.4	1.9	0.7	1.0	1.7	2.8	3.5	0.3	1.8	1.0	0.4	0.1	3.9	8.1	4.8	0.1	3.7	0.7	2.2	0.0	0.0	0.0	1.82	8.13
20-Jul	0.0	0.0	0.0	0.0	0.0	0.5	0.3	1.2	1.6	1.1	0.1	1.1	1.0	2.1	0.2	1.2	0.5	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.47	2.11
21-Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.8	4.5	0.7	0.8	0.0	0.0	1.0	0.5	2.1	0.4	1.4	1.9	1.4	0.9	0.8	0.0	0.8	1.5	0.81	4.48
22-Jul	0.9	1.1	0.8	0.6	1.3	1.6	2.2	3.8	0.6	0.1	0.0	0.0	0.6	0.8	2.0	0.0	1.3	1.9	0.9	2.1	1.8	5.2	4.6	4.7	1.62	5.19
23-Jul	1.0	2.3	2.1	1.4	2.7	5.2	3.7	6.7	0.4	0.0	0.0	0.7	0.0	0.5	0.2	0.7	0.5	0.8	1.6	1.5	0.9	0.9	1.7	0.6	1.50	6.74
24-Jul	1.0	0.4	0.3	0.0	0.0	0.7	1.3	1.7	3.2	0.6	2.9	0.1	1.5	0.0	1.4	1.5	2.7	1.0	0.4	0.0	4.5	4.8	1.7	1.2	1.38	4.84
25-Jul	0.7	1.2	0.5	1.1	0.5	0.8	1.5	1.6	3.2	2.3	3.3	2.8	1.5	1.2	2.6	1.3	0.4	0.0	0.0	1.2	0.6	0.8	7.0	2.7	1.62	6.99
26-Jul	2.2	1.5	3.1	2.9	2.9	2.6	4.3	5.4	5.9	7.2	3.1	5.9	8.4	5.1	3.2	2.2	7.6	6.8	5.3	4.3	3.7	2.3	0.0	1.4	4.06	8.39
27-Jul	2.2	1.5	6.7	3.4	4.3	2.2	3.2	6.5	1.8	3.4	5.2	5.3	2.4	3.2	6.3	2.9	3.6	0.0	6.0	2.6	0.7	0.6	0.0	1.0	3.13	6.71
28-Jul	1.6	2.6	3.4	4.4	4.0	4.5	5.4	4.9	6.4	1.6	0.3	5.1	3.8	5.3	5.7	5.5	0.0	0.0	2.1	0.0	9.7	0.0	4.3	0.0	3.36	9.65
29-Jul	3.9	0.0	0.0	0.3	0.0	0.0	1.1	3.0	6.1	C	C	C	0.0	0.4	0.0	0.7	1.5	1.3	2.2	9.6	0.8	0.8	2.2	3.0	1.75	9.60
30-Jul	2.2	2.3	2.3	1.9	1.8	1.4	2.8	2.9	2.0	3.4	2.6	0.8	0.8	1.1	1.6	1.6	1.0	0.0	1.8	3.6	0.7	1.2	0.4	0.0	1.68	3.63
31-Jul	0.0	0.2	0.0	1.3	1.1	0.8	1.6	2.4	1.6	1.2	0.6	0.5	0.3	1.5	1.2	1.3	1.1	0.4	0.8	1.5	1.7	0.5	0.2	0.5	0.92	2.41
	1.47	1.34	1.60	1.51	1.61	1.89	2.47	3.15	2.59	2.19	2.03	1.84	1.35	1.63	1.76	1.81	1.68	1.19	1.78	1.86	1.90	1.58	1.97	1.44	Diurnal Average	
	6.96	6.65	6.71	4.76	4.33	5.17	5.79	6.74	7.24	9.30	10.58	7.90	8.39	5.33	6.30	8.13	7.62	6.85	6.05	9.60	9.65	6.51	7.75	7.76	Diurnal Maximum	

C - Calibration AF - Analyzer Failure

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m^3 24-hr 30 ul/m^3

STEEPER
STATION #905

METEOROLOGICAL DATA

JULY 2016

West Central Airshed Society

WCAS - Steeper
Summary of Hourly Averages

External Temperature (ET) - C
July 2016

Maximum Value: 25.52 C on Jul 29 15:00

Maximum Daily Average: 17.75 C on Jul 26

Minimum Value: 2.1 C on Jul 31 06:00

Minimum Daily Average: 7.96 C on Jul 31

Maximum Diurnal Average: 17.08 C at hour 14

Minimum Diurnal Average: 8.86 C at hour 6

Monthly Average: 13.110 C

Percentiles: P_1 = 4.6 P_{10} = 8.4 Q_1 = 9.9 Median = 12.6 Q_3 = 15.9 P_{90} = 19.1 P_{99} = 23.0

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																								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-Jul	8.2	7.7	7.5	7.2	7.1	7.4	9.0	11.8	13.6	15.1	17.0	20.0	20.0	17.7	13.1	13.8	13.6	12.9	13.2	13.7	12.9	12.1	11.6	9.9	12.34	20.02
2-Jul	8.7	7.5	6.6	6.5	5.8	6.7	8.7	11.6	13.5	14.0	15.9	17.2	17.9	15.1	16.3	18.4	18.8	16.7	16.5	16.1	14.6	12.7	11.6	10.7	12.84	18.80
3-Jul	9.6	8.8	8.4	8.1	7.5	8.7	9.4	12.2	10.0	8.9	9.4	9.6	11.0	12.9	13.8	14.8	14.7	11.6	13.5	12.7	11.1	8.5	8.4	7.6	10.47	14.84
4-Jul	7.0	6.0	5.6	5.3	4.6	5.9	6.9	8.1	9.1	9.9	11.8	15.3	14.4	15.1	15.9	14.5	12.5	13.6	14.5	12.1	10.7	8.7	8.7	8.3	10.19	15.93
5-Jul	8.9	6.2	4.6	4.5	4.3	4.6	5.6	7.7	10.4	13.4	12.7	13.1	14.6	13.9	15.4	15.9	15.5	13.8	13.6	12.0	11.5	10.6	9.5	8.4	10.45	15.87
6-Jul	7.6	7.2	7.3	7.6	7.6	7.8	8.7	11.6	13.9	14.0	15.0	16.7	16.9	17.9	18.4	18.7	18.7	16.9	16.5	15.9	15.3	13.5	11.2	10.5	13.15	18.73
7-Jul	10.3	9.7	9.1	7.9	7.0	6.2	7.3	10.6	14.5	15.7	16.0	16.9	17.7	18.3	18.8	19.1	20.6	18.8	16.7	15.7	14.7	13.9	13.4	13.5	13.86	20.61
8-Jul	13.0	11.7	11.3	11.2	11.3	11.5	11.8	12.3	13.4	14.5	16.3	17.8	19.2	18.2	19.3	20.2	18.8	19.8	18.6	17.9	14.6	13.7	11.9	11.2	14.97	20.16
9-Jul	10.9	10.7	10.3	9.0	9.2	9.8	10.9	12.2	12.6	13.8	14.5	14.9	12.8	12.8	14.1	14.2	12.7	12.5	13.2	13.3	12.4	11.2	10.0	9.1	11.97	14.91
10-Jul	9.0	8.8	8.3	8.2	8.1	8.3	8.7	9.0	9.7	10.7	11.8	11.8	13.3	14.5	15.6	15.1	14.7	14.5	14.5	13.0	12.2	11.2	10.6	10.1	11.33	15.63
11-Jul	9.6	9.5	9.2	8.9	8.7	8.7	9.2	10.2	10.9	10.4	11.8	13.4	15.7	16.7	16.4	10.4	10.9	10.8	10.4	10.3	10.1	9.6	9.5	9.1	10.85	16.74
12-Jul	8.7	8.6	8.3	8.1	8.1	8.2	9.3	10.6	11.5	12.2	12.1	14.8	16.1	15.8	12.8	12.3	15.2	15.2	13.2	11.9	11.0	10.6	10.4	10.0	11.46	16.13
13-Jul	9.8	9.6	9.4	9.3	9.3	9.3	9.3	9.6	9.9	10.3	11.1	11.8	14.5	15.7	13.0	10.7	11.2	12.5	11.9	11.9	11.5	10.6	9.8	8.9	10.86	15.72
14-Jul	8.9	8.6	8.2	8.0	8.0	8.3	8.6	9.2	10.2	11.4	12.8	15.7	14.0	12.9	14.8	12.5	10.1	9.9	9.8	9.7	9.7	9.4	9.3	9.1	10.38	15.73
15-Jul	9.0	9.1	9.1	9.0	8.9	9.0	9.1	9.1	8.8	9.0	9.8	11.1	11.3	11.2	11.8	13.2	13.2	13.3	10.9	11.3	10.9	10.2	9.8	9.5	10.31	13.31
16-Jul	9.2	9.1	8.9	8.6	8.6	8.7	9.3	10.2	11.8	13.4	14.0	14.6	14.0	17.3	17.8	17.2	14.8	16.0	15.7	14.6	13.4	11.9	10.4	10.2	12.48	17.78
17-Jul	10.0	9.6	10.0	10.7	9.6	9.8	9.9	10.7	11.4	11.5	12.7	13.7	14.6	11.7	11.4	12.5	12.5	13.3	13.8	13.0	12.2	12.2	11.5	10.9	11.64	14.62
18-Jul	10.6	10.4	9.5	8.4	7.6	7.0	7.9	9.1	10.7	13.3	15.4	16.4	14.6	13.0	16.3	19.6	20.2	19.9	17.4	15.8	15.0	14.7	12.7	11.1	13.20	20.23
19-Jul	10.2	9.6	9.2	8.7	8.1	8.0	8.6	12.5	16.7	18.6	19.5	19.3	20.5	22.1	22.4	18.2	17.5	19.8	17.4	16.1	14.9	13.0	12.9	13.1	14.88	22.43
20-Jul	12.4	12.1	12.1	12.2	12.5	12.6	12.6	13.2	14.3	16.7	17.5	16.5	17.0	17.9	18.0	18.0	19.0	18.9	17.0	15.0	14.5	13.2	13.0	13.1	14.97	18.96
21-Jul	13.3	13.2	12.7	12.8	12.5	12.6	12.7	12.9	12.9	15.5	16.4	17.1	17.4	17.9	19.2	17.9	17.9	17.9	16.9	15.6	14.5	13.9	13.9	13.2	15.04	19.21
22-Jul	12.5	10.0	8.9	8.6	8.3	8.2	8.5	11.3	16.3	18.5	20.2	21.9	22.4	22.7	21.0	22.7	22.3	22.7	21.1	18.5	16.8	15.6	14.0	13.6	16.10	22.69
23-Jul	12.9	11.4	11.0	12.0	11.6	11.2	11.5	13.5	16.1	17.4	17.0	18.6	18.8	20.0	19.6	19.5	20.0	18.2	18.1	16.4	14.5	12.5	12.1	12.2	15.26	19.97
24-Jul	12.4	12.6	12.6	12.6	12.9	12.9	13.8	15.3	15.3	15.5	15.9	19.7	20.5	20.6	21.2	21.1	19.2	20.2	19.3	18.5	16.9	15.2	15.1	13.6	16.37	21.24
25-Jul	12.8	12.0	10.7	9.3	8.7	8.5	9.4	13.2	17.0	18.7	18.5	21.0	21.8	22.1	21.3	21.9	23.0	22.2	22.3	20.8	18.5	17.4	16.2	15.3	16.77	23.01
26-Jul	14.6	13.7	13.5	12.6	11.5	10.7	10.6	13.4	18.3	20.6	20.8	22.4	21.5	23.3	23.0	24.9	23.6	21.6	19.8	19.0	17.3	16.8	16.7	15.8	17.75	24.95
27-Jul	15.7	15.8	14.5	14.1	13.0	11.6	11.0	13.3	16.9	17.4	16.5	15.6	17.6	20.9	20.6	18.2	16.3	17.9	18.1	16.9	15.4	14.2	13.0	11.3	15.67	20.88
28-Jul	10.8	10.1	10.2	10.3	10.2	10.2	11.0	12.8	17.0	19.4	21.0	20.5	20.8	20.8	17.5	14.2	17.6	19.7	19.7	18.7	17.1	14.1	12.9	14.3	15.45	21.02
29-Jul	12.4	12.0	12.3	11.3	10.4	9.8	9.8	11.8	18.2	21.4	22.5	23.2	23.7	24.0	25.5	24.5	22.7	22.8	21.6	18.8	13.1	12.1	11.9	11.9	16.99	25.52
30-Jul	11.1	11.5	11.4	11.1	10.8	10.4	10.3	12.2	14.8	13.1	10.2	10.4	11.6	12.7	13.1	10.2	8.8	8.6	9.7	9.5	8.7	8.1	7.3	6.1	10.49	14.84
31-Jul	5.4	4.6	3.9	3.7	3.5	2.1	2.9	4.8	7.8	10.3	10.9	11.7	13.5	13.9	10.7	10.6	9.9	9.7	9.9	9.5	8.6	7.9	7.8	7.7	7.96	13.90
	10.50	9.91	9.50	9.22	8.88	8.86	9.43	11.17	13.15	14.34	15.08	16.22	16.77	17.08	17.03	16.61	16.34	16.20	15.63	14.65	13.37	12.24	11.53	10.94	Diurnal Average	
	15.74	15.84	14.54	14.12	13.02	12.93	13.80	15.34	18.28	21.38	22.48	23.22	23.73	23.96	25.52	24.95	23.62	22.79	22.26	20.75	18.50	17.45	16.73	15.76	Diurnal Maximum	

WCAS - Steeper

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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	5.6	5.7	6.0	6.4	6.4	5.4	4.1	2.4	1.6	0.4	0.9	1.7	2.7	1.8	2.1	2.9	0.8	1.5	0.8	0.8	1.8	2.2	2.5	3.5	1.76	6.39
Dir	SW	SW	SW	SW	SW	SW	SW	SSW	SSW	SW	ENE	E	ENE	NE	NE	NE	N	NE	SW	WSW	SW	SW	SW	SW	SW	SW
2 Spd	3.5	3.6	3.6	3.9	3.8	3.9	3.0	1.3	0.4	1.0	1.8	2.9	2.5	0.8	2.1	2.2	1.3	1.9	1.0	1.1	1.2	2.5	0.9	1.4	0.73	3.94
Dir	SW	SW	SW	SW	SSW	SW	SW	SSW	SSW	ENE	NE	NE	ENE	E	ENE	ENE	ESE	E	E	ESE	E	ENE	SSE	SSW	SSE	SW
3 Spd	2.5	2.9	3.3	3.0	3.9	1.3	0.7	1.4	1.3	1.4	1.9	2.0	2.3	2.2	2.1	3.7	5.5	4.9	4.0	3.1	3.1	5.1	1.6	2.9	2.35	5.51
Dir	SSW	SSW	SSW	SW	SW	W	N	N	NW	N	WNW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW
4 Spd	2.0	3.7	2.3	2.5	3.4	4.2	3.2	2.9	1.0	2.0	3.4	4.1	3.6	2.4	4.1	4.6	6.1	4.8	4.5	2.8	3.0	4.3	4.0	0.6	3.18	6.07
Dir	SW	SW	SW	SW	SW	SW	WSW	WSW	W	SW	SW	SW	WSW	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	E	WSW	WSW
5 Spd	1.0	3.1	3.6	3.2	3.7	3.7	2.6	2.1	1.1	1.3	1.4	1.6	0.2	0.2	1.8	0.8	0.3	1.4	2.9	3.2	3.3	3.6	4.3	5.0	2.00	5.03
Dir	WSW	SW	SW	SSW	SW	SW	SW	SW	W	ENE	WSW	SW	WSW	WSW	NNE	WSW	ENE	SW	SW	SW	SW	SW	SW	SW	SW	SW
6 Spd	2.9	3.0	3.2	3.3	3.0	3.4	2.9	2.1	1.4	1.2	0.8	1.6	0.6	1.7	2.0	1.2	1.4	1.3	1.1	0.9	1.6	1.7	3.5	0.1	0.98	3.47
Dir	SW	SW	SW	WSW	SW	SW	SW	SW	W	WNW	NNW	W	NNW	W	N	NW	WNW	N	NNW	W	SW	ENE	ENE	E	WSW	ENE
7 Spd	0.5	2.7	3.4	4.0	4.3	4.0	3.7	2.4	0.4	0.2	0.4	0.7	0.5	1.2	0.6	2.6	3.7	5.1	5.6	4.8	3.8	3.7	4.2	0.6	2.40	5.56
Dir	WSW	SW	SW	SW	SW	SW	SW	SW	SSE	NNE	NW	NNE	WNW	W	NNE	WSW	SW	WSW	SW	SW	WSW	SW	SW	N	SW	SW
8 Spd	1.5	3.5	3.6	2.5	1.1	0.6	0.5	1.1	0.8	0.5	0.7	0.1	1.6	1.6	0.1	0.6	1.2	1.3	3.3	2.4	2.2	1.9	2.5	1.7	0.19	3.65
Dir	WSW	SW	SW	WSW	WNW	ENE	SW	SSW	SW	WSW	W	NW	SSW	ENE	NNE	SE	S	ENE	NE	ENE	E	E	ENE	E	SSE	SW
9 Spd	1.7	1.6	1.6	2.7	2.7	2.6	1.1	1.4	3.3	3.0	3.1	3.3	2.6	1.1	1.4	1.2	2.8	1.5	0.9	0.7	1.0	2.6	1.6	1.0	0.48	3.32
Dir	SSW	SSW	S	SW	SSW	SSW	SSW	NE	NE	ENE	ENE	ENE	ENE	SE	ENE	S	SW	S	ENE	NE	WNW	WSW	W	WSW	SSE	NE
10 Spd	2.0	2.5	2.9	3.0	2.7	2.4	1.9	2.3	1.4	1.6	1.5	1.5	1.2	1.5	2.1	1.8	2.5	1.7	1.8	1.7	2.2	2.5	1.0	2.2	0.72	3.02
Dir	SW	SW	SW	SW	SW	SW	SW	WSW	W	W	W	NW	NNW	N	NNE	N	NE	NNE	NNE	NE	NE	NE	N	WSW	WNW	SW
11 Spd	2.9	3.1	3.3	3.2	3.0	3.2	3.1	2.8	1.4	2.8	2.6	2.0	1.7	1.7	1.4	3.1	2.8	3.6	5.0	4.7	4.2	4.6	3.7	3.5	2.90	5.02
Dir	WSW	SW	SW	SW	SW	SW	SW	WSW	W	WSW	WSW	WSW	W	W	N	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
12 Spd	3.7	3.5	4.0	3.8	3.9	3.5	2.1	2.0	1.0	1.0	1.1	0.9	1.8	1.8	1.7	2.6	3.1	2.6	2.4	1.1	2.8	1.1	1.2	2.5	1.35	3.96
Dir	SW	SW	SW	SW	SW	SSW	WSW	WSW	WNW	N	W	N	NNE	WSW	SSW	SW	SW	SW	ESE	ESE	NE	NE	WNW	WSW	SW	SW
13 Spd	2.2	2.0	2.6	2.4	1.3	2.4	2.8	1.7	1.6	1.4	1.3	1.2	1.9	2.3	1.5	0.9	2.8	2.7	2.7	2.0	1.1	1.2	2.4	3.0	1.82	2.96
Dir	WSW	SW	SW	SW	WSW	WSW	WSW	WSW	W	W	W	W	W	W	NNW	W	WSW	WSW	WSW	WSW	WNW	WNW	WSW	SW	WSW	SW
14 Spd	2.5	3.1	3.4	3.0	2.8	2.1	2.4	1.8	1.9	0.2	0.4	1.1	0.4	1.7	2.8	3.9	1.4	2.2	2.8	2.7	0.1	0.7	1.0	0.6	0.79	3.94
Dir	SW	SW	SW	SW	SW	SSW	SW	SSW	SW	N	SW	E	NNW	NNE	NE	ENE	ENE	SW	SW	SW	SW	E	ENE	ENE	SSW	ENE
15 Spd	0.4	1.2	2.5	2.3	1.7	1.0	1.0	1.2	0.8	1.2	1.5	1.4	2.5	2.7	2.2	2.4	2.1	2.0	1.5	0.9	0.6	1.1	0.8	0.8	1.27	2.68
Dir	E	NE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	ENE	NE	ENE	NE	ENE	ENE	NE	NE	NE	NE	NNW	W	WNW	NW	NE	NE
16 Spd	1.4	1.3	1.0	1.2	1.8	1.8	1.0	1.3	1.3	2.4	3.0	1.9	2.5	2.1	1.9	4.4	2.6	3.5	4.1	2.7	2.4	2.3	3.9	4.3	0.69	4.37
Dir	WSW	WSW	W	W	WSW	WSW	WNW	NW	NNE	NE	NE	NE	NNE	NNE	N	NE	ENE	SW	WSW	WSW	WSW	WSW	SW	SW	WNW	NE
17 Spd	2.6	3.7	2.3	2.2	3.0	1.6	2.4	2.5	1.5	1.2	1.0	0.9	1.2	2.0	2.0	1.5	1.7	2.1	0.9	0.7	1.0	1.1	1.7	1.8	1.37	3.74
Dir	WSW	SW	SW	SW	SW	WSW	SW	WSW	W	WNW	NW	NNW	N	NNE	WSW	W	W	WSW	WNW	W	SW	S	SW	SW	WSW	SW
18 Spd	2.9	1.9	2.2	2.0	2.9	3.7	2.7	2.5	1.6	0.4	1.9	2.3	1.2	2.5	1.5	0.7	0.8	1.1	3.5	1.8	1.1	1.3	2.3	3.5	0.86	3.69
Dir	SW	SSW	SW	SSW	SW	SW	SW	SW	SW	NNE	NE	NE	ESE	SW	WSW	W	NW	NNW	NE	NE	ENE	SE	SSW	SW	SSW	SW
19 Spd	4.2	4.9	4.9	3.8	4.3	3.8	3.6	2.0	1.4	2.2	2.8	3.3	3.6	4.7	3.9	2.6	3.0	3.7	2.1	2.2	2.4	3.6	4.1	3.8	2.98	4.94
Dir	SW	SW	SW	SW	SW	SW	SW	SW	W	W	W	WSW	WSW	WSW	WSW	NNE	SW	WSW	WNW	W	WSW	SW	SW	SW	WSW	SW
20 Spd	4.0	4.4	4.5	4.4	4.0	3.5	4.0	4.8	4.8	5.2	6.1	5.2	5.8	4.1	4.1	6.4	6.0	5.5	5.5	4.9	4.1	3.9	4.2	4.0	4.70	6.36
Dir	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	SW	WSW	WSW
21 Spd	2.5	2.8	3.4	1.2	1.3	1.0	1.9	4.4	5.3	2.1	3.8	5.1	4.2	5.0	6.4	6.7	7.0	6.5	5.2	4.9	2.8	2.1	0.1	1.0	3.57	7.01
Dir	WSW	WSW	SW	WSW	WSW	WNW	WSW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	WSW	WSW	WSW	WSW
22 Spd	1.0	3.6	3.3	4.3	4.4	4.5	3.6	3.5	3.8	4.9	3.8	4.2	3.6	2.6	3.4	5.0	4.3	5.4	5.6	4.1	0.5	3.4	0.9	1.5	3.04	5.62
Dir	SSW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	N	NE	NE	S	SW	WSW

WCAS - Steeper

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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
23 Spd	1.5	1.7	2.1	2.3	2.1	2.4	1.0	1.1	1.9	3.1	2.2	2.8	3.1	4.5	5.2	5.5	5.7	6.5	8.0	6.6	5.2	3.2	3.9	3.7	3.04	7.96
Dir	S	SSW	SSW	SW	SW	ENE	ESE	NE	WNW	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW	WSW	WSW
24 Spd	3.8	4.4	5.3	5.1	6.0	5.3	5.5	5.8	4.4	2.4	3.7	4.0	6.0	7.1	5.9	7.9	7.6	6.6	7.3	5.0	1.7	1.2	0.4	0.8	4.36	7.85
Dir	SW	SW	SW	SW	SW	SW	SW	SW	WSW	WSW	SW	WSW	WSW	WSW	WSW	WSW	SW	WSW	SW	WSW	NNE	ENE	SE	ENE	SW	WSW
25 Spd	0.6	0.8	2.2	3.2	3.3	2.5	2.0	2.0	0.9	1.7	2.5	0.3	0.6	0.7	2.4	3.8	6.8	3.6	2.7	3.9	3.0	2.3	1.7	3.4	1.76	6.76
Dir	SW	SSW	SW	SW	SW	SSW	SSW	S	SE	ENE	NE	NE	NW	NE	WSW	WSW	WSW	WSW	WSW	WSW	WSW	SW	W	SW	SW	WSW
26 Spd	3.2	3.7	3.2	3.4	3.1	3.9	3.6	1.9	0.9	1.3	2.4	2.2	2.2	2.5	1.6	0.8	3.3	1.3	2.0	2.5	3.3	4.1	3.7	3.6	1.22	4.14
Dir	SW	SW	SW	SW	SW	SW	SW	SSW	NE	NE	NE	ENE	NE	NE	NNE	NNE	NE	SSE	SSW	SW	SW	SW	SW	SW	SW	SW
27 Spd	4.3	4.4	2.9	2.3	2.7	3.5	3.6	2.8	1.4	1.3	0.6	0.5	1.2	2.7	2.4	1.9	3.1	2.3	1.6	2.7	3.1	3.5	2.3	3.8	1.73	4.43
Dir	SW	WSW	SSW	SW	WSW	SW	SW	SW	W	WSW	W	S	NE	NE	NE	SW	WSW	SW	SSE	SSE	S	SSE	SSW	SW	SW	WSW
28 Spd	4.6	4.3	3.9	3.4	4.5	3.5	3.8	4.0	2.5	1.0	2.7	3.0	2.0	1.2	3.1	2.8	3.2	2.6	0.5	1.2	2.3	3.4	4.5	4.0	2.17	4.58
Dir	SW	SW	SW	SSW	SW	SW	SW	SW	SW	NW	NNE	NNE	NE	ENE	SW	SSW	SW	SW	SSE	S	WSW	SW	SW	SW	SW	SW
29 Spd	5.0	5.5	5.1	5.1	6.0	5.7	5.4	3.7	0.6	1.7	1.2	0.6	0.6	1.3	2.6	3.7	1.0	0.9	1.4	1.7	1.2	3.1	2.5	1.7	2.02	5.97
Dir	SW	SW	SW	SW	SW	SW	SW	SW	ESE	ENE	ENE	NNW	WSW	WNW	WSW	WSW	WNW	NNE	E	N	ENE	SW	SW	SSW	SW	SW
30 Spd	3.6	1.9	2.0	3.2	3.5	2.7	3.3	1.3	0.8	1.6	0.5	0.3	1.3	1.4	2.3	3.5	1.7	3.0	3.3	1.2	0.9	2.8	2.4	4.3	1.34	4.29
Dir	SW	WSW	WSW	SW	SW	SW	SW	W	NNE	N	NE	SE	SW	ENE	NE	NE	W	WSW	SW	WNW	WSW	WSW	W	SW	WSW	SW
31 Spd	3.6	3.8	3.8	2.0	2.5	4.3	3.2	2.5	1.8	1.8	1.4	1.6	2.4	2.1	1.8	2.1	1.6	2.6	1.9	1.8	1.8	4.2	4.5	4.5	2.16	4.54
Dir	SW	SW	SW	SW	SW	SW	SW	SW	WSW	NW	NW	W	WNW	WNW	N	NW	NNW	WSW	W	W	W	WSW	WSW	WSW	WSW	WSW
Spd	2.60	3.05	3.05	2.99	3.15	2.83	2.57	1.98	1.11	0.64	0.66	0.67	0.77	0.90	0.91	1.40	2.11	2.30	1.94	1.81	1.27	1.62	1.85	2.23	Diurnal Average	
Dir	SW	SW	SW	SW	SW	SW	SW	SW	WSW	W	WNW	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	SW	SW	SW		
Spd	5.55	5.71	5.98	6.39	6.38	5.74	5.45	5.80	5.30	5.20	6.14	5.22	5.97	7.07	6.39	7.85	7.64	6.57	7.96	6.60	5.15	5.05	4.50	5.03	Diurnal Maximum	
Dir	221.81	221.94	219.89	219.11	220.40	217.37	229.55	231.21	234.24	236.59	237.18	242.75	239.99	242.07	241.93	245.14	235.66	237.36	244.84	241.49	238.34	232.04	220.43	219.99		

Maximum Speed Value: 8.0 kph on Jul 23 19:00
Minimum Speed Value: 0.1 kph on Jul 8 15:00
Maximum Daily Speed Average: 4.70 kph on Jul 20
Minimum Daily Speed Average: 0.19 kph on Jul 15
Maximum Diurnal Speed Average: 3.15 kph at hour 5
Minimum Diurnal Speed Average: 0.64 kph at hour 10

Monthly Average Velocity: 1.772 kph 234.25 deg
Speed Percentiles: P_1 = 0.2 P_{10} = 0.9 Q_1 = 1.5 Median = 2.5 Q_3 = 3.6 P_{90} = 4.6 P_{99} = 6.5
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 (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	36	0	0	0	0	0	36
NorthEast	98	0	0	0	0	0	98
East	33	0	0	0	0	0	33
SouthEast	13	0	0	0	0	0	13
South	22	0	0	0	0	0	22
SouthWest	339	55	0	0	0	0	394
West	116	4	0	0	0	0	120
NorthWest	28	0	0	0	0	0	28
Total	685	59	0	0	0	0	744

WCAS - Steeper
Summary of Hourly Averages

Relative Humidity (RH) - %
July 2016

Maximum Value: 99.41 % on Jul 31 03:00

Maximum Daily Average: 95.37 % on Jul 15

Minimum Value: 28.8 % on Jul 29 15:00

Minimum Daily Average: 51.46 % on Jul 22

Maximum Diurnal Average: 85.54 % at hour 6

Minimum Diurnal Average: 59.30 % at hour 14

Monthly Average: 73.076 %

Percentiles: P_1 = 32.0 P_{10} = 44.4 Q_1 = 57.8 Median = 76.0 Q_3 = 90.8 P_{90} = 97.3 P_{99} = 99.2

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																								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-Jul	91.2	91.0	89.3	88.5	87.6	85.2	81.6	76.1	72.6	74.0	73.3	55.7	50.7	63.9	90.4	91.2	91.7	94.2	92.1	91.1	95.7	96.2	94.4	96.0	83.89	96.19
2-Jul	93.1	94.9	95.0	92.3	93.4	87.9	82.9	75.8	78.4	81.9	66.0	60.2	58.1	77.1	73.4	67.7	60.7	70.0	76.5	74.0	79.2	90.8	94.4	93.7	79.89	94.96
3-Jul	95.0	92.1	90.4	88.8	91.0	90.9	96.0	81.5	90.0	95.4	91.9	92.5	83.3	75.8	66.3	53.5	51.8	73.6	54.5	51.2	59.1	65.7	55.5	57.9	76.82	96.03
4-Jul	59.0	65.2	66.5	67.4	72.1	66.7	65.4	58.6	59.4	57.9	55.8	41.6	42.1	43.1	38.6	43.6	50.6	44.7	41.1	49.2	56.4	65.3	62.3	62.5	55.63	72.15
5-Jul	57.3	71.7	79.0	79.1	79.5	79.4	78.7	75.6	63.6	54.6	54.1	53.7	48.8	53.4	45.6	44.4	49.3	56.7	58.2	61.7	65.4	67.6	75.2	75.7	63.69	79.54
6-Jul	76.7	77.6	76.6	82.2	88.4	89.2	86.5	74.8	63.5	60.7	55.4	47.6	46.1	41.1	43.6	41.8	39.5	45.3	45.4	46.1	48.7	63.6	80.7	83.5	62.70	89.23
7-Jul	84.1	88.2	90.5	91.3	90.4	90.6	84.7	74.1	54.4	50.1	47.4	45.0	36.5	37.5	35.7	35.7	32.0	34.5	42.0	44.2	44.2	46.4	50.8	50.3	57.52	91.32
8-Jul	53.2	59.2	60.3	59.7	60.4	62.1	63.7	71.6	64.5	59.5	51.7	46.5	44.1	50.0	44.1	42.6	50.5	44.0	46.9	51.1	69.8	70.0	89.5	92.7	58.66	92.74
9-Jul	88.8	90.4	91.1	95.3	90.5	85.8	81.2	82.4	84.1	80.7	79.5	76.7	82.6	79.7	71.2	70.8	79.2	82.4	79.5	78.9	83.4	89.1	93.3	96.8	83.90	96.81
10-Jul	97.6	98.3	98.6	98.9	98.9	99.0	99.0	98.9	97.9	93.2	87.2	82.5	77.9	69.6	67.5	68.0	71.7	71.1	71.9	80.9	85.3	89.2	94.3	95.2	87.19	99.01
11-Jul	97.6	98.5	98.7	98.9	99.0	99.0	99.0	98.4	94.6	97.0	94.6	88.0	75.9	67.6	65.1	95.7	96.8	96.9	98.4	97.9	97.8	98.0	97.1	97.5	93.66	99.02
12-Jul	97.3	97.3	97.1	96.5	95.1	94.7	92.4	90.4	89.1	88.0	93.3	81.5	74.9	69.7	78.5	91.6	77.6	81.0	85.0	86.9	91.3	93.7	96.1	98.0	89.04	98.02
13-Jul	97.7	98.0	98.5	98.7	98.9	99.0	99.1	99.1	99.1	99.0	98.6	95.6	84.1	76.7	86.2	95.9	96.8	91.9	91.8	91.2	93.6	92.3	96.0	97.9	94.82	99.14
14-Jul	98.3	98.2	97.8	96.7	95.6	94.5	94.3	93.0	93.7	88.6	82.6	72.0	77.2	90.7	79.7	87.6	95.7	97.9	98.5	98.8	98.9	98.9	99.0	99.0	92.80	98.99
15-Jul	99.0	99.0	99.1	99.2	99.3	99.3	99.2	99.2	99.1	99.0	97.8	94.3	93.8	94.2	90.2	82.8	81.5	80.5	95.8	96.5	96.2	97.8	98.1	97.9	95.37	99.26
16-Jul	98.2	98.2	98.0	97.5	96.5	96.9	95.8	93.5	89.8	80.9	76.5	74.5	73.3	58.0	57.4	58.8	70.2	67.9	66.1	70.4	73.9	80.5	86.9	85.6	81.06	98.22
17-Jul	87.1	88.5	87.2	83.3	90.9	89.2	91.6	90.4	88.1	89.4	85.0	79.3	72.9	88.1	94.7	90.6	88.1	84.1	78.7	83.5	82.4	81.2	86.1	90.1	86.27	94.67
18-Jul	90.9	90.1	93.1	96.5	96.6	97.4	94.2	90.7	86.5	79.8	72.1	71.1	79.5	84.0	66.8	50.3	50.4	48.8	63.6	70.6	71.2	70.1	79.6	88.0	78.41	97.39
19-Jul	90.1	89.6	88.1	87.6	86.3	84.3	81.1	66.7	57.3	50.2	47.0	47.3	40.3	35.5	35.8	51.6	66.8	49.9	58.2	61.3	63.8	69.6	62.9	60.6	63.82	90.10
20-Jul	63.7	64.4	63.6	63.1	63.8	65.1	66.9	67.9	66.3	58.1	53.9	57.7	54.6	54.3	52.7	52.6	48.4	48.1	53.0	60.4	60.7	64.8	63.0	62.1	59.55	67.89
21-Jul	61.0	61.0	63.7	61.6	64.3	63.1	65.4	70.0	75.2	62.8	55.2	51.4	51.5	50.9	48.4	50.4	50.8	52.0	53.6	57.7	61.2	62.1	60.4	61.6	58.97	75.22
22-Jul	62.7	73.8	78.1	78.3	79.5	79.9	78.7	72.1	56.2	43.6	38.2	33.0	31.6	31.3	35.0	29.0	31.6	29.6	32.2	37.7	42.5	47.7	55.5	57.5	51.46	79.87
23-Jul	60.9	65.4	66.3	61.2	64.1	69.7	73.0	69.3	52.7	44.4	43.9	40.4	39.1	38.0	36.5	37.1	34.8	37.8	40.0	45.3	51.0	58.2	58.6	57.9	51.90	72.96
24-Jul	57.7	57.9	58.4	58.0	56.2	57.4	57.3	55.7	57.7	56.2	58.6	45.5	43.9	42.1	40.6	42.1	49.6	49.2	50.0	49.3	57.0	70.9	71.1	78.0	55.01	78.02
25-Jul	78.0	77.2	84.5	88.9	88.2	88.2	83.5	68.7	55.0	51.1	51.5	42.0	39.5	38.9	41.1	41.2	38.6	38.1	36.8	40.6	46.9	48.3	58.2	65.1	57.92	88.87
26-Jul	65.3	67.6	68.0	71.8	76.1	78.3	78.1	69.5	55.8	51.1	46.6	45.2	47.2	42.4	41.4	34.4	39.4	44.7	52.9	59.8	65.3	66.0	59.2	61.3	57.81	78.26
27-Jul	61.8	61.1	75.7	79.2	86.7	92.1	90.3	80.3	62.5	60.3	65.1	71.5	69.5	54.8	58.7	67.1	76.3	65.2	66.2	72.5	76.2	78.8	81.8	89.4	72.63	92.14
28-Jul	89.9	91.8	90.6	89.1	89.0	89.5	86.3	79.5	65.7	55.3	48.3	50.1	49.2	50.2	68.1	85.9	74.8	62.5	62.6	60.4	69.5	76.9	86.6	73.6	72.73	91.83
29-Jul	85.7	83.8	78.3	82.7	84.2	84.3	84.0	78.7	61.6	50.2	43.6	41.4	35.1	32.5	28.8	31.6	37.8	38.1	39.0	52.9	87.4	93.0	91.4	88.6	63.12	92.96
30-Jul	93.8	90.3	90.8	92.7	92.6	94.0	94.2	84.2	73.7	81.8	95.7	97.0	94.8	88.6	83.4	92.0	97.1	98.2	96.7	95.9	96.9	98.0	94.5	97.5	92.26	98.24
31-Jul	98.0	98.6	99.4	98.6	96.6	99.3	98.9	95.4	85.5	77.8	73.4	70.4	60.1	58.7	78.2	81.2	82.5	84.3	83.6	86.6	93.1	97.3	93.8	94.3	86.90	99.41
	81.64	83.20	84.27	84.63	85.53	85.54	84.61	80.07	73.99	70.09	67.22	62.94	59.94	59.30	59.47	61.58	63.31	63.33	64.85	67.89	73.03	77.03	79.55	80.84	Diurnal Average	
	99.00	99.02	99.41	99.23	99.25	99.26	99.23	99.22	99.13	99.03	98.58	96.95	94.77	94.16	94.67	95.93	97.06	98.24	98.55	98.82	98.91	98.92	98.98	98.99	Diurnal Maximum	

WCAS - Steeper
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
July 2016

Maximum Value: 4.04 kph on Jul 24 16:00

Maximum Daily Average: 1.73 kph on Jul 24

Minimum Value: 0.2 kph on Jul 15 01:00

Minimum Daily Average: 0.73 kph on Jul 14

Maximum Diurnal Average: 1.73 kph at hour 16

Minimum Diurnal Average: 0.82 kph at hour 1

Monthly Average: 1.120 kph

Percentiles: $P_1 = 0.5$ $P_{10} = 0.6$ $Q_1 = 0.8$ Median = 1.0 $Q_3 = 1.3$ $P_{90} = 1.9$ $P_{99} = 2.9$

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	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-Jul	1.3	1.2	1.3	1.5	1.5	1.2	1.0	0.7	0.7	0.6	0.8	0.9	1.1	1.3	1.7	1.4	0.9	0.9	0.5	0.6	0.6	0.5	0.7	0.8	0.98	1.69
2-Jul	0.8	0.8	0.7	1.0	0.9	1.1	0.7	0.7	0.7	0.8	1.4	1.2	1.0	1.0	0.9	0.9	1.0	0.7	0.8	0.8	0.6	0.7	0.7	0.8	0.86	1.37
3-Jul	0.8	0.8	0.9	1.0	1.3	1.0	1.0	1.1	1.2	1.1	1.6	1.3	1.3	1.2	1.1	2.4	3.5	2.7	2.5	2.0	1.5	1.5	1.1	0.9	1.46	3.53
4-Jul	0.8	0.9	1.1	0.8	1.0	1.1	1.0	1.2	0.9	0.8	1.0	2.1	2.0	1.9	2.3	2.5	2.3	2.1	2.1	1.6	1.5	0.9	0.9	0.8	1.39	2.48
5-Jul	0.6	0.6	0.8	0.8	0.7	0.7	1.6	0.6	0.6	1.1	0.9	0.8	0.9	0.9	1.3	1.3	1.6	1.1	1.0	0.7	0.7	0.8	1.0	1.4	0.94	1.64
6-Jul	0.6	0.7	0.8	1.0	0.7	0.7	0.6	0.8	1.1	1.2	1.2	1.5	1.1	1.4	1.7	1.4	1.7	1.1	1.0	0.5	0.6	1.5	1.2	0.8	1.03	1.70
7-Jul	0.6	0.8	0.7	1.0	1.0	0.8	1.0	1.1	1.0	1.1	1.1	0.8	0.7	1.1	0.9	1.7	1.7	1.8	1.8	1.5	1.5	1.0	1.1	1.2	1.13	1.81
8-Jul	1.3	0.8	0.8	1.2	0.8	0.6	0.5	0.5	0.5	0.5	0.8	0.8	1.3	0.9	0.7	1.0	0.9	0.9	1.4	0.9	1.1	0.6	0.8	0.7	0.85	1.35
9-Jul	0.9	0.7	1.1	0.8	1.0	1.2	0.8	0.8	1.2	1.0	1.0	1.0	1.1	1.1	0.9	1.0	1.1	1.0	0.6	0.5	0.7	0.7	1.0	0.8	0.91	1.22
10-Jul	0.9	0.6	0.5	0.6	0.8	0.9	0.5	0.6	0.8	0.9	1.0	1.3	1.0	1.2	1.3	1.5	1.4	1.2	1.1	0.9	0.8	0.9	0.9	0.9	0.94	1.47
11-Jul	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.9	0.9	0.9	0.9	1.2	1.1	1.5	1.7	1.3	0.9	1.2	1.1	0.8	1.0	0.9	0.7	0.89	1.69
12-Jul	0.8	0.7	1.0	0.8	0.9	0.9	0.9	1.3	0.8	0.8	0.7	0.9	1.1	1.9	0.6	0.9	0.9	0.9	1.3	1.1	1.2	0.6	0.9	1.0	0.96	1.89
13-Jul	0.7	0.5	0.4	0.5	0.7	0.7	0.8	0.8	0.7	0.8	0.9	1.0	1.2	1.4	1.4	1.1	0.8	1.1	0.9	0.8	0.7	0.7	0.4	0.5	0.82	1.45
14-Jul	0.5	0.8	0.7	0.7	0.6	0.4	0.5	0.7	0.6	0.5	0.8	0.9	1.0	1.3	1.2	1.4	1.0	0.7	0.8	0.5	0.5	0.4	0.6	0.4	0.73	1.39
15-Jul	0.2	0.8	0.8	0.8	0.6	0.5	0.6	0.6	0.6	0.6	0.7	0.8	1.0	1.1	0.9	1.0	1.0	1.1	1.0	0.8	0.6	0.7	0.6	0.7	0.75	1.13
16-Jul	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.9	1.0	1.3	1.1	1.3	1.8	1.5	1.4	2.8	2.1	1.6	1.5	1.1	0.6	0.8	0.9	1.1	1.12	2.82
17-Jul	1.0	0.7	1.2	0.7	0.6	0.6	0.6	0.8	0.8	0.9	0.9	1.0	1.9	1.5	0.9	1.1	0.9	0.9	0.8	0.4	0.5	0.5	0.8	0.5	0.85	1.86
18-Jul	0.5	0.6	0.5	0.5	0.7	0.7	0.8	0.6	0.5	0.8	0.9	1.0	0.8	0.8	1.0	0.8	0.9	1.0	1.3	1.2	0.6	0.8	0.6	0.8	0.78	1.29
19-Jul	1.0	1.3	1.1	0.9	1.2	1.0	0.9	0.6	0.8	1.7	1.8	1.7	2.1	2.7	2.1	2.1	1.7	2.3	1.6	1.4	1.1	0.8	0.8	0.9	1.40	2.69
20-Jul	0.8	0.7	0.8	0.9	0.8	0.7	0.9	1.3	1.4	1.9	2.1	1.9	1.9	1.9	2.2	2.3	2.6	2.3	2.0	1.5	1.3	0.9	1.0	1.0	1.46	2.56
21-Jul	1.5	0.7	0.6	1.0	0.9	0.8	0.9	1.2	1.9	1.3	2.3	2.5	2.2	2.5	2.6	2.7	2.9	2.4	2.1	1.4	1.3	0.8	1.4	0.9	1.61	2.91
22-Jul	1.0	1.0	0.9	1.1	1.2	1.2	1.2	1.0	1.7	2.1	1.8	2.2	2.2	1.9	1.8	2.2	1.9	2.2	2.2	1.9	1.0	1.3	1.4	0.6	1.53	2.22
23-Jul	0.8	0.7	1.0	0.5	0.8	1.0	0.9	0.7	1.6	2.2	1.8	1.8	1.8	2.4	2.7	2.6	3.0	2.8	3.0	2.4	1.9	0.7	0.8	0.7	1.61	3.03
24-Jul	0.8	0.9	1.4	1.4	1.7	1.5	1.6	1.9	1.5	1.1	1.2	1.9	2.9	2.6	2.9	4.0	2.6	2.3	2.5	2.3	1.1	0.5	0.5	0.6	1.73	4.04
25-Jul	0.8	0.9	0.6	0.7	0.8	0.8	0.5	0.9	1.2	1.0	1.2	0.9	1.2	1.1	1.5	2.2	2.5	1.7	1.8	1.8	1.5	1.0	1.4	1.3	1.22	2.51
26-Jul	0.7	0.8	0.7	0.8	0.7	0.8	0.8	0.8	1.0	0.9	1.3	1.3	1.3	1.4	1.0	1.0	1.5	1.3	1.0	0.8	0.8	1.2	0.9	1.0	0.99	1.47
27-Jul	0.9	1.1	1.1	0.9	1.4	0.7	0.8	0.7	0.8	0.7	0.5	0.9	0.9	1.1	1.3	1.2	1.3	1.0	1.4	1.4	1.4	1.7	1.0	1.5	1.08	1.69
28-Jul	1.0	0.9	0.9	0.9	1.2	1.1	0.9	0.9	0.7	1.0	1.7	1.6	1.2	1.1	2.4	1.7	1.3	1.1	0.7	0.7	1.7	1.5	1.3	1.3	1.19	2.39
29-Jul	1.1	1.3	1.2	1.3	1.5	1.3	1.3	0.9	0.9	0.8	0.9	0.9	0.8	1.3	1.7	2.1	1.1	0.9	0.6	2.3	1.0	0.6	1.1	1.3	1.18	2.30
30-Jul	0.8	1.0	1.3	0.7	0.7	0.8	1.3	0.7	1.0	1.7	1.5	0.6	1.1	0.9	1.2	2.2	1.0	1.2	0.9	1.1	1.0	1.5	1.5	1.0	1.11	2.24
31-Jul	0.8	1.1	0.7	0.7	1.0	1.0	0.8	0.6	0.9	1.4	1.5	1.5	2.1	2.1	1.4	1.6	1.5	1.5	1.2	1.1	1.3	1.3	1.0	1.3	1.22	2.13
	0.82	0.82	0.86	0.86	0.92	0.87	0.86	0.86	0.97	1.09	1.20	1.26	1.39	1.47	1.50	1.73	1.61	1.45	1.36	1.20	1.02	0.92	0.95	0.91	Diurnal Average	
	1.46	1.31	1.36	1.47	1.69	1.46	1.56	1.92	1.86	2.18	2.27	2.46	2.89	2.69	2.88	4.04	3.53	2.79	3.03	2.44	1.93	1.69	1.54	1.51	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

West Central Airshed Society

WCAS - Steeper

Summary of Hourly Standard Deviations

Wind Direction (WD) - deg

July 2016

Maximum Value: 101.10 deg on Jul 5 14:00

Maximum Daily Average: 45.88 deg on Jul 8

Minimum Value: 7.3 deg on Jul 15 02:00

Minimum Daily Average: 16.38 deg on Jul 20

Maximum Diurnal Average: 49.46 deg at hour 13

Minimum Diurnal Average: 16.77 deg at hour 4

Monthly Average: 33.022 deg

Percentiles: P_1 = 9.3 P_{10} = 11.2 Q_1 = 13.7 Median = 26.1 Q_3 = 46.9 P_{90} = 66.6 P_{99} = 93.3

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																								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-Jul	11.6	11.7	11.4	11.6	12.6	12.5	9.9	12.3	16.1	84.1	68.5	42.1	23.7	57.3	68.3	17.9	60.7	32.0	33.0	45.4	17.0	13.7	10.1	12.0	28.97	84.14
2-Jul	12.1	9.9	9.5	9.8	13.2	12.5	13.3	56.6	80.3	44.4	32.2	22.5	21.7	82.9	20.0	32.3	53.4	21.7	55.4	53.3	51.3	30.1	57.3	57.8	35.56	82.93
3-Jul	21.3	17.6	13.9	17.5	17.1	60.0	67.5	53.3	63.3	51.4	58.1	45.4	35.4	41.1	37.0	33.2	33.1	24.3	32.4	35.2	21.6	13.5	60.4	17.6	36.29	67.45
4-Jul	62.0	11.8	55.6	14.8	12.1	15.8	20.4	21.3	69.4	24.0	17.1	23.8	44.2	50.0	37.6	33.6	21.0	28.5	29.9	36.6	32.1	10.0	13.2	86.1	32.12	86.15
5-Jul	41.2	10.0	10.5	13.5	10.3	10.1	29.9	20.2	45.7	69.0	54.0	38.7	97.0	101.1	40.3	96.3	91.0	69.9	20.2	11.5	9.9	9.2	13.0	12.8	38.56	101.10
6-Jul	15.1	13.0	15.0	19.0	13.8	10.3	10.4	31.4	51.5	59.2	73.4	63.6	75.6	65.9	61.0	72.2	69.7	46.5	43.0	49.8	17.7	81.5	13.0	95.7	44.47	95.69
7-Jul	87.6	17.9	9.5	12.3	11.7	10.7	13.2	23.0	91.4	94.5	83.2	64.0	66.1	64.0	83.5	41.3	27.4	20.1	17.4	15.1	17.8	12.3	12.2	85.6	40.91	94.47
8-Jul	71.9	10.7	11.1	17.5	47.1	70.0	83.7	22.1	16.5	52.0	74.5	99.9	51.3	41.4	84.5	91.2	49.4	48.5	26.1	15.0	43.1	14.1	10.1	49.2	45.88	99.89
9-Jul	50.4	51.5	51.6	16.7	24.1	28.3	77.7	31.8	11.2	19.7	19.7	19.0	27.7	63.5	42.2	57.5	23.2	41.4	33.1	25.8	47.5	14.6	43.2	48.5	36.25	77.73
10-Jul	19.8	14.5	10.1	11.1	12.6	18.6	19.9	14.7	42.8	42.9	48.4	49.5	50.3	51.9	40.7	45.2	32.4	39.3	33.8	11.9	13.2	11.7	49.2	28.1	29.69	51.93
11-Jul	9.8	8.7	8.7	9.5	9.3	10.1	11.0	12.6	42.2	15.1	19.5	33.1	44.9	48.6	70.5	32.0	26.7	12.4	12.0	12.3	11.5	11.5	12.1	10.7	20.62	70.54
12-Jul	11.5	11.0	11.4	12.3	12.3	14.3	31.3	34.9	59.4	50.0	51.5	59.8	38.9	70.0	32.4	14.0	17.5	23.7	36.7	65.6	32.4	29.4	47.5	20.6	32.84	69.98
13-Jul	18.8	12.8	9.6	9.7	29.1	15.3	14.5	28.4	30.9	36.8	51.4	57.1	43.5	52.0	56.7	69.9	16.1	21.0	15.4	23.4	42.8	36.4	13.1	10.2	29.78	69.87
14-Jul	10.6	9.9	9.8	11.1	11.4	13.8	10.3	18.3	16.9	89.4	94.2	67.0	87.4	57.0	24.8	15.7	43.5	17.1	10.5	9.0	85.8	25.1	11.6	18.9	32.05	94.20
15-Jul	23.1	7.3	11.1	13.4	12.7	12.1	18.4	17.1	37.5	26.4	22.7	39.0	18.1	17.4	19.1	23.5	20.6	52.6	39.3	30.6	49.1	42.4	42.5	48.0	26.84	52.57
16-Jul	24.0	25.0	39.3	35.0	21.3	25.6	45.7	44.8	36.6	26.3	18.8	48.6	35.2	39.1	45.7	28.8	24.1	33.6	20.6	26.0	14.4	24.9	13.1	12.9	29.56	48.61
17-Jul	27.8	11.8	39.8	23.4	11.5	33.8	17.4	19.4	44.4	49.5	59.5	64.8	71.6	32.9	21.4	49.0	37.1	29.2	57.7	45.5	22.1	26.3	7.7	9.3	33.87	71.65
18-Jul	9.4	12.5	11.0	13.5	13.4	10.1	11.8	12.0	20.1	86.7	38.4	21.5	55.3	24.0	52.9	70.9	69.1	63.3	18.6	14.7	11.7	46.9	28.3	11.7	30.34	86.74
19-Jul	11.8	11.6	11.8	10.3	12.2	14.1	13.5	26.0	42.3	46.3	41.7	35.5	40.0	34.8	30.7	51.1	23.4	48.7	52.6	43.4	35.9	10.9	10.4	11.2	27.92	52.56
20-Jul	9.5	8.4	9.9	11.1	11.1	11.1	12.2	12.3	13.7	19.6	18.4	20.1	18.5	23.3	31.3	19.5	26.1	25.8	20.3	16.3	17.5	13.1	11.6	12.5	16.38	31.33
21-Jul	22.1	14.6	9.4	54.3	52.6	44.8	30.0	16.1	15.3	40.9	35.5	28.2	34.1	31.7	22.7	23.9	22.0	19.2	19.9	16.3	35.3	28.6	84.5	80.6	32.61	84.49
22-Jul	55.8	10.9	13.7	12.3	11.3	13.1	13.8	10.6	15.7	24.2	28.4	36.5	39.8	49.8	33.3	24.2	24.8	23.5	22.3	25.4	78.2	13.1	78.5	33.6	28.87	78.48
23-Jul	41.4	33.3	52.3	9.3	59.5	36.9	66.6	35.5	46.3	44.4	53.8	44.7	38.8	34.1	29.7	27.8	27.1	25.1	21.6	19.2	17.0	12.1	11.2	9.9	33.24	66.58
24-Jul	9.6	11.4	13.1	14.7	14.4	14.3	13.6	15.5	14.3	48.6	15.4	28.8	21.4	20.9	24.8	27.9	16.4	16.9	17.6	20.1	63.6	13.0	61.8	39.5	23.23	63.59
25-Jul	93.9	87.1	21.7	11.6	11.3	13.7	18.9	30.9	80.1	38.4	25.0	99.9	82.8	79.5	34.3	24.6	19.8	27.3	43.0	28.6	46.9	45.3	66.6	25.7	44.04	99.90
26-Jul	12.9	10.2	12.8	10.6	11.2	10.2	11.6	17.3	73.4	42.4	47.5	40.1	49.8	32.5	38.3	83.8	33.6	61.8	40.5	17.4	13.2	14.7	13.3	14.9	29.75	83.76
27-Jul	12.1	14.1	28.9	40.5	47.9	14.3	11.4	20.8	41.7	30.5	45.4	75.0	65.0	20.5	21.8	54.8	31.7	39.6	35.1	33.5	29.6	30.7	31.4	15.8	33.00	74.99
28-Jul	11.1	10.5	11.8	14.5	13.2	12.2	11.1	10.4	12.9	57.5	37.1	28.8	37.2	62.8	51.3	31.6	23.6	25.1	75.5	43.8	57.7	31.4	11.3	23.9	29.43	75.46
29-Jul	12.1	11.6	12.1	13.4	12.1	12.2	12.6	9.5	67.1	31.6	61.2	76.9	92.8	66.4	50.0	38.1	67.6	68.6	24.4	65.1	72.2	9.6	59.3	65.4	42.16	92.78
30-Jul	10.6	58.9	58.4	11.2	10.6	17.1	25.3	42.8	86.5	58.9	84.5	83.2	67.6	46.2	20.5	44.1	41.5	18.0	15.4	59.9	69.8	32.8	49.2	12.7	42.74	86.49
31-Jul	11.4	14.6	10.5	34.5	30.1	12.6	14.3	15.0	40.0	55.0	60.6	66.7	57.6	62.8	48.8	45.5	60.7	37.4	45.2	42.9	47.8	16.1	13.5	14.3	35.75	66.67
	27.18	18.22	19.52	16.77	19.13	19.69	24.55	23.77	42.76	47.09	46.44	49.16	49.46	49.21	41.17	42.63	36.60	34.26	31.24	30.91	36.31	23.38	30.97	32.12	Diurnal Average	
	93.86	87.11	58.42	54.26	59.51	70.01	83.70	56.55	91.43	94.47	94.20	99.90	97.02	101.10	84.52	96.31	91.03	69.91	75.46	65.55	85.77	81.49	84.49	95.69	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WEYERHAEUSER – DRAYTON VALLEY
STATION #911

CONTINUOUS AIR MONITORING DATA

JULY 2016

Weyerhaeuser / Drayton Valley **July 2016**
Station 911

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile P10	Q1	Median	Q3	P90	Exceedences 1-hour	Exceedences 24-hour	24 Hour Average Max ($\mu g/m^3$)
Particulate Matter 2.5 microns (μ/m^3)	0	734	98.7	5.1	0.6	27.3	1.8	2.8	4.5	6.5	8.8	0	0	10.7
Wind Speed (kph)	0	710	95.4	6.3	0.2	20.4	2.5	4.0	5.9	8.4	10.3	-	-	-
Temperature (^oC)	0	710	95.4	16.9	8.2	27.5	12.4	13.7	16.3	19.8	22.3	-	-	-
Std Dev Wind Direction (deg)	0	710	95.4	31.9	5.2	98.5	14.5	17.7	26.0	40.1	59.1	-	-	-
Std Dev Wind Speed (kph)	0	710	95.4	2.6	0.7	10.5	1.3	1.8	2.5	3.3	3.9	-	-	-

WCAS - Drayton Valley
Summary of Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$
July 2016

Maximum Value: 27.31 $\mu g/m^3$ on Jul 27 01:00

Maximum Daily Average: 10.73 $\mu g/m^3$ on Jul 17

Minimum Value: 0.6 $\mu g/m^3$ on Jul 31 12:00

Minimum Daily Average: 1.31 $\mu g/m^3$ on Jul 31

Maximum Diurnal Average: 5.97 $\mu g/m^3$ at hour 7

Minimum Diurnal Average: 3.89 $\mu g/m^3$ at hour 19

Monthly Average: 5.083 $\mu g/m^3$

Percentiles: P_1 = 0.7 P_{10} = 1.8 Q_1 = 2.8 Median = 4.5 Q_3 = 6.5 P_{90} = 8.8 P_{99} = 16.0

Hours in Service:	744
Hours of Data:	734
Hours of Missing Data:	10
Hours of Calibration:	0
Percent Operational Time:	98.7

Day	Hourly Period Ending At																								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-Jul	4.9	5.2	7.2	8.6	8.4	6.0	4.6	4.2	2.9	2.5	2.8	3.5	3.1	2.7	2.5	2.8	2.9	3.5	2.9	3.1	4.0	3.7	4.2	5.1	4.22	8.63
2-Jul	5.9	5.6	7.0	7.4	6.3	5.5	4.8	4.5	4.3	4.8	5.2	4.7	3.5	2.6	2.4	2.1	2.5	2.8	2.3	3.2	3.2	2.8	2.7	3.0	4.13	7.36
3-Jul	2.9	3.4	4.2	6.4	6.8	5.3	4.2	5.8	11.2	9.5	2.3	1.0	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.9	1.1	1.0	1.0	3.04	11.16
4-Jul	0.8	1.1	1.8	2.0	2.1	2.3	2.8	3.5	2.2	1.6	1.0	1.0	1.0	1.3	1.4	1.0	1.2	1.2	1.4	2.8	2.6	2.5	2.1	1.3	1.75	3.49
5-Jul	1.2	2.2	2.7	1.8	1.8	2.1	2.6	2.6	2.5	2.4	2.5	2.0	1.4	1.6	1.7	1.6	1.4	1.5	1.5	1.6	1.9	4.7	8.6	4.5	2.43	8.62
6-Jul	8.9	6.7	3.9	2.5	2.5	3.4	3.0	4.0	3.9	4.4	5.1	4.9	4.5	6.4	9.5	16.0	9.7	10.1	11.1	13.3	12.8	11.6	13.2	10.7	7.58	16.02
7-Jul	9.6	8.2	6.4	6.1	6.7	6.8	7.7	7.9	7.5	5.6	3.1	2.1	1.7	1.9	2.0	1.9	2.2	2.2	2.5	3.6	4.2	5.6	5.2	6.3	4.87	9.60
8-Jul	7.5	8.3	9.2	9.0	11.4	9.0	AF	AF	7.9	7.4	8.4	9.1	9.3	7.9	7.7	6.9	6.3	7.2	6.4	8.3	10.0	11.5	11.3	10.4	8.67	11.55
9-Jul	9.6	9.3	9.2	10.1	10.9	10.3	8.3	8.2	10.1	7.5	7.4	6.3	7.5	7.2	6.4	3.0	2.8	1.8	1.6	1.8	2.0	2.3	2.3	3.1	6.21	10.87
10-Jul	2.8	2.6	2.7	2.9	3.6	3.6	3.9	5.7	5.5	5.7	6.1	6.3	4.8	2.7	2.8	4.0	2.8	3.2	3.8	3.7	3.7	3.3	2.8	2.6	3.81	6.26
11-Jul	3.2	3.3	3.6	3.3	3.0	3.5	5.4	6.6	6.0	5.8	6.2	7.0	6.0	4.9	4.6	6.0	6.8	4.6	2.9	2.5	3.0	3.7	3.9	4.1	4.58	7.00
12-Jul	3.9	4.0	3.9	4.0	4.0	4.4	3.9	3.6	4.6	5.7	6.1	6.6	7.3	7.5	6.6	6.0	5.6	5.4	5.4	4.5	4.8	5.5	5.2	5.2	5.16	7.47
13-Jul	4.7	4.5	4.4	4.4	4.6	6.0	6.8	7.2	6.3	6.4	5.9	5.8	6.2	4.6	3.8	4.4	4.3	3.5	3.8	4.1	3.9	3.8	4.6	5.1	4.96	7.21
14-Jul	5.6	4.8	4.2	3.8	4.0	4.3	5.6	5.4	5.3	6.1	6.4	6.4	6.5	8.0	8.7	8.1	8.0	6.7	7.0	6.7	6.6	13.7	5.7	4.9	6.37	13.70
15-Jul	4.4	4.3	4.8	5.5	5.2	4.7	5.4	4.8	4.5	4.6	5.6	5.4	5.4	5.8	2.2	1.7	2.3	3.2	3.3	3.2	4.2	4.7	4.2	4.8	4.35	5.82
16-Jul	4.9	4.7	4.6	4.5	3.6	3.6	2.6	2.2	2.4	2.9	3.8	4.9	7.3	7.6	7.7	6.2	5.1	5.2	5.5	6.4	6.6	7.4	7.2	7.1	5.18	7.74
17-Jul	6.4	5.3	5.7	6.5	7.7	7.7	AF	AF	15.3	16.8	17.7	18.7	12.5	10.7	12.2	12.6	12.0	10.2	11.2	10.2	10.8	9.1	8.1	8.7	10.73	18.67
18-Jul	8.1	8.0	8.0	7.8	9.1	9.3	9.9	8.8	7.7	6.9	5.4	5.3	4.5	3.3	3.4	3.1	3.6	4.0	3.4	2.8	3.1	4.7	8.8	8.1	6.13	9.92
19-Jul	4.9	5.1	10.3	9.2	6.3	7.7	9.1	9.1	9.7	8.9	7.0	6.6	6.2	6.7	4.7	4.3	4.8	5.2	5.7	6.6	7.2	8.2	6.6	6.2	6.93	10.34
20-Jul	6.0	8.3	6.9	8.7	7.8	5.4	5.9	8.5	8.6	8.8	8.3	5.5	3.2	2.2	2.2	1.8	1.8	1.6	1.9	1.7	3.3	3.0	2.5	2.2	4.83	8.78
21-Jul	1.6	1.7	1.5	1.6	2.2	2.4	3.7	5.1	2.5	2.8	2.5	2.2	2.1	2.3	2.5	3.5	3.2	3.2	3.5	4.6	5.5	5.0	5.4	5.0	3.16	5.52
22-Jul	5.2	8.9	8.0	8.3	6.3	6.2	7.6	5.0	4.5	4.5	3.6	3.2	3.2	3.0	2.9	2.7	2.5	2.4	3.2	3.9	4.3	5.1	2.6	3.2	4.59	8.88
23-Jul	2.8	3.3	4.0	3.9	4.7	4.1	4.1	3.8	3.4	2.7	2.8	2.8	3.0	3.1	3.0	3.1	3.2	6.6	3.3	3.6	5.3	12.6	15.4	16.1	5.02	16.08
24-Jul	9.4	7.6	7.3	6.5	5.1	5.4	5.5	4.8	3.5	3.1	3.2	2.6	2.4	2.1	2.5	2.4	2.3	2.2	3.0	2.9	1.6	2.1	3.9	4.0	3.98	9.40
25-Jul	4.0	1.5	2.0	3.4	2.6	2.7	6.3	3.9	2.1	1.8	1.6	1.8	1.9	1.8	1.7	1.6	2.2	2.6	3.4	2.9	4.0	4.6	5.1	6.8	3.02	6.82
26-Jul	3.9	4.2	3.8	5.0	5.6	6.3	AF	AF	AF	AF	AF	AF	3.0	2.9	2.4	2.3	2.5	2.5	2.4	4.8	11.2	14.2	11.6	13.2	5.66	14.22
27-Jul	27.3	16.2	21.2	18.4	11.4	15.9	20.5	10.4	8.5	10.0	7.7	4.6	4.2	4.2	4.6	5.8	5.6	5.7	5.4	6.1	6.2	5.9	5.8	6.9	9.93	27.31
28-Jul	8.1	7.5	8.6	8.3	8.6	8.5	8.2	6.9	7.5	7.0	6.4	5.2	5.2	4.1	3.4	5.4	5.4	6.4	5.6	3.3	4.2	6.4	8.3	8.2	6.54	8.59
29-Jul	4.9	5.7	4.9	4.7	5.4	5.9	8.5	7.4	7.0	7.0	7.1	6.1	5.0	4.6	4.0	3.8	3.6	3.6	3.2	3.5	4.3	4.1	4.8	3.6	5.12	8.53
30-Jul	3.6	3.0	3.4	3.6	4.0	4.7	4.4	4.0	3.9	4.2	4.5	5.4	5.6	5.5	5.3	5.9	4.8	3.1	2.4	4.1	5.7	3.9	3.7	3.1	4.24	5.90
31-Jul	2.8	2.3	2.4	1.9	1.6	2.5	1.7	1.5	1.1	0.8	0.8	0.6	0.7	0.8	0.9	0.7	0.8	0.9	0.8	0.9	1.0	0.9	1.3	1.6	1.31	2.77
	5.80	5.38	5.74	5.82	5.58	5.66	5.97	5.56	5.75	5.61	5.21	4.92	4.48	4.22	4.08	4.24	3.96	3.97	3.89	4.24	4.91	5.74	5.75	5.68	Diurnal Average	
	27.31	16.17	21.24	18.41	11.38	15.92	20.52	10.44	15.32	16.79	17.74	18.67	12.51	10.72	12.16	16.02	11.96	10.17	11.22	13.26	12.76	14.22	15.44	16.08	Diurnal Maximum	

AF - Analyzer Failure

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m^3 24-hr 30 ul/m^3

WEYERHAEUSER – DRAYTON VALLEY
STATION #911

METEOROLOGICAL DATA

JULY 2016

WCAS - Drayton Valley
Summary of Hourly Averages

External Temperature (ET) - C
July 2016

Maximum Value: 27.48 C on Jul 29 16:00

Maximum Daily Average: 20.35 C on Jul 26

Minimum Value: 8.2 C on Jul 4 05:00

Minimum Daily Average: 13.96 C on Jul 15

Maximum Diurnal Average: 21.20 C at hour 15

Minimum Diurnal Average: 12.42 C at hour 6

Monthly Average: 16.910 C

Percentiles: P_1 = 9.9 P_{10} = 12.4 Q_1 = 13.7 Median = 16.3 Q_3 = 19.8 P_{90} = 22.3 P_{99} = 26.3

Hours in Service:	744
Hours of Data:	710
Hours of Missing Data:	34
Hours of Calibration:	0
Percent Operational Time:	95.4

Day	Hourly Period Ending At																								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-Jul	12.4	11.4	11.0	10.4	10.0	10.0	11.7	13.9	16.5	18.3	19.7	21.0	22.2	22.7	23.4	23.0	22.2	21.6	20.8	18.6	15.5	14.7	14.3	13.9	16.64	23.41
2-Jul	13.6	13.7	13.5	13.2	12.9	12.6	12.5	12.9	13.7	15.2	17.3	18.4	20.2	21.4	21.8	22.0	21.9	21.1	16.3	16.2	16.2	16.2	15.6	15.1	16.40	21.99
3-Jul	14.7	14.0	13.8	13.6	13.3	13.7	14.8	15.7	14.8	14.2	15.0	16.9	17.6	18.3	19.5	20.4	19.3	19.5	20.0	19.4	16.8	14.6	13.2	12.0	16.05	20.35
4-Jul	11.6	10.6	10.0	9.5	8.2	8.3	10.1	12.3	14.6	16.6	17.5	17.7	18.5	19.5	18.4	18.7	20.1	19.4	17.4	15.9	14.0	12.9	12.1	11.8	14.39	20.14
5-Jul	11.8	11.3	10.4	9.7	9.0	9.1	10.1	11.7	13.6	15.0	16.2	17.6	18.6	19.6	19.3	20.2	20.1	19.8	19.8	19.2	17.9	15.7	13.9	12.5	15.08	20.18
6-Jul	11.6	11.3	11.4	11.4	10.6	10.8	12.3	14.0	15.2	16.5	17.5	18.7	20.0	20.3	21.2	17.3	19.8	20.0	15.9	15.2	14.5	13.8	12.7	12.8	15.20	21.25
7-Jul	12.6	12.8	12.5	12.2	12.2	12.0	12.9	15.3	16.8	18.6	19.6	20.6	21.5	21.2	21.8	21.8	22.1	22.3	22.0	20.9	19.5	17.9	17.0	15.9	17.58	22.27
8-Jul	14.1	13.5	12.9	11.7	11.5	11.8	13.1	14.5	16.7	17.8	18.9	20.1	20.8	21.4	21.3	22.5	23.3	22.3	20.1	17.0	15.9	15.0	14.3	13.3	16.83	23.30
9-Jul	12.8	12.6	12.5	12.8	12.6	13.1	13.6	14.5	14.7	16.5	17.1	17.8	18.9	19.3	19.6	14.8	13.1	14.4	15.6	14.7	14.4	14.1	13.8	13.5	14.87	19.56
10-Jul	13.1	13.1	13.2	12.9	12.4	12.4	12.3	12.3	12.9	13.8	14.4	14.7	13.7	13.6	15.0	16.3	16.5	16.4	16.5	15.8	14.9	14.1	13.5	13.1	14.04	16.52
11-Jul	12.8	12.7	12.8	12.4	12.4	12.6	13.0	13.6	14.1	15.3	16.1	17.7	19.0	19.6	19.6	14.9	14.6	15.3	17.0	17.3	16.2	14.9	14.5	13.8	15.09	19.64
12-Jul	13.0	12.6	12.2	12.2	12.0	12.2	12.9	14.5	16.5	18.1	19.2	19.5	18.4	18.1	17.7	16.9	17.3	17.5	16.8	16.4	15.8	15.0	14.3	13.9	15.54	19.47
13-Jul	13.6	13.4	13.2	13.1	12.9	13.0	13.4	14.0	14.7	15.6	16.5	17.1	16.9	19.8	19.3	17.7	17.9	17.5	17.7	16.0	15.5	14.2	13.5	12.9	15.40	19.84
14-Jul	12.7	13.2	12.7	12.1	12.0	12.1	12.4	13.5	15.0	16.6	18.4	18.8	17.5	17.1	17.0	16.7	16.9	16.6	16.9	16.4	15.4	14.1	13.2	12.9	15.00	18.82
15-Jul	12.9	12.8	12.4	12.0	11.3	11.9	12.3	14.6	15.4	15.6	16.6	14.9	12.2	12.7	14.4	16.8	16.4	13.8	15.5	15.2	14.5	13.8	13.8	13.3	13.96	16.78
16-Jul	13.2	12.7	12.5	12.1	11.9	11.7	12.1	13.4	15.6	17.2	18.8	19.9	20.8	21.4	21.7	21.5	22.7	21.7	20.3	17.9	16.8	15.6	15.2	14.7	16.73	22.72
17-Jul	14.9	14.8	14.0	13.6	13.4	13.0	13.5	14.0	15.0	15.0	14.8	16.3	17.2	16.4	18.1	19.0	19.0	16.9	17.4	17.3	16.5	15.4	14.9	14.1	15.59	18.99
18-Jul	13.4	13.3	13.0	13.0	12.8	12.5	13.2	14.1	15.6	17.5	19.1	20.1	21.0	21.7	22.4	22.7	22.0	20.3	21.3	21.6	20.1	18.5	17.1	16.2	17.60	22.67
19-Jul	16.3	15.2	12.9	12.1	11.7	12.3	13.4	14.5	16.6	19.2	21.4	22.6	23.5	23.6	21.8	24.4	25.1	25.4	25.7	24.4	22.2	20.5	19.2	17.7	19.24	25.67
20-Jul	16.4	14.4	14.3	13.7	13.4	14.1	15.2	16.0	16.5	17.0	18.9	20.7	22.3	22.8	22.2	21.4	22.0	22.5	21.3	20.5	19.5	18.7	18.4	18.3	18.36	22.75
21-Jul	17.7	17.1	16.8	16.1	15.4	15.2	14.9	15.8	17.6	18.2	19.8	20.6	21.9	22.3	22.6	21.9	22.2	21.9	21.7	20.4	19.0	17.1	16.7	16.3	18.71	22.57
22-Jul	15.9	15.1	14.3	13.8	13.0	13.2	13.9	16.3	18.4	20.6	22.2	23.6	24.6	25.2	25.8	25.3	25.6	25.4	24.3	20.8	19.5	18.2	15.1	15.3	19.40	25.82
23-Jul	16.7	14.9	14.9	14.5	13.5	13.7	14.2	14.7	16.1	17.7	18.4	19.5	20.7	21.6	21.5	21.4	22.1	21.9	21.5	20.7	18.6	17.0	16.0	15.2	17.78	22.08
24-Jul	14.0	12.9	12.4	11.9	11.4	10.9	12.2	15.2	18.2	20.2	22.7	23.7	24.9	25.6	25.6	25.5	26.6	25.2	23.9	22.7	20.7	18.8	16.9	16.6	19.11	26.58
25-Jul	15.7	16.6	15.5	14.6	13.6	13.1	15.1	17.3	19.5	20.3	20.8	21.5	22.2	22.7	23.2	23.8	23.3	22.6	22.3	21.7	20.5	19.1	17.7	16.2	19.13	23.81
26-Jul	16.1	15.4	14.7	14.1	13.7	13.3	14.7	16.7	18.7	19.8	21.6	22.6	24.2	24.8	25.6	26.1	26.6	26.4	25.8	25.4	22.7	21.1	19.9	18.3	20.35	26.60
27-Jul	17.4	17.0	16.4	15.8	16.5	15.4	15.7	16.7	17.0	18.5	20.5	21.6	19.4	21.7	23.1	24.5	24.0	22.9	20.6	18.7	17.6	17.3	17.2	16.5	18.84	24.54
28-Jul	16.2	16.4	15.2	14.2	13.7	13.2	13.8	15.8	18.1	20.7	21.9	23.1	24.1	25.1	25.3	21.6	17.1	16.3	17.3	19.3	18.3	16.5	15.3	15.1	18.07	25.30
29-Jul	14.4	14.0	13.5	12.8	12.1	11.9	13.0	15.6	18.6	21.6	23.3	24.5	25.7	25.9	26.6	27.5	27.0	26.6	25.7	23.9	20.4	19.0	16.7	14.3	19.78	27.48
30-Jul	14.6	14.4	13.7	13.5	13.4	13.6	13.7	14.5	16.5	18.9	20.2	21.2	21.2	19.4	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	21.24
31-Jul	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--
	14.21	13.77	13.28	12.83	12.43	12.42	13.20	14.60	16.10	17.53	18.81	19.77	20.32	20.82	21.20	20.92	20.93	20.46	19.91	18.95	17.57	16.34	15.38	14.67	Diurnal Average	
	17.74	17.14	16.78	16.05	16.54	15.43	15.73	17.35	19.47	21.60	23.31	24.50	25.69	25.93	26.56	27.48	26.95	26.65	25.80	25.36	22.75	21.14	19.94	18.33	Diurnal Maximum	

AF - Analyzer Failure

West Central Airshed Society

WCAS - Drayton Valley

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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	4.8	4.8	5.2	5.4	4.9	5.9	4.7	5.6	3.5	5.5	7.1	7.6	7.3	8.2	8.1	8.9	6.7	6.1	8.4	9.0	5.6	7.6	2.5	2.8	3.64	8.95
Dir	SSW	S	S	S	S	S	S	SSW	SSE	S	S	SSE	SE	SE	ESE	ESE	ESE	ESE	SSE	W	WNW	NW	N	NNE	S	W
2 Spd	2.0	1.6	1.7	6.6	6.9	7.5	7.0	4.6	4.3	3.2	1.9	3.9	4.0	3.2	5.1	4.7	5.6	0.5	3.3	0.7	2.7	4.2	4.3	5.4	0.77	7.50
Dir	NE	N	SSW	S	SSE	SSW	SW	SW	SW	W	ESE	ESE	ESE	SE	ENE	E	ENE	E	N	SSE	N	NNE	NNE	NNW	SE	SSW
3 Spd	7.5	3.2	3.0	3.4	3.6	5.8	6.7	7.8	11.1	19.2	17.1	16.9	18.8	16.3	18.0	20.4	13.2	12.3	10.7	8.3	11.4	7.2	3.5	4.3	7.32	20.38
Dir	N	NE	E	ESE	SE	SE	SSE	SSW	W	NW	NW	NW	NW	NW	NW	NW	NNW	NW	NNW	NNW	NW	WNW	SW	S	NW	NW
4 Spd	4.0	4.9	3.1	4.0	3.4	3.7	6.1	5.4	5.0	0.3	2.8	3.5	1.2	1.6	1.9	4.6	3.2	4.9	2.7	8.7	8.0	9.1	11.8	1.4	2.96	11.76
Dir	WSW	S	S	S	S	S	S	SSW	S	NNW	ENE	S	W	SE	NNW	ENE	WNW	NW	S	SSW	SW	SW	SW	SW	SSW	SW
5 Spd	1.4	5.0	5.9	8.8	5.4	5.5	11.1	11.5	10.0	10.6	8.1	7.5	6.1	7.3	6.9	7.7	6.8	4.1	4.3	5.0	2.1	4.1	3.9	5.0	4.59	11.45
Dir	NW	SW	W	NW	NW	WNW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	N	NNW	NNE	N	NNE	NNE	SSE	SSW	SSW	S	NW	NW
6 Spd	4.2	3.5	4.3	9.7	8.6	9.2	12.8	13.8	13.6	12.5	11.2	10.1	10.0	12.2	10.8	1.6	5.5	9.2	8.5	6.5	1.8	2.8	6.9	10.6	6.63	13.83
Dir	SSW	SSW	WNW	NW	NW	NW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NNW	NNE	NNW	N	NNE	NE	NNW	W	SSW	WNW	NW	WNW
7 Spd	8.8	13.8	11.1	5.7	4.4	5.8	5.2	5.8	9.4	6.8	8.9	7.9	9.2	6.2	4.7	1.5	3.4	5.6	9.4	11.1	5.4	4.8	2.4	3.6	2.85	13.82
Dir	WSW	WNW	WNW	W	WSW	SW	SSW	SW	SW	W	W	W	W	WNW	SW	N	ESE	SE	SE	SE	ESE	E	E	ENE	WSW	WNW
8 Spd	5.3	4.9	1.8	1.3	1.1	4.5	3.2	7.1	8.4	7.5	8.6	8.7	8.7	8.7	8.5	5.7	4.4	7.9	10.0	8.7	5.9	3.8	4.2	4.1	4.93	10.02
Dir	NE	NE	E	S	W	NW	N	NW	NNW	NNW	N	N	N	N	NNW	N	N	NNE	NE	NE	NE	NE	NE	NE	N	NE
9 Spd	2.1	6.7	2.8	1.8	1.8	1.8	3.3	1.8	1.7	3.6	5.8	6.9	6.7	5.0	3.6	13.3	4.6	6.6	2.4	6.5	3.2	2.9	0.8	2.7	1.23	13.33
Dir	NE	NW	WNW	W	SSE	S	NNW	NE	NE	NE	NE	NE	NE	ENE	NNE	WSW	WNW	W	SW	SW	NW	NW	NW	WSW	NW	WSW
10 Spd	3.4	6.1	7.5	10.6	8.1	2.8	6.7	7.5	8.6	9.0	9.2	10.0	8.6	7.2	9.4	15.6	15.0	10.5	10.4	11.9	8.3	9.1	8.1	7.9	8.47	15.58
Dir	WSW	WNW	WNW	NW	NW	NNW	WNW	NW	WNW	W	W	NW	NNW	WNW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW
11 Spd	6.9	5.9	8.1	7.4	9.7	7.7	10.1	9.3	8.2	9.3	10.0	9.2	10.1	9.8	6.3	8.3	4.5	6.0	6.7	5.9	6.4	3.8	6.6	4.8	6.89	10.09
Dir	NW	NW	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	WNW	WNW	SSW	WSW	W	W	WNW	W	WNW	W	WNW	NW
12 Spd	6.2	5.3	5.0	7.8	7.8	6.7	7.5	7.4	9.0	6.1	4.7	7.2	5.8	5.8	12.1	16.8	11.7	8.3	7.7	6.2	6.5	5.4	5.1	7.4	6.74	16.84
Dir	W	W	W	WNW	WNW	WNW	WNW	NW	NW	NNW	WNW	WNW	NW	W	NW	NNW	N	NW	W	W	WNW	W	W	WNW	WNW	NNW
13 Spd	6.8	6.6	9.6	8.3	8.4	7.5	9.6	9.9	8.3	8.2	6.4	6.5	5.8	1.1	8.3	12.6	10.1	4.8	3.3	8.0	5.5	4.5	2.9	3.4	5.75	12.60
Dir	NW	WNW	NW	WNW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NW	WNW	WNW	NW	NNW	NNE	WSW	SW	WSW	WSW	SSW	SW	NW	NW
14 Spd	3.2	5.9	4.3	6.5	5.5	6.7	6.6	6.4	6.1	4.7	5.1	5.9	5.7	8.4	7.7	7.5	7.8	5.6	5.5	5.2	3.3	1.7	3.2	2.1	3.64	8.39
Dir	WSW	WNW	W	WNW	WNW	NW	WNW	NW	NNW	NNW	NNE	NNE	SW	SSW	W	WSW	SW	W	NW	NNW	NNE	NNW	NNW	NNW	WNW	SSW
15 Spd	4.8	5.8	2.6	1.6	3.4	2.5	5.5	2.1	1.7	7.0	4.3	4.0	4.9	7.5	6.6	2.4	6.7	1.5	1.5	6.7	4.8	2.9	4.3	4.9	1.54	7.50
Dir	N	N	N	NNE	NW	NNE	SSW	WNW	WSW	WNW	N	S	SSW	SSW	WNW	NW	ESE	ESE	ENE	N	N	NNW	NNW	NNW	NW	SSW
16 Spd	3.1	4.0	5.4	5.0	5.5	8.0	6.5	7.2	5.9	6.8	4.5	6.4	8.8	7.4	7.4	5.8	8.5	8.0	11.1	10.2	7.3	5.2	3.5	3.4	3.43	11.08
Dir	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNE	NNE	NNE	NNE	NNE	N	NNW	NNW	WSW	SSW	SSW	S	SW	SW	NW	WSW
17 Spd	5.9	8.4	7.8	10.7	10.2	9.9	8.5	8.5	8.5	8.5	6.8	7.8	10.6	5.6	2.6	5.1	7.0	6.9	3.5	3.9	5.5	4.1	3.1	3.5	5.41	10.73
Dir	WNW	NW	NW	NW	NW	NW	NW	NW	NW	NW	WNW	W	NW	NW	NNW	N	NNW	NW	SW	SW	SSW	SW	SW	SSW	NW	NW
18 Spd	3.2	2.2	3.0	3.7	4.1	4.5	7.2	7.1	8.4	7.6	9.2	8.3	9.4	10.1	8.2	7.5	9.7	11.2	9.7	10.1	8.7	4.9	4.1	2.1	6.51	11.20
Dir	SSW	S	S	SSE	S	S	SSW	S	S	S	SSE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SSE	S	S	S	SSW	WSW	SSE	SSE
19 Spd	5.9	2.2	3.2	4.5	6.3	2.5	5.6	5.8	6.3	4.3	7.0	10.2	10.1	8.5	10.3	12.5	12.8	10.2	8.4	8.3	10.8	7.1	8.1	10.3	6.48	12.77
Dir	WNW	WNW	S	S	S	SSW	SSW	SW	W	SSW	WSW	WSW	WSW	W	SW	SW	SW	SW	WSW	WNW	WNW	WNW	SW	SW	WSW	SW
20 Spd	11.1	6.9	4.9	3.7	4.8	5.5	5.9	5.9	5.3	7.5	8.4	9.7	10.1	14.8	13.5	10.0	7.7	6.5	9.5	10.3	4.3	4.8	5.4	5.3	6.00	14.75
Dir	SW	SSW	SSW	S	S	WSW	W	W	W	SW	SW	SW	WSW	WNW	WNW	W	WNW	W	NNW	NW	W	SW	WSW	WSW	WSW	WNW
21 Spd	4.2	3.4	4.2	2.7	2.6	3.9	7.2	4.3	6.2	4.8	8.0	8.9	8.6	10.6	9.1	10.8	9.5	12.5	11.2	6.4	5.7	3.0	2.7	2.2	4.23	12.52
Dir	WSW	WSW	WNW	WSW	SW	SSW	SSW	SSW	WSW	WSW	W	WNW	W	W	W	NNW	NW	NW	NW	NNE	N	N	N	N	WNW	NW
22 Spd	0.2	1.8	2.6	2.7	4.2	5.1	7.0	10.0	13.5	13.8	12.0	7.8	6.5	6.1	6.2	8.9	7.4	5.9	5.5	10.6	1.0	13.8	14.3	6.1	4.15	14.31
Dir	SSE	S	S	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	S	SSE	SE	SE	NNE	N	NE	WNW	W	WNW	SSW	W

WCAS - Drayton Valley
Summary of Hourly Averages

Wind Speed (WS) - kph
July 2016

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
23 Spd	9.1	8.5	8.7	2.3	2.2	3.3	4.0	5.8	6.1	7.9	9.6	8.3	6.2	5.6	8.9	6.7	4.1	6.5	7.8	6.2	1.3	1.5	0.8	1.0	4.61	9.58
Dir	NNW	NW	NW	NNW	SW	WSW	W	WNW	NNW	NW	NW	WNW	NW	WNW	NW	W	SW	WSW	NW	NNW	NNE	SSE	S	W	WNW	NW
24 Spd	2.0	3.7	3.5	4.5	5.0	5.7	7.7	8.5	10.4	9.0	4.5	8.2	6.9	4.0	4.1	5.8	3.0	8.6	9.7	10.0	9.4	4.9	2.0	2.0	2.47	10.40
Dir	SSW	SSE	S	S	SSE	S	S	SSW	SSW	SSW	SSW	S	SSW	WSW	WNW	NW	W	NW	N	NNW	NNW	NNW	WNW	W	WSW	SSW
25 Spd	3.5	6.3	0.7	1.9	3.6	2.2	2.2	4.3	2.7	4.0	6.1	8.7	8.2	12.1	8.5	6.1	11.4	11.6	10.0	13.5	10.7	8.1	5.6	3.1	5.56	13.54
Dir	WNW	NNW	SW	S	SSE	S	SSE	S	SSW	S	SSE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SE	SSE	SSE	SSE	SSE	S	SSE	SSE
26 Spd	6.0	6.0	5.3	4.9	5.6	3.4	6.0	7.0	6.0	8.7	6.5	2.5	4.7	5.0	5.0	3.0	0.8	1.4	4.7	3.2	5.0	6.9	5.1	2.4	0.42	8.71
Dir	SSE	SE	SSE	S	S	SSW	WNW	NW	NW	NNW	NNW	N	NNE	N	N	NE	N	ESE	ENE	ESE	ESE	SE	S	S	ENE	NNW
27 Spd	0.7	0.9	0.9	3.0	0.4	2.3	3.1	3.1	4.3	4.0	9.2	11.1	6.0	4.2	7.1	3.7	5.2	4.4	10.6	8.7	9.1	8.6	8.5	6.1	2.29	11.12
Dir	SSE	SW	SSE	NNE	NE	S	SSW	WSW	NW	WNW	NW	NW	SW	S	S	E	E	ESE	SSE	SSW	SSW	SW	SW	S	SSW	NW
28 Spd	2.7	2.0	2.9	4.4	3.0	5.1	4.2	4.9	5.2	3.5	2.6	4.5	2.2	0.7	2.0	9.4	6.5	7.2	7.8	5.2	3.5	3.8	4.1	4.4	2.99	9.38
Dir	NNW	NNW	S	SSW	SSW	S	SSW	SW	S	SSW	S	SW	SSW	WNW	WNW	W	NNW	S	S	SW	SW	S	S	S	SSW	W
29 Spd	4.3	5.4	5.5	6.4	6.2	5.4	5.1	4.8	4.2	3.7	4.9	2.5	3.6	4.8	6.4	2.9	8.5	12.3	9.1	2.3	6.3	6.4	16.7	8.8	2.74	16.69
Dir	S	S	S	S	S	SSW	SSW	S	S	S	SSW	SW	W	S	S	SW	SSE	SE	SE	NNE	NE	ENE	NW	NE	S	NW
30 Spd	3.9	1.7	4.6	6.9	4.7	3.5	2.6	2.9	4.1	7.8	5.2	5.6	6.8	11.1	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	11.11
Dir	NE	NW	WNW	WNW	SW	S	WSW	W	WSW	WNW	NNW	N	NNE	N	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	N
31 Spd	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--
Dir	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--
Spd	2.05	2.19	2.39	2.25	2.19	2.39	3.48	3.83	3.84	4.21	3.34	2.98	2.95	2.77	3.34	3.44	1.58	1.50	1.02	1.72	1.60	2.10	2.75	1.88	Diurnal Average	
Dir	WNW	WNW	W	W	WSW	WSW	WSW	W	W	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	WNW	WNW	W	W	WSW	W		
Spd	11.09	13.82	11.13	10.73	10.21	9.86	12.82	13.83	13.63	19.21	17.06	16.93	18.82	16.29	18.00	20.38	15.03	12.52	11.24	13.54	11.45	13.75	16.69	10.59	Diurnal Maximum	
Dir	225.17	303.19	303.02	314.16	316.87	314.47	301.81	300.97	302.84	317.77	317.73	317.47	313.07	315.70	311.26	310.00	309.18	311.95	312.12	153.66	317.66	293.33	323.23	289.16		

Maximum Speed Value: 20.4 kph on Jul 3 16:00
Maximum Daily Speed Average: 8.47 kph on Jul 3
Maximum Diurnal Speed Average: 4.21 kph at hour 10

Minimum Speed Value: 0.2 kph on Jul 22 01:00
Minimum Daily Speed Average: 0.42 kph on Jul 2
Minimum Diurnal Speed Average: 1.02 kph at hour 19

Monthly Average Velocity: 2.472 kph 279.45 deg

Speed Percentiles: P_1 = 0.7 P_{10} = 2.5 Q_1 = 4.0 Median = 5.9 Q_3 = 8.4 P_{90} = 10.3 P_{99} = 16.8

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

Hours in Service:	744
Hours of Data:	710
Hours of Missing Data:	34
Percent Operational Time:	95.4

AF - Analyzer Failure

Frequency Distribution

Direction	Speed Range (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	35	45	3	0	0	0	83
NorthEast	22	18	0	0	0	0	40
East	14	6	0	0	0	0	20
SouthEast	13	26	6	0	0	0	45
South	74	65	4	0	0	0	143
SouthWest	44	44	6	0	0	0	94
West	37	61	2	0	0	0	100
NorthWest	29	124	30	2	0	0	185
Total	268	389	51	2	0	0	710

WCAS - Drayton Valley
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
July 2016

Maximum Value: 10.48 kph on Jul 22 22:00

Maximum Daily Average: 3.66 kph on Jul 3

Minimum Value: 0.7 kph on Jul 24 04:00

Minimum Daily Average: 2.17 kph on Jul 28

Maximum Diurnal Average: 3.74 kph at hour 15

Minimum Diurnal Average: 1.60 kph at hour 5

Monthly Average: 2.622 kph

Percentiles: P_1 = 0.8 P_{10} = 1.3 Q_1 = 1.8 Median = 2.5 Q_3 = 3.3 P_{90} = 3.9 P_{99} = 6.2

Hours in Service:	744
Hours of Data:	710
Hours of Missing Data:	34
Hours of Calibration:	0
Percent Operational Time:	95.4

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-Jul	1.0	1.1	1.4	1.3	1.1	1.4	1.3	1.7	1.9	2.4	2.7	2.9	3.7	3.8	3.8	4.3	2.8	2.9	2.5	3.4	2.6	2.3	1.8	1.2	2.30	4.29
2-Jul	1.7	1.5	1.4	2.1	1.8	2.1	2.3	1.9	1.8	1.7	2.3	2.3	2.7	3.1	3.5	2.7	3.1	5.7	5.3	2.4	2.1	1.8	2.1	4.8	2.59	5.74
3-Jul	3.1	2.0	2.0	2.0	1.7	2.8	2.4	2.7	4.1	5.6	5.2	5.7	6.2	5.9	5.4	5.7	4.8	4.2	3.7	2.6	4.5	2.5	1.5	1.2	3.66	6.20
4-Jul	1.7	1.6	0.9	0.8	1.4	1.4	1.4	1.5	1.8	2.7	2.6	2.7	3.7	3.2	6.1	2.8	3.8	2.8	2.6	3.3	2.9	3.0	3.3	3.9	2.57	6.09
5-Jul	1.6	1.1	3.8	3.7	1.9	2.2	3.8	3.6	3.9	3.7	3.1	3.4	3.6	3.6	4.4	4.0	3.1	2.4	2.3	3.0	1.3	1.2	0.9	1.1	2.78	4.40
6-Jul	1.2	1.2	2.2	2.1	2.1	2.8	3.5	4.0	3.7	4.0	3.7	4.0	4.3	6.1	5.3	3.0	3.1	6.3	5.0	3.4	1.6	2.2	2.0	4.1	3.36	6.29
7-Jul	3.6	3.9	3.4	2.2	1.5	1.6	1.5	2.4	3.4	3.0	3.1	3.9	4.5	3.6	2.6	2.8	2.7	3.1	3.6	3.7	1.8	1.6	1.5	1.4	2.76	4.48
8-Jul	2.2	1.6	1.8	0.9	1.2	2.1	1.5	2.6	2.7	2.9	3.6	3.7	3.7	3.9	4.0	3.3	3.2	5.5	4.8	4.2	3.6	2.4	2.1	2.0	2.90	5.52
9-Jul	2.1	2.8	1.5	1.2	1.4	1.7	1.8	1.2	1.7	2.6	3.3	3.7	3.3	2.8	2.3	5.7	2.6	2.7	3.2	2.3	1.9	1.7	1.4	1.3	2.34	5.73
10-Jul	1.5	2.8	3.4	2.8	2.7	2.2	2.3	2.4	2.9	2.9	3.4	3.3	3.2	3.2	3.5	4.8	3.8	3.2	3.2	3.1	2.1	2.3	2.2	1.8	2.88	4.83
11-Jul	1.8	1.8	2.7	2.2	2.5	2.1	2.4	2.8	2.5	2.7	2.9	3.3	3.7	3.5	4.9	5.0	1.6	1.9	2.6	2.3	2.0	1.8	2.3	2.3	2.65	5.01
12-Jul	2.6	2.6	2.3	2.4	2.4	2.0	2.7	2.3	3.1	2.5	2.7	4.1	3.2	3.0	3.5	6.0	6.2	3.7	2.9	2.4	2.2	2.0	2.8	2.1	2.98	6.24
13-Jul	2.2	2.2	2.7	2.4	2.5	2.3	2.8	2.8	2.4	2.7	2.5	2.4	2.4	1.8	5.2	3.7	3.6	2.9	2.0	2.3	2.0	1.9	1.2	1.4	2.52	5.18
14-Jul	1.9	2.7	1.9	1.9	2.0	2.4	2.3	2.0	2.3	2.2	3.3	3.4	2.7	2.5	3.0	1.9	2.5	1.9	2.1	1.9	1.9	1.2	1.1	1.5	2.19	3.36
15-Jul	1.8	2.3	1.5	1.2	1.2	1.5	1.9	1.6	2.8	2.5	2.9	5.2	2.3	3.6	2.7	2.0	3.2	2.0	1.6	2.3	2.0	1.8	1.8	1.4	2.21	5.16
16-Jul	1.3	1.3	1.5	1.6	1.6	2.2	1.9	2.2	2.4	2.8	3.3	3.8	4.4	3.7	3.5	3.4	4.5	3.1	4.3	3.0	2.6	1.5	1.3	1.3	2.61	4.54
17-Jul	2.2	2.6	2.1	2.4	2.6	2.5	2.3	2.6	2.5	2.3	2.0	2.8	4.2	2.4	2.0	2.8	3.4	2.7	1.1	1.0	1.5	1.4	0.8	1.2	2.23	4.16
18-Jul	1.9	1.0	1.4	1.0	1.1	1.2	1.7	1.8	2.8	2.5	3.2	3.8	4.1	3.7	3.6	3.3	3.2	3.4	2.9	2.9	2.3	1.6	0.7	1.9	2.38	4.14
19-Jul	2.0	1.7	1.3	1.3	1.2	1.8	2.1	1.7	1.8	2.6	3.2	3.5	4.0	3.6	3.9	3.8	3.7	3.5	3.0	3.4	3.7	3.3	2.6	3.5	2.76	3.99
20-Jul	3.0	3.8	1.3	1.4	0.9	2.2	2.0	2.5	1.9	2.2	2.7	3.2	3.8	4.9	4.6	5.7	3.5	2.2	3.9	3.9	1.4	1.1	2.2	1.5	2.75	5.73
21-Jul	1.3	1.1	1.9	2.0	1.4	2.0	1.5	0.9	1.9	2.3	3.3	2.9	3.6	3.9	3.7	4.7	3.3	4.9	3.7	3.2	2.4	1.9	1.6	2.1	2.57	4.91
22-Jul	1.0	1.2	1.0	1.2	1.0	1.1	1.9	2.8	3.7	3.9	3.8	3.4	3.7	3.3	3.8	3.0	3.5	3.0	5.5	3.4	1.8	10.5	4.9	2.6	3.14	10.48
23-Jul	2.3	2.2	2.5	2.1	1.3	1.2	1.6	2.0	2.0	3.0	3.9	3.8	3.8	3.1	3.6	3.0	2.5	1.9	2.2	2.2	1.6	1.0	0.8	1.2	2.29	3.89
24-Jul	2.0	0.7	0.9	0.7	0.8	1.0	1.9	2.1	2.9	3.0	3.1	3.7	4.1	2.9	3.0	2.1	2.2	3.0	3.5	3.7	3.8	2.6	1.8	2.1	2.41	4.10
25-Jul	3.5	2.2	1.3	1.7	1.2	1.0	1.1	1.1	1.6	2.7	2.7	3.5	4.6	3.6	3.4	3.1	3.8	3.1	2.7	3.0	3.0	2.3	1.2	1.8	2.47	4.55
26-Jul	1.3	2.1	1.7	1.7	1.3	1.0	2.9	2.9	2.5	3.0	2.7	3.4	3.1	3.6	3.3	2.9	2.6	2.5	2.5	1.6	1.6	2.4	1.6	1.2	2.31	3.60
27-Jul	1.0	0.8	1.3	2.9	1.8	1.8	1.5	2.0	2.3	2.5	3.4	3.3	4.7	2.7	2.8	2.9	2.5	2.4	3.7	2.3	2.4	2.2	2.6	1.6	2.40	4.68
28-Jul	2.0	2.9	1.6	1.4	1.5	1.3	1.1	1.1	1.8	2.2	2.4	2.7	2.8	2.9	3.1	6.1	6.6	2.0	1.8	1.6	1.1	0.7	0.8	0.7	2.17	6.57
29-Jul	0.8	0.9	1.3	1.3	1.2	1.4	1.6	1.2	1.5	2.2	2.4	2.4	2.9	3.4	3.7	3.0	3.9	3.5	3.7	4.4	4.0	3.5	7.6	5.1	2.78	7.64
30-Jul	3.1	2.0	2.1	2.7	1.7	1.5	1.6	2.0	1.9	3.0	2.6	3.0	3.2	8.5	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	8.54
31-Jul	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--
	1.95	1.93	1.87	1.82	1.60	1.79	2.03	2.15	2.48	2.82	3.06	3.43	3.67	3.67	3.74	3.71	3.43	3.18	3.18	2.83	2.34	2.27	2.02	2.05	Diurnal Average	
	3.56	3.92	3.77	3.66	2.73	2.81	3.83	4.03	4.10	5.58	5.22	5.72	6.20	8.54	6.09	6.08	6.57	6.29	5.51	4.40	4.51	10.48	7.64	5.08	Diurnal Maximum	

AF - Analyzer Failure

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WCAS - Drayton Valley
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
July 2016

Maximum Value: 98.47 deg on Jul 28 14:00

Maximum Daily Average: 49.04 deg on Jul 2

Minimum Value: 5.2 deg on Jul 18 02:00

Minimum Daily Average: 20.43 deg on Jul 18

Maximum Diurnal Average: 44.44 deg at hour 14

Minimum Diurnal Average: 21.25 deg at hour 7

Monthly Average: 31.944 deg

Percentiles: P_1 = 7.8 P_{10} = 14.5 Q_1 = 17.7 Median = 26.0 Q_3 = 40.1 P_{90} = 59.1 P_{99} = 93.4

Hours in Service:	744
Hours of Data:	710
Hours of Missing Data:	34
Hours of Calibration:	0
Percent Operational Time:	95.4

Day	Hourly Period Ending At																								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-Jul	16.0	12.1	16.0	10.0	10.3	11.0	19.3	20.8	33.7	31.1	29.2	28.9	46.8	34.3	35.5	31.1	24.3	23.2	20.1	37.5	47.9	16.3	62.8	39.2	27.38	62.77
2-Jul	64.8	56.6	52.9	18.2	17.3	17.6	23.8	25.1	38.3	40.5	84.1	52.8	60.7	74.0	46.3	43.3	37.5	75.0	86.8	89.3	66.2	24.8	31.3	49.8	49.04	89.27
3-Jul	35.7	47.7	43.8	42.5	31.2	24.9	31.9	24.4	28.7	17.6	16.1	20.8	19.9	21.8	22.2	17.8	28.4	22.7	26.1	22.3	15.5	21.3	44.4	18.1	26.91	47.69
4-Jul	29.7	28.1	25.4	14.5	16.3	18.9	17.6	22.2	32.3	96.4	69.1	65.9	96.9	93.9	98.3	48.9	91.6	43.2	79.5	16.7	20.2	18.1	13.9	95.4	48.05	98.33
5-Jul	87.1	16.2	43.8	22.7	25.1	25.1	16.6	17.4	22.8	25.4	31.7	40.5	41.1	44.4	58.7	37.8	38.7	48.3	43.1	39.3	42.2	22.2	12.6	8.3	33.80	87.05
6-Jul	10.0	12.8	47.9	11.3	12.1	15.3	13.9	14.9	17.0	19.4	23.7	28.6	31.9	26.7	39.6	79.9	40.0	40.1	36.6	29.8	59.0	71.3	20.8	21.2	30.15	79.91
7-Jul	20.0	15.0	15.5	29.3	25.6	16.5	21.3	30.6	28.1	30.6	23.6	31.8	37.5	52.7	47.9	84.9	57.3	46.7	20.7	14.7	21.3	26.3	25.9	19.6	30.97	84.92
8-Jul	19.2	12.9	75.3	28.7	57.8	23.4	31.0	16.9	23.8	29.5	30.7	33.2	34.9	36.2	33.0	41.6	63.9	40.1	28.1	29.5	33.1	37.2	26.1	29.5	33.99	75.27
9-Jul	59.7	20.0	37.3	56.8	78.0	69.8	60.8	60.8	56.2	44.4	34.4	36.0	35.6	43.3	53.5	23.3	60.1	28.5	89.7	25.9	45.4	50.6	73.8	33.1	49.03	89.65
10-Jul	36.0	25.5	27.3	16.7	17.4	58.8	18.7	23.2	18.2	21.9	21.8	23.7	29.4	19.3	19.0	19.8	17.5	19.4	20.4	15.3	13.5	12.7	14.3	12.5	21.76	58.81
11-Jul	13.7	15.7	14.6	15.4	14.2	14.4	12.6	16.7	16.9	19.6	17.9	22.1	25.6	28.4	53.6	34.6	36.7	19.6	24.2	19.7	16.5	22.4	16.9	20.7	21.36	53.56
12-Jul	17.8	22.2	26.8	12.9	15.6	15.1	16.1	23.4	20.7	33.0	44.9	45.1	33.0	26.6	16.0	30.3	32.5	27.6	22.3	23.8	19.2	31.7	26.2	14.5	24.90	45.13
13-Jul	16.1	16.6	15.4	14.3	14.6	15.7	15.7	14.6	17.2	22.2	31.4	28.7	35.8	85.5	47.6	16.1	39.9	44.9	54.8	24.6	21.2	21.3	19.7	17.0	27.12	85.50
14-Jul	45.3	18.9	21.9	14.9	16.0	17.8	15.5	23.6	28.1	41.5	46.0	41.2	53.8	21.1	25.0	16.4	23.7	26.8	21.4	33.2	32.0	49.7	25.6	30.2	28.73	53.81
15-Jul	27.1	29.4	31.4	44.6	29.8	32.3	28.7	62.7	92.2	25.7	49.0	93.1	44.4	46.7	25.2	66.1	36.5	80.4	85.2	31.5	28.8	22.1	22.4	15.0	43.76	93.07
16-Jul	24.4	19.8	16.3	17.1	15.8	14.0	16.0	18.1	31.9	30.5	49.6	48.4	38.4	38.0	39.2	40.2	34.1	23.4	28.5	16.7	20.0	13.0	27.5	35.5	27.35	49.56
17-Jul	17.6	14.9	13.0	11.8	14.2	13.0	14.4	16.3	16.9	16.8	20.3	26.5	31.7	29.9	55.7	44.5	36.1	18.6	26.3	25.5	11.4	15.6	16.6	7.4	21.47	55.74
18-Jul	7.1	5.2	15.8	8.1	10.9	11.7	12.3	14.6	17.9	27.5	22.5	33.3	30.9	29.2	30.1	29.7	26.6	15.6	19.2	17.5	13.5	14.0	18.7	58.6	20.43	58.56
19-Jul	16.4	48.6	14.7	12.3	12.5	45.9	20.0	16.8	21.5	55.1	33.6	24.5	24.1	29.8	20.3	21.6	17.2	20.6	27.7	16.8	19.0	48.4	17.3	15.6	25.01	55.09
20-Jul	17.7	55.1	17.5	15.4	13.9	19.3	19.7	24.9	24.5	15.3	25.5	22.4	31.6	24.7	21.8	23.5	34.7	27.8	27.6	16.5	30.3	17.8	21.7	17.7	23.62	55.15
21-Jul	17.6	20.1	30.3	37.7	21.1	32.1	11.3	16.6	23.9	37.4	28.7	25.3	27.4	23.5	42.9	29.2	23.5	21.6	25.2	33.5	32.6	35.2	29.8	44.2	27.95	44.20
22-Jul	82.8	31.2	16.7	14.7	16.2	13.6	14.0	13.0	16.9	19.8	20.1	32.2	42.4	45.3	47.3	29.0	34.6	28.7	59.2	31.1	86.6	15.3	22.8	44.6	32.44	86.57
23-Jul	22.8	12.1	14.5	54.5	46.1	25.8	26.3	18.4	21.6	21.9	24.5	39.6	44.4	48.3	29.5	37.6	55.5	19.8	19.6	29.1	62.6	14.8	18.8	65.5	32.23	65.49
24-Jul	69.3	12.9	13.4	9.0	7.9	14.7	12.7	18.5	16.3	26.8	57.7	28.0	51.5	71.6	53.5	25.8	57.3	23.0	29.6	28.3	24.6	36.1	44.5	71.9	33.54	71.85
25-Jul	51.8	17.9	65.3	56.5	13.7	5.7	7.6	20.3	51.0	44.7	39.2	31.6	40.7	22.4	32.4	38.7	20.8	17.0	16.1	13.4	15.2	18.3	15.2	36.1	28.83	65.28
26-Jul	17.2	18.6	20.3	18.5	14.5	27.6	25.9	27.3	36.1	24.3	37.6	78.0	51.2	55.1	55.1	68.4	90.5	95.4	37.1	32.2	21.5	28.2	11.5	23.5	38.15	95.36
27-Jul	75.6	18.4	68.3	63.9	94.1	48.8	25.8	54.3	41.3	28.3	19.2	21.4	59.5	46.2	31.4	63.8	34.4	26.5	20.3	14.5	17.4	15.3	14.9	13.6	38.21	94.15
28-Jul	71.3	75.7	38.6	31.8	22.6	17.5	19.0	21.0	22.8	51.6	71.6	49.7	86.1	98.5	83.6	48.9	72.7	18.3	15.5	17.0	13.6	15.0	12.5	9.3	41.01	98.47
29-Jul	7.9	7.7	8.4	8.6	6.6	9.9	11.8	16.0	26.2	46.7	46.1	78.4	54.7	68.8	45.7	71.1	42.6	16.3	20.3	78.2	44.9	36.8	35.7	31.2	34.20	78.39
30-Jul	65.5	81.8	29.9	21.5	25.3	33.3	56.8	31.8	33.1	28.0	40.1	38.7	35.0	47.0	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	81.77
31-Jul	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	--	--
	35.44	26.31	29.27	24.47	23.90	23.65	21.25	24.17	29.20	32.45	36.33	39.02	42.56	44.44	41.72	40.13	41.70	33.06	35.56	28.39	30.87	26.61	25.67	30.99	Diurnal Average	
	87.05	81.77	75.27	63.86	94.15	69.84	60.83	62.70	92.16	96.40	84.07	93.07	96.90	98.47	98.33	84.92	91.63	95.36	89.65	89.27	86.57	71.27	73.83	95.38	Diurnal Maximum	

AF - Analyzer Failure

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WEYERHAEUSER - EDSON
STATION #912

CONTINUOUS AIR MONITORING DATA

JULY 2016

Summary Report **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

Weyerhaeuser / Edson **July 2016**
Station 912

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile P10	Q1	Median	Q3	P90	Exceedences 1-hour	Exceedences 24-hour	24 Hour Average Max (ppm)
SO_2 (ppb)	36	707	99.9	0.2	0.0	3.6	0.0	0.0	0.1	0.2	0.4	0	0	0.000
O_3 (ppb)	36	707	99.9	22.2	2.1	43.9	7.5	13.1	23.3	30.5	35.8	0	-	0.036
NO (ppb)	36	707	99.9	1.0	0.0	14.2	0.0	0.1	0.2	1.2	2.9	-	-	-
NO_2 (ppb)	36	707	99.9	2.7	0.4	10.9	0.8	1.2	2.2	3.9	5.5	0	0	0.006
NOx (ppb)	36	707	99.9	3.7	0.4	20.5	0.8	1.4	2.5	4.9	7.9	-	-	-
Particulate Matter 2.5 microns (μ/m^3)	5	739	100.0	3.7	0.0	17.5	0.1	1.3	3.0	5.5	7.9	0	0	7.9 ug/m3
Wind Speed (kph)	0	744	100.0	5.3	0.1	18.7	1.9	3.1	4.7	6.9	9.2	-	-	-
Temperature (^oC)	0	744	100.0	15.9	5.1	29.0	11.2	12.6	15.2	19.0	22.3	-	-	-
Std Dev Wind Direction (deg)	0	744	100.0	35.2	9.7	95.5	15.0	19.2	30.2	43.8	65.1	-	-	-
Std Dev Wind Speed (kph)	0	744	100.0	2.7	0.5	9.7	1.4	1.7	2.3	3.3	4.3	-	-	-

WCAS - Edson
Summary of Hourly Averages

Sulphur Dioxide (SO_2) - ppb
July 2016

Maximum Value: 3.60 ppb on Jul 24 13:00

Maximum Daily Average: 0.63 ppb on Jul 24

Minimum Value: 0.0 ppb on Jul 1 01:00

Minimum Daily Average: 0.01 ppb on Jul 3

Maximum Diurnal Average: 0.41 ppb at hour 9

Minimum Diurnal Average: 0.07 ppb at hour 2

Monthly Average: 0.182 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.2 P_{90} = 0.4 P_{99} = 1.4

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	36
Percent Operational Time:	99.9

Day	Hourly Period Ending At																								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-Jul	0.0	0.0	0.0	Z	0.0	0.4	0.6	0.4	0.4	0.4	0.2	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	0.19	0.58
2-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.2	0.1	0.1	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.38
3-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	M	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	0.01	0.08
4-Jul	0.0	0.0	0.0	Z	0.0	0.3	0.1	0.4	0.3	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.10	0.41
5-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.12	0.28
6-Jul	0.2	0.1	0.2	Z	0.2	0.2	0.3	0.3	0.3	0.4	1.5	1.6	1.2	0.4	0.6	0.4	0.3	0.1	0.2	0.1	0.0	0.0	0.1	0.0	0.38	1.60
7-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.6	0.2	0.1	0.0	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.0	0.10	0.58
8-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.2	0.2	0.2	0.16	0.37
9-Jul	0.3	0.2	0.2	Z	0.2	0.3	0.3	0.1	0.2	0.3	0.5	0.6	0.3	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.18	0.56
10-Jul	0.0	0.0	0.0	Z	0.0	0.1	0.1	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	0.1	0.02	0.09
11-Jul	0.0	0.0	0.1	Z	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.06	0.15
12-Jul	0.0	0.0	0.1	Z	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.07	0.29
13-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.01	0.20
14-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.05	0.16
15-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.0	0.17	0.35
16-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.3	0.5	0.2	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	0.0	0.0	0.07	0.51
17-Jul	0.0	0.3	0.3	Z	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.07	0.33
18-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.2	0.6	0.7	0.5	0.4	0.2	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.14	0.69
19-Jul	0.0	0.0	0.0	Z	0.2	0.3	0.4	0.6	0.4	0.2	0.1	0.0	0.0	0.1	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.57
20-Jul	0.2	0.2	0.0	Z	0.2	0.1	0.2	0.3	0.5	0.9	0.3	0.4	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.19	0.90
21-Jul	0.1	0.1	0.1	Z	0.2	0.1	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.16	0.45
22-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.2	0.3	1.7	0.6	0.5	0.6	0.3	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.1	0.26	1.72
23-Jul	0.1	0.1	0.1	Z	0.2	0.1	0.1	0.2	0.8	0.5	0.3	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.23	0.85
24-Jul	0.3	0.3	0.3	Z	0.5	0.4	0.8	1.3	0.5	0.7	0.7	2.9	3.6	0.5	0.2	0.2	0.0	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.63	3.60
25-Jul	0.2	0.2	0.3	Z	0.3	1.1	0.8	0.6	2.2	0.5	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.5	0.7	0.4	0.4	0.2	0.49	2.23
26-Jul	0.3	0.2	0.1	Z	0.1	0.2	0.2	0.3	0.4	0.4	0.4	0.2	0.2	0.2	0.2	0.2	0.3	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.25	0.52
27-Jul	0.1	0.1	0.1	Z	0.3	0.5	0.9	0.6	0.5	0.7	0.6	0.5	0.9	0.6	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.33	0.93
28-Jul	0.1	0.0	0.0	Z	0.0	0.2	0.0	0.5	0.4	0.5	1.4	0.9	0.3	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.1	0.24	1.40
29-Jul	0.1	0.0	0.2	Z	0.4	0.5	0.9	0.8	1.0	1.3	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.1	0.36	1.27
30-Jul	0.1	0.1	0.1	Z	0.1	0.0	C	C	C	C	C	0.5	0.3	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.1	0.1	0.2	0.1	0.20	0.52
31-Jul	0.0	0.0	0.0	Z	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	0.1	0.2	0.1	0.1	0.2	0.1	0.11	0.19
	0.07	0.07	0.08	--	0.11	0.18	0.26	0.31	0.41	0.32	0.33	0.37	0.33	0.16	0.16	0.14	0.12	0.16	0.13	0.12	0.12	0.08	0.10	0.07	Diurnal Average	
	0.27	0.33	0.33	--	0.50	1.08	0.93	1.31	2.23	1.27	1.47	2.95	3.60	0.61	0.60	0.40	0.33	0.52	0.37	0.50	0.68	0.42	0.44	0.32	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb

WCAS - Edson
Summary of Hourly Averages

Ozone (O_3) - ppb
July 2016

Maximum Value: 43.89 ppb on Jul 16 17:00

Maximum Daily Average: 29.46 ppb on Jul 23

Minimum Value: 2.1 ppb on Jul 2 02:00

Minimum Daily Average: 15.80 ppb on Jul 30

Maximum Diurnal Average: 32.87 ppb at hour 15

Minimum Diurnal Average: 8.14 ppb at hour 6

Monthly Average: 22.248 ppb

Percentiles: P_1 = 3.0 P_{10} = 7.5 Q_1 = 13.1 Median = 23.3 Q_3 = 30.5 P_{90} = 35.8 P_{99} = 42.4

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	36
Percent Operational Time:	99.9

Day	Hourly Period Ending At																								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-Jul	14.8	14.3	11.1	Z	5.7	6.7	7.3	12.0	19.5	29.2	34.5	38.4	40.9	42.0	43.4	39.1	34.2	29.4	25.7	22.2	19.6	13.1	10.0	6.4	22.59	43.44
2-Jul	3.8	2.1	3.8	Z	7.5	6.8	7.0	7.6	10.8	15.0	26.0	30.6	33.0	34.1	34.6	32.0	30.3	31.3	27.1	24.0	20.6	16.8	16.6	13.2	18.90	34.56
3-Jul	11.5	14.1	15.9	Z	13.7	13.0	15.4	21.0	26.4	29.1	M	29.4	26.2	25.2	28.9	29.7	30.3	30.0	25.6	23.1	17.7	14.1	11.5	6.2	20.81	30.26
4-Jul	6.5	3.1	4.0	Z	5.3	5.2	7.8	11.1	16.0	23.0	25.7	26.2	26.9	27.2	27.9	27.1	26.7	26.6	26.4	25.1	23.8	21.5	21.6	17.9	18.81	27.92
5-Jul	15.3	13.5	9.5	Z	7.1	7.3	8.9	14.0	19.6	22.7	25.9	27.7	27.4	27.6	28.0	28.2	27.5	28.0	28.1	23.4	22.6	21.5	21.4	20.6	20.68	28.21
6-Jul	13.0	14.2	15.1	Z	10.4	9.0	7.6	14.7	17.1	19.5	21.4	24.6	27.2	27.1	26.5	28.6	29.3	29.0	31.3	38.2	38.0	35.0	30.0	28.8	23.29	38.21
7-Jul	25.9	23.4	17.8	Z	6.8	10.8	11.7	16.7	19.9	23.8	25.3	28.6	30.8	30.6	30.0	30.6	33.3	33.2	34.1	27.1	24.1	22.3	22.2	21.7	23.95	34.12
8-Jul	21.0	20.5	18.0	Z	18.5	12.3	12.0	12.8	18.5	23.0	26.9	33.7	34.6	36.3	38.3	35.2	36.8	37.2	33.7	33.4	29.8	26.4	25.1	36.8	26.99	38.33
9-Jul	27.0	23.3	15.0	Z	6.0	11.7	10.0	9.6	17.2	25.4	29.6	31.6	27.5	23.1	27.1	25.1	30.9	32.8	30.0	32.0	27.7	24.3	18.9	12.2	22.53	32.85
10-Jul	14.2	14.7	15.7	Z	6.8	3.0	8.9	15.4	16.9	17.2	16.7	21.9	32.2	37.9	30.2	30.3	29.5	33.1	31.6	24.2	20.2	18.0	17.2	13.1	20.38	37.89
11-Jul	11.7	8.8	6.9	Z	10.1	9.0	12.8	14.7	15.1	19.0	25.9	29.0	24.1	33.6	29.9	24.6	24.4	27.4	24.3	20.0	15.5	10.3	8.5	7.8	17.98	33.61
12-Jul	7.9	7.9	8.5	Z	4.5	5.1	8.1	5.9	12.1	17.7	22.9	26.4	28.6	30.9	30.9	33.2	33.9	30.6	28.8	24.6	28.3	20.4	19.2	16.9	19.69	33.86
13-Jul	14.3	13.6	10.9	Z	7.8	7.4	8.9	11.0	13.3	19.6	23.9	25.8	26.5	25.3	23.8	22.3	14.8	14.9	19.1	32.0	21.6	17.6	13.9	11.7	17.39	31.98
14-Jul	9.1	6.5	2.9	Z	2.9	5.0	7.2	8.9	10.1	16.9	23.6	28.7	34.4	31.5	31.4	32.2	26.7	25.9	25.7	17.0	15.7	16.7	15.1	8.2	17.49	34.36
15-Jul	7.4	7.0	3.3	Z	5.3	8.4	16.7	20.8	16.6	21.1	28.6	35.0	35.3	38.4	37.2	37.7	37.4	38.9	32.6	32.1	25.8	19.3	11.6	11.1	22.95	38.91
16-Jul	9.3	9.6	7.9	Z	5.9	5.1	5.5	9.7	25.8	30.9	32.4	33.3	31.2	36.7	40.7	39.4	43.9	43.7	40.1	35.8	35.9	30.6	29.8	27.3	26.54	43.89
17-Jul	21.1	15.7	13.2	Z	13.3	15.1	12.6	14.0	22.3	28.8	28.9	29.7	29.9	29.2	30.1	29.2	28.8	26.9	27.0	26.3	23.2	14.1	11.6	9.0	21.75	30.09
18-Jul	11.4	4.1	2.8	Z	6.2	8.0	7.5	7.5	10.9	17.9	26.9	36.3	38.3	41.3	34.9	34.4	35.6	35.5	30.4	31.7	28.9	22.1	21.6	17.9	22.25	41.32
19-Jul	10.7	5.0	4.8	Z	2.5	3.5	7.1	9.6	17.2	27.4	34.4	35.6	36.8	37.0	38.0	38.9	39.0	35.6	36.3	38.7	37.7	34.1	23.9	17.9	24.86	38.97
20-Jul	18.1	15.3	17.5	Z	10.2	6.9	5.9	6.4	13.1	25.1	29.2	31.6	32.4	32.2	33.1	32.6	30.0	29.3	30.5	26.3	23.2	19.6	21.3	17.0	22.03	33.14
21-Jul	13.5	12.2	10.7	Z	6.3	10.2	8.0	6.7	16.8	24.6	31.4	31.8	31.2	33.1	28.2	29.8	32.5	34.2	31.5	24.2	25.8	23.0	20.3	18.8	21.93	34.22
22-Jul	15.1	12.9	9.2	Z	9.2	7.3	5.9	8.5	17.9	24.0	30.2	37.6	36.8	40.6	42.2	39.5	38.0	33.3	32.5	31.6	25.4	27.4	32.4	31.7	25.60	42.19
23-Jul	26.8	27.1	23.7	Z	21.2	15.6	12.5	13.0	19.1	32.3	36.3	38.5	38.2	38.1	38.0	34.8	33.5	34.3	35.4	36.1	37.2	31.8	29.9	24.2	29.46	38.46
24-Jul	14.0	12.3	14.6	Z	10.3	10.3	10.3	11.8	9.8	10.9	9.1	12.1	18.5	26.9	27.6	25.1	23.2	23.2	21.4	20.8	21.5	27.1	29.6	26.2	18.11	29.59
25-Jul	21.3	16.3	11.3	Z	10.1	9.8	12.9	15.7	21.4	26.9	31.5	31.7	33.4	35.1	34.7	34.5	34.3	34.0	31.8	40.3	34.6	29.0	27.7	24.5	26.21	40.29
26-Jul	21.9	18.5	12.7	Z	11.6	10.7	12.3	19.0	28.7	34.1	42.2	43.5	41.9	40.0	39.1	40.8	41.7	42.4	39.2	40.5	29.0	25.6	17.9	18.8	29.22	43.53
27-Jul	19.4	15.3	12.0	Z	4.4	6.6	12.2	14.9	11.5	24.5	37.5	39.4	42.9	42.6	41.4	39.3	39.2	37.6	29.9	28.3	26.1	16.3	16.6	15.4	24.92	42.87
28-Jul	15.9	5.3	3.5	Z	4.9	4.5	3.8	8.6	17.5	25.6	34.5	39.0	36.2	35.0	35.1	32.0	34.7	35.2	33.0	29.5	25.7	22.8	18.2	14.4	22.39	38.96
29-Jul	12.4	7.9	4.1	Z	2.3	4.0	6.2	9.1	14.1	24.5	31.5	34.7	35.0	35.0	35.8	35.4	32.6	25.5	29.3	26.7	25.3	23.5	16.7	12.6	21.04	35.82
30-Jul	8.1	10.2	5.5	Z	4.2	2.3	C	C	C	C	C	20.2	18.7	22.1	24.6	25.5	25.1	20.3	22.3	18.2	17.0	12.3	12.7	15.1	15.80	25.50
31-Jul	13.7	17.1	18.5	Z	13.0	11.9	15.3	23.3	27.3	28.6	27.2	26.9	27.0	22.8	27.4	25.1	25.7	25.8	24.8	25.5	23.6	19.2	15.6	13.4	21.69	28.61
	14.71	12.63	10.65	--	8.19	8.14	9.61	12.47	17.42	23.60	28.27	30.94	31.74	32.86	32.87	32.00	31.74	31.14	29.65	28.35	25.52	21.81	19.63	17.31	Diurnal Average	
	27.00	27.12	23.72	--	21.16	15.61	16.74	23.31	28.72	34.06	42.21	43.53	42.87	42.55	43.44	40.80	43.89	43.66	40.06	40.50	37.95	35.01	32.38	36.77	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb

WCAS - Edson
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
July 2016

Maximum Value: 14.19 ppb on Jul 22 07:00

Maximum Daily Average: 2.52 ppb on Jul 29

Minimum Value: 0.0 ppb on Jul 1 01:00

Minimum Daily Average: 0.11 ppb on Jul 3

Maximum Diurnal Average: 3.67 ppb at hour 8

Minimum Diurnal Average: 0.25 ppb at hour 24

Monthly Average: 0.993 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.1 Median = 0.2 Q_3 = 1.2 P_{90} = 2.9 P_{99} = 8.0

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	36
Percent Operational Time:	99.9

Day	Hourly Period Ending At																								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-Jul	0.0	0.0	0.0	Z	0.5	3.1	8.8	6.6	3.2	2.2	0.4	0.5	1.0	0.9	1.4	0.4	0.1	0.1	0.1	0.2	1.2	0.1	0.2	0.1	1.35	8.77
2-Jul	0.2	3.5	0.6	Z	0.3	1.4	2.5	5.2	5.0	4.6	2.3	0.6	0.2	0.5	0.2	2.4	2.4	0.7	0.1	0.1	0.1	0.1	0.7	0.2	1.47	5.19
3-Jul	0.1	0.1	0.1	Z	0.1	0.2	0.1	0.2	0.1	0.1	M	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.3	0.1	0.0	0.2	0.11	0.28
4-Jul	0.1	2.2	0.2	Z	0.7	5.9	4.8	8.0	4.6	0.7	0.2	0.1	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	1.27	8.02
5-Jul	0.0	0.0	0.1	Z	0.3	1.8	2.9	1.5	0.4	0.2	0.5	0.4	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.39	2.88
6-Jul	0.0	0.0	0.1	Z	0.1	2.2	8.1	1.2	0.8	0.4	0.2	0.1	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.1	0.7	0.8	0.1	0.0	0.69	8.07
7-Jul	0.0	0.0	0.0	Z	6.5	0.7	3.4	3.2	1.0	0.4	0.3	1.4	0.4	0.2	0.2	0.4	0.8	1.5	1.7	0.7	0.2	0.0	0.0	0.0	1.00	6.45
8-Jul	0.0	0.0	0.0	Z	0.0	0.2	1.5	5.5	2.5	1.4	1.9	0.6	1.5	0.4	1.1	2.0	2.3	1.2	2.9	0.1	0.0	0.0	0.2	0.3	1.10	5.47
9-Jul	0.2	0.0	0.0	Z	1.1	0.8	5.2	0.8	0.9	0.6	0.7	1.3	1.1	0.4	0.1	1.0	1.6	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.72	5.23
10-Jul	0.2	0.4	0.0	Z	0.6	7.3	2.2	0.1	0.3	0.5	0.9	0.6	0.2	0.1	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.62	7.30
11-Jul	0.0	0.2	1.5	Z	0.0	0.5	0.5	0.7	0.8	0.7	0.4	0.2	3.0	0.4	0.1	1.7	0.8	0.5	0.7	0.5	0.1	0.0	0.0	0.1	0.58	3.03
12-Jul	0.1	0.1	0.0	Z	0.5	1.1	1.2	4.5	3.1	1.4	0.5	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.1	0.1	0.1	0.60	4.53
13-Jul	0.0	0.1	0.1	Z	0.1	0.3	0.6	1.2	0.5	0.2	0.2	0.2	1.8	0.4	0.1	0.4	3.9	3.2	1.1	0.0	0.0	0.0	0.0	0.0	0.63	3.90
14-Jul	0.0	0.1	1.9	Z	1.5	0.5	0.9	0.9	3.6	1.7	0.2	0.3	0.2	0.1	0.1	0.1	0.2	2.3	0.5	0.6	0.2	0.0	0.0	0.0	0.71	3.61
15-Jul	0.0	2.3	1.0	Z	0.1	0.1	0.2	0.7	2.2	0.3	0.9	0.4	0.7	0.2	0.2	0.5	0.4	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.47	2.35
16-Jul	0.0	0.0	0.0	Z	0.2	1.7	8.3	7.1	0.7	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.83	8.26
17-Jul	0.0	0.1	0.6	Z	0.0	0.0	0.5	1.0	0.3	0.1	0.0	0.1	0.1	0.0	0.0	0.9	0.1	0.2	0.2	0.1	0.2	0.1	0.0	0.1	0.20	1.00
18-Jul	0.0	0.4	3.9	Z	0.1	0.2	0.9	2.5	2.3	3.3	2.7	1.4	1.6	0.7	1.5	1.4	0.2	0.3	0.3	0.1	0.1	0.1	0.1	0.1	1.04	3.86
19-Jul	1.7	2.9	0.3	Z	1.3	4.7	5.2	7.5	3.7	1.1	0.3	0.1	0.2	0.1	0.8	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	1.36	7.54
20-Jul	0.0	0.1	0.0	Z	0.1	3.0	5.6	4.8	4.7	2.6	0.6	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.99	5.63
21-Jul	0.0	0.0	0.0	Z	7.5	0.3	2.8	5.7	1.6	0.4	0.1	0.1	0.1	0.1	0.4	0.2	0.1	0.2	0.1	0.2	0.1	0.4	0.1	0.1	0.90	7.47
22-Jul	0.1	0.1	0.1	Z	0.2	0.8	14.2	12.7	5.3	3.1	2.4	0.3	0.2	0.3	0.1	0.1	0.1	0.3	0.9	0.0	0.0	0.0	0.0	0.0	1.79	14.19
23-Jul	0.0	0.0	0.0	Z	0.0	0.1	0.6	1.4	1.7	0.4	0.2	0.1	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22	1.72
24-Jul	0.3	0.0	0.0	Z	0.0	0.2	1.4	5.0	7.7	2.9	5.7	6.6	2.2	0.3	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	1.43	7.67
25-Jul	0.0	0.0	0.7	Z	0.2	1.0	2.2	3.5	3.8	5.2	2.6	1.5	0.7	0.4	0.1	0.6	1.2	1.3	2.8	0.6	0.4	0.1	0.1	0.1	1.26	5.24
26-Jul	0.1	0.1	0.1	Z	0.1	0.4	1.7	2.4	1.1	2.1	0.9	1.9	0.1	0.6	1.5	0.7	0.1	0.2	0.2	0.1	0.2	0.1	0.2	0.1	0.64	2.37
27-Jul	0.1	0.0	0.1	Z	1.8	1.2	1.8	1.3	6.0	3.7	0.9	0.5	0.8	0.3	0.2	0.6	0.3	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.89	5.95
28-Jul	0.9	2.9	2.7	Z	0.2	1.2	9.0	4.7	1.9	1.2	1.2	0.7	0.6	0.6	0.2	0.9	1.2	0.2	0.4	1.1	0.6	0.6	0.7	1.4	1.52	8.95
29-Jul	0.6	0.4	4.5	Z	1.4	2.0	6.5	8.2	5.7	2.2	0.2	0.5	0.3	0.3	0.7	1.1	1.2	7.0	3.0	1.8	3.3	3.1	2.0	1.9	2.52	8.23
30-Jul	1.8	0.9	1.6	Z	1.4	6.2	C	C	C	C	C	1.2	0.8	5.4	2.7	0.5	0.8	3.2	1.4	1.0	3.6	3.3	3.4	1.7	2.26	6.16
31-Jul	1.1	0.4	0.5	Z	1.5	2.7	2.4	2.0	0.7	0.9	1.5	1.6	1.4	0.8	0.7	0.9	0.9	1.4	3.0	0.8	2.0	2.3	2.8	1.0	1.45	3.01
	0.25	0.55	0.67	--	0.92	1.67	3.53	3.67	2.54	1.49	1.01	0.77	0.65	0.47	0.44	0.58	0.64	0.82	0.66	0.31	0.45	0.38	0.36	0.25	Diurnal Average	
	1.81	3.52	4.47	--	7.47	7.30	14.19	12.73	7.67	5.24	5.74	6.58	3.03	5.39	2.66	2.39	3.90	7.04	3.01	1.79	3.61	3.26	3.40	1.86	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance

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

WCAS - Edson
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
July 2016

Maximum Value: 10.85 ppb on Jul 20 07:00

Maximum Daily Average: 4.15 ppb on Jul 29

Minimum Value: 0.4 ppb on Jul 3 14:00

Minimum Daily Average: 1.57 ppb on Jul 16

Maximum Diurnal Average: 4.83 ppb at hour 7

Minimum Diurnal Average: 1.47 ppb at hour 15

Monthly Average: 2.741 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.8$ $Q_1 = 1.2$ Median = 2.2 $Q_3 = 3.9$ $P_{90} = 5.5$ $P_{99} = 9.4$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	36
Percent Operational Time:	99.9

Day	Hourly Period Ending At																								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-Jul	4.3	2.4	2.2	Z	4.3	4.7	6.7	5.7	3.8	4.1	1.8	1.4	2.1	2.3	3.4	2.8	0.9	1.2	1.2	2.5	4.6	3.2	4.5	4.7	3.25	6.65
2-Jul	3.1	5.0	3.2	Z	2.7	4.0	4.1	4.6	3.3	3.8	3.9	1.3	0.8	1.5	0.9	2.6	3.2	1.6	1.1	0.9	1.4	1.0	2.1	3.4	2.58	4.98
3-Jul	4.3	2.7	1.4	Z	2.2	2.0	1.6	1.0	0.7	0.5	M	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.6	0.7	2.0	5.9	3.4	4.5	1.67	5.90
4-Jul	2.4	4.7	3.3	Z	3.7	5.0	3.5	5.7	4.2	1.3	0.7	0.5	0.7	0.7	1.0	0.9	0.7	0.8	0.8	0.7	0.7	1.0	0.9	2.0	2.00	5.70
5-Jul	2.2	2.5	4.7	Z	5.0	4.2	3.4	1.8	0.8	0.7	1.3	1.0	0.6	0.6	0.6	0.6	0.7	0.8	0.6	0.8	2.1	1.1	1.0	1.3	1.67	4.99
6-Jul	1.8	1.8	1.8	Z	2.6	4.7	7.5	2.5	1.7	1.1	0.9	0.8	0.8	1.1	0.7	0.7	0.7	0.8	1.1	1.3	2.8	3.4	2.4	2.5	1.97	7.51
7-Jul	1.7	1.6	2.6	Z	9.5	3.7	5.3	4.8	1.9	1.3	1.5	3.1	1.3	1.0	0.9	1.7	2.6	3.0	3.7	2.8	1.9	1.2	1.2	1.6	2.60	9.49
8-Jul	1.5	1.2	1.1	Z	1.4	2.1	4.1	6.1	4.2	3.0	4.3	2.1	3.3	1.6	2.2	3.2	3.1	2.7	5.1	1.8	2.0	1.8	1.1	1.9	2.64	6.07
9-Jul	2.4	1.6	1.5	Z	7.1	4.7	4.8	1.4	1.9	1.9	2.6	3.0	4.1	3.9	3.0	4.9	5.7	2.6	1.4	1.2	1.3	1.5	2.3	2.6	2.94	7.12
10-Jul	4.0	3.8	3.4	Z	2.3	9.2	5.7	1.7	1.6	1.7	2.0	1.6	1.3	1.0	2.4	1.9	0.8	0.8	0.8	2.4	1.7	1.8	1.6	2.5	2.44	9.22
11-Jul	1.6	3.7	4.9	Z	2.5	3.9	3.2	3.1	2.4	1.9	1.6	1.5	6.2	2.0	1.2	5.9	3.4	2.3	3.2	4.2	1.8	3.2	3.9	2.7	3.07	6.18
12-Jul	2.7	4.8	3.1	Z	6.1	5.1	4.4	7.8	3.6	2.0	1.5	1.1	0.8	0.7	0.6	0.8	0.7	1.0	0.9	1.7	1.0	1.8	1.5	2.3	2.44	7.79
13-Jul	1.9	1.7	1.9	Z	2.3	2.3	2.4	3.0	1.9	1.0	0.8	0.8	3.4	1.7	1.0	1.8	6.9	6.4	3.6	0.9	2.0	1.6	1.4	1.2	2.26	6.85
14-Jul	1.7	3.3	5.5	Z	4.5	2.9	2.5	2.6	4.9	3.0	0.9	1.1	1.0	0.8	0.6	0.8	1.1	4.1	4.0	3.9	3.3	3.9	2.5	1.6	2.63	5.53
15-Jul	1.6	2.5	3.4	Z	1.3	1.0	1.2	1.7	2.7	1.6	2.4	1.8	1.9	1.4	1.6	1.8	2.3	1.5	1.5	1.2	1.8	1.6	2.0	1.8	1.81	3.39
16-Jul	1.2	1.4	1.7	Z	3.0	2.9	5.0	5.0	1.5	0.8	0.8	0.8	0.8	1.2	0.8	0.7	0.5	0.5	0.9	0.6	0.7	1.2	2.1	2.0	1.57	5.02
17-Jul	2.1	4.7	6.0	Z	3.4	2.1	3.7	4.2	1.6	0.9	0.7	0.6	0.7	0.7	0.6	1.6	1.0	2.0	2.6	1.5	4.2	5.9	4.4	6.2	2.67	6.16
18-Jul	4.1	2.9	4.1	Z	2.9	2.0	2.4	2.3	3.0	3.3	3.8	3.2	3.0	2.8	2.5	2.4	1.0	1.2	1.7	1.5	1.1	3.2	2.1	1.1	2.50	4.10
19-Jul	2.7	5.5	2.6	Z	5.2	5.5	4.8	5.7	4.1	2.3	1.1	0.6	0.7	0.8	3.0	1.1	1.3	1.0	0.7	0.8	1.0	1.1	7.1	7.4	2.88	7.37
20-Jul	3.6	6.2	2.5	Z	5.2	8.3	10.9	9.4	6.9	4.3	2.3	1.1	0.9	1.2	0.8	0.8	1.0	0.7	0.8	1.2	1.1	1.7	1.5	2.4	3.26	10.85
21-Jul	3.1	2.3	2.8	Z	8.4	3.8	5.8	10.2	4.0	1.7	0.7	0.7	0.7	0.8	1.6	1.1	0.8	1.3	1.4	2.2	1.5	2.7	2.5	3.0	2.74	10.19
22-Jul	2.6	4.1	2.9	Z	6.1	3.1	5.7	7.9	5.8	4.7	3.4	1.4	1.0	1.2	1.0	0.9	0.7	1.2	1.4	1.0	2.9	2.3	0.8	0.8	2.75	7.85
23-Jul	1.6	1.1	1.2	Z	2.6	4.3	4.9	5.1	4.4	1.8	1.3	0.8	0.7	0.6	0.7	1.4	0.7	0.5	0.7	0.7	0.5	0.8	1.4	3.6	1.79	5.06
24-Jul	6.4	6.3	4.2	Z	5.5	4.9	5.9	7.7	8.3	6.2	8.6	7.7	4.2	1.2	0.6	0.6	0.6	0.6	0.5	0.7	0.9	1.1	0.8	1.1	3.68	8.59
25-Jul	3.6	7.1	10.2	Z	7.8	8.9	5.7	5.5	5.7	5.2	2.2	2.7	1.4	1.4	0.8	1.2	2.0	1.8	3.8	2.9	4.5	2.5	2.9	2.5	4.02	10.24
26-Jul	2.1	1.9	3.0	Z	3.9	3.7	5.0	5.2	3.4	5.3	4.0	4.3	1.5	2.2	3.3	2.3	1.2	1.8	1.8	1.9	4.8	3.1	6.5	3.3	3.27	6.46
27-Jul	2.7	3.2	3.0	Z	7.4	7.6	6.7	5.1	9.3	6.4	3.7	2.6	3.5	1.9	1.7	2.1	1.6	1.2	2.0	2.3	1.5	4.0	3.9	2.2	3.72	9.31
28-Jul	3.1	9.4	5.1	Z	3.7	4.5	5.4	4.0	2.9	3.3	4.0	3.2	2.0	1.6	0.9	1.8	3.3	1.1	1.4	2.2	4.7	4.8	4.2	5.2	3.55	9.43
29-Jul	5.1	3.3	6.1	Z	8.5	5.8	6.0	6.2	5.4	3.7	1.0	1.6	1.0	0.9	1.1	1.9	3.0	10.1	4.1	3.5	3.9	5.2	4.6	3.5	4.15	10.09
30-Jul	4.1	5.1	4.7	Z	3.9	4.5	C	C	C	C	C	2.5	2.7	5.8	4.6	1.4	2.0	4.2	3.0	4.0	3.8	6.6	5.9	4.2	4.06	6.62
31-Jul	5.3	2.4	2.7	Z	5.4	6.5	6.4	3.1	1.8	1.2	1.7	1.8	1.6	1.1	0.7	1.3	1.3	1.5	2.2	1.6	2.8	3.2	3.1	1.9	2.63	6.53
	2.92	3.55	3.45	--	4.53	4.45	4.83	4.67	3.59	2.67	2.25	1.85	1.78	1.49	1.47	1.72	1.79	1.96	1.89	1.78	2.27	2.69	2.75	2.80	Diurnal Average	
	6.37	9.43	10.24	--	9.49	9.22	10.85	10.19	9.31	6.39	8.59	7.70	6.18	5.85	4.64	5.94	6.85	10.09	5.12	4.20	4.77	6.62	7.08	7.37	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

WCAS - Edson
Summary of Hourly Averages

NOx (NO_x) - ppb
July 2016

Maximum Value: 20.47 ppb on Jul 22 08:00

Maximum Daily Average: 6.65 ppb on Jul 29

Minimum Value: 0.4 ppb on Jul 23 21:00

Minimum Daily Average: 1.75 ppb on Jul 3

Maximum Diurnal Average: 8.32 ppb at hour 7

Minimum Diurnal Average: 1.88 ppb at hour 15

Monthly Average: 3.707 ppb

Percentiles: $P_1 = 0.5$ $P_{10} = 0.8$ $Q_1 = 1.4$ Median = 2.5 $Q_3 = 4.9$ $P_{90} = 7.9$ $P_{99} = 15.9$

Hours in Service:	744
Hours of Data:	707
Hours of Missing Data:	37
Hours of Calibration:	36
Percent Operational Time:	99.9

Day	Hourly Period Ending At																								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-Jul	4.3	2.4	2.1	Z	4.8	7.8	15.4	12.3	7.0	6.2	2.2	1.9	3.0	3.1	4.7	3.2	1.0	1.2	1.3	2.6	5.8	3.2	4.7	4.8	4.57	15.37
2-Jul	3.3	8.5	3.8	Z	2.9	5.4	6.5	9.7	8.3	8.4	6.1	1.8	0.9	2.0	1.1	5.0	5.6	2.2	1.1	1.0	1.4	1.0	2.8	3.5	4.01	9.74
3-Jul	4.3	2.7	1.4	Z	2.2	2.2	1.7	1.1	0.8	0.6	M	0.7	0.6	0.5	0.5	0.5	0.5	0.5	0.7	0.7	2.3	6.0	3.4	4.7	1.75	5.98
4-Jul	2.4	6.9	3.5	Z	4.3	10.9	8.3	13.7	8.8	2.0	0.9	0.6	1.0	0.9	1.3	1.2	0.8	1.0	1.0	0.7	0.7	1.0	0.8	1.9	3.24	13.68
5-Jul	2.2	2.5	4.8	Z	5.2	6.0	6.2	3.3	1.2	0.9	1.8	1.3	0.6	0.7	0.6	0.6	0.8	0.9	0.7	0.8	2.2	1.1	1.0	1.4	2.03	6.23
6-Jul	1.8	1.8	1.9	Z	2.7	6.8	15.5	3.6	2.5	1.4	1.1	0.9	0.9	1.3	0.8	0.7	0.7	0.8	1.2	1.4	3.4	4.2	2.5	2.5	2.63	15.53
7-Jul	1.6	1.5	2.6	Z	15.9	4.3	8.7	7.9	2.8	1.6	1.7	4.4	1.8	1.1	1.0	2.1	3.4	4.5	5.3	3.5	2.1	1.2	1.2	1.5	3.56	15.88
8-Jul	1.5	1.2	1.0	Z	1.4	2.2	5.6	11.5	6.7	4.4	6.1	2.6	4.8	1.9	3.3	5.1	5.3	3.8	7.9	1.8	2.0	1.8	1.3	2.2	3.71	11.49
9-Jul	2.5	1.5	1.4	Z	8.2	5.5	10.0	2.2	2.8	2.5	3.3	4.2	5.1	4.3	3.0	5.9	7.3	3.0	1.5	1.3	1.4	1.5	2.3	2.6	3.63	9.97
10-Jul	4.2	4.2	3.4	Z	2.9	16.5	7.9	1.8	1.9	2.2	2.9	2.2	1.5	1.0	2.6	2.1	0.9	0.9	0.8	2.4	1.7	1.7	1.5	2.5	3.03	16.46
11-Jul	1.5	3.8	6.4	Z	2.5	4.4	3.6	3.8	3.2	2.6	2.0	1.6	9.2	2.3	1.3	7.6	4.1	2.8	3.9	4.7	1.9	3.2	3.8	2.8	3.61	9.19
12-Jul	2.8	4.8	3.0	Z	6.5	6.2	5.6	12.3	6.7	3.4	1.9	1.3	1.0	0.8	0.7	0.8	0.8	1.1	0.9	2.0	1.0	1.9	1.5	2.3	3.01	12.31
13-Jul	1.9	1.7	2.0	Z	2.4	2.5	3.1	4.1	2.3	1.2	0.9	1.0	5.2	2.2	1.1	2.2	10.7	9.6	4.7	0.9	2.0	1.6	1.4	1.2	2.86	10.72
14-Jul	1.7	3.4	7.4	Z	5.9	3.4	3.5	3.4	8.5	4.7	1.1	1.4	1.2	0.9	0.6	0.8	1.2	6.5	4.5	4.5	3.5	3.9	2.5	1.6	3.31	8.51
15-Jul	1.6	4.8	4.3	Z	1.4	1.1	1.4	2.4	4.8	1.9	3.3	2.2	2.6	1.6	1.8	2.2	2.7	1.6	1.6	1.2	1.8	1.5	2.0	1.8	2.25	4.82
16-Jul	1.2	1.4	1.7	Z	3.2	4.5	13.2	12.1	2.2	0.8	0.9	0.9	0.8	1.4	0.8	0.8	0.5	0.6	0.9	0.7	0.7	1.2	2.0	2.0	2.37	13.22
17-Jul	2.1	4.7	6.6	Z	3.4	2.1	4.2	5.2	1.8	0.9	0.7	0.7	0.7	0.7	0.6	2.4	1.1	2.1	2.9	1.6	4.4	6.0	4.4	6.2	2.85	6.60
18-Jul	4.1	3.2	7.9	Z	3.0	2.1	3.2	4.7	5.2	6.5	6.4	4.6	4.5	3.5	4.0	3.8	1.3	1.5	2.0	1.6	1.2	3.2	2.2	1.2	3.52	7.93
19-Jul	4.4	8.4	2.9	Z	6.5	10.2	10.0	13.2	7.7	3.4	1.4	0.7	0.9	0.9	3.8	1.3	1.6	1.1	0.8	0.8	1.1	1.2	7.2	7.4	4.21	13.21
20-Jul	3.6	6.2	2.5	Z	5.3	11.3	16.5	14.2	11.6	6.8	2.9	1.1	1.0	1.4	0.9	0.9	1.2	0.8	0.9	1.3	1.2	1.7	1.4	2.4	4.22	16.46
21-Jul	3.1	2.3	2.7	Z	15.8	4.0	8.6	15.9	5.5	2.1	0.8	0.8	0.8	0.9	2.0	1.3	0.9	1.5	1.5	2.4	1.6	3.1	2.5	3.0	3.61	15.86
22-Jul	2.6	4.2	3.0	Z	6.3	3.9	19.8	20.5	11.1	7.8	5.8	1.7	1.1	1.5	1.2	0.9	0.8	1.4	2.3	1.0	2.9	2.3	0.8	0.8	4.49	20.47
23-Jul	1.5	1.0	1.1	Z	2.6	4.4	5.4	6.4	6.1	2.2	1.5	0.9	0.8	0.6	0.8	1.6	0.7	0.5	0.7	0.7	0.4	0.8	1.4	3.5	1.98	6.45
24-Jul	6.6	6.3	4.2	Z	5.6	5.1	7.3	12.7	15.9	9.1	14.3	14.2	6.3	1.5	0.7	0.6	0.7	0.6	0.6	0.7	0.9	1.1	0.8	1.1	5.08	15.91
25-Jul	3.6	7.1	10.9	Z	8.0	10.0	7.8	8.9	9.5	10.4	4.8	4.2	2.1	1.7	0.9	1.8	3.1	3.1	6.5	3.5	4.9	2.5	2.9	2.5	5.26	10.91
26-Jul	2.1	1.9	3.0	Z	3.9	4.0	6.7	7.5	4.5	7.3	4.9	6.2	1.6	2.7	4.7	3.0	1.3	2.0	2.0	2.0	4.9	3.1	6.6	3.3	3.88	7.49
27-Jul	2.7	3.2	3.1	Z	9.2	8.8	8.5	6.4	15.2	10.1	4.6	3.1	4.3	2.1	1.9	2.6	1.9	1.3	2.0	2.6	1.6	4.1	3.9	2.2	4.58	15.25
28-Jul	3.9	12.3	7.9	Z	3.8	5.7	14.3	8.7	4.8	4.4	5.2	3.9	2.5	2.2	1.1	2.7	4.4	1.2	1.8	3.3	5.2	5.3	4.9	6.6	5.05	14.32
29-Jul	5.7	3.7	10.5	Z	9.9	7.8	12.5	14.4	11.1	5.9	1.1	2.1	1.3	1.1	1.8	3.0	4.2	17.1	7.0	5.2	7.2	8.3	6.6	5.3	6.65	17.09
30-Jul	5.9	5.9	6.4	Z	5.3	10.6	C	C	C	C	C	3.9	3.7	11.4	7.4	2.0	2.9	7.5	4.5	5.0	7.5	9.9	9.3	5.9	6.39	11.37
31-Jul	6.4	2.8	3.2	Z	7.0	9.2	8.8	5.0	2.5	2.1	3.1	3.3	3.0	1.9	1.4	2.1	2.2	2.8	5.1	2.4	4.7	5.5	5.9	3.0	4.06	9.20
	3.14	4.07	4.08	--	5.42	6.10	8.32	8.31	6.10	4.13	3.23	2.60	2.41	1.94	1.88	2.28	2.41	2.75	2.53	2.07	2.70	3.04	3.08	3.02	Diurnal Average	
	6.65	12.29	10.91	--	15.88	16.46	19.78	20.47	15.91	10.43	14.30	14.24	9.19	11.37	7.43	7.63	10.72	17.09	7.93	5.25	7.50	9.91	9.34	7.38	Diurnal Maximum	

Z - zerospan C - Calibration M - Maintenance

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

WCAS - Edson
Summary of Hourly Averages

PM2.5 ($PM_{2.5}$) - $\mu g/m^3$
July 2016

Maximum Value: 17.46 $\mu g/m^3$ on Jul 15 21:00

Maximum Daily Average: 8.55 $\mu g/m^3$ on Jul 17

Minimum Value: 0.0 $\mu g/m^3$ on Jul 1 12:00

Minimum Daily Average: 0.59 $\mu g/m^3$ on Jul 3

Maximum Diurnal Average: 4.94 $\mu g/m^3$ at hour 8

Minimum Diurnal Average: 2.90 $\mu g/m^3$ at hour 15

Monthly Average: 3.674 $\mu g/m^3$

Percentiles: P_1 = 0.0 P_{10} = 0.1 Q_1 = 1.3 Median = 3.0 Q_3 = 5.5 P_{90} = 7.9 P_{99} = 11.5

Hours in Service:	744
Hours of Data:	739
Hours of Missing Data:	5
Hours of Calibration:	5
Percent Operational Time:	100.0

Day	Hourly Period Ending At																								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-Jul	1.5	1.0	0.7	0.6	1.5	3.9	2.0	3.9	3.7	4.4	3.5	0.0	1.0	1.5	3.8	9.0	3.2	3.7	1.2	2.2	2.5	2.4	1.5	7.0	2.74	8.97
2-Jul	1.0	4.3	2.0	1.3	0.0	0.3	1.6	3.6	4.2	2.9	0.0	0.4	0.0	2.7	2.1	5.6	8.1	0.8	2.0	0.8	1.5	3.9	0.0	0.0	2.04	8.10
3-Jul	0.1	0.0	0.0	0.0	1.0	2.5	2.5	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.3	0.1	0.8	1.4	0.59	4.25
4-Jul	0.0	0.6	0.0	0.3	0.9	0.7	0.8	1.0	0.9	0.0	0.0	0.0	0.0	0.0	0.8	2.6	0.0	0.7	0.2	1.2	1.4	2.3	0.7	1.1	0.67	2.56
5-Jul	0.9	0.8	1.2	1.7	0.7	1.5	1.5	0.8	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.8	0.5	0.3	2.4	2.7	3.3	1.4	2.1	0.97	3.35
6-Jul	2.0	0.7	1.8	1.8	1.6	3.0	5.2	2.4	1.1	0.5	1.4	2.5	2.2	4.0	3.2	2.4	5.4	4.6	8.0	10.6	9.2	11.0	8.4	8.7	4.24	11.01
7-Jul	8.8	7.3	8.0	7.0	8.4	9.6	9.0	9.6	3.4	2.3	2.0	4.1	2.3	1.5	1.2	2.7	2.1	4.0	7.1	6.7	5.7	4.3	3.0	4.1	5.17	9.63
8-Jul	3.0	3.0	3.4	3.2	3.2	4.3	5.6	8.2	7.9	6.5	4.9	4.3	3.7	0.1	2.2	7.2	4.4	6.6	11.7	9.0	7.1	6.3	7.4	0.0	5.12	11.65
9-Jul	6.3	2.1	1.6	2.8	3.6	6.6	5.3	2.8	5.9	4.6	3.5	6.0	8.8	6.3	4.0	5.1	3.2	4.0	1.8	0.6	1.7	0.9	2.6	2.8	3.87	8.77
10-Jul	1.7	0.2	0.0	0.8	1.3	2.4	2.4	2.0	2.0	1.8	0.1	0.5	0.0	0.0	4.4	1.1	0.8	0.0	1.4	2.5	1.3	0.8	1.1	2.6	1.30	4.42
11-Jul	2.5	2.2	2.4	2.3	1.9	2.6	2.2	2.4	3.2	2.5	2.2	2.9	5.6	1.3	4.1	0.0	6.3	0.4	2.4	2.2	2.6	1.4	1.8	1.3	2.45	6.33
12-Jul	1.1	2.7	1.6	2.6	3.8	3.3	4.3	6.1	3.7	5.8	2.9	2.8	0.0	2.1	0.4	0.9	2.4	3.5	3.5	2.3	1.0	5.6	3.0	2.6	2.84	6.14
13-Jul	3.0	3.5	3.1	3.4	3.3	3.0	2.8	3.6	3.9	3.4	3.2	2.4	2.2	5.5	3.5	2.2	4.3	6.4	0.0	0.0	1.5	1.6	1.3	0.9	2.84	6.37
14-Jul	2.4	2.4	3.5	3.7	3.8	4.0	2.5	3.3	4.7	3.7	0.0	0.0	0.0	0.9	0.6	0.7	4.9	2.1	3.4	2.8	1.8	2.9	2.6	2.6	2.46	4.90
15-Jul	3.4	2.1	2.3	3.8	1.6	2.8	3.3	3.1	5.2	3.0	0.2	3.2	5.2	2.2	2.5	3.6	5.4	4.8	6.6	4.2	17.5	4.9	2.3	2.3	3.97	17.46
16-Jul	0.7	0.9	1.9	1.7	1.9	5.3	3.4	5.5	2.7	1.4	2.2	3.5	6.1	3.8	1.3	2.8	0.0	1.9	2.3	6.2	2.9	7.3	6.3	8.9	3.38	8.92
17-Jul	8.0	7.3	6.7	6.2	5.9	6.7	7.6	9.4	11.8	12.5	10.8	6.5	6.2	7.8	5.6	10.1	9.7	7.8	11.5	7.3	9.8	10.9	10.2	8.9	8.55	12.50
18-Jul	14.0	10.9	10.3	10.4	9.9	10.2	9.8	9.3	7.7	9.3	10.4	9.3	10.6	5.8	9.8	1.6	1.2	10.3	7.3	3.1	4.2	7.1	4.0	4.5	7.96	14.01
19-Jul	4.4	5.7	4.5	6.3	5.4	7.0	6.0	8.0	5.4	2.4	1.0	4.1	2.7	5.2	5.5	4.3	4.5	10.8	5.5	4.7	7.2	9.2	7.9	9.7	5.72	10.78
20-Jul	7.0	6.9	5.5	6.1	7.2	6.9	8.1	9.4	7.8	3.2	3.5	1.0	0.0	3.1	0.0	3.6	5.5	0.5	1.8	3.2	1.6	0.8	0.0	3.3	4.00	9.43
21-Jul	3.2	3.6	3.3	4.4	2.5	3.1	4.9	6.6	2.2	2.2	0.0	1.1	0.2	8.5	3.9	0.2	1.0	1.4	7.3	7.1	4.6	5.6	3.9	3.2	3.51	8.51
22-Jul	4.2	2.2	1.5	1.6	2.1	3.2	6.9	7.2	6.0	7.5	6.9	0.0	0.0	0.0	1.9	3.0	3.9	5.0	3.8	3.5	10.5	0.0	0.0	1.0	3.42	10.51
23-Jul	3.2	2.5	2.5	1.0	2.9	3.2	5.7	3.6	2.5	0.0	0.1	0.0	1.3	0.5	0.0	0.4	0.8	1.0	0.8	2.6	1.8	1.5	2.5	5.3	1.91	5.74
24-Jul	6.8	5.9	3.9	4.0	3.4	3.2	3.3	3.9	5.1	6.6	7.3	6.5	4.9	1.1	1.1	2.2	1.4	1.2	0.7	0.2	0.3	0.7	0.6	0.9	3.14	7.30
25-Jul	1.2	1.9	1.9	2.4	2.4	3.3	2.9	2.8	4.8	7.7	3.8	3.7	2.7	1.7	1.3	2.6	4.7	4.7	5.6	7.9	7.6	4.9	5.3	5.8	3.90	7.87
26-Jul	5.0	5.2	4.9	4.8	5.7	5.4	5.9	6.5	4.7	5.9	9.5	10.7	3.7	4.1	4.7	4.9	4.4	4.7	5.1	6.6	6.3	5.0	6.4	6.0	5.68	10.69
27-Jul	5.6	5.6	5.7	5.6	7.1	9.5	8.7	8.9	11.2	13.6	14.0	10.9	7.2	7.7	3.5	4.7	5.7	6.7	6.2	1.4	1.9	2.7	2.4	1.5	6.58	14.05
28-Jul	2.8	3.1	2.7	3.4	3.7	4.7	5.4	7.5	8.4	8.8	9.9	8.4	4.9	1.9	3.6	0.0	1.7	1.1	2.2	1.6	2.1	3.4	3.5	3.4	4.10	9.94
29-Jul	3.9	4.2	7.4	4.6	4.7	4.2	5.8	6.8	8.2	5.7	0.3	3.3	3.2	4.6	9.5	14.1	16.4	7.2	6.5	7.9	10.9	0.7	5.9	3.2	6.22	16.43
30-Jul	3.7	2.7	2.9	1.6	0.9	2.0	C	C	C	C	C	6.2	4.0	6.7	5.1	2.5	5.2	7.4	0.0	4.8	6.1	6.2	2.5	0.2	3.72	7.43
31-Jul	1.3	0.1	0.0	0.1	0.2	1.7	2.0	0.0	0.0	0.1	0.5	0.6	1.7	1.2	0.0	0.0	0.6	0.9	0.0	0.9	2.2	5.0	0.7	0.6	0.85	5.01
	3.63	3.27	3.14	3.20	3.31	4.19	4.58	4.94	4.61	4.28	3.47	3.41	2.96	2.96	2.90	3.22	3.81	3.70	3.89	3.77	4.44	3.97	3.23	3.42	Diurnal Average	
	14.01	10.95	10.28	10.41	9.93	10.19	9.80	9.63	11.79	13.59	14.05	10.85	10.55	8.51	9.85	14.09	16.43	10.78	11.65	10.64	17.46	11.01	10.24	9.65	Diurnal Maximum	

C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 80 ul/m^3 24-hr 30 ul/m^3

WEYERHAEUSER - EDSON
STATION #912

METEOROLOGICAL DATA

JULY 2016

WCAS - Edson
Summary of Hourly Averages

External Temperature (ET) - C
July 2016

Maximum Value: 29.04 C on Jul 29 16:00

Maximum Daily Average: 20.25 C on Jul 26

Minimum Value: 5.1 C on Jul 4 05:00

Minimum Daily Average: 11.15 C on Jul 31

Maximum Diurnal Average: 20.30 C at hour 16

Minimum Diurnal Average: 10.87 C at hour 5

Monthly Average: 15.922 C

Percentiles: P_1 = 6.8 P_{10} = 11.2 Q_1 = 12.6 Median = 15.2 Q_3 = 19.0 P_{90} = 22.3 P_{99} = 26.7

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																								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-Jul	11.6	11.2	10.4	9.3	8.8	9.7	11.3	13.0	16.1	19.1	21.2	22.2	22.6	23.5	23.5	21.4	15.3	15.3	15.2	15.2	15.0	14.4	13.9	13.0	15.51	23.52
2-Jul	11.8	11.5	11.2	11.5	11.2	10.7	10.8	11.2	12.7	15.3	18.1	21.0	21.0	22.3	22.0	21.9	19.1	16.8	16.1	14.8	14.6	14.3	14.2	13.2	15.31	22.26
3-Jul	12.6	12.2	11.6	11.3	10.8	11.6	12.5	13.3	13.3	14.8	15.4	17.0	17.2	17.1	17.3	18.4	18.6	18.8	13.0	13.7	12.4	11.5	9.8	8.5	13.85	18.75
4-Jul	7.4	6.8	6.0	5.2	5.1	5.9	7.9	10.7	13.5	16.3	17.5	18.2	18.9	19.3	19.8	19.5	18.7	19.2	18.6	16.7	14.6	13.9	12.2	10.4	13.44	19.81
5-Jul	9.7	8.5	7.0	6.5	6.0	6.5	8.5	11.5	14.0	15.4	16.3	17.6	18.5	19.3	19.9	20.4	20.4	20.6	21.4	18.9	18.0	16.6	15.7	14.9	14.66	21.40
6-Jul	12.4	11.3	10.1	9.2	8.4	8.5	11.0	13.8	15.3	17.2	18.4	19.1	19.7	19.2	19.8	21.1	20.6	19.8	19.4	15.7	13.8	13.2	12.5	12.4	15.08	21.08
7-Jul	12.1	11.8	11.6	10.7	9.7	9.9	11.3	14.1	16.6	18.2	18.3	19.9	21.1	22.2	21.7	21.6	23.1	23.6	22.7	20.8	18.6	16.4	15.1	14.4	16.89	23.60
8-Jul	13.5	12.9	12.4	12.2	12.1	11.8	12.9	14.5	15.9	17.6	19.4	20.6	21.2	22.2	23.3	22.3	22.4	22.8	21.6	19.5	17.8	16.7	16.2	13.9	17.33	23.29
9-Jul	14.6	13.1	11.8	11.7	11.3	11.8	12.3	12.0	13.5	16.4	17.5	17.7	16.5	14.9	14.1	14.1	15.5	16.4	15.7	16.1	15.2	14.3	13.8	13.4	14.33	17.68
10-Jul	13.6	13.0	12.1	11.8	11.4	11.4	12.0	12.4	13.1	13.9	14.0	15.0	16.3	16.9	14.3	13.7	14.3	14.7	15.0	13.9	13.5	13.1	12.7	12.3	13.52	16.89
11-Jul	12.2	12.3	12.0	12.0	11.9	11.9	12.4	13.1	14.1	15.6	16.9	15.4	15.7	17.3	16.4	15.4	16.0	17.1	16.4	16.0	15.0	13.7	12.7	11.9	14.31	17.33
12-Jul	11.1	10.7	10.1	9.9	10.0	10.4	10.9	11.3	13.1	15.7	17.0	17.5	18.5	19.5	19.6	19.1	18.9	18.6	18.4	17.1	16.0	14.6	14.0	13.5	14.81	19.61
13-Jul	13.2	13.2	12.8	12.7	12.6	12.5	12.9	13.6	14.4	14.8	15.3	16.9	16.3	16.4	16.6	15.9	15.3	15.6	16.1	12.7	12.3	12.3	12.3	12.0	14.11	16.91
14-Jul	11.8	11.8	11.5	11.4	11.5	11.8	12.3	12.9	13.1	13.8	14.4	16.0	18.0	17.7	16.3	18.1	16.7	15.6	14.5	14.4	13.6	13.1	12.7	12.4	13.98	18.07
15-Jul	12.5	12.4	11.4	11.5	11.5	11.4	12.8	14.3	14.3	14.3	15.9	16.8	16.8	17.6	15.9	17.1	18.0	17.8	16.3	15.8	14.2	12.7	11.4	10.8	14.31	18.01
16-Jul	10.0	9.6	8.9	8.6	8.3	8.7	10.6	13.3	16.5	18.4	19.1	19.5	18.3	19.2	17.7	18.7	20.6	21.0	20.9	20.4	19.0	17.4	16.8	16.1	15.74	21.00
17-Jul	14.2	13.2	13.1	12.7	12.4	12.4	12.5	13.4	14.9	16.5	16.7	16.8	17.8	17.5	18.1	18.7	18.7	17.1	16.2	16.0	15.5	14.5	13.9	13.1	15.25	18.75
18-Jul	12.4	12.0	12.3	12.2	11.9	11.7	12.1	13.0	14.4	16.8	19.4	20.4	21.7	22.1	20.2	21.3	22.3	22.5	20.4	16.9	16.2	14.8	13.8	12.6	16.39	22.54
19-Jul	11.7	11.2	10.3	10.1	9.6	10.0	11.9	14.0	17.2	19.7	21.7	23.0	23.8	24.0	22.9	23.7	25.0	23.2	21.2	20.0	18.7	17.3	16.5	15.6	17.60	24.98
20-Jul	14.7	13.8	12.8	12.3	12.6	13.0	13.6	13.6	15.2	18.7	19.7	19.7	20.2	20.3	21.0	20.6	19.1	20.1	19.9	19.2	18.2	16.2	16.4	15.1	16.92	21.02
21-Jul	14.6	14.3	14.0	13.8	13.5	13.4	14.6	15.0	16.0	17.9	20.5	20.6	21.1	17.6	18.6	19.6	20.2	20.7	19.5	18.6	16.9	15.9	15.1	14.4	16.94	21.08
22-Jul	14.0	13.5	11.9	10.8	10.9	10.2	11.8	14.0	16.1	18.7	21.7	23.6	24.0	25.3	25.9	24.9	24.9	24.1	23.8	20.5	18.4	18.1	18.0	17.1	18.42	25.93
23-Jul	15.9	15.0	14.6	14.2	13.8	13.5	13.8	14.6	15.8	17.4	18.8	19.6	20.2	21.8	21.7	21.4	21.8	22.1	21.9	21.2	19.4	16.5	14.6	13.4	17.63	22.14
24-Jul	12.5	11.6	11.3	9.6	10.1	10.6	11.3	13.3	14.0	14.5	15.2	16.7	19.7	24.0	23.7	22.7	22.6	22.2	20.5	20.6	19.4	19.0	18.2	16.5	16.66	23.98
25-Jul	15.4	13.9	13.3	12.1	11.7	12.6	14.0	15.6	19.0	20.5	21.7	21.8	22.2	23.6	24.0	24.9	25.7	25.0	24.4	23.6	21.2	18.9	18.2	16.5	19.17	25.69
26-Jul	15.2	14.4	13.1	12.6	13.1	12.4	14.0	16.8	19.5	22.0	23.2	24.5	24.1	25.8	26.1	26.7	27.0	26.8	25.8	26.0	22.8	20.0	17.8	16.3	20.25	26.99
27-Jul	16.5	15.3	13.9	13.4	13.4	14.1	15.9	16.7	17.1	19.8	22.0	22.7	24.2	24.3	25.7	26.2	24.9	21.7	16.8	16.3	17.0	15.8	15.3	14.2	18.46	26.16
28-Jul	14.2	12.8	11.9	12.1	12.3	12.9	13.0	15.1	18.2	20.3	22.3	23.7	25.0	23.8	23.0	19.0	24.0	24.7	24.3	22.9	20.3	18.1	15.8	14.4	18.50	24.99
29-Jul	13.6	12.1	11.6	11.8	11.1	11.5	13.2	15.6	18.1	21.4	24.1	25.5	26.2	27.2	27.8	29.0	26.8	23.7	23.1	21.6	18.7	15.7	14.9	14.0	19.09	29.04
30-Jul	13.9	13.9	13.5	12.9	12.6	12.3	12.7	14.8	16.6	16.7	17.4	16.7	14.3	13.7	16.1	17.4	15.7	14.0	12.5	12.6	12.4	11.7	11.3	9.9	13.98	17.40
31-Jul	9.5	8.9	8.9	7.9	7.5	7.1	8.1	9.4	10.6	12.0	12.3	14.1	14.8	13.2	14.3	14.3	14.0	13.5	13.2	11.8	10.8	10.6	10.5	10.5	11.15	14.84
	12.85	12.20	11.53	11.10	10.87	11.05	12.10	13.54	15.23	17.09	18.43	19.36	19.86	20.28	20.24	20.30	20.19	19.84	18.86	17.72	16.45	15.20	14.40	13.44	Diurnal Average	
	16.50	15.34	14.56	14.16	13.82	14.12	15.92	16.78	19.50	21.95	24.12	25.50	26.19	27.17	27.75	29.04	26.99	26.78	25.83	26.01	22.76	19.97	18.20	17.07	Diurnal Maximum	

West Central Airshed Society

WCAS - Edson

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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	8.2	5.8	5.0	5.2	6.8	7.0	6.6	5.7	3.7	1.2	5.2	8.3	8.5	10.0	10.5	2.1	9.1	2.7	1.5	2.0	3.0	3.6	2.5	1.1	2.67	10.46
Dir	W	WSW	WSW	WSW	WSW	WSW	SW	SW	SSE	ESE	S	SSE	ESE	SE	ESE	SW	W	W	W	E	SE	SW	WSW	W	SSW	ESE
2 Spd	1.5	0.8	2.0	1.5	5.9	5.6	4.2	4.1	4.6	5.3	5.0	3.5	0.4	4.7	8.2	11.9	11.9	4.3	9.1	6.8	4.6	2.6	6.4	3.8	1.17	11.88
Dir	WSW	N	W	WSW	SW	SW	WSW	SW	S	SSW	SW	SE	WSW	ENE	ENE	ENE	ESE	SE	NNE	NE	N	NNW	ENE	NNE	E	ESE
3 Spd	4.9	8.1	8.8	4.5	1.2	2.5	2.9	6.2	7.4	8.6	6.7	10.9	13.2	10.7	5.3	5.6	5.8	5.6	11.4	4.1	0.6	3.4	3.1	4.7	4.97	13.23
Dir	NE	N	N	NNW	N	W	WNW	WNW	WNW	WNW	NW	W	W	W	WNW	WNW	NW	NNW	NNW	NNW	WNW	W	WSW	W	WNW	W
4 Spd	3.2	4.8	4.3	3.8	5.5	5.1	6.7	8.2	7.9	8.9	10.2	8.8	6.1	2.9	4.0	4.8	10.3	5.4	3.7	5.8	3.4	6.3	5.9	6.3	4.02	10.34
Dir	W	W	W	W	W	WSW	WSW	WSW	SW	SW	SW	SW	SSW	WNW	NNE	NW	NNW	NW	N	N	NNW	NW	NW	W	W	NNW
5 Spd	5.2	5.7	2.3	7.0	7.7	8.0	5.4	5.1	4.7	3.0	8.2	2.1	4.2	2.5	4.3	4.1	3.8	6.4	1.8	4.9	3.6	7.9	9.7	5.2	3.35	9.65
Dir	W	WSW	SW	W	W	W	WSW	WSW	NNW	WNW	SSW	SW	WSW	NW	WNW	WNW	WNW	N	NNW	NNE	NNE	N	N	NNW	WNW	N
6 Spd	2.9	3.1	2.0	2.8	5.7	5.5	6.0	5.7	8.6	8.4	7.3	4.8	6.3	11.0	5.5	10.3	13.9	9.4	13.5	18.7	12.1	3.5	3.7	5.5	3.37	18.70
Dir	W	WNW	WNW	WSW	WSW	WSW	SW	WSW	W	W	WNW	WNW	NW	NNW	NNW	N	N	N	NE	NE	ENE	NNE	S	WSW	NNW	NE
7 Spd	4.4	2.2	1.8	4.5	6.0	6.6	8.5	7.5	3.6	3.4	0.6	2.0	2.3	1.8	3.1	3.0	4.3	7.3	11.4	15.0	14.0	17.1	16.8	12.1	2.60	17.06
Dir	NNW	W	N	WSW	WSW	WSW	WSW	WSW	SW	N	ESE	ESE	W	W	NNW	NNE	E	ESE	E	ENE	NE	NE	NE	NE	NE	NE
8 Spd	9.8	12.4	2.3	4.6	4.1	1.7	1.6	3.0	2.0	1.9	0.4	5.2	6.3	2.8	2.1	7.9	10.4	11.6	15.0	16.9	13.4	10.8	6.0	1.5	4.66	16.87
Dir	N	N	NW	NW	NW	W	NNW	SSE	SSE	SSE	ESE	ENE	NE	NE	SE	ENE	ENE	ENE	ENE	ENE	ENE	NNE	NNW	NE	NE	ENE
9 Spd	4.5	4.1	3.8	1.1	3.8	3.0	2.8	8.4	6.9	8.1	10.6	14.1	4.9	5.3	6.5	3.2	2.9	3.4	7.7	9.1	7.7	6.1	1.2	3.6	2.43	14.10
Dir	SSE	WNW	W	NNE	W	WNW	E	NE	NE	NE	NE	ENE	SE	WSW	SW	NE	ESE	NE	NNE	NNE	NNE	N	W	WSW	NE	ENE
10 Spd	5.4	3.7	3.9	0.9	1.8	3.2	4.0	2.8	4.3	5.9	8.4	7.6	7.3	4.7	8.6	7.0	6.1	4.1	2.6	4.0	4.3	4.8	4.8	4.5	3.08	8.64
Dir	SW	SSW	WSW	W	SW	SW	WSW	WSW	WSW	WSW	WSW	WSW	W	WSW	NE	NE	N	NNW	W	WSW	W	W	W	W	W	NE
11 Spd	4.0	3.0	2.3	3.5	2.2	4.0	5.7	5.8	5.0	4.3	5.0	3.7	4.9	4.5	7.9	2.6	6.5	8.0	7.1	7.0	4.4	4.2	4.3	3.4	3.81	7.97
Dir	W	SW	SW	W	WSW	WSW	WSW	WSW	W	WSW	SW	W	SW	WSW	NE	ENE	SW	WSW	SW	WSW	WSW	W	W	WSW	WSW	WSW
12 Spd	3.5	5.4	4.5	5.1	5.0	5.5	3.4	6.5	8.5	8.1	8.2	7.6	7.6	7.1	15.3	14.0	6.9	6.3	5.1	2.3	5.1	2.1	3.6	3.9	3.64	15.33
Dir	WSW	WSW	WSW	WSW	WSW	W	WSW	SW	WSW	WSW	WSW	W	WNW	NNW	N	N	NNE	N	NNE	W	N	W	WNW	W	WNW	N
13 Spd	2.9	3.1	3.5	5.0	3.8	3.5	4.6	5.2	2.1	3.3	2.9	4.3	4.9	1.0	5.1	4.9	7.5	6.5	3.6	6.9	5.4	5.5	5.1	4.4	3.59	7.48
Dir	WSW	W	WSW	WSW	W	WSW	WSW	WSW	WSW	NNW	W	WSW	NNE	WNW	WSW	SW	SW	SW	W	NW	W	W	WSW	WSW	W	SW
14 Spd	2.8	1.6	2.1	2.2	4.0	3.7	2.8	0.8	3.8	4.0	5.8	2.1	3.7	2.8	11.2	6.0	7.7	5.7	1.5	1.5	2.2	2.3	2.4	1.8	0.08	11.22
Dir	WSW	SW	WSW	SW	WSW	WSW	WSW	SW	ENE	SE	S	SSE	S	ENE	NNE	NE	NE	ENE	SE	S	W	W	W	W	E	NNE
15 Spd	0.6	2.4	1.1	1.1	2.3	2.5	4.5	8.1	3.8	4.3	3.2	0.9	7.0	6.9	8.7	8.8	1.8	7.2	10.3	8.3	5.9	4.1	2.6	4.5	1.48	10.32
Dir	NW	ENE	N	NW	NNW	NNW	NNE	ENE	SE	SSW	SSW	NE	N	NNE	SSE	S	E	NNE	N	N	NNW	WNW	WSW	W	NNE	N
16 Spd	3.4	3.2	6.1	6.9	5.0	5.3	5.7	4.6	4.3	7.5	6.2	2.2	4.6	10.0	13.2	8.8	10.1	8.9	4.7	4.6	3.2	4.3	3.9	3.6	3.27	13.19
Dir	W	W	W	W	WSW	WSW	SW	SW	N	NNE	NE	N	WNW	NNE	NNE	N	N	N	N	NNE	NW	W	WNW	WNW	NNW	NNE
17 Spd	3.4	4.0	4.0	4.2	5.2	4.2	3.7	4.4	5.1	3.5	6.0	8.5	8.7	6.5	6.6	6.3	5.0	3.9	6.8	7.3	6.8	3.1	1.0	0.4	2.26	8.68
Dir	WSW	SW	SW	WSW	W	W	WSW	WSW	WSW	NNW	N	N	N	NNW	N	E	S	WSW	SSW	SW	SW	WSW	NW	W	W	N
18 Spd	0.6	1.6	0.1	3.6	4.6	4.2	6.0	4.4	5.2	3.6	3.8	5.9	6.9	4.4	9.8	7.6	6.3	1.0	10.3	10.9	6.8	1.2	2.6	3.3	1.61	10.90
Dir	WSW	WNW	NW	NNE	N	NNW	NNE	NE	NNE	ENE	E	ESE	E	ENE	SSW	S	SW	E	NNE	N	N	W	W	W	NNE	N
19 Spd	2.2	3.9	4.9	6.6	7.6	7.9	8.8	9.5	7.2	7.2	6.7	8.5	10.7	7.6	10.4	13.9	11.1	15.3	14.5	8.9	4.6	2.1	0.2	2.4	7.30	15.29
Dir	WSW	W	WSW	WSW	WSW	SW	WSW	SW	SW	SW	W	WSW	WSW	WSW	SW	SW	SW	W	W	W	W	W	W	W	WSW	W
20 Spd	2.7	3.2	2.9	2.9	3.4	3.5	3.0	4.9	5.3	10.2	9.2	5.9	7.9	5.3	8.1	7.7	7.2	8.0	4.1	4.0	4.0	2.7	3.5	1.6	4.73	10.19
Dir	SW	SW	WSW	WSW	SW	WSW	WSW	SW	SW	SW	WSW	W	WSW	WNW	WSW	W	W	W	WNW	W	W	W	W	SW	WSW	SW
21 Spd	1.7	2.5	1.1	1.9	2.7	1.6	0.8	2.5	4.3	7.6	10.6	10.6	8.8	7.2	4.6	5.7	4.3	4.1	3.7	3.3	5.7	5.5	0.5	1.0	2.96	10.58
Dir	W	WSW	WSW	SW	WSW	W	SW	SW	WSW	WSW	WSW	WSW	WSW	NW	NW	W	W	NW	NNW	NNE	N	NE	NE	SW	W	WSW
22 Spd	2.2	3.2	0.7	3.4	4.2	1.8	3.2	4.9	4.5	3.9	2.2	3.8	6.1	8.9	5.0	5.1	9.3	10.7	9.2	7.3	0.8	3.8	4.2	3.7	1.74	10.74
Dir	WSW	WSW	W	W	W	WSW	SW	SW	WSW	SW	S	WSW	WSW	SW	WSW	NNW	N	NE	ENE	NNW	E	NW	NW	NNW	WNW	NE

WCAS - Edson

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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
23 Spd	2.6	1.5	0.9	1.7	1.4	3.8	3.3	3.3	3.8	5.3	4.2	5.6	5.9	6.9	6.4	3.0	3.2	5.7	5.0	4.3	3.0	2.7	2.4	2.7	3.27	6.89
Dir	WNW	W	NNW	NNW	SW	WSW	WSW	WSW	SW	W	W	WNW	W	W	NW	NW	NW	NNW	WNW	WNW	WNW	W	WSW	WSW	W	W
24 Spd	4.1	4.9	4.3	4.2	5.3	3.5	4.2	5.2	6.5	5.9	4.4	3.0	2.0	4.3	8.3	6.6	5.9	8.3	7.2	4.4	3.4	2.9	2.2	2.4	3.45	8.33
Dir	WSW	W	W	WSW	W	W	WSW	WSW	SW	SW	SW	WSW	WSW	W	NNW	NNW	N	NNW	NNW	NW	W	WNW	NW	WSW	WNW	NNW
25 Spd	3.1	3.1	4.2	4.0	5.3	5.0	5.0	2.4	1.8	3.1	2.5	4.4	9.0	9.0	11.4	10.1	7.3	16.1	13.8	11.5	6.4	5.8	6.3	6.8	3.17	16.12
Dir	WSW	W	W	WSW	W	WSW	WSW	SW	ENE	ESE	E	E	ENE	NE	NE	ENE	ENE	ENE	ENE	ESE	ENE	NNE	N	NNW	NE	ENE
26 Spd	3.9	3.6	4.8	5.4	6.6	7.0	6.5	5.8	3.8	2.2	2.0	2.7	2.5	2.2	4.3	4.7	7.6	6.4	0.5	4.9	1.0	0.6	1.8	0.9	0.82	7.58
Dir	NW	W	WSW	WSW	W	W	W	WSW	WSW	SE	ESE	SE	NE	ENE	ENE	ENE	NE	NE	ESE	SE	WNW	WNW	W	NNW	WNW	NE
27 Spd	7.4	3.9	1.5	4.0	5.7	6.8	5.3	2.4	2.9	4.9	7.1	9.0	4.2	4.4	2.7	5.5	12.7	10.1	5.3	6.2	2.4	3.9	5.0	4.1	1.17	12.70
Dir	N	NW	WSW	W	WSW	WSW	W	SW	SW	S	SSE	SSE	SE	S	E	ENE	NNE	N	SW	S	WSW	WSW	W	WSW	SW	NNE
28 Spd	2.0	1.2	2.3	6.6	6.8	6.4	7.6	7.4	3.7	3.6	4.0	2.6	2.4	13.9	11.2	6.8	3.1	7.5	8.8	6.7	2.3	2.4	1.0	1.0	1.98	13.95
Dir	WNW	W	SW	SW	WSW	WSW	SW	WSW	WSW	SW	SSW	SW	SW	NE	N	NE	SSW	S	S	SSW	SW	N	WNW	WNW	SW	NE
29 Spd	4.8	4.2	3.5	7.1	4.3	5.3	7.7	6.2	7.0	5.0	1.1	1.9	4.0	3.1	6.7	5.6	1.9	1.6	11.4	9.9	5.0	4.5	3.0	2.1	1.87	11.41
Dir	W	WSW	SW	W	WSW	WSW	WSW	SW	SW	WSW	WNW	SE	S	SSE	S	SSE	S	SSE	ENE	N	NW	E	NW	WNW	SW	ENE
30 Spd	3.7	4.5	3.1	4.6	4.9	4.6	5.5	3.5	4.4	2.7	3.6	3.0	8.5	0.7	1.5	3.6	5.1	8.2	1.2	8.9	3.1	0.8	3.8	2.6	3.23	8.95
Dir	WSW	WSW	SW	SW	SW	SW	W	W	W	NNE	W	NNW	SW	SSE	N	WNW	W	WSW	SE	SW	WSW	N	SW	WSW	WSW	SW
31 Spd	6.1	5.6	4.5	1.5	2.6	4.9	6.0	6.3	7.8	8.1	7.8	8.1	8.6	5.4	9.5	9.8	10.3	10.8	8.3	9.5	7.3	5.4	5.3	4.7	6.50	10.81
Dir	WSW	WSW	W	SW	SSW	SW	SW	WSW	WSW	W	W	W	WSW	WNW	WNW	W	W	W	W	W	WSW	WSW	WSW	WSW	W	W
Spd	2.52	2.72	2.57	3.32	4.09	4.26	3.93	3.60	2.96	2.63	2.65	1.67	2.09	1.90	2.28	1.90	2.08	2.34	2.48	2.18	1.88	2.18	2.06	2.15	Diurnal Average	
Dir	W	W	W	W	WSW	WSW	WSW	WSW	WSW	WSW	WSW	WSW	W	NW	N	N	NNW	NNW	NNE	N	NNW	NNW	NW	WNW		
Spd	9.84	12.36	8.78	7.08	7.67	8.01	8.83	9.52	8.58	10.19	10.62	14.10	13.23	13.95	15.33	14.02	13.92	16.12	15.03	18.70	13.99	17.06	16.80	12.07	Diurnal Maximum	
Dir	6.28	4.26	354.26	260.26	263.87	263.66	241.12	234.47	269.50	231.83	41.31	74.31	262.24	40.66	5.78	7.60	3.70	70.64	75.86	55.89	40.88	34.48	40.07	52.37		

Maximum Speed Value: 18.7 kph on Jul 6 20:00
Minimum Speed Value: 0.1 kph on Jul 18 03:00
Maximum Daily Speed Average: 7.30 kph on Jul 19
Minimum Daily Speed Average: 0.08 kph on Jul 14
Maximum Diurnal Speed Average: 4.26 kph at hour 6
Minimum Diurnal Speed Average: 1.67 kph at hour 12

Monthly Average Velocity: 1.862 kph 281.55 deg
Speed Percentiles: P_1 = 0.6 P_{10} = 1.9 Q_1 = 3.1 Median = 4.7 Q_3 = 6.9 P_{90} = 9.2 P_{99} = 15.3
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 (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	35	46	6	0	0	0	87
NorthEast	18	36	13	0	0	0	67
East	23	11	9	0	0	0	43
SouthEast	21	5	2	0	0	0	28
South	19	11	0	0	0	0	30
SouthWest	82	80	2	0	0	0	164
West	168	91	3	0	0	0	262
NorthWest	41	21	1	0	0	0	63
Total	407	301	36	0	0	0	744

WCAS - Edson

Summary of Hourly Standard Deviations

Wind Speed (WS) - kph

July 2016

Maximum Value: 9.66 kph on Jul 6 19:00

Maximum Daily Average: 3.61 kph on Jul 31

Minimum Value: 0.5 kph on Jul 18 00:00

Minimum Daily Average: 1.92 kph on Jul 14

Maximum Diurnal Average: 3.97 kph at hour 15

Minimum Diurnal Average: 1.70 kph at hour 3

Monthly Average: 2.654 kph

Percentiles: P_1 = 1.0 P_{10} = 1.4 Q_1 = 1.7 Median = 2.3 Q_3 = 3.3 P_{90} = 4.3 P_{99} = 7.0

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-Jul	1.8	1.8	1.4	1.8	2.2	1.9	2.0	2.8	1.8	1.8	2.8	2.8	2.6	3.5	3.6	7.2	5.3	3.3	1.4	2.2	1.6	1.0	1.2	1.2	2.47	7.24
2-Jul	1.5	1.0	1.2	1.6	2.0	1.8	1.9	1.9	2.2	2.3	2.5	2.7	3.0	2.9	3.9	5.1	4.6	4.3	3.7	3.3	1.3	2.0	2.6	2.8	2.58	5.13
3-Jul	3.2	1.5	2.2	3.5	2.1	2.0	2.2	4.3	4.6	5.3	4.4	6.4	6.1	5.4	3.9	4.2	4.3	3.0	6.4	3.1	1.8	1.3	1.5	1.0	3.48	6.38
4-Jul	1.5	1.3	1.6	1.1	1.9	1.5	2.0	2.7	2.9	3.7	4.9	4.4	4.3	3.3	3.1	4.6	4.3	4.0	2.6	1.1	2.1	3.6	2.7	2.1	2.81	4.93
5-Jul	1.8	1.7	2.1	2.1	1.9	2.2	1.9	2.8	3.3	3.2	3.5	3.1	3.9	3.3	3.8	3.6	3.3	4.8	2.4	2.1	1.1	2.0	1.6	2.9	2.68	4.82
6-Jul	1.7	2.1	1.7	1.6	1.7	2.0	2.1	2.9	4.5	4.8	4.6	3.6	4.3	5.6	3.4	4.6	3.7	2.8	9.7	4.0	4.5	3.7	2.7	2.8	3.54	9.66
7-Jul	2.7	1.4	1.5	2.5	1.7	2.1	3.3	3.3	2.4	3.0	2.2	3.8	3.0	2.9	3.4	1.6	3.2	2.7	3.4	3.0	3.4	3.5	3.2	2.7	2.75	3.82
8-Jul	1.9	1.8	3.1	2.1	1.5	1.6	1.7	2.3	1.8	2.1	1.7	3.9	3.3	3.2	2.8	3.3	4.4	4.0	3.1	4.1	3.5	1.9	3.9	5.7	2.86	5.68
9-Jul	3.7	2.8	1.7	1.5	1.9	1.9	2.5	3.1	1.9	2.8	3.0	2.8	3.2	2.4	4.9	2.8	1.8	3.5	1.7	1.9	1.4	4.2	1.5	1.5	2.51	4.86
10-Jul	1.5	2.1	2.0	1.2	1.8	1.1	1.5	1.8	1.9	2.7	3.4	3.8	3.3	3.3	2.6	2.5	2.3	2.9	1.9	1.7	1.4	1.3	1.6	1.3	2.12	3.84
11-Jul	1.8	1.7	1.5	1.6	1.3	1.5	1.8	2.1	2.4	2.0	2.4	2.7	1.8	2.0	2.8	2.0	2.1	3.2	2.7	2.7	2.1	1.4	1.5	1.4	2.02	3.20
12-Jul	1.5	1.6	1.9	1.8	1.5	1.8	3.1	2.9	3.1	3.1	4.1	4.5	4.6	4.6	5.7	3.9	2.1	1.9	1.6	2.8	1.7	1.5	2.1	2.1	2.73	5.67
13-Jul	1.9	1.4	1.3	1.3	1.7	1.4	1.6	2.0	1.5	2.3	2.3	2.4	5.4	1.6	2.9	2.0	2.0	1.9	5.0	5.2	1.5	1.8	1.8	1.6	2.24	5.37
14-Jul	1.4	1.8	1.4	1.2	1.5	1.5	1.2	1.0	2.0	2.3	2.3	1.7	2.4	5.4	3.5	2.6	2.7	2.5	1.8	1.5	0.8	1.1	1.1	1.5	1.92	5.42
15-Jul	1.5	1.2	1.5	1.4	2.1	2.4	1.9	2.0	2.1	1.8	2.3	3.7	3.2	3.9	3.6	3.5	2.7	2.6	3.0	1.8	1.5	1.3	1.5	1.6	2.25	3.92
16-Jul	2.3	1.8	2.6	1.6	1.7	1.7	1.1	1.5	2.8	2.6	3.8	3.5	1.9	8.0	8.3	3.8	3.3	2.6	2.0	2.5	1.1	2.2	2.6	2.3	2.81	8.33
17-Jul	1.5	1.8	1.5	1.4	1.1	1.3	1.4	1.5	1.9	2.6	4.1	3.3	2.8	3.1	3.0	2.8	1.9	2.9	1.7	1.7	1.4	1.7	1.5	0.5	2.01	4.14
18-Jul	0.9	1.4	0.7	1.4	1.4	3.6	1.8	1.3	1.5	2.4	3.0	3.3	4.1	3.0	3.9	4.2	3.5	3.5	2.1	1.8	2.3	1.5	1.8	1.4	2.33	4.17
19-Jul	2.3	1.8	1.6	2.0	2.1	2.1	2.5	2.5	2.2	3.1	4.3	4.7	4.6	4.3	4.5	3.7	4.0	7.1	6.9	5.9	3.0	2.4	2.3	1.8	3.41	7.14
20-Jul	2.0	2.0	1.4	1.5	1.9	1.4	1.6	1.7	2.2	3.5	3.7	3.5	4.5	3.4	4.5	4.9	4.4	4.3	3.4	2.1	1.9	1.9	2.0	1.2	2.70	4.89
21-Jul	1.1	1.2	1.0	2.4	2.1	1.3	1.0	1.6	3.0	4.1	4.7	4.7	3.9	4.5	3.3	3.4	2.8	2.8	3.0	2.3	2.7	2.5	1.6	1.2	2.60	4.75
22-Jul	1.3	1.3	0.8	1.6	1.7	1.1	1.6	1.7	2.2	2.3	2.4	3.4	3.8	5.4	4.3	2.9	3.2	3.6	2.4	2.7	2.2	2.0	3.0	2.1	2.46	5.39
23-Jul	2.0	1.4	2.2	2.2	1.4	1.5	1.2	1.2	2.1	3.1	3.7	3.8	3.6	5.0	4.0	2.5	2.8	3.8	3.5	3.5	2.6	1.6	1.4	1.6	2.57	4.98
24-Jul	1.3	1.3	1.9	1.1	1.6	2.0	1.6	2.0	1.6	1.9	1.9	2.2	2.1	4.1	3.9	3.6	3.2	6.0	3.7	3.9	2.3	2.9	2.3	1.7	2.50	6.04
25-Jul	0.9	1.1	1.3	2.0	1.6	1.6	1.6	1.8	1.9	2.5	3.1	4.5	3.1	3.6	4.2	4.3	4.3	3.7	3.4	3.6	2.0	2.8	2.7	3.9	2.74	4.55
26-Jul	3.5	2.0	1.5	1.8	2.0	1.9	2.2	2.1	2.3	2.0	2.5	2.9	3.1	4.0	3.1	3.6	3.1	2.5	3.1	3.1	2.2	1.1	1.7	1.4	2.45	4.03
27-Jul	2.9	2.6	1.7	1.4	2.1	2.3	1.8	2.1	1.8	2.3	2.4	2.4	2.7	2.5	2.4	3.2	7.5	4.9	3.7	3.4	2.0	2.7	1.9	1.7	2.69	7.49
28-Jul	2.8	1.3	1.4	2.0	1.8	1.7	1.4	3.0	2.6	2.3	2.7	2.5	3.4	6.0	7.5	5.7	2.4	3.0	2.3	1.7	2.1	2.4	1.4	1.7	2.71	7.50
29-Jul	1.6	1.8	2.6	2.0	1.7	1.9	2.2	2.1	2.0	3.0	2.3	3.4	3.7	3.5	4.7	4.6	7.8	5.8	2.8	2.8	4.2	4.8	2.8	1.8	3.16	7.79
30-Jul	1.8	2.6	2.0	2.4	1.4	2.6	2.4	2.0	2.3	2.3	3.1	2.9	2.6	2.8	2.1	2.5	2.9	4.3	5.2	3.4	1.8	1.5	2.4	2.1	2.56	5.22
31-Jul	2.6	2.1	2.1	1.5	1.6	1.7	2.1	2.8	3.7	4.6	4.6	4.5	4.3	4.6	5.6	5.4	6.4	6.1	5.2	5.3	3.5	2.4	1.8	2.1	3.61	6.35
	1.94	1.70	1.70	1.76	1.74	1.82	1.87	2.22	2.41	2.82	3.18	3.49	3.50	3.91	3.97	3.69	3.62	3.69	3.38	2.91	2.15	2.20	2.05	1.96	Diurnal Average	
	3.71	2.81	3.09	3.48	2.22	3.64	3.30	4.32	4.65	5.33	4.93	6.38	6.07	8.02	8.33	7.24	7.79	7.14	9.66	5.86	4.47	4.78	3.87	5.68	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WCAS - Edson

Summary of Hourly Standard Deviations

Wind Direction (WD) - deg

July 2016

Maximum Value: 95.47 deg on Jul 9 00:00

Maximum Daily Average: 49.39 deg on Jul 26

Minimum Value: 9.7 deg on Jul 8 20:00

Minimum Daily Average: 25.44 deg on Jul 11

Maximum Diurnal Average: 50.58 deg at hour 14

Minimum Diurnal Average: 22.14 deg at hour 6

Monthly Average: 35.228 deg

Percentiles: P_1 = 10.6 P_{10} = 15.0 Q_1 = 19.2 Median = 30.2 Q_3 = 43.8 P_{90} = 65.1 P_{99} = 91.9

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																								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-Jul	13.6	15.5	15.8	16.1	14.6	15.9	17.3	32.2	36.1	73.7	31.0	29.0	28.5	31.1	24.5	89.8	30.6	46.8	53.7	81.7	43.3	12.1	23.0	73.4	35.38	89.78
2-Jul	42.2	63.2	32.3	39.1	18.6	17.4	29.5	30.2	28.1	31.5	26.8	47.6	89.1	54.9	23.6	22.5	43.3	88.8	23.4	23.8	33.7	45.1	35.2	29.1	38.30	89.14
3-Jul	29.6	17.8	20.0	61.6	85.4	43.9	35.3	43.3	37.8	38.4	43.3	33.5	26.0	29.7	49.1	45.2	43.9	41.4	39.2	33.4	82.9	23.0	41.7	10.7	39.85	85.43
4-Jul	34.1	12.2	15.0	14.6	15.8	16.6	14.8	17.6	19.6	27.6	24.6	36.7	50.6	68.6	63.4	68.6	27.8	43.3	49.9	14.6	44.3	31.1	39.2	16.8	31.99	68.63
5-Jul	13.5	15.7	64.7	14.8	13.1	14.0	19.0	34.1	50.1	68.5	31.5	90.6	67.4	86.9	57.0	61.4	48.8	45.0	64.1	18.4	14.2	16.5	17.6	37.9	40.20	90.60
6-Jul	31.6	30.7	42.7	31.1	15.6	16.5	22.1	28.3	28.1	36.3	40.2	54.3	48.0	30.0	34.0	32.9	20.8	18.5	20.5	15.2	16.2	76.1	59.1	40.7	32.89	76.09
7-Jul	42.1	28.6	65.3	28.8	16.7	15.0	15.0	21.2	54.4	71.7	93.0	76.5	82.5	83.1	72.0	46.8	48.6	33.8	18.0	11.1	10.6	10.4	10.1	14.1	40.40	93.00
8-Jul	21.6	17.5	51.0	33.5	28.3	51.5	77.9	45.0	43.4	67.2	93.8	63.7	44.4	77.4	82.7	30.7	29.5	17.9	13.1	9.7	10.3	15.0	42.9	95.5	44.31	95.47
9-Jul	65.2	28.8	23.3	79.0	41.0	34.3	60.7	18.5	20.4	20.7	16.2	13.7	59.7	40.8	41.8	56.5	42.7	65.2	17.0	15.4	13.4	63.6	52.1	22.3	38.01	78.96
10-Jul	15.2	29.2	24.8	59.4	28.6	17.6	16.5	22.0	23.2	20.4	24.1	25.8	28.4	43.5	17.2	22.5	30.3	34.6	34.4	45.5	15.7	13.8	14.2	14.6	25.90	59.44
11-Jul	18.8	22.8	38.1	12.9	26.8	15.0	17.7	18.4	23.5	27.9	29.4	56.1	24.5	34.1	28.3	65.9	17.1	22.0	20.6	17.8	21.5	15.6	17.3	18.5	25.44	65.89
12-Jul	15.4	12.3	13.2	15.4	13.8	14.1	53.4	37.4	19.8	22.1	28.0	32.5	36.3	40.4	27.8	22.2	24.8	32.9	44.9	68.1	31.5	31.7	25.5	24.1	28.65	68.11
13-Jul	18.7	19.9	18.6	15.4	13.6	14.9	18.2	17.8	27.6	44.0	47.4	48.0	65.1	76.5	28.5	30.5	14.2	18.3	56.3	35.2	14.7	16.3	16.6	16.7	28.87	76.52
14-Jul	43.1	43.8	40.4	27.3	14.8	13.6	17.8	43.6	41.5	43.3	23.2	62.1	48.2	70.1	19.4	24.6	24.5	33.6	67.6	59.9	12.9	15.2	14.0	30.6	34.80	70.15
15-Jul	68.0	62.0	80.3	52.0	70.0	50.8	37.0	16.7	49.4	28.9	51.7	90.9	36.0	38.8	48.6	32.4	78.7	28.5	18.5	16.0	14.2	13.5	39.5	18.5	43.37	90.89
16-Jul	39.8	21.3	11.3	10.7	13.6	21.5	14.2	21.4	60.3	30.0	36.3	62.7	33.4	37.5	33.2	31.0	27.1	21.3	38.0	26.4	25.3	32.9	36.1	35.4	30.02	62.68
17-Jul	26.4	27.1	16.7	15.7	11.4	14.2	19.1	18.5	20.8	53.1	48.1	21.4	23.4	27.0	32.9	34.7	33.6	56.0	17.5	14.6	9.8	17.6	63.6	24.9	27.00	63.56
18-Jul	28.7	43.3	79.3	30.7	14.8	68.6	18.5	19.6	19.6	58.8	55.6	41.8	38.2	53.9	23.3	33.3	37.1	85.7	13.1	18.7	14.4	62.5	45.9	36.7	39.25	85.72
19-Jul	34.1	36.3	16.1	15.3	14.9	14.3	16.1	14.2	19.7	26.2	39.7	32.0	26.7	37.0	19.3	17.3	19.7	24.6	24.6	36.3	38.7	59.5	87.6	28.7	29.12	87.56
20-Jul	33.0	28.7	22.0	18.6	19.1	16.5	39.9	16.7	16.1	20.1	23.5	31.9	28.3	38.5	30.8	36.0	35.7	31.2	40.7	26.5	23.8	30.4	35.2	23.4	27.77	40.66
21-Jul	19.3	18.1	19.1	24.7	23.2	18.3	37.4	26.5	26.7	26.9	26.1	24.6	27.4	41.9	39.9	31.6	35.8	33.6	37.7	30.3	26.9	38.4	92.4	62.0	32.88	92.41
22-Jul	22.2	19.6	44.9	12.1	11.1	20.2	26.7	21.7	30.2	40.2	70.1	61.8	34.2	43.5	63.0	32.9	28.9	27.6	19.2	24.4	85.3	28.6	35.9	37.4	35.07	85.28
23-Jul	35.0	29.4	63.5	59.1	37.4	19.3	21.7	20.9	29.9	32.8	56.4	43.9	45.1	41.5	40.7	43.6	51.7	40.7	38.3	39.6	50.0	25.0	25.1	32.6	38.46	63.48
24-Jul	17.9	10.6	16.3	16.5	14.8	28.7	17.6	19.8	13.3	15.1	17.1	38.3	75.1	54.5	29.7	28.0	25.7	36.3	29.9	55.1	40.4	60.0	55.1	37.8	31.40	75.09
25-Jul	20.9	16.8	15.1	23.3	16.1	15.8	16.2	38.9	76.8	52.3	81.6	72.4	22.5	25.1	21.2	29.6	57.0	13.0	14.9	16.4	39.0	37.7	40.3	35.4	33.25	81.58
26-Jul	52.5	46.2	13.7	18.3	13.2	12.7	14.5	19.5	36.8	65.0	80.6	66.9	79.7	83.7	61.3	56.1	22.8	23.4	94.5	31.6	79.0	75.8	62.2	75.3	49.39	94.46
27-Jul	23.6	47.0	65.5	27.9	26.2	19.6	18.1	47.8	36.2	35.2	28.5	19.6	48.6	42.7	57.0	48.6	36.9	46.7	45.6	24.6	46.0	40.3	20.0	18.1	36.27	65.48
28-Jul	82.7	78.1	32.6	13.7	19.0	18.4	9.9	18.6	33.0	39.5	46.1	70.4	76.5	29.9	25.0	49.1	45.8	26.7	17.5	19.5	29.6	60.9	51.5	49.4	39.31	82.71
29-Jul	16.4	20.2	28.9	13.9	15.2	16.3	14.1	20.1	19.8	41.6	81.3	70.6	63.1	70.3	53.6	56.5	83.2	93.0	12.6	30.8	69.1	89.0	42.0	59.7	45.05	93.03
30-Jul	35.7	28.7	22.3	43.8	15.3	16.2	26.3	37.4	35.9	75.0	54.6	55.9	16.3	93.2	88.6	38.5	28.3	26.4	87.3	19.2	33.5	71.0	30.1	29.4	42.04	93.18
31-Jul	18.6	19.1	22.7	34.0	36.1	14.6	17.9	22.9	25.8	30.4	31.6	30.4	28.4	42.0	35.3	29.3	33.8	30.4	36.6	31.3	24.8	25.2	17.7	20.2	27.47	42.01
	31.60	29.37	33.40	28.36	23.16	22.14	25.17	26.15	32.38	40.79	44.56	48.57	45.22	50.58	41.06	40.28	36.41	38.30	35.77	29.39	32.75	37.22	38.34	34.52	Diurnal Average	
	82.71	78.08	80.34	78.96	85.43	68.56	77.94	47.79	76.76	75.00	93.79	90.89	89.14	93.18	88.59	89.78	83.22	93.03	94.46	81.71	85.28	88.98	92.41	95.47	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

BRETON
STATION #913

CONTINUOUS AIR MONITORING DATA

JULY 2016

Summary Report **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

WCAS / Breton **July 2016**
Station 913

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	Percentile P10	Q1	Median	Q3	P90	Exceedences 1-hour	Exceedences 24-hour	24 Hour Average Max (ppm)
SO_2 (ppb)	35	709	100.0	0.4	0.0	13.4	0.0	0.0	0.1	0.2	0.7	0	0	0.002
O_3 (ppb)	35	709	100.0	19.8	0.0	49.8	5.0	11.4	20.1	27.9	33.3	0	-	0.028
NO (ppb)	36	708	100.0	0.4	0.0	10.3	0.0	0.1	0.1	0.4	0.8	-	-	-
NO_2 (ppb)	36	708	100.0	3.7	1.7	15.0	2.6	2.9	3.5	4.0	4.8	0	0	0.005
NO_x (ppb)	36	708	100.0	4.1	1.8	25.4	2.8	3.1	3.7	4.5	5.6	-	-	-
Wind Speed (kph)	0	744	100.0	5.8	0.1	24.3	1.2	2.3	4.5	8.2	11.6	-	-	-
Temperature (^oC)	0	744	100.0	16.5	5.7	28.8	11.0	13.0	15.8	19.8	22.9	-	-	-
Relative Humidity (%)	0	744	100.0	70.4	21.5	93.2	41.5	55.1	76.0	88.2	91.1	-	-	-
Std Dev Wind Direction (deg)	0	744	100.0	38.9	10.3	98.5	16.1	21.1	32.3	53.1	72.9	-	-	-
Std Dev Wind Speed (kph)	0	744	100.0	2.7	0.3	10.2	1.2	1.6	2.4	3.5	4.7	-	-	-

WCAS - Breton
Summary of Hourly Averages

Sulphur Dioxide (SO_2) - ppb
July 2016

Maximum Value: 13.37 ppb on Jul 8 13:00

Maximum Daily Average: 1.86 ppb on Jul 26

Minimum Value: 0.0 ppb on Jul 4 22:00

Minimum Daily Average: 0.02 ppb on Jul 31

Maximum Diurnal Average: 1.01 ppb at hour 14

Minimum Diurnal Average: 0.06 ppb at hour 5

Monthly Average: 0.390 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.2 P_{90} = 0.7 P_{99} = 4.9

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																								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-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.08	0.74
2-Jul	0.0	0.2	Z	0.0	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	0.1	0.1	0.1	0.0	0.0	0.05	0.23
3-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.09	0.26
4-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.2	6.7	4.4	2.3	1.5	0.6	0.5	0.5	0.5	0.5	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.80	6.66
5-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.2	0.2	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.1	0.11	0.72
6-Jul	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.5	0.4	0.2	0.3	0.6	0.20	0.65
7-Jul	0.5	0.4	Z	0.2	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.13	0.52
8-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	1.2	13.4	9.4	2.1	0.6	0.7	2.3	0.7	0.4	0.6	0.6	0.4	0.2	1.47	13.37
9-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.6	5.0	3.1	0.4	0.7	0.9	1.2	0.8	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.60	4.97
10-Jul	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.4	2.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.17	2.08
11-Jul	0.1	0.1	Z	0.0	0.1	0.1	0.1	0.2	0.2	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	0.0	0.06	0.16
12-Jul	0.0	0.0	Z	0.1	0.0	0.0	0.1	0.1	0.5	3.2	3.2	3.1	4.7	3.5	2.3	0.6	0.2	1.1	0.9	0.1	0.1	0.1	0.1	0.1	1.05	4.66
13-Jul	0.0	0.0	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.6	0.3	0.2	0.2	0.1	0.6	1.2	1.3	1.4	0.6	0.2	0.1	0.1	0.1	0.0	0.34	1.36
14-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.4	0.6	2.9	2.7	1.4	1.6	0.7	0.4	0.2	0.2	0.3	0.6	0.5	0.3	0.2	0.1	0.58	2.93
15-Jul	0.1	0.0	Z	0.1	0.0	0.1	0.1	0.2	1.0	0.4	0.7	1.6	1.2	0.1	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.26	1.56
16-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.3	1.3	1.5	0.6	0.6	0.4	1.1	0.3	0.2	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.1	0.34	1.54
17-Jul	0.0	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.8	2.6	2.2	1.5	0.4	0.2	0.5	3.3	7.5	5.4	1.7	0.3	0.2	0.2	0.2	0.1	1.20	7.50
18-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.4	0.5	1.0	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.18	0.98
19-Jul	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.07	0.21
20-Jul	0.1	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.40
21-Jul	0.0	0.1	Z	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	2.3	0.5	0.3	0.1	0.21	2.34
22-Jul	0.1	0.0	Z	0.0	0.1	0.2	0.2	0.5	0.8	0.4	1.1	0.8	0.5	0.3	0.2	0.2	0.2	0.2	0.3	0.2	2.0	1.3	0.6	0.1	0.45	1.96
23-Jul	0.1	0.1	Z	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	1.3	1.6	0.6	0.3	0.1	0.25	1.60
24-Jul	0.1	0.1	Z	0.1	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.8	1.7	0.3	0.1	0.1	0.19	1.70
25-Jul	0.1	0.1	Z	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.4	0.2	0.4	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.14	0.41
26-Jul	0.0	0.1	Z	0.1	0.1	0.0	0.0	0.1	0.2	0.2	0.2	0.2	4.0	9.0	6.3	5.4	4.2	4.9	4.3	1.9	0.6	0.5	0.3	0.2	1.86	9.04
27-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.1	0.2	0.5	0.3	0.3	0.7	0.4	0.2	0.2	0.3	0.4	0.4	0.2	0.1	0.0	0.1	0.1	0.22	0.73
28-Jul	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.11	0.26
29-Jul	0.0	0.0	Z	0.0	0.0	0.1	0.1	0.1	0.2	0.3	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	0.0	0.10	0.29
30-Jul	1.4	2.8	Z	0.5	0.3	0.2	0.1	0.2	0.5	0.2	0.3	0.3	0.3	1.8	C	C	C	C	2.9	1.0	1.0	0.4	0.1	0.1	0.76	2.92
31-Jul	0.0	0.0	Z	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	0.02	0.06
	0.11	0.15	--	0.07	0.06	0.06	0.09	0.17	0.65	0.66	0.60	0.55	0.98	1.01	0.63	0.49	0.55	0.59	0.46	0.29	0.40	0.20	0.13	0.09	Diurnal Average	
	1.42	2.83	--	0.52	0.29	0.20	0.24	0.55	6.66	4.40	3.21	3.10	13.37	9.40	6.25	5.43	7.50	5.39	4.26	1.86	2.34	1.33	0.64	0.60	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 172 ppb 24-hr 48 ppb

WCAS - Breton
Summary of Hourly Averages

Ozone (O_3) - ppb
July 2016

Maximum Value: 49.77 ppb on Jul 26 19:00

Maximum Daily Average: 27.52 ppb on Jul 1

Minimum Value: 0.0 ppb on Jul 15 04:00

Minimum Daily Average: 13.81 ppb on Jul 5

Maximum Diurnal Average: 31.16 ppb at hour 17

Minimum Diurnal Average: 5.95 ppb at hour 6

Monthly Average: 19.769 ppb

Percentiles: P_1 = 0.5 P_{10} = 5.0 Q_1 = 11.4 Median = 20.1 Q_3 = 27.9 P_{90} = 33.3 P_{99} = 42.6

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																								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-Jul	13.6	21.3	Z	13.9	14.5	8.6	10.0	18.1	28.1	36.1	39.8	39.5	39.8	39.7	40.1	40.4	38.8	35.6	35.5	33.9	22.8	26.1	20.4	16.4	27.52	40.35
2-Jul	24.3	14.7	Z	12.3	17.1	22.3	19.3	19.5	23.4	28.1	31.3	31.6	32.0	32.0	32.8	32.8	34.3	32.8	28.1	22.8	22.8	26.6	13.1	12.6	24.63	34.25
3-Jul	15.0	10.1	Z	8.2	12.5	15.3	17.2	19.6	19.3	15.6	16.0	17.2	21.4	23.7	23.2	23.7	24.0	26.3	26.3	19.2	18.7	14.8	17.0	13.9	18.19	26.34
4-Jul	11.5	10.7	Z	9.6	6.2	4.4	7.8	13.8	14.8	18.8	22.1	24.0	27.3	28.5	30.7	31.5	32.5	30.7	23.9	21.9	20.9	18.1	14.0	12.1	18.96	32.51
5-Jul	7.9	4.2	Z	4.4	5.1	3.7	4.5	9.3	12.5	15.4	18.2	19.0	18.5	18.9	22.2	20.4	20.5	20.0	17.1	16.8	13.4	15.9	15.3	14.5	13.81	22.24
6-Jul	14.9	14.3	Z	9.5	5.5	2.9	3.9	9.7	14.8	18.4	18.6	20.3	22.8	25.4	27.0	21.9	30.9	33.2	34.3	32.7	22.3	22.5	20.1	23.1	19.53	34.33
7-Jul	17.4	14.8	Z	11.9	9.0	8.6	9.4	17.3	24.1	28.6	29.1	28.0	24.3	23.4	24.3	24.8	25.1	25.3	26.6	25.6	24.0	22.0	17.4	15.4	20.72	29.12
8-Jul	13.8	11.6	Z	4.9	6.6	3.8	2.5	9.7	16.2	22.2	28.1	31.2	17.7	30.5	44.1	43.9	46.1	38.1	31.6	28.1	23.7	20.3	14.8	14.0	21.89	46.07
9-Jul	8.4	5.9	Z	2.6	1.4	2.9	4.3	12.9	18.7	25.8	33.5	35.9	39.2	40.9	36.8	36.7	36.5	31.3	27.1	26.9	19.6	12.9	9.2	12.8	20.96	40.89
10-Jul	14.3	11.5	Z	17.1	13.9	10.6	12.1	17.5	19.2	21.9	20.9	18.8	32.9	27.6	30.2	33.3	27.3	20.2	20.2	17.4	15.8	19.7	17.1	14.1	19.72	33.30
11-Jul	12.1	12.6	Z	7.2	6.6	7.3	9.2	11.9	13.6	14.8	17.7	21.1	25.4	23.7	25.1	27.1	26.3	24.7	25.7	23.9	17.7	14.4	10.6	11.3	16.95	27.13
12-Jul	10.1	8.6	Z	8.5	4.5	5.5	6.4	10.2	13.6	15.5	23.9	29.0	28.8	30.8	25.3	22.6	24.8	24.5	23.9	26.5	21.6	15.3	13.5	12.7	17.66	30.76
13-Jul	7.7	7.2	Z	6.2	5.3	4.2	6.9	9.7	12.5	11.8	12.9	13.3	17.2	21.7	28.1	31.4	28.6	24.0	20.1	19.6	16.6	13.3	14.1	14.9	15.12	31.43
14-Jul	11.4	9.3	Z	3.9	4.7	2.5	2.7	7.6	9.5	14.1	20.5	16.4	16.9	20.0	26.9	24.8	21.4	25.3	26.6	28.9	20.9	12.7	9.4	5.6	14.86	28.90
15-Jul	2.8	1.7	Z	0.0	0.0	0.7	12.5	17.3	23.0	28.0	32.8	34.7	31.4	32.9	31.9	29.4	28.0	24.5	22.2	18.5	14.5	8.2	5.0	3.8	17.56	34.71
16-Jul	4.3	2.1	Z	1.4	1.0	0.9	5.2	6.5	9.9	17.8	28.4	31.8	29.6	32.2	33.8	34.4	34.5	22.0	26.2	27.3	25.1	24.8	23.0	13.7	18.96	34.52
17-Jul	9.1	8.7	Z	3.7	5.0	2.6	11.3	15.2	17.7	17.1	15.3	18.3	24.0	23.3	22.1	23.2	21.9	21.5	17.0	18.3	11.4	8.1	7.5	5.5	14.25	23.99
18-Jul	3.6	2.0	Z	0.5	0.2	0.5	5.7	21.0	31.8	33.5	37.8	38.9	40.8	40.5	40.7	41.8	42.4	35.7	32.3	28.8	27.3	21.3	13.2	10.9	23.96	42.43
19-Jul	8.5	5.2	Z	1.6	3.6	4.3	8.4	8.6	19.0	22.3	22.5	28.9	34.3	33.3	34.2	33.0	34.1	35.7	34.4	29.0	28.3	31.1	27.4	29.8	22.49	35.67
20-Jul	31.0	28.6	Z	30.6	20.3	17.7	15.4	13.4	18.4	20.9	22.8	24.8	27.5	28.4	28.4	28.2	28.8	26.9	24.7	20.9	15.3	11.8	9.1	7.5	21.81	31.03
21-Jul	8.5	10.6	Z	1.5	1.2	3.4	6.0	11.2	15.3	20.0	21.5	28.6	31.9	31.9	30.3	27.3	28.0	28.7	25.8	22.0	15.3	11.7	10.7	5.4	17.26	31.89
22-Jul	3.1	5.7	Z	3.9	5.3	8.5	11.4	20.3	27.0	31.6	35.8	37.7	38.6	38.5	37.7	37.5	38.8	39.5	38.9	29.7	24.8	17.6	28.2	31.1	25.70	39.45
23-Jul	21.6	15.5	Z	8.4	6.8	8.1	7.6	10.5	16.4	24.6	27.8	30.1	31.5	33.0	33.1	32.5	32.9	33.3	32.8	25.7	18.5	15.3	10.7	5.5	20.97	33.26
24-Jul	4.6	4.1	Z	4.9	2.9	3.7	9.1	16.0	21.1	24.4	26.4	26.3	25.6	25.9	26.2	26.9	27.4	28.3	23.7	20.0	15.1	14.0	10.6	6.7	17.12	28.27
25-Jul	5.8	1.9	Z	0.3	0.0	0.3	4.1	8.5	17.7	21.7	25.1	29.3	29.3	32.3	31.2	33.3	32.1	30.3	29.4	27.4	24.2	22.1	20.6	20.9	19.47	33.29
26-Jul	19.2	16.4	Z	13.2	12.1	7.6	7.1	8.1	12.8	19.4	26.7	33.2	34.8	26.2	36.3	42.7	48.7	47.2	49.8	43.1	32.1	28.6	19.1	12.1	25.93	49.77
27-Jul	7.2	4.8	Z	2.1	2.3	1.3	3.4	6.8	14.8	16.5	18.2	25.1	32.9	28.4	29.0	32.0	38.1	40.9	31.5	28.9	28.3	27.0	21.7	17.1	19.93	40.87
28-Jul	10.1	6.1	Z	5.2	1.1	0.7	0.7	5.9	10.0	17.4	24.3	29.8	33.3	37.6	37.2	27.8	24.2	27.3	22.2	14.2	10.3	8.1	3.4	3.7	15.68	37.58
29-Jul	5.1	4.2	Z	1.7	1.2	0.1	2.8	6.7	12.0	21.6	25.0	26.6	27.4	27.8	28.1	29.8	31.7	32.4	30.7	28.2	25.9	24.4	26.2	27.1	19.42	32.35
30-Jul	20.6	12.4	Z	16.5	13.2	12.3	7.0	13.6	23.2	26.0	32.7	35.1	36.4	40.8	C	C	C	C	24.4	25.3	24.0	24.2	18.3	13.9	22.10	40.84
31-Jul	10.7	11.7	Z	8.5	8.5	8.9	11.6	16.0	18.8	22.8	27.7	33.5	30.3	27.1	27.2	27.6	26.3	24.1	22.6	21.0	18.0	18.8	20.7	19.8	20.11	33.49
	11.55	9.63	--	7.24	6.37	5.95	7.92	12.66	17.72	21.71	25.28	27.68	29.16	29.89	30.81	30.76	31.16	29.67	27.61	24.92	20.63	18.45	15.53	13.80	Diurnal Average	
	31.03	28.65	--	30.65	20.33	22.27	19.35	20.97	31.81	36.06	39.79	39.49	40.79	40.89	44.13	43.88	48.75	47.20	49.77	43.10	32.12	31.07	28.21	31.06	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 82.5 ppb 24-hr -- ppb

WCAS - Breton
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
July 2016

Maximum Value: 10.34 ppb on Jul 8 13:00

Maximum Daily Average: 1.15 ppb on Jul 8

Minimum Value: 0.0 ppb on Jul 1 02:00

Minimum Daily Average: 0.12 ppb on Jul 2

Maximum Diurnal Average: 0.99 ppb at hour 9

Minimum Diurnal Average: 0.07 ppb at hour 1

Monthly Average: 0.357 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.1 Median = 0.1 Q_3 = 0.4 P_{90} = 0.8 P_{99} = 3.1

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																								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-Jul	0.1	0.0	Z	0.0	0.1	0.4	0.9	1.2	0.6	0.2	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.19	1.19
2-Jul	0.0	0.1	Z	0.1	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.12	0.34
3-Jul	0.1	0.0	Z	0.1	0.1	0.1	0.4	0.6	0.4	1.0	0.4	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.4	0.1	0.2	0.0	0.0	0.24	0.97
4-Jul	0.1	0.1	Z	0.1	0.1	0.4	0.5	0.8	5.7	3.3	1.5	0.8	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.2	0.63	5.66
5-Jul	0.0	0.1	Z	0.2	0.2	1.3	2.0	1.6	0.9	0.4	0.3	0.2	0.2	0.1	0.4	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.37	1.98
6-Jul	0.0	0.0	Z	0.1	0.5	0.5	1.3	0.9	0.6	0.3	0.2	0.3	0.1	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.25	1.31
7-Jul	0.0	0.0	Z	0.0	0.1	0.2	0.5	0.6	0.4	0.2	0.1	0.2	0.1	0.2	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.14	0.57
8-Jul	0.0	0.0	Z	0.1	0.1	1.2	2.1	2.2	1.7	0.9	0.5	1.1	10.3	4.2	0.4	0.1	0.1	0.7	0.3	0.2	0.1	0.0	0.1	0.0	1.15	10.34
9-Jul	0.1	0.2	Z	0.1	0.1	0.3	0.8	1.3	3.8	2.4	0.3	0.3	0.3	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.47	3.78
10-Jul	0.0	0.0	Z	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.3	0.3	0.2	0.7	2.5	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.26	2.54
11-Jul	0.1	0.1	Z	0.1	0.3	0.3	0.5	0.5	0.4	0.5	0.4	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.0	0.22	0.52
12-Jul	0.0	0.1	Z	0.1	0.1	0.3	0.9	0.8	1.0	3.4	2.1	1.4	2.6	1.1	0.8	0.4	0.2	0.7	0.4	0.1	0.1	0.1	0.1	0.1	0.73	3.37
13-Jul	0.1	0.1	Z	0.2	0.5	1.4	1.0	0.7	0.5	0.7	0.5	0.4	0.4	0.2	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.37	1.40
14-Jul	0.1	0.1	Z	0.2	0.2	1.0	1.9	1.1	1.1	1.0	1.8	1.3	0.8	1.4	0.7	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.3	0.62	1.91
15-Jul	0.2	0.1	Z	1.9	1.4	1.8	0.5	0.5	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4	0.2	0.2	0.39	1.86
16-Jul	0.2	0.3	Z	0.5	0.5	1.1	0.7	1.2	2.6	1.8	0.3	0.3	0.1	0.5	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.47	2.62
17-Jul	0.1	0.1	Z	0.1	0.1	0.5	0.5	0.3	0.8	1.6	1.2	1.4	0.2	0.3	0.6	3.2	5.2	2.4	0.3	0.1	0.1	0.1	0.1	0.1	0.84	5.16
18-Jul	0.1	0.1	Z	0.2	0.1	0.4	0.8	0.5	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.2	0.1	0.17	0.76
19-Jul	0.1	0.0	Z	0.1	0.1	0.5	0.8	1.4	0.8	0.5	0.5	0.2	0.2	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.27	1.44
20-Jul	0.0	0.0	Z	0.0	0.0	0.1	0.3	0.8	0.4	0.4	0.3	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	0.80
21-Jul	0.1	0.2	Z	0.3	0.7	0.3	0.6	0.7	0.7	0.4	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.4	0.1	0.28	0.72
22-Jul	0.1	0.0	Z	0.1	0.1	0.3	0.7	0.8	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.18	0.76
23-Jul	0.1	0.1	Z	0.1	0.3	0.3	0.6	0.6	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.0	0.0	0.19	0.62
24-Jul	0.1	0.0	Z	0.1	0.1	0.5	1.0	0.5	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	0.1	0.1	0.8	0.22	1.05
25-Jul	0.1	0.3	Z	0.2	0.2	0.6	0.6	0.8	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.16	0.76
26-Jul	0.0	0.0	Z	0.0	0.0	0.2	0.5	1.3	1.2	0.8	0.5	0.3	1.6	5.5	2.1	1.2	0.6	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.74	5.53
27-Jul	0.0	0.0	Z	0.1	0.2	0.5	0.6	0.9	0.6	0.6	0.8	0.6	0.3	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.26	0.89
28-Jul	0.0	0.0	Z	0.0	0.4	0.6	0.8	1.2	1.2	0.7	0.5	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.28	1.19
29-Jul	0.0	0.0	Z	0.1	0.1	0.6	1.3	1.4	1.1	0.4	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.25	1.41
30-Jul	0.1	0.1	Z	0.1	0.1	0.1	0.3	0.6	0.7	0.4	0.2	0.1	0.1	0.5	C	C	C	C	C	0.1	0.1	0.1	0.1	0.0	0.20	0.66
31-Jul	0.1	0.1	Z	0.1	0.1	0.4	0.5	0.6	0.5	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.18	0.58
	0.07	0.08	--	0.18	0.23	0.53	0.78	0.87	0.99	0.77	0.47	0.36	0.62	0.55	0.33	0.26	0.31	0.24	0.14	0.11	0.08	0.07	0.07	0.09	Diurnal Average	
	0.20	0.30	--	1.86	1.43	1.81	2.06	2.19	5.66	3.37	2.09	1.40	10.34	5.53	2.54	3.23	5.16	2.40	0.43	0.39	0.28	0.44	0.39	0.76	Diurnal Maximum	

Z - zerospan C - Calibration

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

WCAS - Breton
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
July 2016

Maximum Value: 15.00 ppb on Jul 8 13:00

Maximum Daily Average: 5.23 ppb on Jul 8

Minimum Value: 1.7 ppb on Jul 3 15:00

Minimum Daily Average: 2.79 ppb on Jul 2

Maximum Diurnal Average: 4.09 ppb at hour 21

Minimum Diurnal Average: 3.14 ppb at hour 16

Monthly Average: 3.708 ppb

Percentiles: P_1 = 2.0 P_{10} = 2.6 Q_1 = 2.9 Median = 3.5 Q_3 = 4.0 P_{90} = 4.8 P_{99} = 9.1

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																								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-Jul	3.6	2.9	Z	3.5	3.9	3.2	3.1	3.8	3.3	2.6	3.0	2.1	2.1	2.1	2.0	2.2	2.2	2.3	2.5	3.3	3.3	2.7	3.9	3.5	2.92	3.91
2-Jul	3.5	4.7	Z	3.2	3.2	3.4	3.0	2.8	2.8	2.6	2.5	2.4	2.1	2.0	1.9	2.0	2.1	2.1	2.2	2.6	2.4	2.9	4.6	3.1	2.79	4.70
3-Jul	2.9	2.9	Z	4.1	2.9	2.6	2.8	3.5	3.9	4.1	3.9	2.4	2.0	1.8	1.7	1.7	1.9	2.0	1.9	4.0	2.9	4.0	2.7	2.5	2.82	4.13
4-Jul	3.3	2.9	Z	3.3	2.8	2.7	2.9	3.3	7.6	5.8	4.3	3.8	2.9	2.9	2.8	2.8	3.0	3.1	3.2	3.1	3.5	4.1	4.7	4.7	3.63	7.62
5-Jul	3.7	3.5	Z	4.3	4.1	5.1	4.7	4.1	3.7	3.4	3.2	3.2	3.0	3.0	3.6	2.8	2.8	2.9	3.2	3.4	4.2	3.6	4.0	4.5	3.65	5.13
6-Jul	3.9	3.8	Z	5.0	6.8	4.6	4.1	4.2	3.8	3.7	3.5	3.4	3.1	3.2	3.1	3.1	3.5	3.4	4.5	4.7	5.1	4.4	4.3	5.0	4.10	6.79
7-Jul	6.1	5.9	Z	4.6	4.0	3.7	3.6	3.7	3.6	3.3	3.2	3.1	2.8	2.8	2.7	2.7	2.8	3.1	3.2	3.3	3.5	3.6	3.6	4.0	3.60	6.07
8-Jul	4.0	4.4	Z	4.3	4.5	4.4	4.6	5.2	5.2	4.8	4.2	4.9	15.0	9.8	4.6	3.8	3.8	5.4	4.3	4.3	4.6	4.7	4.9	4.5	5.23	15.00
9-Jul	4.4	4.5	Z	4.3	4.0	4.2	4.0	4.7	9.7	6.2	3.4	3.7	4.0	3.5	2.9	3.3	4.0	4.2	3.8	3.7	3.9	4.3	4.6	3.7	4.31	9.68
10-Jul	4.1	4.0	Z	4.0	4.0	4.0	3.8	3.5	3.7	3.5	3.4	3.9	4.0	4.6	6.1	2.8	3.2	3.1	3.1	3.4	3.1	3.2	3.2	3.2	3.68	6.08
11-Jul	3.4	3.3	Z	4.1	4.5	4.0	3.7	3.6	3.5	3.3	3.1	2.9	2.7	2.9	2.6	2.7	2.8	2.7	2.8	2.7	3.3	3.9	3.7	4.1	3.32	4.54
12-Jul	4.2	4.8	Z	4.5	4.3	3.9	4.2	3.7	3.9	6.4	6.2	6.4	7.5	6.6	6.4	4.0	3.1	4.4	4.1	3.3	4.3	4.4	4.5	4.3	4.76	7.49
13-Jul	3.9	4.0	Z	4.3	4.9	5.6	4.1	3.3	3.2	4.2	3.3	3.2	2.9	2.8	3.3	3.8	4.6	5.9	4.7	3.7	4.4	4.7	3.8	3.9	4.03	5.93
14-Jul	4.1	3.7	Z	3.8	3.9	4.8	4.3	3.7	3.6	3.6	5.8	7.7	5.8	4.9	3.8	3.1	3.2	2.9	3.0	4.0	5.9	5.5	5.1	5.9	4.44	7.65
15-Jul	4.5	3.9	Z	5.5	4.6	3.7	3.6	3.6	3.9	3.0	2.9	3.1	3.1	2.8	3.0	3.4	3.4	3.0	2.8	2.8	3.3	5.0	4.2	3.8	3.61	5.52
16-Jul	3.7	3.5	Z	4.2	4.5	4.0	3.7	3.6	4.8	4.9	3.2	3.4	2.8	3.9	2.9	2.7	3.0	3.0	3.5	3.6	4.0	3.6	3.8	4.9	3.72	4.93
17-Jul	4.2	4.1	Z	4.3	4.2	3.8	3.6	3.3	4.2	6.5	6.5	5.2	3.3	3.6	3.7	6.9	10.5	9.3	5.4	2.8	4.1	4.7	3.6	3.5	4.84	10.54
18-Jul	3.7	3.8	Z	3.9	3.7	3.4	3.8	3.7	3.5	3.5	3.2	2.9	3.0	2.9	2.9	3.0	3.1	3.1	3.2	3.1	3.2	3.7	6.0	4.9	3.52	6.02
19-Jul	4.2	3.6	Z	3.4	3.4	3.2	4.3	3.8	3.7	3.9	3.8	3.0	2.5	2.3	2.5	2.6	2.5	2.5	2.6	3.3	3.4	2.9	4.1	3.4	3.27	4.26
20-Jul	3.3	3.3	Z	3.6	3.9	3.3	4.0	4.5	3.5	3.5	3.1	3.0	3.0	2.9	2.9	2.9	2.7	2.7	3.2	3.1	2.5	3.1	3.1	3.4	3.24	4.49
21-Jul	3.5	4.0	Z	3.6	3.7	3.4	3.6	3.7	3.8	3.1	3.2	2.7	2.5	2.4	2.4	2.5	2.5	2.6	2.7	3.6	7.3	4.6	5.3	4.4	3.53	7.29
22-Jul	3.9	3.6	Z	3.2	3.5	4.1	3.9	4.1	4.0	3.3	3.1	2.9	2.6	2.2	2.2	2.3	2.3	2.5	2.9	3.5	7.2	7.9	4.8	2.8	3.60	7.85
23-Jul	2.7	2.7	Z	3.1	3.9	3.7	3.3	3.2	3.4	2.8	2.5	2.4	2.3	2.4	2.7	2.6	2.8	2.8	2.8	5.0	6.4	4.6	4.2	3.9	3.32	6.39
24-Jul	3.7	3.5	Z	3.8	3.8	4.2	4.3	3.5	2.9	2.8	2.6	2.6	2.5	2.5	2.5	2.8	3.0	3.0	3.9	4.5	6.2	4.5	5.5	6.7	3.69	6.68
25-Jul	4.0	4.6	Z	3.6	3.6	3.3	3.2	3.2	2.7	2.3	2.2	2.7	2.8	3.1	3.1	3.2	3.3	3.2	3.2	3.3	3.6	3.9	3.8	3.6	3.29	4.56
26-Jul	3.6	3.9	Z	3.8	3.9	3.6	3.7	4.3	4.0	4.0	3.9	3.7	7.7	12.8	9.0	7.2	5.9	6.4	5.6	4.0	3.2	3.2	3.5	3.6	4.97	12.84
27-Jul	3.7	3.8	Z	3.6	3.9	3.7	3.2	3.6	3.7	4.4	4.2	4.2	4.5	3.8	3.3	2.9	2.9	3.1	3.3	3.2	3.1	2.6	2.5	2.7	3.47	4.49
28-Jul	2.9	3.1	Z	2.9	3.3	3.1	2.5	3.2	3.2	3.3	3.4	2.7	2.6	2.7	2.7	3.2	3.1	3.1	2.9	2.4	2.6	2.7	2.8	2.9	2.93	3.36
29-Jul	3.0	3.5	Z	3.8	3.8	3.2	3.2	3.4	3.4	3.2	2.9	2.7	2.6	2.3	2.2	2.1	2.0	2.2	2.8	2.7	3.0	3.5	3.6	3.5	2.98	3.80
30-Jul	8.2	12.2	Z	5.4	4.8	4.5	3.7	3.6	3.8	3.4	2.7	2.7	2.6	4.2	C	C	C	C	C	5.8	5.9	3.9	3.3	3.3	4.67	12.20
31-Jul	3.3	3.7	Z	4.0	3.8	4.1	3.5	3.3	3.3	3.2	3.1	2.8	2.7	2.8	2.9	2.9	3.0	2.8	3.1	3.2	3.5	3.3	3.1	3.1	3.24	4.05
	3.90	4.07	--	3.97	4.00	3.83	3.67	3.70	3.97	3.82	3.53	3.40	3.65	3.63	3.27	3.14	3.30	3.43	3.35	3.53	4.09	3.99	4.04	3.91	Diurnal Average	
	8.22	12.20	--	5.52	6.79	5.61	4.67	5.21	9.68	6.50	6.53	7.65	15.00	12.84	8.99	7.23	10.54	9.33	5.59	5.78	7.29	7.85	6.02	6.68	Diurnal Maximum	

Z - zerospan C - Calibration

Alberta Ambient Air Quality Objectives (AAAQO): 1-hr 159 ppb 24-hr 106 ppb

West Central Airshed Society

WCAS - Breton
Summary of Hourly Averages

NOx (NO_x) - ppb
July 2016

Maximum Value: 25.38 ppb on Jul 8 13:00

Maximum Daily Average: 6.41 ppb on Jul 8

Minimum Value: 1.8 ppb on Jul 3 16:00

Minimum Daily Average: 2.93 ppb on Jul 2

Maximum Diurnal Average: 4.99 ppb at hour 9

Minimum Diurnal Average: 3.43 ppb at hour 16

Monthly Average: 4.093 ppb

Percentiles: P_1 = 2.1 P_{10} = 2.8 Q_1 = 3.1 Median = 3.7 Q_3 = 4.5 P_{90} = 5.6 P_{99} = 11.8

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																								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-Jul	3.7	3.0	Z	3.6	4.0	3.6	4.1	5.0	3.9	2.9	3.3	2.2	2.1	2.1	2.1	2.2	2.3	2.4	2.6	3.4	3.3	2.8	4.0	3.6	3.14	4.97
2-Jul	3.5	4.8	Z	3.4	3.3	3.6	3.3	3.2	3.1	2.9	2.8	2.5	2.2	2.1	1.9	2.1	2.1	2.2	2.3	2.7	2.4	3.0	4.8	3.2	2.93	4.80
3-Jul	3.1	3.0	Z	4.2	3.0	2.7	3.2	4.2	4.3	5.1	4.4	2.8	2.3	2.0	1.8	1.8	2.0	2.3	2.0	4.4	3.0	4.2	2.8	2.5	3.09	5.13
4-Jul	3.5	3.0	Z	3.5	3.0	3.1	3.4	4.2	13.3	9.1	5.8	4.6	3.2	3.1	3.0	2.9	3.1	3.2	3.3	3.1	3.5	4.2	4.8	4.9	4.29	13.28
5-Jul	3.8	3.6	Z	4.5	4.3	6.4	6.7	5.8	4.6	3.8	3.5	3.4	3.2	3.1	4.0	3.0	3.0	3.0	3.3	3.5	4.4	3.6	4.0	4.5	4.05	6.70
6-Jul	3.9	3.8	Z	5.1	7.3	5.2	5.5	5.1	4.4	4.0	3.7	3.6	3.2	3.4	3.2	3.2	3.7	3.4	4.8	4.8	5.2	4.4	4.3	5.1	4.37	7.33
7-Jul	6.1	6.0	Z	4.6	4.1	4.0	4.2	4.3	4.0	3.5	3.3	3.3	3.0	3.0	2.8	2.8	2.9	3.2	3.3	3.4	3.6	3.7	3.6	4.0	3.76	6.12
8-Jul	4.1	4.5	Z	4.4	4.7	5.6	6.7	7.4	7.0	5.8	4.7	6.0	25.4	14.0	5.1	3.9	4.0	6.1	4.6	4.6	4.7	4.7	5.0	4.5	6.41	25.38
9-Jul	4.5	4.7	Z	4.4	4.1	4.5	4.8	6.0	13.5	8.6	3.7	4.0	4.3	3.6	3.0	3.5	4.1	4.4	3.9	3.8	4.0	4.3	4.7	3.7	4.80	13.46
10-Jul	4.1	4.0	Z	4.0	4.0	4.2	4.0	3.7	3.9	3.7	3.7	4.2	4.2	5.3	8.6	3.0	3.4	3.2	3.3	3.5	3.2	3.3	3.3	3.2	3.96	8.65
11-Jul	3.5	3.4	Z	4.3	4.9	4.3	4.2	4.1	3.9	3.8	3.5	3.2	2.9	3.1	2.8	2.9	3.1	2.9	3.0	2.9	3.3	4.0	3.8	4.1	3.56	4.88
12-Jul	4.2	5.0	Z	4.6	4.4	4.3	5.1	4.5	4.9	9.8	8.3	7.9	10.1	7.7	7.3	4.5	3.4	5.1	4.6	3.4	4.4	4.5	4.6	4.4	5.52	10.06
13-Jul	3.9	4.2	Z	4.5	5.4	7.0	5.1	4.1	3.7	4.9	3.8	3.6	3.3	3.1	3.6	4.3	4.9	6.3	4.9	3.8	4.5	4.8	3.9	4.0	4.42	7.04
14-Jul	4.2	3.9	Z	4.0	4.2	5.8	6.2	4.8	4.8	4.6	7.7	8.9	6.7	6.3	4.5	3.2	3.5	3.0	3.2	4.1	6.2	5.6	5.2	6.3	5.08	8.94
15-Jul	4.8	4.1	Z	7.4	6.1	5.5	4.1	4.1	4.6	3.2	3.0	3.3	3.2	2.9	3.1	3.6	3.5	3.0	2.9	2.9	3.4	5.4	4.4	4.0	4.03	7.42
16-Jul	3.9	3.8	Z	4.7	5.1	5.1	4.5	4.8	7.5	6.7	3.6	3.7	3.0	4.5	3.0	2.8	3.1	3.3	3.6	3.7	4.1	3.6	3.9	5.0	4.21	7.48
17-Jul	4.3	4.2	Z	4.4	4.3	4.4	4.1	3.6	5.1	8.1	7.8	6.6	3.6	3.9	4.4	10.2	15.7	11.7	5.7	2.9	4.3	4.8	3.7	3.7	5.71	15.68
18-Jul	3.8	4.0	Z	4.1	3.8	3.8	4.6	4.3	3.8	3.8	3.4	3.0	3.1	3.0	3.0	3.1	3.2	3.2	3.3	3.2	3.2	3.8	6.2	5.0	3.73	6.22
19-Jul	4.3	3.6	Z	3.6	3.5	3.7	5.1	5.3	4.6	4.4	4.4	3.3	2.7	2.5	2.6	2.9	2.7	2.7	2.7	3.4	3.5	3.0	4.2	3.5	3.57	5.31
20-Jul	3.3	3.4	Z	3.6	4.0	3.4	4.4	5.3	4.0	3.9	3.4	3.2	3.2	3.1	3.1	3.1	2.9	2.9	3.4	3.3	2.6	3.3	3.3	3.5	3.46	5.33
21-Jul	3.6	4.1	Z	3.9	4.4	3.8	4.2	4.5	4.5	3.5	3.6	3.0	2.7	2.6	2.5	2.6	2.7	2.8	2.8	3.8	7.6	4.7	5.7	4.5	3.84	7.60
22-Jul	4.0	3.7	Z	3.3	3.6	4.5	4.7	4.9	4.7	3.6	3.3	3.1	2.8	2.3	2.3	2.3	2.4	2.6	3.0	3.6	7.3	8.0	4.9	2.9	3.80	8.00
23-Jul	2.8	2.8	Z	3.3	4.2	4.0	3.9	3.9	3.8	3.1	2.7	2.5	2.4	2.6	2.8	2.7	2.9	2.9	2.9	5.3	6.6	4.7	4.2	4.0	3.53	6.60
24-Jul	3.8	3.6	Z	3.9	4.0	4.7	5.4	4.0	3.1	2.9	2.8	2.7	2.6	2.6	2.6	2.9	3.2	3.2	4.1	4.7	6.3	4.5	5.6	7.5	3.94	7.46
25-Jul	4.1	4.9	Z	3.8	3.8	3.9	3.9	4.0	3.0	2.5	2.3	2.8	2.9	3.2	3.2	3.3	3.3	3.3	3.3	3.4	3.7	3.9	3.9	3.6	3.47	4.88
26-Jul	3.6	3.9	Z	3.8	3.9	3.8	4.2	5.6	5.1	4.8	4.4	3.9	9.4	18.4	11.1	8.4	6.6	7.0	6.0	4.1	3.2	3.3	3.5	3.7	5.73	18.37
27-Jul	3.7	3.8	Z	3.7	4.1	4.2	3.8	4.6	4.4	5.1	5.0	4.8	4.8	4.0	3.5	3.1	3.1	3.2	3.3	3.3	3.2	2.7	2.5	2.7	3.76	5.06
28-Jul	2.9	3.2	Z	3.0	3.7	3.7	3.3	4.4	4.4	4.0	3.9	2.8	2.7	2.8	2.8	3.3	3.3	3.3	3.1	2.6	2.7	2.8	2.9	2.9	3.25	4.45
29-Jul	3.1	3.5	Z	3.9	3.9	3.8	4.5	4.8	4.6	3.6	3.1	2.9	2.7	2.4	2.3	2.1	2.0	2.3	2.9	2.8	3.1	3.5	3.6	3.6	3.26	4.80
30-Jul	8.3	12.3	Z	5.5	4.9	4.6	4.0	4.3	4.5	3.9	2.9	2.8	2.7	4.7	C	C	C	C	C	6.0	6.0	4.0	3.5	3.4	4.91	12.32
31-Jul	3.4	3.8	Z	4.2	4.0	4.6	4.1	3.9	3.9	3.6	3.3	2.9	2.9	3.0	3.1	3.0	3.2	2.9	3.2	3.3	3.6	3.4	3.2	3.1	3.47	4.57
	3.99	4.18	--	4.17	4.26	4.39	4.49	4.60	4.99	4.63	4.03	3.79	4.31	4.21	3.63	3.43	3.63	3.70	3.51	3.67	4.20	4.08	4.13	4.03	Diurnal Average	
	8.33	12.32	--	7.42	7.33	7.04	6.71	7.45	13.46	9.82	8.35	8.94	25.38	18.37	11.10	10.20	15.68	11.73	5.95	5.96	7.60	8.00	6.22	7.46	Diurnal Maximum	

Z - zerospan C - Calibration

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

BRETON
STATION #913

METEOROLOGICAL DATA

JULY 2016

WCAS - Breton
Summary of Hourly Averages

External Temperature (ET) - C
July 2016

Maximum Value: 28.79 C on Jul 29 17:00

Maximum Daily Average: 20.03 C on Jul 29

Minimum Value: 5.7 C on Jul 5 05:00

Minimum Daily Average: 12.64 C on Jul 31

Maximum Diurnal Average: 21.70 C at hour 15

Minimum Diurnal Average: 11.02 C at hour 5

Monthly Average: 16.527 C

Percentiles: P_1 = 7.2 P_{10} = 11.0 Q_1 = 13.0 Median = 15.8 Q_3 = 19.8 P_{90} = 22.9 P_{99} = 26.6

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																								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-Jul	11.6	11.0	10.2	9.6	9.6	10.0	12.5	15.2	18.3	21.0	22.6	23.3	24.4	24.6	24.6	24.3	23.4	22.3	20.4	19.2	17.0	15.3	14.7	14.5	17.48	24.61
2-Jul	14.4	13.6	11.5	12.4	12.8	13.1	13.0	13.6	15.0	17.1	19.5	20.9	22.2	22.7	24.4	22.5	23.2	22.3	20.9	18.6	17.1	17.5	15.8	15.0	17.47	24.44
3-Jul	14.6	15.0	14.4	13.6	13.3	13.8	15.9	18.3	17.8	16.4	15.1	16.2	18.4	18.8	19.6	19.7	19.5	19.3	19.1	18.0	16.8	14.8	13.2	11.0	16.36	19.74
4-Jul	11.0	10.4	9.2	7.3	6.0	8.4	10.7	13.7	16.8	17.9	18.3	18.1	18.7	19.7	20.7	20.9	21.3	20.3	17.6	15.1	12.9	10.7	9.5	9.1	14.34	21.26
5-Jul	7.0	7.0	6.9	6.8	5.7	6.3	9.0	12.0	14.1	15.7	16.9	17.8	18.4	18.7	19.2	19.9	20.2	19.6	19.6	20.4	17.2	14.4	12.7	12.1	14.07	20.38
6-Jul	11.8	11.7	10.3	9.7	8.4	8.5	10.6	13.1	14.8	16.3	17.5	18.5	19.6	19.8	20.0	17.7	18.8	20.2	15.4	14.7	13.5	13.2	12.3	12.0	14.51	20.19
7-Jul	11.4	10.4	9.3	10.1	10.0	10.1	11.5	14.9	17.1	18.7	19.7	20.8	21.4	21.3	22.7	22.8	23.3	22.1	21.9	21.3	19.2	16.0	14.6	14.2	16.87	23.25
8-Jul	13.6	13.3	12.3	10.3	10.5	10.6	11.6	14.5	16.4	18.0	19.9	20.9	21.6	22.1	23.0	22.9	24.3	22.0	18.5	17.1	14.9	13.1	11.7	11.0	16.42	24.28
9-Jul	9.6	9.0	8.6	9.2	9.4	10.3	11.4	14.3	16.7	18.4	19.6	20.0	20.7	21.3	21.4	19.0	15.2	14.9	14.9	14.8	14.1	13.3	12.9	12.9	14.66	21.35
10-Jul	12.9	12.6	12.9	12.9	12.6	12.6	12.7	12.8	13.2	13.5	14.1	13.6	11.5	12.6	15.6	17.2	16.2	16.1	16.0	15.8	15.3	14.4	13.8	13.1	13.92	17.22
11-Jul	12.8	12.6	12.6	12.2	12.3	12.6	13.1	13.6	14.2	14.9	15.8	17.0	18.7	17.0	18.2	19.5	17.3	17.1	17.9	17.4	16.2	15.1	14.5	13.7	15.27	19.54
12-Jul	13.0	12.4	11.8	11.6	11.1	11.4	12.8	14.2	16.3	18.0	19.6	20.2	21.3	20.9	19.4	18.2	18.0	19.5	19.3	17.4	16.1	15.0	13.9	13.2	16.02	21.29
13-Jul	12.5	12.6	13.1	13.1	13.0	12.9	13.6	14.8	15.5	15.4	15.6	15.5	17.2	18.0	20.2	19.6	18.6	15.9	15.2	14.0	13.7	13.1	12.4	11.3	14.86	20.16
14-Jul	10.4	10.6	10.6	10.6	10.0	10.7	12.0	13.5	15.0	17.1	19.4	16.1	15.4	17.4	18.8	18.1	17.2	18.0	18.8	18.1	16.0	13.4	12.3	12.1	14.65	19.44
15-Jul	11.6	11.6	11.2	11.0	10.6	11.7	14.7	15.9	17.4	19.3	19.8	19.9	19.2	17.5	17.4	16.4	13.2	13.1	13.6	14.3	13.5	13.0	12.6	12.5	14.62	19.85
16-Jul	12.4	11.9	11.7	11.5	10.9	10.9	11.9	13.0	15.3	17.3	19.1	19.7	19.5	20.7	21.4	22.4	16.6	15.6	16.1	15.9	14.9	14.3	13.6	12.8	15.40	22.36
17-Jul	11.7	11.8	11.4	10.9	11.1	10.6	12.8	14.6	15.7	16.1	15.7	16.6	18.0	15.5	16.8	19.0	19.7	19.3	16.8	16.0	15.7	14.6	13.9	13.0	14.89	19.74
18-Jul	12.5	12.6	12.7	12.4	12.1	12.1	14.1	17.0	18.2	19.4	20.5	21.7	22.3	23.1	23.9	24.1	23.3	20.8	20.5	20.3	20.5	17.6	15.7	14.9	18.02	24.13
19-Jul	13.1	12.6	12.2	10.5	10.4	10.5	13.0	15.2	18.7	19.5	19.1	22.1	23.7	24.4	25.2	25.2	25.3	25.6	25.6	24.4	21.2	18.7	18.3	18.4	18.89	25.63
20-Jul	17.6	15.7	14.4	13.9	13.2	13.3	13.7	15.4	17.1	17.8	18.5	19.6	20.5	22.1	22.0	22.3	22.3	22.1	21.5	18.1	16.7	15.8	15.6	15.1	17.68	22.34
21-Jul	15.6	16.5	15.3	13.9	13.5	13.9	15.0	16.9	18.0	19.7	19.7	21.2	22.2	23.0	22.8	22.2	22.3	21.9	21.5	19.9	17.0	14.1	14.4	13.1	18.06	22.99
22-Jul	13.3	13.1	12.9	12.5	12.5	13.0	15.0	17.9	19.7	21.4	22.5	23.7	25.2	26.0	26.2	26.5	27.4	28.1	25.0	21.2	19.8	17.5	16.5	14.7	19.64	28.09
23-Jul	13.7	13.6	13.2	13.3	12.1	11.8	13.1	15.3	16.4	17.7	18.7	19.7	20.6	21.0	21.6	21.6	22.7	22.4	22.5	19.8	16.7	13.9	13.1	12.4	16.95	22.67
24-Jul	11.6	10.9	10.1	9.8	9.0	9.9	13.1	16.6	19.6	22.0	23.7	24.7	25.6	26.3	26.8	26.9	27.0	26.8	24.4	21.6	20.7	17.9	16.2	15.4	19.02	27.01
25-Jul	14.3	13.5	12.9	12.2	11.8	12.8	15.8	17.9	20.0	21.7	22.5	22.9	23.5	23.3	24.4	24.2	23.9	23.3	22.4	21.0	20.6	18.5	17.3	16.4	19.05	24.44
26-Jul	15.4	14.2	13.6	13.3	13.2	12.8	14.8	16.3	18.3	20.8	21.8	23.4	24.0	24.6	25.3	26.2	26.6	26.1	26.0	24.9	21.3	18.5	17.0	16.1	19.77	26.57
27-Jul	14.8	13.8	13.4	12.9	13.1	12.9	14.4	17.8	20.0	19.7	20.8	21.1	21.5	21.2	22.1	24.8	24.9	21.9	20.0	18.9	17.6	17.1	16.2	15.2	18.18	24.92
28-Jul	13.7	13.1	12.2	11.8	11.6	10.8	12.3	15.2	18.1	19.8	20.9	23.0	23.8	25.0	25.2	23.0	21.1	17.0	16.2	17.2	16.3	14.7	13.7	12.7	17.01	25.24
29-Jul	12.3	11.8	11.2	10.9	10.2	9.8	12.3	16.3	19.2	21.8	24.0	25.2	26.1	26.7	27.5	28.0	28.8	28.5	26.6	24.3	21.6	20.5	21.0	16.2	20.03	28.79
30-Jul	13.8	13.6	13.5	13.4	13.2	13.2	13.4	15.3	18.1	18.5	20.0	21.3	22.4	22.8	19.8	13.3	13.4	15.1	15.2	14.6	13.8	12.9	11.8	11.4	15.58	22.84
31-Jul	11.1	10.6	10.0	9.2	8.2	8.0	9.5	10.7	11.9	13.5	14.7	15.6	15.7	15.7	16.6	17.2	15.2	15.3	15.0	13.8	12.4	11.5	10.9	10.9	12.64	17.20
	12.74	12.36	11.80	11.38	11.02	11.27	12.87	15.03	16.87	18.21	19.22	20.01	20.75	21.09	21.70	21.47	20.97	20.40	19.50	18.33	16.79	15.18	14.26	13.43	Diurnal Average	
	17.55	16.51	15.35	13.93	13.47	13.86	15.95	18.27	20.02	22.03	23.96	25.22	26.06	26.75	27.49	27.98	28.79	28.52	26.62	24.92	21.59	20.46	21.02	18.37	Diurnal Maximum	

WCAS - Breton

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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	2.0	3.2	2.5	2.7	2.8	2.5	2.0	3.4	2.3	1.0	1.4	2.3	2.6	5.9	6.1	6.8	5.8	3.4	7.3	3.7	0.8	3.5	4.9	2.7	2.23	7.28
Dir	SSW	SE	SE	SE	SE	SSE	SSE	SW	SSW	SE	SE	ESE	SE	SE	ESE	ESE	ESE	SSE	S	SW	NE	SE	N	NNW	SE	S
2 Spd	5.6	1.6	1.2	1.1	1.5	2.1	2.6	1.8	3.5	3.9	2.1	1.0	2.3	1.5	2.1	7.1	6.1	4.2	4.5	7.4	5.2	2.8	1.3	1.4	1.07	7.41
Dir	NNE	NE	E	S	SSE	SSW	S	WSW	W	N	NNW	NNW	NE	W	SE	ESE	SE	SE	ENE	N	E	SE	SW	E	E	N
3 Spd	2.8	5.8	1.9	2.2	3.1	3.1	8.4	7.3	5.4	15.4	15.4	18.4	21.7	24.3	22.1	20.7	17.5	15.4	10.6	3.8	5.0	3.6	2.2	2.2	7.03	24.26
Dir	NNW	NNW	E	SSE	SE	SE	SSE	S	WSW	WNW	NW	NNW	NNW	NNW	NNW	N	N	NNW	NNW	N	NNE	NW	NNW	SSE	NNW	NNW
4 Spd	2.2	1.3	0.9	0.2	2.1	1.2	2.6	3.1	3.0	4.2	3.8	8.0	10.1	6.4	3.5	3.5	4.3	2.5	2.7	6.8	6.8	4.9	3.5	2.8	1.45	10.13
Dir	NW	W	SW	NE	SE	SE	SSE	S	ESE	E	NNE	NE	ENE	ESE	E	NE	NE	S	W	S	SSE	S	WNW	NW	ESE	ENE
5 Spd	0.9	1.2	0.3	2.1	0.3	2.3	3.6	8.3	10.7	11.5	10.6	7.4	8.7	12.0	13.1	9.7	9.6	11.0	3.6	1.5	3.5	2.1	2.7	2.8	4.33	13.13
Dir	SSE	S	N	WNW	N	WNW	NNW	NW	NNW	NNW	N	NNW	N	N	NNE	N	NNW	N	NNE	E	WSW	S	S	SSW	NNW	NNE
6 Spd	1.2	1.8	1.2	1.8	1.1	0.2	1.7	7.2	12.3	10.6	13.5	12.8	14.9	13.8	12.2	2.7	4.3	3.7	21.8	4.2	1.6	3.0	2.9	1.9	4.53	21.83
Dir	SW	SSW	SW	WNW	WNW	SW	W	NW	NNW	NW	NW	NW	NW	N	NNE	NE	WNW	NE	NE	ENE	SW	WNW	S	W	NNW	NE
7 Spd	2.9	1.1	0.8	0.5	1.6	1.9	2.0	4.1	4.0	6.0	9.8	10.2	9.2	7.9	6.6	0.7	5.6	11.3	11.2	7.1	4.0	2.8	3.1	3.8	2.78	11.33
Dir	NW	NW	S	SSW	SE	SE	SSE	WSW	WSW	W	W	WNW	WNW	WSW	W	NNW	S	S	S	SSE	ESE	SE	SSE	SSE	SW	S
8 Spd	2.6	3.3	2.1	1.0	1.7	1.9	0.7	3.3	7.1	8.2	8.2	9.9	9.8	10.0	7.5	6.3	2.8	19.6	19.8	11.4	6.0	5.0	3.3	3.0	5.06	19.83
Dir	SSE	SSE	SW	S	S	NNW	NNW	NW	NNW	N	NNE	NNE	NE	NE	NE	NE	N	NNE	NE	ENE	ENE	ENE	NE	E	NE	NE
9 Spd	1.0	2.0	2.5	1.8	0.8	1.8	1.9	4.7	6.9	10.2	11.3	13.0	13.5	7.3	7.2	8.3	6.8	3.9	4.1	1.9	0.8	0.4	1.8	3.3	1.49	13.46
Dir	SE	NNW	NW	NW	E	SE	WSW	NE	NNE	ENE	ENE	ENE	ENE	SE	SSE	WSW	W	NNW	WSW	SW	W	NNW	WNW	WNW	ENE	ENE
10 Spd	3.9	0.8	6.5	7.1	5.2	4.0	8.4	10.6	9.0	6.1	9.2	6.9	10.7	8.5	11.8	13.1	6.4	4.1	5.2	5.3	5.5	7.0	7.6	6.8	6.82	13.12
Dir	NW	WNW	NW	NW	NNW	NW	NW	NW	WNW	WNW	NW	WNW	N	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NW	NW
11 Spd	6.9	4.5	6.5	5.1	4.6	6.2	7.2	9.9	11.1	10.5	10.3	9.1	8.3	9.3	8.1	9.5	15.6	11.0	11.5	10.7	5.3	3.0	2.8	3.4	7.65	15.56
Dir	NNW	NW	NNW	NNW	NW	NNW	NW	NW	NW	NW	NW	NW	NNW	N	NNW	NW	NW	NW	NW	NW	WNW	WNW	W	WNW	NW	NW
12 Spd	2.8	3.0	2.1	2.0	1.8	0.5	3.9	6.7	9.3	7.9	8.5	8.0	11.7	9.6	7.8	10.7	16.2	7.8	9.7	9.4	4.5	3.4	3.4	3.2	5.83	16.15
Dir	W	WNW	WNW	NNW	WNW	NW	WNW	NW	NW	NNW	NNW	N	NNE	N	NW	NW	N	NNW	NNW	NW	NW	WNW	WNW	NW	NNW	N
13 Spd	1.8	1.0	4.3	4.4	3.4	4.1	7.2	9.2	11.5	8.4	9.8	7.3	6.3	4.6	6.2	5.3	9.2	6.0	4.9	4.3	2.0	2.7	2.4	1.4	4.21	11.54
Dir	NW	W	NW	NW	NW	NW	NW	NNW	NNW	NNW	NW	NW	NW	NW	ENE	N	NNE	N	WSW	WSW	WNW	WNW	WSW	WSW	NW	NNW
14 Spd	0.3	0.3	0.6	0.2	0.1	1.1	2.1	6.7	5.4	4.7	5.3	6.2	4.5	2.8	4.7	7.5	7.3	5.1	5.8	8.4	6.9	5.0	0.6	1.9	2.93	8.37
Dir	ESE	NNE	ESE	S	NE	WNW	WNW	NW	NW	NNW	NNE	WNW	WSW	SW	W	WSW	W	WNW	NNW	NNW	N	N	ENE	NW	NW	NNW
15 Spd	1.7	1.2	0.1	1.8	1.0	0.5	1.7	3.7	6.3	8.8	10.7	7.6	9.6	8.5	7.7	10.4	7.2	1.7	1.8	3.6	3.6	2.8	1.0	0.6	0.87	10.66
Dir	NW	N	NE	NNW	NNE	S	SSW	NW	NNE	E	E	SE	S	WSW	WSW	N	NE	NNE	S	NNE	N	NW	WNW	NNE	NE	ESE
16 Spd	2.6	0.3	0.5	1.9	0.9	1.5	5.1	4.8	3.9	7.6	7.5	9.4	11.3	11.4	4.2	1.9	4.8	2.6	4.4	6.5	4.5	3.5	2.2	0.3	2.66	11.44
Dir	WNW	NNE	NNW	NNW	NNW	NW	NNW	WNW	NW	NNW	NNE	NE	NE	NNE	E	SE	NNE	W	NNW	W	WNW	SW	WNW	N	N	NNE
17 Spd	0.6	0.5	1.0	0.3	3.5	1.4	6.0	9.6	10.2	8.4	8.3	7.2	10.7	11.3	6.7	8.9	6.5	5.3	12.5	1.9	0.9	1.1	0.9	0.3	4.39	12.48
Dir	NE	WNW	NNW	WSW	NNW	NW	NNW	NNW	NNW	NNW	NNW	NW	NNW	N	N	NNE	NNE	NE	NE	E	W	NNW	ESE	E	N	NE
18 Spd	0.5	2.1	1.9	2.2	3.2	3.2	5.8	10.5	15.0	13.5	14.7	13.9	15.3	16.5	14.2	15.6	18.3	11.4	9.9	2.4	2.2	2.1	1.3	3.0	7.63	18.26
Dir	S	SE	SE	S	SSE	SSE	SSE	S	S	S	S	S	S	S	S	S	S	S	S	SSE	ESE	NNE	N	NNW	S	S
19 Spd	0.9	3.4	3.3	2.4	2.8	1.7	2.1	3.9	8.2	9.1	10.0	8.2	16.1	14.9	13.2	10.0	12.6	10.3	6.3	3.9	7.1	3.0	8.8	15.0	6.00	16.11
Dir	ENE	SSE	SSE	SSE	SE	SE	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	NW	WNW	W	WSW	SW	WSW	SW	W	W	W	WNW
20 Spd	12.2	10.0	11.1	6.1	2.7	2.1	3.9	3.4	7.6	7.2	6.7	6.5	9.0	9.2	8.6	7.6	10.3	5.3	3.9	3.2	2.6	0.5	1.4	1.3	4.93	12.16
Dir	WNW	NW	WNW	NW	WNW	WSW	W	WNW	NW	WNW	WSW	W	W	W	WNW	NW	NNW	NW	NW	N	SE	SSE	SSE	SSE	WNW	WNW
21 Spd	0.3	4.2	0.6	1.7	0.9	2.6	2.4	4.3	2.6	3.5	6.0	9.0	8.8	10.2	12.2	9.5	14.0	9.1	4.4	7.6	5.0	3.9	3.0	1.1	3.11	14.03
Dir	S	NNW	NNW	SE	SSE	SE	S	SSW	WNW	W	NW	WNW	WNW	W	WNW	N	N	N	N	NNE	NE	ENE	NE	ENE	NNW	N
22 Spd	2.9	1.7	1.6	3.4	3.2	3.2	3.2	10.3	16.3	17.2	16.7	12.7	6.7	3.9	5.0	6.2	0.3	1.7	4.7	3.8	3.9	3.5	19.4	6.5	3.50	19.43
Dir	SSE	SE	SSE	SSE	SSE	SSE	SSE	S	SSW	SSW	SSW	SSW	SSW	SW	SSW	S	NNW	E	E	NNE	NE	NNE	NW	NW	SSW	NW

WCAS - Breton

Summary of Hourly Averages

Wind Speed (WS) - kph

July 2016

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
23 Spd	3.6	0.8	0.8	1.2	1.0	2.3	1.9	3.9	7.5	5.7	6.7	7.5	7.1	8.3	5.9	5.8	7.1	8.0	7.1	7.9	4.3	1.6	2.0	2.7	3.06	8.30
Dir	SE	WSW	WNW	W	SSW	WNW	W	NW	NNW	NNW	NNW	NNW	WNW	W	WNW	NW	NW	WNW	WNW	N	NE	SSE	SE	SSE	NW	W
24 Spd	3.7	3.2	2.5	3.0	3.1	2.8	2.1	5.0	7.6	6.8	9.7	10.7	9.5	9.6	7.6	6.8	6.5	3.6	9.4	11.4	8.0	3.4	1.1	1.3	2.06	11.44
Dir	SE	SE	SE	SE	SE	SE	SSE	S	SW	SW	SW	SSW	SW	WSW	WSW	WSW	WNW	WSW	N	NNE	N	N	NE	NNW	WSW	NNE
25 Spd	0.7	0.8	0.5	1.6	1.4	1.8	1.2	2.0	2.9	1.4	3.4	5.6	8.7	10.0	10.4	12.7	12.6	12.9	12.2	10.9	5.5	3.8	6.1	6.6	5.03	12.87
Dir	NNW	NW	WNW	SE	SE	SSE	S	W	WNW	S	SW	SSW	SSW	S	S	S	S	S	S	S	SSE	SE	SSE	SSE	S	S
26 Spd	2.9	4.0	6.3	3.6	2.1	2.4	1.3	2.3	6.7	2.9	4.5	5.5	9.8	9.9	4.6	3.8	1.8	4.6	6.7	3.2	0.8	1.3	2.6	2.5	1.36	9.93
Dir	SSE	SSE	SSE	SSE	SE	SSE	SSE	WSW	NW	N	NNW	NNW	NNE	NE	NE	NE	N	E	E	SE	ESE	SE	SSE	SE	ENE	NE
27 Spd	3.3	3.6	3.5	2.8	1.2	1.5	3.7	1.7	5.5	3.2	5.6	10.0	2.7	6.3	5.0	11.1	14.7	6.8	1.4	5.1	5.3	1.4	2.8	2.9	0.76	14.69
Dir	SSE	SSE	SSE	SSE	NNW	SE	SSE	WNW	NNW	NNW	NNW	NNW	W	SW	ENE	ENE	ENE	E	SSE	SW	W	W	SSE	SSE	E	ENE
28 Spd	3.0	2.4	1.7	1.1	0.6	0.6	2.3	2.1	4.1	4.4	7.2	10.0	7.6	5.5	2.8	4.6	12.2	12.5	1.5	1.6	1.8	4.3	3.8	4.5	1.87	12.53
Dir	SSE	SE	W	E	S	SE	SSE	SW	SSE	SSE	SSW	SSW	SSW	S	SW	SSW	NNW	NNW	SW	ENE	SSE	SE	SSE	SSE	SSW	NNW
29 Spd	4.3	4.6	4.9	4.0	2.0	2.0	1.6	1.6	2.4	2.5	1.2	2.5	2.8	5.7	3.0	4.7	2.1	5.0	11.2	8.2	3.8	11.5	5.7	17.6	1.09	17.62
Dir	SE	SE	SE	SE	SE	SE	SSE	S	SW	WSW	WNW	N	WNW	NW	W	S	S	SSE	SSE	SSE	E	ENE	NNW	N	SE	N
30 Spd	7.1	0.9	4.1	8.0	4.4	2.6	1.2	0.8	6.4	7.4	7.1	6.0	7.0	8.9	8.3	20.1	9.7	7.4	10.7	8.0	7.8	10.3	8.8	3.9	5.47	20.08
Dir	NNE	N	NW	NNW	WNW	N	SE	SSE	NW	NNW	NNE	NNE	NE	E	NNE	NNW	N	NE	NNW	NW	NNE	NNW	NW	WNW	N	NNW
31 Spd	3.6	5.9	5.4	6.9	2.8	2.2	7.0	12.8	16.7	13.7	11.7	16.9	18.5	19.1	18.0	21.6	17.7	16.1	12.0	9.7	7.5	14.2	19.7	17.3	12.11	21.57
Dir	W	WNW	NW	WNW	WNW	W	WNW	NW	NW	NW	NW	NW	WNW	NW	NW	NW	NW	NW	NW	NW	WNW	WNW	WNW	WNW	NW	NW
Spd	0.47	0.27	0.63	0.57	0.28	0.34	1.07	2.73	4.22	3.72	3.59	3.70	3.61	3.23	3.00	3.75	4.16	2.67	1.98	1.56	1.21	0.90	2.00	1.55	Diurnal Average	
Dir	WNW	WNW	WNW	WNW	SW	SSW	W	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	N	NNW	N	NNW	WNW	WNW		
Spd	12.16	9.96	11.14	7.96	5.20	6.20	8.43	12.77	16.68	17.25	16.72	18.37	21.72	24.26	22.07	21.57	18.26	19.58	21.83	11.44	8.05	14.24	19.71	17.62	Diurnal Maximum	
Dir	287.93	324.03	301.07	338.48	327.96	329.74	323.95	312.69	321.86	201.19	196.95	336.73	333.13	333.13	339.06	324.26	176.76	27.07	37.69	15.44	8.90	293.07	287.70	3.14		

Maximum Speed Value: 24.3 kph on Jul 3 14:00
Minimum Speed Value: 0.1 kph on Jul 14 05:00
Maximum Daily Speed Average: 12.11 kph on Jul 31
Minimum Daily Speed Average: 0.76 kph on Jul 2
Maximum Diurnal Speed Average: 4.22 kph at hour 9
Minimum Diurnal Speed Average: 0.27 kph at hour 2

Monthly Average Velocity: 1.979 kph 319.38 deg
Speed Percentiles: P_1 = 0.3 P_{10} = 1.2 Q_1 = 2.3 Median = 4.5 Q_3 = 8.2 P_{90} = 11.6 P_{99} = 19.5
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 (kph) 0 to 5	5 to 11	11 to 19	19 to 28	28 to 38	> 38	Total
North	40	50	13	2	0	0	105
NorthEast	29	23	6	3	0	0	61
East	22	13	5	0	0	0	40
SouthEast	95	7	0	0	0	0	102
South	51	28	21	0	0	0	100
SouthWest	35	12	0	0	0	0	47
West	54	30	6	1	0	0	91
NorthWest	71	92	29	6	0	0	198
Total	397	255	80	12	0	0	744

WCAS - Breton
Summary of Hourly Averages

Relative Humidity (RH) - %
July 2016

Maximum Value: 93.22 % on Jul 16 07:00

Maximum Daily Average: 86.43 % on Jul 10

Minimum Value: 21.5 % on Jul 29 17:00

Minimum Daily Average: 56.43 % on Jul 24

Maximum Diurnal Average: 90.66 % at hour 5

Minimum Diurnal Average: 48.39 % at hour 15

Monthly Average: 70.449 %

Percentiles: P_1 = 24.9 P_{10} = 41.5 Q_1 = 55.1 Median = 76.0 Q_3 = 88.2 P_{90} = 91.1 P_{99} = 92.8

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																								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-Jul	90.9	91.5	91.7	92.0	92.0	90.9	85.2	76.2	63.6	53.0	44.4	42.6	36.8	38.6	37.1	39.1	43.3	51.8	53.8	54.9	72.0	84.6	89.1	90.7	66.91	91.96
2-Jul	90.4	91.2	92.1	92.7	92.8	92.9	93.0	93.0	91.6	80.7	68.4	62.6	52.4	47.3	39.8	51.2	44.9	50.2	61.9	74.3	84.2	75.8	82.8	85.8	74.66	93.00
3-Jul	84.6	87.9	89.9	91.0	91.4	89.8	85.2	78.4	78.9	80.7	84.6	73.4	62.1	54.3	50.8	47.1	48.0	42.1	42.3	54.1	61.8	66.6	63.1	74.6	70.12	91.41
4-Jul	75.3	77.6	81.5	85.7	89.9	88.3	80.5	67.2	45.2	39.6	36.6	39.7	39.6	38.0	33.4	30.9	30.7	35.4	46.3	53.0	62.1	73.1	78.6	80.3	58.69	89.94
5-Jul	86.9	89.5	90.1	90.8	91.1	91.4	85.9	68.0	61.0	57.1	52.1	49.6	47.9	45.0	46.1	38.3	36.2	38.2	43.5	43.3	57.2	63.2	69.1	70.5	62.99	91.40
6-Jul	69.7	71.0	77.3	79.0	84.4	86.2	81.9	69.3	64.1	61.2	60.1	55.6	49.5	47.5	50.1	67.2	52.2	47.5	65.9	70.1	76.8	79.4	83.4	80.7	67.93	86.17
7-Jul	83.6	88.0	88.6	89.9	89.9	90.3	89.2	75.1	63.5	53.3	49.3	44.3	38.3	36.7	32.1	32.3	31.9	38.3	41.1	45.4	53.8	66.4	75.5	77.7	61.43	90.31
8-Jul	79.2	82.1	85.9	89.1	90.4	90.2	89.6	78.5	69.5	64.7	59.9	56.8	56.1	54.2	51.0	50.4	43.1	56.1	63.5	70.1	77.6	83.8	88.4	89.9	71.67	90.41
9-Jul	90.4	91.6	92.0	92.5	92.7	92.8	92.6	85.1	70.1	63.4	57.0	57.0	56.6	53.8	54.1	57.3	71.5	76.7	79.8	80.1	84.0	88.1	90.3	90.5	77.49	92.81
10-Jul	90.1	90.0	89.8	88.9	90.0	91.0	91.5	91.7	90.7	89.1	88.2	90.0	89.8	89.9	77.7	69.0	75.8	81.3	80.6	83.7	84.9	84.5	87.0	89.2	86.43	91.71
11-Jul	90.3	90.4	90.8	91.6	91.8	91.4	90.1	87.3	85.1	83.2	79.7	75.1	65.5	75.6	69.5	61.9	73.7	75.4	71.3	72.8	79.2	84.7	86.5	87.8	81.28	91.83
12-Jul	89.1	89.4	89.6	90.1	90.0	90.7	87.4	81.2	74.7	70.2	63.2	61.0	54.4	54.9	67.7	76.2	71.3	60.6	61.3	66.3	74.0	80.8	83.8	85.2	75.55	90.66
13-Jul	87.6	88.8	88.7	88.5	88.8	89.1	87.9	83.5	79.9	79.9	80.7	85.4	77.6	69.7	55.8	56.0	60.0	67.7	77.9	83.3	84.7	87.3	88.1	89.4	80.25	89.36
14-Jul	90.5	91.5	91.8	92.0	92.3	92.7	92.3	87.8	82.0	74.7	60.3	76.4	79.8	73.3	64.9	67.7	69.2	62.2	60.1	63.0	76.3	86.4	89.5	90.9	79.49	92.67
15-Jul	91.7	92.0	92.2	92.6	92.6	92.7	84.1	74.8	70.4	61.0	54.5	54.8	56.7	62.2	65.5	70.8	85.1	88.2	88.2	87.6	88.4	90.8	91.7	92.1	80.04	92.75
16-Jul	92.4	92.5	92.7	92.8	92.9	93.1	93.2	92.9	88.3	76.0	64.2	58.8	60.3	55.2	50.7	46.4	61.5	75.5	73.9	76.7	79.5	78.7	79.5	83.4	77.13	93.22
17-Jul	89.1	90.4	90.0	90.4	91.1	90.3	85.3	80.0	76.7	76.2	80.1	77.9	68.6	78.1	76.0	64.0	56.4	58.9	72.1	76.3	79.8	84.6	87.5	89.7	79.56	91.13
18-Jul	91.5	91.8	91.9	92.0	92.1	92.3	89.9	70.5	58.6	56.2	52.0	48.7	47.0	46.6	44.5	44.3	48.7	59.3	62.2	64.5	64.7	76.0	84.0	87.1	69.02	92.35
19-Jul	89.6	91.5	91.8	92.1	92.7	92.7	90.4	82.4	67.2	64.9	63.7	49.6	35.5	35.8	32.6	36.0	30.5	27.3	28.8	37.2	46.0	50.4	55.9	54.9	59.97	92.72
20-Jul	59.2	72.3	78.2	80.7	87.8	88.4	85.0	76.0	68.3	66.6	64.4	61.3	53.1	47.6	48.6	47.7	46.7	49.4	52.5	72.2	82.9	85.6	87.3	87.1	68.72	88.44
21-Jul	82.0	70.2	78.2	88.2	87.1	87.0	79.7	69.1	62.6	57.1	57.6	46.7	41.5	38.2	38.3	47.0	46.3	44.9	47.7	56.3	69.5	82.5	80.4	86.4	64.37	88.25
22-Jul	88.1	87.5	86.6	88.0	88.9	84.6	77.4	66.0	56.1	48.5	46.0	42.7	32.6	26.0	24.8	25.0	22.8	23.0	37.0	54.8	60.0	69.2	68.0	75.2	57.44	88.88
23-Jul	84.4	87.1	89.6	89.3	90.3	91.2	88.7	79.2	68.8	57.9	51.5	45.9	41.6	41.5	41.2	42.4	39.8	40.0	40.2	52.0	65.8	76.0	84.0	86.9	65.63	91.19
24-Jul	89.0	89.6	90.3	91.0	91.2	90.9	78.2	62.9	50.8	42.3	35.2	32.0	30.0	26.0	24.4	26.4	27.7	32.2	36.1	49.0	54.0	61.8	69.6	73.6	56.43	91.24
25-Jul	79.5	84.4	85.8	88.9	90.7	89.3	76.0	64.4	49.7	39.3	33.7	34.1	35.6	38.2	36.6	38.5	40.0	44.7	51.0	55.3	59.0	68.7	75.1	78.0	59.86	90.74
26-Jul	79.9	85.3	87.3	89.2	90.4	90.9	88.9	85.5	77.9	68.4	64.8	60.3	51.0	50.6	42.3	40.4	37.0	39.8	40.2	48.4	63.2	75.2	81.0	86.1	67.67	90.87
27-Jul	88.2	89.7	90.8	91.4	92.0	92.0	92.0	84.6	78.1	79.3	77.1	74.3	65.6	68.2	62.5	50.5	44.4	51.7	62.3	70.1	70.6	69.3	78.5	83.1	75.25	92.01
28-Jul	88.5	90.4	90.9	91.7	91.9	92.2	92.7	88.3	74.2	66.9	61.9	54.3	50.4	45.7	44.4	55.2	60.7	74.0	82.2	78.6	81.8	89.6	90.7	91.3	76.19	92.67
29-Jul	90.7	90.7	90.9	91.5	91.6	92.2	90.4	77.9	68.6	59.2	47.6	44.6	36.8	28.6	27.3	24.7	21.5	24.5	36.8	43.0	52.2	59.9	56.9	75.6	59.33	92.18
30-Jul	87.2	87.0	87.5	87.2	88.9	89.1	89.9	85.5	69.6	66.6	57.0	53.9	50.9	46.2	57.0	86.5	89.9	85.7	84.4	87.4	87.9	85.9	89.6	89.7	78.77	89.92
31-Jul	90.6	88.5	89.1	90.1	90.2	90.7	87.5	81.5	77.5	70.8	64.3	56.5	54.3	55.4	53.2	51.9	56.9	57.8	61.6	66.4	77.4	82.8	86.3	86.6	73.67	90.69
	85.80	87.14	88.50	89.71	90.66	90.56	87.15	78.83	70.43	64.77	60.01	56.97	52.19	50.61	48.39	49.74	50.58	53.57	58.27	64.20	71.33	77.15	80.68	83.55	Diurnal Average	
	92.38	92.48	92.66	92.81	92.93	93.13	93.22	92.96	91.57	89.08	88.23	90.02	89.80	89.88	77.65	86.48	89.92	88.24	88.19	87.60	88.36	90.83	91.70	92.14	Diurnal Maximum	

WCAS - Breton

Summary of Hourly Standard Deviations

Wind Speed (WS) - kph

July 2016

Maximum Value: 10.18 kph on Jul 28 17:00

Maximum Daily Average: 3.95 kph on Jul 31

Minimum Value: 0.3 kph on Jul 6 06:00

Minimum Daily Average: 1.86 kph on Jul 14

Maximum Diurnal Average: 4.26 kph at hour 17

Minimum Diurnal Average: 1.42 kph at hour 6

Monthly Average: 2.713 kph

Percentiles: P_1 = 0.8 P_{10} = 1.2 Q_1 = 1.6 Median = 2.4 Q_3 = 3.5 P_{90} = 4.7 P_{99} = 6.9

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	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-Jul	0.9	1.2	1.2	1.4	0.9	1.4	1.4	1.9	2.2	2.0	2.6	2.8	3.1	5.0	4.3	3.8	3.3	2.0	3.5	2.0	1.5	2.3	3.0	3.7	2.40	4.97
2-Jul	2.5	2.5	1.2	1.2	1.4	1.7	1.6	1.6	2.3	2.5	2.2	2.1	2.4	2.6	3.6	3.4	3.4	2.6	1.2	5.7	3.2	2.5	1.6	1.4	2.35	5.66
3-Jul	4.6	2.9	1.9	1.4	1.4	1.8	3.4	3.2	2.8	4.2	4.5	4.8	5.3	6.7	6.0	5.4	4.6	3.9	3.7	1.6	1.4	3.0	2.5	1.7	3.46	6.67
4-Jul	1.6	1.7	1.3	1.2	1.0	1.1	2.1	1.7	2.4	2.9	3.1	3.3	4.8	4.1	3.4	3.7	3.9	2.4	4.1	2.7	3.2	1.8	3.0	2.5	2.62	4.81
5-Jul	2.0	1.2	0.7	1.0	0.9	0.9	3.0	2.7	3.2	3.0	3.2	3.3	3.9	4.6	3.5	4.4	4.0	2.9	2.9	1.8	2.8	1.3	1.4	1.1	2.48	4.58
6-Jul	1.3	1.3	1.2	1.2	1.2	0.3	1.9	2.8	3.1	3.0	4.5	3.7	4.7	5.0	4.2	5.1	3.7	4.0	6.8	5.0	1.3	1.4	1.3	1.8	2.91	6.82
7-Jul	2.9	1.7	1.3	1.1	1.3	1.2	1.3	1.7	2.7	3.2	3.4	3.9	4.3	3.4	4.5	3.1	3.4	4.4	3.2	3.6	1.9	1.6	1.8	2.2	2.64	4.48
8-Jul	1.3	1.9	1.4	2.4	2.2	2.0	1.6	2.8	2.4	2.5	2.7	3.2	3.2	4.2	4.7	2.6	2.8	6.5	4.1	6.9	3.1	3.1	3.0	3.1	3.07	6.89
9-Jul	1.6	1.4	1.9	1.9	1.6	1.4	1.8	2.7	3.8	3.3	4.1	4.2	4.6	4.8	3.4	6.1	3.5	2.3	1.4	1.7	1.2	1.5	2.1	1.1	2.64	6.14
10-Jul	1.4	1.5	1.7	1.6	1.3	1.5	2.6	2.9	2.4	3.0	3.0	3.8	5.6	2.8	3.4	3.6	3.7	1.2	1.6	1.1	1.2	1.5	1.6	1.3	2.31	5.59
11-Jul	1.5	1.4	1.6	1.3	1.2	1.3	1.8	2.4	2.5	2.8	2.8	2.5	3.6	6.5	2.5	5.1	4.9	3.1	2.8	3.1	1.7	1.4	1.2	1.0	2.50	6.49
12-Jul	1.4	1.0	1.2	1.0	0.9	0.8	2.6	2.4	2.2	2.5	3.0	3.6	3.8	3.1	1.9	4.3	4.3	2.4	3.2	3.5	1.1	1.2	1.2	1.4	2.25	4.31
13-Jul	1.9	1.2	1.8	1.4	0.9	1.7	1.8	2.6	2.4	2.0	2.7	2.1	2.3	2.8	5.0	2.7	6.0	4.8	1.2	1.7	1.3	1.3	1.5	1.3	2.27	6.05
14-Jul	1.0	0.6	0.9	0.8	0.7	1.2	1.8	2.2	2.1	2.2	3.7	3.1	2.8	2.1	2.5	2.4	2.1	1.6	2.3	1.9	1.5	1.6	1.2	2.2	1.86	3.68
15-Jul	1.1	1.2	1.4	1.2	1.2	1.6	1.7	2.3	3.2	4.4	5.4	4.4	5.3	3.9	3.2	5.2	7.0	1.9	2.1	1.8	2.7	1.6	1.3	1.3	2.76	7.01
16-Jul	0.9	1.4	0.8	1.6	1.5	1.6	2.9	1.9	3.4	2.6	4.2	3.7	3.0	4.1	3.6	3.4	7.6	2.3	4.7	1.7	1.8	1.6	1.6	1.7	2.66	7.63
17-Jul	1.0	1.1	1.6	1.2	1.3	1.5	2.2	2.2	2.1	2.4	2.0	2.7	5.8	2.9	2.5	3.0	3.2	2.7	2.4	3.4	1.2	1.1	1.0	1.2	2.17	5.80
18-Jul	0.9	0.9	1.1	2.0	2.3	1.9	3.2	4.5	3.3	3.6	4.2	5.3	4.8	5.5	5.0	4.2	4.3	3.0	3.0	2.1	1.8	1.1	1.5	2.3	2.99	5.49
19-Jul	1.3	2.1	1.8	2.2	1.6	1.2	1.8	2.3	2.7	2.7	2.5	4.7	4.9	4.5	4.3	4.2	3.9	3.5	3.0	1.7	3.9	2.2	3.5	4.1	2.94	4.93
20-Jul	3.5	5.5	6.8	3.2	1.7	1.9	1.9	3.1	2.1	1.9	2.1	2.2	2.5	3.0	3.5	2.5	3.9	1.9	1.0	5.8	1.1	0.8	1.2	1.6	2.69	6.76
21-Jul	1.2	1.5	1.2	1.4	1.0	1.2	1.8	2.0	1.7	2.0	2.3	2.7	3.9	3.7	3.7	2.6	5.2	3.2	2.0	2.1	2.1	2.1	2.0	1.9	2.27	5.20
22-Jul	1.4	1.3	1.5	2.2	1.8	2.2	2.0	5.0	4.1	4.8	5.0	4.0	4.4	4.7	4.1	3.3	2.3	2.5	3.0	3.5	4.9	3.3	7.0	4.8	3.45	7.00
23-Jul	2.1	2.0	1.6	1.6	1.4	1.0	1.4	2.5	2.5	2.5	3.6	3.5	4.3	4.6	3.4	2.8	3.5	3.4	2.5	1.5	3.2	1.0	1.4	1.3	2.45	4.64
24-Jul	1.1	1.4	1.0	1.3	1.2	0.9	1.5	2.4	2.7	3.0	3.4	4.2	3.8	4.3	3.8	3.5	3.1	3.2	4.9	2.3	2.5	4.0	1.4	1.5	2.61	4.92
25-Jul	1.2	1.5	1.4	1.3	1.3	1.2	1.0	1.7	2.1	2.2	4.0	4.4	3.9	4.1	4.3	4.6	3.1	3.2	2.9	2.0	2.7	2.5	2.0	2.0	2.53	4.56
26-Jul	2.0	2.6	2.1	1.4	1.3	1.6	1.5	1.8	3.0	2.8	2.4	4.1	3.3	4.9	4.2	4.4	2.6	3.0	2.3	2.0	1.1	1.1	1.8	1.6	2.44	4.89
27-Jul	1.4	1.6	1.5	1.5	3.5	2.4	2.5	1.7	3.3	4.1	2.8	2.9	2.9	3.9	3.1	3.8	4.4	5.5	1.9	2.9	2.9	2.3	2.3	1.7	2.79	5.49
28-Jul	2.5	2.4	1.6	1.4	1.5	1.1	1.2	2.4	1.9	2.6	4.3	4.0	5.0	3.8	3.4	1.8	10.2	7.2	3.0	1.7	1.0	1.8	1.6	1.6	2.88	10.18
29-Jul	1.8	1.6	1.9	1.7	1.6	1.0	1.2	1.5	1.7	2.5	2.6	3.0	3.6	4.9	3.7	4.2	3.2	4.3	4.5	4.7	2.9	5.5	7.9	4.9	3.18	7.88
30-Jul	4.6	1.6	3.0	2.4	1.5	1.4	1.4	1.3	2.9	4.1	3.3	3.2	4.6	4.7	7.8	8.4	5.4	3.1	3.2	2.6	6.3	5.0	2.6	2.0	3.59	8.37
31-Jul	1.7	1.2	1.5	1.6	1.9	1.8	4.2	3.9	4.6	4.1	4.2	5.0	5.9	6.0	5.5	6.0	5.4	5.7	3.7	3.5	2.8	4.2	5.4	5.2	3.95	5.98
	1.79	1.69	1.65	1.55	1.43	1.42	2.00	2.45	2.71	2.94	3.35	3.56	4.08	4.23	3.94	3.99	4.26	3.34	2.98	2.82	2.31	2.16	2.33	2.14	Diurnal Average	
	4.57	5.50	6.76	3.23	3.51	2.38	4.19	4.96	4.58	4.76	5.42	5.34	5.85	6.67	7.81	8.37	10.18	7.17	6.82	6.89	6.34	5.48	7.88	5.16	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

WCAS - Breton

Summary of Hourly Standard Deviations

Wind Direction (WD) - deg

July 2016

Maximum Value: 98.51 deg on Jul 14 04:00

Maximum Daily Average: 53.41 deg on Jul 2

Minimum Value: 10.3 deg on Jul 10 23:00

Minimum Daily Average: 18.20 deg on Jul 11

Maximum Diurnal Average: 50.94 deg at hour 3

Minimum Diurnal Average: 29.43 deg at hour 19

Monthly Average: 38.882 deg

Percentiles: P_1 = 11.0 P_{10} = 16.1 Q_1 = 21.1 Median = 32.3 Q_3 = 53.1 P_{90} = 72.9 P_{99} = 94.7

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																								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-Jul	45.9	17.7	18.9	19.2	20.5	34.9	30.3	27.8	65.7	86.6	80.4	62.1	64.0	49.6	41.3	35.1	35.2	31.4	24.3	43.1	91.4	55.3	30.7	74.1	45.24	91.43
2-Jul	37.4	86.2	70.2	57.3	40.3	46.1	48.2	60.5	49.8	39.9	57.7	75.1	53.3	88.2	73.1	30.0	34.8	37.3	24.6	34.5	39.6	72.9	72.1	52.6	53.41	88.22
3-Jul	84.2	28.3	59.8	34.8	25.4	37.9	17.4	26.7	42.3	13.9	15.8	15.9	18.3	17.3	16.1	18.5	18.9	14.3	17.3	31.3	24.1	49.0	70.7	50.1	31.19	84.18
4-Jul	48.8	79.1	86.7	79.4	37.0	51.8	68.0	30.3	46.8	55.4	72.7	32.7	34.6	49.7	59.4	75.4	53.1	56.4	74.0	15.1	23.8	21.4	59.4	46.3	52.38	86.65
5-Jul	88.6	42.3	76.7	30.9	78.1	21.5	45.8	19.7	20.8	18.4	21.1	36.6	33.9	22.2	20.0	33.7	33.2	18.3	29.2	31.7	61.7	39.0	23.1	17.7	36.01	88.62
6-Jul	47.5	49.3	61.6	33.3	46.3	56.1	91.9	19.4	14.2	19.1	20.9	21.5	21.5	28.7	16.7	77.9	37.5	43.9	21.8	82.1	46.0	26.2	41.9	62.1	41.14	91.89
7-Jul	68.6	84.4	77.3	82.3	55.1	37.6	33.7	28.1	48.0	35.7	29.6	27.7	36.5	32.2	44.5	87.4	43.1	22.6	16.8	22.8	30.0	35.4	36.1	30.8	43.60	87.41
8-Jul	24.1	31.4	58.3	73.4	53.6	68.1	94.8	38.9	19.1	18.3	22.6	18.1	27.6	25.7	49.1	36.6	55.9	15.5	12.3	53.1	26.2	26.3	65.3	64.6	40.79	94.78
9-Jul	80.2	55.0	46.1	67.3	83.8	54.6	64.5	51.0	25.8	25.5	23.6	18.1	22.7	47.0	28.9	59.5	40.4	59.3	25.3	62.1	90.3	96.8	87.9	39.8	52.31	96.77
10-Jul	25.0	69.4	22.4	17.0	29.4	23.1	14.0	14.8	16.2	35.6	16.8	37.3	31.7	15.4	16.1	18.1	16.9	17.8	15.8	12.5	15.2	11.0	10.3	11.0	21.37	69.42
11-Jul	10.4	12.5	14.8	16.0	16.3	13.2	13.4	14.3	15.9	17.2	15.4	23.4	25.8	37.5	18.9	26.3	15.8	17.2	17.4	14.0	17.4	20.5	23.4	19.8	18.20	37.53
12-Jul	13.3	17.0	28.1	24.8	17.5	64.0	28.2	23.4	18.7	22.4	25.3	29.8	18.9	28.3	16.4	17.5	16.8	21.5	19.2	13.3	18.8	21.5	22.3	37.8	23.53	63.99
13-Jul	69.4	38.4	15.9	16.7	14.8	18.7	13.7	15.1	13.0	14.7	15.9	14.3	24.9	56.4	67.9	43.0	38.2	40.3	22.7	28.7	27.8	20.6	43.1	32.3	29.44	69.36
14-Jul	91.0	62.8	69.2	98.5	78.7	47.2	35.8	18.0	24.3	29.3	51.9	43.4	34.3	50.2	46.3	22.8	22.9	25.3	24.3	10.7	14.5	14.1	84.4	69.0	44.55	98.51
15-Jul	63.5	45.7	92.0	47.6	70.5	90.7	72.8	29.5	44.1	29.0	34.7	37.2	38.8	27.3	34.2	38.9	67.1	92.0	78.5	35.5	43.7	30.7	49.4	73.3	52.77	92.04
16-Jul	21.8	91.2	75.1	63.8	81.2	74.8	48.0	27.8	55.3	21.2	34.7	25.9	17.8	24.4	50.0	90.0	75.0	56.5	73.4	19.4	28.2	30.4	31.8	95.0	50.52	95.05
17-Jul	74.4	65.0	86.0	93.1	19.3	69.8	10.9	11.8	13.2	17.3	18.1	34.9	29.5	15.0	25.0	24.6	29.5	36.0	17.3	89.0	55.9	69.0	50.1	80.8	43.14	93.14
18-Jul	61.9	26.6	25.4	55.9	42.3	28.5	24.5	18.0	14.4	19.6	18.9	23.6	21.2	20.4	23.1	18.7	14.1	16.0	14.5	46.1	48.0	52.7	73.0	67.2	32.27	72.96
19-Jul	70.7	46.5	32.5	56.3	54.9	46.3	39.8	27.6	18.6	17.8	18.2	32.6	19.3	19.0	24.1	24.5	18.0	17.8	25.1	20.8	25.5	53.9	23.0	16.1	31.20	70.66
20-Jul	16.3	29.6	39.7	26.6	37.9	49.2	21.5	42.1	14.9	18.8	23.3	19.4	19.3	24.4	40.5	19.1	28.6	21.4	21.6	97.5	24.3	33.4	24.0	64.5	31.58	97.55
21-Jul	90.9	21.4	90.1	41.1	48.2	22.1	44.4	31.5	43.7	38.9	30.2	28.1	29.9	25.5	18.6	38.8	17.4	19.0	17.9	11.7	25.0	56.5	73.3	69.0	38.88	90.94
22-Jul	26.6	37.6	30.9	22.3	33.4	40.5	39.5	22.9	13.9	16.4	17.5	21.3	40.3	68.8	58.3	33.0	93.9	67.1	34.0	54.2	69.3	72.0	17.3	67.9	41.62	93.91
23-Jul	37.6	96.4	90.2	85.7	63.4	37.9	44.0	33.1	16.6	29.2	37.1	34.9	41.2	31.8	39.6	21.8	29.9	23.9	20.5	14.0	61.6	34.2	52.3	32.7	42.07	96.36
24-Jul	22.5	28.2	22.2	16.6	13.6	18.6	24.9	25.1	24.4	30.4	27.6	29.0	32.7	28.4	36.1	33.6	30.1	57.5	35.7	10.5	12.0	67.6	77.6	60.7	31.89	77.64
25-Jul	92.1	80.5	92.7	54.1	39.0	49.6	44.3	62.7	54.0	88.1	76.6	49.9	35.2	25.7	26.0	20.1	15.0	15.5	12.5	10.5	27.7	37.0	16.6	14.4	43.32	92.72
26-Jul	36.2	23.1	17.8	27.1	42.1	56.3	45.2	63.7	33.6	57.5	39.4	45.9	23.7	34.2	58.5	63.6	54.2	38.8	20.6	32.3	51.0	29.9	28.4	39.5	40.12	63.75
27-Jul	23.5	29.4	30.4	24.5	94.8	72.0	42.8	67.2	29.4	82.8	31.8	16.0	57.1	57.0	31.4	19.4	16.3	29.9	61.7	35.0	36.6	78.3	45.8	39.6	43.85	94.82
28-Jul	38.2	64.5	71.6	81.6	93.8	72.5	28.1	82.2	30.6	34.9	31.0	31.1	53.4	46.8	61.9	22.4	52.6	65.9	81.4	67.2	24.9	19.4	20.7	22.3	49.96	93.79
29-Jul	21.6	20.8	21.2	22.5	47.3	24.2	30.9	52.3	42.5	60.6	80.7	62.1	64.9	39.4	51.8	44.5	66.5	38.5	20.8	27.7	28.2	32.1	75.3	21.1	41.56	80.74
30-Jul	26.2	84.7	43.5	22.3	22.3	17.6	67.5	82.7	31.3	34.6	29.2	38.6	35.9	36.4	48.6	15.6	53.1	30.1	15.4	16.7	52.4	51.6	17.8	35.2	37.88	84.72
31-Jul	27.9	15.2	11.5	12.1	42.1	35.6	34.7	15.9	14.3	19.1	24.7	19.9	19.2	17.3	18.3	16.5	14.7	16.3	16.5	16.4	18.2	14.3	14.2	14.7	19.56	42.06
	47.94	47.74	50.94	45.30	46.54	44.55	40.76	34.97	29.53	33.81	33.66	32.47	33.14	35.17	37.44	36.35	36.74	34.30	29.43	34.18	37.39	41.07	43.91	45.87	Diurnal Average	
	92.15	96.36	92.72	98.51	94.82	90.73	94.78	82.72	65.72	88.07	80.74	75.12	64.90	88.22	73.07	89.99	93.91	91.98	81.37	97.55	91.43	96.77	87.91	95.05	Diurnal Maximum	

,Alberta Ambient Air Quality Objectives (AAAQO): 1-hr --- ul/m^3 24-hr 100 ul/m^3

CALIBRATIONS

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: July 13, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: 0708721217

Previous Calibration Date: June 22, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN - 08600312

Barometric Pressure: 27.40" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF13698

Temperature: 21.1° C

Cylinder Concentration: 12.5 ppm NO

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	NO bkg ppb	NO_x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO_x Coefficient	NO_2 Coefficient	Monitoring Range
Previous	12.7	13.9	NA	1.253	0.997	1.000	200 ppb
Current	12.8	13.3	NA	1.156	1.003	1.000	200 ppb

NO	Final Zero: -0.6 ppb	Final Span: 141.2 ppb	As Found Correction Factor: 1.094
NO_2	Final Zero: -0.1 ppb	Final Span: 0.0 ppb	As Found Correction Factor: NA
NO_x	Final Zero: -0.2 ppb	Final Span: 140.9 ppb	As Found Correction Factor: 1.093

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	150.077000	9.953101	0.999984
		Current	148.897600	16.847480	0.999937
	C_i vs C_c	Current	1.000000	0.000001	0.999937
NO_2	R_c vs C_c	Previous	149.551200	-187.242500	0.999984
		Current	150.705200	86.028140	0.999830
	C_i vs C_c	Current	1.000000	-0.000022	0.999830
NO_x	R_c vs C_c	Previous	150.284200	30.373900	0.999984
		Current	150.303600	28.791290	0.999949
	C_i vs C_c	Current	1.000000	0.000000	0.999949

Comments: Changed pump.

Calibration Data Summary (Page 2)

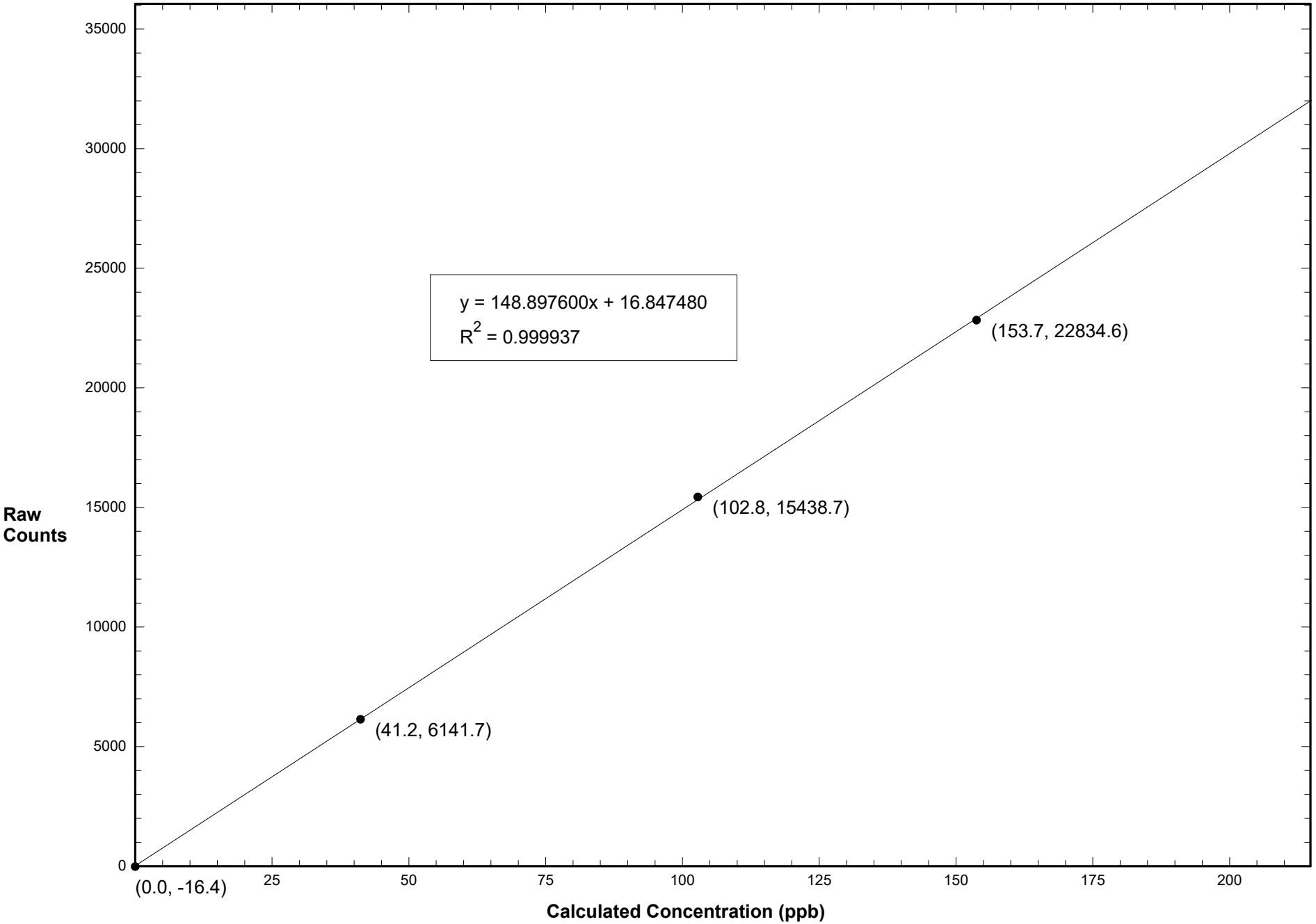
July 13, 2016 - Station 901

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.07505	6.027	153.7	22834.6	153.2	1.003
0.04997	6.025	102.8	15438.7	103.6	0.993
0.01990	6.022	41.2	6141.7	41.1	1.001
0.00000	6.000	0.0	-16.4	-0.2	
NO Calibration				Average Correction Factor:	0.999
0.07505	6.027	153.7	23068.1	153.3	1.003
0.04997	6.025	102.8	15580.4	103.5	0.994
0.01990	6.022	41.2	6228.4	41.2	0.998
0.00000	6.000	0.0	-11.9	-0.3	
NO_x Calibration				Average Correction Factor:	0.998

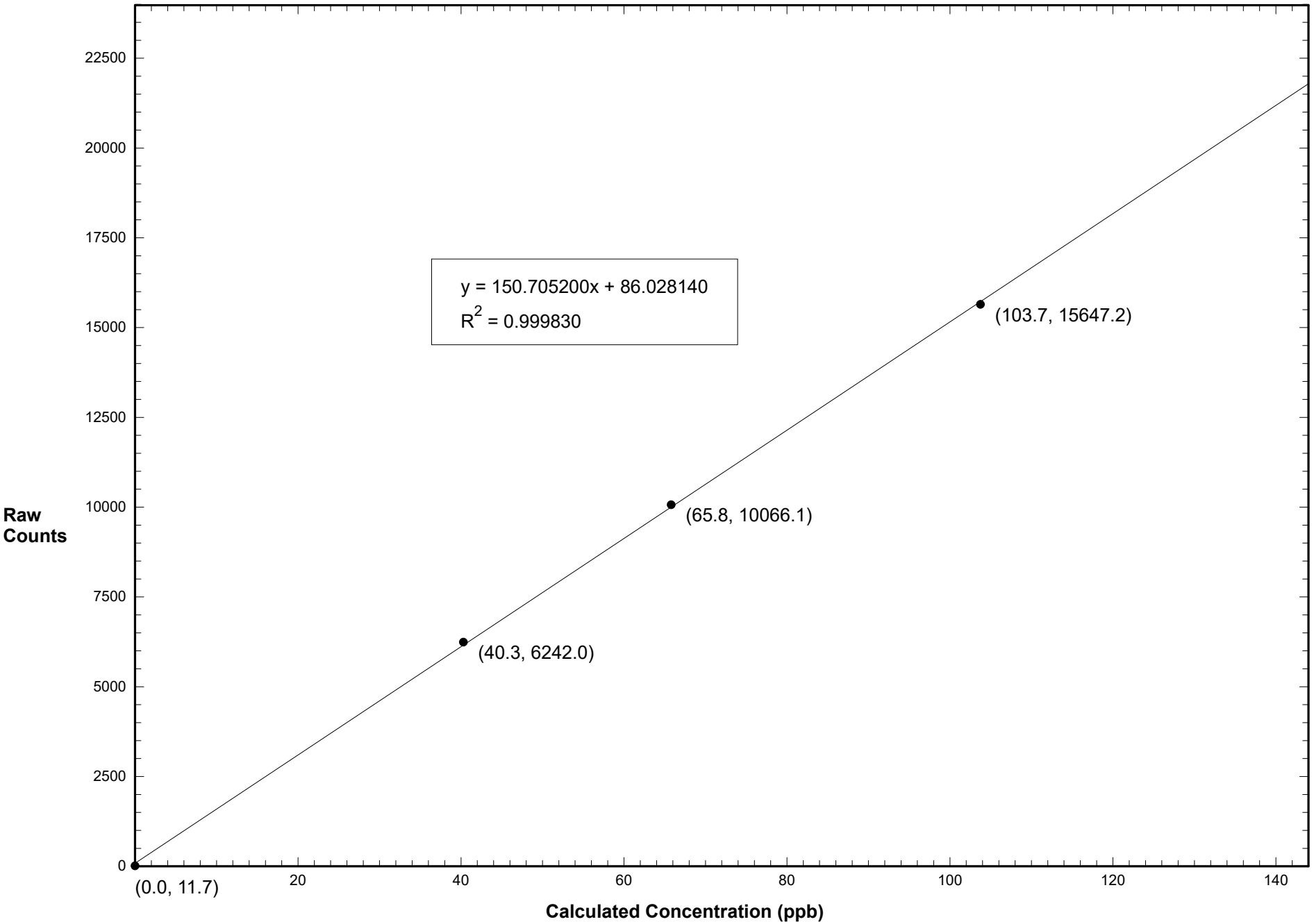
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
154.7	7602.6	50.9	103.7	15647.2	103.3	1.005	0.995
154.7	13253.4	88.9	65.8	10066.1	66.2	0.993	1.007
154.7	17049.1	114.4	40.3	6242.0	40.8	0.987	1.014
			0.0	11.7	-0.5		
					Average Correction Factor:	0.995	
NO_2 Gas Phase Titration						Average Converter Efficiency:	1.005

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	1.002	1.003	0.1
NO_2	0.994	1.005	1.1
NO_x	1.002	1.003	0.1

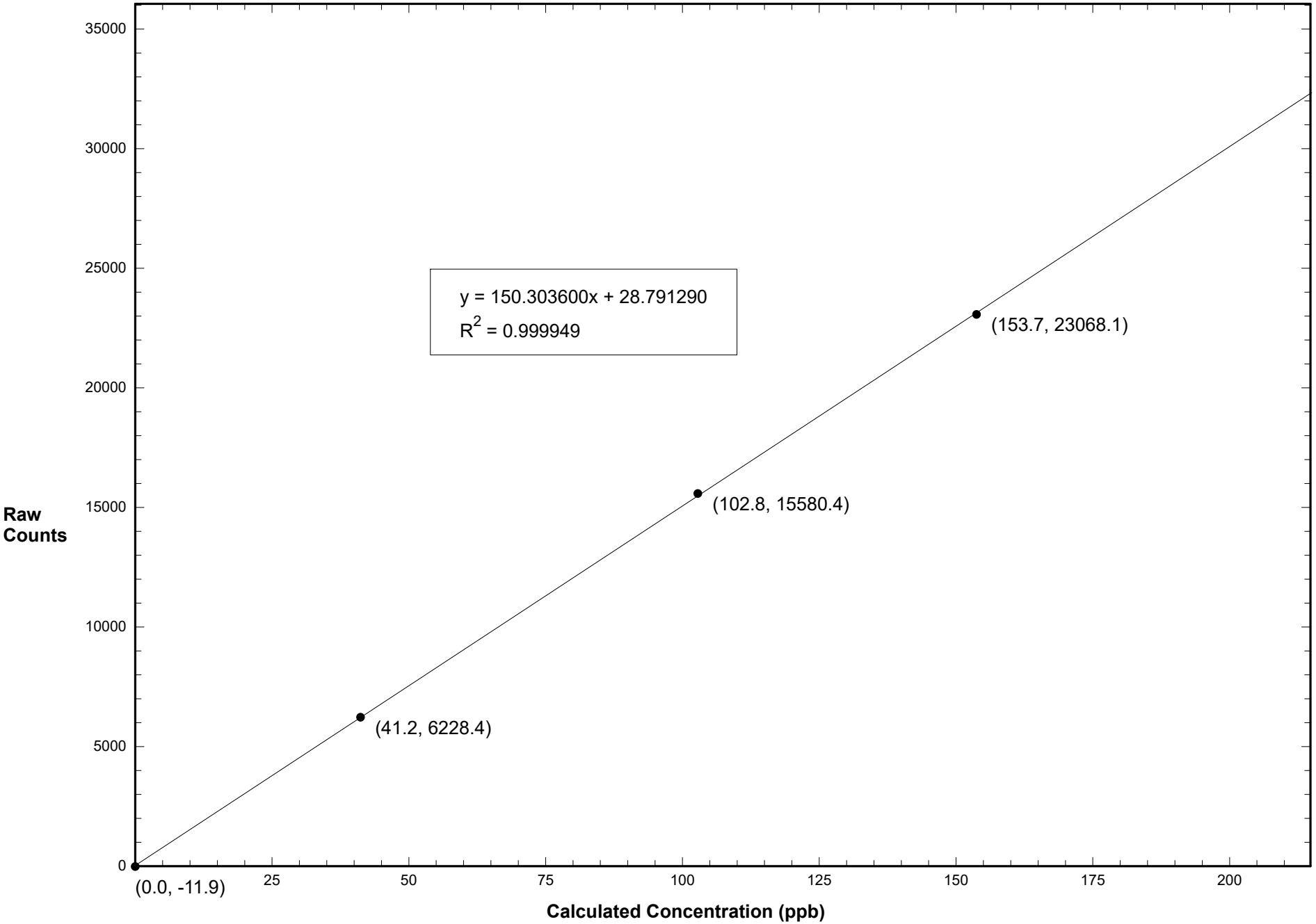
Station 901 NO July 13, 2016: Linear Regression



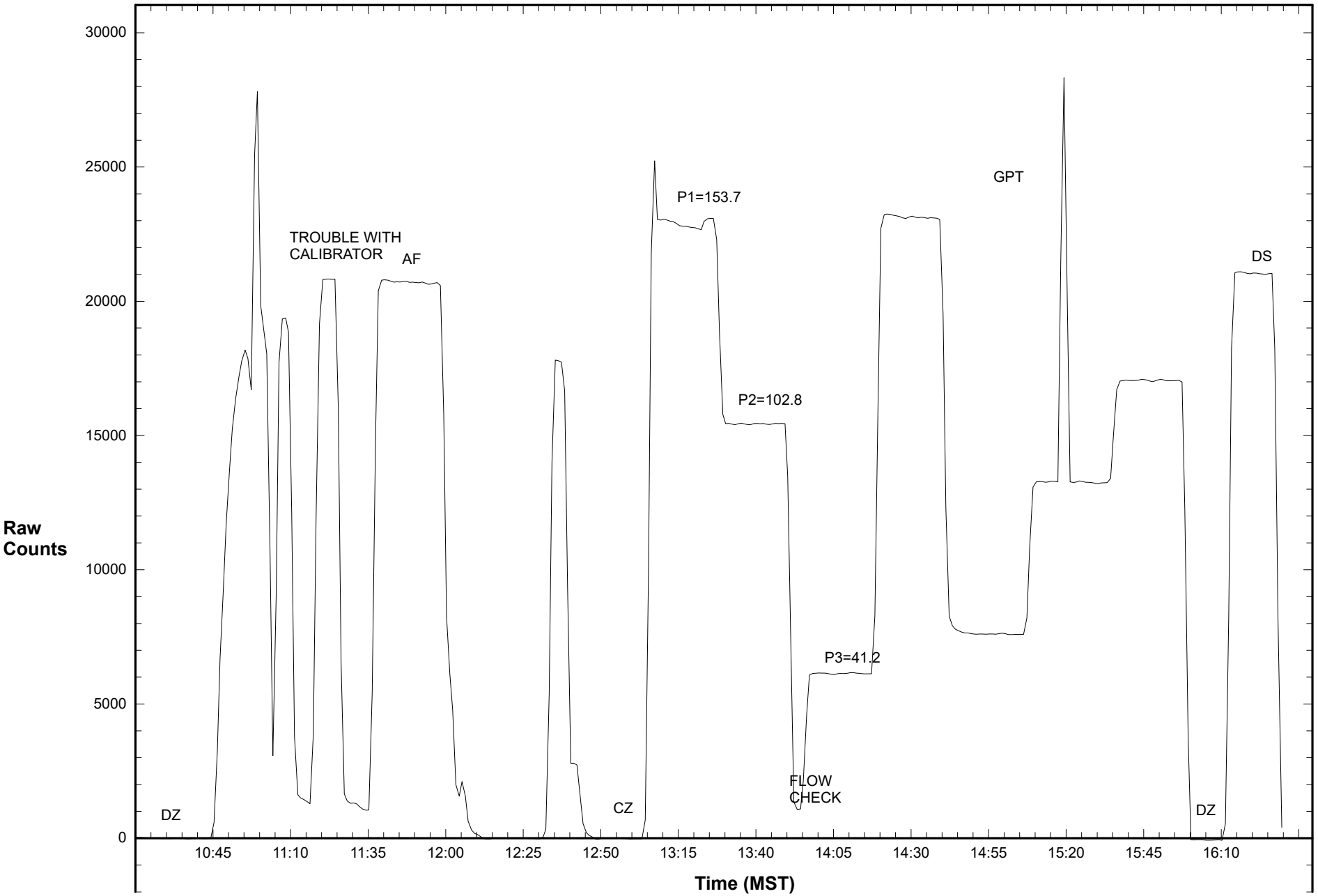
Station 901 NO2 July 13, 2016: Linear Regression



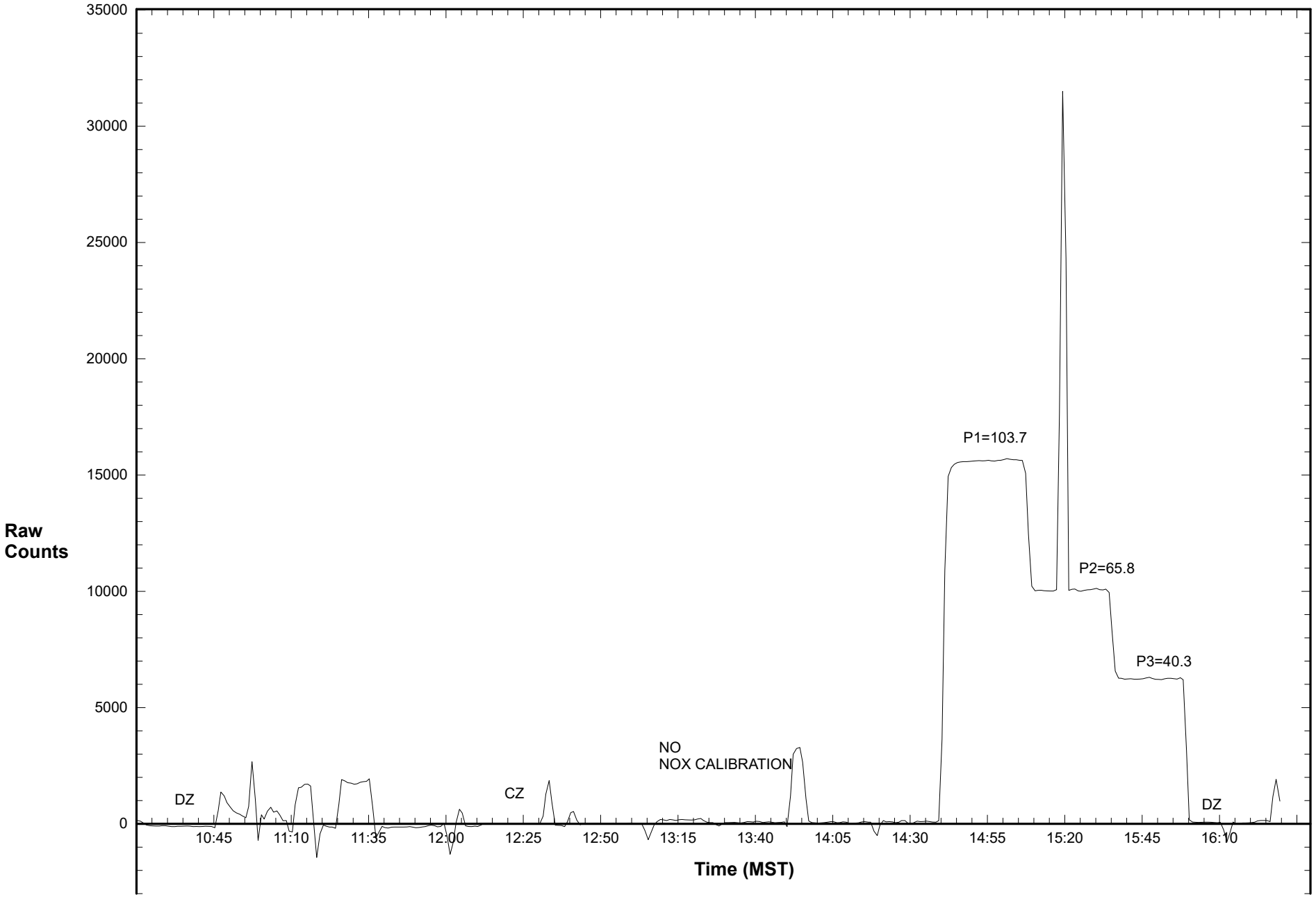
Station 901 NOX July 13, 2016: Linear Regression



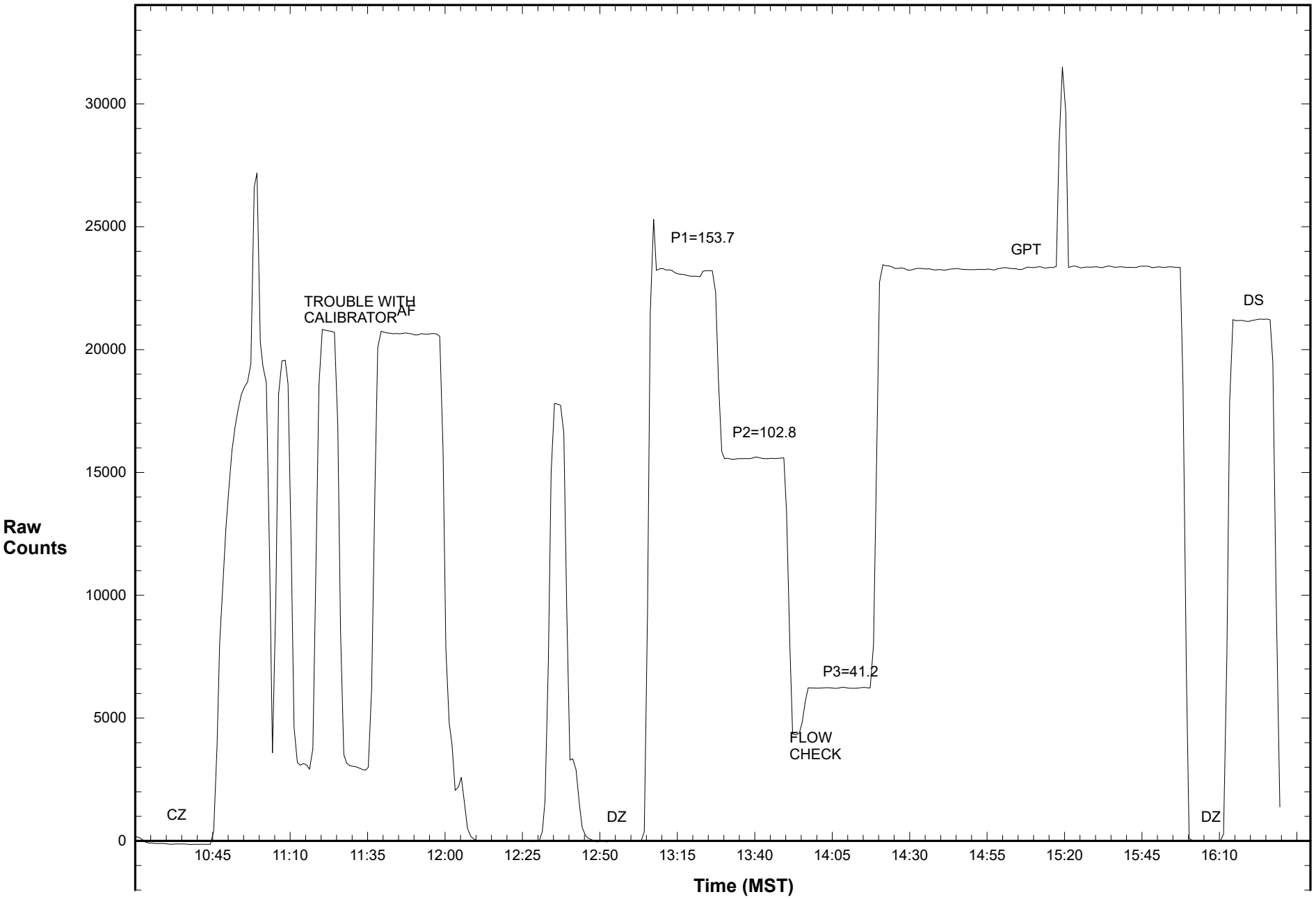
Station 901 NO July 13, 2016: Calibration Graph



Station 901 NO2 July 13, 2016: Calibration Graph



Station 901 NOX July 13, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: July 13, 2016

Parameter: O_3

Instrument: Teco 49i

Serial Number: 0708721220

Previous Calibration Date: June 22, 2016

Calibration: Routine

Calibration Equipment: 2B Tech Model 306 SN#142

Barometric Pressure: 27.40" Hg

Calibration Method: Certified Ozone Generator

Temperature: 21.1° C

Technician: L. Burns

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.3	1.060	500 ppb
Current	-0.1	1.045	500 ppb

Final Zero: -1.7 ppb

Final Span: 234.1 ppb

As Found Correction Factor: 0.990

Calibration System Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
3.000	399.0	23901.3	397.7	1.003
3.000	214.0	13016.5	215.8	0.992
3.000	105.0	6457.0	106.2	0.989
3.000	0.0	-1.7	-1.7	

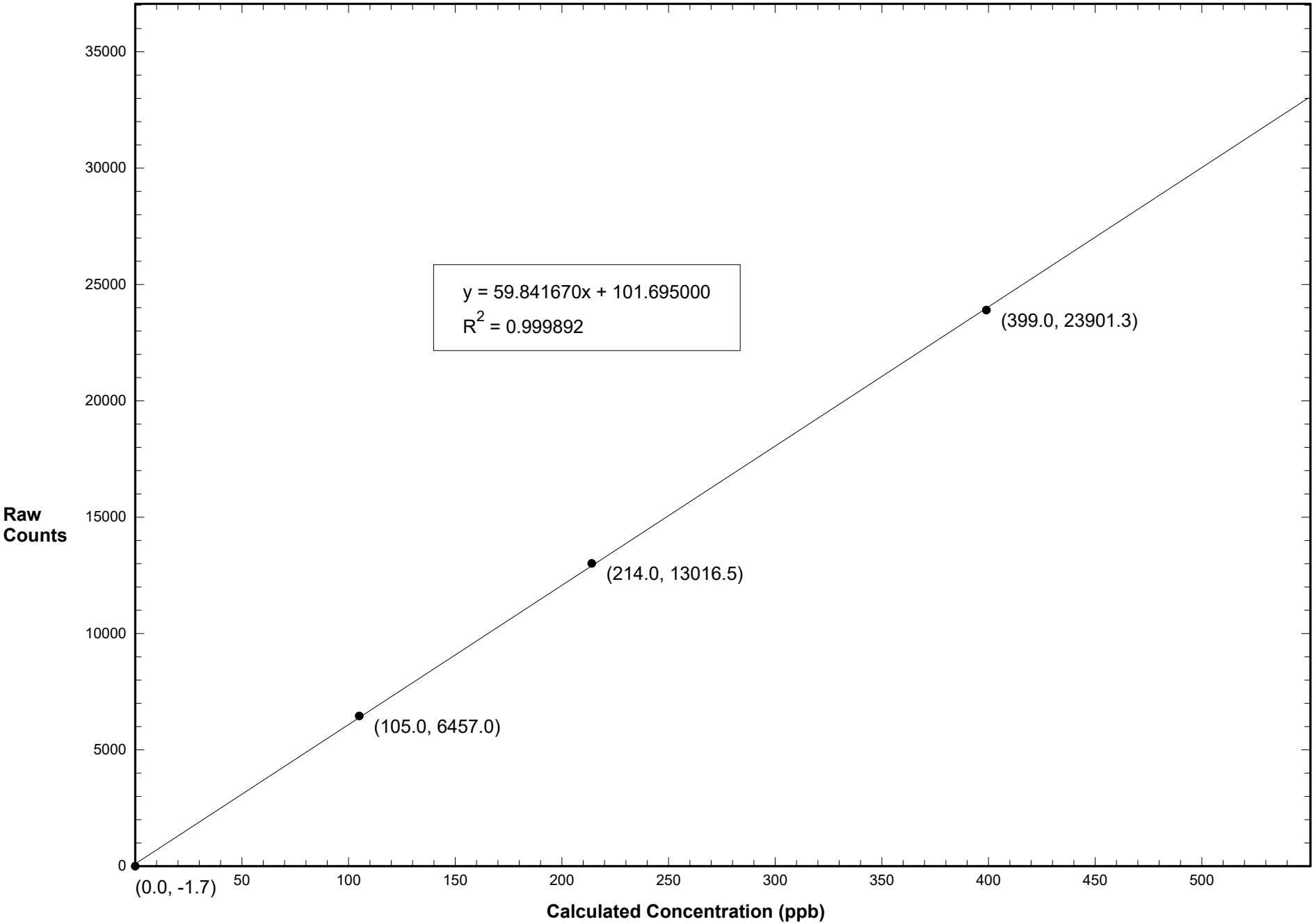
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.983460	45.921850	0.999926
Current	59.841670	101.695000	0.999892
C_i vs C_c			
Current	1.000000	-0.000006	0.999892

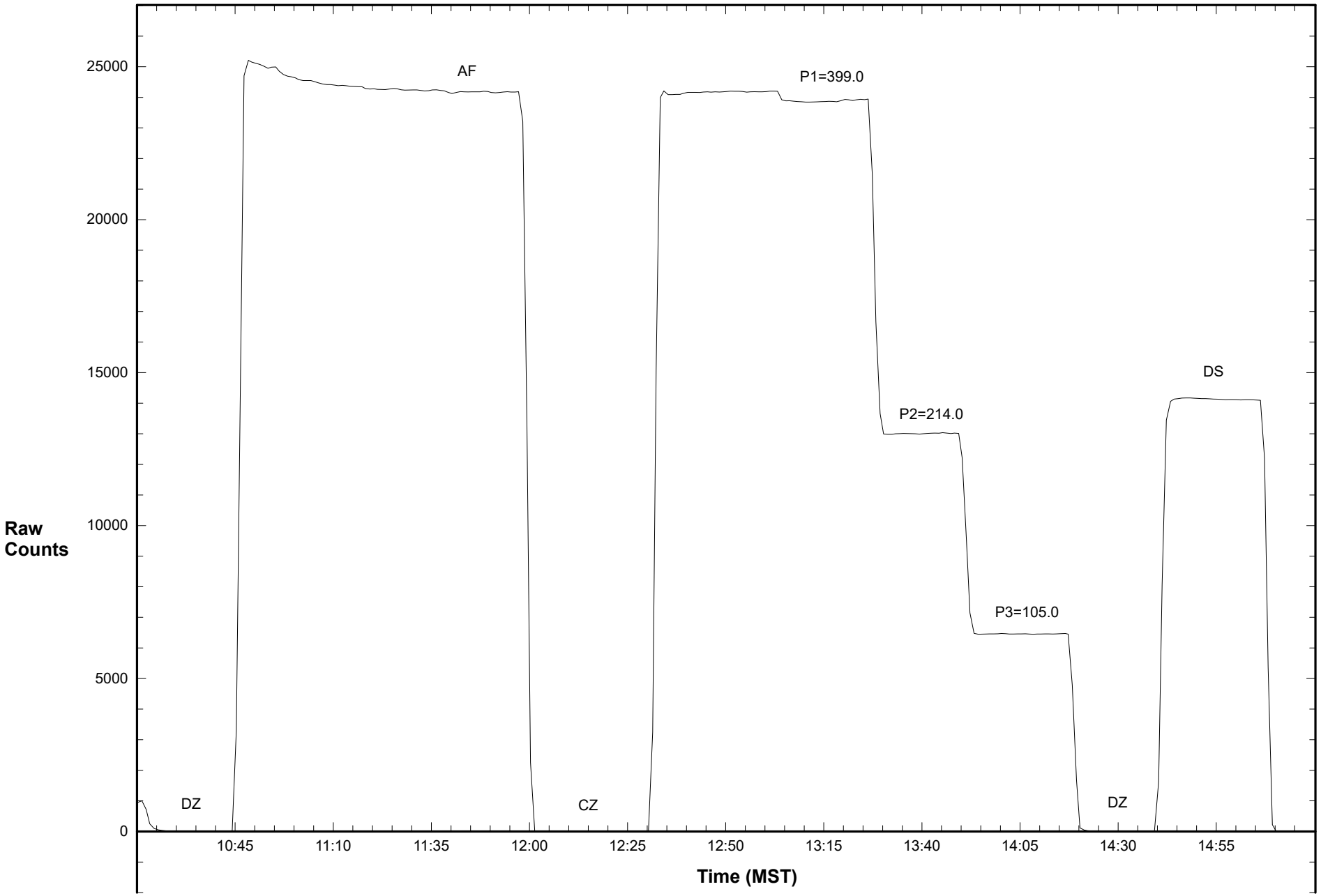
Average Correction Factor:	0.995
Previous Correction Factor:	1.003
Current Correction Factor:	1.003
Percent Change of Correction Factor:	0.0

Comments:

Station 901 O3 July 13, 2016: Linear Regression



Station 901 O3 July 13, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 901, Tomahawk

Calibration Date: July 13, 2016

Parameter: SO_2

Instrument: Teco 43i

Serial Number: 0708721218

Previous Calibration Date: June 22, 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN - 08600312

Barometric Pressure: 27.40" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF13698

Temperature: 21.1° C

Cylinder Concentration: 6.11 ppm SO2

In Service: January 14, 2015

Technician: L. Burns

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	14.1	0.881	100 ppb
Current	14.0	0.880	100 ppb

Final Zero: 0.1 ppb

Final Span: 63.5 ppb

As Found Correction Factor: 0.988

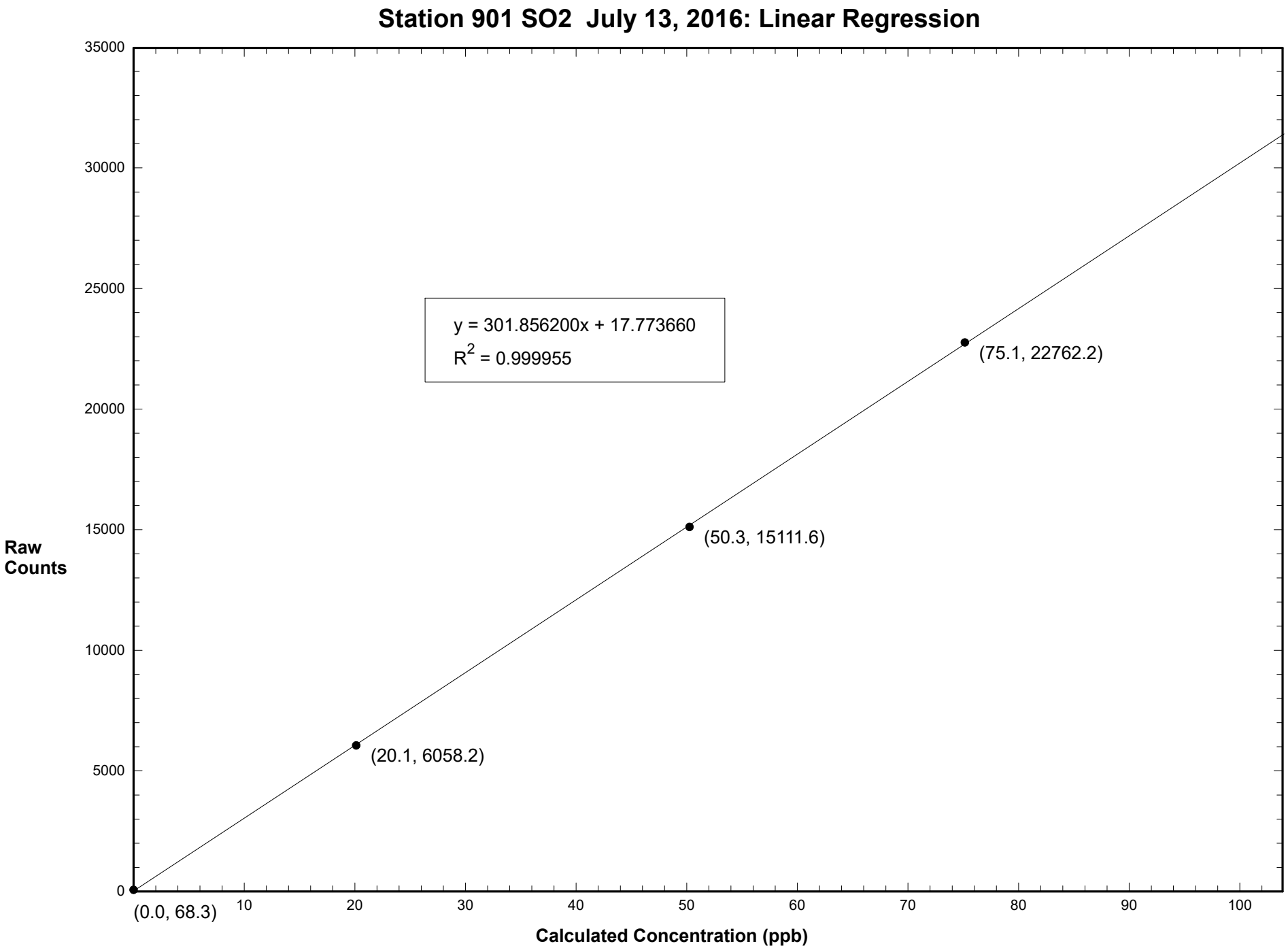
SO_2 Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.0751	6.027	75.1	22762.2	75.3	0.997
0.0500	6.025	50.3	15111.6	50.0	1.005
0.0199	6.022	20.1	6058.2	20.0	1.006
0.0000	6.000	0.0	68.3	0.2	

Results of Linear Regression

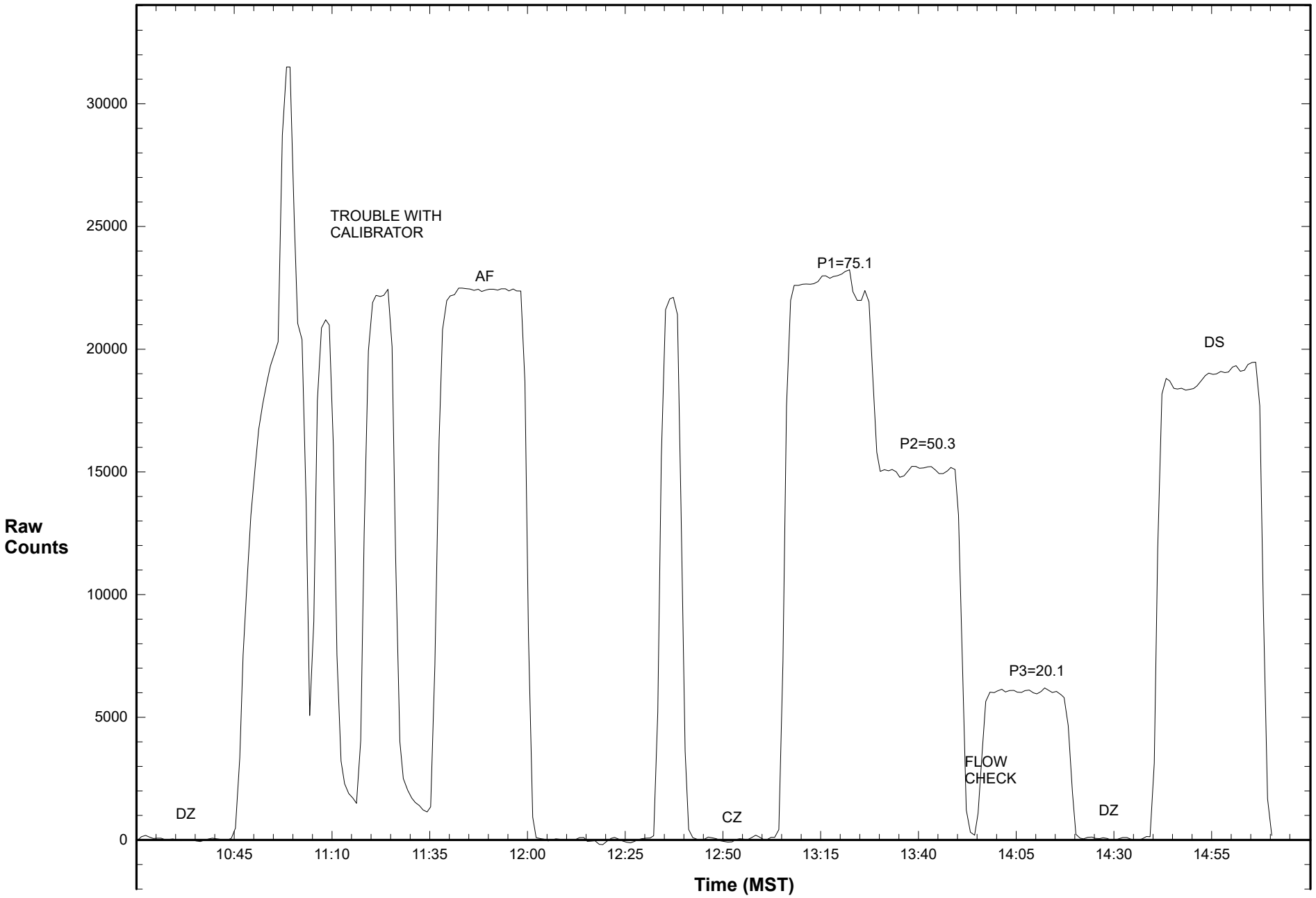
R_c vs C_c	Slope	Intercept	R^2
Previous	299.864200	47.122970	0.999981
Current	301.856200	17.773660	0.999955
C_i vs C_c			
Current	1.000000	-0.000001	0.999955

Average Correction Factor:	1.003
Previous Correction Factor:	1.001
Current Correction Factor:	0.997
Percent Change of Correction Factor:	-0.4

Comments:


Station 901 SO2 July 13, 2016: Linear Regression
y = 301.856200x + 17.773660
R2 = 0.999955
(0.0, 68.3)
(20.1, 6058.2)
(50.3, 15111.6)
(75.1, 22762.2)
Raw Counts
Calculated Concentration (ppb)
0
5000
10000
15000
20000
25000
30000
35000
10
20
30
40
50
60
70
80
90
100

Station 901 SO2 July 13, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: July 26, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: 0708721428

Previous Calibration Date: June 18 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn 04300810

Barometric Pressure: 27.00" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF 16109

Temperature: 22.0° C

Cylinder Concentration: 12.1 ppm NO/NOx

In Service: Jan 14 2015

Technician: Dean Yustak

Instrument Settings	NO bkg ppb	NO_x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO_x Coefficient	NO_2 Coefficient	Monitoring Range
Previous	16.2	17.2	NA	1.779	1.012	1.000	200 ppb
Current	16.3	16.6	NA	1.783	1.001	1.000	200 ppb

NO	Final Zero: 0.0 ppb	Final Span: 51.8 ppb	As Found Correction Factor: 1.004
NO_2	Final Zero: -0.2 ppb	Final Span: -0.3 ppb	As Found Correction Factor: NA
NO_x	Final Zero: -0.1 ppb	Final Span: 51.7 ppb	As Found Correction Factor: 0.993

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	149.685000	-13.257120	0.999991
		Current	149.718400	35.076850	0.999997
	C_i vs C_c	Current	1.000000	-0.000022	0.999998
NO_2	R_c vs C_c	Previous	149.794200	77.949150	0.999991
		Current	149.461400	29.232210	0.999998
	C_i vs C_c	Current	1.000000	-0.000004	0.999998
NO_x	R_c vs C_c	Previous	149.993700	-9.905559	0.999991
		Current	149.923000	30.620820	0.999998
	C_i vs C_c	Current	1.000000	0.000001	0.999997

Comments:

Calibration Data Summary (Page 2)

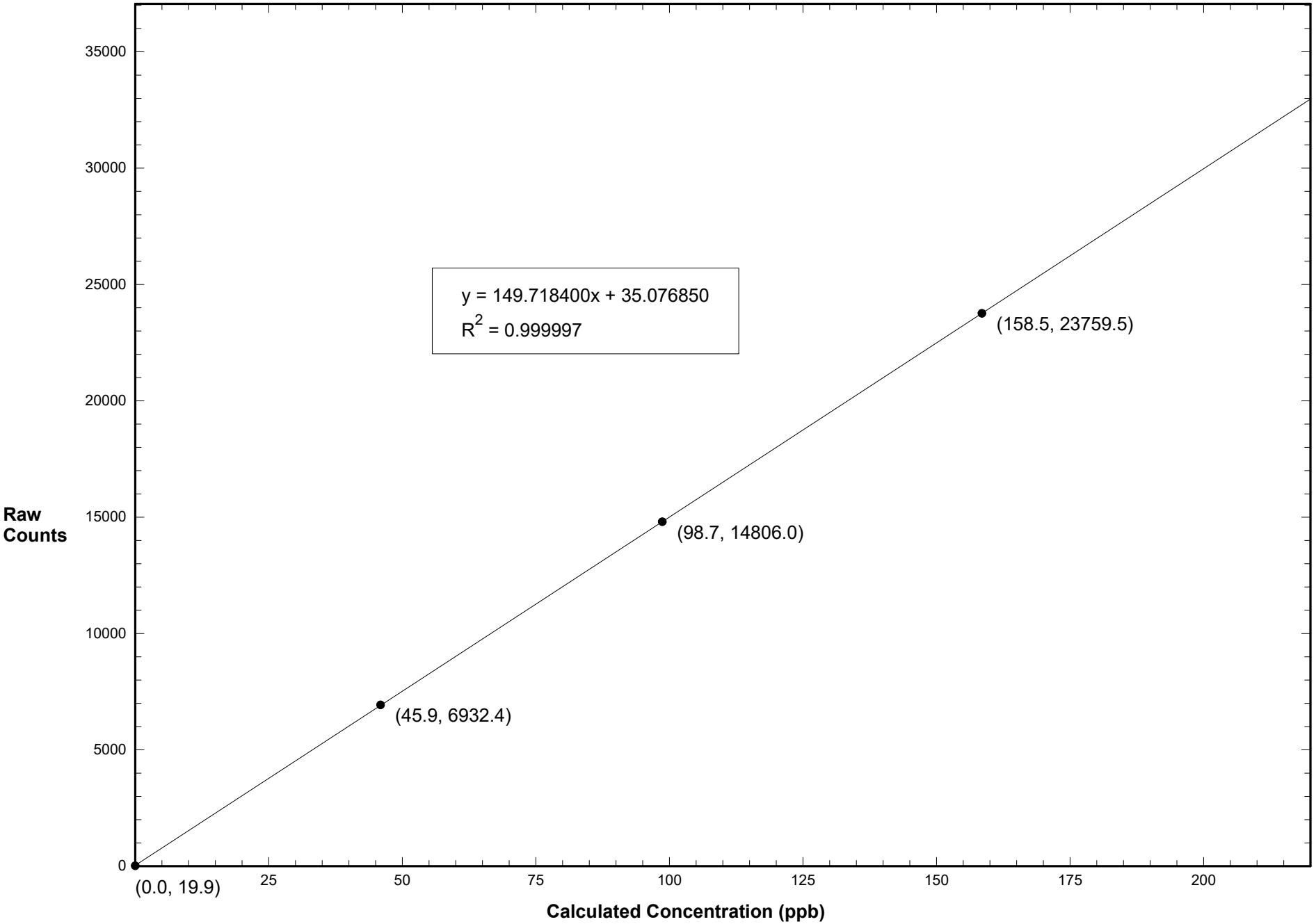
July 26, 2016 - Station 902

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.06720	5.063	158.5	23759.5	158.5	1.000
0.04165	5.066	98.7	14806.0	98.7	1.000
0.01928	5.061	45.9	6932.4	46.1	0.997
0.00000	5.043	0.0	19.9	-0.1	
NO Calibration				Average Correction Factor:	0.999
0.06720	5.063	158.5	23780.0	158.4	1.001
0.04165	5.066	98.7	14840.1	98.8	0.999
0.01928	5.061	45.9	6923.7	46.0	0.999
0.00000	5.043	0.0	18.2	-0.1	
NO_x Calibration				Average Correction Factor:	0.999

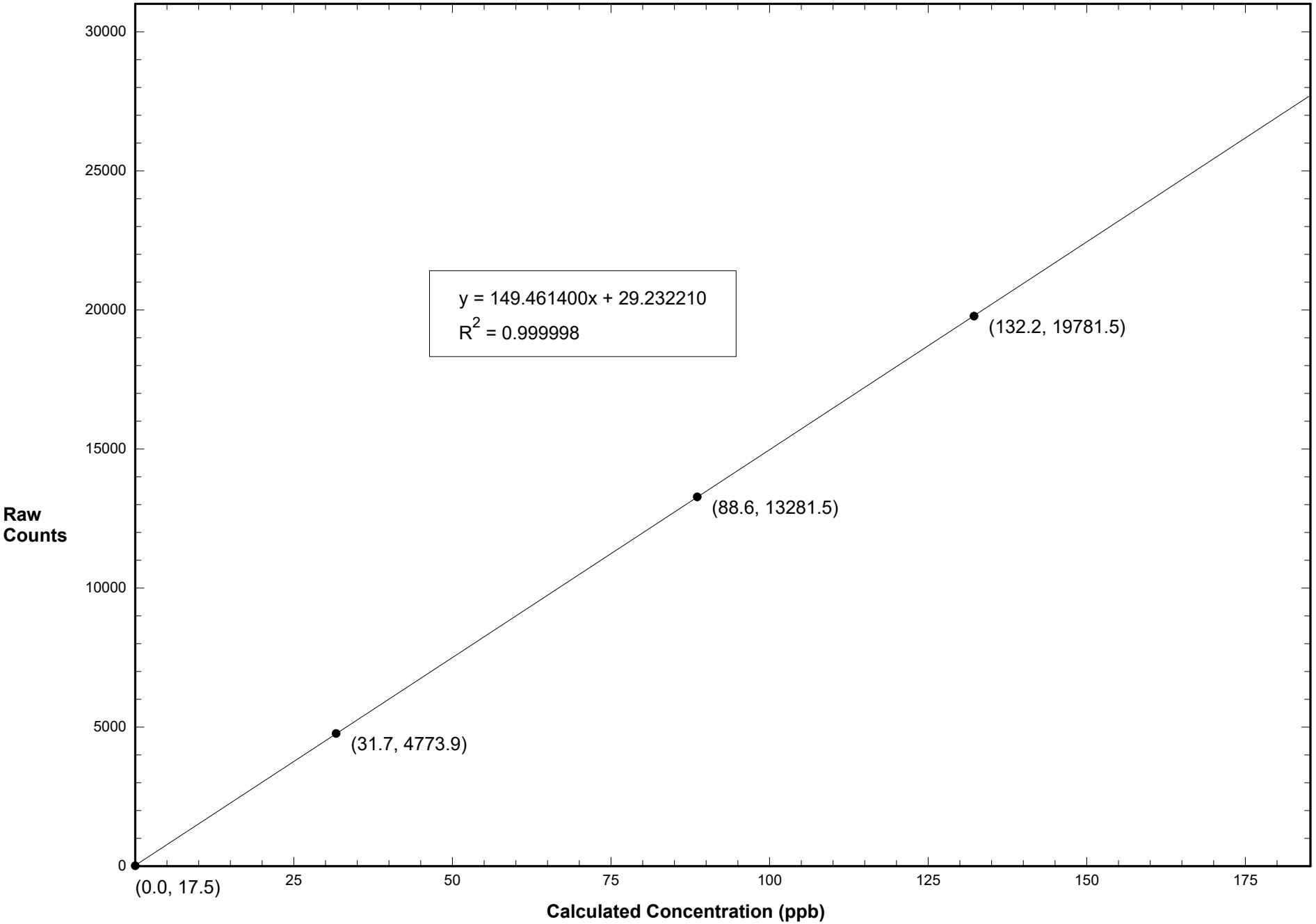
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
159.0	4048.1	26.8	132.2	19781.5	132.2	1.001	1.000
159.0	10580.1	70.4	88.6	13281.5	88.7	0.999	1.001
159.0	19102.1	127.4	31.7	4773.9	31.7	0.998	1.002
			0.0	17.5	-0.1		
					Average Correction Factor:	0.999	
NO_2 Gas Phase Titration						Average Converter Efficiency:	1.001

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	0.999	1.000	0.1
NO_2	1.002	1.001	-0.1
NO_x	1.000	1.001	0.1

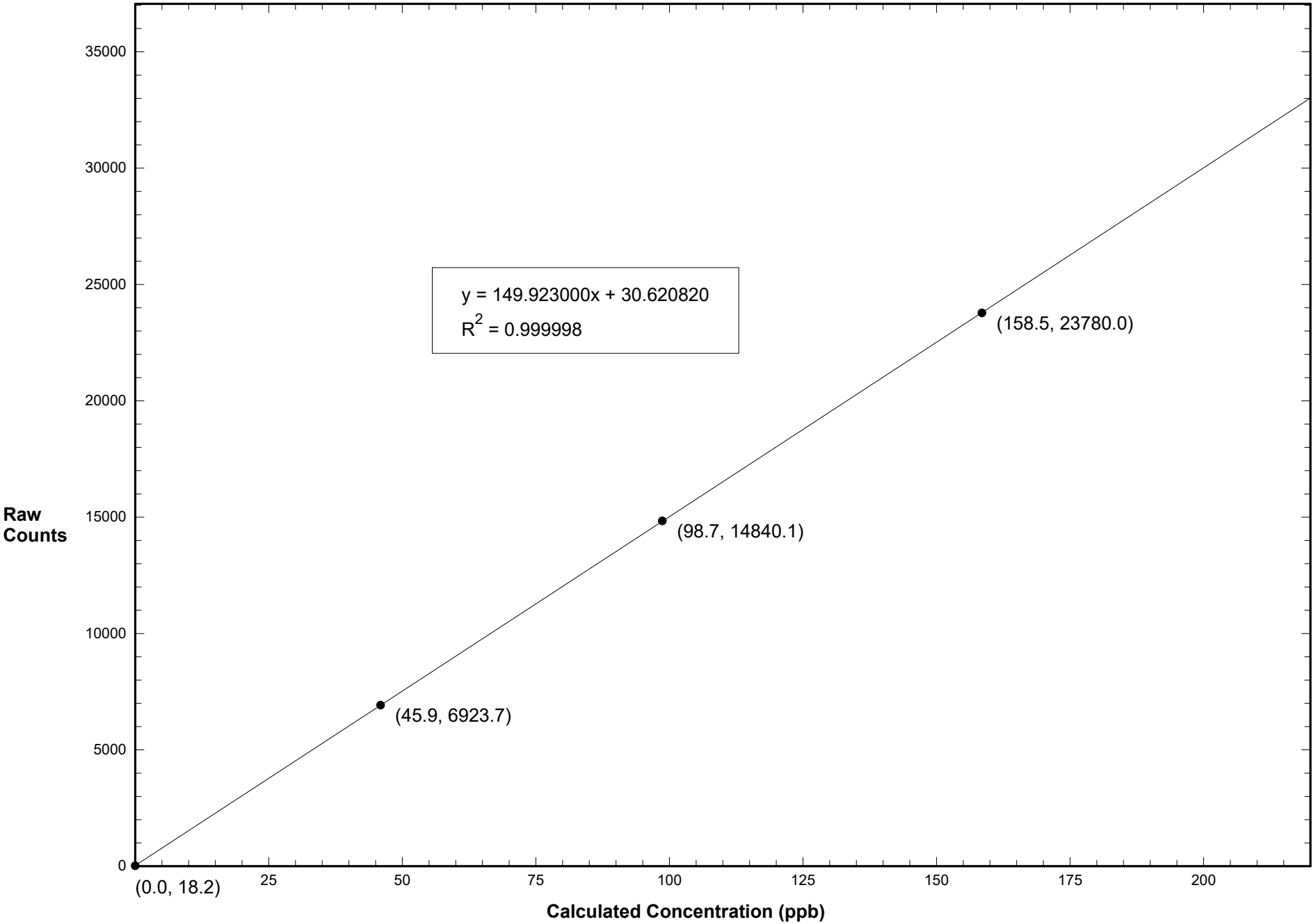
Station 902 NO July 26, 2016: Linear Regression



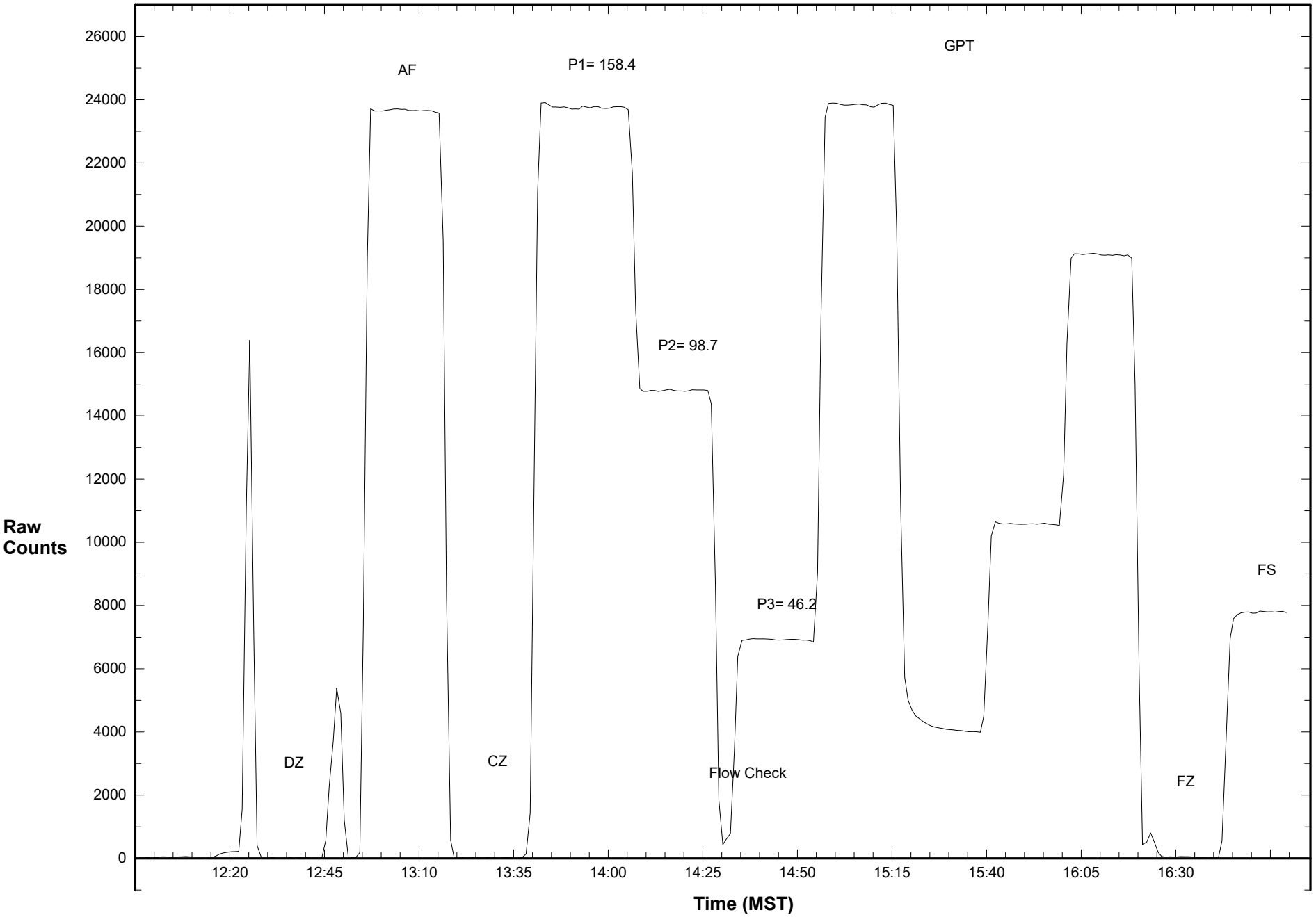
Station 902 NO2 July 26, 2016: Linear Regression



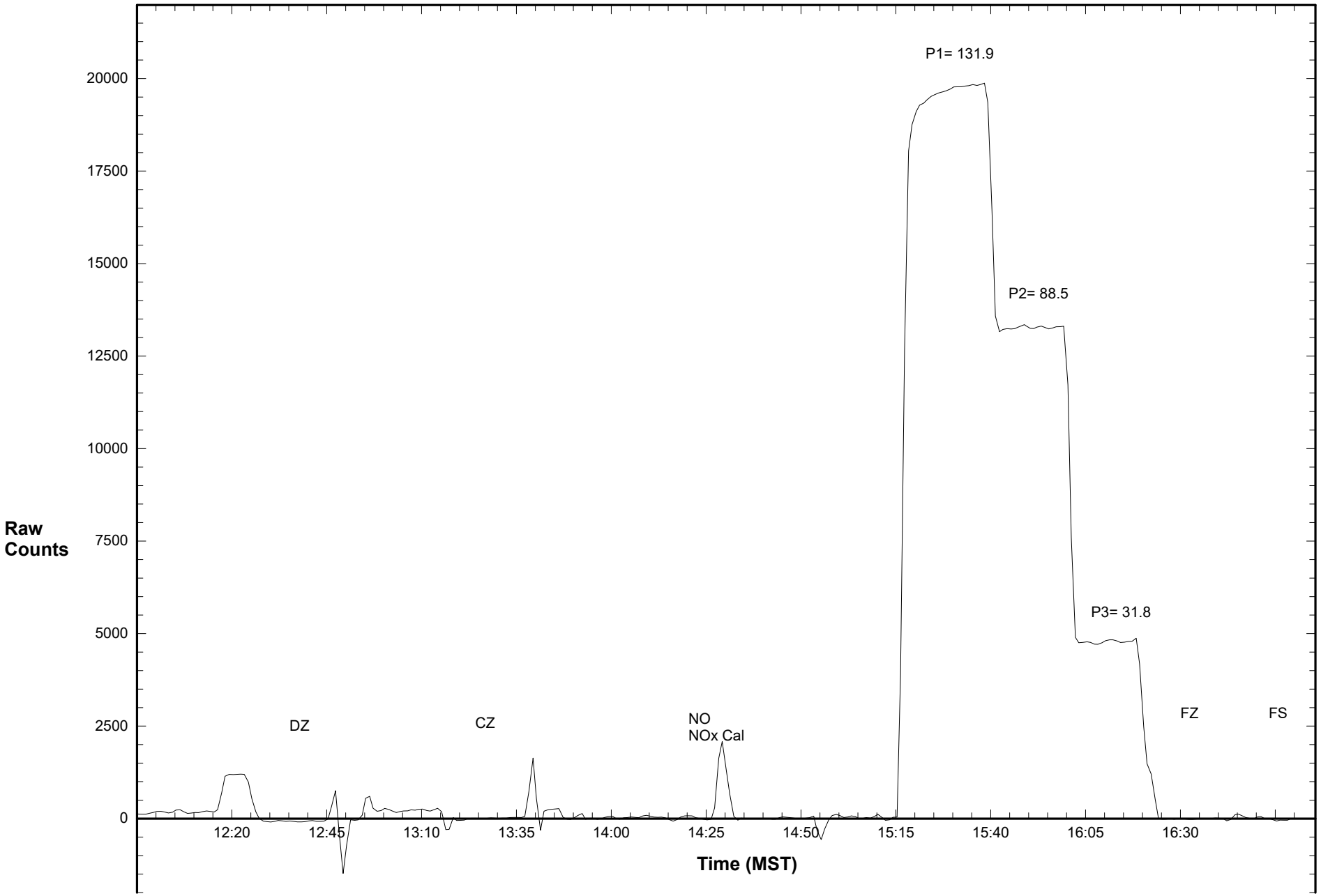
Station 902 NOX July 26, 2016: Linear Regression



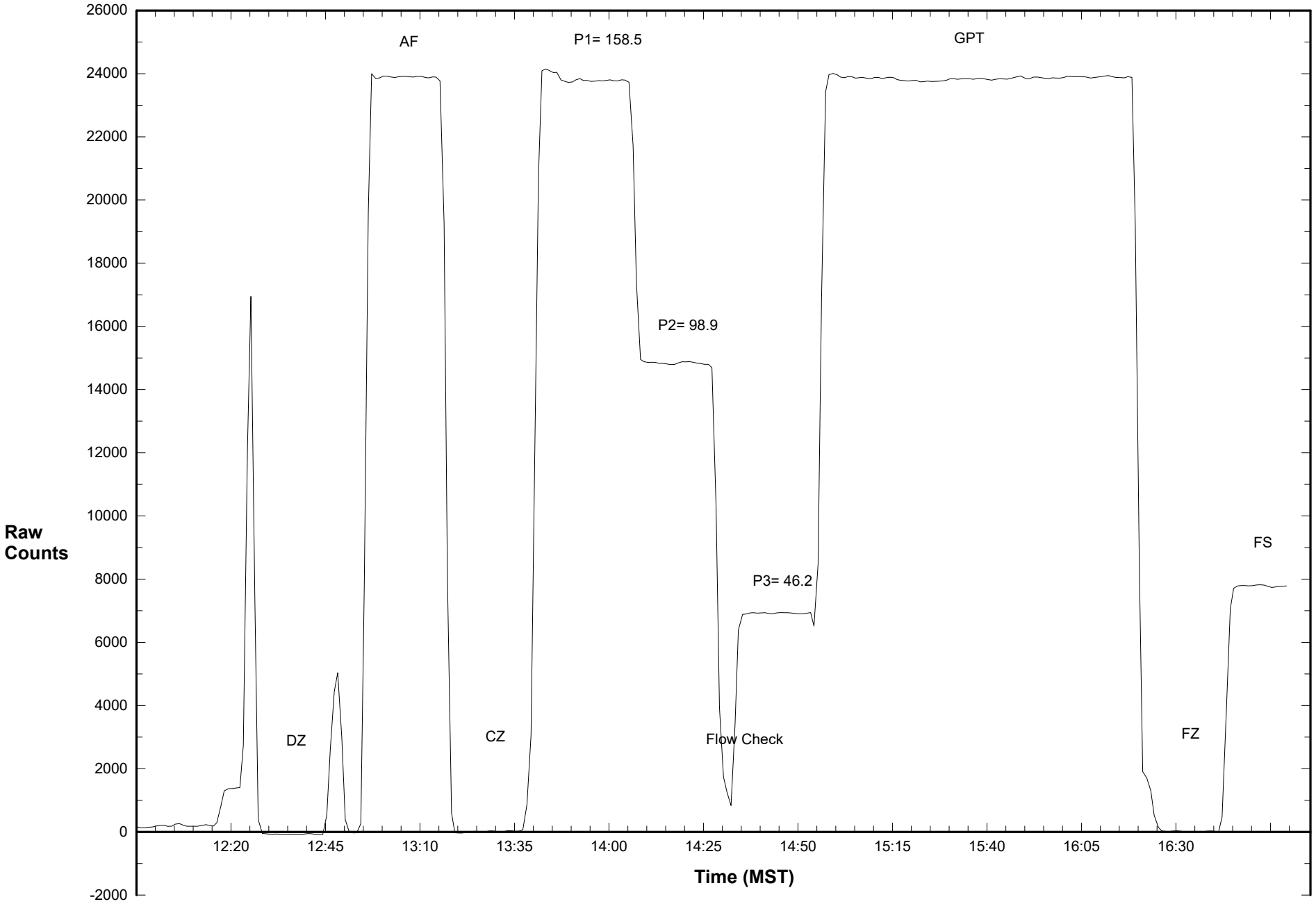
Station 902 NO July 26, 2016: Calibration Graph



Station 902 NO2 July 26, 2016: Calibration Graph



Station 902 NOX July 26, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: July 26, 2016

Parameter: O_3

Instrument: Teco 49 i

Serial Number: 0905034790

Previous Calibration Date: June 18 2016

Calibration: Routine

Calibration Equipment: 2B Technology 306 sn 135

Barometric Pressure: 27.00" Hg

Calibration Method: Certified Ozone Generator

Temperature: 22.0° C

Technician: Dean Yustak

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.4	1.003	500 ppb
Current	-0.1	1.022	500 ppb

Final Zero: -0.9 ppb

Final Span: 267.8 ppb

As Found Correction Factor: 1.024

Calibration System Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
3.000	409.0	24533.1	407.8	1.003
3.000	255.0	15476.7	256.9	0.993
3.000	102.3	6209.7	102.5	0.998
3.000	0.0	-0.9	-0.9	

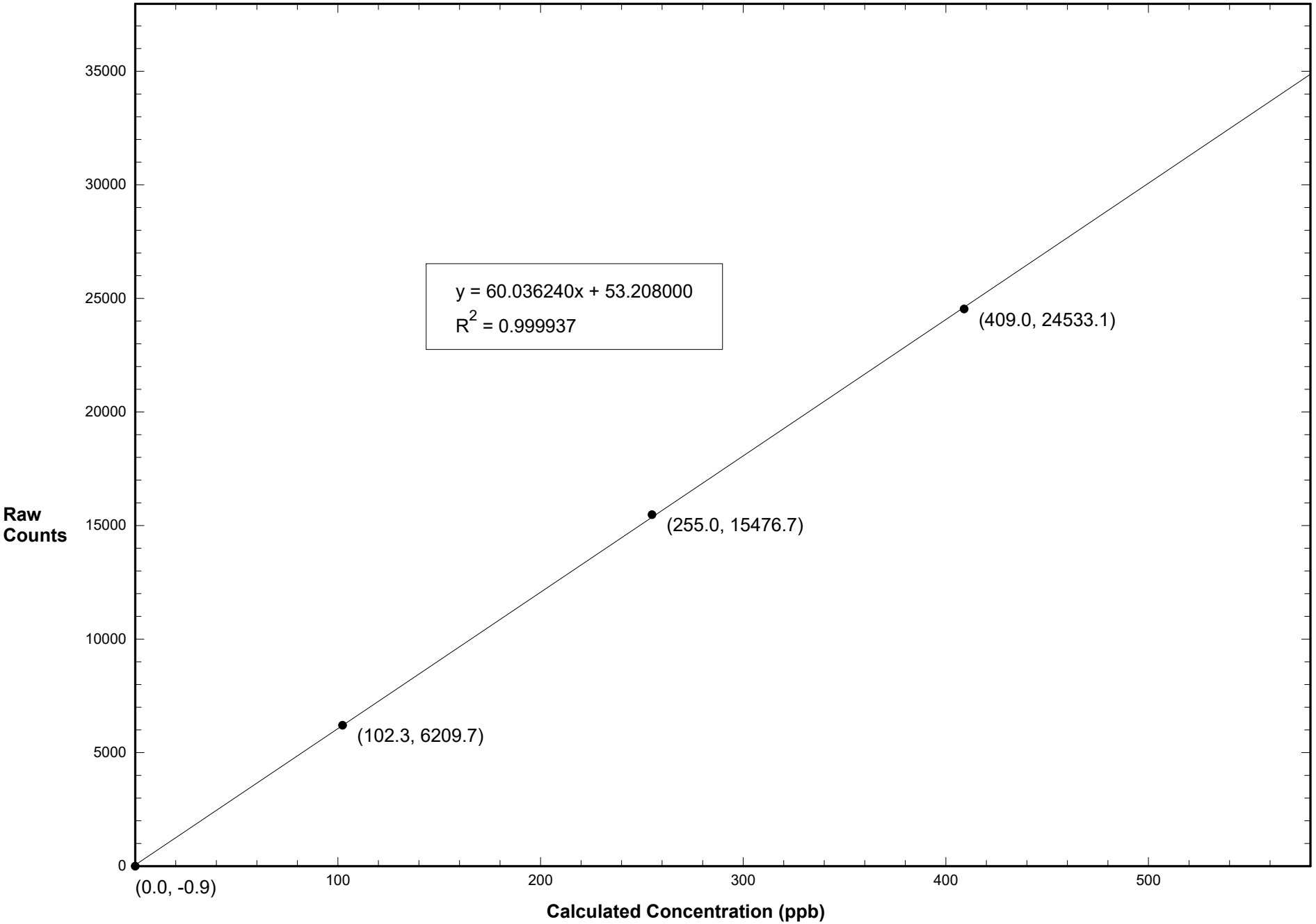
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	60.070140	23.274560	0.999993
Current	60.036240	53.208000	0.999937
C_i vs C_c			
Current	1.000000	0.000007	0.999937

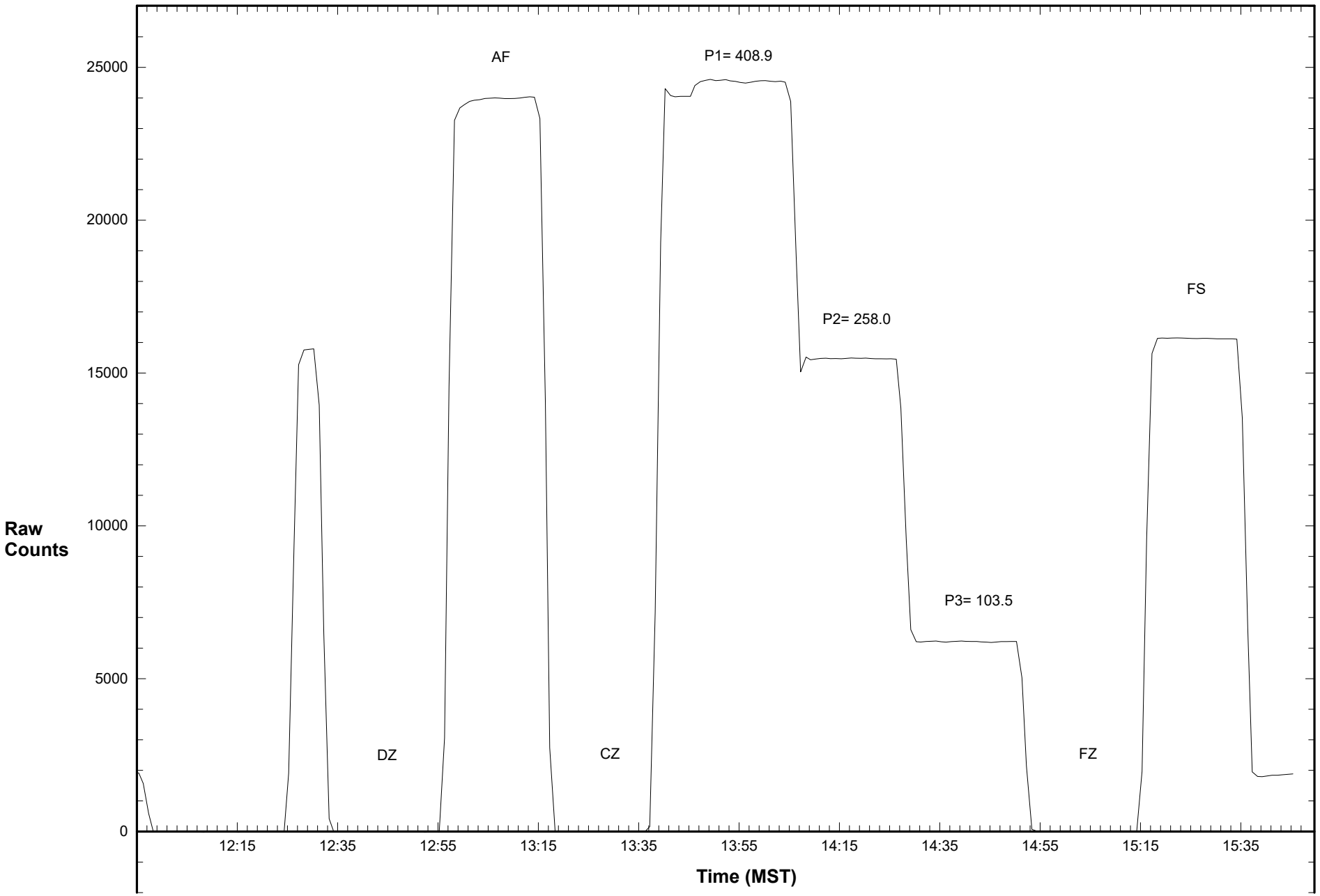
Average Correction Factor:	0.998
Previous Correction Factor:	1.001
Current Correction Factor:	1.003
Percent Change of Correction Factor:	0.2

Comments:

Station 902 O3 July 26, 2016: Linear Regression



Station 902 O3 July 26, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: July 26, 2016

Parameter: SO_2

Instrument: Teco 43i

Serial Number: 0700419949 (AMU 1746)

Previous Calibration Date: June 18 2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn 04300810

Barometric Pressure: 27.00" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF 16109

Temperature: 22.0° C

Cylinder Concentration: 6.11 ppm SO2

In Service: Jan 14, 2015

Technician: Dean Yustak

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	5.8	0.922	100 ppb
Current	5.9	0.933	100 ppb

Final Zero: 0.2 ppb

Final Span: 24.7 ppb

As Found Correction Factor: 1.023

SO_2 Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.0672	5.063	80.0	23960.2	80.0	1.001
0.0417	5.066	49.8	14958.5	49.9	0.998
0.0193	5.061	23.2	6961.1	23.2	1.000
0.0000	5.043	0.0	3.8	0.0	

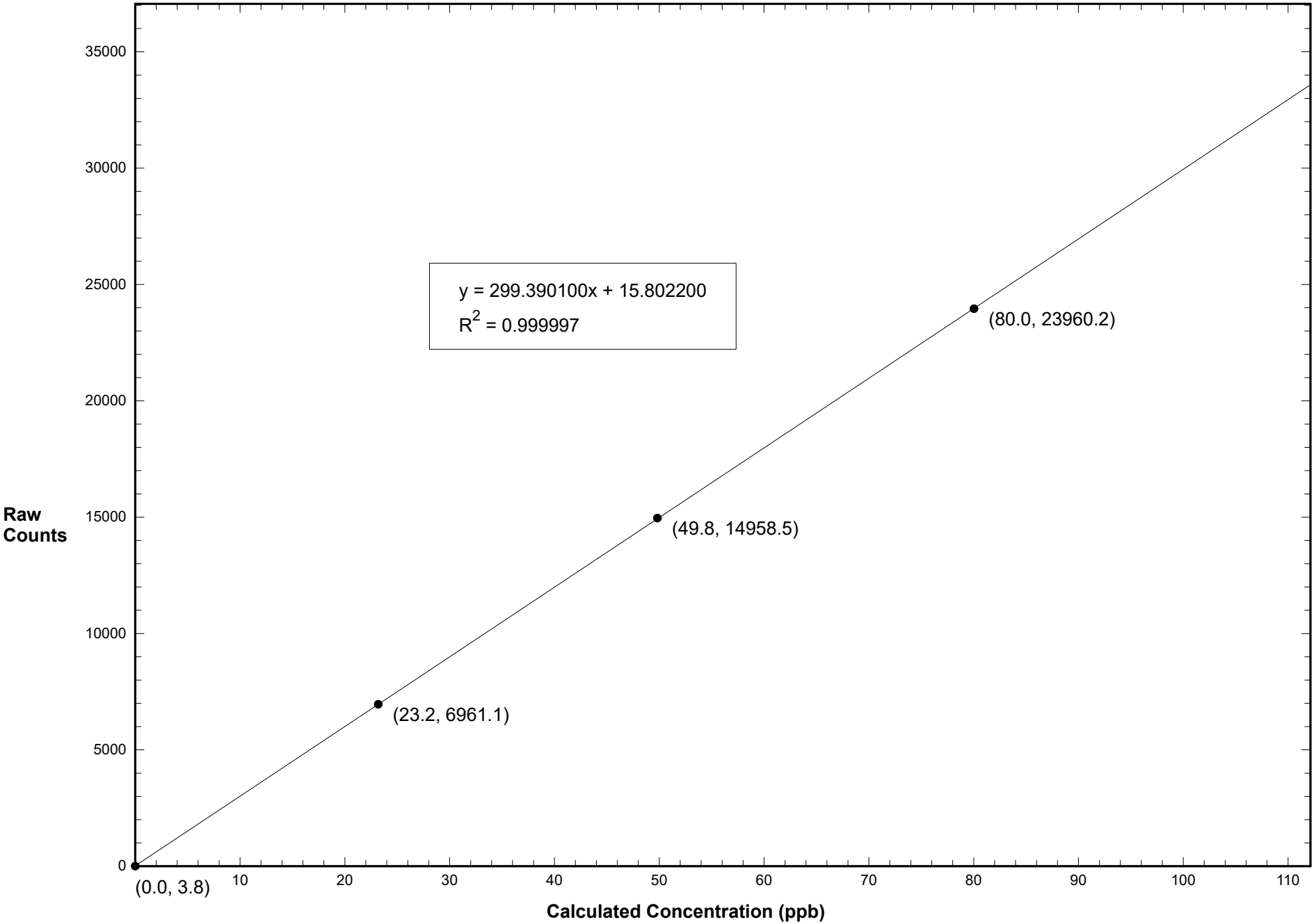
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	301.012800	30.245750	1.000000
Current	299.390100	15.802200	0.999997
C_i vs C_c			
Current	1.000000	0.000000	0.999996

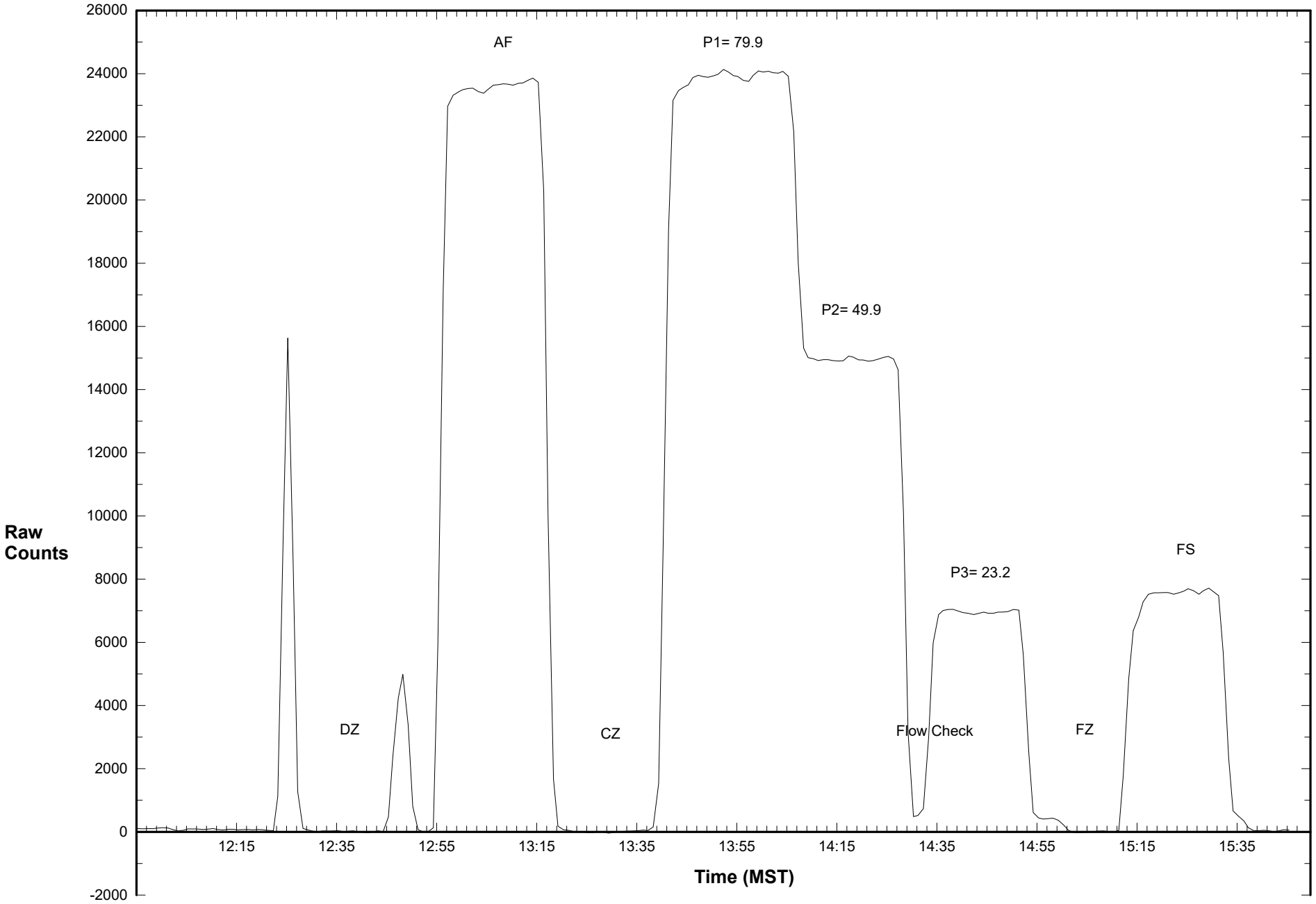
Average Correction Factor:	1.000
Previous Correction Factor:	1.000
Current Correction Factor:	1.001
Percent Change of Correction Factor:	0.1

Comments:

Station 902 SO2 July 26, 2016: Linear Regression



Station 902 SO2 July 26, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 902, Violet Grove

Calibration Date: July 26, 2016

Parameter: THC

Instrument: Teco 51i

Serial Number: 1415561633

Previous Calibration Date: June 18 2016

Calibration: Routine

Calibration Method: Standard Gas Dilution

Barometric Pressure: 27.00" Hg

Gas Concentration 1: 717 ppm CH4

Cylinder ID: FF 16109

Temperature: 22.0° C

Gas Concentration 2:

In Service: August 23 2010

Technician: Dean Yustak

Instrument Settings	Zero Pot	Span Pot	Monitoring Range
Previous	1.42	4.212	20 ppm
Current	1.63	4.319	20 ppm

Final Zero: -0.02 ppm

Final Span: 16.63 ppm

As Found Correction Factor: 1.021

Certified Concentration C_c (ppm)	Raw Count Output R_c	Indicated Concentration C_i (ppm)	Correction Factor C_c/C_i
16.85	25302.7	16.84	1.000
11.42	17196.3	11.44	0.998
5.60	8378.2	5.57	1.005
0.00	40.4	0.01	

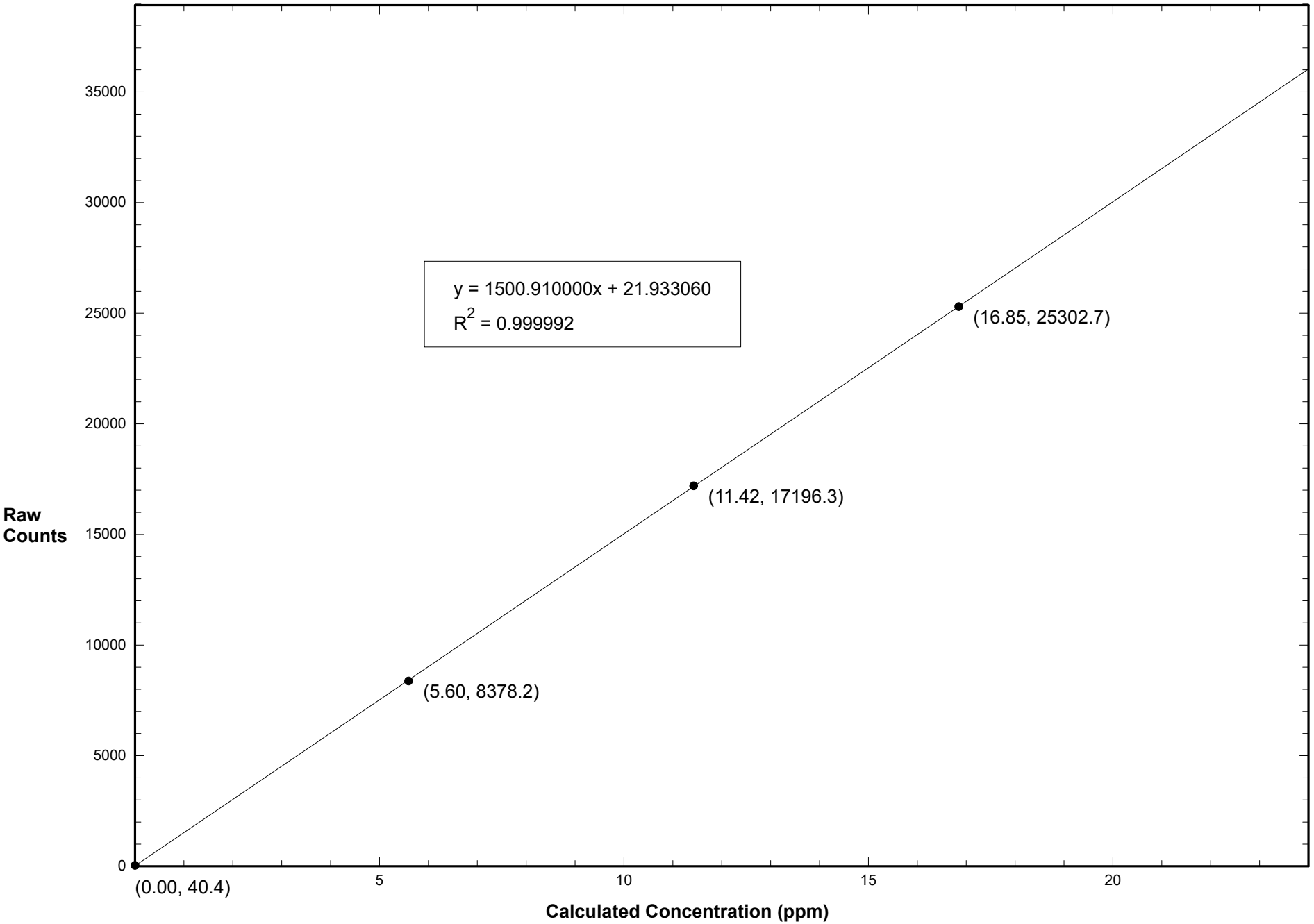
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	1503.752000	-46.558370	0.999874
Current	1500.910000	21.933060	0.999992
C_i vs C_c			
Current	1.000000	0.000002	0.999992

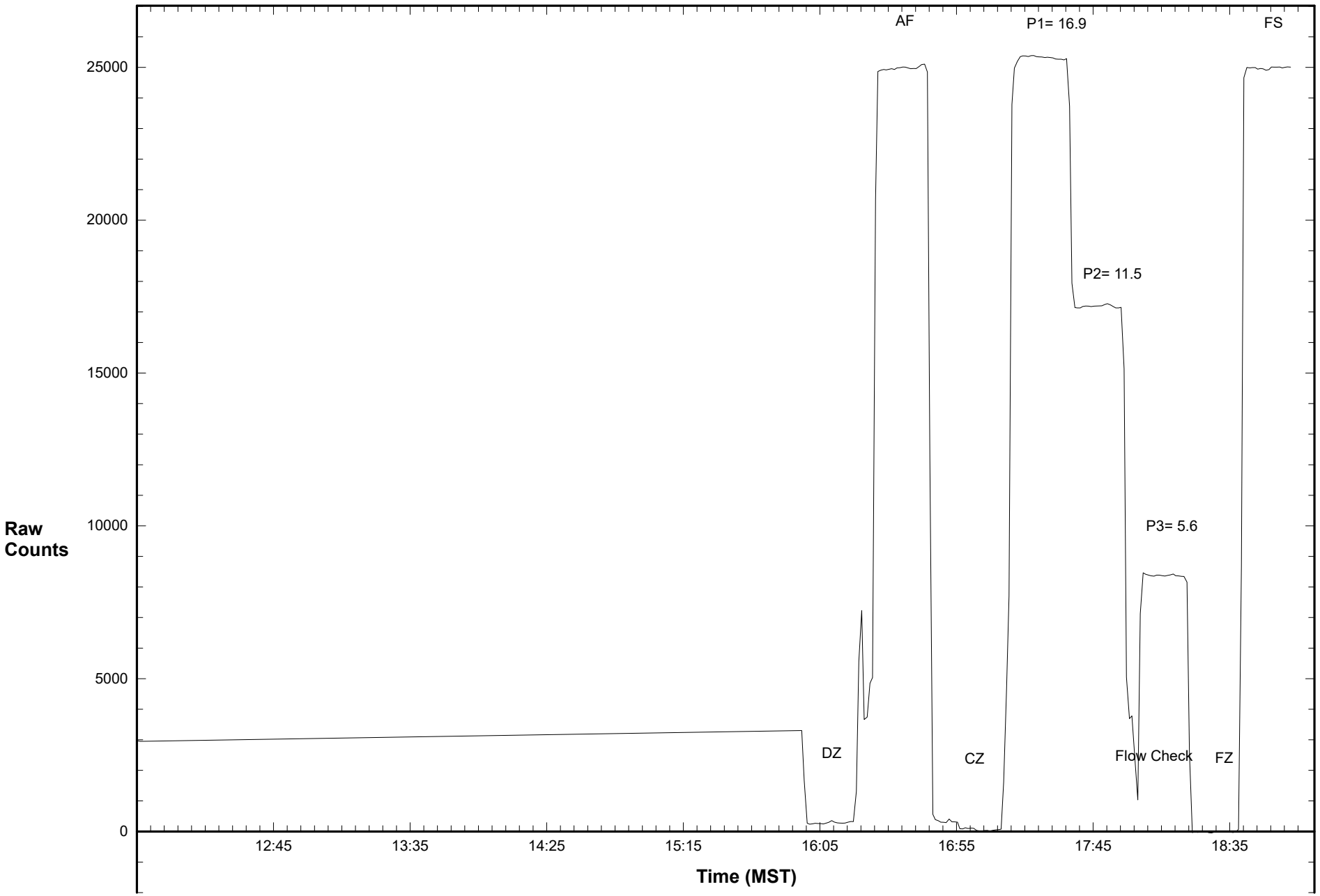
Average Correction Factor:	1.001
Previous Correction Factor:	0.996
Current Correction Factor:	1.000
Percent Change of Correction Factor:	0.4

Comments:

Station 902 THC July 26, 2016: Linear Regression



Station 902 THC July 26, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: July 27, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: 1136451324

Previous Calibration Date: June 13,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 27.00" Hg

Calibration Method: Std. Gas Dilution/GPT

Cylinder ID: FF9469

Temperature: 23.0° C

Cylinder Concentration: 12.6 ppm NO/NOX

In Service: Jan.14,2015

Technician: J.McClintock

Instrument Settings	NO bkg ppb	NO_x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO_x Coefficient	NO_2 Coefficient	Monitoring Range
Previous	6.6	7.2	*	0.971	1.005	0.995	200 ppb
Current	7.1	7.5	*	1.015	1.005	0.995	200 ppb

NO	Final Zero: 0.1 ppb	Final Span: 133.7 ppb	As Found Correction Factor: 1.030
NO_2	Final Zero: 0.1 ppb	Final Span: 0.6 ppb	As Found Correction Factor: 0.995
NO_x	Final Zero: -0.2 ppb	Final Span: 133.8 ppb	As Found Correction Factor: 1.036

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	149.436500	27.925080	0.999978
		Current	149.879700	-35.000300	0.999992
	C_i vs C_c	Current	1.000000	-0.000020	0.999993
NO_2	R_c vs C_c	Previous	150.037300	35.849300	0.999978
		Current	150.422300	-20.156600	0.999974
	C_i vs C_c	Current	1.000000	-0.000021	0.999974
NO_x	R_c vs C_c	Previous	150.149500	44.026860	0.999978
		Current	150.261100	-17.277820	0.999997
	C_i vs C_c	Current	1.000000	0.000000	0.999997

Comments:

Calibration Data Summary (Page 2)

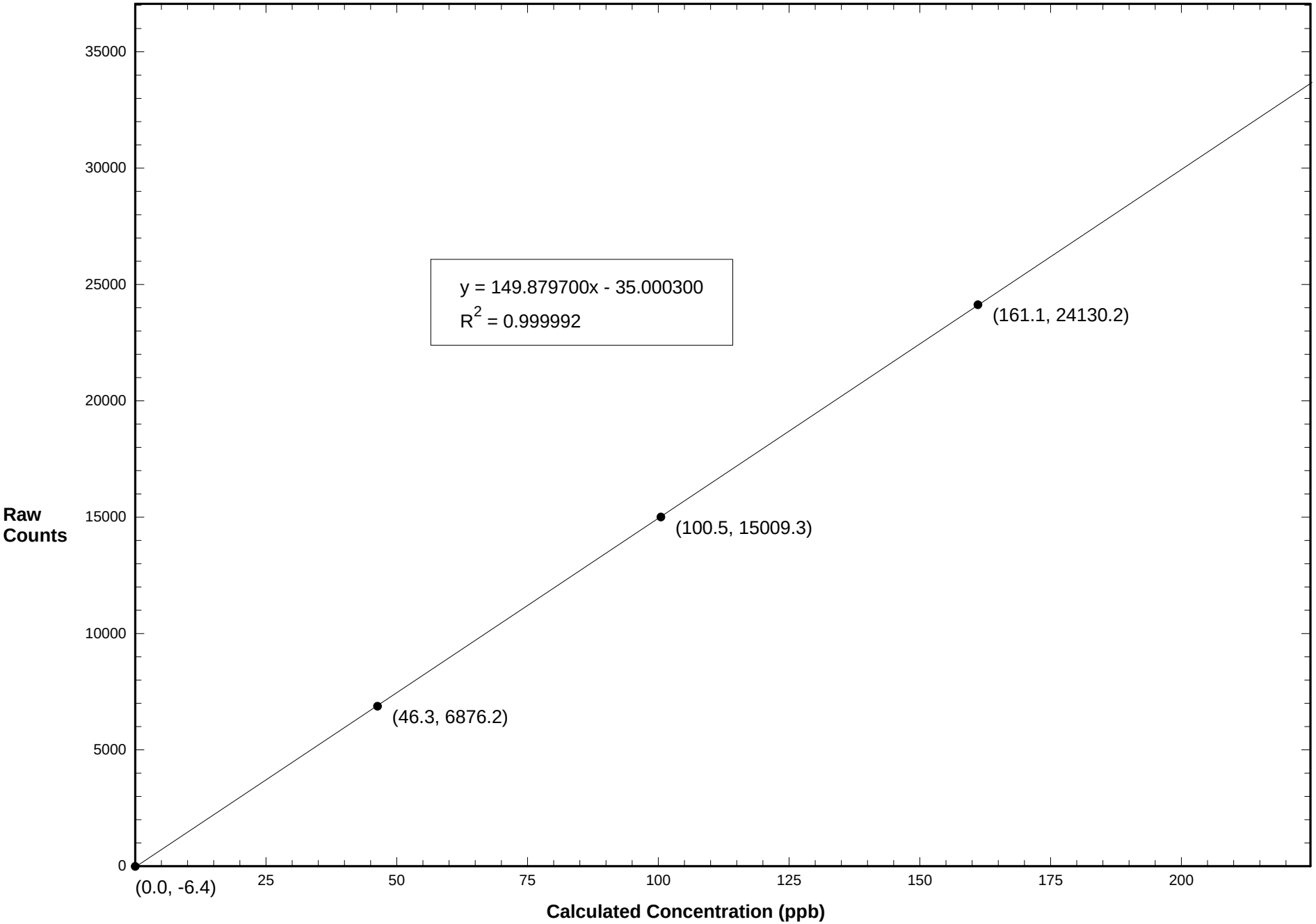
July 27, 2016 - Station 903

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.06600	5.096	161.1	24130.2	161.2	0.999
0.04080	5.075	100.5	15009.3	100.4	1.001
0.01860	5.041	46.3	6876.2	46.1	1.005
0.00000	5.000	0.0	-6.4	0.2	
NO Calibration				Average Correction Factor:	1.002
0.06600	5.096	161.1	24199.9	161.2	1.000
0.04080	5.075	100.5	15076.2	100.4	1.000
0.01860	5.041	46.3	6920.9	46.2	1.003
0.00000	5.000	0.0	0.6	0.1	
NO_x Calibration				Average Correction Factor:	1.001

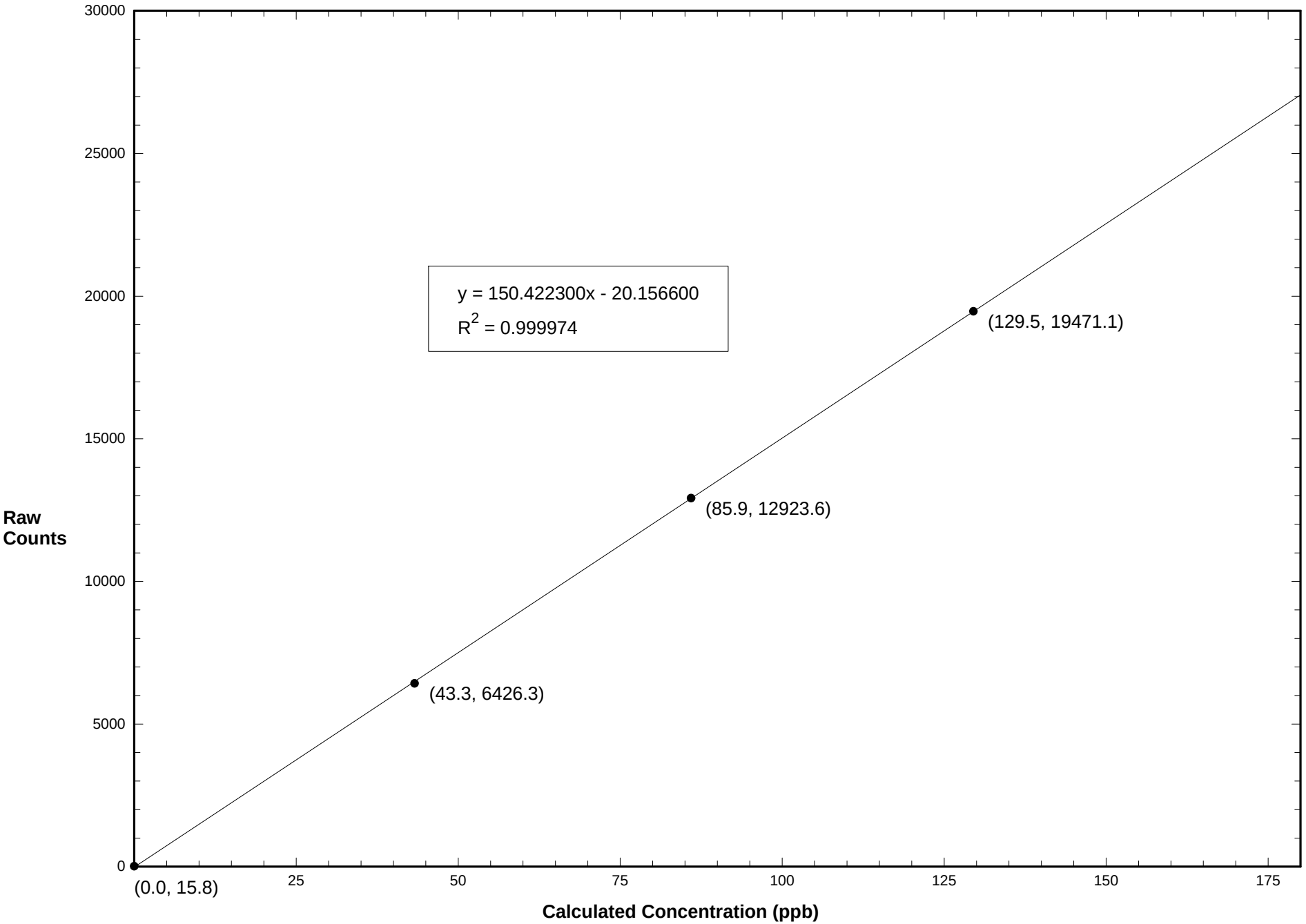
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
160.6	4617.3	31.0	129.5	19471.1	129.6	0.999	1.001
160.6	11147.3	74.6	85.9	12923.6	86.0	0.999	1.001
160.6	17543.1	117.3	43.3	6426.3	42.9	1.010	0.990
			0.0	15.8	0.2		
					Average Correction Factor:	1.003	
NO_2 Gas Phase Titration						Average Converter Efficiency:	0.997

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	0.998	0.999	0.1
NO_2	1.000	0.999	-0.1
NO_x	0.998	1.000	0.2

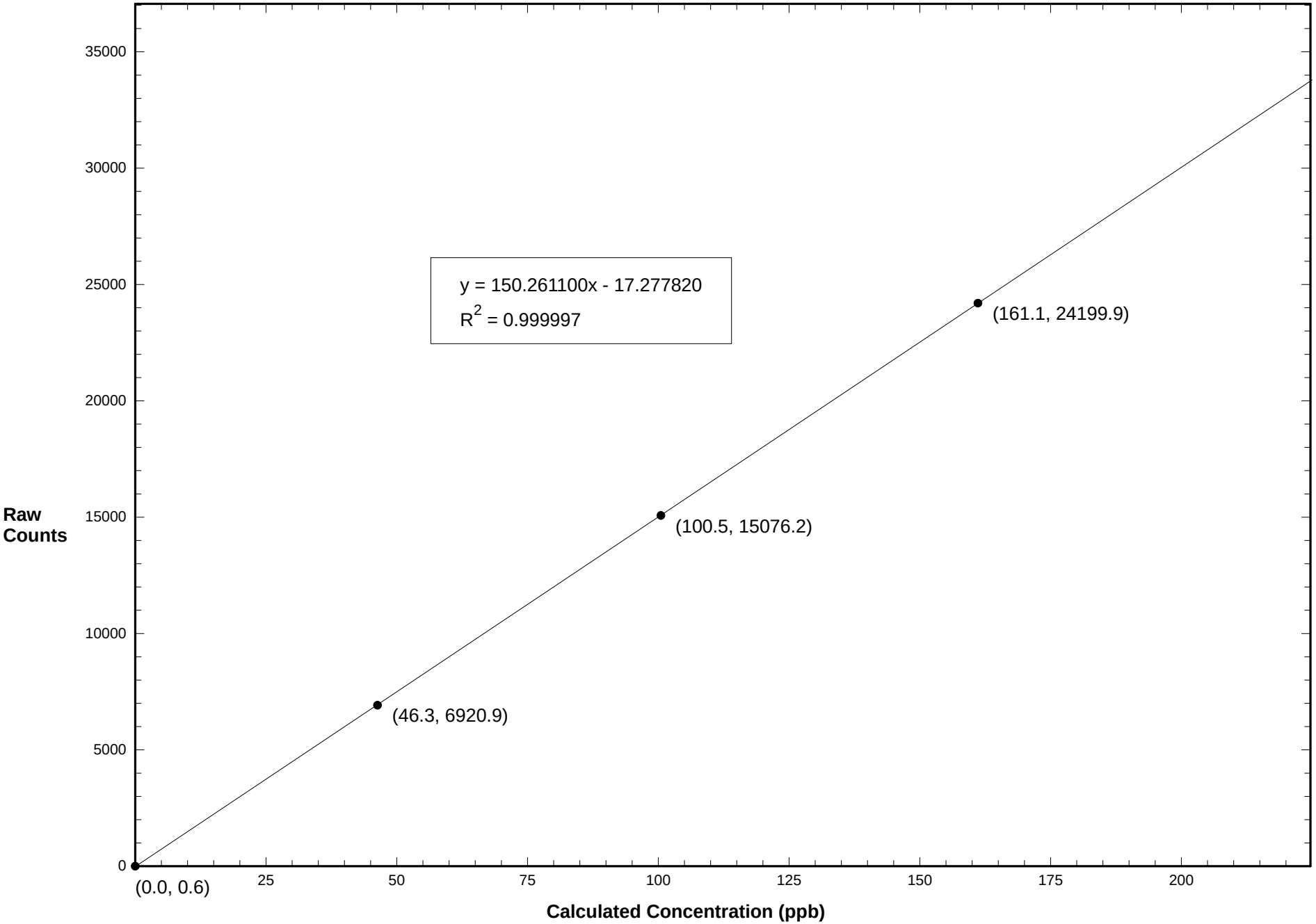
Station 903 NO July 27, 2016: Linear Regression



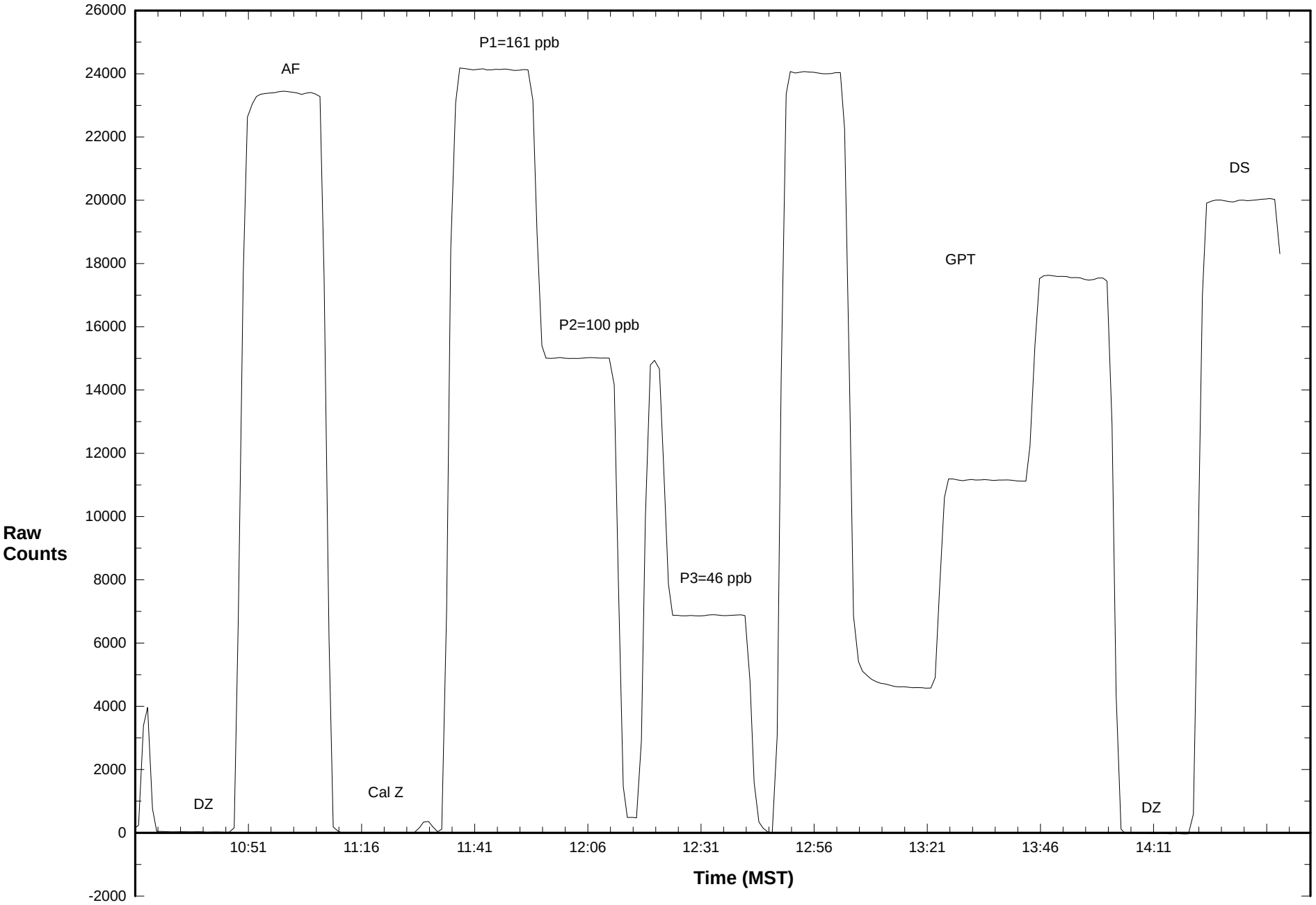
Station 903 NO2 July 27, 2016: Linear Regression



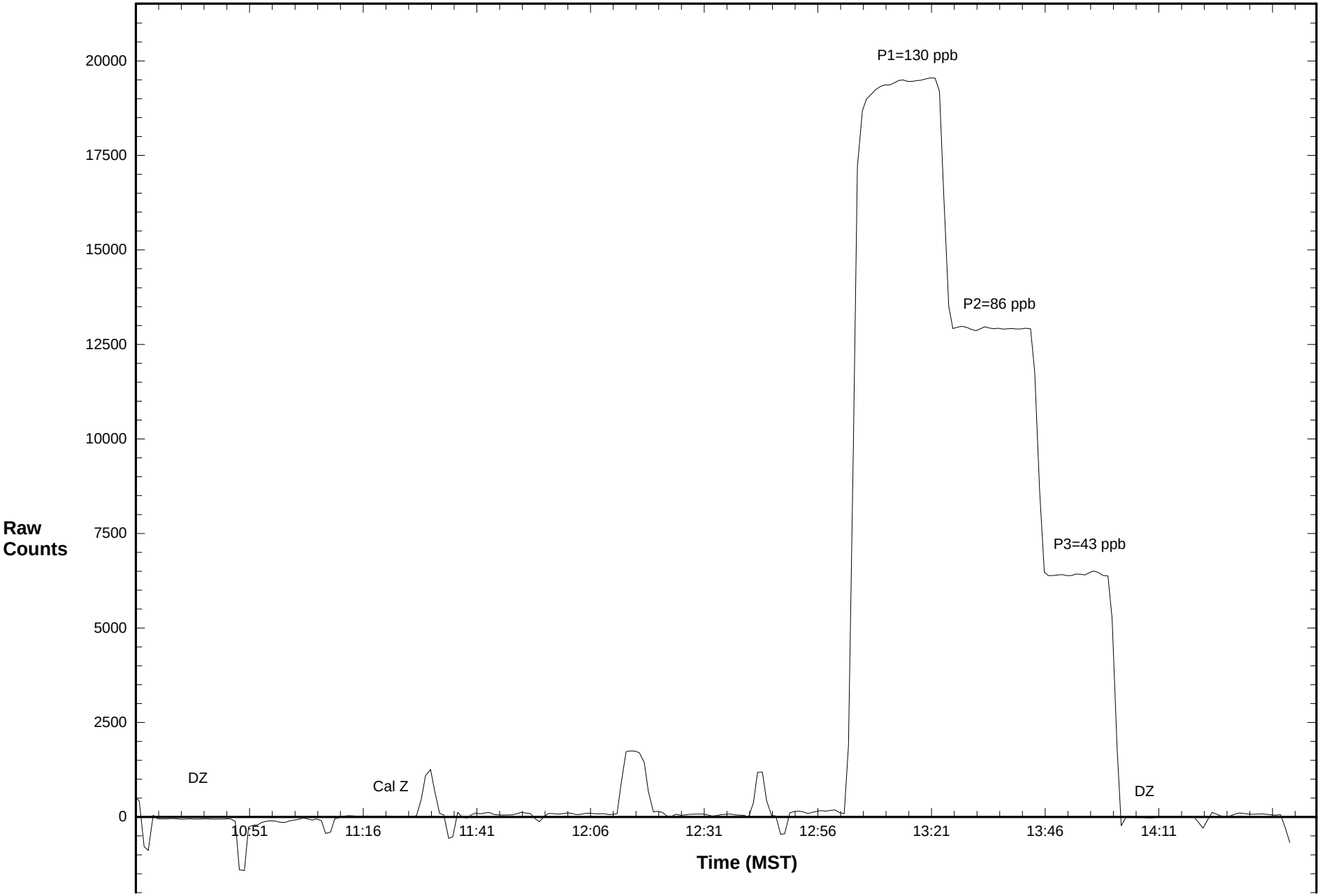
Station 903 NOX July 27, 2016: Linear Regression



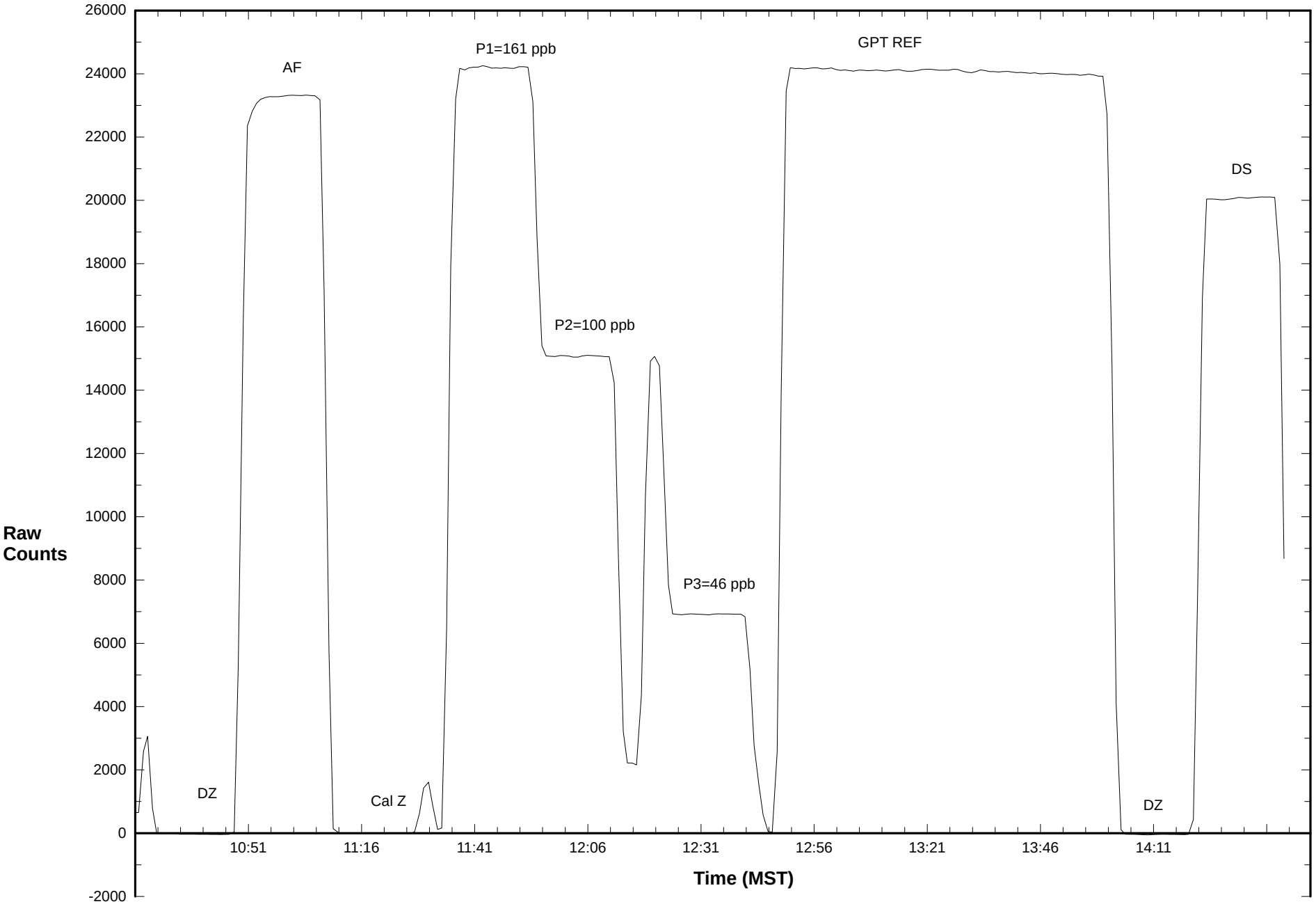
Station 903 NO July 27, 2016: Calibration Graph



Station 903 NO2 July 27, 2016: Calibration Graph



Station 903 NOX July 27, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: July 27, 2016

Parameter: O_3

Instrument: Teco 49C

Serial Number: 0432409136

Previous Calibration Date: June 13,2016

Calibration: Routine

Calibration Equipment: 2B Tech 306 #145

Barometric Pressure: 27.00" Hg

Calibration Method: Certified Ozone Generator

Temperature: 23.0° C

Technician: J.McClintock

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.1	1.027	500 ppb
Current	0.2	1.003	500 ppb

Final Zero: -0.2 ppb

Final Span: 167.2 ppb

As Found Correction Factor: 0.976

Calibration System Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
3.000	409.0	24506.9	408.7	1.001
3.000	256.0	15382.2	256.5	0.998
3.000	102.0	6119.0	101.9	1.001
3.000	0.0	-0.3	-0.1	

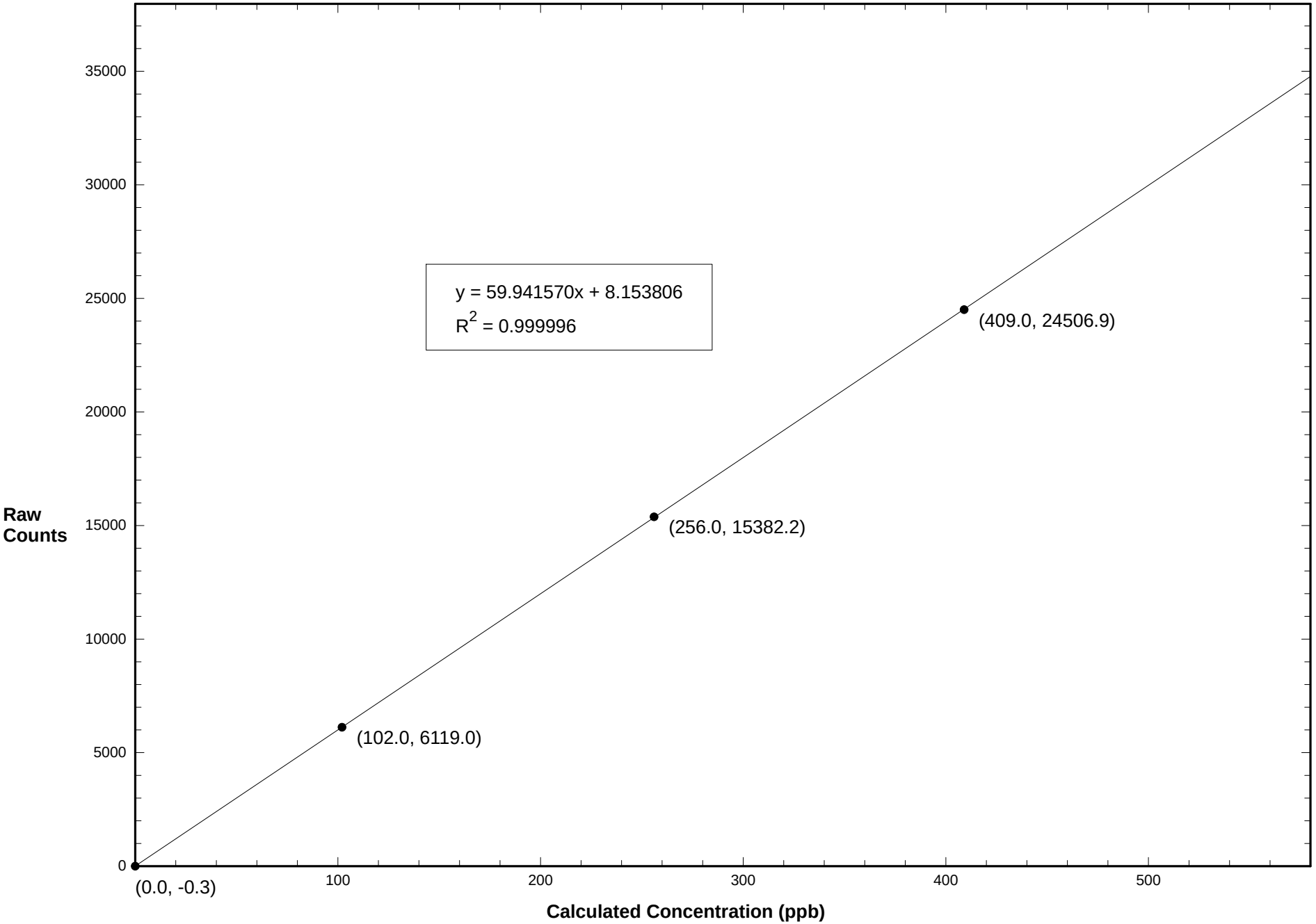
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.885350	105.857200	0.999913
Current	59.941570	8.153806	0.999996
C_i vs C_c			
Current	1.000000	-0.000062	0.999997

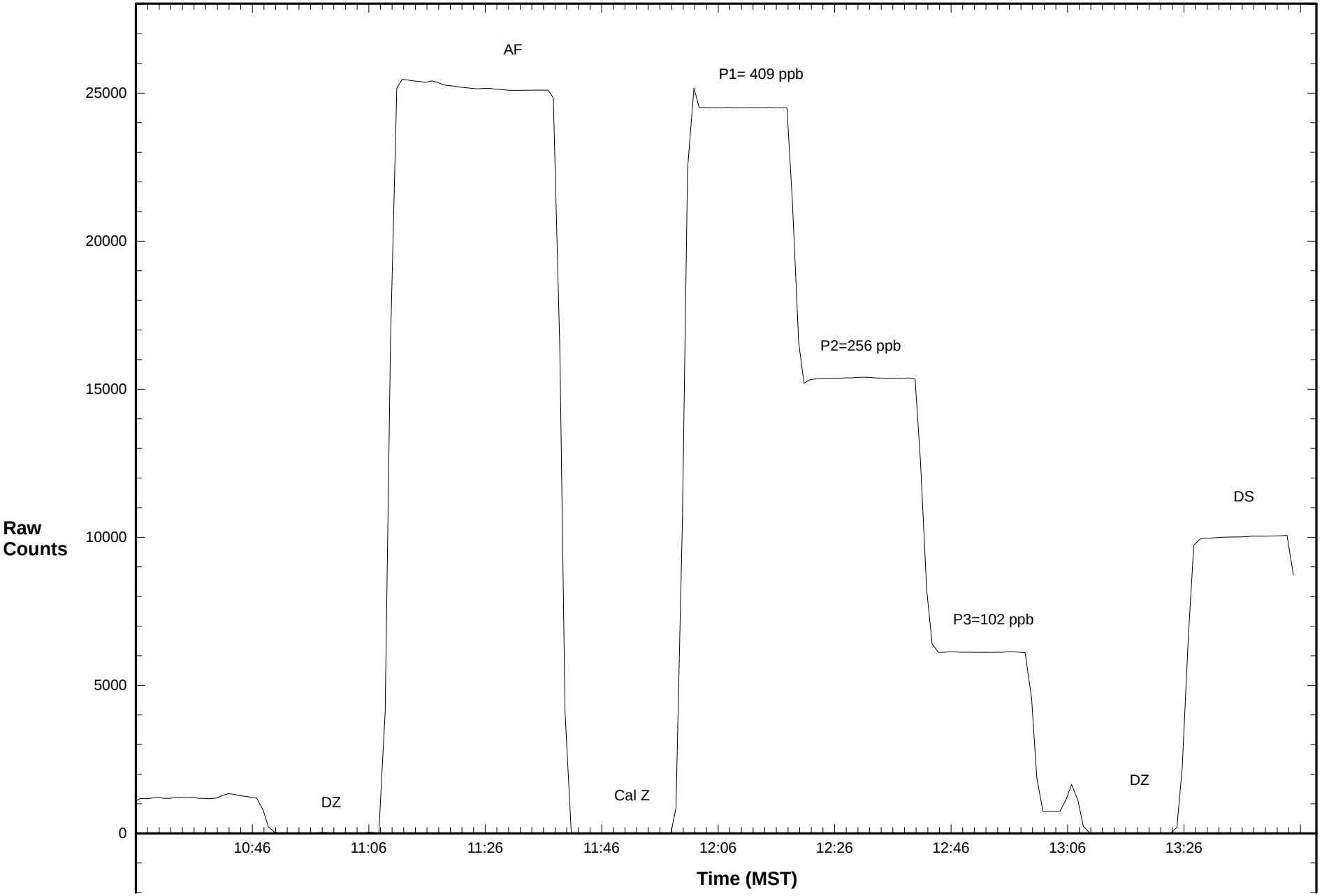
Average Correction Factor:	1.000
Previous Correction Factor:	0.995
Current Correction Factor:	1.001
Percent Change of Correction Factor:	0.6

Comments:

Station 903 O3 July 27, 2016: Linear Regression



Station 903 O3 July 27, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 903, Carrot Creek

Calibration Date: July 27, 2016

Parameter: SO_2

Instrument: Teco 43i

Serial Number: 0905034789

Previous Calibration Date: June 13,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 27.00" Hg

Calibration Method: Std. Gas Dilution

Cylinder ID: FF9469

Temperature: 23.0° C

Cylinder Concentration: 6.2 ppm SO2

In Service: Jan.14,2015

Technician: J.McClintock

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	7.6	0.911	100 ppb
Current	7.6	0.894	100 ppb

Final Zero: 0.1 ppb

Final Span: 60.6 ppb

As Found Correction Factor: 0.987

SO_2 Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.0660	5.096	79.3	23885.8	79.3	1.000
0.0408	5.075	49.4	14876.8	49.4	1.000
0.0186	5.041	22.8	6815.8	22.7	1.004
0.0000	5.000	0.0	-12.0	0.1	

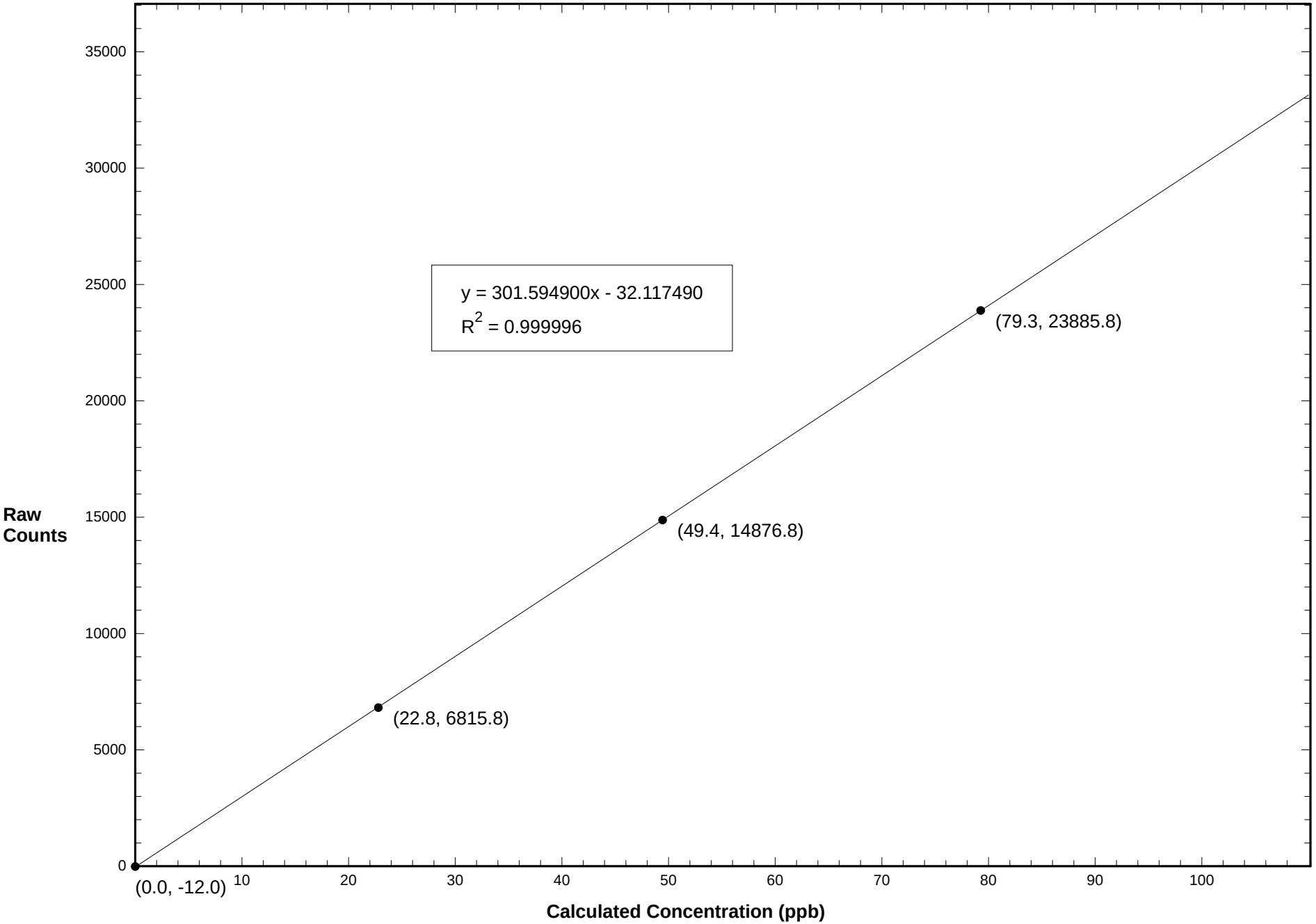
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	300.060100	-20.784410	0.999988
Current	301.594900	-32.117490	0.999996
C_i vs C_c			
Current	1.000000	-0.000010	0.999996

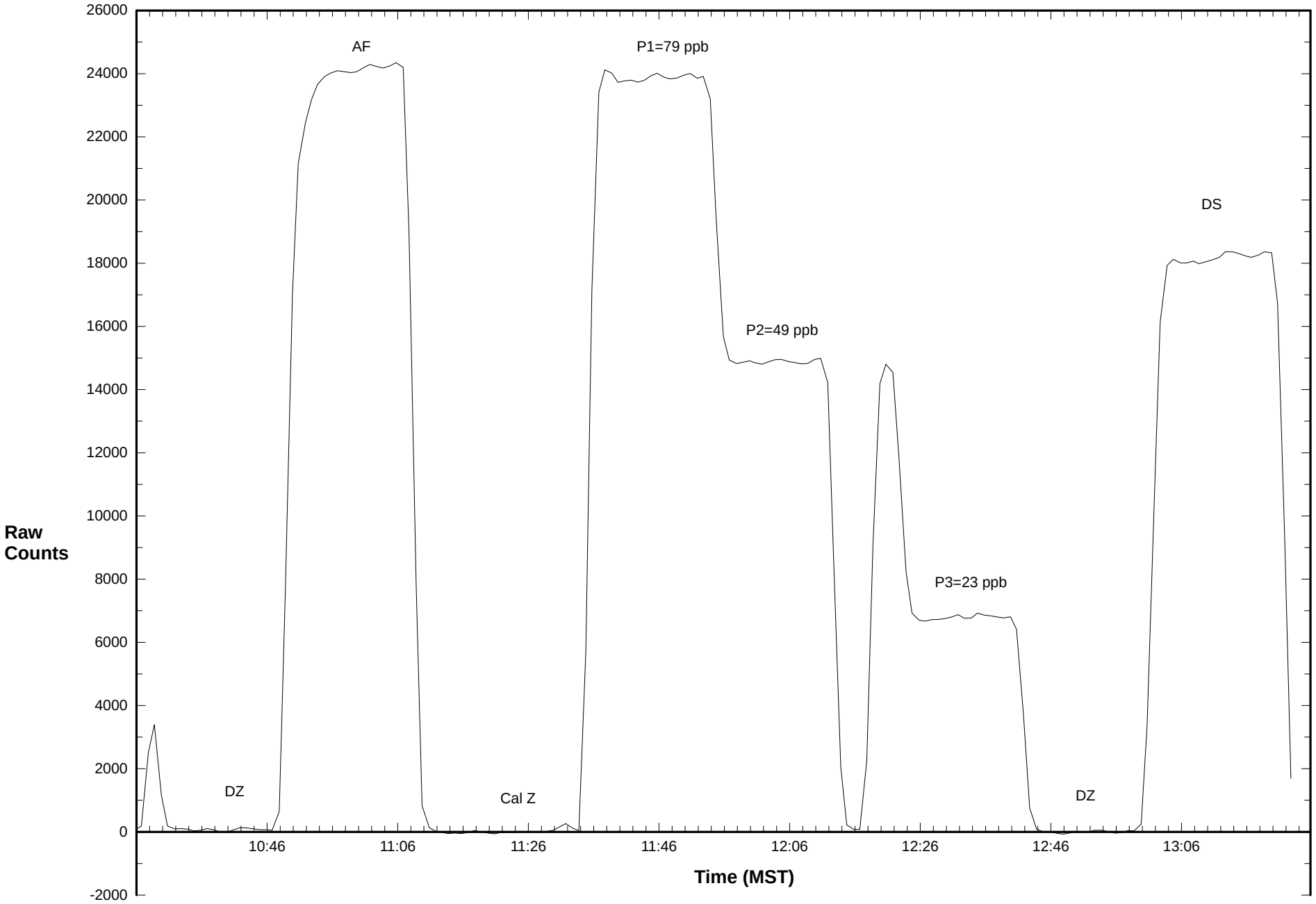
Average Correction Factor:	1.001
Previous Correction Factor:	0.999
Current Correction Factor:	1.000
Percent Change of Correction Factor:	0.1

Comments:

Station 903 SO2 July 27, 2016: Linear Regression



Station 903 SO2 July 27, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: July 29, 2016

Parameter: CO

Instrument: Teco 48 C

Serial Number: 0523012614

Previous Calibration Date: June 8 ,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 25.35" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF23225

Temperature: 22.7° C

Cylinder Concentration: 2611 ppm CO

Technician: J. McClintock

Instrument Settings	Zero Pot	Span Pot	Monitoring Range
Previous	12.059	1.135	50 ppm
Current	11.897	1.127	50 ppm

Final Zero: -0.1 ppm

Final Span: 36.5 ppm

As Found Correction Factor: 0.982

CO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppm)	Raw Count Output R_c	Indicated Concentration C_i (ppm)	Correction Factor C_c/C_i
0.0755	6.025	32.3	19420.2	32.4	0.997
0.0509	5.940	22.2	13252.3	22.1	1.004
0.0256	5.908	11.3	6698.6	11.2	1.010
0.0000	6.000	0.0	74.3	0.1	

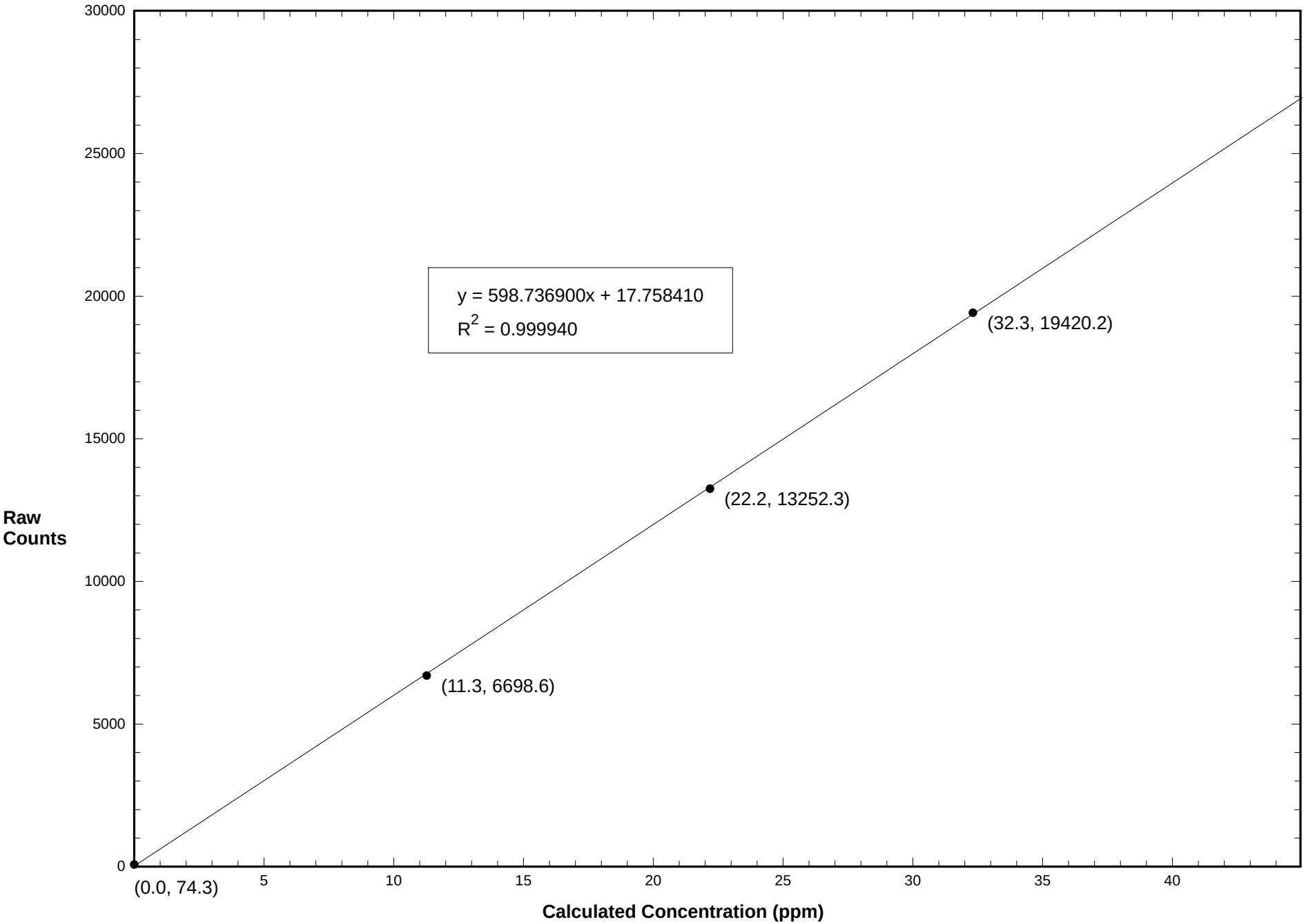
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	598.303800	80.687280	0.999984
Current	598.736900	17.758410	0.999940
C_i vs C_c			
Current	1.000000	-0.000003	0.999940

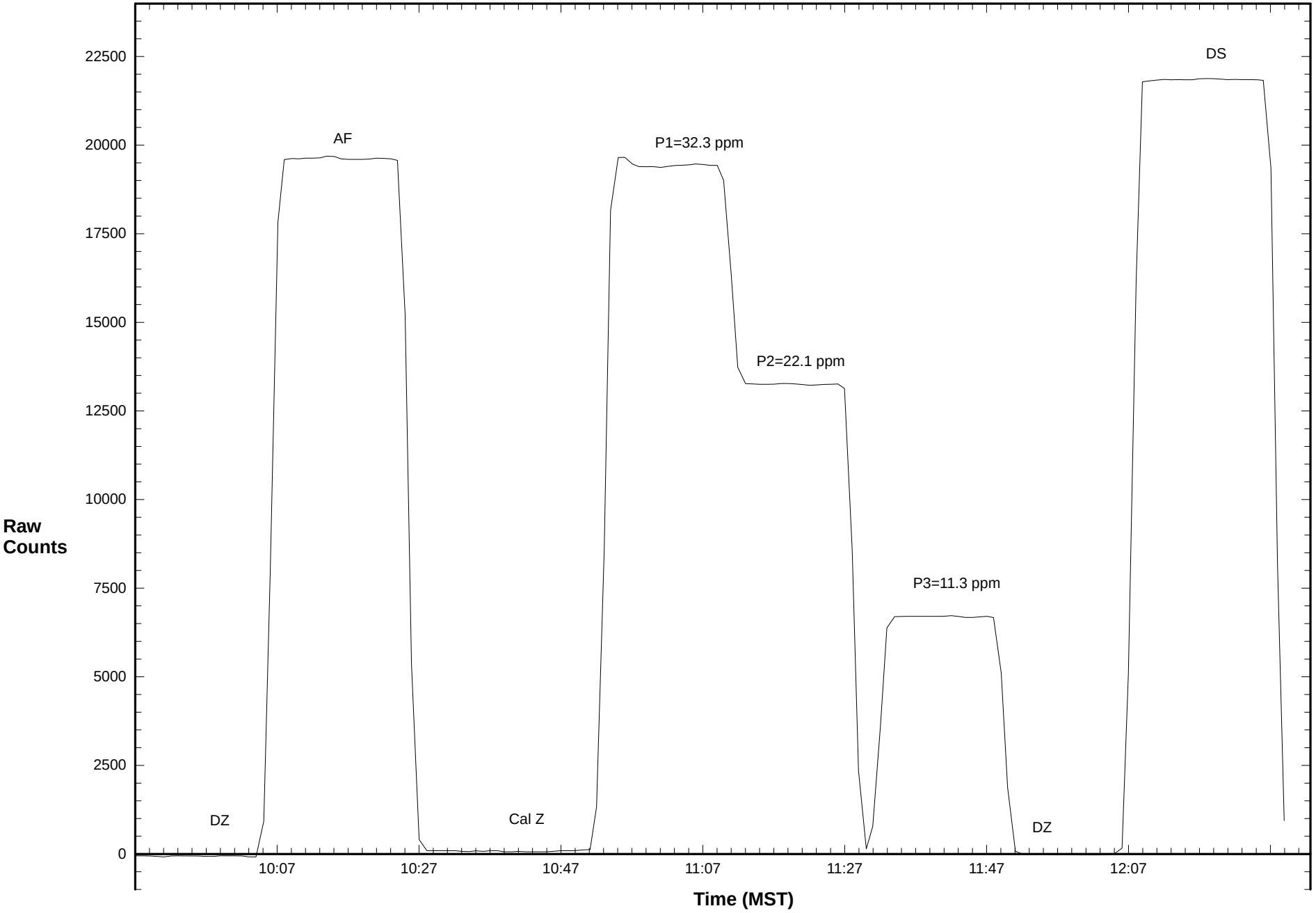
Average Correction Factor:	1.003
Previous Correction Factor:	0.999
Current Correction Factor:	0.997
Percent Change of Correction Factor:	-0.2

Comments:

Station 905 CO July 29, 2016: Linear Regression



Station 905 CO July 29, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: July 29, 2016

Parameter: $NO/NO_2/NO_X$

Instrument: Teco 42i

Serial Number: 1327059403

Previous Calibration Date: June 8 ,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 25.35" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF23225

Temperature: 22.7° C

Cylinder Concentration: 11.9 ppm NO/NOX

In Service: Dec 10,2013

Technician: J. McClintock

Instrument Settings	NO bkg ppb	NO_X bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO_X Coefficient	NO_2 Coefficient	Monitoring Range
Previous	3.8	4.3	*	1.020	1.006	1.002	200 ppb
Current	3.9	4.0	*	1.023	0.999	1.002	200 ppb

NO	Final Zero: -0.1 ppb	Final Span: 187.8 ppb	As Found Correction Factor: 1.006
NO_2	Final Zero: -0.6 ppb	Final Span: -0.7 ppb	As Found Correction Factor: 0.977
NO_X	Final Zero: -0.2 ppb	Final Span: 187.6 ppb	As Found Correction Factor: 1.008

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	149.453900	91.714150	0.999912
		Current	150.005600	8.982720	0.999994
	C_i vs C_c	Current	1.000000	0.000000	0.999994
NO_2	R_c vs C_c	Previous	147.192100	88.183340	0.999912
		Current	150.281700	74.566940	0.999811
	C_i vs C_c	Current	1.000000	-0.000007	0.999811
NO_X	R_c vs C_c	Previous	150.292700	87.661420	0.999912
		Current	149.920900	6.129109	0.999999
	C_i vs C_c	Current	1.000000	0.000000	0.999999

Comments:

Calibration Data Summary (Page 2)

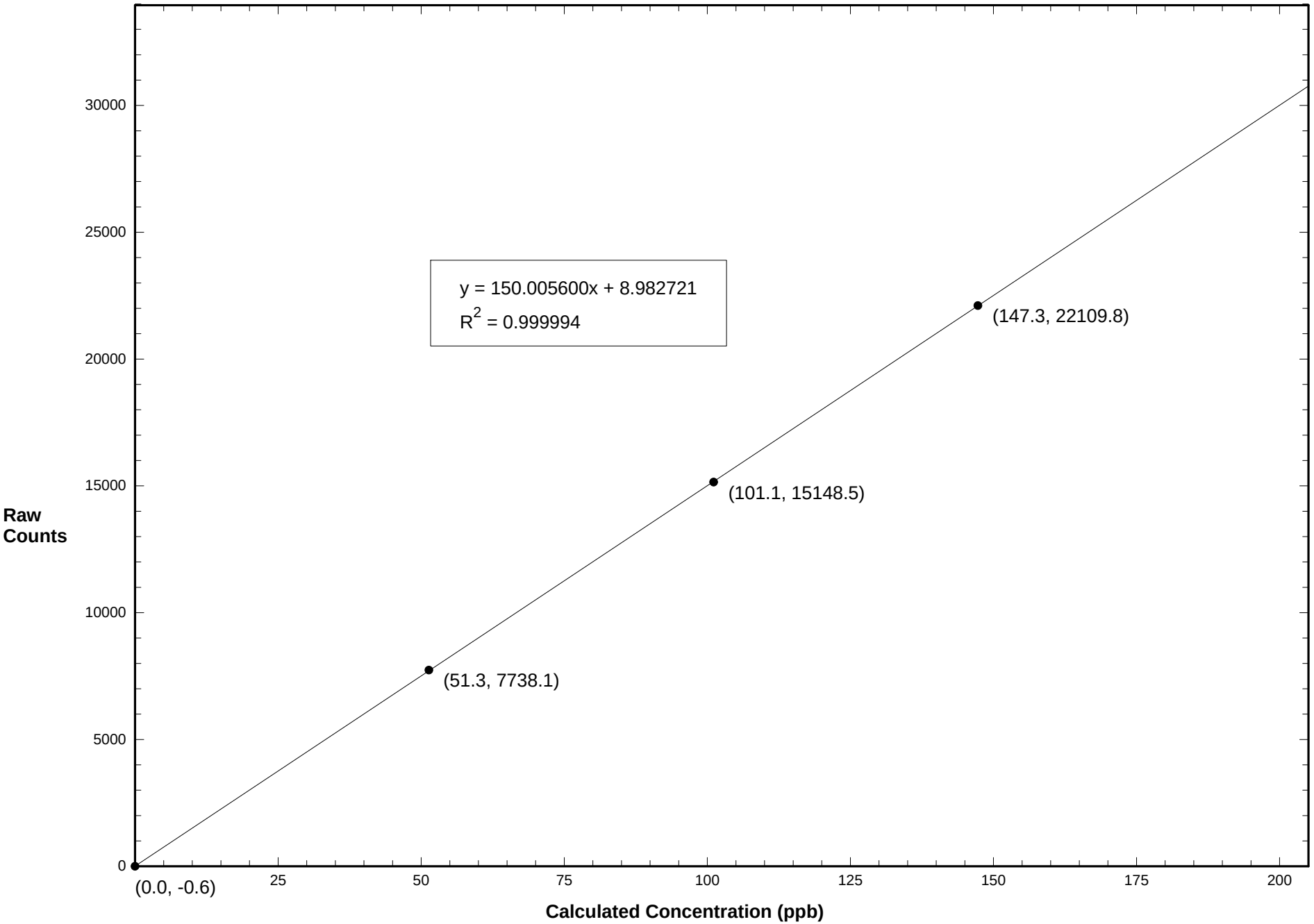
July 29, 2016 - Station 905

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.07550	6.025	147.3	22109.8	147.3	1.000
0.05090	5.940	101.1	15148.5	100.9	1.002
0.02560	5.908	51.3	7738.1	51.5	0.996
0.00000	6.000	0.0	-0.6	-0.1	
NO Calibration				Average Correction Factor:	0.999
0.07550	6.025	147.3	22089.3	147.3	1.000
0.05090	5.940	101.1	15153.5	101.0	1.001
0.02560	5.908	51.3	7713.4	51.4	0.999
0.00000	6.000	0.0	2.8	0.0	
NO_x Calibration				Average Correction Factor:	1.000

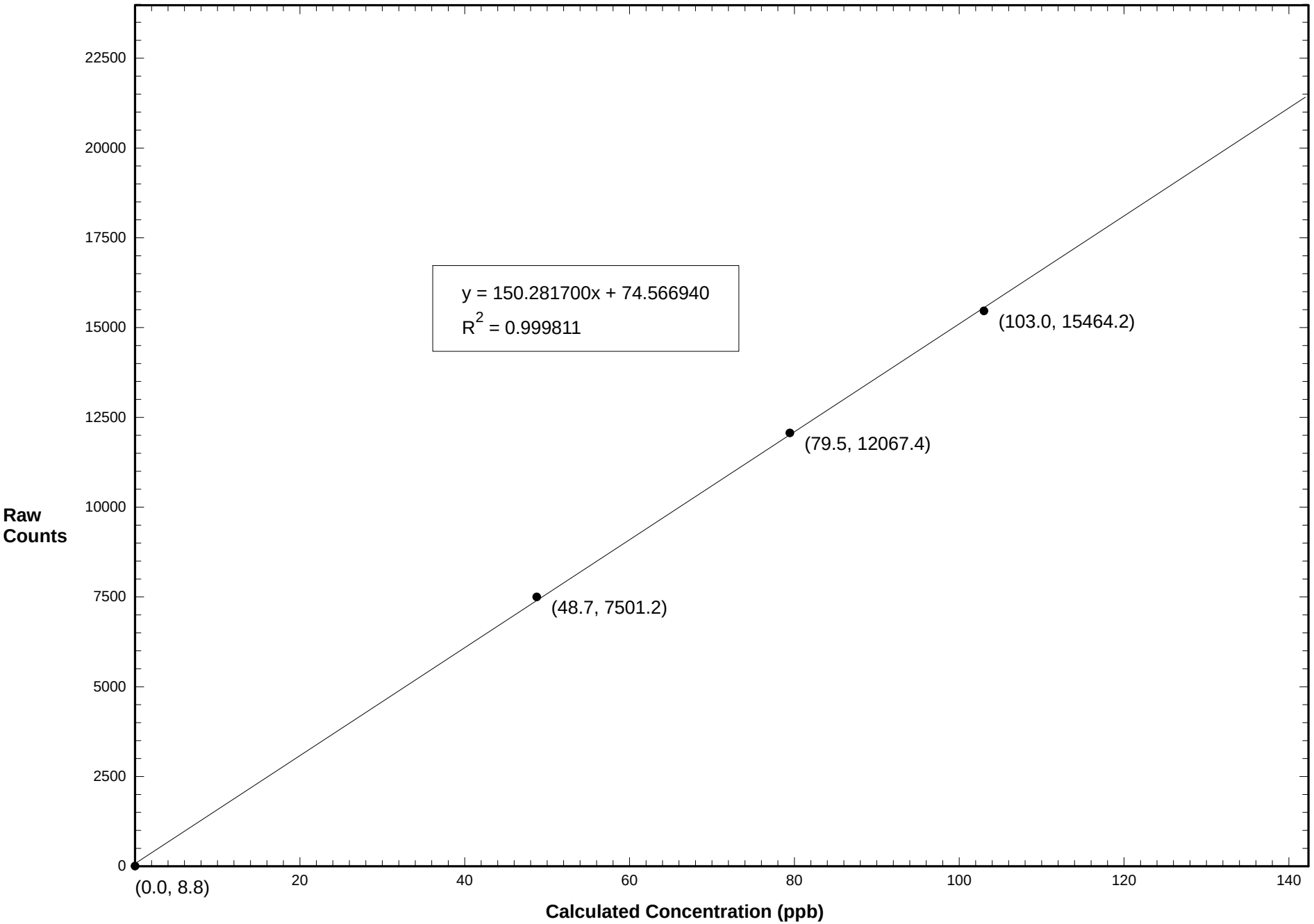
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
148.9	6901.6	45.9	103.0	15464.2	102.4	1.006	0.994
148.9	10433.4	69.5	79.5	12067.4	79.8	0.996	1.004
148.9	15040.5	100.2	48.7	7501.2	49.4	0.986	1.014
			0.0	8.8	-0.4		
					Average Correction Factor:	0.996	
NO_2 Gas Phase Titration						Average Converter Efficiency:	1.004

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	0.995	1.000	0.5
NO_2	0.993	1.006	1.3
NO_x	0.995	1.000	0.5

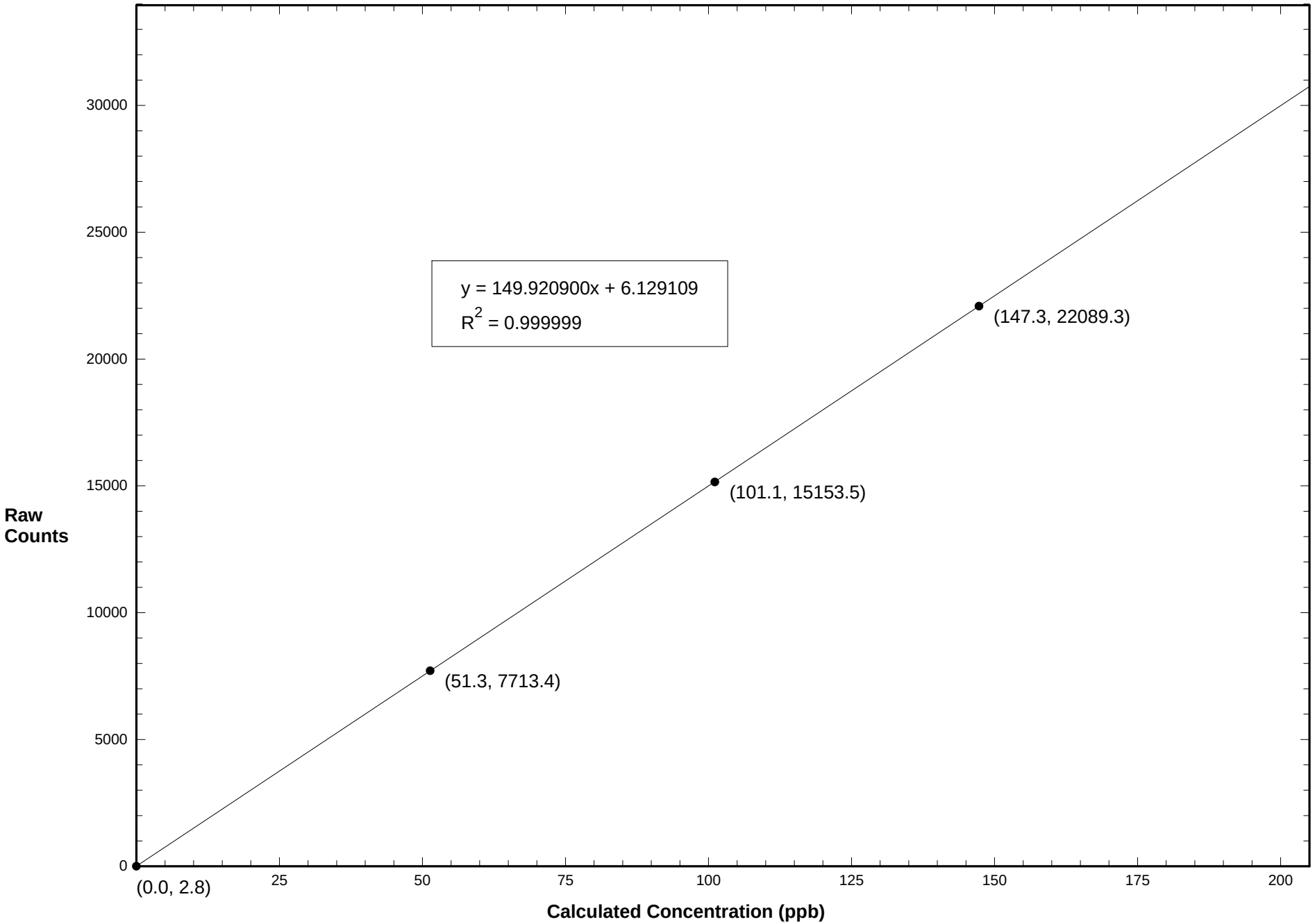
Station 905 NO July 29, 2016: Linear Regression



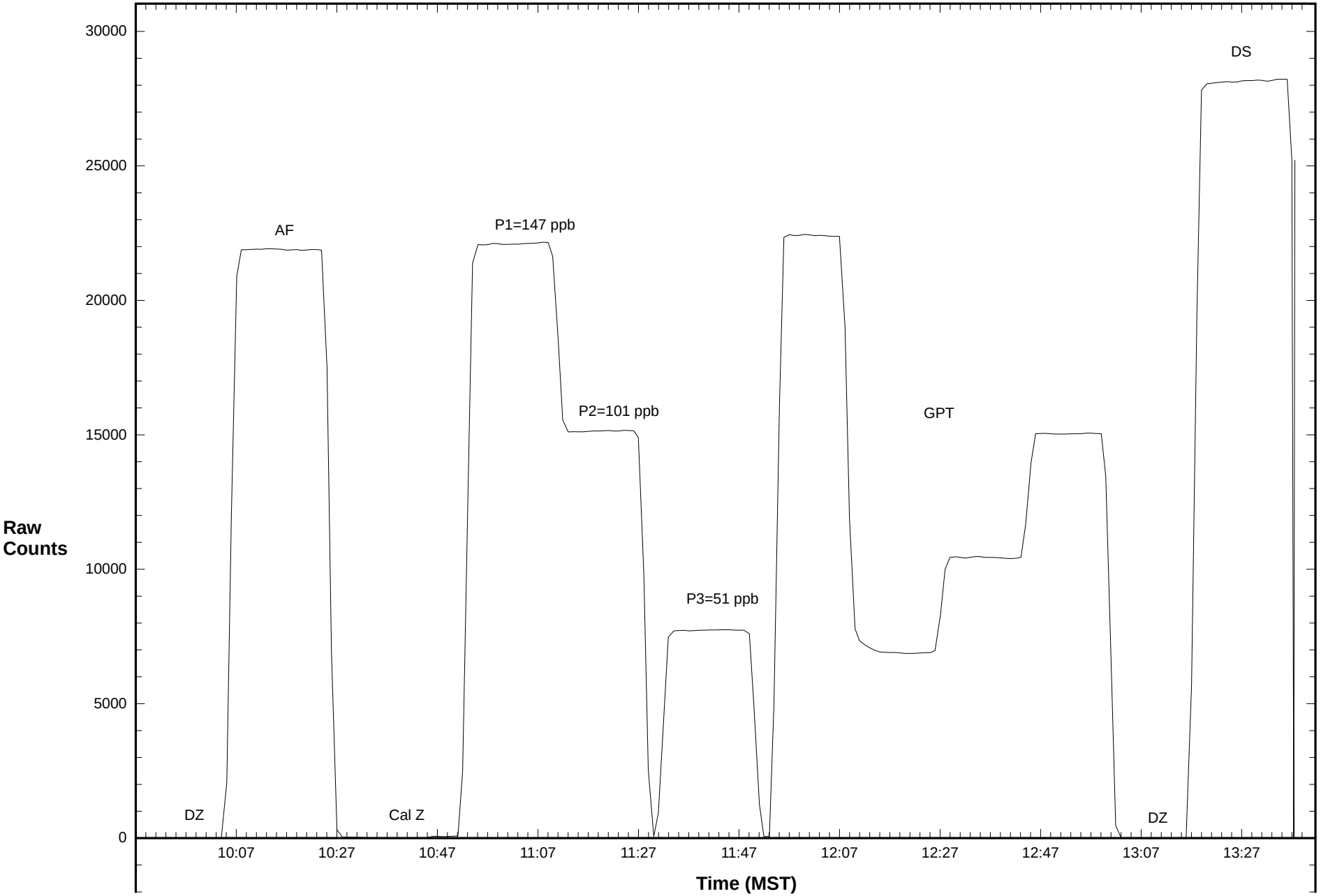
Station 905 NO2 July 29, 2016: Linear Regression



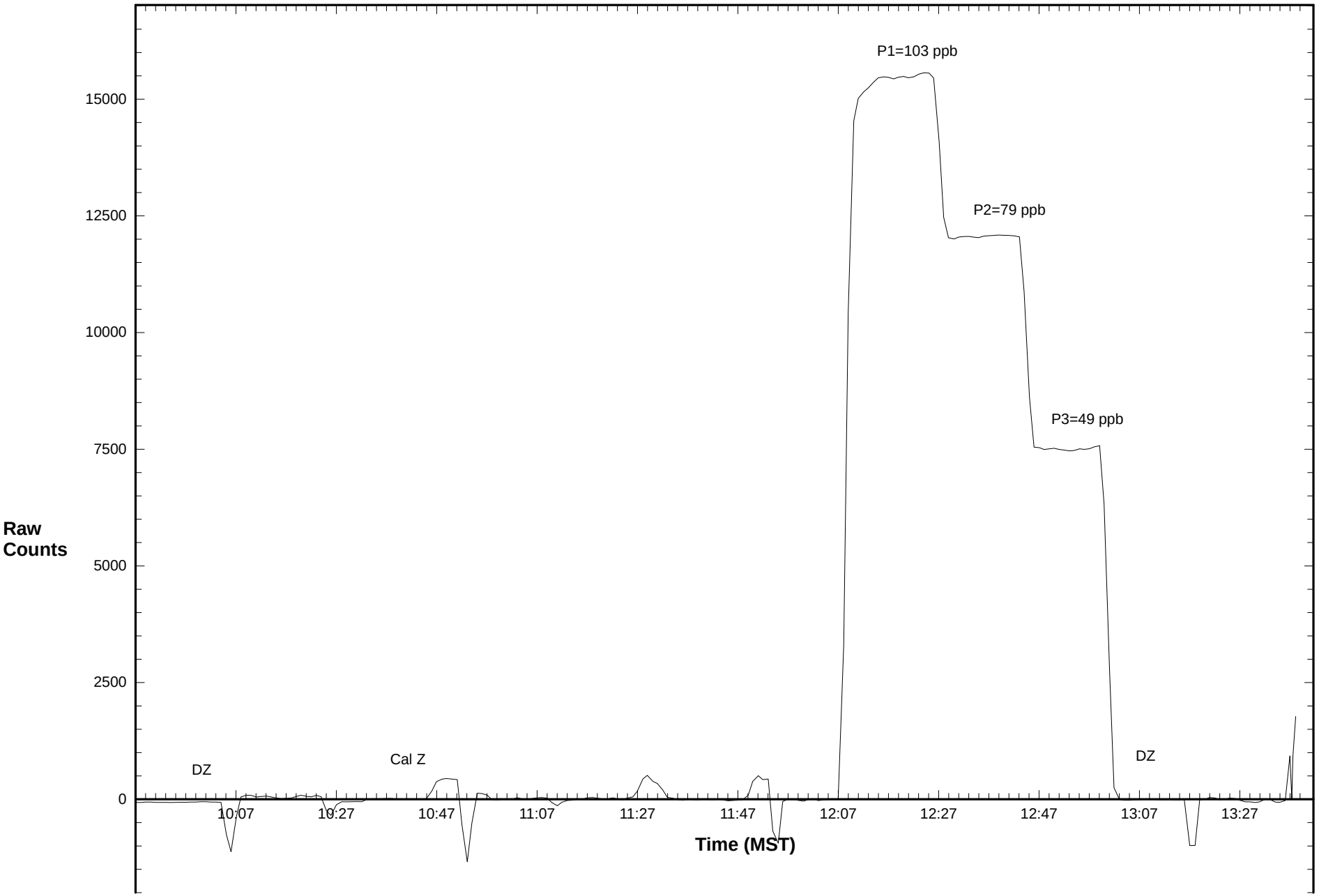
Station 905 NOX July 29, 2016: Linear Regression



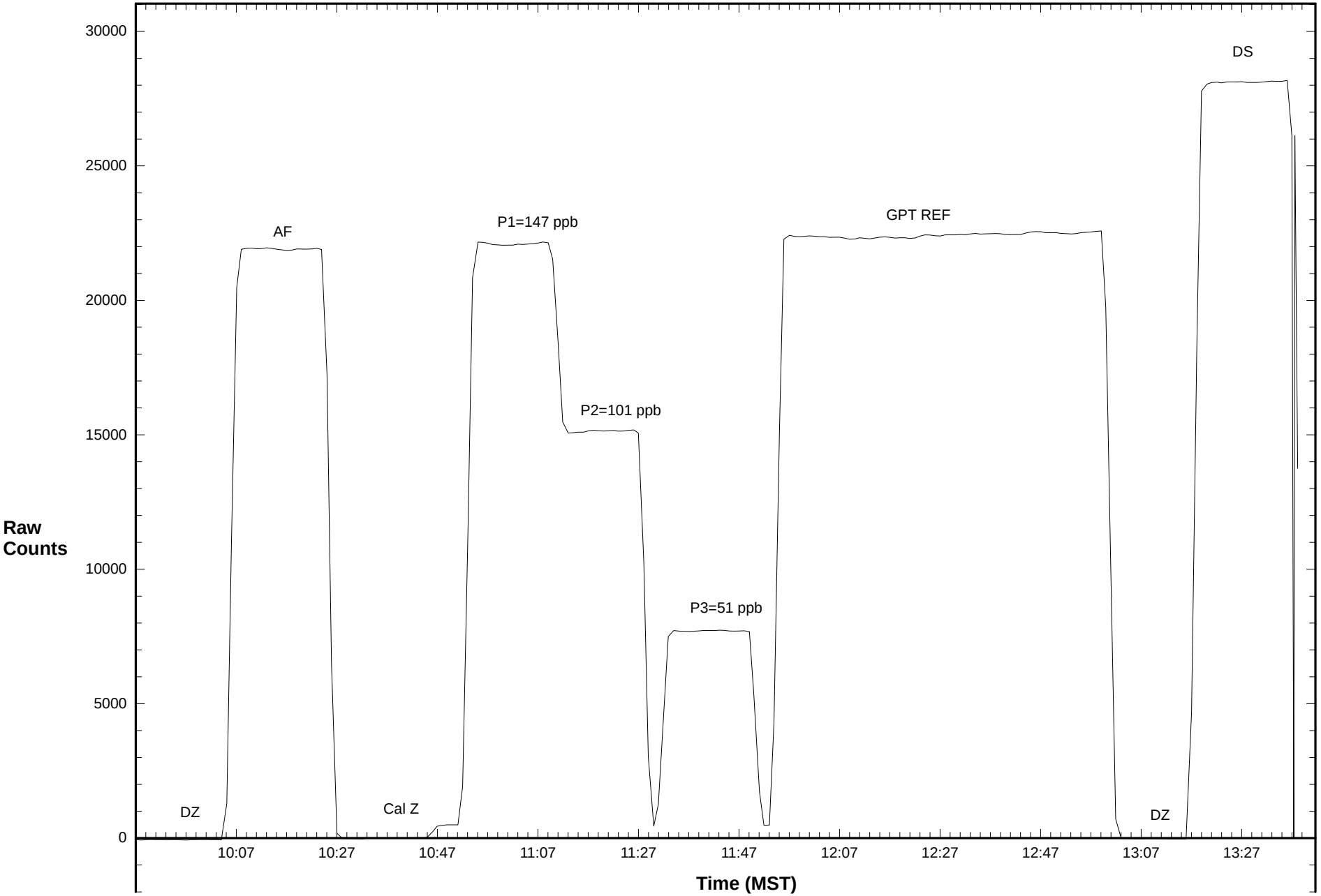
Station 905 NO July 29, 2016: Calibration Graph



Station 905 NO2 July 29, 2016: Calibration Graph



Station 905 NOX July 29, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper

Calibration Date: July 29, 2016

Parameter: O_3

Instrument: Teco 49i

Serial Number: 1407861290

Previous Calibration Date: June 8 ,2016

Calibration: Routine

Calibration Equipment: 2B Tech SN 145

Barometric Pressure: 25.35" Hg

Calibration Method: Certified Ozone Generator

Temperature: 22.7° C

Technician: J. McClintock

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.1	1.078	500 ppb
Current	-0.1	1.013	500 ppb

Final Zero: -0.4 ppb

Final Span: 334.5 ppb

As Found Correction Factor: 0.935

Calibration System Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
3.000	409.0	24556.9	408.7	1.001
3.000	256.0	15421.3	256.4	0.998
3.000	102.0	6172.0	102.3	0.998
3.000	0.0	16.7	-0.3	

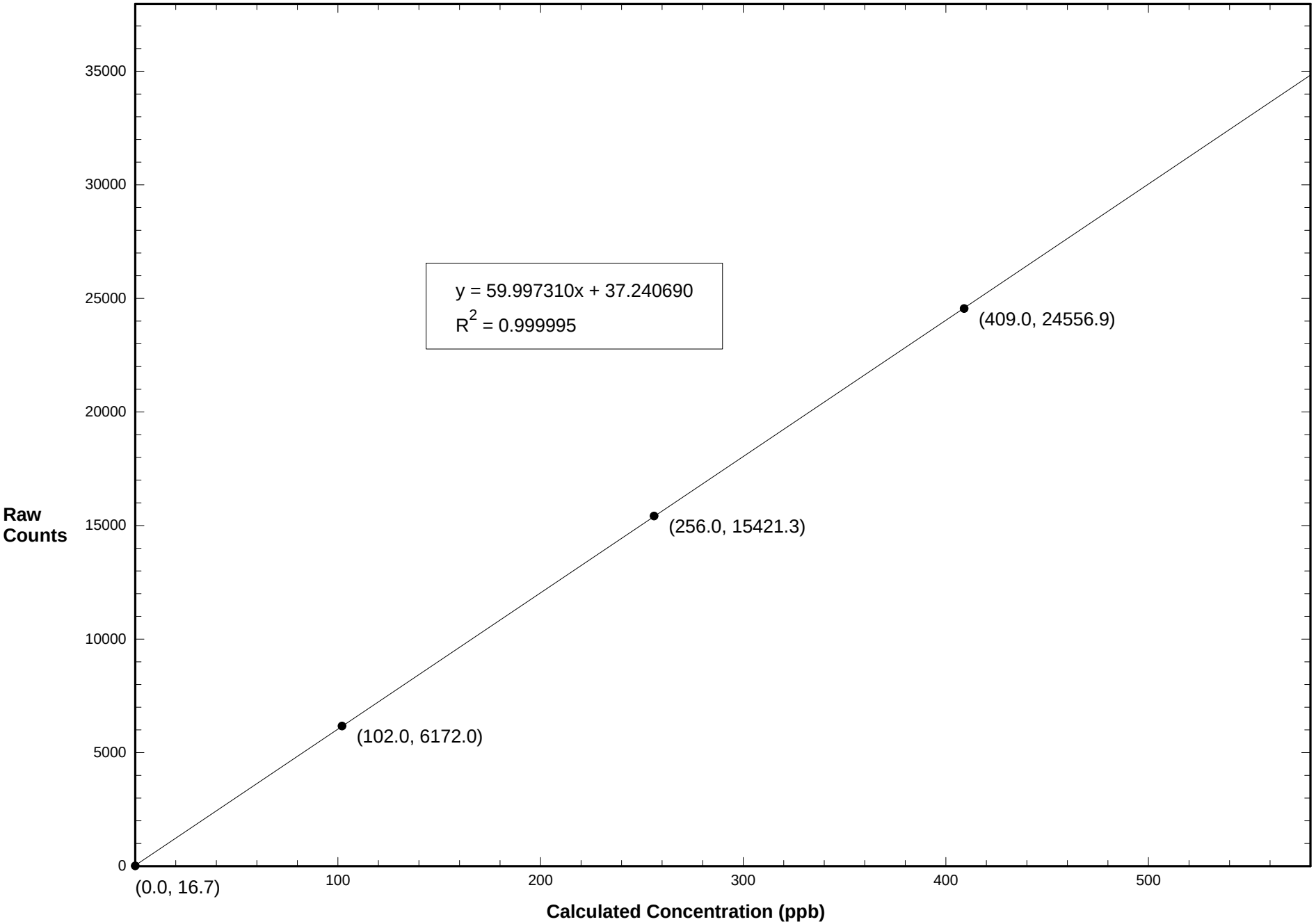
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.840610	135.335200	0.999843
Current	59.997310	37.240690	0.999995
C_i vs C_c			
Current	1.000000	0.000000	0.999996

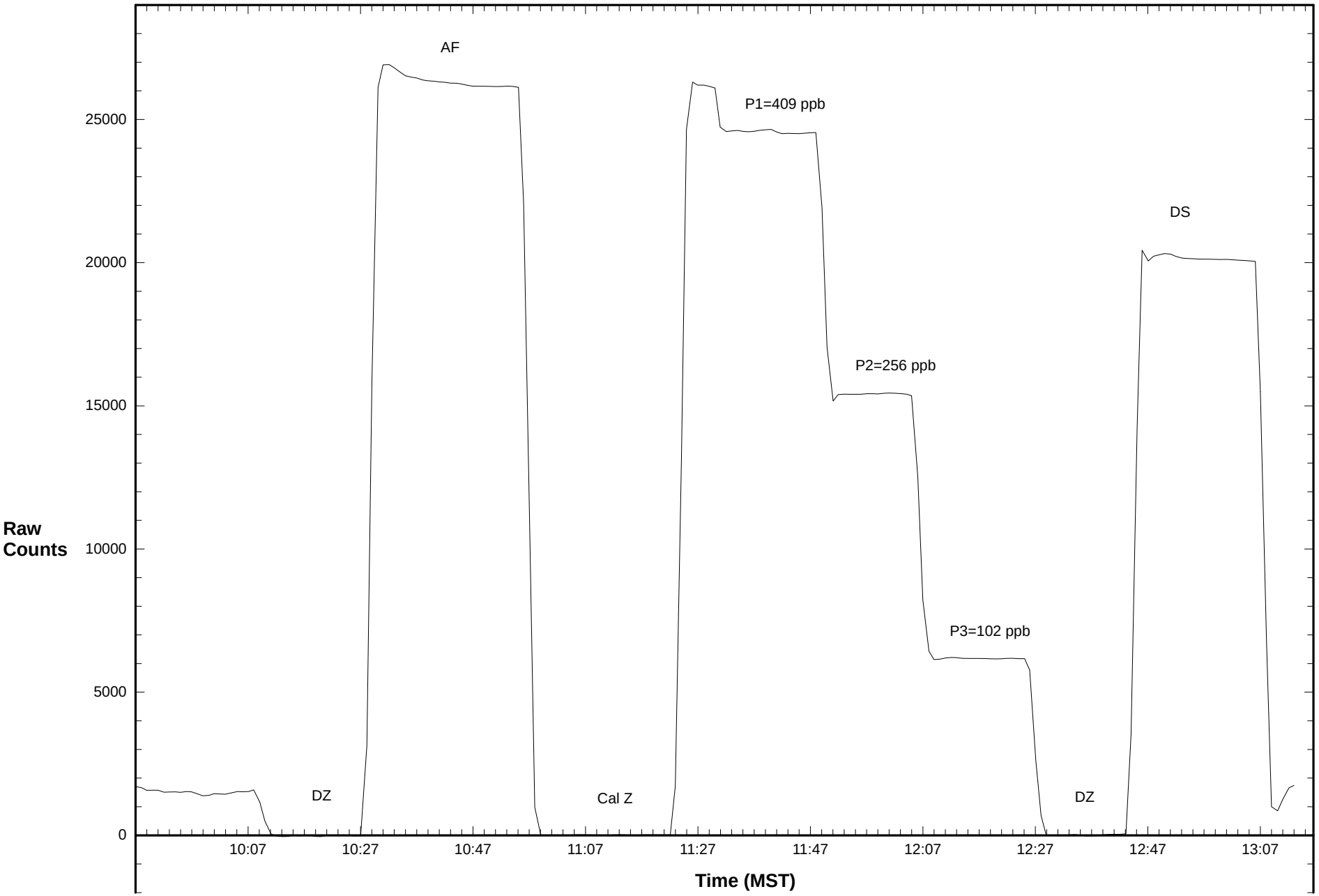
Average Correction Factor:	0.999
Previous Correction Factor:	1.004
Current Correction Factor:	1.001
Percent Change of Correction Factor:	-0.3

Comments:

Station 905 O3 July 29, 2016: Linear Regression



Station 905 O3 July 29, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 905, Steeper 905

Calibration Date: July 29, 2016

Parameter: SO_2

Instrument: Teco 43CTL

Serial Number: 43CTL 68293 365

Previous Calibration Date: June 8 ,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 25.35" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF23225

Temperature: 22.7° C

Cylinder Concentration: 5.96 ppm SO2

In Service: Dec 10,2013

Technician: J. McClintock

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	2.78	1.079	100 ppb
Current	2.66	1.064	100 ppb

Final Zero: 0.1 ppb

Final Span: 82.0 ppb

As Found Correction Factor: 0.988

SO_2 Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.0755	6.025	73.8	22198.4	73.9	0.998
0.0509	5.940	50.6	15166.7	50.5	1.003
0.0256	5.908	25.7	7713.0	25.7	1.002
0.0000	6.000	0.0	37.0	0.1	

Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	301.450600	2.588819	0.999975
Current	300.277500	9.922706	0.999981
C_i vs C_c			
Current	1.000000	-0.000012	0.999982

Average Correction Factor: 1.001

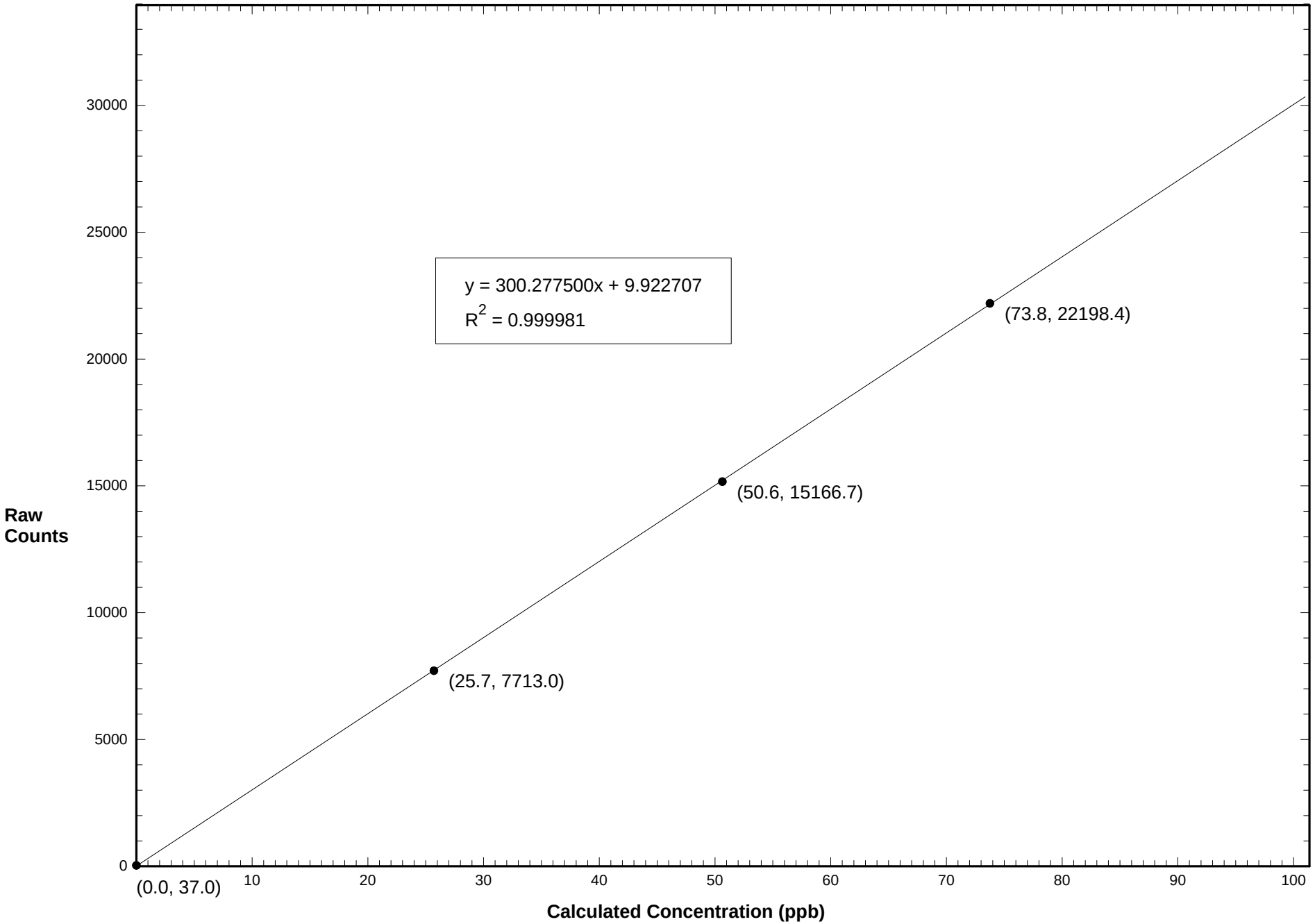
Previous Correction Factor: 1.000

Current Correction Factor: 0.998

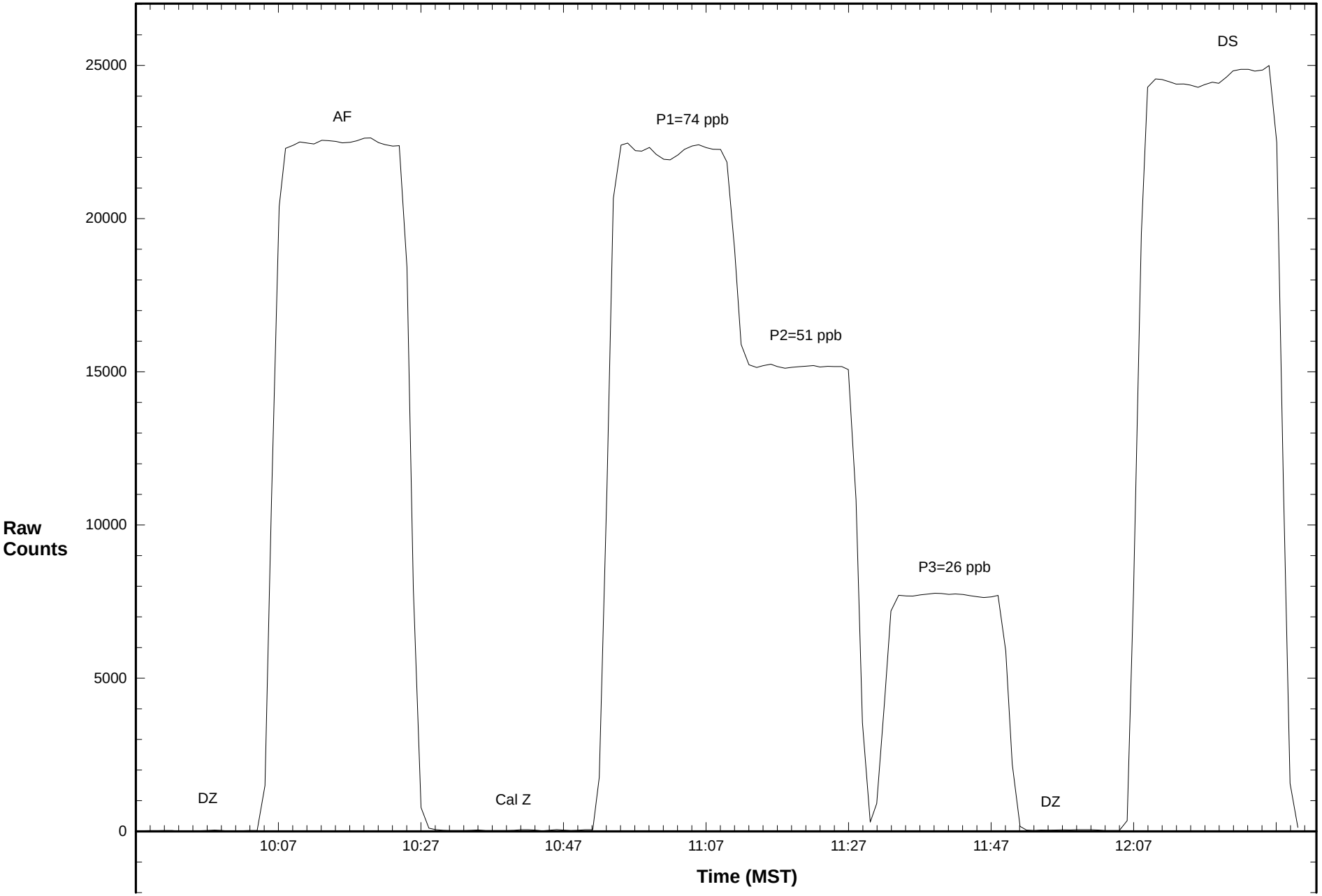
Percent Change of Correction Factor: -0.2

Comments:

Station 905 SO2 July 29, 2016: Linear Regression



Station 905 SO2 July 29, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 912, Edson

Calibration Date: July 30, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: 1150790047

Previous Calibration Date: June 10 ,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 26.85" Hg

Calibration Method: Standard Gas Dilution/GPT

Cylinder ID: FF9469

Temperature: 20.0° C

Cylinder Concentration: 12.6 ppm NO/NOX

In Service: Jan.14,2015

Technician: J. McClintock

Instrument Settings	NO bkg ppb	NO_x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO_x Coefficient	NO_2 Coefficient	Monitoring Range
Previous	12.6	12.8	*	1.317	1.005	1.000	200 ppb
Current	13.3	13.5	*	1.395	1.003	1.000	200 ppb

NO	Final Zero: 0.2 ppb	Final Span: 154.9 ppb	As Found Correction Factor: 1.027
NO_2	Final Zero: -0.4 ppb	Final Span: 0.1 ppb	As Found Correction Factor: 0.999
NO_x	Final Zero: 0.2 ppb	Final Span: 154.9 ppb	As Found Correction Factor: 1.028

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	149.192000	-5.537307	0.999992
		Current	149.813500	-45.934190	0.999969
	C_i vs C_c	Current	1.000000	-0.000020	0.999970
NO_2	R_c vs C_c	Previous	150.305200	43.504740	0.999992
		Current	150.134500	43.296630	0.999966
	C_i vs C_c	Current	1.000000	0.000000	0.999966
NO_x	R_c vs C_c	Previous	150.652800	-10.702390	0.999992
		Current	150.577700	-49.902730	0.999973
	C_i vs C_c	Current	1.000000	0.000001	0.999973

Comments:

Calibration Data Summary (Page 2)

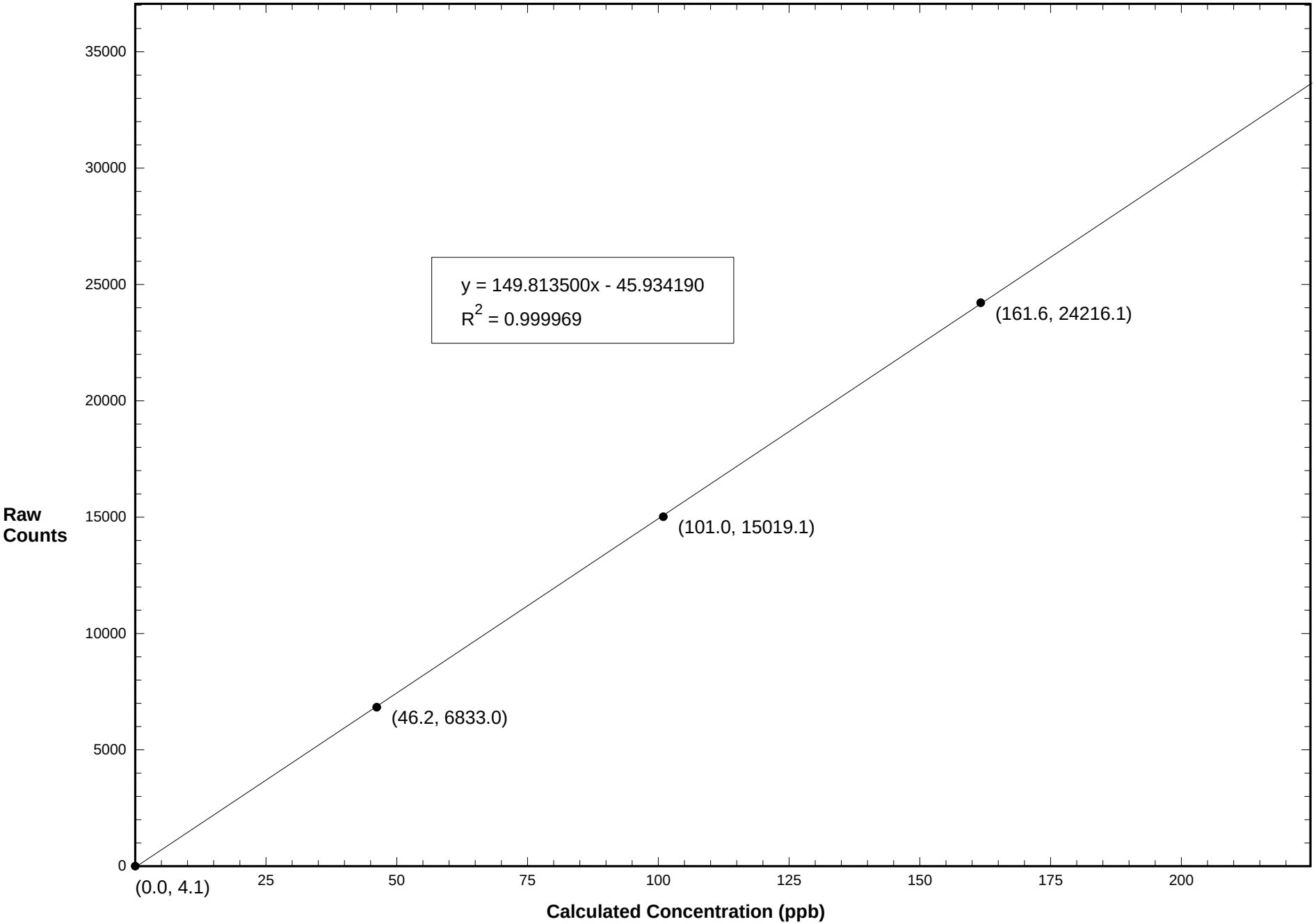
July 30, 2016 - Station 912

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.06610	5.087	161.6	24216.1	161.9	0.998
0.04080	5.051	101.0	15019.1	100.6	1.004
0.01850	5.030	46.2	6833.0	45.9	1.006
0.00000	5.000	0.0	4.1	0.3	
NO Calibration				Average Correction Factor:	1.003
0.06610	5.087	161.6	24331.7	161.9	0.998
0.04080	5.051	101.0	15100.0	100.6	1.003
0.01850	5.030	46.2	6861.3	45.9	1.006
0.00000	5.000	0.0	-0.6	0.3	
NO_x Calibration				Average Correction Factor:	1.003

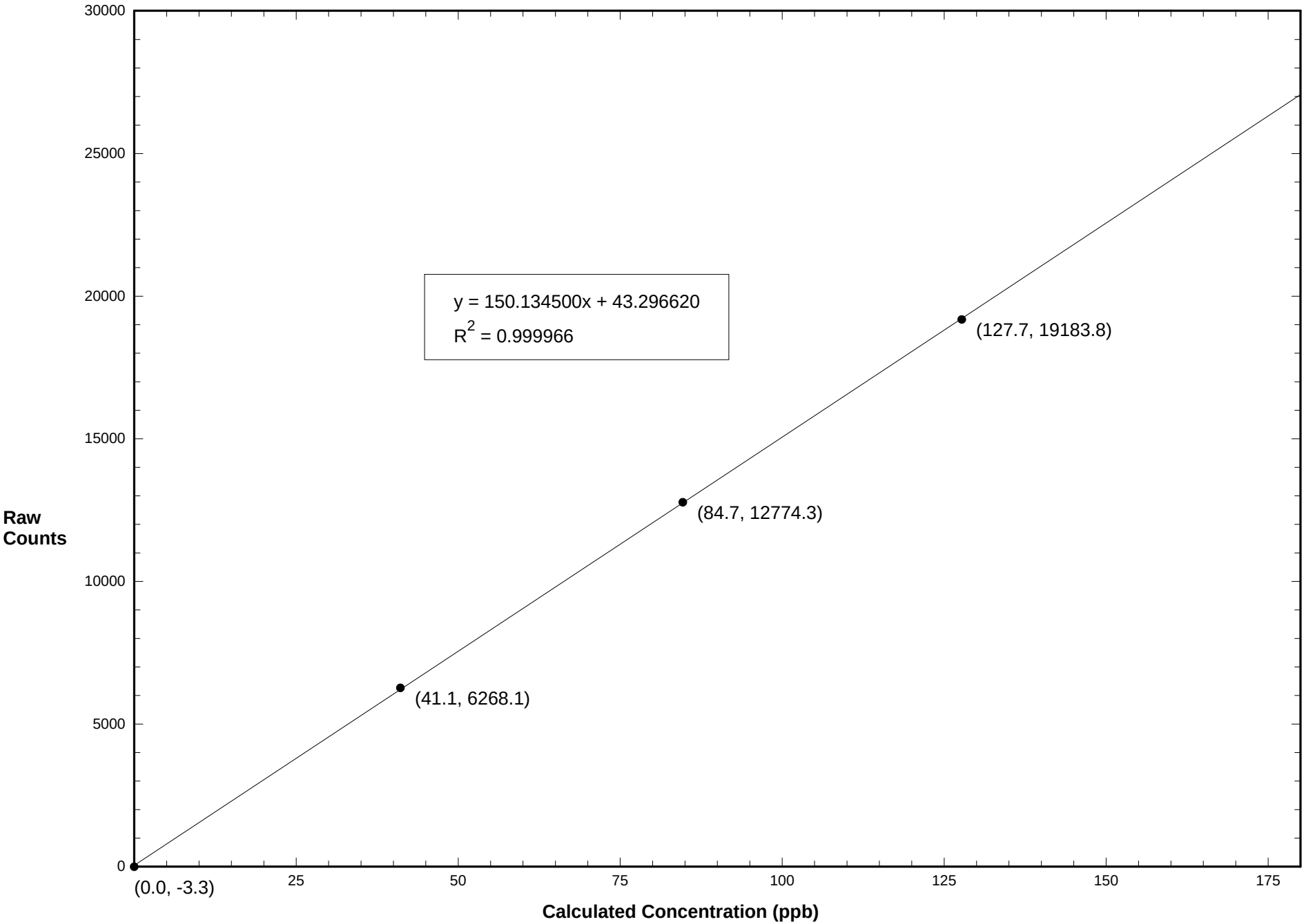
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
161.0	4948.8	33.3	127.7	19183.8	127.5	1.002	0.998
161.0	11398.8	76.4	84.7	12774.3	84.8	0.998	1.002
161.0	17927.6	120.0	41.1	6268.1	41.5	0.991	1.009
			0.0	-3.3	-0.3		
					Average Correction Factor:	0.997	
NO_2 Gas Phase Titration						Average Converter Efficiency:	1.003

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	1.000	0.998	-0.2
NO_2	0.997	1.002	0.5
NO_x	1.000	0.998	-0.2

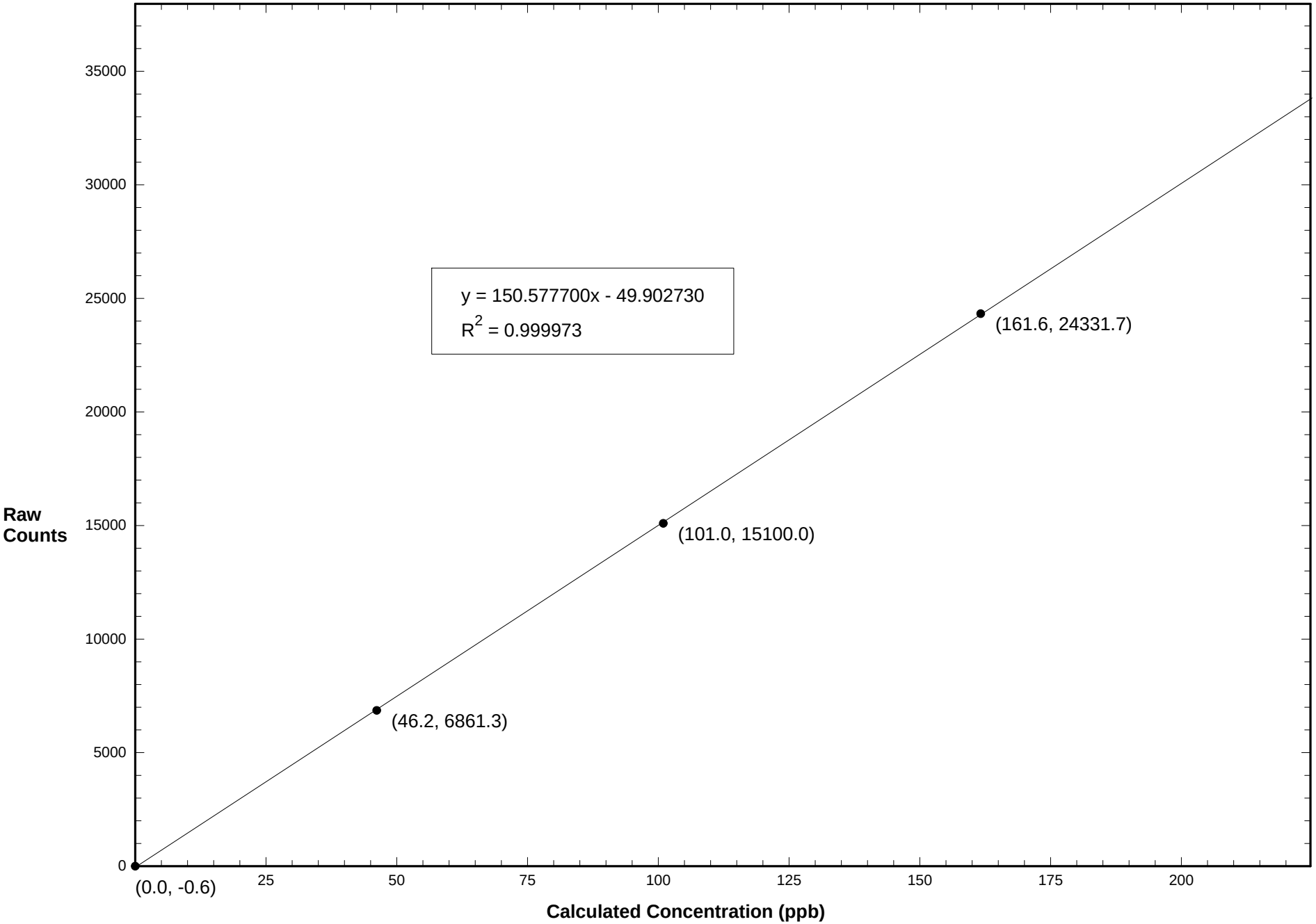
Station 912 NO July 30, 2016: Linear Regression



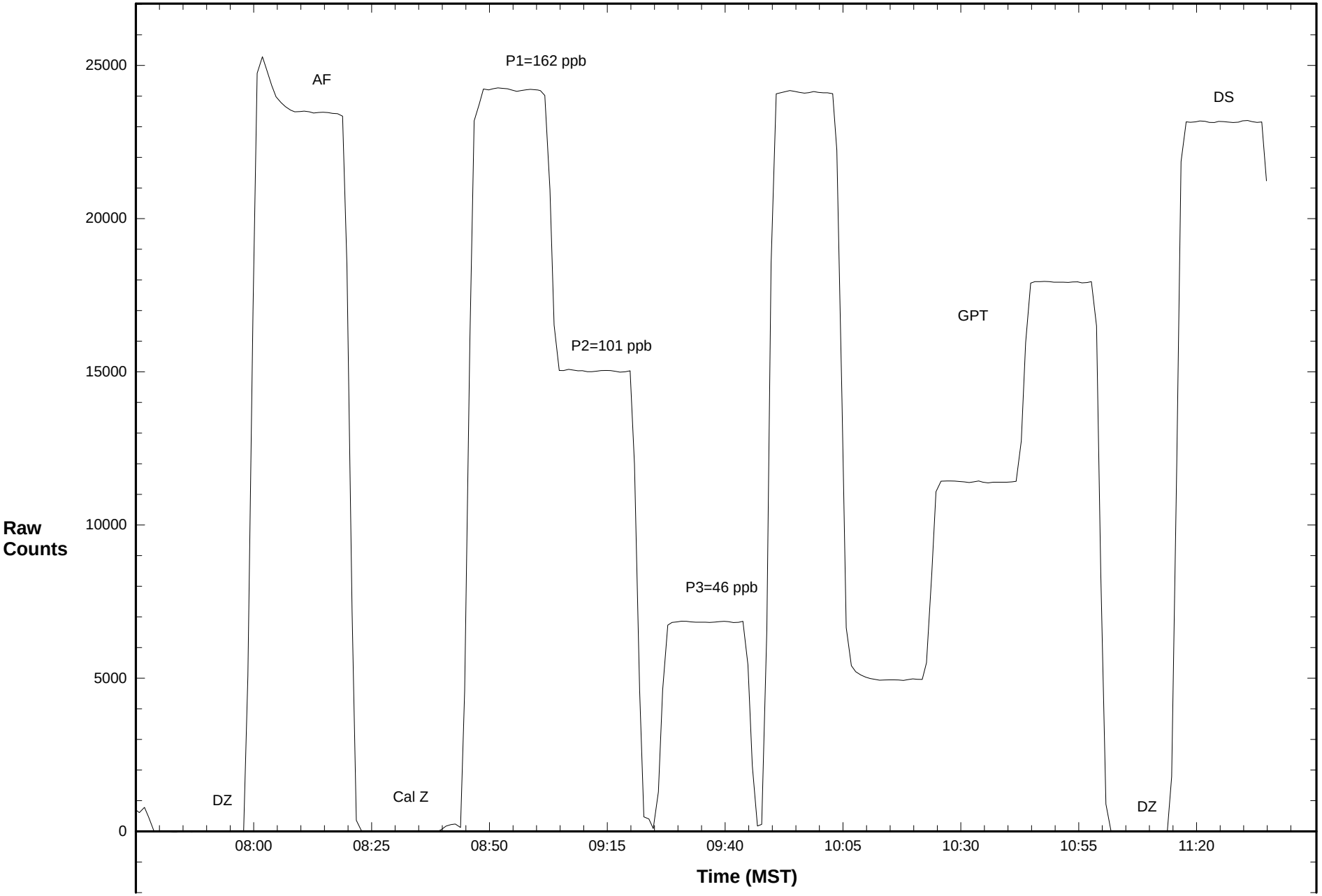
Station 912 NO2 July 30, 2016: Linear Regression



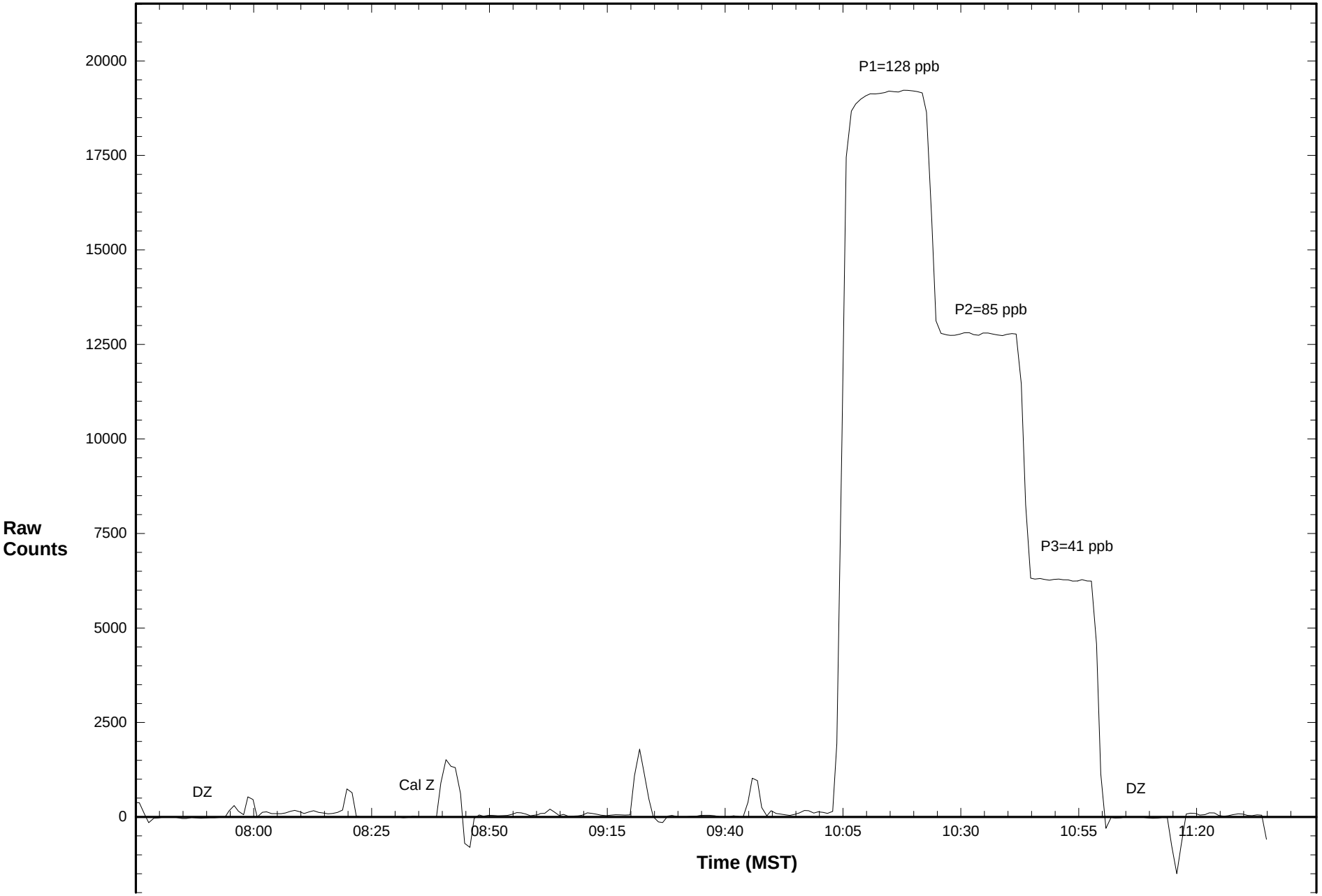
Station 912 NOX July 30, 2016: Linear Regression



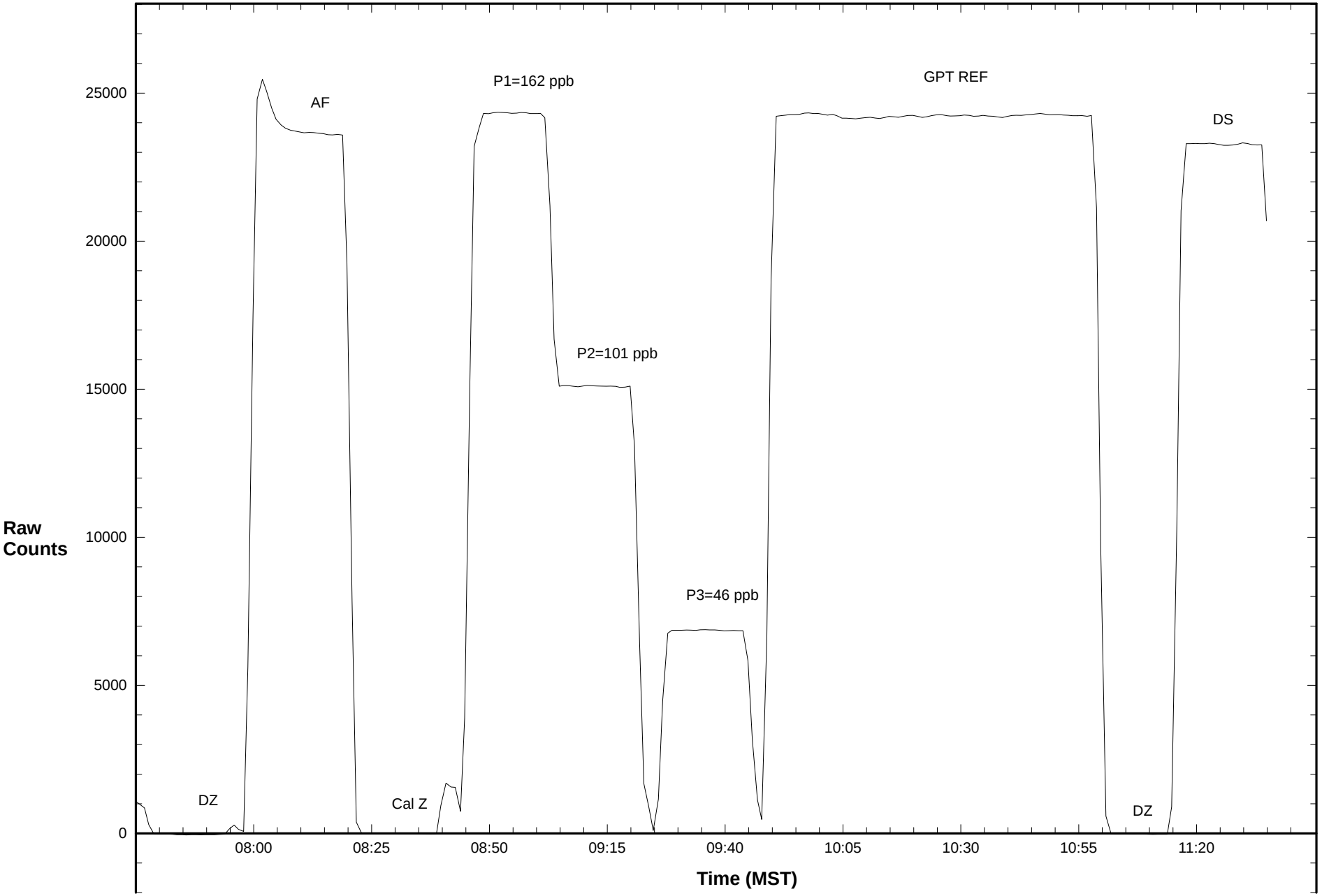
Station 912 NO July 30, 2016: Calibration Graph



Station 912 NO2 July 30, 2016: Calibration Graph



Station 912 NOX July 30, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 912, Edson

Calibration Date: July 30, 2016

Parameter: O_3

Instrument: Teco 49i

Serial Number: 1136451325

Previous Calibration Date: June 10 ,2016

Calibration: Routine

Calibration Equipment: 2B Tech 306 sn#145

Barometric Pressure: 26.85" Hg

Calibration Method: Certified Ozone Generator

Temperature: 20.0° C

Technician: J. McClintock

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.0	1.043	500 ppb
Current	0.1	1.049	500 ppb

Final Zero: -0.7 ppb

Final Span: 359.1 ppb

As Found Correction Factor: 0.981

Calibration System Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
3.000	409.0	24500.7	408.7	1.001
3.000	256.0	15376.7	256.5	0.998
3.000	102.0	6128.2	102.2	0.998
3.000	0.0	-13.4	-0.3	

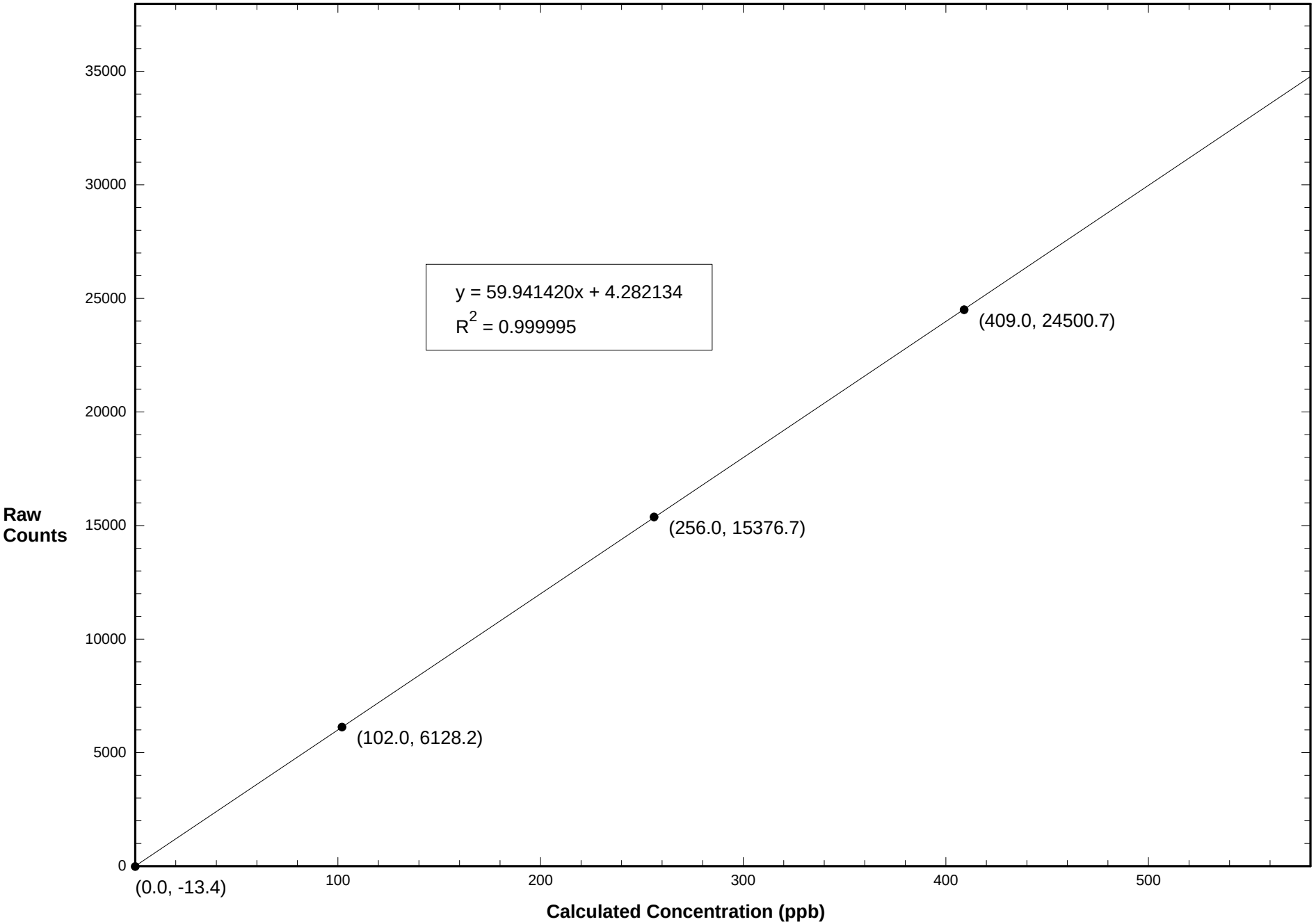
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.726010	95.256520	0.999929
Current	59.941420	4.282134	0.999995
C_i vs C_c			
Current	1.000000	0.000000	0.999995

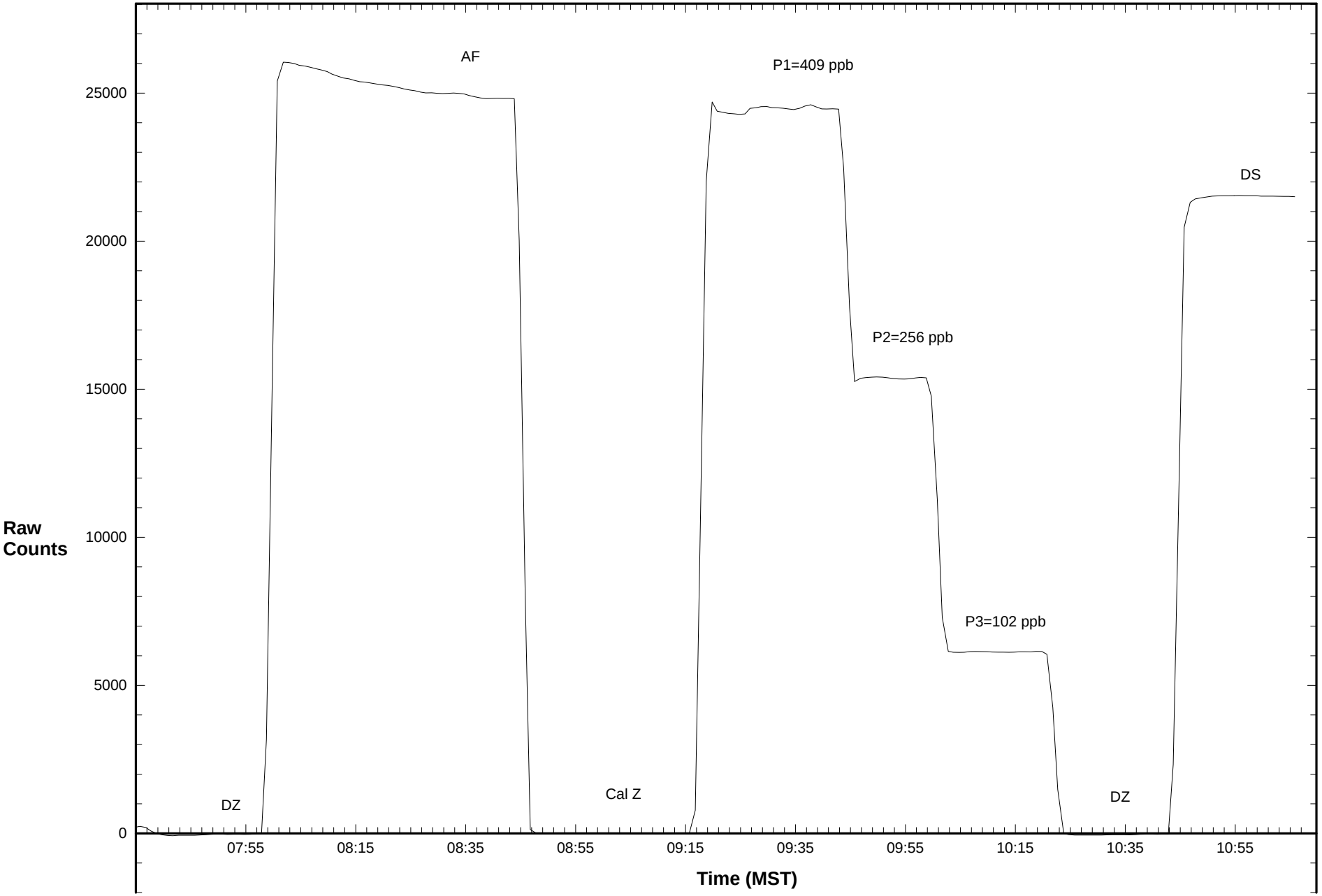
Average Correction Factor:	0.999
Previous Correction Factor:	1.002
Current Correction Factor:	1.001
Percent Change of Correction Factor:	-0.1

Comments:

Station 912 O3 July 30, 2016: Linear Regression



Station 912 O3 July 30, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 912, Edson

Calibration Date: July 30, 2016

Parameter: SO_2

Instrument: Teco 43i

Serial Number: JC 14330011435

Previous Calibration Date: June 10 ,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 26.85" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF9469

Temperature: 20.0° C

Cylinder Concentration: 6.2 ppm SO2

In Service: Jan.14,2015

Technician: J. McClintock

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	29.9	1.060	100 ppb
Current	28.6	1.027	100 ppb

Final Zero: 0.1 ppb

Final Span: 70.9 ppb

As Found Correction Factor: 0.951

SO_2 Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.0661	5.087	79.5	23887.8	79.6	0.998
0.0408	5.051	49.7	14845.3	49.6	1.001
0.0185	5.030	22.7	6659.1	22.4	1.013
0.0000	5.000	0.0	-25.7	0.2	

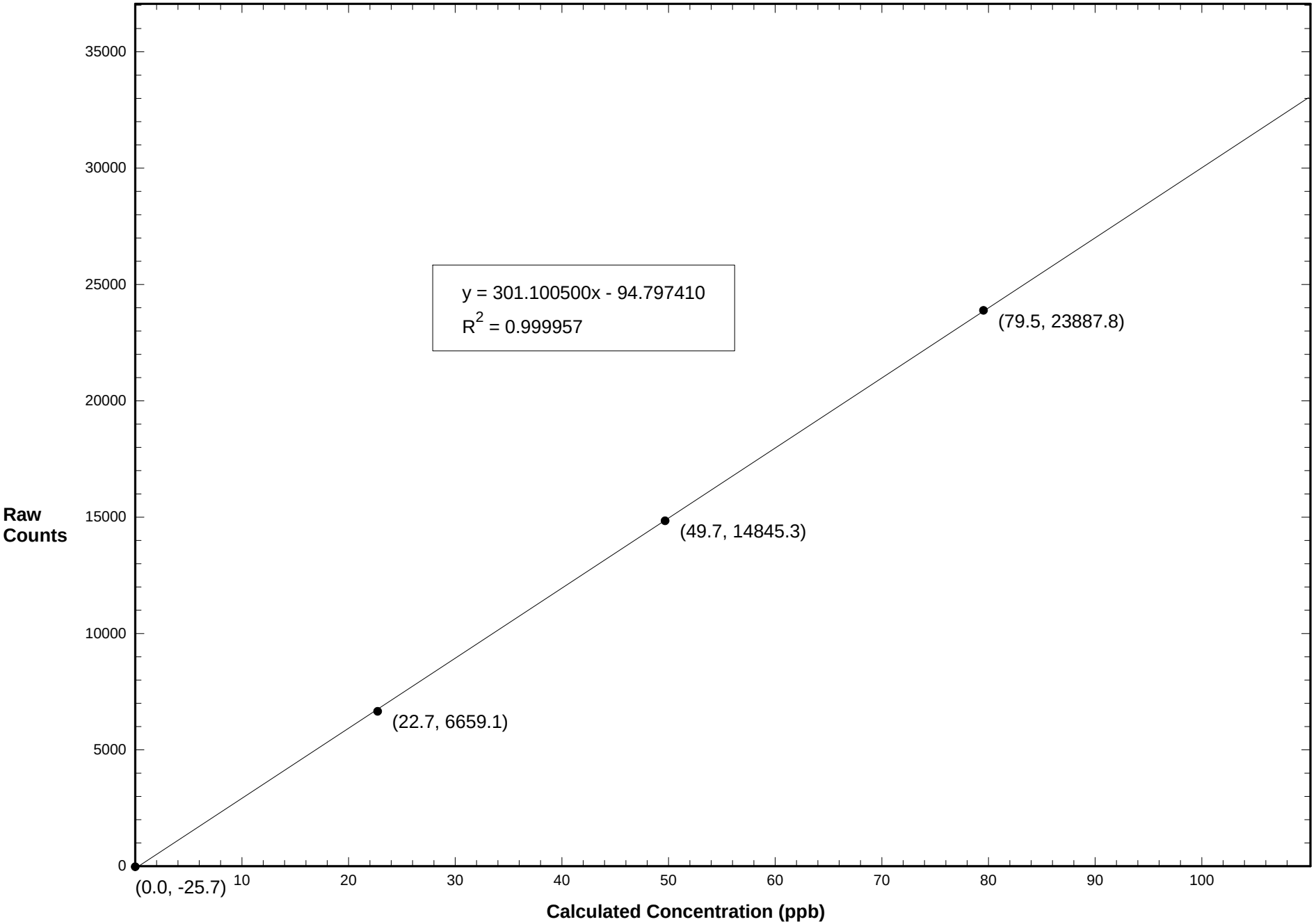
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	299.716900	15.792380	0.999990
Current	301.100500	-94.797410	0.999957
C_i vs C_c			
Current	1.000000	-0.000010	0.999957

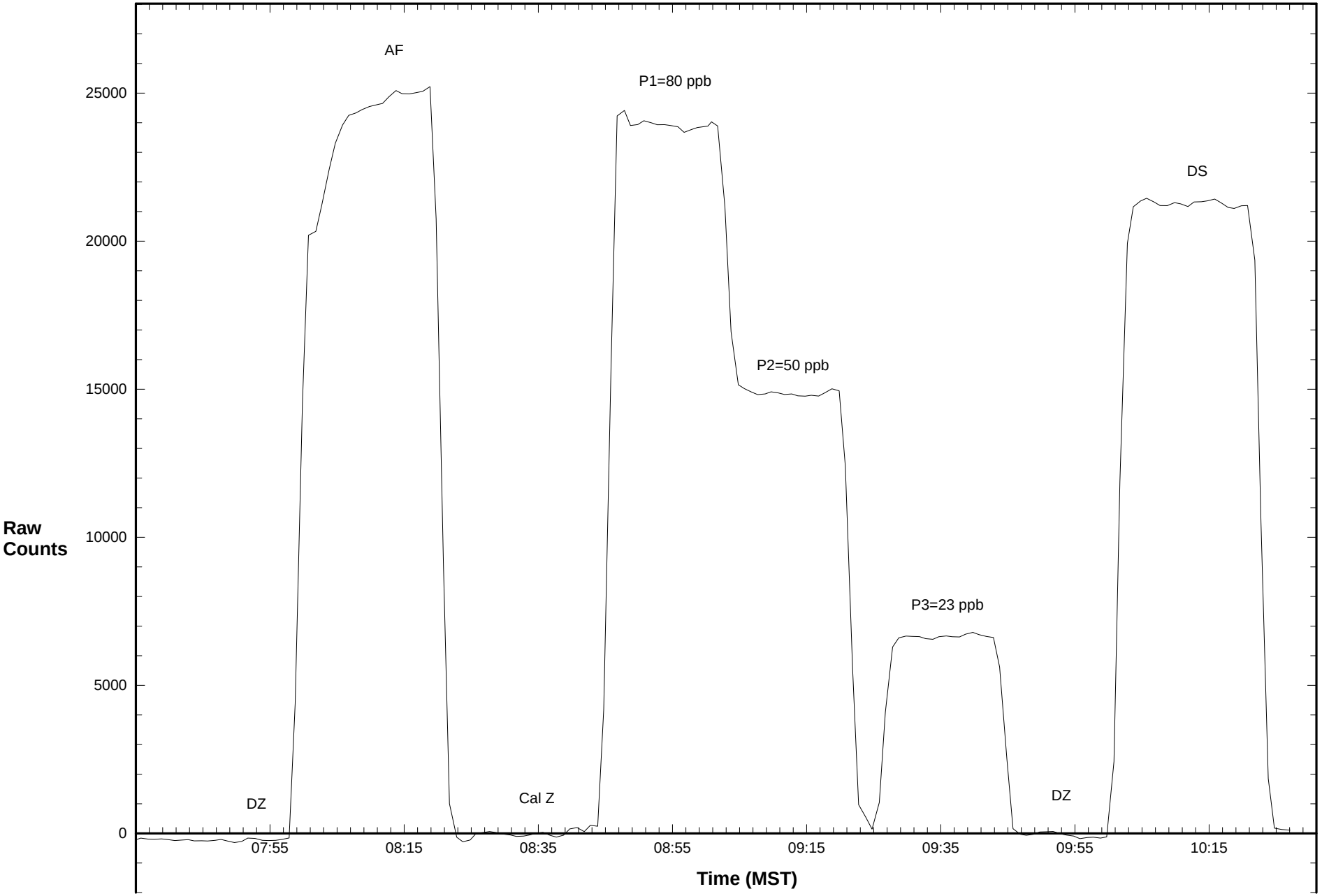
Average Correction Factor:	1.004
Previous Correction Factor:	1.000
Current Correction Factor:	0.998
Percent Change of Correction Factor:	-0.2

Comments:

Station 912 SO2 July 30, 2016: Linear Regression



Station 912 SO2 July 30, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 913, Breton

Calibration Date: July 30, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: 42i 1004840575

Previous Calibration Date: June 16 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 04300810

Barometric Pressure: 26.80" Hg

Calibration Method: Standard Gas Dilution / GPT

Cylinder ID: FF16109

Temperature: 22.0° C

Cylinder Concentration: 12.1 ppm NO/NOx

In Service: January 14, 2015

Technician: Dean Yustak

Instrument Settings	NO bkg ppb	NO_x bkg ppb	Pre-reactor bkg ppb	NO Coefficient	NO_x Coefficient	NO_2 Coefficient	Monitoring Range
Previous	7.4	7.6	na	1.271	1.004	0.996	200 ppb
Current	7.7	9.6	na	1.320	1.001	0.996	200 ppb

NO	Final Zero: -1.0 ppb	Final Span: 106.4 ppb	As Found Correction Factor: 1.044
NO_2	Final Zero: -1.9 ppb	Final Span: -1.4 ppb	As Found Correction Factor: NA
NO_x	Final Zero: -2.5 ppb	Final Span: 105.3 ppb	As Found Correction Factor: 1.034

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	150.027300	24.966490	0.999995
		Current	149.821000	146.892500	0.999654
	C_i vs C_c	Current	1.000000	0.000000	0.999654
NO_2	R_c vs C_c	Previous	150.063500	-85.775860	0.999995
		Current	149.899600	108.811900	0.999945
	C_i vs C_c	Current	1.000000	-0.000019	0.999946
NO_x	R_c vs C_c	Previous	149.829000	24.733520	0.999995
		Current	149.793000	174.934100	0.999613
	C_i vs C_c	Current	1.000000	0.000000	0.999613

Comments:

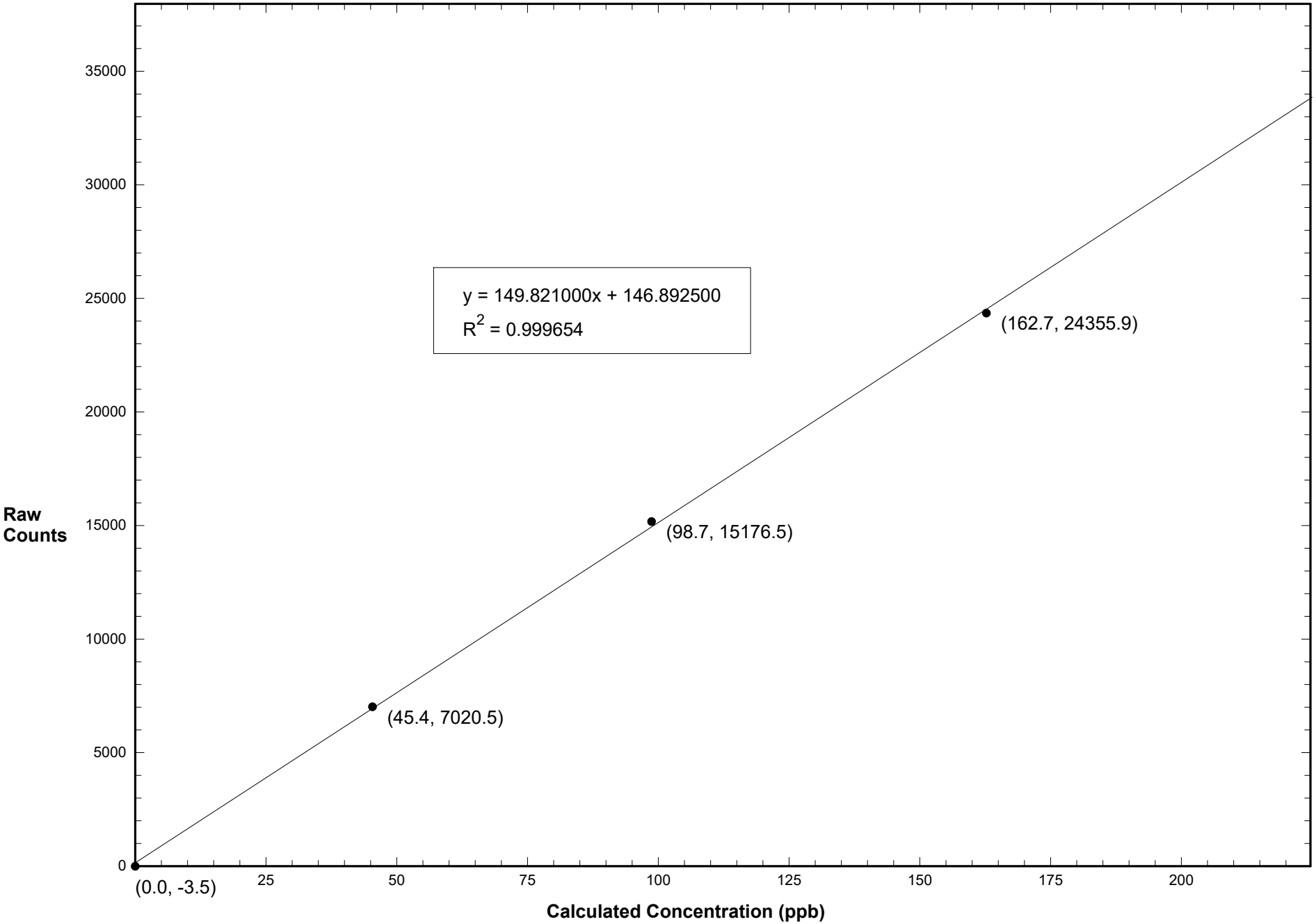
Calibration Data Summary (Page 2)

NO Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.06740	4.945	162.7	24355.9	161.6	1.007
0.04152	5.048	98.7	15176.5	100.3	0.984
0.01903	5.057	45.4	7020.5	45.9	0.989
0.00000	4.983	0.0	-3.5	-1.0	
NO Calibration				Average Correction Factor:	0.993
0.06740	4.945	162.7	24368.9	161.5	1.007
0.04152	5.048	98.7	15240.4	100.6	0.981
0.01903	5.057	45.4	7000.9	45.6	0.995
0.00000	4.983	0.0	42.8	-0.9	
NO_x Calibration				Average Correction Factor:	0.995

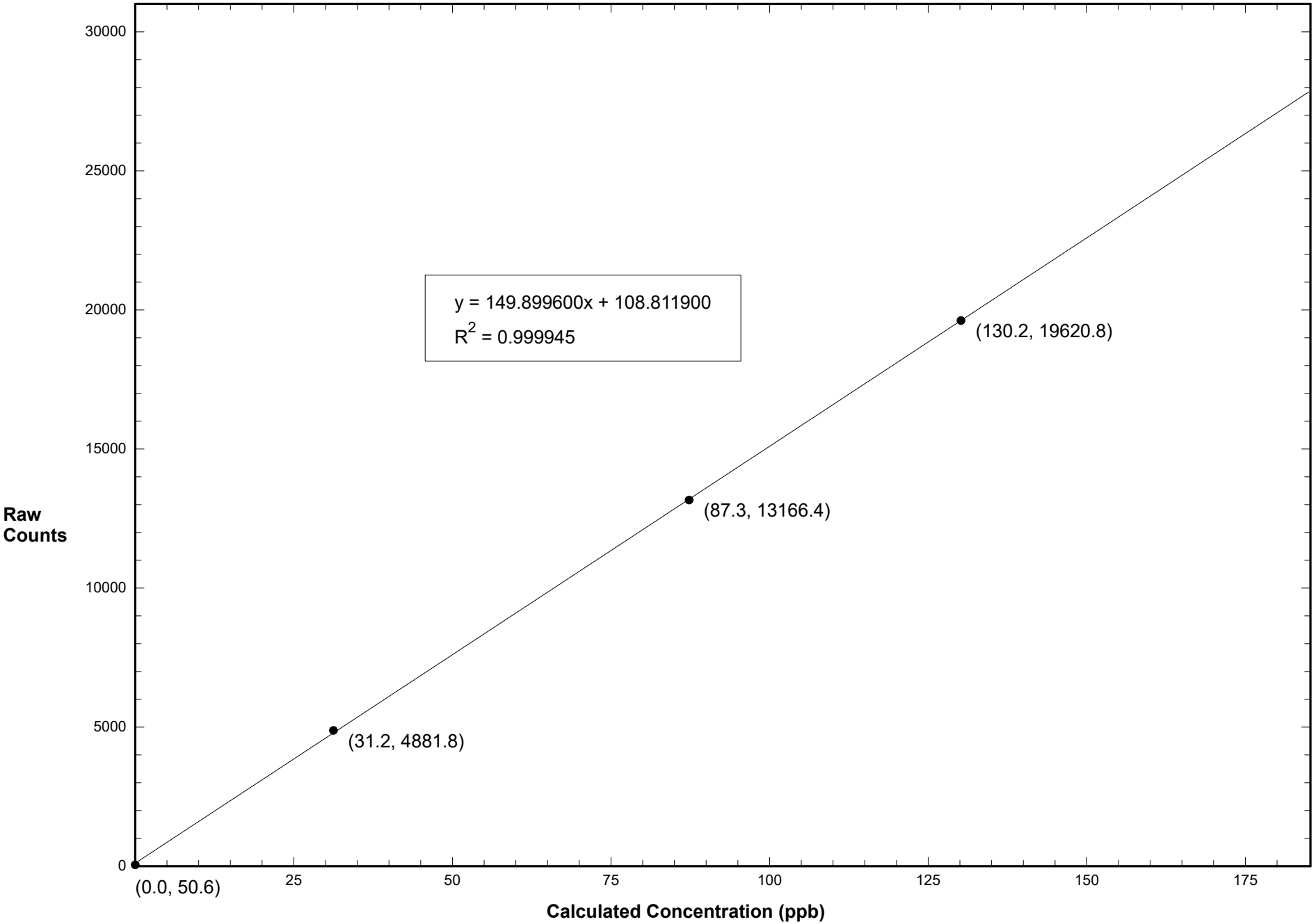
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
158.1	4330.7	27.9	130.2	19620.8	130.2	1.000	1.000
158.1	10752.1	70.8	87.3	13166.4	87.1	1.002	0.998
158.1	19152.8	126.9	31.2	4881.8	31.8	0.981	1.019
			0.0	50.6	-0.4		
					Average Correction Factor:	0.995	
NO_2 Gas Phase Titration						Average Converter Efficiency:	1.006

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	1.000	1.007	0.7
NO_2	0.997	1.000	0.3
NO_x	1.001	1.007	0.6

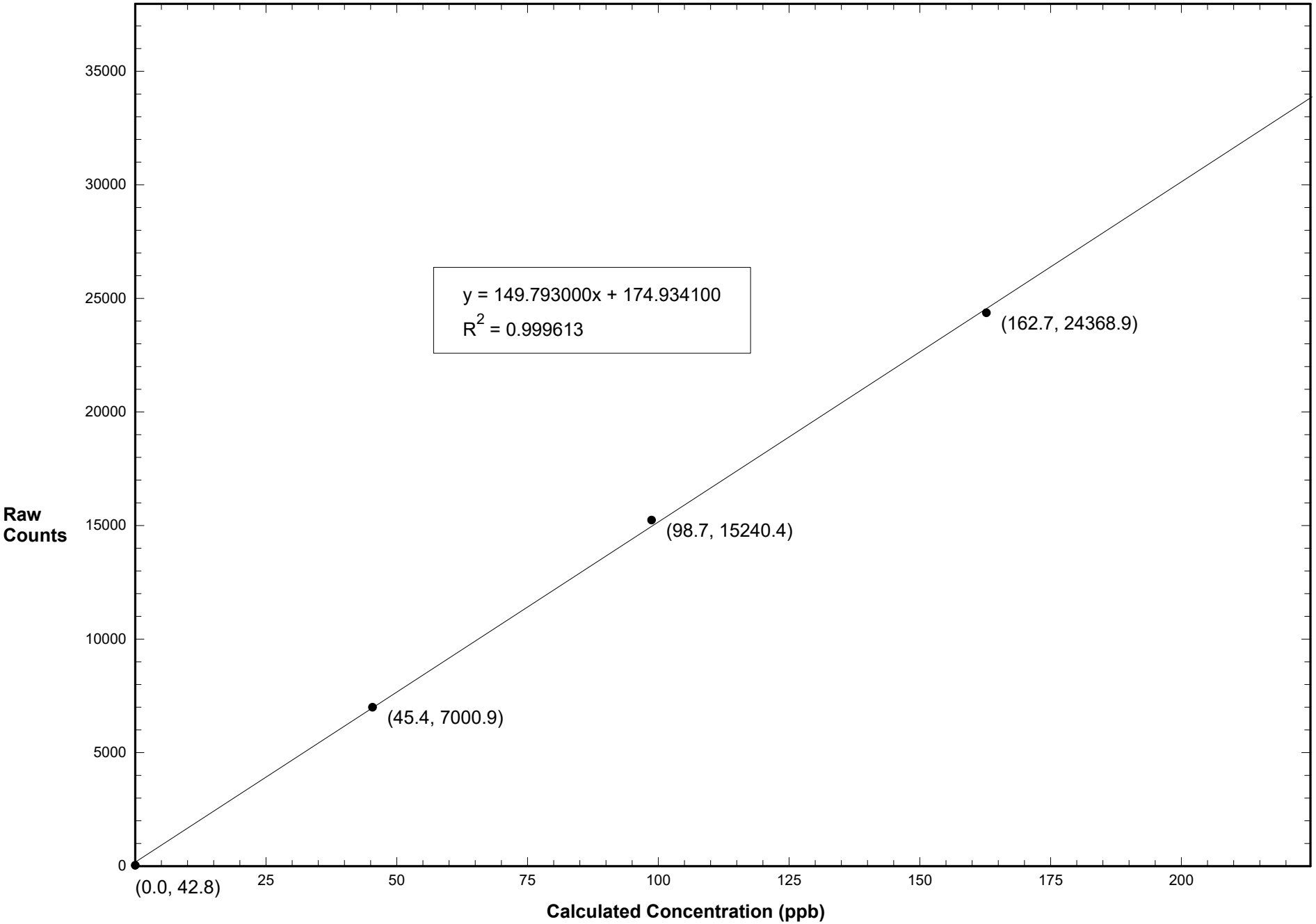
Station 913 NO July 30, 2016: Linear Regression



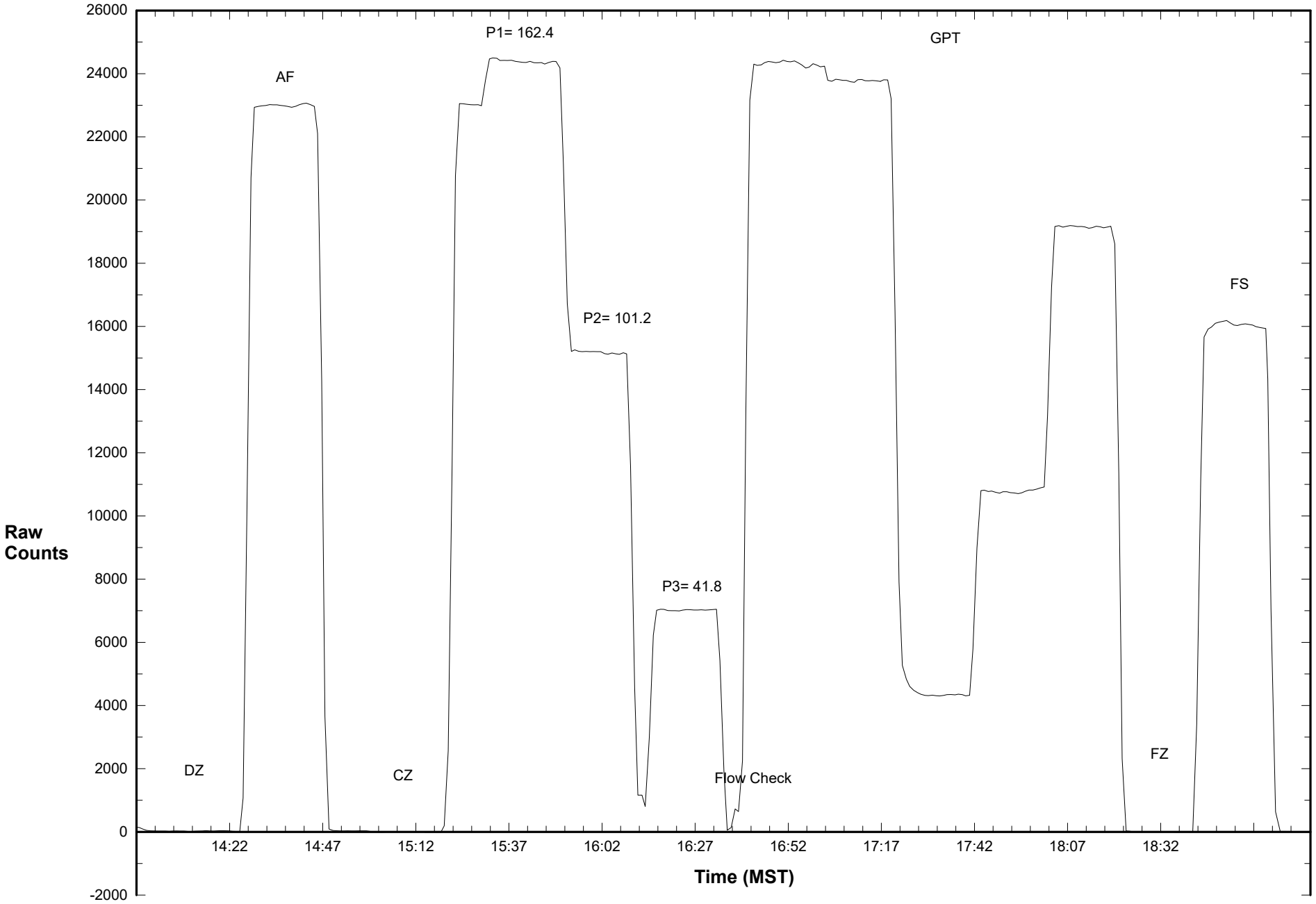
Station 913 NO2 July 30, 2016: Linear Regression



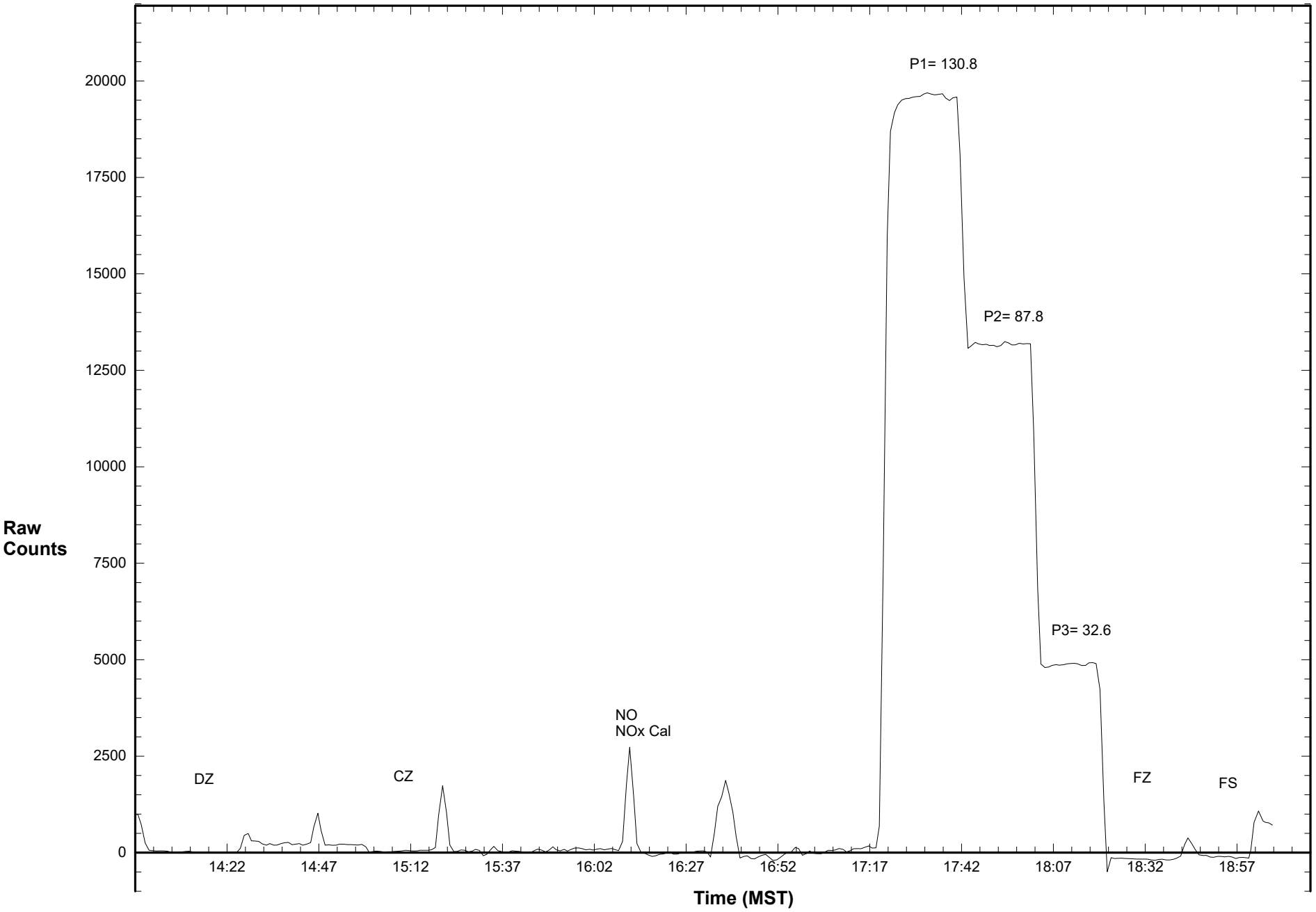
Station 913 NOX July 30, 2016: Linear Regression



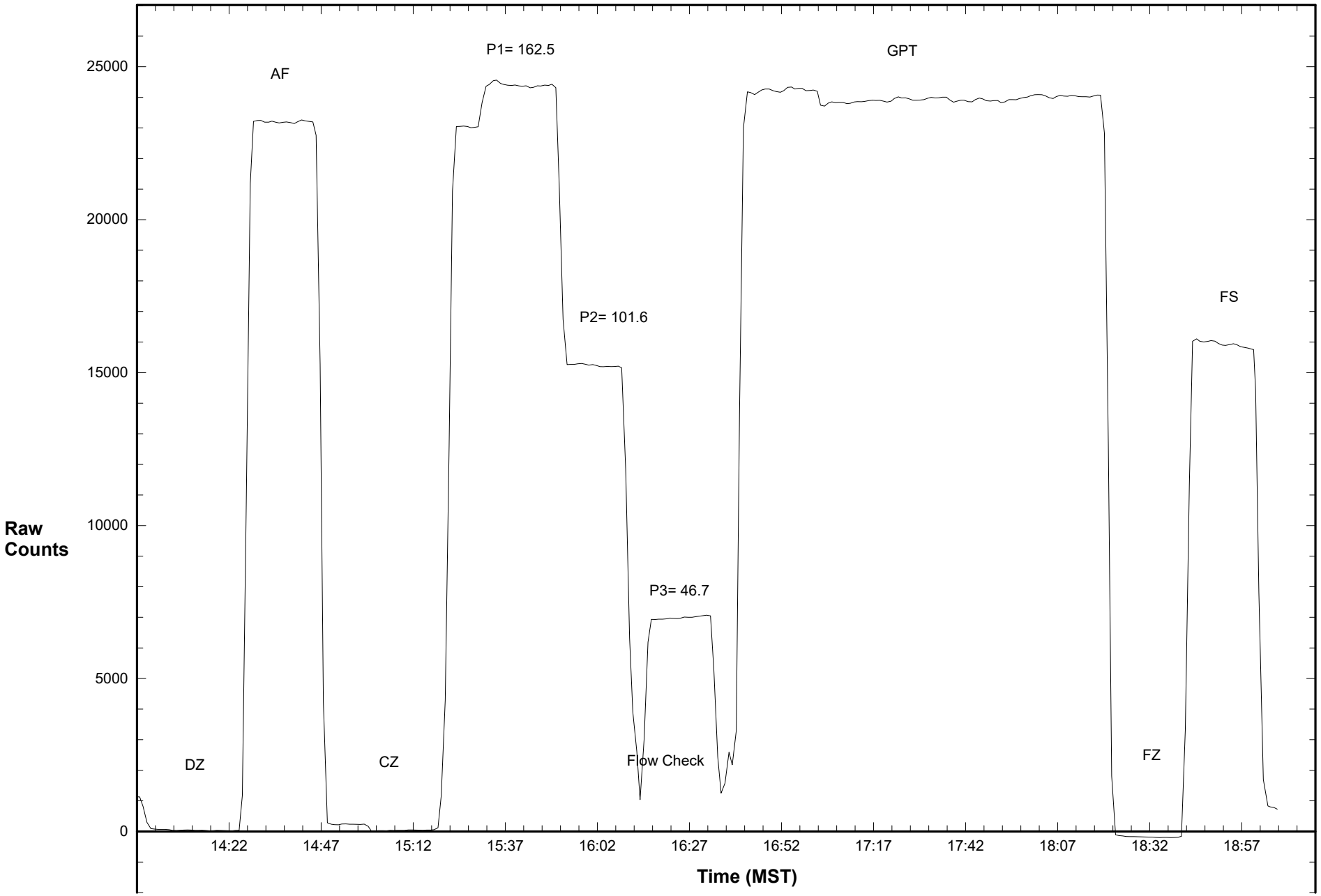
Station 913 NO July 30, 2016: Calibration Graph



Station 913 NO2 July 30, 2016: Calibration Graph



Station 913 NOX July 30, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 913, Breton

Calibration Date: July 30, 2016

Parameter: O_3

Instrument: Teco 49i

Serial Number: 1106047298

Previous Calibration Date: June 16 2016

Calibration: Routine

Calibration Equipment: 2B model 306 SN-135

Barometric Pressure: 26.80" Hg

Calibration Method: Certified Ozone Generator

Temperature: 22.0° C

Technician: Dean Yustak

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	0.989	0.0	500 ppb
Current	1.022	-0.1	500 ppb

Final Zero: -0.5 ppb

Final Span: 215.4 ppb

As Found Correction Factor: 1.018

Calibration System Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
3.000	409.0	24456.7	408.4	1.001
3.000	255.0	15326.7	255.8	0.997
3.000	102.3	6152.4	102.5	0.998
3.000	0.0	-11.8	-0.5	

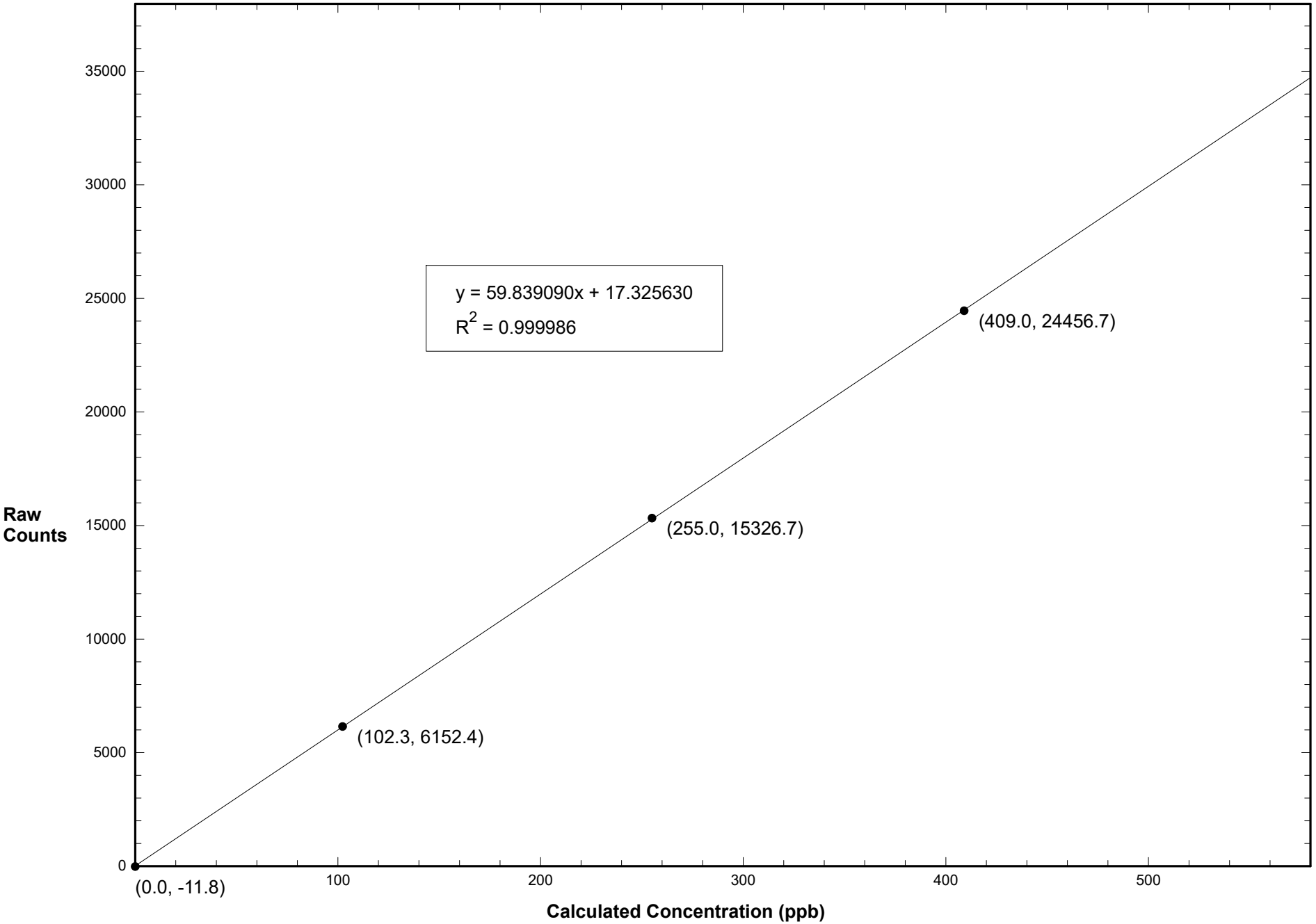
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.925660	21.629550	0.999994
Current	59.839090	17.325630	0.999986
C_i vs C_c			
Current	1.000000	0.000039	0.999986

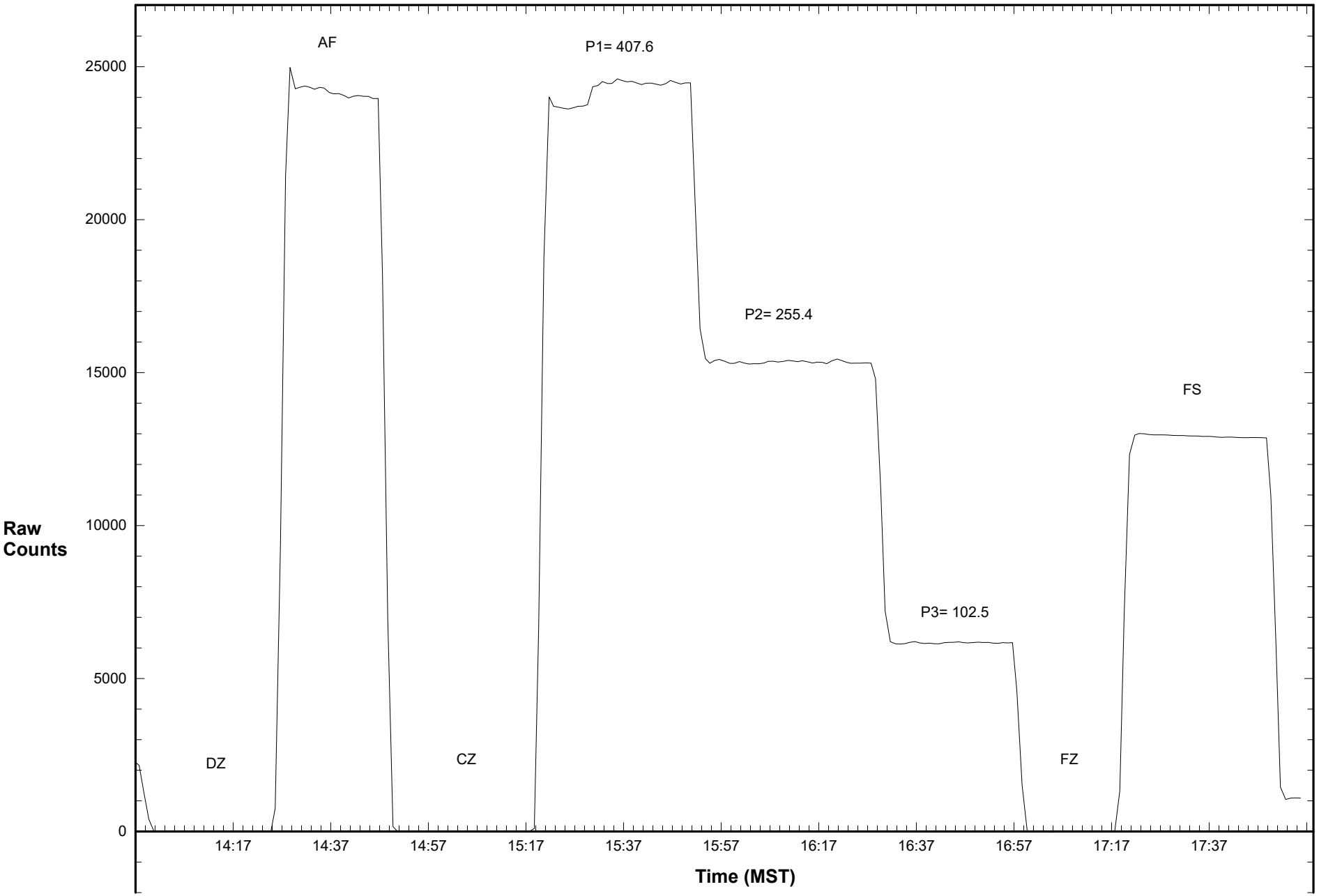
Average Correction Factor:	0.999
Previous Correction Factor:	1.001
Current Correction Factor:	1.001
Percent Change of Correction Factor:	0.0

Comments:

Station 913 O3 July 30, 2016: Linear Regression



Station 913 O3 July 30, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 913, Breton

Calibration Date: July 30, 2016

Parameter: SO_2

Instrument: Teco 43c

Serial Number: 0333803283

Previous Calibration Date: June 16 2016

Calibration: Routine

Calibration Equipment: Sabio 2010 SN 04300810

Barometric Pressure: 26.80" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF16109

Temperature: 22.0° C

Cylinder Concentration: 6.11 ppm SO2

In Service: January 14, 2015

Technician: Dean Yustak

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	3.01	0.976	100 ppb
Current	2.90	0.967	100 ppb

Final Zero: -0.4 ppb

Final Span: 48.5 ppb

As Found Correction Factor: 1.007

SO_2 Flow Rate (LPM)	Dilution Flow Rate (LPM)	Calculated Concentration C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i
0.0674	4.945	82.2	24655.7	81.5	1.008
0.0413	5.078	49.3	15297.4	50.4	0.978
0.0190	5.035	22.9	7026.2	22.9	1.000
0.0000	4.983	0.0	2.1	-0.4	

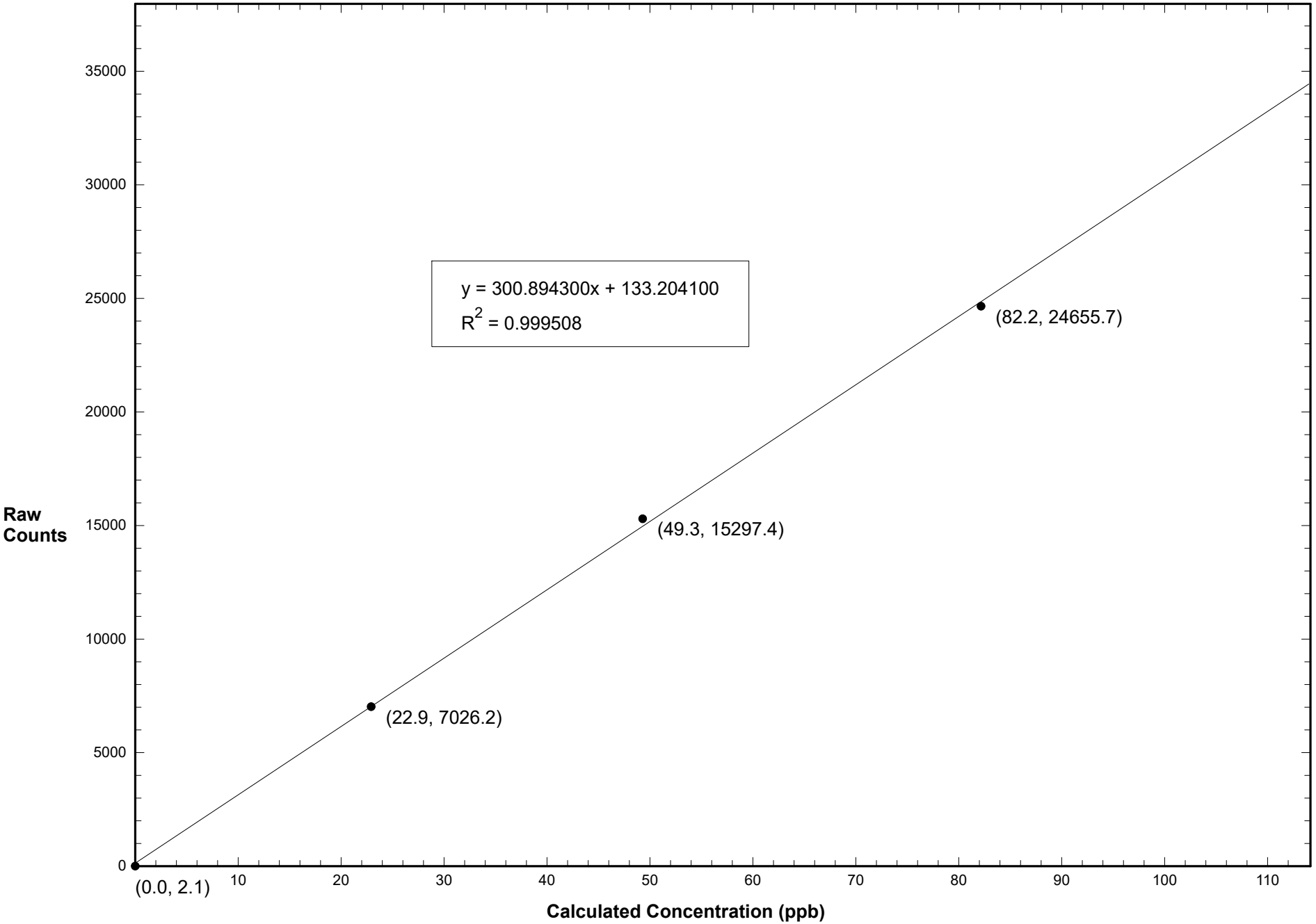
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	300.339400	-70.579380	0.999939
Current	300.894300	133.204100	0.999508
C_i vs C_c			
Current	1.000000	-0.000010	0.999507

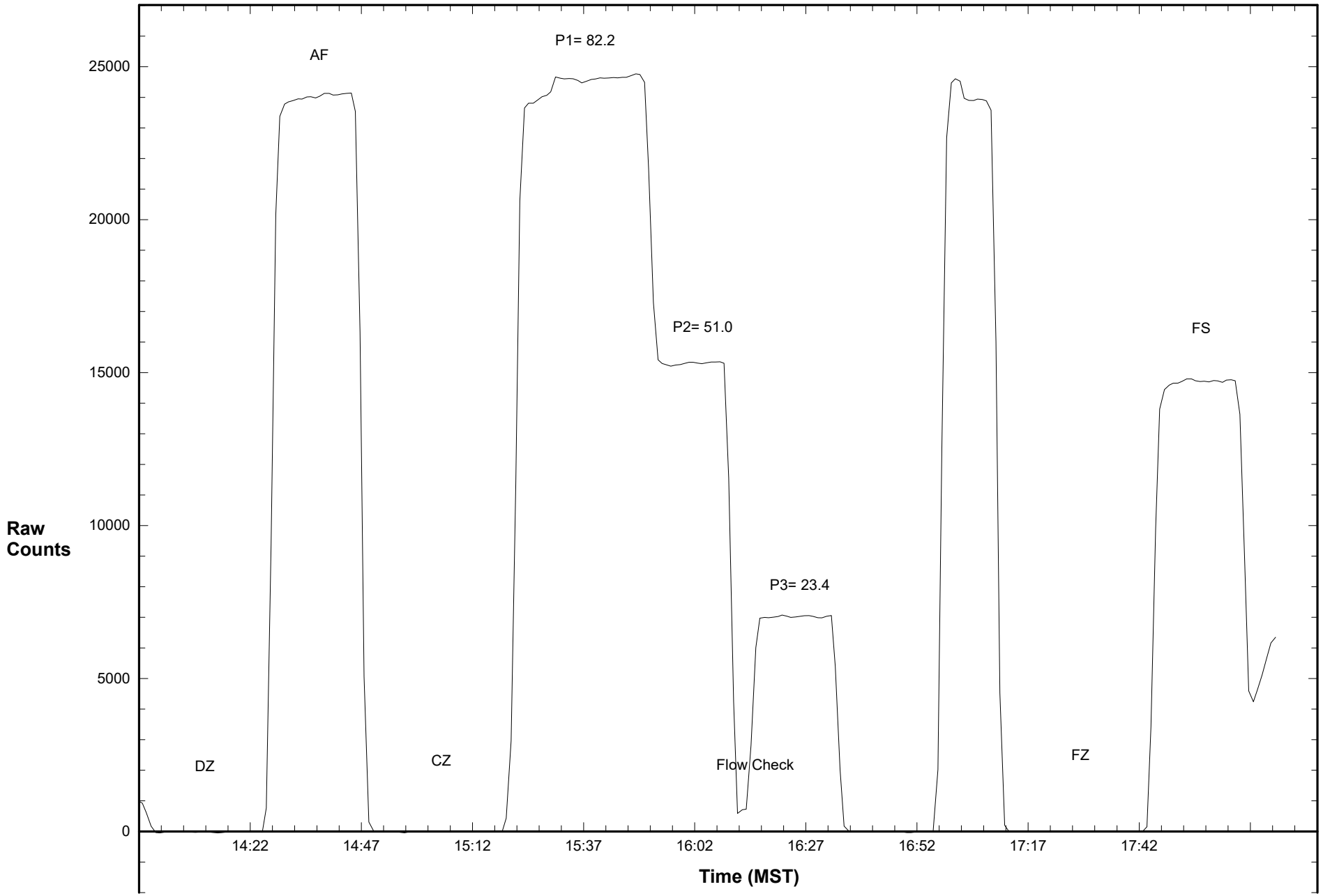
Average Correction Factor:	0.996
Previous Correction Factor:	0.997
Current Correction Factor:	1.008
Percent Change of Correction Factor:	1.1

Comments:

Station 913 SO2 July 30, 2016: Linear Regression



Station 913 SO2 July 30, 2016: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM MONTHLY REPORT

END OF REPORT JULY 2016