Hinton Pulp
A division of West Fraser Mills Limited
Hinton, Alberta

AIR QUALITY MONITORING
July 2016
Monthly Report

Prepared by:

West Central Airshed Society
Drayton Valley, Alberta

August 15, 2016

Hinton Pulp
A Division of West Fraser Mills Ltd.
Mr. Phil Whitney
760 Switzer Drive
Hinton, Alberta
T7V 1V7

Dear Mr. Whitney:

Monthly Ambient Air Quality Monitoring Report for July 2016
For Hinton Pulp – A Division of West Fraser Mills Ltd.

Enclosed are the reports for the continuous ambient air quality monitoring station of the West Central Airshed Society network.

Network Station is Identified as:	AMS 906	Hinton

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

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

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

There were no readings occurring in July 2016 in excess of the 1-hour or 24-hour average guidelines as indicated in Air Monitoring Directive Section III.A.3. (a).

2. Operational times less than 90 percent:

There were no operational times less than 90 percent in the month of July.

3. Monitoring Notes:

AMS 906 (Hinton)

All analyzers and meteorological equipment returned uptimes of 97.9% ($PM_{2.5}$ 97.7%) for the month of July 2016, due to power disruptions at the station.

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

Sincerely,

Robert Scotten
Executive Director

Patrick Andersen
Environmental Specialist

Forest Products Industry
Monthly Report Summary

Hinton
Plant Name/Location

Hinton Pulp - A Division of West Fraser Mills Ltd.
Company

License Number	Report Date	
	Year	Month
	2016	July

TOTAL EMISSIONS FOR MONTH (IN TONNES)

POLLUTANT	INCINERATOR STACK	FLARE	MISCELLANEOUS
SO_2			

"HOURS" OF EXCEEDED STACK LICENSED LIMITS (CEM)

POLLUTANT	STACK TYPE	1-HR AVG CONCENTRATION	1-HR AVG MASS EMISSION	24-HR AVG MASS EMISSION	STACK TOP TEMP.	% TIME STACK MONITOR OPERATIONAL
SO_2						

STATIC AMBIENT MONITORING

PARAMETER	NO. OF STATIONS	PEAK READING	AVG. OF NETWORK	NO. OF STATIONS OVER GUIDELINES
T.S.				
H_2S				

CONTINUOUS AMBIENT MONITORING

			1-HR AVERAGE		24-HR AVERAGE	
PARAMETER	STATION NUMBER	% TIME OPERATIONAL	MAXIMUM CONCENTRATION (ppm)	NO. READINGS > REGULATIONS	MAXIMUM CONCENTRATION (ppm)	NO. READINGS > REGULATIONS
Wind	906	97.9	n/a	n/a	n/a	n/a
TRS	906	97.9	0.007	0	0.002	0
$PM_{2.5}$	906	97.7	26.6 $\mu g/m^3$	0	10.11 $\mu g/m^3$	0

SIGNATURE OF COMPANY REPRESENTATIVE

FOR ALBERTA ENVIRONMENT USE ONLY

WEST CENTRAL AIRSHED SOCIETY

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM MONTHLY REPORT CONTINUOUS AIR QUALITY

AMS 906
HINTON
JULY 2016

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

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

Summary Report **West Central Airshed Society**

Continuous air quality/meteorlogical monitoring measurements

Hinton Pulp / Hinton **Station 906**		**July 2016**											24 Hour Average Max **(ppm)**
												Exceedences	
Parameter	**Calibration Hours**	**Number of Data**	**Percent Uptime**	**Mean**	**Min**	**Max**	**P10**	**Q1**	**Percentile Median**	**Q3**	**P90**	**1-hour**	**24-hour**	
TRS (ppb)	38	690	97.9	0.9	0.0	7.0	0.2	0.3	0.5	1.1	1.9	0	0	0.002
SO_2 (ppb)	38	690	97.9	0.4	0.0	5.7	0.0	0.0	0.1	0.4	1.1	0	-	0.001
O_3 (ppb)	35	693	97.9	18.4	0.9	43.2	3.5	8.6	19.7	27.1	31.9	0	0	0.028
NO (ppb)	35	693	97.9	1.1	0.0	13.5	0.1	0.3	0.6	1.2	2.4	-	-	-
NO_2 (ppb)	35	693	97.9	3.0	0.2	13.0	1.0	1.7	2.6	3.8	5.5	0	0	0.004
NO_x (ppb)	35	693	97.9	4.1	0.4	18.2	1.3	2.2	3.5	5.0	7.3	-	-	-
Particulate Matter 2.5 microns ($\mu g/m^3$)	8	719	97.7	6.7	0.0	26.5	2.8	4.1	5.7	8.4	12.3	0	0	10.11 ug/m3
Wind Speed (kph)	0	728	97.9	2.6	0.0	14.4	0.6	1.0	1.9	3.2	5.7	-	-	-
Temperature (^{o}C)	0	728	97.9	15.7	3.3	28.3	10.2	12.2	15.1	19.2	22.5	-	-	-
Relative Humidity (%)	0	728	97.9	64.1	17.0	91.7	29.5	45.6	69.6	85.9	89.8	-	-	-
Std Dev Wind Direction (deg)	0	728	97.9	55.4	12.7	102.9	34.4	42.0	52.9	67.3	82.6	-	-	-
Std Dev Wind Speed (kph)	0	728	97.9	2.3	0.0	7.3	1.0	1.4	2.0	2.8	4.4	-	-	-

WCAS - Hinton
Summary of Hourly Averages

Total Reduced Sulphur (TRS) - ppb
July 2016

Maximum Value: 6.91 ppb on Jul 5 08:00

Maximum Daily Average: 2.33 ppb on Jul 21

Minimum Value: 0 ppb on Jul 3 03:00

Minimum Daily Average: 0.25 ppb on Jul 9

Maximum Diurnal Average: 1.57 ppb at hour 8

Minimum Diurnal Average: 0.55 ppb at hour 14

Monthly Average: 0.881 ppb

Percentiles: P_1 = 0.2 P_{10} = 0.2 Q_1 = 0.3 Median = 0.5 Q_3 = 1.1 P_{90} = 1.9 P_{99} = 5.4

Hours in Service:	744
Hours of Data:	690
Hours of Missing Data:	54
Hours of Calibration:	38
Percent Operational Time:	97.9

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	Z	1	1	4	2	3	1	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0.90	3.57
2-Jul	0	0	2	Z	1	1	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.65	3.04
3-Jul	0	0	0	Z	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	3	0	0	0.73	3.16
4-Jul	0	0	0	Z	0	0	0	1	0	1	1	0	1	0	1	1	1	1	1	2	0	0	0	1	0.62	2.36
5-Jul	0	0	0	Z	0	1	6	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.98	6.91
6-Jul	1	3	1	Z	1	1	1	3	1	0	0	0	1	1	1	0	1	1	1	0	0	0	0	0	0.93	3.45
7-Jul	0	0	0	Z	0	1	1	1	3	3	1	1	1	3	1	0	0	1	2	3	2	1	2	1	1.21	3.15
8-Jul	0	0	0	Z	1	0	0	0	1	1	1	0	0	1	0	0	0	0	1	1	0	0	0	0	0.43	1.10
9-Jul	0	0	0	Z	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.25	0.97
10-Jul	1	0	1	Z	2	1	1	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	2	1	0.67	1.63
11-Jul	1	1	0	Z	1	1	1	0	1	1	1	1	1	1	0	0	1	1	1	0	1	1	1	2	0.78	1.56
12-Jul	2	1	1	Z	1	1	4	3	2	1	1	1	1	1	1	1	0	0	0	0	0	0	2	0	1.07	4.37
13-Jul	0	0	0	Z	0	0	1	2	0	0	0	1	1	0	0	1	1	1	0	1	0	1	1	1	0.57	1.59
14-Jul	1	0	1	Z	2	1	2	1	2	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0.64	1.92
15-Jul	0	0	0	Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	PF	PF	PF	PF	PF	PF	--	0.37
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	0	0	0	0	0	1	1	0	0	0	1	1	0	1	2	--	1.85
17-Jul	1	2	4	Z	1	1	2	2	1	2	PF	0	0	0	1	0	0	0	0	1	1	0	0	0	0.93	3.58
18-Jul	0	0	0	Z	1	2	0	0	1	1	2	1	3	0	1	1	1	0	0	1	0	0	0	1	0.75	2.70
19-Jul	3	3	1	Z	2	0	0	4	2	0	1	0	1	1	1	1	1	0	1	2	2	4	2	1	1.44	3.90
20-Jul	1	1	1	Z	6	2	1	0	0	0	0	0	0	0	0	0	1	0	0	2	6	3	2	4	1.34	5.68
21-Jul	7	5	7	Z	2	3	5	2	3	3	1	0	0	0	1	0	1	0	4	3	3	2	0	0	2.33	6.70
22-Jul	0	0	0	Z	6	2	1	2	3	2	1	1	0	0	0	0	0	0	0	1	1	0	0	1	1.02	6.08
23-Jul	1	0	0	Z	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	0	0.55	1.20
24-Jul	0	0	0	Z	1	1	1	2	1	1	1	1	1	0	0	0	1	1	0	0	0	0	0	1	0.59	1.81
25-Jul	1	0	1	Z	2	1	1	2	2	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0.82	2.07
26-Jul	1	1	1	Z	1	1	2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	1	1	0	0.93	2.48
27-Jul	1	0	0	Z	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0.61	1.43
28-Jul	1	1	1	Z	2	1	1	C	C	C	C	C	C	C	C	2	1	1	1	1	2	4	1	1	--	3.63
29-Jul	2	3	4	Z	1	1	1	2	1	2	2	1	1	1	1	2	1	1	1	0	0	0	1	1	1.24	4.22
30-Jul	1	1	1	Z	2	1	2	0	0	0	1	1	1	0	0	0	1	0	0	0	1	1	0	1	0.73	2.30
31-Jul	2	0	1	Z	2	2	1	2	4	2	2	1	1	1	0	0	1	1	1	1	1	2	2	1	1.35	3.55
	0.93	0.92	1.05	--	1.43	1.05	1.38	1.57	1.44	0.97	0.76	0.64	0.56	0.55	0.55	0.57	0.57	0.55	0.69	0.84	0.85	0.97	0.80	0.69	Diurnal Average	
	6.70	4.66	6.65	--	6.08	3.42	5.93	6.91	3.55	3.07	2.48	1.93	2.70	2.64	1.13	1.77	1.36	1.20	4.09	3.25	5.52	3.90	2.45	3.53	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Averages

Sulphur Dioxide (SO_2) - ppb
July 2016

Maximum Value: 5.70 ppb on Jul 21 01:00

Maximum Daily Average: 1.41 ppb on Jul 21

Minimum Value: 0.0 ppb on Jul 1 06:00

Minimum Daily Average: 0.03 ppb on Jul 13

Maximum Diurnal Average: 0.81 ppb at hour 12

Minimum Diurnal Average: 0.08 ppb at hour 6

Monthly Average: 0.386 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.0 Q_1 = 0.0 Median = 0.1 Q_3 = 0.4 P_{90} = 1.1 P_{99} = 4.1

Hours in Service:	744
Hours of Data:	690
Hours of Missing Data:	54
Hours of Calibration:	38
Percent Operational Time:	97.9

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	0.1	0.0	0.1	Z	0.0	0.0	0.1	0.0	0.1	0.1	0.1	1.9	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.17	1.93
2-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.1	0.1	0.2	0.1	0.1	2.3	0.6	0.1	0.4	1.1	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.28	2.27
3-Jul	0.1	0.1	0.1	Z	0.0	0.0	0.3	0.2	0.1	0.2	0.1	0.5	0.3	1.4	1.9	1.0	1.0	0.7	0.2	0.1	0.7	0.2	0.2	0.2	0.41	1.93
4-Jul	0.1	0.1	0.1	Z	0.1	0.0	0.0	0.3	0.8	1.5	1.5	0.9	2.7	0.6	1.0	1.9	1.1	1.0	1.6	0.3	0.1	0.1	0.1	0.1	0.70	2.71
5-Jul	0.0	0.1	0.0	Z	0.0	0.0	0.1	0.1	1.6	0.4	0.6	1.3	1.5	0.8	0.2	0.4	0.2	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.33	1.58
6-Jul	0.1	0.1	0.0	Z	0.0	0.0	0.1	0.1	0.4	1.0	1.5	0.8	0.7	0.8	0.2	0.7	1.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.35	1.52
7-Jul	0.0	0.0	0.0	Z	0.0	0.1	0.1	0.0	0.1	0.6	1.7	3.2	1.7	0.4	0.5	0.1	0.7	0.0	0.3	0.5	0.9	1.1	0.9	0.8	0.60	3.24
8-Jul	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.8	0.9	0.2	0.6	1.3	0.8	0.4	0.4	0.2	0.9	0.0	0.1	0.1	0.1	0.1	0.30	1.27
9-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.1	1.5	0.3	0.3	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.16	1.53
10-Jul	0.1	0.1	0.1	Z	0.0	0.1	0.0	0.1	0.1	0.2	0.5	0.2	0.1	0.1	0.0	0.1	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.1	0.11	0.46
11-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.6	1.2	0.7	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.18	1.17
12-Jul	0.1	0.1	0.1	Z	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.9	1.0	4.1	3.2	3.8	0.9	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.65	4.11
13-Jul	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.23
14-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.6	0.5	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.08	0.56
15-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	0.0	0.0	0.0	0.0	0.0	PF	PF	PF	PF	PF	PF	--	0.10
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	1.6	0.6	0.1	0.1	0.4	0.4	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	--	1.64
17-Jul	0.1	0.2	0.1	Z	0.0	0.1	0.1	0.2	0.1	0.2	PF	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.15	0.25
18-Jul	0.2	0.2	0.2	Z	0.2	0.2	0.1	0.1	0.2	0.6	0.8	1.6	1.5	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	0.32	1.57
19-Jul	0.1	0.1	0.1	Z	0.1	0.1	0.0	0.1	0.2	0.1	0.5	1.0	1.8	1.4	0.7	3.9	0.8	1.6	5.2	0.7	0.4	0.6	0.2	0.1	0.86	5.17
20-Jul	0.1	0.0	0.0	Z	0.0	0.1	0.2	0.5	0.5	1.0	0.3	0.4	0.4	0.8	1.7	2.0	1.7	2.2	1.8	1.2	1.2	1.3	3.1	5.2	1.11	5.19
21-Jul	5.7	4.1	4.4	Z	1.5	0.8	1.8	1.4	2.8	4.2	1.5	0.4	0.2	0.4	0.7	0.5	0.8	0.1	0.4	0.1	0.1	0.1	0.1	0.1	1.41	5.70
22-Jul	0.1	0.0	0.0	Z	0.0	0.0	0.1	0.0	0.5	1.4	1.4	0.8	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.23	1.44
23-Jul	0.0	0.0	0.0	Z	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	1.3	0.2	1.4	0.4	0.3	1.8	0.8	1.3	0.6	0.6	0.2	0.1	0.42	1.83
24-Jul	0.1	0.1	0.0	Z	0.1	0.2	0.5	1.0	0.4	0.2	1.4	0.5	0.8	0.1	0.1	0.0	0.4	0.1	0.0	0.0	0.0	0.1	0.1	0.4	0.29	1.38
25-Jul	0.2	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.5	1.2	0.5	0.4	0.7	0.6	1.0	0.6	0.9	0.7	0.4	0.2	0.2	0.2	0.2	0.2	0.38	1.17
26-Jul	0.2	0.3	0.2	Z	0.2	0.1	0.2	0.2	0.2	0.3	3.1	2.6	0.6	0.8	1.2	0.2	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.48	3.13
27-Jul	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.1	0.5	1.7	0.3	0.2	0.1	0.1	0.1	0.0	0.2	0.1	0.0	0.4	0.1	0.1	0.1	0.19	1.66
28-Jul	0.1	0.1	0.1	Z	0.0	0.0	0.0	C	C	C	C	C	C	C	C	4.5	0.5	0.7	0.3	0.3	0.2	0.1	0.1	0.1	--	4.54
29-Jul	0.1	0.0	0.0	Z	0.0	0.0	0.0	0.1	0.3	0.9	1.7	2.3	0.6	0.7	2.1	1.5	0.9	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.54	2.26
30-Jul	0.1	0.1	0.1	Z	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.15	0.27
31-Jul	0.2	0.2	0.3	Z	0.1	0.2	0.1	0.1	0.2	0.2	0.1	0.3	0.2	0.1	0.2	0.2	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.15	0.33
	0.28	0.21	0.21	--	0.08	0.08	0.14	0.17	0.39	0.63	0.78	0.81	0.69	0.58	0.63	0.79	0.44	0.39	0.45	0.21	0.21	0.19	0.22	0.29	Diurnal Average	
	5.70	4.15	4.37	--	1.47	0.78	1.83	1.42	2.83	4.22	3.13	3.24	2.71	4.11	3.25	4.54	1.74	2.16	5.17	1.35	1.16	1.30	3.08	5.19	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Averages

Ozone (O_3) - ppb
July 2016

Maximum Value: 43.22 ppb on Jul 22 17:00

Maximum Daily Average: 27.80 ppb on Jul 21

Minimum Value: 0.9 ppb on Jul 18 05:00

Minimum Daily Average: 11.91 ppb on Jul 14

Maximum Diurnal Average: 28.69 ppb at hour 14

Minimum Diurnal Average: 5.80 ppb at hour 6

Monthly Average: 18.433 ppb

Percentiles: P_1 = 1.3 P_{10} = 3.5 Q_1 = 8.6 Median = 19.7 Q_3 = 27.1 P_{90} = 31.9 P_{99} = 38.8

Hours in Service:	744
Hours of Data:	693
Hours of Missing Data:	51
Hours of Calibration:	35
Percent Operational Time:	97.9

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	4.1	2.3	1.5	Z	1.3	2.2	5.2	8.5	12.9	16.3	15.9	24.3	30.1	25.4	23.9	17.0	16.9	17.5	14.5	13.8	14.7	7.9	2.5	3.7	12.28	30.09
2-Jul	3.1	1.7	2.1	Z	1.5	2.0	4.2	6.5	15.1	21.5	23.6	29.1	32.4	28.5	33.4	32.3	28.7	30.8	27.3	25.6	26.5	20.7	16.4	13.6	18.55	33.44
3-Jul	8.8	6.0	4.1	Z	2.0	3.3	15.1	19.0	18.4	15.8	19.7	24.0	22.2	25.5	28.1	30.6	28.8	29.6	27.7	24.5	22.1	18.7	15.4	9.2	18.20	30.58
4-Jul	5.9	5.3	2.6	Z	1.2	2.3	4.2	10.3	22.7	23.3	23.5	24.8	25.0	25.3	23.8	22.8	22.2	22.5	22.5	19.7	17.2	13.2	9.3	2.2	15.28	25.25
5-Jul	3.4	2.6	1.6	Z	1.5	3.2	3.5	7.1	16.4	21.6	22.5	23.0	24.7	24.1	24.2	21.0	20.8	21.4	18.5	16.9	8.0	5.3	3.4	5.1	13.03	24.72
6-Jul	4.5	4.2	3.7	Z	5.7	5.6	6.3	10.7	14.6	18.7	20.1	20.3	21.0	20.1	21.0	20.7	19.7	19.1	18.8	16.3	12.2	12.1	30.8	30.3	15.51	30.81
7-Jul	24.6	16.1	8.8	Z	2.3	2.9	2.4	6.9	10.4	15.8	23.8	28.1	28.8	27.4	28.6	29.2	27.8	26.3	24.3	24.1	22.1	22.9	23.4	25.9	19.69	29.20
8-Jul	25.2	25.8	24.7	Z	7.2	4.1	4.5	8.9	20.8	25.9	29.2	31.0	29.6	28.9	29.5	30.8	29.9	29.6	30.4	31.9	28.7	29.2	26.8	22.2	24.11	31.88
9-Jul	20.5	18.8	15.9	Z	7.0	5.5	8.3	16.0	21.1	25.7	28.9	32.8	34.1	35.0	37.4	29.8	27.2	31.4	35.6	31.5	26.8	30.3	19.7	20.1	24.33	37.42
10-Jul	15.7	11.9	12.1	Z	4.6	5.3	5.4	6.8	8.3	13.0	21.5	26.0	25.6	29.4	31.7	32.4	32.3	31.9	31.7	34.1	26.3	22.0	17.3	24.0	20.41	34.08
11-Jul	17.6	15.1	15.5	Z	10.9	11.3	11.2	14.4	13.7	19.9	22.1	26.0	26.4	29.5	24.3	23.5	21.2	17.8	12.9	8.1	8.7	8.6	8.4	5.5	16.19	29.53
12-Jul	4.7	3.3	2.4	Z	1.7	2.2	3.6	7.9	5.0	12.1	19.7	24.6	30.1	31.2	34.1	37.9	33.2	30.5	22.3	15.5	19.6	16.1	17.4	23.2	17.32	37.91
13-Jul	15.1	16.4	13.9	Z	15.4	14.5	14.3	11.9	17.4	20.5	21.1	21.6	25.2	24.5	19.2	18.6	17.5	18.1	20.9	14.6	10.9	11.4	6.0	5.8	16.30	25.20
14-Jul	4.7	4.0	3.1	Z	3.1	2.6	2.6	4.1	7.2	16.3	18.3	22.4	23.0	23.5	18.9	19.3	20.2	20.2	15.8	15.2	9.8	8.7	6.5	4.2	11.91	23.47
15-Jul	4.1	4.1	4.4	Z	5.1	6.3	6.6	8.8	13.2	17.8	23.0	28.0	26.9	26.6	28.9	25.2	26.7	22.8	PF	PF	PF	PF	PF	PF	--	28.95
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	25.0	29.4	30.7	35.0	34.0	23.5	24.9	29.7	29.3	28.7	28.3	20.6	14.6	14.2	12.2	--	35.01
17-Jul	16.9	16.0	10.8	Z	4.6	3.9	4.5	5.3	7.3	6.1	PF	22.3	20.3	24.1	22.2	25.6	21.1	12.5	12.8	12.8	8.8	3.1	1.1	1.4	11.98	25.58
18-Jul	1.4	2.2	1.5	Z	0.9	2.4	3.0	3.5	6.9	13.5	11.9	18.4	27.7	27.8	23.3	28.9	24.1	33.2	32.1	22.3	12.5	7.2	4.0	2.2	13.53	33.19
19-Jul	1.6	1.5	1.1	Z	1.5	1.2	2.9	8.9	14.6	21.8	27.6	34.1	34.7	34.8	28.7	36.9	34.0	34.3	34.6	31.7	30.0	22.8	16.0	11.0	20.26	36.91
20-Jul	7.7	7.5	4.2	Z	20.3	7.5	9.5	28.0	32.1	32.4	32.7	31.8	32.5	32.4	31.8	29.8	27.2	26.1	25.3	24.5	22.6	22.3	23.8	21.8	23.21	32.70
21-Jul	23.2	23.3	24.5	Z	25.4	25.6	26.5	27.5	28.9	28.7	31.8	31.3	31.1	32.1	32.5	33.1	32.7	32.6	30.0	27.4	28.4	26.8	22.7	13.3	27.80	33.05
22-Jul	6.1	4.2	3.3	Z	2.5	1.9	4.4	12.7	19.0	26.4	33.2	37.6	39.5	40.5	38.6	41.3	43.2	40.3	36.9	32.7	32.3	31.0	25.5	12.4	24.58	43.22
23-Jul	7.3	9.7	10.2	Z	7.0	6.9	8.6	14.6	21.4	26.2	32.6	39.9	39.0	38.5	36.9	33.9	33.0	34.7	35.6	30.6	30.8	29.2	24.1	13.0	24.51	39.94
24-Jul	6.5	5.0	9.2	Z	23.1	23.7	21.9	21.4	23.4	23.8	25.8	27.1	27.0	24.9	23.1	23.6	24.6	24.3	20.6	20.4	18.3	22.9	27.3	20.1	21.22	27.30
25-Jul	14.6	13.1	11.0	Z	7.7	5.3	7.7	9.7	17.2	24.8	30.1	31.6	30.7	30.4	30.7	29.2	29.5	28.9	27.7	27.2	23.3	16.0	13.0	16.3	20.67	31.57
26-Jul	15.2	11.4	9.3	Z	3.5	3.0	5.9	12.4	18.7	25.9	31.7	34.9	28.9	31.9	32.3	27.6	27.7	27.0	28.6	21.5	15.7	13.1	8.5	6.0	19.16	34.86
27-Jul	8.1	16.0	11.3	Z	9.7	7.5	10.7	14.7	20.1	27.4	33.4	35.8	34.1	33.5	32.3	29.2	26.9	23.8	26.1	27.0	21.7	10.5	9.6	4.7	20.61	35.81
28-Jul	2.2	3.2	2.3	Z	1.9	2.6	4.4	C	C	C	C	C	24.1	23.4	25.2	33.5	35.1	30.6	25.8	22.3	13.1	8.5	3.8	2.9	14.71	35.06
29-Jul	2.0	2.0	1.4	Z	1.2	1.8	3.3	8.1	12.0	16.4	24.0	31.9	30.4	31.1	31.9	31.8	35.8	33.4	31.6	30.3	19.7	13.9	6.3	4.5	17.60	35.75
30-Jul	4.0	3.2	3.2	Z	1.3	1.3	4.2	10.7	16.4	18.3	19.9	16.3	21.2	24.6	28.2	22.1	21.8	21.7	20.9	26.7	16.9	15.7	15.1	12.0	15.03	28.22
31-Jul	11.7	16.3	7.4	Z	4.3	6.2	5.7	6.8	8.8	6.8	9.8	13.2	18.1	20.7	19.5	18.4	18.1	20.0	15.7	15.2	15.6	7.3	9.1	12.8	12.49	20.67
	9.68	9.07	7.58	--	6.19	5.80	7.36	11.44	16.00	20.26	24.37	27.43	28.37	28.69	28.00	27.77	27.02	26.52	25.21	23.09	19.46	16.39	14.23	12.05	Diurnal Average	
	25.22	25.75	24.72	--	25.43	25.56	26.52	28.04	32.08	32.41	33.40	39.94	39.50	40.49	38.58	41.32	43.22	40.31	36.85	34.08	32.29	30.96	30.81	30.34	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Averages

Nitrogen Oxide (NO) - ppb
July 2016

Maximum Value: 13.49 ppb on Jul 7 06:00

Maximum Daily Average: 2.36 ppb on Jul 7

Minimum Value: 0.0 ppb on Jul 7 01:00

Minimum Daily Average: 0.52 ppb on Jul 21

Maximum Diurnal Average: 3.05 ppb at hour 6

Minimum Diurnal Average: 0.32 ppb at hour 20

Monthly Average: 1.099 ppb

Percentiles: P_1 = 0.0 P_{10} = 0.1 Q_1 = 0.3 Median = 0.6 Q_3 = 1.2 P_{90} = 2.4 P_{99} = 8.0

Hours in Service:	744
Hours of Data:	693
Hours of Missing Data:	51
Hours of Calibration:	35
Percent Operational Time:	97.9

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	0.5	0.8	1.0	Z	2.9	2.3	2.8	1.2	1.4	0.9	1.1	3.9	1.1	0.4	0.9	0.5	0.3	0.4	0.2	0.3	0.5	1.0	1.0	0.6	1.12	3.91
2-Jul	4.1	2.1	0.6	Z	0.7	3.3	1.2	2.5	3.6	1.3	1.0	1.1	0.6	0.4	0.7	0.6	0.4	0.5	0.3	0.3	0.4	0.2	1.6	0.3	1.21	4.09
3-Jul	0.7	0.2	0.3	Z	0.6	1.1	0.7	0.3	0.8	0.5	0.5	1.7	0.9	2.1	1.2	0.6	0.9	0.5	0.2	0.1	0.4	0.2	0.2	0.2	0.65	2.07
4-Jul	0.5	0.3	1.0	Z	3.4	2.5	3.4	5.7	1.1	1.4	1.8	1.3	1.7	1.0	1.0	1.4	1.1	0.8	0.8	0.3	0.3	1.0	0.9	6.8	1.72	6.83
5-Jul	1.0	0.4	1.9	Z	2.6	1.2	11.9	8.1	2.1	1.5	1.2	1.6	1.7	0.6	0.2	0.7	0.3	0.5	0.2	0.3	1.9	1.1	0.9	1.2	1.87	11.89
6-Jul	1.8	1.2	0.8	Z	0.7	1.0	1.5	1.9	2.9	2.1	1.8	3.0	0.7	0.6	0.8	1.2	0.8	0.1	0.1	0.1	0.5	0.7	0.1	0.1	1.06	3.01
7-Jul	0.0	0.0	0.1	Z	5.6	13.5	9.9	4.1	5.0	5.6	1.9	2.2	1.5	1.1	0.9	0.1	0.5	0.1	0.3	0.4	0.5	0.5	0.2	0.2	2.36	13.49
8-Jul	0.5	0.1	0.1	Z	0.3	1.9	4.2	3.6	1.2	2.1	1.5	0.7	0.8	0.8	1.0	0.9	1.9	1.5	0.5	0.2	0.3	0.4	0.3	0.3	1.09	4.18
9-Jul	0.2	0.1	0.1	Z	2.5	1.4	1.2	1.0	1.3	0.4	0.6	0.5	0.5	0.5	0.8	0.4	0.2	0.2	0.2	0.2	0.1	0.3	0.1	0.1	0.56	2.54
10-Jul	0.2	0.1	0.1	Z	0.7	0.5	0.6	0.5	1.4	2.8	3.8	0.3	0.1	0.1	0.1	0.1	0.1	0.5	0.3	0.3	0.1	0.1	0.1	0.1	0.57	3.84
11-Jul	0.1	0.1	0.2	Z	0.1	0.1	1.3	1.5	0.7	0.8	1.6	1.3	0.9	0.7	0.6	1.5	0.6	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.58	1.61
12-Jul	0.1	0.1	0.2	Z	2.6	10.7	5.4	2.0	1.8	3.0	0.9	1.4	0.8	2.0	0.8	0.7	0.4	0.6	1.2	0.7	0.3	0.1	0.1	0.1	1.57	10.69
13-Jul	0.1	0.0	0.1	Z	0.1	0.6	1.1	1.4	0.8	0.9	1.4	1.6	1.5	1.2	0.6	0.7	0.4	0.5	0.5	0.3	0.6	0.2	0.1	0.3	0.65	1.57
14-Jul	0.1	0.4	0.5	Z	0.2	1.3	3.6	1.0	1.4	2.9	1.3	0.3	1.0	0.6	0.3	0.8	0.6	0.1	0.1	0.1	0.1	0.5	0.1	0.4	0.78	3.64
15-Jul	0.5	0.2	0.1	Z	0.6	0.9	0.7	0.9	2.7	0.2	0.3	0.5	0.6	0.1	0.1	0.7	0.4	1.0	PF	PF	PF	PF	PF	PF	--	2.68
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	1.6	0.6	0.2	0.2	0.8	1.1	0.9	0.6	0.1	0.1	0.3	0.2	0.1	0.1	0.1	--	1.61
17-Jul	0.0	0.0	0.1	Z	0.2	1.1	0.4	0.7	0.6	1.2	PF	0.9	0.3	0.8	0.5	0.5	0.4	0.1	0.1	0.2	0.4	0.5	2.0	0.8	0.54	2.01
18-Jul	0.2	0.2	0.3	Z	5.3	8.3	3.1	5.6	2.0	2.8	2.3	2.6	1.6	0.8	0.6	0.5	0.2	0.1	1.1	0.4	0.2	0.4	0.8	1.1	1.75	8.26
19-Jul	0.9	2.9	5.8	Z	12.9	3.1	1.0	1.5	1.2	1.2	1.3	0.9	0.9	0.6	0.8	0.8	0.4	0.5	0.7	0.3	0.2	0.2	0.2	1.5	1.73	12.86
20-Jul	0.3	1.0	1.3	Z	0.1	3.0	3.5	0.8	0.4	0.6	0.6	0.9	1.0	1.1	1.4	1.3	1.2	1.3	1.1	0.5	0.3	0.3	0.2	0.2	0.98	3.47
21-Jul	0.3	0.2	0.2	Z	0.1	0.7	0.5	0.5	1.0	1.9	1.0	0.8	0.8	0.5	0.7	0.8	0.8	0.4	0.2	0.1	0.1	0.1	0.1	0.2	0.52	1.95
22-Jul	0.7	2.4	0.7	Z	0.4	5.7	6.8	2.2	2.6	1.9	1.4	0.6	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.5	0.5	2.4	1.32	6.83
23-Jul	2.0	1.0	0.1	Z	1.0	1.2	1.6	1.0	0.3	0.4	0.2	0.2	0.7	0.5	0.7	0.3	0.5	1.1	0.5	0.8	0.3	0.2	0.2	0.9	0.67	1.97
24-Jul	4.2	0.9	3.2	Z	0.5	4.7	5.3	0.6	0.3	1.4	4.0	0.7	0.8	0.2	0.2	0.2	0.5	0.3	0.2	0.2	0.6	0.9	1.5	4.2	1.54	5.26
25-Jul	1.4	0.4	0.0	Z	0.2	2.6	0.8	5.9	3.9	2.4	0.4	0.6	2.1	0.6	0.7	0.8	0.7	0.8	0.4	0.3	0.2	0.5	0.5	0.5	1.17	5.90
26-Jul	0.2	0.7	0.7	Z	2.4	7.0	7.3	1.2	0.7	0.9	2.6	1.2	0.5	0.7	0.3	0.1	0.1	0.5	0.4	0.7	0.5	0.3	0.5	0.5	1.30	7.29
27-Jul	0.9	0.1	0.1	Z	0.0	0.8	1.2	3.1	1.7	1.0	1.3	0.2	0.4	0.5	0.2	0.2	0.7	1.3	1.0	0.2	0.3	0.3	0.2	0.5	0.70	3.13
28-Jul	1.2	1.2	1.8	Z	1.8	2.2	2.0	C	C	C	C	C	1.0	0.6	1.8	2.1	0.4	0.5	0.5	0.4	0.9	0.4	1.9	1.3	1.21	2.23
29-Jul	3.1	5.7	4.8	Z	1.7	4.4	3.1	1.9	1.5	1.4	1.6	1.0	0.7	0.9	1.7	2.1	1.0	1.0	0.7	0.6	0.4	0.3	0.9	0.2	1.77	5.66
30-Jul	0.4	0.4	0.2	Z	0.8	3.9	2.5	0.6	0.7	0.9	0.4	0.5	0.5	0.2	0.8	0.5	0.7	0.9	0.2	0.3	0.1	0.3	0.2	0.6	0.71	3.87
31-Jul	0.6	1.1	0.2	Z	0.9	0.5	1.0	2.2	1.7	1.9	2.3	2.1	1.1	1.5	0.9	0.2	0.9	0.8	0.3	0.2	0.3	0.1	0.2	0.1	0.92	2.35
	0.90	0.81	0.89	--	1.73	3.05	2.99	2.19	1.61	1.59	1.41	1.15	0.87	0.74	0.73	0.71	0.59	0.56	0.42	0.32	0.38	0.39	0.52	0.87	Diurnal Average	
	4.22	5.66	5.79	--	12.86	13.49	11.89	8.06	5.05	5.63	4.04	3.91	2.15	2.07	1.76	2.13	1.93	1.48	1.19	0.78	1.89	1.06	2.01	6.83	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Averages

Nitrogen Dioxide (NO_2) - ppb
July 2016

Maximum Value: 12.97 ppb on Jul 23 01:00

Maximum Daily Average: 4.19 ppb on Jul 28

Minimum Value: 0.2 ppb on Jul 3 20:00

Minimum Daily Average: 2.20 ppb on Jul 3

Maximum Diurnal Average: 4.72 ppb at hour 1

Minimum Diurnal Average: 1.54 ppb at hour 19

Monthly Average: 2.970 ppb

Percentiles: $P_1 = 0.4$ $P_{10} = 1.0$ $Q_1 = 1.7$ Median = 2.6 $Q_3 = 3.8$ $P_{90} = 5.5$ $P_{99} = 9.0$

Hours in Service:	744
Hours of Data:	693
Hours of Missing Data:	51
Hours of Calibration:	35
Percent Operational Time:	97.9

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	3.6	3.2	2.6	Z	3.8	2.1	3.5	2.8	3.3	2.6	2.7	6.6	2.8	3.2	2.8	1.6	1.5	1.7	0.9	1.3	2.8	2.6	2.4	2.5	2.74	6.60
2-Jul	4.7	4.6	4.6	Z	2.7	2.7	1.6	2.0	5.0	2.6	1.8	2.5	1.3	1.0	1.4	2.0	1.2	1.1	0.8	1.7	1.3	1.8	3.1	2.1	2.33	4.98
3-Jul	2.2	1.6	1.1	Z	3.0	2.7	4.7	3.2	3.2	3.1	2.5	2.9	1.6	2.8	2.1	1.3	2.4	1.3	0.5	0.2	2.4	0.7	1.5	3.6	2.20	4.67
4-Jul	3.2	2.1	3.4	Z	2.6	1.4	2.2	4.6	1.8	2.0	2.1	1.2	2.0	1.0	1.5	2.5	1.7	1.4	1.8	1.0	1.1	3.4	3.3	8.6	2.43	8.56
5-Jul	4.9	3.9	3.9	Z	2.9	1.4	6.1	6.8	3.5	1.2	0.9	1.7	2.3	1.0	0.5	1.7	0.9	0.7	0.5	1.4	7.3	6.3	6.1	4.7	3.07	7.32
6-Jul	6.4	5.6	5.6	Z	5.4	4.4	3.0	2.9	3.5	2.5	2.3	2.5	1.9	1.7	1.4	1.5	2.1	0.9	0.8	0.9	3.4	4.2	1.5	1.6	2.88	6.45
7-Jul	1.4	1.9	2.9	Z	5.1	4.8	4.5	3.9	6.2	6.8	3.6	4.5	2.8	2.9	1.7	0.6	1.3	0.5	1.7	3.1	6.5	5.5	4.6	4.0	3.50	6.75
8-Jul	3.0	2.0	1.8	Z	3.2	4.0	4.8	5.6	3.6	4.5	3.3	1.4	1.7	1.7	1.7	1.7	2.3	1.6	2.3	0.6	1.4	1.5	2.5	3.1	2.58	5.62
9-Jul	4.8	3.1	3.5	Z	5.3	3.4	2.3	2.1	3.6	1.8	1.8	1.8	2.2	2.5	2.8	1.5	1.0	0.9	1.2	1.8	1.6	1.9	2.6	1.1	2.38	5.28
10-Jul	5.1	3.6	3.0	Z	4.7	4.1	3.0	2.5	3.4	5.3	5.8	1.0	0.4	0.4	0.4	0.5	0.5	2.2	1.2	1.6	1.2	1.0	6.0	2.7	2.59	5.98
11-Jul	2.7	4.2	4.0	Z	3.8	2.1	4.6	5.0	2.3	2.1	3.4	2.6	2.0	1.4	3.2	3.4	2.5	2.3	0.8	0.5	1.5	2.8	3.8	3.2	2.80	5.03
12-Jul	3.7	2.0	2.4	Z	2.8	6.2	6.4	3.7	4.5	4.2	2.0	2.7	2.2	3.7	2.2	2.7	1.7	1.6	2.8	3.2	2.7	1.5	4.9	2.8	3.17	6.39
13-Jul	3.5	2.1	3.5	Z	3.0	5.9	4.3	6.4	4.8	3.8	3.5	4.3	2.6	3.8	2.6	2.5	1.8	2.3	2.6	2.3	4.8	2.8	2.6	4.0	3.48	6.41
14-Jul	3.0	4.1	4.0	Z	2.4	2.4	3.7	1.9	2.2	3.8	3.0	1.0	1.7	1.6	1.1	2.6	2.8	1.1	0.8	0.6	2.2	5.4	4.1	2.9	2.55	5.44
15-Jul	3.6	1.8	1.3	Z	2.9	2.6	3.5	2.9	3.8	1.8	1.5	1.5	1.5	0.6	0.6	2.0	1.4	2.6	PF	PF	PF	PF	PF	PF	--	3.83
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	2.5	1.2	0.8	0.7	2.5	3.2	2.9	1.6	0.7	1.0	2.8	2.6	1.6	2.8	3.9	--	3.86
17-Jul	3.6	5.5	4.3	Z	3.4	4.2	2.3	3.5	2.8	2.1	PF	2.1	0.9	2.6	3.0	1.8	1.4	0.7	0.6	1.9	5.3	2.6	2.3	1.2	2.65	5.47
18-Jul	1.1	0.6	0.9	Z	2.3	6.2	3.8	5.0	2.2	2.7	2.5	3.6	3.5	1.8	1.9	1.5	0.6	0.4	2.0	2.3	1.4	3.5	1.9	3.6	2.41	6.22
19-Jul	3.2	3.3	2.8	Z	2.8	0.9	1.0	2.2	2.2	2.2	2.9	1.8	1.8	1.8	2.6	3.1	1.4	2.0	2.9	1.6	2.1	4.4	2.0	5.8	2.46	5.76
20-Jul	2.4	1.9	2.0	Z	2.9	5.4	6.3	4.0	2.5	3.3	2.3	3.4	3.1	3.6	4.2	4.5	4.2	4.1	4.3	3.7	4.7	5.5	5.6	7.5	3.97	7.47
21-Jul	6.3	6.1	4.7	Z	5.7	5.8	4.9	3.7	3.8	4.9	2.5	2.1	1.7	1.5	1.7	1.6	2.1	1.8	1.7	0.7	0.7	1.0	1.3	5.6	3.13	6.35
22-Jul	9.0	7.3	4.8	Z	3.4	3.7	4.1	2.9	3.8	4.5	3.0	1.9	0.7	0.6	0.6	0.6	0.6	0.5	0.8	1.5	0.6	3.2	4.0	10.7	3.16	10.68
23-Jul	13.0	6.1	3.8	Z	2.9	6.5	3.6	2.1	1.1	1.3	1.0	0.7	1.8	1.2	2.1	1.5	2.0	4.0	2.5	5.8	2.8	5.6	3.8	9.5	3.69	12.97
24-Jul	10.1	7.6	9.5	Z	5.2	6.3	7.1	6.8	2.6	3.0	3.4	1.8	2.0	0.5	0.4	0.6	1.3	1.2	0.6	0.4	2.3	1.7	1.9	7.1	3.63	10.12
25-Jul	7.2	3.9	4.3	Z	5.8	7.7	3.3	7.5	5.9	4.9	1.5	1.7	1.9	1.4	1.7	1.9	2.2	2.6	2.2	3.3	2.2	4.5	3.8	3.9	3.71	7.67
26-Jul	4.4	6.2	4.8	Z	7.5	9.0	6.3	3.1	2.2	3.0	5.8	4.4	1.5	1.7	1.5	0.6	0.5	1.1	1.4	4.7	4.7	7.3	6.3	5.4	4.06	8.98
27-Jul	5.6	3.4	4.2	Z	4.8	7.5	4.6	7.3	6.1	3.4	3.3	1.3	1.3	1.0	0.8	1.1	2.0	4.1	2.9	1.6	4.7	6.7	3.6	2.9	3.66	7.47
28-Jul	5.4	5.0	4.0	Z	3.9	3.4	2.5	C	C	C	C	C	3.6	2.8	5.1	5.0	2.0	2.3	1.7	3.4	7.0	4.8	7.5	6.0	4.19	7.54
29-Jul	6.0	5.5	4.3	Z	2.9	2.6	2.4	2.5	2.3	2.8	3.5	3.5	1.6	1.7	2.3	3.6	2.1	2.1	0.9	1.8	3.2	4.1	5.1	3.5	3.05	5.96
30-Jul	3.0	2.9	2.4	Z	3.9	3.4	3.5	1.5	2.1	1.8	1.9	2.0	1.5	1.1	2.0	2.9	3.7	2.8	1.1	1.7	3.6	4.6	1.6	3.4	2.54	4.59
31-Jul	5.3	3.9	3.2	Z	2.9	3.5	3.0	2.6	2.4	2.6	2.5	2.5	2.0	2.8	1.8	0.4	2.1	2.4	1.2	1.6	3.0	1.7	3.7	3.0	2.61	5.31
	4.72	3.84	3.58	--	3.81	4.21	3.90	3.83	3.34	3.11	2.67	2.39	1.90	1.87	1.96	1.99	1.78	1.78	1.54	1.97	3.03	3.48	3.55	4.32	Diurnal Average	
	12.97	7.63	9.50	--	7.50	8.98	7.10	7.48	6.18	6.75	5.80	6.60	3.62	3.76	5.11	4.96	4.19	4.13	4.26	5.80	7.32	7.33	7.54	10.68	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Averages

NOx (NO_x) - ppb
July 2016

Maximum Value: 18.15 ppb on Jul 7 06:00

Maximum Daily Average: 5.84 ppb on Jul 7

Minimum Value: 0.4 ppb on Jul 3 20:00

Minimum Daily Average: 2.84 ppb on Jul 3

Maximum Diurnal Average: 7.23 ppb at hour 6

Minimum Diurnal Average: 1.95 ppb at hour 19

Monthly Average: 4.055 ppb

Percentiles: P_1 = 0.5 P_{10} = 1.3 Q_1 = 2.2 Median = 3.5 Q_3 = 5.0 P_{90} = 7.3 P_{99} = 14.7

Hours in Service:	744
Hours of Data:	693
Hours of Missing Data:	51
Hours of Calibration:	35
Percent Operational Time:	97.9

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	4.1	4.0	3.5	Z	6.7	4.4	6.3	4.0	4.7	3.4	3.7	10.5	3.9	3.6	3.7	2.1	1.8	2.1	1.1	1.6	3.2	3.6	3.4	3.1	3.85	10.49
2-Jul	8.8	6.6	5.2	Z	3.5	6.0	2.8	4.5	8.6	3.9	2.8	3.6	1.9	1.4	2.1	2.6	1.5	1.5	1.1	2.0	1.6	2.0	4.7	2.4	3.52	8.79
3-Jul	2.9	1.9	1.3	Z	3.6	3.8	5.4	3.5	4.0	3.6	3.0	4.5	2.5	4.9	3.3	1.8	3.3	1.9	0.7	0.4	2.8	0.9	1.6	3.7	2.84	5.36
4-Jul	3.7	2.4	4.4	Z	6.0	3.8	5.6	10.2	2.9	3.4	3.8	2.5	3.7	2.1	2.5	4.0	2.8	2.2	2.6	1.3	1.4	4.4	4.2	15.3	4.13	15.32
5-Jul	5.8	4.3	5.8	Z	5.6	2.5	17.9	14.8	5.6	2.7	2.1	3.3	4.0	1.6	0.7	2.4	1.2	1.2	0.7	1.7	9.2	7.3	6.9	5.9	4.93	17.94
6-Jul	8.2	6.8	6.4	Z	6.1	5.4	4.5	4.7	6.4	4.6	4.0	5.5	2.5	2.3	2.2	2.7	2.9	1.0	0.9	1.0	3.9	4.9	1.6	1.7	3.93	8.21
7-Jul	1.4	1.9	3.0	Z	10.7	18.2	14.3	7.9	11.2	12.3	5.5	6.7	4.3	4.0	2.6	0.7	1.8	0.7	2.0	3.6	6.9	5.9	4.8	4.2	5.84	18.15
8-Jul	3.5	2.1	1.9	Z	3.5	5.9	8.9	9.2	4.8	6.5	4.8	2.0	2.5	2.6	2.7	2.6	4.2	3.1	2.9	0.7	1.7	1.9	2.8	3.4	3.66	9.15
9-Jul	5.0	3.2	3.6	Z	7.8	4.8	3.5	3.1	4.9	2.2	2.3	2.4	2.8	3.0	3.6	1.9	1.1	1.1	1.4	1.9	1.7	2.3	2.7	1.2	2.93	7.80
10-Jul	5.3	3.7	3.1	Z	5.5	4.6	3.5	3.0	4.8	8.1	9.6	1.3	0.5	0.5	0.5	0.5	0.6	2.6	1.5	1.9	1.3	1.0	6.1	2.9	3.15	9.61
11-Jul	2.8	4.2	4.2	Z	4.0	2.2	5.9	6.5	3.0	2.9	5.0	3.9	2.9	2.0	3.7	4.9	3.0	2.6	1.0	0.6	1.8	2.9	3.9	3.3	3.37	6.53
12-Jul	3.8	2.1	2.5	Z	5.4	16.8	11.8	5.7	6.2	7.3	3.0	4.1	3.0	5.7	3.0	3.4	2.1	2.2	4.0	3.9	2.9	1.6	5.0	2.9	4.72	16.81
13-Jul	3.6	2.2	3.5	Z	3.2	6.5	5.5	7.8	5.6	4.6	4.9	5.8	4.1	5.0	3.2	3.1	2.2	2.8	3.1	2.6	5.4	3.0	2.7	4.3	4.12	7.81
14-Jul	3.1	4.5	4.5	Z	2.6	3.7	7.3	2.9	3.6	6.7	4.3	1.3	2.7	2.2	1.3	3.4	3.5	1.3	0.9	0.7	2.3	5.9	4.2	3.3	3.31	7.31
15-Jul	4.1	1.9	1.3	Z	3.5	3.5	4.2	3.8	6.5	2.0	1.8	2.0	2.1	0.7	0.6	2.7	1.8	3.6	PF	PF	PF	PF	PF	PF	--	6.48
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	4.1	1.8	0.9	0.8	3.2	4.2	3.8	2.2	0.8	1.1	3.1	2.8	1.6	2.8	3.9	--	4.24
17-Jul	3.6	5.5	4.3	Z	3.5	5.3	2.7	4.3	3.4	3.3	PF	3.0	1.2	3.4	3.5	2.3	1.8	0.8	0.7	2.1	5.7	3.1	4.3	2.0	3.18	5.69
18-Jul	1.3	0.8	1.3	Z	7.6	14.4	6.9	10.5	4.2	5.4	4.7	6.2	5.1	2.6	2.4	2.0	0.8	0.5	3.1	2.6	1.6	3.9	2.7	4.7	4.14	14.42
19-Jul	4.1	6.2	8.6	Z	15.5	3.9	2.0	3.7	3.3	3.4	4.2	2.7	2.6	2.4	3.3	3.8	1.8	2.4	3.6	1.9	2.4	4.6	2.2	7.2	4.17	15.49
20-Jul	2.7	2.9	3.3	Z	3.0	8.4	9.7	4.8	2.9	3.9	2.9	4.3	4.1	4.7	5.6	5.8	5.4	5.4	5.4	4.3	5.0	5.8	5.8	7.6	4.94	9.72
21-Jul	6.6	6.3	4.9	Z	5.7	6.4	5.4	4.2	4.8	6.9	3.4	2.9	2.4	2.0	2.4	2.4	2.9	2.1	1.9	0.8	0.7	1.1	1.4	5.8	3.64	6.88
22-Jul	9.7	9.6	5.5	Z	3.8	9.4	10.9	5.1	6.3	6.4	4.4	2.5	0.9	0.7	0.8	0.8	0.7	0.6	0.9	1.7	0.7	3.7	4.5	13.1	4.46	13.08
23-Jul	14.9	7.0	3.9	Z	3.9	7.7	5.2	3.0	1.4	1.7	1.2	0.9	2.5	1.6	2.8	1.7	2.5	5.1	3.0	6.6	3.1	5.8	4.0	10.3	4.34	14.92
24-Jul	14.3	8.5	12.7	Z	5.7	11.0	12.3	7.3	2.8	4.4	7.4	2.5	2.7	0.7	0.5	0.7	1.8	1.5	0.8	0.5	2.9	2.6	3.4	11.2	5.14	14.29
25-Jul	8.6	4.4	4.3	Z	5.9	10.3	4.1	13.3	9.7	7.3	1.8	2.3	4.0	2.0	2.4	2.7	2.9	3.5	2.5	3.7	2.3	5.0	4.2	4.4	4.85	13.31
26-Jul	4.7	6.9	5.6	Z	9.8	15.9	13.5	4.2	2.9	3.9	8.4	5.6	1.9	2.5	1.9	0.7	0.5	1.6	1.8	5.4	5.2	7.6	6.8	5.9	5.35	15.86
27-Jul	6.5	3.5	4.3	Z	4.9	8.3	5.8	10.4	7.8	4.4	4.6	1.4	1.7	1.5	1.1	1.3	2.7	5.3	3.8	1.8	5.0	7.0	3.8	3.4	4.35	10.37
28-Jul	6.6	6.2	5.8	Z	5.7	5.6	4.5	C	C	C	C	C	4.7	3.3	6.8	7.1	2.4	2.7	2.1	3.8	7.8	5.2	9.4	7.3	5.38	9.41
29-Jul	9.1	11.2	9.1	Z	4.7	7.0	5.5	4.4	3.8	4.3	5.2	4.5	2.3	2.6	4.0	5.7	3.1	3.1	1.5	2.4	3.5	4.4	6.0	3.7	4.82	11.20
30-Jul	3.4	3.3	2.5	Z	4.7	7.3	6.0	2.0	2.8	2.7	2.2	2.5	2.0	1.3	2.8	3.4	4.4	3.7	1.3	2.0	3.7	4.9	1.8	3.9	3.25	7.29
31-Jul	5.9	4.9	3.4	Z	3.8	4.0	4.0	4.9	4.2	4.5	4.8	4.6	3.0	4.3	2.7	0.6	3.0	3.2	1.5	1.8	3.4	1.9	3.8	3.1	3.53	5.92
	5.61	4.64	4.45	--	5.52	7.23	6.86	6.00	4.94	4.69	4.06	3.53	2.76	2.59	2.68	2.69	2.35	2.33	1.95	2.28	3.40	3.86	4.05	5.18	Diurnal Average	
	14.92	11.20	12.66	--	15.49	18.15	17.94	14.80	11.18	12.33	9.61	10.49	5.06	5.70	6.81	7.05	5.40	5.45	5.36	6.57	9.19	7.57	9.41	15.32	Diurnal Maximum	

Z - zerospan C - Calibration PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Averages

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

Maximum Value: 26.55 $\mu g/m^3$ on Jul 5 09:00

Maximum Daily Average: 10.11 $\mu g/m^3$ on Jul 25

Minimum Value: 0.0 $\mu g/m^3$ on Jul 4 09:00

Minimum Daily Average: 3.94 $\mu g/m^3$ on Jul 20

Maximum Diurnal Average: 8.86 $\mu g/m^3$ at hour 21

Minimum Diurnal Average: 5.02 $\mu g/m^3$ at hour 13

Monthly Average: 6.701 $\mu g/m^3$

Percentiles: P_1 = 0.0 P_{10} = 2.8 Q_1 = 4.1 Median = 5.7 Q_3 = 8.4 P_{90} = 12.3 P_{99} = 20.6

Hours in Service:	744
Hours of Data:	719
Hours of Missing Data:	25
Hours of Calibration:	8
Percent Operational Time:	97.7

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	3.6	4.8	4.3	3.9	2.8	3.5	8.4	8.3	5.6	6.2	6.1	15.6	13.6	13.9	8.4	6.3	5.6	5.9	4.3	6.8	5.6	7.9	8.3	8.1	6.98	15.58
2-Jul	3.0	2.9	4.4	2.6	3.2	4.6	9.1	7.7	15.2	1.7	4.0	4.1	3.0	5.0	6.4	4.8	2.3	5.8	6.5	4.9	4.1	5.7	4.9	4.8	5.03	15.20
3-Jul	5.2	3.1	4.1	7.0	5.6	8.4	4.4	4.6	2.3	5.2	3.3	4.6	8.5	13.8	8.0	4.7	8.9	8.1	4.9	6.1	6.9	4.1	3.4	5.3	5.86	13.76
4-Jul	4.0	2.4	3.5	2.5	5.7	4.9	3.8	11.6	0.0	3.5	3.1	2.2	4.7	3.4	6.9	6.5	6.5	4.2	3.8	6.0	11.4	13.0	14.4	8.7	5.70	14.45
5-Jul	9.7	5.7	2.3	5.0	3.8	8.4	13.1	17.2	26.5	1.3	0.0	3.2	3.8	5.0	3.8	8.6	10.9	5.7	10.5	17.2	25.3	10.6	18.9	9.0	9.40	26.55
6-Jul	10.6	10.2	8.8	6.3	6.2	6.3	8.5	6.8	4.0	2.1	4.1	4.7	6.1	3.6	3.5	2.9	7.1	6.1	6.7	14.8	11.1	12.7	13.0	12.1	7.43	14.80
7-Jul	10.8	10.8	11.6	12.6	7.3	17.7	14.7	13.2	16.0	20.9	3.6	8.9	4.8	4.4	4.9	3.4	3.5	4.3	5.1	6.6	9.5	9.0	8.5	5.2	9.06	20.90
8-Jul	3.6	3.8	5.1	8.3	12.3	13.9	15.0	21.3	8.7	6.7	4.5	0.3	4.6	3.4	3.9	4.4	4.2	5.0	5.6	4.8	17.2	12.6	10.6	10.5	7.93	21.26
9-Jul	10.7	7.8	6.7	8.4	7.9	12.7	9.9	8.4	12.2	8.1	5.6	4.4	6.3	3.8	5.7	8.3	3.5	0.9	3.4	6.1	9.0	4.7	5.7	4.3	6.85	12.66
10-Jul	6.0	4.0	3.7	4.1	5.2	4.6	4.7	4.3	4.8	5.7	7.6	2.6	0.0	1.6	0.0	0.4	3.3	2.5	5.1	6.2	5.9	4.1	9.2	5.5	4.22	9.24
11-Jul	5.9	5.0	3.9	2.5	4.2	4.2	5.3	4.4	5.7	4.0	4.5	4.7	2.5	2.3	8.9	8.3	6.4	4.3	5.2	4.2	2.7	4.1	2.3	3.9	4.55	8.90
12-Jul	4.1	2.4	0.2	4.5	4.6	8.8	13.6	5.4	3.3	6.6	7.6	5.9	12.3	5.6	4.7	8.7	8.6	3.4	11.3	8.1	2.8	5.7	4.3	2.9	6.06	13.61
13-Jul	4.9	4.9	5.3	5.5	4.4	4.2	4.5	7.8	2.4	3.9	5.7	7.2	6.6	0.4	6.3	8.0	4.8	4.6	2.5	6.0	6.0	4.5	5.3	3.9	4.98	7.97
14-Jul	2.7	3.3	3.8	2.5	4.4	6.4	7.2	4.5	4.4	4.5	8.2	4.4	5.7	8.3	4.7	5.1	4.6	3.3	4.9	3.4	4.7	4.5	3.9	2.9	4.67	8.32
15-Jul	3.3	4.2	3.8	3.4	2.9	4.2	4.9	7.1	2.1	4.9	2.8	5.8	3.3	2.4	6.7	6.5	4.1	5.9	PF	PF	PF	PF	PF	PF	4.37	7.14
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	6.3	9.4	3.8	2.3	9.1	14.3	8.2	8.0	1.5	5.3	4.2	12.2	6.1	6.9	8.9	--	14.32
17-Jul	6.0	8.2	7.5	4.0	7.1	8.0	7.0	5.9	8.4	8.8	PF	PF	8.2	8.0	8.5	6.0	7.3	5.5	5.3	9.8	13.4	7.7	7.9	4.9	7.43	13.39
18-Jul	3.9	4.1	4.6	5.8	5.8	10.1	8.9	9.9	8.1	12.8	13.0	17.3	11.6	3.5	7.2	3.8	5.5	0.0	5.0	12.4	9.6	2.6	1.6	1.1	7.01	17.31
19-Jul	4.0	4.7	3.7	4.2	5.1	4.5	17.4	1.9	2.5	2.3	7.3	2.8	2.9	6.9	14.7	0.3	11.8	6.8	7.8	5.0	6.6	7.5	7.4	5.2	5.97	17.39
20-Jul	4.7	5.2	6.9	4.9	2.7	7.4	4.0	1.2	0.0	3.2	2.5	3.1	4.3	4.2	6.7	8.9	3.1	1.5	2.2	3.4	3.9	2.9	2.9	4.6	3.94	8.87
21-Jul	4.8	4.2	4.1	2.7	5.0	7.0	7.0	7.3	5.7	7.5	8.6	4.5	4.4	3.9	4.7	4.8	5.8	4.6	9.4	8.2	4.0	6.3	10.6	11.2	6.09	11.18
22-Jul	7.2	8.9	10.3	10.2	5.7	9.5	12.3	8.7	13.1	11.5	3.2	5.3	2.3	3.5	6.4	1.9	2.5	9.9	10.9	7.9	10.7	7.3	11.3	11.2	7.99	13.11
23-Jul	11.4	15.3	11.4	9.2	12.3	9.3	8.5	7.1	2.2	3.9	2.2	2.7	0.9	4.0	6.1	8.8	11.7	5.1	4.8	7.1	5.9	6.1	7.9	23.7	7.82	23.69
24-Jul	23.8	19.1	13.2	8.0	4.3	4.2	5.7	8.3	7.9	4.3	3.8	2.3	5.3	14.6	8.6	6.6	0.5	5.3	12.4	3.3	6.4	0.0	1.4	4.4	7.23	23.75
25-Jul	8.4	6.9	9.1	10.8	5.1	12.6	6.2	23.6	19.3	19.5	3.3	6.3	1.7	2.2	4.1	5.9	2.8	4.6	16.1	15.7	16.0	17.5	15.0	10.1	10.11	23.56
26-Jul	8.9	5.9	9.0	8.4	7.6	10.9	12.6	8.7	7.3	10.6	14.9	7.7	0.0	1.9	7.2	8.6	5.5	14.6	6.8	20.7	16.5	12.4	18.9	15.2	10.03	20.74
27-Jul	9.6	7.4	11.2	10.3	9.4	12.7	10.4	14.6	12.4	4.8	5.9	11.1	8.9	4.4	10.9	12.7	16.7	10.6	3.3	3.9	7.5	12.9	9.4	13.7	9.78	16.74
28-Jul	7.1	9.5	7.0	4.0	5.1	6.1	13.9	C	C	C	C	C	C	C	C	6.2	3.5	5.7	4.3	9.9	14.8	12.2	8.0	6.7	--	14.83
29-Jul	8.3	8.2	5.9	4.7	4.3	5.0	11.0	9.0	8.4	8.3	10.3	10.1	0.2	2.5	4.1	10.6	3.7	4.4	9.3	10.7	6.0	6.1	7.2	7.6	6.91	10.96
30-Jul	6.1	5.3	4.8	4.2	4.8	5.1	7.9	5.1	4.4	6.0	7.1	4.6	7.0	5.9	3.9	5.1	6.4	3.9	5.2	0.5	5.9	5.7	1.7	3.4	5.00	7.91
31-Jul	5.1	1.9	2.7	3.6	3.8	4.4	4.7	6.5	5.7	4.7	5.6	6.6	4.8	4.5	4.8	3.3	3.8	3.9	5.3	3.5	3.9	5.0	4.5	3.9	4.45	6.64
	6.92	6.34	6.09	5.80	5.62	7.65	8.81	8.64	7.54	6.67	5.79	5.76	5.02	5.20	6.49	6.08	5.90	5.09	6.44	7.58	8.86	7.39	7.84	7.43	Diurnal Average	
	23.75	19.08	13.19	12.60	12.34	17.67	17.39	23.56	26.55	20.90	14.92	17.31	13.60	14.59	14.71	12.68	16.74	14.56	16.09	20.74	25.29	17.52	18.95	23.69	Diurnal Maximum	

C - Calibration PF - Power Failure

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

Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: July 28, 2016

Parameter: $NO/NO_2/NO_x$

Instrument: Teco 42i

Serial Number: CM13040041

Previous Calibration Date: June 9,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 26.88" Hg

Calibration Method: Standard Gas Dilution/ GPT

Cylinder ID: FF 9469

Temperature: 24.0° 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	5.8	6.0	*	0.93	1.004	1.000	200 ppb
Current	5.8	6.0	*	0.915	1.001	1.000	200 ppb

NO	Final Zero: 0.6 ppb	Final Span: 150.1 ppb	As Found Correction Factor: 0.969
NO_2	Final Zero: 0.0 ppb	Final Span: 0.4 ppb	As Found Correction Factor: 1.001
NO_x	Final Zero: 0.5 ppb	Final Span: 150.2 ppb	As Found Correction Factor: 0.974

Results of Linear Regression			Slope	Intercept	R^2
NO	R_c vs C_c	Previous	149.470600	59.818600	0.999950
		Current	149.672400	-57.345250	0.999945
	C_i vs C_c	Current	1.000000	0.000020	0.999946
NO_2	R_c vs C_c	Previous	150.235100	6.510946	0.999950
		Current	150.175600	-18.722080	0.999994
	C_i vs C_c	Current	1.000000	0.000025	0.999994
NO_x	R_c vs C_c	Previous	150.578400	52.297630	0.999950
		Current	149.971000	-60.691690	0.999941
	C_i vs C_c	Current	1.000000	0.000020	0.999941

Comments:

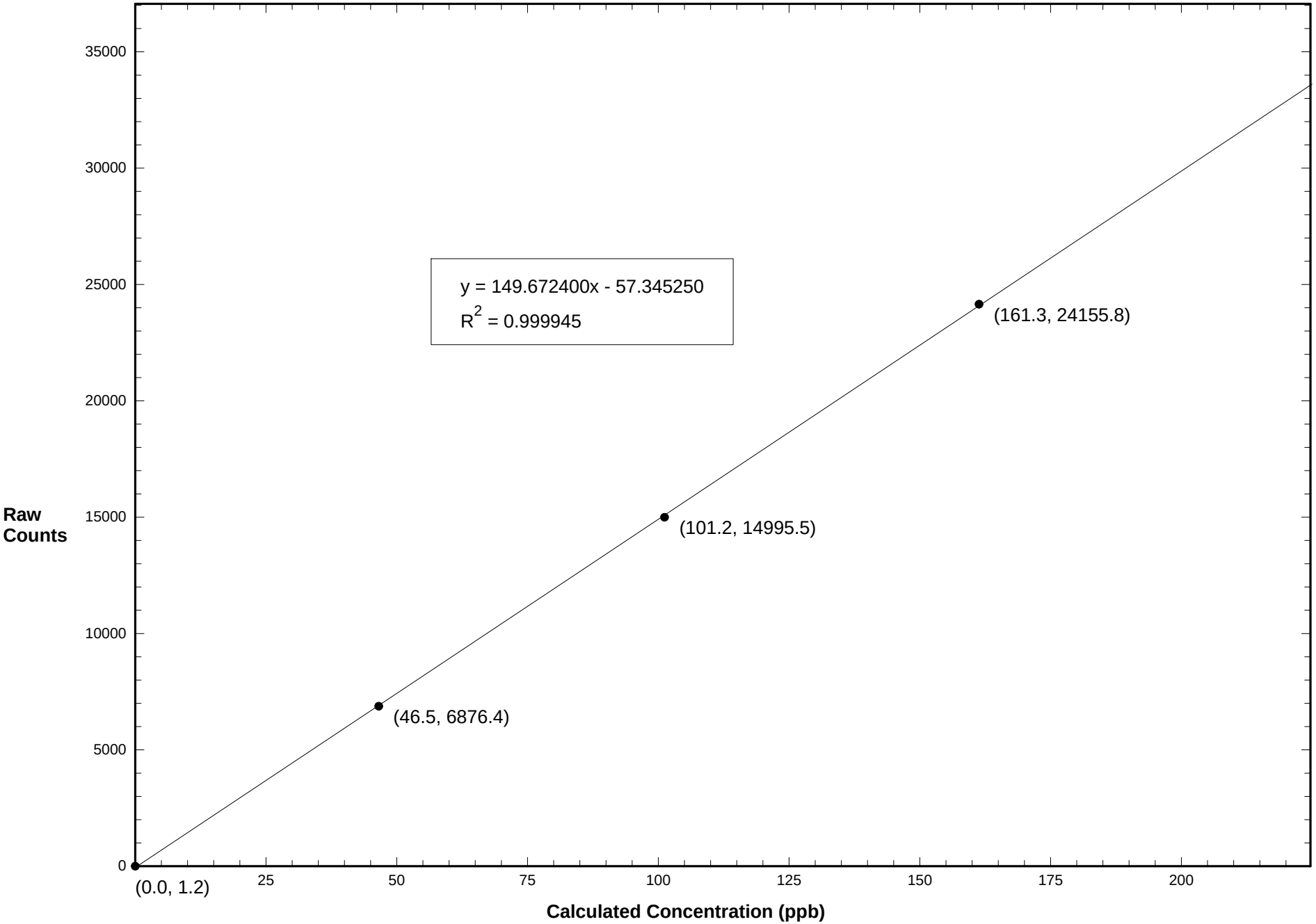
Calibration Data Summary (Page 2)

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
0.06600	5.089	161.3	24155.8	161.8	0.997
0.04100	5.064	101.2	14995.5	100.6	1.006
0.01870	5.043	46.5	6876.4	46.3	1.005
0.00000	5.000	0.0	1.2	0.4	
NO Calibration				Average Correction Factor:	1.003
0.06600	5.089	161.3	24203.2	161.8	0.997
0.04100	5.064	101.2	15018.7	100.5	1.006
0.01870	5.043	46.5	6886.0	46.3	1.005
0.00000	5.000	0.0	-0.1	0.4	
NO_x Calibration				Average Correction Factor:	1.003

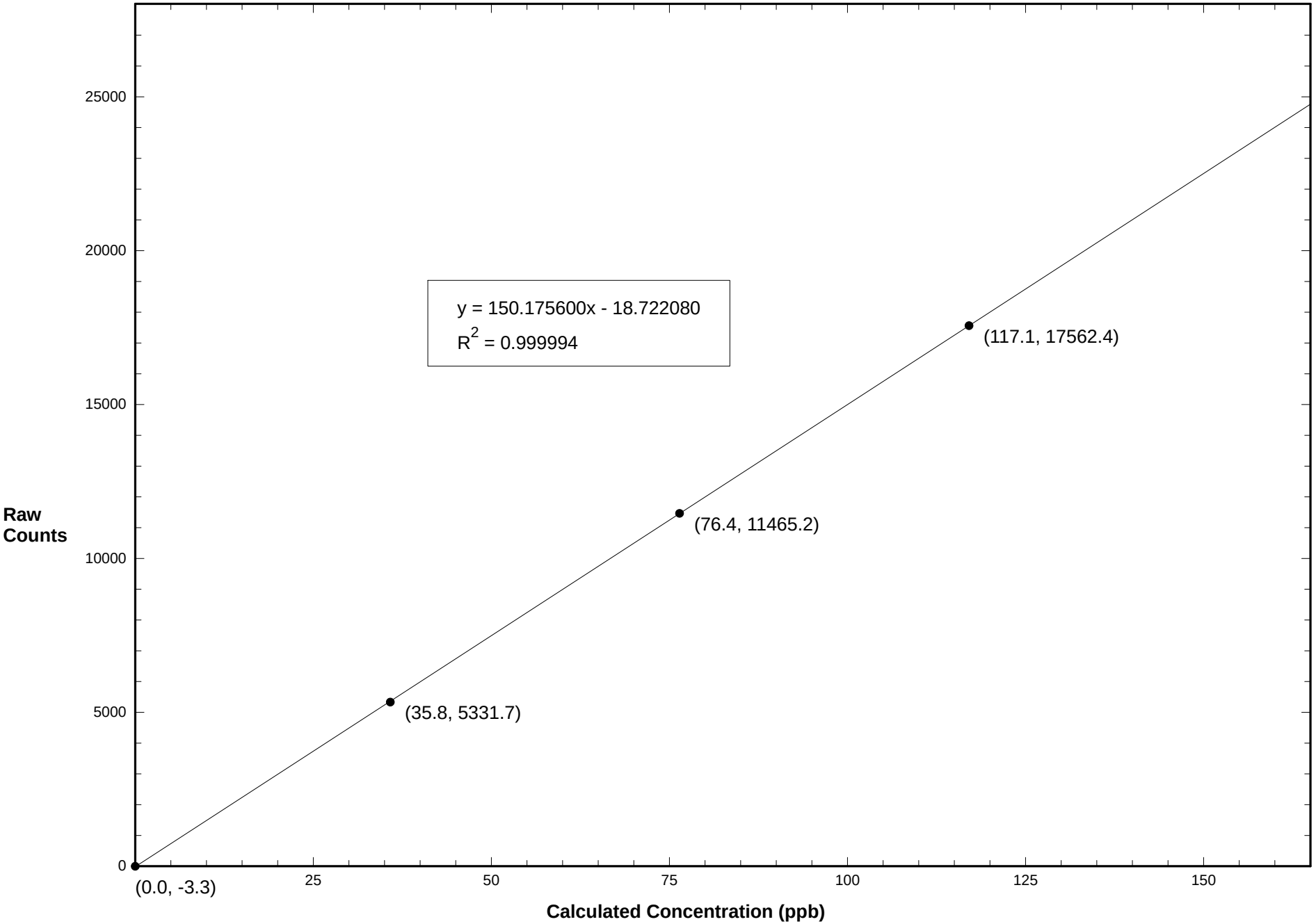
Reference Concentration NO (ppb)	Raw Count Output NO	Calculated Concentration NO (ppb)	Calculated Concentration NO_2, C_c (ppb)	Raw Count Output R_c	Indicated Concentration C_i (ppb)	Correction Factor C_c/C_i	Converter Efficiency C_i/C_c
158.9	6205.3	41.8	117.1	17562.4	117.1	1.000	1.000
158.9	12287.8	82.5	76.4	11465.2	76.5	0.999	1.001
158.9	18366.1	123.1	35.8	5331.7	35.6	1.005	0.995
			0.0	-3.3	0.1		
					Average Correction Factor:	1.001	
NO_2 Gas Phase Titration						Average Converter Efficiency:	0.999

Parameter	Correction Factor (Previous)	Correction Factor: (Current)	Percent Change of Correction Factor
NO	0.997	0.997	0.0
NO_2	1.000	1.000	0.0
NO_x	0.998	0.997	-0.1

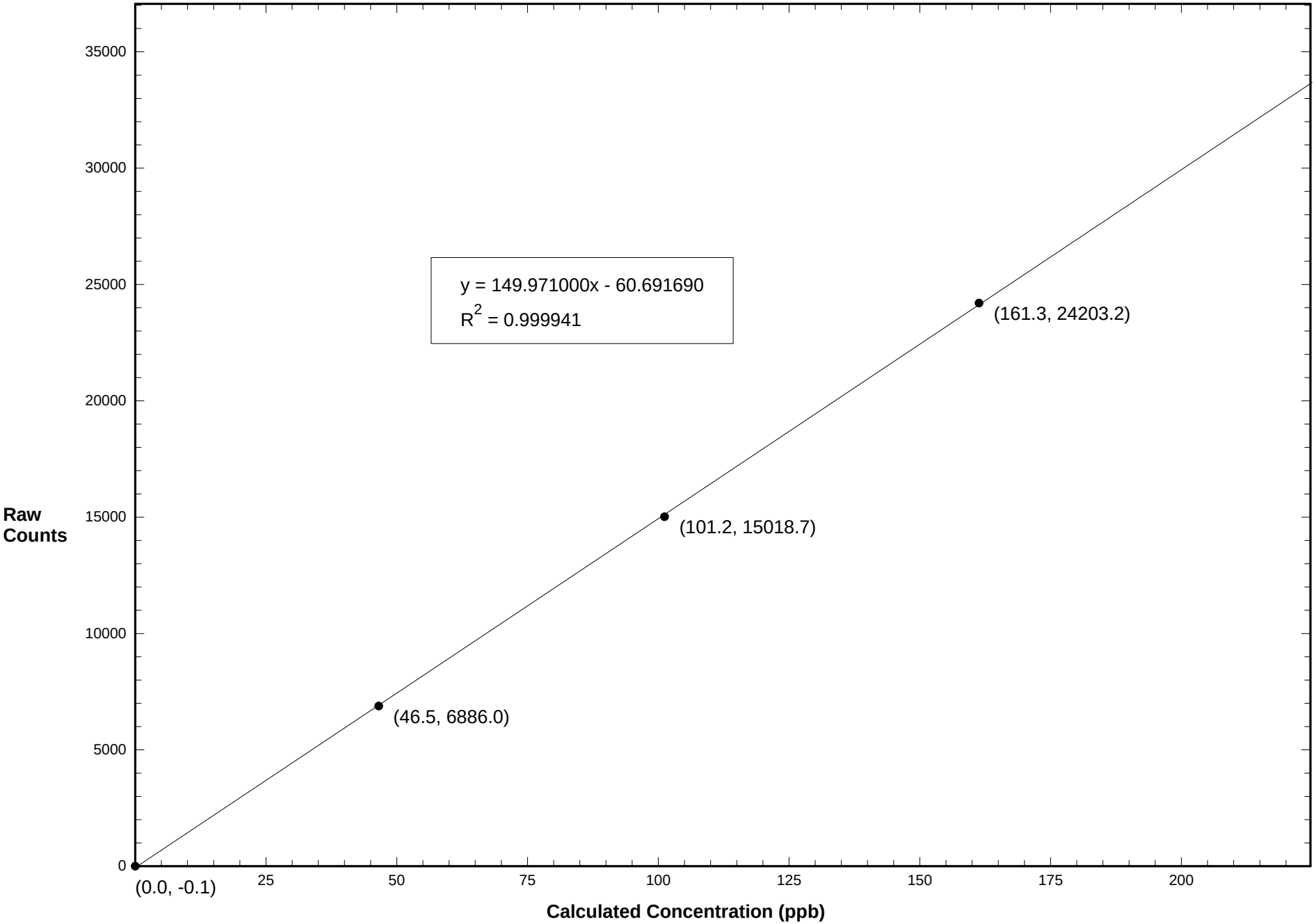
Station 906 NO July 28, 2016: Linear Regression



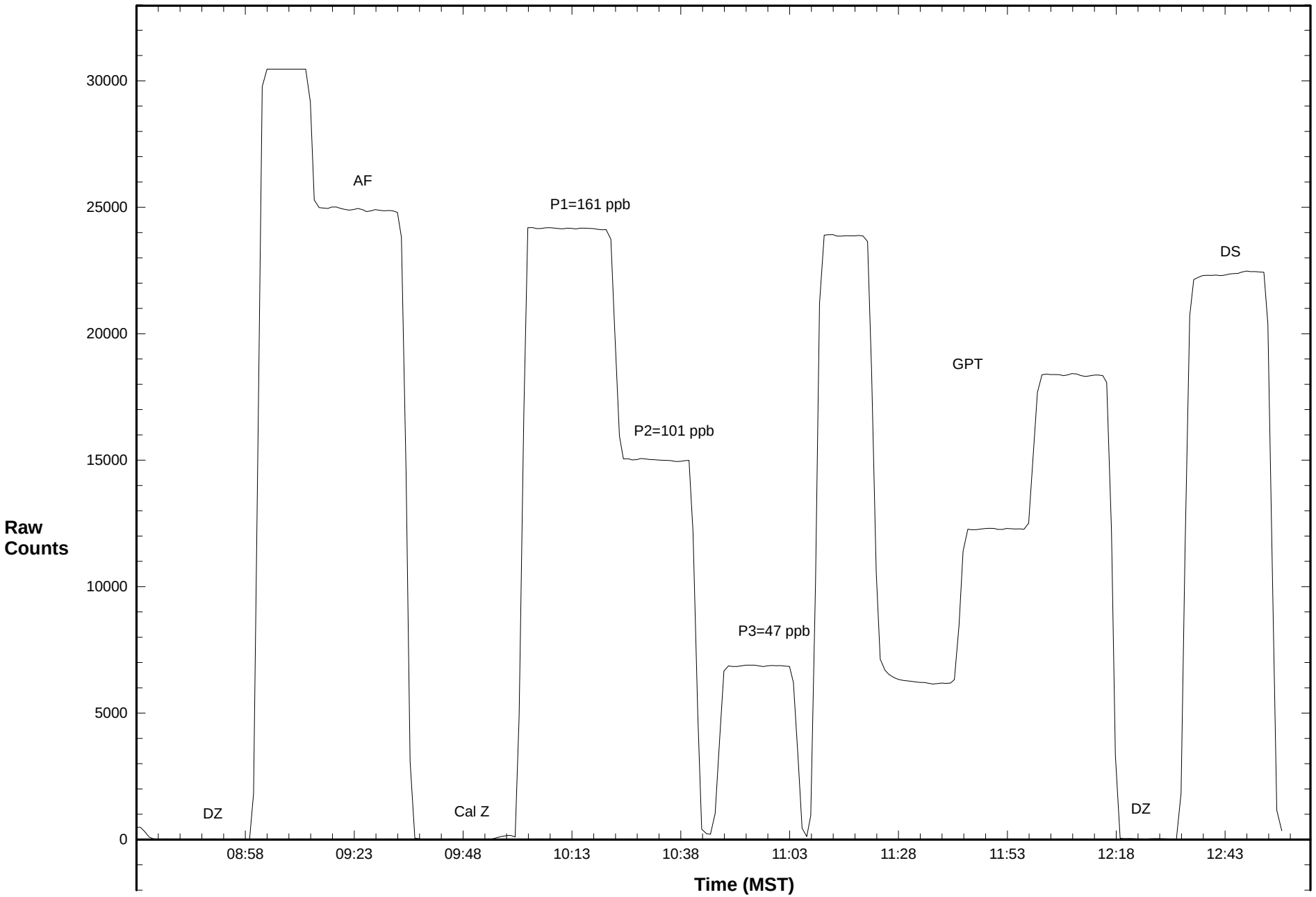
Station 906 NO2 July 28, 2016: Linear Regression



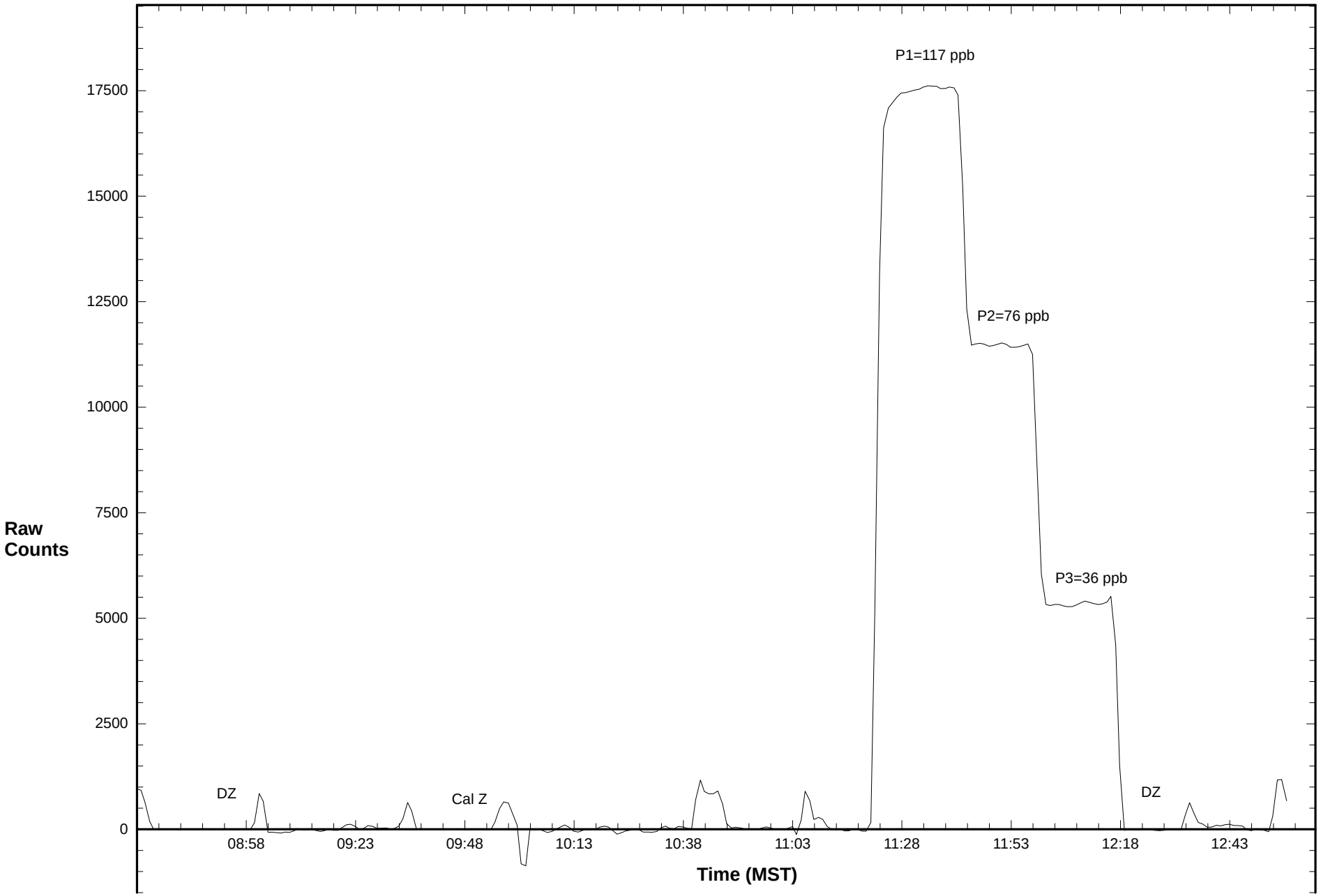
Station 906 NOX July 28, 2016: Linear Regression



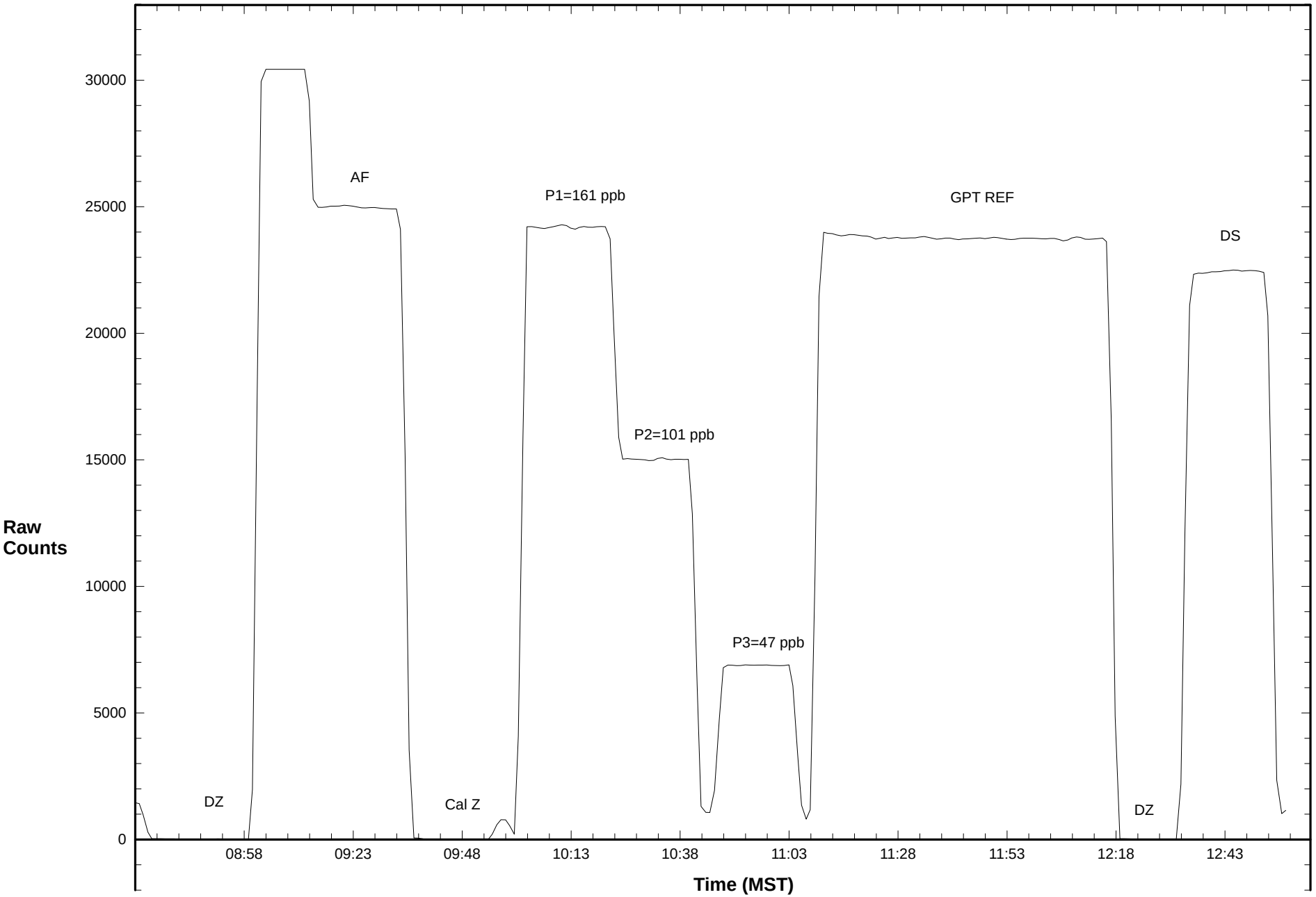
Station 906 NO July 28, 2016: Calibration Graph



Station 906 NO2 July 28, 2016: Calibration Graph



Station 906 NOX July 28, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: July 28, 2016

Parameter: O_3

Instrument: Teco 49i

Serial Number: 1150790050

Previous Calibration Date: June 9,2016

Calibration: Routine

Calibration Equipment: 2B Technologies 306 sn#145

Barometric Pressure: 26.88" Hg

Calibration Method: Certified Ozone Generator

Temperature: 24.0° C

Technician: J. McClintock

Instrument Settings	Background	Coefficient	Monitoring Range
Previous	-0.8	1.041	500 ppb
Current	-0.1	1.005	500 ppb

Final Zero: -1.6 ppb

Final Span: 320.3 ppb

As Found Correction Factor: 0.954

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	24536.7	408.4	1.002
3.000	256.0	15454.5	257.0	0.996
3.000	102.0	6146.2	101.9	1.001
3.000	0.0	11.5	-0.3	

Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	59.994420	93.052830	0.999926
Current	60.008300	30.633710	0.999984
C_i vs C_c			
Current	1.000000	0.000000	0.999984

Average Correction Factor: 0.999

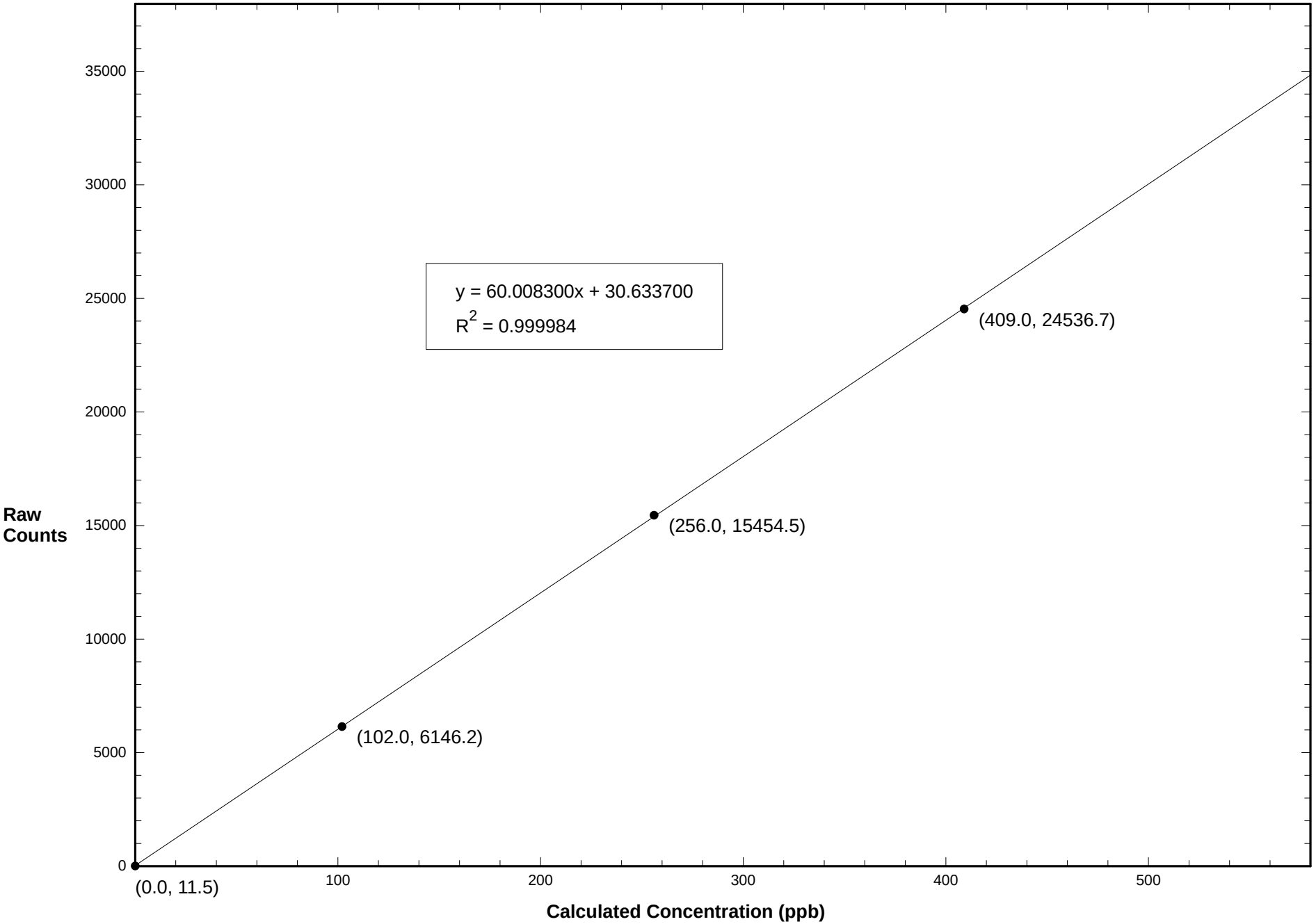
Previous Correction Factor: 1.003

Current Correction Factor: 1.002

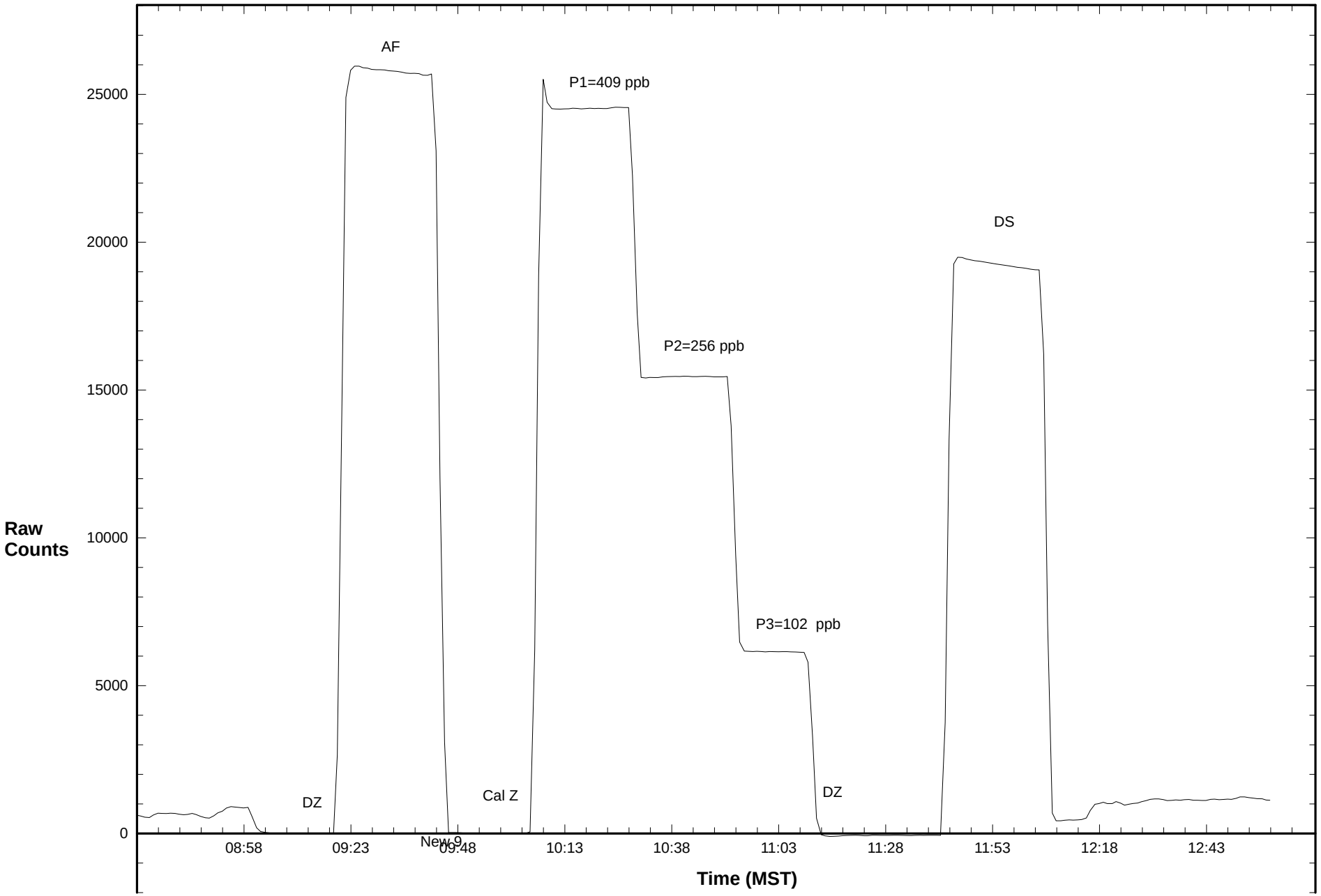
Percent Change of Correction Factor: -0.1

Comments:

Station 906 O3 July 28, 2016: Linear Regression



Station 906 O3 July 28, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: July 28, 2016

Parameter: SO_2

Instrument: Teco 43i

Serial Number: CM 12499009

Previous Calibration Date: June 9,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 26.88" Hg

Calibration Method: Standard Gas Dilution

Cylinder ID: FF 9469

Temperature: 24.0° C

Cylinder Concentration: 6.2 ppb SO2

In Service: Jan. 14,2015

Technician: J. McClintock

Instrument Settings	SO_2 bkg ppb	SO_2 Coefficient	Monitoring Range
Previous	25.6	1.006	100 ppb
Current	25.0	0.966	100 ppb

Final Zero: 0.1 ppm

Final Span: 64.9 ppm

As Found Correction Factor: 0.960

SO_2 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
0.0660	5.089	79.4	23877.9	79.7	0.997
0.0410	5.064	49.8	14808.7	49.5	1.007
0.0187	5.043	22.9	6763.4	22.7	1.010
0.0000	5.000	0.0	40.0	0.3	

Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	302.067300	48.139930	0.999989
Current	300.352200	-46.808350	0.999908
C_i vs C_c			
Current	1.000000	0.000000	0.999907

Average Correction Factor: 1.004

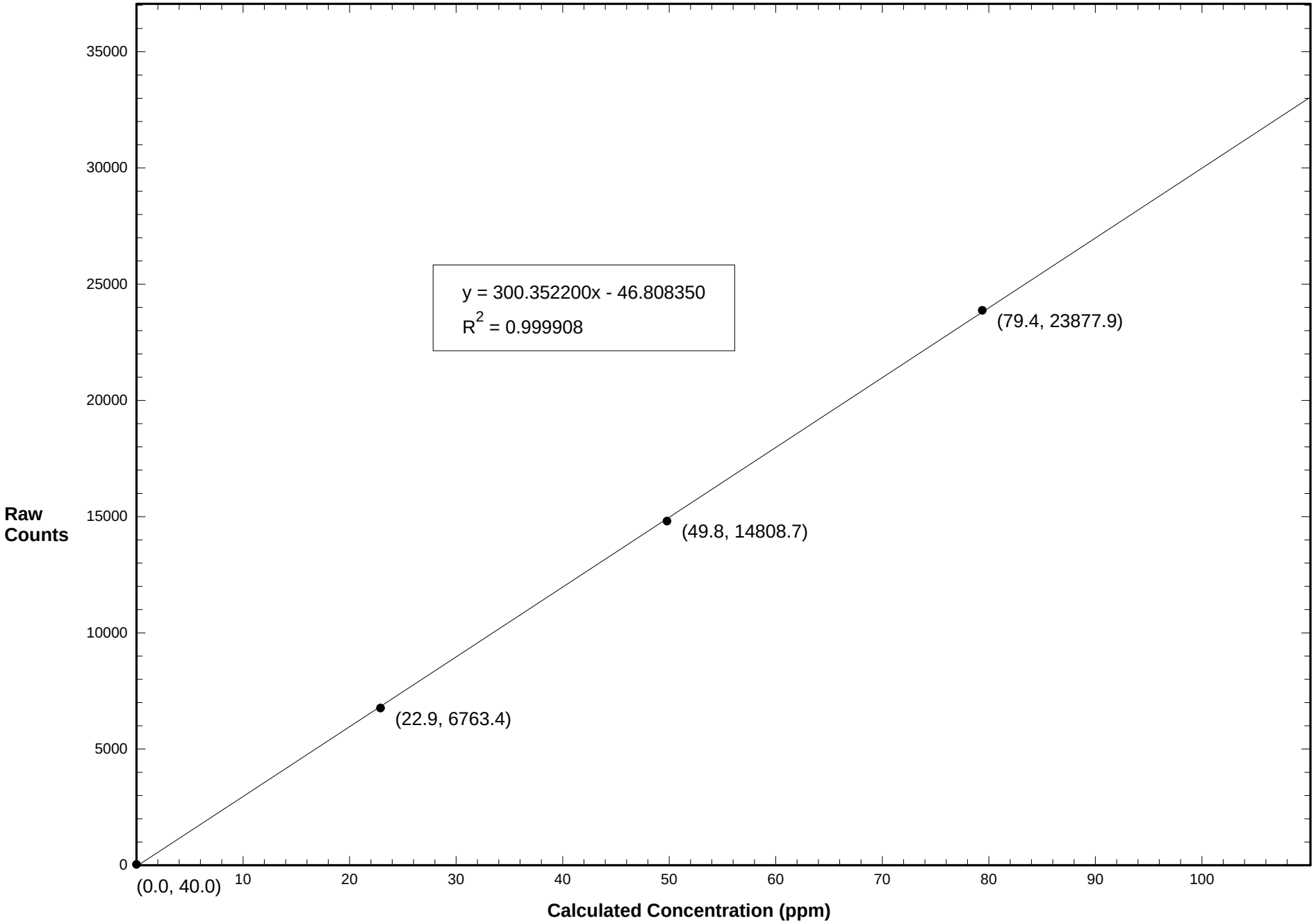
Previous Correction Factor: 1.000

Current Correction Factor: 0.997

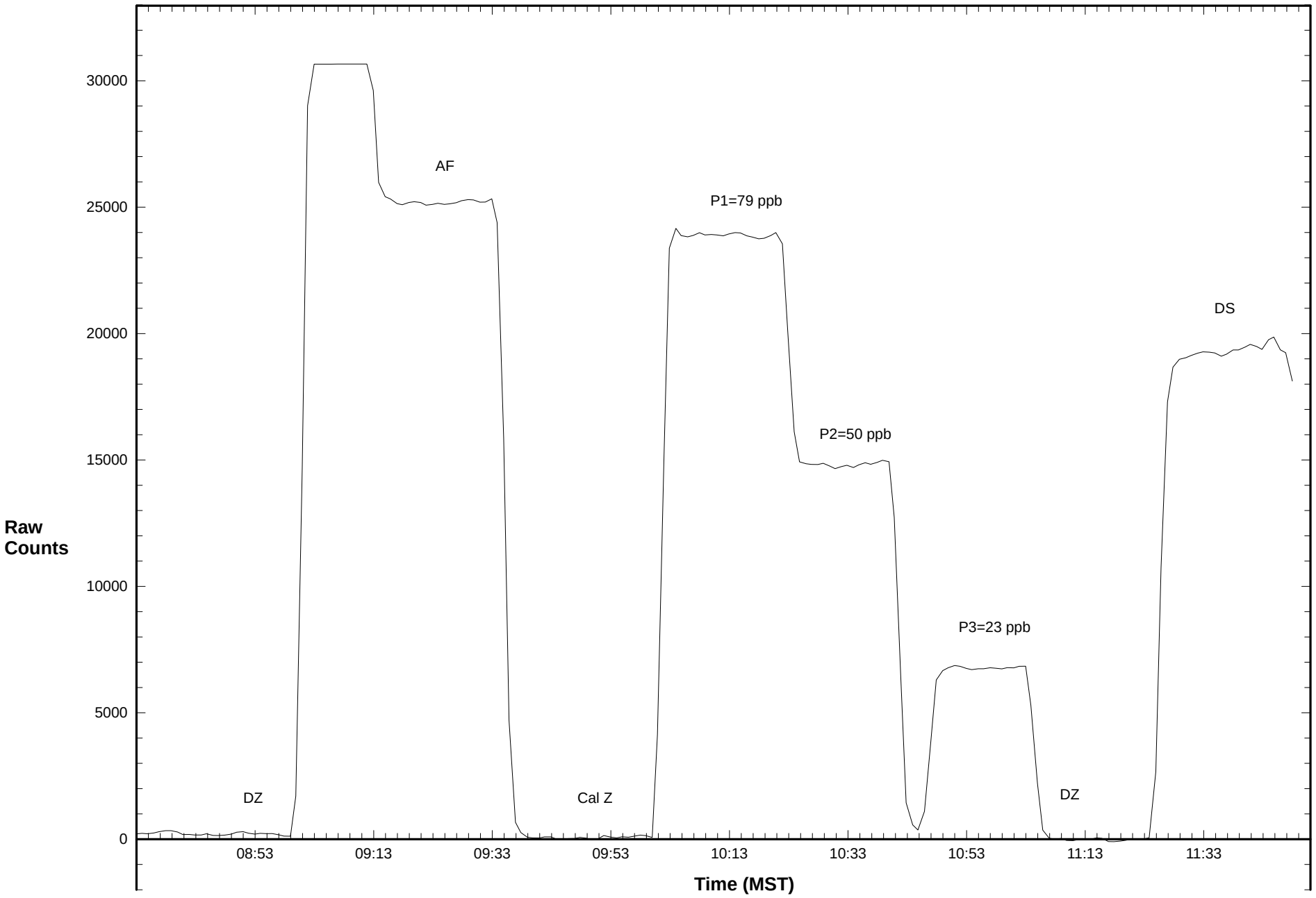
Percent Change of Correction Factor: -0.3

Comments:

Station 906 SO2 July 28, 2016: Linear Regression



Station 906 SO2 July 28, 2016: Calibration Graph



Calibration Data Summary

West Central Airshed Society

Operator: WCAS

Location: Station 906, Hinton

Calibration Date: July 28, 2016

Parameter: TRS

Instrument: Teco 43C

Serial Number: 43CTL - 60324 - 326

Previous Calibration Date: June 9,2016

Calibration: Routine

Calibration Equipment: SABIO 2010 sn# 05200311

Barometric Pressure: 26.88" Hg

Calibration Method: Standard Gas Dilution

Permeation Device ID: SV14360, 4.89 ppm H2S

Temperature: 30.0° C

Permeation Rate: 0 ng/min

In Service: Feb 5,2013

Technician: J. McClintock

Instrument Settings	H_2S bkg ppb	H_2S Coefficient	Monitoring Range
Previous	1.82	0.775	100 ppb
Current	2.69	0.885	100 ppb

Final Zero: -0.1 ppb

Final Span: 76.5 ppb

As Found Correction Factor: 1.087

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
0.075	71.0	21424.4	71.3	0.995
0.051	48.7	14454.2	48.3	1.010
0.025	24.3	7189.1	24.2	1.003
0.000	0.0	-64.1	0.2	

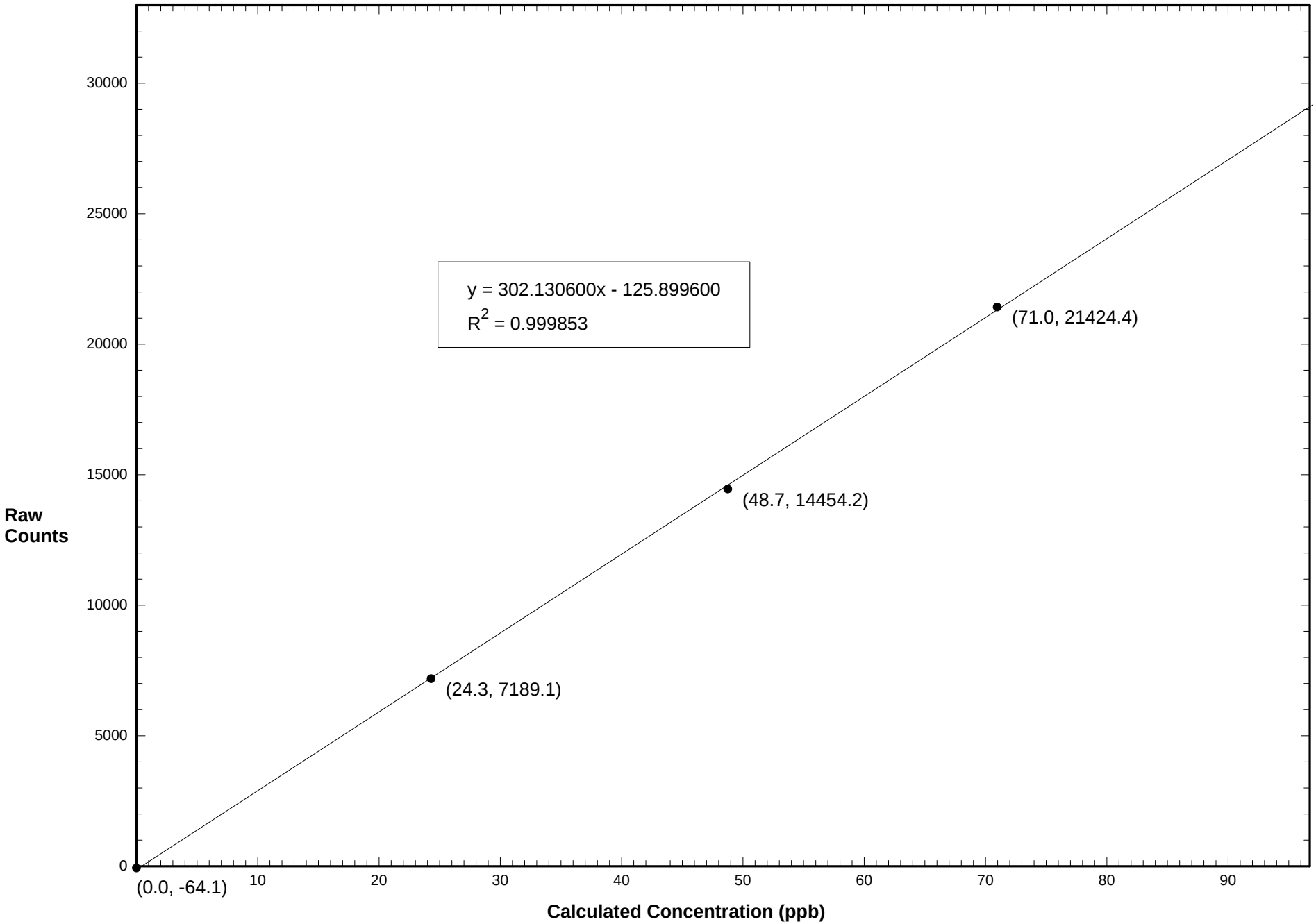
Results of Linear Regression

R_c vs C_c	Slope	Intercept	R^2
Previous	302.775200	-55.260150	0.999938
Current	302.130600	-125.899600	0.999853
C_i vs C_c			
Current	1.000000	-0.000005	0.999852

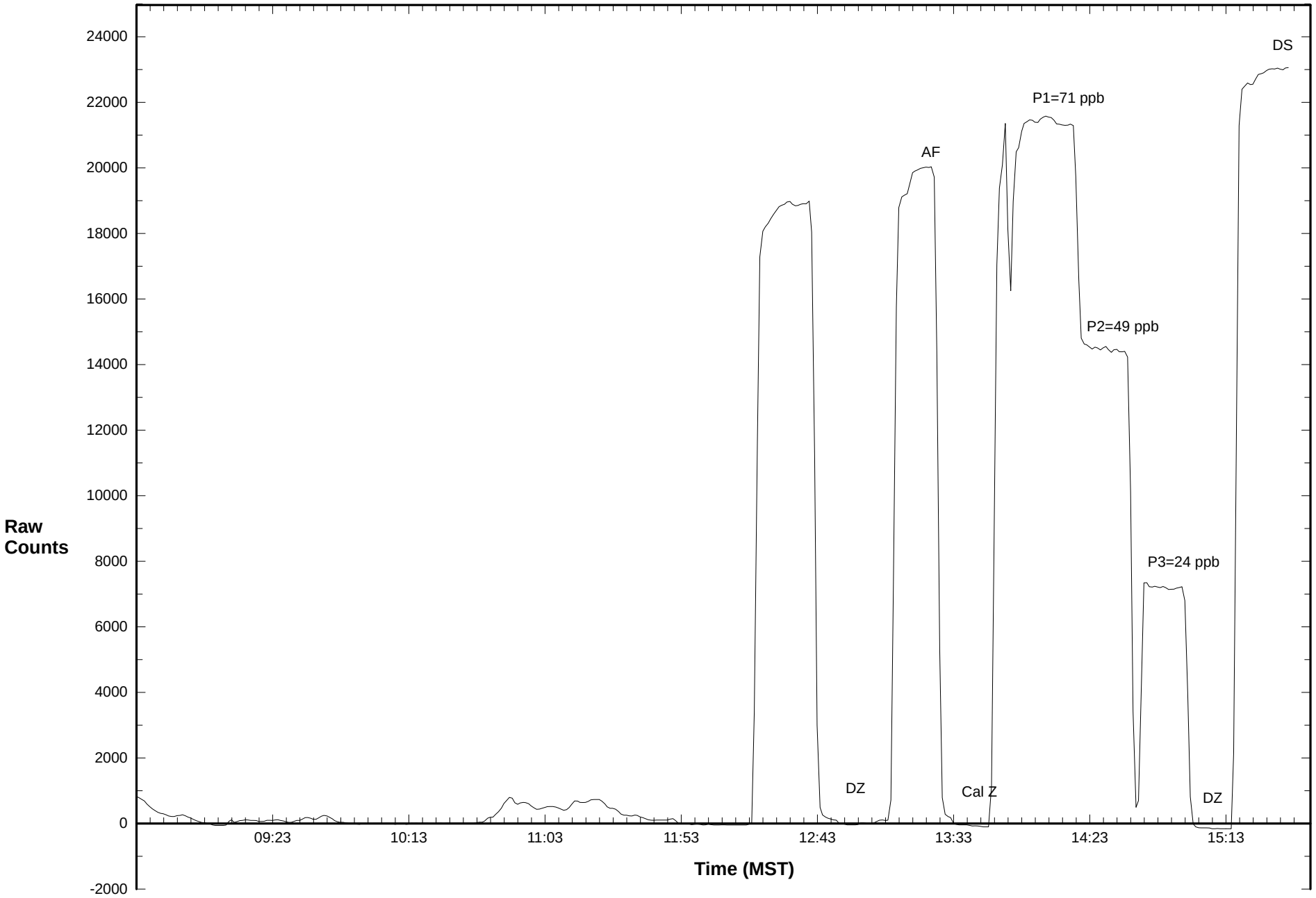
Average Correction Factor:	1.003
Previous Correction Factor:	1.001
Current Correction Factor:	0.995
Percent Change of Correction Factor:	-0.6

Comments:

Station 906 TRS July 28, 2016: Linear Regression



Station 906 TRS July 28, 2016: Calibration Graph



WEST CENTRAL AIRSHED SOCIETY

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM MONTHLY REPORT METEOROLOGICAL DATA

AMS 906
HINTON
JULY 2016

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

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

Maximum Value: 28.28 C on Jul 29 15:00

Maximum Daily Average: 20.66 C on Jul 26

Minimum Value: 3.3 C on Jul 5 05:00

Minimum Daily Average: 10.43 C on Jul 31

Maximum Diurnal Average: 20.32 C at hour 13

Minimum Diurnal Average: 10.42 C at hour 6

Monthly Average: 15.746 C

Percentiles: P_1 = 5.4 P_{10} = 10.2 Q_1 = 12.2 Median = 15.1 Q_3 = 19.2 P_{90} = 22.5 P_{99} = 27.1

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

Day	Hourly Period Ending At																								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	10.0	9.1	8.4	8.3	7.7	7.4	8.9	10.5	12.8	14.3	14.6	17.0	21.0	19.0	15.8	16.0	15.3	15.2	15.1	15.5	15.3	14.0	13.0	12.4	13.20	20.98
2-Jul	11.6	10.9	10.2	8.6	8.2	8.1	8.8	11.3	16.3	17.7	17.5	20.6	21.2	20.8	18.7	21.0	20.0	20.6	19.2	18.8	17.9	16.1	14.5	13.3	15.50	21.22
3-Jul	12.3	11.5	10.7	10.9	11.0	11.2	11.9	11.1	11.1	11.5	11.3	13.1	14.0	16.5	19.2	20.2	18.6	18.1	18.2	16.2	15.4	12.6	10.2	8.4	13.55	20.23
4-Jul	7.3	6.1	5.6	4.7	3.9	4.4	7.1	11.8	15.0	16.3	17.1	17.7	18.7	18.9	18.8	17.3	18.1	18.9	17.3	15.1	13.6	12.4	10.1	8.2	12.68	18.95
5-Jul	7.1	6.6	5.4	4.2	3.3	3.6	6.5	10.7	14.6	15.9	16.5	17.6	19.1	20.7	21.2	20.2	20.4	21.5	19.9	17.5	15.8	13.8	13.1	12.6	13.65	21.47
6-Jul	11.9	11.4	10.5	10.2	9.8	9.0	10.2	13.5	15.8	17.7	19.0	20.2	20.4	20.2	21.8	22.6	21.7	21.0	19.8	18.8	17.8	16.9	15.0	13.9	16.21	22.58
7-Jul	12.8	11.5	9.8	8.4	7.4	7.2	8.8	11.2	13.7	16.8	19.4	21.9	21.8	21.8	22.6	24.1	23.7	22.4	20.6	19.7	18.6	18.1	17.3	17.3	16.53	24.07
8-Jul	16.5	15.6	15.1	14.6	12.6	11.8	12.5	14.2	15.9	17.4	19.6	20.9	22.0	23.5	23.8	24.0	24.5	23.9	22.5	21.1	19.3	17.1	15.8	15.6	18.32	24.48
9-Jul	15.8	14.8	13.9	12.7	11.7	11.8	13.5	15.4	16.7	17.7	18.6	18.6	18.3	16.7	13.6	15.4	16.7	18.0	18.2	17.1	15.7	13.2	12.5	12.0	15.36	18.63
10-Jul	12.1	11.9	11.8	11.5	11.5	11.4	11.5	11.6	11.8	12.3	13.9	15.3	17.0	18.0	18.4	18.0	18.5	17.7	17.0	14.7	13.7	13.3	13.4	12.9	14.14	18.45
11-Jul	12.6	12.5	12.3	12.1	12.0	12.0	12.3	12.7	13.5	14.9	16.3	17.6	19.8	18.8	13.1	14.5	15.8	15.1	15.0	14.8	14.3	13.4	12.4	11.7	14.14	19.81
12-Jul	11.1	10.5	9.7	9.0	9.0	9.9	11.4	12.3	11.8	12.0	14.4	16.9	18.1	19.5	20.8	21.8	21.4	18.5	13.6	13.7	13.0	12.6	12.4	12.3	13.99	21.83
13-Jul	12.5	12.5	12.4	12.4	12.3	12.3	12.3	12.8	12.5	12.8	13.8	14.9	16.8	12.9	13.6	14.9	15.0	14.6	14.6	14.4	13.8	13.4	12.9	12.3	13.45	16.75
14-Jul	11.9	11.4	11.3	11.1	11.0	11.2	11.9	11.9	12.4	14.1	15.6	16.5	15.8	15.1	15.3	15.2	14.8	12.6	12.6	12.7	12.6	12.4	12.1	11.9	13.06	16.46
15-Jul	11.6	11.5	11.4	11.3	11.2	11.1	11.4	11.7	11.6	11.9	12.9	14.2	15.8	16.5	17.5	14.6	14.3	14.4	PF	PF	PF	PF	PF	PF	13.04	17.50
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	17.1	19.3	20.3	21.2	17.4	15.5	16.2	19.5	19.5	19.0	18.0	16.7	14.7	13.3	13.3	--	21.23
17-Jul	13.5	13.7	12.8	11.8	11.4	11.8	12.1	12.2	12.6	13.3	PF	16.4	15.0	15.3	13.9	14.5	15.5	14.7	14.8	14.6	14.6	14.0	13.4	12.5	13.67	16.38
18-Jul	11.6	10.9	10.2	10.0	10.2	9.9	9.9	10.2	11.1	13.9	15.9	18.7	20.8	19.5	19.3	20.9	20.3	22.1	21.3	19.5	17.7	15.2	13.2	11.7	15.16	22.06
19-Jul	10.9	10.2	9.3	8.7	8.0	7.4	9.3	13.1	16.6	18.5	20.9	23.1	24.4	25.0	21.9	23.6	21.4	20.3	20.1	18.5	17.9	16.5	14.4	13.1	16.38	24.98
20-Jul	12.0	11.1	10.9	11.3	14.1	13.4	13.7	17.2	18.3	18.5	19.1	19.5	20.3	20.6	21.1	20.9	20.9	20.7	20.1	19.2	18.0	17.7	17.8	17.3	17.25	21.14
21-Jul	17.3	17.0	16.6	16.6	16.4	16.3	16.6	16.7	18.2	19.7	20.4	20.1	21.4	21.6	22.5	22.7	22.5	21.0	20.2	19.2	18.4	17.6	15.7	13.8	18.68	22.69
22-Jul	11.7	10.3	9.1	8.4	8.1	7.8	9.5	13.7	17.3	19.9	22.3	24.3	25.5	26.0	25.1	26.3	27.3	26.0	22.6	20.6	18.9	17.8	16.7	15.3	17.95	27.27
23-Jul	14.0	13.3	12.9	12.6	11.9	12.2	12.7	15.2	16.3	18.1	20.5	22.5	22.5	22.6	22.8	21.3	21.6	22.3	21.3	20.0	18.2	17.7	15.1	12.6	17.51	22.83
24-Jul	11.4	10.1	10.2	13.1	15.1	16.0	16.4	16.8	17.3	18.9	21.9	22.8	23.8	22.7	22.0	22.4	22.8	22.3	22.1	21.0	19.7	19.3	18.3	16.6	18.46	23.78
25-Jul	13.9	12.2	12.3	12.2	11.7	11.2	11.1	13.6	16.8	19.8	22.5	23.5	24.9	26.0	26.9	26.3	26.1	25.9	24.3	23.1	20.9	19.3	17.9	17.6	19.17	26.91
26-Jul	16.6	15.9	14.2	12.5	11.3	11.9	13.3	16.8	19.1	21.5	23.2	25.4	25.9	26.9	28.2	27.2	27.8	26.5	26.7	23.8	21.7	21.2	19.8	18.3	20.66	28.19
27-Jul	17.4	17.5	16.6	16.2	15.2	14.3	14.6	18.2	20.2	21.0	23.5	24.8	25.8	26.3	25.6	22.7	17.9	19.0	19.6	19.7	18.2	16.5	14.9	13.9	19.14	26.32
28-Jul	14.0	13.8	14.1	12.9	12.1	11.3	12.1	16.2	18.1	19.6	21.8	22.0	23.0	21.8	20.6	24.3	25.6	25.5	23.1	22.1	19.7	17.0	15.5	14.1	18.35	25.63
29-Jul	13.7	13.0	11.8	10.9	10.0	9.2	10.5	14.9	17.8	20.2	22.7	25.1	26.9	28.2	28.3	23.9	27.3	26.4	23.4	19.3	16.6	15.3	14.2	13.6	18.47	28.28
30-Jul	13.4	13.1	12.9	12.7	11.9	11.5	12.2	12.7	14.1	15.2	15.8	14.9	15.4	15.7	12.0	12.0	11.7	12.2	12.2	10.3	10.1	10.2	9.4	8.4	12.51	15.83
31-Jul	7.7	7.7	6.4	5.6	5.2	5.7	6.2	7.7	9.8	10.1	11.7	13.5	13.1	13.4	14.4	12.7	12.6	14.0	13.8	12.5	12.1	11.3	11.4	11.6	10.43	14.36
	12.53	11.92	11.29	10.85	10.51	10.42	11.31	13.26	14.98	16.42	18.07	19.35	20.32	20.25	19.82	19.93	19.98	19.71	18.94	17.70	16.54	15.35	14.19	13.29	Diurnal Average	
	17.41	17.54	16.59	16.59	16.42	16.30	16.55	18.20	20.17	21.48	23.48	25.42	26.92	28.16	28.28	27.18	27.82	26.52	26.72	23.76	21.74	21.16	19.82	18.29	Diurnal Maximum	

PF - Power Failure

WCAS - Hinton

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	1.5	0.9	0.7	0.7	0.8	0.7	0.4	0.8	1.4	1.6	1.0	0.1	3.4	3.6	2.5	2.0	2.0	1.9	1.3	0.8	1.7	1.9	0.5	0.8	0.10	3.58
Dir	SW	S	WSW	SW	SSE	WNW	WSW	W	WNW	WNW	W	SW	ENE	SW	S	NNE	NNE	NE	NNE	NE	ENE	ENE	NE	SE	NNE	SW
2 Spd	2.3	1.1	0.5	1.1	0.9	0.6	0.7	1.0	0.2	6.9	5.8	2.3	4.0	5.7	5.0	2.0	2.5	6.6	2.2	2.6	3.7	2.3	1.5	2.1	1.30	6.93
Dir	SE	SE	W	WSW	NW	WNW	NW	NNW	NNW	SSW	S	E	ESE	ESE	S	NNE	NNE	ENE	NE	ENE	E	ENE	ENE	ENE	ESE	SSW
3 Spd	2.9	1.9	1.5	0.8	0.6	2.3	4.6	2.8	3.4	1.2	3.8	5.6	7.2	2.6	2.4	3.4	7.0	7.9	2.9	2.1	2.1	0.8	0.3	1.0	2.11	7.86
Dir	ENE	ENE	NE	SSE	S	SW	SSW	SSW	S	WSW	SW	SW	SSW	SSW	WSW	WSW	SW	SW	W	WNW	WSW	WSW	NNW	NNE	SW	SW
4 Spd	1.0	0.8	0.6	1.6	1.2	1.7	1.8	0.9	8.3	8.2	9.1	14.4	9.7	9.1	7.6	8.1	5.3	4.4	6.8	1.2	1.5	1.7	0.1	0.1	3.36	14.39
Dir	ENE	E	ENE	ENE	ENE	ENE	ENE	SW	SW	SW	SW	SSW	SSW	SW	SW	SW	SW	WSW	SW	WNW	N	NE	NW	SW	SW	SSW
5 Spd	0.9	0.3	0.5	0.3	0.6	1.4	1.7	2.1	1.5	4.6	6.3	5.9	4.7	1.7	1.6	3.6	0.9	1.8	0.5	0.7	0.4	1.4	1.0	1.5	0.64	6.26
Dir	SSE	NNE	ENE	NE	W	W	WNW	NW	NW	SW	SSW	SSW	SSW	WSW	NW	NE	N	N	NNW	ENE	E	ENE	S	E	SW	SSW
6 Spd	1.7	0.9	1.0	1.5	2.3	1.8	1.0	1.6	4.3	6.3	4.8	2.9	1.5	1.8	2.9	2.7	2.1	1.1	0.6	0.3	0.3	2.9	5.0	1.4	1.25	6.33
Dir	SSW	SSW	SSE	WSW	SW	WSW	WNW	WNW	SW	SSW	SSW	SSE	S	WSW	SW	SSW	WSW	WSW	NW	WSW	SE	E	ENE	ENE	SSW	SSW
7 Spd	0.6	0.7	0.2	0.0	0.4	0.3	1.0	0.5	0.9	0.8	1.3	0.7	2.0	5.5	3.2	2.0	1.9	2.9	2.4	2.5	3.2	3.9	3.5	6.0	1.46	5.99
Dir	NNE	NNW	NW	S	SW	S	NW	NNW	NW	NW	ESE	WNW	W	SW	WSW	WNW	WSW	WNW	W	WSW	SW	SW	SW	S	WSW	S
8 Spd	7.3	3.9	5.9	1.3	0.9	1.2	1.4	1.0	3.1	1.8	2.0	5.5	5.4	6.2	8.3	8.9	7.6	4.1	3.1	1.1	4.0	5.5	3.4	1.3	2.33	8.87
Dir	S	SSW	SSW	SW	NE	NNE	NNE	NE	SSW	SSE	S	SSW	SW	SW	SSW	SW	S	SSE	WSW	WNW	NE	ENE	E	E	SSW	SW
9 Spd	1.9	1.0	2.4	1.8	1.6	1.4	1.8	1.2	1.3	3.0	4.6	4.9	4.5	6.3	12.2	2.7	2.0	2.3	2.7	2.9	1.6	2.8	0.7	0.4	2.16	12.17
Dir	E	NNE	ENE	ENE	NE	NE	ENE	NE	ENE	NE	ENE	ENE	E	E	SE	NNE	N	NNE	ENE	ENE	N	SE	W	S	ENE	SE
10 Spd	1.7	1.1	1.6	0.9	1.3	1.2	0.7	0.7	2.4	3.2	4.6	2.3	1.5	3.2	3.1	2.4	0.9	3.8	0.2	4.2	0.7	1.2	2.2	3.6	1.07	4.63
Dir	SSE	WSW	WSW	WSW	SW	WSW	WSW	WSW	SW	SW	SW	WSW	NW	NW	NNW	NNW	NNW	SSW	ESE	NE	NNW	SW	SW	SW	WSW	SW
11 Spd	2.2	3.2	3.2	2.5	2.3	1.4	3.0	4.4	1.7	2.0	3.7	5.3	2.7	2.9	3.1	4.4	2.2	2.7	0.7	0.4	1.9	1.7	1.4	1.5	2.40	5.27
Dir	WSW	SW	SW	SW	SW	WSW	SW	SW	WSW	WSW	SW	SW	W	W	SW	SW	WSW	SW	WSW	W	SW	SW	WSW	W	SW	SSW
12 Spd	1.3	1.5	0.9	0.3	0.4	1.9	1.3	3.4	1.6	7.4	2.9	1.4	1.0	3.2	1.3	1.2	1.2	7.2	3.3	0.1	2.1	0.6	2.9	4.1	1.18	7.42
Dir	W	WNW	WNW	W	W	SW	W	SW	WSW	SSW	SW	NNW	WSW	SW	SW	ENE	NE	SE	SSE	SSW	ENE	WSW	SW	SW	SSW	SSW
13 Spd	2.5	2.7	2.5	2.2	4.3	4.5	3.4	1.9	4.2	4.8	5.0	4.1	3.7	2.9	0.9	0.8	1.5	2.8	3.3	1.7	3.4	3.0	1.3	2.7	2.66	5.02
Dir	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SSW	SW	SSW	ESE	NNW	W	WSW	SW	SW	WSW	SW	SSW	SW	SW	SW	SSW
14 Spd	0.8	2.2	0.9	0.4	0.3	1.1	0.9	0.8	1.7	4.1	1.4	2.6	4.2	2.2	1.4	0.7	1.4	1.2	0.2	0.2	0.2	0.7	0.2	0.5	0.06	4.16
Dir	SW	SW	SW	WNW	W	W	WNW	W	WSW	SW	NNE	NE	ESE	NE	NNE	E	SW	NNE	WNW	W	NNE	ESE	NNE	ENE	W	ESE
15 Spd	0.9	0.2	0.2	0.2	0.3	0.3	0.7	1.0	2.4	1.0	1.7	2.4	3.2	1.5	1.6	2.2	1.1	1.9	PF	PF	PF	PF	PF	PF	0.89	3.22
Dir	ENE	NNW	N	E	NNE	ENE	NNE	NNE	ESE	N	NNE	NNE	NNE	N	NW	ENE	SE	ESE	PF	PF	PF	PF	PF	PF	NE	NNE
16 Spd	PF	PF	PF	PF	PF	PF	PF	PF	PF	4.1	1.3	3.1	1.8	8.9	2.1	2.7	1.4	1.4	1.7	3.0	1.0	1.8	2.4	1.6	--	8.94
Dir	PF	PF	PF	PF	PF	PF	PF	PF	PF	S	E	NNE	E	S	W	WSW	WSW	W	WSW	SW	WSW	WSW	SW	WSW	--	S
17 Spd	4.0	2.9	1.7	0.9	0.7	1.6	0.7	2.0	1.9	0.9	PF	3.5	1.2	2.4	3.0	3.5	1.6	0.1	0.2	0.8	0.2	0.2	0.3	0.9	1.32	3.97
Dir	SW	SW	WSW	W	SW	WSW	W	WSW	SW	WNW	PF	SW	WSW	SSW	SW	WSW	W	NNW	WSW	SW	S	NNE	NE	NE	SW	SW
18 Spd	0.5	0.8	0.9	0.7	0.3	3.1	1.8	2.7	0.8	1.6	1.9	2.3	1.3	7.4	1.7	2.0	0.7	0.7	2.7	0.8	0.3	0.5	0.4	1.4	0.72	7.40
Dir	ENE	NE	NNE	ENE	E	SSW	SSW	SSW	W	W	NW	NW	WNW	SSW	WNW	WSW	WNW	NNW	SE	S	NW	NNE	SW	WSW	SW	SSW
19 Spd	1.2	1.7	1.3	1.1	0.5	0.3	0.8	1.7	2.0	4.1	6.3	9.3	8.1	4.5	0.9	3.9	4.3	2.0	4.3	3.1	2.1	1.3	0.7	0.5	2.40	9.35
Dir	WSW	SSW	WSW	SSW	WSW	W	NW	WNW	WNW	SW	SW	SW	SW	SW	W	WSW	NW	SW	SW	WSW	SW	WSW	NE	W	SW	SW
20 Spd	0.3	1.3	0.9	0.7	2.2	1.9	1.2	4.6	7.9	8.3	10.0	8.8	10.1	8.8	8.2	7.9	5.1	7.9	8.2	5.7	2.9	3.6	5.0	3.1	4.90	10.13
Dir	NW	W	NNW	WSW	WSW	NE	WNW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	SW	SW	SW	WSW	WSW	SW	WSW	SW	SW
21 Spd	3.0	2.3	2.7	3.0	3.6	2.9	4.9	5.6	5.4	5.2	9.9	10.1	10.5	9.9	9.5	11.5	11.2	8.7	2.6	1.8	2.0	0.6	0.5	0.9	5.07	11.52
Dir	WSW	WSW	WSW	WSW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	WSW	NW	W	NNE	NNE	SE	SW	SW
22 Spd	0.2	0.2	0.1	0.2	1.4	1.0	0.7	0.5	0.8	1.3	8.2	5.8	3.6	3.0	2.5	2.8	2.5	2.9	3.3	1.3	2.0	1.6	1.3	1.0	1.43	8.24
Dir	SE	N	WNW	WSW	W	SW	SW	WSW	WNW	W	SSW	SW	W	WNW	WNW	WNW	W	WNW	WNW	WSW	N	SSE	SSE	SSW	WSW	SSW

WCAS - Hinton

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	0.3	0.7	1.5	0.5	0.6	1.3	1.5	2.4	3.4	3.1	1.7	4.5	7.4	10.2	6.1	1.8	2.1	8.1	9.6	4.5	2.8	3.5	0.6	1.1	1.89	10.19
Dir	SSE	E	ENE	NNE	NE	ENE	NE	ENE	NE	NE	WNW	WSW	SW	SW	WSW	W	WSW	SW	SW	WSW	WSW	SW	WNW	NE	SW	SW
24 Spd	0.3	0.5	1.0	2.8	3.3	4.1	3.7	2.9	1.9	3.3	6.0	8.4	6.2	2.3	2.4	1.6	2.4	2.0	1.8	1.1	3.0	1.1	1.5	3.4	1.92	8.39
Dir	NE	NE	SSW	WSW	SW	SSW	SSW	WSW	WSW	SSW	SSW	SW	SW	WNW	NW	WNW	W	WSW	N	N	ESE	E	SSW	SSE	SW	SW
25 Spd	0.4	1.3	1.8	1.5	1.4	1.4	0.8	1.0	1.1	1.0	2.9	0.3	3.7	4.9	3.3	6.8	5.0	5.2	1.5	1.7	1.0	0.7	1.5	1.7	1.17	6.77
Dir	SSW	SW	SW	WSW	WSW	SW	WNW	NNW	NNW	ENE	NNE	SE	SW	SW	WSW	SW	SW	SSW	NE	NE	NE	SSE	NE	SSW	SW	SW
26 Spd	2.9	3.5	0.8	0.9	0.7	2.9	1.1	1.5	2.0	1.9	1.0	1.1	1.2	1.4	1.8	0.9	2.8	3.0	2.6	0.9	0.6	1.9	0.6	0.0	0.30	3.51
Dir	SSW	S	SE	SSW	SW	SSW	WSW	WNW	WNW	NW	SSE	NNE	SW	SE	NNW	N	NNW	E	E	N	E	SW	SSE	ENE	SW	SSW
27 Spd	1.6	2.4	1.2	1.6	1.8	1.7	1.5	1.5	2.0	4.5	3.7	2.2	4.3	4.4	2.9	2.5	4.0	2.6	6.0	1.1	0.3	0.1	0.6	1.1	1.12	6.04
Dir	SSW	SSW	SW	SW	WSW	W	WSW	W	W	SSW	SE	E	E	SE	N	WSW	SSW	SW	S	NNE	ENE	NNW	NNE	S	SSW	S
28 Spd	0.4	2.3	0.8	0.8	0.9	0.9	1.2	1.6	4.4	5.4	2.1	2.7	4.7	3.4	3.0	3.2	1.8	1.8	1.8	2.2	2.3	1.4	2.3	1.2	2.02	5.37
Dir	S	SSW	SSW	SW	WSW	SW	WNW	W	SW	SW	W	SW	SSW	SW	SSW	SW	SSW	SW	SW	SW	SW	WSW	SW	SSW	SW	SW
29 Spd	1.6	1.3	0.6	0.9	0.5	0.9	0.6	1.8	2.5	2.4	0.4	0.7	7.0	6.8	6.5	7.9	4.0	3.7	3.2	8.4	1.2	2.2	2.0	1.5	2.21	8.38
Dir	SW	SW	WNW	WSW	WSW	SW	WNW	W	WNW	WNW	S	WNW	SSW	SSW	SW	SSW	SW	SW	NNE	S	S	SW	SSE	SW	SW	S
30 Spd	0.9	1.3	0.9	2.5	1.1	1.1	3.0	1.0	4.6	1.1	3.2	0.9	0.1	2.8	2.9	0.9	2.1	3.6	2.5	1.5	2.1	5.0	1.7	3.0	1.43	5.04
Dir	SSW	WSW	SW	SW	WSW	SW	SW	S	SSW	SSE	SSW	WSW	WSW	NNE	E	SW	SSW	S	NW	S	WSW	SSW	S	SSW	SSW	SSW
31 Spd	5.8	4.7	0.8	2.5	1.2	1.5	0.8	1.3	2.0	1.8	2.5	2.5	3.4	6.6	3.5	2.6	3.7	2.8	1.5	2.7	3.6	1.2	2.5	3.0	2.28	6.64
Dir	SW	SW	W	SW	WNW	WSW	W	W	W	WNW	WSW	WSW	SW	SSW	SSW	NNW	SW	W	WNW	SW	SW	WNW	SW	SW	SW	SSW
Spd	1.11	1.08	0.63	0.82	0.85	0.99	0.91	1.19	1.86	2.53	2.83	2.65	2.72	3.07	2.28	2.18	2.07	1.85	1.32	0.73	0.41	0.60	0.58	1.02	Diurnal Average	
Dir	SSW	SW	SW	SW	WSW	SW	WSW	WSW	SW	SW	SW	SW	SSW	SSW	SW	SW	WSW	SW	SW	SW	SW	SSW	SSW	SSW		
Spd	7.25	4.72	5.92	2.98	4.25	4.51	4.88	5.62	8.34	8.30	10.00	14.39	10.51	10.19	12.17	11.52	11.15	8.73	9.55	8.38	4.02	5.51	5.03	5.99	Diurnal Maximum	
Dir	185.80	214.88	196.44	240.08	223.64	218.99	229.84	225.29	224.33	228.11	221.90	206.45	222.82	218.94	138.97	220.18	220.97	222.75	224.88	175.51	52.13	57.88	233.00	189.24		

Maximum Speed Value: 14.4 kph on Jul 4 12:00
Minimum Speed Value: 0.0 kph on Jul 7 04:00
Maximum Daily Speed Average: 5.07 kph on Jul 21
Minimum Daily Speed Average: 0.06 kph on Jul 15
Maximum Diurnal Speed Average: 3.07 kph at hour 14
Minimum Diurnal Speed Average: 0.41 kph at hour 21

Monthly Average Velocity: 1.489 kph 222.31 deg
Speed Percentiles: P_1 = 0.1 P_{10} = 0.6 Q_1 = 1.0 Median = 1.9 Q_3 = 3.2 P_{90} = 5.7 P_{99} = 10.1
All monthly, daily, and diurnal averages have been calculated using vector methods

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

PF - Power 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	39	0	0	0	0	0	39
NorthEast	86	2	0	0	0	0	88
East	45	2	0	0	0	0	47
SouthEast	25	2	1	0	0	0	28
South	49	13	0	0	0	0	62
SouthWest	219	67	3	0	0	0	289
West	120	0	0	0	0	0	120
NorthWest	55	0	0	0	0	0	55
Total	638	86	4	0	0	0	728

WCAS - Hinton
Summary of Hourly Averages

Relative Humidity (RH) - %
July 2016

Maximum Value: 91.70 % on Jul 2 07:00

Maximum Daily Average: 85.06 % on Jul 13

Minimum Value: 17.0 % on Jul 22 17:00

Minimum Daily Average: 44.16 % on Jul 21

Maximum Diurnal Average: 83.15 % at hour 6

Minimum Diurnal Average: 45.16 % at hour 14

Monthly Average: 64.103 %

Percentiles: P_1 = 21.7 P_{10} = 29.5 Q_1 = 45.6 Median = 69.6 Q_3 = 85.9 P_{90} = 89.8 P_{99} = 91.2

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

Day	Hourly Period Ending At																								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	88.5	88.8	89.1	89.9	90.4	90.8	91.2	90.8	79.3	69.6	70.3	58.3	51.1	64.2	80.6	85.0	86.7	87.4	87.5	86.8	84.5	87.6	89.2	90.1	82.41	91.19
2-Jul	90.6	91.0	91.2	91.2	91.5	91.6	91.7	90.9	72.3	59.4	58.1	46.4	42.5	46.0	57.4	50.2	53.8	52.2	58.8	60.8	61.9	71.2	78.7	83.3	70.12	91.70
3-Jul	86.4	87.8	89.1	90.0	90.3	90.3	82.0	85.1	86.3	86.8	87.4	78.3	68.5	53.3	43.3	34.4	35.0	34.4	34.6	41.1	42.2	54.5	60.6	71.6	67.22	90.30
4-Jul	78.1	81.6	83.5	85.6	87.3	87.4	77.1	58.6	35.0	29.6	27.6	24.9	24.1	23.5	25.3	27.1	27.6	26.2	28.4	38.7	46.6	53.3	65.7	72.7	50.65	87.37
5-Jul	76.9	78.7	82.9	85.3	87.0	88.0	82.8	66.2	50.1	35.4	30.3	26.8	22.4	23.4	22.8	27.1	27.4	23.3	31.7	38.7	51.0	59.2	65.3	65.3	51.99	87.95
6-Jul	65.4	69.9	71.8	73.1	73.5	78.7	76.5	64.9	53.4	42.1	36.6	33.2	33.4	34.1	27.9	25.2	28.1	32.1	35.9	43.1	49.5	54.4	64.1	69.9	51.53	78.66
7-Jul	75.1	80.0	85.1	87.0	87.8	88.4	86.2	76.1	64.2	52.5	35.7	27.7	26.9	24.6	23.6	22.0	22.1	25.6	30.3	31.5	32.5	34.0	39.1	37.8	49.83	88.38
8-Jul	40.6	44.1	46.9	50.7	65.9	71.3	70.4	63.1	53.8	46.5	40.1	32.0	28.7	25.2	23.9	23.8	23.6	25.4	28.1	33.0	46.5	62.9	69.6	72.0	45.33	71.97
9-Jul	70.7	74.9	78.2	82.8	84.8	85.2	79.1	68.3	63.0	59.6	55.3	55.8	57.2	60.7	75.9	79.5	73.5	64.1	59.4	64.8	73.0	86.2	88.4	89.7	72.10	89.72
10-Jul	90.1	90.2	90.4	90.6	90.8	90.8	90.9	90.9	90.8	90.1	82.2	76.2	66.8	61.0	57.9	57.8	56.1	58.2	62.3	73.6	80.4	83.3	82.5	83.9	78.66	90.86
11-Jul	87.0	87.8	87.6	86.3	87.0	87.5	87.8	85.2	86.8	80.6	73.2	65.3	57.0	54.9	87.2	84.0	79.4	81.9	84.8	85.2	85.2	86.9	87.3	88.9	81.86	88.89
12-Jul	89.7	90.2	90.6	90.8	91.0	91.2	91.1	89.1	87.2	88.0	82.8	70.0	62.5	56.2	48.1	42.6	45.4	58.5	85.4	89.1	88.9	89.4	89.8	89.8	79.05	91.19
13-Jul	89.6	89.6	89.4	89.8	89.8	89.3	89.0	88.5	87.4	85.9	83.4	79.4	71.0	83.0	85.9	83.3	83.3	83.1	76.5	82.1	83.2	82.7	87.1	89.1	85.06	89.83
14-Jul	89.4	89.8	90.1	90.3	90.5	90.8	90.8	90.7	90.2	79.0	73.5	68.3	69.5	76.2	78.5	79.0	79.4	87.3	88.7	89.1	89.6	89.9	90.1	90.3	85.04	90.79
15-Jul	90.5	90.7	90.8	90.9	91.0	91.0	91.2	91.1	90.6	88.7	87.0	79.0	71.0	67.7	61.8	78.7	77.9	78.9	PF	PF	PF	PF	PF	PF	83.79	91.15
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	61.6	53.0	49.0	41.3	56.2	78.2	75.0	59.2	57.2	57.2	57.2	66.0	75.6	78.7	77.7	--	78.72
17-Jul	74.6	73.1	78.9	84.4	87.2	86.4	86.8	86.9	83.5	85.8	PF	69.5	83.2	79.1	86.5	84.7	81.3	86.6	86.0	85.5	85.3	87.9	89.1	89.7	83.56	89.70
18-Jul	90.3	90.7	90.9	91.2	91.3	91.4	91.5	91.5	91.2	78.5	69.8	60.4	51.0	50.4	58.5	47.9	54.2	40.0	40.9	56.2	70.4	78.6	83.2	86.5	72.78	91.54
19-Jul	87.6	88.7	88.8	89.5	89.8	90.3	90.3	79.9	62.2	51.7	44.5	33.3	29.5	28.8	44.7	33.5	42.3	46.3	46.7	52.0	52.7	60.0	70.4	74.7	61.59	90.33
20-Jul	78.2	81.5	81.0	82.5	64.9	71.8	72.4	51.7	45.9	44.3	42.9	41.5	38.9	37.9	37.2	37.8	39.3	37.9	38.6	41.6	45.6	45.9	44.4	46.6	52.09	82.46
21-Jul	47.0	47.4	48.7	48.0	48.1	49.4	50.1	51.7	46.8	41.8	37.2	38.3	36.0	34.6	32.4	30.3	31.4	34.3	39.9	45.3	46.6	48.9	58.4	67.0	44.16	67.04
22-Jul	74.4	79.2	84.3	86.8	87.1	87.3	83.5	65.2	54.4	45.8	32.8	25.6	23.7	22.5	25.0	20.1	17.0	20.2	28.7	34.7	40.8	42.4	50.2	59.3	49.62	87.31
23-Jul	63.8	67.4	70.6	70.5	78.1	76.3	75.3	64.7	58.0	49.7	39.1	26.5	24.5	24.3	24.7	30.4	29.4	24.7	26.3	31.0	37.4	36.6	48.5	61.8	47.48	78.06
24-Jul	69.2	74.9	72.6	58.2	49.9	46.9	46.9	47.6	47.8	43.6	34.0	29.5	28.8	36.3	44.6	42.3	37.7	39.1	43.7	45.6	47.9	42.1	40.8	47.8	46.58	74.94
25-Jul	59.5	66.9	67.8	70.6	72.1	73.6	74.0	65.5	53.4	44.5	35.9	30.4	25.3	23.0	21.7	23.0	22.6	23.2	30.5	39.7	49.2	57.5	65.8	60.3	48.18	74.02
26-Jul	60.3	62.6	69.2	76.0	79.4	78.5	73.5	61.4	53.8	46.5	39.2	30.8	25.3	22.2	22.1	27.7	24.9	27.7	24.2	36.1	46.1	46.8	56.0	64.1	48.11	79.39
27-Jul	64.4	57.9	62.7	64.2	68.5	71.5	70.2	56.7	51.4	42.9	32.6	29.0	28.8	26.6	29.8	40.1	67.5	68.2	61.7	58.3	63.7	73.8	79.3	83.9	56.41	83.89
28-Jul	83.3	84.4	82.7	86.4	87.7	88.8	88.4	71.9	61.1	54.0	51.0	50.4	43.2	46.7	47.9	30.4	27.1	30.7	38.6	45.7	57.8	71.8	75.2	76.1	61.72	88.78
29-Jul	82.8	84.8	87.1	88.5	89.1	89.4	88.2	70.9	59.4	51.0	41.8	32.5	21.3	18.6	17.9	30.8	20.9	24.1	33.4	57.8	72.2	76.7	80.8	84.1	58.50	89.44
30-Jul	86.5	88.9	89.5	89.6	90.0	90.2	90.3	87.7	80.9	78.1	72.4	78.4	77.4	69.3	86.1	87.8	88.8	86.1	85.9	82.0	86.7	85.8	85.4	88.3	84.68	90.31
31-Jul	88.5	83.4	87.1	89.3	90.1	90.6	90.7	90.6	85.9	83.9	78.5	70.8	73.6	69.7	66.7	74.3	72.5	63.8	70.1	75.1	73.1	84.4	81.3	74.3	79.52	90.68
	77.29	78.90	80.62	81.66	82.39	83.15	81.67	74.79	67.54	61.22	54.28	48.96	45.30	45.16	49.17	48.90	48.88	49.30	51.49	56.72	61.89	67.01	71.50	74.56	Diurnal Average	
	90.63	91.01	91.16	91.22	91.46	91.62	91.70	91.54	91.17	90.09	87.45	79.44	83.24	83.01	87.16	87.81	88.83	87.41	88.73	89.10	89.59	89.89	90.11	90.31	Diurnal Maximum	

PF - Power Failure

WCAS - Hinton
Summary of Hourly Standard Deviations

Wind Speed (WS) - kph
July 2016

Maximum Value: 7.34 kph on Jul 9 15:00

Maximum Daily Average: 3.99 kph on Jul 21

Minimum Value: 0.0 kph on Jul 15 03:00

Minimum Daily Average: 1.23 kph on Jul 14

Maximum Diurnal Average: 3.84 kph at hour 14

Minimum Diurnal Average: 1.38 kph at hour 4

Monthly Average: 2.343 kph

Percentiles: P_1 = 0.4 P_{10} = 1.0 Q_1 = 1.4 Median = 2.0 Q_3 = 2.8 P_{90} = 4.4 P_{99} = 6.5

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

Day	Hourly Period Ending At (MST)																								Daily	Daily
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Average	Maximum
1-Jul	1.4	1.3	0.9	1.2	1.2	0.9	0.9	1.4	1.3	1.4	1.6	1.8	3.1	4.0	3.6	1.7	1.7	1.7	1.3	1.2	1.5	2.1	1.1	1.4	1.66	4.01
2-Jul	1.3	1.3	0.9	1.2	0.9	0.9	0.8	1.2	1.3	4.6	3.2	2.2	2.7	3.4	4.5	1.9	2.2	3.7	2.3	2.0	2.9	1.8	1.6	1.8	2.11	4.64
3-Jul	1.6	1.9	1.5	1.6	1.9	2.5	4.5	2.5	2.2	1.6	2.8	3.3	3.0	2.4	3.0	3.5	6.7	5.9	2.8	1.9	2.6	1.3	1.1	1.5	2.66	6.73
4-Jul	1.8	1.4	1.4	1.9	1.7	1.7	1.6	2.2	5.3	5.9	5.7	6.9	5.9	6.1	6.5	5.7	4.7	4.3	5.3	2.0	1.4	1.5	1.2	1.4	3.49	6.94
5-Jul	1.2	1.0	1.0	0.8	1.0	1.3	1.3	1.5	1.7	3.9	4.2	4.3	4.0	3.9	2.7	2.7	1.6	2.3	0.9	0.9	1.0	1.2	1.7	1.4	1.98	4.35
6-Jul	1.5	1.7	2.6	1.6	2.1	1.0	1.2	1.5	3.1	3.7	3.8	3.0	2.6	1.9	4.0	3.2	2.3	1.3	1.0	0.8	1.3	3.2	3.2	2.1	2.24	4.03
7-Jul	1.1	1.0	0.5	0.7	1.1	1.0	1.0	0.8	1.2	1.5	2.1	1.9	2.7	5.0	3.3	2.4	2.5	2.7	3.0	2.9	2.9	2.9	3.7	2.9	2.11	5.00
8-Jul	1.8	2.6	2.6	2.1	1.3	1.2	1.4	1.2	2.5	2.1	3.7	4.0	4.7	5.5	5.5	5.7	5.5	3.8	3.4	1.7	3.5	3.8	2.1	1.6	3.06	5.69
9-Jul	1.9	1.2	1.5	1.3	1.5	1.3	1.6	1.5	1.5	2.4	2.8	3.4	3.1	4.6	7.3	2.6	1.7	1.7	2.3	2.0	1.6	2.4	1.0	1.2	2.23	7.34
10-Jul	1.7	1.2	1.7	1.2	1.7	1.4	1.0	1.0	2.0	2.1	2.9	2.4	1.6	2.0	2.3	2.2	1.9	3.2	3.1	2.8	1.1	1.5	1.8	2.3	1.92	3.18
11-Jul	1.8	1.8	1.9	1.7	2.3	1.8	2.7	2.8	2.1	1.9	2.8	3.5	2.3	3.3	1.9	2.5	2.4	2.0	1.2	0.8	1.9	1.4	1.3	1.4	2.06	3.53
12-Jul	1.3	1.4	1.0	0.5	0.8	1.4	1.5	2.9	2.0	3.1	2.5	1.7	2.2	2.7	2.2	2.1	1.6	6.4	4.1	1.7	2.3	1.3	1.9	2.0	2.11	6.40
13-Jul	1.9	1.8	1.8	2.2	2.1	2.0	2.4	1.9	2.0	2.0	2.4	2.6	3.8	2.9	1.1	1.1	1.8	2.4	2.1	1.4	2.1	2.5	1.7	1.9	2.07	3.77
14-Jul	1.1	1.4	1.2	0.7	0.7	1.1	1.1	1.2	1.8	2.7	1.5	2.0	2.3	1.6	1.7	1.4	1.7	1.4	0.4	0.4	0.2	1.0	0.0	0.8	1.23	2.67
15-Jul	1.3	0.3	0.0	0.4	0.4	0.5	0.9	1.1	3.0	1.5	1.5	1.8	2.2	1.4	1.8	2.4	2.4	2.1	PF	PF	PF	PF	PF	PF	1.40	3.04
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	2.7	2.5	3.0	3.1	6.5	1.8	2.4	2.2	1.7	1.6	1.9	1.9	2.2	1.6	1.9	--	6.48
17-Jul	2.0	2.6	2.1	1.5	1.6	1.6	1.0	1.9	2.6	1.4	PF	3.1	1.8	2.4	2.4	2.8	2.0	0.2	0.5	0.9	0.8	0.4	0.7	1.2	1.62	3.10
18-Jul	1.1	1.0	1.1	1.0	1.1	2.0	1.4	2.1	1.4	2.1	1.6	1.8	2.3	4.0	1.8	2.5	1.6	1.4	1.8	1.4	0.6	1.0	1.4	1.4	1.62	3.99
19-Jul	1.2	1.5	1.6	1.3	0.8	0.7	0.9	1.4	1.6	3.8	5.1	6.4	5.9	5.2	2.8	4.1	3.0	3.7	4.4	3.1	2.4	1.4	0.9	1.4	2.69	6.44
20-Jul	0.8	1.3	1.1	1.3	2.0	1.3	2.7	3.4	4.9	5.6	5.9	5.5	5.8	5.8	5.8	5.9	4.4	5.5	5.4	5.5	3.2	3.7	3.4	2.8	3.89	5.91
21-Jul	2.9	2.6	2.9	3.0	2.7	2.6	4.7	4.1	4.6	5.5	6.6	5.6	6.1	6.3	6.5	6.3	6.6	5.0	3.0	1.8	2.2	1.4	1.3	1.5	3.99	6.60
22-Jul	1.0	0.5	0.7	0.6	1.1	1.3	1.3	1.2	1.6	2.0	5.7	5.2	3.6	2.2	2.3	2.1	2.7	2.5	2.6	1.5	1.7	2.5	1.8	1.3	2.04	5.73
23-Jul	1.0	1.4	1.5	0.8	1.2	1.9	1.7	1.8	2.7	2.3	2.5	5.2	5.4	6.5	6.2	3.1	3.4	5.7	5.7	3.9	2.8	2.5	1.3	1.3	2.99	6.48
24-Jul	1.5	0.9	2.3	2.7	2.0	2.8	2.8	3.4	2.2	2.4	3.9	5.7	5.8	2.6	1.4	1.5	2.5	2.4	1.8	2.1	2.0	2.2	2.3	3.2	2.60	5.82
25-Jul	1.8	1.7	1.8	1.4	1.3	1.6	0.9	0.9	1.2	1.9	2.5	2.6	3.4	5.5	3.4	5.5	3.9	3.7	2.5	2.1	1.3	1.6	1.4	1.9	2.33	5.51
26-Jul	2.0	2.3	1.3	1.4	1.0	1.6	1.5	1.4	1.7	1.7	2.0	2.0	3.0	3.2	2.1	1.8	2.3	3.0	2.0	1.2	1.7	1.5	1.8	1.2	1.86	3.18
27-Jul	1.4	2.2	1.6	1.7	1.5	1.4	2.2	1.6	2.0	2.4	2.7	2.6	3.3	3.8	3.8	5.4	5.5	2.4	2.6	1.4	1.7	1.8	1.3	2.2	2.43	5.46
28-Jul	2.2	2.2	1.6	1.3	1.3	1.3	1.1	1.7	4.4	3.9	1.9	2.9	4.0	3.3	3.0	3.1	2.6	2.5	1.8	2.2	1.8	1.3	1.4	1.3	2.24	4.44
29-Jul	1.4	1.4	0.8	1.0	0.9	1.2	0.9	1.9	2.0	1.8	1.9	2.4	4.6	4.5	4.8	6.4	3.5	3.8	2.7	7.2	2.0	2.0	1.8	1.7	2.61	7.22
30-Jul	1.8	1.6	1.3	1.8	1.3	1.7	2.7	3.1	3.4	2.4	3.5	1.8	1.8	2.6	2.5	2.4	2.6	2.7	2.5	3.3	2.2	2.6	2.2	2.2	2.33	3.45
31-Jul	3.6	2.9	1.5	1.5	1.4	1.7	1.2	1.5	2.2	1.6	2.7	2.5	2.5	4.2	4.5	3.3	3.0	2.5	1.8	2.2	2.8	1.3	2.5	2.4	2.38	4.46
	1.61	1.58	1.46	1.38	1.40	1.49	1.70	1.88	2.38	2.71	3.15	3.33	3.51	3.84	3.44	3.21	2.98	3.02	2.53	2.15	1.91	1.91	1.69	1.74	Diurnal Average	
	3.57	2.94	2.90	3.00	2.71	2.77	4.73	4.11	5.33	5.91	6.58	6.94	6.07	6.48	7.34	6.44	6.73	6.40	5.74	7.22	3.47	3.78	3.72	3.18	Diurnal Maximum	

PF - Power Failure

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

WCAS - Hinton
Summary of Hourly Standard Deviations

Wind Direction (WD) - deg
July 2016

Maximum Value: 102.90 deg on Jul 30 20:00

Maximum Daily Average: 67.36 deg on Jul 26

Minimum Value: 12.7 deg on Jul 8 01:00

Minimum Daily Average: 40.45 deg on Jul 13

Maximum Diurnal Average: 60.23 deg at hour 24

Minimum Diurnal Average: 46.15 deg at hour 6

Monthly Average: 55.359 deg

Percentiles: P_1 = 22.3 P_{10} = 34.4 Q_1 = 42.0 Median = 52.9 Q_3 = 67.3 P_{90} = 82.6 P_{99} = 98.0

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

Day	Hourly Period Ending At																								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	37.1	49.2	53.2	55.7	72.2	37.5	60.2	57.4	46.6	45.0	72.9	101.7	51.5	62.8	78.5	42.4	37.8	44.5	37.0	49.1	37.9	66.7	88.1	81.6	56.95	101.72
2-Jul	22.1	72.2	55.3	54.2	22.2	43.1	30.8	55.7	89.2	61.3	42.1	61.6	45.1	39.1	49.3	47.4	50.6	33.4	55.4	33.9	50.4	46.9	60.6	53.0	48.96	89.24
3-Jul	28.9	53.2	52.2	96.4	78.9	63.1	65.8	57.7	49.5	70.6	44.9	39.9	23.1	75.1	67.3	61.7	54.2	49.0	54.2	42.5	57.7	71.5	81.6	86.1	59.37	96.37
4-Jul	81.7	72.8	83.7	69.9	61.2	67.3	51.6	100.0	38.4	46.8	42.1	28.7	40.8	43.3	54.8	40.9	54.6	57.3	51.9	74.7	53.6	61.4	94.1	93.2	61.03	100.00
5-Jul	78.1	82.9	75.9	53.8	74.0	32.1	36.5	38.0	69.8	57.8	46.3	63.1	63.4	82.8	83.8	49.2	63.3	79.1	45.6	45.2	83.2	40.1	85.3	64.1	62.22	85.28
6-Jul	59.4	82.6	90.6	49.9	55.6	33.7	57.2	54.5	46.3	43.3	55.7	75.1	97.2	46.6	72.2	76.3	59.3	54.4	56.5	55.9	94.7	72.3	39.7	66.7	62.32	97.16
7-Jul	50.3	59.3	62.1	83.5	64.7	80.5	47.7	77.6	74.2	79.2	94.3	98.2	70.1	54.0	57.8	65.9	77.4	55.2	65.3	64.5	46.4	41.9	55.7	34.6	65.01	98.21
8-Jul	12.7	33.7	20.9	70.3	66.9	44.2	52.3	49.6	64.3	70.2	92.1	55.9	55.3	52.6	46.1	44.7	56.3	68.4	57.1	55.2	38.2	40.5	33.4	74.5	52.31	92.06
9-Jul	41.7	42.7	34.9	45.2	61.1	39.6	36.5	78.0	65.5	49.2	36.2	41.8	36.0	41.4	39.7	47.5	41.1	42.7	46.6	33.6	52.9	78.9	33.2	97.2	48.47	97.17
10-Jul	56.3	31.6	39.7	50.1	50.3	42.5	49.5	40.0	35.8	39.1	38.9	54.3	53.5	38.5	43.2	51.3	74.1	45.6	89.5	40.2	58.5	89.2	40.4	35.0	49.47	89.48
11-Jul	35.4	26.1	31.2	30.9	58.5	43.5	37.2	36.8	53.7	59.2	53.6	47.9	54.4	61.7	53.5	40.6	53.1	39.0	57.1	63.7	45.2	36.4	36.2	32.0	45.29	63.72
12-Jul	33.4	31.9	24.1	43.9	49.7	36.5	42.9	48.1	64.2	27.4	59.6	80.8	89.4	58.0	84.5	78.1	69.3	68.6	75.3	99.2	57.3	42.7	24.8	26.4	54.84	99.23
13-Jul	35.7	38.1	30.8	35.7	22.6	23.5	30.4	46.3	24.8	21.1	26.3	33.6	70.4	54.3	55.0	55.4	60.0	46.1	32.3	32.2	26.3	68.0	70.4	31.3	40.45	70.44
14-Jul	47.0	23.2	36.3	29.2	58.3	39.2	37.5	54.6	48.6	44.7	63.8	53.3	40.8	41.0	58.8	84.0	75.4	42.3	34.3	59.6	20.4	33.2	27.6	32.4	45.23	84.02
15-Jul	55.9	36.6	40.1	56.6	26.2	51.5	30.3	36.2	53.5	45.7	37.3	45.0	41.2	49.8	65.7	68.8	87.9	65.6	PF	PF	PF	PF	PF	PF	49.66	87.86
16-Jul	PF	PF	PF	PF	PF	PF	PF	PF	PF	49.1	85.6	57.0	97.8	46.0	48.9	56.6	67.4	50.0	43.9	35.2	58.4	51.9	38.8	55.6	--	97.76
17-Jul	28.1	43.1	46.2	68.2	79.9	44.3	49.1	41.2	67.9	54.0	PF	58.1	74.9	78.2	40.7	45.5	51.8	53.4	69.6	23.7	90.8	53.8	54.3	28.3	54.14	90.82
18-Jul	53.1	31.9	46.0	40.6	56.3	33.5	32.2	33.5	64.3	68.1	51.3	48.7	67.9	36.5	46.6	62.2	68.7	80.2	47.9	83.1	53.0	85.6	82.6	49.6	55.14	85.60
19-Jul	36.7	34.6	42.8	35.8	52.7	41.3	42.5	33.6	41.4	51.9	47.0	42.2	47.3	72.7	85.5	59.7	46.3	83.6	54.7	49.0	60.8	44.3	45.7	80.5	51.35	85.47
20-Jul	69.9	45.0	62.5	81.1	41.1	33.5	66.6	45.0	37.2	40.7	33.2	36.6	34.5	38.9	45.8	44.8	51.8	43.0	43.9	52.0	57.8	54.6	41.8	49.2	47.94	81.08
21-Jul	51.7	64.1	60.3	56.9	43.0	46.8	60.0	47.5	52.9	63.0	42.2	34.4	37.9	39.3	43.5	33.1	37.8	30.8	53.3	51.4	52.7	73.4	78.2	87.0	51.72	87.01
22-Jul	93.7	90.7	87.9	79.5	27.1	53.9	65.6	84.7	95.0	68.8	44.6	54.5	54.8	46.3	53.6	48.9	61.3	44.4	41.0	49.8	38.7	82.6	81.1	69.4	63.24	94.99
23-Jul	77.3	73.5	66.6	62.2	67.2	81.0	69.6	37.5	41.9	44.2	86.6	63.4	46.3	39.3	57.8	79.3	85.3	42.6	35.2	50.2	51.6	38.6	72.7	67.5	59.90	86.65
24-Jul	95.5	56.1	99.9	55.5	34.6	40.6	40.6	54.1	56.2	43.2	39.1	41.9	53.4	53.7	41.5	46.4	57.4	58.1	58.8	87.5	50.1	93.3	86.5	70.2	58.93	99.94
25-Jul	93.8	72.2	40.3	38.2	41.4	51.9	42.9	42.5	65.5	98.5	56.9	100.1	62.8	72.6	60.5	53.9	47.0	33.8	82.8	49.6	47.8	95.4	60.7	63.2	61.44	100.13
26-Jul	53.8	47.3	76.7	86.1	73.9	20.5	55.4	42.2	45.9	53.8	94.3	86.1	90.0	91.7	66.6	72.3	41.0	61.9	50.5	66.7	97.2	57.0	91.9	93.8	67.36	97.24
27-Jul	54.8	73.7	79.7	49.3	40.4	34.0	54.4	56.1	50.9	32.7	47.9	77.5	50.5	73.9	73.5	79.3	71.6	59.7	22.4	71.6	84.3	92.2	74.7	73.4	61.60	92.19
28-Jul	75.1	62.0	75.0	47.4	34.5	49.3	34.5	46.4	46.6	45.6	46.4	51.2	65.7	47.5	68.1	58.0	94.8	71.8	62.2	43.6	42.7	45.5	39.8	72.0	55.24	94.82
29-Jul	27.8	34.4	37.9	32.6	44.3	49.0	56.9	50.2	44.1	43.1	97.7	87.3	49.3	47.7	49.1	54.7	54.8	52.0	54.2	61.9	78.2	46.4	69.8	69.0	53.85	97.70
30-Jul	77.7	60.8	44.6	57.8	47.4	79.6	47.7	90.3	70.7	96.1	70.8	76.7	93.7	66.2	71.7	78.4	65.3	68.7	40.0	102.9	55.0	29.9	52.8	36.0	65.86	102.90
31-Jul	26.5	25.3	73.8	36.3	53.8	47.9	50.5	52.1	56.6	50.3	52.4	53.3	45.6	39.2	79.3	72.6	48.1	58.3	50.0	54.2	41.9	41.6	45.2	33.8	49.53	79.29
	53.03	51.69	55.72	55.10	52.01	46.15	47.83	52.91	55.38	53.66	56.74	59.68	58.22	54.54	59.46	58.07	60.15	54.30	52.28	56.06	56.13	59.20	59.59	60.23	Diurnal Average	
	95.49	90.72	99.94	96.37	79.94	80.96	69.58	100.00	94.99	98.52	97.70	101.72	97.76	91.72	85.47	84.02	94.82	83.57	89.48	102.90	97.24	95.36	94.10	97.17	Diurnal Maximum	

PF - Power Failure

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

WEST CENTRAL AIRSHED SOCIETY

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM MONTHLY REPORT

END OF REPORT
JULY 2016