

**Capital Power
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2014**

Prepared by:

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



February 6th, 2015

Capital Power
Mr. Kevin Parry
Box 20, Site 2, RR 1
Warburg, AB
T0C 2T0

Dear Mr. Parry:

**Re: Annual Ambient Air Quality Monitoring Report January – December 2014.
For Capital Power**

The West Central Airshed Society (WCAS) presents the 2014 Annual Report containing ambient air quality and meteorological information from the following site:

Network Station is AMS 910 Genesee
Identified as:

WCAS data collection and validation began March 1, 2004. The following is a list of the reported ambient air and meteorological parameters measured at the site location:

AMS 910 (Genesee)

SO₂, NO/ NO₂/ NO_x, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature (10m and 2m), Delta Temperature, (2m – 10m), Global Solar Radiation, and Precipitation.

Exceedences of the Alberta Air Quality Objectives (AAAQO):

There were no exceedences of the AAAQO recorded in 2014.

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

Sincerely,

Patrick Andersen
Environmental Specialist

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

Capital Power / Genesee Station 910													
January to December 2014													
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	----- P10	----- Q1	Percentile Median	----- Q3	----- P90	24 Hour Average Max (ppm)
SO ₂ (ppb)	418	8337	99.9	0.9	-	0.0	46.8	0.0	0.0	0.0	0.5	2.4	0.010
O ₃ (ppb)	421	8333	99.9	22.5	-	0.0	65.1	9.0	14.7	21.2	29.2	38.5	0.046
NO (ppb)	432	8322	99.9	1.1	-	0.0	59.7	0.0	0.1	0.4	1.0	2.7	-
NO ₂ (ppb)	432	8322	99.9	4.1	-	0.0	40.7	0.2	1.1	2.7	5.7	10.0	0.015
NO _x (ppb)	432	8322	99.9	5.1	-	0.0	83.4	0.3	1.3	3.2	6.8	12.4	-
Particulate Matter 2.5 microns (μ/m ³)	25	8669	99.3	3.8	-	0.0	62.4	0.0	1.1	2.6	5.0	8.6	28.01 ug/m3
Wind Speed (kph)	0	8756	100.0	11.8	-	0.0	60.8	3.7	6.5	10.7	15.4	21.2	-
Temperature - 2m (°C)	0	8754	99.9	3.7	-	-34.5	30.5	-14.2	-5.3	5.0	13.6	19.3	-
Temperature - 10m (°C)	0	8754	99.9	3.8	-	-34.3	29.0	-14.2	-5.2	5.3	13.6	18.9	-
Delta Temperature (°C)	0	8754	99.9	0.1	-	-3.3	8.8	-1.4	-0.8	-0.2	0.8	1.8	-
Relative Humidity (%)	0	8754	99.9	69.4	-	15.9	95.3	43.2	56.9	72.6	84.5	90.1	-
Global Solar Radiation (W/m ²)	0	8756	100.0	149.2	-	0.0	1022.1	0.0	0.0	7.9	237.6	525.0	-
Precipitation (mm)	0	8756	100.0	-	193.8	0.0	27.9	0.0	0.0	0.0	0.0	0.0	-
Std Dev Wind Direction (deg)	0	8756	100.0	18.8	-	0.3	102.7	6.9	9.2	13.0	21.3	39.5	-
Std Dev Wind Speed (kph)	0	8756	100.0	2.8	-	0	16.7	1.2	1.7	2.5	3.6	4.8	-

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2014
 SO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations	Percent of Data in each Concentration Range					
								<=0.02	>0.02-0.06	>0.06-0.11	>0.11-0.17	>0.17-0.34	>0.34
January	707	0.6	2.0	12.3	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	639	0.7	3.8	15.5	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	710	0.7	2.8	13.8	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	686	0.7	3.6	22.5	100.0	0	0	99.85	0.15	0.00	0.00	0.00	0.00
May	708	1.1	3.8	32.9	100.0	0	0	99.72	0.28	0.00	0.00	0.00	0.00
June	686	1.2	4.8	26.6	100.0	0	0	99.42	0.58	0.00	0.00	0.00	0.00
July	707	1.3	4.2	46.8	100.0	0	0	99.43	0.57	0.00	0.00	0.00	0.00
August	705	0.7	4.3	36.8	99.6	0	0	99.86	0.14	0.00	0.00	0.00	0.00
September	686	1.4	9.9	33.6	100.0	0	0	98.54	1.46	0.00	0.00	0.00	0.00
October	708	0.9	4.7	21.0	100.0	0	0	99.86	0.14	0.00	0.00	0.00	0.00
November	686	0.8	5.4	30.8	100.0	0	0	99.42	0.58	0.00	0.00	0.00	0.00
December	709	0.3	1.5	6.3	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8337	0.9	9.9	46.8	99.9	0	0	99.68	0.32	0.00	0.00	0.00	0.00

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2014
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	707	17.8	30.3	41.7	99.7	0
February	639	18.0	31.3	43.4	100.0	0
March	708	26.9	43.8	62.3	99.9	0
April	686	30.7	46.0	59.3	100.0	0
May	708	31.8	41.0	58.2	100.0	0
June	686	27.3	41.7	65.1	100.0	0
July	705	26.1	38.1	57.9	100.0	0
August	705	22.7	31.1	54.9	99.6	0
September	686	18.0	30.2	54.6	100.0	0
October	708	19.6	31.0	39.5	100.0	0
November	686	15.2	23.8	30.8	100.0	0
December	709	16.0	28.3	35.1	100.0	0
Annual	8333	22.5	46.0	65.1	99.9	0

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2014
 NO2 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	706	7.2	15.2	27.4	99.7	0	0	100.00	0	0	0
February	638	7.5	14.2	27.1	100.0	0	0	100.00	0	0	0
March	709	5.0	10.9	22.4	100.0	0	0	100.00	0	0	0
April	685	3.3	7.4	40.7	100.0	0	0	100.00	0	0	0
May	707	2.6	7.0	25.7	100.0	0	0	100.00	0	0	0
June	685	2.5	5.1	17.9	100.0	0	0	100.00	0	0	0
July	702	2.1	4.9	32.2	99.9	0	0	100.00	0	0	0
August	705	2.0	5.7	21.5	99.6	0	0	100.00	0	0	0
September	685	3.3	10.4	31.0	100.0	0	0	100.00	0	0	0
October	707	3.7	7.3	21.1	100.0	0	0	100.00	0	0	0
November	685	5.0	12.8	26.1	100.0	0	0	100.00	0	0	0
December	708	5.5	15.3	23.4	100.0	0	0	100.00	0	0	0
Annual	8322	4.1	15.3	40.7	99.9	0	0	100.00	0	0	0

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2014
 PM_{2.5} (µg/m³)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	738	2.4	5.9	38.1	99.2	0	0
February	672	3.9	10.9	51.1	100.0	0	0
March	739	2.5	7.7	12.3	99.9	0	0
April	718	2.7	6.2	11.4	99.7	0	0
May	743	3.2	6.1	15.1	99.9	0	0
June	716	3.0	4.9	14.9	100.0	0	0
July	728	8.9	28.0	62.4	98.4	0	0
August	731	6.7	18.6	31.0	98.9	0	0
September	708	3.5	16.1	38.0	98.3	0	0
October	721	2.0	7.9	15.4	96.9	0	0
November	716	4.0	12.5	18.9	100.0	0	0
December	739	3.3	8.8	16.0	99.9	0	0
Annual	8669	3.8	28.0	62.4	99.3	0	0

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2014
 Percentage Frequency Distribution of Wind

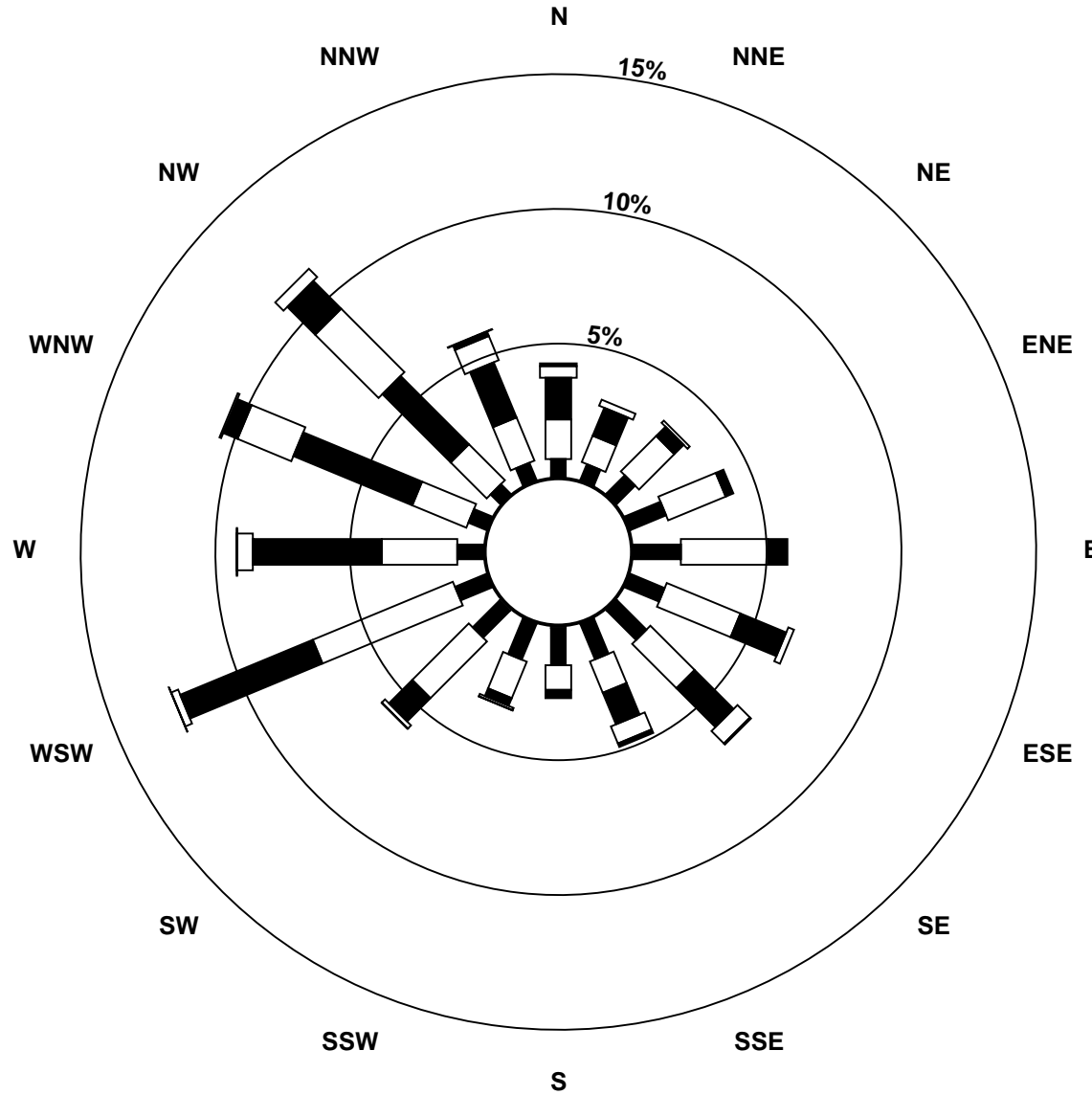
Direction	Speed (kph)						Totals
	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	
N	0.61	1.50	1.57	0.44	0.10	0.00	4.22
NNE	0.64	1.08	1.14	0.24	0.00	0.00	3.10
NE	0.94	1.88	0.50	0.12	0.00	0.00	3.43
ENE	1.44	2.34	0.31	0.00	0.00	0.00	4.09
E	1.77	3.28	0.73	0.00	0.00	0.00	5.79
ESE	1.37	3.00	1.87	0.23	0.00	0.00	6.47
SE	1.45	2.35	2.08	0.66	0.06	0.00	6.60
SSE	1.40	1.28	1.29	0.70	0.14	0.00	4.80
S	1.36	0.93	0.31	0.00	0.00	0.00	2.60
SSW	1.38	1.48	0.31	0.09	0.01	0.00	3.28
SW	1.38	3.02	1.24	0.17	0.01	0.00	5.82
WSW	1.28	5.72	5.40	0.28	0.00	0.01	12.69
W	0.93	2.84	4.86	0.58	0.01	0.01	9.23
WNW	0.72	2.20	4.85	2.19	0.58	0.07	10.61
NW	0.55	1.91	3.64	3.38	1.48	0.44	11.40
NNW	0.66	1.76	2.25	0.99	0.17	0.02	5.86
Totals	17.87	36.58	32.35	10.07	2.57	0.56	100.00

Number of Data Values	8622
Hours in Time Period	8760

**WCAS - Genesee
Wind Speed Rose**



**Wind Speed (WS) - kph
2014**



Wind Frequency (kph)

