

**Capital Power
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2010**

Prepared by:

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



February 18th, 2011

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 2010.
For Capital Power**

The West Central Airshed Society (WCAS) presents the 2010 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.

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

Sincerely,

Patrick Andersen
Environmental Specialist

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2010
 Percentage Frequency Distribution of Wind

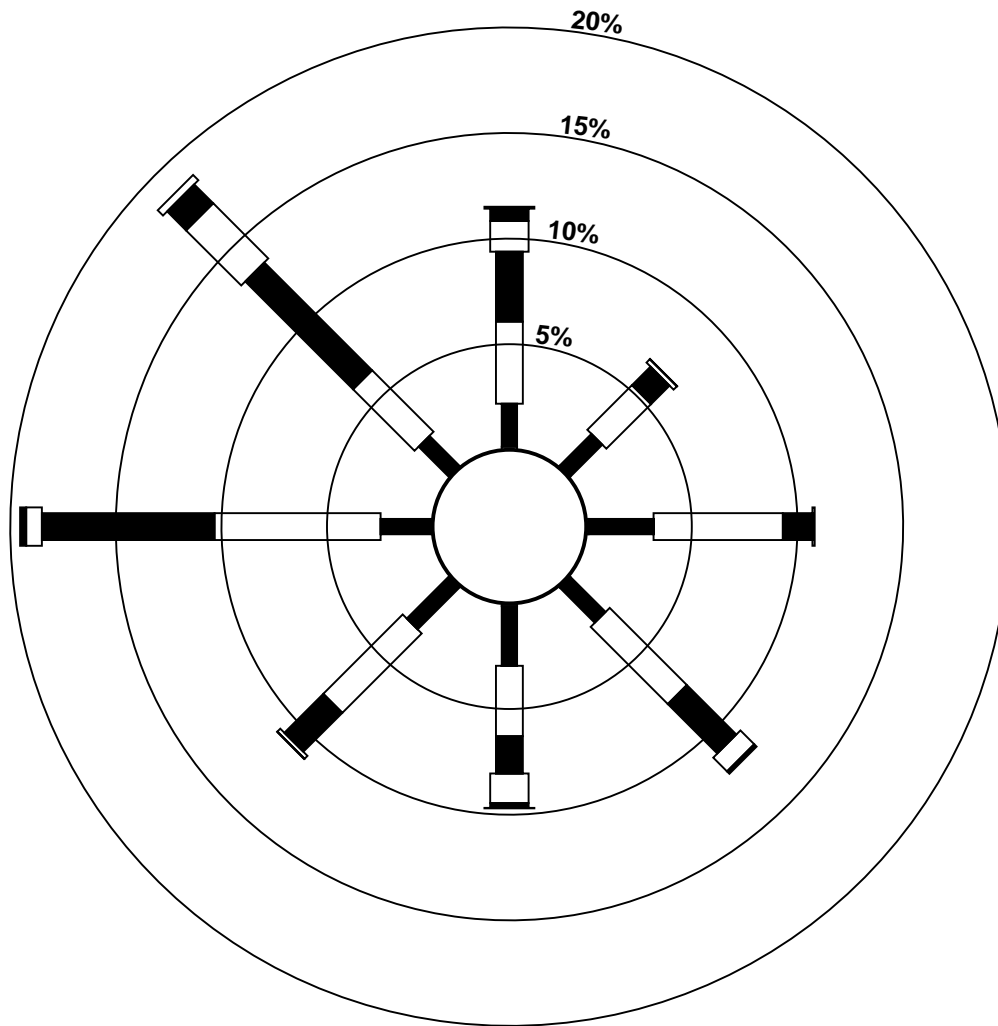
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.03	3.89	3.31	1.45	0.58	0.09	11.35
NorthEast	2.14	2.98	1.25	0.22	0.02	-	6.61
East	3.09	6.11	1.41	0.10	-	-	10.71
SouthEast	2.33	5.17	3.31	0.93	0.16	-	11.90
South	2.82	3.34	1.76	1.41	0.23	0.02	9.58
SouthWest	2.83	5.31	2.61	0.19	0.02	-	10.96
West	2.42	7.86	8.17	0.74	0.29	-	19.48
NorthWest	2.05	4.11	7.22	3.69	1.27	0.35	18.69
Totals	17.94	35.74	31.98	9.99	3.03	0.47	99.15

Percent Calm	0.85
Number of Data Values	8749
Hours in Time Period	8760

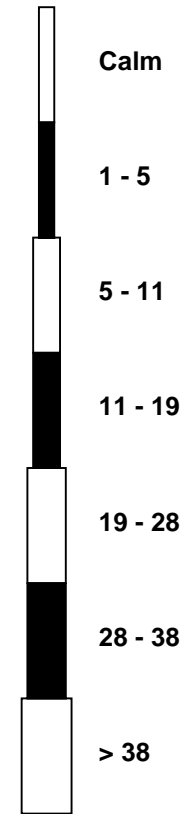
**WCAS - Genesee
Wind Speed Rose**



**Wind Speed (WS) - kph
January 2010**



Wind Frequency (kph)



West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2010
 SO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-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	709	100.0	0.926	13.408	0	3.134	0	100.0	-	-	-	-	-
February	639	100.0	1.144	22.312	0	4.900	0	99.4	0.63	-	-	-	-
March	706	100.0	0.523	8.228	0	1.752	0	100.0	-	-	-	-	-
April	686	100.0	0.797	42.120	0	4.991	0	99.4	0.58	-	-	-	-
May	708	100.0	0.756	26.265	0	4.637	0	99.7	0.3	-	-	-	-
June	685	100.0	1.444	24.899	0	5.360	0	99.3	0.7	-	-	-	-
July	703	99.2	1.562	55.799	0	10.706	0	98.6	1.4	-	-	-	-
August	709	100.0	1.519	54.753	0	7.995	0	98.6	1.4	-	-	-	-
September	685	100.0	1.018	27.410	0	4.913	0	98.8	1.2	-	-	-	-
October	701	99.3	0.745	18.378	0	3.450	0	100.0	-	-	-	-	-
November	685	100.0	0.479	11.964	0	2.888	0	100.0	-	-	-	-	-
December	708	100.0	0.668	7.775	0	2.293	0	100.0	-	-	-	-	-
Annual	8324	99.9	0.964	55.799	0	10.706	0	99.5	0.5	-	-	-	-

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2010
 O3 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value
January	709	100.0	17.0	44.2	0	37.9
February	639	100.0	23.8	47.0	0	35.8
March	707	100.0	31.2	55.6	0	43.3
April	686	100.0	36.3	67.2	0	53.3
May	708	100.0	34.7	75.0	0	54.1
June	685	100.0	29.4	62.4	0	42.6
July	703	99.2	22.9	63.8	0	35.4
August	709	100.0	22.5	59.7	0	33.5
September	685	100.0	17.7	46.0	0	32.2
October	697	99.3	20.4	46.6	0	31.6
November	685	100.0	18.6	37.9	0	29.2
December	708	100.0	14.2	36.9	0	26.4
Annual	8321	99.9	24.1	75.0	0	54.1

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2010
 NO2 (ppb)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations	Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
January	707	100.0	4.616	21.650	0	12.173	0	100.0	-	-	-
February	640	100.0	6.318	46.402	0	12.451	0	100.0	-	-	-
March	708	100.0	4.214	23.203	0	11.572	0	100.0	-	-	-
April	684	100.0	3.418	19.047	0	6.562	0	100.0	-	-	-
May	700	100.0	2.296	27.511	0	5.369	0	100.0	-	-	-
June	684	100.0	3.387	25.340	0	7.292	0	100.0	-	-	-
July	703	100.0	3.920	29.150	0	8.423	0	100.0	-	-	-
August	703	100.0	2.417	31.425	0	9.457	0	100.0	-	-	-
September	685	100.0	2.917	23.516	0	6.912	0	100.0	-	-	-
October	701	99.3	2.649	18.743	0	5.348	0	100.0	-	-	-
November	686	100.0	2.888	19.676	0	9.255	0	100.0	-	-	-
December	706	99.7	6.952	34.181	0	26.614	0	100.0	-	-	-
Annual	8307	99.9	3.822	46.402	0	26.614	0	100.0	-	-	-

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2010
 PM2.5 ($\mu\text{g}/\text{m}^3$)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Number 1-Hour Violations	Maximum 24-Hour Value	Number 24-Hour Violations
January	737	99.1	6.7	74.9	0	29.3	0
February	671	99.9	6.0	42.7	0	16.5	0
March	737	99.9	3.3	16.6	0	8.5	0
April	712	98.9	3.4	18.4	0	8.4	0
May	738	99.2	3.7	59.7	0	9.2	0
June	710	99.3	4.7	37.8	0	13.4	0
July	723	97.2	4.9	31.6	0	10.6	0
August	732	98.4	19.2	450.2	39	220.5	3
September	712	99.6	2.1	31.3	0	6.1	0
October	732	98.4	4.2	21.1	0	7.9	0
November	719	99.9	2.6	13.4	0	7.1	0
December	739	100.0	6.2	24.9	0	14.4	0
Annual	8662	99.1	5.6	450.2	39	220.5	3

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

**Capital Power / Genesee
Station 910**

January to December 2010

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	Percentile				
								P10	Q1	Median	Q3	P90
SO ₂ (ppb)	425	8324	99.9	1.0	-	0.0	55.8	0.5	0.7	1.1	1.5	2.1
O ₃ (ppb)	428	8321	99.9	24.0	-	0.0	75.0	5.4	14.2	21.9	27.6	30.8
NO (ppb)	438	8311	99.9	1.1	-	0.0	130.2	0.6	0.7	0.9	1.6	4.3
NO ₂ (ppb)	438	8311	99.9	4.5	-	0.0	58.2	2.5	3.8	5.6	9.9	14.4
NO _x (ppb)	438	8311	99.9	5.9	-	0.0	189.0	3.5	4.9	7.0	12.1	18.4
Particulate Matter 2.5 microns (μ/m ³)	21	8662	99.2	5.6	-	0.0	450.2	0.4	1.6	3.2	5.8	11.0
Wind Speed (kph)	0	8749	99.9	11.2	-	0.0	53.5	4.0	6.4	10.4	14.3	18.5
Temperature - 2m (°C)	0	8749	99.9	4.1	-	-27.5	29.0	-17.8	-14.7	-8.9	-3.7	-1.0
Temperature - 10m (°C)	0	8748	99.9	3.6	-	-27.8	30.6	-18.1	-15.1	-10.2	-4.8	-2.1
Delta Temperature (°C)	0	8748	99.9	-0.4	-	-6.2	2.5	-2.3	-1.5	-0.6	-0.1	0.2
Relative Humidity (%)	0	8749	99.9	69.2	-	14.3	96.0	60.9	67.4	77.1	83.7	87.7
Global Solar Radiation (W/m ²)	0	8749	99.9	140.3	-	0.0	960.3	0.0	0.0	0.0	36.8	131.2
Precipitation (mm)	0	8749	99.9	-	509.742	0.0	37.0	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8749	99.9	19.7	-	1.9	101.2	5.4	7.5	10.9	17.1	32.9
Std Dev Wind Speed (kph)	0	8749	99.9	2.7	-	0.0	14.9	1.0	1.4	2.0	2.8	4.0