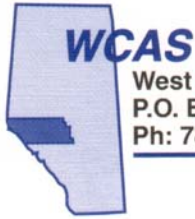


**Capital Power
Continuous Ambient Air Quality
Monitoring Program
Annual Summary for 2009**

Prepared by:

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



West Central Airshed Society
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February 22nd, 2010

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 2009.
For Capital Power**

The West Central Airshed Society (WCAS) presents the 2009 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 2009
 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	1.76	4.20	5.08	2.70	1.29	0.21	15.24
NorthEast	1.67	2.67	2.12	0.26	-	-	6.73
East	2.74	4.58	1.07	0.05	-	-	8.44
SouthEast	2.33	5.28	3.03	0.63	0.06	0.01	11.33
South	2.24	2.46	2.02	1.09	0.09	0.02	7.92
SouthWest	2.90	3.18	1.25	0.30	0.02	0.02	7.67
West	2.58	9.16	9.20	1.02	0.03	-	21.99
NorthWest	1.71	4.20	8.20	3.95	1.53	0.33	19.93
Totals	17.94	35.74	31.98	9.99	3.03	0.59	99.26

Percent Calm	0.74
Number of Data Values	8753
Hours in Time Period	8760

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2009
 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	0.596	9.219	0	1.606	0	100.0	-	-	-	-	-
February	640	100.0	0.680	10.755	0	2.240	0	100.0	-	-	-	-	-
March	709	100.0	1.117	35.186	0	6.181	0	99.4	0.6	-	-	-	-
April	686	100.0	1.051	18.855	0	3.718	0	100.0	-	-	-	-	-
May	706	100.0	1.462	43.097	0	4.107	0	99.4	0.6	-	-	-	-
June	685	100.0	1.548	33.887	0	6.289	0	99.3	0.7	-	-	-	-
July	706	100.0	0.924	35.951	0	5.842	0	99.0	1.0	-	-	-	-
August	703	100.0	2.983	42.302	0	10.200	0	98.9	1.1	-	-	-	-
September	685	100.0	1.319	22.644	0	6.420	0	99.9	0.2	-	-	-	-
October	704	99.3	0.731	22.188	0	3.299	0	99.9	0.1	-	-	-	-
November	686	100.0	0.419	10.422	0	1.989	0	100.0	-	-	-	-	-
December	706	99.7	0.497	14.336	0	2.179	0	100.0	-	-	-	-	-
Annual	8325	99.9	1.113	43.097	0	10.200	0	99.6	0.4	-	-	-	-

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2009
 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	21.3	45.1	0	39.1
February	640	100.0	25.3	57.4	0	36.3
March	708	100.0	37.0	64.2	0	56.7
April	685	100.0	43.0	70.8	0	57.2
May	705	99.9	37.1	63.1	0	48.6
June	685	100.0	33.1	60.9	0	45.0
July	704	100.0	28.3	101.2	7	50.3
August	703	100.0	26.7	67.5	0	44.9
September	685	100.0	28.5	92.6	4	49.1
October	703	99.3	16.8	41.9	0	26.1
November	686	100.0	20.8	41.2	0	32.1
December	706	99.7	17.2	43.2	0	33.9
Annual	8319	99.9	27.9	101.2	11	57.2

West Central Airshed Society - Genesee (AMS 910)
 Annual Summary for 2009
 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 2009
 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	732	98.4	2.8	14.7	0	6.4	0
February	669	99.6	3.4	43.8	0	7.0	0
March	740	100.0	3.5	15.7	0	7.7	0
April	714	99.2	3.9	14.0	0	9.2	0
May	734	98.7	3.6	37.3	0	8.2	0
June	711	99.4	4.9	39.4	0	12.3	0
July	725	97.9	5.2	28.4	0	18.2	0
August	731	98.3	7.0	28.7	0	15.8	0
September	702	98.1	6.1	117.0	0	17.5	0
October	731	98.3	2.5	32.5	0	11.5	0
November	717	99.6	2.1	25.8	0	4.9	0
December	737	99.7	3.6	31.3	0	17.1	0
Annual	8643	98.9	4.0	117.0	0	18.2	0

Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

**Capital Power / Genesee
Station 910**

January to December 2009

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	Percentile				
								P10	Q1	Median	Q3	P90
SO ₂ (ppb)	428	8325	99.9	1.1	-	0.0	43.1	0.5	0.7	1.1	1.5	2.1
O ₃ (ppb)	433	8319	99.9	27.9	-	0.0	101.2	5.4	14.2	21.9	27.6	30.8
NO (ppb)	446	8307	99.9	0.8	-	0.0	69.3	0.6	0.7	0.9	1.6	4.3
NO ₂ (ppb)	446	8307	99.9	3.8	-	0.0	46.4	2.5	3.8	5.6	9.9	14.4
NO _x (ppb)	446	8307	99.9	4.8	-	0.0	114.9	3.5	4.9	7.0	12.1	18.4
Particulate Matter 2.5 microns (μ/m ³)	21	8643	98.9	4.0	-	0.0	117.0	0.4	1.6	3.2	5.8	11.0
Wind Speed (kph)	0	8753	99.9	11.9	-	0.0	51.6	4.0	6.4	10.4	14.3	18.5
Temperature - 2m (°C)	0	8753	99.9	3.4	-	-36.3	33.3	-17.8	-14.7	-8.9	-3.7	-1.0
Temperature - 10m (°C)	0	8753	99.9	2.9	-	-38.8	34.6	-18.1	-15.1	-10.2	-4.8	-2.1
Delta Temperature (°C)	0	8753	99.9	-0.5	-	-5.9	5.6	-2.3	-1.5	-0.6	-0.1	0.2
Relative Humidity (%)	0	8753	99.9	65.4	-	13.9	96.8	60.9	67.4	77.1	83.7	87.7
Global Solar Radiation (W/m ²)	0	8753	99.9	150.1	-	-1.9	954.1	0.0	0.0	0.0	36.8	131.2
Precipitation (mm)	0	8753	99.9	-	31.064	0.0	2.1	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8753	99.9	19.5	-	1.9	106.4	5.4	7.5	10.9	17.1	32.9
Std Dev Wind Speed (kph)	0	8753	99.9	2.9	-	0.0	21.6	1.0	1.4	2.0	2.8	4.0