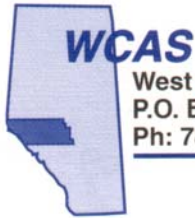


**TransAlta Utilities Corporation  
Continuous Ambient Air Quality  
Monitoring Program  
Annual Summary for 2006**

**Prepared by:**

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



West Central Airshed Society  
P.O. Box 7421, Drayton Valley, Alberta T7A 1S6  
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March 1, 2007

TransAlta Utilities Corporation  
Mr. Jerry Navarro  
Box 120  
Wabamun, Alberta  
T0E 2K0

Dear Sir:

**Re: Annual Ambient Air Quality Monitoring Report. July – December 2006.  
For TransAlta Utilities Corporation**

The West Central Airshed Society (WCAS) presents the 2006 Annual Report containing ambient air quality and meteorological information from the following sites:

Network Stations are	AMS 907	Power
Identified as:	AMS 908	Meadows
	AMS 909	Wagner

The Network Stations 907, 908, 909 were commissioned April 23, April 26, and April 20 of 2004, respectively. WCAS data collection and validation began July 1, 2004. The following is a list of the reported ambient air and meteorological parameters measured at each site location:

**AMS 907 (Power)**

SO<sub>2</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, and External Temperature.

**AMS 908 (Meadows)**

SO<sub>2</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Wind Speed and Direction, Relative Humidity, and External Temperature.

**AMS 909 (Wagner)**

SO<sub>2</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Wind Speed and Direction, Relative Humidity, and External Temperature.

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

Sincerely,

Patrick Andersen  
Environmental Specialist

Greg Swain  
Senior Technologist

Jeff McClintock  
Intermediate Technologist

**TransAlta Utilities Corporation  
Frequency Distribution Charts  
Wind Speed and Direction  
Year 2006**

West Central Airshed Society - Power (AMS 907)  
 Annual Summary for 2006  
 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	1.27	2.95	2.24	0.59	0.07	0.02	7.14
NorthEast	1.61	3.11	1.18	0.25	--	--	6.14
East	1.48	3.13	2.16	0.61	0.01	--	7.39
SouthEast	1.47	5.78	8.12	3.36	0.24	--	18.97
South	1.37	4.94	5.89	0.82	--	--	13.03
SouthWest	1.74	5.23	5.33	0.33	--	--	12.63
West	2.09	6.43	7.86	2.16	0.61	0.02	19.16
NorthWest	1.4	4.31	5.76	2.79	1	0.09	15.35
Totals	12.44	35.87	38.53	10.91	1.93	0.14	99.81

Percent Calm	0.19
Number of Data Values	8757
Hours in Time Period	8760

West Central Airshed Society - Meadows (AMS 908)  
 Annual Summary for 2006  
 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	1.62	3.41	1.95	0.24	0.05	0.01	7.28
NorthEast	2.42	3.19	1.62	0.41	0.12	--	7.77
East	3.73	7.36	5.44	2.33	0.35	--	19.21
SouthEast	1.75	2.81	2.98	1.82	0.38	--	9.75
South	1.41	1.87	1.37	0.2	--	--	4.84
SouthWest	2.75	3.87	1.73	0.53	0.14	--	9.02
West	4.26	11.58	7.77	2.22	0.38	0.01	26.23
NorthWest	1.56	4.03	6.33	2.6	0.35	0.02	14.89
Totals	19.51	38.13	29.19	10.36	1.75	0.05	98.99

Percent Calm	1.01
Number of Data Values	8678
Hours in Time Period	8760

West Central Airshed Society - Wagner (AMS 909)  
 Annual Summary for 2006  
 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	5.72	5.93	0.95	0.16	--	--	12.77
NorthEast	5.86	4.69	0.54	0.1	--	--	11.2
East	3.31	5.34	2.67	0.09	--	--	11.4
SouthEast	1.9	2.21	1.26	0.26	--	--	5.63
South	3.74	3.66	0.8	0.18	--	--	8.39
SouthWest	4.42	8.48	4.11	0.66	--	--	17.68
West	2.08	5.52	8	1.47	0.25	--	17.32
NorthWest	1.95	5.67	4.48	1.4	0.18	--	13.67
Totals	28.99	41.5	22.81	4.33	0.44	--	98.07

Percent Calm	1.93
Number of Data Values	8734
Hours in Time Period	8760

**TransAlta Utilities Corporation  
Frequency Distribution Charts  
SO<sub>2</sub> Monthly Averages  
Year 2006**

West Central Airshed Society - Power (AMS 907)  
 Annual Summary for 2006  
 SO2 (ppm)

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	708	100	0.001	0.031	0	0.005	0	99.44	0.56	-	-	-	-
February	639	100	0.001	0.029	0	0.003	0	99.84	0.16	-	-	-	-
March	710	100	0.002	0.056	0	0.009	0	99.15	0.85	-	-	-	-
April	685	99.86	0.001	0.032	0	0.004	0	99.56	0.44	-	-	-	-
May	709	100	0.001	0.017	0	0.002	0	100	-	-	-	-	-
June	708	100	0.001	0.015	0	0.003	0	100	-	-	-	-	-
July	705	99.87	0.001	0.023	0	0.003	0	99.86	0.14	-	-	-	-
August	708	99.87	0.001	0.032	0	0.004	0	99.86	0.14	-	-	-	-
September	684	99.86	0.001	0.023	0	0.004	0	99.85	0.15	-	-	-	-
October	709	100	0.001	0.029	0	0.004	0	99.58	0.42	-	-	-	-
November	685	100	0.001	0.026	0	0.003	0	99.85	0.15	-	-	-	-
December	709	100	0.001	0.014	0	0.002	0	100	-	-	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual 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
	8359	99.95	0.001	0.056	0	0.009	0	99.75	0.25	-	-	-	-



West Central Airshed Society - Meadows (AMS 908)  
 Annual Summary for 2006  
 SO2 (ppm)

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	706	99.6	0.001	0.016	0	0.004	0	100	-	-	-	-	-
February	634	99.26	0.002	0.032	0	0.011	0	99.21	0.79	-	-	-	-
March	708	100	0.004	0.041	0	0.013	0	96.61	3.39	-	-	-	-
April	684	99.86	0.001	0.02	0	0.004	0	99.85	0.15	-	-	-	-
May	694	97.98	0.001	0.031	0	0.012	0	99.71	0.29	-	-	-	-
June	704	100	0.001	0.023	0	0.007	0	99.71	0.29	-	-	-	-
July	702	99.06	0.001	0.052	0	0.004	0	99.72	0.28	-	-	-	-
August	709	100	0.001	0.036	0	0.004	0	99.72	0.28	-	-	-	-
September	685	100	0.001	0.028	0	0.008	0	99.42	0.58	-	-	-	-
October	703	99.33	0.001	0.034	0	0.01	0	99.72	0.28	-	-	-	-
November	686	100	0.001	0.027	0	0.006	0	99.27	0.73	-	-	-	-
December	666	94.22	0.001	0.01	0	0.002	0	100	-	-	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual 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
	8281	99.1	0.001	0.052	0	0.013	0	99.41	0.59	-	-	-	-

West Central Airshed Society - Wagner (AMS 909)  
 Annual Summary for 2006  
 SO2 (ppm)

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	706	100	0.001	0.018	0	0.003	0	100	-	-	-	-	-
February	630	97.92	0.002	0.021	0	0.004	0	99.84	0.16	-	-	-	-
March	708	100	0.002	0.031	0	0.006	0	99.29	0.71	-	-	-	-
April	681	99.31	0.002	0.03	0	0.009	0	98.68	1.32	-	-	-	-
May	709	100	0.002	0.037	0	0.008	0	98.59	1.41	-	-	-	-
June	705	100	0.002	0.04	0	0.009	0	98.09	1.91	-	-	-	-
July	687	97.31	0.002	0.029	0	0.006	0	99.13	0.87	-	-	-	-
August	709	100	0.001	0.02	0	0.003	0	99.86	0.14	-	-	-	-
September	679	99.17	0.002	0.04	0	0.005	0	99.12	0.88	-	-	-	-
October	708	100	0.001	0.038	0	0.011	0	99.29	0.71	-	-	-	-
November	685	100	0.001	0.023	0	0.003	0	99.85	0.15	-	-	-	-
December	707	100	0.001	0.019	0	0.002	0	100	-	-	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual 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
	8314	99.49	0.002	0.04	0	0.011	0	99.31	0.69	-	-	-	-

**TransAlta Utilities Corporation  
Frequency Distribution Charts  
NO<sub>2</sub> Monthly Averages  
Year 2006**

West Central Airshed Society - Power (AMS 907)

Annual Summary for 2006

NO2 (ppm)

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	0.01	0.032	0	0.018	0	100	-	-	-
February	638	100	0.005	0.028	0	0.013	0	100	-	-	-
March	708	100	0.007	0.059	0	0.021	0	99.72	0.28	-	-
April	682	99.86	0.004	0.017	0	0.008	0	100	-	-	-
May	705	100	0.002	0.017	0	0.005	0	100	-	-	-
June	707	100	0.002	0.01	0	0.005	0	100	-	-	-
July	702	99.87	0.002	0.022	0	0.005	0	100	-	-	-
August	706	99.87	0.002	0.021	0	0.005	0	100	-	-	-
September	683	99.86	0.003	0.017	0	0.005	0	100	-	-	-
October	706	100	0.003	0.021	0	0.011	0	100	-	-	-
November	684	100	0.005	0.032	0	0.014	0	100	-	-	-
December	707	100	0.006	0.029	0	0.013	0	100	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
	8335	99.95	0.004	0.059	0	0.021	0	99.98	0.02	-	-

West Central Airshed Society - Meadows (AMS 908)  
 Annual Summary for 2006  
 NO2 (ppm)

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	703	99.6	0.014	0.036	0	0.022	0	100	-	-	-
February	634	99.26	0.009	0.042	0	0.021	0	100	-	-	-
March	707	100	0.011	0.046	0	0.021	0	100	-	-	-
April	662	97.64	0.006	0.035	0	0.013	0	100	-	-	-
May	694	97.98	0.005	0.03	0	0.012	0	100	-	-	-
June	701	100	0.004	0.032	0	0.01	0	100	-	-	-
July	701	99.06	0.004	0.037	0	0.01	0	100	-	-	-
August	707	100	0.005	0.038	0	0.01	0	100	-	-	-
September	684	100	0.005	0.026	0	0.01	0	100	-	-	-
October	700	99.33	0.006	0.032	0	0.015	0	100	-	-	-
November	685	100	0.008	0.036	0	0.022	0	100	-	-	-
December	664	94.22	0.014	0.041	0	0.027	0	100	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
	8242	98.92	0.008	0.046	0	0.027	0	100	-	-	-

West Central Airshed Society - Wagner (AMS 909)  
 Annual Summary for 2006  
 NO2 (ppm)

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	703	100	0.009	0.030	0	0.015	0	100	-	-	-
February	626	97.92	0.006	0.030	0	0.013	0	100	-	-	-
March	707	100	0.007	0.034	0	0.016	0	100	-	-	-
April	679	99.31	0.005	0.027	0	0.011	0	100	-	-	-
May	708	100	0.004	0.031	0	0.008	0	100	-	-	-
June	704	100	0.004	0.028	0	0.008	0	100	-	-	-
July	640	90.59	0.004	0.021	0	0.007	0	100	-	-	-
August	55	8.33	0.006	0.011	0	0.007	0	100	-	-	-
September	672	99.03	0.004	0.029	0	0.007	0	100	-	-	-
October	699	99.19	0.004	0.021	0	0.013	0	100	-	-	-
November	684	100	0.007	0.033	0	0.015	0	100	-	-	-
December	707	100	0.007	0.029	0	0.015	0	100	-	-	-

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Number 1-Hour Violations	Annual Maximum 24-Hour Value (ppm)	Annual Number 24-Hour Violations	Annual Percent of Data in each Concentration Range			
								<=0.05	>0.05-0.11	>0.11-0.21	>0.21
	7584	91.05	0.006	0.034	0	0.016	0	100	-	-	-

**TransAlta Utilities Corporation  
Frequency Distribution Charts  
PM Monthly Averages  
Year 2006**

West Central Airshed Society - Power (AMS 907)  
 Annual Summary for 2006  
 PM2.5 (ppm)

Month	Number of Data	Operational Time (%)	Mean	Maximum 1-Hour Value	Maximum 24-Hour Value
January	742	99.46	5.3	29.2	14
February	667	99.26	3.4	33.8	12.9
March	738	99.19	4.8	25.5	12.5
April	710	98.61	3.7	18.4	9.4
May	736	98.92	5.5	97.1	17.1
June	733	98.47	5	48.8	12.7
July	725	97.85	7.9	209.6	57.8
August	733	99.19	4.7	28.6	13.6
September	709	98.47	4.2	27.7	13.5
October	737	99.06	2.6	24.4	8.5
November	715	100	4	21.3	11.2
December	739	99.33	2.1	16.1	5.6

Year 2006	Annual Number of Data Hours	Annual Operational Time (%)	Annual Mean (ppm)	Annual Maximum 1-Hour Value (ppm)	Annual Maximum 24-Hour Value (ppm)
	8684	98.98	4.50	209.6	57.8



**TransAlta Utilities Corporation  
Frequency Distribution Charts  
Meteorological Measurements  
Year 2006**

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

**TransAlta / Power  
Station 907**

**January to December 2006**

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	Percentile				
								P10	Q1	Median	Q3	P90
SO <sub>2</sub> (ppb)	421	8359	100.0	1.0	-	0.0	56.0	0.2	0.3	0.6	1.0	1.9
NO (ppb)	445	8335	100.0	0.8	-	0.0	49.0	0.0	0.1	0.2	0.8	2.2
NO <sub>2</sub> (ppb)	445	8335	100.0	4.2	-	0.0	59.0	0.9	1.6	3.3	5.7	8.6
NO <sub>x</sub> (ppb)	445	8335	100.0	5.3	-	0.0	74.0	1.3	2.1	4.0	6.8	10.7
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	13	8682	99.0	4.5	-	0.0	210.0	0.4	1.4	3.1	6.0	9.8
Wind Speed (kph)	0	8781	100.0	11.5	-	0.0	51.0	4.5	7.3	10.8	14.8	19.4
Temperature (°C)	0	8781	100.0	4.9	-	-28.0	33.0	-2.5	0.9	4.7	8.7	12.6
Relative Humidity (%)	0	8781	100.0	68.4	-	10.0	99.0	40.1	53.6	70.2	85.3	92.7
Precipitation (mm)	0	8781	100.0	-	307.0	0.0	10.9	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8781	100.0	16.7	-	2.0	104.0	7.0	8.9	12.4	19.3	32.6
Std Dev Wind Speed (kph)	0	8757	100.0	2.8	-	0.0	19.0	1.3	1.7	2.5	3.5	4.5

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

**TransAlta / Meadows  
Station 908**

**January to December 2006**

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max	----- P10	----- Q1	Percentile Median	----- Q3	----- P90
SO <sub>2</sub> (ppb)	424	8281	99.1	1.3	-	0.0	52.0	0.2	0.3	0.5	1.2	3.1
NO (ppb)	441	8242	98.9	3.4	-	0.0	146.0	0.0	0.1	0.7	3.3	10.3
NO <sub>2</sub> (ppb)	441	8242	98.9	7.7	-	0.0	46.0	1.2	2.6	5.8	11.2	16.9
NO <sub>x</sub> (ppb)	441	8242	98.9	11.2	-	0.0	170.0	1.6	3.2	7.1	14.6	26.7
Wind Speed (kph)	0	8702	99.1	10.2	-	0.0	41.0	3.1	5.6	9.1	13.7	19.0
Temperature (°C)	0	8705	99.1	4.8	-	-32.0	34.0	-2.7	0.8	4.5	8.7	12.5
Relative Humidity (%)	0	8705	99.1	69.6	-	10.0	99.0	42.5	55.9	72.3	85.2	91.5
Precipitation (mm)	0	8705	99.1	-	304.5	0.0	6.1	0.0	0.0	0.0	0.0	0.0
Std Dev Wind Direction (deg)	0	8706	99.1	21.7	-	3.0	103.0	7.2	10.0	14.8	24.0	44.1
Std Dev Wind Speed (kph)	0	8678	99.1	2.7	-	0.0	14.0	1.2	1.7	2.4	3.4	4.5

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

**TransAlta / Wagner  
Station 909**

**January to December 2006**

Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Min	Max	-----	-----	Percentile		-----	-----
							P10	Q1	Median	Q3	P90	
SO <sub>2</sub> (ppb)	422	8314	99.4	1.6	0.0	40.0	0.1	0.3	0.6	1.4	4.0	
NO (ppb)	408	7584	91.1	1.8	0.0	146.0	0.0	0.1	0.6	2.0	5.2	
NO <sub>2</sub> (ppb)	408	7584	91.1	6.0	0.0	36.0	1.8	3.0	4.9	7.8	11.5	
NO <sub>x</sub> (ppb)	408	7584	91.1	7.6	0.0	170.0	1.9	3.3	5.6	9.5	15.7	
Wind Speed (kph)	0	8743	99.5	8.4	0.0	36.0	2.3	4.4	7.4	11.5	15.8	
Temperature (°C)	0	8755	99.7	5.2	-32.0	34.0	-2.4	1.2	5.1	9.3	13.1	
Relative Humidity (%)	0	8755	99.7	68.2	10.0	99.0	40.0	53.5	70.5	84.6	91.4	
Std Dev Wind Direction (deg)	0	8746	99.6	25.2	3.0	103.0	10.0	13.9	19.4	29.9	49.8	
Std Dev Wind Speed (kph)	0	8734	99.6	2.7	0.0	16.0	1.2	1.7	2.5	3.5	4.6	