

**West Central Airshed Society  
Continuous Ambient Air Quality  
Monitoring Program  
Annual Summary for 2012**

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

January 14<sup>th</sup>, 2013

Director, Central Region  
 Alberta Environmental Protection  
 4<sup>th</sup> Floor, Oxbridge Place  
 9820 106 Street  
 Edmonton, Alberta T5K 2J6

Dear Sir:

Re: Annual Ambient Air Quality Monitoring Report. January – December 2012.

The West Central Airshed Society (WCAS) presents the 2012 Annual Report containing ambient air quality and meteorological information from the following sites:

Station 901	Tomahawk	SE 02 51 06 W5
Station 902	Violet Grove	SE 17 48 08 W5
Station 903	Carrot Creek	SE 31 53 13 W5
Station 904	Hightower	SE 11 54 02 W6
Station 911	Drayton Valley	Weyerhaeuser
Station 912	Edson	Weyerhaeuser
Station 913	Breton	NW 25 47 04 W5

WCAS data collection and validation began October 1, 2004 for Station 912, Edson. Data collection was discontinued at the Hightower station on July 10<sup>th</sup>, 2012. The following is a list of the reported ambient air and meteorological parameters measured at the site locations:

**AMS 901 (Tomahawk)**

SO<sub>2</sub>, O<sub>3</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature, Photosynthetically Active Radiation, Leaf Wetness (seasonal), and Precipitation (seasonal).

**AMS 902 (Violet Grove)**

SO<sub>2</sub>, O<sub>3</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, THC, Wind Speed and Direction, Relative Humidity, External Temperature, Delta Temperature, (2m – 10m), Photosynthetically Active Radiation, Global Solar Radiation, Leaf Wetness (seasonal), and Precipitation (seasonal).

**AMS 903 (Carrot Creek)**

SO<sub>2</sub>, O<sub>3</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Wind Speed and Direction, Relative Humidity, External Temperature, Photosynthetically Active Radiation, and Precipitation (seasonal).

**AMS 904 (Hightower)**

SO<sub>2</sub>, O<sub>3</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature.

**AMS 905 (Steeper)**

SO<sub>2</sub>, O<sub>3</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Particulate Matter (2.5 microns), Wind Speed and Direction, Relative Humidity, External Temperature, and Precipitation (seasonal).

**AMS 911 (Drayton Valley)**

Particulate Matter (2.5 microns), Wind Speed and Direction, and External Temperature,

**AMS 912 (Edson)**

SO<sub>2</sub>, O<sub>3</sub>, NO/ NO<sub>2</sub>/ NO<sub>x</sub>, Particulate Matter (2.5 microns), Wind Speed and Direction, and External Temperature.

**AMS 913 (Breton)**

SO<sub>2</sub>, O<sub>3</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 or (403) 505-1041.

Sincerely,



Robert Scotten  
Executive Director



Patrick Andersen  
Environmental Specialist



Greg Swain  
Senior Technologist



Jeff McClintock  
Technologist

**West Central Airshed Society  
Frequency Distribution Charts  
Wind Speed and Direction  
Year 2012**

West Central Airshed Society - Tomahawk (AMS 901)  
 Annual Summary for 2012  
 Percentage Frequency Distribution of Wind

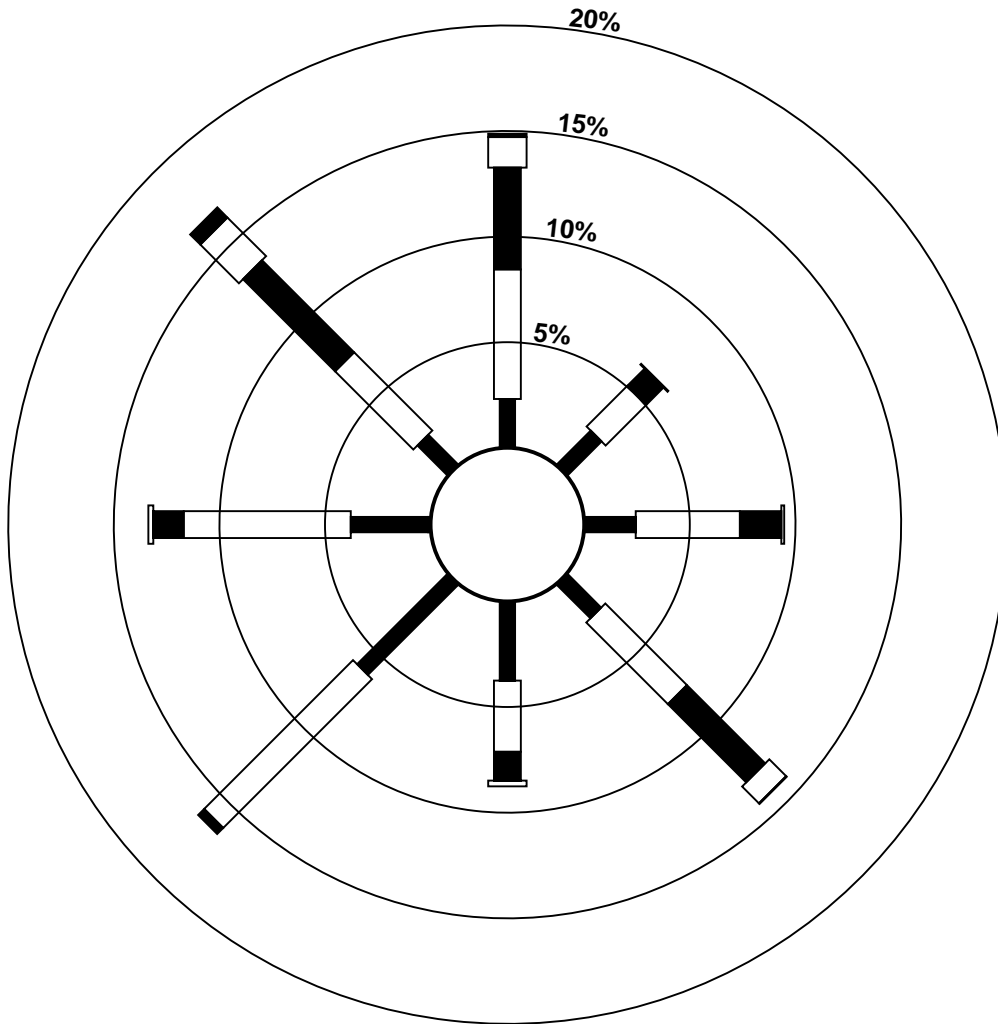
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.28	6.14	4.82	1.45	0.16	0.00	14.85
NorthEast	2.28	2.73	1.14	0.06	0.00	0.00	6.21
East	2.41	4.93	1.96	0.14	0.00	0.00	9.44
SouthEast	2.23	5.47	5.24	1.13	0.05	0.00	14.12
South	3.74	3.37	1.37	0.27	0.00	0.00	8.75
SouthWest	6.01	9.96	0.41	0.00	0.00	0.00	16.38
West	3.67	7.91	1.43	0.24	0.00	0.00	13.25
NorthWest	1.98	5.24	6.17	2.59	0.68	0.00	16.66
Totals	24.60	45.75	22.54	5.88	0.89	0.00	99.66

Percent Calm	0.34
Number of Data Values	8781
Hours in Time Period	8784

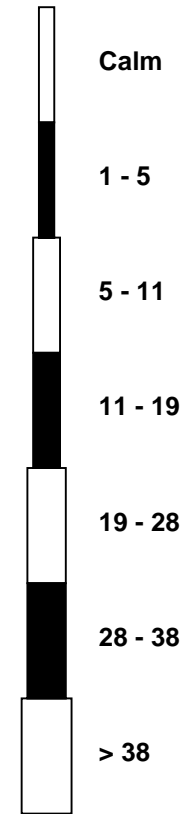
**WCAS - Tomahawk  
Wind Speed Rose**



**Wind Speed (WS) - kph  
2012**



**Wind Frequency (kph)**



West Central Airshed Society - Violet Grove (AMS 902)  
 Annual Summary for 2012  
 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	1.37	2.85	2.60	0.58	0.02	0.00	7.42
NorthEast	1.50	2.49	0.97	0.03	0.00	0.00	4.99
East	3.41	6.17	1.84	0.01	0.00	0.00	11.43
SouthEast	3.20	5.39	3.68	0.71	0.00	0.00	12.98
South	2.98	4.67	1.98	0.09	0.00	0.00	9.72
SouthWest	3.49	6.92	4.20	0.02	0.00	0.00	14.63
West	4.13	10.48	4.47	0.27	0.19	0.00	19.54
NorthWest	2.50	5.27	6.91	3.29	0.59	0.01	18.57
Totals	22.58	44.24	26.65	5.00	0.80	0.01	99.28

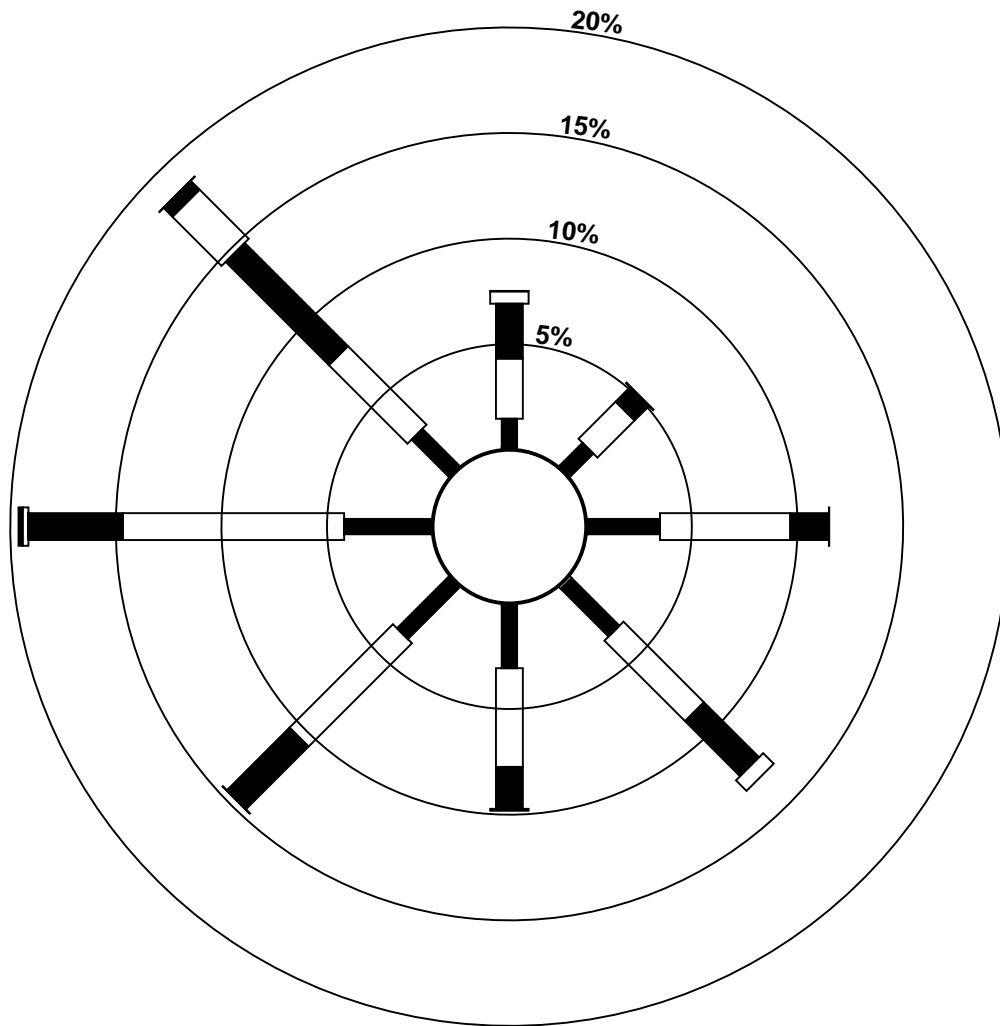
Percent Calm	0.72
Number of Data Values	8772
Hours in Time Period	8784



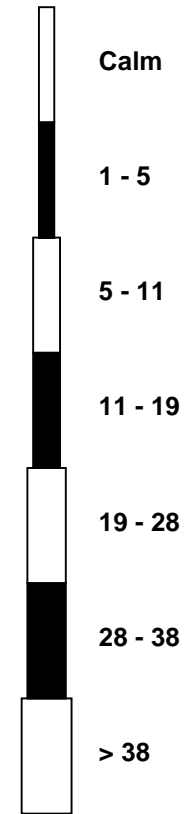
WCAS - Violet Grove  
Wind Speed Rose



Wind Speed (WS) - kph  
2012



Wind Frequency (kph)



West Central Airshed Society - Carrot Creek (AMS 903)  
 Annual Summary for 2012  
 Percentage Frequency Distribution of Wind

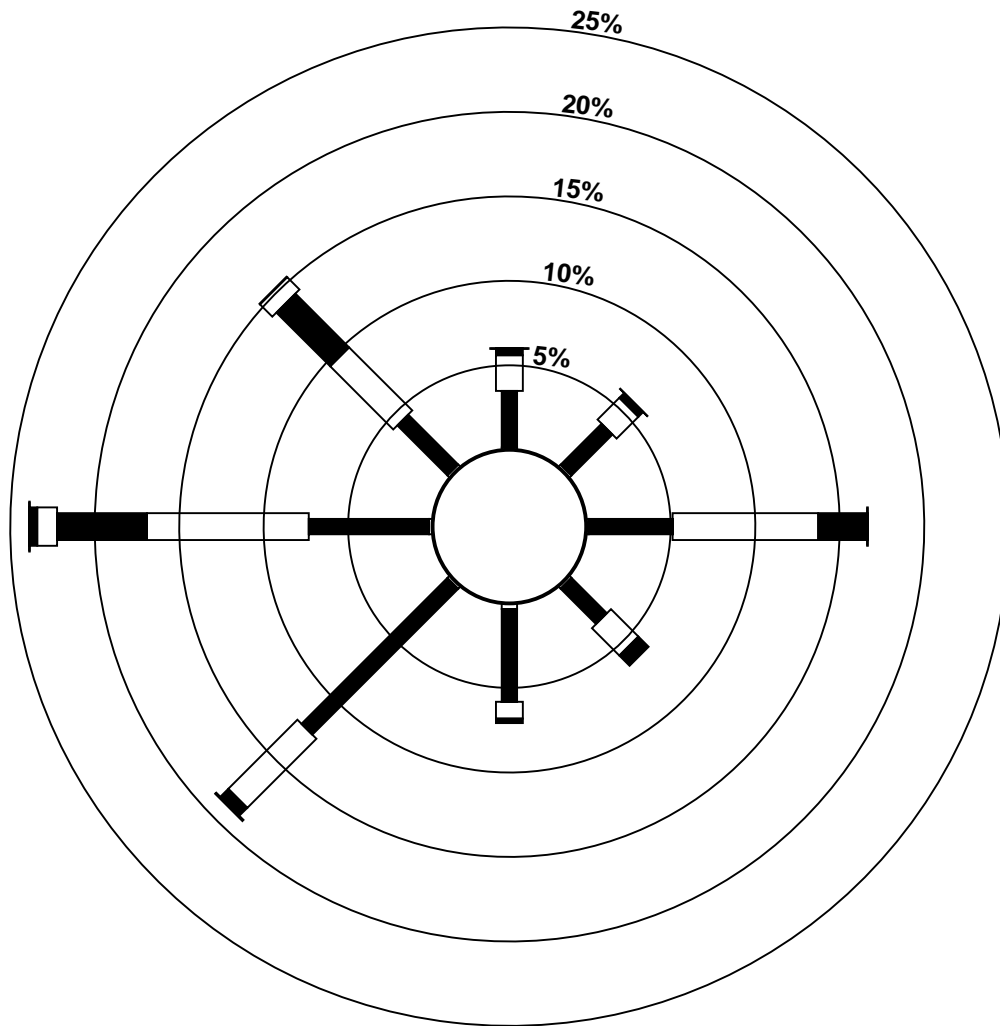
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	3.35	2.12	0.38	0.03	0.00	0.00	5.88
NorthEast	3.43	1.82	0.40	0.02	0.00	0.00	5.67
East	4.98	8.61	2.90	0.03	0.00	0.00	16.52
SouthEast	2.96	2.29	0.85	0.00	0.00	0.00	6.10
South	5.49	0.99	0.27	0.00	0.00	0.00	6.75
SouthWest	12.21	5.79	0.66	0.06	0.03	0.00	18.75
West	7.12	9.58	5.32	1.17	0.44	0.03	23.66
NorthWest	4.18	5.28	4.50	1.04	0.05	0.00	15.05
Totals	43.72	36.48	15.28	2.35	0.52	0.03	98.38

Percent Calm	1.62
Number of Data Values	8781
Hours in Time Period	8784

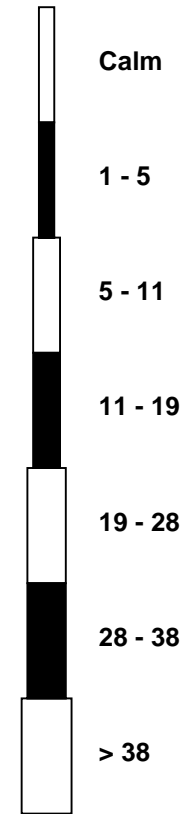
**WCAS - Carrot Creek  
Wind Speed Rose**



**Wind Speed (WS) - kph  
2012**



**Wind Frequency (kph)**



West Central Airshed Society - Hightower (AMS 904)  
 Annual Summary for 2012  
 Percentage Frequency Distribution of Wind

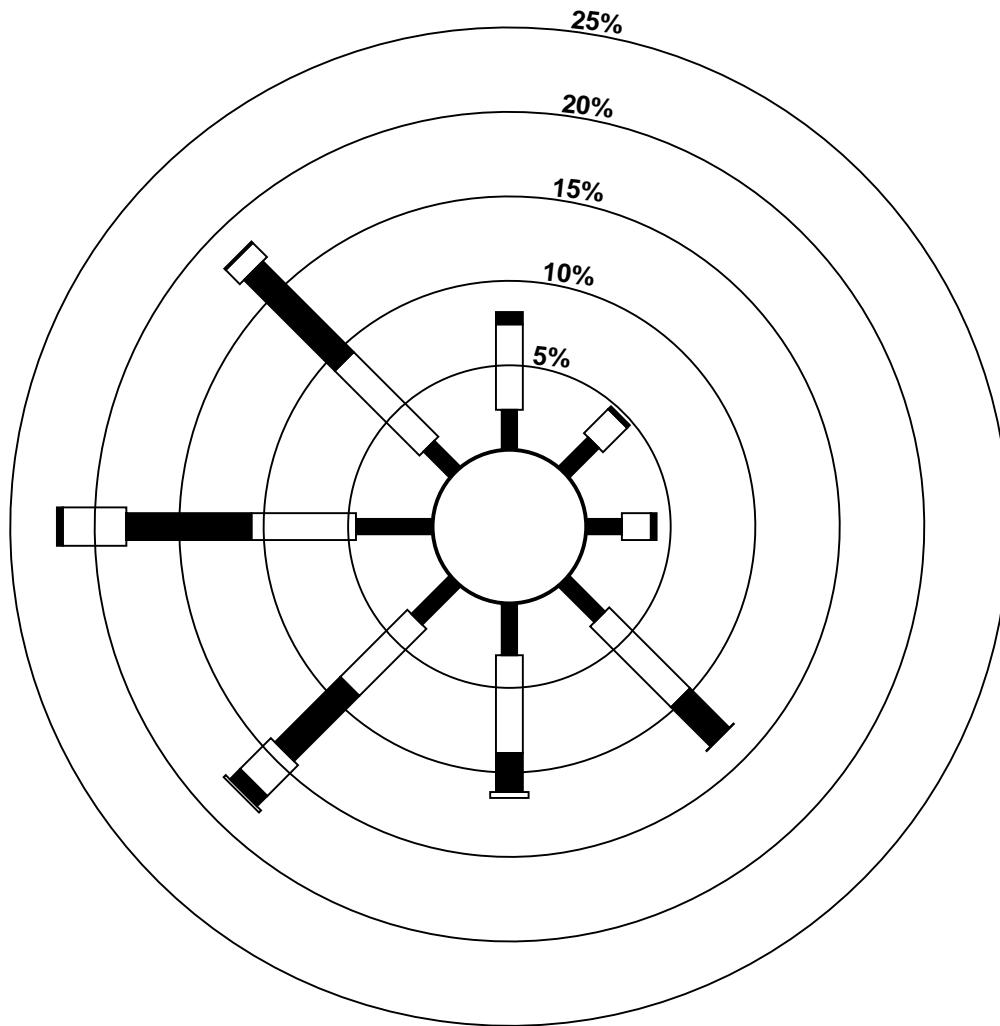
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.31	5.06	0.72	0.00	0.00	0.00	8.09
NorthEast	2.40	2.02	0.23	0.00	0.00	0.00	4.65
East	2.11	1.71	0.35	0.00	0.00	0.00	4.17
SouthEast	2.98	6.77	3.30	0.03	0.00	0.00	13.08
South	2.98	5.78	2.31	0.35	0.00	0.00	11.42
SouthWest	3.18	5.61	5.47	2.57	0.87	0.17	17.87
West	4.51	6.19	7.40	3.76	0.35	0.00	22.21
NorthWest	2.20	7.09	7.61	1.19	0.12	0.00	18.21
Totals	22.67	40.23	27.39	7.90	1.34	0.17	99.70

Percent Calm	0.30
Number of Data Values	3458
Hours in Time Period	4595

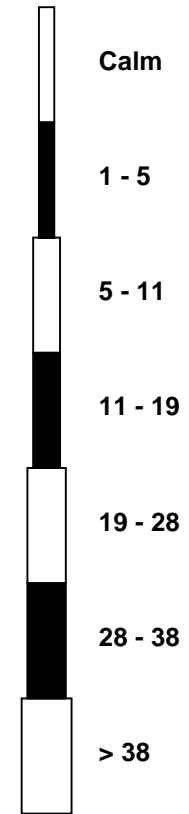
**WCAS - High Tower  
Wind Speed Rose**



**Wind Speed (WS) - kph  
2012**



**Wind Frequency (kph)**



West Central Airshed Society - Steeper (AMS 905)  
 Annual Summary for 2012  
 Percentage Frequency Distribution of Wind

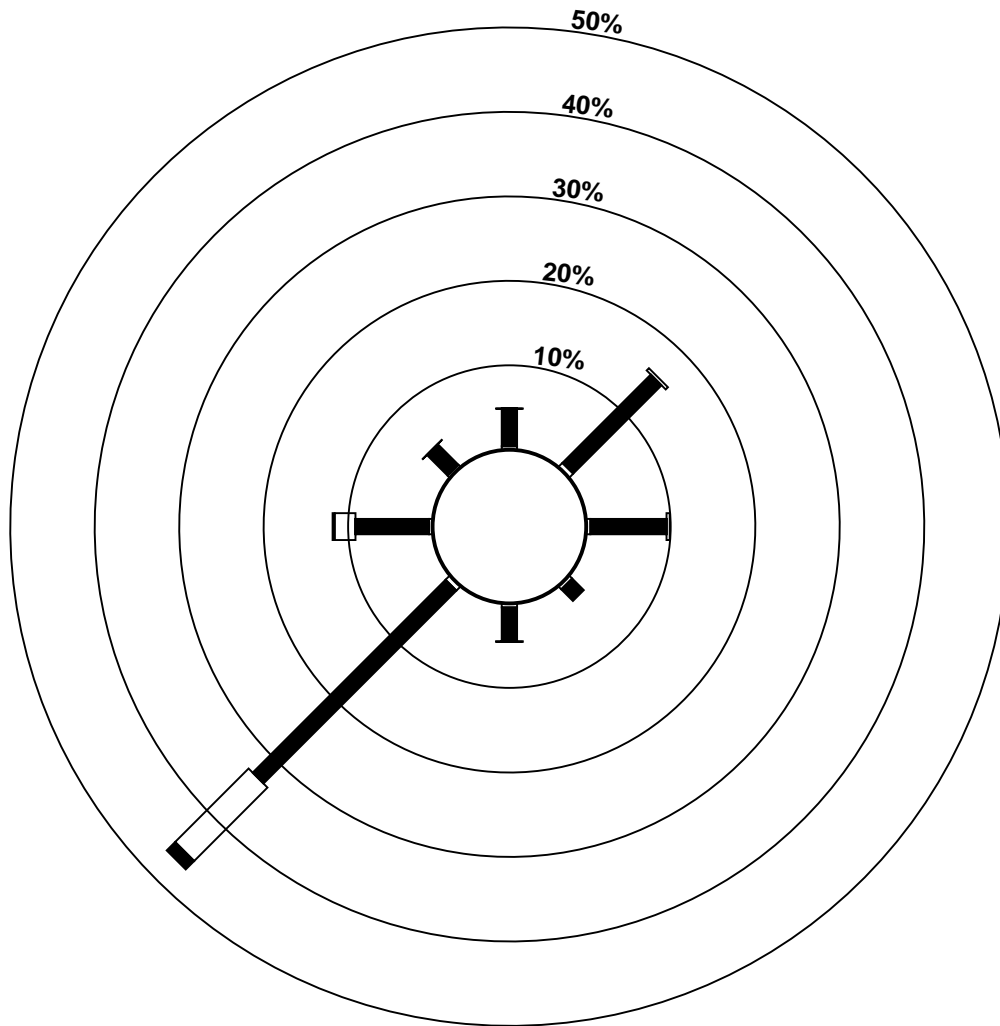
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	4.46	0.01	0.00	0.00	0.00	0.00	4.47
NorthEast	14.79	0.38	0.00	0.00	0.00	0.00	15.17
East	9.03	0.38	0.00	0.00	0.00	0.00	9.41
SouthEast	1.96	0.00	0.00	0.00	0.00	0.00	1.96
South	4.02	0.06	0.00	0.00	0.00	0.00	4.08
SouthWest	32.29	12.29	1.41	0.00	0.00	0.00	45.99
West	8.72	2.46	0.25	0.00	0.00	0.00	11.43
NorthWest	3.48	0.02	0.00	0.00	0.00	0.00	3.50
Totals	78.75	15.60	1.66	0.00	0.00	0.00	96.01

Percent Calm	3.99
Number of Data Values	8764
Hours in Time Period	8784

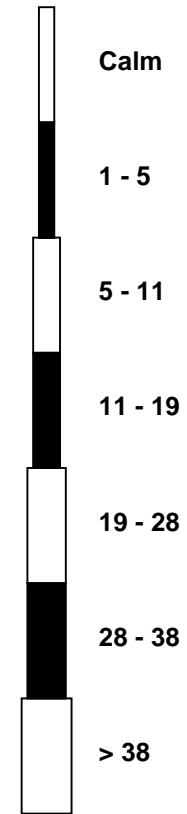
WCAS - Steeper  
Wind Speed Rose



Wind Speed (WS) - kph  
2012



Wind Frequency (kph)



West Central Airshed Society - Drayton Valley (AMS 911)  
 Annual Summary for 2012  
 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	3.12	4.67	0.86	0.01	0.00	0.00	8.66
NorthEast	5.90	4.57	0.09	0.00	0.00	0.00	10.56
East	5.22	2.88	0.02	0.00	0.00	0.00	8.12
SouthEast	3.12	4.53	2.29	0.18	0.00	0.00	10.12
South	13.56	9.91	0.61	0.00	0.00	0.00	24.08
SouthWest	3.70	3.31	0.50	0.11	0.00	0.00	7.62
West	3.25	4.32	2.20	0.49	0.03	0.00	10.29
NorthWest	3.57	7.57	6.76	1.54	0.13	0.00	19.57
Totals	41.44	41.76	13.33	2.33	0.16	0.00	99.02

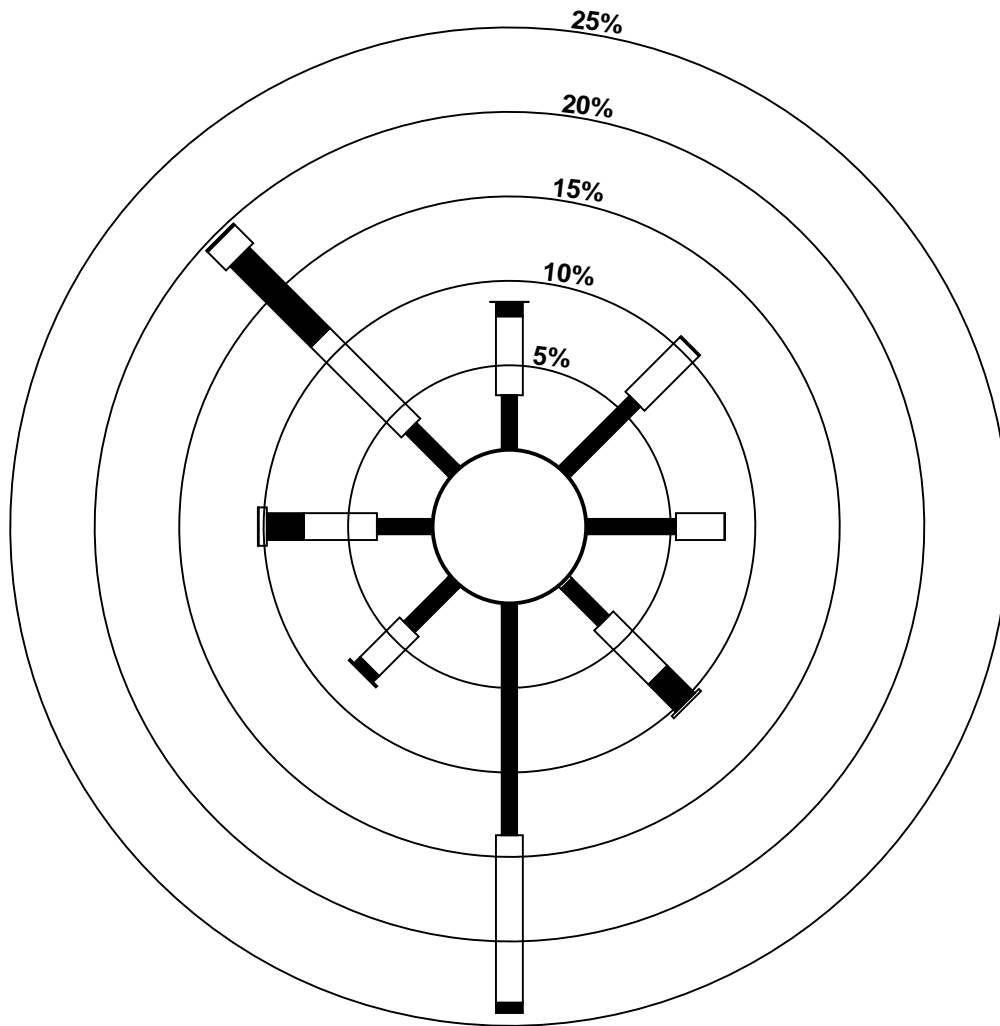
Percent Calm	0.98
Number of Data Values	8760
Hours in Time Period	8784



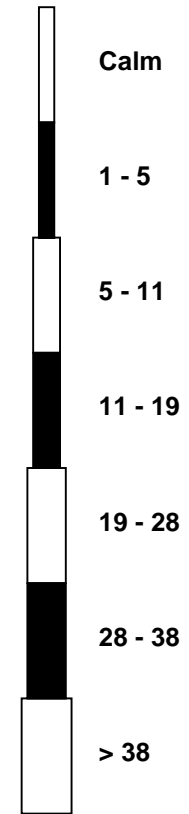
WCAS - Drayton Valley  
Wind Speed Rose



Wind Speed (WS) - kph  
2012



Wind Frequency (kph)



West Central Airshed Society - Edson (AMS 912)  
 Annual Summary for 2012  
 Percentage Frequency Distribution of Wind

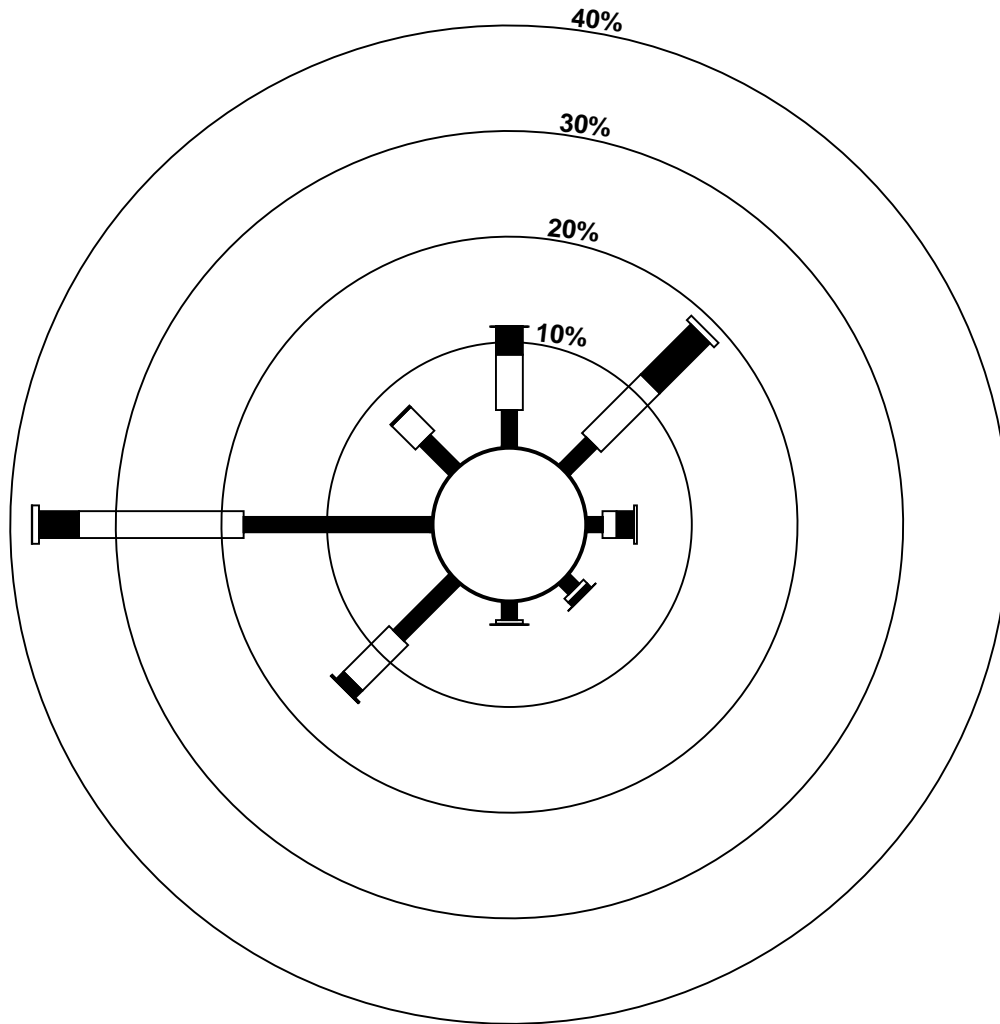
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	3.42	5.24	2.65	0.01	0.00	0.00	11.32
NorthEast	3.54	7.85	6.72	0.60	0.00	0.00	18.71
East	1.43	1.32	1.66	0.28	0.00	0.00	4.69
SouthEast	1.32	0.51	0.55	0.01	0.00	0.00	2.39
South	1.67	0.36	0.06	0.02	0.00	0.00	2.11
SouthWest	7.48	6.10	0.96	0.15	0.03	0.00	14.72
West	17.66	15.59	3.80	0.64	0.03	0.00	37.72
NorthWest	3.97	3.16	0.18	0.00	0.00	0.00	7.31
Totals	40.49	40.13	16.58	1.71	0.06	0.00	98.97

Percent Calm	1.03
Number of Data Values	8690
Hours in Time Period	8784

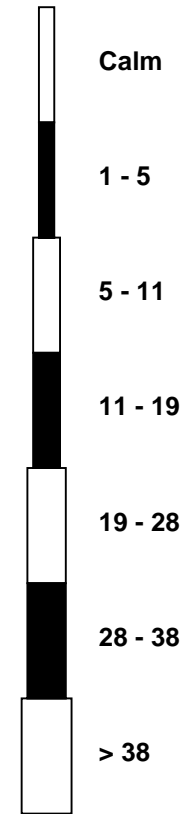
WCAS - Edson  
Wind Speed Rose



Wind Speed (WS) - kph  
2012



Wind Frequency (kph)



West Central Airshed Society - Breton (AMS 913)  
 Annual Summary for 2012  
 Percentage Frequency Distribution of Wind

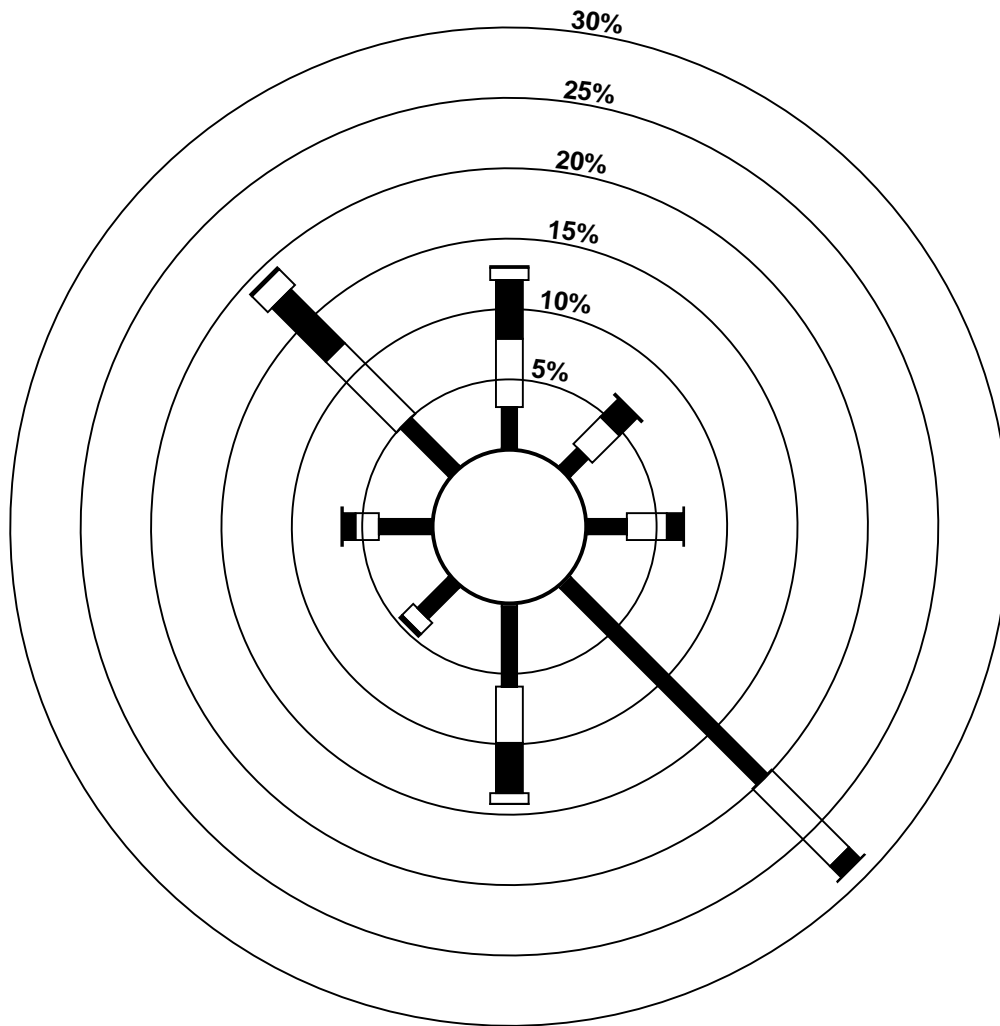
Speed (kph)							
Direction	>1 to 5	>5 to 11	>11 to 19	>19 to 28	>28 to 38	>38	Totals
North	2.91	4.85	4.17	0.87	0.11	0.00	12.91
NorthEast	1.77	2.72	1.78	0.13	0.00	0.00	6.40
East	2.77	2.84	1.17	0.06	0.00	0.00	6.84
SouthEast	19.71	7.79	1.13	0.03	0.00	0.00	28.66
South	5.70	4.00	3.57	0.76	0.01	0.00	14.04
SouthWest	3.13	1.13	0.26	0.00	0.00	0.00	4.52
West	3.78	1.65	0.90	0.10	0.00	0.00	6.43
NorthWest	4.81	7.12	5.40	1.60	0.18	0.00	19.11
Totals	44.58	32.10	18.38	3.55	0.30	0.00	98.91

Percent Calm	1.09
Number of Data Values	8777
Hours in Time Period	8784

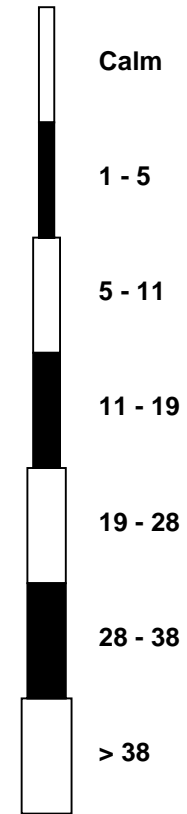
**WCAS - Breton  
Wind Speed Rose**



**Wind Speed (WS) - kph  
2012**



**Wind Frequency (kph)**



**West Central Airshed Society  
Frequency Distribution Charts  
SO<sub>2</sub> Monthly Averages  
Year 2012**

West Central Airshed Society - Tomahawk (AMS 901)  
 Annual Summary for 2012  
 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	0.452	1.627	7.107	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.538	1.585	4.884	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	708	0.607	2.033	10.711	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.477	2.258	18.261	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.400	2.067	14.513	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	685	0.297	1.284	7.592	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	703	0.440	1.652	7.431	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.427	1.455	8.611	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.537	5.863	24.453	100.0	0	0	99.71	0.29	0.00	0.00	0.00	0.00
October	709	0.305	1.112	6.031	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.625	1.787	6.022	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.529	1.940	8.179	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8358	0.469	5.863	24.453	100.0	0	0	99.98	0.02	0.00	0.00	0.00	0.00

West Central Airshed Society - Violet Grove (AMS 902)  
 Annual Summary for 2012  
 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	708	0.544	1.354	9.739	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	639	1.337	17.624	79.702	97.0	0	0	98.90	0.78	0.31	0.00	0.00	0.00
March	709	0.648	2.996	8.603	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	684	0.355	1.242	6.743	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	701	0.310	1.462	8.199	99.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	685	0.250	0.700	4.286	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	699	0.497	1.329	9.063	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	707	0.504	1.635	5.968	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	685	0.530	3.076	9.163	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	709	0.333	1.018	3.792	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.610	2.044	8.938	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	708	0.452	1.051	3.260	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8319	0.525	17.624	79.702	99.6	0	0	99.92	0.06	0.02	0.00	0.00	0.00



West Central Airshed Society - Carrot Creek (AMS 903)  
 Annual Summary for 2012  
 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	710	0.425	2.010	3.084	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.450	1.562	7.620	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	710	0.245	0.770	4.496	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	684	0.217	1.138	6.512	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.142	0.593	3.333	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	684	0.104	0.501	2.045	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	706	0.134	1.402	4.031	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	707	0.103	0.355	1.391	99.7	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.199	1.123	10.742	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.182	0.571	2.094	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.373	1.638	9.031	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	710	0.319	2.757	11.427	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8363	0.240	2.757	11.427	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00

West Central Airshed Society - Hightower (AMS 904)  
 Annual Summary for 2012  
 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	697	0.066	0.455	1.307	98.5	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	658	0.172	0.902	3.226	99.3	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.103	0.707	1.838	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	130	0.031	0.089	0.408	18.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	310	0.062	0.257	0.677	44.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	573	0.039	0.614	1.163	83.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	213	0.013	0.066	0.645	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	-	-	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-	-	-
Annual	3290	0.085	0.902	3.226	41.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00

West Central Airshed Society - Steeper (AMS 905)  
 Annual Summary for 2012  
 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	705	0.024	0.319	1.160	99.6	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.093	0.875	3.362	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	710	0.066	0.342	2.438	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	683	0.071	0.834	3.582	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.026	0.372	1.982	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	685	0.010	0.111	1.009	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	704	0.064	0.483	2.184	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	708	0.018	0.137	1.483	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.016	0.229	1.365	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	706	0.010	0.205	2.145	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	685	0.059	0.497	5.237	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	709	0.026	0.266	1.204	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8352	0.040	0.875	5.237	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00

West Central Airshed Society - Edson (AMS 912)  
 Annual Summary for 2012  
 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	708	0.773	1.920	9.013	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.944	2.749	14.829	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.482	1.266	9.402	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
April	685	0.270	0.909	7.450	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	708	0.267	1.206	9.184	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	666	0.157	0.524	2.862	97.1	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	700	0.267	0.943	9.753	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.430	1.278	12.376	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	686	0.391	1.155	8.920	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	708	0.361	1.196	6.813	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.722	1.313	4.756	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	710	0.902	2.366	7.764	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8338	0.497	2.749	14.829	99.8	0	0	100.00	0.00	0.00	0.00	0.00	0.00

West Central Airshed Society - Breton (AMS 913)  
 Annual Summary for 2012  
 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	709	0.073	0.584	6.266	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
February	663	0.223	2.215	11.904	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
March	709	0.338	5.314	24.798	100.0	0	0	99.72	0.28	0.00	0.00	0.00	0.00
April	686	0.165	1.311	7.210	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
May	709	0.140	1.240	6.130	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
June	681	0.116	1.858	6.047	99.2	0	0	100.00	0.00	0.00	0.00	0.00	0.00
July	706	0.307	1.471	11.159	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
August	709	0.319	2.375	10.488	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
September	685	0.242	1.836	8.248	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
October	709	0.146	1.005	6.057	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
November	686	0.323	1.261	16.048	99.9	0	0	100.00	0.00	0.00	0.00	0.00	0.00
December	708	0.183	1.179	3.337	100.0	0	0	100.00	0.00	0.00	0.00	0.00	0.00
Annual	8360	0.215	5.314	24.798	99.9	0	0	99.98	0.02	0.00	0.00	0.00	0.00

**West Central Airshed Society  
Frequency Distribution Charts  
NO<sub>2</sub> Monthly Averages  
Year 2012**

West Central Airshed Society - Tomahawk (AMS 901)  
 Annual Summary for 2012  
 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	707	5.905	11.253	20.080	100.0	0	0	100.00	0	0	0
February	663	6.003	13.211	26.148	100.0	0	0	100.00	0	0	0
March	707	4.007	7.590	23.579	100.0	0	0	100.00	0	0	0
April	684	2.145	6.392	16.425	100.0	0	0	100.00	0	0	0
May	708	1.535	3.641	14.565	100.0	0	0	100.00	0	0	0
June	683	1.587	3.496	12.857	99.9	0	0	100.00	0	0	0
July	702	2.176	4.380	12.910	99.7	0	0	100.00	0	0	0
August	709	2.195	5.221	17.060	100.0	0	0	100.00	0	0	0
September	684	3.338	10.995	26.667	100.0	0	0	100.00	0	0	0
October	708	3.260	8.720	22.453	100.0	0	0	100.00	0	0	0
November	686	7.859	20.281	38.846	100.0	0	0	100.00	0	0	0
December	709	12.353	19.292	38.473	100.0	0	0	100.00	0	0	0
Annual	8350	4.365	20.281	38.846	100.0	0	0	100.00	0	0	0

West Central Airshed Society - Violet Grove (AMS 902)  
 Annual Summary for 2012  
 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	707	5.197	14.397	31.518	100.0	0	0	100.00	0	0	0
February	661	6.588	11.163	23.257	100.0	0	0	100.00	0	0	0
March	707	4.644	10.168	29.066	100.0	0	0	100.00	0	0	0
April	683	1.879	4.117	13.518	100.0	0	0	100.00	0	0	0
May	701	2.411	3.848	9.796	99.2	0	0	100.00	0	0	0
June	684	2.693	4.875	10.557	99.9	0	0	100.00	0	0	0
July	697	2.386	4.120	6.984	99.6	0	0	100.00	0	0	0
August	707	3.075	8.419	10.126	100.0	0	0	100.00	0	0	0
September	684	3.172	8.153	13.343	99.9	0	0	100.00	0	0	0
October	707	3.995	10.671	39.059	100.0	0	0	100.00	0	0	0
November	685	8.219	18.224	30.058	100.0	0	0	100.00	0	0	0
December	706	10.454	20.999	51.337	99.9	0	0	99.86	0.14	0	0
Annual	8329	4.559	20.999	51.337	99.9	0	0	99.99	0.01	0	0



West Central Airshed Society - Carrot Creek (AMS 903)  
 Annual Summary for 2012  
 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	709	8.311	17.473	40.658	100.0	0	0	100.00	0	0	0
February	662	8.907	18.231	45.222	100.0	0	0	100.00	0	0	0
March	709	5.855	10.282	36.324	100.0	0	0	100.00	0	0	0
April	684	2.744	6.714	18.832	100.0	0	0	100.00	0	0	0
May	707	1.892	4.047	14.724	100.0	0	0	100.00	0	0	0
June	684	2.077	3.542	12.980	99.9	0	0	100.00	0	0	0
July	705	2.253	4.935	13.462	100.0	0	0	100.00	0	0	0
August	706	2.550	4.857	13.814	99.7	0	0	100.00	0	0	0
September	686	3.713	7.729	28.891	100.0	0	0	100.00	0	0	0
October	708	3.740	7.206	18.945	100.0	0	0	100.00	0	0	0
November	684	8.029	16.045	28.314	100.0	0	0	100.00	0	0	0
December	709	11.004	19.105	32.567	100.0	0	0	100.00	0	0	0
Annual	8353	5.082	19.105	45.222	100.0	0	0	100.00	0	0	0

West Central Airshed Society - Hightower (AMS 904)  
 Annual Summary for 2012  
 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	696	0.773	7.096	14.134	98.5	0	0	100.00	0	0	0
February	656	2.483	11.155	22.732	99.3	0	0	100.00	0	0	0
March	708	1.876	4.683	20.777	100.0	0	0	100.00	0	0	0
April	130	0.797	1.029	5.614	18.9	0	0	100.00	0	0	0
May	309	0.839	1.527	6.705	44.0	0	0	100.00	0	0	0
June	572	0.666	1.695	11.912	83.6	0	0	100.00	0	0	0
July	213	0.590	0.828	6.768	100.0	0	0	100.00	0	0	0
August	-	-	-	-	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-	-	-	-	-
Annual	3284	1.329	11.155	22.732	41.9	0	0	100.00	0	0	0

West Central Airshed Society - Steeper (AMS 905)  
 Annual Summary for 2012  
 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	704	1.600	9.246	16.353	99.6	0	0	100.00	0	0	0
February	661	1.883	8.124	14.592	100.0	0	0	100.00	0	0	0
March	709	0.982	3.495	8.652	100.0	0	0	100.00	0	0	0
April	683	1.301	4.311	7.837	100.0	0	0	100.00	0	0	0
May	707	0.514	1.505	6.759	99.9	0	0	100.00	0	0	0
June	674	0.413	1.671	9.330	98.5	0	0	100.00	0	0	0
July	703	0.767	1.814	6.132	100.0	0	0	100.00	0	0	0
August	707	1.283	4.000	20.678	100.0	0	0	100.00	0	0	0
September	685	0.560	1.825	5.382	100.0	0	0	100.00	0	0	0
October	706	2.527	9.659	15.743	99.9	0	0	100.00	0	0	0
November	684	2.740	7.545	13.098	100.0	0	0	100.00	0	0	0
December	708	3.226	12.206	18.076	100.0	0	0	100.00	0	0	0
Annual	8331	1.485	12.206	20.678	99.8	0	0	100.00	0	0	0

West Central Airshed Society - Edson (AMS 912)  
 Annual Summary for 2012  
 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	707	13.920	28.426	62.697	100.0	0	0	99.86	0.14	0	0
February	661	12.873	20.388	47.543	100.0	0	0	100.00	0	0	0
March	708	8.122	19.006	43.183	99.9	0	0	100.00	0	0	0
April	685	3.807	9.922	37.638	100.0	0	0	100.00	0	0	0
May	707	2.890	5.908	18.094	100.0	0	0	100.00	0	0	0
June	665	2.516	6.741	17.973	97.1	0	0	100.00	0	0	0
July	705	3.292	5.977	14.510	100.0	0	0	100.00	0	0	0
August	708	3.899	6.631	20.861	100.0	0	0	100.00	0	0	0
September	685	5.355	8.668	26.512	100.0	0	0	100.00	0	0	0
October	708	5.628	10.816	27.928	100.0	0	0	100.00	0	0	0
November	685	11.942	23.343	36.588	100.0	0	0	100.00	0	0	0
December	709	15.786	26.617	46.424	100.0	0	0	100.00	0	0	0
Annual	8333	7.504	28.426	62.697	99.8	0	0	99.99	0.01	0	0

West Central Airshed Society - Breton (AMS 913)  
 Annual Summary for 2012  
 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	707	4.196	10.888	21.253	100.0	0	0	100.00	0	0	0
February	663	5.703	13.278	32.109	100.0	0	0	100.00	0	0	0
March	708	3.770	9.156	22.780	100.0	0	0	100.00	0	0	0
April	684	1.421	3.645	13.601	100.0	0	0	100.00	0	0	0
May	708	1.507	2.731	8.120	100.0	0	0	100.00	0	0	0
June	680	1.449	4.212	10.187	99.2	0	0	100.00	0	0	0
July	704	1.629	3.289	12.274	100.0	0	0	100.00	0	0	0
August	708	1.798	4.346	13.772	100.0	0	0	100.00	0	0	0
September	685	2.340	4.632	14.588	100.0	0	0	100.00	0	0	0
October	707	3.191	9.505	21.369	100.0	0	0	100.00	0	0	0
November	685	6.080	15.013	30.197	99.9	0	0	100.00	0	0	0
December	708	8.500	18.885	37.707	100.0	0	0	100.00	0	0	0
Annual	8347	3.463	18.885	37.707	99.9	0	0	100.00	0	0	0

**West Central Airshed Society  
Frequency Distribution Charts  
O<sub>3</sub> Monthly Averages  
Year 2012**

West Central Airshed Society - Tomahawk (AMS 901)  
 Annual Summary for 2012  
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	707	28.6	39.8	47.8	100.0	0
February	663	30.4	41.0	47.9	100.0	0
March	707	36.4	47.7	56.5	100.0	0
April	650	40.1	52.5	66.1	94.7	0
May	708	41.1	54.3	62.7	100.0	0
June	685	30.5	43.7	60.2	99.9	0
July	702	31.8	44.0	67.7	99.7	0
August	709	30.2	40.2	75.3	100.0	0
September	687	27.6	35.1	55.3	100.0	0
October	709	21.3	37.4	44.3	100.0	0
November	686	20.5	36.1	47.5	100.0	0
December	709	17.4	36.9	41.6	100.0	0
Annual	8322	29.6	54.3	75.3	99.5	0

West Central Airshed Society - Violet Grove (AMS 902)  
 Annual Summary for 2012  
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	709	34.4	43.3	47.5	100.0	0
February	663	32.2	42.8	50.7	100.0	0
March	708	39.3	49.2	56.3	100.0	0
April	686	39.5	54.7	60.4	100.0	0
May	702	41.7	51.9	65.3	99.2	0
June	684	32.9	47.1	62.6	99.9	0
July	700	32.8	43.1	65.2	99.6	0
August	707	29.9	42.6	66.3	100.0	0
September	685	31.2	37.0	58.5	99.9	0
October	709	20.8	36.5	44.6	100.0	0
November	685	20.3	31.9	43.2	100.0	0
December	708	19.8	41.9	44.6	99.9	0
Annual	8346	31.2	54.7	66.3	99.9	0



West Central Airshed Society - Carrot Creek (AMS 903)  
 Annual Summary for 2012  
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	709	27.0	40.7	46.0	100.0	0
February	664	28.8	42.8	52.5	100.0	0
March	710	37.4	47.9	58.7	100.0	0
April	684	38.3	49.5	64.2	100.0	0
May	708	37.5	51.3	65.4	99.9	0
June	684	29.6	43.2	59.7	99.9	0
July	705	28.8	47.3	98.1	100.0	4
August	706	23.2	30.6	60.2	99.7	0
September	686	24.7	36.2	62.5	100.0	0
October	708	19.5	38.0	48.5	100.0	0
November	686	16.3	30.6	44.6	100.0	0
December	710	16.9	36.9	42.1	100.0	0
Annual	8360	27.3	51.3	98.1	100.0	4

West Central Airshed Society - Hightower (AMS 904)  
 Annual Summary for 2012  
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	697	43.4	55.5	57.2	98.5	0
February	658	50.4	65.8	72.9	99.3	0
March	709	52.0	62.2	66.5	100.0	0
April	130	56.2	65.5	72.7	18.9	0
May	307	46.8	56.6	68.0	43.7	0
June	572	37.9	47.4	63.4	83.6	0
July	213	47.4	63.3	83.2	100.0	1
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Annual	3286	46.8	65.8	83.2	41.9	1

West Central Airshed Society - Edson (AMS 912)  
 Annual Summary for 2012  
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	707	21.5	38.3	45.7	100.0	0
February	664	25.5	42.0	53.8	100.0	0
March	709	35.5	45.1	60.8	99.9	0
April	685	39.2	51.3	63.8	100.0	0
May	709	37.3	51.9	64.5	100.0	0
June	665	30.0	43.7	57.0	97.1	0
July	704	30.7	50.0	91.4	100.0	4
August	709	25.5	37.7	57.6	100.0	0
September	686	25.1	33.4	62.7	100.0	0
October	708	18.8	34.4	49.8	100.0	0
November	685	13.4	30.5	44.7	99.9	0
December	708	14.5	31.5	44.6	100.0	0
Annual	8339	26.4	51.9	91.4	99.7	4

West Central Airshed Society - Breton (AMS 913)  
 Annual Summary for 2012  
 O3 (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 1-Hour Violations
January	709	33.7	42.5	47.2	100.0	0
February	663	32.1	44.2	49.6	100.0	0
March	709	37.3	48.2	55.8	100.0	0
April	686	38.6	49.0	62.6	100.0	0
May	709	40.9	50.0	65.8	100.0	0
June	680	33.0	48.3	66.0	99.2	0
July	706	29.8	39.5	62.3	100.0	0
August	709	24.8	37.5	57.9	100.0	0
September	685	25.6	32.4	56.1	100.0	0
October	708	18.7	33.9	42.1	100.0	0
November	686	20.0	29.7	40.3	99.9	0
December	708	18.1	35.2	39.1	100.0	0
Annual	8358	29.4	50.0	66.0	99.9	0

**West Central Airshed Society  
Frequency Distribution Charts  
THC Monthly Averages  
Year 2012**

West Central Airshed Society - Violet Grove (AMS 902)  
 Annual Summary for 2012  
 THC (ppb)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	708	2.314	2.766	4.967	100.0	0	0
February	663	2.379	2.992	7.062	100.0	0	0
March	705	2.275	2.994	8.092	100.0	0	0
April	686	2.406	2.626	3.816	100.0	0	0
May	700	2.174	2.491	6.901	99.2	0	0
June	683	2.197	2.659	7.599	99.9	0	0
July	700	2.194	2.620	4.839	99.6	0	0
August	707	2.331	2.813	6.341	100.0	0	0
September	683	2.325	2.763	7.792	99.9	0	0
October	709	2.282	2.659	6.240	100.0	0	0
November	685	2.542	3.134	5.633	100.0	0	0
December	702	2.650	3.488	8.827	99.9	0	0
Annual	8331	2.339	3.488	8.827	99.9	0	0

**West Central Airshed Society  
Frequency Distribution Charts  
PM Monthly Averages  
Year 2012**

West Central Airshed Society - Tomahawk (AMS 901)  
 Annual Summary for 2012  
 PM<sub>2.5</sub> (µg/m<sup>3</sup>)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	743	2.3	5.1	16.0	99.9	0	0
February	692	3.0	7.6	16.4	100.0	0	0
March	739	2.6	6.3	14.7	99.3	0	0
April	714	2.6	8.3	15.1	99.2	0	0
May	739	3.5	8.4	43.9	100.0	0	0
June	708	2.7	6.8	17.4	98.3	0	0
July	729	8.3	68.1	175.9	98.5	2	17
August	733	4.2	8.6	19.2	98.5	0	0
September	717	4.2	11.6	33.1	99.6	0	0
October	743	2.7	10.2	33.4	99.9	0	0
November	716	4.4	8.9	17.2	100.0	0	0
December	741	5.0	12.0	24.1	99.6	0	0
Annual	8714	3.8	68.1	175.9	99.4	2	17



West Central Airshed Society - Hightower (AMS 904)  
 Annual Summary for 2012  
 PM<sub>2.5</sub> (µg/m<sup>3</sup>)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	725	1.1	5.5	37.7	98.3	0	0
February	687	1.5	9.6	17.4	98.7	0	0
March	744	1.2	4.6	15.2	100.0	0	0
April	136	1.1	1.7	3.4	18.9	0	0
May	325	1.8	4.0	6.7	43.7	0	0
June	601	1.2	3.0	11.2	83.5	0	0
July	225	3.5	11.4	15.5	99.6	0	0
August	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-
October	-	-	-	-	-	-	-
November	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-
Annual	3443	1.4	11.4	37.7	41.76	0	0

West Central Airshed Society - Steeper (AMS 905)  
 Annual Summary for 2012  
 PM<sub>2.5</sub> (µg/m<sup>3</sup>)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	741	1.2	6.4	10.7	99.6	0	0
February	693	2.1	15.8	113.0	99.6	0	2
March	744	1.1	4.2	6.7	100.0	0	0
April	717	1.8	5.5	8.9	99.6	0	0
May	740	2.4	4.6	9.9	99.5	0	0
June	718	1.5	3.9	7.9	99.7	0	0
July	736	5.1	23.0	56.2	98.9	0	0
August	732	4.2	10.9	22.0	98.4	0	0
September	720	3.1	9.2	27.6	100.0	0	0
October	743	2.4	8.8	18.7	99.9	0	0
November	713	2.4	9.2	17.6	99.0	0	0
December	743	2.3	11.3	20.0	99.9	0	0
Annual	8740	2.5	23.0	113.0	99.5	0	2

West Central Airshed Society - Drayton Valley (AMS 911)  
 Annual Summary for 2012  
 PM<sub>2.5</sub> (µg/m<sup>3</sup>)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	743	6.2	9.8	24.1	99.9	0	0
February	695	7.3	11.8	20.3	99.9	0	0
March	734	6.7	10.4	26.0	98.7	0	0
April	718	6.6	11.4	24.2	99.9	0	0
May	735	7.6	20.3	123.0	99.2	0	3
June	717	7.0	10.4	24.4	99.7	0	0
July	732	12.2	67.5	118.3	98.7	2	21
August	734	8.3	14.9	28.5	98.7	0	0
September	716	9.5	18.6	37.3	99.4	0	0
October	737	6.7	13.1	46.1	99.1	0	0
November	719	7.9	13.0	25.6	99.9	0	0
December	712	9.0	17.5	34.0	95.7	0	0
Annual	8692	7.9	67.5	123.0	99.03	2	24

West Central Airshed Society - Edson (AMS 912)  
 Annual Summary for 2012  
 PM<sub>2.5</sub> (µg/m<sup>3</sup>)

Month	Number of Data	Mean	Maximum 24-Hour Value	Maximum 1-Hour Value	Operational Time (%)	Number 24-Hour Violations	Number 1-Hour Violations
January	737	3.7	7.4	23.5	99.9	0	0
February	689	5.4	20.2	62.9	99.0	0	0
March	742	3.6	10.2	20.5	99.7	0	0
April	714	2.9	6.8	30.0	99.9	0	0
May	740	4.3	12.0	37.8	99.5	0	0
June	670	3.4	11.0	28.4	96.9	0	0
July	736	8.0	49.0	99.4	99.6	2	7
August	736	5.4	14.9	36.7	98.9	0	0
September	720	5.0	13.2	27.9	100.0	0	0
October	738	3.5	19.9	37.1	99.9	0	0
November	715	6.2	14.8	57.3	99.3	0	0
December	743	5.9	15.2	26.3	99.9	0	0
Annual	8680	4.8	49.0	99.4	99.37	2	7

**West Central Airshed Society  
Frequency Distribution Charts  
Meteorological Measurements  
Year 2012**

## Summary Report

Continuous air quality/meteorological monitoring measurements

West Central Airshed Society

WCAS / Tomahawk Station 901		January to December 2012					
Parameter	Calibration Hours	Number of Data	Percent Uptime	Mean	Total	Min	Max
SO <sub>2</sub> (ppb)	423	8359	100.0	0.5	-	0	24.5
O <sub>3</sub> (ppb)	421	8323	99.5	29.7	-	0.4	75.3
NO (ppb)	431	8351	100.0	0.7	-	0	19
NO <sub>2</sub> (ppb)	431	8351	100.0	4.4	-	0	38.8
NO <sub>x</sub> (ppb)	431	8351	100.0	5.3	-	0.3	45
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	17	8715	99.4	3.8	-	0	175.9
Wind Speed (kph)	0	8782	100.0	9.6	-	0.1	37.4
Temperature (°C)	0	8781	100.0	3.2	-	-35.6	32
Relative Humidity (%)	0	8781	100.0	70.9	-	14.4	98.9
Photosynthetically Active Radiation (W/m <sup>2</sup> )	0	8782	100.0	65.0	-	0	446.4
Precipitation (mm)	0	4752	100.0	-	424.8	0	40.2
Leaf Wetness (%)	0	4752	100.0	51.2	-	3.2	89.7
Std Dev Wind Direction (deg)	0	8782	100.0	21.5	-	3.7	105.6
Std Dev Wind Speed (kph)	0	8782	100.0	2.5	-	0	17.7

**Summary Report**  
*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

<b>WCAS / Violet Grove Station 902</b>		<b>January to December 2012</b>					
<b>Parameter</b>	<b>Calibration Hours</b>	<b>Number of Data</b>	<b>Percent Uptime</b>	<b>Mean</b>	<b>Total</b>	<b>Min</b>	<b>Max</b>
SO <sub>2</sub> (ppb)	432	8320	99.6	0.5	-	0	79.6
O <sub>3</sub> (ppb)	426	8347	99.9	31.2	-	0.4	66.3
NO (ppb)	443	8330	99.9	1.0	-	0	87.1
NO <sub>2</sub> (ppb)	443	8330	99.9	4.6	-	0	51.3
NO <sub>x</sub> (ppb)	443	8330	99.9	5.4	-	0.7	104.3
THC (ppm)	441	8332	99.9	2.4	-	1.6	8.8
Wind Speed (kph)	0	8773	99.9	9.8	-	0	39
Temperature (°C)	0	8773	99.9	3.0	-	-34.3	29.7
Delta Temperature (°C)	0	8773	99.9	0.1	-	-7.3	2.3
Relative Humidity (%)	0	8773	99.9	70.5	-	14.2	101.4
Global Solar Radiation (W/m <sup>2</sup> )	0	8773	99.9	138.5	-	0	967.4
Precipitation (mm)	0	8773	99.9	-	515.6	0	920.1
Leaf Wetness (%)	0	1699	99.8	98.6	-	47.8	103.6
Photosynthetically Active Radiation (W/m <sup>2</sup> )	0	8773	99.9	47.7	-	0	353.1
Std Dev Wind Direction (deg)	0	8773	99.9	20.1	-	3.7	112.1
Std Dev Wind Speed (kph)	0	8773	99.9	2.5	-	0	15

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

<b>WCAS / Carrot Creek Station 903</b>		<b>January to December 2012</b>					
<b>Parameter</b>	<b>Calibration Hours</b>	<b>Number of Data</b>	<b>Percent Uptime</b>	<b>Mean</b>	<b>Total</b>	<b>Min</b>	<b>Max</b>
SO <sub>2</sub> (ppb)	418	8364	100.0	0.2	-	0	11.4
O <sub>3</sub> (ppb)	420	8361	100.0	27.3	-	0	98.1
NO (ppb)	428	8354	100.0	1.3	-	0	56.5
NO <sub>2</sub> (ppb)	428	8354	100.0	5.1	-	0	45.2
NO <sub>x</sub> (ppb)	428	8354	100.0	6.5	-	0.3	87
Wind Speed (kph)	0	8782	100.0	7.3	-	0	40.9
Temperature (°C)	0	8782	100.0	2.3	-	-34.9	32.1
Relative Humidity (%)	0	8782	100.0	71.7	-	11.4	101.2
Photosynthetically Active Radiation (W/m <sup>2</sup> )	0	8782	100.0	79.2	-	0	517.8
Precipitation (mm)	0	4174	100.0	-	180.0	0	4.9
Std Dev Wind Direction (deg)	0	8782	100.0	28.6	-	3.9	111.3
Std Dev Wind Speed (kph)	0	8782	100.0	2.5	-	0	12.1



**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

**WCAS / Hightower  
Station 904**

**January to December 2012**

Parameter	Calibration		Percent Uptime	Mean	Min	Max
	Hours	Number of Data				
CO (ppm)	172	3285	77.7	0.1	0.0	0.4
SO <sub>2</sub> (ppb)	169	3291	77.8	0.1	0.0	3.2
O <sub>3</sub> (ppb)	171	3287	77.7	47.7	6.4	83.2
NO (ppb)	176	3285	77.8	0.2	0.0	32.2
NO <sub>2</sub> (ppb)	176	3285	77.8	1.1	0.0	22.7
NO <sub>x</sub> (ppb)	176	3285	77.8	1.2	0.0	54.8
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	6	3444	77.5	1.6	0.0	37.7
Wind Speed (kph)	1	3459	77.8	10.3	0.0	42.5
Temperature (°C)	1	3459	77.8	1.9	-37.1	27
Std Dev Wind Direction (deg)	1	3459	77.8	26.6	0.0	106.7
Std Dev Wind Speed (kph)	1	3459	77.8	3.7	0.1	13

**Summary Report**

*Continuous air quality/meteorological monitoring measurements*

**West Central Airshed Society**

<b>WCAS / Steeper Station 905</b>		<b>January to December 2011</b>				
<b>Parameter</b>	<b>Calibration Hours</b>	<b>Number of Data</b>	<b>Percent Uptime</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>
SO <sub>2</sub> (ppb)	345	6926	99.0	0.1	0.0	7.3
O <sub>3</sub> (ppb)	347	6924	99.0	37.9	2.9	70.9
NO (ppb)	355	6916	99.0	0.1	0.0	10.5
NO <sub>2</sub> (ppb)	355	6916	99.0	1.2	0.0	22.3
NO <sub>x</sub> (ppb)	355	6916	99.0	1.1	0.0	23.2
Particulate Matter 10 microns (μ/m <sup>3</sup> )	154	4905	98.5	1.7	0.0	18.2
Wind Speed (kph)	94	7172	98.9	3.8	0.0	31.3
Temperature (°C)	0	7271	99.0	5.1	-28.7	27
Relative Humidity (%)	0	7271	99.0	43.2	-32.7	98.5
Std Dev Wind Direction (deg)	0	7271	99.0	20.1	0.0	98.8
Std Dev Wind Speed (kph)	0	7271	99.0	19.8	0.2	114.3

**West Central Airshed Society**

**Weyerhaeuser / Drayton Valley  
Station 911**

**December to January 2012**

<b>Parameter</b>	<b>Calibration Hours</b>	<b>Number of Data</b>	<b>Percent Uptime</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>
Particulate Matter 2.5 microns ( $\mu/m^3$ )	7	8693	99.1	7.9	0.0	123.0
Wind Speed (kph)	0	8693	99.7	7.2	0.1	33.0
Temperature ( $^{\circ}C$ )	0	8693	99.7	3.7	-33.6	31.5
Std Dev Wind Direction (deg)	0	8693	99.7	25.5	0.4	103.4
Std Dev Wind Speed (kph)	0	8693	99.7	2.6	0.1	13.4

**Summary Report****West Central Airshed Society***Continuous air quality/meteorological monitoring measurements***Weyerhaeuser / Edson  
Station 912****January to December 2012**

<b>Parameter</b>	<b>Calibration Hours</b>	<b>Number of Data</b>	<b>Percent Uptime</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>
SO <sub>2</sub> (ppb)	424	8339	99.8	0.5	0.0	14.9
O <sub>3</sub> (ppb)	422	8340	99.7	26.4	0.0	91.4
NO (ppb)	429	8334	99.8	4.3	0.0	167.1
NO <sub>2</sub> (ppb)	429	8334	99.8	7.5	0.0	62.7
NO <sub>x</sub> (ppb)	429	8334	99.8	12.2	0.4	187.7
Particulate Matter 2.5 microns (μ/m <sup>3</sup> )	109	8623	99.4	4.8	0.0	99.4
Wind Speed (kph)	0	8691	98.9	7.4	0.1	33.6
Temperature (°C)	0	8762	99.7	2.7	-36.4	32.4
Std Dev Wind Direction (deg)	0	8691	98.9	28.0	4.5	115
Std Dev Wind Speed (kph)	0	8691	98.9	2.6	0	11.9

**Summary Report****West Central Airshed Society***Continuous air quality/meteorological monitoring measurements***Weyerhaeuser / Breton  
Station 913****January to December 2012**

<b>Parameter</b>	<b>Calibration Hours</b>	<b>Number of Data</b>	<b>Percent Uptime</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>
SO <sub>2</sub> (ppb)	416	8361	99.9	0.2	0.0	24.8
O <sub>3</sub> (ppb)	419	8359	99.9	29.4	0.0	66.0
NO (ppb)	430	8348	99.9	0.5	0.0	32.0
NO <sub>2</sub> (ppb)	430	8348	99.9	3.5	0.0	37.7
NO <sub>x</sub> (ppb)	430	8348	99.9	3.7	0.0	49.7
Wind Speed (kph)	0	8778	99.9	6.6	-22.9	36.7
Temperature (°C)	0	8778	99.9	10.5	-33.9	95.6
Relative Humidity (%)	0	8778	99.9	62.3	5.1	103.1
Std Dev Wind Direction (deg)	0	8778	99.9	26.4	0.4	116.6
Std Dev Wind Speed (kph)	0	8059	91.6	2.4	0.0	12.2