

*WOOD BUFFALO
ENVIRONMENTAL
ASSOCIATION*

ANNUAL 2012 REPORT



CONTINUOUS MONITORING
INTEGRATED MONITORING
March 11, 2013

Operations and Data Collection by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

QA/QA, Data Validation and Reporting by:
Aurora Atmospheric Inc
Fort McMurray, Alberta

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March 11, 2013

Director, Environmental Monitoring and Evaluation Branch
Alberta Environment
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, Alberta T5K 2J6

**RE: Monthly Ambient Air Quality Monitoring Report Annual 2012
Wood Buffalo Environmental Association**

Enclosed is the Annual 2012 ambient air quality monitoring report for the ambient air quality monitoring stations of the Wood Buffalo Environmental Association (WBEA) regional air quality monitoring network.

The continuous ambient air quality monitoring network stations are:

AMS 1 - Fort McKay – Bertha Ganter
AMS 2 - Mildred Lake
AMS 3 - Lower Camp B (meteorology)
AMS 4 - Buffalo Viewpoint
AMS 5 - Mannix
AMS 6 - Patricia McInnes
AMS 7 - Athabasca Valley
AMS 8 - Fort Chipewyan
AMS 9 - Barge Landing
AMS 11 - Lower Camp (air quality)
AMS 12 - Millennium Mine
AMS 13 - Syncrude UE 1
AMS 14 - Anzac
AMS 15 - CNRL Horizon
AMS 16 - Albian Muskeg River
AMS 101 - Portable

This report is submitted by WBEA on behalf of the following members to satisfy the requirement contained in EPEA Approvals:

Company	EPEA Approval No.
Canadian Natural Resources Limited	149968-00-01
Cenovus FCCL Limited	48522-01-00
ConocoPhillips Canada Resources Corp	48263-00-00
Nexen Inc.	137467-00-00
Shell Canada Limited	20809-01-00
Suncor Energy Inc.	094-02-00
Syncrude Canada Limited	026-02-00

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The air monitoring stations and passive towers in the WBEA network are presented Figures 1 and 2.

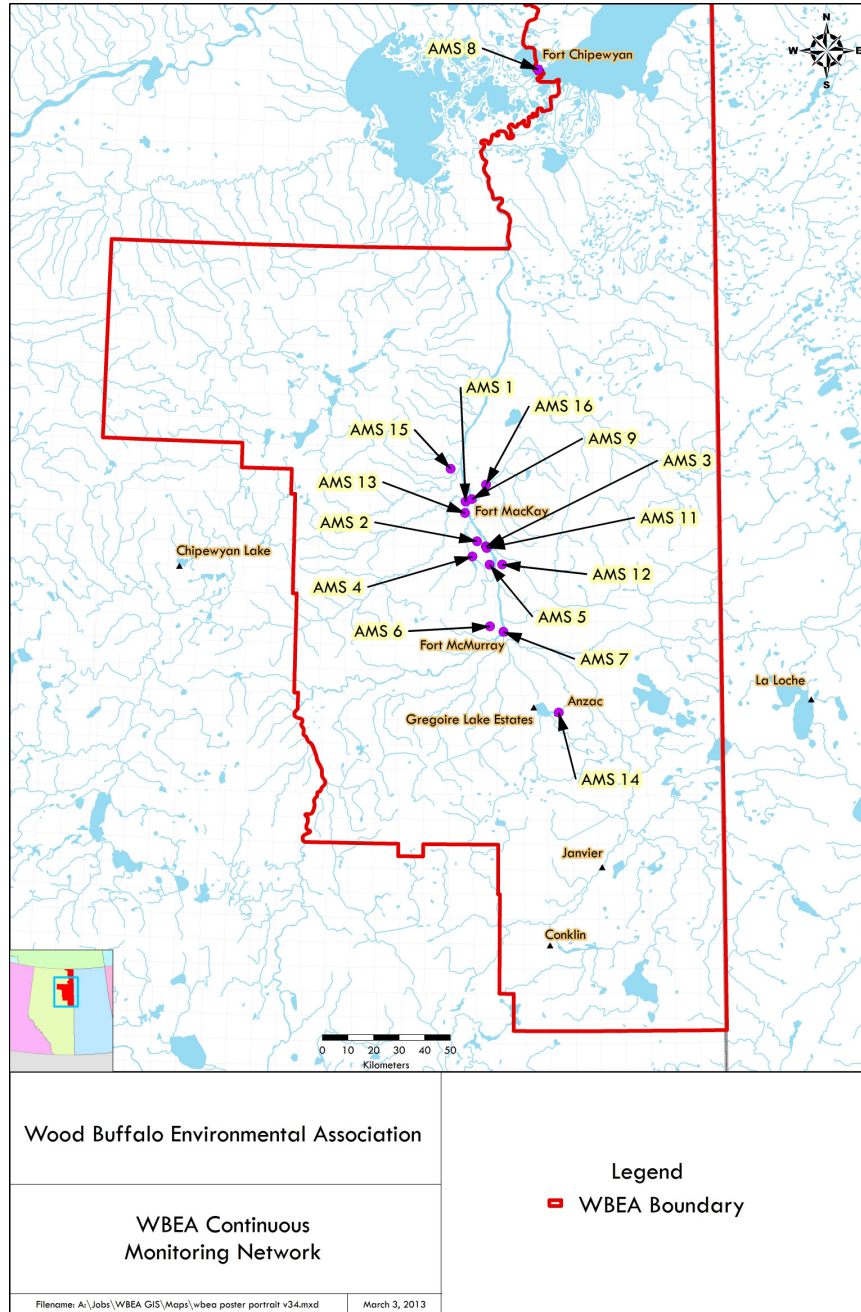


Figure 1 Map of WBEA Continuous Air Monitoring Stations.

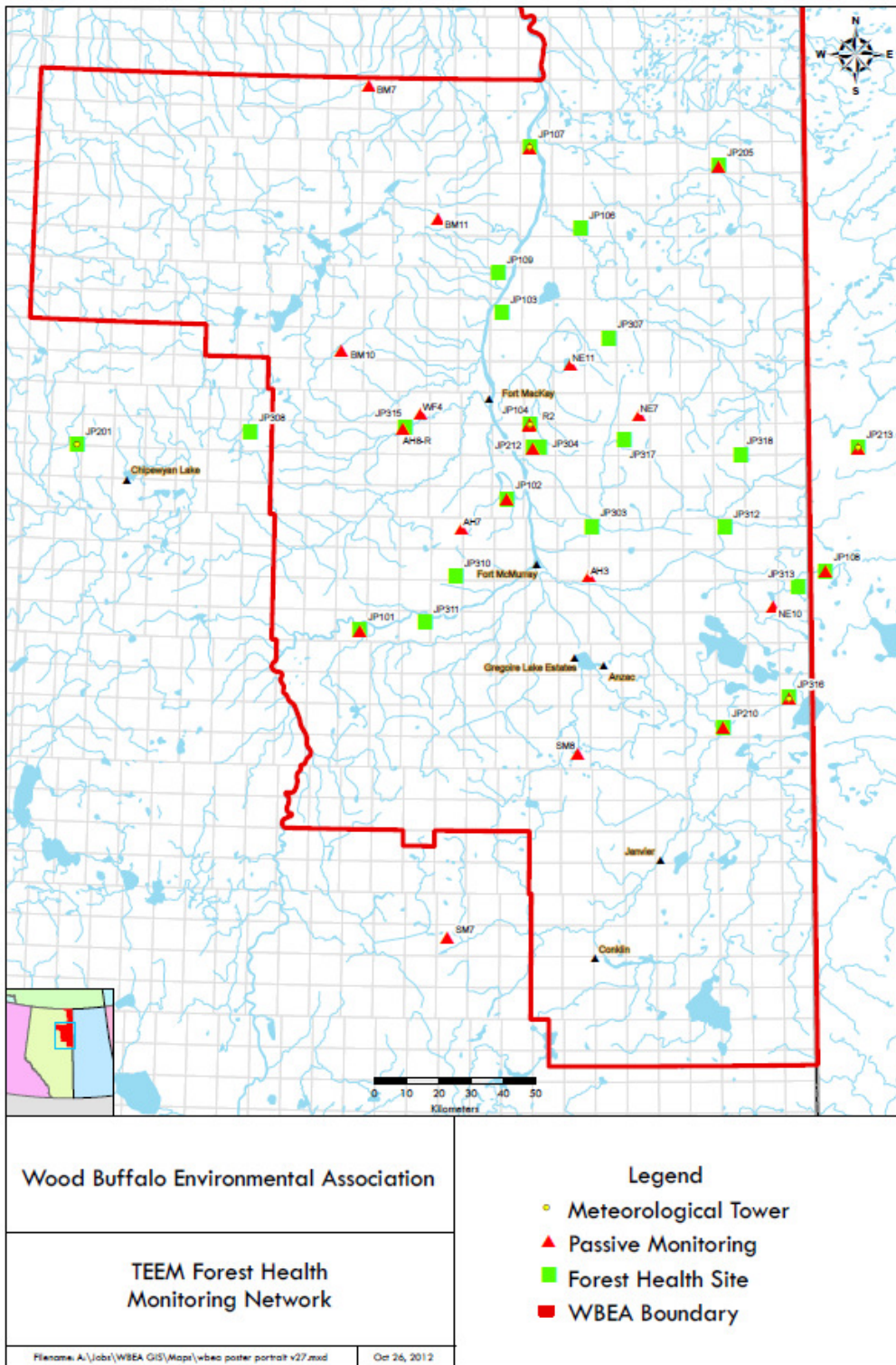


Figure 2 Map of WBEA Forest Health Monitoring Network.

The following operational modifications are provided as per the Air Monitoring Directive requirements.

Station	Parameter	Effective Date	Comment
AMS 1	THC	09Feb12: 15:20	THC range changed from 0 - 25 ppm to 0 - 100ppm, Analyzer response is polled digitally
AMS 1	NMHC	09Feb12: 15:20	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS 1	CH4	09Feb12: 15:20	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS 1	NO2, NO, NOX	22Aug12:16:05	Operating range changed from 0 - 500 ppb to 0 -1000 ppb, Analyzer response is polled digitally
AMS 1	PM2.5	19Oct12:13:32	Analyzer polled digitally, operational range 0 - 1000 ug/m3
AMS 1	Leaf Wetness	10Jun12:15:50	New sensor installed and operational
AMS 1	NAME	22May12:09:00	Station formally renamed to Fort McKay - Bertha Ganter
AMS 2	Relative Humidity	01Dec12:00:00	New parameter at site and operational
AMS 3	Relative Humidity	01Oct11:00:00	New RH sensors installed at 20, 45, 100 and 167 m elevations
AMS 4			No Change
AMS 5	Temperature 90m	14Aug12:20:20	New sensor installed and operational
AMS 5	Wind Speed 90m	14Aug12:20:20	New sensor installed and operational
AMS 5	Wind Direction 90m	14Aug12:20:20	New sensor installed and operational
AMS 5	V. Wind Speed 90m	14Aug12:20:20	New sensor installed and operational
AMS 5	Relative Humidity	14Aug12:20:20	New RH sensors installed at 20, 45, 75 and 90 m elevations
AMS 5	Relative Humidity	16Aug12:17:00	New RH sensors installed at 2m
AMS 6	PM2.5	05Oct12:13:32	Analyzer polled digitally, operational range 0 - 1000 ug/m3
AMS 6	THC	06Nov12: 12:15	THC range changed from 0 - 25 ppm to 0 - 100ppm, Analyzer response is polled digitally
AMS 6	NMHC	06Nov12: 12:15	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS 6	CH4	06Nov12: 12:15	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS 6	Relative Humidity	07Nov12:02:15	New parameter at site and operational
AMS7	THC	24Jul12: 07:15	THC range changed from 0 - 25 ppm to 0 - 100ppm, Analyzer response is polled digitally
AMS7	NMHC	24Jul12: 07:15	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS7	CH4	24Jul12: 07:15	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS7	NO2, NO, NOX	07Dec12:09:00	Operating range changed from 0 - 500 ppb to 0 -1000 ppb, Analyzer response is polled digitally
AMS7	PM2.5	19Oct12:13:32	Analyzer polled digitally, operational range 0 - 1000 ug/m3
AMS7	Barometric Pressure	07Nov12:02:15	New parameter at site and operational
AMS7	Relative Humidity	07Nov12:03:15	New parameter at site and operational
AMS8	NO2, NO, NOX	07Dec12:09:00	Operating range changed from 0 - 50 ppb to 0 -200 ppb, Analyzer response is polled digitally
AMS8	PM2.5	12Mar12:08:05	Analyzer polled digitally, operational range 0 - 1000 ug/m3
AMS8	Leaf Wetness	07Aug12:15:00	New sensor installed and operational
AMS9			No Change
AMS11			No Change
AMS12	NO2, NO, NOX	18Oct12:07:30	Operating range changed from 0 - 500 ppb to 0 -1000 ppb
AMS13	NO2, NO, NOX	16Jan13:13:35	Operating range changed from 0 - 500 ppb to 0 -1000 ppb
AMS13	PM2.5	28Feb12:15:05	Analyzer polled digitally, operational range 0 - 1000 ug/m3
AMS13	Relative Humidity	29Jul12:13:30	New parameter at site and operational
AMS14	THC	11Aug12: 14:30	THC range changed from 0 - 25 ppm to 0 - 100ppm, Analyzer response is polled digitally
AMS14	NMHC	11Aug12: 14:30	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS14	CH4	11Aug12: 14:30	New parameter at site, operating range at 0 - 50 ppm, Analyzer response is polled digitally
AMS14	NO2, NO, NOX	16Jan13:09:35	Operating range changed from 0 - 500 ppb to 0 -1000 ppb
AMS15	PM2.5	19Oct12:13:35	Analyzer polled digitally, operational range 0 - 1000 ug/m3
AMS16	NO2, NO, NOX	10Jan13:10:35	Operating range changed from 0 - 500 ppb to 0 -1000 ppb
AMS101	THC	05May12:09:00	New parameter at site and operational, operational range 0 - 25 ppm
AMS101	O3	05May12:09:00	New parameter at site and operational, operational range 0 - 500 ppm
AMS101	PM2.5	05May12:09:00	New parameter at site and operational, operational range 0 - 1000 ug/m3
AMS101	Relative Humidity	05May12:09:00	New parameter at site and operational

This report contains a summary of operational times for the year, the monthly averages, number of readings in excess of the Alberta Ambient Air Quality Objectives and frequency distributions of 1-hour data. The results of passive and integrated monitoring of VOC, PM_{2.5}, PM₁₀, PAH and precipitation are included in this report. The integrated results for daily and annual averages are provided for all species analyzed. The monthly averages for passive monitoring are also provided.

WBEA updated the air monitoring station site documentation in 2012 and early 2103 to meet the Air Monitoring Directive (Appendix A-2). Copies of the revised site documentation are also included in this report.

If additional information is required, please call either Sanjay Prasad at (403) 703 8931 or the Wood Buffalo Environmental Association at (780) 799 4420.

Yours sincerely,

Aurora Atmospherics Inc.

Sanjay Prasad
Air Quality Scientist

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY
for AMD SECTION III.B.1(c)

JAN - DEC 2012

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APPROVAL NUMBERS	REPORT DATE						
	MONTH	YEAR					
94-02-00	1 - 12	2012					
26-01-00							
20809-01-00							
149968-00-01	CONTINUOUS AMBIENT MONITORING						
137467-00-00			ONE-HOUR AVERAGE		24-HOUR AVERAGE		
46586-00-01	PARAMETER	STN. NO.	% TIME OPERATIONAL	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION
206355-00-00	SO2 (ppm)	1	98.10	0.083	0	0.016	0
48263-00-00	SO2 (ppm)	2	99.80	0.090	0	0.023	0
	SO2 (ppm)	4	99.47	0.100	0	0.016	0
	SO2 (ppm)	5	99.72	0.143	0	0.023	0
	SO2 (ppm)	6	99.73	0.061	0	0.008	0
	SO2 (ppm)	7	98.73	0.045	0	0.006	0
	SO2 (ppm)	8	99.72	0.020	0	0.005	0
	SO2 (ppm)	11	99.64	0.114	0	0.017	0
	SO2 (ppm)	12	99.49	0.074	0	0.016	0
	SO2 (ppm)	13	99.21	0.149	0	0.015	0
	SO2 (ppm)	14	99.70	0.106	0	0.010	0
	SO2 (ppm)	15	99.21	0.129	0	0.016	0
	SO2 (ppm)	16	99.75	0.118	0	0.017	0
	SO2 (ppm)	101	99.15	0.043	0	0.026	0
	H2S (ppm)	2	99.83	0.033	58	0.007	11
	H2S (ppm)	4	99.48	0.020	4	0.002	0
	H2S (ppm)	5	99.37	0.046	82	0.012	16
	H2S (ppm)	11	99.55	0.023	12	0.003	0
	H2S (ppm)	101	99.11	0.018	12	0.009	1
	TRS (ppm)	1	98.13	0.087	2	0.005	1
	TRS (ppm)	6	99.80	0.009	0	0.002	0
	TRS (ppm)	7	98.78	0.009	0	0.002	0
	TRS (ppm)	9	99.59	0.053	3	0.003	1
	TRS (ppm)	12	99.40	0.020	4	0.002	0
	TRS (ppm)	13	98.45	0.070	3	0.007	1
	TRS (ppm)	14	96.30	0.014	2	0.002	0
	TRS (ppm)	15	99.34	0.006	0	0.001	0
	THC (ppm)	1	97.09	4.4	-	3.4	-
	THC (ppm)	2	98.27	8.9	-	3.4	-
	THC (ppm)	4	97.53	14.4	-	4.2	-
	THC (ppm)	5	96.57	7.3	-	3.3	-
	THC (ppm)	6	99.61	3.1	-	2.4	-
	THC (ppm)	7	97.01	3.1	-	2.8	-
	THC (ppm)	9	99.39	5.0	-	3.5	-
	THC (ppm)	11	99.29	5.4	-	3.3	-
	THC (ppm)	12	99.46	9.5	-	4.8	-
	THC (ppm)	13	98.94	6.7	-	4.2	-
	THC (ppm)	14	98.00	3.6	-	2.5	-
	THC (ppm)	15	98.63	8.0	-	3.5	-
	THC (ppm)	16	97.59	8.5	-	4.2	-
	THC (ppm)	101	97.65	3.6	-	2.5	-
	O3 (ppm)	1	98.14	0.071	0	0.048	-
	O3 (ppm)	6	98.53	0.072	0	0.059	-
	O3 (ppm)	7	97.69	0.062	0	0.040	-
	O3 (ppm)	8	99.67	0.060	0	0.048	-

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
MONTHLY AIR MONITORING SUMMARY
for AMD SECTION III.B.1(c)

JAN - DEC 2012

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prepared 27FEB13:11:13

APPROVAL NUMBERS	REPORT DATE						
	MONTH	YEAR					
94-02-00	1 - 12	2012					
26-01-00							
20809-01-00							
149968-00-01	CONTINUOUS AMBIENT MONITORING						
137467-00-00			ONE-HOUR AVERAGE		24-HOUR AVERAGE		
46586-00-01	PARAMETER	STN. NO.	% TIME OPERATIONAL	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION	MAXIMUM CONCENTRATION	NO. READINGS > REGULATION
206355-00-00	O3 (ppm)	13	99.66	0.093	1	0.048	-
48263-00-00	O3 (ppm)	14	99.80	0.062	0	0.052	-
	O3 (ppm)	101	99.59	0.065	0	0.050	-
	NO2 (ppm)	1	97.19	0.049	0	0.033	-
	NO2 (ppm)	6	99.61	0.052	0	0.026	-
	NO2 (ppm)	7	98.27	0.044	0	0.025	-
	NO2 (ppm)	8	98.71	0.141	0	0.035	-
	NO2 (ppm)	12	99.61	0.067	0	0.036	-
	NO2 (ppm)	13	99.31	0.043	0	0.033	-
	NO2 (ppm)	14	99.47	0.052	0	0.030	-
	NO2 (ppm)	15	99.52	0.069	0	0.041	-
	NO2 (ppm)	16	99.08	0.096	0	0.031	-
	NO2 (ppm)	101	99.11	0.021	0	0.011	-
	CO (ppm)	7	98.66	2.6	-	0.8	-
	NH3 (ppm)	1	95.59	64	-	14	-
	NH3 (ppm)	6	99.19	34	-	4	-
	PM2.5 (ug/m3)	1	97.88	563.4	-	138.4	8
	PM2.5 (ug/m3)	6	97.21	308.4	-	67.6	6
	PM2.5 (ug/m3)	7	95.92	386.1	-	73.3	4
	PM2.5 (ug/m3)	8	95.75	1242.5	-	191.1	5
	PM2.5 (ug/m3)	12	97.46	329	-	118.4	9
	PM2.5 (ug/m3)	13	98.28	409.7	-	123.2	4
	PM2.5 (ug/m3)	14	97.68	256.4	-	48.3	3
	PM2.5 (ug/m3)	15	96.55	437.6	-	117.2	12
	PM2.5 (ug/m3)	16	94.41	460	-	87.2	11
	PM2.5 (ug/m3)	101	99.76	268.2	-	84.8	3
	WIND	1	98.96	-	-	-	-
	WIND	2	99.59	-	-	-	-
	WIND	4	98.75	-	-	-	-
	WIND	5	94.40	-	-	-	-
	WIND	6	99.61	-	-	-	-
	WIND	7	99.24	-	-	-	-
	WIND	8	97.93	-	-	-	-
	WIND	9	98.11	-	-	-	-
	WIND	11	98.54	-	-	-	-
	WIND	12	98.95	-	-	-	-
	WIND	13	97.60	-	-	-	-
	WIND	14	92.84	-	-	-	-
	WIND	15	99.49	-	-	-	-
	WIND	16	98.94	-	-	-	-
	WIND	101	99.40	-	-	-	-
SIGNATURE OF ASSOCIATION REPRESENTATIVE				FOR ALBERTA ENVIRONMENT USE ONLY			

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

CONTINUOUS AMBIENT AIR QUALITY MONITORING PROGRAM ANNUAL REPORT

ANNUAL 2012

Operations and Data Collection by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

QA/QC, Data Validation and Reporting by:
Aurora Atmospheric Inc.
Fort McMurray, Alberta

March 7, 2013

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WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline		24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	99.19	701	1.1	20	0	4	0	100	0	0	0	0	0
Feb	99.71	650	1.3	66	0	6	0	99.85	0	0.15	0	0	0
Mar	98.92	696	1.5	81	0	16	0	98.99	0.57	0.43	0	0	0
Apr	97.36	667	1.7	76	0	13	0	98.05	1.65	0.3	0	0	0
May	97.18	687	1.9	83	0	8	0	99.27	0.58	0.15	0	0	0
Jun	88.89	604	1.5	42	0	8	0	98.84	1.16	0	0	0	0
Jul	98.92	698	1.8	81	0	7	0	99	0.86	0.14	0	0	0
Aug	98.25	682	1.1	70	0	5	0	99.41	0.44	0.15	0	0	0
Sep	100	685	1.3	51	0	8	0	98.98	1.02	0	0	0	0
Oct	99.73	708	0.9	63	0	7	0	99.58	0.28	0.14	0	0	0
Nov	99.58	683	0.8	15	0	3	0	100	0	0	0	0	0
Dec	99.46	704	0.8	5	0	2	0	100	0	0	0	0	0
Annual	98.11	8165	1.3	83	0	16	0	99.33	0.54	0.12	0	0	0

Based on 8784 hours of data collection

WBEA - Mildred Lake (AMS 2)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline	24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340	
Jan	100	708	3.9	85	0	23	0	93.5	6.07	0.42	0	0	0
Feb	100	663	0.9	23	0	3	0	99.85	0.15	0	0	0	0
Mar	98.92	701	1.7	53	0	8	0	99.14	0.86	0	0	0	0
Apr	100	686	2.0	34	0	9	0	98.4	1.6	0	0	0	0
May	99.73	707	2.8	88	0	9	0	97.45	2.4	0.14	0	0	0
Jun	100	685	2.9	90	0	15	0	96.64	3.07	0.29	0	0	0
Jul	100	709	2.9	73	0	13	0	97.6	2.26	0.14	0	0	0
Aug	100	709	4.2	75	0	18	0	94.92	4.51	0.56	0	0	0
Sep	98.89	677	2.2	50	0	18	0	97.19	2.81	0	0	0	0
Oct	100	709	1.4	32	0	13	0	98.31	1.69	0	0	0	0
Nov	100	685	1.2	55	0	10	0	99.12	0.88	0	0	0	0
Dec	100	710	0.7	43	0	4	0	99.58	0.42	0	0	0	0
Annual	99.8	8349	2.2	90	0	23	0	97.62	2.25	0.13	0	0	0

Based on 8784 hours of data collection

**WBEA - Buffalo Viewpoint (AMS 4)
Annual Summary for the Year 2012
SO2 (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range					
								0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	100	709	0.5	23	0	5	0	99.72	0.28	0	0	0	0
Feb	100	662	0.6	23	0	4	0	99.85	0.15	0	0	0	0
Mar	100	710	0.7	26	0	6	0	99.58	0.42	0	0	0	0
Apr	100	686	0.5	21	0	3	0	99.85	0.15	0	0	0	0
May	99.33	703	1.1	100	0	12	0	99.15	0.71	0.14	0	0	0
Jun	100	683	2.1	66	0	16	0	96.49	3.22	0.29	0	0	0
Jul	100	709	0.5	22	0	4	0	99.86	0.14	0	0	0	0
Aug	100	710	0.6	56	0	5	0	99.86	0.14	0	0	0	0
Sep	100	685	0.3	19	0	2	0	100	0	0	0	0	0
Oct	99.6	702	0.4	25	0	3	0	99.86	0.14	0	0	0	0
Nov	99.44	682	0.3	7	0	2	0	100	0	0	0	0	0
Dec	95.3	671	0.4	4	0	1	0	100	0	0	0	0	0
Annual	99.46	8312	0.7	100	0	16	0	99.51	0.45	0.04	0	0	0

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range					
								0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	99.87	709	1.0	48	0	8	0	99.58	0.42	0	0	0	0
Feb	100	663	2.6	41	0	12	0	98.04	1.96	0	0	0	0
Mar	99.46	705	3.3	58	0	13	0	95.6	4.4	0	0	0	0
Apr	99.31	681	2.1	55	0	23	0	96.92	3.08	0	0	0	0
May	100	707	1.4	64	0	11	0	98.59	1.27	0.14	0	0	0
Jun	99.31	674	2.1	66	0	10	0	97.03	2.67	0.3	0	0	0
Jul	99.46	706	2.0	73	0	9	0	98.44	1.42	0.14	0	0	0
Aug	99.33	705	1.7	57	0	9	0	98.44	1.56	0	0	0	0
Sep	100	686	1.4	57	0	7	0	98.4	1.6	0	0	0	0
Oct	100	709	1.1	59	0	8	0	99.44	0.56	0	0	0	0
Nov	100	684	1.7	143	0	9	0	97.95	1.75	0.15	0.15	0	0
Dec	99.87	708	1.7	24	0	4	0	99.72	0.28	0	0	0	0
Annual	99.72	8337	1.9	143	0	23	0	98.25	1.7	0.04	0.01	0	0

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline	24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340	
Jan	100	707	0.6	12	0	3	0	100	0	0	0	0	0
Feb	100	664	1.4	27	0	5	0	99.7	0.3	0	0	0	0
Mar	99.73	707	1.3	31	0	4	0	99.72	0.28	0	0	0	0
Apr	100	685	0.4	16	0	3	0	100	0	0	0	0	0
May	100	709	0.5	18	0	4	0	100	0	0	0	0	0
Jun	99.17	676	0.7	28	0	7	0	99.7	0.3	0	0	0	0
Jul	99.87	708	0.5	13	0	2	0	100	0	0	0	0	0
Aug	100	706	0.6	28	0	5	0	99.86	0.14	0	0	0	0
Sep	100	686	0.5	27	0	5	0	99.42	0.58	0	0	0	0
Oct	100	709	0.6	61	0	8	0	99.72	0.14	0.14	0	0	0
Nov	99.31	682	0.7	27	0	8	0	99.56	0.44	0	0	0	0
Dec	98.66	698	1.2	14	0	6	0	100	0	0	0	0	0
Annual	99.73	8337	0.7	61	0	8	0	99.81	0.18	0.01	0	0	0

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline		24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	100	710	0.1	9	0	1	0	100	0	0	0	0	0
Feb	99.28	659	0.5	21	0	3	0	99.85	0.15	0	0	0	0
Mar	98.25	696	0.7	32	0	4	0	99.43	0.57	0	0	0	0
Apr	99.31	681	0.3	12	0	2	0	100	0	0	0	0	0
May	100	709	0.3	22	0	3	0	99.72	0.28	0	0	0	0
Jun	95	649	0.4	16	0	4	0	100	0	0	0	0	0
Jul	100	709	0.2	17	0	2	0	100	0	0	0	0	0
Aug	100	710	0.3	19	0	4	0	100	0	0	0	0	0
Sep	100	686	0.4	45	0	6	0	99.56	0.44	0	0	0	0
Oct	99.73	708	0.6	28	0	5	0	99.72	0.28	0	0	0	0
Nov	93.33	640	0.4	18	0	5	0	100	0	0	0	0	0
Dec	99.87	707	0.4	9	0	2	0	100	0	0	0	0	0
Annual	98.75	8264	0.4	45	0	6	0	99.85	0.15	0	0	0	0

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range						
					1-Hour Guideline		24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340	
Jan	98.52	692	0.3	6	0	2	0	100	0	0	0	0	0	0
Feb	99.57	652	0.6	20	0	4	0	100	0	0	0	0	0	0
Mar	100	707	0.2	5	0	2	0	100	0	0	0	0	0	0
Apr	100	679	0.1	2	0	1	0	100	0	0	0	0	0	0
May	100	707	0.1	2	0	0	0	100	0	0	0	0	0	0
Jun	99.86	684	0.0	2	0	0	0	100	0	0	0	0	0	0
Jul	100	707	0.2	8	0	1	0	100	0	0	0	0	0	0
Aug	99.6	704	0.2	12	0	2	0	100	0	0	0	0	0	0
Sep	99.72	680	0.1	4	0	1	0	100	0	0	0	0	0	0
Oct	100	708	0.2	12	0	3	0	100	0	0	0	0	0	0
Nov	100	685	0.3	11	0	2	0	100	0	0	0	0	0	0
Dec	99.33	704	0.8	15	0	5	0	100	0	0	0	0	0	0
Annual	99.72	8309	0.3	20	0	5	0	100	0	0	0	0	0	0

Based on 8784 hours of data collection

WBEA - Lower Camp (AMS 11)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline	24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340	
Jan	100	709	0.6	22	0	4	0	99.86	0.14	0	0	0	0
Feb	99.86	663	0.6	18	0	3	0	100	0	0	0	0	0
Mar	100	710	1.1	49	0	10	0	99.15	0.85	0	0	0	0
Apr	100	686	1.5	45	0	11	0	98.1	1.9	0	0	0	0
May	99.06	702	1.9	114	0	14	0	98.58	1.28	0	0.14	0	0
Jun	99.72	685	1.8	84	0	17	0	97.52	2.19	0.29	0	0	0
Jul	98.79	701	1.8	82	0	15	0	99	0.71	0.29	0	0	0
Aug	100	705	2.1	62	0	8	0	98.58	1.28	0.14	0	0	0
Sep	98.19	674	1.4	22	0	4	0	99.7	0.3	0	0	0	0
Oct	100	710	1.0	44	0	6	0	99.3	0.7	0	0	0	0
Nov	100	686	1.7	48	0	10	0	98.54	1.46	0	0	0	0
Dec	100	709	1.0	53	0	8	0	99.72	0.28	0	0	0	0
Annual	99.64	8340	1.4	114	0	17	0	98.99	0.94	0.06	0.01	0	0

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range					
								0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	96.91	684	0.8	27	0	6	0	99.71	0.29	0	0	0	0
Feb	100	662	0.9	16	0	3	0	100	0	0	0	0	0
Mar	100	708	1.1	72	0	16	0	98.59	1.13	0.28	0	0	0
Apr	100	687	0.7	74	0	12	0	99.27	0.58	0.15	0	0	0
May	100	708	1.5	65	0	11	0	97.88	1.84	0.28	0	0	0
Jun	100	682	0.9	54	0	7	0	99.27	0.73	0	0	0	0
Jul	100	708	1.2	54	0	7	0	99.15	0.85	0	0	0	0
Aug	100	708	1.4	57	0	6	0	99.15	0.85	0	0	0	0
Sep	100	686	1.0	39	0	6	0	99.71	0.29	0	0	0	0
Oct	100	710	0.6	27	0	4	0	99.86	0.14	0	0	0	0
Nov	100	687	0.6	10	0	2	0	100	0	0	0	0	0
Dec	96.91	685	0.4	3	0	1	0	100	0	0	0	0	0
Annual	99.48	8315	0.9	74	0	16	0	99.39	0.55	0.06	0	0	0

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range					
								0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	100	708	1.0	149	0	15	0	99.29	0.42	0.14	0.14	0	0
Feb	100	662	1.1	51	0	6	0	99.55	0.45	0	0	0	0
Mar	98.66	700	1.4	72	0	15	0	98.86	1	0.14	0	0	0
Apr	100	686	1.9	51	0	14	0	97.96	2.04	0	0	0	0
May	100	707	1.5	50	0	6	0	99.86	0.14	0	0	0	0
Jun	100	685	1.2	48	0	5	0	99.42	0.58	0	0	0	0
Jul	97.98	693	1.7	48	0	6	0	99.28	0.72	0	0	0	0
Aug	99.6	704	1.6	88	0	8	0	98.58	1.14	0.28	0	0	0
Sep	100	684	1.1	63	0	8	0	99.12	0.73	0.15	0	0	0
Oct	95.56	678	0.6	46	0	4	0	99.85	0.15	0	0	0	0
Nov	100	682	1.0	31	0	6	0	99.71	0.29	0	0	0	0
Dec	98.66	698	0.7	4	0	2	0	100	0	0	0	0	0
Annual	99.19	8287	1.2	149	0	15	0	99.27	0.65	0.06	0.01	0	0

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range					
								0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	100	708	1.0	106	0	10	0	99.44	0.28	0.28	0	0	0
Feb	99.86	662	0.9	28	0	7	0	99.7	0.3	0	0	0	0
Mar	100	708	0.6	12	0	2	0	100	0	0	0	0	0
Apr	99.58	683	0.4	10	0	1	0	100	0	0	0	0	0
May	100	708	0.4	20	0	2	0	100	0	0	0	0	0
Jun	99.58	680	0.3	11	0	2	0	100	0	0	0	0	0
Jul	99.06	702	0.7	14	0	3	0	100	0	0	0	0	0
Aug	99.06	703	0.3	18	0	2	0	100	0	0	0	0	0
Sep	99.31	682	0.3	15	0	2	0	100	0	0	0	0	0
Oct	100	711	0.6	36	0	3	0	99.86	0.14	0	0	0	0
Nov	100	687	0.7	25	0	7	0	99.85	0.15	0	0	0	0
Dec	100	710	1.3	23	0	9	0	99.86	0.14	0	0	0	0
Annual	99.7	8344	0.6	106	0	10	0	99.88	0.09	0.03	0	0	0

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline	24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340	
Jan	100	707	1.0	48	0	11	0	98.87	1.13	0	0	0	0
Feb	100	662	1.0	129	0	15	0	99.24	0.45	0.15	0.15	0	0
Mar	96.64	683	0.8	33	0	8	0	99.12	0.88	0	0	0	0
Apr	100	684	1.0	28	0	6	0	99.56	0.44	0	0	0	0
May	98.66	696	0.8	25	0	4	0	99.71	0.29	0	0	0	0
Jun	100	685	0.9	37	0	5	0	99.27	0.73	0	0	0	0
Jul	99.46	704	1.1	39	0	11	0	99.29	0.71	0	0	0	0
Aug	99.19	703	1.3	89	0	14	0	98.58	1.28	0.14	0	0	0
Sep	99.58	682	0.6	30	0	6	0	99.27	0.73	0	0	0	0
Oct	100	710	0.6	40	0	6	0	99.58	0.42	0	0	0	0
Nov	96.94	665	1.2	88	0	16	0	99.25	0.3	0.45	0	0	0
Dec	100	709	0.6	71	0	8	0	99.72	0.14	0.14	0	0	0
Annual	99.2	8290	0.9	129	0	16	0	99.29	0.63	0.07	0.01	0	0

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
SO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range					
					1-Hour Guideline	24-Hour Value	24-Hour Guidance	0 - 20	21 - 60	61 - 110	111 - 170	171 - 340	>340
Jan	99.6	705	0.8	20	0	3	0	100	0	0	0	0	0
Feb	100	662	2.6	118	0	11	0	96.83	2.87	0.15	0.15	0	0
Mar	100	709	0.9	29	0	5	0	99.44	0.56	0	0	0	0
Apr	99.44	681	1.2	71	0	12	0	98.53	1.32	0.15	0	0	0
May	99.73	706	1.0	50	0	6	0	99.29	0.71	0	0	0	0
Jun	100	681	0.6	37	0	5	0	99.71	0.29	0	0	0	0
Jul	100	708	1.9	80	0	12	0	98.31	1.41	0.28	0	0	0
Aug	98.92	702	0.9	42	0	7	0	99.86	0.14	0	0	0	0
Sep	100	687	1.2	47	0	8	0	98.98	1.02	0	0	0	0
Oct	100	709	0.5	11	0	2	0	100	0	0	0	0	0
Nov	100	685	0.7	24	0	8	0	99.56	0.44	0	0	0	0
Dec	99.33	703	1.4	45	0	17	0	98.29	1.71	0	0	0	0
Annual	99.75	8338	1.1	118	0	17	0	99.07	0.87	0.05	0.01	0	0

Based on 8784 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	99.19	702	0.8	4	0	2	0	99.15	0.85	0	0
Feb	99.71	660	1.0	5	0	2	0	98.48	1.52	0	0
Mar	99.06	700	0.6	2	0	1	0	100	0	0	0
Apr	97.36	666	0.4	1	0	1	0	100	0	0	0
May	97.58	684	0.5	2	0	1	0	100	0	0	0
Jun	90.28	617	0.5	3	0	1	0	100	0	0	0
Jul	99.06	702	0.8	8	0	2	0	97.29	2.71	0	0
Aug	97.85	689	0.7	87	1	5	1	98.98	0.87	0	0.15
Sep	99.31	677	0.6	3	0	1	0	100	0	0	0
Oct	99.46	704	0.4	4	0	1	0	99.86	0.14	0	0
Nov	99.58	674	0.5	3	0	1	0	100	0	0	0
Dec	99.06	701	0.7	12	1	2	0	99.43	0.43	0.14	0
Annual	98.13	8176	0.6	87	2	5	1	99.42	0.55	0.01	0.01

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	708	0.4	2	0	1	0	100	0	0	0
Feb	100	663	0.5	2	0	1	0	100	0	0	0
Mar	99.73	708	0.4	2	0	1	0	100	0	0	0
Apr	100	686	0.3	1	0	0	0	100	0	0	0
May	100	709	0.3	1	0	0	0	100	0	0	0
Jun	99.86	675	0.4	2	0	1	0	100	0	0	0
Jul	99.87	707	0.6	7	0	2	0	98.02	1.98	0	0
Aug	100	710	0.4	3	0	1	0	100	0	0	0
Sep	100	686	0.4	2	0	1	0	100	0	0	0
Oct	100	707	0.3	1	0	1	0	100	0	0	0
Nov	100	686	0.3	1	0	0	0	100	0	0	0
Dec	98.12	696	0.5	9	0	2	0	99.43	0.57	0	0
Annual	99.8	8341	0.4	9	0	2	0	99.78	0.22	0	0

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	709	0.6	2	0	1	0	100	0	0	0
Feb	99.28	656	0.7	2	0	1	0	100	0	0	0
Mar	98.25	691	0.4	2	0	1	0	100	0	0	0
Apr	99.86	685	0.3	1	0	0	0	100	0	0	0
May	100	709	0.4	1	0	1	0	100	0	0	0
Jun	95	649	0.5	6	0	1	0	99.85	0.15	0	0
Jul	100	710	0.7	9	0	2	0	98.87	1.13	0	0
Aug	100	709	0.5	2	0	1	0	100	0	0	0
Sep	100	687	0.5	4	0	1	0	99.85	0.15	0	0
Oct	99.73	704	0.4	1	0	1	0	100	0	0	0
Nov	93.33	640	0.6	2	0	1	0	100	0	0	0
Dec	99.87	708	0.8	5	0	2	0	99.44	0.56	0	0
Annual	98.79	8257	0.5	9	0	2	0	99.83	0.17	0	0

Based on 8784 hours of data collection

WBEA - Barge Landing (AMS 9)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	710	0.5	3	0	2	0	100	0	0	0
Feb	100	664	0.7	3	0	2	0	100	0	0	0
Mar	98.66	700	0.2	2	0	1	0	100	0	0	0
Apr	98.89	679	0.2	1	0	0	0	100	0	0	0
May	99.87	707	0.3	2	0	1	0	100	0	0	0
Jun	99.72	683	0.3	2	0	1	0	100	0	0	0
Jul	100	709	0.6	9	0	2	0	96.9	3.1	0	0
Aug	98.52	700	0.4	53	1	3	1	99.57	0.29	0	0.14
Sep	100	686	0.4	2	0	1	0	100	0	0	0
Oct	100	709	0.2	7	0	1	0	99.86	0.14	0	0
Nov	99.44	683	0.2	2	0	1	0	100	0	0	0
Dec	100	709	0.6	16	2	3	0	99.44	0.28	0.28	0
Annual	99.59	8339	0.4	53	3	3	1	99.63	0.33	0.02	0.01

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	706	0.4	3	0	1	0	100	0	0	0
Feb	100	660	0.7	4	0	2	0	99.7	0.3	0	0
Mar	99.87	709	0.6	6	0	2	0	98.73	1.27	0	0
Apr	100	686	0.3	2	0	1	0	100	0	0	0
May	99.87	709	0.4	9	0	1	0	99.86	0.14	0	0
Jun	99.86	682	0.3	6	0	1	0	99.12	0.88	0	0
Jul	99.87	709	0.6	20	1	2	0	97.6	2.26	0.14	0
Aug	99.87	709	0.5	17	3	2	0	97.88	1.69	0.42	0
Sep	99.72	685	0.4	7	0	2	0	98.83	1.17	0	0
Oct	99.87	709	0.2	1	0	0	0	100	0	0	0
Nov	94.17	647	0.3	1	0	1	0	100	0	0	0
Dec	99.73	704	0.3	2	0	1	0	100	0	0	0
Annual	99.41	8315	0.4	20	4	2	0	99.29	0.66	0.05	0

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	709	0.6	3	0	2	0	100	0	0	0
Feb	99.86	661	0.6	3	0	2	0	100	0	0	0
Mar	85.75	607	0.4	3	0	1	0	100	0	0	0
Apr	99.72	683	0.3	2	0	1	0	100	0	0	0
May	99.19	701	0.2	2	0	0	0	100	0	0	0
Jun	99.72	685	0.2	1	0	0	0	100	0	0	0
Jul	98.12	689	0.5	9	0	2	0	97.24	2.76	0	0
Aug	99.06	703	0.6	70	3	7	1	98.44	1.14	0.14	0.28
Sep	100	687	0.3	8	0	1	0	99.85	0.15	0	0
Oct	100	710	0.2	1	0	0	0	100	0	0	0
Nov	100	687	0.2	1	0	1	0	100	0	0	0
Dec	100	709	0.4	3	0	1	0	100	0	0	0
Annual	98.43	8231	0.4	70	3	7	1	99.62	0.35	0.01	0.02

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	708	0.4	4	0	1	0	99.86	0.14	0	0
Feb	96.26	638	0.5	14	2	2	0	99.69	0	0.31	0
Mar	100	710	0.3	2	0	1	0	100	0	0	0
Apr	100	686	0.3	1	0	0	0	100	0	0	0
May	72.98	516	0.4	6	0	1	0	99.81	0.19	0	0
Jun	88.33	605	0.3	1	0	1	0	100	0	0	0
Jul	99.06	703	0.4	2	0	1	0	100	0	0	0
Aug	99.6	706	0.4	2	0	1	0	100	0	0	0
Sep	99.31	682	0.3	1	0	0	0	100	0	0	0
Oct	100	709	0.3	7	0	1	0	99.58	0.42	0	0
Nov	100	687	0.4	3	0	1	0	100	0	0	0
Dec	100	710	0.6	8	0	2	0	98.31	1.69	0	0
Annual	96.29	8060	0.4	14	2	2	0	99.76	0.21	0.03	0

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
TRS (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	709	0.6	3	0	1	0	100	0	0	0
Feb	100	664	0.6	3	0	1	0	100	0	0	0
Mar	96.64	685	0.5	2	0	1	0	100	0	0	0
Apr	100	686	0.5	1	0	1	0	100	0	0	0
May	99.19	703	0.4	2	0	1	0	100	0	0	0
Jun	100	687	0.5	6	0	1	0	99.42	0.58	0	0
Jul	100	710	0.5	4	0	1	0	99.86	0.14	0	0
Aug	100	708	0.5	4	0	1	0	99.72	0.28	0	0
Sep	99.58	684	0.4	2	0	1	0	100	0	0	0
Oct	100	710	0.4	1	0	1	0	100	0	0	0
Nov	96.67	663	0.4	2	0	1	0	100	0	0	0
Dec	100	709	0.5	2	0	1	0	100	0	0	0
Annual	99.34	8318	0.5	6	0	1	0	99.92	0.08	0	0

Based on 8784 hours of data collection

WBEA - Mildred Lake (AMS 2)
Annual Summary for the Year 2012
H2S (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	710	0.6	7	0	2	0	98.45	1.55	0	0
Feb	100	664	0.8	9	0	3	0	97.59	2.41	0	0
Mar	98.92	701	0.4	15	2	2	0	99.14	0.57	0.29	0
Apr	100	685	0.2	4	0	1	0	99.71	0.29	0	0
May	100	710	0.4	10	1	1	0	99.15	0.85	0	0
Jun	100	684	0.4	13	2	2	0	98.39	1.32	0.29	0
Jul	100	710	1.7	33	35	5	8	86.9	8.17	4.93	0
Aug	100	709	1.1	24	10	5	2	91.26	7.33	1.41	0
Sep	99.17	678	0.6	8	0	2	0	97.64	2.36	0	0
Oct	100	709	0.5	19	8	7	1	98.59	0.28	1.13	0
Nov	100	686	0.4	7	0	1	0	99.71	0.29	0	0
Dec	99.87	709	0.5	2	0	1	0	100	0	0	0
Annual	99.83	8355	0.6	33	58	7	11	97.18	2.14	0.68	0

Based on 8784 hours of data collection

**WBEA - Buffalo Viewpoint (AMS 4)
Annual Summary for the Year 2012
H2S (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	709	0.2	4	0	1	0	99.86	0.14	0	0
Feb	100	659	0.2	2	0	0	0	100	0	0	0
Mar	100	710	0.3	14	1	1	0	99.01	0.85	0.14	0
Apr	100	685	0.1	3	0	0	0	100	0	0	0
May	99.19	701	0.2	5	0	1	0	99.71	0.29	0	0
Jun	100	683	0.3	9	0	1	0	99.27	0.73	0	0
Jul	100	710	0.5	20	3	2	0	98.03	1.55	0.42	0
Aug	100	709	0.2	5	0	1	0	99.44	0.56	0	0
Sep	100	680	0.2	3	0	1	0	100	0	0	0
Oct	99.19	702	0.1	2	0	0	0	100	0	0	0
Nov	99.58	681	0.1	2	0	1	0	100	0	0	0
Dec	95.83	678	0.3	9	0	1	0	99.71	0.29	0	0
Annual	99.48	8307	0.2	20	4	2	0	99.57	0.38	0.05	0

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
H2S (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values	Maximum 24-Hour Value	Number of Values	% of Data in Each Concentration Range			
					Exceeding 1-Hour Guideline	Exceeding 24-Hour Guidance	0 - 3	4-10	10-50	> 50	
Jan	100	709	0.6	6	0	2	0	98.59	1.41	0	0
Feb	100	663	0.6	9	0	1	0	98.94	1.06	0	0
Mar	99.33	703	0.6	15	1	2	0	98.29	1.56	0.14	0
Apr	99.31	682	0.3	5	0	1	0	99.27	0.73	0	0
May	95.97	681	0.3	6	0	1	0	99.41	0.59	0	0
Jun	99.17	674	1.1	19	13	7	2	92.14	5.93	1.93	0
Jul	99.6	707	2.5	37	51	12	8	80.2	12.59	7.21	0
Aug	99.33	702	1.5	46	11	6	4	86.04	12.39	1.57	0
Sep	100	687	0.7	14	4	5	2	94.76	4.66	0.58	0
Oct	99.87	708	0.3	2	0	1	0	100	0	0	0
Nov	100	686	0.3	13	1	1	0	99.71	0.15	0.15	0
Dec	99.87	709	0.6	11	1	2	0	99.44	0.42	0.14	0
Annual	99.36	8311	0.8	46	82	12	16	95.88	3.31	0.81	0

Based on 8784 hours of data collection

WBEA - Lower Camp (AMS 11)
Annual Summary for the Year 2012
H2S (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	100	709	0.7	3	0	1	0	100	0	0	0
Feb	99.86	662	0.7	8	0	3	0	98.34	1.66	0	0
Mar	100	709	0.4	3	0	1	0	100	0	0	0
Apr	100	687	0.3	5	0	1	0	99.42	0.58	0	0
May	98.39	697	0.4	8	0	1	0	99.43	0.57	0	0
Jun	100	686	0.5	12	1	1	0	98.98	0.87	0.15	0
Jul	98.66	701	1.0	12	3	3	0	93.87	5.71	0.43	0
Aug	99.46	707	1.0	23	5	3	0	93.78	5.52	0.71	0
Sep	98.19	673	0.5	12	2	2	0	98.81	0.89	0.3	0
Oct	100	708	0.3	18	1	1	0	99.72	0.14	0.14	0
Nov	100	685	0.3	3	0	1	0	100	0	0	0
Dec	100	710	0.5	3	0	2	0	100	0	0	0
Annual	99.54	8334	0.5	23	12	3	0	98.52	1.34	0.15	0

Based on 8784 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Surmont
Summary Jan 1 - Mar 31, 2012
H2S (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Jan	90.99	646	0.8	18	12	9	1	97.21	1.08	1.7	0
Feb	100	667	0.3	4	0	1	0	99.85	0.15	0	0
Mar	100	713	0.2	2	0	1	0	100	0	0	0
Annual	97.00	2026	0.5	18	12	9	1	99.02	0.41	0.57	0

Based on 2184 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
H2S (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values	Maximum 24-Hour Value	Number of Values	% of Data in Each Concentration Range			
					Exceeding 1-Hour Guideline	Exceeding 24-Hour Guidance	0 - 3	4-10	10-50	> 50	
May	100	605	0.0	1	0	0	0	100	0	0	0
Jun	100	686	0.1	1	0	0	0	100	0	0	0
Jul	99.33	705	0.1	1	0	0	0	100	0	0	0
Aug	99.87	708	0.1	1	0	0	0	100	0	0	0
Sep	100	690	0.1	1	0	0	0	100	0	0	0
Oct	100	575	0.1	6	0	1	0	99.83	0.17	0	0
Annual	99.87	3969	0.1	6	12	1	1	99.97	0.03	0	0

Based on 3912 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
Summary Oct 15 - Dec 31, 2012
H2S (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 3	4-10	10-50	> 50
Oct	100	575	0.1	6	0	1	0	99.83	0.17	0	0
Nov	100	687	0.1	0	0	0	0	100	0	0	0
Dec	100	709	0.2	1	0	0	0	100	0	0	0
Annual	100	1971	0.1	6	12	1	1	99.94	0.06	0	0

Based on 1848 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	97.31	683	2.2	4.2	-	3.2	-
Feb	95.4	625	2.2	3.7	-	2.8	-
Mar	97.85	688	1.9	2.9	-	2.4	-
Apr	98.89	677	1.9	3.1	-	2.1	-
May	95.97	676	1.9	2.8	-	2.1	-
Jun	87.5	593	1.9	3.3	-	2.2	-
Jul	98.12	694	2.0	3.8	-	2.4	-
Aug	97.18	686	2.0	3.0	-	2.2	-
Sep	99.72	683	2.1	3.6	-	2.5	-
Oct	98.92	702	2.0	3.1	-	2.3	-
Nov	99.58	683	2.0	3.3	-	2.4	-
Dec	98.79	701	2.3	4.4	-	3.4	-
Annual	97.12	8091	2.0	4.4	-	3.4	-

Based on 8784 hours of data collection

WBEA - Mildred Lake (AMS 2)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	708	2.5	6.4	-	3.4	-
Feb	89.22	582	2.5	6.1	-	3.2	-
Mar	98.92	701	2.2	4.8	-	2.9	-
Apr	100	686	2.2	4.4	-	2.5	-
May	99.73	707	2.3	7.1	-	3.0	-
Jun	99.86	684	2.2	4.8	-	2.7	-
Jul	95.7	679	2.5	8.9	-	3.2	-
Aug	100	709	2.4	5.1	-	2.9	-
Sep	95.83	658	2.4	4.7	-	2.9	-
Oct	100	709	2.2	4.9	-	3.0	-
Nov	100	686	2.3	4.8	-	2.8	-
Dec	100	710	2.5	7.2	-	3.2	-
Annual	98.32	8219	2.4	8.9	-	3.4	-

Based on 8784 hours of data collection

**WBEA - Buffalo Viewpoint (AMS 4)
Annual Summary for the Year 2012
THC (ppm) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	709	2.3	7.4	-	4.2	-
Feb	100	662	2.4	6.2	-	2.8	-
Mar	86.69	615	2.4	14.4	-	3.4	-
Apr	99.58	683	2.2	3.7	-	2.5	-
May	97.98	694	2.2	5.0	-	2.7	-
Jun	100	680	2.2	3.9	-	2.6	-
Jul	95.56	674	2.0	3.6	-	2.4	-
Aug	100	709	2.3	3.5	-	2.5	-
Sep	99.86	683	2.2	4.4	-	2.6	-
Oct	96.37	679	2.2	3.1	-	2.4	-
Nov	99.17	680	2.3	4.6	-	2.8	-
Dec	95.16	669	2.4	5.5	-	2.9	-
Annual	97.5	8137	2.3	14.4	-	4.2	-

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	92.34	654	2.4	5.7	-	3.3	-
Feb	99.86	661	2.5	7.3	-	3.0	-
Mar	99.33	704	2.4	6.5	-	3.1	-
Apr	99.17	680	2.3	4.2	-	2.5	-
May	97.45	688	2.3	4.2	-	2.6	-
Jun	85.69	577	2.3	6.3	-	3.1	-
Jul	96.91	689	2.4	4.7	-	2.7	-
Aug	98.79	701	2.3	4.0	-	2.7	-
Sep	96.67	654	2.4	5.2	-	2.9	-
Oct	97.98	694	2.2	3.6	-	2.3	-
Nov	95.69	658	2.3	4.1	-	2.8	-
Dec	98.92	691	2.5	5.7	-	3.1	-
Annual	96.57	8051	2.3	7.3	-	3.3	-

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	98.52	696	2.2	3.1	-	2.4	-
Feb	100	664	2.2	2.7	-	2.4	-
Mar	99.73	707	2.1	2.7	-	2.2	-
Apr	100	685	2.1	2.8	-	2.2	-
May	100	709	2.1	2.6	-	2.2	-
Jun	99.44	679	2.1	2.4	-	2.2	-
Jul	99.46	705	2.1	3.0	-	2.3	-
Aug	100	710	2.1	2.8	-	2.4	-
Sep	100	686	2.2	2.8	-	2.4	-
Oct	100	709	2.2	3.1	-	2.3	-
Nov	99.72	682	2.0	2.5	-	2.4	-
Dec	98.39	697	2.1	2.9	-	2.3	-
Annual	99.6	8329	2.1	3.1	-	2.4	-

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.73	708	2.0	3.1	-	2.3	-
Feb	98.85	656	2.1	3.0	-	2.3	-
Mar	97.45	690	1.9	2.7	-	2.0	-
Apr	99.17	680	1.9	2.3	-	2.0	-
May	87.9	622	2.0	2.6	-	2.2	-
Jun	90.83	617	2.0	2.4	-	2.1	-
Jul	97.58	688	2.1	2.8	-	2.3	-
Aug	100	710	2.2	2.7	-	2.3	-
Sep	99.86	685	2.0	2.6	-	2.1	-
Oct	99.73	707	1.9	2.7	-	2.1	-
Nov	93.33	640	2.0	2.3	-	2.1	-
Dec	99.73	706	2.1	3.1	-	2.8	-
Annual	97.02	8109	2.0	3.1	-	2.8	-

Based on 8784 hours of data collection

WBEA - Barge Landing (AMS 9)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.6	707	2.5	5.0	-	3.5	-
Feb	99.86	660	2.6	4.3	-	3.1	-
Mar	98.52	697	2.3	3.9	-	2.7	-
Apr	98.89	679	2.3	3.2	-	2.5	-
May	99.87	709	2.3	3.5	-	2.6	-
Jun	99.86	682	2.3	4.4	-	2.6	-
Jul	100	709	2.4	3.7	-	2.7	-
Aug	98.52	699	2.3	4.2	-	2.7	-
Sep	100	683	2.4	3.6	-	2.8	-
Oct	100	710	2.3	3.2	-	2.6	-
Nov	97.5	663	2.4	3.6	-	3.1	-
Dec	100	708	2.7	4.3	-	3.5	-
Annual	99.39	8306	2.4	5.0	-	3.5	-

Based on 8784 hours of data collection

WBEA - Lower Camp (AMS 11)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.87	708	2.5	4.2	-	3.1	-
Feb	99.86	663	2.6	4.9	-	3.2	-
Mar	100	707	2.3	4.4	-	2.9	-
Apr	100	686	2.2	4.2	-	2.4	-
May	99.06	702	2.2	5.0	-	2.6	-
Jun	99.72	685	2.2	3.8	-	2.4	-
Jul	97.72	692	2.4	4.3	-	2.7	-
Aug	97.31	687	2.3	5.4	-	2.8	-
Sep	98.06	672	2.3	4.5	-	2.9	-
Oct	100	710	2.2	3.1	-	2.3	-
Nov	99.86	686	2.2	3.7	-	2.7	-
Dec	100	710	2.5	4.9	-	3.3	-
Annual	99.28	8308	2.3	5.4	-	3.3	-

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.73	707	2.6	6.6	-	3.6	-
Feb	100	662	2.9	9.5	-	4.8	-
Mar	99.73	706	2.3	5.1	-	2.9	-
Apr	99.44	683	2.3	5.3	-	2.5	-
May	96.91	685	2.3	5.6	-	2.8	-
Jun	100	682	2.3	4.7	-	2.7	-
Jul	100	708	2.5	6.1	-	3.0	-
Aug	99.73	706	2.4	5.5	-	3.0	-
Sep	100	685	2.5	5.2	-	2.9	-
Oct	100	710	2.3	4.4	-	2.7	-
Nov	100	686	2.4	4.1	-	2.9	-
Dec	97.98	694	2.8	6.3	-	4.1	-
Annual	99.45	8314	2.5	9.5	-	4.8	-

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	708	2.4	6.0	-	3.8	-
Feb	99.71	660	2.6	5.5	-	3.5	-
Mar	99.06	700	2.2	3.5	-	2.8	-
Apr	100	685	2.2	3.2	-	2.4	-
May	99.87	707	2.1	3.3	-	2.3	-
Jun	100	685	2.1	3.3	-	2.4	-
Jul	95.83	678	2.3	3.7	-	2.5	-
Aug	98.52	698	2.3	3.4	-	2.6	-
Sep	97.5	668	2.3	4.4	-	2.7	-
Oct	100	706	2.1	3.4	-	2.4	-
Nov	96.81	660	2.3	3.6	-	2.9	-
Dec	100	708	2.8	6.7	-	4.2	-
Annual	98.94	8263	2.3	6.7	-	4.2	-

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	708	2.2	2.6	-	2.3	-
Feb	99.86	662	2.2	2.6	-	2.3	-
Mar	99.73	707	2.1	2.4	-	2.3	-
Apr	99.58	683	2.0	2.2	-	2.1	-
May	89.52	627	2.1	2.7	-	2.3	-
Jun	94.86	648	2.0	2.5	-	2.2	-
Jul	94.35	666	2.3	3.6	-	2.5	-
Aug	99.06	699	2.1	3.3	-	2.2	-
Sep	99.17	681	2.0	2.6	-	2.1	-
Oct	99.87	710	1.9	2.1	-	2.0	-
Nov	100	687	1.9	2.3	-	2.1	-
Dec	100	710	2.0	2.5	-	2.2	-
Annual	97.98	8188	2.1	3.6	-	2.5	-

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	96.77	684	2.3	7.6	-	3.5	-
Feb	98.71	653	2.3	6.0	-	3.3	-
Mar	92.2	652	2.2	4.5	-	2.6	-
Apr	100	685	2.2	3.9	-	2.4	-
May	99.6	703	2.2	6.4	-	2.6	-
Jun	100	685	2.2	6.0	-	2.5	-
Jul	100	706	2.2	4.6	-	2.5	-
Aug	99.73	707	2.2	8.0	-	2.7	-
Sep	99.58	682	2.2	5.7	-	2.7	-
Oct	100	709	2.2	3.9	-	2.4	-
Nov	96.94	665	2.3	4.9	-	2.9	-
Dec	100	709	2.4	5.7	-	2.9	-
Annual	98.62	8240	2.2	8.0	-	3.5	-

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.6	705	2.6	8.5	-	4.2	-
Feb	97.84	646	2.5	5.5	-	3.0	-
Mar	100	709	2.4	4.6	-	3.0	-
Apr	85.69	575	2.4	5.7	-	3.3	-
May	99.73	706	2.2	4.3	-	2.7	-
Jun	100	680	2.3	4.3	-	2.8	-
Jul	100	706	2.4	4.6	-	3.1	-
Aug	99.06	702	2.3	5.5	-	2.6	-
Sep	99.44	683	2.2	4.5	-	2.7	-
Oct	100	709	2.3	3.6	-	2.6	-
Nov	97.08	663	2.3	4.2	-	2.8	-
Dec	92.61	654	2.6	6.6	-	3.2	-
Annual	97.61	8138	2.4	8.5	-	4.2	-

Based on 8784 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
THC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
May	91.71	557	2.2	2.7	-	2.4	-
Jun	90.56	620	2.1	2.7	-	2.3	-
Jul	99.06	693	2.3	3.1	-	2.5	-
Aug	99.87	707	2.2	2.5	-	2.3	-
Sep	100	690	2.1	3.5	-	2.3	-
Oct	100	586	2.1	3.6	-	2.5	-
Annual	96.87	3853	2.2	3.6	-	2.5	-

Based on 3912 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
 Summary Oct 15 - Dec 31, 2012
 THC (ppm) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Oct	100	586	2.1	3.6	-	2.5	-
Nov	100	685	2.2	3.0	-	2.4	-
Dec	100	707	2.3	3.5	-	2.5	-
Annual	100	1978	2.2	3.6	-	2.5	-

Based on 1848 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
CH4 (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding
					1-Hour Guideline	24-Hour Guidance	
Mar	97.85	688	1.9	2.7	-	2.2	-
Apr	98.89	677	1.9	2.6	-	2.0	-
May	95.97	676	1.9	2.3	-	2.0	-
Jun	87.5	593	1.9	2.6	-	2.0	-
Jul	98.12	694	1.9	2.7	-	2.0	-
Aug	97.18	686	1.9	2.7	-	2.0	-
Sep	99.72	683	2.0	2.9	-	2.2	-
Oct	98.92	702	2.0	2.7	-	2.1	-
Nov	99.58	683	2.0	2.8	-	2.2	-
Dec	98.79	701	2.2	3.8	-	3.0	-
Annual	81.32	6783	1.9	3.8	-	3.0	-

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
CH4 (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Nov	100	551	1.9	2.2	-	2.0	-
Dec	98.39	697	2.0	2.6	-	2.2	-
Annual	15.14	1248	2.0	2.6	-	2.2	-

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
CH4 (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jul	98.92	171	1.9	2.2	-	2.0	-
Aug	100	710	1.9	2.3	-	2.0	-
Sep	99.86	685	1.9	2.6	-	2.1	-
Oct	99.73	707	1.9	2.5	-	2.0	-
Nov	93.33	640	2.0	2.3	-	2.1	-
Dec	99.73	706	2.1	3.0	-	2.8	-
Annual	46.22	3619	2.0	3.0	-	2.8	-

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
CH4 (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Aug	98.58	459	2.0	3.2	-	2.1	-
Sep	99.17	681	1.9	2.5	-	2.0	-
Oct	99.87	710	1.9	2.1	-	2.0	-
Nov	100	687	1.9	2.3	-	2.1	-
Dec	100	710	2.0	2.4	-	2.2	-
Annual	40.03	3247	2.0	3.2	-	2.2	-

Based on 8784 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.19	702	17.34	37.4	0	34.3	-
Feb	99.57	660	15.18	40.5	0	32.6	-
Mar	98.52	697	26.59	52.4	0	37.3	-
Apr	97.36	667	31.74	57.8	0	40.7	-
May	97.31	687	32.74	57.4	0	48.1	-
Jun	88.89	608	22.35	50.9	0	33.7	-
Jul	98.92	701	19.41	70.6	0	33.1	-
Aug	99.19	701	13.64	56.5	0	21.1	-
Sep	100	686	12.18	36.7	0	18.3	-
Oct	99.73	703	12.82	26.7	0	22.5	-
Nov	99.58	684	13.17	31.7	0	24.4	-
Dec	99.46	704	9.59	27.9	0	25.2	-
Annual	98.16	8200	18.81	70.6	0	48.1	-

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	97.85	695	21.21	41.0	0	36.2	-
Feb	100	663	19.49	44.0	0	31.8	-
Mar	99.73	706	29.21	58.0	0	51.8	-
Apr	100	685	38.22	59.2	0	49.8	-
May	100	710	41.37	67.3	0	59.2	-
Jun	89.72	610	30.70	62.9	0	42.4	-
Jul	99.46	706	27.73	71.7	0	40.6	-
Aug	97.58	681	22.15	62.5	0	32.8	-
Sep	99.72	681	19.99	48.6	0	28.9	-
Oct	100	709	17.49	33.4	0	27.8	-
Nov	100	686	18.56	34.8	0	27.3	-
Dec	98.25	696	12.61	32.6	0	23.2	-
Annual	98.53	8228	24.88	71.7	0	59.2	-

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	709	13.85	35.5	0	28.7	-
Feb	99.28	659	11.44	36.8	0	21.7	-
Mar	98.25	697	23.41	49.2	0	36.1	-
Apr	93.19	638	28.89	51.3	0	36.2	-
May	96.51	671	31.17	55.4	0	39.5	-
Jun	92.5	626	24.77	59.1	0	35.5	-
Jul	100	711	22.48	57.5	0	33.8	-
Aug	100	709	18.36	61.5	0	30.9	-
Sep	100	687	14.55	44.7	0	22.6	-
Oct	99.73	708	14.11	30.6	0	24.1	-
Nov	92.92	635	15.14	32.3	0	23.6	-
Dec	99.87	709	9.00	25.7	0	20.8	-
Annual	97.71	8159	18.82	61.5	0	39.5	-

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	97.98	696	27.62	36.7	0	33.1	-
Feb	99.57	649	29.46	39.0	0	35.6	-
Mar	100	705	35.10	45.9	0	44.0	-
Apr	99.86	686	38.44	53.2	0	47.8	-
May	100	709	37.61	59.8	0	47.7	-
Jun	99.86	684	28.07	52.0	0	37.3	-
Jul	100	708	26.40	58.4	0	41.5	-
Aug	99.6	706	23.31	52.0	0	36.9	-
Sep	99.86	686	21.77	43.0	0	34.5	-
Oct	100	709	21.51	35.5	0	30.3	-
Nov	100	686	25.91	36.2	0	32.7	-
Dec	99.33	705	23.67	33.7	0	32.5	-
Annual	99.67	8329	28.23	59.8	0	47.8	-

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	710	15.18	37.6	0	33.6	-
Feb	99.86	663	13.15	40.5	0	30.0	-
Mar	99.06	703	25.39	53.1	0	38.3	-
Apr	99.86	686	29.43	57.4	0	40.3	-
May	99.73	708	31.23	59.0	0	48.3	-
Jun	99.17	680	21.68	55.5	0	31.2	-
Jul	99.73	708	21.01	93.0	1	33.6	-
Aug	99.6	708	16.49	75.0	0	25.6	-
Sep	99.72	684	12.04	43.2	0	20.3	-
Oct	99.19	704	13.46	30.2	0	23.4	-
Nov	100	686	14.42	36.2	0	25.6	-
Dec	100	709	9.22	31.3	0	27.4	-
Annual	99.66	8349	18.57	93.0	1	48.3	-

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	710	26.95	40.3	0	36.9	-
Feb	99.86	663	27.33	45.3	0	36.1	-
Mar	100	710	32.78	53.0	0	45.9	-
Apr	100	684	38.12	59.5	0	47.9	-
May	100	710	38.09	61.9	0	51.7	-
Jun	99.58	683	27.40	60.3	0	41.5	-
Jul	99.06	704	25.28	61.7	0	36.0	-
Aug	99.73	708	21.70	62.3	0	36.4	-
Sep	99.31	682	20.68	49.5	0	35.4	-
Oct	100	710	19.03	34.1	0	26.2	-
Nov	100	687	23.46	38.1	0	32.1	-
Dec	100	709	17.94	37.4	0	31.3	-
Annual	99.8	8360	26.55	62.3	0	51.7	-

Based on 8784 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
May	100	607	38.97	58.8	0	50.4	-
Jun	100	687	28.44	65.2	0	44.2	-
Jul	98.39	699	25.57	56.4	0	38.5	-
Aug	100	710	21.52	53.4	0	37.7	-
Sep	100	690	22.01	50.1	0	37.0	-
Oct	100	575	19.39	36.1	0	25.6	-
Annual	99.73	3968	25.98	65.2	0	50.4	-

Based on 3912 hours of data collection

WBEA - AMS 101 Portable (AMS101) Christina Lake
Summary Oct 15 - Dec 31, 2012
O3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Oct	100	575	19.39	36.1	0	25.6	-
Nov	100	686	23.84	38.4	0	34.4	-
Dec	100	710	22.48	41.9	0	37.1	-
Annual	100.00	1971	21.90	41.9	0	37.1	-

Based on 1848 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
NMHC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Mar	97.85	688	0.0121	0.4823	-	0.1613	-
Apr	98.89	677	0.0083	0.4998	-	0.0600	-
May	95.97	676	0.0304	0.7202	-	0.1218	-
Jun	87.5	593	0.0395	0.7149	-	0.2042	-
Jul	98.12	694	0.0999	1.0815	-	0.3641	-
Aug	97.18	686	0.0509	0.8733	-	0.1866	-
Sep	99.72	683	0.0873	1.1711	-	0.3350	-
Oct	98.92	702	0.0231	0.4750	-	0.1262	-
Nov	99.58	683	0.0172	0.5523	-	0.1378	-
Dec	98.79	701	0.0878	0.8134	-	0.4404	-
Annual	81.32	6783	0.0459	1.1711	-	0.4404	-

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
NMHC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Nov	100	551	0.0046	0.1845	-	0.0268	-
Dec	98.39	697	0.0345	0.5061	-	0.1228	-
Annual	15.14	1248	0.0213	0.5061	-	0.1228	-

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
NMHC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.73	708	0.0273	0.8190	-	0.1086	-
Feb	98.85	656	0.0353	0.6138	-	0.1281	-
Mar	97.45	690	0.0209	0.6280	-	0.1323	-
Apr	99.17	680	0.0072	0.3021	-	0.0310	-
May	81.63	151	0.0173	0.3792	-	0.0595	-
Jun	88.36	473	0.0008	0.1005	-	0.0071	-
Jul	97.58	688	0.0165	0.6228	-	0.1278	-
Aug	100	710	0.0257	0.3721	-	0.0560	-
Sep	99.86	685	0.0171	0.2610	-	0.0521	-
Oct	99.73	707	0.0043	0.6999	-	0.0328	-
Nov	93.33	640	0.0035	0.1740	-	0.0266	-
Dec	99.73	706	0.0057	0.3029	-	0.0410	-
Annual	97.43	7494	0.0154	0.8190	-	0.1323	-

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
NMHC (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Aug	98.58	459	0.0864	0.2363	-	0.1545	-
Sep	99.17	681	0.0351	0.2005	-	0.0815	-
Oct	99.87	710	0.0034	0.1200	-	0.0250	-
Nov	100	687	0.0011	0.1143	-	0.0161	-
Dec	100	710	0.0066	0.3631	-	0.0546	-
Annual	40.03	3247	0.0220	0.3631	-	0.1545	-

Based on 8784 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	98.92	695	10.6	36	0	27	0	100	0	0	0
Feb	99.57	636	15.7	44	0	25	0	99.84	0.16	0	0
Mar	98.66	688	7.9	40	0	23	0	100	0	0	0
Apr	96.81	659	5.9	40	0	13	0	100	0	0	0
May	96.91	677	4.2	28	0	11	0	100	0	0	0
Jun	87.78	588	2.9	41	0	8	0	99.83	0.17	0	0
Jul	97.45	681	3.1	27	0	8	0	100	0	0	0
Aug	99.06	688	2.6	24	0	7	0	100	0	0	0
Sep	96.53	662	4.5	27	0	10	0	100	0	0	0
Oct	99.6	705	4.2	23	0	10	0	100	0	0	0
Nov	93.33	639	10.1	47	0	26	0	99.69	0.31	0	0
Dec	99.46	704	14.9	49	0	32	0	99.01	0.99	0	0
Annual	97.03	8022	7.2	49	0	32	0	99.86	0.14	0	0

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding		Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Value			0 - 40	41 - 80	81 - 159	>159
Jan	99.73	702	8.9	38	0	20	0	100	0	0	0	
Feb	99.86	659	12.9	42	0	19	0	99.54	0.46	0	0	
Mar	99.73	704	7.6	36	0	14	0	100	0	0	0	
Apr	100	684	4.2	27	0	10	0	100	0	0	0	
May	100	703	2.9	24	0	7	0	100	0	0	0	
Jun	99.86	668	2.6	16	0	5	0	100	0	0	0	
Jul	100	697	3.0	17	0	7	0	100	0	0	0	
Aug	100	700	2.3	16	0	8	0	100	0	0	0	
Sep	100	682	3.3	28	0	10	0	100	0	0	0	
Oct	100	704	4.6	26	0	9	0	100	0	0	0	
Nov	99.44	674	7.6	34	0	16	0	100	0	0	0	
Dec	98.52	698	14.0	34	0	23	0	100	0	0	0	
Annual	99.76	8275	6.1	42	0	23	0	99.96	0.04	0	0	

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	100	708	14.0	43	0	26	0	99.44	0.56	0	0
Feb	99.28	658	18.4	46	0	26	0	98.48	1.52	0	0
Mar	98.25	694	11.6	52	0	19	0	99.42	0.58	0	0
Apr	93.75	641	6.2	32	0	13	0	100	0	0	0
May	100	708	5.3	24	0	10	0	100	0	0	0
Jun	95	647	4.1	19	0	6	0	100	0	0	0
Jul	100	707	5.0	19	0	9	0	100	0	0	0
Aug	100	708	4.5	17	0	9	0	100	0	0	0
Sep	100	684	6.7	39	0	14	0	100	0	0	0
Oct	99.73	705	7.2	25	0	15	0	100	0	0	0
Nov	92.92	635	11.7	43	0	23	0	99.69	0.31	0	0
Dec	99.87	705	15.8	43	0	24	0	99.86	0.14	0	0
Annual	98.26	8200	9.2	52	0	26	0	99.74	0.26	0	0

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	98.39	691	1.1	11	0	4	0	100	0	0	0
Feb	99.57	652	2.3	23	0	8	0	100	0	0	0
Mar	100	707	0.7	6	0	2	0	100	0	0	0
Apr	100	685	0.4	4	0	1	0	100	0	0	0
May	100	707	0.3	3	0	1	0	100	0	0	0
Jun	99.72	683	0.3	9	0	2	0	100	0	0	0
Jul	97.04	686	0.6	6	0	2	0	100	0	0	0
Aug	88.84	621	0.5	6	0	2	0	100	0	0	0
Sep	99.58	682	0.6	11	0	3	0	100	0	0	0
Oct	100	708	0.6	8	0	3	0	100	0	0	0
Nov	100	684	1.3	12	0	7	0	100	0	0	0
Dec	99.33	703	2.5	25	0	13	0	100	0	0	0
Annual	98.52	8209	0.9	25	0	13	0	100	0	0	0

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	100	707	19.3	64	0	33	0	97.45	2.55	0	0
Feb	100	662	23.5	89	0	37	0	93.35	6.34	0.3	0
Mar	100	707	14.8	62	0	32	0	98.44	1.56	0	0
Apr	96.67	663	12.4	51	0	24	0	98.49	1.51	0	0
May	100	708	11.1	42	0	18	0	99.44	0.56	0	0
Jun	100	683	8.7	44	0	17	0	99.41	0.59	0	0
Jul	100	708	9.5	55	0	16	0	99.44	0.56	0	0
Aug	100	708	8.9	33	0	14	0	100	0	0	0
Sep	100	686	11.0	43	0	21	0	99.85	0.15	0	0
Oct	99.87	707	8.7	35	0	17	0	100	0	0	0
Nov	99.86	685	13.6	37	0	25	0	100	0	0	0
Dec	99.87	707	20.2	67	0	36	0	98.02	1.98	0	0
Annual	99.69	8331	13.4	89	0	37	0	98.67	1.31	0.02	0

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding		Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Value			0 - 40	41 - 80	81 - 159	>159
Jan	100	708	10.3	37	0	24	0	100	0	0	0	
Feb	100	662	14.9	50	0	22	0	99.85	0.15	0	0	
Mar	99.06	701	8.2	33	0	19	0	100	0	0	0	
Apr	100	686	5.7	38	0	14	0	100	0	0	0	
May	100	707	3.9	36	0	10	0	100	0	0	0	
Jun	92.22	627	2.7	42	0	8	0	99.84	0.16	0	0	
Jul	100	708	3.5	25	0	8	0	100	0	0	0	
Aug	99.6	706	2.7	26	0	8	0	100	0	0	0	
Sep	100	684	3.6	26	0	9	0	100	0	0	0	
Oct	100	708	3.3	19	0	7	0	100	0	0	0	
Nov	100	683	8.6	43	0	25	0	99.71	0.29	0	0	
Dec	100	708	15.2	43	0	33	0	99.44	0.56	0	0	
Annual	99.25	8288	6.9	50	0	33	0	99.94	0.06	0	0	

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding		Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
					1-Hour Guideline	Maximum 24-Hour Value		0 - 40	41 - 80	81 - 159	>159
Jan	100	708	4.2	40	0	11	0	100	0	0	0
Feb	99.86	662	5.7	32	0	13	0	100	0	0	0
Mar	100	709	3.3	31	0	7	0	100	0	0	0
Apr	99.58	682	1.6	19	0	4	0	100	0	0	0
May	100	708	1.5	26	0	3	0	100	0	0	0
Jun	99.58	678	1.1	12	0	3	0	100	0	0	0
Jul	99.06	702	1.5	11	0	3	0	100	0	0	0
Aug	99.46	705	1.4	10	0	4	0	100	0	0	0
Sep	99.31	680	1.6	17	0	3	0	100	0	0	0
Oct	100	709	2.2	20	0	8	0	100	0	0	0
Nov	100	685	3.0	19	0	7	0	100	0	0	0
Dec	100	709	4.0	13	0	10	0	100	0	0	0
Annual	99.74	8337	2.6	40	0	13	0	100	0	0	0

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	100	707	8.8	50	0	31	0	99.43	0.57	0	0
Feb	100	662	13.6	52	0	30	0	98.19	1.81	0	0
Mar	96.64	684	6.5	47	0	22	0	99.12	0.88	0	0
Apr	100	685	4.7	38	0	14	0	100	0	0	0
May	99.6	703	4.7	42	0	8	0	99.86	0.14	0	0
Jun	99.72	683	2.9	32	0	7	0	100	0	0	0
Jul	99.33	700	3.7	27	0	9	0	100	0	0	0
Aug	99.19	696	3.7	27	0	13	0	100	0	0	0
Sep	99.58	681	4.3	25	0	8	0	100	0	0	0
Oct	100	707	4.3	26	0	9	0	100	0	0	0
Nov	97.08	663	9.3	49	0	30	0	99.7	0.3	0	0
Dec	100	708	11.4	43	0	26	0	99.72	0.28	0	0
Annual	99.26	8279	6.5	52	0	31	0	99.67	0.33	0	0

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	100	708	19.0	82	0	42	0	94.63	5.23	0.14	0
Feb	99.71	660	19.0	44	0	28	0	99.39	0.61	0	0
Mar	100	707	13.8	69	0	34	0	97.88	2.12	0	0
Apr	99.44	680	13.0	48	0	31	0	98.09	1.91	0	0
May	99.73	706	7.3	44	0	21	0	99.01	0.99	0	0
Jun	100	681	7.3	39	0	19	0	100	0	0	0
Jul	100	708	7.4	35	0	15	0	100	0	0	0
Aug	99.06	700	5.5	32	0	15	0	100	0	0	0
Sep	100	686	3.8	17	0	8	0	100	0	0	0
Oct	100	709	4.4	14	0	8	0	100	0	0	0
Nov	100	685	5.4	23	0	12	0	100	0	0	0
Dec	99.33	703	8.2	35	0	13	0	100	0	0	0
Annual	99.77	8333	9.5	82	0	42	0	99.07	0.92	0.01	0

Based on 8784 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Surmont
Summary Jan 1 - Mar 31, 2012
NO2 (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	91.4	648	9.6	83	0	27	0	96.14	3.55	0.31	0
Feb	100	667	7.5	44	0	16	0	99.55	0.45	0	0
Mar	100	713	6.5	47	0	14	0	99.72	0.28	0	0
Annual	97.13	2028	7.8	83	0	27	0	98.47	1.43	0.10	0

Based on 2184 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
NO2 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding		% of Data in Each Concentration Range				
					1-Hour Guideline	Maximum 24-Hour Value	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159
May	100	608	0.7	5	0	1	0	100	0	0	0
Jun	100	684	0.6	7	0	2	0	100	0	0	0
Jul	99.19	699	0.6	6	0	1	0	100	0	0	0
Aug	100	708	0.5	4	0	1	0	100	0	0	0
Sep	100	690	0.6	8	0	2	0	100	0	0	0
Oct	100	586	1.0	6	0	3	0	100	0	0	0
Annual	99.87	3975	0.7	8	0	3	0	100	0	0	0

Based on 3912 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
Summary Oct 15 - Dec 31, 2012
NO2 (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Value	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159
Oct	100	586	1.0	6	0	3	0	100	0	0	0
Nov	100	684	1.9	11	0	4	0	100	0	0	0
Dec	93.68	662	3.1	21	0	11	0	100	0	0	0
Annual	97.89	1932	2.0	21	0	11	0	100	0	0	0

Based on 1848 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	98.92	695	18.6	148	0	64	0	83.74	13.81	2.45	0
Feb	99.57	636	27.4	215	0	73	0	77.67	18.71	3.14	0.47
Mar	98.66	688	11.6	159	0	49	0	95.93	3.34	0.73	0
Apr	96.81	659	7.6	109	0	22	0	99.09	0.76	0.15	0
May	96.91	677	5.4	46	0	15	0	99.85	0.15	0	0
Jun	87.78	588	4.1	89	0	13	0	98.98	0.85	0.17	0
Jul	97.45	681	4.7	46	0	12	0	99.27	0.73	0	0
Aug	99.06	688	3.9	94	0	13	0	99.42	0.44	0.15	0
Sep	96.53	662	6.9	58	0	16	0	98.79	1.21	0	0
Oct	99.6	705	5.9	73	0	18	0	99.29	0.71	0	0
Nov	93.33	639	13.9	143	0	57	0	93.27	5.48	1.25	0
Dec	99.46	704	28.7	205	0	109	0	78.69	12.22	8.24	0.85
Annual	97.03	8022	11.6	215	0	109	0	93.68	4.84	1.37	0.11

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	99.73	702	14.8	134	0	46	0	90.31	8.69	1	0
Feb	99.86	659	20.6	121	0	44	0	88.32	9.86	1.82	0
Mar	99.73	704	10.4	78	0	20	0	97.73	2.27	0	0
Apr	100	684	5.4	48	0	12	0	99.56	0.44	0	0
May	100	703	3.8	49	0	11	0	99.72	0.28	0	0
Jun	99.86	668	3.7	26	0	7	0	100	0	0	0
Jul	100	697	4.2	31	0	9	0	100	0	0	0
Aug	100	700	3.4	27	0	11	0	100	0	0	0
Sep	100	682	5.3	44	0	13	0	99.71	0.29	0	0
Oct	100	704	6.7	53	0	13	0	99.86	0.14	0	0
Nov	99.44	674	10.6	84	0	27	0	97.77	2.08	0.15	0
Dec	98.52	698	22.8	106	0	54	0	86.1	12.61	1.29	0
Annual	99.76	8275	9.3	134	0	54	0	96.59	3.05	0.35	0

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	708	25.2	159	0	55	0	82.77	13.56	3.67	0
Feb	99.28	658	32.3	148	0	51	0	72.95	24.16	2.89	0
Mar	98.25	694	16.2	91	0	30	0	94.09	5.62	0.29	0
Apr	93.75	641	8.0	69	0	15	0	99.38	0.62	0	0
May	100	708	6.9	42	0	13	0	99.72	0.28	0	0
Jun	95	647	5.4	25	0	8	0	100	0	0	0
Jul	100	707	6.7	41	0	14	0	99.86	0.14	0	0
Aug	100	708	6.3	34	0	12	0	100	0	0	0
Sep	100	684	11.0	58	0	21	0	99.12	0.88	0	0
Oct	99.73	705	11.0	82	0	22	0	97.73	2.13	0.14	0
Nov	92.92	635	19.1	153	0	56	0	89.76	8.19	2.05	0
Dec	99.87	705	27.4	211	0	75	0	83.26	13.9	2.7	0.14
Annual	98.26	8200	14.6	211	0	75	0	93.27	5.74	0.98	0.01

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	98.39	691	1.2	11	0	4	0	100	0	0	0
Feb	99.57	652	2.9	24	0	9	0	100	0	0	0
Mar	100	707	0.8	7	0	3	0	100	0	0	0
Apr	100	685	0.4	4	0	2	0	100	0	0	0
May	100	707	0.3	3	0	1	0	100	0	0	0
Jun	99.72	683	0.3	9	0	2	0	100	0	0	0
Jul	97.04	686	0.6	6	0	3	0	100	0	0	0
Aug	88.84	621	0.5	8	0	2	0	100	0	0	0
Sep	99.58	682	0.7	13	0	4	0	100	0	0	0
Oct	100	708	0.7	10	0	4	0	100	0	0	0
Nov	100	684	1.5	21	0	8	0	100	0	0	0
Dec	99.33	703	2.7	27	0	15	0	100	0	0	0
Annual	98.52	8209	1.1	27	0	15	0	100	0	0	0

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	100	707	54.1	534	0	173	0	58.13	18.39	16.55	6.93
Feb	100	662	71.9	591	0	195	0	47.58	23.72	18.43	10.27
Mar	100	707	26.8	375	0	76	0	79.92	15.28	3.54	1.27
Apr	96.67	663	21.9	336	0	62	0	85.07	9.65	4.37	0.9
May	100	708	17.3	296	0	39	0	87.85	9.89	1.84	0.42
Jun	100	683	14.8	184	0	46	0	90.48	7.61	1.76	0.15
Jul	100	708	16.9	143	0	41	0	87.99	10.31	1.69	0
Aug	100	708	16.6	185	0	34	0	89.41	8.76	1.69	0.14
Sep	100	686	22.6	305	0	47	0	84.69	11.66	3.21	0.44
Oct	99.87	707	14.3	167	0	32	0	95.33	3.96	0.57	0.14
Nov	99.86	685	22.7	171	0	62	0	83.94	11.82	4.09	0.15
Dec	99.87	707	48.6	371	0	143	0	54.46	25.74	16.83	2.97
Annual	99.69	8331	28.9	591	0	195	0	79.25	12.96	5.96	1.83

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	708	20.2	128	0	58	0	80.79	16.53	2.68	0
Feb	100	662	30.8	313	0	85	0	76.28	16.31	5.44	1.96
Mar	99.06	701	11.2	122	0	45	0	96.29	3.14	0.57	0
Apr	100	686	7.3	97	0	23	0	98.25	1.46	0.29	0
May	100	707	4.9	64	0	13	0	99.43	0.57	0	0
Jun	92.22	627	3.8	76	0	11	0	99.2	0.8	0	0
Jul	100	708	5.0	46	0	11	0	99.44	0.56	0	0
Aug	99.6	706	4.1	77	0	15	0	99.58	0.42	0	0
Sep	100	684	6.7	62	0	20	0	97.81	2.19	0	0
Oct	100	708	4.9	77	0	17	0	99.44	0.56	0	0
Nov	100	683	12.0	137	0	58	0	95.02	3.81	1.17	0
Dec	100	708	34.6	227	0	144	0	74.86	12.01	9.89	3.25
Annual	99.25	8288	12.1	313	0	144	0	93.18	4.89	1.54	0.38

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	708	5.5	70	0	14	0	99.44	0.56	0	0
Feb	99.86	662	7.5	37	0	16	0	100	0	0	0
Mar	100	709	4.9	70	0	11	0	99.86	0.14	0	0
Apr	99.58	682	2.5	51	0	6	0	99.85	0.15	0	0
May	100	708	2.4	114	0	8	0	99.86	0	0.14	0
Jun	99.58	678	1.9	35	0	4	0	100	0	0	0
Jul	99.06	702	2.7	46	0	5	0	99.86	0.14	0	0
Aug	99.46	705	2.5	31	0	5	0	100	0	0	0
Sep	99.31	680	3.1	64	0	8	0	99.56	0.44	0	0
Oct	100	709	3.2	25	0	9	0	100	0	0	0
Nov	100	685	4.1	38	0	8	0	100	0	0	0
Dec	100	709	5.3	30	0	14	0	100	0	0	0
Annual	99.74	8337	3.8	114	0	16	0	99.87	0.12	0.01	0

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	707	14.4	217	0	81	0	91.8	5.37	1.98	0.85
Feb	100	662	22.8	183	0	75	0	80.36	14.2	4.68	0.76
Mar	96.64	684	9.7	173	0	47	0	96.35	2.05	1.46	0.15
Apr	100	685	5.8	77	0	15	0	98.54	1.46	0	0
May	99.6	703	6.0	134	0	15	0	98.72	0.85	0.43	0
Jun	99.72	683	3.9	73	0	15	0	99.12	0.88	0	0
Jul	99.33	700	4.8	61	0	12	0	99.43	0.57	0	0
Aug	99.19	696	5.5	112	0	16	0	98.85	1.01	0.14	0
Sep	99.58	681	6.5	71	0	16	0	98.68	1.32	0	0
Oct	100	707	6.0	58	0	17	0	99.15	0.85	0	0
Nov	97.08	663	12.4	137	0	62	0	94.57	3.92	1.51	0
Dec	100	708	17.4	146	0	46	0	87.29	10.31	2.4	0
Annual	99.26	8279	9.5	217	0	81	0	95.28	3.53	1.04	0.15

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	100	708	47.4	387	0	187	0	70.48	14.83	7.49	7.2
Feb	99.71	660	37.5	175	0	78	0	66.36	25	8.48	0.15
Mar	100	707	24.5	242	0	84	0	86.85	8.2	4.67	0.28
Apr	99.44	680	23.9	220	0	67	0	78.82	17.65	2.79	0.74
May	99.73	706	11.5	118	0	42	0	94.33	4.25	1.42	0
Jun	100	681	12.4	100	0	36	0	94.42	5.43	0.15	0
Jul	100	708	12.6	90	0	31	0	95.06	4.8	0.14	0
Aug	99.06	700	9.2	109	0	25	0	97.86	1.71	0.43	0
Sep	100	686	6.8	64	0	17	0	99.27	0.73	0	0
Oct	100	709	7.9	41	0	18	0	99.86	0.14	0	0
Nov	100	685	9.3	91	0	34	0	98.25	1.61	0.15	0
Dec	99.33	703	18.7	200	0	45	0	88.9	9.96	0.85	0.28
Annual	99.77	8333	18.4	387	0	187	0	89.42	7.66	2.21	0.71

Based on 8784 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Surrmont
Summary Jan 1 - Mar 31, 2012
NOX (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	91.4	648	19.0	218	0	53	0	87.19	8.49	4.01	0.31
Feb	100	667	10.9	83	0	23	0	98.35	1.5	0.15	0
Mar	100	713	10.0	71	0	21	0	97.48	2.52	0	0
Annual	97.1	2028	13.3	218	0	53	0	94.3	4.2	1.4	0.1

Based on 2184 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
NOX (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
May	100	608	0.8	9	0	2	0	100	0	0	0
Jun	100	684	0.9	18	0	4	0	100	0	0	0
Jul	99.19	699	0.8	12	0	2	0	100	0	0	0
Aug	100	708	0.7	5	0	1	0	100	0	0	0
Sep	100	690	0.9	11	0	3	0	100	0	0	0
Oct	100	586	1.4	13	0	5	0	100	0	0	0
Annual	99.9	3975	0.9	18	0	5	0	100	0	0	0

Based on 3912 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
 Summary Oct 15 - Dec 31, 2012
 NOX (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Guidance	0 - 40	41 - 80	81 - 159	>159	
Oct	100	586	1.4	13	0	5	0	100	0	0	0
Nov	100	684	2.2	16	0	6	0	100	0	0	0
Dec	93.68	662	4.7	90	0	34	0	98.49	1.06	0.45	0
Annual	97.9	1932	2.8	90	0	34	0	99.5	0.4	0	0

Based on 1848 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range	0 - 40	41 - 80	81 - 159	>159
					Maximum 1-Hour Guideline	Maximum 24-Hour Value						Maximum 24-Hour Guidance
Jan	98.92	695	8.2	115	0	39	95.54	3.45	1.01	0	
Feb	99.57	636	11.6	171	0	48	93.08	5.97	0.79	0.16	
Mar	98.66	688	3.7	119	0	27	99.27	0.29	0.44	0	
Apr	96.81	659	1.5	69	0	9	99.7	0.3	0	0	
May	96.91	677	1.3	25	0	3	100	0	0	0	
Jun	87.78	588	1.3	48	0	5	99.83	0.17	0	0	
Jul	97.45	681	1.9	33	0	5	100	0	0	0	
Aug	99.06	688	1.4	70	0	8	99.85	0.15	0	0	
Sep	96.53	662	2.4	47	0	7	99.85	0.15	0	0	
Oct	99.6	705	1.7	54	0	9	99.72	0.28	0	0	
Nov	93.33	639	3.9	96	0	30	97.97	1.72	0.31	0	
Dec	99.46	704	13.8	156	0	77	85.23	10.8	3.98	0	
Annual	97.03	8022	4.4	171	0	77	97.5	1.93	0.55	0.01	

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance	% of Data in Each Concentration Range			
								0 - 40	41 - 80	81 - 159	>159
Jan	99.73	702	5.9	105	0	26	0	97.86	1.85	0.28	0
Feb	99.86	659	7.7	88	0	28	0	96.97	2.73	0.3	0
Mar	99.73	704	2.9	46	0	8	0	99.72	0.28	0	0
Apr	100	684	1.2	24	0	3	0	100	0	0	0
May	100	703	0.9	26	0	4	0	100	0	0	0
Jun	99.86	668	1.1	18	0	4	0	100	0	0	0
Jul	100	697	1.3	17	0	4	0	100	0	0	0
Aug	100	700	0.9	14	0	3	0	100	0	0	0
Sep	100	682	2.0	28	0	5	0	100	0	0	0
Oct	100	704	2.0	35	0	7	0	100	0	0	0
Nov	99.44	674	3.0	51	0	11	0	99.41	0.59	0	0
Dec	98.52	698	8.8	76	0	31	0	96.85	3.15	0	0
Annual	99.76	8275	3.1	105	0	31	0	99.24	0.72	0.05	0

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range			
					1-Hour Guideline	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	100	708	10.9	122	0	38	0	92.66	6.21	1.13	0
Feb	99.28	658	13.7	107	0	30	0	94.07	5.47	0.46	0
Mar	98.25	694	4.6	58	0	12	0	99.71	0.29	0	0
Apr	93.75	641	1.8	48	0	5	0	99.69	0.31	0	0
May	100	708	1.5	23	0	4	0	100	0	0	0
Jun	95	647	1.2	13	0	2	0	100	0	0	0
Jul	100	707	1.6	22	0	5	0	100	0	0	0
Aug	100	708	1.7	19	0	4	0	100	0	0	0
Sep	100	684	4.1	44	0	11	0	99.71	0.29	0	0
Oct	99.73	705	3.6	66	0	11	0	99.57	0.43	0	0
Nov	92.92	635	7.3	109	0	34	0	95.91	3.31	0.79	0
Dec	99.87	705	11.6	168	0	50	0	93.9	4.96	0.99	0.14
Annual	98.26	8200	5.3	168	0	50	0	97.95	1.76	0.28	0.01

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range	0 - 40	41 - 80	81 - 159	>159
					Maximum 1-Hour Guideline	Maximum 24-Hour Value						Maximum 24-Hour Guidance
Jan	98.39	691	0.1	4	0	0	100	0	0	0	0
Feb	99.57	652	0.3	5	0	1	100	0	0	0	0
Mar	100	707	0.1	4	0	1	100	0	0	0	0
Apr	100	685	0.0	1	0	0	100	0	0	0	0
May	100	707	0.0	1	0	0	100	0	0	0	0
Jun	99.72	683	0.0	0	0	0	100	0	0	0	0
Jul	97.04	686	0.0	1	0	0	100	0	0	0	0
Aug	88.84	621	0.1	2	0	0	100	0	0	0	0
Sep	99.58	682	0.1	4	0	1	100	0	0	0	0
Oct	100	708	0.1	4	0	1	100	0	0	0	0
Nov	100	684	0.2	9	0	2	100	0	0	0	0
Dec	99.33	703	0.2	8	0	2	100	0	0	0	0
Annual	98.52	8209	0.1	9	0	2	100	0	0	0	0

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	707	35.3	463	0	138	0	71.29	14	11.17	3.54
Feb	100	662	48.6	528	0	164	0	65.11	16.47	10.42	8.01
Mar	100	707	12.0	326	0	54	0	93.49	4.38	1.13	0.99
Apr	96.67	663	9.2	285	0	41	0	93.82	4.07	1.51	0.6
May	100	708	6.2	255	0	25	0	96.19	3.25	0.14	0.42
Jun	100	683	6.1	152	0	32	0	96.19	2.64	1.17	0
Jul	100	708	7.5	129	0	25	0	96.05	3.53	0.42	0
Aug	100	708	7.7	151	0	20	0	95.62	3.81	0.56	0
Sep	100	686	11.6	281	0	31	0	93.73	4.37	1.6	0.29
Oct	99.87	707	5.5	133	0	23	0	98.02	1.7	0.28	0
Nov	99.86	685	9.3	133	0	40	0	93.58	4.53	1.9	0
Dec	99.87	707	28.5	304	0	108	0	74.54	17.54	6.79	1.13
Annual	99.69	8331	15.5	528	0	164	0	89.38	6.58	2.83	1.21

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	708	9.9	98	0	38	0	90.11	9.46	0.42	0
Feb	100	662	15.9	264	0	63	0	87.92	8.01	2.87	1.21
Mar	99.06	701	3.0	96	0	26	0	99.14	0.71	0.14	0
Apr	100	686	1.6	63	0	10	0	99.42	0.58	0	0
May	100	707	1.0	33	0	4	0	100	0	0	0
Jun	92.22	627	1.1	57	0	5	0	99.84	0.16	0	0
Jul	100	708	1.5	35	0	5	0	100	0	0	0
Aug	99.6	706	1.4	60	0	10	0	99.58	0.42	0	0
Sep	100	684	3.2	54	0	14	0	99.27	0.73	0	0
Oct	100	708	1.6	59	0	11	0	99.72	0.28	0	0
Nov	100	683	3.7	94	0	33	0	97.95	1.76	0.29	0
Dec	100	708	19.8	188	0	112	0	84.04	7.2	7.63	1.13
Annual	99.25	8288	5.3	264	0	112	0	96.58	2.37	0.86	0.19

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Value	Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	100	708	1.2	40	0	4	0	100	0	0	0
Feb	99.86	662	1.6	22	0	3	0	100	0	0	0
Mar	100	709	1.2	38	0	4	0	100	0	0	0
Apr	99.58	682	0.8	46	0	3	0	99.85	0.15	0	0
May	100	708	0.8	89	0	5	0	99.86	0	0.14	0
Jun	99.58	678	0.7	25	0	2	0	100	0	0	0
Jul	99.06	702	1.0	36	0	3	0	100	0	0	0
Aug	99.46	705	0.9	23	0	2	0	100	0	0	0
Sep	99.31	680	1.4	47	0	5	0	99.85	0.15	0	0
Oct	100	709	0.9	19	0	2	0	100	0	0	0
Nov	100	685	1.1	24	0	3	0	100	0	0	0
Dec	100	709	1.3	21	0	4	0	100	0	0	0
Annual	99.74	8337	1.1	89	0	5	0	99.96	0.03	0.01	0

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	100	707	5.8	167	0	50	0	96.46	1.27	1.98	0.28
Feb	100	662	9.3	136	0	45	0	93.5	5.14	1.36	0
Mar	96.64	684	3.2	126	0	26	0	98.1	0.88	1.02	0
Apr	100	685	1.1	50	0	6	0	99.56	0.44	0	0
May	99.6	703	1.5	109	0	10	0	99.57	0.14	0.28	0
Jun	99.72	683	1.1	62	0	9	0	99.56	0.44	0	0
Jul	99.33	700	1.1	49	0	4	0	99.86	0.14	0	0
Aug	99.19	696	1.8	85	0	8	0	99.57	0.29	0.14	0
Sep	99.58	681	2.2	56	0	11	0	99.12	0.88	0	0
Oct	100	707	1.7	43	0	8	0	99.86	0.14	0	0
Nov	97.08	663	3.2	89	0	32	0	98.19	1.66	0.15	0
Dec	100	708	6.1	107	0	24	0	96.75	2.54	0.71	0
Annual	99.26	8279	3.2	167	0	50	0	98.35	1.15	0.47	0.02

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Guidance	0 - 40	41 - 80	81 - 159	>159	
Jan	100	708	29.2	327	0	146	0	82.34	6.64	5.93	5.08
Feb	99.71	660	18.5	142	0	52	0	87.42	8.94	3.64	0
Mar	100	707	10.7	173	0	50	0	93.92	3.82	2.12	0.14
Apr	99.44	680	10.9	174	0	36	0	95.59	2.94	1.18	0.29
May	99.73	706	4.2	77	0	20	0	98.3	1.7	0	0
Jun	100	681	5.1	75	0	17	0	99.56	0.44	0	0
Jul	100	708	5.3	66	0	16	0	98.59	1.41	0	0
Aug	99.06	700	3.7	89	0	12	0	99.29	0.57	0.14	0
Sep	100	686	3.1	48	0	10	0	99.71	0.29	0	0
Oct	100	709	3.5	27	0	10	0	100	0	0	0
Nov	100	685	3.9	68	0	22	0	99.12	0.88	0	0
Dec	99.33	703	10.5	166	0	32	0	96.3	3.41	0.14	0.14
Annual	99.77	8333	9.0	327	0	146	0	95.88	2.57	1.08	0.47

Based on 8784 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Surrmont
Summary Jan 1 - Mar 31, 2012
NO (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding		% of Data in Each Concentration Range				
					1-Hour Guideline	Maximum 24-Hour Value	24-Hour Guidance	0 - 40	41 - 80	81 - 159	>159
Jan	91.4	648	9.4	122	0	27	0	95.22	4.48	0.31	0
Feb	100	667	3.5	42	0	8	0	99.7	0.3	0	0
Mar	100	713	3.5	41	0	10	0	99.86	0.14	0	0
Annual	97.1	2028	5.5	122	0	27	0	98.3	1.6	0.1	0

Based on 2184 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
NO (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Guidance	0 - 40	41 - 80	81 - 159	>159	
May	100	608	0.2	7	0	1	0	100	0	0	0
Jun	100	684	0.3	14	0	2	0	100	0	0	0
Jul	99.19	699	0.2	10	0	1	0	100	0	0	0
Aug	100	708	0.2	4	0	1	0	100	0	0	0
Sep	100	690	0.3	8	0	1	0	100	0	0	0
Oct	100	586	0.4	8	0	3	0	100	0	0	0
Annual	99.9	3975	0.3	14	0	3	0	100	0	0	0

Based on 3912 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
 Summary Oct 15 - Dec 31, 2012
 NO (ppb) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour	% of Data in Each Concentration Range			
					Guideline	Guidance	0 - 40	41 - 80	81 - 159	>159	
Oct	100	586	0.4	8	0	3	0	100	0	0	0
Nov	100	684	0.4	7	0	1	0	100	0	0	0
Dec	93.68	662	1.7	69	0	23	0	99.09	0.91	0	0
Annual	97.9	1932	0.8	69	0	23	0	99.7	0.3	0	0

Based on 1848 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
CO (ppm) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	709	0.13	0.9	0	0.3	-
Feb	99.28	659	0.18	0.8	0	0.3	-
Mar	98.12	696	0.14	0.6	0	0.2	-
Apr	99.72	685	0.16	0.3	0	0.2	-
May	99.87	709	0.16	0.4	0	0.2	-
Jun	95	649	0.21	0.8	0	0.3	-
Jul	99.87	708	0.33	2.6	0	0.8	-
Aug	100	710	0.27	0.9	0	0.4	-
Sep	100	687	0.22	0.7	0	0.3	-
Oct	99.73	708	0.14	0.5	0	0.2	-
Nov	92.5	635	0.18	0.5	0	0.3	-
Dec	99.87	708	0.18	0.7	0	0.3	-
Annual	98.68	8263	0.19	2.6	0	0.8	-

Based on 8784 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
NH3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range		
					1-Hour Guideline	24-Hour Guidance	0 - 1000	1001 - 2000	> 2000	
Jan	98.25	690	0.0	0	0	0	0	100	0	0
Feb	99.28	630	0.0	0	0	0	0	100	0	0
Mar	98.66	686	0.0	0	0	0	0	100	0	0
Apr	96.81	653	0.0	0	0	0	0	100	0	0
May	94.76	662	0.0	0	0	0	0	100	0	0
Jun	85.14	567	0.0	23	0	0	0	100	0	0
Jul	85.08	598	0.6	64	0	14	0	100	0	0
Aug	99.06	686	0.0	0	0	0	0	100	0	0
Sep	98.75	672	0.0	0	0	0	0	100	0	0
Oct	98.79	696	0.0	0	0	0	0	100	0	0
Nov	98.33	669	0.0	0	0	0	0	100	0	0
Dec	94.22	662	0.2	17	0	4	0	100	0	0
Annual	95.58	7871	0.1	64	0	14	0	100	0	0

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
NH3 (ppb) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding	Maximum 24-Hour Value	Number of Values Exceeding	% of Data in Each Concentration Range		
					1-Hour Guideline	24-Hour Guidance	0 - 1000	1001 - 2000	> 2000	
Jan	98.39	687	0.0	0	0	0	0	100	0	0
Feb	99.86	657	0.0	0	0	0	0	100	0	0
Mar	99.73	700	0.0	0	0	0	0	100	0	0
Apr	98.89	669	0.0	0	0	0	0	100	0	0
May	97.45	684	0.0	0	0	0	0	100	0	0
Jun	98.33	657	0.0	0	0	0	0	100	0	0
Jul	99.6	694	0.1	34	0	4	0	100	0	0
Aug	100	700	0.0	0	0	0	0	100	0	0
Sep	100	682	0.0	0	0	0	0	100	0	0
Oct	100	701	0.0	0	0	0	0	100	0	0
Nov	99.31	669	0.0	0	0	0	0	100	0	0
Dec	98.66	697	0.0	0	0	0	0	100	0	0
Annual	99.18	8197	0.0	34	0	4	0	100	0	0

Based on 8784 hours of data collection

WBEA - Fort McKay- Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.06	737	7.74	124.7	-	42.6	1
Feb	99.28	691	7.69	80.8	-	15.7	0
Mar	98.66	734	4.70	32.9	-	14.8	0
Apr	99.31	715	4.65	66.1	-	14.6	0
May	97.31	724	5.91	40.1	-	14.3	0
Jun	86.25	621	10.47	235.3	-	43.1	3
Jul	98.92	736	20.49	563.4	-	138.4	3
Aug	98.79	735	9.05	72.5	-	32.5	1
Sep	99.31	715	7.34	63.5	-	18.1	0
Oct	99.06	737	3.31	30.7	-	12.9	0
Nov	99.44	716	6.75	80.5	-	18.2	0
Dec	99.19	738	8.10	125.9	-	22.2	0
Annual	97.89	8599	8.00	563.4	-	138.4	8

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	98.12	730	2.59	49.9	-	6.5	0
Feb	98.71	687	3.38	24.3	-	6.3	0
Mar	99.06	737	2.78	26.5	-	5.8	0
Apr	98.89	712	3.01	24.3	-	6.9	0
May	95.97	714	4.47	54.0	-	10.6	0
Jun	97.92	695	6.22	121.4	-	37.7	1
Jul	90.05	670	13.89	308.4	-	67.6	5
Aug	93.82	698	5.67	32.3	-	18.8	0
Sep	95.97	691	5.61	26.4	-	14.7	0
Oct	99.73	742	3.42	28.0	-	9.9	0
Nov	99.58	717	4.88	18.4	-	8.3	0
Dec	98.66	734	6.02	40.5	-	11.8	0
Annual	97.19	8527	5.10	308.4	-	67.6	6

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	744	5.56	51.5	-	12.0	0
Feb	99.14	690	6.90	112.0	-	17.7	0
Mar	98.12	730	5.22	43.8	-	9.3	0
Apr	99.86	719	4.47	17.5	-	7.3	0
May	100	744	5.61	40.0	-	9.6	0
Jun	70.42	507	8.91	112.3	-	33.0	1
Jul	95.83	713	14.55	386.1	-	73.3	3
Aug	95.56	711	8.13	35.1	-	18.3	0
Sep	99.86	719	7.06	46.2	-	20.0	0
Oct	99.73	742	3.70	27.4	-	10.0	0
Nov	93.33	672	5.49	35.2	-	13.7	0
Dec	99.19	738	5.80	30.0	-	13.0	0
Annual	95.96	8429	6.71	386.1	-	73.3	4

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	94.89	701	3.79	21.8	-	12.6	0
Feb	97.99	682	5.42	31.8	-	11.5	0
Mar	99.19	738	3.56	18.1	-	7.1	0
Apr	99.58	717	2.58	14.2	-	4.1	0
May	99.73	742	4.44	84.2	-	26.5	0
Jun	62.78	452	14.14	1242.5	-	191.1	1
Jul	99.33	739	12.32	269.9	-	69.3	4
Aug	99.6	741	7.97	57.7	-	24.4	0
Sep	99.86	719	4.82	82.8	-	22.4	0
Oct	97.72	727	2.56	46.1	-	29.5	0
Nov	99.86	719	3.55	23.9	-	7.5	0
Dec	98.52	733	3.39	23.7	-	9.0	0
Annual	95.8	8410	5.46	1242.5	-	191.1	5

Based on 8784 hours of data collection

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	99.33	739	8.42	56.3	-	19.2	0
Feb	98.99	689	10.71	43.9	-	17.4	0
Mar	99.87	743	10.83	113.6	-	31.0	1
Apr	99.72	718	9.92	49.7	-	23.3	0
May	99.73	742	12.74	150.2	-	34.4	1
Jun	96.39	689	17.61	285.0	-	118.4	2
Jul	87.23	649	20.99	329.0	-	86.4	5
Aug	95.56	711	9.08	43.2	-	22.0	0
Sep	98.47	709	8.73	82.5	-	24.2	0
Oct	95.16	708	4.86	20.2	-	11.4	0
Nov	99.44	716	7.27	25.8	-	11.7	0
Dec	99.6	741	8.10	29.5	-	14.4	0
Annual	97.44	8554	10.67	329.0	-	118.4	9

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	97.58	726	4.39	76.5	-	22.7	0
Feb	95.55	665	4.97	53.2	-	10.6	0
Mar	99.06	737	4.84	24.7	-	12.6	0
Apr	99.86	719	4.49	32.8	-	8.5	0
May	100	744	5.31	36.9	-	11.8	0
Jun	99.86	719	9.25	170.6	-	40.9	1
Jul	97.18	723	18.84	409.7	-	123.2	3
Aug	93.15	693	8.43	51.5	-	19.0	0
Sep	99.31	715	6.76	38.4	-	15.1	0
Oct	99.33	739	2.94	37.5	-	10.8	0
Nov	98.47	709	5.20	50.3	-	18.5	0
Dec	100	744	6.11	51.4	-	18.6	0
Annual	98.28	8633	6.79	409.7	-	123.2	4

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	100	744	3.95	28.2	-	8.8	0
Feb	99.86	695	4.10	45.9	-	7.5	0
Mar	99.87	743	3.56	10.4	-	7.3	0
Apr	99.72	718	3.23	10.3	-	5.1	0
May	99.87	743	4.57	38.3	-	10.2	0
Jun	99.44	716	5.15	37.2	-	17.5	0
Jul	88.58	657	14.76	256.4	-	48.3	3
Aug	97.85	728	5.79	30.7	-	16.2	0
Sep	90.56	652	4.94	32.6	-	12.4	0
Oct	98.79	735	2.20	17.9	-	5.9	0
Nov	97.64	703	4.45	28.5	-	8.5	0
Dec	100	744	4.15	39.7	-	10.4	0
Annual	97.68	8578	4.99	256.4	-	48.3	3

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	95.97	714	15.33	334.0	-	83.1	4
Feb	99.57	693	8.96	108.8	-	29.1	0
Mar	96.37	717	6.10	81.9	-	17.7	0
Apr	99.58	717	6.31	32.7	-	13.8	0
May	99.19	738	8.49	189.5	-	27.2	0
Jun	90	645	12.70	178.8	-	48.0	4
Jul	93.28	694	21.16	437.6	-	117.2	3
Aug	97.85	728	9.35	62.0	-	31.6	1
Sep	94.17	662	7.31	34.0	-	14.7	0
Oct	95.83	713	3.27	24.0	-	10.0	0
Nov	96.81	697	7.23	67.4	-	26.7	0
Dec	100	744	6.58	115.9	-	26.1	0
Annual	96.55	8462	9.35	437.6	-	117.2	12

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Jan	90.73	667	19.35	446.9	-	70.5	3
Feb	99.86	695	8.68	106.8	-	26.6	0
Mar	95.97	714	5.01	62.8	-	12.6	0
Apr	99.03	713	5.79	42.5	-	11.6	0
May	99.73	742	10.58	352.9	-	45.0	2
Jun	64.17	462	20.11	317.2	-	71.0	3
Jul	85.08	633	16.58	460.0	-	87.2	3
Aug	99.6	741	6.93	45.4	-	19.6	0
Sep	99.72	718	6.49	38.4	-	14.0	0
Oct	99.87	743	3.98	34.3	-	12.4	0
Nov	100	720	5.68	37.2	-	12.7	0
Dec	99.19	738	6.85	71.3	-	22.7	0
Annual	94.42	8286	9.19	460.0	-	87.2	11

Based on 8784 hours of data collection

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
PM2.5 (ug/m3) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
May	100	635	5.87	163	-	12	0
Jun	99.58	717	5.91	116	-	16	0
Jul	99.19	738	15.45	268	-	85	3
Aug	99.73	742	6.87	55	-	19	0
Sep	100	720	5.90	84	-	18	0
Oct	99.83	597	2.33	25	-	6	0
Annual	99.72	4149	7.05	268	-	85	3

Based on 3912 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
 Summary Oct 15 - Dec 31, 2012
 PM2.5 (ug/m3) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Number of Values Exceeding 1-Hour Guideline	Maximum 24-Hour Value	Number of Values Exceeding 24-Hour Guidance
Oct	99.83	597	2.33	25	-	6	0
Nov	100	720	4.78	25	-	10	0
Dec	99.73	742	4.87	50	-	15	0
Annual	99.85	2059	3.99	50	-	15	0

Based on 1848 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
Ambient Temperature 2m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	738	-14.4	-0.6	Jan-08	-30.5	17-Jan	5.5	Jan-08 15:00	-36.5	Jan-17 08:00	99.19
Feb	693	-11.7	-4.2	Feb-04	-24.6	09-Feb	4.9	Feb-17 15:00	-33.1	Feb-10 07:00	99.57
Mar	744	-5.3	4.4	Mar-31	-14.9	01-Mar	12.7	Mar-09 17:00	-23.2	Mar-23 07:00	100
Apr	719	3.0	10.5	Apr-29	-4.2	15-Apr	20.1	Apr-28 17:00	-13.2	Apr-09 06:00	99.86
May	726	12.9	20.0	May-30	6.2	19-May	30.4	May-29 15:00	-4.2	May-02 05:00	97.58
Jun	720	18.3	23.8	Jun-07	14.5	15-Jun	32.0	Jun-30 16:00	3.5	Jun-11 04:00	100
Jul	737	21.8	27.7	Jul-09	16.9	04-Jul	38.0	Jul-09 16:00	9.3	Jul-13 04:00	99.06
Aug	738	19.6	24.2	Aug-19	14.8	30-Aug	36.1	Aug-19 15:00	5.2	Aug-15 06:00	99.19
Sep	720	13.4	17.2	Sep-28	9.3	30-Sep	29.5	Sep-28 17:00	0.8	Sep-16 07:00	100
Oct	743	1.6	9.9	Oct-07	-8.8	30-Oct	16.9	Oct-15 15:00	-11.1	Oct-31 07:00	99.87
Nov	717	-10.6	5.8	Nov-05	-25.7	29-Nov	9.2	Nov-05 13:00	-33.7	Nov-29 03:00	99.58
Dec	740	-19.5	-10.6	Dec-14	-31.1	23-Dec	-5.8	Dec-14 15:00	-34.1	Dec-26 09:00	99.46
Annual	8735	2.4	27.7	Jul-09	-31.1	23-Dec	38.0	Jul-09 16:00	-36.5	Jan-17 08:00	99.44

WBEA - Fort McKay (AMS 1)
Annual Summary for the Year 2012
Ambient Temperature 10m (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	738	-13.8	0.5	Jan-08	-30.2	17-Jan	6.2	Jan-08 15:00	-34.7	Jan-17 08:00	99.19
Feb	693	-10.5	-2.5	Feb-04	-22.6	10-Feb	4.3	Feb-17 15:00	-31.6	Feb-10 07:00	99.57
Mar	744	-5.1	5.6	Mar-31	-15.1	01-Mar	12.5	Mar-09 17:00	-21.6	Mar-15 07:00	100
Apr	719	3.1	10.8	Apr-29	-4.8	15-Apr	17.8	Apr-28 17:00	-11.4	Apr-15 06:00	99.86
May	726	12.8	19.7	May-30	5.8	19-May	26.6	May-30 18:00	-2.2	May-02 05:00	97.58
Jun	720	18.1	23.2	Jun-26	14.2	12-Jun	29.6	Jun-30 18:00	5.0	Jun-11 04:00	100
Jul	737	21.7	27.2	Jul-09	16.9	04-Jul	34.9	Jul-10 15:00	11.1	Jul-13 05:00	99.06
Aug	738	19.6	24.8	Aug-19	14.7	30-Aug	34.4	Aug-19 15:00	7.0	Aug-15 05:00	99.19
Sep	720	14.1	18.4	Sep-28	10.1	12-Sep	27.5	Sep-08 17:00	2.2	Sep-16 07:00	100
Oct	743	1.9	10.3	Oct-15	-8.7	30-Oct	16.5	Oct-15 16:00	-10.5	Oct-30 04:00	99.87
Nov	717	-10.1	6.3	Nov-05	-25.6	29-Nov	9.7	Nov-05 16:00	-32.6	Nov-29 06:00	99.58
Dec	740	-19.1	-9.9	Dec-14	-30.3	23-Dec	-3.3	Dec-14 16:00	-33.1	Dec-26 09:00	99.46
Annual	8735	2.7	27.2	Jul-09	-30.3	23-Dec	34.9	Jul-10 15:00	-34.7	Jan-17 08:00	99.44

WBEA - Mildred Lake (AMS 2)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	744	-12.3	3.4	Jan-08	-28.1	17-Jan	7.3	Jan-08 14:00	-30.9	Jan-17 02:00	100
Feb	696	-9.5	-2.0	Feb-03	-20.9	10-Feb	4.0	Feb-17 14:00	-29.0	Feb-10 07:00	100
Mar	744	-4.6	5.7	Mar-31	-14.8	01-Mar	11.8	Mar-09 16:00	-19.4	Mar-15 07:00	100
Apr	720	3.7	11.3	Apr-29	-4.6	15-Apr	17.9	Apr-28 17:00	-10.7	Apr-15 06:00	100
May	744	13.3	20.6	May-30	6.4	19-May	27.3	May-30 17:00	-0.2	May-02 05:00	100
Jun	720	17.8	23.3	Jun-30	13.2	12-Jun	29.8	Jun-30 16:00	4.8	Jun-11 04:00	100
Jul	744	21.5	27.7	Jul-09	15.9	04-Jul	35.9	Jul-10 14:00	13.0	Jul-07 04:00	100
Aug	744	19.0	24.3	Aug-19	13.9	30-Aug	33.7	Aug-19 15:00	7.9	Aug-15 05:00	100
Sep	712	13.8	19.0	Sep-28	9.4	15-Sep	26.7	Sep-28 16:00	2.1	Sep-16 06:00	98.89
Oct	744	2.7	11.6	Oct-15	-7.3	30-Oct	16.3	Oct-15 16:00	-8.0	Oct-30 04:00	100
Nov	719	-7.9	6.8	Nov-05	-21.0	29-Nov	9.4	Nov-05 16:00	-26.7	Nov-29 05:00	99.86
Dec	744	-15.8	-7.0	Dec-16	-26.5	23-Dec	-1.9	Dec-14 14:00	-28.0	Dec-23 11:00	100
Annual	8775	3.5	27.7	Jul-09	-28.1	17-Jan	35.9	Jul-10 14:00	-30.9	Jan-17 02:00	99.9

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Ambient Temperature 20m (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	744	-13.3	1.4	Jan-08	-29.5	17-Jan	6.7	Jan-08 15:00	-33.9	Jan-17 11:00	100
Feb	696	-10.6	-3.4	Feb-04	-22.4	10-Feb	3.8	Feb-13 16:00	-30.6	Feb-10 04:00	100
Mar	734	-4.8	5.3	Mar-31	-14.7	01-Mar	11.4	Mar-09 17:00	-20.9	Mar-15 07:00	98.66
Apr	698	3.5	11.0	Apr-29	-4.7	15-Apr	16.9	Apr-28 18:00	-11.0	Apr-15 06:00	96.94
May	744	12.9	19.1	May-30	6.1	19-May	25.0	May-30 16:00	0.2	May-02 05:00	100
Jun	720	17.2	22.3	Jun-26	13.0	12-Jun	28.2	Jun-30 18:00	5.7	Jun-11 05:00	100
Jul	744	20.6	26.4	Jul-09	15.3	04-Jul	33.6	Jul-09 18:00	12.2	Jul-07 05:00	100
Aug	744	18.4	22.7	Aug-19	13.7	30-Aug	32.0	Aug-19 16:00	6.6	Aug-15 06:00	100
Sep	720	13.1	17.5	Sep-28	9.3	11-Sep	26.3	Sep-28 17:00	3.1	Sep-20 07:00	100
Oct	721	0.9	10.2	Oct-15	-9.9	30-Oct	14.7	Oct-15 16:00	-11.2	Oct-30 04:00	96.91
Nov	714	-11.0	5.5	Nov-05	-26.6	29-Nov	8.2	Nov-05 16:00	-33.6	Nov-29 06:00	99.17
Dec	744	-20.0	-10.9	Dec-16	-31.7	23-Dec	-7.6	Dec-16 02:00	-34.0	Dec-23 09:00	100
Annual	8723	2.3	26.4	Jul-09	-31.7	23-Dec	33.6	Jul-09 18:00	-34.0	Dec-23 09:00	99.31

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Ambient Temperature 45m (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	744	-13.1	2.2	Jan-08	-29.5	17-Jan	6.7	Jan-08 15:00	-33.4	Jan-17 10:00	100
Feb	696	-10.3	-2.9	Feb-04	-21.9	10-Feb	3.6	Feb-13 16:00	-29.3	Feb-10 07:00	100
Mar	734	-4.8	5.5	Mar-31	-14.9	01-Mar	11.4	Mar-09 17:00	-20.7	Mar-15 08:00	98.66
Apr	698	3.5	11.0	Apr-29	-4.8	15-Apr	16.8	Apr-28 18:00	-11.0	Apr-15 06:00	96.94
May	744	12.8	19.0	May-30	6.0	19-May	24.9	May-30 18:00	1.1	May-02 05:00	100
Jun	720	17.2	22.2	Jun-26	12.9	12-Jun	27.9	Jun-30 18:00	5.8	Jun-11 05:00	100
Jul	744	20.6	26.5	Jul-09	15.4	04-Jul	33.5	Jul-09 18:00	12.2	Jul-07 05:00	100
Aug	744	18.4	22.8	Aug-19	13.6	30-Aug	31.7	Aug-19 16:00	6.7	Aug-15 06:00	100
Sep	720	13.2	17.8	Sep-28	9.1	15-Sep	26.4	Sep-28 17:00	3.6	Sep-20 07:00	100
Oct	734	0.8	10.3	Oct-15	-10.0	30-Oct	14.5	Oct-15 16:00	-11.3	Oct-30 04:00	98.66
Nov	714	-11.0	5.5	Nov-05	-26.4	29-Nov	8.1	Nov-05 16:00	-33.0	Nov-29 06:00	99.17
Dec	744	-19.9	-10.6	Dec-16	-31.7	23-Dec	-6.3	Dec-14 16:00	-33.8	Dec-23 10:00	100
Annual	8736	2.3	26.5	Jul-09	-31.7	23-Dec	33.5	Jul-09 18:00	-33.8	Dec-23 10:00	99.45

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Ambient Temperature 100m (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	674	-12.5	4.6	Jan-08	-29.6	17-Jan	6.7	Jan-08 16:00	-32.8	Jan-17 10:00	90.59
Feb	696	-8.9	-0.1	Feb-03	-20.5	09-Feb	5.1	Feb-03 17:00	-27.5	Feb-10 09:00	100
Mar	734	-4.9	5.9	Mar-31	-15.5	01-Mar	11.4	Mar-09 17:00	-19.7	Mar-15 08:00	98.66
Apr	696	3.4	10.9	Apr-29	-5.3	15-Apr	16.4	Apr-28 19:00	-11.3	Apr-15 06:00	96.67
May	744	12.6	19.2	May-30	5.6	19-May	24.2	May-30 18:00	1.7	May-02 06:00	100
Jun	720	17.0	22.2	Jun-26	12.5	12-Jun	27.1	Jun-30 18:00	6.3	Jun-11 06:00	100
Jul	744	20.6	26.7	Jul-09	15.1	04-Jul	32.9	Jul-09 18:00	13.0	Jul-06 06:00	100
Aug	744	18.3	23.0	Aug-19	13.1	30-Aug	31.1	Aug-19 16:00	7.7	Aug-15 07:00	100
Sep	720	13.4	18.7	Sep-28	8.7	15-Sep	26.1	Sep-28 17:00	3.7	Sep-16 06:00	100
Oct	732	0.5	10.8	Oct-15	-10.5	30-Oct	14.4	Oct-15 17:00	-11.8	Oct-30 05:00	98.39
Nov	713	-11.0	5.5	Nov-05	-25.2	29-Nov	8.0	Nov-05 16:00	-30.3	Nov-29 06:00	99.03
Dec	700	-19.5	-8.8	Dec-16	-31.4	23-Dec	-3.9	Dec-14 16:00	-33.3	Dec-23 11:00	94.09
Annual	8617	2.7	26.7	Jul-09	-31.4	23-Dec	32.9	Jul-09 18:00	-33.3	Dec-23 11:00	98.1

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Ambient Temperature 167m (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	680	-12.0	3.8	Jan-08	-29.9	17-Jan	6.6	Jan-08 16:00	-33.2	Jan-17 10:00	91.4
Feb	696	-8.2	1.9	Feb-04	-20.5	09-Feb	6.7	Feb-03 20:00	-24.6	Feb-10 09:00	100
Mar	734	-5.1	5.8	Mar-31	-16.0	01-Mar	11.3	Mar-09 17:00	-19.5	Mar-23 07:00	98.66
Apr	692	3.2	10.8	Apr-29	-5.6	15-Apr	15.9	Apr-28 19:00	-11.2	Apr-15 06:00	96.11
May	744	12.4	18.9	May-30	5.1	19-May	23.5	May-30 18:00	2.7	May-02 06:00	100
Jun	720	16.8	21.9	Jun-26	12.0	12-Jun	26.5	Jun-30 19:00	7.6	Jun-11 05:00	100
Jul	744	20.5	26.8	Jul-09	14.7	04-Jul	32.7	Jul-09 19:00	12.9	Jul-13 06:00	100
Aug	744	18.1	23.1	Aug-19	12.5	30-Aug	30.4	Aug-19 16:00	7.8	Aug-15 07:00	100
Sep	720	13.4	18.9	Sep-28	8.3	15-Sep	25.6	Sep-28 18:00	3.7	Sep-16 08:00	100
Oct	731	0.1	10.8	Oct-15	-10.9	30-Oct	13.9	Oct-15 17:00	-12.1	Oct-30 05:00	98.25
Nov	714	-11.2	5.4	Nov-05	-23.0	29-Nov	7.8	Nov-05 16:00	-27.0	Nov-29 08:00	99.17
Dec	526	-17.7	-7.7	Dec-14	-31.0	23-Dec	-3.9	Dec-14 16:00	-32.8	Dec-23 11:00	70.7
Annual	8445	3.2	26.8	Jul-09	-31.0	23-Dec	32.7	Jul-09 19:00	-33.2	Jan-17 10:00	96.14

WBEA - Buffalo Viewpoint (AMS 4)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-12.9	3.4	Jan-08	-29.5	17-Jan	6.6	Jan-08 15:00	-32.7	Jan-17 09:00	100
Feb	696	-9.9	-1.5	Feb-04	-22.8	10-Feb	5.6	Feb-03 16:00	-33.3	Feb-10 08:00	100
Mar	744	-5.2	5.3	Mar-31	-15.3	01-Mar	11.1	Mar-09 16:00	-20.2	Mar-23 06:00	100
Apr	720	3.0	10.4	Apr-29	-5.2	15-Apr	16.9	Apr-28 17:00	-10.9	Apr-15 06:00	100
May	742	12.4	18.7	May-30	5.8	19-May	25.1	May-30 17:00	-0.6	May-02 06:00	99.73
Jun	720	16.8	21.8	Jun-26	12.5	12-Jun	27.9	Jun-30 16:00	3.6	Jun-11 05:00	100
Jul	744	20.1	25.9	Jul-09	15.2	04-Jul	33.8	Jul-09 18:00	11.1	Jul-07 05:00	100
Aug	744	17.9	22.7	Aug-19	13.0	30-Aug	32.3	Aug-19 16:00	6.9	Aug-15 06:00	100
Sep	720	12.6	17.2	Sep-28	8.3	12-Sep	26.8	Sep-28 16:00	0.9	Sep-16 07:00	100
Oct	744	0.3	10.0	Oct-15	-10.4	30-Oct	14.6	Oct-15 15:00	-11.7	Oct-30 03:00	100
Nov	720	-11.4	4.8	Nov-05	-25.2	29-Nov	7.5	Nov-05 16:00	-32.8	Nov-29 05:00	100
Dec	738	-19.9	-10.6	Dec-14	-31.2	23-Dec	-3.1	Dec-14 15:00	-34.1	Dec-26 09:00	99.19
Annual	8776	2.0	25.9	Jul-09	-31.2	23-Dec	33.8	Jul-09 18:00	-34.1	Dec-26 09:00	99.91

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Ambient Temperature 2m (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	744	-13.0	1.9	Jan-08	-30.5	17-Jan	5.9	Jan-08 15:00	-36.5	Jan-17 09:00	100
Feb	696	-10.2	-2.5	Feb-04	-21.6	10-Feb	2.8	Feb-13 15:00	-29.2	Feb-10 08:00	100
Mar	740	-4.9	5.0	Mar-31	-14.8	01-Mar	10.5	Mar-09 17:00	-19.6	Mar-15 07:00	99.46
Apr	718	3.3	10.6	Apr-29	-4.9	15-Apr	17.8	Apr-28 17:00	-11.2	Apr-15 06:00	99.72
May	744	12.8	18.6	May-30	6.0	19-May	26.8	May-30 15:00	0.3	May-02 04:00	100
Jun	718	17.3	22.4	Jun-26	12.4	12-Jun	28.9	Jun-30 16:00	4.3	Jun-11 05:00	99.72
Jul	742	20.4	25.7	Jul-09	14.7	04-Jul	33.9	Jul-10 13:00	10.0	Jul-13 05:00	99.73
Aug	711	18.4	23.4	Aug-19	13.1	30-Aug	32.4	Aug-19 16:00	5.9	Aug-15 06:00	95.56
Sep	720	12.9	17.9	Sep-28	8.6	11-Sep	26.3	Sep-28 17:00	2.7	Sep-16 06:00	100
Oct	742	3.6	11.9	Oct-15	-6.2	31-Oct	16.5	Oct-15 16:00	-7.0	Oct-30 09:00	99.73
Nov	720	-6.0	7.9	Nov-05	-16.4	29-Nov	10.2	Nov-05 16:00	-22.0	Nov-29 06:00	100
Dec	744	-12.7	-4.8	Dec-16	-23.5	23-Dec	-1.3	Dec-14 15:00	-25.0	Dec-23 08:00	100
Annual	8739	3.5	25.7	Jul-09	-30.5	17-Jan	33.9	Jul-10 13:00	-36.5	Jan-17 09:00	99.49

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Ambient Temperature 20m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-12.4	3.3	Jan-08	-29.9	17-Jan	6.9	Jan-08 15:00	-34.2	Jan-17 08:00	100
Feb	696	-9.2	-0.4	Feb-04	-20.7	09-Feb	4.9	Feb-04 16:00	-28.2	Feb-10 09:00	100
Mar	740	-5.0	5.6	Mar-31	-15.5	01-Mar	11.5	Mar-09 17:00	-19.1	Mar-15 07:00	99.46
Apr	718	3.2	10.6	Apr-29	-5.2	15-Apr	16.7	Apr-28 18:00	-10.6	Apr-15 06:00	99.72
May	744	12.6	18.6	May-30	5.5	19-May	24.5	May-30 17:00	1.6	May-02 06:00	100
Jun	718	17.0	22.1	Jun-26	12.3	12-Jun	27.5	Jun-30 19:00	5.1	Jun-11 05:00	99.72
Jul	742	20.4	26.2	Jul-09	14.9	04-Jul	32.9	Jul-09 17:00	11.2	Jul-13 06:00	99.73
Aug	743	18.1	23.2	Aug-19	12.8	30-Aug	31.4	Aug-19 16:00	6.2	Aug-15 06:00	99.87
Sep	716	13.0	18.1	Sep-28	8.8	12-Sep	26.1	Sep-28 17:00	3.3	Sep-16 08:00	99.44
Oct	722	0.4	10.2	Oct-15	-10.3	30-Oct	14.6	Oct-15 16:00	-11.3	Oct-30 09:00	97.04
Nov	709	-11.1	5.1	Nov-05	-23.2	29-Nov	7.9	Nov-05 16:00	-29.0	Nov-29 06:00	98.47
Dec	635	-18.5	-9.3	Dec-14	-25.7	12-Dec	-4.0	Dec-14 16:00	-32.1	Dec-23 12:00	85.35
Annual	8627	2.7	26.2	Jul-09	-29.9	17-Jan	32.9	Jul-09 17:00	-34.2	Jan-17 08:00	98.21

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Ambient Temperature 45m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-12.2	3.6	Jan-08	-30.0	17-Jan	6.8	Jan-08 15:00	-33.5	Jan-17 09:00	100
Feb	696	-8.8	0.4	Feb-04	-20.6	09-Feb	5.1	Feb-04 17:00	-26.5	Feb-10 10:00	100
Mar	740	-5.1	5.7	Mar-31	-16.0	01-Mar	11.5	Mar-09 17:00	-19.4	Mar-06 08:00	99.46
Apr	718	3.0	10.5	Apr-29	-5.5	15-Apr	16.2	Apr-28 18:00	-10.8	Apr-15 06:00	99.72
May	744	12.4	18.7	May-30	5.2	19-May	23.9	May-30 17:00	1.5	May-02 06:00	100
Jun	718	16.8	22.0	Jun-26	11.9	12-Jun	27.0	Jun-30 19:00	6.3	Jun-11 06:00	99.72
Jul	742	20.3	26.1	Jul-09	14.7	04-Jul	32.6	Jul-09 18:00	11.4	Jul-13 06:00	99.73
Aug	743	18.0	23.1	Aug-19	12.6	30-Aug	30.9	Aug-19 17:00	6.6	Aug-15 06:00	99.87
Sep	716	13.1	18.3	Sep-28	8.6	15-Sep	25.8	Sep-28 17:00	3.3	Sep-16 08:00	99.44
Oct	719	0.2	10.5	Oct-15	-10.5	30-Oct	14.3	Oct-15 16:00	-11.6	Oct-30 06:00	96.64
Nov	709	-11.2	5.2	Nov-05	-23.0	29-Nov	7.9	Nov-05 16:00	-28.3	Nov-29 07:00	98.47
Dec	603	-18.4	-8.4	Dec-14	-25.8	12-Dec	-3.6	Dec-14 16:00	-32.3	Dec-23 12:00	81.05
Annual	8592	2.7	26.1	Jul-09	-30.0	17-Jan	32.6	Jul-09 18:00	-33.5	Jan-17 09:00	97.81

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Ambient Temperature 75m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-12.0	3.7	Jan-08	-30.1	17-Jan	6.7	Jan-08 15:00	-33.3	Jan-17 09:00	100
Feb	696	-8.5	1.6	Feb-04	-20.7	09-Feb	5.9	Feb-03 19:00	-25.0	Feb-10 09:00	100
Mar	740	-5.3	5.6	Mar-31	-16.3	01-Mar	11.3	Mar-09 17:00	-19.8	Mar-06 08:00	99.46
Apr	718	2.8	10.4	Apr-29	-5.8	15-Apr	15.9	Apr-28 18:00	-10.8	Apr-15 06:00	99.72
May	744	12.3	18.7	May-30	4.9	19-May	23.6	May-30 19:00	1.7	May-02 07:00	100
Jun	718	16.7	21.9	Jun-26	11.7	12-Jun	26.7	Jun-30 19:00	6.6	Jun-11 06:00	99.72
Jul	740	20.3	26.2	Jul-09	14.5	04-Jul	32.4	Jul-09 19:00	11.6	Jul-13 06:00	99.46
Aug	329	17.8	21.2	Aug-08	13.7	14-Aug	26.4	Aug-08 18:00	9.9	Aug-12 06:00	44.22
Sep	611	13.3	18.5	Sep-28	8.3	15-Sep	25.7	Sep-28 17:00	4.0	Sep-16 08:00	84.86
Oct	718	0.1	10.7	Oct-15	-10.8	30-Oct	14.1	Oct-15 17:00	-11.9	Oct-30 06:00	96.51
Nov	709	-11.3	5.1	Nov-05	-22.4	29-Nov	7.7	Nov-05 16:00	-26.7	Nov-29 06:00	98.47
Dec	548	-17.6	-7.3	Dec-14	-25.7	12-Dec	-3.5	Dec-14 15:00	-30.9	Dec-23 06:00	73.66
Annual	8015	2.0	26.2	Jul-09	-30.1	17-Jan	32.4	Jul-09 19:00	-33.3	Jan-17 09:00	91.25

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Ambient Temperature 90m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Aug	411	18.0	23.2	Aug-19	12.2	30-Aug	30.4	Aug-19 17:00	7.7	Aug-15 07:00	100
Sep	692	13.3	18.5	Sep-28	8.2	15-Sep	25.5	Sep-28 17:00	4.0	Sep-16 08:00	96.11
Oct	718	0.0	10.7	Oct-15	-10.9	30-Oct	14.0	Oct-15 17:00	-12.0	Oct-30 06:00	96.51
Nov	709	-11.3	5.1	Nov-05	-22.2	29-Nov	7.6	Nov-05 16:00	-26.3	Nov-29 06:00	98.47
Dec	552	-17.6	-6.9	Dec-14	-25.6	12-Dec	-3.6	Dec-14 15:00	-30.4	Dec-23 06:00	74.19
Annual	3082	0.5	23.2	Aug-19	-25.6	12-Dec	30.4	Aug-19 17:00	-30.4	Dec-23 06:00	36.57

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-12.7	2.6	Jan-08	-31.1	17-Jan	7.5	Jan-08 15:00	-35.2	Jan-17 08:00	100
Feb	696	-10.1	-2.4	Feb-17	-23.5	10-Feb	6.5	Feb-17 16:00	-32.8	Feb-10 07:00	100
Mar	744	-4.7	4.8	Mar-31	-15.0	01-Mar	11.7	Mar-09 16:00	-21.4	Mar-08 05:00	100
Apr	720	2.9	10.8	Apr-29	-5.1	15-Apr	16.7	Apr-28 18:00	-11.9	Apr-09 06:00	100
May	744	12.1	18.2	May-30	5.5	19-May	24.9	May-30 15:00	-3.0	May-02 04:00	100
Jun	720	16.5	21.5	Jun-26	11.9	12-Jun	27.9	Jun-30 18:00	1.5	Jun-11 05:00	100
Jul	744	19.7	25.8	Jul-09	14.7	04-Jul	34.3	Jul-09 18:00	8.2	Jul-13 05:00	100
Aug	742	17.4	22.0	Aug-19	12.3	30-Aug	32.0	Aug-19 16:00	5.3	Aug-15 06:00	99.73
Sep	720	12.2	17.1	Sep-28	7.8	16-Sep	27.6	Sep-28 17:00	0.2	Sep-16 07:00	100
Oct	714	-0.2	9.2	Oct-15	-10.6	30-Oct	15.0	Oct-15 16:00	-11.6	Oct-30 03:00	95.97
Nov	720	-11.4	4.8	Nov-05	-24.0	29-Nov	8.1	Nov-05 15:00	-32.5	Nov-29 03:00	100
Dec	735	-20.0	-11.1	Dec-14	-30.8	23-Dec	-4.8	Dec-14 14:00	-32.3	Dec-24 00:00	98.79
Annual	8743	1.9	25.8	Jul-09	-31.1	17-Jan	34.3	Jul-09 18:00	-35.2	Jan-17 08:00	99.53

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-14.3	-2.5	Jan-08	-32.0	17-Jan	7.4	Jan-08 15:00	-39.1	Jan-17 09:00	100
Feb	695	-12.1	-5.0	Feb-14	-24.4	10-Feb	7.0	Feb-17 16:00	-31.7	Feb-10 08:00	99.86
Mar	739	-4.7	4.4	Mar-31	-14.5	01-Mar	11.5	Mar-09 16:00	-20.3	Mar-08 07:00	99.33
Apr	720	3.1	10.3	Apr-29	-4.6	15-Apr	16.8	Apr-28 17:00	-10.4	Apr-09 06:00	100
May	744	12.6	18.2	May-30	6.3	19-May	25.8	May-29 16:00	-1.3	May-02 04:00	100
Jun	684	16.9	21.9	Jun-07	12.4	12-Jun	28.8	Jun-30 18:00	4.6	Jun-11 05:00	95
Jul	744	20.1	26.0	Jul-09	15.1	04-Jul	34.9	Jul-09 17:00	10.3	Jul-07 05:00	100
Aug	744	18.0	22.5	Aug-19	13.2	30-Aug	32.4	Aug-19 16:00	6.4	Aug-15 06:00	100
Sep	720	12.3	16.7	Sep-28	8.7	16-Sep	28.0	Sep-28 17:00	2.1	Sep-16 08:00	100
Oct	741	0.7	8.7	Oct-15	-9.2	30-Oct	15.4	Oct-15 16:00	-9.9	Oct-30 08:00	99.6
Nov	672	-10.6	5.0	Nov-05	-24.3	29-Nov	8.5	Nov-05 16:00	-30.9	Nov-29 05:00	93.33
Dec	739	-20.1	-11.6	Dec-04	-31.1	23-Dec	-10.2	Dec-14 15:00	-33.2	Dec-23 10:00	99.33
Annual	8686	1.9	26.0	Jul-09	-32.0	17-Jan	34.9	Jul-09 17:00	-39.1	Jan-17 09:00	98.88

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
Ambient Temperature 2m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	242	-11.9	-1.6	Jan-08	-20.2	07-Jan	3.8	Jan-08 14:00	-26.1	Jan-11 06:00	97.58
Feb	535	-14.4	-7.1	Feb-17	-24.1	09-Feb	0.4	Feb-13 16:00	-28.6	Feb-10 04:00	100
Mar	741	-10.2	2.4	Mar-30	-21.4	06-Mar	9.1	Mar-09 16:00	-26.9	Mar-22 08:00	99.6
Apr	720	-0.9	9.6	Apr-28	-10.9	15-Apr	16.4	Apr-28 18:00	-14.9	Apr-15 06:00	100
May	744	9.7	20.3	May-30	4.5	19-May	26.3	May-30 15:00	0.8	May-13 04:00	100
Jun	720	16.0	21.3	Jun-30	11.8	10-Jun	25.9	Jun-24 15:00	8.0	Jun-20 05:00	100
Jul	744	20.5	26.2	Jul-09	15.7	04-Jul	32.5	Jul-09 15:00	11.1	Jul-20 04:00	100
Aug	744	17.8	22.4	Aug-19	11.4	30-Aug	28.2	Aug-18 16:00	5.8	Aug-15 06:00	100
Sep	720	12.4	16.2	Sep-01	6.7	15-Sep	22.8	Sep-14 13:00	3.4	Sep-12 07:00	100
Oct	744	0.0	6.7	Oct-01	-11.0	31-Oct	10.7	Oct-15 14:00	-13.7	Oct-31 23:00	100
Nov	720	-12.9	0.9	Nov-05	-28.2	29-Nov	3.5	Nov-05 08:00	-33.2	Nov-29 09:00	100
Dec	744	-22.1	-10.7	Dec-16	-32.6	23-Dec	-8.5	Dec-14 10:00	-35.4	Dec-23 09:00	100
Annual	8118	1.4	26.2	Jul-09	-32.6	23-Dec	32.5	Jul-09 15:00	-35.4	Dec-23 09:00	99.89

WBEA - Barge Landing (AMS 9)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-12.4	2.0	Jan-08	-29.0	17-Jan	7.2	Jan-08 15:00	-34.2	Jan-17 07:00	100
Feb	696	-9.1	-0.7	Feb-04	-20.8	10-Feb	6.4	Feb-17 15:00	-29.4	Feb-10 09:00	100
Mar	743	-3.8	6.9	Mar-31	-13.8	01-Mar	13.2	Mar-09 16:00	-20.8	Mar-15 07:00	99.87
Apr	717	4.7	12.3	Apr-29	-2.8	15-Apr	19.7	Apr-28 17:00	-9.6	Apr-09 06:00	99.58
May	744	14.2	20.8	May-30	7.4	19-May	27.9	May-30 14:00	0.0	May-02 05:00	100
Jun	720	18.7	24.1	Jun-07	14.7	12-Jun	30.5	Jun-30 16:00	4.5	Jun-11 04:00	100
Jul	744	21.9	28.3	Jul-09	16.7	04-Jul	36.4	Jul-10 14:00	10.4	Jul-13 04:00	100
Aug	744	19.6	24.6	Aug-19	14.6	30-Aug	35.4	Aug-19 15:00	6.4	Aug-15 06:00	100
Sep	719	14.0	18.5	Sep-28	9.9	30-Sep	27.6	Sep-08 16:00	2.1	Sep-16 07:00	99.86
Oct	744	1.7	10.1	Oct-15	-8.9	30-Oct	16.7	Oct-15 15:00	-10.9	Oct-30 04:00	100
Nov	713	-10.1	5.6	Nov-05	-25.6	29-Nov	9.1	Nov-05 16:00	-33.6	Nov-29 06:00	99.03
Dec	744	-19.3	-9.6	Dec-14	-30.6	23-Dec	-4.7	Dec-14 15:00	-33.6	Dec-26 09:00	100
Annual	8772	3.4	28.3	Jul-09	-30.6	23-Dec	36.4	Jul-10 14:00	-34.2	Jan-17 07:00	99.86

WBEA - Lower Camp (AMS 11)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-13.7	0.4	Jan-08	-29.5	17-Jan	6.5	Jan-08 15:00	-34.7	Jan-17 09:00	100
Feb	696	-11.3	-4.7	Feb-04	-23.8	09-Feb	3.5	Feb-13 16:00	-31.8	Feb-10 05:00	100
Mar	744	-5.0	5.1	Mar-31	-14.5	01-Mar	10.9	Mar-31 16:00	-21.8	Mar-23 07:00	100
Apr	720	3.2	10.4	Apr-29	-4.2	15-Apr	18.1	Apr-28 18:00	-10.7	Apr-15 06:00	100
May	739	13.1	19.6	May-30	6.7	19-May	26.8	May-30 15:00	-0.3	May-02 05:00	99.33
Jun	720	17.4	22.6	Jun-26	13.5	12-Jun	30.1	Jun-30 18:00	5.5	Jun-11 04:00	100
Jul	739	20.6	25.3	Jul-09	15.7	04-Jul	34.7	Jul-10 14:00	11.4	Jul-13 04:00	99.33
Aug	743	18.5	22.7	Aug-19	14.1	30-Aug	33.6	Aug-19 16:00	6.1	Aug-15 06:00	99.87
Sep	713	13.0	16.9	Sep-28	9.4	12-Sep	26.9	Sep-28 17:00	2.4	Sep-20 07:00	99.03
Oct	744	1.2	10.1	Oct-15	-9.9	30-Oct	15.2	Oct-15 15:00	-11.0	Oct-30 04:00	100
Nov	720	-10.9	5.3	Nov-05	-26.4	29-Nov	7.6	Nov-05 16:00	-33.3	Nov-29 04:00	100
Dec	744	-20.1	-11.9	Dec-04	-32.1	23-Dec	-8.2	Dec-14 15:00	-35.2	Dec-23 10:00	100
Annual	8766	2.2	25.3	Jul-09	-32.1	23-Dec	34.7	Jul-10 14:00	-35.2	Dec-23 10:00	99.8

WBEA - Millennium (AMS 12)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

AMS 12 Ambient Temperature

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-13.1	1.5	Jan-08	-30.9	17-Jan	6.5	Jan-08 15:00	-35.5	Jan-17 09:00	100
Feb	696	-10.2	-2.4	Feb-04	-22.3	10-Feb	3.6	Feb-04 15:00	-30.3	Feb-10 08:00	100
Mar	744	-4.9	4.8	Mar-31	-15.3	01-Mar	11.2	Mar-09 17:00	-20.5	Mar-15 06:00	100
Apr	720	3.2	10.2	Apr-29	-4.6	08-Apr	17.6	Apr-28 17:00	-11.2	Apr-15 06:00	100
May	744	12.7	19.3	May-30	5.4	19-May	27.1	May-29 17:00	-0.5	May-02 05:00	100
Jun	720	17.1	22.7	Jun-30	12.6	12-Jun	30.3	Jun-30 19:00	5.2	Jun-11 04:00	100
Jul	744	20.5	27.0	Jul-09	14.4	04-Jul	35.4	Jul-10 13:00	10.3	Jul-13 05:00	100
Aug	744	18.1	23.3	Aug-19	12.8	30-Aug	32.9	Aug-19 16:00	5.3	Aug-15 05:00	100
Sep	720	12.6	17.3	Sep-28	8.2	11-Sep	26.2	Sep-28 15:00	2.0	Sep-16 06:00	100
Oct	744	0.2	8.9	Oct-15	-10.4	30-Oct	14.5	Oct-15 15:00	-11.4	Oct-30 06:00	100
Nov	720	-11.3	4.2	Nov-05	-24.0	29-Nov	7.5	Nov-05 13:00	-32.3	Nov-29 05:00	100
Dec	744	-19.9	-10.5	Dec-16	-32.6	23-Dec	-6.1	Dec-14 14:00	-34.4	Dec-23 08:00	100
Annual	8784	2.1	27.0	Jul-09	-32.6	23-Dec	35.4	Jul-10 13:00	-35.5	Jan-17 09:00	100

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
Ambient Temperature 2m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-10.6	4.4	Jan-08	-29.0	16-Jan	6.7	Jan-08 13:00	-31.3	Jan-17 09:00	100
Feb	695	-8.4	1.1	Feb-04	-21.2	09-Feb	7.8	Feb-04 15:00	-28.7	Feb-10 07:00	99.86
Mar	744	-3.2	5.1	Mar-31	-13.4	01-Mar	13.2	Mar-16 16:00	-19.1	Mar-08 05:00	100
Apr	720	3.0	10.3	Apr-29	-5.1	15-Apr	17.0	Apr-22 16:00	-13.5	Apr-15 06:00	100
May	744	12.2	18.8	May-30	5.1	19-May	25.4	May-30 17:00	-1.7	May-02 05:00	100
Jun	719	16.6	22.7	Jun-26	11.2	12-Jun	29.1	Jun-25 16:00	3.1	Jun-11 05:00	99.86
Jul	744	20.0	26.8	Jul-09	14.0	04-Jul	34.4	Jul-09 16:00	9.3	Jul-13 04:00	100
Aug	742	17.9	24.1	Aug-19	12.6	30-Aug	32.9	Aug-19 15:00	7.0	Aug-15 04:00	99.73
Sep	715	12.9	18.7	Sep-28	7.2	11-Sep	28.5	Sep-28 15:00	1.9	Sep-16 03:00	99.31
Oct	744	0.3	9.3	Oct-15	-9.8	30-Oct	15.1	Oct-15 16:00	-11.5	Oct-30 19:00	100
Nov	720	-10.4	5.2	Nov-05	-22.2	28-Nov	7.6	Nov-06 15:00	-26.9	Nov-29 00:00	100
Dec	744	-17.4	-5.0	Dec-14	-29.9	23-Dec	-1.4	Jan-01 00:00	-31.7	Dec-24 01:00	100
Annual	8775	2.8	26.8	Jul-09	-29.9	23-Dec	34.4	Jul-09 16:00	-31.7	Dec-24 01:00	99.9

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
Ambient Temperature 10m (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-10.4	4.8	Jan-08	-29.3	17-Jan	7.2	Jan-04 21:00	-31.8	Jan-17 09:00	100
Feb	695	-7.5	3.0	Feb-04	-20.9	09-Feb	8.2	Feb-04 15:00	-27.7	Feb-10 05:00	99.86
Mar	744	-3.8	4.9	Mar-31	-13.9	01-Mar	11.1	Mar-09 16:00	-18.9	Mar-02 08:00	100
Apr	720	2.5	10.1	Apr-29	-7.0	15-Apr	15.5	Apr-28 17:00	-13.2	Apr-15 06:00	100
May	744	11.7	18.7	May-30	4.3	19-May	23.6	May-30 17:00	-0.7	May-02 06:00	100
Jun	719	15.9	21.8	Jun-26	10.7	12-Jun	26.3	Jun-25 17:00	3.8	Jun-11 04:00	99.86
Jul	744	19.5	26.3	Jul-09	13.3	04-Jul	32.1	Jul-09 16:00	9.7	Jul-07 04:00	100
Aug	742	17.4	23.7	Aug-19	12.3	30-Aug	30.9	Aug-19 14:00	7.2	Aug-31 07:00	99.73
Sep	715	12.7	18.9	Sep-28	6.7	11-Sep	26.2	Sep-28 16:00	2.0	Sep-16 03:00	99.31
Oct	744	-0.2	9.8	Oct-15	-10.5	30-Oct	13.7	Oct-15 16:00	-11.6	Oct-30 19:00	100
Nov	720	-10.7	5.1	Nov-05	-21.8	28-Nov	7.0	Nov-05 15:00	-25.5	Nov-29 00:00	100
Dec	744	-17.7	-4.3	Dec-14	-30.7	23-Dec	-1.5	Jan-01 00:00	-32.5	Dec-24 01:00	100
Annual	8775	2.5	26.3	Jul-09	-30.7	23-Dec	32.1	Jul-09 16:00	-32.5	Dec-24 01:00	99.9

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	744	-13.9	0.0	Jan-09	-30.9	17-Jan	5.7	Jan-08 15:00	-35.4	Jan-17 09:00	100
Feb	696	-10.5	-0.9	Feb-04	-22.7	10-Feb	5.7	Feb-04 16:00	-30.8	Feb-10 02:00	100
Mar	740	-5.5	5.5	Mar-31	-15.2	01-Mar	12.4	Mar-09 17:00	-21.3	Mar-03 02:00	99.46
Apr	720	2.8	10.4	Apr-29	-4.6	15-Apr	17.9	Apr-28 17:00	-12.5	Apr-09 06:00	100
May	736	12.2	18.7	May-30	6.1	19-May	26.5	May-30 15:00	-3.6	May-02 05:00	98.92
Jun	720	17.0	22.5	Jun-07	12.8	15-Jun	29.1	Jun-30 17:00	1.1	Jun-11 04:00	100
Jul	744	20.0	25.6	Jul-09	16.0	19-Jul	34.1	Jul-10 15:00	7.8	Jul-14 04:00	100
Aug	744	17.6	21.2	Aug-08	13.0	30-Aug	32.9	Aug-19 15:00	5.0	Aug-13 05:00	100
Sep	717	12.0	16.0	Sep-28	7.8	12-Sep	26.0	Sep-08 16:00	-1.0	Sep-16 06:00	99.58
Oct	744	0.0	8.3	Oct-07	-10.8	30-Oct	14.9	Oct-15 15:00	-14.0	Oct-31 06:00	100
Nov	697	-12.0	3.7	Nov-05	-27.6	29-Nov	8.5	Nov-05 16:00	-37.4	Nov-29 07:00	96.81
Dec	744	-21.0	-10.6	Dec-14	-32.5	26-Dec	-5.1	Dec-14 14:00	-36.0	Dec-26 09:00	100
Annual	8746	1.6	25.6	Jul-09	-32.5	26-Dec	34.1	Jul-10 15:00	-37.4	Nov-29 07:00	99.57

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Jan	689	-11.6	3.1	Jan-08	-28.9	17-Jan	7.6	Jan-08 15:00	-34.3	Jan-17 06:00	92.61
Feb	695	-8.3	0.0	Feb-04	-20.8	10-Feb	8.0	Feb-17 16:00	-29.1	Feb-10 08:00	99.86
Mar	741	-3.1	7.0	Mar-31	-13.0	01-Mar	13.9	Mar-09 17:00	-21.0	Mar-15 07:00	99.6
Apr	710	5.3	12.7	Apr-29	-2.5	15-Apr	20.2	Apr-28 18:00	-10.0	Apr-09 06:00	98.61
May	742	14.8	21.1	May-29	8.6	19-May	28.6	May-30 15:00	1.0	May-02 05:00	99.73
Jun	720	19.4	24.9	Jun-07	15.7	12-Jun	30.7	Jun-30 16:00	4.4	Jun-11 04:00	100
Jul	744	22.7	28.8	Jul-09	18.0	04-Jul	36.7	Jul-09 18:00	10.8	Jul-13 05:00	100
Aug	742	20.3	25.1	Aug-19	15.3	30-Aug	34.6	Aug-19 16:00	7.2	Aug-15 05:00	99.73
Sep	720	14.6	18.9	Sep-28	10.5	12-Sep	29.1	Sep-28 16:00	3.9	Sep-16 07:00	100
Oct	744	2.6	10.4	Oct-07	-7.9	30-Oct	17.0	Oct-15 16:00	-9.6	Oct-31 07:00	100
Nov	720	-9.5	6.4	Nov-05	-24.9	29-Nov	9.8	Nov-05 16:00	-34.4	Nov-29 07:00	100
Dec	739	-18.4	-8.2	Dec-14	-29.2	26-Dec	-3.6	Dec-14 16:00	-32.6	Dec-26 10:00	99.33
Annual	8706	4.2	28.8	Jul-09	-29.2	26-Dec	36.7	Jul-09 18:00	-34.4	Nov-29 07:00	99.11

**WBEA - AMS 101 Portable (AMS101) Surmont
Summary Jan 1 - Mar 31, 2012
Ambient Temperature (C) Average**

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Jan	724	-10.3	3.8	Jan-08	-29.9	17-Jan	7.0	Jan-08 14:00	-32.5	Jan-17 04:00	97.31
Feb	696	-6.8	4.6	Feb-04	-18.6	09-Feb	8.4	Feb-04 15:00	-22.6	Feb-10 06:00	100
Mar	744	-3.7	4.3	Mar-31	-13.8	01-Mar	10.2	Mar-16 16:00	-18.7	Mar-06 08:00	100
Annual	2164	-6.9	4.6	Feb-04	-29.9	17-Jan	10.2	Mar-16 16:00	-32.5	Jan-17 04:00	99.10

WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr		24-hr		1-hr		1-hr		Operational Time (%)
			Max	Date	Min	Date	Max	Date	Min	Date	
Apr	57	1.5	2.6	Apr-02	0.5	01-Apr	7.7	Apr-02 18:00	-1.6	Apr-02 07:00	10.49
May	640	11.5	16.6	May-30	3.9	18-May	23.6	May-13 17:00	-2.8	May-18 05:00	100
Jun	720	15.3	20.8	Jun-25	11.0	03-Jun	27.2	Jun-25 16:00	0.5	Jun-11 05:00	100
Jul	744	19.0	25.6	Jul-09	13.9	04-Jul	33.3	Jul-10 15:00	7.0	Jul-13 05:00	100
Aug	744	16.6	21.9	Aug-19	12.2	31-Aug	29.8	Aug-19 14:00	2.3	Aug-31 04:00	100
Sep	720	11.9	16.1	Sep-28	6.8	16-Sep	26.4	Sep-23 15:00	-1.1	Sep-16 04:00	100
Oct	618	-0.6	7.6	Oct-07	-10.8	31-Oct	13.7	Oct-07 13:00	-11.4	Oct-31 08:00	100
Annual	4243	10.7	25.6	Jul-09	-10.8	31-Oct	33.3	Jul-10 15:00	-11.4	Oct-31 08:00	87.21

WBEA - AMS 101 Portable (AMS101) Christina Lake
Summary Oct 15 - Dec 31, 2012
Ambient Temperature (C) Average

Month	N	Average	24-hr Max	Date	24-hr Min	Date	1-hr Max	Date	1-hr Min	Date	Operational Time (%)
Oct	618	-0.6	7.6	Oct-07	-10.8	31-Oct	13.7	Oct-07 13:00	-11.4	Oct-31 08:00	100
Nov	720	-10.2	4.9	Nov-05	-20.2	22-Nov	7.8	Nov-05 15:00	-27.9	Nov-27 02:00	100
Dec	744	-17.6	-5.4	Dec-14	-27.5	24-Dec	-2.9	Dec-14 15:00	-33.3	Dec-25 05:00	100
Annual	2082	-9.5	7.6	Oct-07	-27.5	24-Dec	13.7	Oct-07 13:00	-33.3	Dec-25 05:00	100

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
Relative Humidity (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	99.19	738	79.9	97	94
Feb	99.57	693	75.3	96	91
Mar	100	744	69.7	97	93
Apr	99.86	719	53.7	98	78
May	97.58	726	46.4	95	90
Jun	100	720	61.8	99	93
Jul	99.06	737	68.6	99	89
Aug	99.19	738	67.5	100	91
Sep	100	720	72.5	100	97
Oct	99.87	743	83.2	100	97
Nov	99.58	717	82.0	97	91
Dec	99.46	740	81.2	95	89
Annual	99.44	8735	70.2	100	97

Based on 8784 hours of data collection

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Relative Humidity 20m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	100	744	73.3	96	89
Feb	100	696	70.9	93	83
Mar	98.66	734	65.3	94	86
Apr	96.94	698	52.9	96	73
May	100	744	46.5	95	90
Jun	100	720	61.7	98	94
Jul	100	744	66.1	98	86
Aug	100	744	65.5	99	87
Sep	100	720	69.8	98	95
Oct	96.91	721	78.1	97	93
Nov	99.17	714	76.1	90	84
Dec	100	744	76.0	87	84
Annual	99.31	8723	66.8	99	95

Based on 8784 hours of data collection

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Relative Humidity 45m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	100	744	73.3	96	89
Feb	100	696	70.7	93	83
Mar	98.66	734	65.3	94	87
Apr	96.94	698	52.1	96	73
May	100	744	45.7	95	88
Jun	100	720	60.8	98	93
Jul	100	744	65.0	99	85
Aug	100	744	64.5	99	87
Sep	100	720	68.4	99	94
Oct	98.66	734	78.2	97	93
Nov	99.17	714	76.2	90	85
Dec	100	744	76.4	88	84
Annual	99.45	8736	66.4	99	94

Based on 8784 hours of data collection

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Relative Humidity 100m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	90.59	674	71.1	95	86
Feb	100	696	68.6	90	85
Mar	98.66	734	65.0	94	89
Apr	96.67	696	50.2	95	73
May	100	744	43.6	96	87
Jun	100	720	57.9	98	92
Jul	100	744	61.9	98	84
Aug	100	744	61.9	98	86
Sep	100	720	64.1	98	93
Oct	98.39	732	77.8	97	94
Nov	99.03	713	76.4	91	86
Dec	94.09	700	76.9	89	85
Annual	98.1	8617	64.5	98	94

Based on 8784 hours of data collection

WBEA - Lower Camp Met Tower (AMS 3)
Annual Summary for the Year 2012
Relative Humidity 167m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	91.53	681	70.3	95	86
Feb	100	696	66.2	90	81
Mar	98.66	734	64.9	94	89
Apr	96.67	696	49.6	94	74
May	100	744	42.4	95	87
Jun	100	720	56.4	97	91
Jul	100	744	59.8	96	83
Aug	100	744	60.2	97	84
Sep	100	720	61.4	97	93
Oct	98.25	731	77.6	96	94
Nov	100	720	76.7	93	87
Dec	70.7	526	77.5	90	83
Annual	96.27	8456	63.2	97	94

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Relative Humidity 2m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Aug	100	367	64.8	99	85
Sep	100	720	68.6	99	96
Oct	99.87	743	80.9	99	94
Nov	100	720	79.7	96	90
Dec	100	744	80.4	91	88
Annual	99.97	3294	74.9	99	96

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Relative Humidity 20m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Aug	100	367	63.3	99	83
Sep	99.44	716	65.8	99	94
Oct	97.45	725	79.9	99	94
Nov	98.47	709	79.4	96	90
Dec	86.16	641	81.2	92	87
Annual	96.30	3158	73.9	99	94

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Relative Humidity 45m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Aug	100	367	62.2	98	83
Sep	99.44	716	63.9	99	94
Oct	96.51	718	79.5	98	94
Nov	97.92	705	79.4	97	91
Dec	80.24	597	81.1	94	87
Annual	94.822	3103	73.2	99	94

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Relative Humidity 75m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Sep	100	610	58.7	97	82
Oct	96.51	718	79.6	99	95
Nov	98.47	709	80.0	97	91
Dec	74.33	553	81.5	93	87
Annual	92.33	2590	75.0	99	95

Based on 8784 hours of data collection

WBEA - Mannix (AMS 5)
Annual Summary for the Year 2012
Relative Humidity 90m (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Aug	100	367	61.8	99	84
Sep	95.97	691	62.2	99	95
Oct	96.51	718	80.1	99	96
Nov	98.47	709	80.8	97	92
Dec	74.33	553	82.0	94	87
Annual	93.06	3038	74.3	99	96

Based on 8784 hours of data collection

WBEA - Patricia McInnes (AMS 6)
Annual Summary for the Year 2012
Relative Humidity (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Nov	100	574	79.4	94	88
Dec	98.92	736	79.4	91	87
Annual	99.46	1310	79.4	94	88

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
Relative Humidity (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Nov	92.48	529	78.1	93	87
Dec	99.33	739	77.6	90	84
Annual	95.91	1268	77.9	93	87

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
Relative Humidity (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	97.58	242	83.8	98	92
Feb	100	535	72.5	90	86
Mar	99.6	741	72.4	99	87
Apr	100	720	61.8	97	82
May	100	744	59.0	99	90
Jun	100	720	66.9	98	96
Jul	100	744	65.8	99	90
Aug	100	744	70.9	100	93
Sep	100	720	72.8	100	99
Oct	100	744	82.5	99	98
Nov	100	720	80.6	96	91
Dec	100	744	77.2	92	85
Annual	99.89	8118	71.5	100	99

Based on 8784 hours of data collection

WBEA - Syncrude UE-1 (AMS 13)
Annual Summary for the Year 2012
Relative Humidity (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Sep	100	720	79.4	100	100
Oct	68.55	510	85.2	100	99
Nov	100	720	83.8	100	93
Dec	100	744	80.5	91	87
Annual	30.67	2694	82.0	100	100

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
Relative Humidity (%) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	100	744	80.3	99	93
Feb	99.86	695	73.0	97	90
Mar	100	744	73.2	100	95
Apr	100	720	61.5	100	96
May	100	744	48.6	99	95
Jun	100	720	65.2	98	93
Jul	100	744	69.4	98	94
Aug	99.73	742	68.4	98	92
Sep	99.31	715	71.1	99	97
Oct	100	744	86.7	100	100
Nov	100	720	86.3	99	95
Dec	100	744	84.5	98	94
Annual	99.91	8776	72.4	100	100

Based on 8784 hours of data collection

**WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
Relative Humidity (%) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	100	744	82.4	100	98
Feb	100	696	78.6	100	94
Mar	99.46	740	71.9	100	93
Apr	100	720	56.1	99	78
May	94.76	705	47.2	98	90
Jun	100	720	60.4	99	87
Jul	100	744	66.4	99	91
Aug	100	744	66.4	99	87
Sep	99.58	717	71.6	99	93
Oct	100	744	81.3	99	96
Nov	96.81	697	80.9	99	92
Dec	100	744	79.6	93	88
Annual	99.21	8715	70.3	100	98

Based on 8784 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Conklin
Summary May 5 - Oct 10, 2012
Relative Humidity (%) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
May	100	640	45.8	98	79
Jun	100	720	65.8	100	95
Jul	100	744	70.6	100	90
Aug	100	744	70.0	99	93
Sep	100	720	69.4	100	98
Oct	100	618	82.9	100	98
Annual	100	4186	67.4	100	98

Based on 8784 hours of data collection

**WBEA - AMS 101 Portable (AMS101) Christina Lake
 Summary Oct 15 - Dec 31, 2012
 Relative Humidity (%) Average**

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Oct	100	618	82.9	100	98
Nov	100	720	81.4	97	91
Dec	100	744	81.1	94	86
Annual	100	2082	81.8	100	98

Based on 8784 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
Solar Global Radiation (W/m²) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	99.19	738	12.0	124	24
Feb	99.57	693	35.9	244	59
Mar	100	744	74.1	424	130
Apr	99.86	719	114.2	499	166
May	97.58	726	151.4	569	210
Jun	100	720	152.5	593	229
Jul	99.06	737	144.1	549	214
Aug	99.19	738	118.8	499	187
Sep	100	720	78.8	391	126
Oct	99.87	743	28.0	252	62
Nov	99.58	717	10.2	141	30
Dec	100	744	5.4	70	12
Annual	99.49	8739	77.1	593	229

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
Solar Global Radiation (W/m²) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	97.58	242	10.8	138	24
Feb	100	535	55.0	331	82
Mar	99.6	741	100.0	485	151
Apr	100	720	172.5	608	217
May	100	744	204.1	665	273
Jun	100	720	201.7	686	288
Jul	100	744	194.0	668	256
Aug	100	744	153.3	599	235
Sep	100	720	104.2	497	172
Oct	100	744	42.8	347	81
Nov	100	720	18.4	236	43
Dec	100	744	12.2	118	22
Annual	99.89	8118	112.7	686	288

Based on 8784 hours of data collection

WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
Solar Global Radiation (W/m²) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	100	744	17.1	178	33
Feb	100	696	49.4	335	85
Mar	99.46	740	94.6	516	164
Apr	100	720	139.2	596	203
May	99.87	743	183.9	676	237
Jun	100	720	179.2	672	271
Jul	100	744	174.3	654	258
Aug	100	744	145.8	602	224
Sep	99.58	717	98.6	508	161
Oct	100	744	37.5	343	80
Nov	96.81	697	12.6	214	40
Dec	100	744	3.5	56	8
Annual	99.65	8753	94.9	676	271

Based on 8784 hours of data collection

WBEA - Fort McKay - Bertha Ganter (AMS 1)
Annual Summary for the Year 2012
Precipitation (mm) Average

Month	Operational Time (%)	Number of Data	Total Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	99.19	738	5.3	1.3	3.6
Feb	99.57	693	1.0	0.4	0.9
Mar	99.87	743	15.9	1.0	6.3
Apr	99.86	719	11.9	1.0	4.8
May	97.58	726	17.1	2.7	10.7
Jun	100	720	57.8	5.2	19.3
Jul	99.06	737	75.7	10.5	18.6
Aug	99.19	738	20.6	2.0	4.9
Sep	100	720	94.3	7.4	33.6
Oct	99.73	742	35.9	1.6	10.8
Nov	99.44	716	2.8	0.8	1.5
Dec	100	744	0.0	0.0	0.0
Annual	99.45	8736	338.3	10.5	33.6

Based on 8784 hours of data collection

WBEA - Fort Chipewyan (AMS 8)
Annual Summary for the Year 2012
Precipitation (mm) Average

Month	Operational Time (%)	Number of Data	Total Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	97.98	243	0.1	0.1	0.1
Feb	100	535	0.0	0.0	0.0
Mar	99.6	741	11.2	1.7	9.9
Apr	100	720	1.8	0.8	1.6
May	99.87	743	9.4	1.8	2.4
Jun	99.86	719	27.8	2.6	11.7
Jul	100	744	43.2	5.7	14.4
Aug	100	744	33.6	3.5	11.8
Sep	100	720	56.1	7.0	23.7
Oct	100	744	12.3	0.9	4.8
Nov	100	720	2.3	1.0	1.0
Dec	100	744	0.3	0.1	0.3
Annual	99.88	8117	198.1	7.0	23.7

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
Precipitation (mm) Average

Month	Operational Time (%)	Number of Data	Total Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	100	744	3.8	0.5	2.0
Feb	99.86	695	0.0	0.0	0.0
Mar	100	744	14.9	1.5	4.6
Apr	100	720	35.7	2.7	11.6
May	100	744	9.8	1.6	7.1
Jun	99.58	716	44.7	9.2	13.3
Jul	100	744	158.8	18.4	56.9
Aug	99.73	742	26.1	3.5	8.8
Sep	99.17	714	88.1	8.3	33.4
Oct	100	744	45.3	1.8	13.2
Nov	100	720	5.6	1.2	3.0
Dec	99.87	743	0.4	0.1	0.3
Annual	99.85	8770	433.2	18.4	56.9

Based on 8784 hours of data collection

**WBEA - CNRL Horizon (AMS 15)
Annual Summary for the Year 2012
Precipitation (mm) Average**

Month	Operational Time (%)	Number of Data	Total Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	99.87	743	3.7	1.0	2.1
Feb	100	696	1.8	0.8	1.8
Mar	99.46	740	22.0	1.3	11.0
Apr	100	720	11.7	1.0	4.2
May	99.87	743	19.9	3.7	13.3
Jun	99.86	719	18.9	3.9	7.5
Jul	100	744	93.8	9.2	20.1
Aug	100	744	28.6	4.9	8.8
Sep	100	720	101.5	16.4	37.3
Oct	100	744	39.7	1.7	13.4
Nov	96.81	697	13.4	1.5	10.3
Dec	100	744	0.0	0.0	0.0
Annual	99.66	8754	355.0	16.4	37.3

Based on 8784 hours of data collection

WBEA - Athabasca Valley (AMS 7)
Annual Summary for the Year 2012
Barometric Pressure (inHg) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Nov	92.51	531	29.2	29.7	29.6
Dec	99.33	739	29.1	29.8	29.7
Annual	14.7	1270	29.1	29.8	29.7

Based on 8784 hours of data collection

WBEA - Albian Muskeg River (AMS 16)
Annual Summary for the Year 2012
Barometric Pressure (inHg) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	66.94	498	28.8	29.5	29.5
Feb	100	696	29.0	29.8	29.7
Mar	100	744	28.7	29.5	29.4
Apr	100	720	29.0	29.5	29.4
May	100	744	28.9	29.2	29.1
Jun	100	720	28.8	29.1	29.1
Jul	100	744	28.9	29.1	29.1
Aug	100	744	28.9	29.2	29.1
Sep	100	720	28.9	29.3	29.2
Oct	100	744	29.0	29.5	29.5
Nov	100	720	29.1	29.6	29.5
Dec	99.33	739	29.0	29.7	29.6
Annual	97.14	8533	28.9	29.8	29.7

Based on 8784 hours of data collection

WBEA - Anzac (AMS 14)
Annual Summary for the Year 2012
Dew Point (C) Average

Month	Operational Time (%)	Number of Data	Mean Value	Maximum 1-Hour Value	Maximum 24-Hour Value
Jan	71.51	532	-10.6	1.8	-1.4
Feb	86.06	599	-12.4	-2.4	-5.1
Mar	95.97	714	-9.1	1.2	-0.3
Apr	100	720	-6.0	2.3	0.5
May	100	744	-1.1	5.7	3.0
Jun	99.72	718	7.5	14.1	11.9
Jul	99.06	737	12.2	20.2	16.2
Aug	99.73	742	9.8	17.2	13.8
Sep	99.31	715	5.6	11.9	11.5
Oct	100	744	-3.6	6.5	3.0
Nov	89.31	643	-13.0	0.1	-1.5
Dec	49.06	365	-16.5	-4.8	-8.2
Annual	90.77	7973	-2.0	20.2	16.2

Based on 8784 hours of data collection

Wood Buffalo Environmental Association - Fort McKay - Bertha Ganter (AMS 1)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	5.98	2.25	1.32	1.42	1.1	0.86	1.63	3.43	5.33	4.57	2.93	2.95	3.11	4.59	4.91	4.87	51.25
6 - 11	7.83	2.19	0.7	0.98	0.61	0.74	2.25	5.6	6.2	1.52	1.37	1.13	2.01	3.35	2.07	2.34	40.89
12 - 19	0.83	0.15	0.06	0.01	0.09	0.26	0.77	1.48	0.78	0.26	0.14	0.24	0.31	0.48	1.07	0.68	7.63
20 - 28	.	.	.	.	.	0.01	0.07	0.1	.	.	.	.	.	0.02	0.01	0.01	0.23
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	14.65	4.59	2.08	2.4	1.81	1.88	4.73	10.62	12.31	6.35	4.44	4.31	5.43	8.44	8.06	7.89	100

Total Number of Valid Hours: 8692

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Mildred Lake (AMS 2)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	2.72	1.63	1.14	0.99	1.06	1.25	1.63	2.23	2.65	2.56	1.42	0.89	0.56	0.57	0.79	1.37	23.48
6 - 11	9.59	3.52	1.07	0.61	0.85	1.45	4.05	5.85	5.42	3.13	1.99	1.44	1.03	2.56	1.65	3.26	47.46
12 - 19	4.39	2.03	0.14	0.15	0.3	1.41	2.94	4.2	0.56	0.27	0.54	1.09	1.63	2.79	1.47	1.41	25.31
20 - 28	0.55	0.14	.	.	0.02	0.14	0.47	0.64	0.07	0.02	0.02	0.03	0.42	0.31	0.51	0.34	3.69
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.02	0.03	0.06
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	17.25	7.33	2.35	1.75	2.23	4.24	9.09	12.92	8.7	5.99	3.97	3.45	3.65	6.23	4.45	6.41	100

Total Number of Valid Hours: 8748

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Buffalo Viewpoint (AMS 4)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	1.5	1.12	0.52	0.47	0.37	0.93	2.05	2.34	1.36	1.14	0.82	0.6	0.66	0.9	0.81	1.06	16.65
6 - 11	5.35	2.34	1.07	0.51	0.65	3.22	10.82	7.25	1.13	1.27	1.26	1.58	2.08	1.74	1.58	2.06	43.9
12 - 19	6.13	1.12	0.17	0.08	0.44	2.32	5.74	1.66	0.25	0.44	0.8	2.13	1.99	1.75	1.66	1.01	27.71
20 - 28	3.3	0.24	0.01	.	0.02	0.25	0.58	0.05	0.03	0.02	0.18	1.74	0.8	1.12	0.97	0.44	9.76
29 - 38	0.78	0.01	.	.	.	.	.	.	.	.	.	0.24	0.1	0.16	0.28	0.24	1.82
> 38	0.12	.	.	.	.	.	.	.	.	.	.	.	.	.	0.01	0.03	0.16
Totals	17.18	4.83	1.78	1.06	1.48	6.72	19.19	11.3	2.78	2.87	3.06	6.3	5.63	5.67	5.3	4.85	100

Total Number of Valid Hours: 8672

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Lower Camp Met Tower (AMS 3)

Annual summary for the year 2012

Wind Direction 20 m and Wind Speed 20 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	4.5	1.7	1.37	1.2	1.31	2.06	3.83	2.37	0.91	0.86	1.13	1.04	1.28	1.83	4.67	9.36	39.43
6 - 11	5.52	1.02	0.3	0.11	0.3	1.28	10.78	3.86	0.69	0.4	0.81	1.59	1.43	0.73	1.91	5.26	36.01
12 - 19	1.58	0.15	0.01	0.03	0.07	0.4	7.85	2.66	0.33	0.25	0.32	1.63	2.62	1.26	1.36	1.11	21.64
20 - 28	0.01	.	.	.	.	.	0.87	0.47	0.09	0.03	0.05	0.31	0.71	0.21	0.11	0.02	2.89
29 - 38	.	.	.	.	.	.	0.02	0.01	.	.	.	.	.	.	.	.	0.03
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	11.62	2.86	1.68	1.35	1.67	3.75	23.35	9.37	2.02	1.55	2.31	4.57	6.05	4.03	8.07	15.75	100

Total Number of Valid Hours 8729

Total Number of Hours 8784

Wood Buffalo Environmental Association - Lower Camp Met Tower (AMS 3)

Annual summary for the year 2012

Wind Direction 45 m and Wind Speed 45 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	3.07	1.12	0.97	1	0.99	1.44	1.95	1.58	0.85	0.72	0.88	0.77	0.97	1.55	3.65	5.1	26.62
6 - 11	4.37	1	0.54	0.26	0.53	1.47	8.64	3.47	0.6	0.47	0.81	1.09	0.92	0.7	2.3	7.78	34.93
12 - 19	3.64	0.69	0.17	0.08	0.16	0.7	8.89	3.45	0.46	0.26	0.5	1.34	1.78	0.99	1.43	2.46	27.01
20 - 28	0.54	0.06	.	0.01	.	0.14	3.48	0.81	0.11	0.09	0.1	1.2	2.01	0.71	0.65	0.4	10.32
29 - 38	.	.	.	.	.	.	0.39	0.06	.	.	0.01	0.16	0.38	0.09	0.02	0.01	1.12
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	11.62	2.86	1.68	1.35	1.67	3.75	23.35	9.37	2.02	1.55	2.31	4.56	6.05	4.03	8.07	15.75	100

Total Number of Valid Hours 8728

Total Number of Hours 8784

Wood Buffalo Environmental Association - Lower Camp Met Tower (AMS 3)

Annual summary for the year 2012

Wind Direction 100 m and Wind Speed 100 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	1.1	0.87	0.7	0.57	0.55	0.86	1.02	1.1	1.14	0.96	0.89	0.84	0.65	0.37	1	1.23	13.85
6 - 11	4.25	1.61	0.8	0.51	0.42	0.62	2.98	4.41	2.39	1.14	1.44	1.49	1.31	0.69	1.05	3.29	28.39
12 - 19	5.45	2.38	0.55	0.21	0.24	0.64	3.76	6.91	1.67	0.31	0.62	1.72	1.2	0.72	1.13	2.8	30.3
20 - 28	2.18	1.38	0.15	0.12	0.12	0.34	3.11	3.5	0.48	0.1	0.36	1.52	1.65	1.01	1.09	0.96	18.07
29 - 38	0.42	0.09	0.03	.	.	0.08	2.15	1.02	.	0.01	0.08	0.6	1.71	0.78	0.59	0.22	7.79
> 38	0.01	.	.	.	.	.	0.17	0.39	.	.	.	0.05	0.73	0.1	0.07	0.06	1.59
Totals	13.41	6.34	2.23	1.41	1.32	2.53	13.2	17.34	5.68	2.53	3.39	6.21	7.25	3.67	4.92	8.56	100

Total Number of Valid Hours 8611

Total Number of Hours 8784

Wood Buffalo Environmental Association - Lower Camp Met Tower (AMS 3)

Annual summary for the year 2012

Wind Direction 167 m and Wind Speed 167 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.49	0.73	0.5	0.4	0.37	0.37	0.57	0.8	0.77	0.8	0.69	0.66	0.47	0.54	0.51	0.45	9.12
6 - 11	1.98	1.5	1.2	0.7	0.6	0.72	1.37	2.56	1.96	1.76	1.57	1.05	1.23	0.69	0.73	1.48	21.11
12 - 19	4.13	4.12	1.12	0.45	0.45	0.7	2.52	4.2	3.02	1.38	1.69	2.21	1.15	1.01	1.08	1.7	30.93
20 - 28	2.32	2.85	0.46	0.22	0.28	0.53	2.9	2.98	2.09	0.67	0.54	1.88	1.4	1.28	1.09	1.36	22.87
29 - 38	0.6	0.27	0.09	0.02	0.06	0.22	3.3	1.01	0.31	0.2	0.17	1.14	1.7	1.24	0.82	0.53	11.69
> 38	0.11	0.01	0.01	0.01	.	0.02	0.79	0.33	0.01	.	0.02	0.45	1.62	0.41	0.32	0.14	4.27
Totals	9.62	9.49	3.38	1.81	1.76	2.57	11.45	11.88	8.16	4.83	4.69	7.4	7.57	5.17	4.54	5.67	100

Total Number of Valid Hours 8451

Total Number of Hours 8784

Wood Buffalo Environmental Association - Mannix (AMS 5)
Annual summary for the year 2012
Wind Direction 20 m and Wind Speed 20 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	3.55	1.76	1.3	1.13	1.83	4.06	7.85	6.12	2.32	2.17	2.2	2.36	2.38	1.95	2.24	3.02	46.24
6 - 11	4.8	1.82	0.49	0.33	1.01	4.39	5.36	6.5	0.96	0.71	1.31	3.11	2.67	1.71	1.69	2.75	39.62
12 - 19	1.29	0.68	0.02	0.08	0.06	0.3	1.7	1.5	0.11	0.12	0.13	0.83	1.75	1.06	0.35	1.13	11.12
20 - 28	0.21	0.11	.	.	.	.	0.11	0.01	0.01	.	0.04	0.34	0.84	0.46	0.4	0.18	2.7
29 - 38	.	.	.	.	.	.	.	.	.	.	.	0.05	0.18	0.06	0.02	.	0.31
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	9.84	4.37	1.82	1.54	2.91	8.76	15.02	14.12	3.4	3	3.68	6.69	7.82	5.25	4.7	7.08	100

Total Number of Valid Hours: 8291

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Mannix (AMS 5)
Annual summary for the year 2012
Wind Direction 45 m and Wind Speed 45 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.95	0.57	0.55	0.49	0.44	0.85	0.87	0.68	0.84	0.65	0.46	0.65	0.6	0.55	0.51	0.66	10.32
6 - 11	2.08	1.35	1.19	0.82	1.25	2.6	3.38	2.66	1.5	1.04	1.31	1.08	1.4	1.37	1.32	2.18	26.54
12 - 19	3.92	1.7	0.29	0.47	1.2	3.62	6.44	6.47	1.46	1.07	1.15	2.01	2.56	1.55	1.55	2.79	38.27
20 - 28	2.94	0.47	0.02	0.09	0.74	2.69	1.96	1.8	0.45	0.29	0.55	2.1	1.93	1.33	0.94	1.66	19.98
29 - 38	0.51	0.02	.	.	0.05	0.45	0.11	0.05	0.02	0.04	0.12	0.94	0.69	0.75	0.26	0.4	4.41
> 38	0.11	.	.	.	.	.	.	.	.	.	.	0.12	0.06	0.13	0.08	.	0.49
Totals	10.52	4.11	2.06	1.88	3.67	10.2	12.76	11.66	4.26	3.09	3.59	6.9	7.24	5.69	4.66	7.69	100

Total Number of Valid Hours 8490
Total Number of Hours 8784

Wood Buffalo Environmental Association - Mannix (AMS 5)
Annual summary for the year 2012
Wind Direction 75 m and Wind Speed 75 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.72	0.59	0.57	0.48	0.53	0.82	0.88	0.63	0.66	0.47	0.34	0.4	0.51	0.38	0.43	0.54	8.96
6 - 11	1.66	1.35	0.95	0.91	0.96	1.92	2.81	1.92	1.48	1.15	0.85	1.05	1.07	0.99	1.23	1.53	21.81
12 - 19	3.34	1.73	0.43	0.66	1.1	2.65	4.46	3.51	1.52	1.21	1.36	1.54	1.87	1.35	1.39	2.15	30.28
20 - 28	3.2	1.02	0.06	0.15	0.92	3.35	3.74	4.3	1.23	0.48	1.01	2.12	2.03	1.24	1.18	1.87	27.9
29 - 38	1.26	0.23	.	.	0.25	1.53	0.4	0.77	0.21	0.08	0.28	1.52	0.87	1.09	0.44	0.85	9.78
> 38	0.13	.	.	.	.	0.13	0.01	.	.	.	.	0.33	0.11	0.27	0.2	0.1	1.28
Totals	10.3	4.93	2.01	2.2	3.77	10.4	12.31	11.13	5.09	3.39	3.84	6.96	6.47	5.31	4.86	7.04	100

Total Number of Valid Hours 7914
Total Number of Hours 8784

Wood Buffalo Environmental Association - Mannix (AMS 5)
Annual summary for the year 2012
Wind Direction 90 m and Wind Speed 90 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.45	0.58	0.45	0.45	0.48	0.71	0.93	0.48	0.45	0.35	0.45	0.48	0.42	0.39	0.22	0.45	7.73
6 - 11	1.77	1.77	0.96	0.67	0.42	1.8	2.76	1.73	1.22	1.19	1.48	1.22	0.74	0.67	0.87	1.51	20.76
12 - 19	3.75	2.66	0.87	0.51	0.42	2.15	4.59	3.72	1.83	1.06	1.44	1.64	1.7	1.35	1.16	1.7	30.55
20 - 28	2.02	1.93	0.1	0.06	0.1	0.29	4.53	4.88	2.34	0.71	0.58	1.38	2.76	2.37	0.9	2.41	27.34
29 - 38	1.12	0.61	0.03	.	.	0.06	0.77	1.67	0.71	0.16	0.19	0.87	1.54	1.57	0.8	1.32	11.42
> 38	0.19	0.03	.	.	.	.	.	.	.	.	.	0.35	0.22	0.8	0.45	0.13	2.18
Totals	9.31	7.57	2.41	1.7	1.41	5.01	13.58	12.48	6.55	3.47	4.14	5.94	7.38	7.16	4.4	7.51	100

Total Number of Valid Hours 3116
Total Number of Hours 8784

Wood Buffalo Environmental Association - Patricia McInnes (AMS 6)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.79	0.64	0.61	0.87	1.02	1.76	1.7	2.59	3.21	2.74	1.83	1.57	1.67	1.44	1.41	1.2	25.04
6 - 11	3.49	1.78	1.03	0.87	1.78	3.25	4.17	2.79	2.7	3.22	3.77	2.1	1.66	1.74	2.33	4.32	41
12 - 19	3.98	0.83	0.31	0.4	0.91	4.31	1.81	0.3	0.56	0.59	1.91	2.66	2.14	1.86	1.33	3.1	27
20 - 28	0.82	0.03	.	0.01	0.09	0.75	0.33	0.02	0.07	0.1	0.16	1.15	1.23	0.67	0.4	0.73	6.6
29 - 38	0.08	0.01	.	.	.	.	.	.	.	.	.	0.05	0.11	0.05	0.03	0.03	0.37
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	9.16	3.3	1.94	2.15	3.81	10.07	8.01	5.7	6.54	6.66	7.67	7.53	6.81	5.76	5.5	9.38	100

Total Number of Valid Hours: 8749

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Athabasca Valley (AMS 7)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	2.63	1.82	1.4	2.67	2.91	4.13	4.85	3.2	2.24	2.99	3.3	2.24	1.78	1.67	1.79	2.76	42.4
6 - 11	2.44	0.46	0.25	0.63	0.94	2.81	10.95	1.33	0.55	1.32	3.15	1.1	0.54	0.63	1.64	6.37	35.12
12 - 19	0.92	0.08	.	0.14	0.45	1.5	3.19	0.28	0.06	0.18	1.5	1.89	0.92	0.99	1.03	4.61	17.73
20 - 28	0.06	.	.	0.01	0.05	0.09	0.16	0.01	.	.	0.05	0.57	1.03	0.88	0.44	0.88	4.23
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	0.29	0.08	0.1	0.03	0.5
> 38	.	.	.	.	.	.	.	.	.	.	.	.	0.01	.	.	.	0.01
Totals	6.04	2.36	1.65	3.45	4.35	8.53	19.16	4.82	2.84	4.5	8.01	5.8	4.57	4.26	5	14.66	100

Total Number of Valid Hours: 8718

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Fort Chipewyan (AMS 8)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	1.01	0.65	0.56	0.37	0.99	1.03	0.69	0.53	0.34	0.49	0.69	0.77	1.09	1.19	1.17	1.53	13.1
6 - 11	3.06	1.33	0.72	1.09	2.55	4.85	1.42	0.87	0.86	0.8	1.38	1.66	1.99	4.16	4.1	4.01	34.85
12 - 19	1.23	0.28	0.6	2.14	3.86	6.64	1.35	0.79	0.85	1.58	0.86	0.99	1.84	3.58	2.03	2.33	30.95
20 - 28	0.05	0.02	0.07	2.17	5	3.23	1.2	0.47	0.64	0.76	0.16	0.21	0.58	0.73	0.55	0.56	16.39
29 - 38	.	.	0.01	0.92	2.06	0.57	0.36	0.09	0.07	0.12	.	0.02	0.1	0.07	0.03	0.01	4.44
> 38	.	.	.	0.01	0.08	0.17	.	.	.	.	.	.	.	.	.	.	0.27
Totals	5.35	2.28	1.96	6.71	14.53	16.5	5.01	2.76	2.76	3.74	3.09	3.65	5.6	9.73	7.89	8.44	100

Total Number of Valid Hours: 8602

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Barge Landing (AMS 9)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	4.43	2.75	2.01	1.91	1.73	2.09	2.84	4.76	5.34	4.15	3.12	2.66	2.04	2.02	3.53	7.11	52.5
6 - 11	3.84	4.83	1.85	0.6	0.49	0.75	2.48	4.92	6.31	2.32	2.81	2.45	1.32	1.35	1.23	2.95	40.5
12 - 19	0.48	0.5	0.08	0.01	0.02	0.31	0.78	0.55	0.21	0.16	0.49	1.59	0.35	0.44	0.48	0.45	6.89
20 - 28	.	.	.	.	.	.	.	.	.	.	.	0.07	0.03	.	.	.	0.1
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	8.75	8.08	3.93	2.53	2.24	3.16	6.1	10.22	11.86	6.64	6.42	6.77	3.75	3.81	5.23	10.51	100

Total Number of Valid Hours: 8617

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Lower Camp - Air Quality- (AMS 11)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	2.3	1.51	1.59	1.42	1.8	2.5	2.81	1.11	0.59	0.37	0.29	0.66	1.17	3.71	5.26	4.11	31.2
6 - 11	3.67	0.9	0.55	0.29	0.53	2.45	9.39	1.65	0.59	0.31	0.58	1.17	1.42	1.46	3.2	4.86	33.04
12 - 19	3.09	0.59	0.16	0.18	0.32	2.57	7.95	0.65	0.07	0.15	0.28	1.42	2.22	1.18	1.22	2.11	24.16
20 - 28	0.87	0.17	0.23	0.07	0.06	1.4	2.77	0.02	.	.	0.06	1.04	1.77	0.94	0.5	0.17	10.06
29 - 38	0.18	.	0.01	.	.	0.32	0.45	.	.	.	.	0.18	0.24	0.06	0.01	.	1.47
> 38	.	.	.	.	.	.	0.06	.	.	.	.	.	0.01	.	.	.	0.07
Totals	10.11	3.18	2.55	1.96	2.72	9.23	23.43	3.43	1.25	0.83	1.2	4.47	6.83	7.34	10.19	11.27	100

Total Number of Valid Hours: 8654

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Millennium Mine (AMS 12)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	2.6	1.54	1.17	1.06	1.09	1.59	2.6	6.61	6.35	5.04	2.97	1.73	1.63	1.43	2.32	2.2	41.93
6 - 11	4.66	4.12	1.38	0.7	0.71	0.97	6.03	6.58	2.67	2.11	1.76	1.33	2.29	2.67	2.39	1.61	41.99
12 - 19	2.46	3.91	0.39	0.12	.	0.1	3.74	0.46	0.12	0.16	0.16	0.29	0.74	1.31	0.84	0.31	15.11
20 - 28	0.14	0.67	0.05	.	.	.	0.06	.	.	.	.	.	.	0.01	0.02	.	0.94
29 - 38	.	0.02	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.02
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	9.86	10.26	2.99	1.88	1.81	2.66	12.43	13.65	9.14	7.31	4.89	3.35	4.66	5.42	5.58	4.12	100

Total Number of Valid Hours: 8690

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Syncrude Upgrader Expansion (AMS 13)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	9.14	4.43	1.73	1.13	1.06	2.09	3.51	4.52	7.97	7.53	6.66	6.62	4.78	2.84	3.4	4.59	71.98
6 - 11	5.61	2.72	0.3	0.06	0.34	0.72	2.17	2.17	1.46	0.95	1.41	3.28	2.25	1.38	0.78	0.98	26.58
12 - 19	0.21	0.06	0.02	.	.	.	0.05	0.01	0.04	0.04	0.13	0.53	0.27	0.08	.	0.02	1.45
20 - 28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	14.96	7.21	2.05	1.19	1.4	2.81	5.73	6.7	9.46	8.51	8.2	10.42	7.3	4.29	4.18	5.59	100

Total Number of Valid Hours: 8571

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Anzac (AMS 14)
Annual summary for the year 2012
Wind Direction 20 m and Wind Speed 20 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	1.69	1.72	1.67	1.74	1.28	1.36	1.44	1.87	3.35	3.47	2.98	2.31	2.07	2.79	2.28	2.16	34.18
6 - 11	2.39	1.93	1.88	1.34	1.72	2.17	4.15	4.9	4.06	1.94	2.31	1.88	2.61	7.29	5.81	3.85	50.23
12 - 19	0.48	0.82	0.18	0.07	0.39	0.99	1.98	2.2	0.82	0.48	0.49	0.37	1.09	2.23	1.44	1.1	15.15
20 - 28	.	0.06	.	.	.	0.02	0.16	0.04	.	0.01	0.01	0.02	0.06	0.04	0.01	.	0.44
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	4.57	4.53	3.73	3.15	3.39	4.55	7.72	9	8.24	5.9	5.79	4.58	5.84	12.35	9.54	7.12	100

Total Number of Valid Hours: 8147

Total Number of Hours: 8784

Wood Buffalo Environmental Association - CNRL Horizon (AMS 15)
Annual summary for the year 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	2.77	2.22	1.3	1.08	0.79	0.96	1.32	1.89	2.85	3.36	2.52	1.49	1.29	1.44	1.87	2.49	29.64
6 - 11	5.54	6.28	2.03	0.77	0.76	0.73	1.77	3.76	8.28	6.73	4.28	2.44	1.95	1.43	1.44	1.53	49.72
12 - 19	2.05	3.36	0.37	0.15	0.32	0.38	0.61	1.05	1.97	1.19	1.96	0.92	1.03	1.3	0.87	0.74	18.26
20 - 28	0.49	0.31	0.02	0.01	.	.	0.02	0.1	0.05	.	0.06	0.09	0.13	0.39	0.37	0.23	2.27
29 - 38	0.02	0.05	.	.	.	.	.	.	.	.	.	.	.	0.01	.	0.03	0.11
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	10.87	12.22	3.72	2	1.87	2.07	3.72	6.81	13.15	11.28	8.81	4.93	4.39	4.58	4.54	5.03	100

Total Number of Valid Hours: 8739

Total Number of Hours: 8784

Wood Buffalo Environmental Association - Albian Muskeg River (AMS 16)
Annual summary for the year 2012
Wind Direction 20 m and Wind Speed 20 m (km/hr)

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.16	0.15	0.16	0.31	0.36	0.64	0.78	1.28	5.17	7.96	4.5	1.68	0.7	0.46	0.31	0.14	24.76
6 - 11	0.81	0.76	0.93	1.31	1.69	1.52	1.3	1.58	3.33	9.33	10.46	4.41	1.9	1.43	1.23	1.06	43.04
12 - 19	1.23	2	2.58	4.58	2.43	0.38	0.26	0.76	1.21	1.86	1.27	1.21	2.49	1.62	0.83	0.99	25.7
20 - 28	0.26	0.4	0.71	2.38	0.28	0.01	.	0.02	0.09	0.09	.	.	0.44	0.59	0.54	0.36	6.18
29 - 38	.	.	0.03	0.09	.	.	.	.	.	.	.	.	0.03	0.02	0.08	0.03	0.3
> 38	.	.	.	0.01	.	.	.	.	.	.	.	.	.	.	0.01	.	0.02
Totals	2.46	3.31	4.42	8.69	4.75	2.55	2.35	3.64	9.79	19.25	16.23	7.3	5.56	4.12	3	2.58	100

Total Number of Valid Hours: 8690

Total Number of Hours: 8784

**Wood Buffalo Environmental Association - Portable (AMS 101) Surmont
 Summary Jan 1 - Mar 31, 2012
 Wind Direction 10 m and Wind Speed 10 m (km/hr)**

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	0.28	0.46	0.69	0.74	0.79	0.55	0.88	0.46	0.42	0.32	0.37	0.28	0.14	0.28	0.18	0.18	7.03
6 - 11	3.14	2.22	1.8	1.02	0.6	1.2	2.13	2.82	2.96	2.45	1.76	1.8	1.8	1.29	1.06	1.62	29.68
12 - 19	5.18	1.43	0.42	0.37	0.18	0.83	1.39	1.85	2.5	3.28	3.7	3.24	4.39	6.98	4.72	4.44	44.89
20 - 28	0.37	0.09	.	.	.	0.05	0.42	0.23	0.55	1.06	0.83	1.66	5.83	3.05	1.2	1.11	16.46
29 - 38	.	.	.	.	.	.	.	.	0.14	0.23	0.28	0.23	0.55	0.37	.	0.05	1.85
> 38	.	.	.	.	.	.	.	.	.	.	.	.	0.09	.	.	.	0.09
Totals	8.97	4.21	2.91	2.13	1.57	2.64	4.81	5.36	6.56	7.35	6.93	7.21	12.81	11.97	7.17	7.4	100

Total Number of Valid Hours: 2163

Total Number of Hours: 2184

**Wood Buffalo Environmental Association - Portable (AMS 101) Conklin
 Summary May 5 - Oct 10, 2012
 Wind Direction 10 m and Wind Speed 10 m (km/hr)**

Percentage Frequency Distribution of Wind

Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	2.2	1.91	1.96	1.67	2.09	1.46	1.4	2.04	2.96	6.46	6.99	5.21	3.73	4.08	5.08	3.07	52.3
6 - 11	1.48	1.09	1.22	1.43	2.3	1.38	0.64	0.64	0.79	3.68	9.98	3.28	4.34	4.26	2.86	1.96	41.32
12 - 19	0.03	0.03	0.03	0.26	0.79	0.4	0.05	0.19	0.05	0.85	2.51	0.29	0.32	0.32	0.16	0.03	6.3
20 - 28	.	.	.	.	.	.	.	.	.	.	0.08	.	.	.	.	.	0.08
29 - 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	3.71	3.02	3.2	3.36	5.19	3.23	2.09	2.86	3.81	10.98	19.56	8.79	8.39	8.66	8.1	5.06	100

Total Number of Valid Hours: 3778

Total Number of Hours: 3816

**Wood Buffalo Environmental Association - Portable (AMS 101) Christina Lake
Summary Oct 15 - Dec 31, 2012
Wind Direction 10 m and Wind Speed 10 m (km/hr)**

Percentage Frequency Distribution of Wind

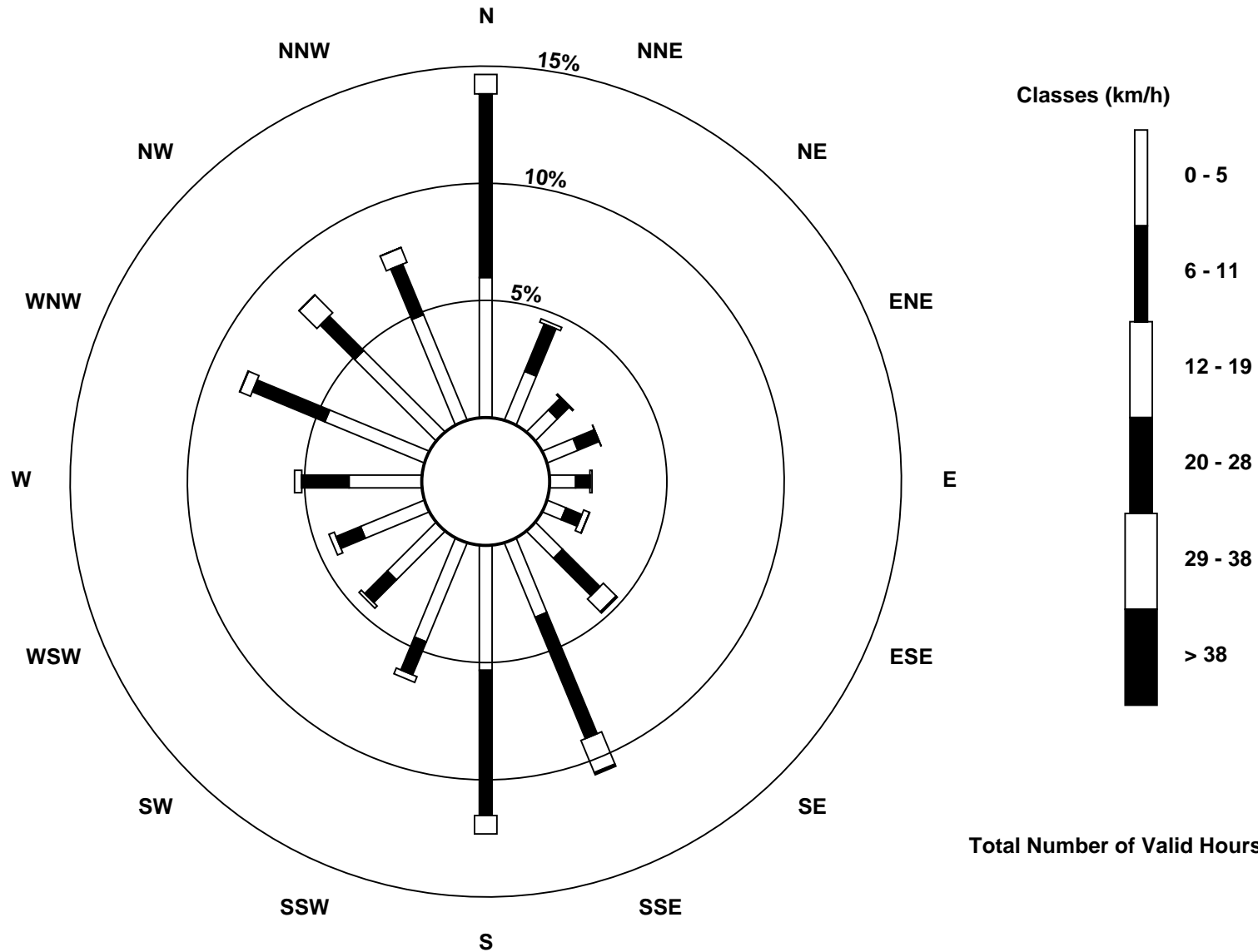
Speed	Wind Direction																Totals
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
0 - 5	3.85	3.9	2.28	1.9	0.92	0.7	1.25	1.08	1.46	2.33	2.65	1.95	2.06	2.55	4.01	2.82	35.7
6 - 11	2.55	3.25	4.33	2.98	1.14	0.92	1.41	2.71	2.98	2.82	4.88	3.09	3.68	1.08	3.36	2.55	43.72
12 - 19	1.35	1.3	0.43	1.41	2.17	0.54	2.06	1.84	1.3	1.25	1.08	.	0.11	0.16	1.03	1.3	17.33
20 - 28	.	.	.	0.05	1.14	0.81	0.7	.	.	.	0.11	.	.	.	0.05	0.22	3.09
29 - 38	.	.	.	.	.	0.16	.	.	.	.	.	.	.	.	.	.	0.16
> 38	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Totals	7.75	8.45	7.04	6.34	5.36	3.14	5.42	5.63	5.74	6.39	8.72	5.04	5.85	3.79	8.45	6.88	100

Total Number of Valid Hours: 1846

Total Number of Hours: 1872

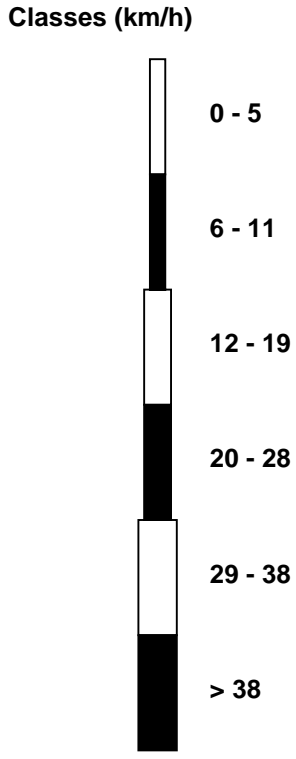
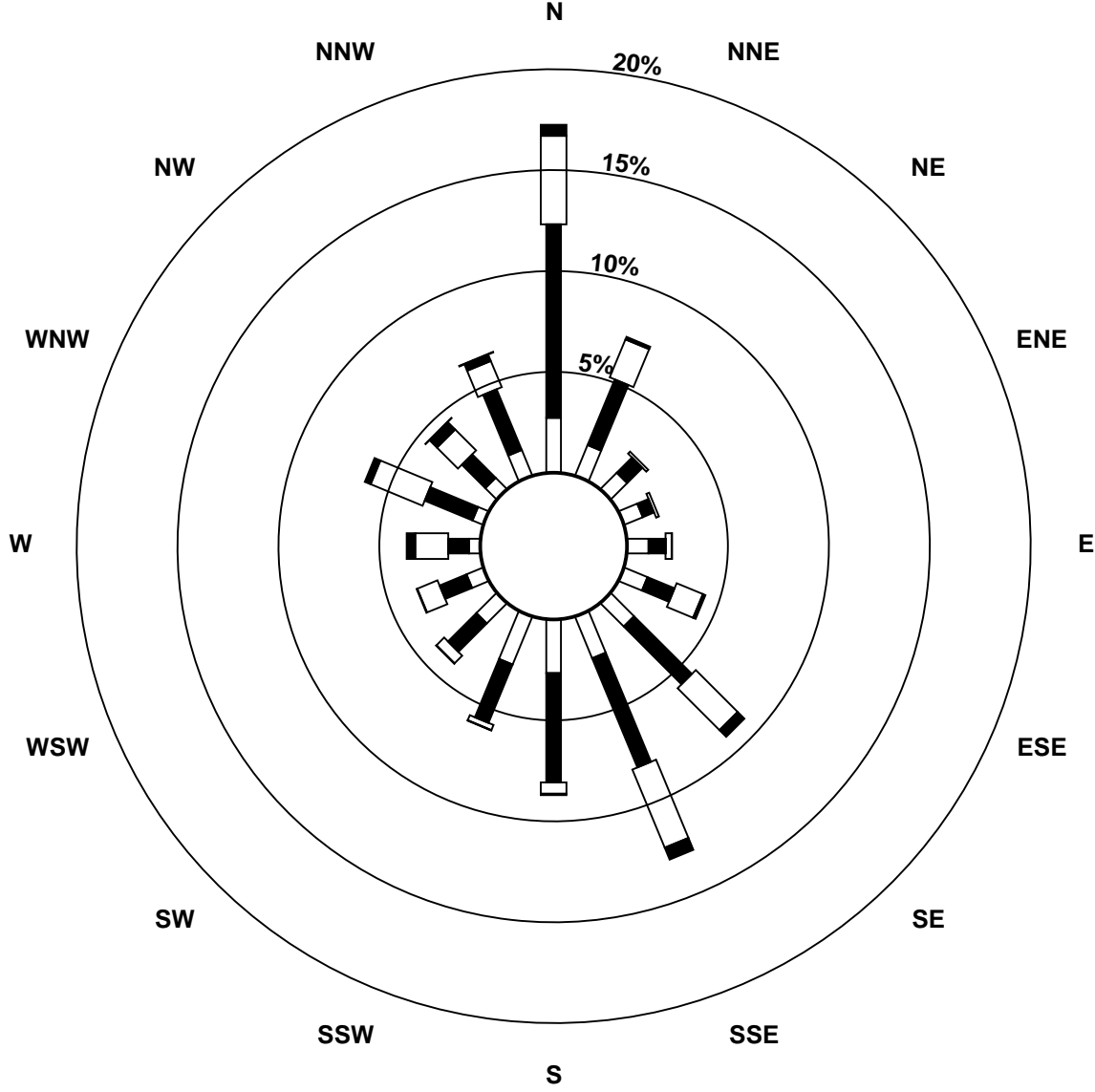
**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
Fort McKay (AMS 1)**



**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

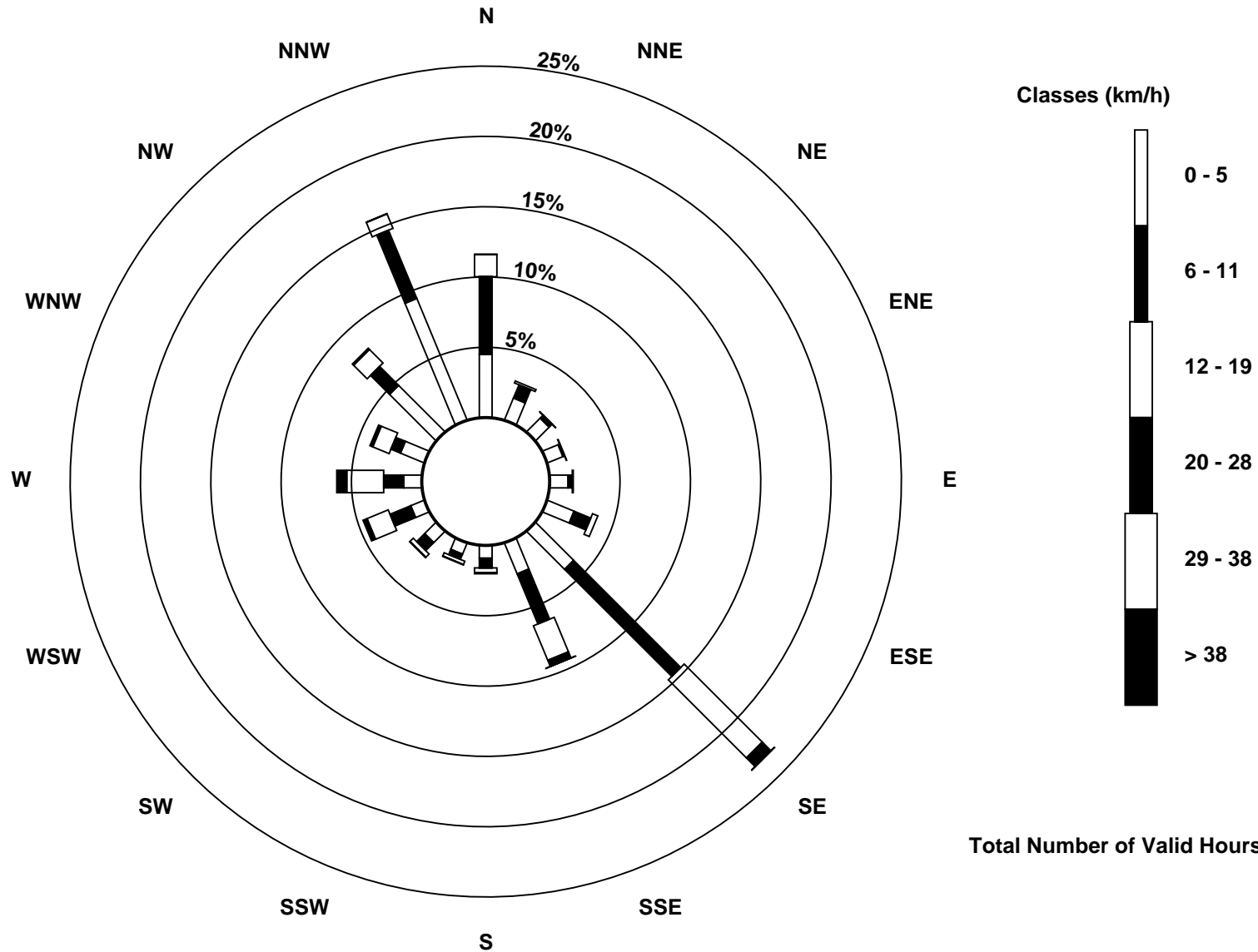
**Wind Speed (WS) - km/h
Mildred Lake (AMS 2)**



Total Number of Valid Hours: 8748

Wood Buffalo Environmental Association
Annual Wind Rose 2012

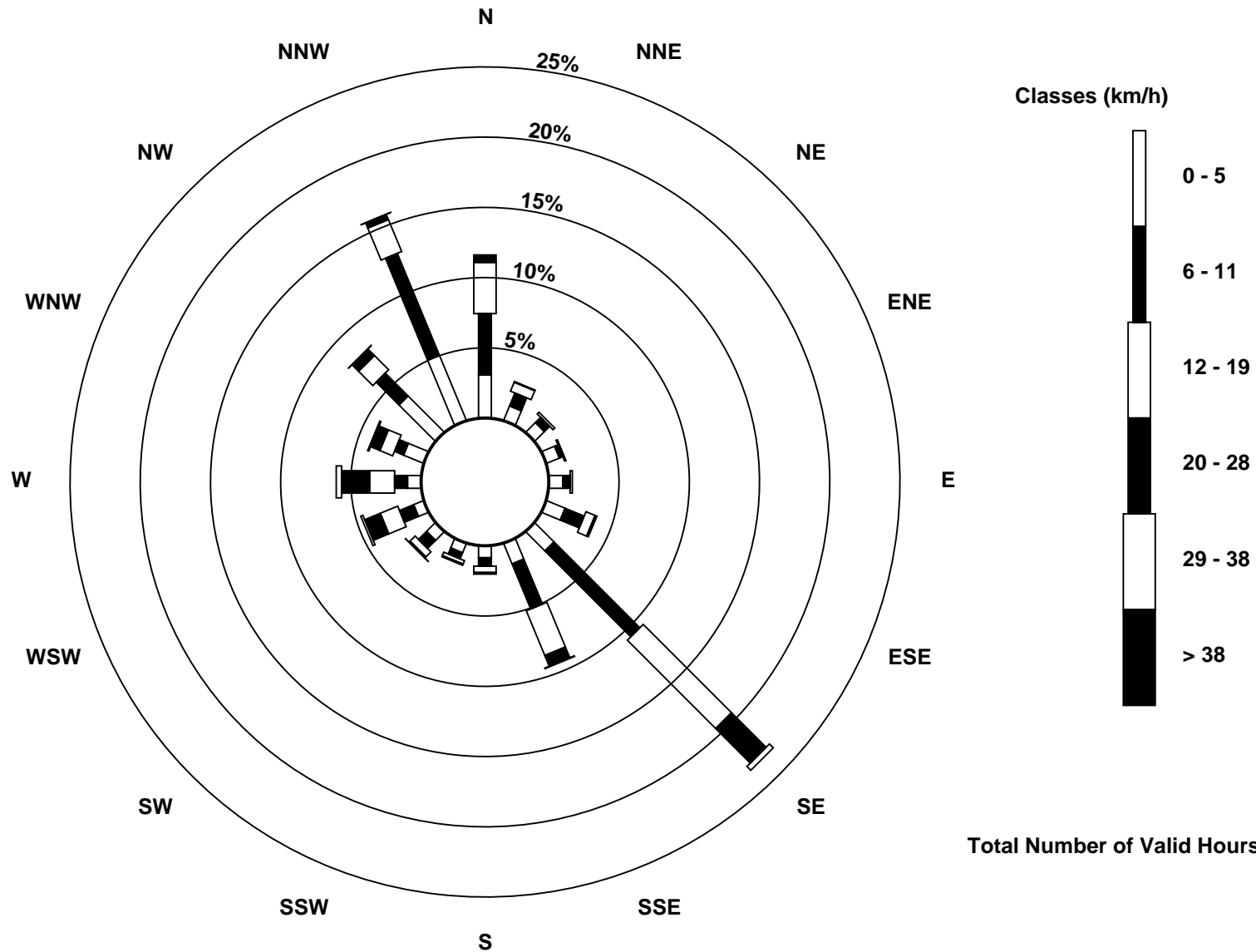
Wind Speed 20 m (WS20m) - km/h
Lower Camp Met Tower (AMS 3)



Total Number of Valid Hours: 8729

**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

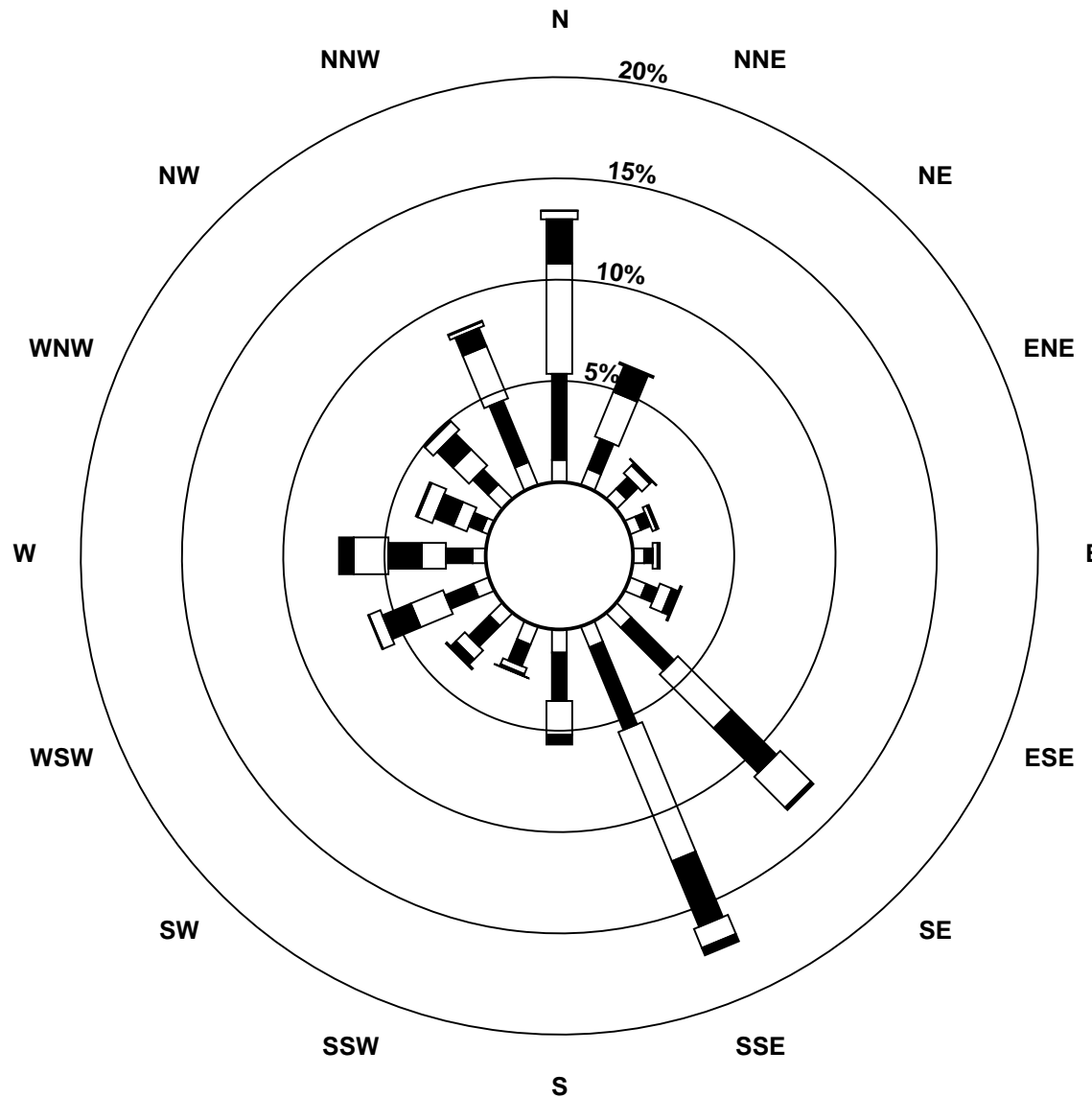
**Wind Speed 45 m (WS45m) - km/h
Lower Camp Met Tower (AMS 3)**



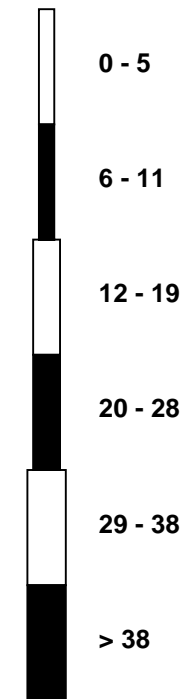
Total Number of Valid Hours: 8728

Wood Buffalo Environmental Association
Annual Wind Rose 2012

Wind Speed 100 m (WS100m) - km/h
Lower Camp Met Tower (AMS 3)



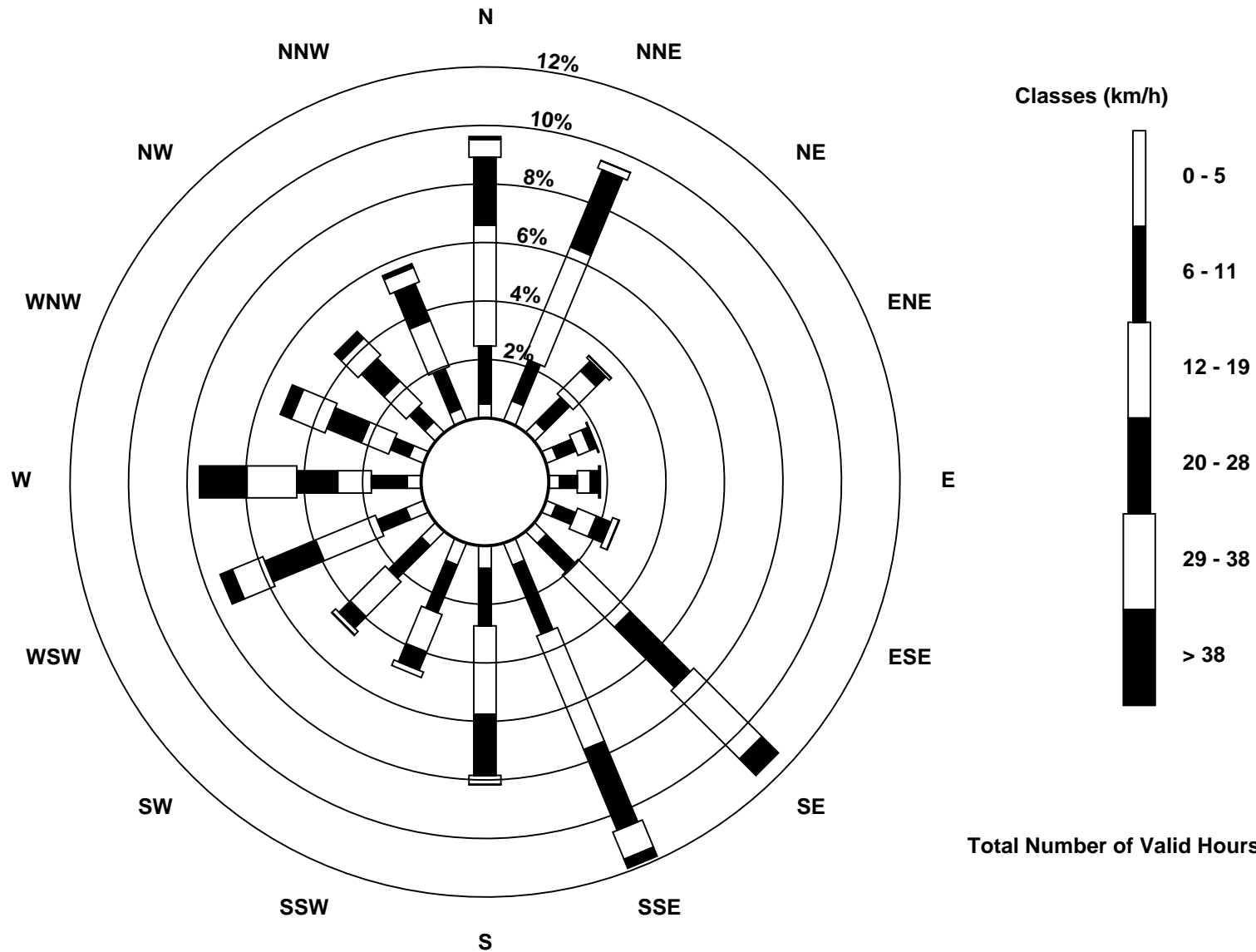
Classes (km/h)



Total Number of Valid Hours: 8611

Wood Buffalo Environmental Association
Annual Wind Rose 2012

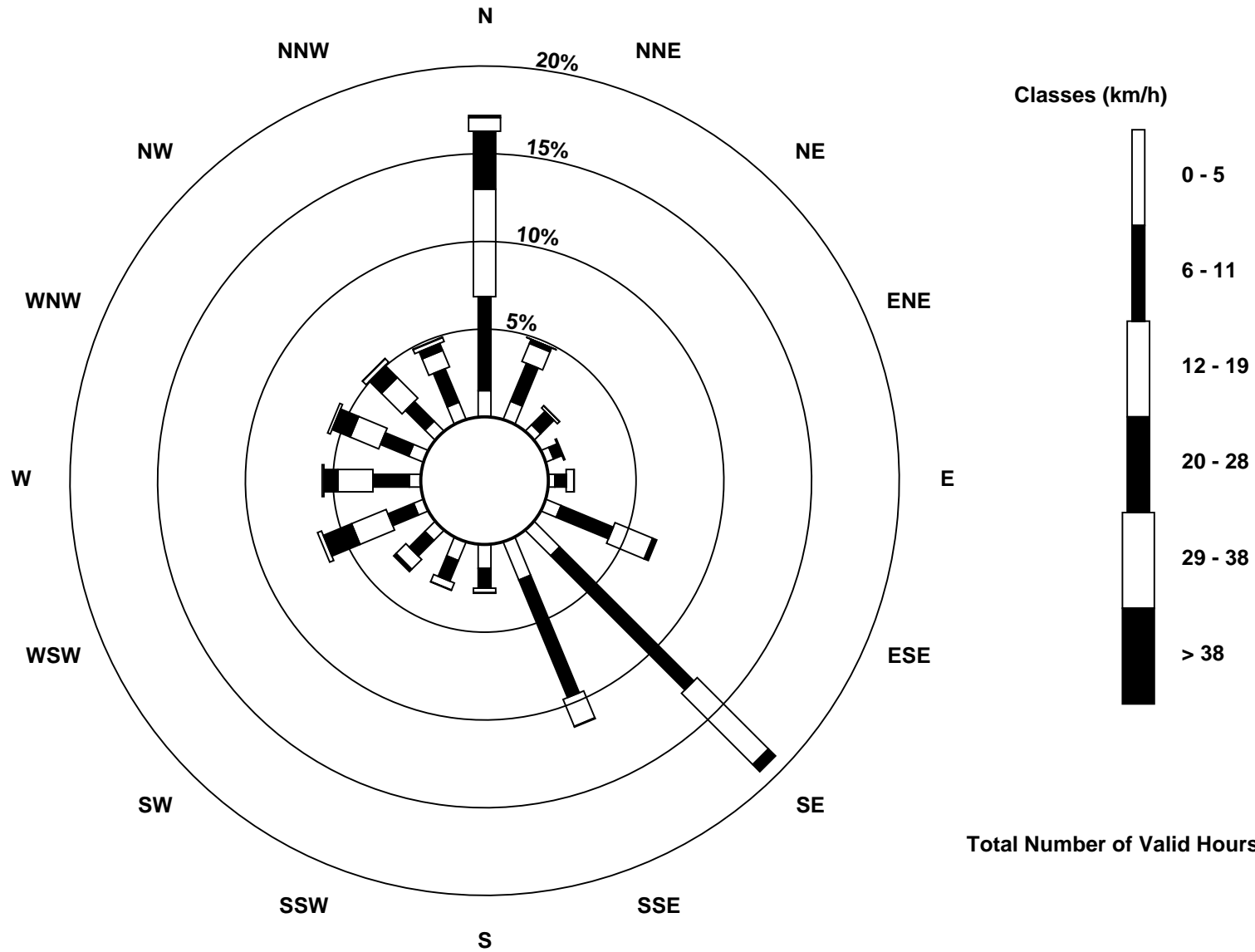
Wind Speed 167 m (WS167m) - km/h
Lower Camp Met Tower (AMS 3)



Total Number of Valid Hours: 8451

**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

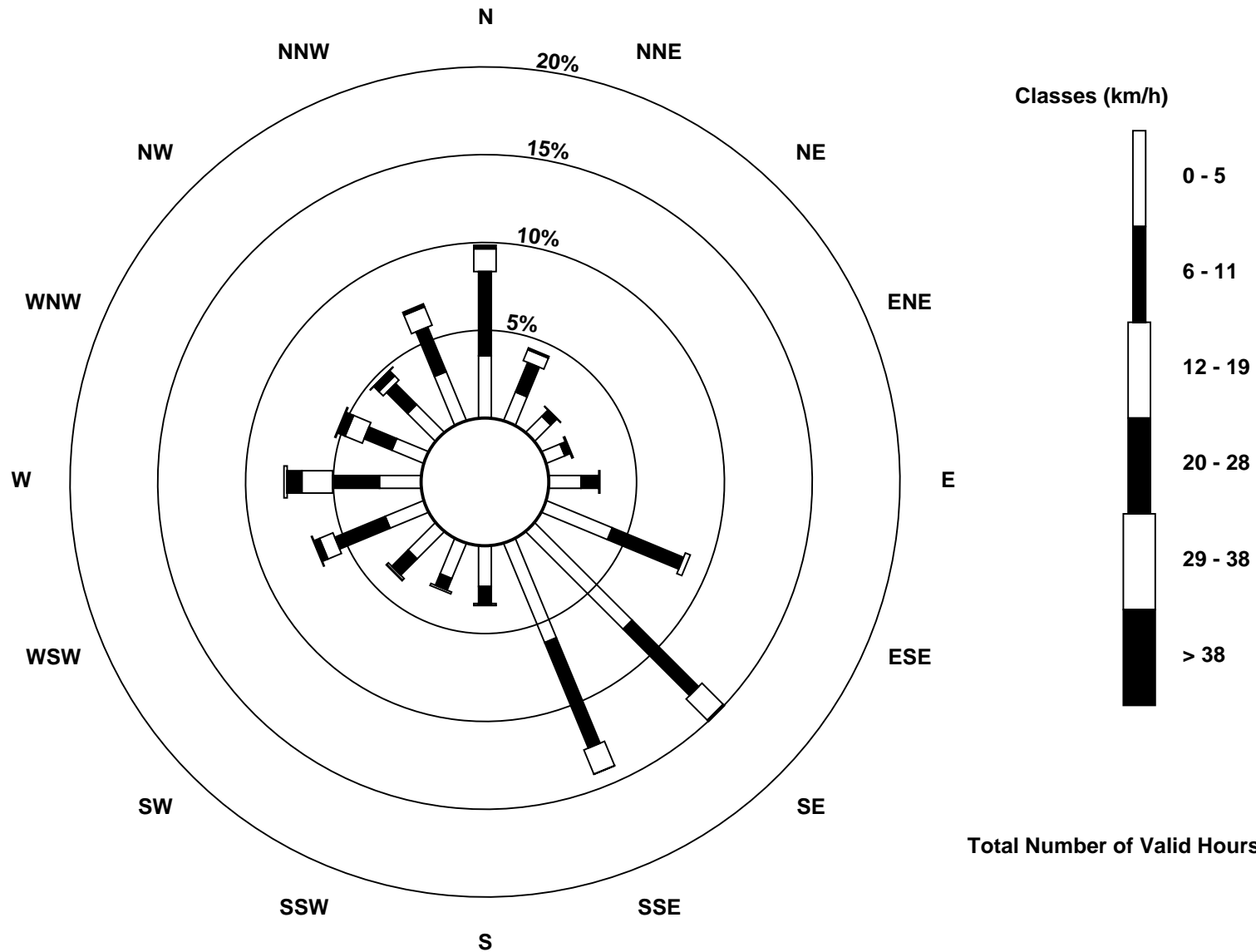
**Wind Speed (WS) - km/h
Buffalo Viewpoint (AMS 4)**



Total Number of Valid Hours: 8672

Wood Buffalo Environmental Association
Annual Wind Rose 2012

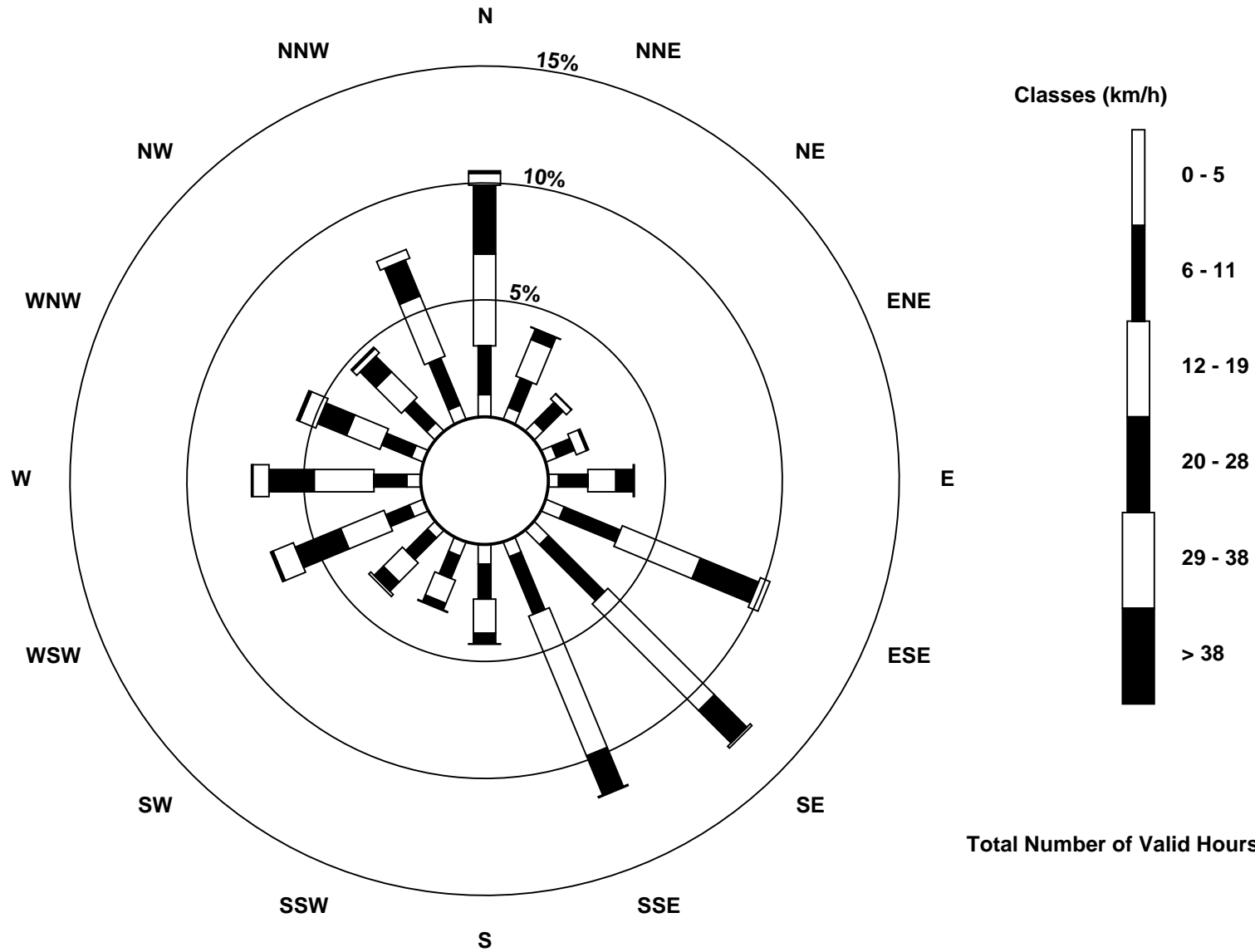
Wind Speed 20 m (WS20m) - km/h
Mannix (AMS 5)



Total Number of Valid Hours: 8291

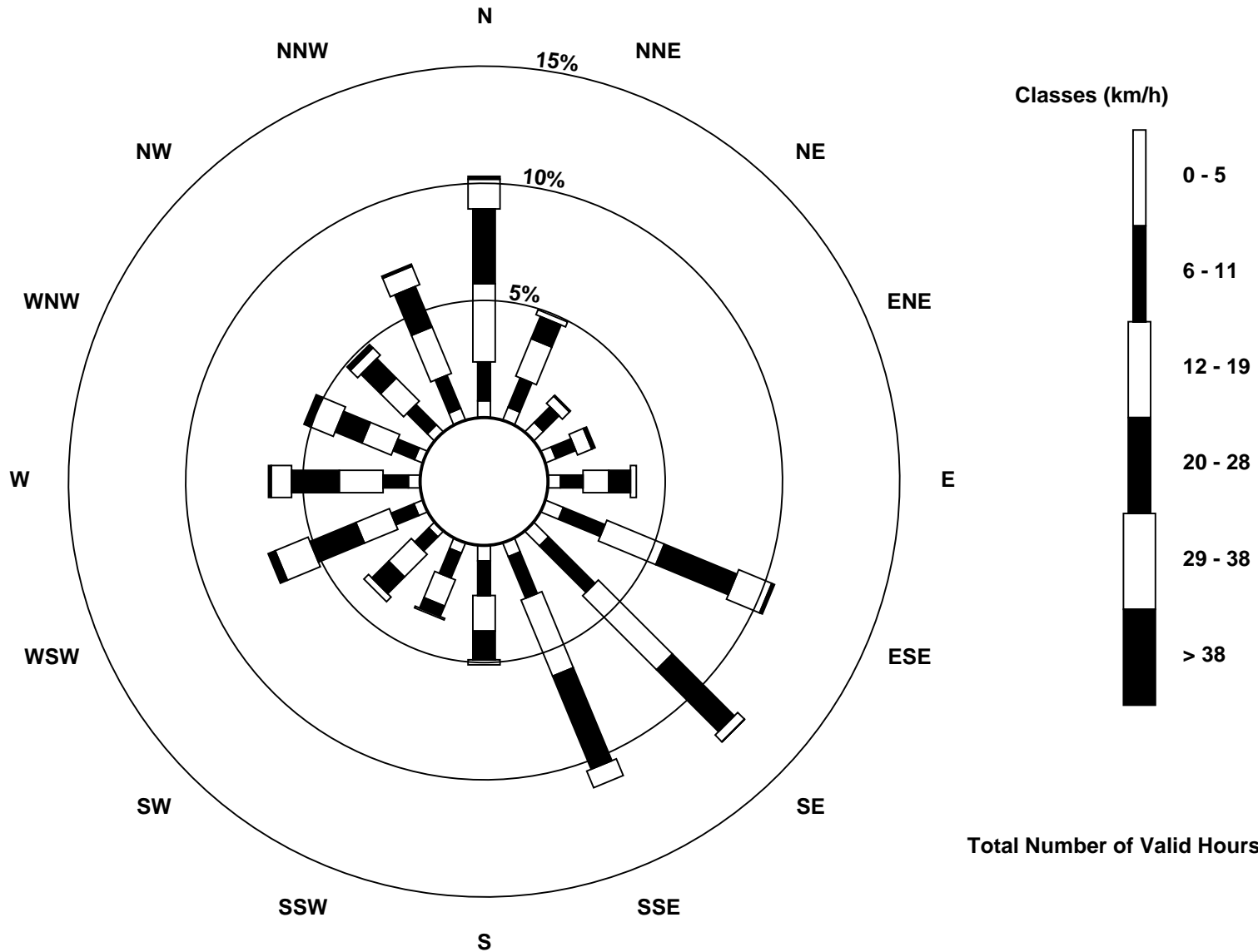
Wood Buffalo Environmental Association
Annual Wind Rose 2012

Wind Speed 45 m (WS45m) - km/h
Mannix (AMS 5)



**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

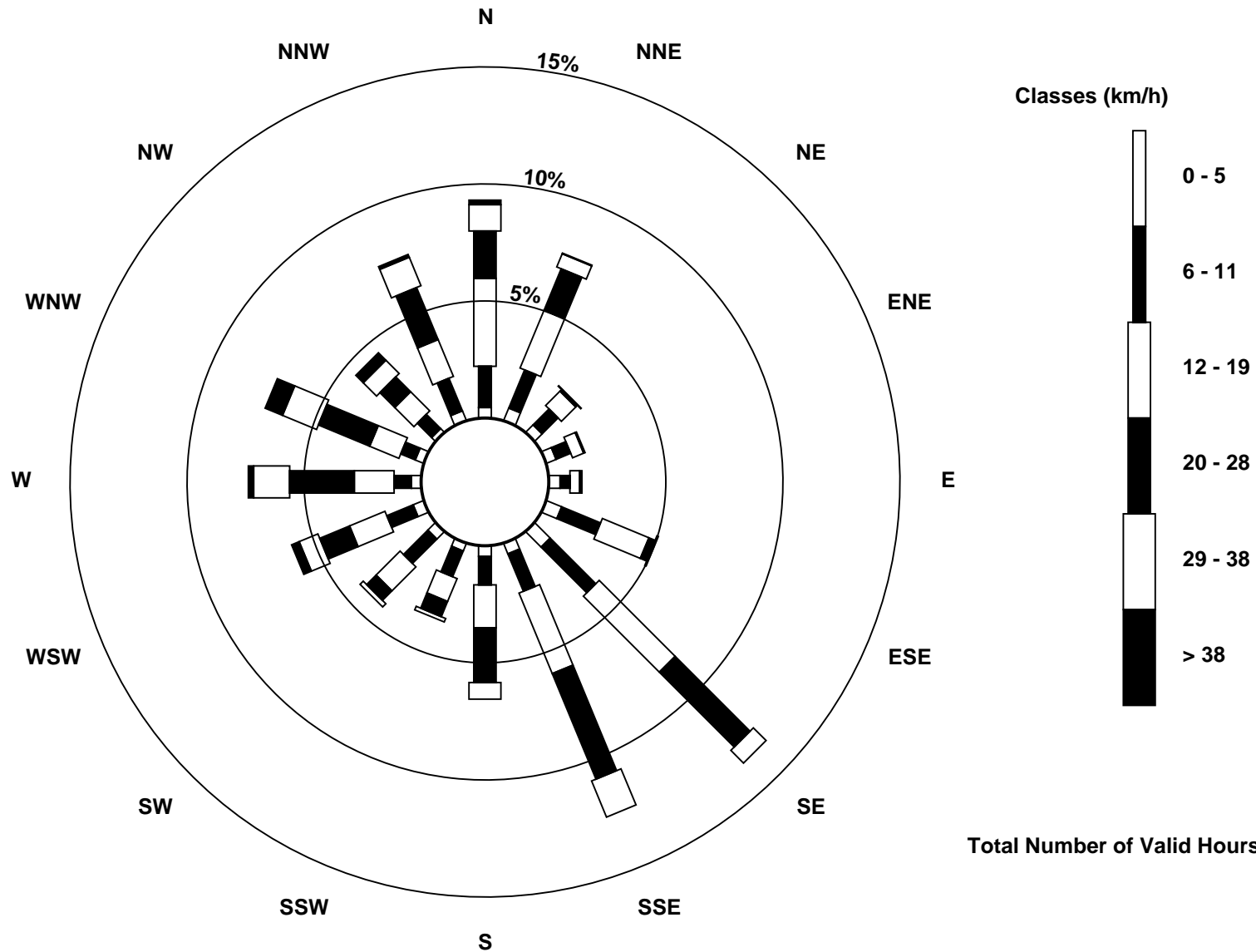
**Wind Speed 75 m (WS75m) - km/h
Mannix (AMS 5)**



Total Number of Valid Hours: 7914

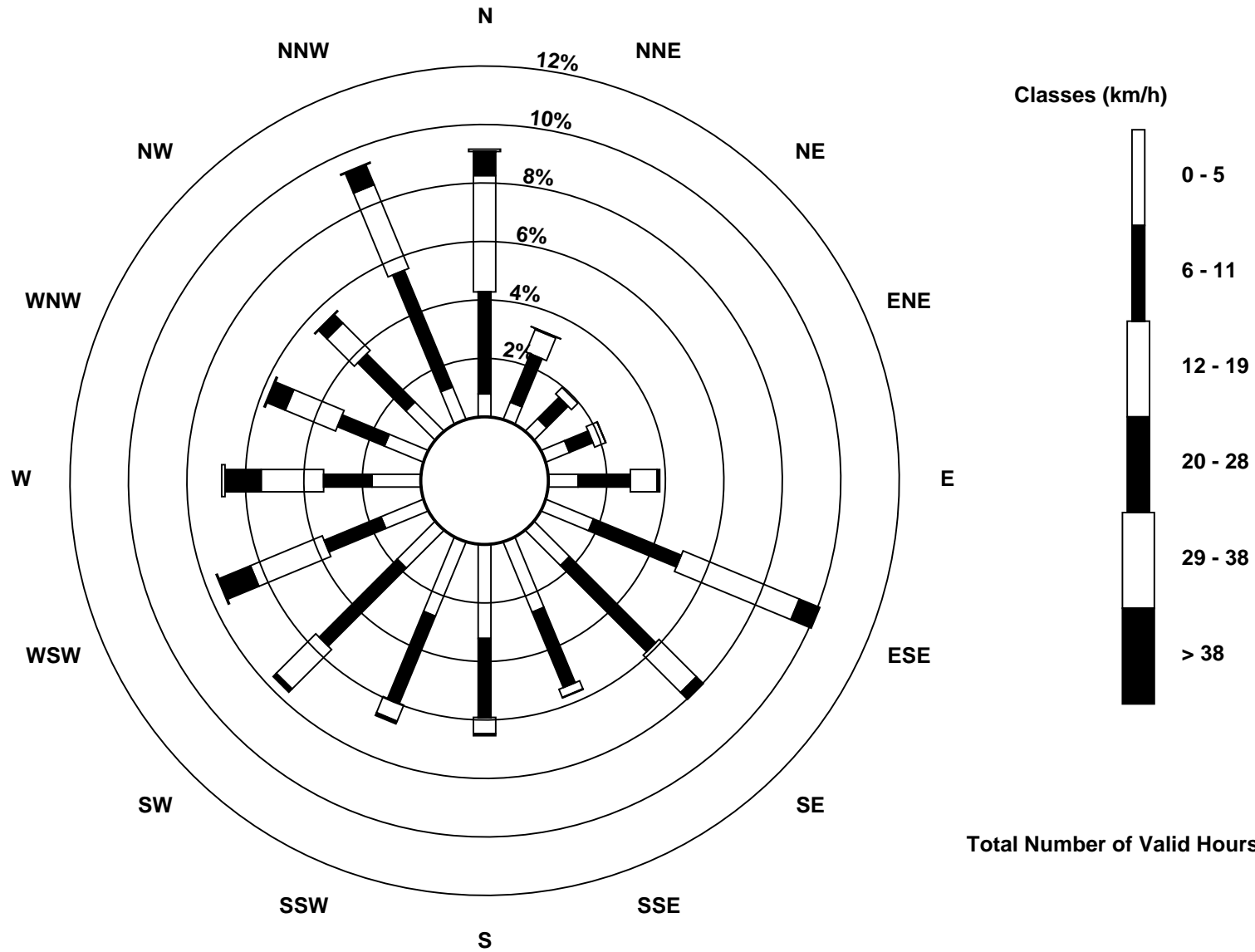
Wood Buffalo Environmental Association
Annual Wind Rose 2012

Wind Speed 90 m (WS90m) - km/h
Mannix (AMS 5)



Wood Buffalo Environmental Association
Annual Wind Rose 2012

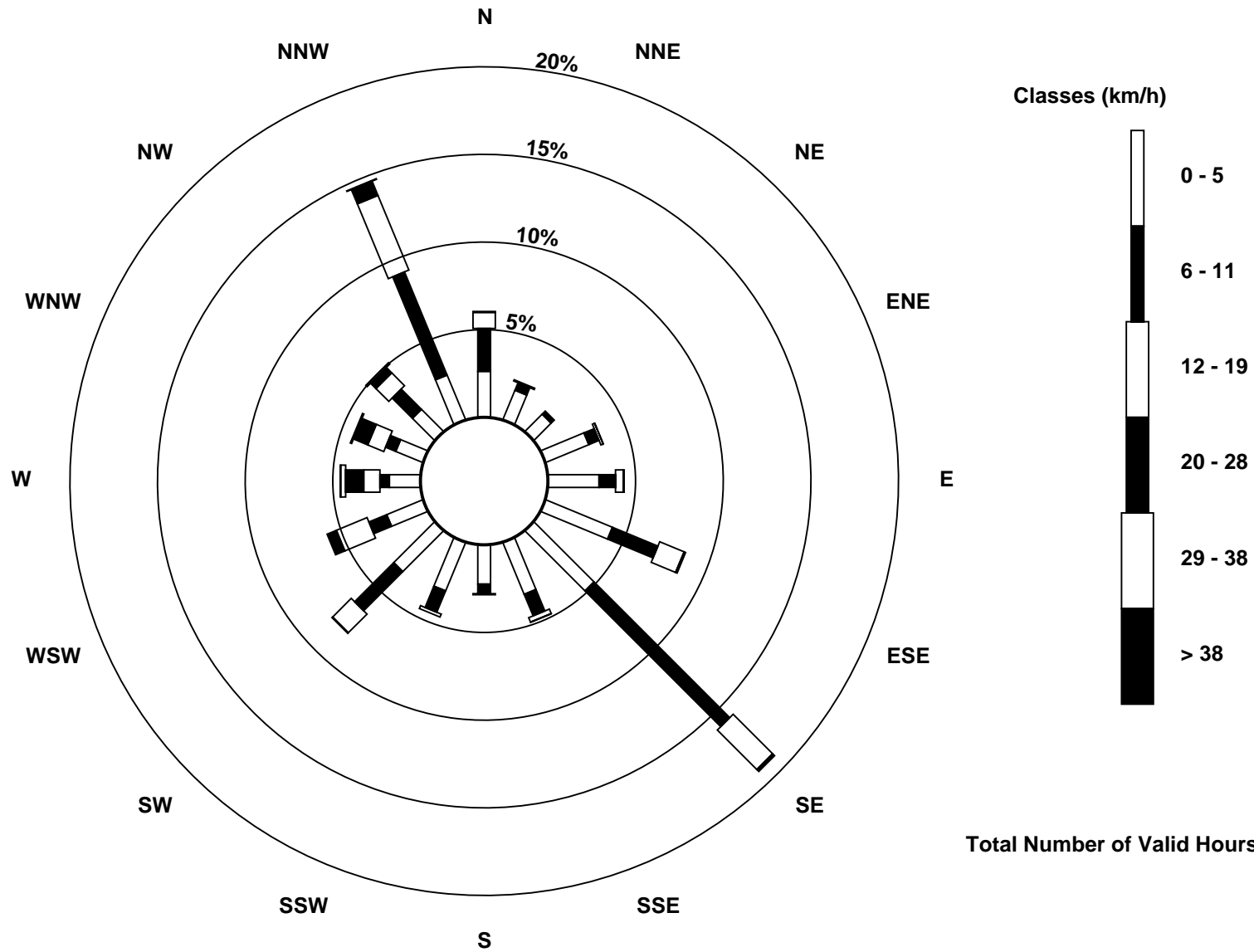
Wind Speed (WS) - km/h
Patricia McInnes (AMS 6)



Total Number of Valid Hours: 8749

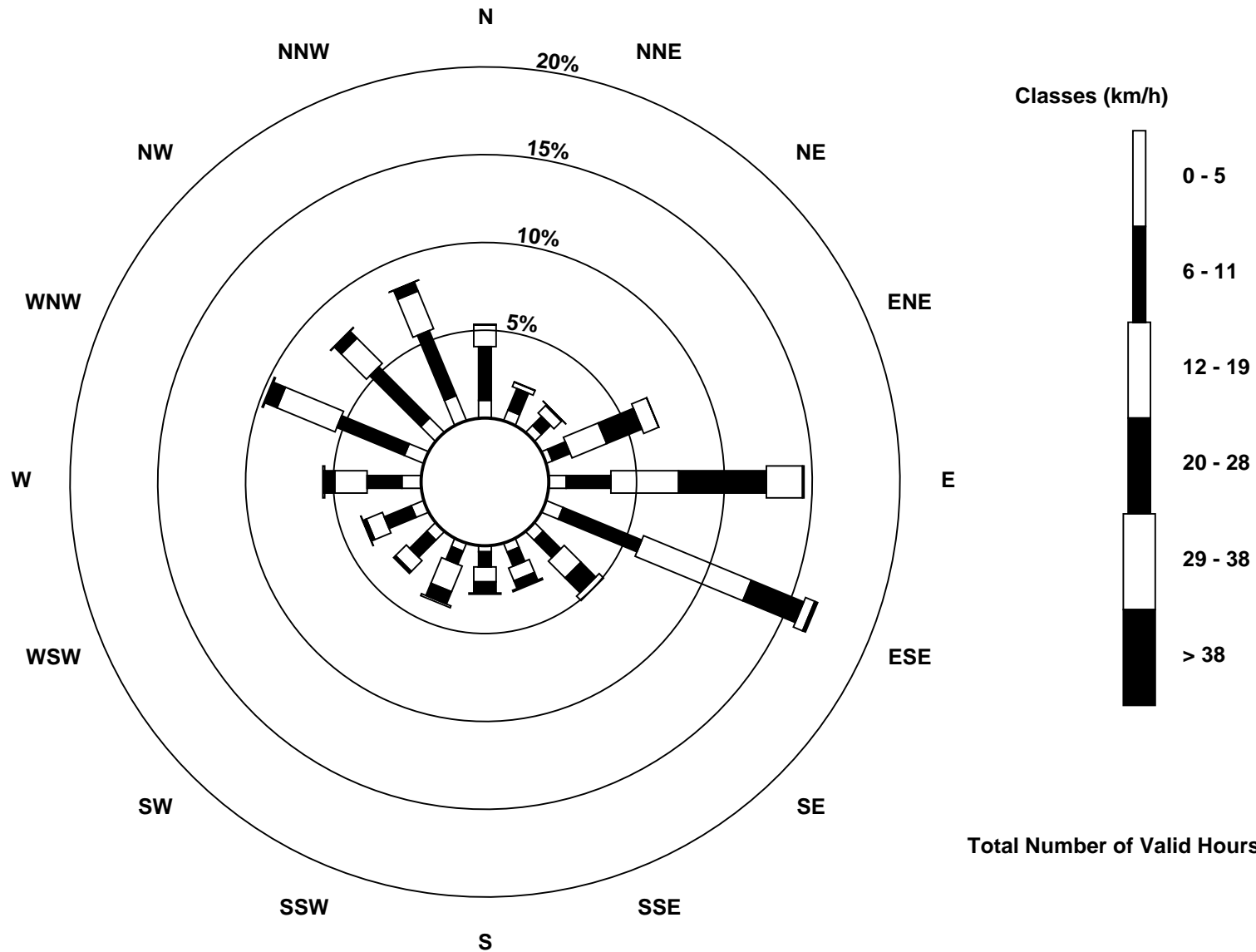
**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
Athabasca Valley (AMS 7)**



**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

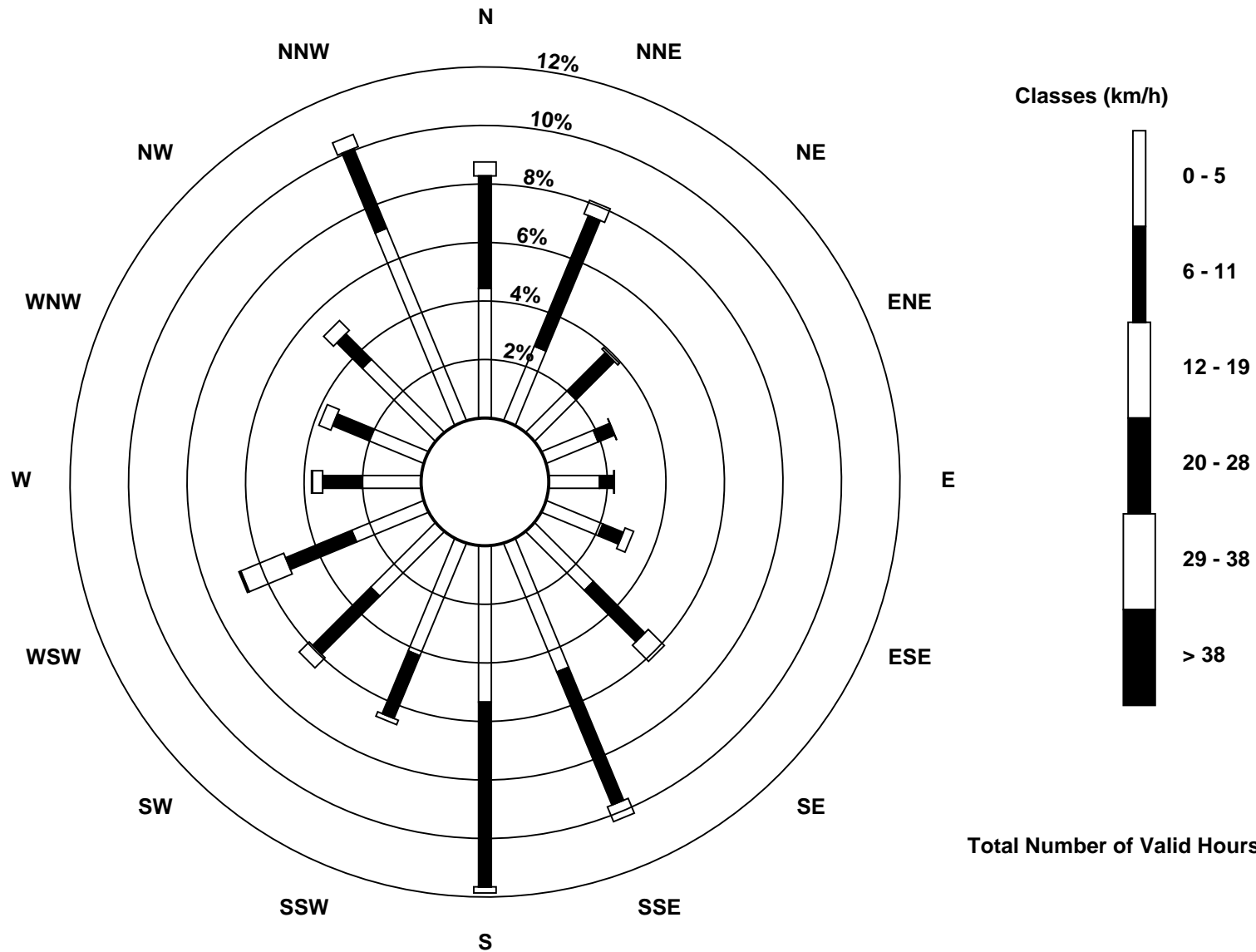
**Wind Speed (WS) - km/h
Fort Chipeywan (AMS 8)**



Total Number of Valid Hours: 8602

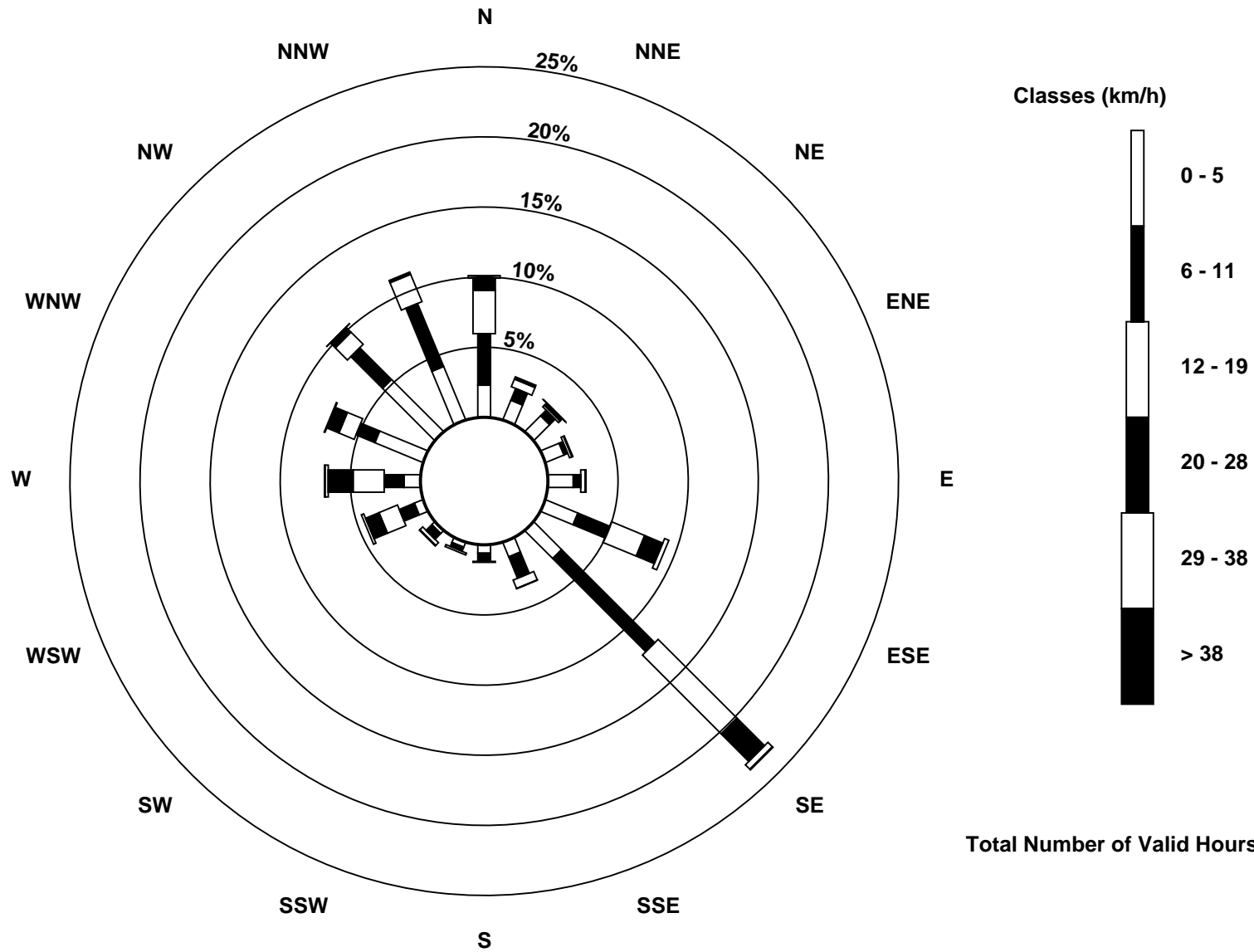
**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
Barge Landing (AMS 9)**



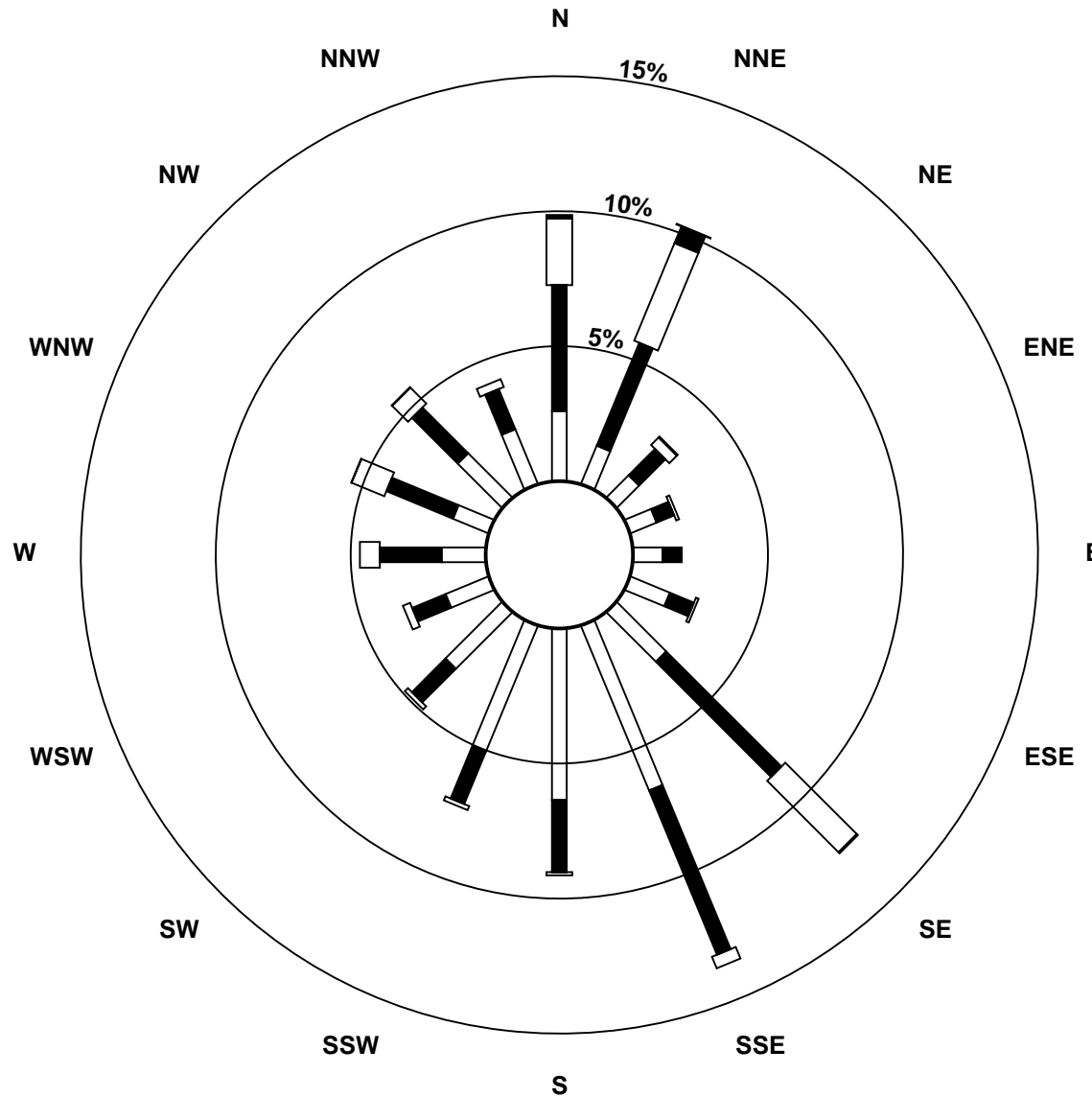
Wood Buffalo Environmental Association
Annual Wind Rose 2012

Wind Speed (WS) - km/h
Lower Camp (AMS 11)

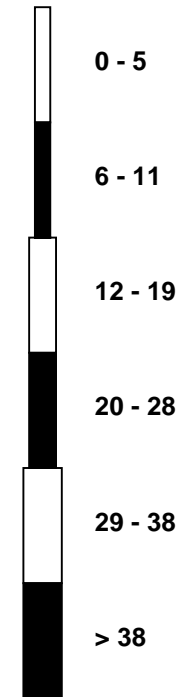


**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
Millennium (AMS 12)**



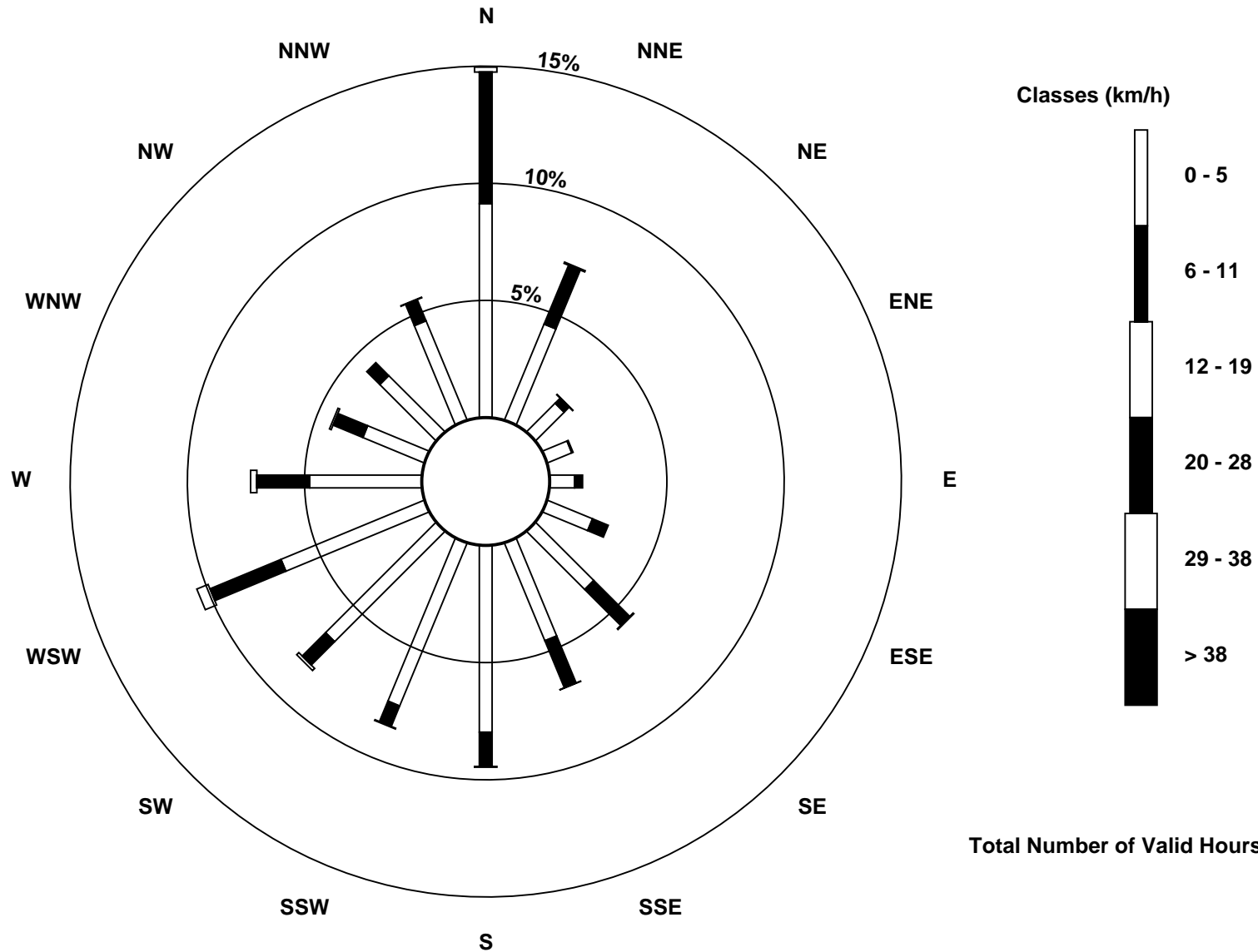
Classes (km/h)



Total Number of Valid Hours: 8690

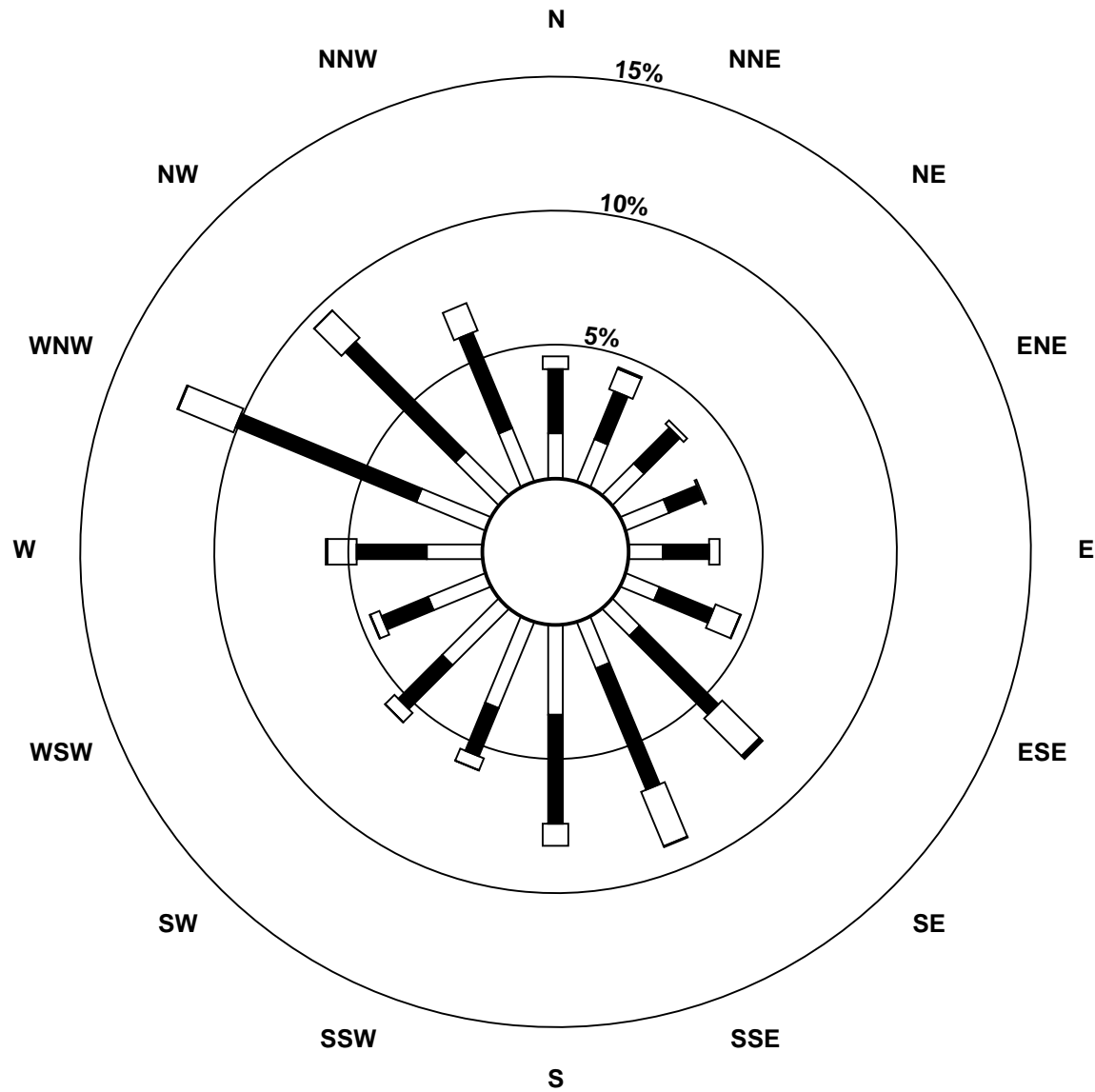
**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
Syncrude UE-1 (AMS 13)**

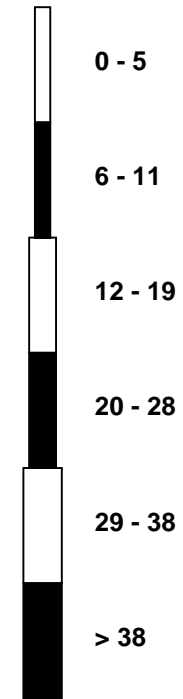


**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
Anzac (AMS 14)**



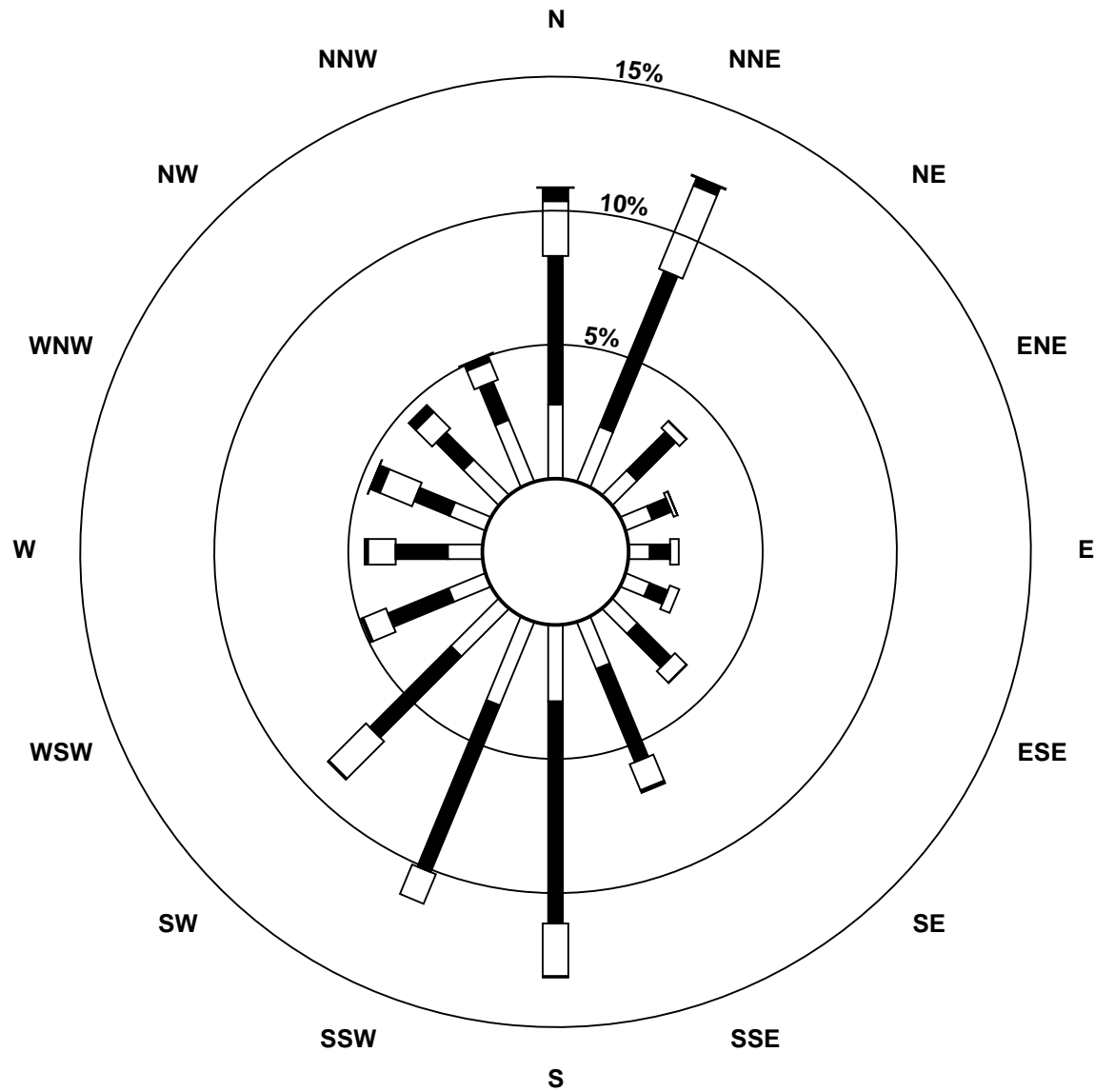
Classes (km/h)



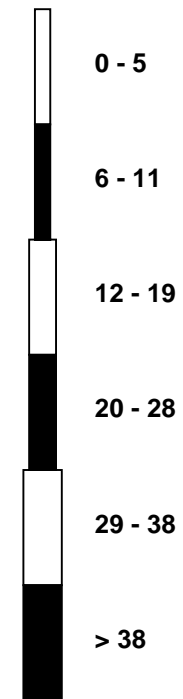
Total Number of Valid Hours: 8147

**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

**Wind Speed (WS) - km/h
CNRL Horizon (AMS 15)**



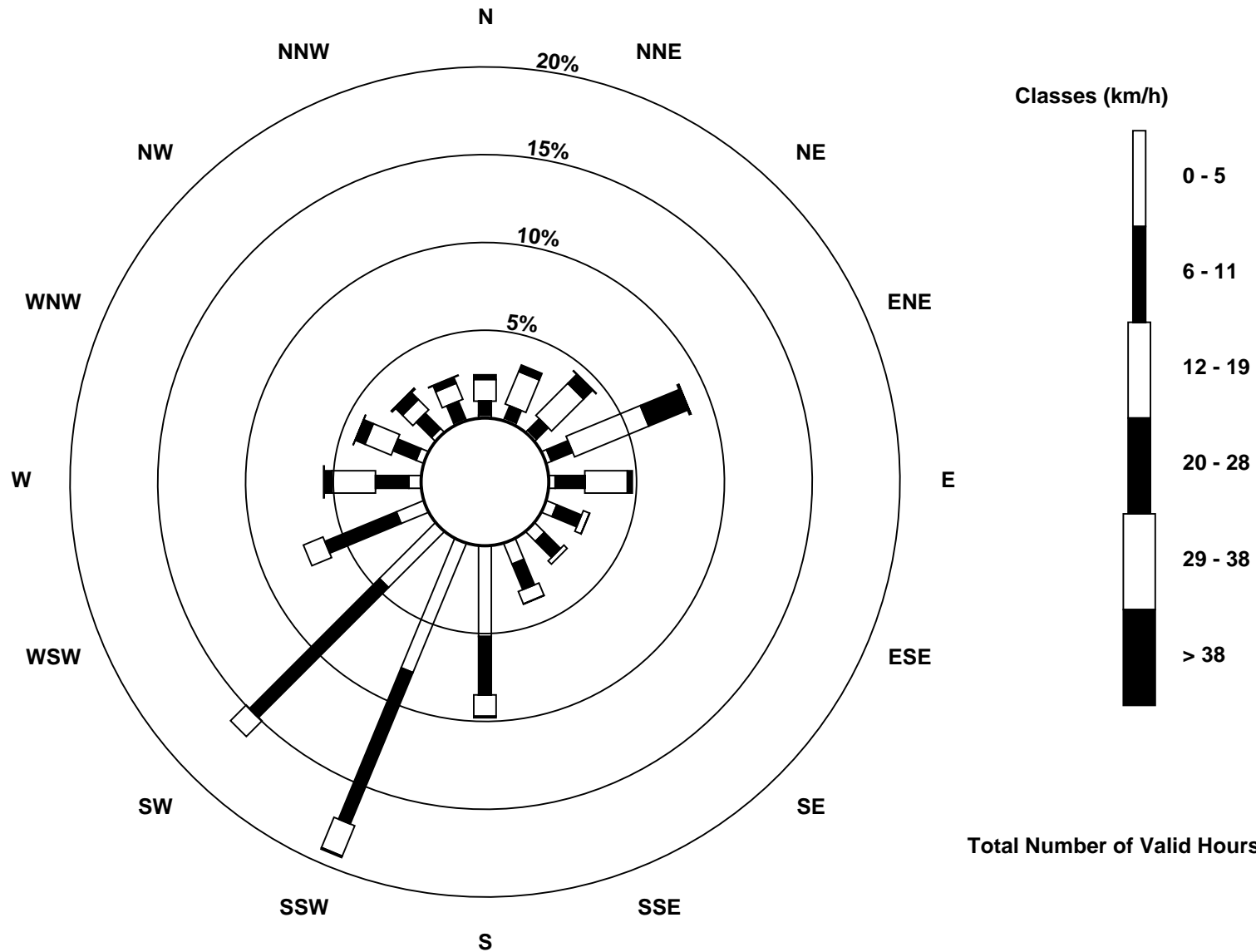
Classes (km/h)



Total Number of Valid Hours: 8739

**Wood Buffalo Environmental Association
Annual Wind Rose 2012**

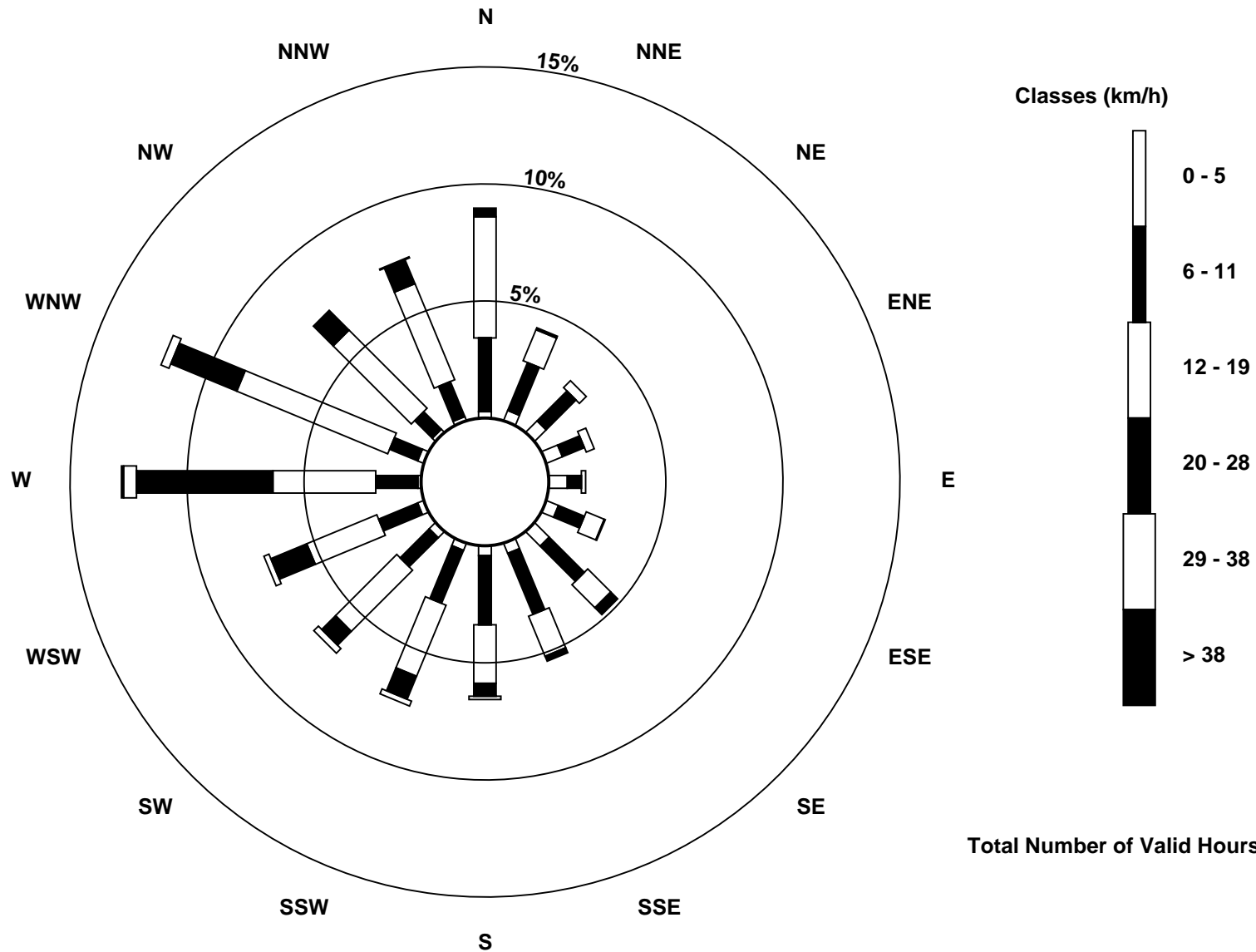
**Wind Speed (WS) - km/h
Albian Muskeg River (AMS 16)**



Total Number of Valid Hours: 8690

Wood Buffalo Environmental Association
 Wind Rose Jan 1 - Mar 31, 2012

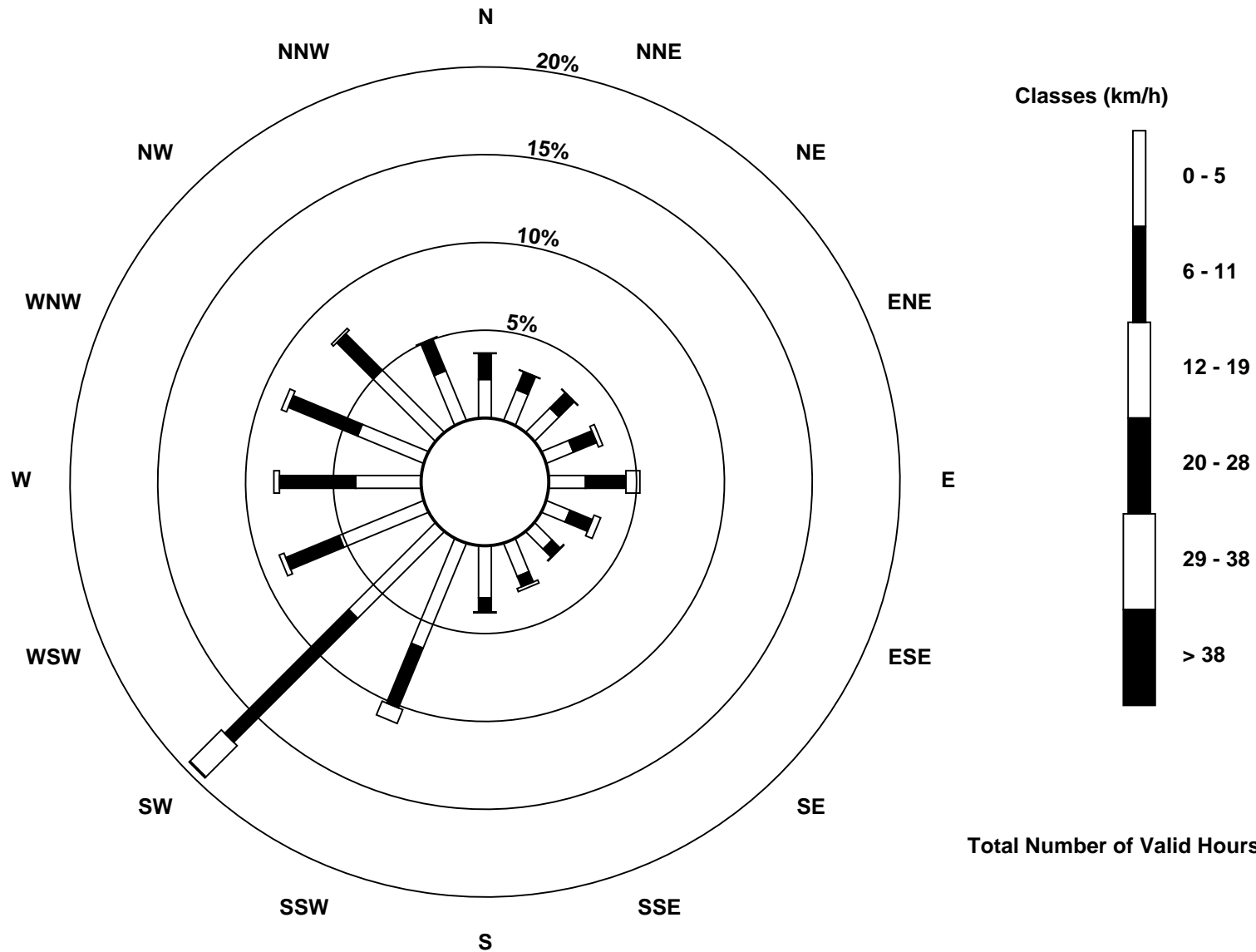
Wind Speed (WS) - km/h
 AMS 101 Portable (AMS101) Surmont



Total Number of Valid Hours: 2163

**Wood Buffalo Environmental Association
Wind Rose May 5 - Oct 10, 2012**

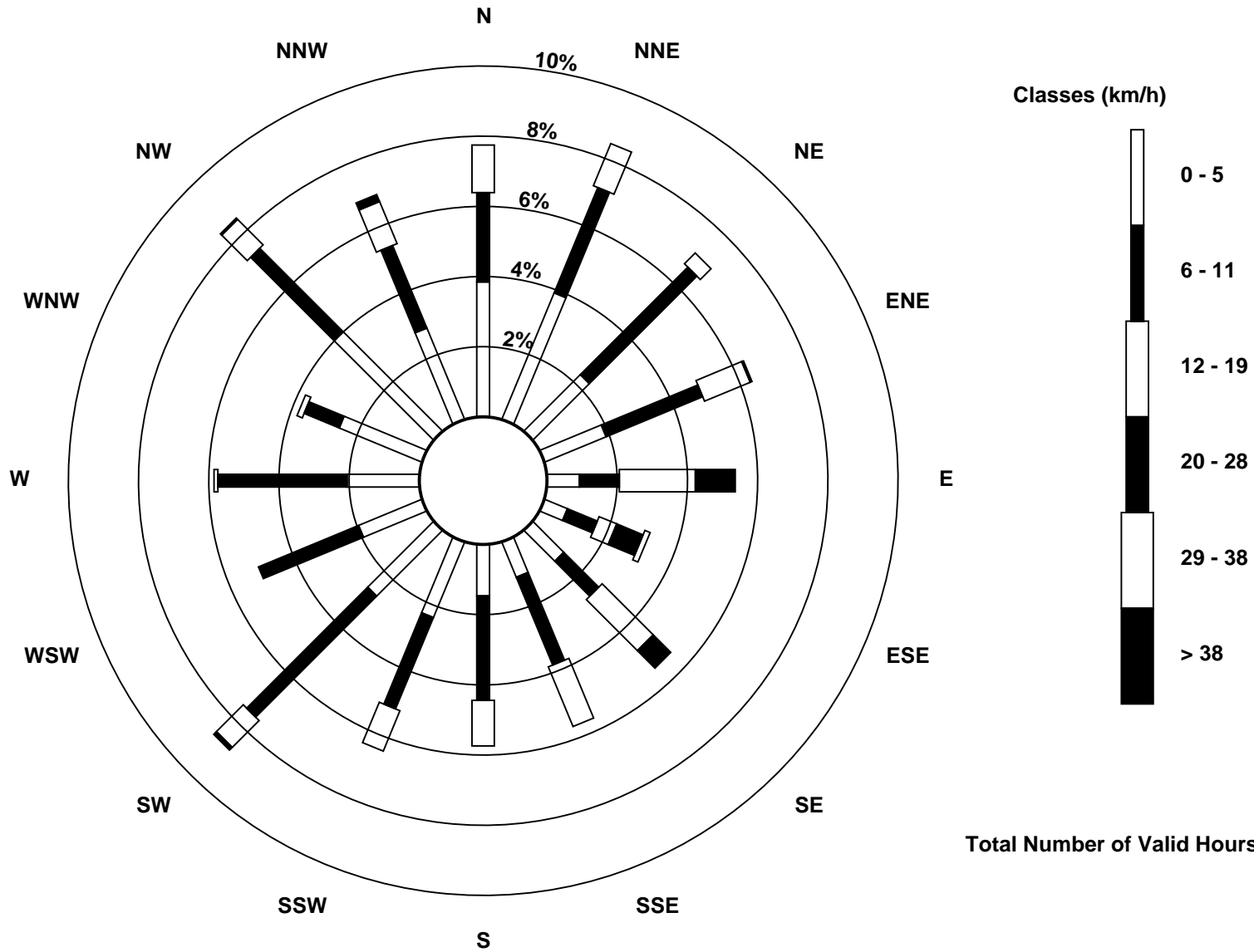
**Wind Speed (WS) - km/h
AMS 101 Portable (AMS101) Conklin**



Total Number of Valid Hours: 3778

Wood Buffalo Environmental Association
 Wind Rose Oct 15 - Dec 31, 2012

Wind Speed (WS) - km/h
 AMS 101 Portable (AMS101) Christina Lake



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WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

INTEGRATED MONITORING PROGRAM ANNUAL REPORT

DATA SUMMARY 2012

Prepared
March 7, 2013

SAMPLE COLLECTION

Wood Buffalo Environmental Association
Fort McMurray, Alberta

LABORATORY ANALYSIS

passive: Maxxam Analytics Ltd
Edmonton, Alberta

VOC: Alberta Innovates - Technology Futures
Vegreville, Alberta

particulate: ALS Canada Ltd
Burlington, Ontario

PAH: Air Zone One Incorporated
Mississauga, Ontario

precipitaon: Alberta Innovates - Technology Futures
Vegreville, Alberta

DATA SUMMARY

Aurora Atmospherics Inc.
Fort McMurray, Alberta

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Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 1 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		Fort McKay
	04-Jan	04-Jan	04-Jan	04-Jan	04-Jan	04-Jan
Naphthalene	4.19	12.1	3.57	1.67	0.003	4.02
Acenaphthylene	2.46	19.5	2.62	0.262	0.002	2.4
Acenaphthene	1.21	2.16	0.998	0.5	0.003	1.16
Fluorene	2.88	5.91	1.82	1.34	0.003	2.81
Phenanthrene	4.47	11.9	2.26	1.44	0.002	4.31
Anthracene	0.466	0.385	0.199	0.088	0.002	0.503
Acridine	0.187	0.426	0.093	0.031	0.001	0.185
Fluoranthene	0.666	2.65	0.375	0.224	0.002	0.649
Pyrene	0.618	2.21	0.447	0.158	0.002	0.595
Benzo(c)phenanthrene	0.104	0.208	0.042	0.035	0.001	0.099
Benz(a)anthracene	0.194	0.647	0.108	0.054	0.002	0.195
Chrysene	0.108	0.36	0.093	0.03	0.001	0.108
7,12-Dimethylbenz(a)anthracene	0.35	0.81	0.372	0.06	0.004	0.281
Benzo(b&j)fluoranthene	0.222	0.682	0.09	0.023	0.001	0.206
Benz(k)fluoranthene	0.248	0.761	0.099	0.026	0.001	0.229
Benzo(a)pyrene	0.154	0.298	0.088	0.054	0.003	0.146
3-Methylcholanthrene	0.002	0.009	0.002	0.003	0.001	0.002
Indeno(123-cd)pyrene	0.009	0.011	0.007	0.007	0.001	0.01
Dibenz(a,h)anthracene	0.008	0.017	0.008	0.007	0.001	0.007
Benzo(ghi)perylene	0.015	0.032	0.011	0.014	0.001	0.012
Dibenzo(a,l)pyrene	0.006	0.02	0.007	0.007	0.003	0.005
Dibenzo(a,i)pyrene	0.003	0.006	0.005	0.009	0.003	0.003
Dibenzo(a,h)pyrene	0.006	0.007	0.006	0.008	0.003	0.005



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 14 Repeat
	Fort McKay 10-Jan	Patricia McInnes 10-Jan	Athabasca Valley 10-Jan	Anzac 10-Jan	10-Jan	Anzac 10-Jan
Naphthalene	3.93	5.23	19.1	5.02	0.003	5.21
Acenaphthylene	0.165	0.088	1.44	0.366	0.002	0.354
Acenaphthene	0.403	0.387	0.894	0.77	0.003	0.757
Fluorene	0.741	0.586	1.06	1.01	0.003	1.03
Phenanthrene	0.858	0.636	1.62	1.12	0.002	1.09
Anthracene	0.094	0.049	0.202	0.093	0.002	0.102
Acridine	0.054	0.02	0.019	0.021	0.001	0.023
Fluoranthene	0.156	0.082	0.302	0.177	0.002	0.178
Pyrene	0.128	0.092	0.278	0.134	0.002	0.141
Benzo(c)phenanthrene	0.012	0.008	0.041	0.016	0.001	0.015
Benzo(a)anthracene	0.034	0.048	0.091	0.023	0.002	0.021
Chrysene	0.032	0.027	0.108	0.029	0.001	0.026
7,12-Dimethylbenz(a)anthracene	0.303	0.091	0.217	0.145	0.004	0.124
Benzo(b&j)fluoranthene	0.022	0.01	0.086	0.026	0.001	0.023
Benzo(k)fluoranthene	0.024	0.011	0.095	0.028	0.001	0.024
Benzo(a)pyrene	0.019	0.025	0.048	0.034	0.003	0.03
3-Methylcholanthrene	0.003	0.003	0.003	0.005	0.001	0.004
Indeno(123-cd)pyrene	0.008	0.007	0.026	0.007	0.001	0.005
Dibenz(a,h)anthracene	0.005	0.004	0.004	0.004	0.001	0.005
Benzo(ghi)perylene	0.016	0.008	0.044	0.01	0.001	0.01
Dibenzo(a,l)pyrene	0.009	0.01	0.012	0.014	0.003	0.012
Dibenzo(a,i)pyrene	0.005	0.005	0.005	0.007	0.003	0.006
Dibenzo(a,h)pyrene	0.005	0.005	0.006	0.009	0.003	0.005



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 1 Repeat
	Fort McKay 16-Jan	Patricia McInnes 16-Jan	Athabasca Valley 16-Jan	Anzac 16-Jan	16-Jan	Fort McKay 16-Jan
Naphthalene	12.2	10.1	54.5	27.6	0.003	11.8
Acenaphthylene	0.203	0.136	3.02	1.51	0.002	0.196
Acenaphthene	0.479	0.5	1.43	1.23	0.003	0.45
Fluorene	0.86	0.595	1.7	3.16	0.003	0.845
Phenanthrene	0.698	0.457	1.5	2.2	0.002	0.678
Anthracene	0.053	0.038	0.148	0.198	0.002	0.05
Acridine	0.019	0.014	0.025	0.057	0.001	0.018
Fluoranthene	0.339	0.144	0.78	0.465	0.002	0.325
Pyrene	0.242	0.098	0.727	0.398	0.002	0.235
Benzo(c)phenanthrene	0.031	0.01	0.1	0.059	0.001	0.03
Benzo(a)anthracene	0.072	0.086	0.169	0.136	0.002	0.069
Chrysene	0.102	0.049	0.216	0.152	0.001	0.095
7,12-Dimethylbenz(a)anthracene	0.122	0.066	0.149	0.15	0.004	0.139
Benzo(b&j)fluoranthene	0.087	0.033	0.179	0.139	0.001	0.08
Benzo(k)fluoranthene	0.098	0.036	0.203	0.157	0.001	0.092
Benzo(a)pyrene	0.041	0.01	0.066	0.058	0.003	0.038
3-Methylcholanthrene	0.003	0.002	0.004	0.004	0.001	0.003
Indeno(123-cd)pyrene	0.012	0.006	0.043	0.029	0.001	0.01
Dibenz(a,h)anthracene	0.004	0.003	0.006	0.009	0.001	0.003
Benzo(ghi)perylene	0.021	0.008	0.082	0.042	0.001	0.019
Dibenzo(a,l)pyrene	0.007	0.003	0.018	0.014	0.003	0.008
Dibenzo(a,i)pyrene	0.008	0.004	0.008	0.008	0.003	0.008
Dibenzo(a,h)pyrene	0.01	0.004	0.009	0.007	0.003	0.008



Compound Name	Results (ng/m3)				
	AMS 1	AMS 7	AMS 14	Lab Blank	AMS 14 Repeat
	Fort McKay 22-Jan	Athabasca Valley 22-Jan	Anzac 22-Jan	22-Jan	Anzac 22-Jan
Naphthalene	8.82	11.6	1.36	0.003	1.4
Acenaphthylene	2.81	2.98	0.229	0.002	0.234
Acenaphthene	1.37	1.28	0.438	0.003	0.445
Fluorene	2.45	2.35	1.29	0.003	1.3
Phenanthrene	3.42	3.04	1.43	0.002	1.5
Anthracene	0.431	0.348	0.071	0.002	0.074
Acridine	0.194	0.092	0.02	0.001	0.021
Fluoranthene	0.707	0.578	0.22	0.002	0.215
Pyrene	0.768	0.599	0.172	0.002	0.177
Benzo(c)phenanthrene	0.066	0.042	0.049	0.001	0.047
Benz(a)anthracene	0.294	0.107	0.122	0.002	0.129
Chrysene	0.243	0.107	0.068	0.001	0.071
7,12-Dimethylbenz(a)anthracene	0.321	0.128	0.107	0.004	0.112
Benzo(b&j)fluoranthene	0.091	0.062	0.032	0.001	0.032
Benz(k)fluoranthene	0.102	0.07	0.035	0.001	0.036
Benzo(a)pyrene	0.104	0.043	0.013	0.003	0.012
3-Methylcholanthrene	0.002	0.002	0.003	0.001	0.003
Indeno(123-cd)pyrene	0.023	0.015	0.007	0.001	0.009
Dibenz(a,h)anthracene	0.009	0.002	0.003	0.001	0.003
Benzo(ghi)perylene	0.045	0.036	0.012	0.001	0.016
Dibenzo(a,l)pyrene	0.017	0.008	0.009	0.003	0.007
Dibenzo(a,i)pyrene	0.006	0.005	0.005	0.003	0.005
Dibenzo(a,h)pyrene	0.005	0.005	0.006	0.003	0.007



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 28-Jan	Patricia McInnes 28-Jan	Athabasca Valley 28-Jan	Anzac 28-Jan	28-Jan	28-Jan	Athabasca Valley 28-Jan
Naphthalene	12.7	6.29	4.78	3.84	0.003	0.042	4.92
Acenaphthylene	1.82	2.86	1.06	0.139	0.002	0.012	1.08
Acenaphthene	0.728	1.29	0.713	0.417	0.003	0.029	0.731
Fluorene	1.16	1.5	0.74	0.599	0.003	0.024	0.758
Phenanthrene	1.87	3.06	1.04	0.639	0.002	0.009	1.16
Anthracene	0.221	0.463	0.105	0.044	0.002	0.002	0.116
Acridine	0.062	0.031	0.018	0.019	0.001	0.002	0.019
Fluoranthene	0.514	0.594	0.308	0.108	0.002	0.003	0.319
Pyrene	0.455	0.505	0.287	0.086	0.002	0.002	0.301
Benzo(c)phenanthrene	0.045	0.043	0.028	0.008	0.001	0.002	0.03
Benzo(a)anthracene	0.119	0.084	0.157	0.048	0.002	0.002	0.169
Chrysene	0.125	0.099	0.082	0.027	0.001	0.002	0.089
7,12-Dimethylbenz(a)anthracene	0.245	0.108	0.051	0.065	0.004	0.016	0.053
Benzo(b&j)fluoranthene	0.05	0.064	0.038	0.011	0.001	0.003	0.04
Benzo(k)fluoranthene	0.055	0.071	0.043	0.012	0.001	0.003	0.045
Benzo(a)pyrene	0.033	0.023	0.022	0.018	0.003	0.002	0.017
3-Methylcholanthrene	0.003	0.002	0.003	0.003	0.001	<0.001	0.003
Indeno(123-cd)pyrene	0.011	0.02	0.01	0.006	0.001	<0.001	0.009
Dibenz(a,h)anthracene	0.002	0.007	0.003	0.002	0.001	<0.001	0.004
Benzo(ghi)perylene	0.022	0.037	0.027	0.008	0.001	<0.001	0.027
Dibenzo(a,l)pyrene	0.006	0.008	0.01	0.008	0.003	<0.001	0.015
Dibenzo(a,i)pyrene	0.006	0.006	0.005	0.007	0.003	<0.001	0.007
Dibenzo(a,h)pyrene	0.006	0.005	0.007	0.005	0.003	0.001	0.008



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 1 Repeat
	Fort McKay 03-Feb	Patricia McInnes 03-Feb	Athabasca Valley 03-Feb	Anzac 03-Feb	03-Feb	Fort McKay 03-Feb
Naphthalene	3.66	4.62	2.92	1.55	0.003	3.58
Acenaphthylene	1.65	9.12	3.5	0.268	0.002	1.58
Acenaphthene	2.12	1.36	0.903	0.851	0.003	2.11
Fluorene	7.55	4.65	1.71	2.56	0.003	7.36
Phenanthrene	10.6	7.9	2	2.27	0.002	10.3
Anthracene	1.56	1.05	0.219	0.246	0.002	1.45
Acridine	0.309	0.044	0.109	0.074	0.001	0.261
Fluoranthene	0.89	1.83	0.515	0.291	0.002	0.843
Pyrene	1.32	1.61	0.599	0.182	0.002	1.26
Benzo(c)phenanthrene	0.096	0.177	0.002	0.015	0.001	0.09
Benz(a)anthracene	0.479	0.361	0.158	0.059	0.002	0.494
Chrysene	0.533	0.209	0.087	0.067	0.001	0.55
7,12-Dimethylbenz(a)anthracene	1.1	0.691	0.2	0.213	0.004	1.21
Benzo(b&j)fluoranthene	0.46	0.118	0.034	0.196	0.001	0.423
Benz(k)fluoranthene	0.474	0.11	0.039	0.185	0.001	0.443
Benzo(a)pyrene	0.561	0.325	0.177	0.053	0.003	0.514
3-Methylcholanthrene	0.027	0.01	0.004	0.006	0.001	0.027
Indeno(123-cd)pyrene	0.078	0.102	0.038	0.009	0.001	0.072
Dibenz(a,h)anthracene	0.041	0.011	0.011	0.004	0.001	0.038
Benzo(ghi)perylene	0.044	0.025	0.024	0.017	0.001	0.04
Dibenzo(a,l)pyrene	0.039	0.024	0.013	0.011	0.003	0.034
Dibenzo(a,i)pyrene	0.014	0.01	0.007	0.007	0.003	0.012
Dibenzo(a,h)pyrene	0.012	0.008	0.008	0.004	0.003	0.011



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay 09-Feb	Patricia McInnes 09-Feb	Athabasca Valley 09-Feb	Anzac 09-Feb	09-Feb	09-Feb	Anzac 09-Feb
Naphthalene	6.8	12.3	16.2	13.2	0.003	0.072	13.8
Acenaphthylene	0.613	1.66	2.5	1.1	0.002	0.007	1.14
Acenaphthene	0.624	1.49	1.32	1.96	0.003	0.003	2.03
Fluorene	0.981	2.19	2.15	2.2	0.003	0.004	2.29
Phenanthrene	1.64	3.62	3.8	3.95	0.002	0.005	4.09
Anthracene	0.113	0.336	0.25	0.264	0.002	0.004	0.247
Acridine	0.06	0.051	0.047	0.029	0.001	<0.001	0.031
Fluoranthene	0.692	0.97	1.21	0.944	0.002	0.002	0.987
Pyrene	0.668	0.919	1.22	0.584	0.002	0.002	0.615
Benzo(c)phenanthrene	0.091	0.113	0.149	0.105	0.001	<0.001	0.109
Benz(a)anthracene	0.231	0.333	0.357	0.265	0.002	0.003	0.276
Chrysene	0.262	0.372	0.402	0.295	0.001	0.004	0.308
7,12-Dimethylbenz(a)anthracene	0.598	0.637	0.787	0.385	0.004	0.003	0.4
Benzo(b&j)fluoranthene	0.19	0.199	0.411	0.266	0.001	0.003	0.307
Benz(k)fluoranthene	0.228	0.212	0.399	0.278	0.001	0.003	0.369
Benzo(a)pyrene	0.163	0.198	0.332	0.117	0.003	<0.001	0.13
3-Methylcholanthrene	0.033	0.008	0.007	0.006	0.001	<0.001	0.007
Indeno(123-cd)pyrene	0.021	0.02	0.04	0.023	0.001	<0.001	0.025
Dibenz(a,h)anthracene	0.01	0.017	0.016	0.012	0.001	<0.001	0.013
Benzo(ghi)perylene	0.031	0.042	0.025	0.028	0.001	<0.001	0.027
Dibenzo(a,l)pyrene	0.016	0.012	0.031	0.009	0.003	<0.001	0.017
Dibenzo(a,i)pyrene	0.007	0.004	0.007	0.003	0.003	<0.001	0.004
Dibenzo(a,h)pyrene	0.004	0.004	0.003	0.004	0.003	<0.001	0.004



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 15-Feb	Patricia McInnes 15-Feb	Athabasca Valley 15-Feb	Anzac 15-Feb	15-Feb	15-Feb	Patricia McInnes 15-Feb
Naphthalene	4.64	3.08	5.02	3.6	0.003	0.085	3.28
Acenaphthylene	0.737	1.54	2.27	0.564	0.002	0.004	1.62
Acenaphthene	1.21	0.961	1.28	1.05	0.003	0.003	1.01
Fluorene	2.58	1.87	3.17	2.11	0.003	0.005	1.96
Phenanthrene	3.35	2.89	4.12	1.79	0.002	0.004	3.02
Anthracene	0.411	0.285	0.326	0.135	0.002	0.002	0.296
Acridine	0.178	0.044	0.119	0.086	0.001	<0.001	0.038
Fluoranthene	0.477	0.56	0.751	0.27	0.002	0.002	0.589
Pyrene	0.525	0.55	0.788	0.177	0.002	0.002	0.571
Benzo(c)phenanthrene	0.052	0.045	0.051	0.027	0.001	<0.001	0.046
Benzo(a)anthracene	0.209	0.138	0.14	0.18	0.002	0.002	0.141
Chrysene	0.234	0.157	0.16	0.201	0.001	0.003	0.161
7,12-Dimethylbenzo(a)anthracene	0.543	0.28	0.252	0.154	0.004	0.002	0.259
Benzo(b&j)fluoranthene	0.211	0.192	0.19	0.121	0.001	0.003	0.186
Benzo(k)fluoranthene	0.216	0.201	0.201	0.135	0.001	0.002	0.187
Benzo(a)pyrene	0.164	0.076	0.084	0.034	0.003	<0.001	0.075
3-Methylcholanthrene	0.008	0.009	0.007	0.01	0.001	<0.001	0.009
Indeno(123-cd)pyrene	0.013	0.012	0.014	0.007	0.001	<0.001	0.011
Dibenzo(a,h)anthracene	0.017	0.008	0.01	0.006	0.001	<0.001	0.008
Benzo(ghi)perylene	0.029	0.032	0.031	0.022	0.001	<0.001	0.028
Dibenzo(a,l)pyrene	0.01	0.014	0.014	0.016	0.003	<0.001	0.017
Dibenzo(a,i)pyrene	0.005	0.003	0.002	0.003	0.003	<0.001	0.003
Dibenzo(a,h)pyrene	0.005	0.004	0.004	0.005	0.003	<0.001	0.004



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 7 Repeat
	Fort McKay 22-Feb	Patricia McInnes 22-Feb	Athabasca Valley 22-Feb	Anzac 22-Feb	22-Feb	Athabasca Valley 22-Feb
Naphthalene	0.817	1.95	2.51	1.65	0.003	2.34
Acenaphthylene	0.219	1.11	1.85	0.185	0.002	1.73
Acenaphthene	0.448	0.605	0.797	0.31	0.003	0.781
Fluorene	1.4	1.87	1.81	0.911	0.003	1.77
Phenanthrene	2.2	3.63	2.52	1.2	0.002	2.67
Anthracene	0.1	0.286	0.277	0.099	0.002	0.294
Acridine	0.128	0.052	0.056	0.024	0.001	0.06
Fluoranthene	0.325	0.65	0.453	0.23	0.002	0.441
Pyrene	0.294	0.465	0.444	0.167	0.002	0.426
Benzo(c)phenanthrene	0.019	0.029	0.021	0.011	0.001	0.02
Benzo(a)anthracene	0.074	0.094	0.073	0.025	0.002	0.069
Chrysene	0.085	0.107	0.083	0.029	0.001	0.08
7,12-Dimethylbenz(a)anthracene	0.044	0.08	0.04	0.034	0.004	0.035
Benzo(b&j)fluoranthene	0.066	0.079	0.059	0.027	0.001	0.055
Benzo(k)fluoranthene	0.069	0.09	0.06	0.032	0.001	0.063
Benzo(a)pyrene	0.022	0.047	0.031	0.03	0.003	0.029
3-Methylcholanthrene	0.007	0.012	0.008	0.007	0.001	0.007
Indeno(123-cd)pyrene	0.004	0.006	0.005	0.004	0.001	0.004
Dibenz(a,h)anthracene	0.002	0.003	0.002	0.003	0.001	0.003
Benzo(ghi)perylene	0.017	0.021	0.028	0.009	0.001	0.026
Dibenzo(a,l)pyrene	0.014	0.016	0.01	0.013	0.003	0.012
Dibenzo(a,i)pyrene	0.002	0.004	0.002	0.003	0.003	0.002
Dibenzo(a,h)pyrene	0.004	0.007	0.003	0.006	0.003	0.003



Compound Name	Results (ng/m3)				
	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Athabasca Valley 27-Feb	Anzac 27-Feb	27-Feb	27-Feb	Athabasca Valley 27-Feb
Naphthalene	11.5	6.04	0.008	0.111	11.7
Acenaphthylene	2.98	0.171	0.007	0.021	3.1
Acenaphthene	1.87	1.05	0.007	0.024	1.96
Fluorene	2.64	0.917	0.009	0.049	2.77
Phenanthrene	4.59	1.05	0.008	0.022	4.76
Anthracene	0.35	0.087	0.005	0.003	0.372
Acridine	0.135	0.073	0.004	<0.001	0.136
Fluoranthene	0.914	0.187	0.005	0.002	0.956
Pyrene	1.01	0.158	0.005	0.003	1.06
Benzo(c)phenanthrene	0.064	0.014	0.005	<0.001	0.068
Benz(a)anthracene	0.132	0.049	0.009	0.004	0.136
Chrysene	0.324	0.105	0.009	0.003	0.328
7,12-Dimethylbenz(a)anthracene	0.167	0.163	0.009	0.011	0.184
Benzo(b&j)fluoranthene	0.304	0.094	0.006	<0.001	0.319
Benzo(k)fluoranthene	0.343	0.106	0.007	<0.001	0.359
Benzo(a)pyrene	0.107	0.041	0.008	<0.001	0.102
3-Methylcholanthrene	0.009	0.007	0.003	<0.001	0.008
Indeno(123-cd)pyrene	0.124	0.031	0.006	<0.001	0.118
Dibenz(a,h)anthracene	0.058	0.026	0.006	0.003	0.051
Benzo(ghi)perylene	0.215	0.043	0.006	<0.001	0.195
Dibenzo(a,l)pyrene	0.031	0.061	0.008	0.005	0.031
Dibenzo(a,i)pyrene	0.071	0.06	0.009	<0.001	0.07
Dibenzo(a,h)pyrene	0.036	0.023	0.008	<0.001	0.032



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay 04-Mar	Patricia McInnes 04-Mar	Athabasca Valley 04-Mar	Anzac 04-Mar	04-Mar	04-Mar	Anzac 04-Mar
Naphthalene	1.2	1.55	2.4	1.77	0.008	0.122	1.65
Acenaphthylene	0.265	1.11	0.926	0.787	0.007	0.026	0.793
Acenaphthene	1.33	1.26	0.918	3.38	0.007	0.015	3.37
Fluorene	1.76	2.01	2.47	2.86	0.009	0.027	2.81
Phenanthrene	3.33	3.64	4.01	2.25	0.008	0.036	2.22
Anthracene	0.279	0.211	0.246	0.174	0.005	0.003	0.131
Acridine	0.367	0.155	0.217	0.091	0.004	<0.001	0.096
Fluoranthene	0.351	0.479	0.45	0.272	0.005	0.001	0.265
Pyrene	0.319	0.534	0.547	0.226	0.005	0.003	0.218
Benzo(c)phenanthrene	0.015	0.023	0.028	0.01	0.005	<0.001	0.008
Benzo(a)anthracene	0.039	0.12	0.119	0.029	0.009	0.005	0.027
Chrysene	0.135	0.216	0.276	0.084	0.009	0.004	0.08
7,12-Dimethylbenz(a)anthracene	0.126	0.206	0.175	0.1	0.009	0.011	0.097
Benzo(b&j)fluoranthene	0.072	0.125	0.137	0.07	0.006	<0.001	0.062
Benzo(k)fluoranthene	0.081	0.14	0.154	0.078	0.007	<0.001	0.073
Benzo(a)pyrene	0.026	0.086	0.094	0.031	0.008	<0.001	0.028
3-Methylcholanthrene	0.006	0.004	0.003	0.003	0.003	<0.001	0.003
Indeno(123-cd)pyrene	0.021	0.038	0.046	0.022	0.006	<0.001	0.019
Dibenz(a,h)anthracene	0.017	0.033	0.039	0.015	0.006	0.003	0.013
Benzo(ghi)perylene	0.025	0.073	0.081	0.038	0.006	<0.001	0.032
Dibenzo(a,l)pyrene	0.011	0.012	0.013	0.017	0.008	0.003	0.016
Dibenzo(a,i)pyrene	0.018	0.012	0.016	0.016	0.009	<0.001	0.016
Dibenzo(a,h)pyrene	0.015	0.017	0.014	0.01	0.008	<0.001	0.01



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay 10-Mar	Patricia McInnes 10-Mar	Athabasca Valley 10-Mar	Anzac 10-Mar	10-Mar	10-Mar	Fort McKay 10-Mar
Naphthalene	0.602	1.71	3.24	0.749	0.008	0.174	0.619
Acenaphthylene	0.122	1.63	0.835	0.176	0.007	0.037	0.131
Acenaphthene	0.709	0.518	0.755	1.36	0.007	0.02	0.742
Fluorene	1.16	1.7	3.2	1.78	0.009	0.038	1.23
Phenanthrene	2.15	2.51	3.61	1.97	0.008	0.033	2.28
Anthracene	0.199	0.209	0.207	0.156	0.005	0.004	0.189
Acridine	0.207	0.064	0.195	0.081	0.004	0.005	0.237
Fluoranthene	0.242	0.387	0.562	0.262	0.005	0.003	0.256
Pyrene	0.221	0.352	0.66	0.235	0.005	0.004	0.228
Benzo(c)phenanthrene	0.008	0.015	0.017	0.008	0.005	<0.001	0.007
Benzo(a)anthracene	0.032	0.026	0.032	0.024	0.009	0.004	0.033
Chrysene	0.047	0.098	0.101	0.061	0.009	0.003	0.053
7,12-Dimethylbenz(a)anthracene	0.055	0.147	0.108	0.081	0.009	0.011	0.056
Benzo(b&j)fluoranthene	0.017	0.099	0.087	0.047	0.006	0.002	0.018
Benzo(k)fluoranthene	0.019	0.111	0.097	0.053	0.007	0.001	0.019
Benzo(a)pyrene	0.016	0.022	0.02	0.016	0.008	<0.001	0.017
3-Methylcholanthrene	0.003	0.004	0.005	0.005	0.003	0.001	0.003
Indeno(123-cd)pyrene	0.01	0.014	0.02	0.012	0.006	<0.001	0.012
Dibenz(a,h)anthracene	0.01	0.011	0.01	0.009	0.006	<0.001	0.011
Benzo(ghi)perylene	0.008	0.028	0.04	0.012	0.006	<0.001	0.01
Dibenzo(a,l)pyrene	0.01	0.013	0.017	0.018	0.008	<0.001	0.012
Dibenzo(a,i)pyrene	0.014	0.012	0.012	0.01	0.009	0.005	0.016
Dibenzo(a,h)pyrene	0.01	0.011	0.013	0.014	0.008	<0.001	0.01



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 16-Mar	Patricia McInnes 16-Mar	Athabasca Valley 16-Mar	Anzac 16-Mar	16-Mar	16-Mar	Patricia McInnes 16-Mar
Naphthalene	0.364	1.13	1.37	1.39	0.008	0.149	1.14
Acenaphthylene	0.067	0.204	0.76	0.239	0.007	0.035	0.215
Acenaphthene	0.527	0.4	1	0.785	0.007	0.024	0.395
Fluorene	1.78	1.66	2.61	2.18	0.009	0.044	1.63
Phenanthrene	3.2	2.62	2.84	2.71	0.008	0.022	2.63
Anthracene	0.223	0.186	0.19	0.204	0.005	0.004	0.181
Acridine	0.449	0.104	0.231	0.12	0.004	0.005	0.117
Fluoranthene	0.227	0.407	0.344	0.376	0.005	0.003	0.408
Pyrene	0.201	0.415	0.385	0.354	0.005	0.004	0.42
Benzo(c)phenanthrene	0.002	0.015	0.009	0.015	0.005	<0.001	0.015
Benzo(a)anthracene	0.017	0.02	0.016	0.026	0.009	0.005	0.024
Chrysene	0.035	0.064	0.057	0.079	0.009	0.004	0.067
7,12-Dimethylbenz(a)anthracene	0.037	0.067	0.063	0.11	0.009	0.011	0.072
Benzo(b&j)fluoranthene	0.022	0.039	0.03	0.055	0.006	<0.001	0.036
Benzo(k)fluoranthene	0.025	0.044	0.033	0.057	0.007	<0.001	0.04
Benzo(a)pyrene	0.015	0.021	0.015	0.016	0.008	<0.001	0.02
3-Methylcholanthrene	0.003	0.004	0.005	0.006	0.003	<0.001	0.004
Indeno(123-cd)pyrene	0.011	0.012	0.013	0.013	0.006	<0.001	0.013
Dibenz(a,h)anthracene	0.01	0.009	0.01	0.009	0.006	<0.001	0.009
Benzo(ghi)perylene	0.009	0.012	0.011	0.009	0.006	<0.001	0.012
Dibenzo(a,l)pyrene	0.009	0.009	0.01	0.012	0.008	<0.001	0.01
Dibenzo(a,i)pyrene	0.01	0.012	0.009	0.011	0.009	<0.001	0.012
Dibenzo(a,h)pyrene	0.012	0.01	0.011	0.012	0.008	<0.001	0.009



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 22-Mar	Patricia McInnes 22-Mar	Athabasca Valley 22-Mar	Anzac 22-Mar	22-Mar	22-Mar	Athabasca Valley 22-Mar
Naphthalene	1.41	2.43	3.02	1.31	0.008	0.149	2.78
Acenaphthylene	0.146	0.524	0.63	0.054	0.007	0.025	0.647
Acenaphthene	0.366	0.945	0.439	0.261	0.007	0.017	0.424
Fluorene	0.766	1.2	0.934	0.352	0.009	0.028	0.917
Phenanthrene	1.22	1.88	1.18	0.287	0.008	0.034	1.16
Anthracene	0.095	0.132	0.107	0.026	0.005	0.002	0.099
Acridine	0.087	0.075	0.07	0.042	0.004	<0.001	0.067
Fluoranthene	0.225	0.378	0.212	0.024	0.005	0.001	0.209
Pyrene	0.226	0.502	0.34	0.025	0.005	0.002	0.337
Benzo(c)phenanthrene	0.014	0.023	0.014	0.003	0.005	<0.001	0.015
Benz(a)anthracene	0.03	0.205	0.196	0.007	0.009	0.005	0.19
Chrysene	0.113	0.346	0.306	0.026	0.009	0.004	0.315
7,12-Dimethylbenz(a)anthracene	0.083	0.243	0.224	0.024	0.009	0.012	0.206
Benzo(b&j)fluoranthene	0.064	0.092	0.067	0.045	0.006	<0.001	0.07
Benz(k)fluoranthene	0.072	0.103	0.076	0.036	0.007	<0.001	0.078
Benzo(a)pyrene	0.016	0.102	0.075	0.017	0.008	<0.001	0.085
3-Methylcholanthrene	0.003	0.004	0.004	0.004	0.003	<0.001	0.004
Indeno(123-cd)pyrene	0.013	0.023	0.018	0.014	0.006	<0.001	0.015
Dibenz(a,h)anthracene	0.009	0.022	0.031	0.009	0.006	0.002	0.029
Benzo(ghi)perylene	0.014	0.028	0.029	0.016	0.006	<0.001	0.028
Dibenzo(a,l)pyrene	0.01	0.014	0.01	0.01	0.008	<0.001	0.01
Dibenzo(a,i)pyrene	0.009	0.011	0.009	0.01	0.009	<0.001	0.009
Dibenzo(a,h)pyrene	0.011	0.011	0.008	0.006	0.008	<0.001	0.008



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 28-Mar	Patricia McInnes 28-Mar	Athabasca Valley 28-Mar	Anzac 28-Mar	28-Mar	28-Mar	Patricia McInnes 28-Mar
Naphthalene	0.652	0.796	7.68	0.447	0.008	0.129	0.813
Acenaphthylene	0.14	0.165	0.431	0.207	0.007	0.025	0.172
Acenaphthene	0.189	0.277	0.888	1.18	0.007	0.026	0.3
Fluorene	1.06	1.17	1.79	1.74	0.009	0.022	1.24
Phenanthrene	1.99	2.16	2.24	1.63	0.008	0.023	2.23
Anthracene	0.147	0.154	0.174	0.131	0.005	0.005	0.159
Acridine	0.052	0.062	0.064	0.048	0.004	<0.001	0.061
Fluoranthene	0.21	0.389	0.39	0.141	0.005	<0.001	0.395
Pyrene	0.215	0.354	0.445	0.136	0.005	<0.001	0.359
Benzo(c)phenanthrene	0.004	0.012	0.011	0.009	0.005	<0.001	0.013
Benzo(a)anthracene	0.016	0.021	0.025	0.014	0.009	<0.001	0.02
Chrysene	0.053	0.067	0.065	0.028	0.009	<0.001	0.065
7,12-Dimethylbenz(a)anthracene	0.062	0.056	0.066	0.027	0.009	<0.001	0.061
Benzo(b&j)fluoranthene	0.032	0.037	0.032	0.026	0.006	<0.001	0.037
Benzo(k)fluoranthene	0.019	0.041	0.035	0.026	0.007	<0.001	0.041
Benzo(a)pyrene	0.014	0.018	0.023	0.017	0.008	<0.001	0.018
3-Methylcholanthrene	0.004	0.004	0.005	0.004	0.003	<0.001	0.004
Indeno(123-cd)pyrene	0.008	0.011	0.011	0.008	0.006	<0.001	0.012
Dibenz(a,h)anthracene	0.008	0.01	0.01	0.009	0.006	<0.001	0.01
Benzo(ghi)perylene	0.01	0.013	0.01	0.011	0.006	<0.001	0.014
Dibenzo(a,l)pyrene	0.009	0.009	0.009	0.008	0.008	<0.001	0.01
Dibenzo(a,i)pyrene	0.01	0.011	0.01	0.008	0.009	<0.001	0.012
Dibenzo(a,h)pyrene	0.007	0.008	0.008	0.007	0.008	<0.001	0.008



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 03-Apr	Patricia McInnes 03-Apr	Athabasca Valley 03-Apr	Anzac 03-Apr	03-Apr	03-Apr	Athabasca Valley 03-Apr
Naphthalene	0.845	0.586	3.07	0.601	0.008	0.185	3.02
Acenaphthylene	0.105	0.15	0.575	0.032	0.004	0.003	0.564
Acenaphthene	0.767	0.377	0.957	1.47	0.006	0.017	0.943
Fluorene	2.62	1.5	2.52	2.26	0.014	0.014	2.58
Phenanthrene	4.76	2.84	3.71	2.41	0.008	0.027	3.62
Anthracene	0.246	0.276	0.318	0.292	0.004	0.006	0.317
Acridine	0.272	0.061	0.096	0.077	0.002	0.001	0.086
Fluoranthene	0.505	0.578	0.768	0.225	0.005	0.005	0.747
Pyrene	0.512	0.534	0.916	0.127	0.005	0.004	0.895
Benzo(c)phenanthrene	0.02	0.042	0.05	0.006	0.001	0.001	0.055
Benz(a)anthracene	0.056	0.077	0.153	0.013	0.011	0.011	0.155
Chrysene	0.203	0.248	0.432	0.038	0.009	0.006	0.408
7,12-Dimethylbenz(a)anthracene	0.127	0.083	0.258	0.008	0.01	<0.001	0.269
Benzo(b&j)fluoranthene	0.135	0.1	0.209	0.164	0.005	0.012	0.207
Benz(k)fluoranthene	0.154	0.057	0.212	0.129	0.006	0.016	0.187
Benzo(a)pyrene	0.072	0.094	0.15	0.014	0.007	0.001	0.144
3-Methylcholanthrene	0.011	0.035	0.02	0.003	0.008	<0.001	0.021
Indeno(123-cd)pyrene	0.068	0.077	0.115	0.014	0.003	0.008	0.124
Dibenz(a,h)anthracene	0.116	0.095	0.069	0.023	0.006	0.021	0.074
Benzo(ghi)perylene	0.085	0.088	0.173	0.008	0.006	0.006	0.174
Dibenzo(a,l)pyrene	0.014	0.013	0.018	0.003	0.002	0.001	0.016
Dibenzo(a,i)pyrene	0.028	0.028	0.026	0.004	0.003	0.003	0.027
Dibenzo(a,h)pyrene	0.033	0.035	0.029	0.007	0.003	0.004	0.027



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay 09-Apr	Patricia McInnes 09-Apr	Athabasca Valley 09-Apr	Anzac 09-Apr	09-Apr	09-Apr	Anzac 09-Apr
Naphthalene	0.771	1.06	1.35	1.13	0.008	0.207	1.12
Acenaphthylene	0.109	0.117	0.097	0.056	0.004	0.003	0.052
Acenaphthene	1.07	0.477	0.387	3.83	0.006	0.031	3.88
Fluorene	1.36	1.13	1.12	6.16	0.014	0.013	6.27
Phenanthrene	2.95	2.04	1.44	5.48	0.008	0.024	5.54
Anthracene	0.28	0.166	0.102	0.385	0.004	<0.001	0.306
Acridine	0.398	0.132	0.136	0.098	0.002	<0.001	0.103
Fluoranthene	0.236	0.521	0.267	0.751	0.005	0.002	0.756
Pyrene	0.38	0.472	0.265	0.271	0.005	<0.001	0.272
Benzo(c)phenanthrene	0.032	0.04	0.024	0.017	0.001	<0.001	0.02
Benzo(a)anthracene	0.097	0.081	0.028	0.045	0.011	0.003	0.043
Chrysene	0.445	0.252	0.144	0.22	0.009	0.007	0.226
7,12-Dimethylbenz(a)anthracene	0.279	0.097	0.07	0.078	0.01	<0.001	0.084
Benzo(b&j)fluoranthene	0.12	0.178	0.261	0.344	0.005	0.022	0.335
Benzo(k)fluoranthene	0.094	0.203	0.252	0.353	0.006	0.029	0.375
Benzo(a)pyrene	0.063	0.079	0.025	0.011	0.007	<0.001	0.014
3-Methylcholanthrene	0.045	0.012	0.006	0.007	0.008	<0.001	0.008
Indeno(123-cd)pyrene	0.034	0.051	0.004	0.003	0.003	0.004	0.003
Dibenz(a,h)anthracene	0.026	0.047	0.004	0.004	0.006	0.008	0.004
Benzo(ghi)perylene	0.038	0.084	0.022	0.024	0.006	<0.001	0.009
Dibenzo(a,l)pyrene	0.005	0.007	0.004	0.003	0.002	<0.001	0.004
Dibenzo(a,i)pyrene	0.01	0.007	0.002	0.004	0.003	0.002	0.005
Dibenzo(a,h)pyrene	0.012	0.004	0.006	0.003	0.003	<0.001	0.003



Compound Name	Results (ng/m3)					
	AMS 1 Fort McKay	AMS 6 Patricia McInnes	AMS 7 Athabasca Valley	AMS 14 Anzac	Lab Blank	AMS 1 Repeat Fort McKay
	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr
Naphthalene	1.4	1.39	1.44	0.845	0.008	1.39
Acenaphthylene	0.158	0.788	0.324	0.075	0.004	0.18
Acenaphthene	1.09	0.504	0.476	1.87	0.006	1.11
Fluorene	1.35	1.23	1.05	2.02	0.014	1.41
Phenanthrene	1.53	2.45	1.47	1.66	0.008	1.55
Anthracene	0.143	0.281	0.14	0.136	0.004	0.157
Acridine	0.33	0.109	0.084	0.076	0.002	0.344
Fluoranthene	0.159	0.492	0.277	0.219	0.005	0.162
Pyrene	0.159	0.452	0.274	0.125	0.005	0.159
Benzo(c)phenanthrene	0.025	0.03	0.019	0.026	0.001	0.025
Benzo(a)anthracene	0.024	0.211	0.02	0.025	0.011	0.022
Chrysene	0.091	0.248	0.085	0.091	0.009	0.092
7,12-Dimethylbenz(a)anthracene	0.066	0.138	0.074	0.044	0.01	0.064
Benzo(b&j)fluoranthene	0.163	0.19	0.128	0.13	0.005	0.16
Benzo(k)fluoranthene	0.192	0.168	0.139	0.129	0.006	0.179
Benzo(a)pyrene	0.015	0.065	0.013	0.007	0.007	0.013
3-Methylcholanthrene	0.009	0.009	0.008	0.002	0.008	0.008
Indeno(123-cd)pyrene	0.003	0.003	0.004	0.002	0.003	0.003
Dibenz(a,h)anthracene	0.005	0.005	0.004	0.001	0.006	0.004
Benzo(ghi)perylene	0.012	0.03	0.01	0.008	0.006	0.011
Dibenzo(a,l)pyrene	0.002	0.007	0.002	0.002	0.002	0.004
Dibenzo(a,i)pyrene	0.006	0.002	0.002	0.002	0.003	0.006
Dibenzo(a,h)pyrene	0.003	0.004	0.003	0.002	0.003	0.004



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 6 Repeat
	Fort McKay 21-Apr	Patricia McInnes 21-Apr	Athabasca Valley 21-Apr	Anzac 21-Apr	21-Apr	Patricia McInnes 21-Apr
Naphthalene	1.04	1.01	4.52	14.9	0.008	1.03
Acenaphthylene	0.172	0.35	0.359	0.373	0.004	0.355
Acenaphthene	0.574	0.343	0.656	31.9	0.006	0.345
Fluorene	1.66	0.795	1.36	21.3	0.014	0.81
Phenanthrene	5.12	2.04	2.73	16.9	0.008	2.08
Anthracene	0.635	0.19	0.25	0.809	0.004	0.203
Acridine	0.569	0.075	0.197	0.209	0.002	0.074
Fluoranthene	0.61	0.401	0.455	0.817	0.005	0.405
Pyrene	0.586	0.313	0.446	0.385	0.005	0.315
Benzo(c)phenanthrene	0.019	0.015	0.033	0.016	0.001	0.016
Benzo(a)anthracene	0.05	0.041	0.031	0.032	0.011	0.039
Chrysene	0.156	0.138	0.124	0.098	0.009	0.141
7,12-Dimethylbenz(a)anthracene	0.137	0.071	0.048	0.053	0.01	0.064
Benzo(b&j)fluoranthene	0.136	0.167	0.158	0.157	0.005	0.165
Benzo(k)fluoranthene	0.177	0.172	0.185	0.173	0.006	0.172
Benzo(a)pyrene	0.013	0.014	0.018	0.013	0.007	0.018
3-Methylcholanthrene	0.01	0.01	0.004	0.018	0.008	0.011
Indeno(123-cd)pyrene	0.003	0.002	0.003	0.004	0.003	0.002
Dibenz(a,h)anthracene	0.006	0.004	0.016	0.005	0.006	0.003
Benzo(ghi)perylene	0.012	0.008	0.007	0.011	0.006	0.006
Dibenzo(a,l)pyrene	0.002	0.002	0.005	0.002	0.002	0.003
Dibenzo(a,i)pyrene	0.002	0.002	0.002	0.002	0.003	0.002
Dibenzo(a,h)pyrene	0.003	0.002	0.002	0.002	0.003	0.002



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 7 Repeat
	Fort McKay 27-Apr	Patricia McInnes 27-Apr	Athabasca Valley 27-Apr	Anzac 27-Apr	27-Apr	Athabasca Valley 27-Apr
Naphthalene	0.707	0.471	2.57	0.798	0.008	2.52
Acenaphthylene	0.116	0.41	0.34	0.06	0.004	0.337
Acenaphthene	0.513	0.278	0.768	2.73	0.006	0.758
Fluorene	1.32	1.2	2.27	4.51	0.014	2.26
Phenanthrene	2.37	2.53	2.97	5.47	0.008	2.99
Anthracene	0.278	0.191	0.441	0.286	0.004	0.454
Acridine	0.253	0.067	0.338	0.08	0.002	0.313
Fluoranthene	0.236	0.441	0.378	0.511	0.005	0.367
Pyrene	0.267	0.464	0.656	0.188	0.005	0.653
Benzo(c)phenanthrene	0.013	0.02	0.015	0.005	0.001	0.016
Benz(a)anthracene	0.02	0.021	0.012	0.016	0.011	0.014
Chrysene	0.08	0.051	0.053	0.055	0.009	0.05
7,12-Dimethylbenz(a)anthracene	0.045	0.026	0.035	0.042	0.01	0.035
Benzo(b&j)fluoranthene	0.118	0.107	0.141	0.204	0.005	0.14
Benzo(k)fluoranthene	0.112	0.117	0.166	0.211	0.006	0.14
Benzo(a)pyrene	0.008	0.009	0.007	0.005	0.007	0.008
3-Methylcholanthrene	0.005	0.011	0.011	0.004	0.008	0.009
Indeno(123-cd)pyrene	0.002	0.002	0.002	0.002	0.003	0.002
Dibenz(a,h)anthracene	0.002	0.002	0.004	0.002	0.006	0.006
Benzo(ghi)perylene	0.006	0.012	0.006	0.005	0.006	0.006
Dibenzo(a,l)pyrene	0.002	0.002	0.002	0.002	0.002	0.002
Dibenzo(a,i)pyrene	0.002	0.002	0.002	0.002	0.003	0.002
Dibenzo(a,h)pyrene	0.002	0.001	0.002	0.001	0.003	0.002



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 7 Repeat
	Fort McKay 03-May	Patricia McInnes 03-May	Athabasca Valley 03-May	Anzac 03-May	03-May	Athabasca Valley 03-May
Naphthalene	0.528	0.772	11.7	0.965	0.008	12
Acenaphthylene	0.155	0.208	0.381	0.064	0.004	0.36
Acenaphthene	0.311	0.489	1.6	2.87	0.006	1.65
Fluorene	0.739	1.12	2.51	6.37	0.014	2.6
Phenanthrene	3.98	3.21	4.45	15.3	0.008	4.56
Anthracene	0.412	0.21	0.487	0.712	0.004	0.451
Acridine	0.301	0.12	0.284	0.188	0.002	0.271
Fluoranthene	0.432	0.738	0.55	1.37	0.005	0.547
Pyrene	0.486	0.556	0.824	0.527	0.005	0.835
Benzo(c)phenanthrene	0.015	0.022	0.025	0.01	0.001	0.027
Benzo(a)anthracene	0.058	0.066	0.025	0.005	0.011	0.029
Chrysene	0.201	0.211	0.126	0.032	0.009	0.134
7,12-Dimethylbenz(a)anthracene	0.08	0.059	0.049	0.035	0.01	0.048
Benzo(b&j)fluoranthene	0.203	0.186	0.22	0.143	0.005	0.206
Benzo(k)fluoranthene	0.167	0.185	0.255	0.165	0.006	0.215
Benzo(a)pyrene	0.029	0.055	0.007	0.004	0.007	0.008
3-Methylcholanthrene	0.007	0.008	0.006	0.002	0.008	0.007
Indeno(123-cd)pyrene	0.002	0.002	0.005	0.002	0.003	0.004
Dibenz(a,h)anthracene	0.003	0.003	0.003	0.005	0.006	0.004
Benzo(ghi)perylene	0.011	0.016	0.01	0.005	0.006	0.011
Dibenzo(a,l)pyrene	0.003	0.001	0.003	0.002	0.002	0.003
Dibenzo(a,i)pyrene	0.003	0.002	0.003	0.001	0.003	0.003
Dibenzo(a,h)pyrene	0.003	0.002	0.003	0.001	0.003	0.002



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 6 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		Patricia McInnes
	09-May	09-May	09-May	09-May	09-May	09-May
Naphthalene	0.252	0.512	1.34	0.437	0.008	0.498
Acenaphthylene	0.177	0.051	0.061	0.07	0.004	0.049
Acenaphthene	0.226	0.18	0.336	0.307	0.006	0.171
Fluorene	0.737	0.385	0.743	1.1	0.014	0.377
Phenanthrene	3.32	0.92	1.81	2.97	0.008	0.903
Anthracene	0.376	0.058	0.164	0.239	0.004	0.062
Acridine	0.264	0.024	0.05	0.176	0.002	0.022
Fluoranthene	0.39	0.131	0.223	0.339	0.005	0.12
Pyrene	0.38	0.109	0.252	0.226	0.005	0.101
Benzo(c)phenanthrene	0.008	0.005	0.01	0.021	0.001	0.007
Benzo(a)anthracene	0.05	0.03	0.015	0.033	0.011	0.027
Chrysene	0.073	0.059	0.052	0.1	0.009	0.054
7,12-Dimethylbenzo(a)anthracene	0.105	0.262	0.045	0.066	0.01	0.235
Benzo(b&j)fluoranthene	0.043	0.061	0.07	0.059	0.005	0.056
Benzo(k)fluoranthene	0.048	0.06	0.073	0.073	0.006	0.052
Benzo(a)pyrene	0.013	0.007	0.007	0.008	0.007	0.006
3-Methylcholanthrene	0.005	0.003	0.005	0.004	0.008	0.003
Indeno(123-cd)pyrene	0.004	0.002	0.002	0.005	0.003	0.002
Dibenzo(a,h)anthracene	0.004	0.002	0.003	0.004	0.006	0.002
Benzo(ghi)perylene	0.014	0.006	0.011	0.013	0.006	0.007
Dibenzo(a,l)pyrene	0.004	0.002	0.004	0.003	0.002	0.002
Dibenzo(a,i)pyrene	0.005	0.003	0.004	0.004	0.003	0.002
Dibenzo(a,h)pyrene	0.003	0.002	0.003	0.002	0.003	0.002



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			Fort McKay
	15-May	15-May	15-May	15-May	15-May	15-May	15-May
Naphthalene	0.113	0.122	4.22	1.33	0.007	0.072	0.103
Acenaphthylene	0.361	0.235	0.214	0.103	0.004	0.006	0.377
Acenaphthene	1.49	0.417	0.503	3.37	0.006	0.05	1.47
Fluorene	2.29	1.12	1.03	7.67	0.009	0.028	2.26
Phenanthrene	7.23	3.94	3.84	25.3	0.011	0.043	7.03
Anthracene	0.742	0.38	0.282	1.81	0.007	0.004	0.792
Acridine	0.952	0.107	0.096	0.276	0.004	0.007	0.947
Fluoranthene	0.733	0.701	0.482	1.57	0.006	0.005	0.697
Pyrene	1.15	0.781	0.628	0.662	0.007	0.004	1.1
Benzo(c)phenanthrene	0.014	0.02	0.011	0.007	0.003	<0.001	0.012
Benzo(a)anthracene	0.025	0.046	0.016	0.005	0.007	<0.001	0.021
Chrysene	0.091	0.1	0.047	0.016	0.006	<0.001	0.096
7,12-Dimethylbenz(a)anthracene	0.088	0.06	0.066	0.079	0.01	0.002	0.077
Benzo(b)fluoranthene	0.016	0.063	0.027	0.002	0.004	<0.001	0.015
Benzo(k)fluoranthene	0.018	0.071	0.031	0.002	0.004	<0.001	0.017
Benzo(a)pyrene	0.011	0.026	0.012	0.009	0.003	<0.001	0.01
3-Methylcholanthrene	0.003	0.002	0.008	0.01	0.003	<0.001	0.002
Indeno(123-cd)pyrene	0.016	0.051	0.033	0.009	0.005	<0.001	0.013
Dibenz(a,h)anthracene	0.058	0.068	0.041	0.018	0.008	<0.001	0.054
Benzo(ghi)perylene	0.027	0.063	0.057	0.017	0.007	<0.001	0.029
Dibenzo(a,l)pyrene	0.015	0.014	0.01	0.011	0.005	<0.001	0.016
Dibenzo(a,i)pyrene	0.019	0.018	0.017	0.022	0.008	<0.001	0.016
Dibenzo(a,h)pyrene	0.022	0.017	0.024	0.013	0.008	<0.001	0.019



Compound Name	Results (ng/m3)				
	AMS 1	AMS 6	AMS 7	Lab Blank	Field Blank
	Fort McKay 21-May	Patricia McInnes 21-May	Athabasca Valley 21-May	21-May	21-May
Naphthalene	0.863	0.975	2.35	0.007	0.235
Acenaphthylene	0.614	0.214	0.43	0.004	0.013
Acenaphthene	0.625	0.491	0.708	0.006	0.059
Fluorene	1.57	1.2	1.86	0.009	0.033
Phenanthrene	11.3	4.05	6.69	0.011	0.041
Anthracene	1.35	0.414	0.536	0.007	0.004
Acridine	1.34	0.202	0.398	0.004	0.005
Fluoranthene	1.58	0.697	0.897	0.006	0.002
Pyrene	2.64	0.718	1.02	0.007	0.003
Benzo(c)phenanthrene	0.028	0.012	0.022	0.003	<0.001
Benzo(a)anthracene	0.097	0.025	0.036	0.007	<0.001
Chrysene	0.302	0.067	0.091	0.006	<0.001
7,12-Dimethylbenz(a)anthracene	0.188	0.109	0.105	0.01	<0.001
Benzo(b)fluoranthene	0.051	0.042	0.05	0.004	<0.001
Benzo(k)fluoranthene	0.058	0.048	0.056	0.004	<0.001
Benzo(a)pyrene	0.04	0.029	0.024	0.003	<0.001
3-Methylcholanthrene	0.005	0.01	0.008	0.003	<0.001
Indeno(123-cd)pyrene	0.056	0.044	0.062	0.005	<0.001
Dibenz(a,h)anthracene	0.078	0.038	0.034	0.008	<0.001
Benzo(ghi)perylene	0.093	0.086	0.047	0.007	<0.001
Dibenzo(a,l)pyrene	0.016	0.018	0.016	0.005	<0.001
Dibenzo(a,i)pyrene	0.017	0.01	0.009	0.008	<0.001
Dibenzo(a,h)pyrene	0.026	0.013	0.019	0.008	<0.001



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 6 Repeat
	Fort McKay 27-May	Patricia McInnes 27-May	Athabasca Valley 27-May	Anzac 27-May	27-May	Patricia McInnes 27-May
Naphthalene	0.508	1.43	1.49	7.02	0.007	1.42
Acenaphthylene	0.16	0.664	0.148	0.235	0.004	0.658
Acenaphthene	0.478	0.596	0.486	12.8	0.006	0.607
Fluorene	0.944	2	0.952	14.3	0.009	2
Phenanthrene	2.55	9.98	3.64	67	0.011	9.95
Anthracene	0.333	0.752	0.354	3.99	0.007	0.711
Acridine	0.304	0.147	0.117	12.1	0.004	0.167
Fluoranthene	0.288	1.87	0.448	3.12	0.006	1.86
Pyrene	0.401	1.55	0.618	1.44	0.007	1.54
Benzo(c)phenanthrene	0.004	0.038	0.007	0.012	0.003	0.038
Benzo(a)anthracene	0.027	0.069	0.008	0.066	0.007	0.066
Chrysene	0.04	0.177	0.03	0.131	0.006	0.172
7,12-Dimethylbenz(a)anthracene	0.088	0.113	0.09	0.122	0.01	0.109
Benzo(b)fluoranthene	0.013	0.106	0.017	0.036	0.004	0.098
Benzo(k)fluoranthene	0.015	0.12	0.019	0.042	0.004	0.111
Benzo(a)pyrene	0.009	0.081	0.009	0.047	0.003	0.076
3-Methylcholanthrene	0.002	0.011	0.011	0.009	0.003	0.009
Indeno(123-cd)pyrene	0.012	0.129	0.026	0.026	0.005	0.125
Dibenz(a,h)anthracene	0.033	0.074	0.027	0.043	0.008	0.068
Benzo(ghi)perylene	0.01	0.045	0.041	0.069	0.007	0.047
Dibenzo(a,l)pyrene	0.008	0.015	0.007	0.007	0.005	0.014
Dibenzo(a,i)pyrene	0.019	0.014	0.012	0.01	0.008	0.013
Dibenzo(a,h)pyrene	0.017	0.019	0.015	0.014	0.008	0.02



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
	02-Jun	02-Jun	02-Jun	02-Jun	02-Jun	02-Jun
Naphthalene	0.727	1	9.86	1.28	0.007	0.17
Acenaphthylene	0.45	0.725	1.09	0.472	0.004	0.003
Acenaphthene	0.581	0.361	1.64	2.01	0.006	0.022
Fluorene	2.19	0.996	2.8	23.3	0.009	0.009
Phenanthrene	18.7	6.63	9.35	81.7	0.011	0.034
Anthracene	1.24	0.293	0.496	3.61	0.007	0.006
Acridine	1.89	0.187	0.214	0.409	0.004	0.001
Fluoranthene	2.32	0.946	1.05	4.5	0.006	<0.001
Pyrene	3.35	0.823	1.03	1.91	0.007	<0.001
Benzo(c)phenanthrene	0.052	0.047	0.03	0.013	0.003	<0.001
Benzo(a)anthracene	0.135	0.088	0.048	0.005	0.007	<0.001
Chrysene	0.447	0.332	0.228	0.03	0.006	<0.001
7,12-Dimethylbenz(a)anthracene	0.599	0.727	0.666	0.069	0.01	0.002
Benzo(b)fluoranthene	0.125	0.169	0.076	0.005	0.004	<0.001
Benzo(k)fluoranthene	0.141	0.191	0.086	0.007	0.004	<0.001
Benzo(a)pyrene	0.044	0.069	0.029	0.013	0.003	<0.001
3-Methylcholanthrene	0.002	0.004	0.003	0.008	0.003	<0.001
Indeno(123-cd)pyrene	0.086	0.13	0.066	0.011	0.005	<0.001
Dibenz(a,h)anthracene	0.067	0.077	0.039	0.02	0.008	<0.001
Benzo(ghi)perylene	0.064	0.097	0.08	0.01	0.007	<0.001
Dibenzo(a,l)pyrene	0.013	0.015	0.018	0.006	0.005	<0.001
Dibenzo(a,i)pyrene	0.025	0.028	0.021	0.018	0.008	<0.001
Dibenzo(a,h)pyrene	0.021	0.021	0.023	0.022	0.008	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			Athabasca Valley
	08-Jun	08-Jun	08-Jun	08-Jun	08-Jun	08-Jun	08-Jun
Naphthalene	0.829	1.83	0.28	10.4	0.007	0.158	0.287
Acenaphthylene	1.14	1.76	0.066	0.876	0.004	0.003	0.069
Acenaphthene	0.588	1.06	0.196	67.5	0.006	0.02	0.204
Fluorene	1.9	3.14	0.513	75.3	0.009	0.003	0.495
Phenanthrene	15.4	10.8	1.87		0.011	0.028	2
Anthracene	1.3	0.846	0.212	4.86	0.007	0.001	0.218
Acridine	1.3	0.491	0.164	0.96	0.004	<0.001	0.147
Fluoranthene	1.56	1.68	0.121	7.65	0.006	<0.001	0.112
Pyrene	2.48	1.65	0.144	3.51	0.007	<0.001	0.145
Benzo(c)phenanthrene	0.015	0.03	0.003	0.015	0.003	<0.001	0.003
Benzo(a)anthracene	0.03	0.043	0.002	0.085	0.007	<0.001	0.003
Chrysene	0.211	0.146	0.006	0.14	0.006	<0.001	0.006
7,12-Dimethylbenz(a)anthracene	0.153	0.197	0.057	0.282	0.01	<0.001	0.061
Benzo(b)fluoranthene	0.014	0.057	0.014	0.024	0.004	<0.001	0.014
Benzo(k)fluoranthene	0.016	0.065	0.017	0.027	0.004	<0.001	0.016
Benzo(a)pyrene	0.015	0.033	0.007	0.034	0.003	<0.001	0.007
3-Methylcholanthrene	0.002	0.003	0.006	0.01	0.003	<0.001	0.006
Indeno(123-cd)pyrene	0.013	0.056	0.009	0.021	0.005	<0.001	0.01
Dibenz(a,h)anthracene	0.038	0.037	0.027	0.037	0.008	<0.001	0.025
Benzo(ghi)perylene	0.009	0.033	0.009	0.029	0.007	<0.001	0.011
Dibenzo(a,l)pyrene	0.007	0.006	0.005	0.01	0.005	<0.001	0.005
Dibenzo(a,i)pyrene	0.01	0.011	0.009	0.022	0.008	<0.001	0.011
Dibenzo(a,h)pyrene	0.014	0.014	0.013	0.021	0.008	<0.001	0.013



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay 14-Jun	Patricia McInnes 14-Jun	Athabasca Valley 14-Jun	Anzac 14-Jun	14-Jun	14-Jun
Naphthalene	0.48	1.27	2.56	0.517	0.007	0.194
Acenaphthylene	0.082	0.192	0.355	0.22	0.004	0.003
Acenaphthene	0.384	0.634	0.457	1.97	0.006	0.021
Fluorene	1.11	0.992	0.833	10.4	0.009	0.012
Phenanthrene	7.09	3.29	3.72	42.1	0.011	0.04
Anthracene	0.833	0.254	0.36	2.09	0.007	0.002
Acridine	0.824	0.283	0.18	0.416	0.004	<0.001
Fluoranthene	0.628	0.292	0.378	2.72	0.006	<0.001
Pyrene	1.12	0.311	0.42	1.08	0.007	<0.001
Benzo(c)phenanthrene	0.007	0.003	0.003	0.005	0.003	<0.001
Benzo(a)anthracene	0.029	0.007	0.01	0.005	0.007	<0.001
Chrysene	0.062	0.013	0.021	0.022	0.006	<0.001
7,12-Dimethylbenz(a)anthracene	0.08	0.041	0.034	0.019	0.01	<0.001
Benzo(b)fluoranthene	0.005	0.004	0.003	0.005	0.004	<0.001
Benzo(k)fluoranthene	0.005	0.005	0.003	0.006	0.004	<0.001
Benzo(a)pyrene	0.009	0.01	0.01	0.005	0.003	<0.001
3-Methylcholanthrene	0.009	0.006	0.005	0.002	0.003	<0.001
Indeno(123-cd)pyrene	0.007	0.006	0.01	0.005	0.005	<0.001
Dibenz(a,h)anthracene	0.009	0.004	0.011	0.012	0.008	<0.001
Benzo(ghi)perylene	0.011	0.011	0.018	0.008	0.007	<0.001
Dibenzo(a,l)pyrene	0.004	0.004	0.008	0.003	0.005	<0.001
Dibenzo(a,i)pyrene	0.018	0.016	0.014	0.008	0.008	<0.001
Dibenzo(a,h)pyrene	0.012	0.02	0.015	0.004	0.008	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			Anzac
	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun
Naphthalene	0.578	1.06	1.02	7.08	0.007	0.334	7.1
Acenaphthylene	0.162	0.41	0.557	0.596	0.004	0.014	0.608
Acenaphthene	0.771	0.59	0.273	33.2	0.006	0.078	34.9
Fluorene	1.13	1.32	0.736	31.8	0.009	0.064	33.6
Phenanthrene	7.8	4.14	3.99	34.9	0.011	0.066	37
Anthracene	0.827	0.539	0.499	2.35	0.007	0.009	2.32
Acridine	1.12	0.24	0.318	0.436	0.004	0.011	0.408
Fluoranthene	0.772	0.437	0.485	2.35	0.006	0.003	2.38
Pyrene	1.3	0.495	0.535	1.08	0.007	0.004	1.1
Benzo(c)phenanthrene	0.01	0.006	0.006	0.005	0.003	<0.001	0.006
Benzo(a)anthracene	0.014	0.009	0.023	0.008	0.007	<0.001	0.006
Chrysene	0.061	0.039	0.042	0.022	0.006	<0.001	0.021
7,12-Dimethylbenz(a)anthracene	0.075	0.128	0.057	0.094	0.01	<0.001	0.06
Benzo(b)fluoranthene	0.002	0.014	0.014	0.006	0.004	<0.001	0.005
Benzo(k)fluoranthene	0.002	0.017	0.015	0.006	0.004	<0.001	0.006
Benzo(a)pyrene	0.008	0.018	0.011	0.01	0.003	<0.001	0.011
3-Methylcholanthrene	0.005	0.016	0.008	0.006	0.003	<0.001	0.006
Indeno(123-cd)pyrene	0.01	0.018	0.009	0.01	0.005	<0.001	0.011
Dibenz(a,h)anthracene	0.011	0.019	0.014	0.018	0.008	<0.001	0.015
Benzo(ghi)perylene	0.01	0.028	0.014	0.015	0.007	<0.001	0.017
Dibenzo(a,l)pyrene	0.002	0.016	0.005	0.006	0.005	<0.001	0.006
Dibenzo(a,i)pyrene	0.01	0.025	0.009	0.012	0.008	<0.001	0.011
Dibenzo(a,h)pyrene	0.011	0.021	0.009	0.013	0.008	<0.001	0.015



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Polycyclic Aromatic Hydrocarbons (PAHs)

2012
Indicated Sites and Dates

Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay 26-Jun	Patricia McInnes 26-Jun	Athabasca Valley 26-Jun	Anzac 26-Jun	26-Jun	26-Jun
Naphthalene	0.643	0.555	1.04	6.94	0.007	0.368
Acenaphthylene	0.184	0.083	0.363	1.74	0.004	0.026
Acenaphthene	0.205	0.174	1.06	61.7	0.006	0.113
Fluorene	0.545	0.442	1.99	52.5	0.009	0.049
Phenanthrene	6.1	3.07	2.33	62.6	0.011	0.099
Anthracene	0.764	0.23	0.266	4.7	0.007	0.016
Acridine	0.649	0.061	0.091	0.916	0.004	0.016
Fluoranthene	1.35	0.408	0.148	3.69	0.006	0.007
Pyrene	2.45	0.414	0.126	1.76	0.007	0.009
Benzo(c)phenanthrene	0.025	0.004	0.003	0.013	0.003	<0.001
Benzo(a)anthracene	0.024	0.006	0.004	0.009	0.007	<0.001
Chrysene	0.117	0.021	0.007	0.039	0.006	<0.001
7,12-Dimethylbenz(a)anthracene	0.041	0.04	0.069	0.068	0.01	<0.001
Benzo(b)fluoranthene	0.008	0.003	0.003	0.02	0.004	<0.001
Benzo(k)fluoranthene	0.01	0.004	0.004	0.022	0.004	<0.001
Benzo(a)pyrene	0.009	0.01	0.01	0.014	0.003	<0.001
3-Methylcholanthrene	0.007	0.005	0.007	0.009	0.003	<0.001
Indeno(123-cd)pyrene	0.012	0.006	0.007	0.037	0.005	<0.001
Dibenz(a,h)anthracene	0.01	0.009	0.01	0.025	0.008	<0.001
Benzo(ghi)perylene	0.002	0.008	0.01	0.045	0.007	<0.001
Dibenzo(a,l)pyrene	0.005	0.005	0.005	0.012	0.005	<0.001
Dibenzo(a,i)pyrene	0.016	0.009	0.018	0.019	0.008	<0.001
Dibenzo(a,h)pyrene	0.017	0.007	0.021	0.014	0.008	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			Fort McKay
	02-Jul	02-Jul	02-Jul	02-Jul	02-Jul	02-Jul	02-Jul
Naphthalene	0.294	0.272	1.33	0.326	0.003	0.014	0.267
Acenaphthylene	0.166	0.155	0.15	0.056	0.001	0.001	0.156
Acenaphthene	0.163	0.313	0.322	0.145	0.001	<0.001	0.154
Fluorene	0.438	0.566	0.838	0.397	0.002	0.001	0.411
Phenanthrene	2.55	1.64	3.07	1.72	0.003	0.007	2.46
Anthracene	0.312	0.116	0.295	0.149	0.001	0.001	0.359
Acridine	0.196	0.067	0.115	0.058	0.001	<0.001	0.191
Fluoranthene	0.48	0.208	0.394	0.177	0.002	<0.001	0.493
Pyrene	0.883	0.207	0.413	0.148	0.002	<0.001	0.868
Benzo(c)phenanthrene	0.015	0.01	0.011	0.023	0.001	<0.001	0.015
Benzo(a)anthracene	0.036	0.015	0.019	0.011	0.002	0.001	0.037
Chrysene	0.108	0.028	0.045	0.016	0.002	<0.001	0.117
7,12-Dimethylbenz(a)anthracene	0.023	0.036	0.042	0.014	0.008	<0.001	0.029
Benzo(b)fluoranthene	0.037	0.07	0.081	0.076	0.001	0.001	0.038
Benzo(k)fluoranthene	0.045	0.074	0.081	0.078	0.001	0.002	0.056
Benzo(a)pyrene	0.011	0.008	0.014	0.007	0.001	<0.001	0.011
3-Methylcholanthrene	0.005	0.009	0.008	0.003	0.001	<0.001	0.007
Indeno(123-cd)pyrene	0.016	0.008	0.009	0.008	0.001	<0.001	0.013
Dibenz(a,h)anthracene	0.02	0.008	0.016	0.015	0.001	<0.001	0.019
Benzo(ghi)perylene	0.016	0.02	0.012	0.009	0.002	0.002	0.016
Dibenzo(a,l)pyrene	0.028	0.016	0.028	0.026	0.003	<0.001	0.026
Dibenzo(a,i)pyrene	0.024	0.028	0.027	0.02	0.006	0.002	0.029
Dibenzo(a,h)pyrene	0.028	0.028	0.029	0.028	0.006	<0.001	0.032



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
	08-Jul	08-Jul	08-Jul	08-Jul	08-Jul	08-Jul
Naphthalene	0.148	0.263	0.973	1.8	0.003	0.039
Acenaphthylene	0.134	0.267	0.246	0.268	0.001	0.002
Acenaphthene	0.195	0.242	0.572	13	0.001	0.002
Fluorene	0.455	0.747	1.01	21.3	0.002	<0.001
Phenanthrene	2.73	4.69	3.12	50.2	0.003	0.008
Anthracene	0.299	0.372	0.234	4.02	0.001	0.001
Acridine	0.164	0.049	0.042	0.158	0.001	<0.001
Fluoranthene	0.624	1.01	0.54	4.71	0.002	<0.001
Pyrene	1.16	0.82	0.544	1.87	0.002	<0.001
Benzo(c)phenanthrene	0.025	0.032	0.02	0.019	0.001	<0.001
Benzo(a)anthracene	0.062	0.047	0.029	0.011	0.002	<0.001
Chrysene	0.216	0.105	0.071	0.036	0.002	<0.001
7,12-Dimethylbenz(a)anthracene	0.08	0.088	0.027	0.021	0.008	<0.001
Benzo(b)fluoranthene	0.037	0.065	0.067	0.041	0.001	0.003
Benzo(k)fluoranthene	0.038	0.065	0.074	0.043	0.001	0.003
Benzo(a)pyrene	0.017	0.018	0.01	0.007	0.001	<0.001
3-Methylcholanthrene	0.008	0.003	0.003	0.003	0.001	<0.001
Indeno(123-cd)pyrene	0.008	0.009	0.008	0.005	0.001	<0.001
Dibenz(a,h)anthracene	0.011	0.016	0.013	0.013	0.001	0.002
Benzo(ghi)perylene	0.013	0.02	0.012	0.01	0.002	0.001
Dibenzo(a,l)pyrene	0.011	0.013	0.007	0.018	0.003	0.002
Dibenzo(a,i)pyrene	0.019	0.018	0.019	0.016	0.006	0.005
Dibenzo(a,h)pyrene	0.012	0.019	0.014	0.018	0.006	0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 14-Jul	Patricia McInnes 14-Jul	Athabasca Valley 14-Jul	Anzac 14-Jul	14-Jul	14-Jul	Patricia McInnes 14-Jul
Naphthalene	0.472	0.325	0.95	2.04	0.003	0.05	0.323
Acenaphthylene	0.302	0.351	0.272	0.531	0.001	0.002	0.345
Acenaphthene	0.136	0.221	0.307	18.2	0.001	0.011	0.217
Fluorene	1.29	1.04	0.975	22.7	0.002	<0.001	1.01
Phenanthrene	4.92	4.43	3.74	54	0.003	0.006	4.38
Anthracene	0.365	0.338	0.295	3.96	0.001	0.001	0.321
Acridine	0.256	0.101	0.08	0.429	0.001	<0.001	0.097
Fluoranthene	0.74	0.751	0.597	4.83	0.002	<0.001	0.741
Pyrene	1.27	0.598	0.582	1.99	0.002	<0.001	0.587
Benzo(c)phenanthrene	0.027	0.021	0.018	0.021	0.001	<0.001	0.02
Benzo(a)anthracene	0.113	0.053	0.049	0.049	0.002	<0.001	0.052
Chrysene	0.306	0.08	0.069	0.061	0.002	<0.001	0.076
7,12-Dimethylbenz(a)anthracene	0.072	0.041	0.07	0.053	0.008	0.002	0.044
Benzo(b)fluoranthene	0.032	0.042	0.031	0.049	0.001	<0.001	0.042
Benzo(k)fluoranthene	0.033	0.047	0.032	0.051	0.001	<0.001	0.044
Benzo(a)pyrene	0.042	0.032	0.031	0.029	0.001	<0.001	0.025
3-Methylcholanthrene	0.009	0.005	0.009	0.007	0.001	<0.001	0.006
Indeno(123-cd)pyrene	0.009	0.006	0.013	0.004	0.001	<0.001	0.007
Dibenz(a,h)anthracene	0.021	0.017	0.014	0.011	0.001	<0.001	0.016
Benzo(ghi)perylene	0.016	0.015	0.013	0.009	0.002	<0.001	0.013
Dibenzo(a,l)pyrene	0.009	0.015	0.012	0.006	0.003	<0.001	0.007
Dibenzo(a,i)pyrene	0.027	0.023	0.027	0.014	0.006	0.002	0.022
Dibenzo(a,h)pyrene	0.023	0.025	0.023	0.018	0.006	<0.001	0.022



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul
Naphthalene	0.236	0.551	2.75	2.7	0.003	0.02
Acenaphthylene	0.087	0.869	0.466	0.456	0.001	<0.001
Acenaphthene	0.268	0.544	0.77	15.2	0.001	0.006
Fluorene	0.589	1.15	1.38	25.5	0.002	0.006
Phenanthrene	3.3	3.91	3.8	44.4	0.003	0.005
Anthracene	0.376	0.414	0.41	2.29	0.001	0.001
Acridine	0.288	0.086	0.089	0.195	0.001	<0.001
Fluoranthene	0.57	0.601	0.495	2.84	0.002	<0.001
Pyrene	0.984	0.511	0.53	1.08	0.002	<0.001
Benzo(c)phenanthrene	0.012	0.021	0.014	0.027	0.001	<0.001
Benzo(a)anthracene	0.026	0.023	0.019	0.005	0.002	<0.001
Chrysene	0.115	0.045	0.041	0.018	0.002	<0.001
7,12-Dimethylbenz(a)anthracene	0.063	0.031	0.026	0.007	0.008	0.004
Benzo(b)fluoranthene	0.024	0.033	0.031	0.018	0.001	<0.001
Benzo(k)fluoranthene	0.025	0.036	0.034	0.019	0.001	<0.001
Benzo(a)pyrene	0.009	0.008	0.013	0.009	0.001	<0.001
3-Methylcholanthrene	0.002	0.002	0.005	0.003	0.001	<0.001
Indeno(123-cd)pyrene	0.01	0.013	0.008	0.005	0.001	<0.001
Dibenz(a,h)anthracene	0.009	0.01	0.008	0.008	0.001	<0.001
Benzo(ghi)perylene	0.007	0.01	0.015	0.005	0.002	<0.001
Dibenzo(a,l)pyrene	0.013	0.005	0.006	0.005	0.003	<0.001
Dibenzo(a,i)pyrene	0.01	0.005	0.014	0.012	0.006	<0.001
Dibenzo(a,h)pyrene	0.023	0.02	0.012	0.016	0.006	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 26-Jul	Patricia McInnes 26-Jul	Athabasca Valley 26-Jul	Anzac 26-Jul	26-Jul	26-Jul	Athabasca Valley 26-Jul
Naphthalene	0.131	0.23	1.2	1.03	0.003	0.022	1.23
Acenaphthylene	0.05	0.261	0.38	0.277	0.001	<0.001	0.378
Acenaphthene	0.256	0.164	0.938	10.4	0.001	<0.001	0.922
Fluorene	0.521	0.806	1.52	16.9	0.002	<0.001	1.49
Phenanthrene	3.36	3.43	3.02	31.4	0.003	<0.001	2.96
Anthracene	0.366	0.317	0.325	2.24	0.001	<0.001	0.328
Acridine	0.281	0.082	0.063	0.174	0.001	<0.001	0.057
Fluoranthene	0.599	0.552	0.357	2.26	0.002	<0.001	0.329
Pyrene	1.1	0.486	0.35	0.946	0.002	<0.001	0.343
Benzo(c)phenanthrene	0.02	0.019	0.016	0.018	0.001	<0.001	0.014
Benzo(a)anthracene	0.036	0.03	0.024	0.016	0.002	<0.001	0.023
Chrysene	0.138	0.064	0.046	0.036	0.002	<0.001	0.044
7,12-Dimethylbenz(a)anthracene	0.035	0.064	0.034	0.035	0.008	<0.001	0.035
Benzo(b)fluoranthene	0.024	0.018	0.028	0.029	0.001	<0.001	0.025
Benzo(k)fluoranthene	0.025	0.018	0.031	0.029	0.001	<0.001	0.027
Benzo(a)pyrene	0.007	0.008	0.011	0.009	0.001	<0.001	0.012
3-Methylcholanthrene	0.001	0.007	0.002	<0.001	0.001	<0.001	0.002
Indeno(123-cd)pyrene	0.007	0.004	0.007	0.005	0.001	<0.001	0.007
Dibenz(a,h)anthracene	0.006	0.007	0.006	0.007	0.001	<0.001	0.007
Benzo(ghi)perylene	0.008	0.009	0.011	0.007	0.002	<0.001	0.009
Dibenzo(a,l)pyrene	0.005	0.007	0.007	0.008	0.003	<0.001	0.004
Dibenzo(a,i)pyrene	0.013	0.014	0.014	0.011	0.006	<0.001	0.011
Dibenzo(a,h)pyrene	0.006	0.017	0.012	0.011	0.006	<0.001	0.009



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay 01-Aug	Patricia McInnes 01-Aug	Athabasca Valley 01-Aug	Anzac 01-Aug	01-Aug	01-Aug	Anzac 01-Aug
Naphthalene	0.127	0.309	0.596	0.742	0.003	0.036	0.717
Acenaphthylene	0.044	0.027	0.13	0.127	0.001	<0.001	0.119
Acenaphthene	0.143	0.106	0.269	3.08	0.001	0.002	3.14
Fluorene	0.272	0.316	0.437	5.88	0.002	<0.001	5.96
Phenanthrene	2.39	2.5	2.64	11.5	0.003	0.008	11.6
Anthracene	0.2	0.164	0.28	0.869	0.001	0.003	0.916
Acridine	0.189	0.046	0.081	0.065	0.001	<0.001	0.07
Fluoranthene	0.417	0.392	0.367	1.01	0.002	0.002	1.01
Pyrene	0.814	0.318	0.43	0.454	0.002	0.002	0.459
Benzo(c)phenanthrene	0.015	0.032	0.032	0.023	0.001	<0.001	0.026
Benzo(a)anthracene	0.03	0.011	0.017	0.014	0.002	<0.001	0.012
Chrysene	0.116	0.032	0.043	0.019	0.002	<0.001	0.016
7,12-Dimethylbenz(a)anthracene	0.052	0.045	0.035	0.035	0.008	<0.001	0.039
Benzo(b)fluoranthene	0.034	0.113	0.065	0.066	0.001	<0.001	0.074
Benzo(k)fluoranthene	0.036	0.117	0.067	0.065	0.001	<0.001	0.076
Benzo(a)pyrene	0.007	0.009	0.012	0.007	0.001	<0.001	0.007
3-Methylcholanthrene	<0.001	0.003	0.002	0.002	0.001	<0.001	0.002
Indeno(123-cd)pyrene	0.006	0.01	0.009	0.005	0.001	<0.001	0.006
Dibenz(a,h)anthracene	0.006	0.008	0.008	0.006	0.001	<0.001	0.007
Benzo(ghi)perylene	0.01	0.014	0.017	0.009	0.002	<0.001	0.009
Dibenzo(a,l)pyrene	0.008	0.009	0.01	0.007	0.003	<0.001	0.008
Dibenzo(a,i)pyrene	0.006	0.011	0.012	0.009	0.006	<0.001	0.008
Dibenzo(a,h)pyrene	<0.001	0.015	0.017	0.015	0.006	<0.001	0.018



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay 07-Aug	Patricia McInnes 07-Aug	Athabasca Valley 07-Aug	Anzac 07-Aug	07-Aug	07-Aug	Fort McKay 07-Aug
Naphthalene	0.133	0.298	0.684	2.9	0.003	0.013	0.124
Acenaphthylene	0.175	0.162	0.483	0.565	0.001	0.001	0.186
Acenaphthene	0.089	0.081	0.186	17.4	0.001	0.002	0.087
Fluorene	0.271	0.427	0.477	24.3	0.001	0.006	0.276
Phenanthrene	3.2	2.8	1.92	68.2	0.002	0.009	3.16
Anthracene	0.296	0.36	0.206	3.75	0.001	0.001	0.283
Acridine	0.116	0.176	0.119	0.212	0.001	<0.001	0.106
Fluoranthene	0.556	0.417	0.208	6.8	0.003	0.003	0.584
Pyrene	1.23	0.412	0.237	2.66	0.002	0.002	1.19
Benzo(c)phenanthrene	0.016	0.013	0.019	0.019	0.001	<0.001	0.014
Benzo(a)anthracene	0.228	0.1	0.051	0.047	0.001	0.002	0.221
Chrysene	0.263	0.113	0.058	0.052	0.002	<0.001	0.252
7,12-Dimethylbenz(a)anthracene	0.156	0.085	0.034	0.09	0.003	<0.001	0.163
Benzo(b)fluoranthene	0.157	0.054	0.017	0.045	0.002	<0.001	0.159
Benzo(k)fluoranthene	0.157	0.048	0.013	0.032	0.002	<0.001	0.159
Benzo(a)pyrene	0.041	0.043	0.015	0.01	0.003	<0.001	0.039
3-Methylcholanthrene	0.002	0.003	0.003	0.004	0.004	<0.001	0.002
Indeno(123-cd)pyrene	0.022	0.033	0.017	0.006	0.004	<0.001	0.019
Dibenz(a,h)anthracene	0.107	0.009	0.009	0.011	0.004	0.001	0.095
Benzo(ghi)perylene	0.041	0.038	0.029	0.021	0.003	<0.001	0.047
Dibenzo(a,l)pyrene	0.013	0.016	0.007	0.006	0.005	<0.001	0.012
Dibenzo(a,i)pyrene	0.036	0.031	0.023	0.033	0.007	0.001	0.032
Dibenzo(a,h)pyrene	0.035	0.032	0.029	0.015	0.007	0.002	0.037



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug
Naphthalene	0.268	0.443	0.242	1.69	0.003	0.039
Acenaphthylene	0.335	0.274	0.118	0.112	0.001	0.002
Acenaphthene	0.073	0.337	0.057	4.35	0.001	0.003
Fluorene	0.451	0.939	0.212	6.86	0.001	0.008
Phenanthrene	4.87	1.84	1.75	24.4	0.002	0.012
Anthracene	0.367	0.253	0.152	1.17	0.001	0.001
Acridine	0.361	0.043	0.147	0.065	0.001	<0.001
Fluoranthene	0.66	0.266	0.322	1.9	0.003	0.003
Pyrene	1.13	0.229	0.346	0.69	0.002	0.005
Benzo(c)phenanthrene	0.02	0.008	0.005	0.011	0.001	<0.001
Benzo(a)anthracene	0.3	0.05	0.047	0.028	0.001	0.001
Chrysene	0.243	0.057	0.053	0.031	0.002	<0.001
7,12-Dimethylbenz(a)anthracene	0.316	0.488	0.11	0.345	0.003	0.002
Benzo(b)fluoranthene	0.043	0.215	0.021	0.116	0.002	<0.001
Benzo(k)fluoranthene	0.04	0.215	0.015	0.116	0.002	<0.001
Benzo(a)pyrene	0.049	0.012	0.012	0.015	0.003	<0.001
3-Methylcholanthrene	0.003	0.003	0.003	0.005	0.004	<0.001
Indeno(123-cd)pyrene	0.022	0.011	0.01	0.007	0.004	<0.001
Dibenz(a,h)anthracene	0.017	0.011	0.009	0.039	0.004	<0.001
Benzo(ghi)perylene	0.036	0.03	0.026	0.011	0.003	<0.001
Dibenzo(a,l)pyrene	0.016	0.016	0.007	0.007	0.005	<0.001
Dibenzo(a,i)pyrene	0.011	0.017	0.011	0.02	0.007	<0.001
Dibenzo(a,h)pyrene	0.019	0.019	0.014	0.012	0.007	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 19-Aug	Patricia McInnes 19-Aug	Athabasca Valley 19-Aug	Anzac 19-Aug	19-Aug	19-Aug	Patricia McInnes 19-Aug
Naphthalene	0.222	0.104	3.1	8.62	0.003	0.022	0.115
Acenaphthylene	0.222	0.051	0.658	0.71	0.001	0.002	0.048
Acenaphthene	0.132	0.131	0.966	28.7	0.001	0.003	0.142
Fluorene	0.533	0.164	2.05	27.3	0.001	0.003	0.161
Phenanthrene	3.31	0.275	5.78	39.8	0.002	0.011	0.288
Anthracene	3.23	0.029	0.468	2.9	0.001	0.001	0.028
Acridine	0.337	0.016	0.322	0.329	0.001	<0.001	0.014
Fluoranthene	0.626	0.018	1.65	3.51	0.003	0.005	0.017
Pyrene	0.953	0.023	1.45	1.42	0.002	0.006	0.022
Benzo(c)phenanthrene	0.026	0.011	0.026	0.01	0.001	<0.001	0.011
Benzo(a)anthracene	0.194	0.008	0.278	0.056	0.001	0.003	0.007
Chrysene	0.221	0.009	0.317	0.062	0.002	0.002	0.007
7,12-Dimethylbenz(a)anthracene	0.135	0.032	0.17	0.28	0.003	0.004	0.034
Benzo(b)fluoranthene	0.109	0.005	0.178	0.099	0.002	<0.001	0.004
Benzo(k)fluoranthene	0.1	0.005	0.178	0.096	0.002	<0.001	0.004
Benzo(a)pyrene	0.028	0.002	0.062	0.025	0.003	<0.001	0.002
3-Methylcholanthrene	0.003	0.001	0.004	0.002	0.004	<0.001	0.001
Indeno(123-cd)pyrene	0.004	0.002	0.046	0.004	0.004	<0.001	0.002
Dibenz(a,h)anthracene	0.008	0.002	0.012	0.006	0.004	<0.001	0.002
Benzo(ghi)perylene	0.01	0.003	0.069	0.009	0.003	<0.001	0.003
Dibenzo(a,l)pyrene	0.008	<0.001	0.008	0.007	0.005	<0.001	<0.001
Dibenzo(a,i)pyrene	0.009	<0.001	0.008	0.008	0.007	<0.001	<0.001
Dibenzo(a,h)pyrene	0.009	0.001	0.009	0.006	0.007	0.001	0.001



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay 25-Aug	Patricia McInnes 25-Aug	Athabasca Valley 25-Aug	Anzac 25-Aug	25-Aug	25-Aug
Naphthalene	0.247	0.073	1.46	0.756	0.003	0.056
Acenaphthylene	0.347	0.029	0.64	0.176	0.001	0.001
Acenaphthene	0.091	0.047	1.14	0.819	0.001	0.002
Fluorene	0.392	0.042	2.41	1.2	0.001	0.006
Phenanthrene	2.61	0.168	3.68	3.78	0.002	0.016
Anthracene	0.269	0.022	0.45	0.311	0.001	0.002
Acridine	0.208	0.005	0.174	0.192	0.001	<0.001
Fluoranthene	0.471	0.018	0.319	0.363	0.003	0.003
Pyrene	0.658	0.021	0.359	0.22	0.002	0.003
Benzo(c)phenanthrene	0.006	<0.001	0.006	0.004	0.001	<0.001
Benzo(a)anthracene	0.085	0.007	0.045	0.022	0.001	0.002
Chrysene	0.097	0.007	0.051	0.024	0.002	<0.001
7,12-Dimethylbenz(a)anthracene	0.125	0.026	0.248	0.247	0.003	<0.001
Benzo(b)fluoranthene	0.063	0.005	0.094	0.088	0.002	<0.001
Benzo(k)fluoranthene	0.066	0.005	0.098	0.088	0.002	<0.001
Benzo(a)pyrene	0.009	<0.001	0.012	0.009	0.003	<0.001
3-Methylcholanthrene	0.002	0.002	0.002	0.003	0.004	<0.001
Indeno(123-cd)pyrene	0.005	<0.001	0.006	0.004	0.004	<0.001
Dibenz(a,h)anthracene	0.004	0.002	0.02	0.003	0.004	<0.001
Benzo(ghi)perylene	0.005	0.002	0.014	0.006	0.003	<0.001
Dibenzo(a,l)pyrene	0.006	<0.001	0.005	0.005	0.005	<0.001
Dibenzo(a,i)pyrene	0.008	<0.001	0.005	0.005	0.007	<0.001
Dibenzo(a,h)pyrene	0.009	0.002	0.005	0.005	0.007	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 31-Aug	Patricia McInnes 31-Aug	Athabasca Valley 31-Aug	Anzac 31-Aug	31-Aug	31-Aug	Athabasca Valley 31-Aug
Naphthalene	0.279	0.062	0.699	1.92	0.003	0.028	0.706
Acenaphthylene	0.083	0.012	1.08	0.236	0.001	0.007	1.1
Acenaphthene	0.133	0.025	0.149	6.63	0.001	0.003	0.139
Fluorene	0.303	0.046	0.796	11.3	0.001	0.005	0.761
Phenanthrene	1.43	0.133	1.85	18.3	0.002	0.009	1.78
Anthracene	0.169	0.012	0.219	1.03	0.001	<0.001	0.246
Acridine	0.179	0.007	0.086	0.165	0.001	<0.001	0.079
Fluoranthene	0.254	0.01	0.293	1.47	0.003	0.003	0.284
Pyrene	0.336	0.018	0.323	0.628	0.002	0.008	0.311
Benzo(c)phenanthrene	0.003	<0.001	0.002	0.002	0.001	<0.001	0.002
Benzo(a)anthracene	0.049	0.003	0.069	0.036	0.001	0.004	0.067
Chrysene	0.056	0.004	0.078	0.041	0.002	0.004	0.076
7,12-Dimethylbenz(a)anthracene	0.203	0.03	0.044	0.193	0.003	0.01	0.04
Benzo(b)fluoranthene	0.039	0.003	0.097	0.089	0.002	<0.001	0.09
Benzo(k)fluoranthene	0.039	0.003	0.098	0.096	0.002	<0.001	0.099
Benzo(a)pyrene	0.009	<0.001	0.036	0.011	0.003	<0.001	0.032
3-Methylcholanthrene	0.002	<0.001	0.003	0.005	0.004	<0.001	0.003
Indeno(123-cd)pyrene	0.005	<0.001	0.017	0.005	0.004	<0.001	0.015
Dibenz(a,h)anthracene	0.003	<0.001	0.004	0.003	0.004	<0.001	0.003
Benzo(ghi)perylene	0.006	<0.001	0.03	0.004	0.003	<0.001	0.029
Dibenzo(a,l)pyrene	0.006	<0.001	0.005	0.007	0.005	<0.001	0.006
Dibenzo(a,i)pyrene	0.008	<0.001	0.006	0.006	0.007	<0.001	0.006
Dibenzo(a,h)pyrene	0.008	<0.001	0.008	0.01	0.007	0.004	0.007



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			Anzac
	06-Sep	06-Sep	06-Sep	06-Sep	06-Sep	06-Sep	06-Sep
Naphthalene	1.11	0.226	1.04	1.38	0.003	0.051	1.37
Acenaphthylene	0.729	0.075	1.52	0.353	0.001	0.002	0.35
Acenaphthene	0.195	0.022	0.315	16.1	0.001	0.002	15.9
Fluorene	1.12	0.245	1.19	16.7	0.001	0.008	16.5
Phenanthrene	4.24	2.02	2.53	20.4	0.002	0.02	20.1
Anthracene	0.498	0.241	0.335	1.22	0.001	0.001	1.31
Acridine	0.285	0.129	0.105	0.143	0.001	<0.001	0.149
Fluoranthene	0.578	0.411	0.372	1.31	0.003	0.003	1.3
Pyrene	0.623	0.41	0.412	0.515	0.002	0.007	0.507
Benzo(c)phenanthrene	0.004	0.003	0.003	0.003	0.001	<0.001	0.003
Benzo(a)anthracene	0.325	0.054	0.075	0.016	0.001	0.003	0.015
Chrysene	0.366	0.071	0.085	0.018	0.002	0.003	0.021
7,12-Dimethylbenz(a)anthracene	0.329	0.255	0.104	0.295	0.003	0.015	0.232
Benzo(b)fluoranthene	0.255	0.086	0.131	0.111	0.002	<0.001	0.116
Benzo(k)fluoranthene	0.213	0.085	0.126	0.111	0.002	<0.001	0.116
Benzo(a)pyrene	0.171	0.028	0.044	0.011	0.003	<0.001	0.012
3-Methylcholanthrene	0.002	0.007	0.004	0.004	0.004	<0.001	0.004
Indeno(123-cd)pyrene	0.006	0.011	0.031	0.005	0.004	<0.001	0.005
Dibenz(a,h)anthracene	0.016	0.014	0.003	0.004	0.004	<0.001	0.003
Benzo(ghi)perylene	0.029	0.018	0.041	0.004	0.003	<0.001	0.004
Dibenzo(a,l)pyrene	0.003	0.004	0.007	0.006	0.005	<0.001	0.006
Dibenzo(a,i)pyrene	0.005	0.005	0.008	0.008	0.007	<0.001	0.007
Dibenzo(a,h)pyrene	0.012	0.006	0.01	0.008	0.007	<0.001	0.009



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay 12-Sep	Patricia McInnes 12-Sep	Athabasca Valley 12-Sep	Anzac 12-Sep	12-Sep	12-Sep	Fort McKay 12-Sep
Naphthalene	0.307	0.541	2.28	0.64	0.001	0.014	0.302
Acenaphthylene	0.278	0.619	2.29	0.194	0.001	0.007	0.277
Acenaphthene	0.036	0.117	0.582	5.82	0.001	0.004	0.034
Fluorene	0.27	0.459	1.14	5.93	0.001	0.007	0.275
Phenanthrene	0.711	1.06	2.12	5.34	0.002	0.007	0.666
Anthracene	0.119	0.138	0.234	0.48	0.001	0.001	0.115
Acridine	0.056	0.045	0.057	0.045	0.001	<0.001	0.058
Fluoranthene	0.072	0.142	0.317	0.252	0.002	<0.001	0.076
Pyrene	0.097	0.127	0.368	0.124	0.001	<0.001	0.094
Benzo(c)phenanthrene	0.008	0.009	0.016	0.008	0.001	<0.001	0.008
Benzo(a)anthracene	0.018	0.038	0.044	0.006	0.001	<0.001	0.022
Chrysene	0.017	0.044	0.075	0.009	0.001	<0.001	0.018
7,12-Dimethylbenz(a)anthracene	0.093	0.114	0.128	0.083	0.004	<0.001	0.101
Benzo(b)fluoranthene	0.024	0.026	0.059	0.01	0.001	<0.001	0.02
Benzo(k)fluoranthene	0.027	0.029	0.066	0.011	0.001	<0.001	0.02
Benzo(a)pyrene	0.011	0.012	0.03	0.006	0.001	<0.001	0.01
3-Methylcholanthrene	0.007	0.004	0.007	0.006	0.001	<0.001	0.008
Indeno(123-cd)pyrene	0.027	0.027	0.028	0.016	0.001	<0.001	0.023
Dibenz(a,h)anthracene	0.037	0.029	0.026	0.014	0.001	<0.001	0.029
Benzo(ghi)perylene	0.025	0.024	0.039	0.019	0.002	<0.001	0.028
Dibenzo(a,l)pyrene	0.011	0.009	0.013	0.026	0.004	<0.001	0.013
Dibenzo(a,i)pyrene	0.022	0.01	0.034	0.007	0.006	<0.001	0.029
Dibenzo(a,h)pyrene	0.017	0.012	0.024	0.015	0.006	<0.001	0.018



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay 18-Sep	Patricia McInnes 18-Sep	Athabasca Valley 18-Sep	Anzac 18-Sep	18-Sep	18-Sep
Naphthalene	0.268	0.107	2.89	0.556	0.001	0.012
Acenaphthylene	0.035	0.032	0.846	0.044	0.001	0.011
Acenaphthene	0.073	0.007	0.792	0.689	0.001	0.003
Fluorene	0.444	0.106	1.91	0.662	0.001	0.006
Phenanthrene	2.05	0.977	9.29	1.24	0.002	0.004
Anthracene	0.182	0.098	0.929	0.101	0.001	0.002
Acridine	0.203	0.029	0.336	0.05	0.001	<0.001
Fluoranthene	0.181	0.11	1.18	0.082	0.002	<0.001
Pyrene	0.259	0.093	1.37	0.061	0.001	0.001
Benzo(c)phenanthrene	0.009	0.007	0.045	0.007	0.001	<0.001
Benzo(a)anthracene	0.016	0.015	0.144	0.006	0.001	<0.001
Chrysene	0.038	0.018	0.145	0.006	0.001	<0.001
7,12-Dimethylbenz(a)anthracene	0.097	0.092	0.359	0.085	0.004	<0.001
Benzo(b)fluoranthene	0.015	0.009	0.07	0.006	0.001	<0.001
Benzo(k)fluoranthene	0.017	0.01	0.078	0.006	0.001	<0.001
Benzo(a)pyrene	0.005	0.005	0.018	0.005	0.001	<0.001
3-Methylcholanthrene	0.005	0.008	0.005	0.003	0.001	<0.001
Indeno(123-cd)pyrene	0.019	0.013	0.069	0.009	0.001	<0.001
Dibenz(a,h)anthracene	0.038	0.024	0.093	0.011	0.001	<0.001
Benzo(ghi)perylene	0.035	0.033	0.01	0.013	0.002	<0.001
Dibenzo(a,l)pyrene	0.017	0.038	0.019	0.009	0.004	<0.001
Dibenzo(a,i)pyrene	0.034	0.028	0.002	0.023	0.006	<0.001
Dibenzo(a,h)pyrene	0.032	0.02	0.026	0.018	0.006	<0.001



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 24-Sep	Patricia McInnes 24-Sep	Athabasca Valley 24-Sep	Anzac 24-Sep	24-Sep	24-Sep	Patricia McInnes 24-Sep
Naphthalene	0.252	0.344	0.476	0.915	0.001	0.035	0.323
Acenaphthylene	0.133	0.621	0.369	0.099	0.001	0.008	0.604
Acenaphthene	0.121	0.086	0.242	2.34	0.001	0.003	0.086
Fluorene	0.723	0.749	0.563	2.9	0.001	0.008	0.717
Phenanthrene	3.92	3.85	2.32	7.94	0.002	0.016	3.66
Anthracene	0.404	0.36	0.323	0.396	0.001	<0.001	0.322
Acridine	0.323	0.116	0.036	0.094	0.001	<0.001	0.102
Fluoranthene	0.338	0.561	0.438	0.603	0.002	<0.001	0.548
Pyrene	0.575	0.545	0.442	0.258	0.001	0.002	0.522
Benzo(c)phenanthrene	0.011	0.017	0.018	0.003	0.001	<0.001	0.015
Benzo(a)anthracene	0.078	0.035	0.046	0.011	0.001	0.001	0.031
Chrysene	0.089	0.051	0.056	0.008	0.001	<0.001	0.049
7,12-Dimethylbenz(a)anthracene	0.073	0.114	0.017	0.02	0.004	<0.001	0.101
Benzo(b)fluoranthene	0.016	0.025	0.003	0.003	0.001	<0.001	0.021
Benzo(k)fluoranthene	0.018	0.028	0.003	0.003	0.001	<0.001	0.023
Benzo(a)pyrene	0.012	0.017	0.007	0.007	0.001	<0.001	0.014
3-Methylcholanthrene	0.006	0.005	0.015	0.013	0.001	<0.001	0.005
Indeno(123-cd)pyrene	0.016	0.022	0.014	0.027	0.001	<0.001	0.023
Dibenz(a,h)anthracene	0.026	0.02	0.005	0.026	0.001	<0.001	0.018
Benzo(ghi)perylene	0.016	0.019	0.015	0.013	0.002	<0.001	0.019
Dibenzo(a,l)pyrene	0.006	0.014	0.011	0.007	0.004	<0.001	0.013
Dibenzo(a,i)pyrene	0.028	0.023	0.014	0.028	0.006	<0.001	0.016
Dibenzo(a,h)pyrene	0.028	0.022	0.025	0.026	0.006	<0.001	0.013



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 30-Sep	Patricia McInnes 30-Sep	Athabasca Valley 30-Sep	Anzac 30-Sep	30-Sep	30-Sep	Athabasca Valley 30-Sep
Naphthalene	0.383	0.499	1.84	4.86	0.001	0.017	1.87
Acenaphthylene	0.048	0.496	0.937	0.186	0.001	0.007	0.955
Acenaphthene	0.048	0.046	0.69	7.27	0.001	0.004	0.714
Fluorene	0.605	0.374	1.13	4.03	0.001	0.009	1.14
Phenanthrene	2.1	1.05	2.57	4.19	0.002	0.025	2.58
Anthracene	1.8	0.138	0.229	0.254	0.001	0.003	0.237
Acridine	0.121	0.032	0.108	0.095	0.001	0.001	0.102
Fluoranthene	0.155	0.134	0.32	0.221	0.002	<0.001	0.327
Pyrene	0.178	0.146	0.366	0.157	0.001	<0.001	0.367
Benzo(c)phenanthrene	0.005	0.006	0.011	0.007	0.001	<0.001	0.014
Benzo(a)anthracene	0.022	0.023	0.042	0.015	0.001	<0.001	0.049
Chrysene	0.022	0.017	0.039	0.013	0.001	<0.001	0.04
7,12-Dimethylbenz(a)anthracene	0.026	0.036	0.035	0.016	0.004	<0.001	0.034
Benzo(b)fluoranthene	0.005	0.009	0.018	0.005	0.001	<0.001	0.023
Benzo(k)fluoranthene	0.007	0.009	0.022	0.006	0.001	<0.001	0.025
Benzo(a)pyrene	0.006	0.005	0.019	0.007	0.001	<0.001	0.018
3-Methylcholanthrene	0.004	0.005	0.015	0.005	0.001	<0.001	0.013
Indeno(123-cd)pyrene	0.014	0.014	0.011	0.013	0.001	<0.001	0.012
Dibenz(a,h)anthracene	0.008	0.009	0.013	0.008	0.001	<0.001	0.013
Benzo(ghi)perylene	0.018	0.018	0.012	0.015	0.002	<0.001	0.013
Dibenzo(a,l)pyrene	0.017	0.028	0.024	0.018	0.004	<0.001	0.029
Dibenzo(a,i)pyrene	0.044	0.04	0.04	0.039	0.006	<0.001	0.05
Dibenzo(a,h)pyrene	0.026	0.033	0.023	0.034	0.006	<0.001	0.039



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 14 Repeat
	Fort McKay 06-Oct	Patricia McInnes 06-Oct	Athabasca Valley 06-Oct	Anzac 06-Oct	06-Oct	06-Oct	Anzac 06-Oct
Naphthalene	0.72	0.962	0.957	1.35	0.001	0.019	1.37
Acenaphthylene	0.284	5.11	1.31	0.154	0.001	0.007	0.151
Acenaphthene	0.674	0.616	0.632	7.41	0.001	0.008	7.34
Fluorene	1.95	2.72	1.95	11.2	0.001	0.008	11.1
Phenanthrene	4.6	6.98	4.97	12.3	0.002	0.01	12.2
Anthracene	0.35	0.613	0.553	0.875	0.001	0.002	0.842
Acridine	0.495	0.206	0.155	0.118	0.001	<0.001	0.11
Fluoranthene	0.401	1.16	0.805	0.47	0.002	<0.001	0.465
Pyrene	0.468	1.09	0.803	0.228	0.001	<0.001	0.227
Benzo(c)phenanthrene	0.021	0.06	0.03	0.008	0.001	<0.001	0.008
Benzo(a)anthracene	0.038	0.078	0.054	0.01	0.001	<0.001	0.011
Chrysene	0.069	0.122	0.059	0.011	0.001	<0.001	0.013
7,12-Dimethylbenz(a)anthracene	0.034	0.134	0.026	0.026	0.004	<0.001	0.024
Benzo(b)fluoranthene	0.022	0.019	0.033	0.004	0.001	<0.001	0.005
Benzo(k)fluoranthene	0.023	0.026	0.035	0.006	0.001	<0.001	0.006
Benzo(a)pyrene	0.016	0.047	0.027	0.007	0.001	<0.001	0.007
3-Methylcholanthrene	0.005	0.008	0.005	0.012	0.001	<0.001	0.011
Indeno(123-cd)pyrene	0.008	0.01	0.024	0.009	0.001	<0.001	0.009
Dibenz(a,h)anthracene	0.008	0.011	0.012	0.01	0.001	<0.001	0.009
Benzo(ghi)perylene	0.013	0.015	0.023	0.014	0.002	<0.001	0.012
Dibenzo(a,l)pyrene	0.06	0.026	0.014	0.04	0.004	<0.001	0.038
Dibenzo(a,i)pyrene	0.038	0.037	0.025	0.023	0.006	<0.001	0.025
Dibenzo(a,h)pyrene	0.034	0.037	0.024	0.017	0.006	<0.001	0.022



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 7 Repeat
	Fort McKay 12-Oct	Patricia McInnes 12-Oct	Athabasca Valley 12-Oct	Anzac 12-Oct	12-Oct	Athabasca Valley 12-Oct
Naphthalene	0.228	0.779	1.01	0.346	0.001	0.968
Acenaphthylene	0.119	1.2	0.44	0.221	0.001	0.431
Acenaphthene	0.234	0.392	0.838	0.538	0.001	0.804
Fluorene	0.696	0.971	1.21	0.714	0.001	1.18
Phenanthrene	1.29	1.97	1.07	1.07	0.002	1.1
Anthracene	0.143	0.27	0.095	0.147	0.001	0.105
Acridine	0.212	0.193	0.132	0.047	0.001	0.133
Fluoranthene	0.095	0.278	0.092	0.065	0.002	0.094
Pyrene	0.116	0.272	0.1	0.036	0.001	0.099
Benzo(c)phenanthrene	0.004	0.012	0.004	0.003	0.001	0.004
Benzo(a)anthracene	0.014	0.028	0.006	0.009	0.001	0.007
Chrysene	0.016	0.023	0.008	0.012	0.001	0.009
7,12-Dimethylbenz(a)anthracene	0.026	0.03	0.043	0.008	0.004	0.04
Benzo(b)fluoranthene	0.009	0.018	0.007	0.007	0.001	0.006
Benzo(k)fluoranthene	0.01	0.02	0.008	0.007	0.001	0.007
Benzo(a)pyrene	0.006	0.006	0.006	0.005	0.001	0.006
3-Methylcholanthrene	0.002	0.011	0.004	0.004	0.001	0.004
Indeno(123-cd)pyrene	0.004	0.009	0.01	0.01	0.001	0.01
Dibenz(a,h)anthracene	0.006	0.005	0.005	0.003	0.001	0.005
Benzo(ghi)perylene	0.007	0.01	0.01	0.01	0.002	0.012
Dibenzo(a,l)pyrene	0.021	0.009	0.009	0.027	0.004	0.011
Dibenzo(a,i)pyrene	0.014	0.013	0.018	0.026	0.006	0.016
Dibenzo(a,h)pyrene	0.014	0.01	0.011	0.004	0.006	0.011



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 14 Repeat
	Fort McKay 18-Oct	Patricia McInnes 18-Oct	Athabasca Valley 18-Oct	Anzac 18-Oct	18-Oct	Anzac 18-Oct
Naphthalene	1.07	1.12	1.16	0.837	0.001	0.818
Acenaphthylene	0.446	1.63	2.24	0.092	0.001	0.091
Acenaphthene	0.587	0.315	0.43	2.77	0.001	2.7
Fluorene	1.37	1.56	1.36	3.17	0.001	3.08
Phenanthrene	2.68	2.98	3.4	3.24	0.002	3.31
Anthracene	0.371	0.429	0.385	0.264	0.001	0.259
Acridine	0.234	0.18	0.089	0.044	0.001	0.047
Fluoranthene	0.244	0.521	0.568	0.186	0.002	0.177
Pyrene	0.271	0.64	0.542	0.094	0.001	0.09
Benzo(c)phenanthrene	0.01	0.004	0.033	0.003	0.001	0.003
Benzo(a)anthracene	0.039	0.076	0.081	0.007	0.001	0.008
Chrysene	0.048	0.092	0.083	0.008	0.001	0.009
7,12-Dimethylbenz(a)anthracene	0.149	0.206	0.176	0.048	0.004	0.041
Benzo(b)fluoranthene	0.027	0.053	0.072	0.007	0.001	0.006
Benzo(k)fluoranthene	0.03	0.059	0.081	0.008	0.001	0.007
Benzo(a)pyrene	0.007	0.029	0.033	0.006	0.001	0.005
3-Methylcholanthrene	0.006	0.005	0.005	0.008	0.001	0.007
Indeno(123-cd)pyrene	0.018	0.026	0.024	0.008	0.001	0.009
Dibenz(a,h)anthracene	0.005	0.003	0.005	0.004	0.001	0.005
Benzo(ghi)perylene	0.011	0.016	0.012	0.01	0.002	0.009
Dibenzo(a,l)pyrene	0.008	0.016	0.014	0.007	0.004	0.006
Dibenzo(a,i)pyrene	0.013	0.034	0.024	0.017	0.006	0.013
Dibenzo(a,h)pyrene	0.009	0.013	0.018	0.009	0.006	0.01



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay 24-Oct	Patricia McInnes 24-Oct	Athabasca Valley 24-Oct	Anzac 24-Oct	24-Oct	24-Oct	Fort McKay 24-Oct
Naphthalene	0.127	0.24	0.165	3.02	0.001	0.007	0.128
Acenaphthylene	0.043	0.286	0.063	0.85	0.001	0.002	0.041
Acenaphthene	0.044	0.194	0.125	0.601	0.001	0.005	0.043
Fluorene	0.285	0.462	0.348	0.752	0.001	0.001	0.292
Phenanthrene	1.02	0.996	0.59	1.19	0.001	0.006	0.933
Anthracene	0.172	0.114	0.068	0.189	0.001	<0.001	0.164
Acridine	0.036	0.085	0.062	0.05	0.001	<0.001	0.035
Fluoranthene	0.102	0.097	0.044	0.124	0.001	<0.001	0.102
Pyrene	0.088	0.116	0.062	0.134	0.001	<0.001	0.088
Benzo(c)phenanthrene	0.006	0.006	0.003	0.008	0.001	<0.001	0.006
Benzo(a)anthracene	0.009	0.011	0.007	0.026	0.001	<0.001	0.009
Chrysene	0.007	0.012	0.008	0.026	0.001	<0.001	0.009
7,12-Dimethylbenz(a)anthracene	0.078	0.113	0.011	0.209	0	<0.001	0.08
Benzo(b)fluoranthene	0.012	0.018	0.009	0.048	0.001	<0.001	0.01
Benzo(k)fluoranthene	0.015	0.02	0.012	0.06	0.001	<0.001	0.013
Benzo(a)pyrene	0.004	0.008	0.009	0.036	0.001	<0.001	0.004
3-Methylcholanthrene	0.066	0.065	0.014	0.367	0.001	<0.001	0.068
Indeno(123-cd)pyrene	0.059	0.057	0.031	0.171	0.002	<0.001	0.049
Dibenz(a,h)anthracene	0.036	0.035	0.027	0.151	0.002	<0.001	0.038
Benzo(ghi)perylene	0.058	0.083	0.044	0.267	0.003	<0.001	0.063
Dibenzo(a,l)pyrene	0.007	0.003	0.008	0.033	0.003	<0.001	0.007
Dibenzo(a,i)pyrene	0.028	0.027	0.023	0.111	0.009	<0.001	0.024
Dibenzo(a,h)pyrene	0.018	0.033	0.021	0.123	0.004	<0.001	0.013



Compound Name	Results (ng/m3)				
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank
	Fort McKay 30-Oct	Patricia McInnes 30-Oct	Athabasca Valley 30-Oct	Anzac 30-Oct	30-Oct
Naphthalene	0.305	1.2	1.92	1.28	0.001
Acenaphthylene	0.219	0.442	2.22	0.834	0.001
Acenaphthene	0.078	0.455	0.767	0.655	0.001
Fluorene	0.225	0.819	1.39	1.04	0.001
Phenanthrene	0.433	1.41	2.52	1.7	0.001
Anthracene	0.076	0.17	0.293	0.179	0.001
Acridine	0.018	0.071	0.126	0.077	0.001
Fluoranthene	0.08	0.163	0.348	0.219	0.001
Pyrene	0.091	0.149	0.436	0.199	0.001
Benzo(c)phenanthrene	0.007	0.006	0.016	0.012	0.001
Benzo(a)anthracene	0.015	0.018	0.04	0.041	0.001
Chrysene	0.017	0.022	0.046	0.046	0.001
7,12-Dimethylbenz(a)anthracene	0.019	0.084	0.048	0.006	0
Benzo(b)fluoranthene	0.025	0.021	0.038	0.056	0.001
Benzo(k)fluoranthene	0.032	0.029	0.055	0.071	0.001
Benzo(a)pyrene	0.018	0.017	0.039	0.037	0.001
3-Methylcholanthrene	0.013	0.036	0.034	0.04	0.001
Indeno(123-cd)pyrene	0.017	0.043	0.047	0.038	0.002
Dibenz(a,h)anthracene	0.038	0.028	0.028	0.025	0.002
Benzo(ghi)perylene	0.038	0.063	0.077	0.064	0.003
Dibenzo(a,l)pyrene	0.004	0.008	0.009	0.01	0.003
Dibenzo(a,i)pyrene	0.015	0.028	0.03	0.015	0.009
Dibenzo(a,h)pyrene	0.011	0.017	0.034	0.028	0.004



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 05-Nov	Patricia McInnes 05-Nov	Athabasca Valley 05-Nov	Anzac 05-Nov	05-Nov	05-Nov	Patricia McInnes 05-Nov
Naphthalene	0.217	0.336	0.48	0.362	0.001	0.004	0.326
Acenaphthylene	0.24	0.03	0.116	0.067	0.001	0.008	0.032
Acenaphthene	0.043	0.051	0.054	0.086	0.001	0.003	0.049
Fluorene	0.555	0.549	0.68	0.642	0.001	0.006	0.548
Phenanthrene	1.12	1.41	2	1.7	0.001	0.033	1.33
Anthracene	0.126	0.142	0.184	0.148	0.001	0.002	0.133
Acridine	0.037	0.029	0.044	0.056	0.001	0.005	0.027
Fluoranthene	0.123	0.135	0.295	0.182	0.001	0.002	0.125
Pyrene	0.091	0.107	0.293	0.145	0.001	0.003	0.098
Benzo(c)phenanthrene	0.005	0.003	0.009	0.007	0.001	<0.001	0.004
Benzo(a)anthracene	0.011	0.001	0.02	0.016	0.001	<0.001	0.001
Chrysene	0.008	0.001	0.023	0.019	0.001	<0.001	0.001
7,12-Dimethylbenz(a)anthracene	0.007	0.05	0.002	0.017	0	0.022	0.043
Benzo(b)fluoranthene	0.028	0.008	0.017	0.033	0.001	<0.001	0.009
Benzo(k)fluoranthene	0.036	0.011	0.019	0.04	0.001	<0.001	0.012
Benzo(a)pyrene	0.02	0.015	0.012	0.019	0.001	0.002	0.014
3-Methylcholanthrene	0.034	0.024	0.037	0.049	0.001	<0.001	0.022
Indeno(123-cd)pyrene	0.03	0.031	0.025	0.062	0.002	<0.001	0.027
Dibenz(a,h)anthracene	0.03	0.069	0.013	0.137	0.002	<0.001	0.064
Benzo(ghi)perylene	0.062	0.029	0.053	0.044	0.003	<0.001	0.03
Dibenzo(a,l)pyrene	0.014	0.004	0.004	0.004	0.003	<0.001	0.006
Dibenzo(a,i)pyrene	0.034	0.015	0.023	0.008	0.009	<0.001	0.015
Dibenzo(a,h)pyrene	0.021	0.019	0.023	0.012	0.004	<0.001	0.023



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 7 Repeat
	Fort McKay 11-Nov	Patricia McInnes 11-Nov	Athabasca Valley 11-Nov	Anzac 11-Nov	11-Nov	Athabasca Valley 11-Nov
Naphthalene	0.827	23.5	2.41	1.11	0.001	2.37
Acenaphthylene	0.602	2.66	7.77	0.264	0.001	7.95
Acenaphthene	0.64	0.843	2.12	0.898	0.001	2.14
Fluorene	1.28	2.47	3.65	1.11	0.001	3.71
Phenanthrene	2.78	5.84	9.71	2.04	0.001	9.65
Anthracene	0.346	0.665	1.33	0.163	0.001	1.3
Acridine	0.169	0.064	0.08	0.035	0.001	0.078
Fluoranthene	0.312	0.593	1.87	0.178	0.001	1.82
Pyrene	0.294	0.493	1.73	0.145	0.001	1.67
Benzo(c)phenanthrene	0.017	0.024	0.085	0.021	0.001	0.081
Benzo(a)anthracene	0.061	0.06	0.186	0.045	0.001	0.182
Chrysene	0.07	0.072	0.231	0.052	0.001	0.222
7,12-Dimethylbenz(a)anthracene	0.098	0.659	0.107	0.037	0	0.118
Benzo(b)fluoranthene	0.041	0.091	0.2	0.038	0.001	0.187
Benzo(k)fluoranthene	0.049	0.078	0.253	0.056	0.001	0.241
Benzo(a)pyrene	0.029	0.09	0.123	0.034	0.001	0.118
3-Methylcholanthrene	0.029	0.23	0.026	0.028	0.001	0.027
Indeno(123-cd)pyrene	0.034	0.14	0.141	0.039	0.002	0.137
Dibenz(a,h)anthracene	0.024	0.064	0.035	0.019	0.002	0.039
Benzo(ghi)perylene	0.062	0.239	0.22	0.043	0.003	0.203
Dibenzo(a,l)pyrene	0.005	0.07	0.012	0.008	0.003	0.012
Dibenzo(a,i)pyrene	0.018	0.12	0.024	0.027	0.009	0.021
Dibenzo(a,h)pyrene	0.02	0.149	0.028	0.022	0.004	0.024



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 14 Repeat
	Fort McKay 17-Nov	Patricia McInnes 17-Nov	Athabasca Valley 17-Nov	Anzac 17-Nov	17-Nov	Anzac 17-Nov
Naphthalene	0.598	0.95	0.894	1.37	0.001	1.36
Acenaphthylene	1.31	0.856	0.495	1.06	0.001	1.09
Acenaphthene	0.527	0.494	0.352	0.64	0.001	0.653
Fluorene	1.92	1.42	1.12	1.46	0.001	1.52
Phenanthrene	6.02	2.98	2.24	3.03	0.001	3.16
Anthracene	0.79	0.294	0.264	0.363	0.001	0.34
Acridine	0.155	0.052	0.054	0.041	0.001	0.047
Fluoranthene	0.796	0.437	0.314	0.247	0.001	0.257
Pyrene	0.652	0.378	0.307	0.207	0.001	0.212
Benzo(c)phenanthrene	0.043	0.012	0.01	0.009	0.001	0.009
Benzo(a)anthracene	0.082	0.015	0.018	0.02	0.001	0.02
Chrysene	0.094	0.017	0.016	0.022	0.001	0.02
7,12-Dimethylbenz(a)anthracene	0.068	0.038	0.03	0.03	0	0.027
Benzo(b)fluoranthene	0.059	0.021	0.024	0.033	0.001	0.029
Benzo(k)fluoranthene	0.079	0.028	0.03	0.037	0.001	0.035
Benzo(a)pyrene	0.032	0.011	0.015	0.021	0.001	0.021
3-Methylcholanthrene	0.025	0.026	0.048	0.09	0.001	0.09
Indeno(123-cd)pyrene	0.061	0.029	0.032	0.035	0.002	0.037
Dibenz(a,h)anthracene	0.054	0.015	0.018	0.066	0.002	0.064
Benzo(ghi)perylene	0.116	0.047	0.042	0.043	0.003	0.042
Dibenzo(a,l)pyrene	0.01	0.008	0.009	0.013	0.003	0.014
Dibenzo(a,i)pyrene	0.014	0.019	0.027	0.025	0.009	0.026
Dibenzo(a,h)pyrene	0.01	0.021	0.02	0.025	0.004	0.03



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	AMS 1 Repeat
	Fort McKay 23-Nov	Patricia McInnes 23-Nov	Athabasca Valley 23-Nov	Anzac 23-Nov	23-Nov	Fort McKay 23-Nov
Naphthalene	1.51	2.06	2.75	1.07	0.001	1.53
Acenaphthylene	0.659	0.627	1.56	0.137	0.001	0.653
Acenaphthene	0.769	0.812	0.813	0.185	0.001	0.788
Fluorene	1.15	1	0.901	0.598	0.001	1.16
Phenanthrene	2.61	1.89	2.04	0.874	0.001	2.65
Anthracene	0.32	0.249	0.34	0.109	0.001	0.308
Acridine	0.13	0.041	0.033	0.011	0.001	0.143
Fluoranthene	0.309	0.25	0.316	0.093	0.001	0.308
Pyrene	0.277	0.232	0.331	0.094	0.001	0.271
Benzo(c)phenanthrene	0.011	0.006	0.008	0.007	0.001	0.011
Benzo(a)anthracene	0.061	0.018	0.015	0.011	0.001	0.055
Chrysene	0.07	0.02	0.017	0.01	0.001	0.057
7,12-Dimethylbenz(a)anthracene	0.181	0.186	0.146	0.096	0	0.165
Benzo(b)fluoranthene	0.087	0.03	0.029	0.013	0.001	0.078
Benzo(k)fluoranthene	0.111	0.039	0.037	0.016	0.001	0.099
Benzo(a)pyrene	0.069	0.019	0.011	0.013	0.001	0.064
3-Methylcholanthrene	0.017	0.017	0.006	0.007	0.001	0.015
Indeno(123-cd)pyrene	0.025	0.017	0.016	0.017	0.002	0.023
Dibenz(a,h)anthracene	0.012	0.01	0.018	0.016	0.002	0.011
Benzo(ghi)perylene	0.006	0.023	0.014	0.012	0.003	0.053
Dibenzo(a,l)pyrene	0.017	0.008	0.005	0.006	0.003	0.016
Dibenzo(a,i)pyrene	0.014	0.006	0.008	0.008	0.009	0.009
Dibenzo(a,h)pyrene	0.017	0.014	0.012	0.015	0.004	0.018



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay 29-Nov	Patricia McInnes 29-Nov	Athabasca Valley 29-Nov	Anzac 29-Nov	29-Nov	29-Nov	Fort McKay 29-Nov
Naphthalene	18.4	3.86	3.75	0.95	0.001	0.006	19.6
Acenaphthylene	13.2	2.05	1.34	0.089	0.001	0.006	12.7
Acenaphthene	1.62	1.3	0.663	0.332	0.001	0.001	1.59
Fluorene	4.38	1.34	0.828	0.469	0	0.005	4.18
Phenanthrene	8.33	2.31	1.19	0.644	0.001	0.008	8.02
Anthracene	1.25	0.341	0.17	0.06	0.001	0.004	1.25
Acridine	0.153	0.069	0.043	0.025	0.001	<0.001	0.14
Fluoranthene	2.83	0.48	0.289	0.121	0.001	0.002	2.7
Pyrene	3.29	0.56	0.382	0.12	0	0.003	3.09
Benzo(c)phenanthrene	0.464	0.036	0.034	0.017	0	0.002	0.429
Benzo(a)anthracene	1.94	0.163	0.168	0.06	0.001	0.008	1.75
Chrysene	2.04	0.196	0.185	0.068	0.001	0.009	1.86
7,12-Dimethylbenz(a)anthracene	1.61	0.157	0.049	0.093	0	0.006	1.38
Benzo(b)fluoranthene	0.962	0.12	0.145	0.053	0.001	0.002	0.942
Benzo(k)fluoranthene	1.04	0.142	0.164	0.059	0.001	0.003	1.05
Benzo(a)pyrene	1.07	0.069	0.161	0.037	0.001	0.006	1.01
3-Methylcholanthrene	0.026	0.007	0.003	0.002	0	0.006	0.024
Indeno(123-cd)pyrene	0.368	0.08	0.488	0.139	0.001	0.004	0.351
Dibenz(a,h)anthracene	0.208	0.061	0.513	0.185	0.001	0.005	0.197
Benzo(ghi)perylene	0.47	0.072	0.469	0.12	0.001	0.003	0.441
Dibenzo(a,l)pyrene	0.067	0.023	0.022	0.015	0.001	<0.001	0.069
Dibenzo(a,i)pyrene	0.075	0.066	0.054	0.033	0.001	0.004	0.077
Dibenzo(a,h)pyrene	0.09	0.073	0.057	0.028	0.001	<0.001	0.089



Compound Name	Results (ng/m3)					
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank
	Fort McKay 05-Dec	Patricia McInnes 05-Dec	Athabasca Valley 05-Dec	Anzac 05-Dec	05-Dec	05-Dec
Naphthalene	0.823	0.937	1.7	2.71	0.001	0.018
Acenaphthylene	0.168	0.109	0.52	0.438	0.001	0.004
Acenaphthene	0.257	0.164	0.281	0.253	0.001	0.008
Fluorene	0.978	0.519	0.817	0.83	0	0.006
Phenanthrene	2	0.78	1.24	1.17	0.001	0.012
Anthracene	0.168	0.073	0.141	0.111	0.001	0.002
Acridine	0.075	0.026	0.049	0.028	0.001	<0.001
Fluoranthene	0.171	0.097	0.19	0.161	0.001	0.003
Pyrene	0.129	0.074	0.192	0.147	0	0.002
Benzo(c)phenanthrene	0.011	0.004	0.014	0.012	0	<0.001
Benzo(a)anthracene	0.066	0.027	0.053	0.074	0.001	0.004
Chrysene	0.075	0.031	0.062	0.084	0.001	0.005
7,12-Dimethylbenz(a)anthracene	0.081	0.068	0.042	0.067	0	0.008
Benzo(b)fluoranthene	0.044	0.018	0.037	0.048	0.001	0.004
Benzo(k)fluoranthene	0.047	0.018	0.037	0.054	0.001	0.004
Benzo(a)pyrene	0.026	0.01	0.007	0.023	0.001	<0.001
3-Methylcholanthrene	0.002	0.005	0.002	0.009	0	<0.001
Indeno(123-cd)pyrene	0.065	0.038	0.039	0.03	0.001	0.002
Dibenz(a,h)anthracene	0.051	0.043	0.051	0.023	0.001	<0.001
Benzo(ghi)perylene	0.044	0.021	0.032	0.018	0.001	0.002
Dibenzo(a,l)pyrene	0.01	0.012	0.005	0.006	0.001	<0.001
Dibenzo(a,i)pyrene	0.03	0.004	0.023	0.015	0.001	0.005
Dibenzo(a,h)pyrene	0.015	0.007	0.024	0.013	0.001	0.005



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 6 Repeat
	Fort McKay 11-Dec	Patricia McInnes 11-Dec	Athabasca Valley 11-Dec	Anzac 11-Dec	11-Dec	11-Dec	Patricia McInnes 11-Dec
Naphthalene	5.86	4.56	1.96	1.27	0.001	0.003	4.49
Acenaphthylene	5.4	0.759	0.476	0.12	0.001	0.003	0.749
Acenaphthene	0.993	0.76	0.36	0.111	0.001	0.002	0.748
Fluorene	3.36	0.853	0.717	0.423	0	0.003	0.895
Phenanthrene	6.13	1.47	1.21	0.598	0.001	0.005	1.45
Anthracene	0.924	0.161	0.157	0.084	0.001	0.001	0.153
Acridine	0.128	0.042	0.048	0.02	0.001	<0.001	0.046
Fluoranthene	1.43	0.244	0.185	0.066	0.001	<0.001	0.247
Pyrene	1.53	0.268	0.2	0.06	0	0.002	0.266
Benzo(c)phenanthrene	0.152	0.009	0.008	0.004	0	<0.001	0.01
Benzo(a)anthracene	0.643	0.046	0.046	0.021	0.001	0.002	0.047
Chrysene	0.705	0.053	0.053	0.025	0.001	0.003	0.054
7,12-Dimethylbenz(a)anthracene	0.048	0.099	0.041	0.027	0	<0.001	0.091
Benzo(b)fluoranthene	0.266	0.028	0.029	0.01	0.001	0.002	0.031
Benzo(k)fluoranthene	0.302	0.028	0.034	0.01	0.001	0.002	0.032
Benzo(a)pyrene	0.17	0.013	0.011	0.007	0.001	<0.001	0.012
3-Methylcholanthrene	0.003	0.002	0.003	0.003	0	0.002	0.003
Indeno(123-cd)pyrene	0.088	0.019	0.025	0.013	0.001	<0.001	0.021
Dibenz(a,h)anthracene	0.032	0.015	0.015	0.023	0.001	<0.001	0.016
Benzo(ghi)perylene	0.008	0.018	0.019	0.006	0.001	<0.001	0.021
Dibenzo(a,l)pyrene	0.01	0.005	0.003	0.004	0.001	<0.001	0.005
Dibenzo(a,i)pyrene	0.011	0.011	0.013	0.005	0.001	0.008	0.008
Dibenzo(a,h)pyrene	0.012	0.011	0.022	0.002	0.001	0.004	0.011



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 7 Repeat
	Fort McKay 17-Dec	Patricia McInnes 17-Dec	Athabasca Valley 17-Dec	Anzac 17-Dec	17-Dec	17-Dec	Athabasca Valley 17-Dec
Naphthalene	2.67	3.37	4.19	4.54	0.001	0.001	4.41
Acenaphthylene	3.24	2.06	1.69	0.168	0.001	0.004	1.7
Acenaphthene	1.53	1.2	0.696	0.197	0.001	0.002	0.693
Fluorene	2.38	1.47	1.25	0.296	0	0.001	1.24
Phenanthrene	6.29	2.29	1.52	0.444	0.001	0.004	1.52
Anthracene	0.884	0.311	0.222	0.039	0.001	0.001	0.259
Acridine	0.139	0.096	0.13	0.009	0.001	<0.001	0.129
Fluoranthene	0.949	0.403	0.241	0.055	0.001	<0.001	0.243
Pyrene	0.794	0.439	0.309	0.045	0	<0.001	0.3
Benzo(c)phenanthrene	0.085	0.025	0.019	0.005	0	<0.001	0.02
Benzo(a)anthracene	0.47	0.13	0.11	0.041	0.001	0.002	0.106
Chrysene	0.525	0.149	0.127	0.046	0.001	0.002	0.121
7,12-Dimethylbenz(a)anthracene	0.802	0.199	0.184	0.18	0	<0.001	0.18
Benzo(b)fluoranthene	0.2	0.064	0.048	0.016	0.001	<0.001	0.042
Benzo(k)fluoranthene	0.226	0.071	0.054	0.018	0.001	<0.001	0.049
Benzo(a)pyrene	0.179	0.026	0.026	0.011	0.001	<0.001	0.022
3-Methylcholanthrene	0.005	0.002	0.004	0.006	0	<0.001	0.004
Indeno(123-cd)pyrene	0.103	0.029	0.024	0.008	0.001	<0.001	0.02
Dibenz(a,h)anthracene	0.041	0.014	0.015	0.006	0.001	<0.001	0.011
Benzo(ghi)perylene	0.077	0.03	0.021	0.006	0.001	<0.001	0.03
Dibenzo(a,l)pyrene	0.01	0.017	0.005	0.006	0.001	<0.001	0.006
Dibenzo(a,i)pyrene	0.028	0.029	0.016	0.01	0.001	0.006	0.011
Dibenzo(a,h)pyrene	0.032	0.026	0.02	0.008	0.001	0.004	0.019



Compound Name	Results (ng/m3)						
	AMS 1	AMS 6	AMS 7	AMS 14	Lab Blank	Field Blank	AMS 1 Repeat
	Fort McKay 23-Dec	Patricia McInnes 23-Dec	Athabasca Valley 23-Dec	Anzac 23-Dec	23-Dec	23-Dec	Fort McKay 23-Dec
Naphthalene	2.15	24.2	12.4	0.049	0.001	0.013	2.21
Acenaphthylene	0.052	4.24	1.19	0.015	0.001	<0.001	0.051
Acenaphthene	0.082	2.71	0.846	0.012	0.001	<0.001	0.079
Fluorene	0.187	2.25	0.955	0.008	0.001	0.004	0.173
Phenanthrene	0.22	3.87	0.958	0.02	0.001	0.004	0.212
Anthracene	0.031	0.575	0.108	0.006	0.001	0.003	0.027
Acridine	0.012	0.103	0.072	0.009	0.001	0.002	0.012
Fluoranthene	0.046	0.468	0.2	0.009	0.002	0.001	0.045
Pyrene	0.046	0.301	0.204	0.008	0.001	<0.001	0.043
Benzo(c)phenanthrene	0.012	0.042	0.014	0.004	0.002	<0.001	0.013
Benzo(a)anthracene	0.038	0.313	0.104	0.009	0.001	0.002	0.033
Chrysene	0.043	0.369	0.119	0.01	0.001	<0.001	0.038
7,12-Dimethylbenz(a)anthracene	0.023	0.032	0.023	0.013	0.002	0.001	0.022
Benzo(b)fluoranthene	0.021	0.241	0.074	0.007	0.001	<0.001	0.022
Benzo(k)fluoranthene	0.025	0.272	0.084	0.011	0.001	<0.001	0.029
Benzo(a)pyrene	0.012	0.03	0.023	0.009	0.001	<0.001	0.013
3-Methylcholanthrene	0.015	0.004	0.005	0.009	0.001	0.001	0.014
Indeno(123-cd)pyrene	0.171	0.129	0.204	0.06	0.001	0.017	0.172
Dibenz(a,h)anthracene	0.032	0.033	0.027	0.01	0.002	0.007	0.036
Benzo(ghi)perylene	0.023	0.017	0.03	0.002	0.001	0.007	0.023
Dibenzo(a,l)pyrene	0.013	0.014	0.025	0.01	0.001	0.003	0.013
Dibenzo(a,i)pyrene	0.016	0.022	0.022	0.017	0.002	0.005	0.017
Dibenzo(a,h)pyrene	0.011	0.023	0.02	0.012	0.002	0.005	0.011



Compound Name	Results - Percentage of Samples Detected > 0					
	AMS 1 Fort McKay	AMS 6 Patricia McInnes	AMS 7 Athabasca Valley	AMS 14 Anzac	Lab Blank	Field Blank
Naphthalene	100	100	100	100	100	100
Acenaphthylene	100	100	100	100	100	90.5
Acenaphthene	100	100	100	100	100	92.9
Fluorene	100	100	100	100	100	90.5
Phenanthrene	100	100	100	100	100	97.6
Anthracene	100	100	100	100	100	88.1
Acridine	100	100	100	100	100	28.6
Fluoranthene	100	100	100	100	100	59.5
Pyrene	100	100	100	100	100	61.9
Benzo(c)phenanthrene	100	96.6	100	100	100	7.1
Benz(a)anthracene	100	100	100	100	100	54.8
Chrysene	100	100	100	100	100	40.5
7,12-Dimethylbenz(a)anthracene	100	100	100	100	100	47.6
Benzo(b&j)fluoranthene	100	100	100	100	100	26.2
Benz(k)fluoranthene	100	100	100	100	100	26.2
Benzo(a)pyrene	100	96.6	100	100	100	9.5
3-Methylcholanthrene	98.3	98.3	100	98.3	100	9.5
Indeno(123-cd)pyrene	100	96.6	100	100	100	11.9
Dibenz(a,h)anthracene	100	98.3	100	100	100	21.4
Benzo(ghi)perylene	100	98.3	100	100	100	14.3
Dibenzo(a,l)pyrene	100	94.8	100	100	100	11.9
Dibenzo(a,i)pyrene	100	94.8	100	100	100	28.6
Dibenzo(a,h)pyrene	98.3	98.3	100	100	100	23.8



Compound Name	Results - Total Times Sampled					
	AMS 1 Fort McKay	AMS 6 Patricia McInnes	AMS 7 Athabasca Valley	AMS 14 Anzac	Lab Blank	Field Blank
Naphthalene	59	58	60	59	60	42
Acenaphthylene	59	58	60	59	60	42
Acenaphthene	59	58	60	59	60	42
Fluorene	59	58	60	59	60	42
Phenanthrene	59	58	60	59	60	42
Anthracene	59	58	60	59	60	42
Acridine	59	58	60	59	60	42
Fluoranthene	59	58	60	59	60	42
Pyrene	59	58	60	59	60	42
Benzo(c)phenanthrene	59	58	60	59	60	42
Benzo(a)anthracene	59	58	60	59	60	42
Chrysene	59	58	60	59	60	42
7,12-Dimethylbenz(a)anthracene	59	58	60	59	60	42
Benzo(b&j)fluoranthene	59	58	60	59	60	42
Benzo(k)fluoranthene	59	58	60	59	60	42
Benzo(a)pyrene	59	58	60	59	60	42
3-Methylcholanthrene	59	58	60	59	60	42
Indeno(123-cd)pyrene	59	58	60	59	60	42
Dibenz(a,h)anthracene	59	58	60	59	60	42
Benzo(ghi)perylene	59	58	60	59	60	42
Dibenzo(a,l)pyrene	59	58	60	59	60	42
Dibenzo(a,i)pyrene	59	58	60	59	60	42
Dibenzo(a,h)pyrene	59	58	60	59	60	42



Compound Name	Results - Yearly Average					
	AMS 1 Fort McKay	AMS 6 Patricia McInnes	AMS 7 Athabasca Valley	AMS 14 Anzac	Lab Blank	Field Blank
Naphthalene	1.91	2.59	4.27	3.03	0.004	0.083
Acenaphthylene	0.759	1.25	1.09	0.341	0.002	0.008
Acenaphthene	0.536	0.55	0.721	6.91	0.003	0.015
Fluorene	1.32	1.24	1.46	8.49	0.005	0.014
Phenanthrene	3.97	3.12	3.04	15.5	0.004	0.02
Anthracene	0.498	0.287	0.299	0.952	0.003	0.003
Acridine	0.317	0.099	0.122	0.344	0.002	0.001
Fluoranthene	0.56	0.531	0.483	1.16	0.003	0.002
Pyrene	0.75	0.488	0.523	0.531	0.003	0.002
Benzo(c)phenanthrene	0.033	0.026	0.024	0.015	0.001	0
Benz(a)anthracene	0.13	0.078	0.07	0.037	0.004	0.002
Chrysene	0.184	0.107	0.104	0.054	0.004	0.002
7,12-Dimethylbenz(a)anthracene	0.19	0.16	0.119	0.094	0.006	0.004
Benzo(b&j)fluoranthene	0.093	0.082	0.083	0.063	0.002	0.001
Benzo(k)fluoranthene	0.099	0.087	0.09	0.066	0.003	0.002
Benzo(a)pyrene	0.064	0.042	0.04	0.02	0.003	0
3-Methylcholanthrene	0.009	0.013	0.008	0.015	0.003	0
Indeno(123-cd)pyrene	0.031	0.029	0.037	0.019	0.003	0.001
Dibenz(a,h)anthracene	0.026	0.021	0.026	0.02	0.003	0.001
Benzo(ghi)perylene	0.034	0.033	0.044	0.023	0.004	0.001
Dibenzo(a,l)pyrene	0.012	0.012	0.011	0.011	0.004	0
Dibenzo(a,i)pyrene	0.016	0.017	0.015	0.015	0.006	0.001
Dibenzo(a,h)pyrene	0.015	0.017	0.016	0.014	0.005	0.001



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	4-Jan	4-Jan	4-Jan	4-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	99	162	169	42		
Chloride	<0.0167	<0.0166	<0.0166	<0.0167	0.4	<
Nitrate	0.251	0.551	0.778	0.135	0.2	0.896349863
Sulphate	0.713	0.597	0.776	0.446	1	<
Ammonium (as N)	0.281	0.326	0.415	0.178	0.5	0
Calcium	<0.0833	<0.0830	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0362	0.0330	0.0823	0.0167	0.2	<
Sodium	<0.167	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.607	23.55	24.1	24.008	32.17	24.007	24.007	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	156.6666667	233.3333333	342.3333333	42	302.3333333	126.6666667	189	302.6666667
Chloride	<0.0163	0.0375	0.163	<0.0167	0.0177	0.0190	<0.0167	<0.0167
Nitrate	0.333	0.680	1.14	0.114	0.211	0.145	0.175	0.295
Sulphate	0.781	0.726	0.846	0.503	0.767	0.746	0.980	0.890
Ammonium (as N)	0.238	0.359	0.430	0.163	0.232	0.210	0.285	0.296
Calcium	<0.0813	<0.0849	0.144	<0.0833	0.103	0.133	0.0866	0.152
Magnesium	<0.0406	<0.0425	<0.0415	<0.0417	<0.0311	<0.0417	<0.0417	<0.0416
Potassium	0.130	0.0373	0.114	0.0192	0.0398	0.0308	0.0592	0.0435
Sodium	<0.163	<0.170	0.207	<0.167	<0.124	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	10-Jan	10-Jan	10-Jan	10-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	9.66666667	15	3.33333333	-41.33333333		
Chloride	0.0392	0.0489	0.0670	<0.0167	0.4	<
Nitrate	0.153	0.148	0.132	0.0229	0.2	0.896349863
Sulphate	0.291	0.328	0.292	<0.0417	1	<
Ammonium (as N)	0.0944	0.126	0.0986	<0.0208	0.5	<
Calcium	<0.0833	<0.0830	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0299	0.0142	0.0136	<0.00833	0.2	<
Sodium	<0.167	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.379	26.368	24.1	24.003	15.319	24.05	24.005	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	56	8	81.66666667	13.66666667	405	13.66666667	136.3333333	428.6666667
Chloride	0.0731	0.0599	0.574	0.0689	0.123	0.0592	0.0943	0.0885
Nitrate	0.118	0.130	0.166	0.141	0.228	0.133	0.167	0.222
Sulphate	0.253	0.296	0.412	0.233	2.35	0.252	0.336	0.350
Ammonium (as N)	0.0813	0.0994	0.144	0.0791	0.741	0.0786	0.0939	0.106
Calcium	<0.0788	<0.0758	<0.0830	<0.0833	0.458	<0.0832	<0.0833	0.722
Magnesium	<0.0394	<0.0379	<0.0415	<0.0417	0.0968	<0.0416	<0.0417	0.0940
Potassium	0.0114	0.0202	0.0304	0.0190	0.0319	0.0142	0.0660	0.0536
Sodium	<0.158	<0.152	0.419	<0.167	<0.261	<0.166	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	16-Jan	16-Jan	16-Jan	16-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	16.8	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	71	57	150	-96		
Chloride	0.223	0.166	0.158	<0.0167	0.4	<
Nitrate	0.303	0.321	0.479	10.6	0.2	0.896349863
Sulphate	1.01	1.08	1.52	0.0649	1	<
Ammonium (as N)	0.268	0.274	0.425	2.37	0.5	<
Calcium	0.0900	<0.0830	<0.119	<0.0833	2	<
Magnesium	0.0475	0.0424	<0.0595	<0.0417	1	<
Potassium	0.0431	0.0401	0.0698	0.157	0.2	<
Sodium	0.283	0.271	0.327	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	27.416	5.641	9.4	24.01	24.045	24.01	24.007	24.004
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	92	-20	105	35	363	49	526	462.3333333
Chloride	0.390	0.141	0.782	0.133	0.546	0.315	0.406	0.500
Nitrate	0.279	0.868	0.809	0.885	0.435	0.312	0.488	0.366
Sulphate	0.897	0.780	1.96	0.839	1.13	0.918	1.43	1.03
Ammonium (as N)	0.244	0.285	0.569	0.0762	0.230	0.228	0.365	0.268
Calcium	<0.0730	<0.355	0.240	0.109	0.292	<0.0833	0.211	0.430
Magnesium	0.0507	<0.177	0.125	0.0621	0.0877	0.0505	0.0809	0.0760
Potassium	0.0443	0.0585	0.0919	0.0452	0.0527	0.0403	0.0786	0.0512
Sodium	0.380	<0.709	0.737	0.363	0.482	0.329	0.421	0.400



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	22-Jan	22-Jan	22-Jan	22-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	15.2		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	210	162	119	9		
Chloride	0.0217	0.0175	0.0277	<0.0263	0.4	0.88
Nitrate	0.952	0.771	0.674	0.0349	0.2	0.976973924
Sulphate	1.50	0.667	0.681	0.0902	1	1.8461945
Ammonium (as N)	0.696	0.375	0.325	<0.0329	0.5	<
Calcium	<0.0833	<0.0830	<0.0830	<0.132	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0658	1	<
Potassium	0.0815	0.0570	0.0411	0.0223	0.2	0.28
Sodium	<0.167	<0.166	<0.166	<0.263	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.243	24.105	24.1	24.011	24.051	24.01	19.557	24.004
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	357	223	158	136	396	216	1782	468
Chloride	0.0228	0.0223	0.133	0.178	0.0217	0.0196	0.0661	0.0261
Nitrate	1.04	1.05	0.800	0.335	0.678	0.412	2.39	0.775
Sulphate	1.50	0.768	0.645	0.601	0.750	1.36	1.36	1.77
Ammonium (as N)	0.681	0.433	0.321	0.244	0.349	0.477	0.750	0.666
Calcium	<0.0792	<0.0830	<0.0830	<0.0833	0.190	<0.0833	0.388	0.480
Magnesium	<0.0396	<0.0415	<0.0415	<0.0416	<0.0416	<0.0416	0.0714	0.0646
Potassium	0.0858	0.0663	0.0635	0.0951	0.0642	0.0708	0.228	0.0806
Sodium	<0.158	<0.166	0.258	<0.167	<0.166	<0.167	<0.205	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	28-Jan	28-Jan	28-Jan	28-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	169	116	184	162		
Chloride	0.159	0.0354	0.116	0.0972	0.4	0.88
Nitrate	0.592	0.524	0.657	0.442	0.2	0.976973924
Sulphate	1.16	1.52	1.24	1.51	1	1.8461945
Ammonium (as N)	0.296	0.417	0.289	0.400	0.5	<
Calcium	0.151	0.224	<0.0830	0.161	2	<
Magnesium	0.0917	0.0918	0.0922	0.0837	1	<
Potassium	0.0541	0.0510	0.0537	0.0776	0.2	0.28
Sodium	0.292	0.234	0.288	0.286	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	21.5	24.105	24.1	24.01	24.048	24.012	24.002	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	282	16	327	171	962	445	325	751
Chloride	0.381	<0.0166	0.638	0.0968	0.380	0.400	0.299	0.434
Nitrate	0.609	0.0102	0.805	0.612	0.575	0.589	0.685	0.835
Sulphate	1.10	0.0585	1.28	1.75	1.18	1.78	2.17	0.786
Ammonium (as N)	0.310	<0.0207	0.369	0.462	0.344	0.457	0.446	<0.0208
Calcium	0.300	<0.0830	0.344	0.105	1.01	0.408	0.247	0.671
Magnesium	0.132	<0.0415	0.149	0.0994	0.232	0.131	0.147	0.170
Potassium	0.0580	<0.00830	0.0726	0.0675	1.24	0.0804	0.0754	0.112
Sodium	0.397	<0.166	0.561	0.321	0.584	0.441	0.420	0.396



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	3-Feb	3-Feb	3-Feb	3-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	25.056	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	225	174	259	94		
Chloride	<0.0167	0.0328	0.255	<0.0167	0.4	0.88
Nitrate	0.436	0.193	0.368	0.105	0.2	0.976973924
Sulphate	0.437	0.206	0.256	0.188	1	1.8461945
Ammonium (as N)	0.211	0.0650	0.169	<0.0208	0.5	<
Calcium	<0.0833	<0.0798	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0399	<0.0415	<0.0417	1	<
Potassium	0.119	0.0572	0.0592	0.0296	0.2	0.28
Sodium	<0.167	<0.160	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	17.415	24.1	24.1	24.008	24.052	24.008	24.005	24.011
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	255	234	307	108	309	221	113	236
Chloride	0.0609	0.945	0.841	0.0339	0.0317	0.0526	0.0192	0.0235
Nitrate	0.644	0.248	0.554	0.160	0.223	0.288	0.154	0.246
Sulphate	0.482	0.244	0.306	0.192	0.214	0.374	0.214	0.902
Ammonium (as N)	0.225	<0.0207	0.163	0.0651	0.0734	0.0991	0.0570	0.142
Calcium	0.188	<0.0830	0.104	<0.0833	0.136	0.0874	<0.0833	0.197
Magnesium	<0.0574	<0.0415	<0.0415	<0.0417	<0.0416	<0.0417	<0.0417	<0.0416
Potassium	0.134	0.0898	0.0775	0.0347	0.0437	0.0816	0.0700	0.0793
Sodium	<0.230	0.723	0.637	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 6	AMS 7	MDL	Lab Blank
Station Name	Patricia McInnes	Athabasca Valley		
Sample Date	9-Feb	9-Feb		
PM Size(µm)	2.5	2.5		
Total Air Volume (m3)	25.056	22.5		
Units	µg/M3	µg/M3		
Particulate Matter (µg/m3)	135	261		
Chloride	0.0262	0.214	0.4	0.88
Nitrate	0.440	0.781	0.2	0.976973924
Sulphate	0.622	1.68	1	1.8461945
Ammonium (as N)	0.509	0.550	0.5	<
Calcium	<0.0798	0.178	2	<
Magnesium	<0.0399	<0.0444	1	<
Potassium	0.0597	0.0959	0.2	0.28
Sodium	<0.160	0.325	4	<

Station #	AMS 6	AMS 7	AMS 13
Station Name	Patricia McInnes	Athabasca Valley	AMS 13
Sample Date	9-Feb	9-Feb	9-Feb
PM Size(µm)	10	10	10
Total Air Volume (m3)	24.1	23.9	24.008
Units	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	959	810	417
Chloride	0.886	3.73	0.347
Nitrate	0.785	0.974	0.333
Sulphate	1.88	1.53	0.292
Ammonium (as N)	0.592	0.516	0.105
Calcium	0.566	0.592	0.633
Magnesium	0.0637	0.0956	0.0621
Potassium	0.0894	0.151	0.0327
Sodium	0.739	2.64	0.277



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	15-Feb	15-Feb	15-Feb	15-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	183	117	133	113		
Chloride	0.0232	0.0460	0.127	0.0314	0.4	0.88
Nitrate	0.453	0.247	0.466	0.269	0.2	0.976973924
Sulphate	0.756	0.522	0.338	0.355	1	1.8461945
Ammonium (as N)	0.295	0.186	0.131	0.122	0.5	<
Calcium	<0.0833	<0.0830	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0416	0.0491	0.0573	0.0716	0.2	0.28
Sodium	<0.167	<0.166	0.175	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	16.384	24.1	24.1	24.008	24.052	24.008	23.877	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	309	284	387	128	1681	292	462	711
Chloride	0.165	1.33	2.53	0.0949	0.152	0.199	0.206	0.0990
Nitrate	0.630	0.391	0.573	0.271	0.468	0.293	0.573	0.477
Sulphate	0.735	0.554	0.327	0.459	0.413	0.570	0.552	1.09
Ammonium (as N)	0.297	0.200	0.143	0.152	0.158	0.216	0.206	0.372
Calcium	0.193	0.117	0.291	<0.0833	1.36	0.209	0.164	0.855
Magnesium	<0.0610	<0.0415	0.0529	<0.0417	0.174	<0.0417	<0.0419	0.0919
Potassium	0.0326	0.0792	0.0965	0.0556	0.0709	0.0424	0.0727	0.0513
Sodium	<0.244	0.912	1.61	<0.167	0.218	0.194	0.226	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	21-Feb	21-Feb	21-Feb	21-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	162	47	75	50		
Chloride	<0.0167	<0.0166	0.0191	<0.0167	0.4	0.88
Nitrate	0.396	0.237	0.285	0.0945	0.2	0.976973924
Sulphate	0.961	0.724	0.890	0.696	1	1.8461945
Ammonium (as N)	0.395	0.278	0.337	0.235	0.5	<
Calcium	<0.0833	0.102	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0621	0.0246	0.0293	0.0204	0.2	0.28
Sodium	<0.167	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	15.294	24.1	24.1	24.013	24.053	24.01	24	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	209	109	163	58	465	235	552	431
Chloride	0.0374	0.178	0.239	0.0244	0.0287	0.0239	0.0346	0.0311
Nitrate	0.422	0.313	0.349	0.139	0.231	0.160	11.6	0.329
Sulphate	1.02	0.760	0.916	0.761	1.17	1.10	1.33	0.952
Ammonium (as N)	0.372	0.296	0.337	0.254	0.402	0.377	3.37	0.301
Calcium	0.219	<0.0830	<0.0830	<0.0833	0.394	0.167	0.344	0.510
Magnesium	<0.0654	<0.0415	<0.0415	<0.0416	0.0510	<0.0416	<0.0417	0.0582
Potassium	0.0517	0.0309	0.0377	0.0198	0.0452	0.0346	0.278	0.0404
Sodium	<0.262	0.168	0.237	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	27-Feb	27-Feb	27-Feb	27-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	141	70	87	37		
Chloride	0.0229	0.0365	0.261	<0.0167	0.4	<
Nitrate	0.266	0.273	0.312	0.154	0.2	1.968175624
Sulphate	0.888	0.705	0.640	0.650	1	1.680112
Ammonium (as N)	0.329	0.243	0.236	0.252	0.5	<
Calcium	<0.0833	<0.0830	<0.0830	0.151	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0340	0.108	0.0407	0.0191	0.2	<
Sodium	<0.167	<0.166	0.321	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	26.753	24.1	24.1	24.009	24.053	24.008	24.003	24.009
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	751	208	629	54	3912	523	176	1035
Chloride	0.492	2.00	7.40	0.0843	0.195	0.0979	0.107	0.135
Nitrate	0.446	0.345	0.456	0.178	16.3	0.217	0.190	0.399
Sulphate	0.885	0.699	0.672	0.565	0.892	0.780	0.703	1.22
Ammonium (as N)	0.335	0.277	0.311	0.200	3.58	0.278	0.264	0.455
Calcium	0.228	<0.0830	0.271	<0.0833	3.79	0.171	0.239	1.72
Magnesium	<0.0374	<0.0415	0.0489	<0.0417	0.261	<0.0417	<0.0417	0.186
Potassium	0.0455	0.0822	0.153	0.381	0.344	0.0332	0.0295	0.0461
Sodium	0.438	1.46	5.34	<0.167	0.369	<0.167	<0.167	<0.167



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Station #	AMS 14	MDL	Lab Blank
Station Name	Anzac		
Sample Date	4-Mar		
PM Size(µm)	2.5		
Total Air Volume (m3)	24		
Units	µg/M3		
Particulate Matter (µg/m3)	39		
Chloride	0.0169	0.4	<
Nitrate	0.0664	0.2	1.968175624
Sulphate	0.441	1	1.680112
Ammonium (as N)	0.155	0.5	<
Calcium	<0.0833	2	<
Magnesium	<0.0417	1	<
Potassium	<0.00833	0.2	<
Sodium	<0.167	4	<

Station #	AMS 14	AMS 12	AMS 13	AMS 16
Station Name	Anzac	Millenium	Syncrude UE-1	Albian Muskeg River
Sample Date	4-Mar	4-Mar	4-Mar	4-Mar
PM Size(µm)	10	10	10	10
Total Air Volume (m3)	24.007	24.05	24.009	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	47	722	218	635
Chloride	0.0647	0.0210	0.0437	0.0264
Nitrate	0.0838	0.195	0.112	0.315
Sulphate	0.533	4.80	0.997	1.12
Ammonium (as N)	0.160	1.36	0.331	0.404
Calcium	<0.0833	0.302	0.213	0.791
Magnesium	<0.0417	<0.0416	<0.0417	<0.0417
Potassium	0.0131	0.0916	0.0264	0.0320
Sodium	<0.167	<0.166	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	10-Mar	10-Mar	10-Mar	10-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	23.9	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	25	24	73	13		
Chloride	<0.0167	0.0224	0.110	<0.0167	0.4	<
Nitrate	0.0925	0.108	0.124	0.0696	0.2	1.968175624
Sulphate	0.220	0.237	0.209	0.195	1	1.680112
Ammonium (as N)	0.0601	0.0698	0.0561	0.0561	0.5	<
Calcium	<0.0837	<0.0830	<0.0833	<0.0833	2	<
Magnesium	<0.0418	<0.0415	<0.0417	<0.0417	1	<
Potassium	0.0102	0.0171	0.0143	0.0152	0.2	<
Sodium	<0.167	<0.166	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.002	24.1	24.1	24.008	24.05	24.006	23.99	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	23	91	456	-4	200	29	113	35
Chloride	0.0234	0.349	2.43	0.0305	0.0342	0.0495	<0.0167	0.0365
Nitrate	0.0907	0.118	0.160	0.107	0.115	0.102	0.105	0.0711
Sulphate	0.248	0.261	0.290	0.213	0.270	0.238	0.252	0.263
Ammonium (as N)	0.0677	0.0779	0.0847	0.0534	0.0934	0.0764	0.0797	0.0634
Calcium	<0.0800	<0.0830	0.744	<0.0833	0.222	<0.0833	0.180	<0.0833
Magnesium	<0.0400	<0.0415	0.117	<0.0417	<0.0416	<0.0417	<0.0417	<0.0417
Potassium	0.0242	0.0267	0.0896	0.0198	0.0174	0.0124	0.0107	0.00991
Sodium	<0.160	0.268	1.62	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	16-Mar	16-Mar	16-Mar	16-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	20.3	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	46	94	139	41		
Chloride	<0.0197	0.0238	0.0748	<0.0167	0.4	<
Nitrate	0.273	0.199	0.559	0.0976	0.2	1.968175624
Sulphate	0.822	1.01	1.64	0.402	1	1.680112
Ammonium (as N)	0.293	0.339	0.460	0.135	0.5	<
Calcium	0.137	<0.0830	0.198	<0.0833	2	<
Magnesium	<0.0493	<0.0415	<0.0417	<0.0417	1	<
Potassium	0.0252	0.0341	0.0728	0.0163	0.2	<
Sodium	<0.197	<0.166	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.214	24.1	24.1	24.008	24.05	24.004	23.998	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	80	176	450	45	378	97	103	549
Chloride	0.0272	0.689	1.19	0.0446	0.0344	0.0656	0.0188	0.0413
Nitrate	0.430	0.307	0.830	0.167	0.374	0.260	0.251	0.326
Sulphate	1.03	0.985	1.60	0.375	5.40	0.775	0.857	1.42
Ammonium (as N)	0.285	0.340	0.435	0.120	1.54	0.262	0.289	0.465
Calcium	0.164	0.0989	0.755	<0.0833	0.155	<0.0833	<0.0833	<0.0833
Magnesium	<0.0397	<0.0415	0.0998	<0.0417	<0.0416	<0.0417	<0.0417	<0.0416
Potassium	0.0200	0.0548	0.0967	0.0103	0.0951	0.0381	0.0211	0.132
Sodium	<0.159	0.560	0.787	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	22-Mar	22-Mar	22-Mar	22-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	0	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	24	112	109	79		
Chloride	not quantifiable	0.0330	0.0595	0.0405	0.4	<
Nitrate	not quantifiable	0.395	0.573	0.183	0.2	0.917691526
Sulphate	not quantifiable	0.992	0.856	0.790	1	<
Ammonium (as N)	not quantifiable	0.288	0.256	0.240	0.5	<
Calcium	not quantifiable	0.103	0.185	0.168	2	<
Magnesium	not quantifiable	<0.0415	<0.0415	<0.0417	1	<
Potassium	not quantifiable	0.0360	0.0698	0.0236	0.2	<
Sodium	not quantifiable	<0.166	0.182	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	27.324	24.1	24.1	24.013	24.055	24.009	24.013	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	867	556	542	25	524	540	58	1130
Chloride	0.180	0.412	0.873	0.0683	0.184	0.227	0.0900	0.253
Nitrate	0.366	0.682	0.756	0.224	0.186	0.367	0.143	0.339
Sulphate	0.905	0.999	0.932	0.769	0.670	0.908	0.928	1.06
Ammonium (as N)	0.240	0.299	0.265	0.228	0.232	0.280	0.260	0.269
Calcium	1.91	0.556	0.626	0.189	0.428	1.33	0.141	2.61
Magnesium	0.141	0.0666	0.0919	<0.0416	0.0882	0.111	<0.0416	0.202
Potassium	0.0418	0.0397	0.105	0.0212	0.0253	0.0438	0.0288	0.0425
Sodium	0.149	0.384	0.674	<0.167	0.178	0.191	<0.167	0.182



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	28-Mar	28-Mar	28-Mar	28-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	0	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	23	90	131	96		
Chloride	not quantifiable	0.0480	0.116	<0.0167	0.4	<
Nitrate	not quantifiable	0.0744	0.107	0.117	0.2	0.917691526
Sulphate	not quantifiable	1.08	1.00	1.02	1	<
Ammonium (as N)	not quantifiable	0.355	0.307	0.338	0.5	<
Calcium	not quantifiable	<0.0830	0.196	<0.0833	2	<
Magnesium	not quantifiable	<0.0415	<0.0415	<0.0417	1	<
Potassium	not quantifiable	0.0218	0.0267	0.0217	0.2	<
Sodium	not quantifiable	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.247	24.1	24.1	24.012	24.053	24.006	23.999	24.009
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	236	195	486	141	860	343	160	319
Chloride	0.0568	0.323	1.21	0.0451	0.0782	0.0449	<0.0167	0.0449
Nitrate	0.261	0.250	0.129	0.211	0.362	0.227	0.155	0.351
Sulphate	1.10	1.03	0.993	1.06	1.29	1.20	1.03	1.27
Ammonium (as N)	0.356	0.349	0.320	0.328	0.405	0.359	0.309	0.391
Calcium	0.217	0.186	0.563	0.0974	0.857	0.428	<0.0833	0.369
Magnesium	<0.0396	<0.0415	0.0859	<0.0416	0.0617	<0.0417	<0.0417	0.0500
Potassium	0.0240	0.0331	0.0519	0.0178	0.0433	0.0203	0.0165	0.0259
Sodium	<0.158	0.263	0.822	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	3-Apr	3-Apr	3-Apr	3-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.1	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	108	89	151	52		
Chloride	<0.0166	0.0646	0.238	<0.0167	0.4	<
Nitrate	0.131	0.0693	0.0992	0.0862	0.2	0.917691526
Sulphate	0.624	0.533	0.479	0.585	1	<
Ammonium (as N)	0.161	0.160	0.163	0.137	0.5	<
Calcium	<0.0830	0.163	0.173	0.148	2	<
Magnesium	<0.0415	<0.0415	<0.0417	<0.0417	1	<
Potassium	0.0217	0.104	0.0260	0.0179	0.2	<
Sodium	<0.166	<0.166	0.175	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.16	24.1	24	24.01	24.719	24.002	24	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	372	314	1336	67	2195	268	473	396
Chloride	0.125	0.515	2.13	0.0167	0.157	0.0283	0.0796	0.0723
Nitrate	0.133	0.111	0.242	0.148	0.294	0.128	0.249	0.110
Sulphate	0.598	0.499	0.609	0.623	0.793	0.658	0.710	0.543
Ammonium (as N)	0.204	0.100	0.192	0.118	0.152	0.193	0.183	0.0426
Calcium	0.461	0.292	2.37	0.102	2.11	0.464	0.608	0.583
Magnesium	0.0434	0.0478	0.277	<0.0416	0.168	<0.0417	0.0702	0.0579
Potassium	0.0258	0.0377	0.101	0.0130	0.0932	0.0238	0.0213	0.0242
Sodium	<0.159	0.340	1.51	<0.167	0.264	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	9-Apr	9-Apr	9-Apr	9-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	176	111	99	65		
Chloride	<0.0167	0.0413	0.0573	<0.0167	0.4	<
Nitrate	0.0873	0.0858	0.0952	0.0759	0.2	0.917691526
Sulphate	0.990	0.717	0.761	0.735	1	<
Ammonium (as N)	0.260	0.198	0.224	0.219	0.5	<
Calcium	0.310	0.214	0.199	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0147	0.0182	0.0123	0.0127	0.2	<
Sodium	<0.167	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	23.36	24.1	24.1	24.01	24.054	24.008	23.998	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1276	625	536	157	2362	714	1847	1062
Chloride	0.149	0.357	0.361	0.0455	0.160	0.0578	0.128	0.115
Nitrate	0.299	0.142	0.201	0.124	0.161	0.293	0.473	0.365
Sulphate	1.21	0.791	0.806	0.808	0.886	1.17	1.14	1.18
Ammonium (as N)	0.261	0.200	0.205	0.217	0.198	0.306	0.308	0.314
Calcium	2.19	0.932	0.509	0.121	3.57	1.29	1.86	1.74
Magnesium	0.138	0.122	0.0718	<0.0416	0.219	0.0663	0.185	0.154
Potassium	0.0284	0.0271	0.0279	0.0130	0.0536	0.0287	0.0391	0.0333
Sodium	<0.171	0.265	0.277	<0.167	0.302	<0.167	0.210	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	15-Apr	15-Apr	15-Apr	15-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	204	128	84	87		
Chloride	<0.0167	0.0327	0.0203	<0.0167	0.4	0.44
Nitrate	0.228	0.239	0.160	0.0700	0.2	0.792012842
Sulphate	2.94	1.20	1.18	1.38	1	<
Ammonium (as N)	0.677	0.124	0.395	0.417	0.5	<
Calcium	0.317	0.229	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0338	0.0151	0.0446	0.0545	0.2	1.83
Sodium	<0.167	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	26.41	24.1	24.1	24.009	24.053	24.007	24	24.011
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	445	300	760	105	280	215	274	443
Chloride	0.0425	0.372	<0.0166	0.0206	0.0568	0.0232	0.0313	0.0394
Nitrate	0.338	0.279	0.0590	0.140	0.198	0.296	0.309	0.310
Sulphate	2.87	1.25	0.0917	1.48	1.18	3.13	1.79	3.20
Ammonium (as N)	0.627	0.295	<0.0207	0.440	0.353	0.736	0.380	0.614
Calcium	0.583	0.268	0.129	<0.0833	0.245	0.250	0.329	0.682
Magnesium	0.0618	0.0427	<0.0415	<0.0417	0.0429	0.0480	0.0421	0.0665
Potassium	0.0336	0.0309	<0.00830	0.0354	0.138	0.0555	0.0274	0.0477
Sodium	<0.151	0.301	<0.166	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	21-Apr	21-Apr	21-Apr	21-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	11.9	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	55	53	94	27		
Chloride	0.0349	<0.0166	0.0278	0.0189	0.4	0.44
Nitrate	0.155	0.0586	0.118	0.0929	0.2	0.792012842
Sulphate	0.790	0.558	0.700	0.709	1	<
Ammonium (as N)	<0.0420	0.156	0.230	0.235	0.5	<
Calcium	0.406	0.149	<0.0830	0.108	2	<
Magnesium	<0.0840	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.104	0.0107	0.0330	0.0496	0.2	1.83
Sodium	<0.336	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.013	24.1	24	24.008	24.054	24.001	24.001	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	742	207	414	120	394	209	190	340
Chloride	0.229	0.135	0.220	0.0310	0.0366	0.0204	<0.0167	0.0386
Nitrate	0.221	0.0819	0.183	0.0557	0.121	0.0522	0.0664	0.126
Sulphate	0.956	0.675	0.822	0.736	0.966	0.791	1.04	1.18
Ammonium (as N)	0.157	0.143	0.254	0.228	0.299	0.159	0.265	0.304
Calcium	0.843	0.188	0.272	<0.0833	0.456	0.161	0.481	0.501
Magnesium	0.0725	<0.0415	0.0502	<0.0417	0.0462	<0.0417	<0.0417	<0.0416
Potassium	0.0217	0.0145	0.0569	0.0336	0.0592	0.0272	0.0171	0.0267
Sodium	<0.160	<0.166	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	27-Apr	27-Apr	27-Apr	27-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	25.248	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	51	54	60	41		
Chloride	<0.0158	<0.0166	0.0176	0.0201	0.4	<
Nitrate	0.0338	0.0319	0.0437	0.0530	0.2	0.792012842
Sulphate	1.12	0.788	0.925	0.892	1	<
Ammonium (as N)	0.369	0.262	0.270	0.283	0.5	<
Calcium	<0.0792	<0.0830	<0.0830	<0.0833	2	<
Magnesium	<0.0396	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0621	0.0270	0.0328	0.0624	0.2	1.83
Sodium	<0.158	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.289	24.1	24.1	24.791	24.051	23.998	24	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	116	69	111	54	171	100	130	170
Chloride	<0.0158	0.0315	0.0286	<0.0161	<0.0166	0.0255	<0.0167	<0.0167
Nitrate	0.0664	0.0874	0.0830	0.0471	0.0398	0.0794	0.0727	0.0320
Sulphate	1.12	0.836	0.944	0.812	0.884	1.26	1.82	0.916
Ammonium (as N)	0.376	0.267	0.290	0.252	0.261	0.350	0.556	0.284
Calcium	<0.0791	<0.0830	<0.0830	<0.0807	0.155	0.137	<0.0833	<0.0833
Magnesium	<0.0395	<0.0415	<0.0415	<0.0403	<0.0416	<0.0417	<0.0417	<0.0417
Potassium	0.244	0.102	0.0278	0.0232	0.0225	0.0473	0.0399	0.0329
Sodium	<0.158	<0.166	<0.166	<0.161	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	3-May	3-May	3-May	3-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.377	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	126	105	127	60		
Chloride	<0.0164	0.0166	<0.0166	0.0227	0.4	<
Nitrate	0.0553	0.0720	0.0815	0.0419	0.2	0.792012842
Sulphate	1.47	0.893	0.888	0.855	1	<
Ammonium (as N)	0.469	0.299	0.314	0.280	0.5	<
Calcium	<0.0820	0.133	0.116	0.199	2	<
Magnesium	<0.0410	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0560	0.0441	0.0883	0.0367	0.2	1.83
Sodium	<0.164	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	3-May	3-May	3-May	3-May	3-May	3-May	3-May	3-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	19.443	24.1	24.1	24.007	24.053	24.007	24	24.006
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	368	625	821	173	1536	569	567	216
Chloride	0.115	0.0985	0.195	0.0193	0.111	0.0420	0.0339	0.0209
Nitrate	0.188	0.180	0.168	0.159	0.214	0.212	0.240	0.149
Sulphate	1.11	0.870	0.915	0.910	3.00	1.58	1.50	1.00
Ammonium (as N)	0.330	0.285	0.256	0.297	0.328	0.443	0.430	0.304
Calcium	0.527	0.607	1.20	0.230	1.32	0.692	0.627	0.329
Magnesium	<0.0514	0.0781	0.157	<0.0417	0.120	0.0503	0.0471	<0.0417
Potassium	0.0504	0.0578	0.0478	0.0505	0.0919	0.0766	0.0569	0.0520
Sodium	<0.206	<0.166	<0.166	<0.167	1.11	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	9-May	9-May	9-May	9-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	23.85	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3			
Particulate Matter (µg/m3)	84	82	78	96		
Chloride	<0.0168	<0.0166	0.0211	<0.0167	0.4	<
Nitrate	0.0807	0.0457	0.0751	0.0636	0.2	0.792012842
Sulphate	0.937	0.798	0.867	0.878	1	<
Ammonium (as N)	0.276	0.254	0.257	0.266	0.5	<
Calcium	0.130	0.121	0.126	0.139	2	<
Magnesium	<0.0419	<0.0415	<0.0417	<0.0417	1	<
Potassium	0.0348	0.0234	0.0955	0.0246	0.2	1.83
Sodium	<0.168	<0.166	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	9-May	9-May	9-May	9-May	9-May	9-May	9-May	9-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.34	24	24	24.006	24.052	24.005	24.007	24.005
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	258	248	489	201	903	154	385	877
Chloride	0.0405	0.0436	0.123	0.0374	0.0792	<0.0167	0.0365	0.0791
Nitrate	0.207	0.201	0.238	0.177	0.243	0.203	0.215	0.186
Sulphate	0.975	0.964	1.10	0.972	1.79	0.915	1.07	1.18
Ammonium (as N)	0.275	0.283	0.298	0.286	0.347	0.277	0.260	0.266
Calcium	0.176	0.107	0.578	0.0946	1.40	0.116	0.247	0.591
Magnesium	<0.0411	<0.0417	0.0868	<0.0417	0.0781	<0.0417	<0.0417	0.0703
Potassium	0.0835	0.0420	0.0570	0.0458	0.0671	0.0452	0.0611	0.0487
Sodium	<0.164	<0.167	<0.167	<0.167	0.311	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	15-May	15-May	15-May	15-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	23.755	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	125	163	111	78		
Chloride	<0.0168	0.0213	<0.0166	0.0233	0.4	0.44
Nitrate	0.0507	0.0972	0.0409	0.0427	0.2	0.792012842
Sulphate	0.604	0.616	0.577	0.529	1	<
Ammonium (as N)	0.202	0.208	0.197	0.180	0.5	<
Calcium	<0.0842	<0.0830	<0.0830	0.202	2	<
Magnesium	<0.0421	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0279	0.0490	0.0276	0.0178	0.2	1.83
Sodium	<0.168	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	15-May	15-May	15-May	15-May	15-May	15-May	15-May	15-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.62	24.1	24.1	24	24.053	24.007	24.007	24.006
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	4	490	327	169	15984	269	635	375
Chloride	<0.0162	0.0860	0.0645	0.0171	0.814	<0.0167	0.0247	0.0217
Nitrate	0.0177	0.121	0.131	0.0581	0.454	0.0849	0.190	0.0826
Sulphate	<0.0406	0.633	0.634	0.574	8.19	0.786	0.927	0.551
Ammonium (as N)	<0.0203	0.219	0.217	0.193	0.548	0.258	0.282	0.183
Calcium	<0.0812	0.322	0.308	0.133	3.48	0.462	0.518	0.399
Magnesium	<0.0406	0.0565	0.0618	<0.0417	0.275	<0.0417	0.0574	<0.0417
Potassium	<0.00812	0.0736	0.0412	0.0434	0.314	0.0252	0.0385	0.0231
Sodium	<0.162	<0.166	<0.166	<0.167	0.731	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley		
Sample Date	21-May	21-May	21-May		
PM Size(µm)	2.5	2.5	2.5		
Total Air Volume (m3)	24.917	24	24		
Units	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	55	86	105		
Chloride	<0.0161	<0.0167	<0.0167	0.4	<
Nitrate	0.0624	0.0838	0.0680	0.2	1.007800772
Sulphate	0.378	0.335	0.336	1	1.41
Ammonium (as N)	0.119	0.108	0.106	0.5	<
Calcium	<0.0803	0.206	0.193	2	<
Magnesium	<0.0401	<0.0417	<0.0417	1	<
Potassium	0.0139	<0.00833	0.00857	0.2	<
Sodium	<0.161	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	21-May	21-May	21-May	21-May	21-May	21-May	21-May
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24.591	24.1	24.1	24.049	24.004	24.007	24.007
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	208	319	251	947	179	284	123
Chloride	0.0192	0.0345	0.0485	0.0752	0.0226	0.0238	<0.0167
Nitrate	0.160	0.208	0.195	0.318	0.232	0.222	0.115
Sulphate	0.410	0.360	0.413	0.684	0.401	0.476	0.407
Ammonium (as N)	0.126	0.122	0.122	0.0910	0.131	0.142	0.0520
Calcium	0.281	0.266	0.250	0.850	0.139	0.295	0.285
Magnesium	<0.0407	0.0426	0.0419	0.0619	<0.0417	<0.0417	<0.0417
Potassium	0.0127	0.0209	0.0235	0.0186	0.0262	0.0133	<0.00833
Sodium	<0.163	<0.166	<0.166	0.219	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	27-May	27-May	27-May	27-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	21.919	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	213	212	211	134		
Chloride	0.0451	0.0198	0.0207	<0.0167	0.4	<
Nitrate	0.178	0.107	0.156	0.100	0.2	1.007800772
Sulphate	1.59	1.13	1.05	1.01	1	1.41
Ammonium (as N)	0.480	0.345	0.312	0.317	0.5	<
Calcium	0.111	0.222	0.285	0.207	2	<
Magnesium	<0.0456	<0.0415	<0.0417	<0.0417	1	<
Potassium	0.0462	0.0533	0.0403	0.0282	0.2	<
Sodium	<0.182	<0.166	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	27-May	27-May	27-May	27-May	27-May	27-May	27-May	27-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.208	24	24	24	24	24	24.008	24.007
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	843	669	795	309	1356	665	1300	878
Chloride	0.0620	0.126	0.289	0.0257	0.107	0.0629	0.0471	0.0536
Nitrate	0.399	0.287	0.347	0.190	0.297	0.321	0.452	0.273
Sulphate	1.71	1.29	1.18	1.05	1.79	1.74	1.81	1.68
Ammonium (as N)	0.456	0.351	0.328	0.329	0.384	0.460	0.462	0.470
Calcium	0.947	0.547	0.871	0.239	1.36	1.08	4.31	0.643
Magnesium	0.0933	0.109	0.147	<0.0417	0.0953	0.0803	0.114	0.0873
Potassium	0.0615	0.0540	0.0663	0.0369	0.0523	0.0671	0.0524	0.0412
Sodium	<0.165	<0.167	0.215	<0.167	0.267	<0.167	0.185	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	2-Jun	2-Jun	2-Jun	2-Jun			2-Jun
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.555	24.1	24	24			24.1
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	956	955	1100	109			-4
Chloride	<0.0163	0.0534	0.0739	0.0179	0.4	<	<0.0166
Nitrate	0.216	0.237	0.356	0.0518	0.2	1.007800772	0.0370
Sulphate	0.931	1.25	1.18	0.916	1	1.41	<0.0415
Ammonium (as N)	0.241	0.282	0.228	0.293	0.5	<	<0.0207
Calcium	0.264	0.553	0.936	0.181	2	<	0.216
Magnesium	<0.0407	0.0581	0.131	<0.0417	1	<	<0.0415
Potassium	0.271	0.301	0.217	0.0338	0.2	<	<0.00830
Sodium	<0.163	<0.166	<0.167	<0.167	4	<	<0.166

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	
Sample Date	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	23.864	24	24.1	24.005	24.049	24.008	24.013	24.1
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1719	1577	652	257	5645	1310	1854	15
Chloride	0.0513	0.0971	0.0193	0.0349	0.205	0.0328	0.0715	<0.0166
Nitrate	0.463	0.629	0.0988	0.177	2.78	0.325	0.454	0.0575
Sulphate	1.15	1.45	1.00	0.957	3.92	1.06	1.25	0.150
Ammonium (as N)	0.222	0.234	0.236	0.287	0.359	0.313	0.276	<0.0207
Calcium	1.06	0.944	0.634	0.180	8.68	0.955	1.53	0.0975
Magnesium	0.0959	0.180	0.0439	<0.0417	0.240	0.0636	0.121	<0.0415
Potassium	0.289	0.316	0.198	0.0351	0.718	0.243	0.285	<0.00830
Sodium	<0.168	<0.167	<0.166	<0.167	0.546	<0.167	0.167	<0.166



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Station #	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	8-Jun	8-Jun	8-Jun			8-Jun
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24			24.1
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	301	280	98			-4
Chloride	<0.0167	<0.0167	<0.0167	0.4	<	<0.0166
Nitrate	0.109	0.120	0.0949	0.2	1.007800772	0.0437
Sulphate	0.795	0.738	0.528	1	1.41	0.0740
Ammonium (as N)	0.240	0.219	0.152	0.5	<	<0.0207
Calcium	0.228	0.254	<0.0833	2	<	<0.0830
Magnesium	<0.0417	<0.0417	<0.0417	1	<	<0.0415
Potassium	0.0321	0.0371	0.0609	0.2	<	<0.00830
Sodium	<0.167	<0.167	<0.167	4	<	<0.166

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.052	24	24.009	24.007	24.1
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	985	911	754	261	98	897	1345	2	17
Chloride	0.0350	0.0814	0.0758	0.0360	0.0198	0.0408	0.0336	<0.0167	<0.0166
Nitrate	0.254	0.333	0.290	0.183	0.102	0.0245	0.290	0.0533	0.0449
Sulphate	1.01	0.949	0.903	0.531	0.117	0.967	1.13	0.0453	0.0695
Ammonium (as N)	0.328	0.265	0.241	0.156	<0.0208	0.276	0.395	<0.0208	<0.0207
Calcium	0.600	0.688	0.635	0.192	0.127	0.702	0.818	<0.0833	<0.0830
Magnesium	0.0699	0.0946	0.0835	<0.0417	<0.0416	0.0528	0.0864	<0.0417	<0.0415
Potassium	0.0699	0.0721	0.0343	0.00884	0.0132	0.0355	0.0412	<0.00833	<0.00830
Sodium	<0.167	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167	<0.166



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Station #	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	14-Jun	14-Jun	14-Jun		
PM Size(µm)	2.5	2.5	2.5		
Total Air Volume (m3)	24	24	24		
Units	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	129	119	49		
Chloride	0.0213	<0.0167	<0.0167	0.4	<
Nitrate	0.0265	0.0577	0.0431	0.2	1.007800772
Sulphate	0.457	0.464	0.366	1	1.41
Ammonium (as N)	0.0724	0.101	0.101	0.5	<
Calcium	<0.0833	0.177	<0.0833	2	<
Magnesium	<0.0417	<0.0417	<0.0417	1	<
Potassium	<0.00833	0.0209	<0.00833	0.2	<
Sodium	<0.167	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.052	24	24.009	24.009
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	242	416	333	162	434	246	317	833
Chloride	0.0240	0.0762	0.0514	0.0269	0.0560	0.0265	0.0341	0.0985
Nitrate	0.0743	0.103	0.0786	0.0767	0.156	0.111	0.0660	0.117
Sulphate	0.499	0.541	0.509	0.440	0.639	0.467	0.500	0.708
Ammonium (as N)	0.149	0.108	0.111	0.0998	0.173	0.120	0.138	0.157
Calcium	<0.0833	0.207	0.214	<0.0833	0.344	0.177	0.151	1.09
Magnesium	<0.0417	0.0426	<0.0417	<0.0417	<0.0416	<0.0417	<0.0417	0.124
Potassium	0.0120	0.0285	0.0265	<0.00833	0.0354	0.0253	<0.00833	0.0422
Sodium	<0.167	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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2012
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Station #	AMS 1	MDL	Lab Blank
Station Name	Fort McKay		
Sample Date	16-Jun		
PM Size(µm)	2.5		
Total Air Volume (m3)	24.387		
Units	µg/M3		
Particulate Matter (µg/m3)	99		
Chloride	<0.0164	0.4	<
Nitrate	0.0673	0.2	1.007800772
Sulphate	0.687	1	1.41
Ammonium (as N)	0.195	0.5	<
Calcium	0.190	2	<
Magnesium	<0.0410	1	<
Potassium	<0.00820	0.2	<
Sodium	<0.164	4	<

Station #	AMS 1	MDL	Lab Blank
Station Name	Fort McKay		
Sample Date	16-Jun		
PM Size(µm)	2.5		
Total Air Volume (m3)	24.387		
Units	µg/M3		
Particulate Matter (µg/m3)	99		
Chloride	<0.0164	0.4	<
Nitrate	0.0673	0.2	1.007800772
Sulphate	0.687	1	1.41
Ammonium (as N)	0.195	0.5	<
Calcium	0.190	2	<
Magnesium	<0.0410	1	<
Potassium	<0.00820	0.2	<
Sodium	<0.164	4	<



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	20-Jun	20-Jun	20-Jun	20-Jun		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.306	24	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	63	179	207	85		
Chloride	<0.0165	<0.0167	0.0216	<0.0167	0.4	<
Nitrate	0.0437	0.105	0.123	0.0617	0.2	1.007800772
Sulphate	0.286	0.553	1.02	0.524	1	1.41
Ammonium (as N)	0.0721	0.150	0.278	0.170	0.5	<
Calcium	<0.0823	0.108	0.213	<0.0833	2	<
Magnesium	<0.0411	<0.0417	<0.0417	<0.0417	1	<
Potassium	<0.00823	0.0129	0.0400	<0.00833	0.2	<
Sodium	<0.165	<0.167	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.051	24	24	24.006
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	255	488	504	250	852	142	211	463
Chloride	0.0402	0.107	0.0496	0.0240	0.0746	0.0242	0.0319	0.0443
Nitrate	0.0375	0.191	0.179	0.136	0.122	0.0375	0.0976	0.0905
Sulphate	0.511	0.523	0.711	0.599	0.563	0.301	0.324	0.296
Ammonium (as N)	0.0730	0.129	0.194	0.178	0.0968	0.0809	0.0854	0.0501
Calcium	0.327	0.476	0.524	0.151	1.42	0.100	0.295	0.561
Magnesium	<0.0417	0.0586	0.0625	<0.0417	0.0649	<0.0417	<0.0417	0.0501
Potassium	0.0150	0.0500	0.0279	0.0301	0.0286	0.0259	0.00848	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	26-Jun	26-Jun	26-Jun	26-Jun			26-Jun
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.493	24	24	24.007			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	90	159	95	185			20
Chloride	<0.0167	<0.0167	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.0292	0.0632	0.0423	0.0636	0.2	<	<0.00833
Sulphate	0.228	0.283	0.261	0.316	1	<	<0.0417
Ammonium (as N)	0.0851	0.138	0.118	0.122	0.5	<	<0.0208
Calcium	0.0860	<0.0833	<0.0833	0.123	2	<	<0.0833
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0196	0.114	0.0537	0.0295	0.2	<	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.051	24	24	24.014	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	227	496	350	281	457	204	389	800	26
Chloride	0.0244	0.0905	0.0439	0.0268	0.0389	<0.0167	0.0208	0.0350	<0.0167
Nitrate	0.117	0.0786	0.110	0.131	0.135	0.100	0.132	0.211	<0.00833
Sulphate	0.263	0.356	0.309	0.325	0.469	0.261	0.298	0.475	<0.0417
Ammonium (as N)	0.0949	0.119	0.120	0.128	0.160	0.104	0.101	0.137	<0.0208
Calcium	0.105	0.296	0.255	0.158	0.485	0.274	0.604	1.13	<0.0833
Magnesium	<0.0426	0.0646	0.0448	<0.0417	0.0443	<0.0417	<0.0417	0.0909	<0.0417
Potassium	0.0431	0.0413	0.0489	0.0580	0.0919	0.0355	0.0460	0.0438	<0.00833
Sodium	<0.170	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	2-Jul	2-Jul	2-Jul	2-Jul			2-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	72.5	115	320.1666667	207.5			10
Chloride	<0.0167	<0.0167	0.0290	0.0179	0.4	<	<0.0167
Nitrate	0.0328	<0.00833	0.0652	0.0672	0.2	<	<0.00833
Sulphate	0.387	0.414	0.494	0.703	1	<	0.0592
Ammonium (as N)	0.145	0.161	0.166	0.189	0.5	<	<0.0208
Calcium	<0.0833	0.0852	0.226	0.176	2	<	<0.0833
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0265	0.0351	0.0652	0.0788	0.2	<	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.049	24.005	24	24.007	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	16.5	198	-27.16666667	75.83333333	473	253.3333333	178	331	-11
Chloride	<0.0167	0.0282	<0.0167	0.0169	0.0923	<0.0167	<0.0167	0.0212	<0.0167
Nitrate	0.0332	0.0553	<0.00833	0.0186	0.0406	0.0470	0.0372	0.0774	<0.00833
Sulphate	0.236	0.452	<0.0417	0.568	0.516	0.393	0.327	0.404	0.0419
Ammonium (as N)	<0.0208	0.176	<0.0208	0.186	0.157	0.159	0.129	0.148	<0.0208
Calcium	0.117	0.114	0.103	0.114	0.505	0.243	0.147	0.368	<0.0833
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	0.0567	<0.0417	<0.0417	<0.0417	<0.0417
Potassium	<0.00833	0.0555	<0.00833	0.0255	0.0478	0.0409	0.0363	0.0468	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	8-Jul	8-Jul	8-Jul	8-Jul			8-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.85	24	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	375	244	18	167.8333333			-11
Chloride	<0.0168	<0.0167	<0.0166	<0.0167	0.4	<	<0.0167
Nitrate	0.0815	0.0229	0.0146	0.0304	0.2	<	0.00869
Sulphate	2.65	0.516	0.0494	0.577	1	<	0.0592
Ammonium (as N)	0.822	0.217	<0.0207	0.220	0.5	<	<0.0208
Calcium	<0.0839	0.318	<0.0830	0.345	2	<	0.127
Magnesium	<0.0419	<0.0417	<0.0415	<0.0417	1	<	<0.0417
Potassium	1.44	0.0529	<0.00830	0.0489	0.2	<	<0.00833
Sodium	<0.168	<0.167	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	0	24	24	24.006	48.103	24.006	24.008	24.014	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	7	616	609.8333333	462.1666667	3649	1086	1318	1164	4
Chloride	not quantifiable	0.0346	0.0468	<0.0167	<0.00832	<0.0167	<0.0167	0.0267	<0.0167
Nitrate	not quantifiable	0.0901	0.0842	0.0798	0.00434	0.213	0.223	0.219	<0.00833
Sulphate	not quantifiable	0.554	0.571	0.603	<0.0208	2.31	2.08	3.90	0.0728
Ammonium (as N)	not quantifiable	0.226	0.225	0.220	<0.0104	0.704	0.634	1.08	<0.0208
Calcium	not quantifiable	0.430	0.433	0.294	<0.0416	1.77	1.33	2.37	<0.0833
Magnesium	not quantifiable	0.0769	0.0821	0.0531	<0.0208	0.0878	0.0968	0.126	<0.0417
Potassium	not quantifiable	0.0748	0.0724	0.0624	0.00593	0.0914	0.0868	0.101	<0.00833
Sodium	not quantifiable	<0.167	<0.167	<0.167	<0.0832	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	14-Jul	14-Jul	14-Jul	14-Jul			14-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	1472	972	17	1004			7
Chloride	<0.0167	<0.0167	<0.0166	<0.0167	0.4	<	<0.0167
Nitrate	0.189	0.0684	<0.00830	0.0854	0.2	<	0.0107
Sulphate	1.94	0.674	0.0534	0.881	1	<	<0.0417
Ammonium (as N)	0.721	0.405	<0.0207	0.448	0.5	<	<0.0208
Calcium	0.403	0.310	0.136	0.251	2	<	0.145
Magnesium	0.0625	<0.0417	<0.0415	<0.0417	1	<	<0.0417
Potassium	0.237	0.211	<0.00830	0.201	0.2	<	<0.00833
Sodium	<0.167	<0.167	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.007	24	24	24.006	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	3276	1653	1778	1350	1849	2321	2312	-2
Chloride	0.117	0.115	0.0888	<0.0167	0.0622	0.0225	0.0437	<0.0167
Nitrate	0.480	0.150	0.183	0.146	0.246	0.289	0.337	<0.00833
Sulphate	2.25	0.840	0.151	0.926	2.25	1.15	2.82	<0.0417
Ammonium (as N)	0.619	0.368	0.382	0.427	0.667	0.560	0.944	<0.0208
Calcium	2.97	1.19	1.33	0.534	1.98	1.98	2.29	0.178
Magnesium	0.259	0.197	0.239	0.0992	0.195	0.122	0.162	<0.0417
Potassium	0.263	0.235	0.244	0.235	0.248	0.238	0.242	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	0.206	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	20-Jul	20-Jul	20-Jul	20-Jul			20-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	118	118	-5	64			17
Chloride	<0.0167	<0.0167	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.130	0.117	0.0755	0.0636	0.2	0.739844331	0.0387
Sulphate	0.424	0.173	<0.0417	0.187	1	<	<0.0417
Ammonium (as N)	0.163	0.0888	<0.0208	0.0945	0.5	<	<0.0208
Calcium	0.0895	0.261	<0.0833	0.0959	2	<	0.143
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0447	0.0386	0.0165	0.0239	0.2	0.5325	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24	24.049	24	24	24.007	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	465	321	422	144	748	366	512	546	0
Chloride	0.0341	0.0301	0.0680	<0.0167	0.118	<0.0167	<0.0167	0.0252	<0.0167
Nitrate	0.255	0.105	0.138	0.0862	0.124	0.126	0.135	0.173	0.0593
Sulphate	0.484	0.217	0.215	0.197	0.361	0.545	0.687	0.529	<0.0417
Ammonium (as N)	0.159	0.0822	0.0803	0.0913	0.0989	0.185	0.229	0.164	<0.0208
Calcium	0.325	0.179	0.336	0.0882	0.851	0.410	0.513	0.710	<0.0833
Magnesium	0.0448	<0.0417	0.0574	<0.0417	0.0652	<0.0417	0.0520	0.0493	<0.0417
Potassium	0.0946	0.0900	0.0602	0.0566	0.0604	0.0698	0.0572	0.0881	<0.00833
Sodium	<0.167	<0.167	<0.166	<0.167	<0.166	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	26-Jul	26-Jul	26-Jul	26-Jul			26-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.667	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	225	416	16	415			51
Chloride	<0.0169	<0.0166	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.104	0.0811	0.0751	0.0585	0.2	0.739844331	0.0589
Sulphate	0.288	1.92	0.0717	1.34	1	<	<0.0417
Ammonium (as N)	0.100	0.587	<0.0208	0.483	0.5	<	<0.0208
Calcium	0.308	0.258	0.103	0.417	2	<	0.106
Magnesium	<0.0423	<0.0415	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0325	0.0580	<0.00833	0.0585	0.2	0.5325	0.0251
Sodium	<0.169	<0.166	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24.1	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	699	427	950	678	1073	545	747	911	-2
Chloride	0.0244	0.0198	0.0268	0.0182	0.0382	0.0237	0.0400	0.0410	<0.0167
Nitrate	0.119	0.0941	0.230	0.158	0.150	0.112	0.117	0.139	0.0403
Sulphate	0.384	1.06	2.06	1.48	1.31	0.551	0.473	0.502	<0.0417
Ammonium (as N)	0.109	0.360	0.592	0.470	0.351	0.140	0.135	0.0894	<0.0208
Calcium	0.855	0.459	1.02	0.286	1.86	0.704	0.350	0.752	<0.0833
Magnesium	0.0942	0.0529	0.113	0.0421	0.108	0.0617	0.0670	0.0762	<0.0417
Potassium	0.0479	0.0840	0.121	0.134	0.0913	0.0777	0.0511	0.0484	0.0303
Sodium	<0.167	<0.167	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	1-Aug	1-Aug	1-Aug	1-Aug			1-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.737	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	99	431	16	116			1
Chloride	<0.0169	<0.0167	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.0647	0.0893	0.0549	0.0340	0.2	0.739844331	<0.00833
Sulphate	0.404	2.04	0.0477	0.197	1	<	0.0755
Ammonium (as N)	0.0889	0.632	<0.0208	0.0482	0.5	<	<0.0208
Calcium	0.141	0.253	0.230	0.238	2	<	0.190
Magnesium	<0.0421	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0148	0.0604	<0.00833	0.0117	0.2	0.5325	<0.00833
Sodium	<0.169	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.009	24	24	24	24.009	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	384	343	434	207	2077	224	443	1038	8
Chloride	0.0313	0.0345	0.0398	0.0222	0.141	0.0188	<0.0167	0.0627	<0.0167
Nitrate	0.160	0.0158	0.0897	0.0889	0.367	0.112	0.0972	0.215	0.0368
Sulphate	0.374	0.332	0.278	0.250	2.47	0.306	0.564	0.577	<0.0417
Ammonium (as N)	0.110	0.0815	0.0761	<0.0208	0.352	0.0846	0.196	<0.0208	<0.0208
Calcium	0.382	0.401	0.308	0.211	5.39	0.551	1.13	1.97	0.105
Magnesium	0.0505	<0.0417	0.0442	<0.0417	0.232	0.0467	0.0504	0.136	<0.0417
Potassium	0.0371	0.0456	0.0537	0.0162	0.0750	0.0271	0.0407	0.0301	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	0.359	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	7-Aug	7-Aug	7-Aug	7-Aug			7-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	266	26	85	47			78
Chloride	<0.200	<0.0166	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	1.05	0.0571	0.0395	0.0447	0.2	0.739844331	0.0225
Sulphate	10.6	<0.0415	<0.0417	0.0567	1	<	<0.0417
Ammonium (as N)	3.51	<0.0207	<0.0208	0.0250	0.5	<	<0.0208
Calcium	2.06	0.162	<0.0833	0.230	2	<	0.157
Magnesium	<0.500	<0.0415	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.347	<0.00830	<0.00833	<0.00833	0.2	0.5325	<0.00833
Sodium	<2.00	<0.166	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	778	1145	886	342	1125	572	479	801	12
Chloride	0.0242	0.0813	0.0311	<0.0167	0.0488	<0.0167	<0.0167	0.0381	<0.0167
Nitrate	0.213	0.273	0.292	0.110	0.162	0.168	0.0929	0.211	0.0316
Sulphate	1.10	2.05	2.01	1.07	1.52	1.04	0.390	0.885	<0.0417
Ammonium (as N)	0.311	0.562	0.567	0.364	0.442	0.313	0.146	0.253	<0.0208
Calcium	0.679	0.980	0.650	0.384	1.64	0.657	0.287	0.790	<0.0833
Magnesium	0.0778	0.188	0.0913	<0.0417	0.0950	0.0548	0.0443	0.0735	<0.0417
Potassium	0.0470	0.0864	0.0766	0.0535	0.0744	0.0605	0.0367	0.0442	0.0225
Sodium	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	13-Aug	13-Aug	13-Aug	13-Aug			13-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	187	136	23	130			20
Chloride	<0.0167	<0.0167	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.0435	0.0241	<0.00833	0.0340	0.2	0.618252997	0.0336
Sulphate	0.696	0.376	<0.0417	0.311	1	<	<0.0417
Ammonium (as N)	0.239	0.153	<0.0208	0.130	0.5	<	<0.0208
Calcium	<0.0833	0.245	<0.0833	0.172	2	<	0.208
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0487	0.0265	0.00875	0.0263	0.2	<	0.0115
Sodium	<0.167	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1054	341	509	299	868	612	1041	554	12
Chloride	0.0719	0.0247	0.0364	0.0188	0.111	<0.0167	0.0202	0.0245	<0.0167
Nitrate	0.345	0.103	0.0956	0.0624	0.198	0.198	0.295	0.155	0.0387
Sulphate	2.04	0.419	0.504	0.385	0.793	2.14	3.73	1.19	<0.0417
Ammonium (as N)	0.456	0.154	0.170	0.154	0.193	0.540	0.817	0.332	<0.0208
Calcium	1.13	0.221	0.274	0.141	0.783	0.460	0.959	0.597	<0.0833
Magnesium	0.111	<0.0417	0.0612	<0.0417	0.0751	0.0446	0.0827	0.0524	<0.0417
Potassium	0.0682	0.0479	0.0869	0.0362	0.0515	0.0521	0.0651	0.0404	0.0206
Sodium	<0.167	<0.167	<0.167	<0.167	0.201	<0.167	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	19-Aug	19-Aug	19-Aug	19-Aug			19-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	349	300	335	240			9
Chloride	<0.0167	<0.0167	<0.0167	<0.0167	0.4	<	0.0206
Nitrate	0.0703	0.0411	0.0462	0.0257	0.2	0.618252997	0.0178
Sulphate	2.26	0.510	0.444	0.514	1	<	0.0601
Ammonium (as N)	0.673	0.224	0.177	0.199	0.5	<	<0.0208
Calcium	0.175	0.364	0.391	0.295	2	<	0.139
Magnesium	0.0437	<0.0417	0.0503	<0.0417	1	<	<0.0417
Potassium	0.0578	0.0543	0.0607	0.0407	0.2	<	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	
Sample Date	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	828	874	908	516	1642	791	1728	6
Chloride	0.0278	0.0885	0.0504	0.0394	0.141	0.0221	0.0445	<0.0167
Nitrate	0.144	0.121	0.126	0.112	0.132	0.102	0.129	0.0237
Sulphate	1.20	0.633	0.675	0.556	0.981	1.19	0.740	<0.0417
Ammonium (as N)	0.365	0.221	0.181	0.212	0.153	0.364	0.211	<0.0208
Calcium	0.725	0.701	0.841	0.376	2.15	0.629	1.46	<0.0833
Magnesium	0.0878	0.116	0.0842	0.0679	0.116	0.0716	0.147	<0.0417
Potassium	0.139	0.0690	0.0694	0.0683	0.0793	0.0761	0.0807	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	0.281	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	25-Aug	25-Aug	25-Aug	25-Aug		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	166	167	124	146		
Chloride	0.0184	<0.0167	<0.0167	<0.0167	0.4	<
Nitrate	0.0941	0.0553	0.0328	0.0786	0.2	0.618252997
Sulphate	0.285	0.703	1.02	0.665	1	<
Ammonium (as N)	0.108	0.236	0.322	0.223	0.5	<
Calcium	<0.0833	<0.0833	0.121	0.121	2	<
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<
Potassium	0.0355	0.0323	0.0328	0.0237	0.2	<
Sodium	<0.167	<0.167	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.007	24.051	24.004	24	22.935
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	134	135	361	239	435	158	424	505
Chloride	<0.0167	<0.0166	0.0245	<0.0167	0.0238	0.0169	0.0190	0.0347
Nitrate	0.0759	0.0165	0.115	0.0660	0.0702	0.0328	0.0656	0.0509
Sulphate	0.113	0.600	1.18	0.726	0.745	0.176	0.287	0.243
Ammonium (as N)	0.0286	0.212	0.349	0.249	0.192	0.0381	0.0746	0.0257
Calcium	<0.0833	<0.0830	0.234	<0.0833	0.411	0.247	0.0964	0.397
Magnesium	<0.0417	<0.0415	<0.0417	<0.0417	<0.0416	<0.0417	<0.0417	<0.0436
Potassium	0.0296	0.0258	0.0413	0.0851	0.0266	0.0312	0.0282	0.0322
Sodium	<0.167	<0.166	<0.167	<0.167	<0.166	<0.167	<0.167	<0.174



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	31-Aug	31-Aug	31-Aug	31-Aug		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.375	24	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	88	60	81	49		
Chloride	0.0177	<0.0167	<0.0167	<0.0167	0.4	<
Nitrate	0.0217	0.0435	0.0123	0.0202	0.2	0.618252997
Sulphate	0.484	0.176	0.156	0.154	1	<
Ammonium (as N)	0.139	0.0302	0.0234	0.0374	0.5	<
Calcium	0.0930	<0.0833	0.106	0.136	2	<
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<
Potassium	0.0198	0.0173	0.0138	0.00920	0.2	<
Sodium	<0.167	<0.167	<0.167	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.002	24.052	24.004	24.008	24.005
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	404	394	323	122	449	224	401	500
Chloride	0.0291	0.0926	0.0460	0.0256	0.0602	<0.0167	0.0378	0.0417
Nitrate	0.0842	0.0854	0.0664	0.0782	0.0517	0.0253	0.0683	0.0964
Sulphate	0.545	0.233	0.171	0.181	0.250	0.609	0.236	0.758
Ammonium (as N)	0.138	0.0311	0.0286	0.0381	0.0344	0.159	0.0423	0.194
Calcium	0.347	0.285	0.381	<0.0833	0.651	0.165	0.193	0.437
Magnesium	<0.0417	0.0588	<0.0417	<0.0417	0.0456	<0.0417	<0.0417	0.0485
Potassium	0.0197	0.0219	0.0207	0.0246	0.0304	0.0463	0.0172	0.0241
Sodium	<0.167	<0.167	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	6-Sep	6-Sep	6-Sep	6-Sep			6-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.44	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	209	97	167	93			12
Chloride	<0.0164	<0.0166	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.0652	0.0394	0.0486	0.0360	0.2	0.618252997	0.0308
Sulphate	0.972	0.379	0.261	0.242	1	<	<0.0417
Ammonium (as N)	0.331	0.128	0.0614	0.0882	0.5	<	<0.0208
Calcium	0.112	<0.0830	0.129	0.170	2	<	<0.0833
Magnesium	<0.0409	<0.0415	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0173	0.0141	0.0215	0.0134	0.2	<	<0.00833
Sodium	<0.164	<0.166	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24	30.616	24.004	24.004	24.003	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1074	410	668	354	755	508	208	635	1
Chloride	0.0913	0.0359	0.0912	0.0191	0.0881	0.0277	<0.0167	0.0297	<0.0167
Nitrate	0.133	0.0786	0.111	0.0735	0.110	0.0854	0.0648	0.123	<0.00833
Sulphate	1.08	0.440	0.307	0.263	0.483	1.05	0.152	2.66	<0.0417
Ammonium (as N)	0.283	0.127	0.0755	0.0828	0.0992	0.306	0.0403	0.700	<0.0208
Calcium	1.35	0.171	0.558	<0.0833	0.589	0.267	0.106	0.758	<0.0833
Magnesium	0.135	<0.0417	0.0734	<0.0417	0.0456	<0.0417	<0.0417	0.0498	<0.0417
Potassium	0.0355	0.0375	0.0597	0.0969	0.0442	0.0660	0.0168	0.0438	<0.00833
Sodium	<0.167	<0.167	<0.166	<0.167	<0.131	<0.167	<0.167	<0.167	<0.167



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Particulate Matter - Ions

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Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	12-Sep	12-Sep	12-Sep	12-Sep			12-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	95	96	125	76			10
Chloride	<0.0164	<0.0167	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.0412	0.0237	0.0431	0.0178	0.2	0.618252997	0.0190
Sulphate	0.164	0.123	0.116	0.0965	1	<	0.0496
Ammonium (as N)	0.0581	<0.0208	0.0282	<0.0208	0.5	<	<0.0208
Calcium	<0.0821	<0.0833	<0.0833	<0.0833	2	<	<0.0833
Magnesium	<0.0410	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0165	0.0167	0.0192	0.0142	0.2	<	0.0111
Sodium	<0.164	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.004	17.454	24.007	24.007	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	182	245	428	143	286	169	331	348	12
Chloride	0.0362	0.0210	0.0321	0.0289	0.0359	0.0237	0.0198	<0.0167	<0.0167
Nitrate	0.0502	0.0364	0.0443	0.0502	0.0484	0.0502	0.0454	0.0494	0.0273
Sulphate	0.184	0.133	0.133	0.144	0.527	0.150	0.197	0.146	<0.0417
Ammonium (as N)	0.0511	0.0243	0.0257	<0.0208	0.125	0.0209	0.0394	<0.0208	<0.0208
Calcium	<0.0833	<0.0833	0.236	<0.0833	0.672	0.123	0.225	0.339	<0.0833
Magnesium	<0.0417	<0.0417	0.0417	<0.0417	<0.0573	<0.0417	<0.0417	<0.0417	<0.0417
Potassium	0.0312	0.0264	0.0597	0.0628	0.0286	0.0370	0.0586	0.0257	0.0101
Sodium	<0.167	<0.167	<0.167	<0.167	<0.229	<0.167	<0.167	<0.167	<0.167



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Ions

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	18-Sep	18-Sep	18-Sep	18-Sep			18-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.315	24	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	76	71	141	86			26
Chloride	<0.0165	<0.0167	<0.0166	<0.0167	0.4	<	<0.0167
Nitrate	0.0694	0.0530	0.0701	0.0356	0.2	0.607051759	0.0415
Sulphate	0.251	0.170	0.226	0.189	1	<	<0.0417
Ammonium (as N)	0.0492	0.0396	0.0857	0.0533	0.5	<	<0.0208
Calcium	<0.0823	<0.0833	0.109	<0.0833	2	<	0.348
Magnesium	<0.0411	<0.0417	<0.0415	<0.0417	1	<	<0.0417
Potassium	<0.00823	0.0360	0.0467	<0.00833	0.2	<	<0.00833
Sodium	<0.165	<0.167	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24	24.006	24.051	24.004	24	24.004	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	254	266	545	191	773	181	656	966	10
Chloride	<0.0167	0.0184	0.0383	<0.0167	0.0546	0.0295	0.0399	0.0963	<0.0167
Nitrate	0.0854	0.0838	0.107	0.0770	0.123	0.129	0.0826	0.101	0.0130
Sulphate	0.289	0.229	0.276	0.269	1.51	0.229	0.285	0.528	<0.0417
Ammonium (as N)	<0.0208	0.0565	0.0842	0.0863	0.405	0.0735	0.0899	0.169	<0.0208
Calcium	0.103	0.0868	0.299	0.0882	1.02	0.266	0.210	1.02	<0.0833
Magnesium	<0.0417	<0.0415	0.0435	<0.0417	0.0661	<0.0417	<0.0417	0.0959	<0.0417
Potassium	0.0127	0.0253	0.0365	0.0211	0.0341	0.0276	0.0172	0.0291	0.0119
Sodium	<0.167	<0.166	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167	<0.167



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	24-Sep	24-Sep	24-Sep	24-Sep			24-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.156	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	280	272	307	233			17
Chloride	0.0209	<0.0166	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.0990	0.0398	0.0668	0.0755	0.2	0.607051759	0.0478
Sulphate	0.889	0.719	1.20	0.827	1	<	<0.0417
Ammonium (as N)	0.279	0.294	0.429	0.323	0.5	<	<0.0208
Calcium	0.127	0.359	0.463	0.234	2	<	0.134
Magnesium	<0.0414	<0.0415	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0281	0.0177	0.0287	0.0180	0.2	<	0.0146
Sodium	<0.166	<0.166	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24.003	24.053	24.004	24.003	23.999	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	817	554	730	410	1121	619	833	1453	14
Chloride	0.0367	0.0300	0.0503	0.0243	0.0878	0.0374	0.0261	0.0797	0.0170
Nitrate	0.168	0.153	0.168	0.0877	0.125	0.189	0.159	0.362	0.0454
Sulphate	0.836	0.863	1.39	0.864	0.795	0.839	1.52	0.761	<0.0417
Ammonium (as N)	0.281	0.321	0.444	0.331	0.219	0.293	0.466	0.182	<0.0208
Calcium	0.688	0.399	0.538	0.224	2.19	0.730	0.672	1.84	<0.0833
Magnesium	0.0619	0.0651	0.102	<0.0417	0.0910	0.0442	0.0662	0.131	<0.0417
Potassium	0.0463	0.0394	0.0582	0.0481	0.0631	0.0612	0.0356	0.0391	<0.00833
Sodium	<0.167	<0.167	<0.166	<0.167	<0.166	<0.167	<0.167	<0.167	<0.167



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Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	30-Sep	30-Sep	30-Sep	30-Sep			30-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.673	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	164	56	95	46			4
Chloride	<0.0162	<0.0167	0.0198	<0.0167	0.4	<	<0.0167
Nitrate	0.0546	0.0549	0.0949	0.0383	0.2	0.607051759	0.0561
Sulphate	0.180	0.198	0.206	0.245	1	<	<0.0417
Ammonium (as N)	0.0860	0.0642	0.0651	0.0615	0.5	<	<0.0208
Calcium	<0.0811	<0.0833	0.164	<0.0833	2	<	0.145
Magnesium	<0.0405	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0116	<0.00833	<0.00833	0.0129	0.2	<	<0.00833
Sodium	<0.162	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.003	24.051	24.005	24.004	24.006	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	201	342	419	216	908	276	421	448	-1
Chloride	0.0212	0.0837	0.0787	0.0712	0.179	0.0849	0.0274	0.0368	<0.0167
Nitrate	0.0692	0.0850	0.0929	0.134	0.142	0.203	0.0759	0.0798	0.0206
Sulphate	0.253	0.222	0.265	0.268	0.709	0.568	0.400	0.381	0.0513
Ammonium (as N)	0.0963	0.0692	0.0728	0.0704	0.0922	0.135	0.111	0.104	<0.0208
Calcium	0.0948	0.267	0.373	0.173	1.69	0.316	0.231	0.481	0.164
Magnesium	<0.0417	0.0500	0.0614	<0.0417	0.0879	<0.0417	<0.0417	0.0466	<0.0417
Potassium	0.0200	0.0310	0.0165	0.0474	0.0181	0.0598	0.0287	0.0219	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	0.314	<0.167	<0.167	<0.167	<0.167



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2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	6-Oct	6-Oct	6-Oct	6-Oct			6-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.864	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	190	229	249	129			28
Chloride	<0.0161	0.0204	<0.0167	<0.0167	0.4	<	<0.0167
Nitrate	0.108	0.0571	0.0636	0.0324	0.2	0.607051759	0.0237
Sulphate	1.15	2.01	1.53	0.848	1	<	<0.0417
Ammonium (as N)	0.377	0.631	0.499	0.276	0.5	<	<0.0208
Calcium	<0.0804	0.209	0.150	0.102	2	<	0.175
Magnesium	<0.0402	<0.0415	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0160	0.0283	0.0489	0.0104	0.2	<	<0.00833
Sodium	<0.161	<0.166	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.054	2.464	24.01	24.003	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	442	490	539	246	603	11	661	686	14
Chloride	0.0252	0.0218	0.0422	<0.0167	0.0481	<0.162	0.0202	0.0192	<0.0167
Nitrate	0.143	0.122	0.164	0.0636	0.264	0.928	0.158	0.179	0.0146
Sulphate	1.30	2.04	1.70	0.802	2.05	0.498	1.33	1.06	<0.0417
Ammonium (as N)	0.410	0.634	0.523	0.281	0.563	<0.203	0.414	0.330	<0.0208
Calcium	0.372	0.277	0.381	0.137	0.626	1.39	1.50	1.06	0.0890
Magnesium	0.0442	0.0463	0.0619	<0.0417	0.0551	<0.406	0.0753	0.0645	<0.0417
Potassium	0.0241	0.0563	0.0326	0.0117	0.0327	<0.0812	0.0124	0.0181	<0.00833
Sodium	<0.167	<0.167	<0.167	<0.167	<0.166	<1.62	<0.167	<0.167	<0.167



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2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	12-Oct	12-Oct	12-Oct	12-Oct			12-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	25.461	24.1	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	95	56	79	40			5
Chloride	<0.0157	<0.0166	<0.0166	<0.0167	0.4	<	<0.0167
Nitrate	0.0325	0.200	0.111	0.0368	0.2	1.291565852	0.0178
Sulphate	0.439	0.752	0.694	1.05	1	2.23	<0.0417
Ammonium (as N)	0.168	0.259	0.263	0.266	0.5	<	<0.0208
Calcium	<0.0787	<0.0830	0.0990	0.102	2	<	<0.0833
Magnesium	<0.0393	<0.0415	<0.0415	<0.0417	1	<	<0.0417
Potassium	<0.00787	0.0118	0.0540	<0.00833	0.2	0.582	<0.00833
Sodium	<0.157	<0.166	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.008	24	24.1	23.999	24.007	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	75	86	120	59	74	110	81	89	17
Chloride	<0.0167	<0.0166	0.0272	<0.0167	<0.0167	<0.0166	<0.0167	<0.0167	<0.0167
Nitrate	0.0775	0.209	0.303	0.0399	0.106	0.0909	0.0988	0.0593	0.0336
Sulphate	0.695	0.784	0.741	0.753	0.735	0.297	0.842	0.602	<0.0417
Ammonium (as N)	0.221	0.252	0.264	0.268	0.253	0.0952	0.279	0.224	<0.0208
Calcium	<0.0833	<0.0830	0.137	<0.0833	0.133	0.0923	<0.0833	0.0859	0.107
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	<0.0417	<0.0415	<0.0417	<0.0417	<0.0417
Potassium	<0.00833	0.0134	0.0504	<0.00833	<0.00833	<0.00830	<0.00833	<0.00833	<0.00833
Sodium	<0.167	<0.166	<0.166	<0.167	<0.167	<0.166	<0.167	<0.167	<0.167



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Ions

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	18-Oct	18-Oct	18-Oct	18-Oct			18-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	25.152	24.1	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	86	110	153	62			10
Chloride	0.0161	<0.0166	0.0187	<0.0167	0.4	<	<0.0167
Nitrate	0.0777	0.0685	0.105	0.0439	0.2	1.291565852	0.0360
Sulphate	0.652	0.177	0.164	0.151	1	2.23	<0.0417
Ammonium (as N)	0.225	0.0489	0.0558	0.0471	0.5	<	<0.0208
Calcium	<0.0795	0.117	0.221	0.125	2	<	<0.0833
Magnesium	<0.0398	<0.0415	<0.0415	<0.0417	1	<	<0.0417
Potassium	0.0118	<0.00830	<0.00830	<0.00833	0.2	0.582	<0.00833
Sodium	<0.159	<0.166	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	23.997	24.05	24.011	24.009	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	204	439	826	98	136	181	132	213
Chloride	0.0228	0.0438	0.0937	0.0205	0.0202	0.0170	<0.0167	<0.0167
Nitrate	0.138	0.138	0.190	0.0561	0.0805	0.0885	0.0921	0.103
Sulphate	0.990	0.169	0.215	0.158	0.183	0.819	0.546	0.719
Ammonium (as N)	0.309	0.0591	0.0528	0.0539	0.0709	0.260	0.202	0.215
Calcium	0.164	0.278	0.797	<0.0833	0.240	0.187	0.112	0.466
Magnesium	<0.0417	0.0471	0.101	<0.0417	<0.0416	<0.0416	<0.0417	<0.0416
Potassium	0.0357	0.0107	0.0305	0.0181	<0.00832	0.0799	0.0694	0.0279
Sodium	<0.167	<0.167	<0.166	<0.167	<0.166	<0.167	<0.167	<0.167



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Ions

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	24-Oct	24-Oct	24-Oct	24-Oct			24-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	25.726	24.1	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	72	16	40	22			17
Chloride	<0.0155	<0.0166	<0.0166	0.0192	0.4	<	<0.0167
Nitrate	0.0210	0.0386	0.0370	0.0427	0.2	1.291565852	0.0182
Sulphate	0.0881	0.358	0.222	0.161	1	2.23	<0.0417
Ammonium (as N)	0.0247	0.125	0.0752	0.0586	0.5	<	<0.0208
Calcium	<0.0777	<0.0830	<0.0830	<0.0833	2	<	<0.0833
Magnesium	<0.0389	<0.0415	<0.0415	<0.0417	1	<	<0.0417
Potassium	<0.00777	0.0304	<0.00830	<0.00833	0.2	0.582	<0.00833
Sodium	<0.155	<0.166	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	23.986	24.049	24.007	24.01	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	45	45	67	22	36	23	40	51
Chloride	<0.0167	<0.0166	0.0475	<0.0167	<0.0166	0.0179	<0.0167	<0.0167
Nitrate	0.0494	0.0460	0.0724	0.0312	0.0690	0.0889	0.0359	0.0387
Sulphate	0.105	0.362	0.317	0.168	0.127	0.0744	0.0877	0.0910
Ammonium (as N)	0.0238	0.133	0.0745	0.0706	0.0549	0.0464	0.0247	0.0389
Calcium	<0.0833	<0.0830	<0.0830	<0.0834	<0.0832	0.0911	<0.0833	<0.0833
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	<0.0416	<0.0417	<0.0416	<0.0417
Potassium	<0.00833	<0.00830	0.0411	<0.00834	<0.00832	<0.00833	<0.00833	<0.00833
Sodium	<0.167	<0.166	<0.166	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	30-Oct	30-Oct	30-Oct	30-Oct		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	26.185	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	66	83	170	104		
Chloride	<0.0153	<0.0166	<0.0166	<0.0167	0.4	<
Nitrate	0.0869	0.0748	0.218	0.0644	0.2	1.291565852
Sulphate	0.357	0.980	3.03	1.19	1	2.23
Ammonium (as N)	0.122	0.307	0.931	0.386	0.5	<
Calcium	<0.0764	<0.0830	<0.0830	<0.0833	2	<
Magnesium	<0.0382	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0214	0.0317	0.0410	0.0373	0.2	0.582
Sodium	<0.153	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.005	24.052	24.007	24	24.013
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	60	81	212	88	136	37	62	60
Chloride	<0.0167	<0.0166	0.0184	<0.0167	<0.0166	<0.0167	<0.0167	0.0234
Nitrate	0.0609	0.0893	0.295	0.0664	0.112	0.0308	0.0838	0.0830
Sulphate	0.407	0.957	3.32	1.22	0.505	0.0770	0.432	0.276
Ammonium (as N)	0.115	0.300	0.907	0.389	0.155	<0.0208	0.153	0.0644
Calcium	<0.0833	<0.0830	<0.0830	<0.0833	0.126	<0.0833	<0.0833	<0.0833
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	<0.0416	<0.0417	<0.0417	<0.0416
Potassium	0.0213	0.0349	0.0439	0.0380	0.0381	0.0118	0.0252	0.0212
Sodium	<0.167	<0.166	<0.166	<0.167	<0.166	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	5-Nov	5-Nov	5-Nov	5-Nov		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	68	55	63	29		
Chloride	<0.0167	<0.0166	0.0212	<0.0167	0.4	<
Nitrate	0.0901	0.0949	0.114	0.0624	0.2	1.291565852
Sulphate	0.559	0.288	0.342	0.237	1	2.23
Ammonium (as N)	0.162	0.0685	0.0859	0.0543	0.5	<
Calcium	<0.0833	<0.0830	<0.0830	<0.0833	2	<
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	1	<
Potassium	0.0488	0.0261	0.0292	0.0263	0.2	0.582
Sodium	<0.167	<0.166	<0.166	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	CNRL Horizon	Albian Muskeg River	
Sample Date	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	23.994	25.053	24.009	24.01	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	89	65	100	61	81	74	88	9
Chloride	0.0196	<0.0166	0.363	0.0263	0.0210	<0.0167	<0.0167	0.0372
Nitrate	0.0992	0.0874	0.142	0.0676	0.0909	0.100	0.0924	0.0751
Sulphate	0.562	0.283	0.324	0.284	0.445	0.397	0.444	0.0606
Ammonium (as N)	0.179	0.0766	0.0857	0.0605	0.137	0.110	0.131	<0.0208
Calcium	<0.0833	<0.0830	<0.0830	<0.0834	<0.0798	<0.0833	<0.0833	<0.0833
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	<0.0399	<0.0417	<0.0416	<0.0417
Potassium	0.106	0.0279	0.0535	0.0288	0.0466	0.0333	0.0403	0.0199
Sodium	<0.167	<0.166	0.274	<0.167	<0.160	<0.167	<0.167	<0.167



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Station #	AMS 1	AMS 6	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Anzac			
Sample Date	11-Nov	11-Nov	11-Nov			11-Nov
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24.1	24.001			24
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	31	225	98			-7
Chloride	0.0214	0.0190	<0.0167	0.4	<	0.0290
Nitrate	0.627	0.687	0.288	0.2	1.291565852	0.0308
Sulphate	1.57	0.807	0.751	1	2.23	0.0488
Ammonium (as N)	0.582	0.486	0.325	0.5	<	<0.0208
Calcium	<0.0833	0.0877	<0.0833	2	<	<0.0833
Magnesium	<0.0417	<0.0415	<0.0417	1	<	<0.0417
Potassium	0.0450	0.0459	<0.00833	0.2	0.582	<0.00833
Sodium	<0.167	<0.166	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.001	24.051	24.009	24.006	23.998
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	27	487	1149	155	2491	882	515	803
Chloride	<0.0167	2.75	6.51	<0.0167	0.211	0.204	0.0295	0.151
Nitrate	0.115	1.32	1.40	0.382	1.20	1.08	0.559	1.03
Sulphate	0.0434	1.12	1.31	0.802	1.40	1.82	0.662	2.38
Ammonium (as N)	0.0219	0.380	0.414	0.343	0.407	0.644	0.261	0.762
Calcium	<0.0833	0.318	0.835	0.156	5.18	0.255	0.851	1.81
Magnesium	<0.0417	0.0527	0.112	<0.0417	0.233	0.0513	0.0519	0.0947
Potassium	0.0602	0.0732	0.161	0.0136	0.0915	0.0352	0.0185	0.0432
Sodium	<0.167	2.10	4.66	<0.167	0.303	0.303	<0.167	0.201



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Station #	AMS 1	AMS 6	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Anzac			
Sample Date	17-Nov	17-Nov	17-Nov			17-Nov
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24			24
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	179	180	163			5
Chloride	<0.0167	0.0169	<0.0167	0.4	<	<0.0167
Nitrate	0.268	0.483	0.560	0.2	1.291565852	0.0526
Sulphate	1.77	1.61	1.62	1	2.23	0.0855
Ammonium (as N)	0.559	0.604	0.623	0.5	<	<0.0208
Calcium	<0.0833	<0.0833	<0.0833	2	<	<0.0833
Magnesium	<0.0417	<0.0417	<0.0417	1	<	<0.0417
Potassium	0.0777	0.0480	0.0376	0.2	0.582	<0.00833
Sodium	<0.167	<0.167	<0.167	4	<	<0.167

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.008	24.049	24	24	23.997
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	207	154	201	169	186	148	249	103
Chloride	<0.0167	0.0201	0.0306	<0.0167	<0.0166	<0.0167	0.0306	<0.0167
Nitrate	0.374	0.608	0.608	0.540	0.314	0.257	0.622	0.154
Sulphate	1.79	1.52	1.68	1.64	1.51	1.64	2.30	1.44
Ammonium (as N)	0.579	0.578	0.597	0.620	0.528	0.552	0.731	0.486
Calcium	<0.0833	<0.0830	<0.0830	<0.0833	0.105	<0.0833	0.139	0.101
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	<0.0416	<0.0417	<0.0417	<0.0417
Potassium	0.0599	0.0478	0.0507	0.0468	0.0463	0.0355	0.0470	0.0390
Sodium	<0.167	<0.166	<0.166	<0.167	<0.166	<0.167	0.208	<0.167



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	23-Nov	23-Nov	23-Nov	23-Nov		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	109	95	75	121		
Chloride	<0.0167	<0.0167	0.0744	<0.0167	0.4	0.5106115
Nitrate	0.270	0.363	0.392	0.340	0.2	2.788644017
Sulphate	1.32	1.36	0.366	1.66	1	1.847623167
Ammonium (as N)	0.368	0.392	0.0802	0.465	0.5	<
Calcium	<0.0833	<0.0833	<0.0833	<0.0833	2	<
Magnesium	<0.0417	<0.0417	<0.0417	<0.0417	1	<
Potassium	0.0212	0.0169	<0.00833	0.0204	0.2	<
Sodium	<0.167	<0.167	0.183	<0.167	4	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	CNRL Horizon	Albian Muskeg River
Sample Date	23-Nov	23-Nov	23-Nov	23-Nov	23-Nov	23-Nov	23-Nov
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24.005	24.005	24.012	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	221	119	119	137	193	236	278
Chloride	0.0217	<0.0167	0.0383	<0.0167	0.0206	<0.0167	<0.0167
Nitrate	0.551	0.391	0.434	0.365	0.427	0.344	0.382
Sulphate	1.43	1.36	0.995	1.71	0.852	2.84	0.947
Ammonium (as N)	0.400	0.376	0.300	0.487	0.233	0.677	0.269
Calcium	0.129	<0.0833	0.0861	<0.0833	0.136	0.178	<0.0833
Magnesium	<0.0417	<0.0417	<0.0415	<0.0417	<0.0417	0.0480	<0.0416
Potassium	0.0492	0.0186	0.0120	0.0189	0.0153	0.0336	0.00973
Sodium	0.177	0.172	0.187	0.188	0.171	0.180	<0.167



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Station #	AMS 1	AMS 6	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Anzac			
Sample Date	29-Nov	29-Nov	29-Nov			29-Nov
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	28.039	24.1	24			24
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	471	141	114			-43
Chloride	0.0894	0.357	0.284	0.4	0.5106115	<.400
Nitrate	0.742	0.830	0.617	0.2	2.788644017	<.200
Sulphate	0.827	0.563	0.574	1	1.847623167	<1.0
Ammonium (as N)	0.185	0.126	0.107	0.5	<	<0.500
Calcium	0.0911	0.103	0.0938	2	<	<2.00
Magnesium	0.0370	0.0643	0.0590	1	<	<1.00
Potassium	0.0462	0.0494	0.0192	0.2	<	<0.200
Sodium	0.326	0.472	0.405	4	<	<4.00

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	29-Nov	29-Nov	29-Nov	29-Nov	29-Nov	29-Nov	29-Nov
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24	23.943	24.015	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	542	174	247	141	513	597	403
Chloride	0.475	0.680	0.812	0.446	0.887	0.937	0.423
Nitrate	1.51	0.982	1.39	0.753	1.43	1.84	1.40
Sulphate	1.38	0.570	0.902	0.570	1.38	1.54	0.908
Ammonium (as N)	0.324	0.117	0.198	0.107	0.383	0.468	0.190
Calcium	0.163	0.129	0.235	<0.0833	0.14	0.141	0.209
Magnesium	0.0886	0.0721	0.102	0.0653	0.0735	0.0934	0.0845
Potassium	0.0859	0.0569	0.171	0.0237	0.0961	0.144	0.0470
Sodium	0.727	0.646	0.794	0.504	0.92	1.03	0.650



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	5-Dec	5-Dec	5-Dec	5-Dec			5-Dec
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	41	70	84	51			2
Chloride	0.0361	<0.0166	0.0176	0.0265	0.4	0.5106115	<0.400
Nitrate	0.203	0.115	0.225	0.111	0.2	2.788644017	<.200
Sulphate	0.634	0.581	0.696	0.827	1	1.847623167	<1.00
Ammonium (as N)	0.180	0.161	0.231	0.277	0.5	<	<0.500
Calcium	<0.0833	<0.0830	0.0860	0.115	2	<	<2.00
Magnesium	<0.0417	<0.0415	<0.0417	<0.0417	1	<	<1.00
Potassium	0.0627	0.00889	0.0104	0.0218	0.2	<	<0.200
Sodium	<0.167	<0.166	<0.167	<0.167	4	<	<4.00

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	5-Dec	5-Dec	5-Dec	5-Dec	5-Dec	5-Dec	5-Dec
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.009	24.011	24.008	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	70	53	82	73	1	124	92
Chloride	<0.0167	<0.0166	0.0636	<0.0167	<0.0167	<0.0167	0.0206
Nitrate	0.234	0.145	0.274	0.124	0.224	0.290	0.260
Sulphate	0.644	0.655	0.707	0.967	0.615	0.763	0.717
Ammonium (as N)	0.168	0.207	0.204	0.270	0.196	0.189	0.188
Calcium	<0.0833	<0.0830	0.0878	<0.0833	<0.0833	<0.0833	<0.0833
Magnesium	<0.0417	<0.0415	<0.0415	<0.0417	<0.0416	<0.0417	<0.0416
Potassium	0.0159	<0.00830	0.0228	0.0880	0.00919	0.0640	0.0736
Sodium	<0.167	<0.166	<0.166	<0.167	<0.167	<0.167	<0.167



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Particulate Matter - Ions

2012
 Indicated Sites and Dates

Station #	AMS 14	MDL	Lab Blank
Station Name	Anzac		
Sample Date	11-Dec		
PM Size(µm)	2.5		
Total Air Volume (m3)	24		
Units	µg/M3		
Particulate Matter (µg/m3)	72		
Chloride	<0.0167	0.4	0.5106115
Nitrate	0.106	0.2	2.788644017
Sulphate	0.899	1	1.847623167
Ammonium (as N)	0.267	0.5	<
Calcium	<0.0833	2	<
Magnesium	<0.0417	1	<
Potassium	0.0200	0.2	<
Sodium	<0.167	4	<

Station #	AMS 14		
Station Name	Anzac		
Sample Date	11-Dec		
PM Size(µm)	10		
Total Air Volume (m3)	24.004		
Units	µg/M3		
Particulate Matter (µg/m3)	61		
Chloride	0.0206		
Nitrate	0.160		
Sulphate	0.905		
Ammonium (as N)	0.277		
Calcium	<0.0833		
Magnesium	<0.0417		
Potassium	0.0157		
Sodium	<0.167		



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Particulate Matter - Percentage of Samples Detected > 0

2012
 Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date							
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)							
Units							
Particulate Matter (µg/m3)							
Chloride	28.8	42.9	52.8	23.2			8.6
Nitrate	100	98.2	96.2	100			80
Sulphate	100	98.2	94.3	98.2			25.7
Ammonium (as N)	98.1	96.4	86.8	92.9			2.9
Calcium	40.4	50	54.7	51.8			42.9
Magnesium	9.6	7.1	5.7	3.6			-
Potassium	90.4	91.1	83	82.1			20
Sodium	5.8	5.4	15.1	3.6			-

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date									
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)									
Units									
Particulate Matter (µg/m3)									
Chloride	77.8	85.7	96.4	71.4	88.7	75	67.3	79.6	10
Nitrate	100	100	98.2	100	100	100	100	100	75
Sulphate	98.1	100	98.2	100	98.1	100	100	100	30
Ammonium (as N)	94.4	96.4	96.4	96.4	96.2	96.4	100	92.6	-
Calcium	68.5	66.1	85.7	50	94.3	85.7	81.8	83.3	30
Magnesium	38.9	46.4	67.9	12.5	64.2	35.7	43.6	59.3	-
Potassium	92.6	94.6	96.4	94.6	94.3	94.6	94.5	90.7	30
Sodium	11.1	26.8	37.5	7.1	35.8	16.1	16.4	9.3	-



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Total Times Sampled

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date							
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)							
Units							
Particulate Matter (µg/m3)							
Chloride	52	56	53	56			35
Nitrate	52	56	53	56			35
Sulphate	52	56	53	56			35
Ammonium (as N)	52	56	53	56			35
Calcium	52	56	53	56			35
Magnesium	52	56	53	56			35
Potassium	52	56	53	56			35
Sodium	52	56	53	56			35

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date									
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)									
Units									
Particulate Matter (µg/m3)									
Chloride	54	56	56	56	53	56	55	54	20
Nitrate	54	56	56	56	53	56	55	54	20
Sulphate	54	56	56	56	53	56	55	54	20
Ammonium (as N)	54	56	56	56	53	56	55	54	20
Calcium	54	56	56	56	53	56	55	54	20
Magnesium	54	56	56	56	53	56	55	54	20
Potassium	54	56	56	56	53	56	55	54	20
Sodium	54	56	56	56	53	56	55	54	20



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Yearly Average

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date							
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)							
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)							
Chloride	0.015173077	0.0218	0.043096226	0.011366071			0.002008571
Nitrate	0.198521154	0.1738375	0.187486792	0.292541071			0.026531143
Sulphate	1.049482692	0.710232143	0.657230189	0.611148214			0.017068571
Ammonium (as N)	0.332492308	0.237775	0.208407547	0.239789286			0.000685714
Calcium	0.111376923	0.105123214	0.116283019	0.092958929			0.075657143
Magnesium	0.005430769	0.004582143	0.005160377	0.002548214			0
Potassium	0.076369231	0.042428393	0.037764528	0.030248214			0.003597143
Sodium	0.017326923	0.017446429	0.037283019	0.012339286			0

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date									
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)									
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)									
Chloride	0.073633333	0.247821429	0.629076786	0.0379875	0.101496226	0.069060714	0.059132727	0.066609259	0.00271
Nitrate	0.266864815	0.265960714	0.327141071	0.169780357	0.579763019	0.2329875	0.487367273	0.254385185	0.02812
Sulphate	0.852637037	0.734366071	0.822369643	0.685696429	1.281962264	0.910060714	0.96154	0.988005556	0.022305
Ammonium (as N)	0.243862963	0.230567857	0.257944643	0.214330357	0.354813208	0.265048214	0.335767273	0.271472222	0
Calcium	0.409496296	0.259816071	0.4267125	0.094775	1.182018868	0.403157143	0.499709091	0.683183333	0.037025
Magnesium	0.036172222	0.0373625	0.061883929	0.008733929	0.073213208	0.025841071	0.036718182	0.05527037	0
Potassium	0.056368519	0.053780357	0.067189286	0.046841786	0.094411887	0.04985875	0.056808727	0.044315556	0.005765
Sodium	0.042	0.166089286	0.436892857	0.024571429	0.136037736	0.054303571	0.0554	0.03387037	0



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Metals

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	4-Jan	4-Jan	4-Jan	4-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	99	162	169	42		
Aluminum	0.0469	0.0502	0.132	0.0147	0.2	1.183196313
Arsenic	<0.0500	<0.0498	<0.0498	<0.0500	0.005	<
Barium	0.000354	0.00143	0.00128	0.000236	0.005	<
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0273	0.0282	0.0285	0.0298	0.2	0.579886781
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	<0.000833	<0.000830	0.000876	<0.000833	0.02	<
Cobalt	<0.0000833	0.000130	<0.0000830	<0.0000833	0.002	<
Copper	0.00718	0.0154	0.00439	0.00311	0.01	<
Lead	0.000288	0.00148	0.00109	0.000428	0.005	<
Manganese	0.00941	0.00496	0.00268	0.00123	0.002	0.009094594
Molybdenum	0.00159	0.000402	0.000337	0.000262	0.002	0.030640797
Nickel	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Silver	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Titanium	<0.000833	0.00125	0.00159	<0.000833	0.02	0.020484156
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	<0.000833	0.00143	0.00152	0.000925	0.02	<
Zinc	0.0126	0.0183	0.0158	0.00718	0.02	0.159164063
Iron	0.0304	0.0506	0.0707	0.0146	0.2	0.527878422
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	5.042567969

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan	4-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.607	23.55	24.1	24.008	32.17	24.007	24.007	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	156.6666667	233.3333333	342.3333333	42	302.3333333	126.6666667	189	302.6666667
Aluminum	0.140	0.168	0.0823	0.130	0.0566	0.0370	0.0547	0.136
Arsenic	<0.0488	<0.0510	<0.0498	<0.0500	<0.0373	<0.0500	<0.0500	<0.0500
Barium	0.000726	0.00374	0.00571	0.000387	0.00228	0.000764	0.00101	0.00163
Beryllium	<0.000203	<0.000212	<0.000207	<0.000208	<0.000155	<0.000208	<0.000208	<0.000208
Boron	0.0292	0.0304	0.0274	0.0266	0.0210	0.0280	0.0278	0.0278
Cadmium	<0.000203	<0.000212	<0.000207	<0.000208	<0.000155	<0.000208	<0.000208	<0.000208
Chromium	0.000922	0.00124	0.00107	<0.000833	0.000830	<0.000833	<0.000833	0.00112
Cobalt	<0.0000813	<0.0000849	<0.0000830	<0.0000833	<0.0000622	<0.0000833	<0.0000833	0.0000853
Copper	0.00655	0.0289	0.00816	0.00172	0.00231	0.00265	0.00229	0.00110
Lead	0.000274	0.00163	0.00151	0.000455	0.000370	0.000226	0.000424	0.000430
Manganese	0.00277	0.00533	0.0103	0.00343	0.00718	0.00428	0.00297	0.00746
Molybdenum	0.000814	0.000616	0.000702	0.000571	0.000389	0.000266	0.000601	0.000803
Nickel	<0.000813	0.00123	0.00186	<0.000833	0.00146	<0.000833	0.00108	<0.000833
Silver	<0.0000813	<0.0000849	<0.0000830	<0.0000833	<0.0000622	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000282	0.000407	0.00133	<0.000208	0.000488	0.000239	0.000391	0.000677
Titanium	0.00110	0.00451	0.00764	0.00146	0.00206	0.00110	0.00207	0.00754
Uranium	<0.0000813	<0.0000849	<0.0000830	<0.0000833	<0.0000622	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00113	0.00321	0.00483	0.000945	0.00209	0.00113	0.00220	0.00110
Zinc	0.0126	0.0166	0.0212	0.00839	0.0196	0.0120	0.0261	0.0162
Iron	0.0874	0.204	0.244	0.0397	0.246	0.0939	0.212	0.319
Phosphorus	<0.203	<0.212	<0.207	<0.208	<0.155	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Metals

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	10-Jan	10-Jan	10-Jan	10-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	9.66666667	15	3.33333333	-41.33333333		
Aluminum	0.0108	0.00866	0.0218	0.0677	0.2	1.183196313
Arsenic	0.000442	0.0000796	0.000284	0.0000978	0.005	2.183196313
Barium	0.000491	<0.000207	0.000381	<0.000208	0.005	<
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0297	0.0268	0.0286	0.0278	0.2	0.579886781
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Cobalt	0.000101	0.000120	<0.000830	0.000241	0.002	<
Copper	0.00899	0.000948	0.00139	0.00104	0.01	<
Lead	0.000433	0.000295	0.000320	<0.000208	0.005	<
Manganese	0.00593	0.00180	0.0480	0.000836	0.002	0.009094594
Molybdenum	0.00176	0.000176	0.000192	0.000370	0.002	0.030640797
Nickel	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Silver	0.0000836	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000252	<0.000207	<0.000207	<0.000208	0.005	<
Titanium	<0.000833	<0.000830	<0.000830	<0.000833	0.02	0.020484156
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Zinc	0.00778	0.0224	0.0334	0.00549	0.02	0.159164063
Iron	0.0210	0.0160	0.0238	0.0106	0.2	0.527878422
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	5.042567969

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan	10-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.379	26.368	24.1	24.003	15.319	24.05	24.005	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	56	8	81.66666667	13.66666667	405	13.66666667	136.3333333	428.6666667
Aluminum	0.0546	0.0524	0.0683	0.0620	0.347	0.0612	0.0928	0.395
Arsenic	0.000201	0.0000418	0.0000702	0.0000779	<0.0783	0.0000697	0.000139	0.000609
Barium	0.000793	0.000353	0.00157	0.000324	0.00755	0.000392	0.00172	0.00563
Beryllium	<0.000197	<0.000190	<0.000207	<0.000208	<0.000326	<0.000208	<0.000208	0.000242
Boron	0.0275	0.0231	0.0287	0.0293	0.0424	0.0286	0.0300	0.0289
Cadmium	<0.000197	<0.000190	<0.000207	<0.000208	<0.000326	<0.000208	<0.000208	<0.000208
Chromium	<0.000788	<0.000758	<0.000830	<0.000833	0.00139	0.000852	<0.000833	0.00162
Cobalt	<0.0000788	0.000729	<0.0000830	<0.0000833	0.000395	<0.0000832	0.000131	0.000696
Copper	0.00887	0.000894	0.00188	0.00585	0.00177	0.00199	0.00192	0.00185
Lead	0.000354	0.000277	0.000357	0.000288	0.000776	0.000333	0.000578	0.00111
Manganese	0.00318	0.00685	0.00335	0.00254	0.0340	0.00164	0.00753	0.0267
Molybdenum	0.000380	0.000163	0.000445	0.000344	0.000802	0.000344	0.000441	0.000529
Nickel	<0.000788	<0.000758	<0.000830	<0.000833	0.00493	<0.000832	<0.000833	0.00136
Silver	<0.0000788	<0.0000758	<0.0000830	<0.0000833	<0.000131	<0.0000832	<0.0000833	0.0000951
Strontium	0.000343	0.000371	0.000444	0.000210	0.00226	0.000219	0.000854	0.00229
Titanium	0.000843	0.000973	0.00187	0.000836	0.0224	0.000854	0.00320	0.0210
Uranium	<0.0000788	<0.0000758	<0.0000830	<0.0000833	<0.000131	<0.0000832	<0.0000833	0.000193
Vanadium (corr)	<0.000788	0.000824	0.000850	<0.000833	0.0115	<0.000832	0.00165	0.00171
Zinc	0.00734	0.00735	0.00914	0.00764	0.0146	0.00994	0.0192	0.0218
Iron	0.130	0.0479	0.154	0.0462	2.09	0.0587	0.257	1.37
Phosphorus	<0.197	<0.190	<0.207	<0.208	<0.326	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Metals

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	16-Jan	16-Jan	16-Jan	16-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	16.8	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	71	57	150	-96		
Aluminum	0.0760	0.171	0.0705	0.215	0.2	1.183196313
Arsenic	0.000886	0.000589	0.000837	<0.000208	0.005	2.183196313
Barium	0.000839	0.000899	0.00163	0.000717	0.005	<
Beryllium	<0.000208	<0.000207	<0.000298	<0.000208	0.005	<
Boron	0.0300	0.0294	0.0463	0.0254	0.2	0.579886781
Cadmium	<0.000208	<0.000207	<0.000298	<0.000208	0.005	<
Chromium	0.00246	0.00342	0.00415	0.00277	0.02	<
Cobalt	0.00110	0.000147	0.000678	0.000284	0.002	<
Copper	0.0799	0.000959	0.00233	0.00160	0.01	<
Lead	0.00416	0.00570	0.00636	0.000245	0.005	<
Manganese	0.00342	0.00328	0.00751	0.00296	0.002	0.009094594
Molybdenum	0.000311	0.000523	0.000627	0.000623	0.002	0.030640797
Nickel	<0.000833	<0.000830	<0.00119	<0.000833	0.02	<
Silver	0.000126	<0.000830	<0.000119	<0.000833	0.002	<
Strontium	0.000813	0.000663	0.000993	0.000258	0.005	<
Titanium	<0.000833	<0.000830	<0.00119	<0.000833	0.02	0.020484156
Uranium	<0.000833	<0.000830	<0.000119	<0.000833	0.002	<
Vanadium (corr)	<0.000833	0.000863	0.00165	<0.000833	0.02	<
Zinc	0.0156	0.0134	0.0269	0.0129	0.02	0.159164063
Iron	0.0561	0.0551	0.132	0.0334	0.2	0.527878422
Phosphorus	<0.208	<0.207	<0.298	<0.208	5	5.042567969

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan	16-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	27.416	5.641	9.4	24.01	24.045	24.01	24.007	24.004
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	92	-20	105	35	363	49	526	462.3333333
Aluminum	0.0395	0.321	0.248	0.0706	0.285	0.0879	0.223	0.380
Arsenic	0.000693	<0.000886	0.00124	0.000682	0.000752	0.000504	0.000705	0.000922
Barium	0.00119	0.00348	0.00412	0.00162	0.00690	0.000915	0.00341	0.00575
Beryllium	<0.000182	<0.000886	<0.000532	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0244	0.127	0.0687	0.0280	0.0290	0.0264	0.0278	0.0299
Cadmium	0.000323	<0.000886	<0.000532	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00192	0.0148	0.00622	0.00365	0.00390	0.00262	0.00298	0.00501
Cobalt	0.000304	0.00131	0.00125	0.000694	0.00155	0.000290	0.000259	0.000470
Copper	0.0379	0.00607	0.00301	0.00189	0.00432	0.00205	0.00196	0.00256
Lead	0.00392	0.00314	0.00942	0.00610	0.00666	0.00396	0.00530	0.00690
Manganese	0.00308	0.0280	0.0119	0.00319	0.0238	0.00310	0.00985	0.0232
Molybdenum	0.000717	0.00287	0.000421	0.00116	0.000834	0.000276	0.000756	0.00129
Nickel	<0.000730	<0.00355	<0.00213	<0.000833	0.00196	<0.000833	0.00110	0.00211
Silver	0.000101	<0.000355	<0.000213	<0.000833	<0.000832	<0.000833	<0.000833	<0.000833
Strontium	0.000809	0.00299	0.00247	0.000960	0.00249	0.00108	0.00193	0.00241
Titanium	0.000911	0.0243	0.00603	<0.000833	0.00969	<0.000833	0.00558	0.0135
Uranium	<0.0000730	<0.000355	<0.000213	<0.000833	<0.000832	<0.000833	<0.000833	<0.000833
Vanadium (corr)	<0.000730	0.00492	0.00495	0.00106	0.00222	<0.000833	0.00222	0.00311
Zinc	0.0175	0.0422	0.0386	0.0176	0.0306	0.0149	0.0220	0.0210
Iron	0.0489	0.465	0.454	0.0881	1.35	0.0471	0.407	1.12
Phosphorus	<0.182	<0.886	<0.532	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	22-Jan	22-Jan	22-Jan	22-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	15.2		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	210	162	119	9		
Aluminum	0.0361	0.0249	0.0385	0.0235	0.2	<
Arsenic	0.000704	<0.000207	0.000235	<0.000329	0.005	0.005393547
Barium	0.00141	0.00171	0.00187	0.000438	0.005	0.005393547
Beryllium	<0.000208	<0.000207	<0.000207	<0.000329	0.005	<
Boron	0.0307	0.0333	0.0307	0.0509	0.2	0.744367875
Cadmium	<0.000208	<0.000207	<0.000207	<0.000329	0.005	<
Chromium	0.00212	0.00346	0.00265	0.0102	0.02	0.085578844
Cobalt	0.000576	0.000654	0.000167	0.000282	0.002	0.021424641
Copper	0.119	0.00366	0.0133	0.00653	0.01	0.013023031
Lead	0.00164	0.00175	0.00321	<0.000329	0.005	<
Manganese	0.00365	0.00457	0.00424	0.00404	0.002	0.066897656
Molybdenum	0.000706	0.000643	0.000538	0.00179	0.002	0.042413906
Nickel	<0.000833	0.00108	0.00105	<0.00132	0.02	<
Silver	0.000386	<0.0000830	0.000144	<0.000132	0.002	<
Strontium	0.000584	0.000343	0.000353	<0.000329	0.005	0.005088953
Titanium	0.00157	<0.000830	0.00230	<0.00132	0.02	<
Uranium	0.000341	<0.0000830	<0.0000830	<0.000132	0.002	<
Vanadium (corr)	0.00136	0.00385	0.00380	0.00277	0.02	<
Zinc	0.0307	0.0198	0.0279	0.0157	0.02	0.287770875
Iron	0.0330	0.0748	0.210	0.0543	0.2	<
Phosphorus	<0.208	<0.207	<0.207	<0.329	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan	22-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.243	24.105	24.1	24.011	24.051	24.01	19.557	24.004
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	357	223	158	136	396	216	1782	468
Aluminum	0.109	0.0567	0.0677	0.0619	0.345	0.0716	0.493	0.199
Arsenic	0.000306	<0.000207	0.000326	<0.000208	0.000312	<0.000208	0.000272	0.000342
Barium	0.00291	0.00533	0.00724	0.00174	0.00547	0.00220	0.00769	0.00521
Beryllium	<0.000198	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000256	<0.000208
Boron	0.0314	0.0297	0.0319	0.0292	0.0308	0.0313	0.0385	0.0272
Cadmium	<0.000198	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	0.000328	<0.000208
Chromium	0.00275	0.00337	0.00322	0.00287	0.00377	0.00319	0.00391	0.00324
Cobalt	0.000335	0.000254	0.000207	0.000355	0.000401	0.000806	0.000351	0.000288
Copper	0.0490	0.00700	0.0155	0.00542	0.00363	0.00259	0.00393	0.0120
Lead	0.00144	0.00191	0.00329	0.000991	0.00177	0.00116	0.00190	0.00202
Manganese	0.00628	0.00447	0.00575	0.00859	0.0235	0.0126	0.0425	0.0141
Molybdenum	0.00156	0.00121	0.000944	0.000523	0.000913	0.000984	0.000907	0.00208
Nickel	0.00186	0.00199	0.00213	<0.000833	0.00243	0.00124	0.00161	0.00237
Silver	0.0000824	<0.0000830	0.000159	<0.0000833	<0.0000832	<0.0000833	0.000121	<0.0000833
Strontium	0.000887	0.000653	0.000807	0.000565	0.00168	0.000735	0.00225	0.00137
Titanium	0.00279	0.00253	0.00551	<0.000833	0.0108	0.00179	0.00769	0.00810
Uranium	<0.0000792	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.000102	<0.0000833
Vanadium (corr)	0.00465	0.00545	0.00464	<0.000833	0.00369	0.00265	0.00355	0.00533
Zinc	0.0193	0.0195	0.0173	0.0241	0.0436	0.0262	0.0556	0.0281
Iron	0.167	0.189	0.383	0.842	1.11	0.143	0.433	0.824
Phosphorus	<0.198	<0.207	<0.207	<0.208	<0.208	<0.208	<0.256	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	28-Jan	28-Jan	28-Jan	28-Jan		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	169	116	184	162		
Aluminum	0.0319	0.0472	0.0251	0.0284	0.2	<
Arsenic	0.000209	0.000277	0.000791	0.000209	0.005	0.005393547
Barium	0.000665	0.000868	0.00148	0.000737	0.005	0.005393547
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0286	0.0284	0.0293	0.0296	0.2	0.744367875
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00140	0.00207	0.00248	0.00209	0.02	0.085578844
Cobalt	0.000514	0.000290	0.000276	0.000153	0.002	0.021424641
Copper	0.0513	0.0147	0.0123	0.0162	0.01	0.013023031
Lead	0.00115	0.00252	0.00715	0.00137	0.005	<
Manganese	0.00252	0.00299	0.00548	0.00144	0.002	0.066897656
Molybdenum	0.000347	0.000574	0.000332	0.000585	0.002	0.042413906
Nickel	<0.000833	0.00347	0.00106	<0.000833	0.02	<
Silver	0.000102	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000933	0.000675	0.000934	0.000697	0.005	0.005088953
Titanium	0.00148	<0.000830	0.00187	<0.000833	0.02	<
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	<0.000833	0.00219	0.00142	0.000906	0.02	<
Zinc	0.0109	0.0139	0.0114	0.0114	0.02	0.287770875
Iron	0.0553	0.108	0.307	0.0655	0.2	<
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan	28-Jan
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	21.5	24.105	24.1	24.01	24.048	24.012	24.002	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	282	16	327	171	962	445	325	751
Aluminum	0.200	0.00962	0.174	0.0570	0.897	0.242	0.135	0.535
Arsenic	0.000242	<0.000207	0.000922	<0.000208	0.000633	0.000320	0.000250	0.000630
Barium	0.00311	0.000238	0.00573	0.00103	0.0142	0.00505	0.00235	0.00696
Beryllium	<0.000233	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0362	0.0296	0.0307	0.0282	0.0278	0.0320	0.0276	0.0310
Cadmium	<0.000233	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00225	0.00235	0.00207	0.00203	0.00325	0.00332	0.00213	0.00294
Cobalt	0.000965	0.000132	0.000309	0.00269	0.000950	0.000472	0.000430	0.000878
Copper	0.0556	0.000855	0.0334	0.00946	0.00654	0.00396	0.00247	0.00206
Lead	0.00152	<0.000207	0.00791	0.00157	0.00185	0.00161	0.00141	0.00185
Manganese	0.0194	0.000783	0.0125	0.00396	0.0492	0.0179	0.00868	0.0257
Molybdenum	0.000351	0.000453	0.000561	0.000682	0.000592	0.00133	0.000765	0.000643
Nickel	0.00111	<0.000830	0.00176	<0.000833	0.00197	0.00113	<0.000833	0.00144
Silver	<0.0000930	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00206	<0.000207	0.00220	0.00103	0.00553	0.00264	0.00170	0.00373
Titanium	0.00653	<0.000830	0.00626	<0.000833	0.0283	0.00790	0.00350	0.0212
Uranium	<0.0000930	<0.0000830	<0.0000830	<0.0000833	0.0000870	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00161	<0.000830	0.00259	0.00111	0.00362	0.00291	0.00201	0.00235
Zinc	0.0185	0.00884	0.0139	0.0131	0.0172	0.0155	0.0148	0.0296
Iron	0.437	0.0154	0.903	0.101	2.91	0.827	0.325	1.16
Phosphorus	<0.233	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	3-Feb	3-Feb	3-Feb	3-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	25.056	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	225	174	259	94		
Aluminum	0.0270	0.0142	0.0205	0.0171	0.2	<
Arsenic	0.000398	<0.000200	0.00628	<0.000208	0.005	0.005393547
Barium	0.00191	0.00233	0.00439	0.000711	0.005	0.005393547
Beryllium	<0.000208	<0.000200	<0.000207	<0.000208	0.005	<
Boron	0.0371	0.0302	0.0275	0.0300	0.2	0.744367875
Cadmium	0.000268	<0.000200	0.000250	<0.000208	0.005	<
Chromium	0.00289	0.00171	0.00426	0.00188	0.02	0.085578844
Cobalt	0.000343	0.000271	0.000511	0.000253	0.002	0.021424641
Copper	0.0149	0.0272	0.0648	0.0288	0.01	0.013023031
Lead	0.00154	0.00200	0.0563	0.000354	0.005	<
Manganese	0.00716	0.00177	0.0200	0.00302	0.002	0.066897656
Molybdenum	0.00127	0.000118	0.00179	0.000349	0.002	0.042413906
Nickel	<0.000833	<0.000798	0.00634	<0.000833	0.02	<
Silver	<0.0000833	<0.0000798	0.000116	<0.0000833	0.002	<
Strontium	0.000396	<0.000200	0.000354	<0.000208	0.005	0.005088953
Titanium	0.00333	<0.000798	0.00182	<0.000833	0.02	<
Uranium	<0.0000833	<0.0000798	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	0.00109	<0.000798	<0.000830	<0.000833	0.02	<
Zinc	0.0298	0.0160	0.209	0.0112	0.02	0.287770875
Iron	0.144	0.0363	2.09	0.0240	0.2	<
Phosphorus	<0.208	<0.200	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb	3-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	17.415	24.1	24.1	24.008	24.052	24.008	24.005	24.011
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	255	234	307	108	309	221	113	236
Aluminum	0.0980	0.0381	0.0810	0.0431	0.0977	0.0360	0.0261	0.0625
Arsenic	0.000428	<0.000207	0.00357	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.00522	0.00977	0.0137	0.00144	0.00314	0.00285	0.000896	0.00280
Beryllium	<0.000287	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0424	0.0306	0.0289	0.0297	0.0281	0.0284	0.0306	0.0310
Cadmium	<0.000287	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00462	0.00256	0.00423	0.00202	0.00212	0.00249	0.00213	0.00194
Cobalt	0.00129	0.000285	0.000615	0.000257	0.000436	0.000521	0.000311	0.000451
Copper	0.00983	0.0521	0.0482	0.00958	0.00395	0.00206	0.000787	0.00158
Lead	0.00188	0.00250	0.0327	0.000456	0.000767	0.000794	0.000361	0.000715
Manganese	0.0133	0.00508	0.0205	0.00249	0.0112	0.00594	0.00220	0.00672
Molybdenum	0.00199	0.000420	0.00155	0.000712	0.000545	0.000870	0.00107	0.000894
Nickel	0.00440	<0.000830	0.00575	<0.000833	<0.000832	0.00118	<0.000833	0.00110
Silver	<0.000115	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00164	0.000751	0.00109	0.000223	0.000770	0.000573	0.000241	0.000707
Titanium	0.0202	0.00473	0.00596	<0.000833	0.00299	0.00105	<0.000833	0.00337
Uranium	<0.000115	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00727	<0.000830	<0.000830	<0.000833	<0.000832	0.00232	<0.000833	0.00301
Zinc	0.0418	0.0208	0.0641	0.0108	0.0327	0.0201	0.0163	0.0193
Iron	0.291	0.224	2.00	0.0560	0.513	0.136	0.0469	0.200
Phosphorus	<0.287	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	9-Feb	9-Feb	9-Feb	9-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	25.056	22.5	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	158	135	261	222		
Aluminum	0.0869	0.0401	0.0700	0.0531	0.2	<
Arsenic	0.000513	0.000358	0.000155	0.000223	0.005	0.005393547
Barium	0.00154	0.00120	0.00239	0.00374	0.005	0.005393547
Beryllium	<0.000208	<0.000200	<0.000222	<0.000208	0.005	<
Boron	0.0305	0.0314	0.0329	0.0301	0.2	0.744367875
Cadmium	<0.000208	<0.000200	<0.000222	<0.000208	0.005	<
Chromium	0.00203	0.00279	0.00265	0.00268	0.02	0.085578844
Cobalt	0.00139	0.000164	0.000126	0.000699	0.002	0.021424641
Copper	0.0971	0.00613	0.0103	0.0198	0.01	0.013023031
Lead	0.000544	0.0968	0.138	0.000609	0.005	<
Manganese	0.00674	0.000451	0.000627	0.00333	0.002	0.066897656
Molybdenum	0.000142	0.00529	0.00714	0.000837	0.002	0.042413906
Nickel	<0.000833	0.000986	0.00132	0.000890	0.02	<
Silver	0.000150	<0.000798	<0.000889	<0.000833	0.002	<
Strontium	0.000703	<0.200	<0.222	0.000593	0.005	0.005088953
Titanium	0.00214	<0.0000798	<0.0000889	0.00109	0.02	<
Uranium	0.000103	0.00100	0.000546	<0.0000833	0.002	<
Vanadium (corr)	<0.000833	<0.000798	0.00299	0.00205	0.02	<
Zinc	0.0228	<0.0000798	<0.0000889	0.0143	0.02	0.287770875
Iron	0.276	0.00256	0.00268	0.141	0.2	<
Phosphorus	<0.208	0.0189	0.0184	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	9-Feb	9-Feb	9-Feb	9-Feb	9-Feb	9-Feb	9-Feb	9-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	17.454	24.1	23.9	24.001	24.049	24.008	24.008	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	655	959	810	376	1324	417	411	753
Aluminum	0.836	0.719	0.360	0.234	1.22	0.373	0.781	1.39
Arsenic	0.000641	0.000639	0.000333	0.000275	0.000723	0.000221	0.000444	0.000817
Barium	0.0106	0.0112	0.0128	0.00545	0.0180	0.00500	0.0114	0.0182
Beryllium	<0.000286	<0.000207	<0.000209	0.000267	0.000213	<0.000208	<0.000208	0.000304
Boron	0.0279	0.0299	0.0317	0.0304	0.0335	0.0284	0.0304	0.0346
Cadmium	<0.000286	<0.000207	<0.000209	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00297	0.00423	0.00271	0.00278	0.00432	0.00305	0.00346	0.00521
Cobalt	0.00119	0.000978	0.000425	0.000564	0.00114	0.000282	0.000869	0.00141
Copper	0.0428	0.0194	0.0633	0.00488	0.00439	0.00202	0.00210	0.00365
Lead	0.00102	1.72	1.20	0.000762	0.00143	0.931	0.00108	0.00151
Manganese	0.0401	0.00130	0.000983	0.0130	0.0749	0.000473	0.0300	0.0874
Molybdenum	0.000324	0.0360	0.0247	0.000852	0.000859	0.0204	0.000658	0.00149
Nickel	0.00188	0.00136	0.00115	0.00148	0.00394	0.00109	0.00169	0.00316
Silver	<0.000115	0.00363	0.00175	<0.0000833	<0.0000832	<0.000833	<0.0000833	<0.0000833
Strontium	0.00652	<0.207	<0.209	0.00158	0.00704	<0.208	0.00364	0.00902
Titanium	0.0292	<0.0000830	<0.0000837	0.0206	0.0444	<0.0000833	0.0234	0.0670
Uranium	0.000139	0.00473	0.00353	<0.0000833	0.000102	0.00227	<0.0000833	0.0000869
Vanadium (corr)	0.00286	0.0338	0.0171	0.00394	0.00851	0.0210	0.00313	0.00498
Zinc	0.0195	<0.0000830	<0.0000837	0.0150	0.0258	<0.0000833	0.0198	0.0196
Iron	1.94	0.00936	0.00507	0.773	3.99	0.00156	1.75	4.01
Phosphorus	<0.286	0.0329	0.0269	<0.208	<0.208	0.0122	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	15-Feb	15-Feb	15-Feb	15-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	183	117	133	113		
Aluminum	0.0251	0.0270	0.0912	0.0269	0.2	<
Arsenic	0.0000647	<0.00	0.00102	<0.00	0.005	0.005393547
Barium	0.00131	0.00125	0.00417	0.000486	0.005	0.005393547
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0294	0.0315	0.0303	0.0294	0.2	0.744367875
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00193	0.00238	0.00207	0.00210	0.02	0.085578844
Cobalt	<0.0000833	<0.0000830	0.0000935	<0.0000833	0.002	0.021424641
Copper	0.0169	0.00843	0.0319	0.0525	0.01	0.013023031
Iron	0.0834	0.0452	0.182	0.0401	0.2	<
Lead	0.000251	0.000257	0.0324	<0.000208	0.005	<
Manganese	0.00453	0.0269	0.00573	0.00151	0.002	0.066897656
Molybdenum	0.000459	0.000428	0.000256	0.000235	0.002	0.042413906
Nickel	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	<
Silver	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000302	<0.000207	0.000422	<0.000208	0.005	0.005088953
Titanium	<0.000833	<0.000830	0.00170	<0.000833	0.02	<
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	0.00115	0.00141	<0.000830	<0.000833	0.02	<
Zinc	0.0121	0.0128	0.0238	0.0108	0.02	0.287770875

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb	15-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	16.384	24.1	24.1	24.008	24.052	24.008	23.877	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	309	284	387	128	1681	292	462	711
Aluminum	0.231	0.124	0.169	0.0526	1.65	0.157	0.209	0.528
Arsenic	0.000193	0.0000890	0.000834	0.0000341	0.000905	0.000108	0.000189	0.000323
Barium	0.00518	0.00679	0.0112	0.00143	0.0234	0.00293	0.00890	0.00710
Beryllium	<0.000305	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000209	<0.000208
Boron	0.0430	0.0299	0.0293	0.0293	0.0296	0.0288	0.0283	0.0300
Cadmium	<0.000305	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000209	<0.000208
Chromium	0.00357	0.00265	0.00274	0.00253	0.00455	0.00276	0.00211	0.00236
Cobalt	0.000747	0.000146	0.000235	<0.0000833	0.00134	0.000307	0.000194	0.000447
Copper	0.0152	0.0201	0.0410	0.00652	0.00504	0.00232	0.00164	0.00561
Iron	0.614	0.385	0.628	0.115	3.97	0.317	0.527	1.50
Lead	0.000843	0.000445	0.0275	0.000378	0.00163	0.000344	0.000402	0.000738
Manganese	0.0149	0.00740	0.0115	0.00562	0.0827	0.00704	0.00944	0.0292
Molybdenum	0.00105	0.000595	0.000509	0.000629	0.00116	0.000639	0.000335	0.000725
Nickel	0.00294	<0.000830	0.000901	<0.000833	0.00313	0.00148	0.00115	0.00190
Phosphorus	<0.305	<0.207	<0.207	<0.208	<0.208	<0.208	<0.209	<0.208
Silver	<0.000122	0.0000906	<0.0000830	<0.0000833	0.000180	<0.0000833	<0.0000838	<0.0000833
Strontium	0.00206	0.00102	0.00168	0.000427	0.00887	0.000925	0.00146	0.00319
Titanium	0.00794	0.00555	0.00764	0.00102	0.0553	0.00450	0.00641	0.0258
Uranium	<0.000122	<0.0000830	<0.0000830	<0.0000833	0.000120	<0.0000833	<0.0000838	<0.0000833
Vanadium (corr)	0.00664	0.00229	0.00110	0.000985	0.00545	0.00389	0.00291	0.00409
Zinc	0.0338	0.0129	0.0179	0.0107	0.0383	0.0121	0.0124	0.0189



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	21-Feb	21-Feb	21-Feb	21-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	162	47	75	50		
Aluminum	0.0571	0.0156	0.0152	0.0164	0.2	<
Arsenic	0.000389	0.000257	0.000114	0.0000656	0.005	0.005393547
Barium	0.000840	0.000565	0.00170	0.000456	0.005	0.005393547
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0320	0.0310	0.0282	0.0317	0.2	0.744367875
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00265	0.00237	0.00278	0.00302	0.02	0.085578844
Cobalt	0.000156	<0.0000830	0.000299	0.000123	0.002	0.021424641
Copper	0.00114	0.0113	0.0111	0.00489	0.01	0.013023031
Iron	0.0822	0.0237	0.0433	0.0332	0.2	<
Lead	0.000409	0.000216	0.000288	0.000366	0.005	<
Manganese	0.00537	0.00252	0.00310	0.00232	0.002	0.066897656
Molybdenum	0.000840	<0.0000830	0.000248	0.000212	0.002	0.042413906
Nickel	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	<
Silver	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000344	<0.000207	<0.000207	0.000216	0.005	0.005088953
Titanium	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Uranium	0.0000908	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	0.00110	<0.000830	<0.000830	<0.000833	0.02	<
Zinc	0.0150	0.0135	0.0128	0.00958	0.02	0.287770875

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb	21-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	15.294	24.1	24.1	24.013	24.053	24.01	24	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	209	109	163	58	465	235	552	431
Aluminum	0.469	0.0699	0.0492	0.0282	0.369	0.111	0.429	0.261
Arsenic	0.000394	0.000296	0.000192	0.0000880	0.000248	0.000172	0.000413	0.000254
Barium	0.00375	0.00247	0.00607	0.000679	0.00646	0.00225	0.00728	0.00405
Beryllium	<0.000327	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0484	0.0326	0.0317	0.0296	0.0312	0.0286	0.0322	0.0313
Cadmium	<0.000327	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00486	0.00282	0.00285	0.00256	0.00340	0.00307	0.00374	0.00292
Cobalt	0.00103	0.000220	0.0000869	0.000139	0.000397	0.000147	0.000749	0.000270
Copper	0.00585	0.0187	0.0169	0.00163	0.00137	0.00254	0.00267	0.00108
Iron	0.617	0.0988	0.182	0.0411	1.21	0.275	0.986	0.704
Lead	0.000735	0.000320	0.000489	0.000274	0.000600	0.00132	0.000887	0.000547
Manganese	0.0139	0.00322	0.00336	0.00244	0.0251	0.00745	0.0185	0.0147
Molybdenum	0.000822	0.000177	0.000284	0.000308	0.000577	0.000893	0.000824	0.000855
Nickel	0.00148	<0.000830	0.000948	<0.000833	0.00113	0.00188	0.00187	0.000976
Phosphorus	<0.327	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208
Silver	<0.000131	<0.0000830	<0.0000830	<0.0000833	<0.0000831	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00163	0.000319	0.000608	<0.000208	0.00259	0.000784	0.00274	0.00162
Titanium	0.00665	<0.000830	0.00278	<0.000833	0.0163	0.00471	0.0126	0.00733
Uranium	<0.000131	<0.0000830	<0.0000830	<0.0000833	<0.0000831	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00394	<0.000830	0.000847	<0.000833	0.00257	0.00558	0.00392	0.00196
Zinc	0.0288	0.00959	0.0131	0.00748	0.0158	0.0123	0.0229	0.0147



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	27-Feb	27-Feb	27-Feb	27-Feb		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	141	70	87	37		
Aluminum	0.0828	0.0253	0.0892	0.0378	0.2	0.431821406
Arsenic	0.000406	<0.000207	<0.000207	<0.000208	0.005	<
Barium	0.00176	0.00158	0.00301	0.00129	0.005	0.011772766
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0326	0.0293	0.0296	0.0316	0.2	0.690014578
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00234	0.00253	0.00195	0.00270	0.02	0.054836766
Cobalt	0.000493	0.000167	0.000196	0.000171	0.002	0.004243406
Copper	0.0213	0.00289	0.0134	0.0322	0.01	0.089595797
Lead	0.000539	0.000326	0.00166	0.000398	0.005	<
Manganese	0.00482	0.00351	0.00320	0.00404	0.002	0.069754031
Molybdenum	0.000763	<0.0000830	<0.0000830	0.000583	0.002	0.033386438
Nickel	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Silver	0.000145	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000675	0.000261	0.000403	0.000212	0.005	<
Titanium	0.00262	<0.000830	0.00167	<0.000833	0.02	<
Uranium	0.000208	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	0.00130	<0.000830	<0.000830	<0.000833	0.02	<
Zinc	0.0170	0.0165	0.0143	0.0259	0.02	0.381376594
Iron	0.181	0.308	0.152	0.133	0.2	2.613729703
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb	27-Feb
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	26.753	24.1	24.1	24.009	24.053	24.008	24.003	24.009
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	751	208	629	54	3912	523	176	1035
Aluminum	0.761	0.0810	0.247	0.0460	4.92	0.860	0.0974	0.980
Arsenic	0.000543	<0.000207	0.000278	<0.000208	0.00264	0.000396	<0.000208	0.000598
Barium	0.0110	0.00619	0.0134	0.00317	0.0650	0.0105	0.00189	0.0123
Beryllium	<0.000187	<0.000207	<0.000207	<0.000208	0.000261	<0.000208	<0.000208	<0.000208
Boron	0.0286	0.0333	0.0323	0.0289	0.0372	0.0287	0.0297	0.0325
Cadmium	<0.000187	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00303	0.00274	0.00284	0.00274	0.0105	0.00369	0.00222	0.00290
Cobalt	0.000647	0.000179	0.000240	0.000309	0.00431	0.000649	0.000169	0.000843
Copper	0.00463	0.00801	0.0245	0.0241	0.0102	0.00658	0.00528	0.00377
Lead	0.000971	0.000462	0.000978	0.000725	0.00455	0.000746	0.000511	0.00119
Manganese	0.0258	0.00482	0.0136	0.00726	0.265	0.0209	0.00585	0.0415
Molybdenum	0.000700	0.000405	<0.0000830	0.00102	0.00235	0.000440	0.000117	0.000309
Nickel	0.00267	<0.000830	0.000880	0.00181	0.00911	0.00198	<0.000833	0.00313
Silver	<0.0000748	<0.0000830	0.0000928	<0.0000833	0.000165	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00396	0.000755	0.00224	0.000410	0.0258	0.00380	0.000584	0.00623
Titanium	0.0381	0.00350	0.0119	<0.000833	0.169	0.0230	0.00384	0.0302
Uranium	0.000118	<0.0000830	<0.0000830	<0.0000833	0.000392	<0.0000833	<0.0000833	0.000130
Vanadium (corr)	0.00635	0.000899	0.00152	<0.000833	0.0158	0.00435	0.000849	0.00620
Zinc	0.0163	0.0168	0.0200	0.0271	0.0560	0.0183	0.0150	0.0158
Iron	1.30	0.296	0.933	0.272	12.2	1.43	0.251	2.35
Phosphorus	<0.187	<0.207	<0.207	<0.208	0.279	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 14	MDL	Lab Blank
Station Name	Anzac		
Sample Date	4-Mar		
PM Size(µm)	2.5		
Total Air Volume (m3)	24		
Units	µg/M3		
Particulate Matter (µg/m3)	39		
Aluminum	0.0165	0.2	0.431821406
Arsenic	<0.000208	0.005	<
Barium	<0.000208	0.005	0.011772766
Beryllium	<0.000208	0.005	<
Boron	0.0257	0.2	0.690014578
Cadmium	<0.000208	0.005	<
Chromium	0.00214	0.02	0.054836766
Cobalt	0.0000902	0.002	0.004243406
Copper	0.0258	0.01	0.089595797
Lead	0.000305	0.005	<
Manganese	0.00251	0.002	0.069754031
Molybdenum	0.000416	0.002	0.033386438
Nickel	<0.000833	0.02	<
Silver	<0.000833	0.002	<
Strontium	<0.000208	0.005	<
Titanium	<0.000833	0.02	<
Uranium	<0.000833	0.002	<
Vanadium (corr)	<0.000833	0.02	<
Zinc	0.0117	0.02	0.381376594
Iron	0.0695	0.2	2.613729703
Phosphorus	<0.208	5	<

Station #	AMS 14	AMS 12	AMS 13	AMS 16
Station Name	Anzac	Millenium	Syncrude UE-1	Albian Muskeg River
Sample Date	4-Mar	4-Mar	4-Mar	4-Mar
PM Size(µm)	10	10	10	10
Total Air Volume (m3)	24.007	24.05	24.009	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	47	722	218	635
Aluminum	0.0395	0.227	0.161	0.728
Arsenic	<0.000208	<0.000208	<0.000208	0.000384
Barium	0.000694	0.00316	0.00240	0.00883
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0282	0.0307	0.0264	0.0328
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00250	0.00333	0.00279	0.00356
Cobalt	0.000117	0.000181	0.000111	0.000603
Copper	0.00780	0.00330	0.0133	0.00357
Lead	0.000355	0.000530	0.000348	0.000919
Manganese	0.00418	0.0124	0.0155	0.0378
Molybdenum	0.000964	0.000979	<0.000833	0.00111
Nickel	<0.000833	0.00125	<0.000833	0.00156
Silver	<0.000833	<0.000832	<0.000833	<0.000833
Strontium	0.000253	0.00132	0.00100	0.00396
Titanium	<0.000833	0.00694	0.00400	0.0259
Uranium	<0.000833	<0.000832	<0.000833	<0.000833
Vanadium (corr)	0.000986	0.00356	0.00111	0.00290
Zinc	0.0108	0.0274	0.0231	0.0268
Iron	0.112	0.587	0.454	1.77
Phosphorus	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	10-Mar	10-Mar	10-Mar	10-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	23.9	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	25	24	73	13		
Aluminum	0.0442	0.0333	0.0763	0.0259	0.2	0.431821406
Arsenic	0.000349	<0.000207	<0.000208	0.00106	0.005	<
Barium	0.000620	0.00142	0.00306	0.000745	0.005	0.011772766
Beryllium	<0.000209	<0.000207	<0.000208	<0.000208	0.005	<
Boron	0.0289	0.0278	0.0317	0.0267	0.2	0.690014578
Cadmium	<0.000209	<0.000207	<0.000208	<0.000208	0.005	<
Chromium	0.00205	0.00201	0.00253	0.00190	0.02	0.054836766
Cobalt	0.000401	<0.0000830	0.0000951	0.000119	0.002	0.004243406
Copper	0.0412	0.0258	0.0221	0.0291	0.01	0.089595797
Lead	0.000629	0.00108	0.00417	0.000547	0.005	<
Manganese	0.00396	0.00419	0.00300	0.00295	0.002	0.069754031
Molybdenum	0.000494	<0.0000830	0.000437	0.000204	0.002	0.033386438
Nickel	<0.000837	<0.000830	0.00124	<0.000833	0.02	<
Silver	0.000121	<0.0000830	<0.0000833	<0.0000833	0.002	<
Strontium	0.000405	0.000462	0.000534	0.000237	0.005	<
Titanium	0.00142	<0.000830	0.00208	0.00429	0.02	<
Uranium	0.000106	<0.0000830	<0.0000833	<0.0000833	0.002	<
Vanadium (corr)	<0.000837	<0.000830	<0.000833	<0.000833	0.02	<
Zinc	0.0298	0.0163	0.0140	0.0140	0.02	0.381376594
Iron	0.0994	0.0963	0.167	0.0536	0.2	2.613729703
Phosphorus	<0.209	<0.207	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar	10-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.002	24.1	24.1	24.008	24.05	24.006	23.99	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	23	91	456	-4	200	29	113	35
Aluminum	0.0606	0.0717	0.264	0.0399	0.204	0.0502	0.0702	0.0737
Arsenic	<0.000200	<0.000207	<0.000207	0.000908	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.000872	0.00361	0.00867	0.00102	0.00275	0.000791	0.00125	0.00117
Beryllium	<0.000200	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0285	0.0309	0.0277	0.0294	0.0281	0.0277	0.0314	0.0281
Cadmium	<0.000200	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00265	0.00310	0.00271	0.00195	0.00279	0.00236	0.00281	0.00250
Cobalt	0.00162	<0.0000830	0.00109	0.000168	0.000304	<0.0000833	0.000206	0.000184
Copper	0.0346	0.0355	0.0318	0.0154	0.00310	0.00512	0.00179	0.00151
Lead	0.000673	0.000928	0.00437	0.000473	0.000597	0.000407	0.000541	0.000499
Manganese	0.00772	0.00763	0.00977	0.00849	0.0140	0.00432	0.00342	0.00677
Molybdenum	0.000381	0.000198	0.000105	<0.0000833	0.000224	0.000200	0.000892	0.000108
Nickel	<0.000800	<0.000830	<0.000830	<0.000833	0.00102	<0.000833	<0.000834	<0.000833
Silver	<0.0000800	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000834	<0.0000833
Strontium	0.000427	0.000540	0.00237	0.000305	0.00109	0.000368	0.000861	0.000625
Titanium	<0.000800	0.00200	0.00923	<0.000833	0.00605	0.00138	<0.000834	0.00149
Uranium	<0.0000800	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000834	<0.0000833
Vanadium (corr)	0.000808	<0.000830	0.00100	<0.000833	0.00119	<0.000833	<0.000834	<0.000833
Zinc	0.0256	0.0125	0.0231	0.0167	0.0315	0.0184	0.0115	0.0174
Iron	0.139	0.340	0.544	0.109	0.548	0.173	0.172	0.226
Phosphorus	<0.200	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	16-Mar	16-Mar	16-Mar	16-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	20.3	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	46	94	139	41		
Aluminum	0.0242	0.0344	0.0700	0.0224	0.2	0.431821406
Arsenic	<0.000246	<0.000207	0.000766	<0.000208	0.005	<
Barium	0.00129	0.00218	0.00388	0.00124	0.005	0.011772766
Beryllium	<0.000246	<0.000207	<0.000208	<0.000208	0.005	<
Boron	0.0343	0.0277	0.0297	0.0281	0.2	0.690014578
Cadmium	<0.000246	<0.000207	<0.000208	<0.000208	0.005	<
Chromium	0.00174	0.00218	0.00209	0.00194	0.02	0.054836766
Cobalt	0.0000989	0.0000952	0.0000895	<0.0000833	0.002	0.004243406
Copper	0.0273	0.0361	0.00467	0.0174	0.01	0.089595797
Lead	0.000914	0.00118	0.00830	0.000569	0.005	<
Manganese	0.00326	0.00437	0.00700	0.00161	0.002	0.069754031
Molybdenum	0.000344	0.000425	0.00192	0.000516	0.002	0.033386438
Nickel	<0.000985	<0.000830	0.00104	<0.000833	0.02	<
Silver	<0.0000985	<0.0000830	<0.0000833	<0.0000833	0.002	<
Strontium	0.000317	0.000342	0.000676	<0.000208	0.005	<
Titanium	<0.000985	0.00110	0.00334	0.00155	0.02	<
Uranium	<0.0000985	<0.0000830	<0.0000833	<0.0000833	0.002	<
Vanadium (corr)	<0.000985	0.00261	0.00478	0.00124	0.02	<
Zinc	0.0102	0.0187	0.0116	0.00906	0.02	0.381376594
Iron	0.0951	0.178	0.198	0.0523	0.2	2.613729703
Phosphorus	<0.246	<0.207	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar	16-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.214	24.1	24.1	24.008	24.05	24.004	23.998	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	80	176	450	45	378	97	103	549
Aluminum	0.0573	0.0975	0.229	0.0921	0.114	0.0418	0.0578	0.112
Arsenic	<0.000198	0.000247	0.000862	<0.000208	0.000744	<0.000208	<0.000208	<0.000208
Barium	0.00191	0.00655	0.0101	0.00341	0.00270	0.00201	0.00107	0.00230
Beryllium	<0.000198	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0289	0.0255	0.0303	0.0261	0.0296	0.0280	0.0272	0.0278
Cadmium	<0.000198	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00184	0.00299	0.00251	0.00260	0.00371	0.00213	0.00268	0.00245
Cobalt	0.000142	0.000160	0.000167	0.000110	0.000142	<0.0000833	0.000109	0.000162
Copper	0.0225	0.0447	0.0231	0.00794	0.00638	0.00507	0.00141	0.00534
Lead	0.000895	0.00123	0.00896	0.000668	0.00187	0.000976	0.000942	0.00145
Manganese	0.0269	0.00686	0.0134	0.00867	0.0124	0.0112	0.00645	0.00985
Molybdenum	0.000536	0.000649	0.00125	0.000511	0.00517	0.000489	0.000344	0.00115
Nickel	<0.000793	0.000899	0.00176	<0.000833	0.00360	<0.000833	<0.000833	<0.000833
Silver	<0.0000793	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000538	0.000993	0.00238	0.000595	0.000767	0.000389	0.000432	0.000855
Titanium	0.00651	0.00457	0.0137	0.00235	0.00787	0.00204	<0.000833	0.00432
Uranium	<0.0000793	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.000800	0.00280	0.00515	0.00233	0.0212	0.000998	0.00105	0.00148
Zinc	0.00711	0.0236	0.0208	0.0183	0.0173	0.00904	0.0271	0.0298
Iron	0.187	0.392	0.577	0.253	0.341	0.176	0.162	0.392
Phosphorus	<0.198	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	22-Mar	22-Mar	22-Mar	22-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	0	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	24	112	109	79		
Aluminum	not quantifiable	0.0409	0.0994	0.0204	0.2	0.397039195
Arsenic	not quantifiable	0.000576	0.000389	<0.000208	0.005	0.011299734
Barium	not quantifiable	0.00110	0.00174	0.00166	0.005	0.011299734
Beryllium	not quantifiable	<0.000207	<0.000207	<0.000208	0.005	<
Boron	not quantifiable	0.0324	0.0323	0.0315	0.2	0.73762582
Cadmium	not quantifiable	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	not quantifiable	0.00183	0.00248	0.00142	0.02	0.042538102
Cobalt	not quantifiable	0.000112	<0.0000830	<0.0000833	0.002	0.002286047
Copper	not quantifiable	0.00518	0.00261	0.0336	0.01	0.122817984
Lead	not quantifiable	0.00137	0.00132	0.000843	0.005	0.009642258
Manganese	not quantifiable	0.00360	0.00500	0.00274	0.002	0.201603188
Molybdenum	not quantifiable	0.00130	0.00108	<0.0000833	0.002	0.025175086
Nickel	not quantifiable	<0.000830	0.00296	0.00238	0.02	<
Silver	not quantifiable	<0.0000830	<0.0000830	<0.0000833	0.002	0.002416125
Strontium	not quantifiable	0.000524	0.000546	0.000350	0.005	<
Titanium	not quantifiable	0.00187	0.00531	0.00443	0.02	<
Uranium	not quantifiable	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	not quantifiable	0.00258	0.00147	<0.000833	0.02	<
Zinc	not quantifiable	0.0145	0.0159	0.00998	0.02	0.165126961
Iron	not quantifiable	0.107	0.140	0.0480	0.2	0.769125797
Phosphorus	not quantifiable	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar	22-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	27.324	24.1	24.1	24.013	24.055	24.009	24.013	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	867	556	542	25	524	540	58	1130
Aluminum	0.753	0.466	0.449	0.0440	0.639	0.634	0.0763	1.37
Arsenic	0.00113	0.000846	0.000801	0.000403	0.000495	0.000903	<0.000208	0.00145
Barium	0.0105	0.00679	0.00977	0.00216	0.00748	0.00859	0.00429	0.0176
Beryllium	<0.000183	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0256	0.0330	0.0348	0.0330	0.0339	0.0326	0.0341	0.0329
Cadmium	<0.000183	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00265	0.00274	0.00336	0.00192	0.00268	0.00216	0.00208	0.00369
Cobalt	0.000960	0.000582	0.000485	<0.0000833	0.000440	0.000497	0.000600	0.00132
Copper	0.0218	0.0131	0.0159	0.00820	0.00278	0.00251	0.00293	0.00743
Lead	0.00190	0.00174	0.00177	0.00101	0.00152	0.00188	0.00181	0.00270
Manganese	0.0500	0.0214	0.0288	0.00546	0.0191	0.0365	0.00383	0.160
Molybdenum	0.000296	0.00125	0.000761	<0.0000833	0.00132	<0.0000833	<0.0000833	0.000183
Nickel	0.00194	0.00265	0.00207	<0.000833	0.00538	0.00170	<0.000833	0.00307
Silver	0.000176	<0.0000830	<0.0000830	<0.0000833	<0.0000831	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00469	0.00247	0.00356	0.000497	0.00282	0.00369	0.000830	0.00919
Titanium	0.0335	0.0166	0.0218	<0.000833	0.0258	0.0237	0.00164	0.0587
Uranium	<0.0000732	<0.0000830	<0.0000830	<0.0000833	<0.0000831	<0.0000833	<0.0000833	0.0000849
Vanadium (corr)	0.00308	0.00619	0.00406	<0.000833	0.00232	0.00264	<0.000833	0.00464
Zinc	0.0154	0.0168	0.0229	0.0114	0.0145	0.0115	0.0136	0.0180
Iron	2.47	1.05	1.16	0.0617	1.08	1.98	0.110	4.63
Phosphorus	<0.183	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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2012
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	28-Mar	28-Mar	28-Mar	28-Mar		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	0	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	23	90	131	96		
Aluminum	not quantifiable	0.0470	0.0727	0.0338	0.2	0.397039195
Arsenic	not quantifiable	<0.000207	<0.000207	<0.000208	0.005	0.011299734
Barium	not quantifiable	0.00176	0.00251	0.000869	0.005	0.011299734
Beryllium	not quantifiable	<0.000207	<0.000207	<0.000208	0.005	<
Boron	not quantifiable	0.0333	0.0322	0.0268	0.2	0.73762582
Cadmium	not quantifiable	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	not quantifiable	0.00160	0.00220	0.00191	0.02	0.042538102
Cobalt	not quantifiable	<0.0000830	0.000146	<0.0000833	0.002	0.002286047
Copper	not quantifiable	0.0140	0.00770	0.00481	0.01	0.122817984
Lead	not quantifiable	0.000697	0.000757	0.000566	0.005	0.009642258
Manganese	not quantifiable	0.00263	0.00364	0.000723	0.002	0.201603188
Molybdenum	not quantifiable	<0.0000830	<0.0000830	0.000365	0.002	0.025175086
Nickel	not quantifiable	<0.000830	<0.000830	<0.000833	0.02	<
Silver	not quantifiable	<0.0000830	<0.0000830	<0.0000833	0.002	0.002416125
Strontium	not quantifiable	0.000463	0.000509	0.000265	0.005	<
Titanium	not quantifiable	0.00190	0.00308	<0.000833	0.02	<
Uranium	not quantifiable	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	not quantifiable	<0.000830	<0.000830	<0.000833	0.02	<
Zinc	not quantifiable	0.00860	0.00847	0.00434	0.02	0.165126961
Iron	not quantifiable	0.0842	0.170	0.0498	0.2	0.769125797
Phosphorus	not quantifiable	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar	28-Mar
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.247	24.1	24.1	24.012	24.053	24.006	23.999	24.009
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	236	195	486	141	860	343	160	319
Aluminum	0.197	0.168	0.397	0.0768	0.941	0.354	0.0936	0.321
Arsenic	0.000218	<0.000207	0.000236	<0.000208	0.000645	<0.000208	<0.000208	<0.000208
Barium	0.00248	0.00452	0.0109	0.00180	0.0109	0.00450	0.00184	0.00504
Beryllium	<0.000198	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0270	0.0287	0.0314	0.0327	0.0316	0.0336	0.0261	0.0275
Cadmium	<0.000198	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00167	0.00258	0.00265	0.00153	0.00332	0.00233	0.00194	0.00242
Cobalt	0.000128	0.00106	0.000344	<0.0000833	0.00139	0.000639	<0.0000833	0.000367
Copper	0.00408	0.0142	0.00588	0.0102	0.0103	0.00318	0.000918	0.00503
Lead	0.000765	0.000928	0.00178	0.00161	0.00745	0.000955	0.000557	0.000967
Manganese	0.0108	0.00852	0.0235	0.00538	0.0416	0.0138	0.00681	0.0212
Molybdenum	0.000205	0.000251	<0.0000830	0.000107	0.00101	0.000682	<0.0000833	<0.0000833
Nickel	<0.000792	<0.000830	0.00125	0.00147	0.00368	0.00104	<0.000833	<0.000833
Silver	<0.0000792	<0.0000830	<0.0000830	0.000140	0.00173	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00129	0.00114	0.00300	0.000746	0.00454	0.00228	0.000819	0.00257
Titanium	0.00773	0.0111	0.0205	0.00252	0.0377	0.0142	0.00304	0.0112
Uranium	<0.0000792	<0.0000830	<0.0000830	<0.0000833	0.000216	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00116	0.00102	0.00187	<0.000833	0.00372	0.00267	0.00109	0.00144
Zinc	0.00866	0.0111	0.0233	0.0142	0.0228	0.00864	0.00749	0.0108
Iron	0.419	0.425	1.41	0.154	2.05	0.695	0.229	1.31
Phosphorus	<0.198	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	3-Apr	3-Apr	3-Apr	3-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.1	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	108	89	151	52		
Aluminum	0.0501	0.0692	0.122	0.0559	0.2	0.397039195
Arsenic	0.000669	<0.000207	<0.000208	<0.000208	0.005	0.011299734
Barium	0.00190	0.00287	0.00430	0.000955	0.005	0.011299734
Beryllium	0.000231	<0.000207	<0.000208	<0.000208	0.005	<
Boron	0.0305	0.0295	0.0168	0.0282	0.2	0.73762582
Cadmium	<0.000207	<0.000207	<0.000208	<0.000208	0.005	<
Chromium	0.00193	0.00170	0.00156	0.00161	0.02	0.042538102
Cobalt	0.000469	0.000155	0.000167	0.0000892	0.002	0.002286047
Copper	0.0297	0.0223	0.0127	0.0158	0.01	0.122817984
Lead	0.000929	0.000748	0.000746	0.000573	0.005	0.009642258
Manganese	0.00815	0.00362	0.00572	0.00187	0.002	0.201603188
Molybdenum	0.000815	0.000249	0.000180	<0.0000833	0.002	0.025175086
Nickel	0.000900	<0.000830	<0.000833	<0.000833	0.02	<
Silver	0.000260	<0.0000830	0.000172	<0.0000833	0.002	0.002416125
Strontium	0.000673	0.000381	0.000693	0.000209	0.005	<
Titanium	0.00134	0.00206	0.00473	0.00110	0.02	<
Uranium	0.000363	<0.0000830	<0.0000833	<0.0000833	0.002	<
Vanadium (corr)	0.00124	<0.000830	<0.000833	<0.000833	0.02	<
Zinc	0.0152	0.00908	0.0107	0.00808	0.02	0.165126961
Iron	0.187	0.158	0.405	0.0760	0.2	0.769125797
Phosphorus	<0.207	<0.207	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr	3-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.16	24.1	24	24.01	24.719	24.002	24	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	372	314	1336	67	2195	268	473	396
Aluminum	0.371	0.223	1.09	0.0617	2.47	0.211	0.356	0.336
Arsenic	0.000343	0.000259	0.000922	<0.000208	0.00137	<0.000208	0.000334	0.000262
Barium	0.00539	0.00995	0.0320	0.00187	0.0282	0.00352	0.00725	0.00744
Beryllium	<0.000199	<0.000207	<0.000208	<0.000208	<0.000202	<0.000208	<0.000208	<0.000208
Boron	0.0308	0.0334	0.0320	0.0304	0.0341	0.0293	0.0327	0.0287
Cadmium	<0.000199	<0.000207	<0.000208	<0.000208	<0.000202	<0.000208	<0.000208	<0.000208
Chromium	0.00232	0.00280	0.00456	0.00210	0.00519	0.00154	0.00210	0.00211
Cobalt	0.000365	0.000579	0.000981	0.000182	0.00223	0.000282	0.000495	0.000352
Copper	0.0370	0.0513	0.0238	0.00688	0.00471	0.00542	0.00252	0.00184
Lead	0.000957	0.000954	0.00262	0.000949	0.00250	0.000665	0.000959	0.000953
Manganese	0.0191	0.0159	0.0715	0.00412	0.103	0.0102	0.0255	0.0295
Molybdenum	0.000363	0.000322	0.000640	<0.0000833	0.00116	0.000300	0.000263	0.000111
Nickel	0.00127	0.000952	0.00298	<0.000833	0.00477	<0.000833	0.00123	0.00104
Silver	<0.0000795	<0.0000830	0.000116	0.0000973	0.0000938	<0.0000833	<0.0000833	0.000439
Strontium	0.00222	0.00175	0.00828	0.000491	0.0125	0.00157	0.00301	0.00291
Titanium	0.0122	0.00903	0.0461	0.00183	0.0745	0.00749	0.0117	0.0130
Uranium	<0.0000795	<0.0000830	0.0000861	<0.0000833	0.000180	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00195	0.00130	0.00438	<0.000833	0.00785	0.00208	0.00261	0.00162
Zinc	0.0127	0.0129	0.0369	0.0130	0.0294	0.0111	0.00978	0.0129
Iron	0.949	0.867	4.29	0.117	4.86	0.505	1.69	1.67
Phosphorus	<0.199	<0.207	<0.208	<0.208	<0.202	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	9-Apr	9-Apr	9-Apr	9-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	176	111	99	65		
Aluminum	0.136	0.0891	0.0701	0.0299	0.2	0.397039195
Arsenic	0.000249	<0.000207	<0.000207	0.000226	0.005	0.011299734
Barium	0.00189	0.00219	0.00241	0.00388	0.005	0.011299734
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0291	0.0311	0.0284	0.0304	0.2	0.73762582
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00241	0.00184	0.00124	0.00137	0.02	0.042538102
Cobalt	0.000220	0.000104	0.000128	0.000149	0.002	0.002286047
Copper	0.0555	0.0160	0.0172	0.0581	0.01	0.122817984
Lead	0.00150	0.00139	0.00149	0.00104	0.005	0.009642258
Manganese	0.103	0.00601	0.00532	0.00349	0.002	0.201603188
Molybdenum	<0.0000833	<0.0000830	<0.0000830	0.000160	0.002	0.025175086
Nickel	<0.000833	<0.000830	<0.000830	0.00140	0.02	<
Silver	0.000134	<0.0000830	<0.0000830	<0.0000833	0.002	0.002416125
Strontium	0.000876	0.000539	0.000489	0.000367	0.005	<
Titanium	0.00287	0.00279	0.00214	<0.000833	0.02	<
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	0.00116	<0.000830	<0.000830	<0.000833	0.02	<
Zinc	0.0120	0.0114	0.0164	0.00446	0.02	0.165126961
Iron	0.354	0.344	0.178	0.208	0.2	0.769125797
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr	9-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	23.36	24.1	24.1	24.01	24.054	24.008	23.998	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1276	625	536	157	2362	714	1847	1062
Aluminum	1.26	0.430	0.429	0.113	2.52	0.944	2.01	1.09
Arsenic	0.000812	0.000316	0.000379	0.000348	0.00172	0.00104	0.00101	0.000643
Barium	0.0160	0.0100	0.0109	0.0119	0.0284	0.0114	0.0254	0.0120
Beryllium	<0.000214	<0.000207	<0.000207	<0.000208	0.000257	<0.000208	<0.000208	<0.000208
Boron	0.0324	0.0327	0.0274	0.0298	0.0357	0.0309	0.0338	0.0296
Cadmium	<0.000214	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00333	0.00240	0.00238	0.00219	0.00487	0.00273	0.00452	0.00279
Cobalt	0.00103	0.000391	0.000421	0.000202	0.00227	0.000793	0.00156	0.000834
Copper	0.0482	0.0304	0.0385	0.0178	0.00456	0.00395	0.0103	0.00287
Lead	0.00241	0.00156	0.00186	0.00136	0.00305	0.00229	0.00301	0.00184
Manganese	0.0639	0.0253	0.0253	0.0105	0.102	0.0406	0.0988	0.0447
Molybdenum	0.000322	0.000191	0.0000886	0.000245	0.00127	0.000560	0.000332	0.000304
Nickel	0.00305	0.00118	0.00223	0.00106	0.00499	0.00241	0.00370	0.00212
Silver	<0.0000856	<0.0000830	<0.0000830	<0.0000833	0.000105	<0.0000833	0.0000930	<0.0000833
Strontium	0.00875	0.00341	0.00313	0.00110	0.0157	0.00541	0.0106	0.00606
Titanium	0.0392	0.0142	0.0144	0.00358	0.0585	0.0301	0.0589	0.0399
Uranium	0.0000988	<0.0000830	<0.0000830	<0.0000833	0.000208	<0.0000833	0.000159	<0.0000833
Vanadium (corr)	0.00529	0.00182	0.00196	<0.000833	0.00831	0.00386	0.00738	0.00398
Zinc	0.0208	0.0279	0.0229	0.0114	0.0235	0.0226	0.0227	0.0138
Iron	3.42	1.43	1.52	0.733	5.44	1.80	4.28	2.51
Phosphorus	<0.214	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	15-Apr	15-Apr	15-Apr	15-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	204	128	84	87		
Aluminum	0.0718	0.124	0.0524	0.0304	0.2	0.27432757
Arsenic	<0.000208	<0.000207	<0.000207	0.000209	0.005	<
Barium	0.00139	0.00184	0.00140	0.000755	0.005	0.006616906
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0274	0.0323	0.0297	0.0309	0.2	0.778465055
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00128	0.00178	0.00265	0.00289	0.02	0.077433586
Cobalt	0.000339	0.000415	0.000308	0.000119	0.002	0.01423657
Copper	0.0318	0.0220	0.00894	0.0216	0.01	0.15839993
Iron	0.00137	0.00156	0.119	0.0439	0.2	0.995111016
Lead	0.00681	0.00637	0.00128	0.00111	0.005	0.008037508
Manganese	0.000136	<0.0000830	0.00318	0.00197	0.002	0.049126969
Molybdenum	<0.000833	<0.000830	0.000324	0.000981	0.002	0.026724625
Nickel	<0.0000833	<0.0000830	<0.000830	<0.000833	0.02	<
Phosphorus	0.000553	0.000451	<0.207	<0.208	5	<
Silver	0.00292	0.00286	<0.0000830	<0.0000833	0.002	0.002753359
Strontium	<0.0000833	<0.0000830	0.000518	0.000307	0.005	0.008026031
Titanium	0.00128	<0.000830	0.00131	<0.000833	0.02	<
Uranium	0.0142	0.0162	<0.0000830	<0.0000833	0.002	0.002225625
Vanadium (corr)	0.214	0.155	<0.000830	0.000840	0.02	0.021242883
Zinc	<0.208	<0.207	0.00871	0.00567	0.02	0.226111875

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr	15-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	26.41	24.1	24.1	24.009	24.053	24.007	24	24.011
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	445	300	760	105	280	215	274	443
Aluminum	0.246	0.181	0.554	0.0698	0.264	0.111	0.234	0.317
Arsenic	0.000272	<0.000207	0.000400	0.000308	0.000267	<0.000208	<0.000208	0.000246
Barium	0.00460	0.00527	0.00795	0.000833	0.00342	0.00221	0.00380	0.00473
Beryllium	<0.000189	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0239	0.0294	0.0322	0.0334	0.0342	0.0290	0.0303	0.0312
Cadmium	<0.000189	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00199	0.00191	0.00278	0.00311	0.00420	0.00175	0.00169	0.00183
Cobalt	0.000351	0.00208	0.000415	0.000133	0.000344	0.000151	0.000409	0.000458
Copper	0.0149	0.0389	0.0219	0.0108	0.00185	0.00351	0.00408	0.00453
Iron	0.00153	0.00165	0.00291	0.104	0.563	0.00132	0.00154	0.00153
Lead	0.0206	0.0137	0.0243	0.00139	0.00176	0.00875	0.0125	0.0204
Manganese	0.000281	<0.0000830	<0.0000830	0.00295	0.0118	0.0000834	<0.0000833	0.000293
Molybdenum	0.00121	<0.000830	0.00666	0.000853	0.000935	<0.000833	0.000964	0.00130
Nickel	0.0000925	<0.0000830	<0.0000830	<0.000833	0.00118	<0.0000833	<0.0000833	<0.0000833
Phosphorus	0.00225	0.00159	0.00126	<0.208	<0.208	0.000956	0.00169	0.00231
Silver	0.00966	0.00658	0.0156	<0.0000833	<0.0000831	0.00416	0.0119	0.00955
Strontium	<0.0000757	<0.0000830	<0.0000830	0.000590	0.00211	<0.0000833	<0.0000833	<0.0000833
Titanium	0.00248	0.000912	0.00179	0.00161	0.00886	0.00198	0.00173	0.00334
Uranium	0.0115	0.0152	0.0534	<0.0000833	<0.0000831	0.0123	0.00955	0.0130
Vanadium (corr)	0.994	0.615	1.55	0.00110	0.00180	0.361	0.577	0.990
Zinc	<0.189	<0.207	<0.207	0.00696	0.0117	<0.208	<0.208	<0.208



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Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	21-Apr	21-Apr	21-Apr	21-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	11.9	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	55	53	94	27		
Aluminum	0.122	0.0424	0.0920	0.0350	0.2	0.27432757
Arsenic	<0.000420	<0.000207	0.000247	<0.000208	0.005	<
Barium	0.00373	0.00174	0.00256	0.000871	0.005	0.006616906
Beryllium	<0.000420	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0663	0.0308	0.0319	0.0310	0.2	0.778465055
Cadmium	<0.000420	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00448	0.00144	0.00192	0.00154	0.02	0.077433586
Cobalt	0.00127	0.000126	0.000225	0.000101	0.002	0.01423657
Copper	0.0230	0.0159	0.0195	0.0228	0.01	0.15839993
Iron	0.000871	0.000742	0.177	0.108	0.2	0.995111016
Lead	0.0157	0.00539	0.000847	0.000776	0.005	0.008037508
Manganese	0.000565	0.000114	0.00556	0.00265	0.002	0.049126969
Molybdenum	0.00245	<0.000830	0.000569	0.0000872	0.002	0.026724625
Nickel	0.000317	<0.0000830	0.00112	<0.000833	0.02	<
Phosphorus	0.000891	0.000317	<0.207	<0.208	5	<
Silver	0.00281	0.00109	<0.0000830	<0.0000833	0.002	0.002753359
Strontium	0.000170	<0.0000830	0.000446	<0.000208	0.005	0.008026031
Titanium	<0.00168	<0.000830	0.00310	0.00109	0.02	<
Uranium	0.0235	0.00908	<0.0000830	<0.0000833	0.002	0.002225625
Vanadium (corr)	0.334	0.127	<0.000830	<0.000833	0.02	0.021242883
Zinc	<0.420	<0.207	0.0148	0.00733	0.02	0.226111875

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr	21-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.013	24.1	24	24.008	24.054	24.001	24.001	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	742	207	414	120	394	209	190	340
Aluminum	0.665	0.219	0.405	0.146	0.290	0.235	0.169	0.316
Arsenic	0.000507	<0.000207	0.000469	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.0107	0.00503	0.0121	0.00530	0.00478	0.00371	0.00279	0.00492
Beryllium	<0.000200	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0291	0.0308	0.0342	0.0324	0.0317	0.0316	0.0284	0.0305
Cadmium	<0.000200	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00221	0.00168	0.00234	0.00249	0.00233	0.00208	0.00166	0.00194
Cobalt	0.000708	0.000233	0.000552	0.000347	0.000328	0.000231	0.000157	0.000272
Copper	0.0179	0.0188	0.0213	0.00648	0.00216	0.00186	0.00225	0.00239
Iron	0.00127	0.00101	1.21	0.465	0.939	0.000664	0.000868	0.000811
Lead	0.0403	0.0145	0.00168	0.000951	0.000899	0.00758	0.00987	0.0198
Manganese	0.000355	0.0000976	0.0210	0.0103	0.0179	<0.0000833	<0.0000833	0.000135
Molybdenum	0.00185	<0.000830	0.000202	0.000996	0.000241	<0.000833	<0.000833	0.000863
Nickel	0.000134	0.0000993	0.00146	<0.000833	0.00113	0.0000985	<0.0000833	0.0000858
Phosphorus	0.00578	0.00131	<0.208	<0.208	<0.208	0.00148	0.00158	0.00235
Silver	0.0225	0.00826	<0.0000833	<0.0000833	<0.0000831	0.00745	0.00718	0.00984
Strontium	0.000102	<0.0000830	0.00277	0.000855	0.00228	<0.0000833	<0.0000833	<0.0000833
Titanium	0.00274	0.000899	0.0144	0.00527	0.0136	0.00117	<0.000833	0.00153
Uranium	0.0207	0.0162	<0.0000833	<0.0000833	<0.0000831	0.0223	0.00713	0.0126
Vanadium (corr)	2.66	0.720	0.00158	0.000892	0.00155	0.394	0.341	0.880
Zinc	<0.200	<0.207	0.0196	0.00914	0.0188	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	27-Apr	27-Apr	27-Apr	27-Apr		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	25.248	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	51	54	60	41		
Aluminum	0.0345	0.0342	0.0450	0.0522	0.2	0.27432757
Arsenic	<0.000198	<0.000207	0.000256	<0.000208	0.005	<
Barium	0.000537	0.00132	0.00158	0.000259	0.005	0.006616906
Beryllium	<0.000198	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0302	0.0306	0.0327	0.0300	0.2	0.778465055
Cadmium	<0.000198	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00217	0.00156	0.00220	0.00217	0.02	0.077433586
Cobalt	0.000811	<0.0000830	<0.0000830	<0.0000833	0.002	0.01423657
Copper	0.000800	0.00918	0.00652	0.00462	0.01	0.15839993
Lead	0.0302	0.0408	0.000853	0.000607	0.005	0.008037508
Manganese	0.000793	0.000765	0.00623	0.00676	0.002	0.049126969
Molybdenum	0.00263	0.00262	0.000340	<0.0000833	0.002	0.026724625
Nickel	0.000766	<0.0000830	<0.000830	<0.000833	0.02	<
Silver	<0.000792	<0.000830	<0.0000830	<0.0000833	0.002	0.002753359
Strontium	<0.198	<0.207	<0.000207	<0.000208	0.005	0.008026031
Titanium	<0.0000792	<0.0000830	0.00132	<0.000833	0.02	<
Uranium	0.000229	0.000242	<0.0000830	<0.0000833	0.002	0.002225625
Vanadium (corr)	0.00253	0.00113	<0.000830	<0.000833	0.02	0.021242883
Zinc	<0.0000792	<0.0000830	0.00948	0.00600	0.02	0.226111875
Iron	0.00189	<0.000830	0.111	0.0685	0.2	0.995111016
Phosphorus	0.00607	0.0111	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr	27-Apr
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	25.289	24.1	24.1	24.791	24.051	23.998	24	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	116	69	111	54	171	100	130	170
Aluminum	0.0567	0.0784	0.106	0.0629	0.193	0.103	0.0817	0.0839
Arsenic	<0.000198	<0.000207	<0.000207	<0.000202	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.00150	0.00341	0.00437	0.00108	0.00211	0.00164	0.00133	0.00170
Beryllium	<0.000198	<0.000207	<0.000207	<0.000202	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0290	0.0303	0.0296	0.0295	0.0304	0.0312	0.0280	0.0290
Cadmium	<0.000198	<0.000207	<0.000207	<0.000202	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00182	0.00205	0.00298	0.00339	0.00234	0.00217	0.00184	0.00183
Cobalt	0.000204	0.00100	0.000972	0.000571	0.000107	0.000654	0.000229	0.000414
Copper	0.00148	0.0119	0.00472	0.00396	0.00107	0.00729	0.00211	0.00263
Lead	0.142	0.112	0.00106	0.00116	0.000816	0.00102	0.120	0.00105
Manganese	0.000570	0.000917	0.0102	0.00774	0.00829	0.0106	0.000912	0.00560
Molybdenum	0.0109	0.00325	0.000129	<0.0000807	<0.0000832	<0.0000833	0.00525	0.000196
Nickel	0.000282	<0.0000830	<0.000830	0.000826	<0.000832	<0.000833	0.000152	<0.000833
Silver	<0.000791	<0.000830	<0.0000830	<0.0000807	<0.0000832	<0.0000833	0.00199	<0.0000833
Strontium	<0.198	<0.207	0.000583	0.000356	0.000959	0.000629	<0.208	0.000464
Titanium	<0.0000791	<0.0000830	0.00584	<0.000807	0.00539	0.00270	<0.0000833	0.00473
Uranium	0.000570	0.000456	<0.0000830	<0.0000807	<0.0000832	<0.0000833	0.000565	<0.0000833
Vanadium (corr)	0.00155	0.00409	<0.000830	<0.000807	0.000847	0.00120	0.00389	0.00115
Zinc	<0.0000791	<0.0000830	0.0111	0.0242	0.00923	0.0133	<0.0000833	0.00873
Iron	0.00186	<0.000830	0.255	0.0984	0.369	0.232	0.00158	0.183
Phosphorus	0.00686	0.00752	<0.207	<0.202	<0.208	<0.208	0.00837	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	3-May	3-May	3-May	3-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.377	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	126	105	127	60		
Aluminum	0.115	0.129	0.162	0.0799	0.2	0.27432757
Arsenic	0.000402	<0.000207	<0.000207	<0.000208	0.005	<
Barium	0.00159	0.00260	0.00301	0.000830	0.005	0.006616906
Beryllium	<0.000205	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0344	0.0321	0.0318	0.0327	0.2	0.778465055
Cadmium	<0.000205	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00266	0.00245	0.00243	0.00218	0.02	0.077433586
Cobalt	0.000260	<0.0000830	<0.0000830	0.000354	0.002	0.01423657
Copper	0.0155	0.00991	0.0103	0.0153	0.01	0.15839993
Lead	0.252	0.261	0.336	0.00118	0.005	0.008037508
Manganese	0.00184	0.00150	0.00162	0.00366	0.002	0.049126969
Molybdenum	0.00601	0.00577	0.0123	<0.0000833	0.002	0.026724625
Nickel	0.00174	<0.0000830	<0.0000830	<0.000833	0.02	<
Silver	0.00112	<0.000830	<0.000830	<0.000833	0.002	0.002753359
Strontium	<0.205	<0.207	<0.207	0.000240	0.005	0.008026031
Titanium	<0.0000820	<0.0000830	<0.0000830	0.00110	0.02	<
Uranium	0.000762	0.000610	0.000816	<0.0000833	0.002	0.002225625
Vanadium (corr)	0.00439	0.00296	0.00352	<0.000833	0.02	0.021242883
Zinc	<0.0000820	<0.0000830	<0.0000830	0.00571	0.02	0.226111875
Iron	0.00491	<0.000830	0.000832	0.112	0.2	0.995111016
Phosphorus	0.0128	0.00779	0.00986	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	3-May	3-May	3-May	3-May	3-May	3-May	3-May	3-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	19.443	24.1	24.1	24.007	24.053	24.007	24	24.006
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	368	625	821	173	1536	569	567	216
Aluminum	0.575	0.604	0.800	0.196	1.40	0.602	0.603	0.249
Arsenic	0.000487	0.000560	0.000537	<0.000208	0.000647	0.000262	0.000310	<0.000208
Barium	0.00714	0.0134	0.0183	0.00326	0.0157	0.00734	0.00709	0.00305
Beryllium	<0.000257	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0441	0.0332	0.0314	0.0323	0.0363	0.0332	0.0373	0.0356
Cadmium	<0.000257	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00690	0.00389	0.00383	0.00265	0.00483	0.00395	0.00348	0.00235
Cobalt	0.000456	0.000564	0.000534	0.000446	0.00121	0.000435	0.000508	0.000151
Copper	0.00253	0.0166	0.0117	0.00757	0.00340	0.00246	0.00222	0.00251
Lead	1.35	1.97	0.00304	0.413	2.36	1.05	1.18	0.572
Manganese	0.00210	0.00235	0.0478	0.00150	0.00236	0.00186	0.00200	0.00150
Molybdenum	0.0239	0.0480	0.000150	0.00926	0.0497	0.0216	0.0232	0.0107
Nickel	0.00123	0.000250	0.00166	0.000248	0.000389	0.00127	0.00234	0.00119
Silver	0.00188	0.00176	<0.0000830	<0.000833	0.00293	0.00236	0.00372	<0.000833
Strontium	<0.257	<0.207	0.00577	<0.208	<0.208	<0.208	<0.208	<0.208
Titanium	<0.000103	<0.0000830	0.0277	<0.0000833	<0.0000831	<0.0000833	<0.0000833	<0.0000833
Uranium	0.00411	0.00415	<0.0000830	0.00106	0.00938	0.00411	0.00535	0.00167
Vanadium (corr)	0.0183	0.0224	0.00325	0.00920	0.0543	0.0303	0.0313	0.0106
Zinc	<0.000103	<0.0000830	0.0230	<0.0000833	<0.0000831	<0.0000833	<0.0000833	<0.0000833
Iron	0.00405	0.00266	2.76	0.00115	0.00531	0.00848	0.0124	0.00144
Phosphorus	0.0128	0.0650	<0.207	0.00854	0.0154	0.0134	0.0113	0.00803



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	9-May	9-May	9-May	9-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	23.85	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3			
Particulate Matter (µg/m3)	84	82	78	96		
Aluminum	0.165	0.150	0.152	0.168	0.2	0.27432757
Arsenic	<0.000210	<0.000207	<0.000208	<0.000208	0.005	<
Barium	0.00174	0.00194	0.00239	0.00191	0.005	0.006616906
Beryllium	<0.000210	<0.000207	<0.000208	<0.000208	0.005	<
Boron	0.0345	0.0302	0.0294	0.0304	0.2	0.778465055
Cadmium	<0.000210	<0.000207	<0.000208	<0.000208	0.005	<
Chromium	0.00250	0.00269	0.00181	0.00224	0.02	0.077433586
Cobalt	0.000324	0.000125	<0.0000833	<0.0000833	0.002	0.01423657
Copper	0.0226	0.00378	0.00453	0.00413	0.01	0.15839993
Lead	0.00200	0.00178	0.00167	0.00193	0.005	0.008037508
Manganese	0.00580	0.00418	0.00482	0.00506	0.002	0.049126969
Molybdenum	<0.0000839	<0.0000830	<0.0000833	<0.0000833	0.002	0.026724625
Nickel	<0.000839	<0.000830	<0.000833	<0.000833	0.02	<
Silver	<0.0000839	<0.0000830	<0.0000833	<0.0000833	0.002	0.002753359
Strontium	0.000671	0.000908	0.000618	0.000736	0.005	0.008026031
Titanium	0.00364	0.00376	0.00498	0.00417	0.02	<
Uranium	<0.0000839	<0.0000830	<0.0000833	<0.0000833	0.002	0.002225625
Vanadium (corr)	<0.000839	0.000893	<0.000833	<0.000833	0.02	0.021242883
Zinc	0.0171	0.00829	0.00917	0.00757	0.02	0.226111875
Iron	0.189	0.167	0.171	0.178	0.2	0.995111016
Phosphorus	<0.210	<0.207	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	9-May	9-May	9-May	9-May	9-May	9-May	9-May	9-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.34	24	24	24.006	24.052	24.005	24.007	24.005
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	258	248	489	201	903	154	385	877
Aluminum	0.425	0.421	0.582	0.315	0.868	0.266	0.612	0.872
Arsenic	<0.000205	0.000348	0.000719	0.000370	0.000344	0.000243	0.000295	0.000569
Barium	0.00552	0.00788	0.0125	0.00415	0.0101	0.00334	0.00753	0.0133
Beryllium	<0.000205	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0331	0.0339	0.0313	0.0298	0.0344	0.0308	0.0338	0.0292
Cadmium	<0.000205	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00277	0.00613	0.00291	0.00241	0.00344	0.00265	0.00281	0.00344
Cobalt	0.000118	0.000248	0.000248	0.000249	0.000772	0.000218	0.000269	0.000884
Copper	0.0165	0.00448	0.00939	0.0119	0.00346	0.00159	0.00173	0.00191
Lead	0.00217	0.00223	0.00268	0.00231	0.00235	0.00178	0.00214	0.00261
Manganese	0.0126	0.0136	0.0244	0.0119	0.0347	0.00695	0.0199	0.0540
Molybdenum	<0.0000822	0.000820	0.000157	0.000120	0.000634	<0.0000833	0.000191	0.000294
Nickel	<0.000822	0.00104	0.000940	<0.000833	0.00391	<0.000833	0.00109	0.00225
Silver	<0.0000822	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	0.000108
Strontium	0.00231	0.00303	0.00400	0.00175	0.00629	0.00144	0.00339	0.00588
Titanium	0.0118	0.0165	0.0229	0.00912	0.0279	0.00885	0.0180	0.0399
Uranium	<0.0000822	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	0.0000837
Vanadium (corr)	0.00151	0.00157	0.00188	0.00123	0.00788	0.00125	0.00221	0.00388
Zinc	0.0101	0.00809	0.0168	0.00911	0.0133	0.00736	0.0105	0.0123
Iron	0.549	0.819	1.35	0.449	1.61	0.285	0.856	2.66
Phosphorus	<0.205	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	15-May	15-May	15-May	15-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	23.755	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	125	163	111	78		
Aluminum	0.0758	0.0978	0.0738	0.0609	0.2	0.27432757
Arsenic	0.000332	<0.000207	<0.000207	<0.000208	0.005	<
Barium	0.000984	0.00254	0.00230	0.00106	0.005	0.006616906
Beryllium	<0.000210	<0.000207	<0.000207	<0.000208	0.005	<
Boron	0.0294	0.0290	0.0316	0.0327	0.2	0.778465055
Cadmium	<0.000210	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00200	0.00225	0.00254	0.00244	0.02	0.077433586
Cobalt	0.000302	0.000435	0.000263	0.000154	0.002	0.01423657
Copper	0.00765	0.0146	0.00796	0.0153	0.01	0.15839993
Iron	0.159	0.414	0.147	0.166	0.2	0.995111016
Lead	0.000561	0.000677	0.00114	0.000532	0.005	0.008037508
Manganese	0.00549	0.00598	0.00493	0.00507	0.002	0.049126969
Molybdenum	0.000295	0.000112	<0.0000830	0.000112	0.002	0.026724625
Nickel	<0.000842	<0.000830	<0.000830	<0.000833	0.02	<
Phosphorus	<0.210	<0.207	<0.207	<0.208	5	<
Silver	<0.0000842	<0.0000830	<0.0000830	<0.0000833	0.002	0.002753359
Strontium	0.000515	0.000587	0.000457	0.000436	0.005	0.008026031
Titanium	0.00317	0.00269	0.00135	0.00134	0.02	<
Uranium	<0.0000842	<0.0000830	<0.0000830	<0.0000833	0.002	0.002225625
Vanadium (corr)	0.000994	<0.000830	0.000862	<0.000833	0.02	0.021242883
Zinc	0.00780	0.00806	0.0114	0.00624	0.02	0.226111875

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	15-May	15-May	15-May	15-May	15-May	15-May	15-May	15-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.62	24.1	24.1	24	24.053	24.007	24.007	24.006
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	4	490	327	169	15984	269	635	375
Aluminum	0.0217	0.434	0.327	0.172	11.5	0.247	0.708	0.461
Arsenic	<0.000203	0.000231	0.000258	<0.000208	0.0260	<0.000208	0.000481	0.000271
Barium	0.000274	0.0109	0.00851	0.00295	0.105	0.00392	0.00989	0.00515
Beryllium	<0.000203	<0.000207	<0.000207	<0.000208	0.000793	<0.000208	<0.000208	<0.000208
Boron	0.0288	0.0294	0.0319	0.0310	0.0593	0.0327	0.0337	0.0317
Cadmium	<0.000203	<0.000207	<0.000207	<0.000208	0.000398	<0.000208	<0.000208	<0.000208
Chromium	0.00238	0.00337	0.00281	0.00195	0.0498	0.00274	0.00307	0.00277
Cobalt	0.000212	0.000456	0.000301	0.000225	0.0114	0.000238	0.0123	0.000490
Copper	0.00103	0.0310	0.00833	0.0321	0.0487	0.00350	0.00283	0.00281
Iron	0.103	1.29	0.864	0.289	23.3	0.482	1.60	1.02
Lead	<0.000203	0.00107	0.00143	0.000698	0.0286	0.000934	0.00121	0.00101
Manganese	0.00191	0.0223	0.0154	0.00704	0.438	0.0103	0.0363	0.0218
Molybdenum	0.000244	0.000297	0.000177	0.000107	0.00309	0.000236	0.000561	0.000438
Nickel	<0.000812	0.00114	0.000953	<0.000833	0.0491	0.000958	0.00229	0.00107
Phosphorus	<0.203	<0.207	<0.207	<0.208	0.575	<0.208	<0.208	<0.208
Silver	<0.0000812	<0.0000830	<0.0000830	0.000149	0.000458	0.000137	0.000184	0.000116
Strontium	<0.000203	0.00282	0.00217	0.000835	0.0466	0.00189	0.00453	0.00245
Titanium	<0.000812	0.0155	0.0106	0.00626	0.320	0.00590	0.0726	0.0207
Uranium	<0.0000812	<0.0000830	<0.0000830	<0.0000833	0.000921	<0.0000833	<0.0000833	0.0000958
Vanadium (corr)	<0.000812	0.00205	0.00164	0.000926	0.0416	0.00235	0.00434	0.00191
Zinc	0.00547	0.0179	0.0181	0.00868	2.53	0.0117	0.0130	0.00943



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Station #	AMS 1	AMS 6	AMS 7	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley		
Sample Date	21-May	21-May	21-May		
PM Size(µm)	2.5	2.5	2.5		
Total Air Volume (m3)	24.917	24	24		
Units	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	55	86	105		
Aluminum	0.0361	0.0627	0.0505	0.2	0.335279016
Arsenic	0.00115	<0.000208	<0.000208	0.005	<
Barium	0.000911	0.000876	0.000693	0.005	<
Beryllium	0.000255	<0.000208	<0.000208	0.005	<
Boron	0.0286	0.0266	0.0272	0.2	0.432570602
Cadmium	0.000278	<0.000208	<0.000208	0.005	<
Chromium	0.00334	0.00177	0.00218	0.02	0.054707016
Cobalt	0.000425	<0.0000833	0.00214	0.002	0.005224729
Copper	0.00350	0.0159	0.00528	0.01	0.030773133
Lead	0.000700	<0.000208	<0.000208	0.005	<
Manganese	0.00287	0.00230	0.00345	0.002	0.091405945
Molybdenum	0.00309	<0.0000833	0.000191	0.002	0.049664789
Nickel	0.00123	<0.000833	<0.000833	0.02	<
Silver	0.000455	<0.0000833	<0.0000833	0.002	0.002442672
Strontium	0.000953	0.000391	0.000393	0.005	0.005686672
Titanium	<0.000803	0.00429	<0.000833	0.02	<
Uranium	0.000692	<0.0000833	<0.0000833	0.002	0.002180594
Vanadium (corr)	0.00128	<0.000833	<0.000833	0.02	<
Zinc	0.00842	0.00549	0.00681	0.02	0.134136422
Iron	0.116	0.110	0.161	0.2	1.144903078
Phosphorus	<0.201	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	21-May	21-May	21-May	21-May	21-May	21-May	21-May
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24.591	24.1	24.1	24.049	24.004	24.007	24.007
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	208	319	251	947	179	284	123
Aluminum	0.154	0.284	0.213	0.951	0.155	0.269	0.107
Arsenic	0.000437	0.000253	<0.000207	0.000495	<0.000208	0.000242	<0.000208
Barium	0.00191	0.00614	0.00463	0.0115	0.00135	0.00391	0.000875
Beryllium	<0.000203	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0265	0.0271	0.0278	0.0293	0.0281	0.0257	0.0254
Cadmium	<0.000203	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00280	0.00242	0.00249	0.00374	0.00228	0.00209	0.00193
Cobalt	<0.0000813	<0.0000830	<0.0000830	0.00103	<0.0000833	<0.0000833	0.000126
Copper	0.00205	0.0342	0.00394	0.00245	0.00291	0.00103	0.000835
Lead	<0.000203	0.000277	0.000285	0.000750	<0.000208	<0.000208	<0.000208
Manganese	0.00750	0.0152	0.0180	0.0406	0.00539	0.0159	0.00556
Molybdenum	0.000575	<0.0000830	<0.0000830	0.000273	0.000393	<0.0000833	<0.0000833
Nickel	<0.000813	0.000902	0.000980	0.00213	<0.000833	<0.000833	<0.000833
Silver	0.000115	<0.0000830	<0.0000830	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00153	0.00196	0.00146	0.00747	0.00100	0.00172	0.000703
Titanium	0.00527	0.0138	0.00804	0.0317	0.00520	0.0113	0.0484
Uranium	0.000164	<0.0000830	<0.0000830	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00122	0.00127	0.00106	0.00385	0.00100	0.00134	<0.000833
Zinc	0.00993	0.0123	0.0151	0.0109	0.00531	0.00617	0.00637
Iron	0.412	0.755	0.676	2.23	0.243	0.798	0.272
Phosphorus	<0.203	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	27-May	27-May	27-May	27-May		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	21.919	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	213	212	211	134		
Aluminum	0.133	0.159	0.126	0.0757	0.2	0.335279016
Arsenic	0.00181	0.000675	0.000253	<0.000208	0.005	<
Barium	0.00332	0.00408	0.00399	0.00133	0.005	<
Beryllium	0.00114	<0.000207	<0.000208	<0.000208	0.005	<
Boron	<0.00912	<0.00830	<0.00833	<0.00833	0.2	0.432570602
Cadmium	0.000444	0.000538	<0.000208	<0.000208	0.005	<
Chromium	0.00378	0.00225	0.00213	0.00193	0.02	0.054707016
Cobalt	0.00158	0.000852	0.00102	0.00104	0.002	0.005224729
Copper	0.0761	0.00898	0.0143	0.00115	0.01	0.030773133
Lead	0.00212	0.00150	0.00151	0.000540	0.005	<
Manganese	0.00911	0.00737	0.00796	0.00279	0.002	0.091405945
Molybdenum	0.00236	<0.0000830	0.000544	0.000393	0.002	0.049664789
Nickel	0.00196	<0.000830	<0.000833	<0.000833	0.02	<
Silver	0.000637	<0.0000830	<0.0000833	<0.0000833	0.002	0.002442672
Strontium	0.00247	0.00104	0.00114	0.000405	0.005	0.005686672
Titanium	0.00680	0.00465	0.00403	0.00171	0.02	<
Uranium	0.00133	<0.0000830	<0.0000833	0.000131	0.002	0.002180594
Vanadium (corr)	0.00273	<0.000830	<0.000833	<0.000833	0.02	<
Zinc	0.0148	0.00972	0.0159	0.00537	0.02	0.134136422
Iron	0.353	0.477	0.450	0.115	0.2	1.144903078
Phosphorus	<0.228	<0.207	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	27-May	27-May	27-May	27-May	27-May	27-May	27-May	27-May
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24.208	24	24	24	24	24	24.008	24.007
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	843	669	795	309	1356	665	1300	878
Aluminum	0.714	0.585	0.654	0.256	0.580	0.617	1.02	0.899
Arsenic	0.000449	0.000954	0.000571	0.000391	<0.000208	0.000276	0.000756	0.00156
Barium	0.0127	0.0172	0.0170	0.00494	0.00617	0.00830	0.0131	0.00991
Beryllium	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	0.000443
Boron	<0.00826	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000207	0.000644	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	0.000259
Chromium	0.00303	0.00314	0.00316	0.00235	0.00109	0.00266	0.00333	0.00424
Cobalt	0.000805	0.00377	0.000928	0.000509	0.00982	0.00219	0.00102	0.00184
Copper	0.0384	0.0113	0.0211	0.00225	0.00143	0.00493	0.00333	0.00316
Lead	0.00120	0.00127	0.00573	0.000889	0.000445	0.00111	0.00148	0.00207
Manganese	0.0298	0.0360	0.0372	0.0133	0.0171	0.0221	0.0428	0.0384
Molybdenum	0.000341	<0.0000833	0.000186	0.000420	0.000985	0.000321	0.000410	0.00200
Nickel	0.00228	0.00140	0.00141	0.00107	0.00104	0.00182	0.00255	0.00285
Silver	<0.0000826	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.000401
Strontium	0.00570	0.00554	0.00605	0.00183	0.00348	0.00460	0.0132	0.00561
Titanium	0.0225	0.0216	0.0232	0.0105	0.0328	0.0215	0.0395	0.0340
Uranium	<0.0000826	<0.0000833	<0.0000833	0.000242	0.000104	<0.0000833	0.000251	0.000601
Vanadium (corr)	0.00560	0.00231	0.00232	0.00121	0.00193	0.00447	0.00452	0.00537
Zinc	0.0193	0.0318	0.0285	0.00790	0.00976	0.0145	0.0109	0.0204
Iron	1.60	2.10	2.12	0.780	0.966	1.27	2.10	1.94
Phosphorus	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	2-Jun	2-Jun	2-Jun	2-Jun			2-Jun
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.555	24.1	24	24			24.1
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	956	955	1100	109			-4
Aluminum	0.112	0.184	0.547	0.0633	0.2	0.335279016	0.0173
Arsenic	0.000541	0.00707	0.000817	<0.000208	0.005	<	<0.000207
Barium	0.002233	0.00461	0.0169	0.00146	0.005	<	0.000694
Beryllium	<0.000204	<0.000207	<0.000208	<0.000208	0.005	<	<0.000207
Boron	<0.00814	<0.00830	<0.00833	<0.00833	0.2	0.432570602	<0.00830
Cadmium	0.000279	<0.000207	<0.000208	<0.000208	0.005	<	<0.000207
Chromium	0.00244	0.00257	0.00326	0.00298	0.02	0.054707016	0.00288
Cobalt	0.000625	0.00117	0.00123	0.000194	0.002	0.005224729	0.000389
Copper	0.0853	0.0172	0.0223	0.0201	0.01	0.030773133	0.00116
Lead	0.00131	0.00207	0.00224	0.000836	0.005	<	0.000351
Manganese	0.0107	0.00829	0.0319	0.00442	0.002	0.091405945	0.00260
Molybdenum	0.000422	0.000168	0.000782	0.000505	0.002	0.049664789	0.00111
Nickel	<0.000814	<0.000830	0.00141	<0.000833	0.02	<	<0.000830
Silver	0.000247	<0.0000830	<0.0000833	<0.0000833	0.002	0.002442672	<0.0000830
Strontium	0.00154	0.00123	0.00487	0.000405	0.005	0.005686672	<0.000207
Titanium	0.00505	0.00516	0.0193	0.00499	0.02	<	<0.000830
Uranium	0.000212	<0.0000830	<0.0000833	<0.0000833	0.002	0.002180594	<0.0000830
Vanadium (corr)	0.000853	0.000907	0.00222	<0.000833	0.02	<	<0.000830
Zinc	0.0308	0.0324	0.0443	0.0161	0.02	0.134136422	0.00795
Iron	0.312	0.453	1.87	0.243	0.2	1.144903078	0.115
Phosphorus	<0.204	<0.207	<0.208	<0.208	5	<	<0.207

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	
Sample Date	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun	2-Jun
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	23.864	24	24.1	24.005	24.049	24.008	24.013	24.1
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1719	1577	652	257	5645	1310	1854	15
Aluminum	0.809	0.747	0.147	0.225	3.36	0.549	0.948	0.0327
Arsenic	0.000495	0.00200	0.000635	0.000336	0.00185	0.000387	0.000690	<0.000207
Barium	0.0147	0.0194	0.00471	0.00650	0.0410	0.00896	0.0159	0.000379
Beryllium	<0.000210	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000207
Boron	<0.00838	<0.00833	<0.00830	<0.00833	0.0199	<0.00833	<0.00833	<0.00830
Cadmium	0.000217	<0.000208	<0.000207	<0.000208	0.000484	<0.000208	0.000320	<0.000207
Chromium	0.00341	0.00348	0.00236	0.00315	0.00772	0.00388	0.00487	0.00250
Cobalt	0.00108	0.00110	0.000554	0.00704	0.00392	0.000833	0.00156	0.00133
Copper	0.0624	0.0327	0.0148	0.0713	0.00769	0.00363	0.00311	0.00103
Lead	0.00153	0.00194	0.00134	0.00149	0.00610	0.00148	0.00170	0.000232
Manganese	0.0594	0.0353	0.00756	0.0160	0.152	0.0357	0.0590	0.00494
Molybdenum	0.000105	0.000648	0.00127	0.000263	0.00185	0.000518	0.000363	0.00199
Nickel	0.00192	0.00170	0.00122	0.00139	0.00888	0.00143	0.00232	<0.000830
Silver	<0.0000838	<0.0000833	<0.0000830	0.000130	<0.0000832	<0.0000833	<0.0000833	<0.0000830
Strontium	0.00689	0.00688	0.00103	0.00138	0.0353	0.00514	0.00955	0.000241
Titanium	0.0280	0.0266	0.00388	0.00804	0.0926	0.0192	0.0345	<0.000830
Uranium	<0.0000838	<0.0000833	<0.0000830	<0.0000833	0.000201	<0.0000833	<0.0000833	<0.0000830
Vanadium (corr)	0.00351	0.00270	0.000838	0.00137	0.0160	0.00271	0.00424	<0.000830
Zinc	0.0407	0.0543	0.0265	0.0121	0.108	0.0379	0.0478	0.0121
Iron	2.80	2.03	0.431	0.745	8.04	1.69	2.76	0.0252
Phosphorus	<0.210	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208	<0.207



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	8-Jun	8-Jun	8-Jun			8-Jun
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24			24.1
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	301	280	98			-4
Aluminum	0.178	0.237	0.0542	0.2	0.335279016	0.0216
Arsenic	0.000485	<0.000208	<0.000208	0.005	<	<0.000207
Barium	0.00377	0.00601	0.00241	0.005	<	0.000352
Beryllium	<0.000208	<0.000208	<0.000208	0.005	<	<0.000207
Boron	<0.00833	<0.00833	<0.00833	0.2	0.432570602	<0.00830
Cadmium	<0.000208	<0.000208	<0.000208	0.005	<	<0.000207
Chromium	0.00270	0.00282	0.00230	0.02	0.054707016	0.00235
Cobalt	0.000210	0.000490	0.000234	0.002	0.005224729	0.000476
Copper	0.0138	0.00905	0.0381	0.01	0.030773133	0.00139
Lead	0.000594	0.000839	0.00131	0.005	<	<0.000207
Manganese	0.00892	0.0110	0.00534	0.002	0.091405945	0.00277
Molybdenum	0.000882	0.000114	0.000412	0.002	0.049664789	0.000385
Nickel	<0.000833	0.000953	<0.000833	0.02	<	<0.000830
Silver	<0.0000833	<0.0000833	<0.0000833	0.002	0.002442672	<0.0000830
Strontium	0.00127	0.00146	0.000387	0.005	0.005686672	0.000209
Titanium	0.00905	0.00541	0.000877	0.02	<	<0.000830
Uranium	<0.0000833	<0.0000833	<0.0000833	0.002	0.002180594	<0.0000830
Vanadium (corr)	0.00116	0.00132	<0.000833	0.02	<	<0.000830
Zinc	0.0252	0.0137	0.00695	0.02	0.134136422	0.00735
Iron	0.389	0.567	0.273	0.2	1.144903078	0.0700
Phosphorus	<0.208	<0.208	<0.208	5	<	<0.207

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun	8-Jun
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.052	24	24.009	24.007	24.1
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	985	911	754	261	98	897	1345	2	17
Aluminum	0.452	0.764	0.645	0.191	0.119	0.448	0.537	0.0382	0.0260
Arsenic	0.000758	0.000604	0.000375	0.000350	<0.000208	0.000298	0.000459	0.000235	<0.000207
Barium	0.00912	0.0149	0.0119	0.00845	0.00167	0.00713	0.00997	0.000585	0.000503
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000207
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833	<0.00830
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000207
Chromium	0.00283	0.00322	0.00345	0.00339	0.00241	0.00299	0.00306	0.00255	0.00230
Cobalt	0.000917	0.000639	0.000576	0.000319	0.000208	0.000933	0.000892	0.000771	0.000375
Copper	0.0373	0.0218	0.0315	0.125	0.00396	0.00368	0.00376	0.00198	0.00451
Lead	0.000745	0.00885	0.00114	0.000621	0.00314	0.000737	0.000970	0.000358	0.000780
Manganese	0.0352	0.0295	0.0319	0.0156	0.00711	0.0295	0.0339	0.00354	0.00294
Molybdenum	0.00148	0.000260	0.000226	0.000380	0.000306	0.000350	0.000608	0.000689	0.00196
Nickel	0.00136	0.00177	0.00195	0.00152	<0.000832	0.00135	0.00175	<0.000833	<0.000830
Silver	<0.0000833	<0.0000833	<0.0000833	0.000108	<0.0000832	<0.0000833	<0.0000833	0.000219	0.000124
Strontium	0.00377	0.00549	0.00452	0.00117	0.000768	0.00358	0.00423	0.000454	0.000238
Titanium	0.0204	0.0208	0.0741	0.00898	0.00222	0.0182	0.0216	<0.000833	<0.000830
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	0.000275	<0.0000830
Vanadium (corr)	0.00222	0.00292	0.00255	0.00169	0.000879	0.00203	0.00336	<0.000833	<0.000830
Zinc	0.0130	0.0250	0.0513	0.00775	0.0157	0.0155	0.0168	0.0178	0.0205
Iron	1.74	1.61	1.49	1.28	0.277	1.53	1.72	0.107	0.0940
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.207



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Station #	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	14-Jun	14-Jun	14-Jun		
PM Size(µm)	2.5	2.5	2.5		
Total Air Volume (m3)	24	24	24		
Units	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	129	119	49		
Aluminum	0.0961	0.0677	0.0205	0.2	0.335279016
Arsenic	<0.000208	0.00164	<0.000208	0.005	<
Barium	0.00135	0.00212	0.000471	0.005	<
Beryllium	<0.000208	<0.000208	<0.000208	0.005	<
Boron	<0.00833	<0.00833	<0.00833	0.2	0.432570602
Cadmium	<0.000208	<0.000208	<0.000208	0.005	<
Chromium	0.00224	0.00291	0.00200	0.02	0.054707016
Cobalt	0.00287	0.00316	0.00138	0.002	0.005224729
Copper	0.00223	0.0164	0.0268	0.01	0.030773133
Lead	0.000232	0.0216	0.00101	0.005	<
Manganese	0.00556	0.0101	0.00162	0.002	0.091405945
Molybdenum	<0.0000833	0.000601	<0.0000833	0.002	0.049664789
Nickel	<0.000833	0.00233	<0.000833	0.02	<
Silver	<0.0000833	<0.0000833	<0.0000833	0.002	0.002442672
Strontium	0.000598	0.00266	0.000769	0.005	0.005686672
Titanium	0.00231	0.00196	0.00150	0.02	<
Uranium	<0.0000833	<0.0000833	0.000134	0.002	0.002180594
Vanadium (corr)	<0.000833	<0.000833	<0.000833	0.02	<
Zinc	0.00981	0.0375	0.00469	0.02	0.134136422
Iron	0.285	0.973	0.0460	0.2	1.144903078
Phosphorus	<0.208	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun	14-Jun
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.052	24	24.009	24.009
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	242	416	333	162	434	246	317	833
Aluminum	0.183	0.380	0.188	0.0393	0.373	0.160	0.249	0.673
Arsenic	<0.000208	<0.000208	0.00176	<0.000208	0.000907	<0.000208	<0.000208	0.000372
Barium	0.00208	0.00646	0.00503	0.00133	0.00339	0.00245	0.00329	0.0116
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00239	0.00298	0.00309	0.00180	0.00446	0.00269	0.00277	0.00366
Cobalt	0.000826	0.0111	0.00177	0.000985	0.000630	0.00167	0.00474	0.00109
Copper	0.0280	0.00639	0.0330	0.0887	0.00387	0.00245	0.00131	0.00283
Lead	0.000334	0.000630	0.0261	<0.000208	0.000604	0.000233	0.000336	0.000696
Manganese	0.00895	0.0143	0.0149	0.00469	0.0113	0.0107	0.0128	0.0559
Molybdenum	0.000127	<0.0000833	0.000555	<0.0000833	0.000228	0.000504	0.000748	0.00230
Nickel	0.00128	0.00102	0.00298	<0.000833	0.00195	<0.000833	<0.000833	0.00193
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000963	0.00596	0.00315	0.00105	0.00225	0.00243	0.00162	0.00541
Titanium	0.00346	0.00894	0.00682	0.000936	0.00428	0.00306	0.00633	0.0392
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.000891	0.00129	<0.000833	<0.000833	0.00130	0.000882	0.00108	0.00306
Zinc	0.0111	0.0112	0.0437	0.00809	0.0168	0.0122	0.0212	0.0264
Iron	0.263	0.796	1.32	0.198	0.535	0.273	0.602	3.04
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	MDL	Lab Blank
Station Name	Fort McKay		
Sample Date	16-Jun		
PM Size(µm)	2.5		
Total Air Volume (m3)	24.387		
Units	µg/M3		
Particulate Matter (µg/m3)	99		
Aluminum	0.0513	0.2	0.335279016
Arsenic	0.000451	0.005	<
Barium	0.000903	0.005	<
Beryllium	<0.000205	0.005	<
Boron	<0.00820	0.2	0.432570602
Cadmium	<0.000205	0.005	<
Chromium	0.00260	0.02	0.054707016
Cobalt	0.00149	0.002	0.005224729
Copper	0.00150	0.01	0.030773133
Lead	0.000482	0.005	<
Manganese	0.00635	0.002	0.091405945
Molybdenum	0.00152	0.002	0.049664789
Nickel	0.000833	0.02	<
Silver	<0.0000820	0.002	0.002442672
Strontium	0.000495	0.005	0.005686672
Titanium	0.00114	0.02	<
Uranium	<0.0000820	0.002	0.002180594
Vanadium (corr)	0.00137	0.02	<
Zinc	0.00807	0.02	0.134136422
Iron	0.127	0.2	1.144903078
Phosphorus	<0.205	5	<

Station #	AMS 1	MDL	Lab Blank
Station Name	Fort McKay		
Sample Date	16-Jun		
PM Size(µm)	2.5		
Total Air Volume (m3)	24.387		
Units	µg/M3		
Particulate Matter (µg/m3)	99		
Aluminum	0.0513	0.2	0.335279016
Arsenic	0.000451	0.005	<
Barium	0.000903	0.005	<
Beryllium	<0.000205	0.005	<
Boron	<0.00820	0.2	0.432570602
Cadmium	<0.000205	0.005	<
Chromium	0.00260	0.02	0.054707016
Cobalt	0.00149	0.002	0.005224729
Copper	0.00150	0.01	0.030773133
Lead	0.000482	0.005	<
Manganese	0.00635	0.002	0.091405945
Molybdenum	0.00152	0.002	0.049664789
Nickel	0.000833	0.02	<
Silver	<0.0000820	0.002	0.002442672
Strontium	0.000495	0.005	0.005686672
Titanium	0.00114	0.02	<
Uranium	<0.0000820	0.002	0.002180594
Vanadium (corr)	0.00137	0.02	<
Zinc	0.00807	0.02	0.134136422
Iron	0.127	0.2	1.144903078
Phosphorus	<0.205	5	<



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2012
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	20-Jun	20-Jun	20-Jun	20-Jun		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.306	24	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	63	179	207	85		
Aluminum	0.0475	0.119	0.158	0.0331	0.2	0.335279016
Arsenic	0.000453	<0.000208	0.00154	<0.000208	0.005	<
Barium	0.00131	0.00191	0.00390	0.000485	0.005	<
Beryllium	<0.000206	<0.000208	<0.000208	<0.000208	0.005	<
Boron	<0.00823	<0.00833	<0.00833	<0.00833	0.2	0.432570602
Cadmium	<0.000206	<0.000208	<0.000208	<0.000208	0.005	<
Chromium	0.00177	0.00250	0.00262	0.00214	0.02	0.054707016
Cobalt	0.000356	0.000594	0.000313	0.000509	0.002	0.005224729
Copper	0.0545	0.00784	0.00763	0.0501	0.01	0.030773133
Lead	0.000466	0.00315	0.00341	0.000270	0.005	<
Manganese	0.00378	0.00593	0.00958	0.00271	0.002	0.091405945
Molybdenum	0.000774	0.000797	0.000394	0.000277	0.002	0.049664789
Nickel	0.00105	<0.000833	0.000850	<0.000833	0.02	<
Silver	<0.0000823	<0.0000833	<0.0000833	<0.0000833	0.002	0.002442672
Strontium	0.000332	0.00280	0.000958	0.000275	0.005	0.005686672
Titanium	0.00161	0.00380	0.00498	<0.000833	0.02	<
Uranium	<0.0000823	<0.0000833	<0.0000833	<0.0000833	0.002	0.002180594
Vanadium (corr)	<0.000823	0.00109	0.00129	<0.000833	0.02	<
Zinc	0.0156	0.0112	0.0157	0.0107	0.02	0.134136422
Iron	0.123	0.323	0.481	0.0724	0.2	1.144903078
Phosphorus	<0.206	<0.208	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun	20-Jun
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.051	24	24	24.006
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	255	488	504	250	852	142	211	463
Aluminum	0.225	0.461	0.422	0.106	0.960	0.128	0.194	0.416
Arsenic	0.000349	0.000305	0.000549	<0.000208	0.000475	<0.000208	<0.000208	0.000269
Barium	0.00290	0.00794	0.00971	0.00145	0.0112	0.00177	0.00300	0.00576
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00228	0.00321	0.00276	0.00179	0.00361	0.00248	0.00237	0.00251
Cobalt	0.000497	0.000587	0.000577	0.000442	0.00108	0.000317	0.000282	0.00128
Copper	0.137	0.0149	0.0330	0.139	0.00578	0.00345	0.00339	0.00225
Lead	0.000541	0.000759	0.000900	0.000412	0.000919	0.000300	0.00122	0.000546
Manganese	0.0125	0.0249	0.0200	0.00617	0.0267	0.0136	0.0136	0.0343
Molybdenum	0.000436	0.000213	0.000264	0.000167	0.000255	0.000775	0.000174	0.00102
Nickel	0.000994	0.00154	0.00132	<0.000833	0.00220	0.000874	0.00105	0.00158
Silver	0.000223	<0.0000833	<0.0000833	0.000126	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00256	0.00333	0.00492	0.000860	0.00644	0.000952	0.00117	0.00293
Titanium	0.00675	0.0173	0.0133	0.00278	0.0232	0.00334	0.00437	0.0150
Uranium	0.000109	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.000956	0.00227	0.00226	<0.000833	0.00334	<0.000833	0.000912	0.00169
Zinc	0.0129	0.0197	0.0220	0.00880	0.0170	0.0132	0.0121	0.0140
Iron	0.620	1.44	1.14	0.297	1.55	0.466	0.876	1.95
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Metals

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	26-Jun	26-Jun	26-Jun	26-Jun			26-Jun
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.493	24	24	24.007			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	90	159	95	185			20
Aluminum	0.0330	0.109	0.0647	0.0620	0.2	0.22278025	0.0203
Arsenic	0.000926	<0.000208	<0.000208	<0.000208	0.005	0.005680508	<0.000208
Barium	0.000778	0.00242	0.00238	0.00213	0.005	0.005680508	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00232	0.00253	0.00193	0.00237	0.02	0.053631328	0.00262
Cobalt	0.000489	0.000473	0.000105	0.000654	0.002	0.00903668	0.000292
Copper	0.0232	0.00563	0.00652	0.0409	0.01	0.016336102	0.00217
Lead	0.000290	0.000270	0.000782	0.000378	0.005	0.007341461	<0.000208
Manganese	0.00187	0.00481	0.00345	0.00462	0.002	0.040682063	0.00157
Molybdenum	0.000338	0.000979	0.00118	0.000396	0.002	0.044484305	0.00143
Nickel	<0.000833	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	0.002068992	<0.0000833
Strontium	0.000405	0.000691	0.000473	0.000682	0.005	<	<0.000208
Titanium	<0.000833	0.00308	0.00193	0.00131	0.02	0.020232844	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000833	0.000834	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.00374	0.00404	0.00536	0.00947	0.02	0.098658516	0.00379
Iron	0.0754	0.290	0.123	0.170	0.2	0.597299648	0.136
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun	26-Jun
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.051	24	24	24.014	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	227	496	350	281	457	204	389	800	26
Aluminum	0.148	0.374	0.273	0.261	0.395	0.141	0.391	0.668	0.0125
Arsenic	<0.000208	0.000250	0.000279	0.000219	0.000222	<0.000208	<0.000208	0.000428	<0.000208
Barium	0.00345	0.0101	0.00921	0.00539	0.00543	0.00219	0.00476	0.0126	<0.000208
Beryllium	0.000462	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00851	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000213	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00252	0.00267	0.00233	0.00277	0.00296	0.00246	0.00272	0.00345	0.00200
Cobalt	0.000797	0.000304	0.000385	0.000425	0.000437	0.000312	0.000530	0.000735	0.000314
Copper	0.101	0.00217	0.00716	0.122	0.00277	0.00207	0.00124	0.00200	0.000991
Lead	0.000982	0.000398	0.00108	0.000790	0.000631	0.000295	0.000440	0.000805	<0.000208
Manganese	0.00772	0.0183	0.0128	0.0153	0.0178	0.00467	0.0160	0.0465	0.00161
Molybdenum	0.000720	0.00111	0.00176	0.000457	0.000214	<0.0000833	0.000229	0.000150	0.000300
Nickel	0.00112	0.00147	0.000936	0.000895	0.00144	<0.000833	0.000882	0.00173	<0.000833
Silver	0.000399	<0.0000833	<0.0000833	0.000110	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00272	0.00399	0.00199	0.00150	0.00336	0.000995	0.00311	0.00514	<0.000208
Titanium	0.00538	0.0132	0.00908	0.0121	0.0215	0.00316	0.00962	0.0236	<0.000833
Uranium	0.000538	<0.0000833	0.0000847	<0.0000833	<0.0000832	<0.0000833	<0.0000833	0.0000905	<0.0000833
Vanadium (corr)	0.00141	0.00162	0.00120	0.00134	0.00212	0.000959	0.00146	0.00303	<0.000833
Zinc	0.00683	0.00944	0.0124	0.0114	0.0120	0.00738	0.0107	0.00835	0.00334
Iron	0.443	0.969	0.719	0.750	1.03	0.235	0.708	2.55	0.0552
Phosphorus	<0.213	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	2-Jul	2-Jul	2-Jul	2-Jul			2-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	72.5	115	320.1666667	207.5			10
Aluminum	0.0283	0.0320	0.218	0.160	0.2	0.22278025	0.0133
Arsenic	0.000336	<0.000208	<0.000208	<0.000208	0.005	0.005680508	<0.000208
Barium	0.00108	0.000665	0.00831	0.00262	0.005	0.005680508	0.00208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00259	0.00346	0.00396	0.00354	0.02	0.053631328	0.00332
Cobalt	0.00100	0.000237	0.000648	0.00221	0.002	0.00903668	0.00204
Copper	0.0292	0.00416	0.00962	0.0217	0.01	0.016336102	0.000832
Lead	<0.000208	<0.000208	0.000824	0.000284	0.005	0.007341461	<0.000208
Manganese	0.00369	0.00396	0.0134	0.0109	0.002	0.040682063	0.00181
Molybdenum	0.00165	0.000244	0.000661	0.000335	0.002	0.044484305	0.00126
Nickel	<0.000833	<0.000833	0.000897	<0.000833	0.02	<	0.0441
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	0.002068992	<0.0000833
Strontium	0.000210	<0.000208	0.00189	0.000678	0.005	<	<0.000208
Titanium	<0.000833	<0.000833	0.00679	0.00238	0.02	0.020232844	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000833	<0.000833	0.00150	0.00108	0.02	<	<0.000833
Zinc	0.00369	0.00387	0.0190	0.0644	0.02	0.098658516	0.00808
Iron	0.0666	0.0751	0.662	0.379	0.2	0.597299648	0.119
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul	2-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.049	24.005	24	24.007	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	16.5	198	-27.16666667	75.83333333	473	253.3333333	178	331	-11
Aluminum	<0.00833	0.106	0.0245	0.0279	0.320	0.0626	0.0806	0.226	0.00924
Arsenic	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	<0.000208	0.00241	0.00244	0.000559	0.00541	0.00159	0.00121	0.00325	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00288	0.00333	0.00414	0.0154	0.00372	0.00336	0.00376	0.00350	0.00311
Cobalt	0.0147	0.000247	0.0000857	0.0102	0.000783	0.000815	0.000969	0.000454	0.00287
Copper	0.00103	0.00428	0.00475	0.00345	0.00208	0.00253	0.00195	0.00142	0.000641
Lead	<0.000208	0.000270	0.000251	<0.000208	0.000623	<0.000208	0.000213	0.000248	<0.000208
Manganese	0.00338	0.00937	0.00399	0.00487	0.0200	0.00689	0.00650	0.0151	0.00891
Molybdenum	0.00108	0.000455	0.000837	0.000481	0.00147	0.000305	0.000788	0.000821	0.00268
Nickel	<0.000833	<0.000833	0.00188	<0.000833	0.00106	<0.000833	0.00114	0.00184	<0.000833
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000454	0.000761	<0.000208	<0.000208	0.00270	0.000313	0.000798	0.00193	<0.000208
Titanium	<0.000833	0.00352	<0.000833	<0.000833	0.0123	0.000883	<0.000833	0.00699	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	0.000948	<0.000833	<0.000833	0.00187	0.000869	0.00110	0.00141	<0.000833
Zinc	0.00381	0.0203	0.00797	0.00507	0.0140	0.00732	0.00556	0.00539	0.00331
Iron	0.0226	0.319	0.0720	0.191	1.03	0.193	0.219	0.804	0.0159
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	8-Jul	8-Jul	8-Jul	8-Jul			8-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.85	24	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	375	244	18	167.8333333			-11
Aluminum	0.0937	0.0583	0.0246	0.0403	0.2	0.22278025	<0.00833
Arsenic	0.000569	0.00442	<0.000207	<0.000208	0.005	0.005680508	<0.000208
Barium	0.00219	0.00224	0.000466	0.000791	0.005	0.005680508	0.000250
Beryllium	<0.000210	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Boron	<0.00839	<0.00833	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium	<0.000210	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00210	0.00192	0.00188	0.00214	0.02	0.053631328	0.00253
Cobalt	0.000919	0.000676	0.000410	0.00122	0.002	0.00903668	0.000898
Copper	0.0573	0.0218	0.00261	0.0137	0.01	0.016336102	0.00104
Lead	0.000575	0.000660	<0.000207	<0.000208	0.005	0.007341461	<0.000208
Manganese	0.00770	0.00365	0.00225	0.00350	0.002	0.040682063	0.00119
Molybdenum	0.000814	0.000109	0.000930	<0.0000833	0.002	0.044484305	0.000724
Nickel	0.00119	<0.000833	<0.000830	<0.000833	0.02	<	<0.000833
Silver	0.000116	<0.0000833	<0.0000830	<0.0000833	0.002	0.002068992	0.0000869
Strontium	0.00139	0.000801	<0.000207	0.000250	0.005	<	0.000272
Titanium	0.00307	0.00180	<0.000830	<0.000833	0.02	0.020232844	<0.000833
Uranium	0.000104	<0.0000833	<0.0000830	<0.0000833	0.002	<	0.000175
Vanadium (corr)	0.00193	<0.000833	<0.000830	<0.000833	0.02	<	<0.000833
Zinc	0.0145	0.0107	0.00479	0.00494	0.02	0.098658516	0.00182
Iron	0.295	0.154	0.0441	0.0923	0.2	0.597299648	0.0156
Phosphorus	<0.210	<0.208	<0.207	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul	8-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	0	24	24	24.006	48.103	24.006	24.008	24.014	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	7	616	609.8333333	462.1666667	3649	1086	1318	1164	4
Aluminum	not quantifiable	0.365	0.343	0.287	1.08	0.737	1.01	0.649	<0.00833
Arsenic	not quantifiable	0.00467	0.000249	<0.000208	0.000745	0.000321	0.000500	0.000379	<0.000208
Barium	not quantifiable	0.0105	0.00924	0.00494	0.0145	0.00968	0.0123	0.00966	<0.000208
Beryllium	not quantifiable	<0.000208	<0.000208	<0.000208	<0.000104	<0.000208	<0.000208	<0.000208	<0.000208
Boron	not quantifiable	<0.00833	<0.00833	<0.00833	0.00884	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	not quantifiable	<0.000208	<0.000208	<0.000208	<0.000104	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	not quantifiable	0.00277	0.00250	0.00264	0.00292	0.00386	0.00395	0.00328	0.00218
Cobalt	not quantifiable	0.00133	0.00107	0.000945	0.00137	0.000687	0.00110	0.000641	0.000206
Copper	not quantifiable	0.0222	0.00613	0.0588	0.00300	0.00447	0.00304	0.00203	0.000651
Lead	not quantifiable	0.00112	0.00450	0.000870	0.00133	0.00100	0.00450	0.000781	<0.000208
Manganese	not quantifiable	0.0204	0.0187	0.0169	0.0543	0.0328	0.0488	0.0452	0.00267
Molybdenum	not quantifiable	0.000288	0.000673	0.0000925	0.000531	0.000488	0.000265	0.000962	0.00144
Nickel	not quantifiable	0.00133	0.00118	0.00106	0.00269	0.00259	0.00286	0.00206	<0.000833
Silver	not quantifiable	<0.0000833	<0.0000833	<0.0000833	0.0000439	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	not quantifiable	0.00227	0.00262	0.00142	0.00856	0.00702	0.00803	0.00757	<0.000208
Titanium	not quantifiable	0.0130	0.0158	0.00929	0.0297	0.0218	0.0295	0.0260	<0.000833
Uranium	not quantifiable	<0.0000833	<0.0000833	<0.0000833	0.0000858	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	not quantifiable	0.00161	0.00141	0.00130	0.00433	0.00482	0.00513	0.00604	<0.000833
Zinc	not quantifiable	0.0264	0.0169	0.00882	0.0248	0.0147	0.0144	0.0157	0.00426
Iron	not quantifiable	1.05	1.13	0.687	3.01	1.76	2.47	2.50	0.0222
Phosphorus	not quantifiable	<0.208	<0.208	<0.208	0.124	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	14-Jul	14-Jul	14-Jul	14-Jul			14-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	1472	972	17	1004			7
Aluminum	0.187	0.0857	0.0250	0.0646	0.2	0.22278025	0.0124
Arsenic	0.000970	0.00173	<0.000207	<0.000208	0.005	0.005680508	<0.000208
Barium	0.00548	0.00253	0.000600	0.00153	0.005	0.005680508	<0.000208
Beryllium	<0.000208	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Boron	0.0117	0.0120	<0.00830	0.00913	0.2	<	<0.00833
Cadmium	0.000215	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00259	0.00258	0.00239	0.00240	0.02	0.053631328	0.00207
Cobalt	0.00169	0.00139	0.00126	0.000508	0.002	0.00903668	0.000214
Copper	0.0547	0.0267	0.00153	0.00916	0.01	0.016336102	0.000812
Lead	0.00105	0.000481	0.000231	0.000346	0.005	0.007341461	<0.000208
Manganese	0.0172	0.00648	0.00302	0.00470	0.002	0.040682063	0.000866
Molybdenum	0.00126	<0.000833	0.000132	<0.000833	0.002	0.044484305	0.00196
Nickel	0.00123	<0.000833	<0.000830	0.00179	0.02	<	<0.000833
Silver	0.000239	<0.000833	<0.000830	<0.000833	0.002	0.002068992	<0.000833
Strontium	0.00191	0.000624	<0.000207	0.000373	0.005	<	<0.000208
Titanium	0.00645	0.00288	<0.000830	0.00115	0.02	0.020232844	<0.000833
Uranium	0.000258	<0.000833	<0.000830	<0.000833	0.002	<	<0.000833
Vanadium (corr)	0.00293	<0.000833	<0.000830	<0.000833	0.02	<	<0.000833
Zinc	0.0182	0.0205	0.00483	0.0195	0.02	0.098658516	0.0123
Iron	1.02	0.284	0.0653	0.177	0.2	0.597299648	0.0144
Phosphorus	<0.208	<0.208	<0.207	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul	14-Jul
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.007	24	24	24.006	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	3276	1653	1778	1350	1849	2321	2312	-2
Aluminum	1.53	0.676	0.627	0.312	0.643	0.745	0.906	0.0119
Arsenic	0.00178	0.00182	0.000656	0.000272	0.000554	0.000782	0.000574	<0.000208
Barium	0.0483	0.0155	0.0157	0.00700	0.0108	0.0120	0.0136	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	0.0243	0.0107	0.0149	<0.00833	0.0168	0.0128	0.0110	<0.00833
Cadmium	0.000230	<0.000208	<0.000208	<0.000208	<0.000208	0.000339	<0.000208	<0.000208
Chromium	0.00530	0.00337	0.00409	0.00273	0.00345	0.00378	0.00448	0.00272
Cobalt	0.00260	0.000827	0.000989	0.000640	0.000832	0.00126	0.000943	0.000293
Copper	0.152	0.0314	0.00848	0.0285	0.0104	0.00511	0.00276	0.00603
Lead	0.00217	0.00101	0.00532	0.000751	0.00110	0.00113	0.00129	<0.000208
Manganese	0.141	0.0475	0.0442	0.0226	0.0350	0.0479	0.0519	0.00124
Molybdenum	0.000984	<0.000833	0.000639	0.000342	0.000881	0.000565	0.000652	0.000678
Nickel	0.00465	0.00150	0.00164	0.00254	0.00264	0.00207	0.00279	<0.000833
Silver	0.000196	<0.000833	<0.000833	<0.000833	0.000103	0.000164	<0.000833	<0.000833
Strontium	0.0160	0.00574	0.00639	0.00185	0.00575	0.00768	0.00941	<0.000208
Titanium	0.0504	0.0225	0.0243	0.0128	0.0245	0.0227	0.0298	0.00246
Uranium	0.000154	<0.000833	<0.000833	<0.000833	<0.000833	0.000198	<0.000833	<0.000833
Vanadium (corr)	0.0102	0.00265	0.00287	0.00160	0.00618	0.00349	0.00600	<0.000833
Zinc	0.0465	0.0314	0.0363	0.0192	0.0393	0.0372	0.0266	0.00627
Iron	8.59	2.71	2.26	1.06	1.97	2.10	2.68	0.0223
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	20-Jul	20-Jul	20-Jul	20-Jul			20-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	118	118	-5	64			17
Aluminum	0.0360	0.0193	0.0105	0.0151	0.2	0.270451305	<0.00833
Arsenic	0.000434	0.00147	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.000985	0.00102	<0.000208	0.000304	0.005	<	<0.000208
Beryllium	0.000221	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00302	0.00291	0.00313	0.00249	0.02	0.060403359	0.00320
Cobalt	0.000131	0.000214	<0.0000833	<0.0000833	0.002	0.00370582	<0.0000833
Copper	0.0503	0.0177	0.00162	0.00942	0.01	0.121048734	0.00108
Lead	0.000501	0.000320	0.000386	0.000271	0.005	<	<0.000208
Manganese	0.00573	0.00175	0.00196	0.00105	0.002	0.022945383	<0.0000833
Molybdenum	0.00125	<0.0000833	0.000239	<0.0000833	0.002	0.028958711	0.000643
Nickel	<0.000833	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Silver	0.000132	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.000458	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Titanium	<0.000833	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Uranium	0.000159	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.00139	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.00897	0.0101	0.00752	0.0111	0.02	0.264177352	0.00597
Iron	0.178	0.0592	0.223	0.0125	0.2	<	<0.00833
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul	20-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24	24.049	24	24	24.007	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	465	321	422	144	748	366	512	546	0
Aluminum	0.278	0.155	0.344	0.0396	0.601	0.207	0.383	0.380	<0.00833
Arsenic	0.000405	0.00167	0.000300	<0.000208	0.000450	<0.000208	0.000249	0.000307	<0.000208
Barium	0.00637	0.00458	0.0101	0.000511	0.00690	0.00232	0.00498	0.00543	<0.000208
Beryllium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00830	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00333	0.00350	0.00377	0.00292	0.00366	0.00396	0.00369	0.00373	0.00313
Cobalt	0.000330	<0.0000833	0.000909	<0.0000833	0.000515	0.000145	0.00100	0.000535	<0.0000833
Copper	0.176	0.0154	0.00991	0.0242	0.00510	0.0105	0.000997	0.00283	0.00143
Lead	0.000475	0.000503	0.0145	<0.000208	0.000745	0.00163	0.000380	0.000455	<0.000208
Manganese	0.0256	0.00955	0.0180	0.00337	0.0345	0.0171	0.0216	0.0303	0.000474
Molybdenum	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000832	0.000388	<0.0000833	<0.0000833	0.00172
Nickel	0.00108	<0.000833	0.00104	<0.000833	0.00244	0.00106	0.00113	0.00115	<0.000833
Silver	0.000181	<0.0000833	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00323	0.00117	0.00283	<0.000208	0.00468	0.00194	0.00309	0.00367	<0.000208
Titanium	0.00843	0.00539	0.0128	0.00575	0.0175	0.00372	0.0121	0.0831	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00248	0.00124	0.00189	<0.000833	0.00276	0.00238	0.00247	0.00257	<0.000833
Zinc	0.0129	0.0162	0.0239	0.00980	0.0197	0.0134	0.00641	0.0149	0.00679
Iron	1.45	0.552	1.13	0.0639	1.78	0.428	1.37	1.65	0.0204
Phosphorus	<0.208	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	26-Jul	26-Jul	26-Jul	26-Jul			26-Jul
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.667	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	225	416	16	415			51
Aluminum	0.0721	0.0353	0.0169	0.0259	0.2	0.270451305	<0.00833
Arsenic	0.000356	<0.000207	<0.000208	0.000625	0.005	<	<0.000208
Barium	0.00116	0.00160	<0.000208	0.00167	0.005	<	<0.000208
Beryllium	<0.000211	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00845	<0.00830	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000211	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00200	0.00320	0.00309	0.00314	0.02	0.060403359	0.00293
Cobalt	0.000693	0.000155	0.000419	<0.0000833	0.002	0.00370582	<0.0000833
Copper	0.0393	0.00916	0.00177	0.0154	0.01	0.121048734	0.00110
Lead	<0.000211	0.000246	<0.000208	0.000230	0.005	<	<0.000208
Manganese	0.00784	0.00288	0.00219	0.00326	0.002	0.022945383	0.000500
Molybdenum	0.000688	0.000817	0.000398	0.000359	0.002	0.028958711	0.000914
Nickel	<0.000845	<0.000830	<0.000833	<0.000833	0.02	<	<0.000833
Silver	<0.0000845	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.000465	0.000264	<0.000208	<0.000208	0.005	<	<0.000208
Titanium	0.00194	<0.000830	<0.000833	<0.000833	0.02	<	<0.000833
Uranium	<0.0000845	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000845	0.00223	<0.000833	0.00102	0.02	<	<0.000833
Zinc	0.0186	0.0137	0.00709	0.0128	0.02	0.264177352	0.00658
Iron	0.373	0.197	0.0379	0.154	0.2	<	0.0127
Phosphorus	<0.211	<0.207	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul	26-Jul
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24.1	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	699	427	950	678	1073	545	747	911	-2
Aluminum	0.368	0.118	0.391	0.296	0.585	0.265	0.662	0.483	0.0289
Arsenic	0.000449	<0.000208	0.000397	0.000731	0.000326	0.000241	0.000423	0.000333	<0.000208
Barium	0.00776	0.00257	0.00988	0.00614	0.00580	0.00404	0.00772	0.00722	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208
Boron	0.00922	<0.00833	0.00907	<0.00833	0.00849	<0.00830	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208
Chromium	0.00278	0.00358	0.00337	0.00365	0.00349	0.00304	0.00391	0.00351	0.00205
Cobalt	0.000781	0.000410	0.000478	0.000344	0.000655	0.000142	0.00900	0.000977	0.0000934
Copper	0.154	0.00392	0.00998	0.0739	0.00347	0.00874	0.00342	0.00186	0.00102
Lead	0.000599	0.000314	0.000789	0.000335	0.000602	0.000300	0.000654	0.000602	0.000227
Manganese	0.118	0.00660	0.0205	0.00906	0.0402	0.0377	0.0239	0.0418	0.00178
Molybdenum	0.000201	0.000319	0.000457	0.000458	0.000251	0.000245	0.000535	0.000630	0.00192
Nickel	0.00139	0.00131	0.00160	0.000876	0.00155	0.000949	0.00178	0.00168	<0.000833
Silver	0.000117	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00368	0.000853	0.00338	0.000944	0.00690	0.00209	0.00397	0.00464	<0.000208
Titanium	0.0135	0.00371	0.0135	0.00272	0.0169	0.00760	0.0174	0.0220	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00206	0.00115	0.00359	0.00134	0.00253	0.00153	0.00382	0.00271	<0.000833
Zinc	0.0137	0.0147	0.0353	0.0278	0.0194	0.0119	0.0120	0.0146	0.00617
Iron	2.42	0.365	1.30	0.659	1.42	1.34	1.57	2.11	0.0347
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.207	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	1-Aug	1-Aug	1-Aug	1-Aug			1-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	23.737	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	99	431	16	116			1
Aluminum	0.0711	0.126	0.0212	0.0325	0.2	0.270451305	<0.00833
Arsenic	0.00110	0.000360	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.000736	0.00235	<0.000208	0.000943	0.005	<	<0.000208
Beryllium	<0.000211	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00843	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000211	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00169	0.00204	0.00179	0.00207	0.02	0.060403359	0.00174
Cobalt	0.00645	0.00142	0.00177	0.000252	0.002	0.00370582	<0.0000833
Copper	0.0313	0.0318	0.0128	0.0117	0.01	0.121048734	0.0243
Lead	<0.000211	0.000433	<0.000208	<0.000208	0.005	<	<0.000208
Manganese	0.00394	0.0145	0.00309	0.00426	0.002	0.022945383	0.00216
Molybdenum	0.000612	0.000194	0.000263	0.000789	0.002	0.028958711	0.00108
Nickel	<0.000843	<0.000833	0.000964	<0.000833	0.02	<	<0.000833
Silver	<0.0000843	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.00115	0.000659	<0.000208	0.00435	0.005	<	<0.000208
Titanium	0.00108	0.00294	<0.000833	0.00189	0.02	<	<0.000833
Uranium	<0.0000843	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000843	0.00185	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.0146	0.0118	0.0104	0.0127	0.02	0.264177352	0.00790
Iron	0.215	0.239	0.200	0.205	0.2	<	0.0138
Phosphorus	<0.211	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug	1-Aug
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.009	24	24	24	24.009	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	384	343	434	207	2077	224	443	1038	8
Aluminum	0.289	0.241	0.345	0.110	1.62	0.134	0.293	0.745	0.0167
Arsenic	0.000372	0.000262	0.000948	<0.000208	0.000741	<0.000208	<0.000208	0.000470	<0.000208
Barium	0.00586	0.00632	0.0106	0.00224	0.0180	0.00193	0.00346	0.0125	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	0.000241	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00236	0.00246	0.00263	0.00186	0.00467	0.00208	0.00215	0.00312	0.00132
Cobalt	0.00323	0.00140	0.000444	0.000963	0.00204	0.000616	0.000477	0.00101	0.000155
Copper	0.113	0.0253	0.00780	0.0287	0.00679	0.0134	0.0189	0.0195	0.0107
Lead	0.000378	0.000442	0.000471	<0.000208	0.00134	0.000243	0.00147	0.000774	<0.000208
Manganese	0.0211	0.0114	0.0137	0.0171	0.0670	0.00814	0.0154	0.0654	0.00116
Molybdenum	0.000274	0.000138	0.000169	<0.0000833	0.000743	0.000444	0.000656	0.000298	0.000185
Nickel	0.00113	0.00164	0.00105	<0.000833	0.00691	<0.000833	0.00141	0.00198	<0.000833
Silver	0.0000999	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.000106	<0.0000833	<0.0000833
Strontium	0.00261	0.00166	0.00239	0.000593	0.0163	0.000973	0.00310	0.00667	<0.000208
Titanium	0.00815	0.00784	0.0113	0.00311	0.0558	0.00247	0.00763	0.0295	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.000107	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00146	0.00119	0.00145	<0.000833	0.00751	0.000840	0.00116	0.00352	<0.000833
Zinc	0.0375	0.0195	0.0233	0.0137	0.0242	0.00966	0.00862	0.0139	0.00757
Iron	1.26	0.608	0.855	0.276	3.63	0.425	0.650	3.58	0.0224
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	7-Aug	7-Aug	7-Aug	7-Aug			7-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	266	26	85	47			78
Aluminum	0.544	0.0114	0.0489	0.0145	0.2	0.270451305	0.0253
Arsenic	0.00750	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.0135	<0.000207	<0.000208	0.000602	0.005	<	<0.000208
Beryllium	<0.00250	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.100	<0.00830	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.00250	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.0136	0.00152	0.00179	0.00140	0.02	0.060403359	0.00179
Cobalt	0.00510	0.000820	0.00254	<0.000833	0.002	0.00370582	<0.000833
Copper	0.517	0.0627	0.00168	0.0112	0.01	0.121048734	0.0191
Lead	0.00432	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Manganese	0.0589	0.00243	0.00101	0.00181	0.002	0.022945383	0.00245
Molybdenum	0.00916	<0.000830	<0.000833	<0.000833	0.002	0.028958711	0.000127
Nickel	<0.0100	<0.000830	<0.000833	<0.000833	0.02	<	<0.000833
Silver	0.00196	<0.000830	<0.000833	<0.000833	0.002	<	<0.000833
Strontium	0.00679	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Titanium	0.0206	<0.000830	<0.000833	<0.000833	0.02	<	0.00393
Uranium	0.00243	<0.000830	<0.000833	<0.000833	0.002	<	<0.000833
Vanadium (corr)	<0.0100	<0.000830	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.143	0.0102	0.00875	0.00907	0.02	0.264177352	0.00794
Iron	2.56	0.0890	0.0162	0.0152	0.2	<	0.0187
Phosphorus	<2.50	<0.207	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug	7-Aug
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	778	1145	886	342	1125	572	479	801	12
Aluminum	0.414	0.726	0.463	0.115	0.788	0.381	0.343	0.449	<0.00833
Arsenic	0.000537	0.000619	0.000473	<0.000208	0.000408	0.000419	0.000212	0.000434	<0.000208
Barium	0.00827	0.0168	0.0103	0.00199	0.00808	0.00629	0.00481	0.00725	0.000390
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00222	0.00291	0.00223	0.00168	0.00299	0.00241	0.00177	0.00211	0.00146
Cobalt	0.00103	0.00101	0.000358	0.0000873	0.000696	0.000390	0.000313	0.000736	0.0000933
Copper	0.186	0.0390	0.0233	0.118	0.0129	0.0349	0.00979	0.0122	0.00215
Lead	0.000527	0.000790	0.00114	0.000308	0.000770	0.000617	0.000359	0.000670	<0.000208
Manganese	0.0375	0.0377	0.0225	0.00790	0.0240	0.0219	0.0190	0.0355	0.00119
Molybdenum	0.000515	0.000577	0.000456	0.000203	0.000371	0.000203	0.000180	0.000314	0.000325
Nickel	0.00162	0.00195	0.00146	0.000948	0.00189	0.00172	0.00362	0.00146	0.00217
Silver	0.000188	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833
Strontium	0.00394	0.00784	0.00410	0.000792	0.00650	0.00242	0.00220	0.00429	<0.000208
Titanium	0.0247	0.0304	0.0145	0.00382	0.0181	0.0103	0.00990	0.0175	<0.000833
Uranium	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833
Vanadium (corr)	0.00237	0.00414	0.00341	0.00110	0.00377	0.00183	0.00192	0.00252	<0.000833
Zinc	0.0176	0.0184	0.0206	0.0119	0.0210	0.0163	0.0127	0.0180	0.00787
Iron	1.95	2.19	1.37	0.353	1.37	1.24	1.03	1.98	0.0163
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	13-Aug	13-Aug	13-Aug	13-Aug			13-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	187	136	23	130			20
Aluminum	0.0883	0.0491	0.0218	0.0468	0.2	0.269343016	0.0175
Arsenic	0.000787	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.00194	0.00112	<0.000208	0.000460	0.005	<	0.00142
Beryllium	0.000293	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00322	0.00296	0.00260	0.00244	0.02	0.059531594	0.00247
Cobalt	0.000643	0.000205	0.000216	0.000128	0.002	0.007254469	0.000412
Copper	0.00250	0.0125	0.00186	0.0126	0.01	0.047243016	0.00220
Lead	0.000617	0.000221	<0.000208	<0.000208	0.005	<	<0.000208
Manganese	0.0112	0.0143	0.00270	0.00131	0.002	0.031101172	0.00492
Molybdenum	0.00247	0.000546	0.00100	<0.000833	0.002	0.020195073	0.000988
Nickel	<0.000833	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Silver	0.000253	<0.000833	<0.000833	<0.000833	0.002	<	<0.000833
Strontium	0.000991	0.000222	<0.000208	<0.000208	0.005	0.005044026	<0.000208
Titanium	0.00230	<0.000833	<0.000833	<0.000833	0.02	0.029962432	<0.000833
Uranium	0.000479	<0.000833	<0.000833	<0.000833	0.002	<	<0.000833
Vanadium (corr)	0.00136	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.0108	0.00750	0.00605	0.0179	0.02	0.256631859	0.00633
Iron	0.305	0.0962	0.0815	0.0948	0.2	0.370263349	0.0402
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug	13-Aug
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1054	341	509	299	868	612	1041	554	12
Aluminum	0.720	0.211	0.369	0.172	0.735	0.428	0.800	0.401	0.0302
Arsenic	0.000827	<0.000208	0.000462	<0.000208	0.000247	0.000233	0.000390	<0.000208	<0.000208
Barium	0.0201	0.00585	0.0117	0.00391	0.00864	0.00663	0.0118	0.00609	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00369	0.00333	0.00328	0.00214	0.00377	0.00291	0.00307	0.00286	0.00236
Cobalt	0.000980	0.000202	0.000320	0.000343	0.000653	0.000515	0.000878	0.00103	0.0000977
Copper	0.0608	0.00932	0.0114	0.0729	0.00304	0.00696	0.00430	0.00207	0.00247
Lead	0.00109	0.000357	0.000729	0.000365	0.000719	0.000546	0.000976	0.000667	<0.000208
Manganese	0.0636	0.0185	0.0173	0.00890	0.0252	0.0150	0.0359	0.0219	0.00198
Molybdenum	<0.000833	0.000686	0.000211	<0.000833	0.000131	0.000192	0.000236	0.000266	0.00162
Nickel	0.00193	<0.000833	0.00176	0.00252	0.00224	0.00188	0.00209	0.00123	<0.000833
Silver	0.000142	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833
Strontium	0.00652	0.00179	0.00260	0.000798	0.00532	0.00476	0.00538	0.00267	<0.000208
Titanium	0.0307	0.00729	0.0116	0.00736	0.0686	0.0143	0.0237	0.0122	<0.000833
Uranium	0.000194	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833	<0.000833
Vanadium (corr)	0.00620	0.00126	0.00160	0.000878	0.00302	0.00424	0.00487	0.00312	<0.000833
Zinc	0.0208	0.0166	0.0327	0.0102	0.0185	0.0145	0.0151	0.0157	0.00752
Iron	3.69	0.621	1.07	0.470	1.45	0.917	1.89	1.29	0.0668
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	19-Aug	19-Aug	19-Aug	19-Aug			19-Aug
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	349	300	335	240			9
Aluminum	0.127	0.112	0.193	0.0770	0.2	0.269343016	0.0172
Arsenic	0.00123	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.00305	0.00236	0.00412	0.00115	0.005	<	<0.000208
Beryllium	0.000858	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	0.000406	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00337	0.00184	0.00258	0.00213	0.02	0.059531594	0.00243
Cobalt	0.00116	<0.0000833	0.000129	<0.0000833	0.002	0.007254469	0.000179
Copper	0.00401	0.00234	0.00970	0.0103	0.01	0.047243016	0.00160
Lead	0.00126	0.000932	0.000679	0.000241	0.005	<	<0.000208
Manganese	0.00782	0.00770	0.00727	0.00291	0.002	0.031101172	0.0000883
Molybdenum	0.00125	<0.0000833	<0.0000833	<0.0000833	0.002	0.020195073	0.000344
Nickel	0.0211	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Silver	0.000464	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.00186	0.000568	0.000855	<0.000208	0.005	0.005044026	<0.000208
Titanium	0.00437	0.00323	0.00393	0.00157	0.02	0.029962432	<0.000833
Uranium	0.000964	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.00257	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.0126	0.0149	0.0144	0.00899	0.02	0.256631859	0.00574
Iron	0.422	0.225	0.350	0.143	0.2	0.370263349	0.0185
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	
Sample Date	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug	19-Aug
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24	24	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	828	874	908	516	1642	791	1728	6
Aluminum	0.471	0.698	0.644	0.357	1.35	0.525	1.81	0.0167
Arsenic	0.000512	0.000315	0.000391	<0.000208	0.000404	0.000336	0.000852	<0.000208
Barium	0.00968	0.0171	0.0151	0.00801	0.0159	0.00866	0.0258	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00502	0.00270	0.00322	0.00323	0.00413	0.00267	0.00508	0.00239
Cobalt	0.000572	0.000301	0.000659	0.000413	0.00118	0.000300	0.00116	0.000103
Copper	0.104	0.00644	0.0128	0.0319	0.00447	0.00572	0.00474	0.00146
Lead	0.000734	0.00154	0.000886	0.000621	0.00126	0.000610	0.00145	<0.000208
Manganese	0.0314	0.0315	0.0291	0.0231	0.0512	0.0236	0.0562	0.00149
Molybdenum	0.000352	<0.0000833	0.000361	0.0000921	0.000146	<0.0000833	<0.0000833	0.00181
Nickel	0.00275	0.00184	0.00146	0.000991	0.00288	0.00158	0.00328	<0.000833
Silver	0.000130	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00439	0.00586	0.00466	0.00190	0.0107	0.00366	0.0130	<0.000208
Titanium	0.0174	0.0240	0.0228	0.0112	0.0373	0.0156	0.0565	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00319	0.00220	0.00268	0.00152	0.00477	0.00230	0.00633	<0.000833
Zinc	0.0160	0.0204	0.0209	0.0140	0.0301	0.0208	0.0195	0.00692
Iron	1.69	1.60	1.52	0.822	2.56	1.30	3.36	0.0301
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	25-Aug	25-Aug	25-Aug	25-Aug		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	166	167	124	146		
Aluminum	0.0120	0.107	0.0371	0.0225	0.2	0.269343016
Arsenic	<0.000208	<0.000207	<0.000208	<0.000208	0.005	<
Barium	<0.000208	0.00126	0.00176	<0.000208	0.005	<
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<
Chromium	0.00116	0.00276	0.00265	0.00210	0.02	0.059531594
Cobalt	0.000160	0.000352	0.000372	0.00197	0.002	0.007254469
Copper	0.00465	0.00164	0.00611	0.0110	0.01	0.047243016
Lead	<0.000208	<0.000208	<0.000208	0.000218	0.005	<
Manganese	0.000735	0.00687	0.00210	0.00149	0.002	0.031101172
Molybdenum	0.00139	<0.0000833	0.000384	0.000198	0.002	0.020195073
Nickel	<0.000833	<0.000833	<0.000833	<0.000833	0.02	<
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<
Strontium	<0.000208	0.000689	0.000324	0.000260	0.005	0.005044026
Titanium	<0.000833	0.00109	<0.000833	<0.000833	0.02	0.029962432
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<
Vanadium (corr)	<0.000833	0.000918	<0.000833	<0.000833	0.02	<
Zinc	0.00455	0.0124	0.00958	0.0125	0.02	0.256631859
Iron	0.0179	0.161	0.0929	0.0331	0.2	0.370263349
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug	25-Aug
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.007	24.051	24.004	24	22.935
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	134	135	361	239	435	158	424	505
Aluminum	0.0523	0.0212	0.250	0.0912	0.314	0.0590	0.371	0.429
Arsenic	<0.000208	<0.000208	0.000252	<0.000208	<0.000208	<0.000208	<0.000208	0.000243
Barium	0.000431	<0.000207	0.00756	0.000706	0.00366	0.00134	0.00488	0.00661
Beryllium	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000218
Boron	<0.00833	<0.00830	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00872
Cadmium	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000218
Chromium	0.00200	0.00244	0.00320	0.00210	0.00295	0.00246	0.00266	0.00333
Cobalt	0.000260	0.000239	0.000555	0.000360	0.000394	0.00229	0.000604	0.000639
Copper	0.118	0.00192	0.0111	0.0419	0.00619	0.00196	0.00182	0.00245
Lead	<0.000208	0.000228	0.000363	<0.000208	0.000325	0.000304	0.000375	0.000497
Manganese	0.00411	0.00121	0.0143	0.00286	0.0145	0.00462	0.0164	0.0303
Molybdenum	<0.0000833	<0.0000830	0.000813	<0.0000833	0.000228	0.000939	0.00131	0.00146
Nickel	<0.000833	0.00113	0.00118	<0.000833	0.00124	<0.000833	0.00104	0.00151
Silver	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000872
Strontium	0.00148	<0.000207	0.00217	0.000416	0.00238	0.000526	0.00173	0.00303
Titanium	0.00345	0.00128	0.00694	<0.000833	0.00702	0.00171	0.00861	0.0181
Uranium	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000872
Vanadium (corr)	<0.000833	<0.000830	0.00160	<0.000833	0.00192	<0.000833	0.00188	0.00205
Zinc	0.0126	0.0158	0.0183	0.00737	0.0147	0.00992	0.0117	0.0175
Iron	0.148	0.0429	0.647	0.144	0.832	0.177	0.730	1.77
Phosphorus	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208	<0.218



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	31-Aug	31-Aug	31-Aug	31-Aug		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24.375	24	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	88	60	81	49		
Aluminum	0.0685	0.0578	0.0521	0.0428	0.2	0.269343016
Arsenic	<0.000205	0.000856	0.000267	<0.000208	0.005	0.269343016
Barium	0.00210	0.00197	0.00211	<0.000208	0.005	<
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<
Chromium	0.00282	0.00879	0.00194	0.00181	0.02	0.059531594
Cobalt	0.00210	0.000401	0.000426	0.000174	0.002	0.007254469
Copper	0.0639	0.00471	0.00978	0.0583	0.01	0.047243016
Lead	<0.000208	0.000247	0.000209	<0.000208	0.005	<
Manganese	0.0139	0.00488	0.00376	0.00119	0.002	0.031101172
Molybdenum	0.00180	0.000310	<0.0000833	<0.0000833	0.002	0.020195073
Nickel	0.000879	0.000834	<0.000833	<0.000833	0.02	<
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<
Strontium	0.000566	0.000456	0.000333	<0.000208	0.005	0.005044026
Titanium	0.00209	<0.000833	0.000969	<0.000833	0.02	0.029962432
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<
Vanadium (corr)	0.000989	<0.000833	<0.000833	<0.000833	0.02	<
Zinc	0.0153	0.0179	0.0133	0.00717	0.02	0.256631859
Iron	0.252	0.186	0.129	0.0499	0.2	0.370263349
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug	31-Aug
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.002	24.052	24.004	24.008	24.005
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	404	394	323	122	449	224	401	500
Aluminum	0.316	0.450	0.329	0.0603	0.455	0.147	0.488	0.367
Arsenic	<0.000208	0.000945	0.000629	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.00706	0.0131	0.0109	0.000240	0.00537	0.00241	0.00655	0.00521
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00279	0.00316	0.00284	0.00143	0.00234	0.00240	0.00210	0.00201
Cobalt	0.00263	0.000634	0.000519	<0.0000833	0.000450	0.000835	0.000528	0.000636
Copper	0.210	0.00664	0.0149	0.0216	0.00313	0.00131	0.00442	0.00288
Lead	0.000351	0.000545	0.000770	<0.000208	0.000362	0.000268	0.000492	0.000324
Manganese	0.0216	0.0234	0.0173	0.00205	0.0157	0.00619	0.0204	0.0225
Molybdenum	0.000134	0.000169	0.000391	<0.0000833	<0.0000832	0.000126	0.0000929	0.000174
Nickel	0.00124	0.00109	0.00107	<0.000833	0.00106	<0.000833	0.000950	0.00106
Silver	0.000150	<0.0000833	0.0000899	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00277	0.00424	0.00248	<0.000208	0.00332	0.00103	0.00235	0.00315
Titanium	0.00970	0.0151	0.00966	0.00186	0.0102	0.00312	0.0144	0.0212
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00209	0.00187	0.00149	<0.000833	0.00160	0.00124	0.00168	0.00194
Zinc	0.0134	0.0194	0.0248	0.00729	0.0114	0.00993	0.00856	0.00991
Iron	1.33	1.40	0.957	0.147	0.818	0.316	0.938	1.18
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	6-Sep	6-Sep	6-Sep	6-Sep			6-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.44	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	209	97	167	93			12
Aluminum	0.100	0.0480	0.174	0.0342	0.2	0.269343016	0.0178
Arsenic	0.000340	<0.000207	0.00133	<0.000208	0.005	<	<0.000208
Barium	0.00271	0.00146	0.00660	0.000468	0.005	<	0.000341
Beryllium	<0.000205	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00818	<0.00830	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000205	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00281	0.00251	0.00258	0.00271	0.02	0.059531594	0.00309
Cobalt	0.000979	0.000343	0.000357	0.000409	0.002	0.007254469	0.000668
Copper	0.0434	0.00243	0.0123	0.0140	0.01	0.047243016	0.00263
Lead	0.000507	0.000221	0.00340	0.000337	0.005	<	0.000277
Manganese	0.0127	0.00345	0.00688	0.00230	0.002	0.031101172	0.00168
Molybdenum	0.000876	0.000286	<0.0000833	<0.0000833	0.002	0.020195073	<0.0000833
Nickel	<0.000818	<0.000830	<0.000833	0.00103	0.02	<	<0.000833
Silver	0.0000983	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.000850	0.000308	0.00104	<0.000208	0.005	0.005044026	<0.000208
Titanium	0.00270	<0.000830	0.00640	<0.000833	0.02	0.029962432	<0.000833
Uranium	<0.0000818	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.00129	<0.000830	0.000893	<0.000833	0.02	<	<0.000833
Zinc	0.0200	0.0112	0.0234	0.0113	0.02	0.256631859	0.0346
Iron	0.570	0.103	0.352	0.0570	0.2	0.370263349	0.0542
Phosphorus	<0.205	<0.207	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep	6-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24	30.616	24.004	24.004	24.003	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	1074	410	668	354	755	508	208	635	1
Aluminum	0.728	0.312	0.469	0.155	0.335	0.352	0.140	0.471	0.0136
Arsenic	0.000650	0.000366	0.00176	<0.000208	0.000200	<0.000208	<0.000208	0.000303	<0.000208
Barium	0.0255	0.00880	0.0199	0.00283	0.00667	0.00581	0.00182	0.00744	0.000335
Beryllium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000163	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00830	<0.00833	<0.00653	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000163	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00387	0.00265	0.00373	0.00272	0.00261	0.00327	0.00266	0.00375	0.00297
Cobalt	0.00150	0.00427	0.00136	0.000589	0.000798	0.000653	0.000639	0.000838	0.000356
Copper	0.208	0.0129	0.0177	0.0481	0.00279	0.00725	0.00203	0.00296	0.00217
Lead	0.00102	0.000514	0.00393	0.000542	0.000524	0.000600	0.000337	0.000696	<0.000208
Manganese	0.0820	0.0169	0.0249	0.00935	0.0269	0.0114	0.00603	0.0231	0.00141
Molybdenum	0.000224	0.000375	<0.0000830	<0.0000833	0.000124	<0.0000833	<0.0000833	0.000780	0.00148
Nickel	0.00336	0.00103	0.00157	<0.000833	0.00130	0.00122	<0.000833	0.00158	<0.000833
Silver	0.000241	0.0000903	<0.0000830	<0.0000833	<0.0000653	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00815	0.00247	0.00428	0.000807	0.00342	0.00280	0.00105	0.00448	<0.000208
Titanium	0.0483	0.0103	0.0143	0.00538	0.00969	0.00998	0.00364	0.0128	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000653	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00455	0.00146	0.00208	0.000925	0.00171	0.00208	0.00100	0.00580	<0.000833
Zinc	0.0336	0.0258	0.0527	0.0145	0.0229	0.0186	0.0152	0.0222	0.0110
Iron	5.05	0.998	1.38	0.372	1.31	0.684	0.242	1.31	0.0316
Phosphorus	<0.208	<0.208	<0.207	<0.208	<0.163	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	12-Sep	12-Sep	12-Sep	12-Sep			12-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	95	96	125	76			10
Aluminum	0.0238	0.0242	0.0822	0.0210	0.2	0.269343016	0.0277
Arsenic	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.000969	0.000765	0.00372	0.000376	0.005	<	<0.000208
Beryllium	<0.000205	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00821	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000205	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00588	0.00286	0.00235	0.00236	0.02	0.059531594	0.00260
Cobalt	0.00140	0.000918	0.000400	0.000459	0.002	0.007254469	0.000688
Copper	0.0221	0.00240	0.0130	0.0113	0.01	0.047243016	0.00243
Lead	<0.000205	0.00101	0.000485	<0.000208	0.005	<	<0.000208
Manganese	0.00505	0.00240	0.00572	0.00611	0.002	0.031101172	0.0219
Molybdenum	0.000139	0.00154	0.000243	0.000227	0.002	0.020195073	<0.0000833
Nickel	<0.000821	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Silver	<0.0000821	<0.0000833	<0.0000833	<0.0000833	0.002	<	0.0000915
Strontium	0.000253	<0.000208	0.000516	<0.000208	0.005	0.005044026	<0.000208
Titanium	<0.000821	<0.000833	0.00305	<0.000833	0.02	0.029962432	<0.000833
Uranium	<0.0000821	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000821	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.0162	0.0269	0.0147	0.0105	0.02	0.256631859	0.0165
Iron	0.0623	0.0576	0.228	0.0364	0.2	0.370263349	0.0358
Phosphorus	<0.205	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep	12-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.004	17.454	24.007	24.007	24	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	182	245	428	143	286	169	331	348	12
Aluminum	0.0484	0.0821	0.372	0.0686	0.246	0.0425	0.290	0.180	0.0156
Arsenic	<0.000208	<0.000208	0.000308	<0.000208	<0.000286	<0.000208	<0.000208	0.000557	<0.000208
Barium	0.00111	0.00270	0.0149	0.00182	0.00445	0.000742	0.00390	0.00392	0.000282
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000286	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.0115	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000286	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00224	0.00247	0.00289	0.00211	0.00394	0.00317	0.00312	0.00240	0.00267
Cobalt	0.00120	0.00115	0.00129	0.00108	0.000978	0.000452	0.00205	0.000858	0.00115
Copper	0.123	0.00442	0.0118	0.0417	0.00336	0.00123	0.00300	0.00443	0.00469
Lead	0.000241	0.00142	0.000802	0.000270	0.000460	<0.000208	0.000292	0.000249	0.000237
Manganese	0.00596	0.0203	0.0215	0.0148	0.0180	0.00431	0.0133	0.0269	0.00335
Molybdenum	<0.0000833	<0.0000833	0.000354	0.000201	0.000546	0.00121	0.000452	0.0000978	0.00190
Nickel	<0.000833	<0.000833	0.00140	0.000840	0.00126	<0.000833	<0.000833	0.000892	<0.000833
Silver	0.000109	<0.0000833	0.000114	0.000127	<0.000115	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000412	0.000713	0.00268	0.000495	0.00280	0.000301	0.00213	0.00155	<0.000208
Titanium	<0.000833	0.00190	0.0127	0.00164	0.00905	<0.000833	0.00939	0.00545	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.000115	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	<0.000833	0.00161	<0.000833	0.00195	<0.000833	0.00140	0.00116	<0.000833
Zinc	0.0255	0.0176	0.0297	0.0147	0.0187	0.0112	0.0113	0.0142	0.0135
Iron	0.132	0.268	1.18	0.187	0.954	0.0595	0.635	0.987	0.0265
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.286	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	18-Sep	18-Sep	18-Sep	18-Sep			18-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.315	24	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	76	71	141	86			26
Aluminum	0.0592	0.0531	0.113	0.0386	0.2	<	<0.00833
Arsenic	<0.000206	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Barium	<0.000206	0.000988	0.00388	<0.000208	0.005	<	<0.000208
Beryllium	<0.000206	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Boron	<0.00823	<0.00833	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium (114)	<0.000206	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Chromium (52)	0.00110	0.00219	0.00183	0.00161	0.02	0.034559086	0.00110
Cobalt	<0.0000823	0.000635	0.000169	<0.0000833	0.002	<	<0.0000833
Copper (63)	0.0120	0.00389	0.0118	0.00531	0.01	<	<0.000417
Iron (57)	0.180	0.0866	0.256	0.0588	0.2	0.238534055	0.0250
Lead	<0.000206	0.000308	0.000375	<0.000208	0.005	<	<0.000208
Manganese	0.00578	0.00354	0.00590	0.00125	0.002	0.004884281	0.000570
Molybdenum	<0.0000823	0.00121	0.000197	<0.0000833	0.002	0.014993906	<0.0000833
Nickel	<0.000823	0.00174	<0.000830	<0.000833	0.02	<	<0.000833
Phosphorus	<0.206	<0.208	<0.207	<0.208	5	<	<0.208
Silver	<0.0000823	<0.0000833	<0.0000830	<0.0000833	0.002	<	<0.0000833
Strontium	<0.000206	0.000342	0.00113	<0.000208	0.005	<	<0.000208
Titanium (50)	<0.000823	0.00509	0.00276	<0.000833	0.02	<	<0.000833
Uranium	<0.0000823	<0.0000833	<0.0000830	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000823	<0.000833	<0.000830	<0.000833	0.02	<	<0.000833
Zinc (66)	0.0183	0.0102	0.0169	0.00739	0.02	0.158958867	0.00608

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep	18-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24	24.006	24.051	24.004	24	24.004	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	254	266	545	191	773	181	656	966	10
Aluminum	0.167	0.178	0.463	0.158	0.603	0.0740	0.844	0.923	<0.00833
Arsenic	<0.000208	<0.000207	0.000281	<0.000208	0.000331	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.00241	0.00357	0.0128	0.00211	0.00804	0.00130	0.00941	0.0126	<0.000208
Beryllium	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium (114)	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium (52)	0.00116	0.00185	0.00234	0.00117	0.00286	0.00162	0.00238	0.00261	<0.000833
Cobalt	<0.0000833	0.000796	0.000521	<0.0000833	0.00123	0.000221	<0.0000833	<0.0000833	<0.0000833
Copper (63)	0.0706	0.00308	0.0138	0.0130	0.00302	0.0107	0.000801	0.00336	<0.000417
Iron (57)	0.560	0.446	1.01	0.266	1.33	0.155	1.61	3.58	0.0128
Lead	<0.000208	0.000395	0.000779	<0.000208	0.000777	0.000251	<0.000208	<0.000208	<0.000208
Manganese	0.0106	0.0109	0.0205	0.00564	0.0258	0.00608	0.0271	0.0589	0.00134
Molybdenum	<0.0000833	0.000153	0.000308	<0.0000833	0.000712	0.000807	<0.0000833	<0.0000833	<0.0000833
Nickel	<0.000833	0.00108	0.00149	<0.000833	0.00289	<0.000833	<0.000833	0.00122	<0.000833
Phosphorus	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208
Silver	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000375	0.00123	0.00283	<0.000208	0.00474	0.000906	0.00318	0.00490	<0.000208
Titanium (50)	0.00377	0.00541	0.0170	0.00416	0.0184	0.00160	0.0346	0.0293	<0.000833
Uranium	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	0.000860	0.00169	<0.000833	0.00694	<0.000833	0.00201	0.00238	<0.000833
Zinc (66)	0.0133	0.0144	0.0216	0.00875	0.0161	0.00783	0.0104	0.0243	0.0171



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	24-Sep	24-Sep	24-Sep	24-Sep			24-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.156	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	280	272	307	233			17
Aluminum	0.0614	0.0402	0.0713	0.0340	0.2	<	0.0126
Arsenic	0.000415	0.00484	0.000340	<0.000208	0.005	<	<0.000208
Barium	0.00159	0.00180	0.00331	0.000664	0.005	<	<0.000208
Beryllium	<0.000207	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00828	<0.00830	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium (114)	<0.000207	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Chromium (52)	0.00192	0.00217	0.00244	0.00230	0.02	0.034559086	0.0201
Cobalt	0.00229	0.000376	0.00117	0.000597	0.002	<	0.000757
Copper (63)	0.105	0.0139	0.0140	0.0134	0.01	<	0.00234
Iron (57)	0.217	0.174	0.185	0.0703	0.2	0.238534055	0.00904
Lead	0.000490	0.000459	0.000601	0.000294	0.005	<	<0.000208
Manganese	0.00759	0.00324	0.00416	0.00221	0.002	0.004884281	0.000968
Molybdenum	0.000927	<0.0000830	0.000650	0.000177	0.002	0.014993906	0.00181
Nickel	0.00782	0.00172	0.00141	0.00292	0.02	<	<0.000833
Phosphorus	<0.207	<0.207	<0.208	<0.208	5	<	<0.208
Silver	<0.0000828	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.00135	0.000342	0.000484	<0.000208	0.005	<	<0.000208
Titanium (50)	0.00249	0.00108	0.00257	<0.000833	0.02	<	<0.000833
Uranium	<0.0000828	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.00213	0.00108	0.00220	0.000946	0.02	<	<0.000833
Zinc (66)	0.0169	0.0158	0.0118	0.0101	0.02	0.158958867	0.00879

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep	24-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24.003	24.053	24.004	24.003	23.999	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	817	554	730	410	1121	619	833	1453	14
Aluminum	0.557	0.781	0.353	0.178	0.727	0.317	0.560	1.25	<0.00833
Arsenic	0.000468	0.00615	0.000545	<0.000208	0.000316	0.000407	0.000443	0.000711	<0.000208
Barium	0.00938	0.00831	0.0136	0.00506	0.00778	0.00516	0.00835	0.0193	<0.000208
Beryllium	<0.000208	0.000415	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00830	<0.00833	<0.00831	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium (114)	<0.000208	0.000460	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium (52)	0.00291	0.00306	0.00271	0.00191	0.00445	0.00237	0.00297	0.00428	0.00177
Cobalt	0.000974	0.00104	0.000855	0.000484	0.000756	0.000449	0.000592	0.00117	0.000149
Copper (63)	0.122	0.0342	0.0225	0.0358	0.0150	0.0158	0.00293	0.00414	0.00135
Iron (57)	1.34	0.787	1.17	0.304	1.46	0.778	1.44	5.42	<0.00833
Lead	0.000807	0.00255	0.000992	0.000350	0.000851	0.000732	0.000726	0.00122	<0.000208
Manganese	0.0236	0.0138	0.0196	0.00643	0.0289	0.0201	0.0242	0.0910	0.000971
Molybdenum	0.000725	0.000444	0.000726	<0.0000833	0.00117	0.000698	0.00155	0.000395	0.000931
Nickel	0.00304	0.00244	0.00251	0.00149	0.00235	0.00291	0.00226	0.0171	0.00221
Phosphorus	<0.208	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208
Silver	<0.0000833	0.000205	<0.0000830	<0.0000833	<0.0000831	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00444	0.00242	0.00281	0.000686	0.00674	0.00237	0.00481	0.00833	<0.000208
Titanium (50)	0.0156	0.00977	0.0135	0.00405	0.0184	0.0114	0.0192	0.0560	0.000913
Uranium	<0.0000833	0.000577	<0.0000830	<0.0000833	<0.0000831	<0.0000833	<0.0000833	0.0000916	<0.0000833
Vanadium (corr)	0.00413	0.00248	0.00349	0.00128	0.00276	0.00373	0.00620	0.00497	<0.000833
Zinc (66)	0.0209	0.0421	0.0269	0.0314	0.0353	0.0239	0.0257	0.0199	0.0125



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	30-Sep	30-Sep	30-Sep	30-Sep			30-Sep
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.673	24	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	164	56	95	46			4
Aluminum	0.0139	0.0311	0.0592	0.0294	0.2	<	0.00933
Arsenic	0.000280	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Barium	0.000325	0.000922	0.00257	0.000514	0.005	<	0.000510
Beryllium	<0.000203	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00811	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium (114)	<0.000203	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium (52)	0.00200	0.00251	0.00184	0.00274	0.02	0.034559086	0.00204
Cobalt	0.000394	0.000404	0.00180	0.000294	0.002	<	0.00153
Copper (63)	0.0124	0.00889	0.0333	0.00357	0.01	<	0.00922
Iron (57)	0.0787	0.129	0.163	0.128	0.2	0.238534055	0.0235
Lead	<0.000203	<0.000208	0.000677	0.000427	0.005	<	<0.000208
Manganese	0.00135	0.00234	0.00256	0.00253	0.002	0.004884281	0.000740
Molybdenum	0.00105	0.000434	0.000501	0.000277	0.002	0.014993906	0.000390
Nickel	0.000961	0.000874	<0.000833	0.000838	0.02	<	0.00100
Phosphorus	<0.203	<0.208	<0.208	<0.208	5	<	<0.208
Silver	<0.0000811	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.00888	0.000283	0.000420	0.000361	0.005	<	0.000233
Titanium (50)	0.00681	<0.000833	0.00169	<0.000833	0.02	<	<0.000833
Uranium	<0.0000811	<0.0000833	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000811	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Zinc (66)	0.0109	0.00812	0.0135	0.00965	0.02	0.158958867	0.00906

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep	30-Sep
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24.003	24.051	24.005	24.004	24.006	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	201	342	419	216	908	276	421	448	-1
Aluminum	0.0432	0.295	0.334	0.203	0.793	0.0804	0.299	0.239	0.0124
Arsenic	<0.000208	<0.000208	<0.000208	<0.000208	0.000250	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.000933	0.00595	0.0118	0.00372	0.00891	0.00135	0.00343	0.00374	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium (114)	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium (52)	0.00250	0.00304	0.00243	0.00233	0.00357	0.00159	0.00284	0.00274	0.00151
Cobalt	0.00138	0.000444	0.00119	0.00309	0.000736	0.000308	0.000353	0.000879	0.0100
Copper (63)	0.103	0.00733	0.0128	0.0158	0.00294	0.00601	0.00187	0.00221	0.00139
Iron (57)	0.171	1.83	1.20	0.570	1.89	0.161	0.488	0.830	<0.00833
Lead	0.000325	0.000399	0.00114	0.000259	0.000680	<0.000208	0.000319	0.000322	<0.000208
Manganese	0.00344	0.0266	0.0187	0.0122	0.0352	0.00274	0.0113	0.0167	0.00198
Molybdenum	0.000330	0.000596	0.000576	0.000224	0.000990	0.00153	0.000351	0.000454	0.00117
Nickel	0.00360	0.00236	0.00193	<0.000833	0.00235	<0.000833	0.00144	0.00134	0.00146
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208	<0.208
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000379	0.00259	0.00265	0.00117	0.00572	0.000610	0.00167	0.0214	0.0170
Titanium (50)	0.00108	0.0107	0.0118	0.00658	0.0213	0.00142	0.00598	0.00644	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	0.00175	0.00156	0.00122	0.00317	<0.000833	0.00149	0.00131	<0.000833
Zinc (66)	0.0125	0.0146	0.0217	0.0112	0.0146	0.00942	0.00951	0.0110	0.00850



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	6-Oct	6-Oct	6-Oct	6-Oct			6-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24.864	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	190	229	249	129			28
Aluminum	0.0282	0.0328	0.0475	0.0442	0.2	<	<0.00833
Arsenic	0.000322	0.00510	0.00175	<0.000208	0.005	<	<0.000208
Barium	0.000814	0.00211	0.00295	0.000354	0.005	<	<0.000208
Beryllium	<0.000201	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00804	<0.00830	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium (114)	<0.000201	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Chromium (52)	0.00264	0.00271	0.00289	0.00196	0.02	0.034559086	0.00263
Cobalt	0.000576	0.00135	0.000248	0.000668	0.002	<	0.000179
Copper (63)	0.00556	0.00955	0.00871	0.0108	0.01	<	0.00387
Iron (57)	0.0933	0.121	0.150	0.0643	0.2	0.238534055	<0.00833
Lead	0.000319	0.000390	0.000546	<0.000208	0.005	<	<0.000208
Manganese	0.00370	0.00251	0.00325	0.00138	0.002	0.004884281	0.00126
Molybdenum	0.000569	0.000212	0.000549	0.000785	0.002	0.014993906	0.000368
Nickel	<0.000804	0.000912	<0.000833	0.00376	0.02	<	<0.000833
Phosphorus	<0.201	<0.207	<0.208	<0.208	5	<	<0.208
Silver	<0.0000804	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.000385	0.000298	0.000765	<0.000208	0.005	<	<0.000208
Titanium (50)	<0.000804	<0.000830	0.00125	0.00123	0.02	<	<0.000833
Uranium	<0.0000804	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.00140	0.00113	0.00279	0.000867	0.02	<	<0.000833
Zinc (66)	0.0102	0.0163	0.0147	0.00626	0.02	0.158958867	0.00841

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct	6-Oct
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24	24	24.054	2.464	24.01	24.003	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	442	490	539	246	603	11	661	686	14
Aluminum	0.241	0.223	0.340	0.110	0.335	<0.0812	0.363	0.388	<0.00833
Arsenic	0.000305	0.00501	0.00198	<0.000208	<0.000208	<0.00203	0.000306	<0.000208	<0.000208
Barium	0.00437	0.00870	0.0121	0.00258	0.00453	<0.00203	0.00510	0.00577	<0.000208
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.00203	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00833	<0.00833	<0.00831	<0.0812	<0.00833	<0.00833	<0.00833
Cadmium (114)	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208	<0.00203	<0.000208	<0.000208	<0.000208
Chromium (52)	0.00380	0.00390	0.00302	0.00269	0.00361	0.0243	0.00359	0.00327	0.00248
Cobalt	0.000409	0.00488	0.00258	0.000234	0.00140	0.00108	0.000297	0.000559	<0.0000833
Copper (63)	0.0289	0.0139	0.0193	0.0377	0.00202	0.0167	0.00243	0.00183	0.000690
Iron (57)	0.930	0.767	1.14	0.364	0.893	0.294	1.07	1.37	<0.00833
Lead	0.000494	0.000733	0.00115	0.000376	0.000457	<0.00203	0.000396	0.000454	<0.000208
Manganese	0.0155	0.0134	0.0182	0.00736	0.0166	0.0209	0.0203	0.0250	0.000243
Molybdenum	0.000425	0.000831	0.000802	0.000305	0.000989	0.00392	0.000386	0.000505	0.000466
Nickel	0.000931	0.0145	0.00171	<0.000833	0.00225	<0.00812	0.00119	0.00211	<0.000833
Phosphorus	<0.208	<0.208	<0.208	<0.208	<0.208	<2.03	<0.208	<0.208	<0.208
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000831	<0.000812	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00256	0.00177	0.00276	0.000615	0.00328	<0.00203	0.00439	0.00373	<0.000208
Titanium (50)	0.00758	0.00764	0.0125	0.00434	0.0102	<0.00812	0.0103	0.0113	<0.000833
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	<0.0000831	<0.000812	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.00261	0.00196	0.00386	0.00133	0.00551	<0.00812	0.00261	0.00304	<0.000833
Zinc (66)	0.0148	0.0263	0.0297	0.00848	0.0158	0.0640	0.0209	0.0165	0.00533



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	12-Oct	12-Oct	12-Oct	12-Oct			12-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	25.461	24.1	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	95	56	79	40			5
Aluminum	0.00886	0.0106	0.0204	0.0103	0.2	0.24147175	<0.00833
Arsenic	0.000384	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Barium	0.000467	0.000516	0.00118	<0.000208	0.005	0.01002313	<0.000208
Beryllium	<0.000197	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Boron	<0.00787	<0.00830	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium	<0.000197	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00292	0.00207	0.00193	0.00190	0.02	0.061111484	0.00258
Cobalt	0.000372	0.000187	0.000669	0.000309	0.002	0.077236906	<0.0000833
Copper	0.0188	0.00939	0.00572	0.0304	0.01	0.100790953	0.00104
Lead	0.000210	<0.000207	<0.000207	<0.000208	0.005	<	0.0256
Manganese	0.00207	0.00496	0.00553	0.00746	0.002	0.104727031	<0.000208
Molybdenum	<0.0000787	<0.0000830	<0.0000830	0.000573	0.002	0.016274745	0.00114
Nickel	0.00213	0.00107	<0.000830	<0.000833	0.02	0.297540313	0.000722
Silver	0.0000841	<0.0000830	<0.0000830	<0.0000833	0.002	<	<0.000833
Strontium	0.000223	<0.000207	<0.000207	<0.000208	0.005	<	<0.208
Titanium	<0.000787	<0.000830	0.000923	<0.000833	0.02	<	<0.0000833
Uranium	0.0000997	<0.0000830	<0.0000830	<0.0000833	0.002	<	<0.000208
Vanadium (corr)	<0.000787	<0.000830	<0.000830	<0.000833	0.02	<	<0.000833
Zinc	0.00445	0.00627	0.00551	0.00289	0.02	0.112324344	<0.0000833
Iron	0.0176	0.0285	0.0555	0.0176	0.2	0.403301958	<0.000833
Phosphorus	<0.197	<0.207	<0.207	<0.208	5	<	0.00696

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct	12-Oct
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.008	24	24.1	23.999	24.007	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	75	86	120	59	74	110	81	89	17
Aluminum	0.0285	0.0253	0.0667	0.0164	0.0252	0.136	0.0740	0.0264	<0.00833
Arsenic	0.000586	<0.000207	<0.000207	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208
Barium	0.00100	0.00192	0.00421	<0.000208	0.000537	0.00303	0.000397	0.000540	<0.000208
Beryllium	0.000393	<0.000207	<0.000207	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00833	<0.00833	<0.00830	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208
Chromium	0.00212	0.00212	0.00229	0.00160	0.00246	0.00285	0.00282	0.00157	0.00197
Cobalt	0.000577	0.000537	0.000450	<0.0000833	0.000203	0.000823	0.000454	<0.0000833	<0.0000833
Copper	0.0803	0.0112	0.0502	0.118	0.00393	0.00808	0.00183	0.00160	<0.000417
Lead	0.000754	<0.000207	0.000370	<0.000208	<0.000208	0.000425	<0.000208	<0.000208	<0.00833
Manganese	0.00319	0.00713	0.00544	0.00347	0.0210	0.00597	0.00234	0.00171	<0.000208
Molybdenum	0.000168	0.000506	0.000385	<0.0000833	<0.0000833	<0.0000830	0.000226	<0.0000833	0.000413
Nickel	0.00121	<0.000830	0.000937	<0.000833	<0.000833	0.00206	0.00185	<0.000833	0.00162
Silver	0.000237	<0.0000830	<0.0000830	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.000833
Strontium	0.000748	0.000208	0.000969	<0.000208	<0.000208	0.000643	<0.000208	<0.000208	<0.208
Titanium	0.00125	<0.000830	0.00240	0.00129	<0.000833	0.00517	<0.000833	<0.000833	<0.0000833
Uranium	0.000437	<0.0000830	0.000125	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.000208
Vanadium (corr)	0.000874	<0.000830	0.000960	<0.000833	<0.000833	<0.000830	<0.000833	<0.000833	<0.000833
Zinc	0.00585	0.00640	0.00726	0.00293	0.00562	0.0164	0.00352	0.00251	<0.0000833
Iron	0.0554	0.0884	0.186	0.0328	0.0669	0.215	0.0928	0.0681	<0.000833
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.208	<0.207	<0.208	<0.208	0.0170



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	18-Oct	18-Oct	18-Oct	18-Oct			18-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	25.152	24.1	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	86	110	153	62			10
Aluminum	0.0310	0.0588	0.148	0.0196	0.2	0.24147175	0.0113
Arsenic	0.000266	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Barium	0.00123	0.00338	0.00750	0.000701	0.005	0.01002313	<0.000208
Beryllium	<0.000199	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Boron	<0.00795	<0.00830	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium	<0.000199	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00233	0.00251	0.00210	0.00233	0.02	0.061111484	0.00217
Cobalt	0.00188	0.00301	0.000188	0.000591	0.002	0.077236906	0.000398
Copper	0.00498	0.00850	0.0351	0.0103	0.01	0.100790953	0.00275
Lead	0.000240	0.000455	0.000458	<0.000208	0.005	<	<0.000208
Manganese	0.00289	0.00580	0.00780	0.00231	0.002	0.104727031	0.00133
Molybdenum	0.000304	0.000257	<0.0000830	0.000344	0.002	0.016274745	0.000550
Nickel	0.00301	0.00197	0.000947	0.00161	0.02	0.297540313	0.00238
Silver	<0.0000795	<0.0000830	<0.0000830	<0.0000833	0.002	<	<0.0000833
Strontium	0.000319	0.000404	0.000921	0.000360	0.005	<	<0.000208
Titanium	0.00149	0.00253	0.00455	<0.000833	0.02	<	<0.000833
Uranium	<0.0000795	<0.0000830	<0.0000830	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000795	<0.000830	<0.000830	<0.000833	0.02	<	<0.000833
Zinc	0.00540	0.00870	0.00698	0.00422	0.02	0.112324344	0.00590
Iron	0.112	0.157	0.385	0.0574	0.2	0.403301958	0.0282
Phosphorus	<0.199	<0.207	<0.207	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct	18-Oct
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	23.997	24.05	24.011	24.009	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	204	439	826	98	136	181	132	213
Aluminum	0.118	0.363	0.772	0.0394	0.0669	0.125	0.0681	0.0923
Arsenic	<0.000208	0.000386	0.000385	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.00438	0.0151	0.0326	0.00185	0.00175	0.00411	0.00182	0.00238
Beryllium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	0.000313
Boron	<0.00833	<0.00833	<0.00830	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00220	0.00288	0.00396	0.00224	0.00522	0.00267	0.00274	0.00228
Cobalt	0.00131	0.000344	0.00102	0.000134	0.00233	0.000311	<0.0000833	0.000367
Copper	0.0192	0.0148	0.0228	0.0189	0.00720	0.0113	0.00249	0.0121
Lead	0.000349	0.000715	0.00147	<0.000208	0.000462	0.000520	<0.000208	0.000552
Manganese	0.00729	0.0240	0.0445	0.00271	0.00537	0.00794	0.00326	0.00547
Molybdenum	0.000758	0.000133	0.000677	<0.0000833	0.000827	0.000163	0.000367	0.000887
Nickel	0.0103	0.00253	0.00336	0.000962	0.0155	0.00640	<0.000833	0.00141
Silver	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.00106	0.00415	0.00789	0.000386	0.000639	0.00132	0.000543	0.00176
Titanium	0.00297	0.0129	0.0289	<0.000833	0.00129	0.00444	0.000935	0.00220
Uranium	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	0.000148
Vanadium (corr)	0.00120	0.00145	0.00319	<0.000833	<0.000832	0.000858	<0.000833	0.00328
Zinc	0.00863	0.0166	0.0253	0.00362	0.00974	0.0118	0.00417	0.00736
Iron	0.410	1.09	2.42	0.108	0.236	0.411	0.171	0.234
Phosphorus	<0.208	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	24-Oct	24-Oct	24-Oct	24-Oct			24-Oct
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	25.726	24.1	24.1	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	72	16	40	22			17
Aluminum	0.0126	0.0255	0.0191	0.0159	0.2	0.24147175	<0.00833
Arsenic	0.000431	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Barium	0.000974	0.000764	0.00149	0.000489	0.005	0.01002313	0.000412
Beryllium	0.000314	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Boron	<0.00777	<0.00830	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium	<0.000194	<0.000207	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00276	0.00292	0.00781	0.00361	0.02	0.061111484	0.00234
Cobalt	0.00313	0.00227	0.00303	0.00702	0.002	0.077236906	0.00419
Copper	0.0123	0.00565	0.00716	0.00573	0.01	0.100790953	0.00263
Lead	0.000415	0.000279	0.000252	0.000319	0.005	<	<0.000208
Manganese	0.00334	0.00284	0.00361	0.00466	0.002	0.104727031	0.00896
Molybdenum	0.00145	<0.0000830	0.000163	0.00138	0.002	0.016274745	0.000102
Nickel	0.0123	0.00565	0.0153	0.00853	0.02	0.297540313	0.00410
Silver	0.000149	<0.0000830	<0.0000830	<0.0000833	0.002	<	<0.0000833
Strontium	0.000531	0.000281	0.000249	0.000218	0.005	<	0.000233
Titanium	0.00226	<0.000830	<0.000830	0.000993	0.02	<	<0.000833
Uranium	0.000298	<0.0000830	<0.0000830	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.000859	0.00172	0.000987	<0.000833	0.02	<	<0.000833
Zinc	0.00990	0.0211	0.00778	0.00556	0.02	0.112324344	0.00243
Iron	0.0763	0.157	0.0603	0.0244	0.2	0.403301958	0.0424
Phosphorus	<0.194	<0.207	<0.207	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct	24-Oct
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	23.986	24.049	24.007	24.01	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	45	45	67	22	36	23	40	51
Aluminum	0.0234	0.0300	0.0427	0.0184	0.0154	0.0116	0.0108	0.0201
Arsenic	0.000600	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.000722	0.000958	0.00237	0.000329	0.000330	0.000644	0.000209	0.000591
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00834	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00287	0.00272	0.00181	0.00175	0.00177	0.00108	0.00232	0.00742
Cobalt	0.00177	0.000636	0.00154	0.00248	0.00175	0.000849	0.000402	0.00141
Copper	0.0469	0.00230	0.0243	0.00434	0.00227	0.00915	0.00185	0.00534
Lead	0.000267	<0.000207	0.000306	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Manganese	0.00284	0.00421	0.00409	0.00180	0.00439	0.00163	0.00727	0.00717
Molybdenum	0.000137	<0.0000830	<0.0000830	0.000283	<0.0000832	0.0000940	<0.0000833	0.0000972
Nickel	0.00815	0.00133	0.00462	0.00970	0.00473	0.00229	0.00271	0.00642
Silver	<0.0000833	<0.0000830	<0.0000830	<0.0000834	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000361	0.000755	0.000430	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Titanium	0.000981	<0.000830	0.00217	<0.000834	<0.000832	<0.000833	<0.000833	<0.000833
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000834	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	0.00178	0.000865	<0.000834	<0.000832	<0.000833	<0.000833	<0.000833
Zinc	0.0145	0.00940	0.00774	0.00361	0.00926	0.00676	0.00451	0.00839
Iron	0.0960	0.110	0.118	<0.00834	0.0363	0.0240	<0.00833	0.0787
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	30-Oct	30-Oct	30-Oct	30-Oct		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	26.185	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	66	83	170	104		
Aluminum	0.0114	0.00991	0.0193	0.0147	0.2	0.24147175
Arsenic	<0.000191	<0.000207	<0.000207	<0.000208	0.005	<
Barium	0.000726	0.000552	0.00119	0.000388	0.005	0.01002313
Beryllium	0.000217	<0.000207	<0.000207	<0.000208	0.005	<
Boron	<0.00764	<0.00830	<0.00830	<0.00833	0.2	<
Cadmium	<0.000191	<0.000207	<0.000207	0.000849	0.005	<
Chromium	0.00306	0.00319	0.00341	0.00306	0.02	0.0611111484
Cobalt	0.000765	0.000781	0.000786	0.000970	0.002	0.077236906
Copper	0.0208	0.00380	0.00440	0.0235	0.01	0.100790953
Lead	0.000202	0.000284	0.000323	0.000879	0.005	<
Manganese	0.00244	0.00271	0.00296	0.00299	0.002	0.104727031
Molybdenum	0.0000941	<0.0000830	<0.0000830	<0.0000833	0.002	0.016274745
Nickel	0.00300	0.00408	0.00229	0.00966	0.02	0.297540313
Silver	<0.0000764	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000410	0.000615	0.000446	<0.000208	0.005	<
Titanium	<0.000764	<0.000830	<0.000830	<0.000833	0.02	<
Uranium	<0.0000764	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	0.000809	0.00137	0.00185	0.00107	0.02	<
Zinc	0.00749	0.00923	0.0116	0.0155	0.02	0.112324344
Iron	0.0354	0.0305	0.0453	0.0532	0.2	0.403301958
Phosphorus	<0.191	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct	30-Oct
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.005	24.052	24.007	24	24.013
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	60	81	212	88	136	37	62	60
Aluminum	0.0160	0.0115	0.0396	0.0131	0.0303	<0.00833	0.0246	0.0331
Arsenic	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.00114	0.00115	0.00363	0.000797	0.00110	0.000540	0.000537	0.00176
Beryllium	0.000446	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00311	0.00282	0.00345	0.00294	0.00269	0.00360	0.00353	0.00298
Cobalt	0.00133	0.000466	0.00129	0.00207	0.00135	0.00208	0.000637	0.000843
Copper	0.0971	0.00230	0.0146	0.103	0.00414	0.0117	0.00268	0.00435
Lead	0.000433	<0.000207	0.000424	0.000318	0.000281	0.000378	0.000302	0.000421
Manganese	0.00338	0.00221	0.00460	0.00432	0.00560	0.00369	0.00245	0.00543
Molybdenum	0.000137	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Nickel	0.00665	0.00128	0.00266	0.0157	0.0155	0.0497	0.00796	0.0102
Silver	0.000238	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000537	0.000241	0.000635	0.000322	0.000351	0.00162	0.00118	0.000451
Titanium	<0.000833	<0.000830	0.00423	<0.000833	<0.000832	<0.000833	<0.000833	<0.000833
Uranium	0.000268	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.000931	0.00129	0.00142	0.00112	<0.000832	<0.000833	0.000942	0.000865
Zinc	0.00817	0.0140	0.0121	0.0104	0.0114	0.00527	0.0150	0.0892
Iron	0.0710	0.0283	0.138	0.0577	0.126	0.0151	0.0395	0.215
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	5-Nov	5-Nov	5-Nov	5-Nov		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24.1	24.1	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	68	55	63	29		
Aluminum	0.0170	0.0160	0.0169	0.00992	0.2	0.24147175
Arsenic	0.000350	<0.000207	<0.000207	<0.000208	0.005	<
Barium	0.000579	0.000873	0.00203	0.000272	0.005	0.01002313
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Boron	<0.00833	<0.00830	<0.00830	<0.00833	0.2	<
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	0.005	<
Chromium	0.00249	0.00262	0.00252	0.00219	0.02	0.061111484
Cobalt	0.00129	0.000508	0.000523	0.000973	0.002	0.077236906
Copper	0.00799	0.00370	0.0116	0.00353	0.01	0.100790953
Lead	0.000496	0.000421	0.000466	<0.000208	0.005	<
Manganese	0.0135	0.00460	0.00420	0.00220	0.002	0.104727031
Molybdenum	0.000627	<0.0000830	<0.0000830	0.0000939	0.002	0.016274745
Nickel	0.00475	0.00703	0.00470	<0.000833	0.02	0.297540313
Silver	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Strontium	0.000223	<0.000207	0.000246	<0.000208	0.005	<
Titanium	0.00258	<0.000830	<0.000830	<0.000833	0.02	<
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	0.002	<
Vanadium (corr)	<0.000833	<0.000830	<0.000830	<0.000833	0.02	<
Zinc	0.0126	0.0179	0.0148	0.00323	0.02	0.112324344
Iron	0.0342	0.0600	0.0881	0.0156	0.2	0.403301958
Phosphorus	<0.208	<0.207	<0.207	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	CNRL Horizon	Albian Muskeg River	
Sample Date	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov	5-Nov
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	23.994	25.053	24.009	24.01	24
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	89	65	100	61	81	74	88	9
Aluminum	0.0382	0.0179	0.0357	0.0168	0.0250	0.0171	0.0231	0.0141
Arsenic	<0.000208	<0.000207	<0.000207	<0.000208	<0.000200	<0.000208	<0.000208	<0.000208
Barium	0.00277	0.000867	0.00398	0.000868	0.000891	0.000464	0.000573	0.000532
Beryllium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000200	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00834	<0.00798	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000200	<0.000208	<0.000208	<0.000208
Chromium	0.00289	0.00280	0.00234	0.00242	0.00249	0.00212	0.00257	0.00252
Cobalt	0.000961	0.00141	0.000427	0.00101	0.000556	0.000994	0.000695	0.000249
Copper	0.0236	0.00358	0.00323	0.00894	0.00188	0.00129	0.00169	0.000828
Lead	0.000588	0.000368	0.000423	0.000263	0.000657	0.000432	0.000432	0.000360
Manganese	0.00951	0.00311	0.00985	0.0199	0.00512	0.00609	0.0155	0.00815
Molybdenum	<0.0000833	<0.0000830	<0.0000830	0.000106	0.000222	<0.0000833	0.000163	<0.0000833
Nickel	0.00297	0.00565	<0.000830	<0.000834	<0.000798	<0.000833	0.00268	<0.000833
Silver	0.000176	<0.0000830	<0.0000830	<0.0000834	<0.0000798	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000499	<0.000207	0.000484	<0.000208	0.000354	0.00229	<0.000208	<0.000208
Titanium	<0.000833	<0.000830	0.00114	<0.000834	<0.000798	<0.000833	<0.000833	<0.000833
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000834	<0.0000798	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.000972	<0.000830	<0.000830	<0.000834	<0.000798	<0.000833	0.000939	<0.000833
Zinc	0.0200	0.00596	0.00939	0.00694	0.0136	0.00684	0.0107	0.00423
Iron	0.0705	0.0412	0.117	0.0323	0.0877	0.0386	0.0793	0.0342
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.200	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Anzac			
Sample Date	11-Nov	11-Nov	11-Nov			
PM Size(µm)	2.5	2.5	2.5			
Total Air Volume (m3)	24	24.1	24.001			24
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	31	225	98			-7
Aluminum	0.0636	0.129	0.0340	0.2	0.24147175	0.0399
Arsenic	0.000413	0.000738	0.000448	0.005	<	<0.000208
Barium	0.00157	0.00330	0.00133	0.005	0.01002313	0.000719
Beryllium	0.000934	0.000468	<0.000208	0.005	<	0.000229
Boron	<0.00833	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00273	0.00332	0.00335	0.02	0.061111484	0.0349
Cobalt	0.0116	0.0166	0.00673	0.002	0.077236906	0.00478
Copper	0.00838	0.00376	0.0258	0.01	0.100790953	0.00213
Lead	0.00141	0.00163	0.000993	0.005	<	<0.000208
Manganese	0.0172	0.0314	0.00624	0.002	0.104727031	0.00454
Molybdenum	0.000255	0.000705	<0.0000833	0.002	0.016274745	0.00126
Nickel	0.00853	0.00234	0.0135	0.02	0.297540313	<0.000833
Silver	0.000111	0.000248	<0.0000833	0.002	<	<0.0000833
Strontium	0.000770	0.00188	0.000367	0.005	<	0.000512
Titanium	0.00172	0.00439	<0.000833	0.02	<	<0.000833
Uranium	<0.0000833	0.000136	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.000952	0.00122	<0.000833	0.02	<	0.000845
Zinc	0.0112	0.0159	0.0123	0.02	0.112324344	0.00370
Iron	0.182	0.310	0.0619	0.2	0.403301958	0.120
Phosphorus	<0.208	<0.207	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov	11-Nov
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.001	24.051	24.009	24.006	23.998
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	27	487	1149	155	2491	882	515	803
Aluminum	0.0271	0.240	0.800	0.0644	1.91	0.509	0.501	0.467
Arsenic	<0.000208	0.000521	0.00200	0.000441	0.00131	0.000520	0.00133	0.000554
Barium	0.000517	0.00820	0.0275	0.00308	0.0276	0.0107	0.00906	0.0107
Beryllium	0.000618	<0.000207	0.000376	<0.000208	0.00120	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00833	<0.00832	<0.00833	0.00958	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00261	0.00357	0.00557	0.00923	0.00579	0.00324	0.00381	0.00329
Cobalt	0.00460	0.00480	0.00340	0.00170	0.00509	0.00241	0.00276	0.00206
Copper	0.00830	0.0137	0.0270	0.0857	0.00845	0.00892	0.00426	0.00511
Lead	0.000297	0.00160	0.00277	0.00102	0.00274	0.00200	0.00144	0.00162
Manganese	0.00461	0.0188	0.0832	0.00600	0.130	0.0301	0.0229	0.0300
Molybdenum	<0.0000833	0.000487	0.000812	<0.0000833	0.000762	<0.0000833	<0.0000833	0.000278
Nickel	0.0253	0.00178	0.00381	0.00886	0.00759	0.00867	0.00564	0.00879
Silver	<0.0000833	0.000118	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000367	0.00254	0.00937	0.000728	0.0180	0.00517	0.00488	0.00609
Titanium	<0.000833	0.00946	0.0324	<0.000833	0.0543	0.0140	0.0133	0.0216
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	0.00153	0.00364	0.00274	0.00738	0.00312	0.00234	0.00419
Zinc	0.00324	0.0176	0.0368	0.00687	0.0299	0.0154	0.0160	0.0137
Iron	0.0358	0.891	2.83	0.149	6.76	1.40	0.988	1.62
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



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Station #	AMS 1	AMS 6	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Anzac			
Sample Date	17-Nov	17-Nov	17-Nov			17-Nov
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24	24			24
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	179	180	163			5
Aluminum	0.0219	0.0242	0.0172	0.2	0.24147175	0.0104
Arsenic	0.000305	0.000550	<0.000208	0.005	<	<0.000208
Barium	0.000643	0.00101	0.000476	0.005	0.01002313	<0.000208
Beryllium	0.000279	<0.000208	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00284	0.00219	0.00350	0.02	0.061111484	0.00293
Cobalt	0.00783	0.00650	0.00367	0.002	0.077236906	0.00647
Copper	0.0161	0.0258	0.00419	0.01	0.100790953	0.0190
Lead	0.00128	0.00119	0.000700	0.005	<	<0.000208
Manganese	0.0111	0.00715	0.00290	0.002	0.104727031	0.00238
Molybdenum	<0.0000833	0.000782	<0.0000833	0.002	0.016274745	0.000145
Nickel	0.0462	0.00388	0.00102	0.02	0.297540313	0.00194
Silver	<0.0000833	0.000146	<0.0000833	0.002	<	<0.0000833
Strontium	0.000519	0.000466	<0.000208	0.005	<	<0.000208
Titanium	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Uranium	<0.0000833	0.000214	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000833	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.0140	0.0154	0.00953	0.02	0.112324344	0.00347
Iron	0.0648	0.0554	0.0199	0.2	0.403301958	0.00863
Phosphorus	<0.208	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov	17-Nov
PM Size(µm)	10	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.008	24.049	24	24	23.997
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	207	154	201	169	186	148	249	103
Aluminum	0.0499	0.0347	0.0350	0.0310	0.0469	0.0279	0.0598	0.0313
Arsenic	0.000303	<0.000207	<0.000207	<0.000208	0.000457	<0.000208	<0.000208	0.000303
Barium	0.00109	0.00291	0.00308	0.00147	0.000883	0.000998	0.00132	0.000917
Beryllium	0.000299	<0.000207	<0.000207	<0.000208	0.000563	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00833	<0.00832	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00244	0.00309	0.00240	0.00265	0.00246	0.00381	0.00285	0.00300
Cobalt	0.00809	0.00888	0.00587	0.00367	0.00648	0.00274	0.00626	0.00622
Copper	0.0387	0.0176	0.0218	0.00773	0.0127	0.0158	0.00194	0.0216
Lead	0.00121	0.000984	0.000971	0.000873	0.00114	0.000570	0.000808	0.00112
Manganese	0.0646	0.00307	0.00811	0.00323	0.00466	0.00394	0.00462	0.00464
Molybdenum	<0.0000833	0.000792	0.000407	0.000193	<0.0000832	0.000232	0.000283	<0.0000833
Nickel	0.0419	0.00183	0.00221	0.000946	0.0466	0.00209	0.00361	0.0387
Silver	0.000127	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000712	0.000409	0.000403	0.000290	0.00108	0.000258	0.00110	0.000484
Titanium	0.00115	0.00114	0.00161	<0.000833	0.00150	<0.000833	0.00115	<0.000833
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	<0.0000832	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	0.000875	<0.000830	<0.000830	<0.000833	<0.000832	0.00160	0.00152	<0.000833
Zinc	0.0328	0.0124	0.0112	0.00920	0.0127	0.00940	0.0134	0.00872
Iron	0.140	0.0768	0.0896	0.0511	0.138	0.0719	0.123	0.0870
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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2012
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Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac		
Sample Date	23-Nov	23-Nov	23-Nov	23-Nov		
PM Size(µm)	2.5	2.5	2.5	2.5		
Total Air Volume (m3)	24	24	24	24		
Units	µg/M3	µg/M3	µg/M3	µg/M3		
Particulate Matter (µg/m3)	109	95	75	121		
Aluminum	0.0283	0.0266	0.0269	0.0162	0.2	0.295945646
Arsenic	<0.000208	<0.000208	0.000262	<0.000208	0.005	<
Barium	0.000509	0.000821	0.00100	0.000402	0.005	0.007093536
Beryllium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<
Boron	<0.00833	<0.00833	<0.00833	<0.00833	0.2	<
Cadmium	<0.000208	<0.000208	<0.000208	<0.000208	0.005	<
Chromium	0.00248	0.00259	0.00206	0.00165	0.02	0.072419016
Cobalt	0.00319	0.00310	0.00518	0.00122	0.002	0.089059109
Copper	0.0118	0.0115	0.00673	0.0127	0.01	0.131886078
Lead	0.000496	0.000409	0.00559	0.000848	0.005	0.006894344
Manganese	0.00469	0.00241	0.0101	0.00223	0.002	0.070831891
Molybdenum	0.000180	0.000226	0.000313	<0.0000833	0.002	0.02057074
Nickel	0.000991	0.00145	0.00265	0.00242	0.02	0.072744052
Silver	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<
Strontium	0.000434	0.000325	0.000375	0.000305	0.005	0.006105234
Titanium	<0.000833	<0.000833	<0.000833	<0.000833	0.02	<
Uranium	<0.0000833	<0.0000833	<0.0000833	<0.0000833	0.002	<
Vanadium (corr)	0.00157	0.000960	<0.000833	<0.000833	0.02	<
Zinc	0.00934	0.0131	0.0138	0.00958	0.02	0.093552875
Iron	0.0660	0.0617	0.203	0.0250	0.2	0.688366969
Phosphorus	<0.208	<0.208	<0.208	<0.208	5	<

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	CNRL Horizon	Albian Muskeg River
Sample Date	23-Nov	23-Nov	23-Nov	23-Nov	23-Nov	23-Nov	23-Nov
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24	24.1	24.005	24.005	24.012	24.01
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	221	119	119	137	193	236	278
Aluminum	0.126	0.0308	0.0363	0.0203	0.198	0.0842	0.0687
Arsenic	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	0.000407	<0.000208
Barium	0.00209	0.00167	0.00263	0.000309	0.00231	0.00143	0.00143
Beryllium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208
Boron	<0.00833	<0.00833	<0.00830	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000208	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00241	0.00238	0.00155	0.00165	0.00204	0.00269	0.00214
Cobalt	0.00397	0.00434	0.000643	0.000781	0.00125	0.00573	0.00296
Copper	0.0333	0.0102	0.00413	0.0169	0.00334	0.00815	0.00324
Lead	0.000497	0.000629	0.000311	0.000223	0.000480	0.00111	0.000470
Manganese	0.00906	0.00356	0.00340	0.00288	0.0103	0.00563	0.00327
Molybdenum	0.000223	0.000211	<0.0000830	<0.0000833	0.000103	0.00213	0.000673
Nickel	0.00207	0.00382	0.00142	0.00111	0.00147	0.00907	0.00246
Silver	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000833	<0.0000833	0.000117
Strontium	0.00118	0.000507	0.000527	0.000311	0.00120	0.000906	0.000703
Titanium	0.00395	0.000989	0.00167	<0.000833	0.00573	0.00341	0.00162
Uranium	<0.0000833	<0.0000833	<0.0000830	<0.0000833	<0.0000833	0.000209	0.000110
Vanadium (corr)	0.00206	0.00104	<0.000830	<0.000833	0.00118	0.00696	0.00101
Zinc	0.0119	0.00855	0.00675	0.00534	0.00952	0.00973	0.00509
Iron	0.363	0.110	0.121	0.0380	0.467	0.218	0.142
Phosphorus	<0.208	<0.208	<0.207	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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Station #	AMS 1	AMS 6	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Anzac			
Sample Date	29-Nov	29-Nov	29-Nov			29-Nov
PM Size(µm)	2.5	2.5	2.5			2.5
Total Air Volume (m3)	28.039	24.1	24			24
Units	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	471	141	114			-43
Aluminum	0.0195	0.0322	0.0203	0.2	0.295945646	0.0128
Arsenic	0.000447	0.000320	<0.000208	0.005	<	<0.000208
Barium	0.000829	0.00149	0.000329	0.005	0.007093536	<0.000208
Beryllium	<0.000178	<0.000207	<0.000208	0.005	<	<0.000208
Boron	<0.00713	<0.00830	<0.00833	0.2	<	<0.00833
Cadmium	<0.000178	<0.000207	<0.000208	0.005	<	<0.000208
Chromium	0.00215	0.00313	0.00212	0.02	0.072419016	0.00184
Cobalt	0.00324	0.00246	0.00845	0.002	0.089059109	0.000834
Copper	0.0205	0.0153	0.0223	0.01	0.131886078	0.00210
Lead	0.000612	0.000406	0.000406	0.005	0.006894344	<0.000208
Manganese	0.00237	0.00318	0.00282	0.002	0.070831891	0.000992
Molybdenum	0.000636	0.000612	0.000145	0.002	0.02057074	0.00124
Nickel	0.00351	0.00179	0.0123	0.02	0.072744052	0.00433
Silver	0.000201	<0.0000830	0.000156	0.002	<	<0.0000833
Strontium	0.000976	0.000788	0.000639	0.005	0.006105234	<0.000208
Titanium	<0.000713	<0.000830	<0.000833	0.02	<	<0.000833
Uranium	0.000230	<0.0000830	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	0.00112	0.000886	<0.000833	0.02	<	<0.000833
Zinc	0.0160	0.00955	0.00378	0.02	0.093552875	0.00288
Iron	0.0725	0.113	0.0605	0.2	0.688366969	0.0196
Phosphorus	<0.178	<0.207	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	29-Nov	29-Nov	29-Nov	29-Nov	29-Nov	29-Nov	29-Nov
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24	23.943	24.015	24.008
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	542	174	247	141	513	597	403
Aluminum	0.0729	0.0411	0.0703	0.0265	0.0820	0.0604	0.104
Arsenic	0.000638	0.000318	<0.000207	<0.000208	<0.000209	<0.000208	<0.000208
Barium	0.00274	0.00409	0.00738	0.000449	0.00257	0.00209	0.00314
Beryllium	0.000271	<0.000207	<0.000207	0.000568	<0.000209	<0.000208	<0.000208
Boron	<0.00833	<0.00830	<0.00830	<0.00833	<0.00835	<0.00833	<0.00833
Cadmium	0.000388	<0.000207	<0.000207	<0.000208	<0.000209	<0.000208	<0.000208
Chromium	0.00362	0.00283	0.00213	0.00304	0.00665	0.00399	0.00303
Cobalt	0.00698	0.00272	0.000974	0.00467	0.00203	0.00489	0.00268
Copper	0.109	0.0188	0.0555	0.0482	0.0204	0.00311	0.00658
Lead	0.000892	0.000503	0.000598	0.000423	0.000406	0.000520	0.000581
Manganese	0.00717	0.00379	0.00968	0.00292	0.00569	0.00597	0.00907
Molybdenum	0.000621	<0.0000830	0.000492	0.000228	0.000163	0.000509	0.000787
Nickel	0.0133	0.00121	0.00477	0.0144	0.00469	0.00840	0.00753
Silver	0.000267	<0.0000830	<0.0000830	<0.0000833	<0.0000835	<0.0000833	<0.0000833
Strontium	0.00161	0.00117	0.00187	0.000877	0.00121	0.00122	0.00160
Titanium	0.00245	0.00201	0.00304	0.00324	<0.000835	0.00136	0.00254
Uranium	0.000289	<0.0000830	<0.0000830	<0.0000833	<0.0000835	<0.0000833	<0.0000833
Vanadium (corr)	0.00195	0.000843	<0.000830	0.000980	0.00255	0.00180	0.00140
Zinc	0.0173	0.0111	0.0262	0.00509	0.0218	0.0233	0.0185
Iron	0.324	0.144	0.226	0.0777	0.341	0.258	0.293
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.209	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	5-Dec	5-Dec	5-Dec	5-Dec			5-Dec
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)	24	24.1	24	24			24
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)	41	70	84	51			2
Aluminum	0.0136	0.0145	0.0200	0.0117	0.2	0.295945646	0.0105
Arsenic	0.000437	<0.000207	0.000303	<0.000208	0.005	<	<0.000208
Barium	0.000418	<0.000207	0.00244	<0.000208	0.005	0.007093536	0.000264
Beryllium	0.000318	<0.000207	0.000244	<0.000208	0.005	<	<0.000208
Boron	<0.00833	<0.00830	<0.00833	<0.00833	0.2	<	<0.00833
Cadmium	<0.000208	<0.000207	<0.000208	<0.000208	0.005	<	<0.000208
Chromium	0.00227	0.00256	0.00227	0.00227	0.02	0.072419016	0.00262
Cobalt	0.00109	0.00102	0.000668	0.000968	0.002	0.089059109	0.00618
Copper	0.0175	0.00269	0.0142	0.0121	0.01	0.131886078	0.00519
Lead	0.000608	0.000297	0.00530	0.000257	0.005	0.006894344	0.000324
Manganese	0.00222	0.00181	0.00365	0.00200	0.002	0.070831891	0.00199
Molybdenum	0.000501	<0.0000830	0.000239	<0.0000833	0.002	0.02057074	0.000714
Nickel	0.00557	<0.000830	0.00256	0.00479	0.02	0.072744052	0.0192
Silver	0.000125	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Strontium	0.000442	<0.000207	0.000371	<0.000208	0.005	0.006105234	0.000242
Titanium	<0.000833	<0.000830	<0.000833	<0.000833	0.02	<	<0.000833
Uranium	0.000166	<0.0000830	<0.0000833	<0.0000833	0.002	<	<0.0000833
Vanadium (corr)	<0.000833	<0.000830	<0.000833	<0.000833	0.02	<	<0.000833
Zinc	0.00751	0.00553	0.0294	0.00729	0.02	0.093552875	0.00419
Iron	0.0370	0.0512	0.317	0.0421	0.2	0.688366969	0.0432
Phosphorus	<0.208	<0.207	<0.208	<0.208	5	<	<0.208

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 13	AMS 15	AMS 16
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Syncrude UE-1	CNRL Horizon	Albian Muskeg River
Sample Date	5-Dec	5-Dec	5-Dec	5-Dec	5-Dec	5-Dec	5-Dec
PM Size(µm)	10	10	10	10	10	10	10
Total Air Volume (m3)	24	24.1	24.1	24.009	24.011	24.008	24.012
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)	70	53	82	73	1	124	92
Aluminum	0.0278	0.0193	0.0376	0.0189	0.0286	0.0513	0.0405
Arsenic	<0.000208	<0.000207	0.000535	<0.000208	<0.000208	<0.000208	<0.000208
Barium	0.000480	0.000242	0.00248	0.000337	0.000560	0.00552	0.000760
Beryllium	<0.000208	0.000351	<0.000207	<0.000208	<0.000208	<0.000208	0.000248
Boron	<0.00833	<0.00830	<0.00830	<0.00833	<0.00833	<0.00833	<0.00833
Cadmium	<0.000208	<0.000207	<0.000207	<0.000208	<0.000208	<0.000208	<0.000208
Chromium	0.00235	0.00243	0.00327	0.00422	0.00256	0.00234	0.00212
Cobalt	0.00134	0.000332	0.00354	0.00626	0.00723	0.000847	0.00254
Copper	0.0583	0.00220	0.0179	0.0400	0.0180	0.00220	0.00644
Lead	0.000385	0.00156	0.0181	0.000285	0.000511	0.000331	0.000471
Manganese	0.00314	0.00168	0.00633	0.00313	0.00364	0.00380	0.0107
Molybdenum	0.000112	<0.0000830	0.000541	0.000611	<0.0000833	<0.0000833	0.000314
Nickel	0.00132	0.00435	0.00612	0.000885	0.0378	0.00246	0.00164
Silver	0.000192	<0.0000830	<0.0000830	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Strontium	0.000372	0.000208	0.00149	0.000320	0.000350	0.000516	0.000459
Titanium	<0.000833	0.00179	0.00270	<0.000833	<0.000833	<0.000833	<0.000833
Uranium	<0.0000833	<0.0000830	<0.0000830	<0.0000833	<0.0000833	<0.0000833	<0.0000833
Vanadium (corr)	<0.000833	<0.000830	<0.000830	<0.000833	<0.000833	<0.000833	<0.000833
Zinc	0.00775	0.0159	0.0333	0.00852	0.00658	0.0121	0.0103
Iron	0.0983	0.0561	0.588	0.0553	0.0565	0.106	0.129
Phosphorus	<0.208	<0.207	<0.207	<0.208	<0.208	<0.208	<0.208



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
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2012
Indicated Sites and Dates

Station #	AMS 14	MDL	Lab Blank
Station Name	Anzac		
Sample Date	11-Dec		
PM Size(µm)	2.5		
Total Air Volume (m3)	24		
Units	µg/M3		
Particulate Matter (µg/m3)	72		
Aluminum	0.0264	0.2	0.295945646
Arsenic	<0.000208	0.005	<
Barium	0.000354	0.005	0.007093536
Beryllium	<0.000208	0.005	<
Boron	<0.00833	0.2	<
Cadmium	<0.000208	0.005	<
Chromium	0.00181	0.02	0.072419016
Cobalt	0.00363	0.002	0.089059109
Copper	0.0130	0.01	0.131886078
Lead	0.000424	0.005	0.006894344
Manganese	0.00320	0.002	0.070831891
Molybdenum	0.000278	0.002	0.02057074
Nickel	0.00415	0.02	0.072744052
Silver	<0.000833	0.002	<
Strontium	0.000232	0.005	0.006105234
Titanium	<0.000833	0.02	<
Uranium	<0.000833	0.002	<
Vanadium (corr)	0.00146	0.02	<
Zinc	0.00582	0.02	0.093552875
Iron	0.0609	0.2	0.688366969
Phosphorus	<0.208	5	<

Station #	AMS 14		
Station Name	Anzac		
Sample Date	11-Dec		
PM Size(µm)	10		
Total Air Volume (m3)	24.004		
Units	µg/M3		
Particulate Matter (µg/m3)	61		
Aluminum	0.0628		
Arsenic	<0.000208		
Barium	0.000977		
Beryllium	<0.000208		
Boron	<0.00833		
Cadmium	<0.000208		
Chromium	0.00249		
Cobalt	0.00609		
Copper	0.0429		
Lead	0.000700		
Manganese	0.00753		
Molybdenum	0.000496		
Nickel	0.0369		
Silver	0.000194		
Strontium	0.000233		
Titanium	<0.000833		
Uranium	<0.000833		
Vanadium (corr)	0.00325		
Zinc	0.0109		
Iron	0.0660		
Phosphorus	<0.208		



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Percentage of Samples Detected > 0

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	percent detected	percent detected	percent detected	percent detected			percent detected
PM Size(µm)	2.5	2.5	2.5	2.5			2.5
Total Air Volume (m3)							
Units							
Particulate Matter (µg/m3)							
Aluminum	100	100	100	100			68.6
Arsenic	77.4	33.9	41.5	15.8			2.9
Barium	96.2	94.6	90.6	87.7			48.6
Beryllium	20.8	1.8	1.9	-			5.7
Boron	41.5	42.9	43.4	42.1			-
Cadmium	11.3	1.8	1.9	1.8			-
Chromium	96.2	96.4	98.1	96.5			100
Cobalt	94.3	85.7	86.8	78.9			82.9
Copper	100	100	100	100			97.1
Lead	88.7	91.1	84.9	80.7			22.9
Manganese	96.2	98.2	100	94.7			82.9
Molybdenum	92.5	66.1	77.4	66.7			77.1
Nickel	52.8	32.1	50.9	38.6			51.4
Silver	52.8	10.7	9.4	7			8.6
Strontium	79.2	64.3	58.5	49.1			20
Titanium	52.8	41.1	49.1	29.8			2.9
Uranium	50.9	17.9	18.9	10.5			5.7
Vanadium (corr)	50.9	42.9	43.4	21.1			2.9
Zinc	84.9	82.1	79.2	84.2			85.7
Iron	96.2	89.3	88.7	89.5			74.3
Phosphorus	17	17.9	20.8	15.8			14.3

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	percent detected	percent detected	percent detected	percent detected	percent detected	percent detected	percent detected	percent detected	percent detected
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)									
Units									
Particulate Matter (µg/m3)									
Aluminum	98.2	100	100	100	100	96.4	100	100	65
Arsenic	63.6	53.6	76.8	29.8	63	39.3	48.2	58.2	-
Barium	98.2	98.2	100	98.2	100	98.2	100	100	30
Beryllium	10.9	3.6	1.8	3.5	13	-	-	9.1	-
Boron	45.5	42.9	44.6	40.4	50	44.6	44.6	45.5	-
Cadmium	7.3	3.6	-	-	3.7	-	5.4	1.8	-
Chromium	98.2	98.2	98.2	96.5	100	98.2	96.4	100	95
Cobalt	92.7	92.9	94.6	84.2	98.1	91.1	91.1	96.4	80
Copper	100	100	100	100	100	100	100	100	90
Lead	94.5	92.9	100	84.2	96.3	92.9	92.9	94.5	30
Manganese	96.4	100	100	98.2	100	96.4	98.2	98.2	75
Molybdenum	85.5	75	82.1	71.9	87	78.6	76.8	89.1	95
Nickel	78.2	73.2	91.1	57.9	90.7	66.1	71.4	83.6	25
Silver	54.5	17.9	25	15.8	27.8	12.5	21.4	25.5	15
Strontium	83.6	76.8	82.1	70.2	79.6	82.1	80.4	80	10
Titanium	70.9	76.8	82.1	49.1	77.8	73.2	69.6	74.5	5
Uranium	36.4	17.9	21.4	15.8	37	14.3	23.2	32.7	5
Vanadium (corr)	83.6	82.1	83.9	54.4	87	80.4	83.9	87.3	5
Zinc	83.6	83.9	83.9	82.5	85.2	83.9	83.9	89.1	75
Iron	94.5	96.4	100	94.7	100	94.6	98.2	100	75
Phosphorus	16.4	17.9	16.1	17.5	22.2	16.1	16.1	14.5	25



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Total Times Sampled

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	times detected	times detected	times detected	times detected			
PM Size(µm)	2.5	2.5	2.5	2.5			times detected
Total Air Volume (m3)							2.5
Units							
Particulate Matter (µg/m3)							
Aluminum	53	56	53	57			35
Arsenic	53	56	53	57			35
Barium	53	56	53	57			35
Beryllium	53	56	53	57			35
Boron	53	56	53	57			35
Cadmium	53	56	53	57			35
Chromium	53	56	53	57			35
Cobalt	53	56	53	57			35
Copper	53	56	53	57			35
Lead	53	56	53	57			35
Manganese	53	56	53	57			35
Molybdenum	53	56	53	57			35
Nickel	53	56	53	57			35
Silver	53	56	53	57			35
Strontium	53	56	53	57			35
Titanium	53	56	53	57			35
Uranium	53	56	53	57			35
Vanadium (corr)	53	56	53	57			35
Zinc	53	56	53	57			35
Iron	53	56	53	57			35
Phosphorus	53	56	53	57			35

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	times detected	times detected	times detected	times detected	times detected	times detected	times detected	times detected	times detected
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)									
Units									
Particulate Matter (µg/m3)									
Aluminum	55	56	56	57	54	56	56	55	20
Arsenic	55	56	56	57	54	56	56	55	20
Barium	55	56	56	57	54	56	56	55	20
Beryllium	55	56	56	57	54	56	56	55	20
Boron	55	56	56	57	54	56	56	55	20
Cadmium	55	56	56	57	54	56	56	55	20
Chromium	55	56	56	57	54	56	56	55	20
Cobalt	55	56	56	57	54	56	56	55	20
Copper	55	56	56	57	54	56	56	55	20
Lead	55	56	56	57	54	56	56	55	20
Manganese	55	56	56	57	54	56	56	55	20
Molybdenum	55	56	56	57	54	56	56	55	20
Nickel	55	56	56	57	54	56	56	55	20
Silver	55	56	56	57	54	56	56	55	20
Strontium	55	56	56	57	54	56	56	55	20
Titanium	55	56	56	57	54	56	56	55	20
Uranium	55	56	56	57	54	56	56	55	20
Vanadium (corr)	55	56	56	57	54	56	56	55	20
Zinc	55	56	56	57	54	56	56	55	20
Iron	55	56	56	57	54	56	56	55	20
Phosphorus	55	56	56	57	54	56	56	55	20



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Particulate Matter - Yearly Average

2012
Indicated Sites and Dates

Station #	AMS 1	AMS 6	AMS 7	AMS 14	MDL	Lab Blank	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac			
Sample Date	average	average	average	average			
PM Size(µm)	2.5	2.5	2.5	2.5			average
Total Air Volume (m3)							2.5
Units	µg/M3	µg/M3	µg/M3	µg/M3			µg/M3
Particulate Matter (µg/m3)							
Aluminum	0.067440755	0.062390536	0.083009434	0.041758246			0.012594
Arsenic	0.000547466	0.000547839	0.000370196	5.3954E-05			1.44286E-05
Barium	0.001564453	0.001646679	0.00276717	0.000865228			0.000269571
Beryllium	9.54717E-05	8.35714E-06	4.60377E-06	0			1.63143E-05
Boron	0.013079245	0.0125875	0.013156604	0.012465439			0
Cadmium	3.56604E-05	9.60714E-06	4.71698E-06	1.48947E-05			0
Chromium	0.002600566	0.002440179	0.002475396	0.002351579			0.002508286
Cobalt	0.001400092	0.0010002	0.000671775	0.000891446			0.001305171
Copper	0.039823208	0.012219768	0.011481509	0.01787			0.004946971
Lead	0.022914604	0.025619214	0.038503396	0.012899316			0.002441486
Manganese	0.008450906	0.004527732	0.006469453	0.00282586			0.003699351
Molybdenum	0.001652889	0.001333714	0.001402906	0.000607981			0.000611971
Nickel	0.002442623	0.000679036	0.001021792	0.001198881			0.003944857
Silver	0.000320698	0.000100714	5.58868E-05	0.000134632			3.36686E-05
Strontium	0.000692019	0.000423196	0.000502302	0.000265246			5.58857E-05
Titanium	0.001762075	0.001247857	0.001895321	0.000633333			0.000112286
Uranium	0.000405277	7.23929E-05	0.000113283	2.7807E-05			1.16571E-05
Vanadium (corr)	0.000958906	0.000759125	0.00088566	0.000283877			2.41429E-05
Zinc	0.014143411	0.011154643	0.015233396	0.009137193			0.006018286
Iron	0.196676868	0.13123	0.241433283	0.073716719			0.032520857
Phosphorus	0.002076792	0.00218875	0.002956038	0.001281053			0.001122857

Station #	AMS 1	AMS 6	AMS 7	AMS 14	AMS 12	AMS 13	AMS 15	AMS 16	Travel Blank
Station Name	Fort McKay	Patricia McInnes	Athabasca Valley	Anzac	Millenium	Syncrude UE-1	CNRL Horizon	Albian Muskeg River	
Sample Date	average	average	average	average	average	average	average	average	average
PM Size(µm)	10	10	10	10	10	10	10	10	10
Total Air Volume (m3)									
Units	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3	µg/M3
Particulate Matter (µg/m3)									
Aluminum	0.31022	0.269289643	0.323516071	0.111596491	0.958518519	0.243903571	0.386669643	0.425269091	0.012027
Arsenic	0.000333273	0.000558764	0.000536932	0.000109368	0.000899611	0.000146977	0.000230054	0.000297309	0
Barium	0.006048873	0.00694425	0.010326429	0.002641912	0.011583352	0.003839571	0.005792375	0.006374018	0.00012105
Beryllium	4.52545E-05	1.36786E-05	6.71429E-06	1.46491E-05	6.53333E-05	0	0	2.81818E-05	0
Boron	0.013822182	0.014376786	0.01370125	0.01205614	0.015317222	0.013055357	0.012996071	0.013367273	0
Cadmium	2.10545E-05	1.97143E-05	0	0	1.63333E-05	0	0.000017625	4.70909E-06	0
Chromium	0.002802764	0.003065714	0.00293875	0.002704561	0.004397222	0.003087893	0.002808214	0.002957455	0.0021705
Cobalt	0.001476873	0.001298768	0.000857225	0.001159918	0.001533426	0.000794304	0.001312911	0.000906387	0.00089172
Copper	0.060180545	0.016691054	0.019224643	0.034331404	0.005378704	0.006814821	0.003190232	0.004175727	0.00221005
Lead	0.106718873	0.168883661	0.156928286	0.052012474	0.703356759	0.080012375	0.161940143	0.273535436	0.0007318
Manganese	0.021869345	0.012368071	0.017510054	0.006822561	0.031952481	0.011655964	0.0159495	0.024277291	0.0021647
Molybdenum	0.0025078	0.003609868	0.003103564	0.0014478	0.014098463	0.002369436	0.003465248	0.005377	0.00124775
Nickel	0.003047673	0.001090107	0.001708161	0.002007526	0.003707463	0.00279475	0.001617589	0.002519764	0.00031785
Silver	0.000326996	0.000486029	0.000253995	4.42509E-05	0.001306994	0.000174813	0.00029275	0.000494198	0.0001897
Strontium	0.002363109	0.001801161	0.002369321	0.000567421	0.015209556	0.001643179	0.002438304	0.002699309	0.00002395
Titanium	0.010218455	0.007614957	0.0112825	0.002723526	0.020448296	0.006388107	0.009369089	0.015697382	0.000123
Uranium	0.000340633	0.000384018	0.000394711	0.000113684	0.001740607	0.000247589	0.000527	0.0008926	0.00085
Vanadium (corr)	0.003007764	0.003369732	0.003536125	0.001341298	0.013271963	0.002946	0.005272911	0.005179891	0.00004565
Zinc	0.014240364	0.014662625	0.020666964	0.009590351	0.017803167	0.01215875	0.012868571	0.014620135	0.0060675
Iron	0.972475091	0.592543036	0.894793518	0.240455842	1.557047407	0.51943375	0.731058214	1.14984	0.02589
Phosphorus	0.002713273	0.004343036	0.003491071	0.001953158	0.057681481	0.002979464	0.002401429	0.002232	0.0030215



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 04-Jan	Patricia McInnes 04-Jan	Athabasca Valley 04-Jan	Anzac 04-Jan
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.5	0.7	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 04-Jan	AMS 12 Millennium Mine 04-Jan	AMS 13 Syncrude UE 1 04-Jan	AMS 15 CNRL Horizon 04-Jan
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.1			
2	Carbonyl sulphide	1	0.5	0.6	0.5	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 10-Jan	Millennium Mine 10-Jan	Syncrude UE 1 10-Jan	CNRL Horizon 10-Jan
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.4	0.5	0.4	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 10-Jan	AMS 6 Patricia McInnes 10-Jan	AMS 7 Athabasca Valley 10-Jan	AMS 14 Anzac 10-Jan
#	Compound Name	MDL				
1	Hydrogen sulphide	1				0.4
2	Carbonyl sulphide	1	0.4	1	0.5	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 16-Jan	Patricia McInnes 16-Jan	Athabasca Valley 16-Jan	Anzac 16-Jan
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.4	0.5	0.4	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 16-Jan	AMS 12 Millennium Mine 16-Jan	AMS 13 Syncrude UE 1 16-Jan	AMS 15 CNRL Horizon 16-Jan
#	Compound Name	MDL				
1	Hydrogen sulphide	1		0.2		
2	Carbonyl sulphide	1	0.4	0.5	0.4	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.1		0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 22-Jan	Patricia McInnes 22-Jan	Athabasca Valley 22-Jan	Anzac 22-Jan
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.9	0.9	1	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 9 Barge Landing 22-Jan	AMS 12 Millennium Mine 22-Jan	AMS 13 Syncrude UE 1 22-Jan
#	Compound Name	MDL			
1	Hydrogen sulphide	1			0.1
2	Carbonyl sulphide	1	0.4	0.5	0.4
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 28-Jan	Millennium Mine 28-Jan	Syncrude UE 1 28-Jan	CNRL Horizon 28-Jan
1	Hydrogen sulphide	1				7
2	Carbonyl sulphide	1	0.5	0.6	0.9	8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.4
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 28-Jan	AMS 6 Patricia McInnes 28-Jan	AMS 7 Athabasca Valley 28-Jan	AMS 14 Anzac 28-Jan
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.8	0.9	0.8	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)	
#	Compound Name	MDL	AMS 1	AMS 14
			Fort McKay 01-Feb	Anzac 01-Feb
1	Hydrogen sulphide	1	0.2	
2	Carbonyl sulphide	1	0.7	0.6
3	Methyl mercaptan	1		
4	Ethyl mercaptan	1		
5	Dimethyl sulphide	1		
6	Carbon disulphide	1		
7	Isopropyl mercaptan	1		
8	tert-Butyl mercaptan	1		
9	Propyl mercaptan	1		
10.1	Thiophene	1		
10.2	Isobutyl mercaptan	1		
10.3	sec-Butyl mercaptan	1		
11	Ethyl sulphide	1		
12	Butyl mercaptan	1		
13	tert-Pentyl mercaptan	1		
14	Dimethyl disulphide	1		
15	2-methyl Thiophene	1		
16	3-methyl Thiophene	1		
17	Pentyl mercaptan	1		
18	2-ethyl Thiophene	1		
19	Allyl sulphide	1		
20	2,5-dimethyl Thiophene	1		



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 03-Feb	Millennium Mine 03-Feb	Syncrude UE 1 03-Feb	CNRL Horizon 03-Feb
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.7	0.5	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 03-Feb	AMS 6 Patricia McInnes 03-Feb	AMS 7 Athabasca Valley 03-Feb	AMS 14 Anzac 03-Feb
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.3	0.1		
2	Carbonyl sulphide	1	0.7	0.6	0.7	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 09-Feb	AMS 12 Millennium Mine 09-Feb	AMS 13 Syncrude UE 1 09-Feb	AMS 15 CNRL Horizon 09-Feb
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.1	0.3		0.2
2	Carbonyl sulphide	1	0.7	0.6	0.4	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 09-Feb	AMS 6 Patricia McInnes 09-Feb	AMS 7 Athabasca Valley 09-Feb	AMS 14 Anzac 09-Feb
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.6	0.8	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 12	AMS 13	AMS 15
			Millennium Mine 15-Feb	Syncrude UE 1 15-Feb	CNRL Horizon 15-Feb
1	Hydrogen sulphide	1		0.3	
2	Carbonyl sulphide	1	0.6	0.8	1
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1		0.2	0.1
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 15-Feb	AMS 6 Patricia McInnes 15-Feb	AMS 7 Athabasca Valley 15-Feb	AMS 14 Anzac 15-Feb
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.4	0.5	1	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1			0.2	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 21-Feb	AMS 12 Millennium Mine 21-Feb	AMS 13 Syncrude UE 1 21-Feb	AMS 15 CNRL Horizon 21-Feb
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.2			
2	Carbonyl sulphide	1	0.7	0.6	0.6	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 21-Feb	Patricia McInnes 21-Feb	Athabasca Valley 21-Feb	Anzac 21-Feb
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.5	0.6	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 27-Feb	Millennium Mine 27-Feb	Syncrude UE 1 27-Feb	CNRL Horizon 27-Feb
1	Hydrogen sulphide	1				1
2	Carbonyl sulphide	1	0.8	0.7	0.8	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 27-Feb	AMS 6 Patricia McInnes 27-Feb	AMS 7 Athabasca Valley 27-Feb	AMS 14 Anzac 27-Feb
#	Compound Name	MDL				
1	Hydrogen sulphide	1			0.2	
2	Carbonyl sulphide	1	0.8	1	0.7	0.7
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 04-Mar	Millennium Mine 04-Mar	Syncrude UE 1 04-Mar	CNRL Horizon 04-Mar
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.4	0.4	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 04-Mar	Patricia McInnes 04-Mar	Athabasca Valley 04-Mar	Anzac 04-Mar
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.4	0.4	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 10-Mar	Millennium Mine 10-Mar	Syncrude UE 1 10-Mar	CNRL Horizon 10-Mar
1	Hydrogen sulphide	1		0.4		
2	Carbonyl sulphide	1	0.6	1	0.8	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.1		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 10-Mar	Patricia McInnes 10-Mar	Athabasca Valley 10-Mar	Anzac 10-Mar
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.6	0.8	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 12	AMS 13	AMS 15
			Millennium Mine 16-Mar	Syncrude UE 1 16-Mar	CNRL Horizon 16-Mar
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	1	0.7	0.8
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 16-Mar	AMS 6 Patricia McInnes 16-Mar	AMS 7 Athabasca Valley 16-Mar	AMS 14 Anzac 16-Mar
#	Compound Name	MDL				
1	Hydrogen sulphide	1			0.1	
2	Carbonyl sulphide	1	0.7	0.5	0.8	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 22-Mar	Millennium Mine 22-Mar	Syncrude UE 1 22-Mar	CNRL Horizon 22-Mar
1	Hydrogen sulphide	1				0.2
2	Carbonyl sulphide	1	0.6	0.6	0.7	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 22-Mar	AMS 6 Patricia McInnes 22-Mar	AMS 7 Athabasca Valley 22-Mar	AMS 14 Anzac 22-Mar
#	Compound Name	MDL				
1	Hydrogen sulphide	1		0.7		
2	Carbonyl sulphide	1	0.8	0.7	0.6	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.1		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 9 Barge Landing 28-Mar	AMS 12 Millennium Mine 28-Mar	AMS 13 Syncrude UE 1 28-Mar
#	Compound Name	MDL			
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.6	0.7	0.6
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 28-Mar	AMS 6 Patricia McInnes 28-Mar	AMS 7 Athabasca Valley 28-Mar	AMS 14 Anzac 28-Mar
#	Compound Name	MDL				
1	Hydrogen sulphide	1	2			
2	Carbonyl sulphide	1	2	0.7	0.6	0.7
3	Methyl mercaptan	1	0.4			
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1	0.2			
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 9 Barge Landing 03-Apr	AMS 12 Millennium Mine 03-Apr	AMS 13 Syncrude UE 1 03-Apr
#	Compound Name	MDL			
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.6	0.7	0.5
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)		
			AMS 1 Fort McKay 03-Apr	AMS 7 Athabasca Valley 03-Apr	AMS 14 Anzac 03-Apr
#	Compound Name	MDL			
1	Hydrogen sulphide	1	0.2		
2	Carbonyl sulphide	1	0.8	0.7	0.7
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 09-Apr	AMS 6 Patricia McInnes 09-Apr	AMS 7 Athabasca Valley 09-Apr	AMS 14 Anzac 09-Apr
#	Compound Name	MDL				
1	Hydrogen sulphide	1			0.4	
2	Carbonyl sulphide	1	2	1	1	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.2		0.2	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 09-Apr	AMS 12 Millennium Mine 09-Apr	AMS 13 Syncrude UE 1 09-Apr	AMS 15 CNRL Horizon 09-Apr
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.8			0.2
2	Carbonyl sulphide	1	2	1	1	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.2			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1	0.1			
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 15-Apr	Millennium Mine 15-Apr	Syncrude UE 1 15-Apr	CNRL Horizon 15-Apr
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.9	1	0.9
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 15-Apr	AMS 6 Patricia McInnes 15-Apr	AMS 7 Athabasca Valley 15-Apr	AMS 14 Anzac 15-Apr
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	2	1	1	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.2		0.2	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)
#	Compound Name	MDL	AMS 1 Fort McKay 19-Apr
1	Hydrogen sulphide	1	
2	Carbonyl sulphide	1	2
3	Methyl mercaptan	1	
4	Ethyl mercaptan	1	
5	Dimethyl sulphide	1	
6	Carbon disulphide	1	0.2
7	Isopropyl mercaptan	1	
8	tert-Butyl mercaptan	1	
9	Propyl mercaptan	1	
10.1	Thiophene	1	
10.2	Isobutyl mercaptan	1	
10.3	sec-Butyl mercaptan	1	
11	Ethyl sulphide	1	
12	Butyl mercaptan	1	
13	tert-Pentyl mercaptan	1	
14	Dimethyl disulphide	1	
15	2-methyl Thiophene	1	
16	3-methyl Thiophene	1	
17	Pentyl mercaptan	1	
18	2-ethyl Thiophene	1	
19	Allyl sulphide	1	
20	2,5-dimethyl Thiophene	1	



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 21-Apr	AMS 12 Millennium Mine 21-Apr	AMS 13 Syncrude UE 1 21-Apr	AMS 15 CNRL Horizon 21-Apr
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.7	1	0.8	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.1		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 21-Apr	AMS 6 Patricia McInnes 21-Apr	AMS 7 Athabasca Valley 21-Apr	AMS 14 Anzac 21-Apr
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.1		0.2	
2	Carbonyl sulphide	1	1	0.7	1	0.7
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 9 Barge Landing 27-Apr	AMS 12 Millennium Mine 27-Apr	AMS 13 Syncrude UE 1 27-Apr
#	Compound Name	MDL			
1	Hydrogen sulphide	1	0.2	0.6	
2	Carbonyl sulphide	1	1	1	1
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 27-Apr	AMS 6 Patricia McInnes 27-Apr	AMS 7 Athabasca Valley 27-Apr	AMS 14 Anzac 27-Apr
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.2		0.2	
2	Carbonyl sulphide	1	1	1	1	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13
			Barge Landing 03-May	Millennium Mine 03-May	Syncrude UE 1 03-May
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	1	1	1
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 03-May	AMS 6 Patricia McInnes 03-May	AMS 7 Athabasca Valley 03-May	AMS 14 Anzac 03-May
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	2	2	2	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 09-May	AMS 12 Millennium Mine 09-May	AMS 13 Syncrude UE 1 09-May	AMS 15 CNRL Horizon 09-May
#	Compound Name	MDL				
1	Hydrogen sulphide	1			0.3	
2	Carbonyl sulphide	1	2	1	1	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 09-May	AMS 6 Patricia McInnes 09-May	AMS 7 Athabasca Valley 09-May	AMS 14 Anzac 09-May
#	Compound Name	MDL				
1	Hydrogen sulphide	1		0.7		
2	Carbonyl sulphide	1	2	2	2	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13
			Barge Landing 15-May	Millennium Mine 15-May	Syncrude UE 1 15-May
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	2	2	1
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 15-May	Patricia McInnes 15-May	Athabasca Valley 15-May	Anzac 15-May
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	2	1	2	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)
#	Compound Name	MDL	AMS 15 CNRL Horizon 16-May
1	Hydrogen sulphide	1	
2	Carbonyl sulphide	1	1
3	Methyl mercaptan	1	
4	Ethyl mercaptan	1	
5	Dimethyl sulphide	1	
6	Carbon disulphide	1	
7	Isopropyl mercaptan	1	
8	tert-Butyl mercaptan	1	
9	Propyl mercaptan	1	
10.1	Thiophene	1	
10.2	Isobutyl mercaptan	1	
10.3	sec-Butyl mercaptan	1	
11	Ethyl sulphide	1	
12	Butyl mercaptan	1	
13	tert-Pentyl mercaptan	1	
14	Dimethyl disulphide	1	
15	2-methyl Thiophene	1	
16	3-methyl Thiophene	1	
17	Pentyl mercaptan	1	
18	2-ethyl Thiophene	1	
19	Allyl sulphide	1	
20	2,5-dimethyl Thiophene	1	



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 6	AMS 7	AMS 14
			Patricia McInnes 21-May	Athabasca Valley 21-May	Anzac 21-May
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.7	0.6	0.5
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 21-May	Millennium Mine 21-May	Syncrude UE 1 21-May	CNRL Horizon 21-May
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.7	0.5	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				0.2
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 27-May	Millennium Mine 27-May	Syncrude UE 1 27-May	CNRL Horizon 27-May
1	Hydrogen sulphide	1	0.2		0.3	
2	Carbonyl sulphide	1	2	1	1	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.2			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 27-May	AMS 6 Patricia McInnes 27-May	AMS 7 Athabasca Valley 27-May	AMS 14 Anzac 27-May
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.9	0.2		
2	Carbonyl sulphide	1	1	1	1	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 02-Jun	AMS 12 Millennium Mine 02-Jun	AMS 13 Syncrude UE 1 02-Jun	AMS 15 CNRL Horizon 02-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1			0.1	
2	Carbonyl sulphide	1	1	1	1	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.1	0.1		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 02-Jun	AMS 6 Patricia McInnes 02-Jun	AMS 7 Athabasca Valley 02-Jun	AMS 14 Anzac 02-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	1	1	0.7
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 08-Jun	Millennium Mine 08-Jun	Syncrude UE 1 08-Jun	CNRL Horizon 08-Jun
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.6	0.8	0.7
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 1 Fort McKay 08-Jun	AMS 6 Patricia McInnes 08-Jun	AMS 7 Athabasca Valley 08-Jun
#	Compound Name	MDL			
1	Hydrogen sulphide	1	0.3		
2	Carbonyl sulphide	1	0.9	0.7	0.6
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 14-Jun	Millennium Mine 14-Jun	Syncrude UE 1 14-Jun	CNRL Horizon 14-Jun
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.6	0.6	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 14-Jun	AMS 6 Patricia McInnes 14-Jun	AMS 7 Athabasca Valley 14-Jun	AMS 14 Anzac 14-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.7	0.6	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.1	0.1		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 20-Jun	AMS 12 Millennium Mine 20-Jun	AMS 13 Syncrude UE 1 20-Jun	AMS 15 CNRL Horizon 20-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.3	1		
2	Carbonyl sulphide	1	0.9	1	0.6	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.1	0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 20-Jun	AMS 6 Patricia McInnes 20-Jun	AMS 7 Athabasca Valley 20-Jun	AMS 14 Anzac 20-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.8	0.9	2	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1			0.5	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 26-Jun	AMS 12 Millennium Mine 26-Jun	AMS 13 Syncrude UE 1 26-Jun	AMS 15 CNRL Horizon 26-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1		0.5	0.6	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1		0.4		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 26-Jun	AMS 6 Patricia McInnes 26-Jun	AMS 7 Athabasca Valley 26-Jun	AMS 14 Anzac 26-Jun
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	1	0.7	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 02-Jul	Millennium Mine 02-Jul	Syncrude UE 1 02-Jul	CNRL Horizon 02-Jul
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	2	1	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.2
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 02-Jul	Patricia McInnes 02-Jul	Athabasca Valley 02-Jul	Anzac 02-Jul
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.9	2	0.8	1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 08-Jul	Millennium Mine 08-Jul	Syncrude UE 1 08-Jul	CNRL Horizon 08-Jul
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.7	0.6	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 08-Jul	Patricia McInnes 08-Jul	Athabasca Valley 08-Jul	Anzac 08-Jul
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.4	1	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 9 Barge Landing 14-Jul	AMS 13 Syncrude UE 1 14-Jul	AMS 15 CNRL Horizon 14-Jul
#	Compound Name	MDL			
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.7		0.7
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 14-Jul	AMS 6 Patricia McInnes 14-Jul	AMS 7 Athabasca Valley 14-Jul	AMS 14 Anzac 14-Jul
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	3	0.7	0.6	0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	4	0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1		0.1		



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 20-Jul	AMS 12 Millennium Mine 20-Jul	AMS 13 Syncrude UE 1 20-Jul	AMS 15 CNRL Horizon 20-Jul
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5		0.6	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 20-Jul	AMS 6 Patricia McInnes 20-Jul	AMS 7 Athabasca Valley 20-Jul	AMS 14 Anzac 20-Jul
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	2	0.6	0.5	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	4			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 26-Jul	AMS 12 Millennium Mine 26-Jul	AMS 13 Syncrude UE 1 26-Jul	AMS 15 CNRL Horizon 26-Jul
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5		2	2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1			2	3
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1			0.4	
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 26-Jul	AMS 6 Patricia McInnes 26-Jul	AMS 7 Athabasca Valley 26-Jul	AMS 14 Anzac 26-Jul
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	5		0.6	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.8		0.1	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 9	AMS 13	AMS 15
			Barge Landing 01-Aug	Syncrude UE 1 01-Aug	CNRL Horizon 01-Aug
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.4	0.4	0.4
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 01-Aug	AMS 6 Patricia McInnes 01-Aug	AMS 7 Athabasca Valley 01-Aug	AMS 14 Anzac 01-Aug
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	3	0.4	0.9	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	6		0.5	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 07-Aug	Millennium Mine 07-Aug	Syncrude UE 1 07-Aug	CNRL Horizon 07-Aug
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.7	0.5	0.7
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 07-Aug	AMS 6 Patricia McInnes 07-Aug	AMS 7 Athabasca Valley 07-Aug	AMS 14 Anzac 07-Aug
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.8		0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	3			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 13-Aug	AMS 12 Millennium Mine 13-Aug	AMS 13 Syncrude UE 1 13-Aug	AMS 15 CNRL Horizon 13-Aug
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.4		0.9
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 13-Aug	AMS 6 Patricia McInnes 13-Aug	AMS 7 Athabasca Valley 13-Aug	AMS 14 Anzac 13-Aug
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.8		0.5	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	4			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 19-Aug	Millennium Mine 19-Aug	Syncrude UE 1 19-Aug	CNRL Horizon 19-Aug
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.4		1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 19-Aug	Patricia McInnes 19-Aug	Athabasca Valley 19-Aug	Anzac 19-Aug
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	2	0.4	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	3	2		0.2
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 9	AMS 13	AMS 15
			Barge Landing 25-Aug	Syncrude UE 1 25-Aug	CNRL Horizon 25-Aug
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1		0.5	0.5
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 25-Aug	AMS 6 Patricia McInnes 25-Aug	AMS 7 Athabasca Valley 25-Aug	AMS 14 Anzac 25-Aug
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	2		0.5	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	3	0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)
			AMS 1
			Fort McKay
#	Compound Name	MDL	26-Aug
1	Hydrogen sulphide	1	
2	Carbonyl sulphide	1	0.6
3	Methyl mercaptan	1	
4	Ethyl mercaptan	1	
5	Dimethyl sulphide	1	
6	Carbon disulphide	1	
7	Isopropyl mercaptan	1	
8	tert-Butyl mercaptan	1	
9	Propyl mercaptan	1	
10.1	Thiophene	1	
10.2	Isobutyl mercaptan	1	
10.3	sec-Butyl mercaptan	1	
11	Ethyl sulphide	1	
12	Butyl mercaptan	1	
13	tert-Pentyl mercaptan	1	
14	Dimethyl disulphide	1	
15	2-methyl Thiophene	1	
16	3-methyl Thiophene	1	
17	Pentyl mercaptan	1	
18	2-ethyl Thiophene	1	
19	Allyl sulphide	1	
20	2,5-dimethyl Thiophene	1	



RSC Canisters			Results (ppbv)		
			AMS 1 Fort McKay 31-Aug	AMS 7 Athabasca Valley 31-Aug	AMS 14 Anzac 31-Aug
#	Compound Name	MDL			
1	Hydrogen sulphide	1	0.8	0.6	
2	Carbonyl sulphide	1	0.7	0.4	
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1	2		
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 31-Aug	AMS 12 Millennium Mine 31-Aug	AMS 13 Syncrude UE 1 31-Aug	AMS 15 CNRL Horizon 31-Aug
#	Compound Name	MDL				
1	Hydrogen sulphide	1	1			0.9
2	Carbonyl sulphide	1				
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)
			AMS 6
			Patricia McInnes
#	Compound Name	MDL	01-Sep
1	Hydrogen sulphide	1	1
2	Carbonyl sulphide	1	0.5
3	Methyl mercaptan	1	
4	Ethyl mercaptan	1	
5	Dimethyl sulphide	1	
6	Carbon disulphide	1	
7	Isopropyl mercaptan	1	
8	tert-Butyl mercaptan	1	
9	Propyl mercaptan	1	
10.1	Thiophene	1	
10.2	Isobutyl mercaptan	1	
10.3	sec-Butyl mercaptan	1	
11	Ethyl sulphide	1	
12	Butyl mercaptan	1	
13	tert-Pentyl mercaptan	1	
14	Dimethyl disulphide	1	
15	2-methyl Thiophene	1	
16	3-methyl Thiophene	1	
17	Pentyl mercaptan	1	
18	2-ethyl Thiophene	1	
19	Allyl sulphide	1	
20	2,5-dimethyl Thiophene	1	



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 06-Sep	AMS 12 Millennium Mine 06-Sep	AMS 13 Syncrude UE 1 06-Sep	AMS 15 CNRL Horizon 06-Sep
#	Compound Name	MDL				
1	Hydrogen sulphide	1				0.4
2	Carbonyl sulphide	1			0.3	0.3
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 06-Sep	AMS 6 Patricia McInnes 06-Sep	AMS 7 Athabasca Valley 06-Sep	AMS 14 Anzac 06-Sep
#	Compound Name	MDL				
1	Hydrogen sulphide	1			0.5	
2	Carbonyl sulphide	1	0.8	0.3	0.7	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1		0.4	
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
#	Compound Name	MDL	Barge Landing 12-Sep	Millennium Mine 12-Sep	Syncrude UE 1 12-Sep	CNRL Horizon 12-Sep
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1			0.4	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1			0.3	0.1
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 12-Sep	Patricia McInnes 12-Sep	Athabasca Valley 12-Sep	Anzac 12-Sep
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.5	0.4	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1			0.2
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 18-Sep	Millennium Mine 18-Sep	Syncrude UE 1 18-Sep	CNRL Horizon 18-Sep
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.3	0.3	0.2	0.3
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 18-Sep	AMS 6 Patricia McInnes 18-Sep	AMS 7 Athabasca Valley 18-Sep	AMS 14 Anzac 18-Sep
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.4		
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 24-Sep	AMS 12 Millennium Mine 24-Sep	AMS 13 Syncrude UE 1 24-Sep	AMS 15 CNRL Horizon 24-Sep
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.4	0.2		0.2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 24-Sep	AMS 6 Patricia McInnes 24-Sep	AMS 7 Athabasca Valley 24-Sep	AMS 14 Anzac 24-Sep
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.4	0.2		
2	Carbonyl sulphide	1	0.5	0.3		0.2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.7			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 30-Sep	Millennium Mine 30-Sep	Syncrude UE 1 30-Sep	CNRL Horizon 30-Sep
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.3	0.4		0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 30-Sep	AMS 6 Patricia McInnes 30-Sep	AMS 7 Athabasca Valley 30-Sep	AMS 14 Anzac 30-Sep
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.5		0.3
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.8	0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 06-Oct	AMS 12 Millennium Mine 06-Oct	AMS 13 Syncrude UE 1 06-Oct	AMS 15 CNRL Horizon 06-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.4		0.2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.2			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 06-Oct	AMS 6 Patricia McInnes 06-Oct	AMS 7 Athabasca Valley 06-Oct	AMS 14 Anzac 06-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6			
3	Methyl mercaptan	1		0.6		
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.6			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 12-Oct	AMS 12 Millennium Mine 12-Oct	AMS 13 Syncrude UE 1 12-Oct	AMS 15 CNRL Horizon 12-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.3	0.4	0.3	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 12-Oct	AMS 6 Patricia McInnes 12-Oct	AMS 7 Athabasca Valley 12-Oct	AMS 14 Anzac 12-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.6	0.4		0.2
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 18-Oct	AMS 12 Millennium Mine 18-Oct	AMS 13 Syncrude UE 1 18-Oct	AMS 15 CNRL Horizon 18-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1		0.3		
2	Carbonyl sulphide	1		0.4	0.5	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.2
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 18-Oct	AMS 6 Patricia McInnes 18-Oct	AMS 7 Athabasca Valley 18-Oct	AMS 14 Anzac 18-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				0.3
2	Carbonyl sulphide	1	0.6	0.3	0.2	0.3
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 24-Oct	AMS 12 Millennium Mine 24-Oct	AMS 13 Syncrude UE 1 24-Oct	AMS 15 CNRL Horizon 24-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1		0.4		0.7
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 24-Oct	AMS 6 Patricia McInnes 24-Oct	AMS 7 Athabasca Valley 24-Oct	AMS 14 Anzac 24-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1	0.4			
2	Carbonyl sulphide	1	1	0.4		
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 30-Oct	Millennium Mine 30-Oct	Syncrude UE 1 30-Oct	CNRL Horizon 30-Oct
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.3	0.4	0.4	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 30-Oct	AMS 6 Patricia McInnes 30-Oct	AMS 7 Athabasca Valley 30-Oct	AMS 14 Anzac 30-Oct
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1			
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.9			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 05-Nov	Millennium Mine 05-Nov	Syncrude UE 1 05-Nov	CNRL Horizon 05-Nov
1	Hydrogen sulphide	1				0.3
2	Carbonyl sulphide	1	0.5	0.5	0.4	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				0.2
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 05-Nov	AMS 6 Patricia McInnes 05-Nov	AMS 7 Athabasca Valley 05-Nov	AMS 14 Anzac 05-Nov
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	2			
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	1			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7
			Fort McKay 11-Nov	Patricia McInnes 11-Nov	Athabasca Valley 11-Nov
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.9	0.6	
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1	0.8		
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 11-Nov	AMS 12 Millennium Mine 11-Nov	AMS 13 Syncrude UE 1 11-Nov	AMS 15 CNRL Horizon 11-Nov
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.4	0.7		0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 17-Nov	Millennium Mine 17-Nov	Syncrude UE 1 17-Nov	CNRL Horizon 17-Nov
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.4	0.3		1
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 17-Nov	Patricia McInnes 17-Nov	Athabasca Valley 17-Nov	Anzac 17-Nov
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.9	0.7	0.5	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.7			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 23-Nov	Millennium Mine 23-Nov	Syncrude UE 1 23-Nov	CNRL Horizon 23-Nov
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1		0.3	0.5	0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 23-Nov	AMS 6 Patricia McInnes 23-Nov	AMS 7 Athabasca Valley 23-Nov	AMS 14 Anzac 23-Nov
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.6		0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.9	0.1		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 29-Nov	Millennium Mine 29-Nov	Syncrude UE 1 29-Nov	CNRL Horizon 29-Nov
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1		0.4	0.4	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 29-Nov	AMS 6 Patricia McInnes 29-Nov	AMS 7 Athabasca Valley 29-Nov	AMS 14 Anzac 29-Nov
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.8	0.4	0.3	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.7			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 9	AMS 13	AMS 15
			Barge Landing 05-Dec	Syncrude UE 1 05-Dec	CNRL Horizon 05-Dec
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1	0.5		0.4
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 05-Dec	AMS 6 Patricia McInnes 05-Dec	AMS 7 Athabasca Valley 05-Dec	AMS 14 Anzac 05-Dec
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.9	0.5		0.4
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.8			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)		
			AMS 9 Barge Landing 11-Dec	AMS 12 Millennium Mine 11-Dec	AMS 13 Syncrude UE 1 11-Dec
#	Compound Name	MDL			
1	Hydrogen sulphide	1			
2	Carbonyl sulphide	1			0.5
3	Methyl mercaptan	1			
4	Ethyl mercaptan	1			
5	Dimethyl sulphide	1			
6	Carbon disulphide	1			
7	Isopropyl mercaptan	1			
8	tert-Butyl mercaptan	1			
9	Propyl mercaptan	1			
10.1	Thiophene	1			
10.2	Isobutyl mercaptan	1			
10.3	sec-Butyl mercaptan	1			
11	Ethyl sulphide	1			
12	Butyl mercaptan	1			
13	tert-Pentyl mercaptan	1			
14	Dimethyl disulphide	1			
15	2-methyl Thiophene	1			
16	3-methyl Thiophene	1			
17	Pentyl mercaptan	1			
18	2-ethyl Thiophene	1			
19	Allyl sulphide	1			
20	2,5-dimethyl Thiophene	1			



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 11-Dec	AMS 6 Patricia McInnes 11-Dec	AMS 7 Athabasca Valley 11-Dec	AMS 14 Anzac 11-Dec
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.8	0.5	0.5	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.6			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 17-Dec	Patricia McInnes 17-Dec	Athabasca Valley 17-Dec	Anzac 17-Dec
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.8	0.3	0.5	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.7			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 17-Dec	AMS 12 Millennium Mine 17-Dec	AMS 13 Syncrude UE 1 17-Dec	AMS 15 CNRL Horizon 17-Dec
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.5	0.4	
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 23-Dec	AMS 6 Patricia McInnes 23-Dec	AMS 7 Athabasca Valley 23-Dec	AMS 14 Anzac 23-Dec
#	Compound Name	MDL				
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.9	0.6	0.8
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.6			
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 23-Dec	Millennium Mine 23-Dec	Syncrude UE 1 23-Dec	CNRL Horizon 23-Dec
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1		0.9		0.6
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 29-Dec	Millennium Mine 29-Dec	Syncrude UE 1 29-Dec	CNRL Horizon 29-Dec
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	0.5	0.7	0.5	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1				
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results (ppbv)			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 29-Dec	Patricia McInnes 29-Dec	Athabasca Valley 29-Dec	Anzac 29-Dec
1	Hydrogen sulphide	1				
2	Carbonyl sulphide	1	1	0.9	0.7	0.5
3	Methyl mercaptan	1				
4	Ethyl mercaptan	1				
5	Dimethyl sulphide	1				
6	Carbon disulphide	1	0.7	0.2		
7	Isopropyl mercaptan	1				
8	tert-Butyl mercaptan	1				
9	Propyl mercaptan	1				
10.1	Thiophene	1				
10.2	Isobutyl mercaptan	1				
10.3	sec-Butyl mercaptan	1				
11	Ethyl sulphide	1				
12	Butyl mercaptan	1				
13	tert-Pentyl mercaptan	1				
14	Dimethyl disulphide	1				
15	2-methyl Thiophene	1				
16	3-methyl Thiophene	1				
17	Pentyl mercaptan	1				
18	2-ethyl Thiophene	1				
19	Allyl sulphide	1				
20	2,5-dimethyl Thiophene	1				



RSC Canisters			Results - Percentage of Samples Detected > 0			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing	Millennium Mine	Syncrude UE 1	CNRL Horizon
1	Hydrogen sulphide	1	13.6	10.5	8.2	14.5
2	Carbonyl sulphide	1	81.4	89.5	80.3	92.7
3	Methyl mercaptan	1	-	-	-	-
4	Ethyl mercaptan	1	-	-	-	-
5	Dimethyl sulphide	1	-	-	-	-
6	Carbon disulphide	1	8.5	10.5	4.9	25.5
7	Isopropyl mercaptan	1	-	-	-	-
8	tert-Butyl mercaptan	1	-	-	-	-
9	Propyl mercaptan	1	-	-	-	-
10.1	Thiophene	1	-	-	-	-
10.2	Isobutyl mercaptan	1	-	-	-	-
10.3	sec-Butyl mercaptan	1	-	-	-	-
11	Ethyl sulphide	1	-	-	-	-
12	Butyl mercaptan	1	-	-	-	-
13	tert-Pentyl mercaptan	1	-	-	-	-
14	Dimethyl disulphide	1	1.7	-	1.6	1.8
15	2-methyl Thiophene	1	-	-	-	-
16	3-methyl Thiophene	1	-	-	-	-
17	Pentyl mercaptan	1	-	-	-	-
18	2-ethyl Thiophene	1	-	-	-	-
19	Allyl sulphide	1	-	-	-	-
20	2,5-dimethyl Thiophene	1	-	-	-	-



RSC Canisters			Results - Percentage of Samples Detected > 0			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay	Patricia McInnes	Athabasca Valley	Anzac
1	Hydrogen sulphide	1	17.2	10	11.5	3.2
2	Carbonyl sulphide	1	100	90	80.3	77.4
3	Methyl mercaptan	1	1.6	1.7	-	-
4	Ethyl mercaptan	1	-	-	-	-
5	Dimethyl sulphide	1	-	-	-	-
6	Carbon disulphide	1	54.7	18.3	11.5	3.2
7	Isopropyl mercaptan	1	-	-	-	-
8	tert-Butyl mercaptan	1	-	-	-	-
9	Propyl mercaptan	1	-	-	-	-
10.1	Thiophene	1	-	-	-	-
10.2	Isobutyl mercaptan	1	-	-	-	-
10.3	sec-Butyl mercaptan	1	-	-	-	-
11	Ethyl sulphide	1	-	-	-	-
12	Butyl mercaptan	1	-	-	-	-
13	tert-Pentyl mercaptan	1	-	-	-	-
14	Dimethyl disulphide	1	1.6	-	-	-
15	2-methyl Thiophene	1	-	-	-	-
16	3-methyl Thiophene	1	-	-	-	-
17	Pentyl mercaptan	1	-	-	-	-
18	2-ethyl Thiophene	1	-	-	-	-
19	Allyl sulphide	1	-	-	-	-
20	2,5-dimethyl Thiophene	1	-	1.7	-	-



RSC Canisters			Results - Total Times Sampled			
			AMS 9 Barge Landing	AMS 12 Millennium Mine	AMS 13 Syncrude UE 1	AMS 15 CNRL Horizon
#	Compound Name	MDL				
1	Hydrogen sulphide	1	59	57	61	55
2	Carbonyl sulphide	1	59	57	61	55
3	Methyl mercaptan	1	59	57	61	55
4	Ethyl mercaptan	1	59	57	61	55
5	Dimethyl sulphide	1	59	57	61	55
6	Carbon disulphide	1	59	57	61	55
7	Isopropyl mercaptan	1	59	57	61	55
8	tert-Butyl mercaptan	1	59	57	61	55
9	Propyl mercaptan	1	59	57	61	55
10.1	Thiophene	1	59	57	61	55
10.2	Isobutyl mercaptan	1	59	57	61	55
10.3	sec-Butyl mercaptan	1	59	57	61	55
11	Ethyl sulphide	1	59	57	61	55
12	Butyl mercaptan	1	59	57	61	55
13	tert-Pentyl mercaptan	1	59	57	61	55
14	Dimethyl disulphide	1	59	57	61	55
15	2-methyl Thiophene	1	59	57	61	55
16	3-methyl Thiophene	1	59	57	61	55
17	Pentyl mercaptan	1	59	57	61	55
18	2-ethyl Thiophene	1	59	57	61	55
19	Allyl sulphide	1	59	57	61	55
20	2,5-dimethyl Thiophene	1	59	57	61	55



RSC Canisters			Results - Total Times Sampled			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay	Patricia McInnes	Athabasca Valley	Anzac
1	Hydrogen sulphide	1	64	60	61	62
2	Carbonyl sulphide	1	64	60	61	62
3	Methyl mercaptan	1	64	60	61	62
4	Ethyl mercaptan	1	64	60	61	62
5	Dimethyl sulphide	1	64	60	61	62
6	Carbon disulphide	1	64	60	61	62
7	Isopropyl mercaptan	1	64	60	61	62
8	tert-Butyl mercaptan	1	64	60	61	62
9	Propyl mercaptan	1	64	60	61	62
10.1	Thiophene	1	64	60	61	62
10.2	Isobutyl mercaptan	1	64	60	61	62
10.3	sec-Butyl mercaptan	1	64	60	61	62
11	Ethyl sulphide	1	64	60	61	62
12	Butyl mercaptan	1	64	60	61	62
13	tert-Pentyl mercaptan	1	64	60	61	62
14	Dimethyl disulphide	1	64	60	61	62
15	2-methyl Thiophene	1	64	60	61	62
16	3-methyl Thiophene	1	64	60	61	62
17	Pentyl mercaptan	1	64	60	61	62
18	2-ethyl Thiophene	1	64	60	61	62
19	Allyl sulphide	1	64	60	61	62
20	2,5-dimethyl Thiophene	1	64	60	61	62



RSC Canisters			Results - Yearly Average			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay	Patricia McInnes	Athabasca Valley	Anzac
1	Hydrogen sulphide	1	0.09	0.05	0.04	0.01
2	Carbonyl sulphide	1	1.09	0.68	0.63	0.48
3	Methyl mercaptan	1	0.01	0.01	0	0
4	Ethyl mercaptan	1	0	0	0	0
5	Dimethyl sulphide	1	0	0	0	0
6	Carbon disulphide	1	0.74	0.06	0.03	0.01
7	Isopropyl mercaptan	1	0	0	0	0
8	tert-Butyl mercaptan	1	0	0	0	0
9	Propyl mercaptan	1	0	0	0	0
10.1	Thiophene	1	0	0	0	0
10.2	Isobutyl mercaptan	1	0	0	0	0
10.3	sec-Butyl mercaptan	1	0	0	0	0
11	Ethyl sulphide	1	0	0	0	0
12	Butyl mercaptan	1	0	0	0	0
13	tert-Pentyl mercaptan	1	0	0	0	0
14	Dimethyl disulphide	1	0	0	0	0
15	2-methyl Thiophene	1	0	0	0	0
16	3-methyl Thiophene	1	0	0	0	0
17	Pentyl mercaptan	1	0	0	0	0
18	2-ethyl Thiophene	1	0	0	0	0
19	Allyl sulphide	1	0	0	0	0
20	2,5-dimethyl Thiophene	1	0	0	0	0



RSC Canisters			Results - Yearly Average			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing	Millennium Mine	Syncrude UE 1	CNRL Horizon
1	Hydrogen sulphide	1	0.05	0.05	0.02	0.19
2	Carbonyl sulphide	1	0.57	0.61	0.52	0.98
3	Methyl mercaptan	1	0	0	0	0
4	Ethyl mercaptan	1	0	0	0	0
5	Dimethyl sulphide	1	0	0	0	0
6	Carbon disulphide	1	0.01	0.02	0.04	0.11
7	Isopropyl mercaptan	1	0	0	0	0
8	tert-Butyl mercaptan	1	0	0	0	0
9	Propyl mercaptan	1	0	0	0	0
10.1	Thiophene	1	0	0	0	0
10.2	Isobutyl mercaptan	1	0	0	0	0
10.3	sec-Butyl mercaptan	1	0	0	0	0
11	Ethyl sulphide	1	0	0	0	0
12	Butyl mercaptan	1	0	0	0	0
13	tert-Pentyl mercaptan	1	0	0	0	0
14	Dimethyl disulphide	1	0	0	0.01	0
15	2-methyl Thiophene	1	0	0	0	0
16	3-methyl Thiophene	1	0	0	0	0
17	Pentyl mercaptan	1	0	0	0	0
18	2-ethyl Thiophene	1	0	0	0	0
19	Allyl sulphide	1	0	0	0	0
20	2,5-dimethyl Thiophene	1	0	0	0	0



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 04-Jan	Patricia McInnes 04-Jan	Athabasca Valley 04-Jan	Anzac 04-Jan
1	Formaldehyde	2				
2	Isobutane	0.03	0.33	0.77	1.27	0.43
3	1-Butene	0.03	0.22	0.2	0.68	
4	Acetaldehyde	0.2				
5	Butane	0.03	1.26	1.9	3.76	1.3
6	Methanol	2	27.5		26.3	3.36
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.7	1.12	1.97	0.61
11	1-Pentene	0.03				
12	Acetone	0.2	1.28	1.17	1.95	0.73
13	Pentane	0.03		0.71	0.85	0.51
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03			0.05	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.07	0.1	0.1	
22	Cyclopentane	0.03		0.07	0.14	
23	2-Methylpentane	0.03	0.14	0.25	0.42	0.09
24	3-Methylpentane	0.03	0.08	0.14	0.24	0.04
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.11	0.16	0.47	0.08
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03		0.05		
31	Methylcyclopentane	0.03	0.04	0.08	0.16	
32	Cyclohexane	0.03		0.07	71.3	
33	Benzene	0.03	0.11	0.2	0.45	0.16
34	2-Methylhexane	0.03		0.05	1.07	
35	2,3-Dimethylpentane	0.03		0.06	0.43	
36	3-Methylhexane	0.03	0.1	0.12	1.55	
37	2,2,4-Trimethylpentane	0.03		0.06	0.07	
38	Heptane	0.03	0.21	0.22	0.91	
39	Methylcyclohexane	0.03	0.1	0.14	0.19	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03			0.07	
42	2-Methylheptane	0.03	0.12	0.1	0.05	
43	Toluene	0.03	0.26	0.44	1.08	0.06
44	3-Methylheptane	0.03	0.06	0.05		
45	Octane	0.03	0.31	0.29	0.22	
46	Ethyl benzene	0.03	0.04	0.05	0.08	
47	m,p-Xylene	0.03	0.12	0.15	0.26	
48	Styrene	0.03				
49	Nonane	0.03	0.05	0.05	0.05	
50	o-Xylene	0.03	0.04	0.05	0.08	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.03	0.14	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03			0.43	
56	Decane	0.03			0.04	
57	1,2,4-Trimethylbenzene	0.03			0.05	
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9	AMS 12	AMS 13	AMS 15
				Barge Landing 04-Jan	Millennium Mine 04-Jan	Syncrude UE 1 04-Jan	CNRL Horizon 04-Jan
1	Formaldehyde	2					
2	Isobutane	0.03	0.36	0.41	0.37	0.62	
3	1-Butene	0.03		0.17			
4	Acetaldehyde	0.2				7.45	
5	Butane	0.03	0.8	1.14	0.59	0.66	
6	Methanol	2	11.3				
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.56	0.55	0.61	0.91	
11	1-Pentene	0.03					
12	Acetone	0.2	0.74	1.85	0.96	3.42	
13	Pentane	0.03	0.34	0.38	0.54	0.24	
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03	0.05	0.15	0.06	0.05	
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.06	0.14	0.08	0.08	
22	Cyclopentane	0.03	0.05		0.08	0.06	
23	2-Methylpentane	0.03	0.12	0.11	0.17	0.06	
24	3-Methylpentane	0.03	0.09	0.07	0.11	0.12	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.06	0.07	0.08		
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03		0.03	0.03	0.07	
32	Cyclohexane	0.03		0.08	0.04	0.13	
33	Benzene	0.03	0.15	0.15	0.15	3.15	
34	2-Methylhexane	0.03					
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03		0.06	0.03		
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.04	0.12	0.04	0.05	
39	Methylcyclohexane	0.03	0.04	0.08	0.05	0.08	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03	0.07	0.18	0.07	0.18	
44	3-Methylheptane	0.03					
45	Octane	0.03	0.04	0.16	0.06		
46	Ethyl benzene	0.03		0.03			
47	m,p-Xylene	0.03		0.08		0.04	
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03		0.05			
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03		0.03		0.06	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9	AMS 12	AMS 13	AMS 15
				Barge Landing 10-Jan	Millennium Mine 10-Jan	Syncrude UE 1 10-Jan	CNRL Horizon 10-Jan
1	Formaldehyde	2					
2	Isobutane	0.03	0.36	1.04	0.2	0.75	
3	1-Butene	0.03	0.16	0.66		0.55	
4	Acetaldehyde	0.2		1.25	0.92	4.63	
5	Butane	0.03	0.73	4.09	0.68	0.72	
6	Methanol	2		40.1			
7	trans-2-Butene	0.03		0.55			
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.38	1.94	0.23	0.87	
11	1-Pentene	0.03					
12	Acetone	0.2	2.22	3.66	1.33	3.56	
13	Pentane	0.03					
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03		0.05		0.04	
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03		0.08		0.08	
22	Cyclopentane	0.03		0.2		0.05	
23	2-Methylpentane	0.03	0.04	0.26	0.03	0.04	
24	3-Methylpentane	0.03		0.17	0.03	0.09	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03		0.34			
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03	0.02	0.15		0.06	
32	Cyclohexane	0.03		12.4		0.12	
33	Benzene	0.03	0.12	0.17	0.16	3.34	
34	2-Methylhexane	0.03		0.6			
35	2,3-Dimethylpentane	0.03		0.44			
36	3-Methylhexane	0.03		1.09			
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03		0.84			
39	Methylcyclohexane	0.03		0.25		0.08	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03		0.07			
42	2-Methylheptane	0.03					
43	Toluene	0.03	0.05	0.98		0.15	
44	3-Methylheptane	0.03		0.04			
45	Octane	0.03		0.19			
46	Ethyl benzene	0.03		0.08			
47	m,p-Xylene	0.03		0.3			
48	Styrene	0.03					
49	Nonane	0.03			0.09		
50	o-Xylene	0.03		0.09			
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03		0.07			
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03		2.25			
56	Decane	0.03		0.07			
57	1,2,4-Trimethylbenzene	0.03		0.05			
58	Undecane	0.03		0.1			
59	Dodecane	0.03					
60	Naphthalene	0.03					



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1	AMS 6	AMS 7	AMS 14
				Fort McKay 10-Jan	Patricia McInnes 10-Jan	Athabasca Valley 10-Jan	Anzac 10-Jan
1	Formaldehyde	2					
2	Isobutane	0.03	0.29		1.15	0.2	
3	1-Butene	0.03		1.63	0.25		
4	Acetaldehyde	0.2	0.57	3.2			
5	Butane	0.03	0.85	3.52	4.3	0.81	
6	Methanol	2		51.9			
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.27	2.22	1.03	0.18	
11	1-Pentene	0.03					
12	Acetone	0.2	0.99	6.36	1.15	1.3	
13	Pentane	0.03	0.15		0.37		
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03		0.16			
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03		0.07			
22	Cyclopentane	0.03		0.16			
23	2-Methylpentane	0.03		0.45	0.09		
24	3-Methylpentane	0.03		0.26	0.05		
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03		0.49	0.04		
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03		0.19			
32	Cyclohexane	0.03		16.7			
33	Benzene	0.03	0.11	0.27	0.2	0.11	
34	2-Methylhexane	0.03		1.46			
35	2,3-Dimethylpentane	0.03		0.55			
36	3-Methylhexane	0.03		2.32			
37	2,2,4-Trimethylpentane	0.03			0.07		
38	Heptane	0.03		1.37			
39	Methylcyclohexane	0.03		0.29			
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03	0.03	1.57	0.11	0.04	
44	3-Methylheptane	0.03					
45	Octane	0.03		0.21			
46	Ethyl benzene	0.03		0.1			
47	m,p-Xylene	0.03		0.34	0.05		
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03		0.13			
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03		0.07			
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03		0.05			
57	1,2,4-Trimethylbenzene	0.03		0.06			
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1	AMS 6	AMS 7	AMS 14
				Fort McKay 16-Jan	Patricia McInnes 16-Jan	Athabasca Valley 16-Jan	Anzac 16-Jan
1	Formaldehyde	2					
2	Isobutane	0.03	0.2	0.34	0.52	0.15	
3	1-Butene	0.03					
4	Acetaldehyde	0.2		0.95			
5	Butane	0.03	0.29	0.9	1.52	0.31	
6	Methanol	2					
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.19	0.29	0.48	0.1	
11	1-Pentene	0.03					
12	Acetone	0.2	0.4	1.88	0.95	0.32	
13	Pentane	0.03	0.08		0.19	0.08	
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03					
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03		0.03	0.08		
24	3-Methylpentane	0.03	0.04		0.03		
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03		0.03	0.05		
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03					
32	Cyclohexane	0.03	0.04				
33	Benzene	0.03	0.07	0.1	0.21	0.08	
34	2-Methylhexane	0.03					
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03		0.06	0.05		
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03		0.04			
39	Methylcyclohexane	0.03					
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03		0.05	0.1		
44	3-Methylheptane	0.03					
45	Octane	0.03					
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03					
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03					
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03					
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 16-Jan	Millennium Mine 16-Jan	Syncrude UE 1 16-Jan	CNRL Horizon 16-Jan
1	Formaldehyde	2				
2	Isobutane	0.03	0.21	0.71	0.45	0.61
3	1-Butene	0.03		0.41		0.27
4	Acetaldehyde	0.2		1.11	0.93	4.04
5	Butane	0.03	0.3	1.99	0.9	0.42
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.09	0.86	0.59	0.74
11	1-Pentene	0.03				
12	Acetone	0.2	0.41	1.13	1.15	1.67
13	Pentane	0.03	0.08			1.16
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.05		0.04
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.06		0.07
22	Cyclopentane	0.03		0.07		0.05
23	2-Methylpentane	0.03		0.12	0.03	0.05
24	3-Methylpentane	0.03		0.09	0.04	0.14
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.04	0.19		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.07		0.08
32	Cyclohexane	0.03		0.74		0.24
33	Benzene	0.03	0.1	0.26	0.16	1.23
34	2-Methylhexane	0.03		1.65		
35	2,3-Dimethylpentane	0.03		2.86		0.05
36	3-Methylhexane	0.03		5.02		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.76		
39	Methylcyclohexane	0.03		2.14	0.04	0.12
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.35	0.03	0.08
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03		0.04		
47	m,p-Xylene	0.03		0.07		
48	Styrene	0.03				
49	Nonane	0.03		0.03		
50	o-Xylene	0.03		0.04		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 22-Jan	AMS 6 Patricia McInnes 22-Jan	AMS 7 Athabasca Valley 22-Jan	AMS 14 Anzac 22-Jan
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.66	0.96	1.24	0.57
3	1-Butene	0.03				
4	Acetaldehyde	0.2	0.55	2.44		1.02
5	Butane	0.03	1.65	2.21	3.44	1.82
6	Methanol	2		8.53	14.1	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.5	0.72	0.73	0.38
11	1-Pentene	0.03				
12	Acetone	0.2	0.96	1.52	1.21	0.7
13	Pentane	0.03		0.97	0.22	0.23
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.03			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.06	0.05	0.04	
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.17	0.15	0.13	0.07
24	3-Methylpentane	0.03	0.13	0.09	0.06	0.03
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.24	0.13	0.07	0.06
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.09	0.06	0.04	
32	Cyclohexane	0.03	23.2			2.8
33	Benzene	0.03	0.31	0.22	0.16	0.23
34	2-Methylhexane	0.03	0.05	0.04		
35	2,3-Dimethylpentane	0.03		0.06		
36	3-Methylhexane	0.03		0.08	0.05	
37	2,2,4-Trimethylpentane	0.03		0.15	0.07	
38	Heptane	0.03	0.49	0.05		
39	Methylcyclohexane	0.03	0.2			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.14			
43	Toluene	0.03	0.41	0.22	0.12	0.04
44	3-Methylheptane	0.03	0.08			
45	Octane	0.03	0.51			
46	Ethyl benzene	0.03	0.06	0.03		
47	m,p-Xylene	0.03	0.13	0.07	0.05	
48	Styrene	0.03				
49	Nonane	0.03	0.09			
50	o-Xylene	0.03	0.05	0.03		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 9	AMS 12	AMS 13
				Barge Landing 22-Jan	Millennium Mine 22-Jan	Syncrude UE 1 22-Jan
1	Formaldehyde	2				
2	Isobutane	0.03	0.78	0.64	0.6	
3	1-Butene	0.03	0.25	0.17		
4	Acetaldehyde	0.2				
5	Butane	0.03	1.87	1.54	1.82	
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.54	0.46	0.43	
11	1-Pentene	0.03				
12	Acetone	0.2	0.89	0.69	0.85	
13	Pentane	0.03		0.31	0.34	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.06	0.07		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.08	0.07	0.04	
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.09	0.06	0.09	
24	3-Methylpentane	0.03	0.05	0.04	0.04	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.11	0.09	0.15	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.06	0.04	0.07	
32	Cyclohexane	0.03	0.05	0.1	0.05	
33	Benzene	0.03	0.18	0.16	0.17	
34	2-Methylhexane	0.03	0.05	0.14	0.07	
35	2,3-Dimethylpentane	0.03	0.06	0.33	0.04	
36	3-Methylhexane	0.03	0.11	0.65	0.15	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.17	0.09	0.45	
39	Methylcyclohexane	0.03	0.1	0.21	0.19	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.07		0.2	
43	Toluene	0.03	0.19	0.09	0.32	
44	3-Methylheptane	0.03	0.04		0.09	
45	Octane	0.03	0.21		0.54	
46	Ethyl benzene	0.03	0.03		0.05	
47	m,p-Xylene	0.03	0.09		0.13	
48	Styrene	0.03				
49	Nonane	0.03	0.04		0.08	
50	o-Xylene	0.03	0.04		0.04	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.05	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 28-Jan	Millennium Mine 28-Jan	Syncrude UE 1 28-Jan	CNRL Horizon 28-Jan
1	Formaldehyde	2				
2	Isobutane	0.03	0.28	0.36	0.33	0.9
3	1-Butene	0.03				2.31
4	Acetaldehyde	0.2				39.2
5	Butane	0.03	0.67	0.69	0.77	2.21
6	Methanol	2	2.1			10.4
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		0.19	0.28	0.9
11	1-Pentene	0.03				
12	Acetone	0.2	0.98	0.51	1.09	13.2
13	Pentane	0.03	0.37	0.13	0.25	1.27
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.04	0.04	0.04	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.06	0.04	0.05	
22	Cyclopentane	0.03	0.04			
23	2-Methylpentane	0.03	0.17		0.06	0.27
24	3-Methylpentane	0.03	0.12			0.14
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.07			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.15	0.11	0.11	9.98
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				0.14
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.05	0.03	0.04	0.35
44	3-Methylheptane	0.03				
45	Octane	0.03				0.64
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 28-Jan	AMS 6 Patricia McInnes 28-Jan	AMS 7 Athabasca Valley 28-Jan	AMS 14 Anzac 28-Jan
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.31	0.44	0.45	0.33
3	1-Butene	0.03				
4	Acetaldehyde	0.2		1.26		
5	Butane	0.03	0.71	1.11	1.15	0.84
6	Methanol	2		4.06	2.86	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.23	0.35	0.33	0.29
11	1-Pentene	0.03				
12	Acetone	0.2	0.82	1.09	0.8	1.76
13	Pentane	0.03	0.24	0.4	0.26	0.14
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.03			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03			0.04	
22	Cyclopentane	0.03			0.04	
23	2-Methylpentane	0.03	0.05	0.06	0.05	0.05
24	3-Methylpentane	0.03	0.03	0.03	0.03	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.05	0.04	0.03
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03			0.18	
33	Benzene	0.03	0.12	0.14	0.18	0.14
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03			0.04	
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.03		
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.04	0.08	0.1	0.05
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	Results (ppbv)		
	#	Compound Name	MDL
1	Formaldehyde	2	
2	Isobutane	0.03	1.19
3	1-Butene	0.03	0.56
4	Acetaldehyde	0.2	0.84
5	Butane	0.03	3.04
6	Methanol	2	
7	trans-2-Butene	0.03	
8	cis-2-Butene	0.03	
9	3-Methyl-1-butene	0.03	
10	Isopentane	0.03	0.87
11	1-Pentene	0.03	
12	Acetone	0.2	0.93
13	Pentane	0.03	0.56
14	Isoprene	0.03	
15	trans-2-Pentene	0.03	
16	cis-2-Pentene	0.03	
17	2-Methyl-2-butene	0.03	
18	2,2-Dimethylbutane	0.03	0.18
19	Cyclopentene	0.03	
20	4-Methyl-1-pentene	0.03	
21	2,3-Dimethylbutane	0.03	0.19
22	Cyclopentane	0.03	0.11
23	2-Methylpentane	0.03	0.17
24	3-Methylpentane	0.03	0.1
25	2-Methyl-1-pentene	0.03	
26	Hexane	0.03	0.18
27	Methyl ethyl ketone	0.2	
28	cis-2-Hexene	0.03	
29	trans-2-Hexene	0.03	
30	2,4-Dimethylpentane	0.03	
31	Methylcyclopentane	0.03	0.09
32	Cyclohexane	0.03	0.14
33	Benzene	0.03	0.18
34	2-Methylhexane	0.03	0.08
35	2,3-Dimethylpentane	0.03	0.09
36	3-Methylhexane	0.03	0.15
37	2,2,4-Trimethylpentane	0.03	
38	Heptane	0.03	0.35
39	Methylcyclohexane	0.03	0.19
40	Methyl isobutyl ketone	0.2	
41	2,3,4-Trimethylpentane	0.03	0.04
42	2-Methylheptane	0.03	0.13
43	Toluene	0.03	0.42
44	3-Methylheptane	0.03	0.06
45	Octane	0.03	0.34
46	Ethyl benzene	0.03	0.05
47	m,p-Xylene	0.03	0.17
48	Styrene	0.03	
49	Nonane	0.03	0.1
50	o-Xylene	0.03	0.07
51	Isopropylbenzene	0.03	
52	alpha Pinene	0.03	0.06
53	n-Propylbenzene	0.03	
54	1,3,5-Trimethylbenzene	0.03	
55	beta Pinene	0.03	
56	Decane	0.03	0.03
57	1,2,4-Trimethylbenzene	0.03	
58	Undecane	0.03	0.03
59	Dodecane	0.03	
60	Naphthalene	0.03	



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 03-Feb	Millennium Mine 03-Feb	Syncrude UE 1 03-Feb	CNRL Horizon 03-Feb
1	Formaldehyde	2				
2	Isobutane	0.03	1.25	0.76	1.06	0.55
3	1-Butene	0.03	0.27			
4	Acetaldehyde	0.2	1.28	0.85	0.51	4.41
5	Butane	0.03	3.46	1.66	2.61	1.38
6	Methanol	2	5.87	5.53	2.93	3.57
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.82	0.5	0.67	0.38
11	1-Pentene	0.03				
12	Acetone	0.2	0.63	0.78	0.76	2.4
13	Pentane	0.03	0.34	0.31	0.4	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.18	0.14	0.09	0.05
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.17	0.15	0.15	0.07
22	Cyclopentane	0.03	0.08		0.06	
23	2-Methylpentane	0.03	0.14	0.1	0.14	0.08
24	3-Methylpentane	0.03	0.15	0.09	0.07	0.07
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.17	0.07	0.2	0.08
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.14	0.04	0.08	0.04
32	Cyclohexane	0.03	0.18	0.05	0.13	0.11
33	Benzene	0.03	0.22	0.17	0.23	2.21
34	2-Methylhexane	0.03	0.09		0.09	
35	2,3-Dimethylpentane	0.03	0.1		0.1	
36	3-Methylhexane	0.03	0.21		0.28	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.52		0.62	0.06
39	Methylcyclohexane	0.03	0.33	0.04	0.41	0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03	0.04			
42	2-Methylheptane	0.03	0.24		0.38	
43	Toluene	0.03	0.66	0.09	1.07	0.28
44	3-Methylheptane	0.03	0.11		0.17	
45	Octane	0.03	0.76		0.99	
46	Ethyl benzene	0.03	0.09		0.13	
47	m,p-Xylene	0.03	0.29		0.36	
48	Styrene	0.03				
49	Nonane	0.03	0.17		0.18	0.04
50	o-Xylene	0.03	0.11		0.12	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.09		0.13	0.31
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				1.12
56	Decane	0.03	0.09		0.1	
57	1,2,4-Trimethylbenzene	0.03	0.05		0.05	
58	Undecane	0.03	0.04		0.04	
59	Dodecane	0.03				
60	Naphthalene	0.03				0.15



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1	AMS 6	AMS 7	AMS 14
				Fort McKay 03-Feb	Patricia McInnes 03-Feb	Athabasca Valley 03-Feb	Anzac 03-Feb
1	Formaldehyde	2					
2	Isobutane	0.03	1	1.12	1.99	0.63	
3	1-Butene	0.03	0.28				
4	Acetaldehyde	0.2	0.68		0.86		
5	Butane	0.03	2.54	2.99	6.6	1.99	
6	Methanol	2		77.7	89.4	7.58	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.76	0.87	1.45	0.6	
11	1-Pentene	0.03					
12	Acetone	0.2	0.63	1.48	1.87	0.9	
13	Pentane	0.03	0.34		0.34	0.35	
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03	0.19				
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.23	0.06	0.07		
22	Cyclopentane	0.03	0.07				
23	2-Methylpentane	0.03	0.17	0.16	0.2	0.15	
24	3-Methylpentane	0.03	0.17	0.15	0.1	0.1	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.2	0.12	0.1	0.11	
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03		0.06			
31	Methylcyclopentane	0.03	0.15	0.09	0.07	0.05	
32	Cyclohexane	0.03	0.19	0.03			
33	Benzene	0.03	0.24	0.28	0.24	0.19	
34	2-Methylhexane	0.03	0.09	0.05	0.04		
35	2,3-Dimethylpentane	0.03	0.12	0.1	0.11		
36	3-Methylhexane	0.03	0.21	0.07	0.1		
37	2,2,4-Trimethylpentane	0.03		0.16	0.2		
38	Heptane	0.03	0.57	0.05	0.05	0.04	
39	Methylcyclohexane	0.03	0.35	0.04	0.03	0.04	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03	0.04		0.04		
42	2-Methylheptane	0.03	0.29				
43	Toluene	0.03	0.76	0.3	0.28	0.08	
44	3-Methylheptane	0.03	0.13				
45	Octane	0.03	0.73		0.03		
46	Ethyl benzene	0.03	0.1	0.04	0.04		
47	m,p-Xylene	0.03	0.37	0.13	0.12		
48	Styrene	0.03					
49	Nonane	0.03	0.19				
50	o-Xylene	0.03	0.13	0.05	0.05		
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.12				
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03	0.1				
57	1,2,4-Trimethylbenzene	0.03	0.06				
58	Undecane	0.03	0.04				
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 09-Feb	Millennium Mine 09-Feb	Syncrude UE 1 09-Feb	CNRL Horizon 09-Feb
1	Formaldehyde	2				
2	Isobutane	0.03	0.24	0.7	0.25	0.31
3	1-Butene	0.03				
4	Acetaldehyde	0.2	0.97	0.43		8.35
5	Butane	0.03	0.61	1.05	0.52	0.66
6	Methanol	2	2.28			
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.63	0.58	0.24	0.29
11	1-Pentene	0.03				
12	Acetone	0.2	1.44	0.85	0.96	4.15
13	Pentane	0.03		0.25	0.28	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.06	0.3		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.07	0.29	0.04	0.06
22	Cyclopentane	0.03	0.09	0.06		
23	2-Methylpentane	0.03	0.22	0.08	0.07	0.05
24	3-Methylpentane	0.03	0.12	0.05	0.04	0.07
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.07	0.05	0.03	0.11
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.06		0.06
32	Cyclohexane	0.03		0.14		0.08
33	Benzene	0.03	0.12	0.18	0.09	1.67
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03		0.05		
36	3-Methylhexane	0.03		0.05		0.06
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.07		0.11
39	Methylcyclohexane	0.03		0.12		0.06
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.05		
43	Toluene	0.03	0.04	0.2	0.03	0.13
44	3-Methylheptane	0.03		0.04		
45	Octane	0.03		0.17		
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.11		
48	Styrene	0.03				
49	Nonane	0.03		0.07		
50	o-Xylene	0.03		0.05		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.03		0.05
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 09-Feb	Patricia McInnes 09-Feb	Athabasca Valley 09-Feb	Anzac 09-Feb
1	Formaldehyde	2				
2	Isobutane	0.03	0.24	0.34	0.39	0.45
3	1-Butene	0.03				
4	Acetaldehyde	0.2				0.85
5	Butane	0.03	0.53	0.89	1.13	1.1
6	Methanol	2		2.56	2.1	16.2
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.17	0.45	0.42	0.6
11	1-Pentene	0.03				
12	Acetone	0.2	0.93	1.44	0.91	1.75
13	Pentane	0.03	0.16	0.37	0.36	0.92
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03			0.04	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.05	0.05	0.04
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.04	0.1	0.1	0.08
24	3-Methylpentane	0.03		0.07	0.06	0.06
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.08	0.07	0.14
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				0.03
31	Methylcyclopentane	0.03		0.04	0.04	0.05
32	Cyclohexane	0.03				3.23
33	Benzene	0.03	0.1	0.16	0.17	0.22
34	2-Methylhexane	0.03		0.03	0.03	0.09
35	2,3-Dimethylpentane	0.03			0.04	0.04
36	3-Methylhexane	0.03		0.06	0.07	0.15
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.11	0.09	0.16
39	Methylcyclohexane	0.03		0.06	0.07	0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.06	0.05	
43	Toluene	0.03	0.03	0.18	0.2	0.29
44	3-Methylheptane	0.03				
45	Octane	0.03		0.13	0.11	0.07
46	Ethyl benzene	0.03		0.03		
47	m,p-Xylene	0.03		0.08	0.08	0.06
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03		0.03		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 12	AMS 13	AMS 15
				Millennium Mine 15-Feb	Syncrude UE 1 15-Feb	CNRL Horizon 15-Feb
1	Formaldehyde	2				
2	Isobutane	0.03	0.57	0.5	0.41	
3	1-Butene	0.03			0.38	
4	Acetaldehyde	0.2	1.49		4.36	
5	Butane	0.03	1.17	1.27	0.81	
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.54	0.64	0.27	
11	1-Pentene	0.03				
12	Acetone	0.2	1.37	0.88	3.31	
13	Pentane	0.03		0.77		
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.12	0.07		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.14	0.12	0.09	
22	Cyclopentane	0.03		0.12		
23	2-Methylpentane	0.03	0.08	0.29	0.12	
24	3-Methylpentane	0.03	0.05	0.15	0.09	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.2	0.23	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.07	0.09	
32	Cyclohexane	0.03	0.11	0.07		
33	Benzene	0.03	0.16	0.21	2.16	
34	2-Methylhexane	0.03		0.06		
35	2,3-Dimethylpentane	0.03		0.06		
36	3-Methylhexane	0.03		0.13	0.12	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.38	0.27	
39	Methylcyclohexane	0.03	0.06	0.22	0.14	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.23		
43	Toluene	0.03	0.07	0.5	0.5	
44	3-Methylheptane	0.03		0.1	0.08	
45	Octane	0.03		0.56	0.51	
46	Ethyl benzene	0.03		0.09	0.05	
47	m,p-Xylene	0.03		0.2	0.13	
48	Styrene	0.03				
49	Nonane	0.03		0.12	0.12	
50	o-Xylene	0.03		0.07	0.05	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.34	0.45	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03		0.05	0.06	
57	1,2,4-Trimethylbenzene	0.03			0.03	
58	Undecane	0.03			0.03	
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 15-Feb	AMS 6 Patricia McInnes 15-Feb	AMS 7 Athabasca Valley 15-Feb	AMS 14 Anzac 15-Feb
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.64	0.6	0.91	0.36
3	1-Butene	0.03				
4	Acetaldehyde	0.2		1.25	1.22	1.49
5	Butane	0.03	1.38	1.2	2.77	0.75
6	Methanol	2		6.8	15.2	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.53	0.44	0.99	0.33
11	1-Pentene	0.03				
12	Acetone	0.2	1.14	1.73	1.97	0.9
13	Pentane	0.03	0.7		0.54	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.1	0.04	0.07	0.04
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.2	0.07	0.09	0.06
22	Cyclopentane	0.03	0.11		0.12	
23	2-Methylpentane	0.03	0.43	0.19	0.25	0.19
24	3-Methylpentane	0.03	0.24	0.11	0.16	0.09
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.33	0.14	0.23	0.13
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.13	0.07	0.09	0.04
32	Cyclohexane	0.03	0.14	0.06	0.11	
33	Benzene	0.03	0.24	0.24	0.25	0.18
34	2-Methylhexane	0.03	0.1		0.08	0.1
35	2,3-Dimethylpentane	0.03	0.09	0.06	0.12	0.06
36	3-Methylhexane	0.03	0.17	0.07	0.15	0.22
37	2,2,4-Trimethylpentane	0.03	0.04	0.1	0.12	0.05
38	Heptane	0.03	0.4	0.07	0.12	0.23
39	Methylcyclohexane	0.03	0.21	0.05	0.06	0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.5	0.2	0.69	0.1
44	3-Methylheptane	0.03				
45	Octane	0.03	0.59		0.04	
46	Ethyl benzene	0.03	0.09	0.04	0.07	
47	m,p-Xylene	0.03	0.25	0.1	0.25	
48	Styrene	0.03				
49	Nonane	0.03	0.23			
50	o-Xylene	0.03	0.09	0.04	0.08	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.11	0.11	0.08	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.07		0.04	
57	1,2,4-Trimethylbenzene	0.03	0.05		0.06	
58	Undecane	0.03	0.03		0.03	
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 21-Feb	Millennium Mine 21-Feb	Syncrude UE 1 21-Feb	CNRL Horizon 21-Feb
1	Formaldehyde	2				
2	Isobutane	0.03	0.57	1.12	0.65	1.16
3	1-Butene	0.03		0.4		0.48
4	Acetaldehyde	0.2	1.22	1.76		4.57
5	Butane	0.03	1.43	3.7	1.64	1.71
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.01	2.3	0.84	1.15
11	1-Pentene	0.03				
12	Acetone	0.2	1.05	2.38	0.72	2.88
13	Pentane	0.03	1.64		0.95	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03		0.11		
18	2,2-Dimethylbutane	0.03	0.12	0.08		0.13
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.12	0.1	0.12	0.24
22	Cyclopentane	0.03		0.25	0.13	0.15
23	2-Methylpentane	0.03	0.24	0.4	0.31	0.29
24	3-Methylpentane	0.03	0.12	0.25	0.15	0.31
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.09	0.59	0.14	0.51
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.05	0.23	0.03	0.35
32	Cyclohexane	0.03		2.89	0.04	0.49
33	Benzene	0.03	0.2	0.35	0.22	2.32
34	2-Methylhexane	0.03		0.41		0.2
35	2,3-Dimethylpentane	0.03		0.2		0.22
36	3-Methylhexane	0.03		0.67	0.05	0.46
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.06	0.56	0.15	0.67
39	Methylcyclohexane	0.03	0.06	0.15	0.08	0.37
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.05		0.1
43	Toluene	0.03	0.11	1.08	0.19	0.4
44	3-Methylheptane	0.03		0.05		
45	Octane	0.03			0.11	
46	Ethyl benzene	0.03		0.11		
47	m,p-Xylene	0.03		0.51	0.08	0.09
48	Styrene	0.03				
49	Nonane	0.03			0.03	
50	o-Xylene	0.03		0.15	0.03	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.13	0.08	0.21
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03		3.08		2.03
56	Decane	0.03		0.06		
57	1,2,4-Trimethylbenzene	0.03		0.1		
58	Undecane	0.03		0.06		
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 21-Feb	AMS 6 Patricia McInnes 21-Feb	AMS 7 Athabasca Valley 21-Feb	AMS 14 Anzac 21-Feb
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.69	0.49	0.66	0.35
3	1-Butene	0.03	0.12	0.09		
4	Acetaldehyde	0.2				1.16
5	Butane	0.03	1.39	1.23	2.44	1.07
6	Methanol	2		6.59	49.4	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.71	0.35	0.67	0.25
11	1-Pentene	0.03				
12	Acetone	0.2	0.81	1.23	1.21	0.71
13	Pentane	0.03	0.61	0.65	1.32	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.17			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.05	0.04	
22	Cyclopentane	0.03	0.12	0.04		
23	2-Methylpentane	0.03	0.46	0.12	0.1	
24	3-Methylpentane	0.03	0.31	0.06	0.04	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.24	0.09	0.06	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03	0.04		0.07	
31	Methylcyclopentane	0.03	0.11	0.05	0.06	
32	Cyclohexane	0.03	29.1			
33	Benzene	0.03	0.31	0.17	0.25	0.14
34	2-Methylhexane	0.03	0.06		0.07	
35	2,3-Dimethylpentane	0.03	0.04	0.05	0.09	
36	3-Methylhexane	0.03	0.09	0.05	0.09	
37	2,2,4-Trimethylpentane	0.03		0.08	0.12	
38	Heptane	0.03	0.11	0.05		
39	Methylcyclohexane	0.03	0.09	0.03		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.28	0.16	0.16	
44	3-Methylheptane	0.03				
45	Octane	0.03	0.19	0.14		
46	Ethyl benzene	0.03	0.03	0.04		
47	m,p-Xylene	0.03	0.11	0.08	0.07	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03	0.05	0.04		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.07	0.09		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03	0.03			
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9	AMS 12	AMS 13	AMS 15
				Barge Landing 27-Feb	Millennium Mine 27-Feb	Syncrude UE 1 27-Feb	CNRL Horizon 27-Feb
1	Formaldehyde	2					
2	Isobutane	0.03	0.53	0.38	0.63	0.42	
3	1-Butene	0.03					
4	Acetaldehyde	0.2				10.6	
5	Butane	0.03	1.67	0.85	1.8	0.83	
6	Methanol	2					
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.38	0.26	0.49	0.28	
11	1-Pentene	0.03					
12	Acetone	0.2	0.99	1.01	1.07	3.14	
13	Pentane	0.03	0.29	0.22	0.29		
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03	0.04	0.05	0.07		
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.08	0.07	0.14		
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03	0.07	0.04	0.07		
24	3-Methylpentane	0.03	0.05		0.05		
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.1		0.11		
27	Methyl ethyl ketone	0.2				0.21	
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03			0.03		
31	Methylcyclopentane	0.03	0.05		0.07		
32	Cyclohexane	0.03	0.06				
33	Benzene	0.03	0.21	0.15	0.16	2.31	
34	2-Methylhexane	0.03	0.05		0.04		
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03	0.1		0.09		
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.27		0.27		
39	Methylcyclohexane	0.03	0.16		0.25		
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03	0.09		0.12		
43	Toluene	0.03	0.26	0.05	0.24	0.18	
44	3-Methylheptane	0.03	0.05		0.06		
45	Octane	0.03	0.26		0.29		
46	Ethyl benzene	0.03	0.03		0.04		
47	m,p-Xylene	0.03	0.08		0.08		
48	Styrene	0.03					
49	Nonane	0.03			0.05		
50	o-Xylene	0.03			0.03		
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03			0.04	0.35	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 27-Feb	Patricia McInnes 27-Feb	Athabasca Valley 27-Feb	Anzac 27-Feb
1	Formaldehyde	2				
2	Isobutane	0.03	0.61	0.39	0.69	0.37
3	1-Butene	0.03				
4	Acetaldehyde	0.2			0.99	
5	Butane	0.03	1.67	1.02	2.21	1.07
6	Methanol	2	2.25	12.8	8.01	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.59	0.36	0.58	0.3
11	1-Pentene	0.03				
12	Acetone	0.2	1.15	1.2	0.71	0.63
13	Pentane	0.03	0.3	0.14	0.21	0.2
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.1			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.12	0.05	0.04	
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.11	0.09	0.1	0.05
24	3-Methylpentane	0.03	0.09	0.04	0.06	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.12	0.06	0.06	0.03
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03			0.04	
31	Methylcyclopentane	0.03	0.07	0.03	0.04	
32	Cyclohexane	0.03	0.08	0.09		
33	Benzene	0.03	0.49	0.19	0.22	0.16
34	2-Methylhexane	0.03	0.05			
35	2,3-Dimethylpentane	0.03	0.09		0.08	
36	3-Methylhexane	0.03	0.1		0.05	
37	2,2,4-Trimethylpentane	0.03		0.03	0.12	
38	Heptane	0.03	0.28	0.09	0.04	
39	Methylcyclohexane	0.03	0.19	0.05	0.02	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03	0.02		0.02	
42	2-Methylheptane	0.03	0.11	0.03		
43	Toluene	0.03	0.32	0.19	0.17	0.06
44	3-Methylheptane	0.03	0.04			
45	Octane	0.03	0.28	0.11		
46	Ethyl benzene	0.03	0.05			
47	m,p-Xylene	0.03	0.15	0.07	0.08	0.02
48	Styrene	0.03				
49	Nonane	0.03	0.07			
50	o-Xylene	0.03	0.06			
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.08	0.09		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03			0.01	
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 04-Mar	Millennium Mine 04-Mar	Syncrude UE 1 04-Mar	CNRL Horizon 04-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.42	0.39	0.29	0.37
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.76	0.78	0.63	0.76
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.04	0.45	0.84	0.26
11	1-Pentene	0.03				
12	Acetone	0.2	0.96	0.68	0.8	2.75
13	Pentane	0.03		0.31	0.99	
14	Isoprene	0.03				0.21
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.2	0.16	0.13	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.24	0.19	0.13	0.05
22	Cyclopentane	0.03	0.24		0.18	
23	2-Methylpentane	0.03	0.71	0.12	0.52	0.07
24	3-Methylpentane	0.03	0.36	0.09	0.25	0.04
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.22	0.09	0.15	0.06
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.07	0.06	0.04	0.03
32	Cyclohexane	0.03		0.13		
33	Benzene	0.03	0.35	0.16	0.16	0.24
34	2-Methylhexane	0.03		0.04		
35	2,3-Dimethylpentane	0.03		0.06		
36	3-Methylhexane	0.03		0.08		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.09	0.17	0.03	0.09
39	Methylcyclohexane	0.03	0.1	0.18	0.04	0.06
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.08		0.03
43	Toluene	0.03	0.2	0.2	0.06	0.96
44	3-Methylheptane	0.03		0.04		
45	Octane	0.03	0.08	0.21	0.04	0.09
46	Ethyl benzene	0.03	0.03	0.03		
47	m,p-Xylene	0.03	0.08	0.1		
48	Styrene	0.03				
49	Nonane	0.03	0.05	0.07		
50	o-Xylene	0.03	0.04	0.04		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.05		0.05	0.46
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 04-Mar	Patricia McInnes 04-Mar	Athabasca Valley 04-Mar	Anzac 04-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.27	0.4	0.41	0.37
3	1-Butene	0.03				
4	Acetaldehyde	0.2			2.68	
5	Butane	0.03	0.49	1.18	1.28	1.02
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.44	0.4	0.48	0.37
11	1-Pentene	0.03				
12	Acetone	0.2	1.19	1.1	0.97	0.46
13	Pentane	0.03	0.12			0.17
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.07	0.05	0.05	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.09	0.08	0.06	0.04
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.22	0.14	0.12	0.07
24	3-Methylpentane	0.03	0.12	0.07	0.05	0.05
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.11	0.11	0.09	0.11
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03		0.03		
31	Methylcyclopentane	0.03	0.03	0.06	0.04	0.04
32	Cyclohexane	0.03		0.05		
33	Benzene	0.03	0.14	0.19	0.15	0.13
34	2-Methylhexane	0.03		0.05		
35	2,3-Dimethylpentane	0.03		0.07	0.04	0.08
36	3-Methylhexane	0.03		0.1	0.08	0.04
37	2,2,4-Trimethylpentane	0.03		0.07		0.13
38	Heptane	0.03		0.18	0.13	
39	Methylcyclohexane	0.03	0.05	0.11	0.06	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03		0.03		
42	2-Methylheptane	0.03		0.08	0.04	
43	Toluene	0.03	0.06	0.24	0.15	0.13
44	3-Methylheptane	0.03		0.04		
45	Octane	0.03		0.23	0.1	
46	Ethyl benzene	0.03		0.04		
47	m,p-Xylene	0.03		0.11	0.06	
48	Styrene	0.03				
49	Nonane	0.03		0.04		
50	o-Xylene	0.03		0.04		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.04	0.03		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 10-Mar	Millennium Mine 10-Mar	Syncrude UE 1 10-Mar	CNRL Horizon 10-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.11	0.19	0.12	0.28
3	1-Butene	0.03				
4	Acetaldehyde	0.2				4.58
5	Butane	0.03	0.41	0.53	0.41	1.09
6	Methanol	2				9.1
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.83	0.16	0.4	0.3
11	1-Pentene	0.03				
12	Acetone	0.2	1.19	1.1	0.98	2.89
13	Pentane	0.03	1.11		0.63	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.18	0.08	0.03	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.23	0.05	0.04	0.05
22	Cyclopentane	0.03	0.41		0.08	
23	2-Methylpentane	0.03	0.8		0.17	0.12
24	3-Methylpentane	0.03	0.29		0.08	0.11
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.15		0.1	0.15
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.05
32	Cyclohexane	0.03				28.6
33	Benzene	0.03	0.18	0.11	0.12	2.2
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03		0.03		0.08
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.12		0.09
39	Methylcyclohexane	0.03		0.05		0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.07	0.06	0.4
44	3-Methylheptane	0.03				
45	Octane	0.03		0.11	0.05	
46	Ethyl benzene	0.03				0.03
47	m,p-Xylene	0.03				0.12
48	Styrene	0.03				
49	Nonane	0.03				0.04
50	o-Xylene	0.03				0.05
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.11
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				0.03
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 10-Mar	Patricia McInnes 10-Mar	Athabasca Valley 10-Mar	Anzac 10-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.27	0.37	0.32	0.19
3	1-Butene	0.03				
4	Acetaldehyde	0.2	2.68			1.97
5	Butane	0.03	0.61	1.57	1.44	0.52
6	Methanol	2	4.43		26.8	4.79
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.43	0.5	0.4	0.14
11	1-Pentene	0.03				
12	Acetone	0.2	1.64	1.49	1.27	0.86
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.07			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.09			
22	Cyclopentane	0.03	0.15			
23	2-Methylpentane	0.03	0.28	0.11	0.05	
24	3-Methylpentane	0.03	0.19	0.06	0.03	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.15	0.09	0.04	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.07	0.04	
32	Cyclohexane	0.03				
33	Benzene	0.03	0.15	0.14	0.13	0.12
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03		0.09	0.13	
36	3-Methylhexane	0.03		0.06		
37	2,2,4-Trimethylpentane	0.03		0.25	0.25	
38	Heptane	0.03	0.06			
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03			0.05	
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.16	0.21	0.14	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03		0.03		
47	m,p-Xylene	0.03		0.1		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03		0.04		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.04		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)		
			AMS 12	AMS 13	AMS 15
			Millennium Mine 16-Mar	Syncrude UE 1 16-Mar	CNRL Horizon 16-Mar
1	Formaldehyde	2			
2	Isobutane	0.03	0.32	0.26	2
3	1-Butene	0.03			
4	Acetaldehyde	0.2	3.2		3.35
5	Butane	0.03	0.92	0.58	1.22
6	Methanol	2	2.64		6.37
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.29	1.61	1.78
11	1-Pentene	0.03			
12	Acetone	0.2	1.63	1.16	3.51
13	Pentane	0.03	0.27	2.1	
14	Isoprene	0.03			
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03			
17	2-Methyl-2-butene	0.03			
18	2,2-Dimethylbutane	0.03	0.1	0.23	0.16
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03			
21	2,3-Dimethylbutane	0.03	0.14	0.24	0.31
22	Cyclopentane	0.03		0.28	0.28
23	2-Methylpentane	0.03	0.11	0.95	0.28
24	3-Methylpentane	0.03	0.07	0.51	0.56
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03	0.15	0.27	0.22
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03	0.09	0.06	0.16
32	Cyclohexane	0.03			0.31
33	Benzene	0.03	0.16	0.19	0.99
34	2-Methylhexane	0.03	0.05		
35	2,3-Dimethylpentane	0.03			
36	3-Methylhexane	0.03	0.06	0.06	
37	2,2,4-Trimethylpentane	0.03			
38	Heptane	0.03	0.13	0.15	0.12
39	Methylcyclohexane	0.03	0.1	0.12	0.26
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03			
42	2-Methylheptane	0.03		0.11	
43	Toluene	0.03	0.13	0.18	0.34
44	3-Methylheptane	0.03	0.04	0.05	
45	Octane	0.03	0.16	0.25	
46	Ethyl benzene	0.03		0.03	
47	m,p-Xylene	0.03	0.06	0.07	
48	Styrene	0.03			0.06
49	Nonane	0.03	0.05	0.05	
50	o-Xylene	0.03		0.03	
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03		0.03	0.06
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03			
57	1,2,4-Trimethylbenzene	0.03			
58	Undecane	0.03			
59	Dodecane	0.03			
60	Naphthalene	0.03			



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 16-Mar	Patricia McInnes 16-Mar	Athabasca Valley 16-Mar	Anzac 16-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.23	0.31	0.38	0.53
3	1-Butene	0.03				
4	Acetaldehyde	0.2		1.92	2.35	7.62
5	Butane	0.03	0.44	1.03	1.2	1.42
6	Methanol	2		9.34	12.6	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.22	0.37	0.35	0.57
11	1-Pentene	0.03				
12	Acetone	0.2	1.7	1.74	5.79	1.75
13	Pentane	0.03	1.6	0.53	0.84	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.18			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.2		0.05	
22	Cyclopentane	0.03	0.26			
23	2-Methylpentane	0.03	0.75		0.08	0.08
24	3-Methylpentane	0.03	0.33		0.04	0.04
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.25			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.07			
32	Cyclohexane	0.03				
33	Benzene	0.03	0.19	0.14	0.16	0.18
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.13	0.06	0.09	
39	Methylcyclohexane	0.03	0.12		0.04	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.11			
43	Toluene	0.03	0.21	0.13	0.11	0.05
44	3-Methylheptane	0.03	0.06			
45	Octane	0.03	0.22	0.07	0.07	
46	Ethyl benzene	0.03	0.04			
47	m,p-Xylene	0.03	0.08	0.07		
48	Styrene	0.03		0.08	0.07	
49	Nonane	0.03				
50	o-Xylene	0.03	0.03	0.03		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.04	0.04	0.04	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 22-Mar	AMS 12 Millennium Mine 22-Mar	AMS 13 Syncrude UE 1 22-Mar	AMS 15 CNRL Horizon 22-Mar
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	1.77	0.26	0.17	0.22
3	1-Butene	0.03				
4	Acetaldehyde	0.2	3.34			
5	Butane	0.03	7.15	0.75	0.43	0.49
6	Methanol	2	33.5			3.34
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	5.15	0.45	0.48	0.14
11	1-Pentene	0.03				
12	Acetone	0.2	22.6	1.51	1.41	3.67
13	Pentane	0.03			0.65	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.11			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.19	0.05	0.06	
22	Cyclopentane	0.03	0.6			
23	2-Methylpentane	0.03	1.03	0.11	0.18	
24	3-Methylpentane	0.03	0.61	0.06	0.1	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	1.13	0.08		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03	0.19			
31	Methylcyclopentane	0.03	0.42			
32	Cyclohexane	0.03	56.9			
33	Benzene	0.03	0.6	0.16	0.14	0.56
34	2-Methylhexane	0.03	0.31			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.54			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.55	0.17		
39	Methylcyclohexane	0.03	0.35	0.06		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	3.79	0.09		0.15
44	3-Methylheptane	0.03	0.07			
45	Octane	0.03	0.45	0.07		0.18
46	Ethyl benzene	0.03	0.38			0.03
47	m,p-Xylene	0.03	1.86			0.12
48	Styrene	0.03	0.05			
49	Nonane	0.03	0.46			
50	o-Xylene	0.03	0.57			0.04
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.25			
53	n-Propylbenzene	0.03	0.08			
54	1,3,5-Trimethylbenzene	0.03	0.1			
55	beta Pinene	0.03				
56	Decane	0.03	0.93			
57	1,2,4-Trimethylbenzene	0.03	0.53			
58	Undecane	0.03	0.37			
59	Dodecane	0.03	0.04			
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 22-Mar	Patricia McInnes 22-Mar	Athabasca Valley 22-Mar	Anzac 22-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.17	0.27	0.21	0.2
3	1-Butene	0.03				
4	Acetaldehyde	0.2		2.59	2.03	
5	Butane	0.03	0.51	0.9	0.69	0.37
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.18	0.33	0.19	0.15
11	1-Pentene	0.03				
12	Acetone	0.2	1.17	2.14	1.56	1.35
13	Pentane	0.03	0.16			
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.05			
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.11	0.13	0.1	0.14
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.06		
39	Methylcyclohexane	0.03		0.04		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.12		0.03
44	3-Methylheptane	0.03				
45	Octane	0.03		0.08		
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.06		
48	Styrene	0.03		0.08		
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.04	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)		
			AMS 9	AMS 12	AMS 13
			Barge Landing 28-Mar	Millennium Mine 28-Mar	Syncrude UE 1 28-Mar
1	Formaldehyde	2			
2	Isobutane	0.03	0.34	0.19	0.16
3	1-Butene	0.03			
4	Acetaldehyde	0.2			
5	Butane	0.03	1.49	0.58	0.52
6	Methanol	2	9.07		
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.67	0.28	0.13
11	1-Pentene	0.03			
12	Acetone	0.2	3.45		2.25
13	Pentane	0.03			
14	Isoprene	0.03			
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03			
17	2-Methyl-2-butene	0.03			
18	2,2-Dimethylbutane	0.03		0.12	
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03			
21	2,3-Dimethylbutane	0.03		0.15	
22	Cyclopentane	0.03			
23	2-Methylpentane	0.03	0.12		
24	3-Methylpentane	0.03	0.07	0.05	
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03	0.22		
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03	0.05		
32	Cyclohexane	0.03	0.08	0.08	
33	Benzene	0.03	0.14	0.31	0.08
34	2-Methylhexane	0.03			
35	2,3-Dimethylpentane	0.03			
36	3-Methylhexane	0.03	0.06		
37	2,2,4-Trimethylpentane	0.03			
38	Heptane	0.03	0.07		
39	Methylcyclohexane	0.03	0.03		
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03			
42	2-Methylheptane	0.03			
43	Toluene	0.03	0.47		
44	3-Methylheptane	0.03			
45	Octane	0.03			
46	Ethyl benzene	0.03	0.05		
47	m,p-Xylene	0.03	0.13		
48	Styrene	0.03			
49	Nonane	0.03			
50	o-Xylene	0.03	0.06		
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03			
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03			
57	1,2,4-Trimethylbenzene	0.03			
58	Undecane	0.03			
59	Dodecane	0.03			
60	Naphthalene	0.03			



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 28-Mar	Patricia McInnes 28-Mar	Athabasca Valley 28-Mar	Anzac 28-Mar
1	Formaldehyde	2				
2	Isobutane	0.03	0.14	0.32	0.46	0.25
3	1-Butene	0.03				
4	Acetaldehyde	0.2	5.51			
5	Butane	0.03	0.66	1.11	1.45	0.62
6	Methanol	2	3.12		3.23	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.17	0.35	0.31	
11	1-Pentene	0.03				
12	Acetone	0.2	5.1	2.75	1.39	1.97
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2	2.56			
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.23	0.12	0.11	0.19
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.08		
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.1	0.1	0.04	0.1
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.05			
48	Styrene	0.03	0.07			
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	1.07			



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 9	AMS 12	AMS 13
				Barge Landing 03-Apr	Millennium Mine 03-Apr	Syncrude UE 1 03-Apr
1	Formaldehyde	2				
2	Isobutane	0.03			0.15	
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03		0.44	0.49	
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.24	0.18	0.13	
11	1-Pentene	0.03				
12	Acetone	0.2	1.65	0.83	1.91	
13	Pentane	0.03		0.09		
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.12		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.15		
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.05			
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.1	0.09	0.11	
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03		0.04		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03			0.06	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 1 Fort McKay 03-Apr	AMS 7 Athabasca Valley 03-Apr	AMS 14 Anzac 03-Apr
1	Formaldehyde	2				
2	Isobutane	0.03	0.2	1.12	0.18	
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.55	3.49	0.55	
6	Methanol	2		5.86		
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.43	1.08	0.2	
11	1-Pentene	0.03				
12	Acetone	0.2	1.75	2.43	1.44	
13	Pentane	0.03	0.4	0.68		
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.07			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.12	0.11		
24	3-Methylpentane	0.03		0.05		
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.06	0.07		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.03		
32	Cyclohexane	0.03				
33	Benzene	0.03	0.12	0.19	0.15	
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.04	0.09	0.05	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.05			
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	0.76			



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 09-Apr	Patricia McInnes 09-Apr	Athabasca Valley 09-Apr	Anzac 09-Apr
1	Formaldehyde	2				
2	Isobutane	0.03	0.17	0.3	0.14	0.13
3	1-Butene	0.03				
4	Acetaldehyde	0.2	2.8			
5	Butane	0.03	0.44	1.24	0.59	0.4
6	Methanol	2			3.1	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.25	0.25	0.14	0.18
11	1-Pentene	0.03				
12	Acetone	0.2	2.23	1.87	1.62	1.57
13	Pentane	0.03		2.07		
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.06			
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.14			
24	3-Methylpentane	0.03	0.06			
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.12	0.13	0.11	0.11
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.07	0.04	0.03
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.04		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 09-Apr	Millennium Mine 09-Apr	Syncrude UE 1 09-Apr	CNRL Horizon 09-Apr
1	Formaldehyde	2				
2	Isobutane	0.03	0.13	0.12	0.15	0.7
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.35	0.35	0.33	0.62
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.49	0.13	0.43	0.93
11	1-Pentene	0.03				
12	Acetone	0.2	1.9	1.2	2.02	2.17
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.08	0.07	0.08	0.1
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.22		0.19	
24	3-Methylpentane	0.03	0.12		0.09	0.14
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.09	0.07	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.09
32	Cyclohexane	0.03				0.15
33	Benzene	0.03	0.13		0.11	0.1
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03		0.08		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				0.14
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.04			0.05
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.05	0.12
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 15-Apr	Millennium Mine 15-Apr	Syncrude UE 1 15-Apr	CNRL Horizon 15-Apr
1	Formaldehyde	2				
2	Isobutane	0.03			0.09	
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03		0.32	0.27	0.32
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.12		0.1	0.16
11	1-Pentene	0.03				
12	Acetone	0.2	1.57	1.39	1.59	2.11
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03			0.09	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.1	0.17	0.1	0.11
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03			0.17	
39	Methylcyclohexane	0.03			0.12	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03			0.11	
43	Toluene	0.03	0.1		0.16	0.06
44	3-Methylheptane	0.03				
45	Octane	0.03	0.11		0.22	
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03			0.07	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.06
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 15-Apr	Patricia McInnes 15-Apr	Athabasca Valley 15-Apr	Anzac 15-Apr
1	Formaldehyde	2				
2	Isobutane	0.03	0.12	0.26	0.24	0.19
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.4	0.74	0.92	0.68
6	Methanol	2	1.85	3.52	12.2	1.59
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		0.21	0.26	0.21
11	1-Pentene	0.03				
12	Acetone	0.2	1.8		1.84	2.21
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03			0.09	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03			0.34	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03			0.06	
32	Cyclohexane	0.03				
33	Benzene	0.03	0.16	0.11	0.2	0.19
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03			0.24	
36	3-Methylhexane	0.03	0.11		0.59	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.18			
39	Methylcyclohexane	0.03	0.14		0.19	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.1			
43	Toluene	0.03	0.19	0.05	0.09	
44	3-Methylheptane	0.03				
45	Octane	0.03	0.31			
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.08			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)
			AMS 1
			Fort McKay
#	Compound Name	MDL	19-Apr
1	Formaldehyde	2	
2	Isobutane	0.03	0.19
3	1-Butene	0.03	
4	Acetaldehyde	0.2	
5	Butane	0.03	0.7
6	Methanol	2	2.29
7	trans-2-Butene	0.03	
8	cis-2-Butene	0.03	
9	3-Methyl-1-butene	0.03	
10	Isopentane	0.03	0.2
11	1-Pentene	0.03	
12	Acetone	0.2	3.08
13	Pentane	0.03	
14	Isoprene	0.03	
15	trans-2-Pentene	0.03	
16	cis-2-Pentene	0.03	
17	2-Methyl-2-butene	0.03	
18	2,2-Dimethylbutane	0.03	
19	Cyclopentene	0.03	
20	4-Methyl-1-pentene	0.03	
21	2,3-Dimethylbutane	0.03	
22	Cyclopentane	0.03	
23	2-Methylpentane	0.03	
24	3-Methylpentane	0.03	
25	2-Methyl-1-pentene	0.03	
26	Hexane	0.03	
27	Methyl ethyl ketone	0.2	
28	cis-2-Hexene	0.03	
29	trans-2-Hexene	0.03	
30	2,4-Dimethylpentane	0.03	
31	Methylcyclopentane	0.03	0.07
32	Cyclohexane	0.03	
33	Benzene	0.03	0.23
34	2-Methylhexane	0.03	
35	2,3-Dimethylpentane	0.03	
36	3-Methylhexane	0.03	0.17
37	2,2,4-Trimethylpentane	0.03	
38	Heptane	0.03	0.39
39	Methylcyclohexane	0.03	0.27
40	Methyl isobutyl ketone	0.2	
41	2,3,4-Trimethylpentane	0.03	
42	2-Methylheptane	0.03	0.22
43	Toluene	0.03	0.37
44	3-Methylheptane	0.03	
45	Octane	0.03	0.62
46	Ethyl benzene	0.03	0.07
47	m,p-Xylene	0.03	0.15
48	Styrene	0.03	
49	Nonane	0.03	0.1
50	o-Xylene	0.03	0.07
51	Isopropylbenzene	0.03	
52	alpha Pinene	0.03	
53	n-Propylbenzene	0.03	
54	1,3,5-Trimethylbenzene	0.03	
55	beta Pinene	0.03	
56	Decane	0.03	
57	1,2,4-Trimethylbenzene	0.03	
58	Undecane	0.03	
59	Dodecane	0.03	
60	Naphthalene	0.03	



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 21-Apr	Millennium Mine 21-Apr	Syncrude UE 1 21-Apr	CNRL Horizon 21-Apr
1	Formaldehyde	2				
2	Isobutane	0.03	0.34	0.33	0.32	
3	1-Butene	0.03				
4	Acetaldehyde	0.2	3.6		4.08	2.92
5	Butane	0.03	1.02	0.83	1.01	0.34
6	Methanol	2	4.99	2.76	2.38	2.68
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.37	0.21	0.28	
11	1-Pentene	0.03				
12	Acetone	0.2	2.25	2.94	2.26	2.8
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.15		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.16		
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03	0.12			
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.21	0.35	0.14	0.15
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03	0.14			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.25	0.06		
44	3-Methylheptane	0.03				
45	Octane	0.03	0.32			
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.11			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.06	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03			2.02	
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	0.21			



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 21-Apr	AMS 6 Patricia McInnes 21-Apr	AMS 7 Athabasca Valley 21-Apr	AMS 14 Anzac 21-Apr
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.44	0.42	0.29	0.28
3	1-Butene	0.03				
4	Acetaldehyde	0.2	7.46	6.07	4.55	
5	Butane	0.03	1.32	1.28	0.84	0.84
6	Methanol	2	4.71	6.12	7.66	3.36
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.33	0.29	0.19	0.19
11	1-Pentene	0.03				
12	Acetone	0.2	2.75	2.18	3.2	1.95
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03	0.09			
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.07			
32	Cyclohexane	0.03				
33	Benzene	0.03	0.4	0.18	0.15	0.15
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.07	0.09		
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.07
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				1.53
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 9	AMS 12	AMS 13
				Barge Landing 27-Apr	Millennium Mine 27-Apr	Syncrude UE 1 27-Apr
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2	4.99		4.13	
5	Butane	0.03	0.36		0.28	
6	Methanol	2	3.75		2.14	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03				
11	1-Pentene	0.03				
12	Acetone	0.2	2.35	1.97	2.42	
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03			0.05	
32	Cyclohexane	0.03				
33	Benzene	0.03	0.11	0.3	0.13	
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03			0.08	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 27-Apr	Patricia McInnes 27-Apr	Athabasca Valley 27-Apr	Anzac 27-Apr
1	Formaldehyde	2				
2	Isobutane	0.03	0.08	0.15		
3	1-Butene	0.03			0.32	
4	Acetaldehyde	0.2		2.57	4.71	
5	Butane	0.03	0.38	0.38	0.93	
6	Methanol	2	3.63	5.74	5.8	2.82
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.09	0.13	0.2	
11	1-Pentene	0.03				
12	Acetone	0.2	3.17	3.25	6.16	2.37
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.14	0.15	0.17	0.13
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.08	0.07	0.07	0.03
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 9	AMS 12	AMS 13
				Barge Landing 03-May	Millennium Mine 03-May	Syncrude UE 1 03-May
1	Formaldehyde	2				
2	Isobutane	0.03	0.09		0.09	
3	1-Butene	0.03				
4	Acetaldehyde	0.2	4.1			
5	Butane	0.03	0.62		0.29	
6	Methanol	2	4.5			
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.13	0.04	0.07	
11	1-Pentene	0.03				
12	Acetone	0.2	1.92	1.61	1.77	
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03			0.04	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.07	0.06	
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03			0.03	
33	Benzene	0.03	0.08	0.08	0.08	
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03			0.03	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03			0.05	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.06	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 03-May	AMS 6 Patricia McInnes 03-May	AMS 7 Athabasca Valley 03-May	AMS 14 Anzac 03-May
1	Formaldehyde	2					
2	Isobutane	0.03	0.08	0.15	0.2		
3	1-Butene	0.03					
4	Acetaldehyde	0.2	1.27	2.07	2.41	2.01	
5	Butane	0.03	0.36	0.47	0.74	0.25	
6	Methanol	2	2.38	3.12	4.42	2.34	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.09	0.17	0.22	0.12	
11	1-Pentene	0.03					
12	Acetone	0.2	1.87	1.94	2	1.66	
13	Pentane	0.03	0.28	0.14			
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.04				
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03		0.06	0.07	0.07	
24	3-Methylpentane	0.03		0.04		0.03	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03					
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03					
32	Cyclohexane	0.03					
33	Benzene	0.03	0.13	0.11	0.09	0.1	
34	2-Methylhexane	0.03					
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03					
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03					
39	Methylcyclohexane	0.03					
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03	0.08	0.3	0.05	0.04	
44	3-Methylheptane	0.03					
45	Octane	0.03					
46	Ethyl benzene	0.03	0.05	0.05			
47	m,p-Xylene	0.03	0.11	0.11	0.03		
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03	0.03	0.03			
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03					
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 09-May	Millennium Mine 09-May	Syncrude UE 1 09-May	CNRL Horizon 09-May
1	Formaldehyde	2				
2	Isobutane	0.03	0.35	3.66	0.17	1.61
3	1-Butene	0.03		1.19		
4	Acetaldehyde	0.2		2.7		3.95
5	Butane	0.03	0.65	11.6	0.31	0.87
6	Methanol	2		23.8		
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.37	6.84	0.14	3
11	1-Pentene	0.03				
12	Acetone	0.2	1.99	10	8.83	3.86
13	Pentane	0.03				
14	Isoprene	0.03		0.11	0.05	0.13
15	trans-2-Pentene	0.03		0.27		
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03		0.39		
18	2,2-Dimethylbutane	0.03		0.22		0.23
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.65		0.66
22	Cyclopentane	0.03		1.66		0.33
23	2-Methylpentane	0.03		2.37		
24	3-Methylpentane	0.03	0.09	5.37	0.05	0.84
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		20		
27	Methyl ethyl ketone	0.2		25.6		
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.04	3.5		0.35
32	Cyclohexane	0.03		395		0.66
33	Benzene	0.03	0.08	1.51	0.07	0.1
34	2-Methylhexane	0.03		0.82		
35	2,3-Dimethylpentane	0.03				0.21
36	3-Methylhexane	0.03		1.04		
37	2,2,4-Trimethylpentane	0.03		0.26		
38	Heptane	0.03		0.76		
39	Methylcyclohexane	0.03	0.06	0.34		0.83
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		2.95		0.09
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03		0.34		
47	m,p-Xylene	0.03		1.71		
48	Styrene	0.03				
49	Nonane	0.03		0.35		
50	o-Xylene	0.03		0.56		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.49	0.05	
53	n-Propylbenzene	0.03		0.09		
54	1,3,5-Trimethylbenzene	0.03		0.14		
55	beta Pinene	0.03		8.05	2.78	
56	Decane	0.03		1.2		
57	1,2,4-Trimethylbenzene	0.03		0.71		
58	Undecane	0.03		1.13		
59	Dodecane	0.03		0.16		
60	Naphthalene	0.03		1.49		



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 09-May	AMS 6 Patricia McInnes 09-May	AMS 7 Athabasca Valley 09-May	AMS 14 Anzac 09-May
	1	Formaldehyde	2				
	2	Isobutane	0.03	0.26			0.08
	3	1-Butene	0.03				
	4	Acetaldehyde	0.2		0.85	0.61	
	5	Butane	0.03	0.42		0.64	0.32
	6	Methanol	2	0.78	3.35		0.81
	7	trans-2-Butene	0.03				
	8	cis-2-Butene	0.03				
	9	3-Methyl-1-butene	0.03				
	10	Isopentane	0.03	0.3	0.07	0.27	0.07
	11	1-Pentene	0.03				
	12	Acetone	0.2	1.73	2.28	2.25	2.5
	13	Pentane	0.03				
	14	Isoprene	0.03				
	15	trans-2-Pentene	0.03				
	16	cis-2-Pentene	0.03				
	17	2-Methyl-2-butene	0.03				
	18	2,2-Dimethylbutane	0.03				
	19	Cyclopentene	0.03				
	20	4-Methyl-1-pentene	0.03				
	21	2,3-Dimethylbutane	0.03	0.09			
	22	Cyclopentane	0.03				
	23	2-Methylpentane	0.03				
	24	3-Methylpentane	0.03	0.05			
	25	2-Methyl-1-pentene	0.03				
	26	Hexane	0.03				
	27	Methyl ethyl ketone	0.2				
	28	cis-2-Hexene	0.03				
	29	trans-2-Hexene	0.03				
	30	2,4-Dimethylpentane	0.03				
	31	Methylcyclopentane	0.03				
	32	Cyclohexane	0.03				
	33	Benzene	0.03	0.09	0.07	0.08	0.08
	34	2-Methylhexane	0.03				
	35	2,3-Dimethylpentane	0.03				
	36	3-Methylhexane	0.03				
	37	2,2,4-Trimethylpentane	0.03				
	38	Heptane	0.03				
	39	Methylcyclohexane	0.03				
	40	Methyl isobutyl ketone	0.2				
	41	2,3,4-Trimethylpentane	0.03				
	42	2-Methylheptane	0.03				
	43	Toluene	0.03	0.04		0.37	0.16
	44	3-Methylheptane	0.03				
	45	Octane	0.03				
	46	Ethyl benzene	0.03				
	47	m,p-Xylene	0.03				
	48	Styrene	0.03				
	49	Nonane	0.03				
	50	o-Xylene	0.03				
	51	Isopropylbenzene	0.03				
	52	alpha Pinene	0.03	0.05			0.03
	53	n-Propylbenzene	0.03				
	54	1,3,5-Trimethylbenzene	0.03				
	55	beta Pinene	0.03				1.4
	56	Decane	0.03				
	57	1,2,4-Trimethylbenzene	0.03				
	58	Undecane	0.03				
	59	Dodecane	0.03				
	60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 9	AMS 12	AMS 13
				Barge Landing 15-May	Millennium Mine 15-May	Syncrude UE 1 15-May
1	Formaldehyde	2				
2	Isobutane	0.03	0.11			
3	1-Butene	0.03				
4	Acetaldehyde	0.2	2.35			
5	Butane	0.03	0.57	0.26		
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.39		0.21	
11	1-Pentene	0.03				
12	Acetone	0.2		1.73		
13	Pentane	0.03				
14	Isoprene	0.03			0.14	
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.08	0.05		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.43			
24	3-Methylpentane	0.03	0.22			
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03		0.07		
33	Benzene	0.03	0.27	0.07	0.2	
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.06		
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.06		0.14	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03	1.54		5.82	
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 15-May	AMS 6 Patricia McInnes 15-May	AMS 7 Athabasca Valley 15-May	AMS 14 Anzac 15-May
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03		0.24	0.19	
3	1-Butene	0.03				
4	Acetaldehyde	0.2	1.62	2.17	2.67	
5	Butane	0.03		0.85	0.97	0.49
6	Methanol	2	1.03	1.74	1.66	1.36
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.18	0.3	0.32	0.16
11	1-Pentene	0.03				
12	Acetone	0.2	9.81	3.1		2.83
13	Pentane	0.03				
14	Isoprene	0.03	0.43			
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03		0.13	0.13	
24	3-Methylpentane	0.03		0.08	0.09	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03			0.16	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.07	0.13	0.27	0.29
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03			0.09	
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.14	0.08	0.07	0.05
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.07			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.16			
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03	1.97			2.24
56	Decane	0.03	0.06			
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03	0.14			
59	Dodecane	0.03	0.23			
60	Naphthalene	0.03	0.74			



VOC Canisters			Results (ppbv)
#	Compound Name	MDL	AMS 15 CNRL Horizon 16-May
1	Formaldehyde	2	
2	Isobutane	0.03	1.3
3	1-Butene	0.03	
4	Acetaldehyde	0.2	4.83
5	Butane	0.03	
6	Methanol	2	9.99
7	trans-2-Butene	0.03	
8	cis-2-Butene	0.03	
9	3-Methyl-1-butene	0.03	
10	Isopentane	0.03	1.51
11	1-Pentene	0.03	
12	Acetone	0.2	10.4
13	Pentane	0.03	
14	Isoprene	0.03	
15	trans-2-Pentene	0.03	
16	cis-2-Pentene	0.03	
17	2-Methyl-2-butene	0.03	
18	2,2-Dimethylbutane	0.03	
19	Cyclopentene	0.03	
20	4-Methyl-1-pentene	0.03	
21	2,3-Dimethylbutane	0.03	
22	Cyclopentane	0.03	
23	2-Methylpentane	0.03	
24	3-Methylpentane	0.03	0.72
25	2-Methyl-1-pentene	0.03	
26	Hexane	0.03	0.56
27	Methyl ethyl ketone	0.2	
28	cis-2-Hexene	0.03	
29	trans-2-Hexene	0.03	
30	2,4-Dimethylpentane	0.03	
31	Methylcyclopentane	0.03	0.67
32	Cyclohexane	0.03	1.32
33	Benzene	0.03	0.43
34	2-Methylhexane	0.03	
35	2,3-Dimethylpentane	0.03	0.39
36	3-Methylhexane	0.03	
37	2,2,4-Trimethylpentane	0.03	
38	Heptane	0.03	0.5
39	Methylcyclohexane	0.03	1
40	Methyl isobutyl ketone	0.2	
41	2,3,4-Trimethylpentane	0.03	
42	2-Methylheptane	0.03	
43	Toluene	0.03	0.1
44	3-Methylheptane	0.03	
45	Octane	0.03	
46	Ethyl benzene	0.03	
47	m,p-Xylene	0.03	
48	Styrene	0.03	
49	Nonane	0.03	
50	o-Xylene	0.03	
51	Isopropylbenzene	0.03	
52	alpha Pinene	0.03	0.15
53	n-Propylbenzene	0.03	
54	1,3,5-Trimethylbenzene	0.03	
55	beta Pinene	0.03	
56	Decane	0.03	
57	1,2,4-Trimethylbenzene	0.03	
58	Undecane	0.03	
59	Dodecane	0.03	
60	Naphthalene	0.03	0.82



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 6 Patricia McInnes 21-May	AMS 7 Athabasca Valley 21-May	AMS 14 Anzac 21-May
	1	Formaldehyde	2			
	2	Isobutane	0.03	0.04		
	3	1-Butene	0.03			
	4	Acetaldehyde	0.2	1.54		
	5	Butane	0.03	0.42		0.21
	6	Methanol	2	2.45	2.24	6.71
	7	trans-2-Butene	0.03			
	8	cis-2-Butene	0.03			
	9	3-Methyl-1-butene	0.03			
	10	Isopentane	0.03	0.14	0.12	0.13
	11	1-Pentene	0.03			
	12	Acetone	0.2	1.48	1.47	
	13	Pentane	0.03			
	14	Isoprene	0.03			
	15	trans-2-Pentene	0.03			
	16	cis-2-Pentene	0.03			
	17	2-Methyl-2-butene	0.03			
	18	2,2-Dimethylbutane	0.03			
	19	Cyclopentene	0.03			
	20	4-Methyl-1-pentene	0.03			
	21	2,3-Dimethylbutane	0.03			
	22	Cyclopentane	0.03			
	23	2-Methylpentane	0.03	0.06	0.07	
	24	3-Methylpentane	0.03			
	25	2-Methyl-1-pentene	0.03			
	26	Hexane	0.03		0.1	0.07
	27	Methyl ethyl ketone	0.2			
	28	cis-2-Hexene	0.03			
	29	trans-2-Hexene	0.03			
	30	2,4-Dimethylpentane	0.03			
	31	Methylcyclopentane	0.03			
	32	Cyclohexane	0.03			
	33	Benzene	0.03	0.21	0.06	0.19
	34	2-Methylhexane	0.03			
	35	2,3-Dimethylpentane	0.03			
	36	3-Methylhexane	0.03			
	37	2,2,4-Trimethylpentane	0.03			
	38	Heptane	0.03			0.09
	39	Methylcyclohexane	0.03			0.05
	40	Methyl isobutyl ketone	0.2			
	41	2,3,4-Trimethylpentane	0.03			
	42	2-Methylheptane	0.03			
	43	Toluene	0.03	0.07	0.05	0.06
	44	3-Methylheptane	0.03			
	45	Octane	0.03			
	46	Ethyl benzene	0.03			
	47	m,p-Xylene	0.03			
	48	Styrene	0.03			
	49	Nonane	0.03			
	50	o-Xylene	0.03			
	51	Isopropylbenzene	0.03			
	52	alpha Pinene	0.03			
	53	n-Propylbenzene	0.03			
	54	1,3,5-Trimethylbenzene	0.03			
	55	beta Pinene	0.03			
	56	Decane	0.03			
	57	1,2,4-Trimethylbenzene	0.03			
	58	Undecane	0.03			
	59	Dodecane	0.03			
	60	Naphthalene	0.03			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 21-May	Millennium Mine 21-May	Syncrude UE 1 21-May	CNRL Horizon 21-May
1	Formaldehyde	2				
2	Isobutane	0.03		0.1		0.27
3	1-Butene	0.03				0.51
4	Acetaldehyde	0.2		5.72	1.72	2.65
5	Butane	0.03		0.45	0.31	1.41
6	Methanol	2	0.97	3.86		6.8
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.09	0.18	0.09	0.92
11	1-Pentene	0.03				
12	Acetone	0.2	2.59	3.91	1.32	5.99
13	Pentane	0.03				
14	Isoprene	0.03	0.09	0.1		
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.07		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.12		0.24
22	Cyclopentane	0.03		0.07		0.27
23	2-Methylpentane	0.03		0.1		0.7
24	3-Methylpentane	0.03		0.08		0.47
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.21	0.07	0.53
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.08		0.23
32	Cyclohexane	0.03		1.61		0.08
33	Benzene	0.03	0.18	0.32	0.16	0.12
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03		0.06		0.11
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.06		0.11
39	Methylcyclohexane	0.03		0.03		0.07
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.11		0.23
44	3-Methylheptane	0.03				
45	Octane	0.03		0.04		
46	Ethyl benzene	0.03				0.03
47	m,p-Xylene	0.03				0.1
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				0.06
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.03		0.07	0.11
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				0.04
57	1,2,4-Trimethylbenzene	0.03				0.03
58	Undecane	0.03				0.05
59	Dodecane	0.03				0.06
60	Naphthalene	0.03				2.04



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9 Barge Landing 27-May	AMS 12 Millennium Mine 27-May	AMS 13 Syncrude UE 1 27-May	AMS 15 CNRL Horizon 27-May
1	Formaldehyde	2					
2	Isobutane	0.03			0.1		
3	1-Butene	0.03					
4	Acetaldehyde	0.2			5.36	4.54	
5	Butane	0.03			0.49	0.4	
6	Methanol	2	3.95	2.89	5.33	6.14	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.12		0.13	0.16	
11	1-Pentene	0.03					
12	Acetone	0.2	2.56	2.4	3	5.07	
13	Pentane	0.03					
14	Isoprene	0.03	0.32	0.31	0.37	0.12	
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03		0.1			
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03					
24	3-Methylpentane	0.03					
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03					
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03			0.06	0.11	
32	Cyclohexane	0.03					
33	Benzene	0.03	0.11	0.11	0.12	0.32	
34	2-Methylhexane	0.03					
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03					
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03			0.17	0.14	
39	Methylcyclohexane	0.03			0.13	0.11	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03			0.08		
43	Toluene	0.03	0.13		0.16	0.14	
44	3-Methylheptane	0.03					
45	Octane	0.03			0.15		
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03	0.08		0.09	0.07	
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03			0.05		
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.08	0.06	0.21	0.38	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03	2.79	2.72	9.82		
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					0.48



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 27-May	AMS 6 Patricia McInnes 27-May	AMS 7 Athabasca Valley 27-May	AMS 14 Anzac 27-May
1	Formaldehyde	2					
2	Isobutane	0.03		0.21	0.11		
3	1-Butene	0.03					
4	Acetaldehyde	0.2	4.25	4.56	9.73	6.09	
5	Butane	0.03	0.65	0.95	0.71	0.37	
6	Methanol	2	4.99	5.77	5.87	5.65	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.19	0.32	0.23	0.12	
11	1-Pentene	0.03					
12	Acetone	0.2	2.64	2.78	3.71	2.93	
13	Pentane	0.03					
14	Isoprene	0.03	0.16				0.08
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.11				
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03					
24	3-Methylpentane	0.03	0.05				
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03					
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03					
32	Cyclohexane	0.03					
33	Benzene	0.03	0.12	0.13	0.13	0.12	
34	2-Methylhexane	0.03					
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03					
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.13				
39	Methylcyclohexane	0.03	0.09				
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03	0.07				
43	Toluene	0.03	0.16	0.09	0.09		
44	3-Methylheptane	0.03					
45	Octane	0.03					
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03	0.1		0.08		
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03	0.05				
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03			0.06	0.06	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03	5.7				
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9	AMS 12	AMS 13	AMS 15
				Barge Landing 02-Jun	Millennium Mine 02-Jun	Syncrude UE 1 02-Jun	CNRL Horizon 02-Jun
1	Formaldehyde	2					
2	Isobutane	0.03	0.34		0.94	2.89	
3	1-Butene	0.03					
4	Acetaldehyde	0.2	7.25	20.9	8.43	9.39	
5	Butane	0.03	0.89	0.98		1.24	
6	Methanol	2		11.4	6.66		
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	1.22		1.24	5.04	
11	1-Pentene	0.03					
12	Acetone	0.2					
13	Pentane	0.03	1.71		1.06		
14	Isoprene	0.03	0.38		0.96	0.24	
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03				0.46	
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.57			1.96	
22	Cyclopentane	0.03				0.85	
23	2-Methylpentane	0.03	2.03		0.98	0.96	
24	3-Methylpentane	0.03	0.98		1.12	3.32	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.74		0.55	2.78	
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03	0.44		0.48	3.06	
32	Cyclohexane	0.03	0.84		1.08	3.61	
33	Benzene	0.03	0.99	1.42	0.91	0.23	
34	2-Methylhexane	0.03	0.27				
35	2,3-Dimethylpentane	0.03	0.32		0.31		
36	3-Methylhexane	0.03	0.32			0.67	
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.55	0.2	0.36	1.82	
39	Methylcyclohexane	0.03	0.31	0.13	0.65	3.42	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03	0.15	0.3	0.12	0.24	
44	3-Methylheptane	0.03					
45	Octane	0.03					
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03		0.1		0.06	
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03		0.09			
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.25	0.15	0.27	0.38	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03	0.26			0.28	
59	Dodecane	0.03	0.09			0.07	
60	Naphthalene	0.03	0.28			0.59	



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 02-Jun	AMS 6 Patricia McInnes 02-Jun	AMS 7 Athabasca Valley 02-Jun	AMS 14 Anzac 02-Jun
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.51	0.22		
3	1-Butene	0.03		0.49		
4	Acetaldehyde	0.2	4.62	9.24	7.5	
5	Butane	0.03	0.39	1.08	1.13	
6	Methanol	2	5.56	13.8	15.9	7.06
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1	0.26	0.45	0.14
11	1-Pentene	0.03				
12	Acetone	0.2	4.32		7.6	3.11
13	Pentane	0.03				
14	Isoprene	0.03	0.41		0.44	0.55
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.16			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.45			
22	Cyclopentane	0.03	0.26			
23	2-Methylpentane	0.03	0.57			
24	3-Methylpentane	0.03	0.69			
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.5			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.44			
32	Cyclohexane	0.03	0.72			
33	Benzene	0.03	0.55	1.55	0.4	0.16
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03	0.16			
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.2			
39	Methylcyclohexane	0.03	0.38			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.15	0.23	0.17	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.06	0.06	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.19	0.05		0.16
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03		0.21		1.86



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 08-Jun	Millennium Mine 08-Jun	Syncrude UE 1 08-Jun	CNRL Horizon 08-Jun
1	Formaldehyde	2				
2	Isobutane	0.03				0.51
3	1-Butene	0.03				
4	Acetaldehyde	0.2	11.7		11.6	6.78
5	Butane	0.03				0.95
6	Methanol	2	13	9.96	12.9	8.42
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.43	0.2	0.76	0.64
11	1-Pentene	0.03				
12	Acetone	0.2	4.24	3.77	4.43	5.05
13	Pentane	0.03				
14	Isoprene	0.03	0.45	0.29	0.73	0.37
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.33	0.23		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.56	0.31		0.13
22	Cyclopentane	0.03	0.68			
23	2-Methylpentane	0.03	2.08		0.72	
24	3-Methylpentane	0.03	1.24		0.5	0.17
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.69		0.3	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.16			0.16
32	Cyclohexane	0.03				
33	Benzene	0.03	0.37	0.45	0.23	0.47
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				0.08
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.17		0.07	0.13
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.24
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				0.33



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 1	AMS 6	AMS 7
				Fort McKay 08-Jun	Patricia McInnes 08-Jun	Athabasca Valley 08-Jun
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03				
6	Methanol	2	12.6	10.6	12.7	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.73	0.24	0.34	
11	1-Pentene	0.03				
12	Acetone	0.2	4.48	2.99	4.81	
13	Pentane	0.03	1.87			
14	Isoprene	0.03	0.66		0.3	
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.21			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.29			
22	Cyclopentane	0.03	0.35			
23	2-Methylpentane	0.03	1.33			
24	3-Methylpentane	0.03	0.74			
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.46			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.08			
32	Cyclohexane	0.03				
33	Benzene	0.03	0.87	0.14		
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.08	0.08		
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 14-Jun	Millennium Mine 14-Jun	Syncrude UE 1 14-Jun	CNRL Horizon 14-Jun
1	Formaldehyde	2				
2	Isobutane	0.03			0.07	0.93
3	1-Butene	0.03				
4	Acetaldehyde	0.2	6.65		4.97	3.25
5	Butane	0.03				0.37
6	Methanol	2		1.97		3
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.19	0.18	0.16	1.23
11	1-Pentene	0.03				
12	Acetone	0.2			1.18	2.12
13	Pentane	0.03				
14	Isoprene	0.03			0.23	0.06
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				0.09
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				0.3
22	Cyclopentane	0.03				0.11
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				0.38
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.36
32	Cyclohexane	0.03	0.15			0.74
33	Benzene	0.03	0.36	0.15	0.34	0.26
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				0.22
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				0.78
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.13			
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.1
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 14-Jun	AMS 6 Patricia McInnes 14-Jun	AMS 7 Athabasca Valley 14-Jun	AMS 14 Anzac 14-Jun
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2	12		6.13	4.75
5	Butane	0.03				
6	Methanol	2		3.85	3.36	3.9
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03			0.11	
11	1-Pentene	0.03				
12	Acetone	0.2			1.26	
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03				0.32
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03				
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 20-Jun	Millennium Mine 20-Jun	Syncrude UE 1 20-Jun	CNRL Horizon 20-Jun
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03				
6	Methanol	2			1.55	2.45
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.76	0.31	0.09	0.2
11	1-Pentene	0.03				
12	Acetone	0.2	7.77	1.93	1.73	1.41
13	Pentane	0.03				
14	Isoprene	0.03	0.35	0.28	0.68	0.37
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.12	0.08		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.36	0.18		
22	Cyclopentane	0.03	0.25			
23	2-Methylpentane	0.03	1.2	0.27	0.11	
24	3-Methylpentane	0.03	0.61	0.12	0.1	0.07
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.18			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.16		
32	Cyclohexane	0.03				
33	Benzene	0.03	0.16	0.12	0.09	0.13
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.06		
39	Methylcyclohexane	0.03		0.09		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.08	0.05		0.04
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.05	0.05	0.11	0.07
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 20-Jun	Patricia McInnes 20-Jun	Athabasca Valley 20-Jun	Anzac 20-Jun
1	Formaldehyde	2				
2	Isobutane	0.03	0.14			0.78
3	1-Butene	0.03				
4	Acetaldehyde	0.2				6.83
5	Butane	0.03				0.44
6	Methanol	2	3.91	2.55	8.45	5.14
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.63	0.13	0.25	1.45
11	1-Pentene	0.03				
12	Acetone	0.2	1.73	1.74	2.95	3.65
13	Pentane	0.03	0.55			
14	Isoprene	0.03	0.39	0.23	0.3	0.86
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				0.15
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.19			0.48
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.55		0.15	0.18
24	3-Methylpentane	0.03	0.2	0.08	0.07	0.88
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.09	0.11		0.4
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.78
32	Cyclohexane	0.03	26.6			2.09
33	Benzene	0.03	0.37	0.12	0.17	0.37
34	2-Methylhexane	0.03				0.31
35	2,3-Dimethylpentane	0.03				0.42
36	3-Methylhexane	0.03				0.58
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				0.44
39	Methylcyclohexane	0.03				0.6
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				0.2
43	Toluene	0.03	0.4	0.09	0.24	0.32
44	3-Methylheptane	0.03				
45	Octane	0.03				0.48
46	Ethyl benzene	0.03				0.06
47	m,p-Xylene	0.03	0.08			0.11
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03	0.03			0.04
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.09		0.06	0.25
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 26-Jun	Millennium Mine 26-Jun	Syncrude UE 1 26-Jun	CNRL Horizon 26-Jun
1	Formaldehyde	2				
2	Isobutane	0.03		0.45		0.83
3	1-Butene	0.03				
4	Acetaldehyde	0.2	8.83			
5	Butane	0.03				
6	Methanol	2	7.95			5.96
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		1.07		1.83
11	1-Pentene	0.03				
12	Acetone	0.2	4.31	2.59	3.82	4.26
13	Pentane	0.03				
14	Isoprene	0.03	1.75	1.18	3.49	1.28
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.34		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.8		
22	Cyclopentane	0.03				11.7
23	2-Methylpentane	0.03		0.98		
24	3-Methylpentane	0.03		0.81		0.49
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.55		0.51
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.5		0.13
32	Cyclohexane	0.03		1.04		0.22
33	Benzene	0.03	0.59	0.57	0.59	0.18
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		1.07	0.53	
39	Methylcyclohexane	0.03		1.3		0.25
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.48	0.33	0.15	0.17
44	3-Methylheptane	0.03				
45	Octane	0.03		0.54		
46	Ethyl benzene	0.03	0.11	0.08		
47	m,p-Xylene	0.03	0.2	0.18		
48	Styrene	0.03				
49	Nonane	0.03		0.15		
50	o-Xylene	0.03		0.08		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.15	0.12	0.42	0.36
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 26-Jun	AMS 6 Patricia McInnes 26-Jun	AMS 7 Athabasca Valley 26-Jun	AMS 14 Anzac 26-Jun
1	Formaldehyde	2					
2	Isobutane	0.03					
3	1-Butene	0.03					
4	Acetaldehyde	0.2			14.7	12	
5	Butane	0.03			1.91		
6	Methanol	2	7.48	6.62	9.95	13.1	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03			1.29	0.21	
11	1-Pentene	0.03					
12	Acetone	0.2	6.38	3.69	3.82	5.84	
13	Pentane	0.03					
14	Isoprene	0.03	1.88	1.76	1.08	1.58	
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03					
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03					
24	3-Methylpentane	0.03					
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03					
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03					
32	Cyclohexane	0.03					
33	Benzene	0.03	0.61	0.29	0.6	0.69	
34	2-Methylhexane	0.03					
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03					
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03					
39	Methylcyclohexane	0.03					
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03		0.09			
44	3-Methylheptane	0.03					
45	Octane	0.03					
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03					
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03					
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.23	0.08	0.07	0.14	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 02-Jul	Millennium Mine 02-Jul	Syncrude UE 1 02-Jul	CNRL Horizon 02-Jul
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2			13.2	
5	Butane	0.03				
6	Methanol	2			7.36	6.32
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		0.13		
11	1-Pentene	0.03				
12	Acetone	0.2	3.05	2.78	4.09	4.27
13	Pentane	0.03				
14	Isoprene	0.03	1.26	0.63	2.27	0.86
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.17		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.09	0.1	0.12	0.12
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03				
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.07		0.27	0.11
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 02-Jul	AMS 6 Patricia McInnes 02-Jul	AMS 7 Athabasca Valley 02-Jul	AMS 14 Anzac 02-Jul
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03				
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03			0.22	
11	1-Pentene	0.03				
12	Acetone	0.2	3.83	3.89	4.33	2.65
13	Pentane	0.03				
14	Isoprene	0.03	0.48	0.93		0.54
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03		0.14	0.11	0.11
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.21	0.09		
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.14			0.07
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 08-Jul	AMS 12 Millennium Mine 08-Jul	AMS 13 Syncrude UE 1 08-Jul	AMS 15 CNRL Horizon 08-Jul
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2		23.8		
5	Butane	0.03				
6	Methanol	2	6.18	13.7	4.07	8.36
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.14			0.6
11	1-Pentene	0.03				
12	Acetone	0.2	4.62		3.93	4.25
13	Pentane	0.03				
14	Isoprene	0.03	1	0.65	2.46	1.72
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.3		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				0.39
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.23
32	Cyclohexane	0.03				
33	Benzene	0.03		0.73	0.37	0.29
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03			0.33	0.49
39	Methylcyclohexane	0.03			0.22	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03			0.15	
43	Toluene	0.03	0.2	0.25	0.38	0.23
44	3-Methylheptane	0.03				
45	Octane	0.03			0.31	
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03			0.18	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.24	0.48
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 08-Jul	Patricia McInnes 08-Jul	Athabasca Valley 08-Jul	Anzac 08-Jul
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2	14.1	33.8	10.9	
5	Butane	0.03		6.46		
6	Methanol	2	7.52	17.5	9.82	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		1.25	0.47	
11	1-Pentene	0.03				
12	Acetone	0.2	6.83	10.2	5.9	2.05
13	Pentane	0.03				
14	Isoprene	0.03	1.56	3.93	2.06	1.22
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.61	1.19		
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03		0.77	0.21	
38	Heptane	0.03	0.66			
39	Methylcyclohexane	0.03	0.53			0.16
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.22	0.25	0.17	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.16		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)		
			AMS 9	AMS 13	AMS 15
			Barge Landing 14-Jul	Syncrude UE 1 14-Jul	CNRL Horizon 14-Jul
1	Formaldehyde	2			
2	Isobutane	0.03			
3	1-Butene	0.03			
4	Acetaldehyde	0.2			12.1
5	Butane	0.03			1.4
6	Methanol	2	5.24	6.57	17.1
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.78		0.88
11	1-Pentene	0.03			
12	Acetone	0.2	5.77	5.74	9.01
13	Pentane	0.03			
14	Isoprene	0.03	1.5	4.41	1.57
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03			
17	2-Methyl-2-butene	0.03			
18	2,2-Dimethylbutane	0.03			
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03			
21	2,3-Dimethylbutane	0.03			
22	Cyclopentane	0.03			
23	2-Methylpentane	0.03	1.1		
24	3-Methylpentane	0.03	0.57		
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03	0.49		
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03			
32	Cyclohexane	0.03			
33	Benzene	0.03	0.55	0.47	0.67
34	2-Methylhexane	0.03			1.02
35	2,3-Dimethylpentane	0.03			2.54
36	3-Methylhexane	0.03			3.02
37	2,2,4-Trimethylpentane	0.03			
38	Heptane	0.03			0.65
39	Methylcyclohexane	0.03	0.12		1.97
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03			
42	2-Methylheptane	0.03	0.11		
43	Toluene	0.03	0.29	0.31	0.76
44	3-Methylheptane	0.03			
45	Octane	0.03			
46	Ethyl benzene	0.03			
47	m,p-Xylene	0.03			0.15
48	Styrene	0.03			
49	Nonane	0.03			
50	o-Xylene	0.03			0.08
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03		0.28	0.58
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03			
57	1,2,4-Trimethylbenzene	0.03			
58	Undecane	0.03			
59	Dodecane	0.03			
60	Naphthalene	0.03			



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 14-Jul	AMS 6 Patricia McInnes 14-Jul	AMS 7 Athabasca Valley 14-Jul	AMS 14 Anzac 14-Jul
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	2.09			
3	1-Butene	0.03	9.67			
4	Acetaldehyde	0.2	11.3			13.9
5	Butane	0.03	12.5			
6	Methanol	2	10.9	19.4	5.04	10.9
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.5	0.85	0.4	
11	1-Pentene	0.03				
12	Acetone	0.2	12.5	8.22	6.3	6.02
13	Pentane	0.03				
14	Isoprene	0.03	2.86	1.7	4.03	3.95
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.27			
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	1.87			
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	1.47			
27	Methyl ethyl ketone	0.2	3.85			
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.13			
32	Cyclohexane	0.03		15.2		
33	Benzene	0.03	0.55	1.18	0.47	0.48
34	2-Methylhexane	0.03	2.18			
35	2,3-Dimethylpentane	0.03	0.36			
36	3-Methylhexane	0.03	3.75			
37	2,2,4-Trimethylpentane	0.03			0.54	
38	Heptane	0.03	10.9			
39	Methylcyclohexane	0.03	1.71			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	4.33	0.45	0.25	0.15
44	3-Methylheptane	0.03				
45	Octane	0.03	0.58			
46	Ethyl benzene	0.03	0.28			
47	m,p-Xylene	0.03	0.79			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03	0.2			
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.39			
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.22			
57	1,2,4-Trimethylbenzene	0.03	0.18			
58	Undecane	0.03	0.12			
59	Dodecane	0.03	0.12			
60	Naphthalene	0.03	3.05			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 20-Jul	Millennium Mine 20-Jul	Syncrude UE 1 20-Jul	CNRL Horizon 20-Jul
1	Formaldehyde	2				
2	Isobutane	0.03	0.07	0.16	0.06	0.75
3	1-Butene	0.03				
4	Acetaldehyde	0.2	2.97	3.15		3.21
5	Butane	0.03		0.66		0.73
6	Methanol	2		5.68		7.39
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		0.14		3.43
11	1-Pentene	0.03				
12	Acetone	0.2	2.07	2.09	1.4	3.32
13	Pentane	0.03				8.44
14	Isoprene	0.03	1.66	0.89	2.65	2.22
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.05		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.07		0.69
22	Cyclopentane	0.03				0.67
23	2-Methylpentane	0.03				2.66
24	3-Methylpentane	0.03				1.59
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.05		1
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.38
32	Cyclohexane	0.03				0.44
33	Benzene	0.03	0.19	0.17	0.2	0.29
34	2-Methylhexane	0.03				0.08
35	2,3-Dimethylpentane	0.03				0.14
36	3-Methylhexane	0.03				0.17
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.04		0.29
39	Methylcyclohexane	0.03				0.35
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				0.08
43	Toluene	0.03	0.19	0.08	0.08	0.24
44	3-Methylheptane	0.03				0.05
45	Octane	0.03				0.18
46	Ethyl benzene	0.03	0.03			0.03
47	m,p-Xylene	0.03	0.07			0.09
48	Styrene	0.03				
49	Nonane	0.03		0.03		
50	o-Xylene	0.03				0.05
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.28	0.11	0.48	1.08
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				0.04
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1	AMS 6	AMS 7	AMS 14
				Fort McKay 20-Jul	Patricia McInnes 20-Jul	Athabasca Valley 20-Jul	Anzac 20-Jul
1	Formaldehyde	2					
2	Isobutane	0.03	0.28	0.17	0.59	0.07	
3	1-Butene	0.03	1.24				
4	Acetaldehyde	0.2	3.31	2.16			
5	Butane	0.03	2.39	0.55	1.41		
6	Methanol	2	6.19	4.55	2.97		
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.1	0.2	0.89	0.06	
11	1-Pentene	0.03					
12	Acetone	0.2	7.37	2.48	2	1.45	
13	Pentane	0.03					
14	Isoprene	0.03	1.73	2.19	2.22	0.99	
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03			0.12		
22	Cyclopentane	0.03		0.26	0.66		
23	2-Methylpentane	0.03	0.24	0.06	0.2		
24	3-Methylpentane	0.03		0.04	0.12		
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.24	0.07	0.19		
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03			0.12		
31	Methylcyclopentane	0.03	0.04	0.04	0.14		
32	Cyclohexane	0.03					
33	Benzene	0.03	0.25	0.34	0.28	0.2	
34	2-Methylhexane	0.03	0.47		0.06		
35	2,3-Dimethylpentane	0.03		0.05	0.21		
36	3-Methylhexane	0.03	0.69	0.05	0.08		
37	2,2,4-Trimethylpentane	0.03		0.1	0.7		
38	Heptane	0.03	2.33	0.05	0.07		
39	Methylcyclohexane	0.03	0.33		0.04		
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03			0.1		
42	2-Methylheptane	0.03					
43	Toluene	0.03	2.15	0.29	0.46	0.07	
44	3-Methylheptane	0.03	0.05				
45	Octane	0.03	0.18		0.04		
46	Ethyl benzene	0.03	0.11	0.05	0.05		
47	m,p-Xylene	0.03	0.47	0.13	0.17		
48	Styrene	0.03	0.12				
49	Nonane	0.03	0.05				
50	o-Xylene	0.03	0.12	0.05	0.06		
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.71	0.19	0.17	0.16	
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03	0.1				
57	1,2,4-Trimethylbenzene	0.03	0.09	0.06	0.05		
58	Undecane	0.03	0.06				
59	Dodecane	0.03	0.05				
60	Naphthalene	0.03	1.02	4.51			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 26-Jul	Millennium Mine 26-Jul	Syncrude UE 1 26-Jul	CNRL Horizon 26-Jul
1	Formaldehyde	2				
2	Isobutane	0.03				2.07
3	1-Butene	0.03				0.19
4	Acetaldehyde	0.2				3.38
5	Butane	0.03				1.02
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.73	0.11	0.14	3.43
11	1-Pentene	0.03				
12	Acetone	0.2	3.25	2.81	1.78	5.4
13	Pentane	0.03				
14	Isoprene	0.03	0.69	1.15	1.15	1.67
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.2	0.12		0.27
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.21	0.13		0.5
22	Cyclopentane	0.03	0.21			0.28
23	2-Methylpentane	0.03	0.86		0.13	
24	3-Methylpentane	0.03	0.42	0.03		0.84
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.41	0.04		0.18
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.05			0.67
32	Cyclohexane	0.03		0.07		1.31
33	Benzene	0.03	0.31	0.24	0.18	0.29
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				0.29
36	3-Methylhexane	0.03				0.13
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				0.18
39	Methylcyclohexane	0.03		0.06		0.85
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.09	0.13	0.17	0.16
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03		0.04		
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.11	0.2	0.26	0.6
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 26-Jul	AMS 6 Patricia McInnes 26-Jul	AMS 7 Athabasca Valley 26-Jul	AMS 14 Anzac 26-Jul
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	1.15	0.14	0.2	
3	1-Butene	0.03				0.53
4	Acetaldehyde	0.2	14.6	2.5		
5	Butane	0.03	4.01	0.5	0.59	0.7
6	Methanol	2	70.4	7.58		11.2
7	trans-2-Butene	0.03	0.26			
8	cis-2-Butene	0.03	0.2			
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	3.72	0.28	0.28	0.19
11	1-Pentene	0.03	0.26			
12	Acetone	0.2	10.1	3.2	7.59	2.59
13	Pentane	0.03	5.25			
14	Isoprene	0.03	0.68	1.32	1.7	1.59
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03	0.15			
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.1			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.26	0.06		
22	Cyclopentane	0.03	0.8	0.05		
23	2-Methylpentane	0.03	0.75	0.17	0.12	
24	3-Methylpentane	0.03	0.39	0.09	0.07	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.72	0.11	0.08	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.32	0.04	0.04	
32	Cyclohexane	0.03	1.32	0.04	0.03	
33	Benzene	0.03	0.53	0.28	0.31	0.28
34	2-Methylhexane	0.03	0.42		0.05	
35	2,3-Dimethylpentane	0.03	0.32	0.03		
36	3-Methylhexane	0.03	0.61	0.06	0.06	
37	2,2,4-Trimethylpentane	0.03	0.16		0.09	
38	Heptane	0.03	0.76	0.12	0.09	
39	Methylcyclohexane	0.03	0.34	0.07	0.04	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03	0.11			
42	2-Methylheptane	0.03	0.12	0.06		
43	Toluene	0.03	10.1	0.21	0.25	0.22
44	3-Methylheptane	0.03	0.13			
45	Octane	0.03		0.09	0.06	
46	Ethyl benzene	0.03	0.56	0.04	0.04	
47	m,p-Xylene	0.03	1.83	0.13	0.14	
48	Styrene	0.03	0.08			
49	Nonane	0.03	0.15	0.06		
50	o-Xylene	0.03	0.61	0.06	0.05	
51	Isopropylbenzene	0.03	0.14			
52	alpha Pinene	0.03	0.76	0.28	0.47	0.48
53	n-Propylbenzene	0.03	0.08			
54	1,3,5-Trimethylbenzene	0.03	0.11			
55	beta Pinene	0.03				
56	Decane	0.03	0.27	0.04		
57	1,2,4-Trimethylbenzene	0.03	0.32	0.03	0.04	
58	Undecane	0.03	0.54			
59	Dodecane	0.03	0.11			
60	Naphthalene	0.03	0.24			



#	VOC Canisters Compound Name	MDL	Results (ppbv)		
			AMS 9	AMS 13	AMS 15
			Barge Landing 01-Aug	Syncrude UE 1 01-Aug	CNRL Horizon 01-Aug
1	Formaldehyde	2			
2	Isobutane	0.03	0.41	0.82	2.21
3	1-Butene	0.03		0.64	
4	Acetaldehyde	0.2		8.13	
5	Butane	0.03	0.56	0.45	0.87
6	Methanol	2	6.63	7.72	14.2
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.39	0.42	2.64
11	1-Pentene	0.03			
12	Acetone	0.2	3.27	4.52	3.23
13	Pentane	0.03			
14	Isoprene	0.03	0.16	2.17	0.92
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03			
17	2-Methyl-2-butene	0.03			
18	2,2-Dimethylbutane	0.03			0.18
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03			
21	2,3-Dimethylbutane	0.03			0.38
22	Cyclopentane	0.03			
23	2-Methylpentane	0.03			
24	3-Methylpentane	0.03		0.15	0.58
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03		0.12	0.2
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03			0.42
32	Cyclohexane	0.03	0.14	0.21	1.04
33	Benzene	0.03	0.16	0.27	0.17
34	2-Methylhexane	0.03			
35	2,3-Dimethylpentane	0.03			0.25
36	3-Methylhexane	0.03			0.22
37	2,2,4-Trimethylpentane	0.03			
38	Heptane	0.03		0.11	0.31
39	Methylcyclohexane	0.03	0.12	0.17	0.93
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03			
42	2-Methylheptane	0.03			
43	Toluene	0.03		0.12	
44	3-Methylheptane	0.03			
45	Octane	0.03			
46	Ethyl benzene	0.03			
47	m,p-Xylene	0.03			
48	Styrene	0.03			
49	Nonane	0.03			
50	o-Xylene	0.03			
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03		0.34	0.44
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03			
57	1,2,4-Trimethylbenzene	0.03			
58	Undecane	0.03			
59	Dodecane	0.03			
60	Naphthalene	0.03			



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 01-Aug	Patricia McInnes 01-Aug	Athabasca Valley 01-Aug	Anzac 01-Aug
1	Formaldehyde	2				
2	Isobutane	0.03	0.38		0.18	
3	1-Butene	0.03	0.67		0.26	
4	Acetaldehyde	0.2				
5	Butane	0.03	1.76	0.77	0.65	
6	Methanol	2	21.5		14.2	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.3	0.23	0.24	
11	1-Pentene	0.03				
12	Acetone	0.2	5.09	2.22	3.13	2.13
13	Pentane	0.03				
14	Isoprene	0.03	1.86	1.68	2.08	1.55
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.16			
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.22			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03	0.11			
33	Benzene	0.03	0.18	0.19	0.17	0.14
34	2-Methylhexane	0.03	0.29			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.39			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	1.26			
39	Methylcyclohexane	0.03	0.26			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	1.46	0.11	0.14	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.27		0.09	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.29	0.11	0.14	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.1			
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	0.78			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 07-Aug	Millennium Mine 07-Aug	Syncrude UE 1 07-Aug	CNRL Horizon 07-Aug
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03			1.34	
6	Methanol	2				24.7
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.42		0.44	0.24
11	1-Pentene	0.03				
12	Acetone	0.2	3.77	3.01	2.98	3.25
13	Pentane	0.03				
14	Isoprene	0.03	0.6	0.62	2.3	0.68
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.14		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.18		
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.25			
24	3-Methylpentane	0.03	0.16		0.13	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03			0.17	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03	0.12			
33	Benzene	0.03	0.3	0.27	0.29	0.24
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.1	0.2	
39	Methylcyclohexane	0.03	0.1	0.12	0.17	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.15	0.16	0.22	
44	3-Methylheptane	0.03				
45	Octane	0.03			0.27	
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03			0.16	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.21	0.17	0.6	0.25
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 07-Aug	AMS 6 Patricia McInnes 07-Aug	AMS 7 Athabasca Valley 07-Aug	AMS 14 Anzac 07-Aug
	1	Formaldehyde	2				
	2	Isobutane	0.03				
	3	1-Butene	0.03				
	4	Acetaldehyde	0.2				
	5	Butane	0.03	3		1.41	
	6	Methanol	2				
	7	trans-2-Butene	0.03				
	8	cis-2-Butene	0.03				
	9	3-Methyl-1-butene	0.03				
	10	Isopentane	0.03	0.34	0.34	0.36	
	11	1-Pentene	0.03				
	12	Acetone	0.2	5.06	3.54	3.98	3.54
	13	Pentane	0.03				
	14	Isoprene	0.03	1.7	0.71	0.91	0.83
	15	trans-2-Pentene	0.03				
	16	cis-2-Pentene	0.03				
	17	2-Methyl-2-butene	0.03				
	18	2,2-Dimethylbutane	0.03				
	19	Cyclopentene	0.03				
	20	4-Methyl-1-pentene	0.03				
	21	2,3-Dimethylbutane	0.03				
	22	Cyclopentane	0.03				
	23	2-Methylpentane	0.03	0.31			
	24	3-Methylpentane	0.03	0.12			
	25	2-Methyl-1-pentene	0.03				
	26	Hexane	0.03	0.35			
	27	Methyl ethyl ketone	0.2				
	28	cis-2-Hexene	0.03				
	29	trans-2-Hexene	0.03				
	30	2,4-Dimethylpentane	0.03				
	31	Methylcyclopentane	0.03				
	32	Cyclohexane	0.03				
	33	Benzene	0.03	0.33	0.4	0.29	0.3
	34	2-Methylhexane	0.03	0.42			
	35	2,3-Dimethylpentane	0.03				
	36	3-Methylhexane	0.03	0.53			
	37	2,2,4-Trimethylpentane	0.03				
	38	Heptane	0.03	1.54			
	39	Methylcyclohexane	0.03	0.33			
	40	Methyl isobutyl ketone	0.2				
	41	2,3,4-Trimethylpentane	0.03				
	42	2-Methylheptane	0.03	0.1			
	43	Toluene	0.03	2.14	0.26	0.15	0.15
	44	3-Methylheptane	0.03				
	45	Octane	0.03				
	46	Ethyl benzene	0.03	0.12			
	47	m,p-Xylene	0.03	0.49	0.14	0.12	
	48	Styrene	0.03				
	49	Nonane	0.03	0.09			
	50	o-Xylene	0.03	0.12			
	51	Isopropylbenzene	0.03				
	52	alpha Pinene	0.03	0.72		0.11	0.18
	53	n-Propylbenzene	0.03				
	54	1,3,5-Trimethylbenzene	0.03				
	55	beta Pinene	0.03				
	56	Decane	0.03	0.17			
	57	1,2,4-Trimethylbenzene	0.03	0.11			
	58	Undecane	0.03				
	59	Dodecane	0.03				
	60	Naphthalene	0.03	0.57			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 13-Aug	Millennium Mine 13-Aug	Syncrude UE 1 13-Aug	CNRL Horizon 13-Aug
1	Formaldehyde	2				
2	Isobutane	0.03			0.35	1.32
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03				
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.28	0.15	0.37	1.18
11	1-Pentene	0.03				
12	Acetone	0.2	3.08	2.5	2.1	3.74
13	Pentane	0.03			0.24	
14	Isoprene	0.03	0.63	0.61	2.32	0.97
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.12		0.12
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.15		0.26
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.15		0.16	
24	3-Methylpentane	0.03	0.1		0.15	0.29
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.12		0.14	0.19
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03			0.08	0.28
32	Cyclohexane	0.03			0.12	0.51
33	Benzene	0.03	0.32	0.25	0.28	0.33
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				0.14
36	3-Methylhexane	0.03				0.19
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.12		0.17	0.29
39	Methylcyclohexane	0.03	0.1		0.14	0.42
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				0.14
43	Toluene	0.03	0.21		0.16	0.24
44	3-Methylheptane	0.03				
45	Octane	0.03			0.16	0.44
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.14	0.14	0.38	0.39
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 13-Aug	Patricia McInnes 13-Aug	Athabasca Valley 13-Aug	Anzac 13-Aug
1	Formaldehyde	2				
2	Isobutane	0.03	0.42	2.96		
3	1-Butene	0.03	0.68			
4	Acetaldehyde	0.2	5.77			
5	Butane	0.03	2.4	11.1		
6	Methanol	2	7.69			
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.4	0.25	0.25	0.15
11	1-Pentene	0.03				
12	Acetone	0.2	4.64	3.66	2.97	2.65
13	Pentane	0.03				
14	Isoprene	0.03	1.63	1.21	0.15	0.64
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.28	0.39		
24	3-Methylpentane	0.03	0.16	0.77		
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.3	2.99		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.11	0.51		
32	Cyclohexane	0.03	0.14			
33	Benzene	0.03	0.35	0.32	0.3	0.26
34	2-Methylhexane	0.03	0.27			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.42			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	1.07			
39	Methylcyclohexane	0.03	0.25			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	1.58	2.63		
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.35	0.29		
48	Styrene	0.03				
49	Nonane	0.03		0.26		
50	o-Xylene	0.03		0.09		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.36	0.28		0.09
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.1	1.41		
57	1,2,4-Trimethylbenzene	0.03		0.09		
58	Undecane	0.03		0.39		
59	Dodecane	0.03				
60	Naphthalene	0.03	0.48			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 19-Aug	Millennium Mine 19-Aug	Syncrude UE 1 19-Aug	CNRL Horizon 19-Aug
1	Formaldehyde	2				
2	Isobutane	0.03			0.57	
3	1-Butene	0.03			0.33	
4	Acetaldehyde	0.2				
5	Butane	0.03	0.71	0.79	1.59	1.64
6	Methanol	2	7.17		14.1	35.1
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.18	0.2	1.25	
11	1-Pentene	0.03				
12	Acetone	0.2	4.05	3.75	4.89	8.96
13	Pentane	0.03				
14	Isoprene	0.03	2.61	0.29	2.87	2.89
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03			0.39	
24	3-Methylpentane	0.03			0.26	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.22	0.53	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03			0.19	
32	Cyclohexane	0.03				
33	Benzene	0.03	0.34	0.36	0.53	0.74
34	2-Methylhexane	0.03			0.26	
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03		0.2	0.45	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.17	0.4	0.42	
39	Methylcyclohexane	0.03	0.1	0.2	0.2	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.18	0.12	
43	Toluene	0.03	0.21	0.62	1.22	0.29
44	3-Methylheptane	0.03				
45	Octane	0.03		0.43	0.32	
46	Ethyl benzene	0.03			0.11	
47	m,p-Xylene	0.03	0.12		0.37	
48	Styrene	0.03				
49	Nonane	0.03			0.09	
50	o-Xylene	0.03			0.14	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.13	0.11	0.37	0.37
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03	0.39			
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 19-Aug	Patricia McInnes 19-Aug	Athabasca Valley 19-Aug	Anzac 19-Aug
1	Formaldehyde	2				
2	Isobutane	0.03		6.36		
3	1-Butene	0.03	0.59	1.64	0.43	
4	Acetaldehyde	0.2		11.2	10.6	
5	Butane	0.03	2.23	1.07	1.12	0.76
6	Methanol	2	10.5			9.35
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.19	2.83	0.33	0.16
11	1-Pentene	0.03				
12	Acetone	0.2	6.37	13.2	3.79	3.41
13	Pentane	0.03				
14	Isoprene	0.03	2.59		0.25	1.31
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.29		
22	Cyclopentane	0.03		0.62		
23	2-Methylpentane	0.03		0.81		
24	3-Methylpentane	0.03		0.32		
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.26			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.18		
32	Cyclohexane	0.03				
33	Benzene	0.03	0.35	0.89	0.33	0.28
34	2-Methylhexane	0.03	0.24	0.39		
35	2,3-Dimethylpentane	0.03		0.16		
36	3-Methylhexane	0.03	0.39	0.27		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	1.08			
39	Methylcyclohexane	0.03	0.22	0.11		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.57		
43	Toluene	0.03	1.53	0.35	0.11	
44	3-Methylheptane	0.03		0.55		
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.37	0.18		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03	0.1			
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.28			0.13
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03	0.64			
56	Decane	0.03	0.11			
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	0.62			



#	VOC Canisters Compound Name	MDL	Results (ppbv)		
			AMS 9	AMS 13	AMS 15
			Barge Landing 25-Aug	Syncrude UE 1 25-Aug	CNRL Horizon 25-Aug
1	Formaldehyde	2			
2	Isobutane	0.03	0.26	0.12	0.83
3	1-Butene	0.03			
4	Acetaldehyde	0.2	2.58	2.58	15.6
5	Butane	0.03	0.34	0.43	0.96
6	Methanol	2			13.6
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.2	0.21	0.86
11	1-Pentene	0.03			
12	Acetone	0.2	0.39	0.52	2.56
13	Pentane	0.03			5.52
14	Isoprene	0.03	0.23		0.14
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03			
17	2-Methyl-2-butene	0.03			
18	2,2-Dimethylbutane	0.03			0.07
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03			
21	2,3-Dimethylbutane	0.03			0.17
22	Cyclopentane	0.03	0.83		0.08
23	2-Methylpentane	0.03			
24	3-Methylpentane	0.03			0.2
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03			
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03			0.15
32	Cyclohexane	0.03		0.03	0.32
33	Benzene	0.03	0.24	0.23	0.29
34	2-Methylhexane	0.03			
35	2,3-Dimethylpentane	0.03			0.07
36	3-Methylhexane	0.03			
37	2,2,4-Trimethylpentane	0.03			
38	Heptane	0.03			0.08
39	Methylcyclohexane	0.03		0.04	0.21
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03			
42	2-Methylheptane	0.03			
43	Toluene	0.03	0.07	0.09	0.12
44	3-Methylheptane	0.03			
45	Octane	0.03			0.08
46	Ethyl benzene	0.03			
47	m,p-Xylene	0.03			
48	Styrene	0.03			
49	Nonane	0.03			
50	o-Xylene	0.03			
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03	0.08	0.03	0.08
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03			
57	1,2,4-Trimethylbenzene	0.03			0.02
58	Undecane	0.03			0.03
59	Dodecane	0.03			
60	Naphthalene	0.03			



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 25-Aug	Patricia McInnes 25-Aug	Athabasca Valley 25-Aug	Anzac 25-Aug
1	Formaldehyde	2				
2	Isobutane	0.03	0.23	0.1	0.13	0.07
3	1-Butene	0.03				
4	Acetaldehyde	0.2		2.87	2.36	
5	Butane	0.03	1.62	0.32	0.54	0.47
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.51	0.16	0.3	0.19
11	1-Pentene	0.03				
12	Acetone	0.2	1.36	0.97	0.8	0.47
13	Pentane	0.03				
14	Isoprene	0.03	0.33	0.3	0.1	0.11
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03	2.08			
23	2-Methylpentane	0.03	0.21	0.1	0.15	0.11
24	3-Methylpentane	0.03	0.08	0.06	0.07	0.07
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.16			
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.06		0.03	
32	Cyclohexane	0.03	0.06	0.03		
33	Benzene	0.03	0.36	0.27	0.29	0.26
34	2-Methylhexane	0.03	0.17			
35	2,3-Dimethylpentane	0.03	0.05			
36	3-Methylhexane	0.03	0.25			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.62	0.05	0.06	0.04
39	Methylcyclohexane	0.03	0.12	0.04	0.04	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	1.26	0.09	0.12	0.09
44	3-Methylheptane	0.03				
45	Octane	0.03	0.07		0.06	0.04
46	Ethyl benzene	0.03	0.07			
47	m,p-Xylene	0.03	0.29			
48	Styrene	0.03	0.04			
49	Nonane	0.03	0.03			
50	o-Xylene	0.03	0.06			
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.16	0.06	0.04	0.05
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.09	0.03		
57	1,2,4-Trimethylbenzene	0.03	0.07			
58	Undecane	0.03	0.06			
59	Dodecane	0.03	0.03			
60	Naphthalene	0.03	1.07			



VOC Canisters			Results (ppbv)
#	Compound Name	MDL	AMS 1
			Fort McKay 26-Aug
1	Formaldehyde	2	
2	Isobutane	0.03	0.12
3	1-Butene	0.03	
4	Acetaldehyde	0.2	
5	Butane	0.03	0.46
6	Methanol	2	
7	trans-2-Butene	0.03	
8	cis-2-Butene	0.03	
9	3-Methyl-1-butene	0.03	
10	Isopentane	0.03	0.16
11	1-Pentene	0.03	
12	Acetone	0.2	2.82
13	Pentane	0.03	
14	Isoprene	0.03	0.76
15	trans-2-Pentene	0.03	
16	cis-2-Pentene	0.03	
17	2-Methyl-2-butene	0.03	
18	2,2-Dimethylbutane	0.03	
19	Cyclopentene	0.03	
20	4-Methyl-1-pentene	0.03	
21	2,3-Dimethylbutane	0.03	
22	Cyclopentane	0.03	
23	2-Methylpentane	0.03	0.07
24	3-Methylpentane	0.03	
25	2-Methyl-1-pentene	0.03	
26	Hexane	0.03	
27	Methyl ethyl ketone	0.2	
28	cis-2-Hexene	0.03	
29	trans-2-Hexene	0.03	
30	2,4-Dimethylpentane	0.03	
31	Methylcyclopentane	0.03	
32	Cyclohexane	0.03	0.03
33	Benzene	0.03	0.26
34	2-Methylhexane	0.03	
35	2,3-Dimethylpentane	0.03	
36	3-Methylhexane	0.03	
37	2,2,4-Trimethylpentane	0.03	
38	Heptane	0.03	
39	Methylcyclohexane	0.03	
40	Methyl isobutyl ketone	0.2	
41	2,3,4-Trimethylpentane	0.03	
42	2-Methylheptane	0.03	
43	Toluene	0.03	0.06
44	3-Methylheptane	0.03	
45	Octane	0.03	
46	Ethyl benzene	0.03	
47	m,p-Xylene	0.03	
48	Styrene	0.03	
49	Nonane	0.03	
50	o-Xylene	0.03	
51	Isopropylbenzene	0.03	
52	alpha Pinene	0.03	0.06
53	n-Propylbenzene	0.03	
54	1,3,5-Trimethylbenzene	0.03	
55	beta Pinene	0.03	
56	Decane	0.03	
57	1,2,4-Trimethylbenzene	0.03	
58	Undecane	0.03	
59	Dodecane	0.03	
60	Naphthalene	0.03	



VOC Canisters			Results (ppbv)		
#	Compound Name	MDL	AMS 1	AMS 7	AMS 14
			Fort McKay 31-Aug	Athabasca Valley 31-Aug	Anzac 31-Aug
1	Formaldehyde	2			
2	Isobutane	0.03	0.1	0.15	0.21
3	1-Butene	0.03			
4	Acetaldehyde	0.2		45.2	
5	Butane	0.03	1.28	0.61	
6	Methanol	2		13.7	
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.13	0.38	0.1
11	1-Pentene	0.03			
12	Acetone	0.2	1.54	18.3	0.32
13	Pentane	0.03			
14	Isoprene	0.03	0.54	0.07	0.12
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03		0.08	
17	2-Methyl-2-butene	0.03		0.05	
18	2,2-Dimethylbutane	0.03		0.06	
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03		0.08	
21	2,3-Dimethylbutane	0.03		0.15	
22	Cyclopentane	0.03		0.09	
23	2-Methylpentane	0.03	0.08		
24	3-Methylpentane	0.03		0.11	
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03	0.08	0.15	
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03		0.08	
32	Cyclohexane	0.03		0.06	
33	Benzene	0.03	0.17	0.27	0.12
34	2-Methylhexane	0.03	0.06		
35	2,3-Dimethylpentane	0.03		0.06	
36	3-Methylhexane	0.03	0.14	0.08	
37	2,2,4-Trimethylpentane	0.03		0.07	
38	Heptane	0.03	0.31		
39	Methylcyclohexane	0.03	0.07	0.05	
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03		0.04	
42	2-Methylheptane	0.03		0.04	
43	Toluene	0.03	0.64	0.21	
44	3-Methylheptane	0.03		0.04	
45	Octane	0.03	0.06		
46	Ethyl benzene	0.03	0.04	0.05	
47	m,p-Xylene	0.03	0.12	0.11	
48	Styrene	0.03			
49	Nonane	0.03		0.04	
50	o-Xylene	0.03		0.05	
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03	0.11		
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03	0.04	0.05	
57	1,2,4-Trimethylbenzene	0.03		0.04	
58	Undecane	0.03		0.03	
59	Dodecane	0.03			
60	Naphthalene	0.03	0.26	0.18	



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 31-Aug	Millennium Mine 31-Aug	Syncrude UE 1 31-Aug	CNRL Horizon 31-Aug
1	Formaldehyde	2				
2	Isobutane	0.03	0.05	0.08	0.05	0.17
3	1-Butene	0.03				
4	Acetaldehyde	0.2		1.77		
5	Butane	0.03	0.33	0.45		0.44
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.1	0.12	0.15	0.22
11	1-Pentene	0.03				
12	Acetone	0.2	0.41	0.66	0.99	1.02
13	Pentane	0.03				
14	Isoprene	0.03	0.28	0.19	0.52	0.25
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.04		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.09			
24	3-Methylpentane	0.03			0.04	0.07
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.04		0.03	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.04
32	Cyclohexane	0.03				0.06
33	Benzene	0.03	0.22	0.2	0.17	0.19
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03			0.05	
39	Methylcyclohexane	0.03				0.06
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.05	0.05	0.05	0.08
44	3-Methylheptane	0.03				
45	Octane	0.03			0.04	
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.06	0.05	0.06	0.07
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)
#	Compound Name	MDL	AMS 6 Patricia McInnes 01-Sep
1	Formaldehyde	2	
2	Isobutane	0.03	0.18
3	1-Butene	0.03	
4	Acetaldehyde	0.2	1.37
5	Butane	0.03	0.66
6	Methanol	2	
7	trans-2-Butene	0.03	
8	cis-2-Butene	0.03	
9	3-Methyl-1-butene	0.03	
10	Isopentane	0.03	0.37
11	1-Pentene	0.03	
12	Acetone	0.2	1.6
13	Pentane	0.03	
14	Isoprene	0.03	0.19
15	trans-2-Pentene	0.03	
16	cis-2-Pentene	0.03	
17	2-Methyl-2-butene	0.03	
18	2,2-Dimethylbutane	0.03	
19	Cyclopentene	0.03	
20	4-Methyl-1-pentene	0.03	
21	2,3-Dimethylbutane	0.03	0.06
22	Cyclopentane	0.03	0.04
23	2-Methylpentane	0.03	0.17
24	3-Methylpentane	0.03	0.09
25	2-Methyl-1-pentene	0.03	
26	Hexane	0.03	0.12
27	Methyl ethyl ketone	0.2	
28	cis-2-Hexene	0.03	
29	trans-2-Hexene	0.03	
30	2,4-Dimethylpentane	0.03	
31	Methylcyclopentane	0.03	0.05
32	Cyclohexane	0.03	
33	Benzene	0.03	0.24
34	2-Methylhexane	0.03	0.03
35	2,3-Dimethylpentane	0.03	
36	3-Methylhexane	0.03	0.07
37	2,2,4-Trimethylpentane	0.03	
38	Heptane	0.03	0.08
39	Methylcyclohexane	0.03	0.05
40	Methyl isobutyl ketone	0.2	
41	2,3,4-Trimethylpentane	0.03	
42	2-Methylheptane	0.03	0.03
43	Toluene	0.03	0.11
44	3-Methylheptane	0.03	
45	Octane	0.03	0.07
46	Ethyl benzene	0.03	
47	m,p-Xylene	0.03	0.08
48	Styrene	0.03	
49	Nonane	0.03	
50	o-Xylene	0.03	0.03
51	Isopropylbenzene	0.03	
52	alpha Pinene	0.03	0.05
53	n-Propylbenzene	0.03	
54	1,3,5-Trimethylbenzene	0.03	
55	beta Pinene	0.03	
56	Decane	0.03	0.04
57	1,2,4-Trimethylbenzene	0.03	
58	Undecane	0.03	
59	Dodecane	0.03	
60	Naphthalene	0.03	



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 06-Sep	Millennium Mine 06-Sep	Syncrude UE 1 06-Sep	CNRL Horizon 06-Sep
1	Formaldehyde	2				
2	Isobutane	0.03	0.19	1590	0.36	2.44
3	1-Butene	0.03				
4	Acetaldehyde	0.2				2
5	Butane	0.03	0.61	3.73	0.76	0.43
6	Methanol	2		20.1		
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.24	2.97	0.76	0.51
11	1-Pentene	0.03				
12	Acetone	0.2	1.04	6.09	1	1.68
13	Pentane	0.03			0.57	0.07
14	Isoprene	0.03		0.6	0.81	0.31
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03		0.2		
18	2,2-Dimethylbutane	0.03	0.04	0.13	0.12	0.06
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.1	0.23	0.2	0.14
22	Cyclopentane	0.03		0.45	0.18	
23	2-Methylpentane	0.03	0.13	0.75	0.48	0.07
24	3-Methylpentane	0.03	0.07	0.44	0.3	0.18
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.11	0.53	0.2	0.03
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.06	0.27	0.12	0.07
32	Cyclohexane	0.03	0.06	32	0.13	0.14
33	Benzene	0.03	0.26	0.64	0.23	0.18
34	2-Methylhexane	0.03	0.06	0.33	0.06	
35	2,3-Dimethylpentane	0.03	0.05	0.27	0.06	0.05
36	3-Methylhexane	0.03	0.13	0.63	0.15	
37	2,2,4-Trimethylpentane	0.03		0.09		
38	Heptane	0.03	0.18	0.38	0.21	
39	Methylcyclohexane	0.03	0.14	0.29	0.22	0.13
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03		0.05		
42	2-Methylheptane	0.03	0.1		0.14	
43	Toluene	0.03	0.19	2.87	0.24	0.05
44	3-Methylheptane	0.03	0.06	0.09	0.07	
45	Octane	0.03	0.21	0.21	0.29	
46	Ethyl benzene	0.03	0.04	0.15	0.04	
47	m,p-Xylene	0.03	0.09	0.58	0.11	
48	Styrene	0.03				
49	Nonane	0.03	0.06	0.09	0.06	
50	o-Xylene	0.03	0.04	0.19	0.04	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.05	0.23	0.24	0.13
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.03	0.11	0.04	
57	1,2,4-Trimethylbenzene	0.03		0.12		
58	Undecane	0.03		0.5	0.03	
59	Dodecane	0.03		0.05		
60	Naphthalene	0.03		0.19		



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 06-Sep	AMS 6 Patricia McInnes 06-Sep	AMS 7 Athabasca Valley 06-Sep	AMS 14 Anzac 06-Sep
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.23	0.21	0.22	11.1
3	1-Butene	0.03				
4	Acetaldehyde	0.2	1.41	1.35	1.12	
5	Butane	0.03	1.19	0.66	1.08	0.57
6	Methanol	2			6.86	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.36	0.39	0.52	0.18
11	1-Pentene	0.03				
12	Acetone	0.2	1.45	1.01	1.79	0.88
13	Pentane	0.03	0.14	0.18	0.09	0.14
14	Isoprene	0.03	0.43	0.36	0.49	0.32
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.04			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.08	0.05	0.05	
22	Cyclopentane	0.03	0.03			
23	2-Methylpentane	0.03	0.16	0.15	0.12	
24	3-Methylpentane	0.03	0.1	0.08	0.08	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.16	0.06	0.07	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03			0.04	
31	Methylcyclopentane	0.03	0.09	0.04	0.06	
32	Cyclohexane	0.03	0.09			
33	Benzene	0.03	0.26	0.29	0.23	0.18
34	2-Methylhexane	0.03	0.11			
35	2,3-Dimethylpentane	0.03	0.05		0.07	
36	3-Methylhexane	0.03	0.16		0.06	
37	2,2,4-Trimethylpentane	0.03		0.06	0.13	
38	Heptane	0.03	0.36		0.05	
39	Methylcyclohexane	0.03	0.16			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.12			
43	Toluene	0.03	0.59	0.11	0.18	0.05
44	3-Methylheptane	0.03	0.07			
45	Octane	0.03	0.19			
46	Ethyl benzene	0.03	0.06		0.03	
47	m,p-Xylene	0.03	0.17		0.1	
48	Styrene	0.03				
49	Nonane	0.03	0.05			
50	o-Xylene	0.03	0.05		0.03	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.18	0.07	0.07	0.11
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.05			
57	1,2,4-Trimethylbenzene	0.03	0.04		0.03	
58	Undecane	0.03	0.03			
59	Dodecane	0.03				
60	Naphthalene	0.03	0.22			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 12-Sep	Millennium Mine 12-Sep	Syncrude UE 1 12-Sep	CNRL Horizon 12-Sep
1	Formaldehyde	2				
2	Isobutane	0.03	0.06	3.5		0.65
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03		0.57		0.45
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.1	0.1		0.73
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				0.14
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.09
32	Cyclohexane	0.03				0.17
33	Benzene	0.03	0.17	0.14	0.14	0.17
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				0.12
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03				
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.05	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 12-Sep	AMS 6 Patricia McInnes 12-Sep	AMS 7 Athabasca Valley 12-Sep	AMS 14 Anzac 12-Sep
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.08	0.08	0.12	3.87
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.07	0.48	0.68	
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03			0.22	
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03				
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.17	0.18	0.17	0.13
34	2-Methylhexane	0.03	0.07			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.11			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.26			
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.58		0.11	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.08			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.09			
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	0.3			



VOC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 18-Sep	AMS 12 Millennium Mine 18-Sep	AMS 13 Syncrude UE 1 18-Sep	AMS 15 CNRL Horizon 18-Sep
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.17	0.33	0.08	1.11
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03		0.67	0.5	0.52
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.19	0.27	0.11	1.05
11	1-Pentene	0.03				
12	Acetone	0.2	1.71	2.46	1.48	1.77
13	Pentane	0.03			0.15	
14	Isoprene	0.03		0.1		
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.24		0.1
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.25		0.19
22	Cyclopentane	0.03				0.1
23	2-Methylpentane	0.03		0.12		0.08
24	3-Methylpentane	0.03	0.05	0.09		0.23
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.06	0.18		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.08		0.13
32	Cyclohexane	0.03		0.1		0.25
33	Benzene	0.03	0.13	0.14	0.12	0.14
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				0.07
36	3-Methylhexane	0.03		0.11		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.15		
39	Methylcyclohexane	0.03		0.12		0.19
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.06	0.15	0.1	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.08	0.12	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.06	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03			0.08	
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03			0.29	



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 18-Sep	Patricia McInnes 18-Sep	Athabasca Valley 18-Sep	Anzac 18-Sep
1	Formaldehyde	2				
2	Isobutane	0.03	0.2	0.1	0.47	0.09
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.99	0.56	1.32	0.44
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.18		0.55	
11	1-Pentene	0.03				
12	Acetone	0.2	2.27	1.72	2.13	1.44
13	Pentane	0.03			0.18	
14	Isoprene	0.03	0.09			
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03			0.1	
24	3-Methylpentane	0.03			0.05	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.09		0.05	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.14	0.15	0.15	0.12
34	2-Methylhexane	0.03	0.07			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.12			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.25			
39	Methylcyclohexane	0.03	0.08			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.55		0.08	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.11			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.07			
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03	0.44			



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 24-Sep	Millennium Mine 24-Sep	Syncrude UE 1 24-Sep	CNRL Horizon 24-Sep
1	Formaldehyde	2				
2	Isobutane	0.03	0.26	0.35	0.55	7.2
3	1-Butene	0.03				
4	Acetaldehyde	0.2		14.1	2.73	4.57
5	Butane	0.03	0.34	0.47	0.9	2.1
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.57	0.33	0.62	2.24
11	1-Pentene	0.03				
12	Acetone	0.2	0.75	1.55		1.46
13	Pentane	0.03	0.69	0.15	0.37	0.67
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.1	0.25	0.08	0.16
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.14	0.3	0.14	0.27
22	Cyclopentane	0.03	0.14	0.07	0.1	0.23
23	2-Methylpentane	0.03	0.53	0.25	0.28	0.43
24	3-Methylpentane	0.03	0.27	0.15	0.2	0.44
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.18	0.21	0.17	0.22
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.08	0.12	0.09	0.25
32	Cyclohexane	0.03	0.07	0.12	0.11	0.5
33	Benzene	0.03	0.27	0.31	0.25	0.28
34	2-Methylhexane	0.03	0.05	0.09	0.04	0.09
35	2,3-Dimethylpentane	0.03		0.08	0.04	0.13
36	3-Methylhexane	0.03		0.11	0.08	0.13
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.06	0.17	0.09	0.11
39	Methylcyclohexane	0.03	0.06	0.16	0.11	0.33
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03			0.03	
43	Toluene	0.03	0.1	0.19	0.24	0.14
44	3-Methylheptane	0.03				
45	Octane	0.03			0.11	0.07
46	Ethyl benzene	0.03			0.06	
47	m,p-Xylene	0.03		0.08	0.26	
48	Styrene	0.03				
49	Nonane	0.03		0.06	0.06	
50	o-Xylene	0.03		0.04	0.06	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.07	0.04	0.1	0.11
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03		0.05	0.03	
57	1,2,4-Trimethylbenzene	0.03			0.14	
58	Undecane	0.03		0.03		
59	Dodecane	0.03				
60	Naphthalene	0.03			0.65	



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 24-Sep	AMS 6 Patricia McInnes 24-Sep	AMS 7 Athabasca Valley 24-Sep	AMS 14 Anzac 24-Sep
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.51	0.47	0.42	0.23
3	1-Butene	0.03				
4	Acetaldehyde	0.2		4.23		2.77
5	Butane	0.03	0.89	1.29	1.38	0.87
6	Methanol	2		10.7		
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.59	0.59	0.55	0.28
11	1-Pentene	0.03				
12	Acetone	0.2	1.04	2.7	1.61	1.91
13	Pentane	0.03	0.26		0.2	0.22
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.06			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.1	0.08	0.05	
22	Cyclopentane	0.03	0.07	0.06		
23	2-Methylpentane	0.03	0.3	0.27	0.24	0.17
24	3-Methylpentane	0.03	0.18	0.16	0.11	0.07
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.2	0.28	0.13	0.07
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.11	0.14	0.08	0.03
32	Cyclohexane	0.03	0.12	0.07	0.04	
33	Benzene	0.03	0.29	0.39	0.29	0.3
34	2-Methylhexane	0.03	0.13	0.11	0.08	
35	2,3-Dimethylpentane	0.03	0.08	0.09	0.06	
36	3-Methylhexane	0.03	0.17	0.14	0.1	
37	2,2,4-Trimethylpentane	0.03		0.06	0.07	
38	Heptane	0.03	0.36	0.2	0.1	0.04
39	Methylcyclohexane	0.03	0.15	0.12	0.05	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.05		0.03	
43	Toluene	0.03	0.85	2.22	0.24	0.08
44	3-Methylheptane	0.03				
45	Octane	0.03	0.08	0.12	0.05	
46	Ethyl benzene	0.03	0.07	0.07	0.04	
47	m,p-Xylene	0.03	0.22	0.26	0.11	
48	Styrene	0.03				
49	Nonane	0.03	0.05	0.08		
50	o-Xylene	0.03	0.05	0.1	0.04	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.21	0.08	0.06	0.06
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.07	0.07		
57	1,2,4-Trimethylbenzene	0.03	0.05	0.14	0.04	
58	Undecane	0.03	0.04	0.07		
59	Dodecane	0.03		0.04		
60	Naphthalene	0.03	0.64	1.23	0.26	



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 30-Sep	Millennium Mine 30-Sep	Syncrude UE 1 30-Sep	CNRL Horizon 30-Sep
1	Formaldehyde	2				
2	Isobutane	0.03	95.9	0.55	0.38	0.33
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.21	2.63	0.37	1.32
6	Methanol	2	11.3	26	4.69	17.9
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.44	1.14		0.65
11	1-Pentene	0.03				
12	Acetone	0.2		2.36		
13	Pentane	0.03	0.54	1.53		0.59
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.15		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.18		
22	Cyclopentane	0.03		0.15		
23	2-Methylpentane	0.03		0.34		
24	3-Methylpentane	0.03		0.16		0.15
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.25		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.13		
32	Cyclohexane	0.03		0.12		
33	Benzene	0.03	0.17	0.18	0.13	0.17
34	2-Methylhexane	0.03		0.31		0.12
35	2,3-Dimethylpentane	0.03		0.36		0.11
36	3-Methylhexane	0.03		0.84		0.34
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.24		0.1
39	Methylcyclohexane	0.03		0.14		0.08
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.28	0.56	0.1	0.22
44	3-Methylheptane	0.03				
45	Octane	0.03			0.06	
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.09	0.17	0.09	0.06
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03		0.07		
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 30-Sep	AMS 6 Patricia McInnes 30-Sep	AMS 7 Athabasca Valley 30-Sep	AMS 14 Anzac 30-Sep
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03			0.48	
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03			2.2	0.48
6	Methanol	2	16.1	81.9	13.5	5.15
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03			0.66	
11	1-Pentene	0.03				
12	Acetone	0.2		2.86		
13	Pentane	0.03			0.41	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.14	0.13	0.16	0.07
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.36	0.71	0.11	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03			0.09	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03		0.69		



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 06-Oct	Millennium Mine 06-Oct	Syncrude UE 1 06-Oct	CNRL Horizon 06-Oct
1	Formaldehyde	2				
2	Isobutane	0.03	0.27	0.2	0.17	1.2
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.59	0.88	0.58	0.82
6	Methanol	2	5.72	3.87	3.83	7.25
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.46	0.3	0.21	1.33
11	1-Pentene	0.03				
12	Acetone	0.2		2.91		
13	Pentane	0.03	0.63	0.28	0.22	0.19
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.08	0.13		0.12
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				0.2
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.23	0.21	0.09	0.17
24	3-Methylpentane	0.03	0.15	0.11	0.06	0.22
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.09	0.19	0.14	0.12
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.09		0.16
32	Cyclohexane	0.03		0.07		0.24
33	Benzene	0.03	0.12	0.17	0.14	0.17
34	2-Methylhexane	0.03				0.07
35	2,3-Dimethylpentane	0.03				0.08
36	3-Methylhexane	0.03		0.15	0.11	0.15
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.23	0.17	0.27
39	Methylcyclohexane	0.03		0.18	0.09	0.33
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.13		0.15
43	Toluene	0.03	0.07	0.3	0.18	0.21
44	3-Methylheptane	0.03				0.08
45	Octane	0.03		0.28	0.16	0.37
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.14	0.17	0.12
48	Styrene	0.03				
49	Nonane	0.03		0.12	0.07	0.09
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03		0.06	0.07	
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03		0.99		



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 06-Oct	AMS 6 Patricia McInnes 06-Oct	AMS 7 Athabasca Valley 06-Oct	AMS 14 Anzac 06-Oct
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.16		0.29	0.16
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.07	1	1.26	0.67
6	Methanol	2	95.7	9.08	6.38	107
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.22	0.21	0.32	0.21
11	1-Pentene	0.03				
12	Acetone	0.2	1.82	2.43		1.59
13	Pentane	0.03				0.18
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.11		0.08	
24	3-Methylpentane	0.03				
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.08		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.12	0.16	0.13	0.13
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.12			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.24			
39	Methylcyclohexane	0.03	0.09			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.34	0.9	0.09	0.07
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.1	0.07		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 12-Oct	Millennium Mine 12-Oct	Syncrude UE 1 12-Oct	CNRL Horizon 12-Oct
1	Formaldehyde	2				
2	Isobutane	0.03				
3	1-Butene	0.03				
4	Acetaldehyde	0.2		3.09		
5	Butane	0.03				
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.33	0.13		0.15
11	1-Pentene	0.03				
12	Acetone	0.2	0.94	2.2	0.58	1.09
13	Pentane	0.03	0.33	0.08	0.23	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.07	0.03		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.09			0.05
22	Cyclopentane	0.03	0.05			
23	2-Methylpentane	0.03	0.19		0.09	0.07
24	3-Methylpentane	0.03	0.09			0.04
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.04			0.09
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.05
32	Cyclohexane	0.03				0.06
33	Benzene	0.03	0.09	0.09	0.08	0.07
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				0.07
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				0.08
39	Methylcyclohexane	0.03				0.04
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03		0.04	0.03	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 12-Oct	AMS 6 Patricia McInnes 12-Oct	AMS 7 Athabasca Valley 12-Oct	AMS 14 Anzac 12-Oct
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.07	0.14	0.1	
3	1-Butene	0.03				
4	Acetaldehyde	0.2		4.85		3.24
5	Butane	0.03			0.6	
6	Methanol	2			1.81	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.21	0.21	0.11	0.12
11	1-Pentene	0.03				
12	Acetone	0.2	1.06	1.85		0.95
13	Pentane	0.03	0.21	0.15	0.14	0.1
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.06	0.04		
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.16	0.09	0.06	
24	3-Methylpentane	0.03	0.07	0.06		
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.06	0.17		
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.05		
32	Cyclohexane	0.03				
33	Benzene	0.03	0.08	0.12	0.09	0.07
34	2-Methylhexane	0.03		0.03		
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.08	0.09		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.12	0.08		
39	Methylcyclohexane	0.03		0.05		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.26	0.75	0.04	
44	3-Methylheptane	0.03				
45	Octane	0.03		0.05		
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.07		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.04		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 9 Barge Landing 18-Oct	AMS 12 Millennium Mine 18-Oct	AMS 13 Syncrude UE 1 18-Oct	AMS 15 CNRL Horizon 18-Oct
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.26	0.19	0.7	0.21
3	1-Butene	0.03			0.61	
4	Acetaldehyde	0.2				
5	Butane	0.03	0.89	0.94	3.25	0.85
6	Methanol	2			45.3	25.5
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.25	0.26	2.42	0.26
11	1-Pentene	0.03				
12	Acetone	0.2	1.01	2.28	90.8	1.7
13	Pentane	0.03	0.23	0.19	3.02	0.15
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03			0.17	
18	2,2-Dimethylbutane	0.03	0.04	0.04	0.07	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.07	0.04	0.18	0.06
22	Cyclopentane	0.03			0.46	
23	2-Methylpentane	0.03	0.13	0.06	0.5	0.06
24	3-Methylpentane	0.03	0.07	0.04	0.46	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.13	0.05	1.97	0.06
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03			0.16	
31	Methylcyclopentane	0.03	0.07		0.41	0.03
32	Cyclohexane	0.03	0.07		17.3	
33	Benzene	0.03	0.17	0.19	0.43	0.12
34	2-Methylhexane	0.03	0.05		0.28	
35	2,3-Dimethylpentane	0.03			0.18	
36	3-Methylhexane	0.03	0.15		0.58	0.05
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.12		0.51	0.08
39	Methylcyclohexane	0.03	0.08		0.28	0.07
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.05		0.18	0.05
43	Toluene	0.03	0.13	0.07	2.6	0.12
44	3-Methylheptane	0.03			0.11	
45	Octane	0.03	0.08		0.46	0.12
46	Ethyl benzene	0.03			0.32	
47	m,p-Xylene	0.03	0.07		1.26	
48	Styrene	0.03				
49	Nonane	0.03	0.03		0.15	
50	o-Xylene	0.03	0.03		0.37	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.03		0.16	0.04
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03			0.03	
55	beta Pinene	0.03				
56	Decane	0.03			0.33	
57	1,2,4-Trimethylbenzene	0.03			0.15	
58	Undecane	0.03			0.4	
59	Dodecane	0.03			0.06	
60	Naphthalene	0.03			0.55	



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 18-Oct	Patricia McInnes 18-Oct	Athabasca Valley 18-Oct	Anzac 18-Oct
1	Formaldehyde	2				
2	Isobutane	0.03	0.26	0.33	0.69	0.21
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.26	1.41	2.97	0.69
6	Methanol	2		7.28	10.1	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.36	0.44	0.92	0.27
11	1-Pentene	0.03				
12	Acetone	0.2	1.36	2.27	3.23	1.05
13	Pentane	0.03	0.26	0.19	0.33	0.15
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.07		0.06	
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.16	0.08	0.14	0.06
24	3-Methylpentane	0.03	0.08	0.06	0.08	0.05
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.26	0.09	0.07	0.1
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.09	0.05	0.06	
32	Cyclohexane	0.03	0.06			
33	Benzene	0.03	0.15	0.2	0.21	0.12
34	2-Methylhexane	0.03	0.11			
35	2,3-Dimethylpentane	0.03	0.06		0.04	
36	3-Methylhexane	0.03	0.21	0.09	0.07	
37	2,2,4-Trimethylpentane	0.03			0.06	
38	Heptane	0.03	0.46	0.04	0.04	
39	Methylcyclohexane	0.03	0.2			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.13			
43	Toluene	0.03	0.62	0.45	0.1	0.06
44	3-Methylheptane	0.03	0.07			
45	Octane	0.03	0.26			
46	Ethyl benzene	0.03	0.07			
47	m,p-Xylene	0.03	0.18	0.07		
48	Styrene	0.03				
49	Nonane	0.03	0.09			
50	o-Xylene	0.03	0.07			
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.06		0.03	0.03
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.05			
57	1,2,4-Trimethylbenzene	0.03	0.04			
58	Undecane	0.03	0.03			
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 24-Oct	Millennium Mine 24-Oct	Syncrude UE 1 24-Oct	CNRL Horizon 24-Oct
1	Formaldehyde	2				
2	Isobutane	0.03	0.07	0.08		
3	1-Butene	0.03				
4	Acetaldehyde	0.2	0.55	0.97		
5	Butane	0.03	0.4	0.42	0.41	0.67
6	Methanol	2	11.3	11.3	13.1	77.8
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.1	0.09		0.19
11	1-Pentene	0.03				
12	Acetone	0.2		1		1.07
13	Pentane	0.03	0.07	0.05	0.07	0.12
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.04		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.05		
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03				0.1
24	3-Methylpentane	0.03				0.08
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03				0.18
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.09
32	Cyclohexane	0.03				0.08
33	Benzene	0.03	0.1	0.08	0.09	0.07
34	2-Methylhexane	0.03				0.04
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				0.09
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				0.1
39	Methylcyclohexane	0.03		0.04		0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.03	0.04	0.06	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03			0.11	
47	m,p-Xylene	0.03			0.4	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03			0.1	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03			0.04	
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 24-Oct	Patricia McInnes 24-Oct	Athabasca Valley 24-Oct	Anzac 24-Oct
1	Formaldehyde	2				
2	Isobutane	0.03		0.08	0.07	0.04
3	1-Butene	0.03				
4	Acetaldehyde	0.2	3.18	1.34		
5	Butane	0.03		0.52	0.52	0.47
6	Methanol	2	9.36	11.3	13.5	12.7
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03		0.12	0.12	0.1
11	1-Pentene	0.03				
12	Acetone	0.2		0.59		
13	Pentane	0.03		0.13	0.12	0.11
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03			0.05	
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03		0.09	0.05	0.03
24	3-Methylpentane	0.03		0.03		
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.04	0.11	0.04	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				
32	Cyclohexane	0.03				
33	Benzene	0.03	0.1	0.11	0.16	0.08
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03		0.05		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.1	0.05		
39	Methylcyclohexane	0.03				
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.22	0.52	0.04	0.05
44	3-Methylheptane	0.03				
45	Octane	0.03		0.05		
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.06			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 30-Oct	Millennium Mine 30-Oct	Syncrude UE 1 30-Oct	CNRL Horizon 30-Oct
1	Formaldehyde	2				
2	Isobutane	0.03	0.09	0.29	0.37	1.3
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.46	1.55	0.57	1.1
6	Methanol	2	15.1	15.4	14.6	43.3
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.4	0.74	0.56	1.48
11	1-Pentene	0.03				
12	Acetone	0.2		1.65		1.36
13	Pentane	0.03	0.34	1.43	0.11	0.27
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.08	0.07	0.04	0.11
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.08	0.11	0.06	0.18
22	Cyclopentane	0.03		0.08		
23	2-Methylpentane	0.03	0.16	0.22	0.04	0.13
24	3-Methylpentane	0.03	0.09	0.09	0.08	0.25
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.05	0.24	0.07	0.27
27	Methyl ethyl ketone	0.2				0.38
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				0.08
31	Methylcyclopentane	0.03		0.05	0.05	0.19
32	Cyclohexane	0.03		0.08	0.09	0.25
33	Benzene	0.03	0.08	0.08	0.07	0.09
34	2-Methylhexane	0.03				0.06
35	2,3-Dimethylpentane	0.03				0.07
36	3-Methylhexane	0.03				0.13
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03		0.05	0.06	0.12
39	Methylcyclohexane	0.03		0.06	0.06	0.18
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.06	0.06	0.05	0.05
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03			0.07	
47	m,p-Xylene	0.03			0.22	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03			0.07	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 30-Oct	Patricia McInnes 30-Oct	Athabasca Valley 30-Oct	Anzac 30-Oct
1	Formaldehyde	2				
2	Isobutane	0.03	0.17	0.15	0.27	0.18
3	1-Butene	0.03				
4	Acetaldehyde	0.2	1.1	0.93		
5	Butane	0.03	0.79	0.67	0.98	0.83
6	Methanol	2	15.2	13.5	14.9	14.4
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.21	0.27	0.38	0.27
11	1-Pentene	0.03				
12	Acetone	0.2	0.54	1		0.75
13	Pentane	0.03	0.12	0.16	0.14	0.2
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.05		0.05
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.07	0.09	0.08	0.05
24	3-Methylpentane	0.03	0.04	0.05	0.07	0.04
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.07	0.1	0.11	0.08
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.04	0.06	
32	Cyclohexane	0.03				0.04
33	Benzene	0.03	0.07	0.09	0.15	0.08
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.1		0.07	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.13	0.05	0.07	0.07
39	Methylcyclohexane	0.03		0.03	0.06	0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03	0.05			
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.24	0.22	0.08	0.08
44	3-Methylheptane	0.03				
45	Octane	0.03	0.07		0.08	0.06
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03		0.04		
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 05-Nov	Millennium Mine 05-Nov	Syncrude UE 1 05-Nov	CNRL Horizon 05-Nov
1	Formaldehyde	2				
2	Isobutane	0.03	0.39	0.33	0.24	0.47
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.93	1.36	1.04	1.37
6	Methanol	2				39.8
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.29	0.29	0.27	0.55
11	1-Pentene	0.03				
12	Acetone	0.2				1.28
13	Pentane	0.03	0.21	0.32	0.36	0.26
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.03			
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.08	0.11	0.14	0.1
24	3-Methylpentane	0.03	0.07	0.07	0.07	0.1
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.08	0.16	0.13	0.1
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.04	0.06	0.06	0.07
32	Cyclohexane	0.03			0.05	0.07
33	Benzene	0.03		0.1		
34	2-Methylhexane	0.03	0.05	0.07	0.07	
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.1	0.11	0.16	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.06	0.12	0.23	0.08
39	Methylcyclohexane	0.03	0.07	0.06	0.15	0.1
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.04	0.14	
43	Toluene	0.03	0.1	0.15	0.28	0.08
44	3-Methylheptane	0.03			0.08	
45	Octane	0.03	0.05	0.09	0.35	
46	Ethyl benzene	0.03			0.08	
47	m,p-Xylene	0.03			0.25	
48	Styrene	0.03				
49	Nonane	0.03		0.03	0.08	
50	o-Xylene	0.03			0.07	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03		0.03		
57	1,2,4-Trimethylbenzene	0.03			0.04	
58	Undecane	0.03				
59	Dodecane	0.03		0.03		
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 05-Nov	AMS 6 Patricia McInnes 05-Nov	AMS 7 Athabasca Valley 05-Nov	AMS 14 Anzac 05-Nov
	1	Formaldehyde	2				
	2	Isobutane	0.03	0.35	0.28	0.39	0.22
	3	1-Butene	0.03				
	4	Acetaldehyde	0.2				
	5	Butane	0.03	1.27	1.01	1.36	1.67
	6	Methanol	2	23		12.4	94
	7	trans-2-Butene	0.03				
	8	cis-2-Butene	0.03				
	9	3-Methyl-1-butene	0.03				
	10	Isopentane	0.03	0.28	0.3	0.31	0.33
	11	1-Pentene	0.03				
	12	Acetone	0.2	1.57	0.84	0.61	1.57
	13	Pentane	0.03	0.25	0.19	0.24	0.22
	14	Isoprene	0.03				
	15	trans-2-Pentene	0.03				
	16	cis-2-Pentene	0.03				
	17	2-Methyl-2-butene	0.03				
	18	2,2-Dimethylbutane	0.03				
	19	Cyclopentene	0.03				
	20	4-Methyl-1-pentene	0.03				
	21	2,3-Dimethylbutane	0.03				
	22	Cyclopentane	0.03				
	23	2-Methylpentane	0.03	0.11	0.1	0.11	
	24	3-Methylpentane	0.03	0.09	0.06	0.05	
	25	2-Methyl-1-pentene	0.03				
	26	Hexane	0.03	0.18	0.1	0.07	
	27	Methyl ethyl ketone	0.2				
	28	cis-2-Hexene	0.03				
	29	trans-2-Hexene	0.03				
	30	2,4-Dimethylpentane	0.03				
	31	Methylcyclopentane	0.03	0.07	0.03	0.04	
	32	Cyclohexane	0.03	0.07			
	33	Benzene	0.03			0.02	0.08
	34	2-Methylhexane	0.03	0.13		0.05	
	35	2,3-Dimethylpentane	0.03	0.05			
	36	3-Methylhexane	0.03	0.19	0.09	0.08	
	37	2,2,4-Trimethylpentane	0.03				
	38	Heptane	0.03	0.33	0.04		
	39	Methylcyclohexane	0.03	0.15		0.04	
	40	Methyl isobutyl ketone	0.2				
	41	2,3,4-Trimethylpentane	0.03				
	42	2-Methylheptane	0.03	0.09			
	43	Toluene	0.03	0.59	0.52	0.11	0.1
	44	3-Methylheptane	0.03	0.05			
	45	Octane	0.03	0.17			
	46	Ethyl benzene	0.03	0.08			
	47	m,p-Xylene	0.03	0.2	0.07		
	48	Styrene	0.03				
	49	Nonane	0.03	0.07			
	50	o-Xylene	0.03	0.08	0.04		
	51	Isopropylbenzene	0.03				
	52	alpha Pinene	0.03				
	53	n-Propylbenzene	0.03				
	54	1,3,5-Trimethylbenzene	0.03				
	55	beta Pinene	0.03				
	56	Decane	0.03	0.06			
	57	1,2,4-Trimethylbenzene	0.03				
	58	Undecane	0.03				
	59	Dodecane	0.03				
	60	Naphthalene	0.03	0.41			



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 1	AMS 6	AMS 7
				Fort McKay 11-Nov	Patricia McInnes 11-Nov	Athabasca Valley 11-Nov
1	Formaldehyde	2				
2	Isobutane	0.03	0.75	0.7	0.72	
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.47	1.64	1.8	
6	Methanol	2	2.46	6.1	7.34	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.34	0.52	0.52	
11	1-Pentene	0.03				
12	Acetone	0.2		1.54	1.09	
13	Pentane	0.03	0.42	0.43	0.35	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03				
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.15	0.13	0.13	
24	3-Methylpentane	0.03	0.08	0.07	0.06	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.24	0.15	0.09	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.09	0.05	0.05	
32	Cyclohexane	0.03	0.08			
33	Benzene	0.03	0.16	0.21	0.32	
34	2-Methylhexane	0.03	0.11			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.17	0.06	0.06	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.39	0.06		
39	Methylcyclohexane	0.03	0.16	0.05		
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.09			
43	Toluene	0.03	0.6	0.56	0.19	
44	3-Methylheptane	0.03				
45	Octane	0.03	0.15			
46	Ethyl benzene	0.03	0.06			
47	m,p-Xylene	0.03	0.17	0.1	0.09	
48	Styrene	0.03				
49	Nonane	0.03	0.06			
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 11-Nov	Millennium Mine 11-Nov	Syncrude UE 1 11-Nov	CNRL Horizon 11-Nov
1	Formaldehyde	2				
2	Isobutane	0.03	0.66	89.7	0.54	0.77
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	2.07	3.33	1.7	2.37
6	Methanol	2		12.6		30.1
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.63	0.83		0.76
11	1-Pentene	0.03				
12	Acetone	0.2		2.91		1.26
13	Pentane	0.03	0.5	0.6	0.48	0.6
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.04	0.1	0.04	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.04	0.14	0.07	
22	Cyclopentane	0.03		0.07		
23	2-Methylpentane	0.03	0.15	0.16	0.16	0.12
24	3-Methylpentane	0.03	0.07	0.08	0.1	0.08
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.24	0.15	0.25	0.09
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.07	0.06	0.13	0.05
32	Cyclohexane	0.03	0.07	0.13	0.11	
33	Benzene	0.03		0.22	0.1	0.07
34	2-Methylhexane	0.03	0.08	0.08	0.14	
35	2,3-Dimethylpentane	0.03			0.09	
36	3-Methylhexane	0.03	0.15	0.21	0.3	
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.13	0.15	0.59	
39	Methylcyclohexane	0.03	0.09	0.08	0.37	0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03			0.34	
43	Toluene	0.03	0.1	0.37	0.53	0.06
44	3-Methylheptane	0.03			0.17	
45	Octane	0.03	0.11		0.81	
46	Ethyl benzene	0.03		0.06	0.13	
47	m,p-Xylene	0.03		0.16	0.35	
48	Styrene	0.03				
49	Nonane	0.03			0.17	
50	o-Xylene	0.03		0.07	0.11	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.05	
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03			0.03	
57	1,2,4-Trimethylbenzene	0.03			0.04	
58	Undecane	0.03		0.08		
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 17-Nov	Millennium Mine 17-Nov	Syncrude UE 1 17-Nov	CNRL Horizon 17-Nov
1	Formaldehyde	2				
2	Isobutane	0.03	0.51	0.59	0.54	0.72
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.43	1.62	1.54	1.52
6	Methanol	2	7.65	6.33	4.41	33.1
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.49	0.34	0.42	0.73
11	1-Pentene	0.03				
12	Acetone	0.2		1.96		
13	Pentane	0.03	0.43	0.34	0.45	0.79
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03				0.07
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03			0.04	0.07
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.14	0.07	0.11	0.25
24	3-Methylpentane	0.03	0.07		0.05	0.12
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.08	0.06	0.07	0.18
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.04		0.05	0.06
32	Cyclohexane	0.03	0.05			0.06
33	Benzene	0.03	0.2	0.19	0.22	0.32
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.08			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03			0.06	0.06
39	Methylcyclohexane	0.03	0.06		0.04	0.08
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.07		0.1	0.1
44	3-Methylheptane	0.03				
45	Octane	0.03			0.08	0.08
46	Ethyl benzene	0.03			0.06	
47	m,p-Xylene	0.03			0.19	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03			0.06	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03		0.06		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 17-Nov	AMS 6 Patricia McInnes 17-Nov	AMS 7 Athabasca Valley 17-Nov	AMS 14 Anzac 17-Nov
1	Formaldehyde	2					
2	Isobutane	0.03	0.63	0.62	0.71	0.52	
3	1-Butene	0.03					
4	Acetaldehyde	0.2					
5	Butane	0.03	1.54	1.81	2.27	1.84	
6	Methanol	2	4.7	8.14	8.01	4.04	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	0.4	0.43	0.42	0.42	
11	1-Pentene	0.03					
12	Acetone	0.2		0.97		1.39	
13	Pentane	0.03	0.36	0.47	0.4	0.5	
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03					
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.05				
22	Cyclopentane	0.03					
23	2-Methylpentane	0.03	0.14	0.11	0.08	0.08	
24	3-Methylpentane	0.03	0.08	0.05			
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.14	0.11	0.08	0.09	
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03					
31	Methylcyclopentane	0.03	0.06	0.04			
32	Cyclohexane	0.03	0.07				
33	Benzene	0.03	0.17	0.22	0.19	0.34	
34	2-Methylhexane	0.03	0.05				
35	2,3-Dimethylpentane	0.03					
36	3-Methylhexane	0.03	0.11	0.06	0.04		
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.17				
39	Methylcyclohexane	0.03	0.07				
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03					
43	Toluene	0.03	0.27	0.3	0.07	0.09	
44	3-Methylheptane	0.03					
45	Octane	0.03	0.06				
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03	0.08	0.06			
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03					
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03					
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 23-Nov	Millennium Mine 23-Nov	Syncrude UE 1 23-Nov	CNRL Horizon 23-Nov
1	Formaldehyde	2				
2	Isobutane	0.03	0.15	0.11	0.17	1.38
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.43	0.52	0.52	1.16
6	Methanol	2		3.04	3.01	6.18
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.19	0.12	0.22	1.25
11	1-Pentene	0.03				
12	Acetone	0.2		0.82		1.53
13	Pentane	0.03	0.2	0.09	0.17	0.62
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.05		0.03	0.11
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.05		0.05	0.16
22	Cyclopentane	0.03				0.37
23	2-Methylpentane	0.03	0.07		0.06	0.19
24	3-Methylpentane	0.03	0.04		0.04	0.18
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.06		0.07	0.16
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03				0.11
32	Cyclohexane	0.03				0.21
33	Benzene	0.03	0.06	0.08	0.08	0.12
34	2-Methylhexane	0.03				0.07
35	2,3-Dimethylpentane	0.03				0.08
36	3-Methylhexane	0.03			0.05	0.17
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.04			0.2
39	Methylcyclohexane	0.03	0.04			0.32
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				0.05
43	Toluene	0.03	0.06	0.04	0.05	0.41
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03			0.08	0.11
48	Styrene	0.03				
49	Nonane	0.03				0.04
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.05
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				0.11
57	1,2,4-Trimethylbenzene	0.03				0.06
58	Undecane	0.03				0.05
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 23-Nov	AMS 6 Patricia McInnes 23-Nov	AMS 7 Athabasca Valley 23-Nov	AMS 14 Anzac 23-Nov
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.16	0.27	0.48	0.19
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.73	0.75	1.34	0.82
6	Methanol	2		3.71	6.5	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.15	0.27	0.42	0.3
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03	0.15	0.21	0.26	0.45
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.04			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.06	0.03		
22	Cyclopentane	0.03				
23	2-Methylpentane	0.03	0.08	0.08	0.06	0.09
24	3-Methylpentane	0.03	0.05	0.05	0.04	0.04
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.09	0.1	0.04	0.06
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.03	0.04	0.03	0.03
32	Cyclohexane	0.03	0.03			
33	Benzene	0.03	0.07	0.08	0.08	0.11
34	2-Methylhexane	0.03	0.05			
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.07	0.04		
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.13			
39	Methylcyclohexane	0.03	0.05			
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.27	0.21	0.07	0.07
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03	0.07			
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 29-Nov	Millennium Mine 29-Nov	Syncrude UE 1 29-Nov	CNRL Horizon 29-Nov
1	Formaldehyde	2				
2	Isobutane	0.03	1.23	0.43	3.23	4.13
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	1.46	1.25	1	1.5
6	Methanol	2	5.16	3.44	5.6	4.28
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.59	0.52	1.35	4.52
11	1-Pentene	0.03				
12	Acetone	0.2	1	1.68	1.99	1.19
13	Pentane	0.03	1.04	0.28	0.97	0.45
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.2	0.19	0.15	0.21
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.27	0.19	0.27	0.41
22	Cyclopentane	0.03	0.24		0.24	0.24
23	2-Methylpentane	0.03	0.53	0.12	0.47	0.22
24	3-Methylpentane	0.03	0.36	0.08	0.34	0.58
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.26	0.11	0.3	0.23
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03		0.03		
31	Methylcyclopentane	0.03	0.19	0.08	0.17	0.41
32	Cyclohexane	0.03	0.23	0.11	0.17	0.74
33	Benzene	0.03	0.33	0.18	0.21	0.32
34	2-Methylhexane	0.03	0.08	0.04	0.06	0.11
35	2,3-Dimethylpentane	0.03	0.08	0.04	0.07	0.22
36	3-Methylhexane	0.03	0.2	0.1	0.14	0.25
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.22	0.08	0.15	0.23
39	Methylcyclohexane	0.03	0.23	0.09	0.17	0.56
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				0.04
42	2-Methylheptane	0.03	0.09		0.05	0.07
43	Toluene	0.03	0.22	0.15	0.16	0.15
44	3-Methylheptane	0.03	0.03			
45	Octane	0.03				
46	Ethyl benzene	0.03	0.03		0.03	
47	m,p-Xylene	0.03	0.09		0.11	0.06
48	Styrene	0.03				
49	Nonane	0.03	0.05		0.04	0.04
50	o-Xylene	0.03	0.04		0.04	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.05		0.05	0.05
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.04			
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 1 Fort McKay 29-Nov	AMS 6 Patricia McInnes 29-Nov	AMS 7 Athabasca Valley 29-Nov	AMS 14 Anzac 29-Nov
1	Formaldehyde	2					
2	Isobutane	0.03	1.04	0.35	0.64	0.32	
3	1-Butene	0.03					
4	Acetaldehyde	0.2					
5	Butane	0.03	1.14	1.26	1.01	0.76	
6	Methanol	2	3.84	7.02	4.78	4.85	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	1.2	0.33	0.43	0.23	
11	1-Pentene	0.03					
12	Acetone	0.2					
13	Pentane	0.03	0.68	0.18	0.29	0.39	
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03	0.11		0.04		
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.19		0.07		
22	Cyclopentane	0.03	0.16				
23	2-Methylpentane	0.03	0.35	0.07	0.14	0.08	
24	3-Methylpentane	0.03	0.27	0.04	0.08	0.03	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.21	0.06	0.16	0.05	
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03			0.06		
31	Methylcyclopentane	0.03	0.12		0.07	0.03	
32	Cyclohexane	0.03	0.16		0.06		
33	Benzene	0.03	0.23	0.12		0.13	
34	2-Methylhexane	0.03	0.08		0.05		
35	2,3-Dimethylpentane	0.03	0.08				
36	3-Methylhexane	0.03	0.16		0.08		
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.2		0.1		
39	Methylcyclohexane	0.03	0.19		0.07	0.03	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03					
42	2-Methylheptane	0.03	0.04				
43	Toluene	0.03	0.2		0.15	0.05	
44	3-Methylheptane	0.03					
45	Octane	0.03			0.05		
46	Ethyl benzene	0.03					
47	m,p-Xylene	0.03	0.08		0.08		
48	Styrene	0.03					
49	Nonane	0.03					
50	o-Xylene	0.03			0.03		
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.04		0.23		
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03					
57	1,2,4-Trimethylbenzene	0.03					
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	VOC Canisters Compound Name	MDL	Results (ppbv)		
			AMS 9	AMS 13	AMS 15
			Barge Landing 05-Dec	Syncrude UE 1 05-Dec	CNRL Horizon 05-Dec
1	Formaldehyde	2			
2	Isobutane	0.03	0.39	0.34	1.02
3	1-Butene	0.03			
4	Acetaldehyde	0.2			
5	Butane	0.03	0.74	0.81	2.1
6	Methanol	2	2.97		3.91
7	trans-2-Butene	0.03			
8	cis-2-Butene	0.03			
9	3-Methyl-1-butene	0.03			
10	Isopentane	0.03	0.7	0.48	1.39
11	1-Pentene	0.03			
12	Acetone	0.2	0.83		1.27
13	Pentane	0.03		0.34	0.58
14	Isoprene	0.03			
15	trans-2-Pentene	0.03			
16	cis-2-Pentene	0.03			
17	2-Methyl-2-butene	0.03			
18	2,2-Dimethylbutane	0.03	0.06	0.05	0.08
19	Cyclopentene	0.03			
20	4-Methyl-1-pentene	0.03			
21	2,3-Dimethylbutane	0.03	0.09	0.07	0.14
22	Cyclopentane	0.03			0.12
23	2-Methylpentane	0.03	0.18	0.11	0.15
24	3-Methylpentane	0.03	0.12	0.09	0.16
25	2-Methyl-1-pentene	0.03			
26	Hexane	0.03	0.08	0.15	0.1
27	Methyl ethyl ketone	0.2			
28	cis-2-Hexene	0.03			
29	trans-2-Hexene	0.03			
30	2,4-Dimethylpentane	0.03			
31	Methylcyclopentane	0.03	0.04	0.04	0.1
32	Cyclohexane	0.03	0.05	0.08	0.15
33	Benzene	0.03	0.13	0.09	0.15
34	2-Methylhexane	0.03			
35	2,3-Dimethylpentane	0.03			
36	3-Methylhexane	0.03	0.04		0.06
37	2,2,4-Trimethylpentane	0.03			
38	Heptane	0.03	0.03	0.05	0.06
39	Methylcyclohexane	0.03	0.04	0.06	0.09
40	Methyl isobutyl ketone	0.2			
41	2,3,4-Trimethylpentane	0.03			
42	2-Methylheptane	0.03			
43	Toluene	0.03	0.06	0.08	0.06
44	3-Methylheptane	0.03			
45	Octane	0.03			
46	Ethyl benzene	0.03		0.04	
47	m,p-Xylene	0.03		0.11	
48	Styrene	0.03			
49	Nonane	0.03			
50	o-Xylene	0.03		0.04	
51	Isopropylbenzene	0.03			
52	alpha Pinene	0.03			
53	n-Propylbenzene	0.03			
54	1,3,5-Trimethylbenzene	0.03			
55	beta Pinene	0.03			
56	Decane	0.03			
57	1,2,4-Trimethylbenzene	0.03			
58	Undecane	0.03			
59	Dodecane	0.03			
60	Naphthalene	0.03			



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 05-Dec	Patricia McInnes 05-Dec	Athabasca Valley 05-Dec	Anzac 05-Dec
1	Formaldehyde	2				
2	Isobutane	0.03	0.46	0.26	0.38	0.95
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.92	0.91	1.09	2.48
6	Methanol	2	2.31	2.89	3.63	16.9
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.62	0.31	0.28	
11	1-Pentene	0.03				
12	Acetone	0.2	0.93	1.09		2.9
13	Pentane	0.03	0.48	0.19	0.23	1.03
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.1			
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.12			
22	Cyclopentane	0.03	0.14			0.74
23	2-Methylpentane	0.03	0.26	0.08	0.07	0.23
24	3-Methylpentane	0.03	0.2	0.05	0.04	0.11
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.15	0.08	0.06	0.21
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.09	0.03	0.03	0.1
32	Cyclohexane	0.03	0.12			0.25
33	Benzene	0.03	0.16	0.12	0.14	0.23
34	2-Methylhexane	0.03	0.08			0.1
35	2,3-Dimethylpentane	0.03				0.07
36	3-Methylhexane	0.03	0.11	0.05		0.21
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.18			0.16
39	Methylcyclohexane	0.03	0.1			0.07
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03	0.04			
42	2-Methylheptane	0.03	0.05			
43	Toluene	0.03	0.33	0.37	0.07	0.56
44	3-Methylheptane	0.03				
45	Octane	0.03	0.08			
46	Ethyl benzene	0.03	0.06			0.06
47	m,p-Xylene	0.03	0.14			0.22
48	Styrene	0.03				
49	Nonane	0.03	0.04			
50	o-Xylene	0.03	0.05			0.08
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				0.05
53	n-Propylbenzene	0.03	0.04			
54	1,3,5-Trimethylbenzene	0.03	0.03			
55	beta Pinene	0.03				
56	Decane	0.03	0.05			0.03
57	1,2,4-Trimethylbenzene	0.03	0.04			0.04
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)		
				AMS 9	AMS 12	AMS 13
				Barge Landing 11-Dec	Millennium Mine 11-Dec	Syncrude UE 1 11-Dec
1	Formaldehyde	2				
2	Isobutane	0.03	0.27	0.22	0.3	
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.74	0.87	0.72	
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.16	0.31	1.23	
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03	1.26	0.21	1.03	
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.14		0.11	
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.19		0.18	
22	Cyclopentane	0.03	0.17		0.09	
23	2-Methylpentane	0.03	0.61	0.05	0.51	
24	3-Methylpentane	0.03	0.3		0.23	
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.19		0.17	
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03			0.05	
32	Cyclohexane	0.03				
33	Benzene	0.03	0.17	0.06	0.14	
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.03			
39	Methylcyclohexane	0.03	0.04		0.04	
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.07	0.04	0.07	
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters			Results (ppbv)			
			AMS 1 Fort McKay 11-Dec	AMS 6 Patricia McInnes 11-Dec	AMS 7 Athabasca Valley 11-Dec	AMS 14 Anzac 11-Dec
#	Compound Name	MDL				
1	Formaldehyde	2				
2	Isobutane	0.03	0.27	0.27	0.31	0.52
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.82	0.91	0.91	0.96
6	Methanol	2		3.25	3.76	
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.69	0.37	0.34	1.19
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03	0.82	0.24	0.21	0.93
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.11			0.1
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.15	0.05		0.12
22	Cyclopentane	0.03	0.1			0.18
23	2-Methylpentane	0.03	0.42	0.08	0.07	0.34
24	3-Methylpentane	0.03	0.2	0.04	0.04	0.21
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.17	0.07	0.05	0.12
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.04			0.05
32	Cyclohexane	0.03				0.07
33	Benzene	0.03	0.16	0.08	0.1	0.08
34	2-Methylhexane	0.03				
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03	0.09			
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.09			0.03
39	Methylcyclohexane	0.03	0.04			0.05
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.17	0.18	0.07	0.04
44	3-Methylheptane	0.03				
45	Octane	0.03				
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03				
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 17-Dec	Patricia McInnes 17-Dec	Athabasca Valley 17-Dec	Anzac 17-Dec
1	Formaldehyde	2				
2	Isobutane	0.03	0.93	1.07	1.02	1.23
3	1-Butene	0.03				
4	Acetaldehyde	0.2				6.7
5	Butane	0.03	2.02	2.44	2.29	3.29
6	Methanol	2		2.63		2.6
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.98	1.07	1.01	1.56
11	1-Pentene	0.03				
12	Acetone	0.2				5.48
13	Pentane	0.03	0.56	0.75	0.67	1.9
14	Isoprene	0.03				0.08
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				0.14
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.14	0.05	0.07	0.16
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.24	0.11	0.11	0.25
22	Cyclopentane	0.03	0.08	0.09	0.1	0.29
23	2-Methylpentane	0.03	0.28	0.27	0.26	0.74
24	3-Methylpentane	0.03	0.18	0.18	0.16	0.46
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.28	0.32	0.24	0.76
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.14	0.15	0.11	0.46
32	Cyclohexane	0.03	0.18	0.13	0.12	0.41
33	Benzene	0.03	0.22	0.17	0.15	0.48
34	2-Methylhexane	0.03	0.11	0.11	0.07	0.27
35	2,3-Dimethylpentane	0.03	0.13	0.11	0.12	0.17
36	3-Methylhexane	0.03	0.19	0.15	0.14	0.37
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.29	0.22	0.13	0.37
39	Methylcyclohexane	0.03	0.29	0.19	0.14	0.45
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03			0.04	0.08
42	2-Methylheptane	0.03		0.08	0.06	0.12
43	Toluene	0.03	0.56	0.57	0.25	0.44
44	3-Methylheptane	0.03	0.08	0.05		0.11
45	Octane	0.03	0.31	0.14	0.1	0.21
46	Ethyl benzene	0.03	0.08	0.06	0.04	0.11
47	m,p-Xylene	0.03	0.23	0.19	0.13	0.24
48	Styrene	0.03				
49	Nonane	0.03	0.1		0.03	0.07
50	o-Xylene	0.03	0.07	0.08	0.06	0.11
51	Isopropylbenzene	0.03				0.08
52	alpha Pinene	0.03	0.09	0.04	0.19	0.05
53	n-Propylbenzene	0.03				0.05
54	1,3,5-Trimethylbenzene	0.03				0.06
55	beta Pinene	0.03				
56	Decane	0.03	0.07		0.03	0.05
57	1,2,4-Trimethylbenzene	0.03	0.06	0.05	0.04	0.07
58	Undecane	0.03				0.03
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9	AMS 12	AMS 13	AMS 15
				Barge Landing 17-Dec	Millennium Mine 17-Dec	Syncrude UE 1 17-Dec	CNRL Horizon 17-Dec
1	Formaldehyde	2					
2	Isobutane	0.03	0.99	0.89	1.17	2.14	
3	1-Butene	0.03					
4	Acetaldehyde	0.2					
5	Butane	0.03	2.23	2.05	2.4	2.88	
6	Methanol	2	3.46				
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	1.33	0.9	1.42	2.01	
11	1-Pentene	0.03					
12	Acetone	0.2					
13	Pentane	0.03	0.8	0.65	0.73	0.77	
14	Isoprene	0.03					
15	trans-2-Pentene	0.03					
16	cis-2-Pentene	0.03					
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03	0.08	0.09	0.18	0.09	
19	Cyclopentene	0.03					
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.16	0.14	0.26	0.16	
22	Cyclopentane	0.03				0.09	
23	2-Methylpentane	0.03	0.24	0.21	0.18	0.17	
24	3-Methylpentane	0.03	0.13	0.12	0.11	0.23	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.25	0.14	0.12	0.15	
27	Methyl ethyl ketone	0.2					
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03		0.06			
31	Methylcyclopentane	0.03	0.12	0.09	0.1	0.15	
32	Cyclohexane	0.03	0.11	0.15	0.1	0.21	
33	Benzene	0.03	0.1	0.15	0.16	0.15	
34	2-Methylhexane	0.03	0.07	0.06		0.04	
35	2,3-Dimethylpentane	0.03		0.06	0.09	0.06	
36	3-Methylhexane	0.03	0.18	0.08	0.11	0.08	
37	2,2,4-Trimethylpentane	0.03					
38	Heptane	0.03	0.23	0.1	0.1	0.06	
39	Methylcyclohexane	0.03	0.17	0.13	0.15	0.16	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03			0.03		
42	2-Methylheptane	0.03	0.13	0.05	0.06		
43	Toluene	0.03	0.23	0.12	0.15	0.07	
44	3-Methylheptane	0.03	0.06				
45	Octane	0.03	0.24	0.09	0.16	0.03	
46	Ethyl benzene	0.03	0.05		0.05		
47	m,p-Xylene	0.03	0.13	0.07	0.15		
48	Styrene	0.03					
49	Nonane	0.03	0.05	0.03	0.06		
50	o-Xylene	0.03	0.04		0.07		
51	Isopropylbenzene	0.03					
52	alpha Pinene	0.03	0.05	0.03	0.08		
53	n-Propylbenzene	0.03					
54	1,3,5-Trimethylbenzene	0.03					
55	beta Pinene	0.03					
56	Decane	0.03			0.06		
57	1,2,4-Trimethylbenzene	0.03			0.05		
58	Undecane	0.03					
59	Dodecane	0.03					
60	Naphthalene	0.03					



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 23-Dec	Patricia McInnes 23-Dec	Athabasca Valley 23-Dec	Anzac 23-Dec
1	Formaldehyde	2				
2	Isobutane	0.03	3.4	0.45	0.41	0.78
3	1-Butene	0.03	0.7			
4	Acetaldehyde	0.2				
5	Butane	0.03	0.77	1.04	0.98	1.72
6	Methanol	2	4.27			
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.2	0.87	0.75	0.97
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03	0.11	0.76	0.64	0.6
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.11	0.13	0.06
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.17	0.15	0.12
22	Cyclopentane	0.03		0.1	0.1	0.06
23	2-Methylpentane	0.03	0.07	0.35	0.24	0.19
24	3-Methylpentane	0.03	0.05	0.18	0.14	0.14
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.08	0.17	0.17	0.25
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.1	0.06	0.09
32	Cyclohexane	0.03		0.08	0.07	0.11
33	Benzene	0.03		0.11	0.11	0.15
34	2-Methylhexane	0.03		0.06		0.07
35	2,3-Dimethylpentane	0.03		0.08	0.04	
36	3-Methylhexane	0.03	0.08	0.14	0.12	0.14
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.18	0.22	0.12	0.11
39	Methylcyclohexane	0.03		0.18	0.1	0.07
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03		0.13	0.05	
43	Toluene	0.03	0.34	0.49	0.1	0.26
44	3-Methylheptane	0.03		0.06		
45	Octane	0.03		0.37	0.12	
46	Ethyl benzene	0.03		0.06		0.04
47	m,p-Xylene	0.03	0.09	0.16	0.08	0.09
48	Styrene	0.03				
49	Nonane	0.03		0.09	0.04	0.03
50	o-Xylene	0.03		0.06	0.03	0.04
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03			0.05	0.04
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



#	Compound Name	MDL	Results (ppbv)			
			AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing 23-Dec	Millennium Mine 23-Dec	Syncrude UE 1 23-Dec	CNRL Horizon 23-Dec
1	Formaldehyde	2				
2	Isobutane	0.03	0.15	0.33	0.19	0.45
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	0.48	0.76	0.51	2.44
6	Methanol	2				
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	0.12	0.45	0.18	0.83
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03	0.12	0.47	0.16	1.3
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03		0.14		
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03		0.16		0.06
22	Cyclopentane	0.03		0.05		0.1
23	2-Methylpentane	0.03	0.04	0.14	0.05	0.31
24	3-Methylpentane	0.03		0.09		0.13
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03		0.08		0.34
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03		0.03		0.12
32	Cyclohexane	0.03		0.05		0.11
33	Benzene	0.03		0.09	0.06	0.06
34	2-Methylhexane	0.03				0.06
35	2,3-Dimethylpentane	0.03				
36	3-Methylhexane	0.03				0.15
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03				0.14
39	Methylcyclohexane	0.03		0.04		0.06
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03				
43	Toluene	0.03	0.04	0.06	0.05	0.05
44	3-Methylheptane	0.03				
45	Octane	0.03			0.04	
46	Ethyl benzene	0.03				
47	m,p-Xylene	0.03			0.08	
48	Styrene	0.03				
49	Nonane	0.03				
50	o-Xylene	0.03				
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03				
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03				
57	1,2,4-Trimethylbenzene	0.03				
58	Undecane	0.03				
59	Dodecane	0.03				
60	Naphthalene	0.03				



VOC Canisters	#	Compound Name	MDL	Results (ppbv)			
				AMS 9	AMS 12	AMS 13	AMS 15
				Barge Landing 29-Dec	Millennium Mine 29-Dec	Syncrude UE 1 29-Dec	CNRL Horizon 29-Dec
1	Formaldehyde	2					
2	Isobutane	0.03	1.78	1.47	1.52	2.62	
3	1-Butene	0.03	2.12				
4	Acetaldehyde	0.2	33.7				
5	Butane	0.03	3.01	2.96	2.39	3.5	
6	Methanol	2	8.85	8.49	6.24	7.57	
7	trans-2-Butene	0.03					
8	cis-2-Butene	0.03					
9	3-Methyl-1-butene	0.03					
10	Isopentane	0.03	1.64	1.62	1.28	2.86	
11	1-Pentene	0.03	0.75				
12	Acetone	0.2	13.9				
13	Pentane	0.03		0.84	0.76	0.83	
14	Isoprene	0.03	0.17				
15	trans-2-Pentene	0.03	0.31				
16	cis-2-Pentene	0.03	0.32				
17	2-Methyl-2-butene	0.03					
18	2,2-Dimethylbutane	0.03	0.41	0.44	0.09	0.18	
19	Cyclopentene	0.03	0.09				
20	4-Methyl-1-pentene	0.03					
21	2,3-Dimethylbutane	0.03	0.48	0.54	0.18	0.31	
22	Cyclopentane	0.03	0.39	0.18	0.09	0.24	
23	2-Methylpentane	0.03	0.63	0.32	0.34	0.36	
24	3-Methylpentane	0.03	0.5	0.26	0.26	0.43	
25	2-Methyl-1-pentene	0.03					
26	Hexane	0.03	0.82	0.28	0.46	0.35	
27	Methyl ethyl ketone	0.2	3.87				
28	cis-2-Hexene	0.03					
29	trans-2-Hexene	0.03					
30	2,4-Dimethylpentane	0.03				0.17	
31	Methylcyclopentane	0.03	0.57	0.21	0.29	0.43	
32	Cyclohexane	0.03	0.86	0.25	0.33	0.44	
33	Benzene	0.03	2.67		0.15		
34	2-Methylhexane	0.03	0.57		0.19	0.13	
35	2,3-Dimethylpentane	0.03	0.48	0.12	0.15	0.16	
36	3-Methylhexane	0.03	0.57	0.15	0.35	0.18	
37	2,2,4-Trimethylpentane	0.03	0.37				
38	Heptane	0.03	1.1	0.17	0.71	0.24	
39	Methylcyclohexane	0.03	0.69	0.24	0.64	0.43	
40	Methyl isobutyl ketone	0.2					
41	2,3,4-Trimethylpentane	0.03	0.34				
42	2-Methylheptane	0.03	0.55		0.4	0.1	
43	Toluene	0.03	1.45	0.31	0.59	0.24	
44	3-Methylheptane	0.03	0.43		0.2	0.05	
45	Octane	0.03	0.62		0.68	0.14	
46	Ethyl benzene	0.03	0.58	0.04	0.12	0.04	
47	m,p-Xylene	0.03	1.22	0.14	0.32	0.08	
48	Styrene	0.03	0.19				
49	Nonane	0.03	0.45	0.06	0.2	0.04	
50	o-Xylene	0.03	0.57	0.05	0.12		
51	Isopropylbenzene	0.03	0.31				
52	alpha Pinene	0.03			0.06		
53	n-Propylbenzene	0.03	0.26				
54	1,3,5-Trimethylbenzene	0.03	0.41				
55	beta Pinene	0.03					
56	Decane	0.03	0.3		0.08		
57	1,2,4-Trimethylbenzene	0.03	0.42		0.08		
58	Undecane	0.03	0.24		0.03		
59	Dodecane	0.03	0.19				
60	Naphthalene	0.03	0.64				



#	Compound Name	MDL	Results (ppbv)			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay 29-Dec	Patricia McInnes 29-Dec	Athabasca Valley 29-Dec	Anzac 29-Dec
1	Formaldehyde	2				
2	Isobutane	0.03	1.64	2.66		1.6
3	1-Butene	0.03				
4	Acetaldehyde	0.2				
5	Butane	0.03	2.76	6.37		3.88
6	Methanol	2	3.94	19.4	4.5	9.37
7	trans-2-Butene	0.03				
8	cis-2-Butene	0.03				
9	3-Methyl-1-butene	0.03				
10	Isopentane	0.03	1.46	3.13		1.63
11	1-Pentene	0.03				
12	Acetone	0.2				
13	Pentane	0.03	0.72	2.39		1.11
14	Isoprene	0.03				
15	trans-2-Pentene	0.03				
16	cis-2-Pentene	0.03				
17	2-Methyl-2-butene	0.03				
18	2,2-Dimethylbutane	0.03	0.1	0.09	0.04	0.05
19	Cyclopentene	0.03				
20	4-Methyl-1-pentene	0.03				
21	2,3-Dimethylbutane	0.03	0.22		0.09	0.14
22	Cyclopentane	0.03	0.12	0.67		
23	2-Methylpentane	0.03	0.33	0.66	0.22	0.43
24	3-Methylpentane	0.03	0.27	0.5	0.15	0.23
25	2-Methyl-1-pentene	0.03				
26	Hexane	0.03	0.35	1.38	0.18	0.34
27	Methyl ethyl ketone	0.2				
28	cis-2-Hexene	0.03				
29	trans-2-Hexene	0.03				
30	2,4-Dimethylpentane	0.03				
31	Methylcyclopentane	0.03	0.26	0.34	0.14	0.2
32	Cyclohexane	0.03	0.3	0.57	0.13	0.14
33	Benzene	0.03		0.08		
34	2-Methylhexane	0.03	0.16	0.25	0.07	
35	2,3-Dimethylpentane	0.03	0.15	0.24		
36	3-Methylhexane	0.03	0.27	0.38	0.09	0.15
37	2,2,4-Trimethylpentane	0.03				
38	Heptane	0.03	0.55	0.39	0.16	0.17
39	Methylcyclohexane	0.03	0.46	0.38	0.18	0.16
40	Methyl isobutyl ketone	0.2				
41	2,3,4-Trimethylpentane	0.03				
42	2-Methylheptane	0.03	0.17		0.07	0.07
43	Toluene	0.03	0.72	1.79	0.25	0.22
44	3-Methylheptane	0.03	0.09	0.11	0.05	
45	Octane	0.03	0.35	0.36	0.13	0.16
46	Ethyl benzene	0.03	0.09	0.19		0.04
47	m,p-Xylene	0.03	0.29	0.71	0.1	0.08
48	Styrene	0.03				
49	Nonane	0.03	0.11	0.11	0.05	0.03
50	o-Xylene	0.03	0.09	0.25	0.05	
51	Isopropylbenzene	0.03				
52	alpha Pinene	0.03	0.04	0.15		
53	n-Propylbenzene	0.03				
54	1,3,5-Trimethylbenzene	0.03				
55	beta Pinene	0.03				
56	Decane	0.03	0.08	0.11	0.04	
57	1,2,4-Trimethylbenzene	0.03	0.07	0.16	0.03	
58	Undecane	0.03	0.03	0.09		
59	Dodecane	0.03		0.03		
60	Naphthalene	0.03				



VOC Canisters

Results - Percentage of Samples Detected > 0

#	Compound Name	MDL	Results - Percentage of Samples Detected > 0			
			AMS 9 Barge Landing	AMS 12 Millennium Mine	AMS 13 Syncrude UE 1	AMS 15 CNRL Horizon
1	Formaldehyde	2	-	-	-	-
2	Isobutane	0.03	71.2	70.7	77.4	80
3	1-Butene	0.03	6.8	12.1	4.8	12.7
4	Acetaldehyde	0.2	27.1	27.6	24.2	45.5
5	Butane	0.03	69.5	77.6	75.8	85.5
6	Methanol	2	44.1	37.9	33.9	60
7	trans-2-Butene	0.03	-	1.7	-	-
8	cis-2-Butene	0.03	-	-	-	-
9	3-Methyl-1-butene	0.03	-	-	-	-
10	Isopentane	0.03	91.5	87.9	82.3	94.5
11	1-Pentene	0.03	1.7	-	-	-
12	Acetone	0.2	74.6	82.8	72.6	85.5
13	Pentane	0.03	39	44.8	51.6	38.2
14	Isoprene	0.03	30.5	27.6	30.6	36.4
15	trans-2-Pentene	0.03	1.7	1.7	-	-
16	cis-2-Pentene	0.03	1.7	-	-	-
17	2-Methyl-2-butene	0.03	-	5.2	1.6	-
18	2,2-Dimethylbutane	0.03	45.8	75.9	32.3	43.6
19	Cyclopentene	0.03	1.7	-	-	-
20	4-Methyl-1-pentene	0.03	-	-	-	-
21	2,3-Dimethylbutane	0.03	47.5	72.4	41.9	63.6
22	Cyclopentane	0.03	27.1	22.4	21	38.2
23	2-Methylpentane	0.03	66.1	55.2	61.3	58.2
24	3-Methylpentane	0.03	64.4	53.4	61.3	80
25	2-Methyl-1-pentene	0.03	-	-	-	-
26	Hexane	0.03	59.3	55.2	54.8	56.4
27	Methyl ethyl ketone	0.2	1.7	1.7	-	3.6
28	cis-2-Hexene	0.03	-	-	-	-
29	trans-2-Hexene	0.03	-	-	-	-
30	2,4-Dimethylpentane	0.03	1.7	3.4	3.2	3.6
31	Methylcyclopentane	0.03	37.3	44.8	40.3	80
32	Cyclohexane	0.03	30.5	46.6	32.3	67.3
33	Benzene	0.03	93.2	96.6	98.4	96.4
34	2-Methylhexane	0.03	22	25.9	19.4	23.6
35	2,3-Dimethylpentane	0.03	10.2	22.4	17.7	38.2
36	3-Methylhexane	0.03	25.4	41.4	29	43.6
37	2,2,4-Trimethylpentane	0.03	1.7	3.4	-	-
38	Heptane	0.03	37.3	51.7	48.4	63.6
39	Methylcyclohexane	0.03	47.5	60.3	53.2	81.8
40	Methyl isobutyl ketone	0.2	-	-	-	-
41	2,3,4-Trimethylpentane	0.03	3.4	3.4	1.6	1.8
42	2-Methylheptane	0.03	15.3	12.1	27.4	16.4
43	Toluene	0.03	79.7	77.6	80.6	83.6
44	3-Methylheptane	0.03	13.6	10.3	16.1	7.3
45	Octane	0.03	23.7	24.1	43.5	23.6
46	Ethyl benzene	0.03	20.3	17.2	29	10.9
47	m,p-Xylene	0.03	28.8	31	45.2	27.3
48	Styrene	0.03	3.4	-	-	1.8
49	Nonane	0.03	15.3	24.1	27.4	12.7
50	o-Xylene	0.03	16.9	24.1	32.3	10.9
51	Isopropylbenzene	0.03	1.7	-	-	-
52	alpha Pinene	0.03	37.3	32.8	59.7	63.6
53	n-Propylbenzene	0.03	3.4	1.7	-	-
54	1,3,5-Trimethylbenzene	0.03	3.4	1.7	1.6	-
55	beta Pinene	0.03	5.1	6.9	6.5	3.6
56	Decane	0.03	8.5	10.3	12.9	7.3
57	1,2,4-Trimethylbenzene	0.03	5.1	8.6	16.1	9.1
58	Undecane	0.03	6.8	10.3	6.5	9.1
59	Dodecane	0.03	5.1	5.2	1.6	3.6
60	Naphthalene	0.03	5.1	5.2	4.8	10.9



VOC Canisters			Results - Percentage of Samples Detected > 0			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay	Patricia McInnes	Athabasca Valley	Anzac
1	Formaldehyde	2	-	-	-	-
2	Isobutane	0.03	82.8	78.3	75.4	71
3	1-Butene	0.03	15.6	8.3	8.2	1.6
4	Acetaldehyde	0.2	32.8	43.3	32.8	24.2
5	Butane	0.03	84.4	83.3	85.2	77.4
6	Methanol	2	53.1	66.7	73.8	50
7	trans-2-Butene	0.03	1.6	-	-	-
8	cis-2-Butene	0.03	1.6	-	-	-
9	3-Methyl-1-butene	0.03	-	-	-	-
10	Isopentane	0.03	87.5	90	98.4	80.6
11	1-Pentene	0.03	1.6	-	-	-
12	Acetone	0.2	81.3	83.3	75.4	82.3
13	Pentane	0.03	50	40	47.5	43.5
14	Isoprene	0.03	32.8	21.7	24.6	29
15	trans-2-Pentene	0.03	-	-	-	-
16	cis-2-Pentene	0.03	1.6	-	1.6	1.6
17	2-Methyl-2-butene	0.03	-	1.7	1.6	1.6
18	2,2-Dimethylbutane	0.03	34.4	8.3	14.8	11.3
19	Cyclopentene	0.03	-	-	-	-
20	4-Methyl-1-pentene	0.03	-	-	1.6	-
21	2,3-Dimethylbutane	0.03	45.3	33.3	32.8	17.7
22	Cyclopentane	0.03	26.6	18.3	11.5	8.1
23	2-Methylpentane	0.03	67.2	61.7	63.9	43.5
24	3-Methylpentane	0.03	59.4	60	57.4	37.1
25	2-Methyl-1-pentene	0.03	-	-	-	-
26	Hexane	0.03	64.1	56.7	57.4	38.7
27	Methyl ethyl ketone	0.2	3.1	-	-	-
28	cis-2-Hexene	0.03	-	-	-	-
29	trans-2-Hexene	0.03	-	-	-	-
30	2,4-Dimethylpentane	0.03	1.6	5	8.2	4.8
31	Methylcyclopentane	0.03	48.4	46.7	44.3	24.2
32	Cyclohexane	0.03	39.1	21.7	16.4	16.1
33	Benzene	0.03	92.2	96.7	91.8	96.8
34	2-Methylhexane	0.03	43.8	21.7	19.7	12.9
35	2,3-Dimethylpentane	0.03	25	25	27.9	12.9
36	3-Methylhexane	0.03	54.7	43.3	39.3	16.1
37	2,2,4-Trimethylpentane	0.03	3.1	20	27.9	4.8
38	Heptane	0.03	65.6	46.7	29.5	24.2
39	Methylcyclohexane	0.03	57.8	33.3	31.1	24.2
40	Methyl isobutyl ketone	0.2	-	-	-	-
41	2,3,4-Trimethylpentane	0.03	9.4	1.7	11.5	3.2
42	2-Methylheptane	0.03	29.7	15	13.1	8.1
43	Toluene	0.03	92.2	91.7	88.5	69.4
44	3-Methylheptane	0.03	20.3	10	3.3	4.8
45	Octane	0.03	37.5	26.7	24.6	12.9
46	Ethyl benzene	0.03	37.5	26.7	14.8	11.3
47	m,p-Xylene	0.03	62.5	55	41	14.5
48	Styrene	0.03	6.3	3.3	1.6	-
49	Nonane	0.03	29.7	11.7	8.2	6.5
50	o-Xylene	0.03	39.1	33.3	19.7	9.7
51	Isopropylbenzene	0.03	1.6	-	-	1.6
52	alpha Pinene	0.03	51.6	35	29.5	32.3
53	n-Propylbenzene	0.03	3.1	-	-	1.6
54	1,3,5-Trimethylbenzene	0.03	3.1	-	-	1.6
55	beta Pinene	0.03	4.7	-	1.6	4.8
56	Decane	0.03	31.3	11.7	8.2	4.8
57	1,2,4-Trimethylbenzene	0.03	21.9	11.7	16.4	6.5
58	Undecane	0.03	18.8	5	3.3	3.2
59	Dodecane	0.03	7.8	3.3	-	-
60	Naphthalene	0.03	26.6	6.7	3.3	1.6



VOC Canisters

Results - Total Times Sampled

#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing	Millennium Mine	Syncrude UE 1	CNRL Horizon
1	Formaldehyde	2	59	58	62	55
2	Isobutane	0.03	59	58	62	55
3	1-Butene	0.03	59	58	62	55
4	Acetaldehyde	0.2	59	58	62	55
5	Butane	0.03	59	58	62	55
6	Methanol	2	59	58	62	55
7	trans-2-Butene	0.03	59	58	62	55
8	cis-2-Butene	0.03	59	58	62	55
9	3-Methyl-1-butene	0.03	59	58	62	55
10	Isopentane	0.03	59	58	62	55
11	1-Pentene	0.03	59	58	62	55
12	Acetone	0.2	59	58	62	55
13	Pentane	0.03	59	58	62	55
14	Isoprene	0.03	59	58	62	55
15	trans-2-Pentene	0.03	59	58	62	55
16	cis-2-Pentene	0.03	59	58	62	55
17	2-Methyl-2-butene	0.03	59	58	62	55
18	2,2-Dimethylbutane	0.03	59	58	62	55
19	Cyclopentene	0.03	59	58	62	55
20	4-Methyl-1-pentene	0.03	59	58	62	55
21	2,3-Dimethylbutane	0.03	59	58	62	55
22	Cyclopentane	0.03	59	58	62	55
23	2-Methylpentane	0.03	59	58	62	55
24	3-Methylpentane	0.03	59	58	62	55
25	2-Methyl-1-pentene	0.03	59	58	62	55
26	Hexane	0.03	59	58	62	55
27	Methyl ethyl ketone	0.2	59	58	62	55
28	cis-2-Hexene	0.03	59	58	62	55
29	trans-2-Hexene	0.03	59	58	62	55
30	2,4-Dimethylpentane	0.03	59	58	62	55
31	Methylcyclopentane	0.03	59	58	62	55
32	Cyclohexane	0.03	59	58	62	55
33	Benzene	0.03	59	58	62	55
34	2-Methylhexane	0.03	59	58	62	55
35	2,3-Dimethylpentane	0.03	59	58	62	55
36	3-Methylhexane	0.03	59	58	62	55
37	2,2,4-Trimethylpentane	0.03	59	58	62	55
38	Heptane	0.03	59	58	62	55
39	Methylcyclohexane	0.03	59	58	62	55
40	Methyl isobutyl ketone	0.2	59	58	62	55
41	2,3,4-Trimethylpentane	0.03	59	58	62	55
42	2-Methylheptane	0.03	59	58	62	55
43	Toluene	0.03	59	58	62	55
44	3-Methylheptane	0.03	59	58	62	55
45	Octane	0.03	59	58	62	55
46	Ethyl benzene	0.03	59	58	62	55
47	m,p-Xylene	0.03	59	58	62	55
48	Styrene	0.03	59	58	62	55
49	Nonane	0.03	59	58	62	55
50	o-Xylene	0.03	59	58	62	55
51	Isopropylbenzene	0.03	59	58	62	55
52	alpha Pinene	0.03	59	58	62	55
53	n-Propylbenzene	0.03	59	58	62	55
54	1,3,5-Trimethylbenzene	0.03	59	58	62	55
55	beta Pinene	0.03	59	58	62	55
56	Decane	0.03	59	58	62	55
57	1,2,4-Trimethylbenzene	0.03	59	58	62	55
58	Undecane	0.03	59	58	62	55
59	Dodecane	0.03	59	58	62	55
60	Naphthalene	0.03	59	58	62	55



#	Compound Name	MDL	Results - Total Times Sampled			
			AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay	Patricia McInnes	Athabasca Valley	Anzac
1	Formaldehyde	2	64	60	61	62
2	Isobutane	0.03	64	60	61	62
3	1-Butene	0.03	64	60	61	62
4	Acetaldehyde	0.2	64	60	61	62
5	Butane	0.03	64	60	61	62
6	Methanol	2	64	60	61	62
7	trans-2-Butene	0.03	64	60	61	62
8	cis-2-Butene	0.03	64	60	61	62
9	3-Methyl-1-butene	0.03	64	60	61	62
10	Isopentane	0.03	64	60	61	62
11	1-Pentene	0.03	64	60	61	62
12	Acetone	0.2	64	60	61	62
13	Pentane	0.03	64	60	61	62
14	Isoprene	0.03	64	60	61	62
15	trans-2-Pentene	0.03	64	60	61	62
16	cis-2-Pentene	0.03	64	60	61	62
17	2-Methyl-2-butene	0.03	64	60	61	62
18	2,2-Dimethylbutane	0.03	64	60	61	62
19	Cyclopentene	0.03	64	60	61	62
20	4-Methyl-1-pentene	0.03	64	60	61	62
21	2,3-Dimethylbutane	0.03	64	60	61	62
22	Cyclopentane	0.03	64	60	61	62
23	2-Methylpentane	0.03	64	60	61	62
24	3-Methylpentane	0.03	64	60	61	62
25	2-Methyl-1-pentene	0.03	64	60	61	62
26	Hexane	0.03	64	60	61	62
27	Methyl ethyl ketone	0.2	64	60	61	62
28	cis-2-Hexene	0.03	64	60	61	62
29	trans-2-Hexene	0.03	64	60	61	62
30	2,4-Dimethylpentane	0.03	64	60	61	62
31	Methylcyclopentane	0.03	64	60	61	62
32	Cyclohexane	0.03	64	60	61	62
33	Benzene	0.03	64	60	61	62
34	2-Methylhexane	0.03	64	60	61	62
35	2,3-Dimethylpentane	0.03	64	60	61	62
36	3-Methylhexane	0.03	64	60	61	62
37	2,2,4-Trimethylpentane	0.03	64	60	61	62
38	Heptane	0.03	64	60	61	62
39	Methylcyclohexane	0.03	64	60	61	62
40	Methyl isobutyl ketone	0.2	64	60	61	62
41	2,3,4-Trimethylpentane	0.03	64	60	61	62
42	2-Methylheptane	0.03	64	60	61	62
43	Toluene	0.03	64	60	61	62
44	3-Methylheptane	0.03	64	60	61	62
45	Octane	0.03	64	60	61	62
46	Ethyl benzene	0.03	64	60	61	62
47	m,p-Xylene	0.03	64	60	61	62
48	Styrene	0.03	64	60	61	62
49	Nonane	0.03	64	60	61	62
50	o-Xylene	0.03	64	60	61	62
51	Isopropylbenzene	0.03	64	60	61	62
52	alpha Pinene	0.03	64	60	61	62
53	n-Propylbenzene	0.03	64	60	61	62
54	1,3,5-Trimethylbenzene	0.03	64	60	61	62
55	beta Pinene	0.03	64	60	61	62
56	Decane	0.03	64	60	61	62
57	1,2,4-Trimethylbenzene	0.03	64	60	61	62
58	Undecane	0.03	64	60	61	62
59	Dodecane	0.03	64	60	61	62
60	Naphthalene	0.03	64	60	61	62



VOC Canisters			Results - Yearly Average			
#	Compound Name	MDL	AMS 1	AMS 6	AMS 7	AMS 14
			Fort McKay	Patricia McInnes	Athabasca Valley	Anzac
1	Formaldehyde	2	0	0	0	0
2	Isobutane	0.03	0.4	0.46	0.37	0.51
3	1-Butene	0.03	0.23	0.07	0.03	0.01
4	Acetaldehyde	0.2	1.56	1.82	2.19	1.17
5	Butane	0.03	1.2	1.27	1.32	0.85
6	Methanol	2	6.31	8.09	8.41	6.41
7	trans-2-Butene	0.03	0	0	0	0
8	cis-2-Butene	0.03	0	0	0	0
9	3-Methyl-1-butene	0.03	0	0	0	0
10	Isopentane	0.03	0.43	0.47	0.47	0.32
11	1-Pentene	0.03	0	0	0	0
12	Acetone	0.2	2.33	2.16	2.27	1.56
13	Pentane	0.03	0.3	0.21	0.18	0.2
14	Isoprene	0.03	0.33	0.28	0.27	0.26
15	trans-2-Pentene	0.03	0	0	0	0
16	cis-2-Pentene	0.03	0	0	0	0
17	2-Methyl-2-butene	0.03	0	0	0	0
18	2,2-Dimethylbutane	0.03	0.04	0.01	0.01	0.01
19	Cyclopentene	0.03	0	0	0	0
20	4-Methyl-1-pentene	0.03	0	0	0	0
21	2,3-Dimethylbutane	0.03	0.07	0.03	0.02	0.03
22	Cyclopentane	0.03	0.08	0.04	0.02	0.02
23	2-Methylpentane	0.03	0.2	0.11	0.08	0.07
24	3-Methylpentane	0.03	0.1	0.07	0.05	0.05
25	2-Methyl-1-pentene	0.03	0	0	0	0
26	Hexane	0.03	0.15	0.14	0.07	0.06
27	Methyl ethyl ketone	0.2	0.1	0	0	0
28	cis-2-Hexene	0.03	0	0	0	0
29	trans-2-Hexene	0.03	0	0	0	0
30	2,4-Dimethylpentane	0.03	0	0	0.01	0
31	Methylcyclopentane	0.03	0.05	0.04	0.03	0.04
32	Cyclohexane	0.03	1.3	0.55	1.18	0.15
33	Benzene	0.03	0.22	0.24	0.18	0.18
34	2-Methylhexane	0.03	0.1	0.04	0.03	0.02
35	2,3-Dimethylpentane	0.03	0.03	0.03	0.03	0.02
36	3-Methylhexane	0.03	0.17	0.08	0.06	0.04
37	2,2,4-Trimethylpentane	0.03	0	0.03	0.05	0.01
38	Heptane	0.03	0.45	0.07	0.04	0.04
39	Methylcyclohexane	0.03	0.14	0.03	0.02	0.03
40	Methyl isobutyl ketone	0.2	0	0	0	0
41	2,3,4-Trimethylpentane	0.03	0	0	0.01	0
42	2-Methylheptane	0.03	0.04	0.02	0.01	0.01
43	Toluene	0.03	0.62	0.35	0.15	0.09
44	3-Methylheptane	0.03	0.02	0.01	0	0
45	Octane	0.03	0.1	0.04	0.02	0.02
46	Ethyl benzene	0.03	0.04	0.02	0.01	0.01
47	m,p-Xylene	0.03	0.14	0.07	0.04	0.02
48	Styrene	0.03	0	0	0	0
49	Nonane	0.03	0.03	0.01	0	0
50	o-Xylene	0.03	0.04	0.02	0.01	0.01
51	Isopropylbenzene	0.03	0	0	0	0
52	alpha Pinene	0.03	0.1	0.03	0.03	0.04
53	n-Propylbenzene	0.03	0	0	0	0
54	1,3,5-Trimethylbenzene	0.03	0	0	0	0
55	beta Pinene	0.03	0.13	0	0.01	0.08
56	Decane	0.03	0.03	0.03	0	0
57	1,2,4-Trimethylbenzene	0.03	0.02	0.01	0.01	0
58	Undecane	0.03	0.02	0.01	0	0
59	Dodecane	0.03	0.01	0	0	0
60	Naphthalene	0.03	0.2	0.11	0.01	0.03



VOC Canisters			Results - Yearly Average			
#	Compound Name	MDL	AMS 9	AMS 12	AMS 13	AMS 15
			Barge Landing	Millennium Mine	Syncrude UE 1	CNRL Horizon
1	Formaldehyde	2	0	0	0	0
2	Isobutane	0.03	1.92	29.36	0.35	0.97
3	1-Butene	0.03	0.05	0.05	0.03	0.09
4	Acetaldehyde	0.2	1.63	1.49	1.13	3.18
5	Butane	0.03	0.78	1.15	0.7	0.98
6	Methanol	2	3.39	4.05	2.81	9.12
7	trans-2-Butene	0.03	0	0.01	0	0
8	cis-2-Butene	0.03	0	0	0	0
9	3-Methyl-1-butene	0.03	0	0	0	0
10	Isopentane	0.03	0.55	0.55	0.44	1.11
11	1-Pentene	0.03	0.01	0	0	0
12	Acetone	0.2	2.16	1.79	2.95	2.94
13	Pentane	0.03	0.22	0.18	0.32	0.45
14	Isoprene	0.03	0.24	0.14	0.49	0.31
15	trans-2-Pentene	0.03	0.01	0	0	0
16	cis-2-Pentene	0.03	0.01	0	0	0
17	2-Methyl-2-butene	0.03	0	0.01	0	0
18	2,2-Dimethylbutane	0.03	0.05	0.1	0.03	0.06
19	Cyclopentene	0.03	0	0	0	0
20	4-Methyl-1-pentene	0.03	0	0	0	0
21	2,3-Dimethylbutane	0.03	0.08	0.13	0.05	0.16
22	Cyclopentane	0.03	0.08	0.06	0.03	0.3
23	2-Methylpentane	0.03	0.28	0.15	0.15	0.17
24	3-Methylpentane	0.03	0.15	0.16	0.11	0.28
25	2-Methyl-1-pentene	0.03	0	0	0	0
26	Hexane	0.03	0.13	0.44	0.13	0.18
27	Methyl ethyl ketone	0.2	0.07	0.44	0	0.01
28	cis-2-Hexene	0.03	0	0	0	0
29	trans-2-Hexene	0.03	0	0	0	0
30	2,4-Dimethylpentane	0.03	0	0	0	0
31	Methylcyclopentane	0.03	0.05	0.11	0.05	0.2
32	Cyclohexane	0.03	1.02	7.72	0.33	0.8
33	Benzene	0.03	0.25	0.24	0.19	0.75
34	2-Methylhexane	0.03	0.03	0.08	0.02	0.04
35	2,3-Dimethylpentane	0.03	0.02	0.09	0.02	0.1
36	3-Methylhexane	0.03	0.05	0.21	0.05	0.13
37	2,2,4-Trimethylpentane	0.03	0.01	0.01	0	0
38	Heptane	0.03	0.08	0.13	0.12	0.15
39	Methylcyclohexane	0.03	0.07	0.13	0.09	0.29
40	Methyl isobutyl ketone	0.2	0	0	0	0
41	2,3,4-Trimethylpentane	0.03	0.01	0	0	0
42	2-Methylheptane	0.03	0.02	0.01	0.05	0.01
43	Toluene	0.03	0.21	0.25	0.2	0.17
44	3-Methylheptane	0.03	0.01	0.01	0.02	0
45	Octane	0.03	0.06	0.05	0.12	0.05
46	Ethyl benzene	0.03	0.02	0.02	0.03	0
47	m,p-Xylene	0.03	0.08	0.08	0.1	0.03
48	Styrene	0.03	0	0	0	0
49	Nonane	0.03	0.02	0.02	0.03	0.01
50	o-Xylene	0.03	0.03	0.03	0.03	0.01
51	Isopropylbenzene	0.03	0.01	0	0	0
52	alpha Pinene	0.03	0.04	0.04	0.1	0.16
53	n-Propylbenzene	0.03	0.01	0	0	0
54	1,3,5-Trimethylbenzene	0.03	0.01	0	0	0
55	beta Pinene	0.03	0.08	0.28	0.33	0.06
56	Decane	0.03	0.02	0.03	0.01	0
57	1,2,4-Trimethylbenzene	0.03	0.02	0.02	0.01	0
58	Undecane	0.03	0.02	0.03	0.01	0.01
59	Dodecane	0.03	0.01	0	0	0
60	Naphthalene	0.03	0.02	0.05	0.02	0.08

December 2011 - January 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

Passive Monitoring Results

Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	8-Dec-11	9-Feb-12	Sample	0.0	7.5	14.4	1.1
			Sample	0.0	7.3	13.8	1.2
			Sample	0.0	8.0	15.4	1.0
			Average	0.0	7.6	14.5	1.1
AMS 2 - Mildred Lake	9-Dec-11	14-Feb-12	Sample	0.2	12.3	13.6	4.0
			Sample	0.6	14.2	13.8	4.1
			Sample	0.0	14.3	14.7	3.6
			Average	0.3	13.6	14.0	3.9
AMS 6 - Patricia McInnes	9-Dec-11	10-Feb-12	Sample	0.0	5.9	20.3	1.0
			Sample	0.0	6.9	17.7	1.1
			Sample	0.0	7.4	19.4	0.9
			Average	0.0	6.7	19.1	1.0
AMS 8 - Fort Chipewyan	6-Dec-11	8-Feb-12	Sample	0.0	1.1	26.0	0.8
			Sample	0.0	1.0	26.2	0.9
			Sample	0.0	0.9	29.1	0.8
			Average	0.0	1.0	27.1	0.8
AMS 14 - Anzac	7-Dec-11	10-Feb-12	Sample	0.0	2.7	23.3	1.3
			Sample	0.0	2.4	23.8	1.0
			Sample	0.0	2.4	23.6	1.1
			Average	0.0	2.5	23.6	1.1

February 2012 - March 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Passive Monitoring Results
 Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	9-Feb-12	5-Apr-12	Sample	0.0	3.4	23.5	1.2
			Sample	0.0	3.7	24.5	1.2
			Sample	0.0	3.5	20.3	1.1
			Average	0.0	3.5	22.8	1.2
AMS 2 - Mildred Lake	14-Feb-12	2-Apr-12	Sample	0.0	6.3	22.7	2.1
			Sample	0.0	6.4	24.5	1.8
			Sample	0.0	6.5	22.9	2.0
			Average	0.0	6.4	23.4	2.0
AMS 6 - Patricia McInnes	10-Feb-12	5-Apr-12	Sample	0.0	3.7	27.0	1.9
			Sample	0.0	3.1	23.7	1.8
			Sample	0.0	4.9	28.8	1.9
			Average	0.0	3.9	26.5	1.9
AMS 8 - Fort Chipewyan	8-Feb-12	18-Apr-12	Sample	0	0	41.8	0.5
			Sample	0	0.1	40.4	0.4
			Sample	0	0.2	41.8	0.5
			Average	0.0	0.1	41.3	0.5
AMS 14 - Anzac	10-Feb-12	10-Apr-12	Sample	0.0	0.9	26.9	0.9
			Sample	0.0	0.7	27.9	0.9
			Sample	0.0	0.8	33.3	1.0
			Average	0.0	0.8	29.4	0.9

April 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	5-Apr-12	7-May-12	Sample	<0.1	2.3	29.1	2.0
			Sample	<0.1	2.0	27.7	2.0
			Sample	<0.1	2.1	29.7	1.9
			Average	<0.1	2.1	28.8	2.0
AMS 2 - Mildred Lake	2-Apr-12	7-May-12	Sample	<0.1	4.0	28.4	2.4
			Sample	<0.1	5.3	34.3	2.0
			Sample	<0.1	4.1	29.8	2.3
			Average	<0.1	4.5	30.8	2.2
AMS 6 - Patricia McInnes	5-Apr-12	2-May-12	Sample	<0.1	2.2	28.3	0.5
			Sample	<0.1	1.8	30.2	0.6
			Sample	<0.1	1.9	31.1	0.5
			Average	<0.1	2.0	29.9	0.5
AMS 8 - Fort Chipewyan	18-Apr-12	9-May-12	Sample	10.0	0.2	41.5	0.2
			Sample	DAMAGED	0.2	48.2	0.2
			Sample	8.0	0.1	39.7	0.2
			Average	9.0	0.2	43.1	0.2
AMS 14 - Anzac	10-Apr-12	2-May-12	Sample	<0.1	0.5	33.2	0.5
			Sample	<0.1	0.7	31.9	0.6
			Sample	<0.1	0.5	32.1	0.5
			Average	<0.1	0.6	32.4	0.5

May 2012

**WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Continuous Air Monitoring Stations**

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	7-May-12	11-Jun-12	Sample	0.0	1.3	25.5	0.8
			Sample	0.0	1.1	25.6	0.9
			Sample	0.0	1.1	25.9	0.8
			Average	0.0	1.2	25.7	0.8
AMS 2 - Mildred Lake	7-May-12	8-Jun-12	Sample	0.0	3.2	23.7	2.8
			Sample	0.0	3.3	25.5	2.6
			Sample	0.0	3.5	26.0	2.9
			Average	0.0	3.3	25.1	2.8
AMS 6 - Patricia McInnes	2-May-12	11-Jun-12	Sample	0.0	1.1	29.6	0.5
			Sample	0.0	0.9	32.2	0.4
			Sample	0.0	0.9	33.6	0.5
			Average	0.0	1.0	31.8	0.5
AMS 8 - Fort Chipewyan	9-May-12	5-Jun-12	Sample	0.0	0.0	34.7	0.1
			Sample	0.0	0.0	39.5	0.0
			Sample	0.0	0.0	36.4	0.0
			Average	0.0	0.0	36.9	0.0
AMS 14 - Anzac	2-May-12	7-Jun-12	Sample	0.0	0.4	31.5	0.4
			Sample	0.0	0.5	31.0	0.3
			Sample	0.0	0.5	30.2	0.4
			Average	0.0	0.5	30.9	0.4

June 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	11-Jun-12	5-Jul-12	Sample	0.0	0.9	23.6	0.8
			Sample	0.0	0.8	23.0	0.9
			Sample	0.0	0.9	23.9	0.9
			Average	0.0	0.9	23.5	0.9
AMS 2 - Mildred Lake	8-Jun-12	5-Jul-12	Sample	0.0	3.2	22.0	2.6
			Sample	0.0	2.8	23.1	2.7
			Sample	0.0	2.8	21.2	2.7
			Average	0.0	2.9	22.1	2.7
AMS 6 - Patricia McInnes	11-Jun-12	5-Jul-12	Sample	0.0	1.0	24.9	0.8
			Sample	0.0	0.9	16.1	1.1
			Sample	0.0	1.0	25.2	1.0
			Average	0.0	1.0	22.1	1.0
AMS 8 - Fort Chipewyan	5-Jun-12	18-Jul-12	Sample	0.0	0.3	30.2	0.0
			Sample	0.0	0.4	29.4	0.0
			Sample	0.0	0.4	36.0	0.0
			Average	0.0	0.4	31.9	0.0
AMS 14 - Anzac	7-Jun-12	5-Jul-12	Sample	0.0	0.3	23.1	0.3
			Sample	0.0	0.6	23.2	0.3
			Sample	0.0	0.9	22.4	0.3
			Average	0.0	0.6	22.9	0.3

July 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	5-Jul-12	3-Aug-12	Sample	0.0	0.9	19.0	1.9
			Sample	0.0	0.9	20.6	1.9
			Sample	0.0	1.0	21.2	1.9
			Average	0.0	0.9	20.3	1.9
AMS 2 - Mildred Lake	5-Jul-12	3-Aug-12	Sample	0.0	3.5	17.6	2.6
			Sample	0.0	2.5	19.8	2.5
			Sample	0.0	3.2	19.5	2.5
			Average	0.0	3.1	19.0	2.5
AMS 6 - Patricia McInnes	5-Jul-12	3-Aug-12	Sample	0.0	1.1	23.7	0.6
			Sample	0.0	0.9	26.5	0.7
			Sample	0.0	1.1	26.4	0.7
			Average	0.0	1.0	25.5	0.7
AMS 8 - Fort Chipewyan	18-Jul-12	9-Aug-12	Sample	0.0	0.9	24.7	0.3
			Sample	0.0	0.2	27.3	0.2
			Sample	0.0	0.2	30.0	0.1
			Average	0.0	0.4	27.3	0.2
AMS 14 - Anzac	5-Jul-12	2-Aug-12	Sample	0.0	0.7	19.2	0.4
			Sample	0.0	0.5	19.6	0.3
			Sample	0.0	0.8	20.6	0.3
			Average	0.0	0.7	19.8	0.3

August 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Passive Monitoring Results
 Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	3-Aug-12	5-Sep-12	Sample	0.0	1.1	16.6	1.2
			Sample	0.0	1.0	18.1	1.0
			Sample	0.0	1.5	17.4	1.1
			Average	0.0	1.2	17.4	1.1
AMS 2 - Mildred Lake	3-Aug-12	4-Sep-12	Sample	0.0	5.0	15.1	4.2
			Sample	0.0	3.6	14.9	4.4
			Sample	0.0	5.2	15.8	4.5
			Average	0.0	4.6	15.3	4.4
AMS 6 - Patricia McInnes	3-Aug-12	4-Sep-12	Sample	0.0	0.9	21.1	0.8
			Sample	0.0	0.9	21.6	0.7
			Sample	0.0	1.0	21.7	0.9
			Average	0.0	0.9	21.5	0.8
AMS 8 - Fort Chipewyan	9-Aug-12	5-Sep-12	Sample	0.0	0.1	27.0	0.2
			Sample	0.0	0.2	23.1	0.2
			Sample	0.0	0.2	23.1	0.3
			Average	0.0	0.2	24.4	0.2
AMS 14 - Anzac	2-Aug-12	4-Sep-12	Sample	0.0	0.5	17.5	0.3
			Sample	0.0	0.0	0.3	0.0
			Sample	0.0	0.0	0.3	0.0
			Average	0.0	0.2	6.0	0.1

September 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Passive Monitoring Results
 Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	5-Sep-12	2-Oct-12	Sample	0.0	2.2	12.9	1.2
			Sample	0.0	2.2	13.7	1.2
			Sample	0.0	2.8	14.4	1.5
			Average	0.0	2.4	13.7	1.3
AMS 2 - Mildred Lake	4-Sep-12	9-Oct-12	Sample	0.0	4.7	13.4	1.6
			Sample	0.0	5.2	10.9	1.7
			Sample	0.0	4.8	12.9	1.6
			Average	0.0	4.9	12.4	1.6
AMS 6 - Patricia McInnes	4-Sep-12	2-Oct-12	Sample	0.0	2.0	16.7	0.5
			Sample	0.0	1.7	18.3	0.8
			Sample	0.0	1.7	17.6	0.6
			Average	0.0	1.8	17.5	0.6
AMS 8 - Fort Chipewyan	5-Sep-12	3-Oct-12	Sample	0.0	0.3	22.1	0.3
			Sample	0.0	0.2	20.8	0.1
			Sample	0.0	0.6	22.2	0.2
			Average	0.0	0.4	21.7	0.2
AMS 14 - Anzac	4-Sep-12	2-Oct-12	Sample	0.0	1.0	15.6	0.2
			Sample	0.0	0.9	16.9	0.3
			Sample	0.0	0.6	16.5	0.3
			Average	0.0	0.8	16.3	0.3

October 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Passive Monitoring Results
 Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	2-Oct-12	8-Dec-12	Sample	0.0	4.2	13.4	0.7
			Sample	0.0	3.7	13.6	0.9
			Sample	0.0	4.3	15.6	0.9
			Average	0.0	4.1	14.2	0.8
AMS 2 - Mildred Lake	9-Oct-12	8-Dec-12	Sample	0.0	11.3	15.2	2.1
			Sample	0.0	8.3	16.4	2.0
			Sample	0.0	11.6	13.6	1.9
			Average	0.0	10.4	15.1	2.0
AMS 6 - Patricia McInnes	2-Oct-12	8-Dec-12	Sample	0.0	5.8	20.5	1.5
			Sample	0.0	3.9	20.3	1.7
			Sample	0.0	6.8	20.1	1.5
			Average	0.0	5.5	20.3	1.6
AMS 8 - Fort Chipewyan	3-Oct-12	8-Dec-12	Sample	0.0	0.5	27.2	0.5
			Sample	0.0	0.7	22.5	0.5
			Sample	0.0	0.5	21.2	0.5
			Average	0.0	0.6	23.6	0.5
AMS 14 - Anzac	2-Oct-12	7-Dec-12	Sample	0.0	1.5	14.4	0.9
			Sample	0.0	1.5	17.7	1.0
			Sample	0.0	1.6	19.3	0.9
			Average	0.0	1.5	17.1	0.9

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Continuous Air Monitoring Stations

Station	Start	End	Result Type	NH ₃ (ppb)	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AMS 1 - Fort McKay	8-Dec-12	2-Feb-13	Sample	0.0	10.5	11.0	1.2
			Sample	0.0	12.2	10.6	1.0
			Sample	0.0	10.5	12.7	1.0
			Average	0.0	11.1	11.4	1.1
AMS 2 - Mildred Lake	8-Dec-12	2-Feb-13	Sample	0.0	12.8	13.6	1.7
			Sample	0.0	13.6	13.0	1.6
			Sample	0.0	15.7	14.5	1.7
			Average	0.0	14.0	13.7	1.7
AMS 6 - Patricia McInnes	8-Dec-12	2-Feb-13	Sample	0.0	9.6	15.1	1.9
			Sample	0.0	8.9	16.2	2.2
			Sample	0.0	10.2	15.0	2.4
			Average	0.0	9.6	15.4	2.2
AMS 8 - Fort Chipewyan	8-Dec-12	2-Feb-13	Sample	0.0	0.7	28.8	1.2
			Sample	0.0	0.7	27.2	1.0
			Sample	0.0	0.8	27.4	1.1
			Average	0.0	0.7	27.8	1.1
AMS 14 - Anzac	7-Dec-12	2-Feb-13	Sample	0.0	4.0	16.3	1.6
			Sample	0.0	4.8	18.1	1.7
			Sample	0.0	5.4	18.7	1.8
			Average	0.0	4.7	17.7	1.7

December 2011 - January 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	7-Dec-11	8-Feb-12	Sample	1.8	23.2	0.7
			Sample	2.5	25.1	0.7
			Average	2.2	24.2	0.7
AH7	6-Dec-11	8-Feb-12	Sample	1.9	27	1.5
			Sample	2.1	DAMAGED	1.5
			Average	2.0	27.0	1.5
AH8-R	7-Dec-11	7-Feb-12	Sample	1.3	20.6	0.8
			Sample	1.5	21.2	0.9
			Average	1.4	20.9	0.9
BM7	5-Dec-11	7-Feb-12	Sample	0	37	0.5
BM10	7-Dec-11	7-Feb-12	Sample	0.4	22	1.1
BM11	5-Dec-11	7-Feb-12	Sample	0.2	30.4	0.8
JP101 (JPL1)	6-Dec-11	8-Feb-12	Sample	0.7	27.1	1
			Sample	1.3	26.6	1.1
			Average	1.0	26.9	1.1
JP102 (JPH2)	6-Dec-11	8-Feb-12	Sample	3	17.5	0.3
			Sample	2.8	16.2	0.3
			Average	2.9	16.9	0.3
JP104 (JPH4)	20-Dec-11	9-Feb-12	Sample	8.3	17.7	1.6
			Sample	11.9	17.7	1.5
			Average	10.1	17.7	1.6
JP107 (JPL7)	5-Dec-11	7-Feb-12	Sample	3.1	24	1.3
			Sample	2.7	23.8	1.6
			Average	2.9	23.9	1.5
JP108 (JPL8)	5-Dec-11	8-Feb-12	Sample	0.4	17.9	0.2
			Sample	0.5	21.5	0.2
			Average	0.5	19.7	0.2
JP205 (205)	5-Dec-11	7-Feb-12	Sample	1.3	25.6	1.8
			Sample	1.4	27.4	2
			Average	1.4	26.5	1.9
JP210 (210)	6-Dec-11	8-Feb-12	Sample	1	26	0.7
			Sample	1.5	25.3	0.8
			Average	1.3	25.7	0.8
JP212	7-Dec-11	8-Feb-12	Sample	9.1	14.5	1.1
JP213 (213)	5-Dec-11	7-Feb-12	Sample	0.8	25.3	1.5
			Sample	0.7	31.2	1.4
			Average	0.8	28.3	1.5
NE7	5-Dec-11	7-Feb-12	Sample	2.9	24	2.8
NE10	6-Dec-11	8-Feb-12	Sample	0.4	26.3	0.5
NE11	5-Dec-11	7-Feb-12	Sample	2.5	18.4	1.6
R2	8-Dec-11	9-Feb-12	Sample	8.5	14.3	1.4
SM7	6-Dec-11	8-Feb-12	Sample	0.7	31.9	0.5
SM8	6-Dec-11	8-Feb-12	Sample	0.6	32.9	0.9
WF4	7-Dec-11	7-Feb-12	Sample	1.3	21.6	0.9

February 2012 - March 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	8-Feb-12	3-Apr-12	Sample	1.1	31.0	0.6
			Sample	1.3	32.2	0.7
			Average	1.2	31.6	0.7
AH7	8-Feb-12	4-Apr-12	Sample	2.0	31.6	2.4
			Sample	2.0	DAMAGED	2.3
			Average	2.0	31.6	2.4
AH8-R	7-Feb-12	3-Apr-12	Sample	1.5	28.3	1.1
			Sample	1.3	25.7	1.0
			Average	1.4	27.0	1.1
BM7	7-Feb-12	3-Apr-12	Sample	<0.1	37.7	0.5
BM10	7-Feb-12	3-Apr-12	Sample	0.2	26.2	0.6
BM11	7-Feb-12	3-Apr-12	Sample	0.1	29.1	0.6
JP101 (JPL1)	8-Feb-12	4-Apr-12	Sample	0.9	33.1	2.2
			Sample	1.1	31.5	1.9
			Average	1.0	32.3	2.1
JP102 (JPH2)	8-Feb-12	4-Apr-12	Sample	3.3	25.8	1.2
			Sample	3.7	27.4	1.1
			Average	3.5	26.6	1.2
JP104 (JPH4)	9-Feb-12	10-Apr-12	Sample	5.4	25.1	1.4
			Sample	4.9	26.1	1.5
			Average	5.2	25.6	1.5
JP107 (JPL7)	7-Feb-12	3-Apr-12	Sample	0.9	31.2	0.9
			Sample	0.9	33.0	1.0
			Average	0.9	32.1	1.0
JP108 (JPL8)	8-Feb-12	4-Apr-12	Sample	0.9	31.2	0.9
			Sample	0.9	33.0	1.0
			Average	0.9	32.1	1.0
JP205 (205)	7-Feb-12	3-Apr-12	Sample	0.2	33.7	1.1
			Sample	0.2	35.2	0.9
			Average	0.2	34.5	1.0
JP210 (210)	8-Feb-12	4-Apr-12	Sample	0.6	31.0	0.6
			Sample	0.6	33.1	0.7
			Average	0.6	32.1	0.7
JP212	8-Feb-12	3-Apr-12	Sample	2.9	24.0	1.2
JP213 (213)	7-Feb-12	3-Apr-12	Sample	0.3	38.6	0.5
			Sample	0.2	35.1	0.5
			Average	0.3	36.9	0.5
NE7	7-Feb-12	3-Apr-12	Sample	0.4	30.6	0.9
NE10	8-Feb-12	4-Apr-12	Sample	<0.1	31.7	0.5
NE11	7-Feb-12	3-Apr-12	Sample	0.6	31.7	1.3
R2	9-Feb-12	10-Apr-12	Sample	2.6	21.8	1.6
SM7	8-Feb-12	4-Apr-12	Sample	<0.1	31.8	0.5
SM8	8-Feb-12	4-Apr-12	Sample	<0.1	32.3	0.7
WF4	7-Feb-12	3-Apr-12	Sample	0.6	28.7	1.2

April 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	3-Apr-12	4-May-12	Sample	<0.1	36.2	0.4
			Sample	<0.1	35.5	0.4
			Average	<0.1	35.9	0.4
AH7	No Samples Deployed/Collected					
AH8-R	3-Apr-12	3-May-12	Sample	0.7	30.3	1.4
			Sample	0.8	33.3	1.5
			Average	0.8	31.8	1.5
BM7	3-Apr-12	3-May-12	Sample	<0.1	35.0	0.7
BM10	3-Apr-12	3-May-12	Sample	0.1	28.9	0.9
BM11	3-Apr-12	3-May-12	Sample	<0.1	36.2	1.0
JP101 (JPL1)	4-Apr-12	4-May-12	Sample	0.2	35.1	0.4
			Sample	0.1	35.8	0.6
			Average	0.2	35.5	0.5
JP102 (JPH2)	4-Apr-12	4-May-12	Sample	1.3	33.8	0.9
			Sample	0.6	34.2	1.0
			Average	1.0	34.0	1.0
JP104 (JPH4)	10-Apr-12	4-May-12	Sample	3.0	36.0	2.7
			Sample	2.7	33.4	2.7
			Average	2.9	34.7	2.7
JP107 (JPL7)	3-Apr-12	3-May-12	Sample	0.2	37.1	0.6
			Sample	0.2	34.9	0.6
			Average	0.2	36.0	0.6
JP108 (JPL8)	4-Apr-12	4-May-12	Sample	<0.1	30.4	0.2
			Sample	<0.1	33.2	0.2
			Average	<0.1	31.8	0.2
JP205 (205)	3-Apr-12	3-May-12	Sample	<0.1	40.7	0.5
			Sample	<0.1	35.9	0.4
			Average	<0.1	38.3	0.5
JP210 (210)	4-Apr-12	4-May-12	Sample	<0.1	35.2	0.2
			Sample	<0.1	33.6	0.3
			Average	<0.1	34.4	0.3
JP212	3-Apr-12	4-May-12	Sample	2.9	26.8	1.6
JP213 (213)	3-Apr-12	3-May-12	Sample	<0.1	38.5	0.4
			Sample	<0.1	41.8	0.4
			Average	<0.1	40.2	0.4
NE7	3-Apr-12	3-May-12	Sample	<0.1	35.1	0.4
NE10	4-Apr-12	4-May-12	Sample	<0.1	32.0	0.2
NE11	3-Apr-12	3-May-12	Sample	0.4	29.8	1.1
R2	10-Apr-12	4-May-12	Sample	2.4	29.2	2.6
SM7	4-Apr-12	4-May-12	Sample	<0.1	37.3	0.3
SM8	4-Apr-12	4-May-12	Sample	<0.1	38.4	0.4
WF4	3-Apr-12	3-May-12	Sample	0.9	28.3	1.3

May 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	4-May-12	5-Jun-12	Sample	0.3	32.9	0.6
			Sample	0.2	32.3	0.5
			Average	0.3	32.6	0.6
AH7	No Samples Deployed/Collected					
AH8-R	3-May-12	7-Jun-12	Sample	0.4	28.3	0.7
			Sample	0.4	30.4	0.7
			Average	0.4	29.4	0.7
BM7	3-May-12	5-Jun-12	Sample	0.2	32.7	0.3
BM10	3-May-12	5-Jun-12	Sample	0.2	27.9	0.5
BM11	3-May-12	5-Jun-12	Sample	0.1	29.0	0.2
JP101 (JPL1)	4-May-12	6-Jun-12	Sample	0.0	31.7	0.2
			Sample	0.0	31.8	0.2
			Average	0.0	31.8	0.2
JP102 (JPH2)	4-May-12	6-Jun-12	Sample	0.7	29.8	0.8
			Sample	0.4	34.2	0.9
			Average	0.6	32.0	0.9
JP104 (JPH4)	4-May-12	4-Jun-12	Sample	2.1	25.2	1.8
			Sample	3.5	30.5	1.9
			Average	2.8	27.9	1.9
JP107 (JPL7)	3-May-12	5-Jun-12	Sample	0.2	35.4	0.3
			Sample	0.2	37.3	0.3
			Average	0.2	36.4	0.3
JP108 (JPL8)	4-May-12	Samples were not collected in June because of crews inability to land at site due to a flooded heli pad				
JP205 (205)	3-May-12	5-Jun-12	Sample	0.2	38.2	0.3
			Sample	0.1	34.9	0.2
			Average	0.2	36.6	0.3
JP210 (210)	4-May-12	6-Jun-12	Sample	0.0	30.7	0.3
			Sample	0.0	33.6	0.3
			Average	0.0	32.2	0.3
JP212	4-May-12	7-Jun-12	Sample	2.0	21.0	1.6
JP213 (213)	3-May-12	5-Jun-12	Sample	0.0	37.7	0.4
			Sample	0.1	36.2	0.3
			Average	0.1	37.0	0.4
NE7	3-May-12	5-Jun-12	Sample	0.3	28.6	0.7
NE10	4-May-12	6-Jun-12	Sample	0.0	28.5	0.2
NE11	3-May-12	5-Jun-12	Sample	DAMAGED	DAMAGED	DAMAGED
R2	4-May-12	4-Jun-12	Sample	2.0	23.7	1.8
SM7	4-May-12	6-Jun-12	Sample	0.0	33.1	0.0
SM8	4-May-12	6-Jun-12	Sample	0.0	28.4	0.2
WF4	3-May-12	7-Jun-12	Sample	0.5	25.8	1.2

June 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

Passive Monitoring Results

Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	5-Jun-12	6-Jul-12	Sample	0.3	22.6	0.4
			Sample	0.2	24.4	0.4
			Average	0.3	23.5	0.4
AH7	No Samples Deployed/Collected					
AH8-R	7-Jun-12	3-Jul-12	Sample	0.0	21.4	0.2
			Sample	0.0	25.2	0.2
			Average	0.0	23.3	0.2
BM7	5-Jun-12	3-Jul-12	Sample	0.0	25.2	0.0
BM10	5-Jun-12	3-Jul-12	Sample	0.0	21.8	0.4
BM11	5-Jun-12	3-Jul-12	Sample	0.0	23.0	0.4
JP101 (JPL1)	6-Jun-12	6-Jul-12	Sample	0.0	24.1	0.2
			Sample	0.0	28.7	0.3
			Average	0.0	26.4	0.3
JP102 (JPH2)	6-Jun-12	3-Jul-12	Sample	0.9	26.8	1.7
			Sample	0.6	27.9	2.2
			Average	0.8	27.4	2.0
JP104 (JPH4)	4-Jun-12	5-Jul-12	Sample	1.4	26.5	1.6
			Sample	1.5	24.4	1.6
			Average	1.5	25.5	1.6
JP107 (JPL7)	5-Jun-12	3-Jul-12	Sample	0.0	25.8	0.1
			Sample	0.0	28.7	0.0
			Average	0.0	27.3	0.1
JP108 (JPL8)	4-May-12	3-Jul-12	Sample	0	25.2	0
			Sample	0	26.7	0
			Average	0.0	26.0	0.0
JP205 (205)	5-Jun-12	3-Jul-12	Sample	0.0	28.0	0.2
			Sample	0.0	26.2	0.1
			Average	0.0	27.1	0.2
JP210 (210)	6-Jun-12	6-Jul-12	Sample	0.0	30.4	0.2
			Sample	0.0	28.6	0.2
			Average	0.0	29.5	0.2
JP212	7-Jun-12	3-Jul-12	Sample	1.6	16.1	1.8
JP213 (213)	5-Jun-12	3-Jul-12	Sample	0.0	29.9	0.1
			Sample	0.0	32.8	0.2
			Average	0.0	31.4	0.2
NE7	5-Jun-12	3-Jul-12	Sample	0.1	24.4	0.5
NE10	6-Jun-12	6-Jul-12	Sample	0.5	24.5	0.0
NE11	5-Jun-12	3-Jul-12	Sample	0.3	19.4	0.4
R2	4-Jun-12	5-Jul-12	Sample	1.3	18.2	1.3
SM7	6-Jun-12	6-Jul-12	Sample	0.0	27.5	0.0
SM8	6-Jun-12	6-Jul-12	Sample	MISSING	25.6	MISSING
WF4	7-Jun-12	3-Jul-12	Sample	0.3	19.3	1.1

July 2012

WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

Passive Monitoring Results

Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	6-Jul-12	2-Aug-12	Sample	0.2	22.0	0.2
			Sample	0.2	22.4	0.1
			Average	0.2	22.2	0.2
AH7	No Samples Deployed/Collected					
AH8-R	3-Jul-12	1-Aug-12	Sample	0.3	16.3	0.1
			Sample	0.4	20.1	0.1
			Average	0.4	18.2	0.1
BM7	3-Jul-12	1-Aug-12	Sample	0.0	21.4	0.0
BM10	3-Jul-12	1-Aug-12	Sample	0.2	18.8	0.1
BM11	3-Jul-12	1-Aug-12	Sample	0.0	18.8	0.2
JP101 (JPL1)	6-Jul-12	2-Aug-12	Sample	0.3	24.3	0.4
			Sample	0.3	24.9	0.4
			Average	0.3	24.6	0.4
JP102 (JPH2)	3-Jul-12	2-Aug-12	Sample	0.8	21.4	1.5
			Sample	0.9	22.8	1.4
			Average	0.9	22.1	1.5
JP104 (JPH4)	5-Jul-12	3-Aug-12	Sample	2.7	20.0	2.2
			Sample	3.4	21.3	2.2
			Average	3.1	20.7	2.2
JP107 (JPL7)	3-Jul-12	1-Aug-12	Sample	0.2	28.0	0.5
			Sample	0.2	27.5	0.4
			Average	0.2	27.8	0.5
JP108 (JPL8)	3-Jul-12	2-Aug-12	Sample	0	13.3	0.1
			Sample	0	19.4	0
			Average	0.0	16.4	0.1
JP205 (205)	3-Jul-12	1-Aug-12	Sample	0.0	24.5	0.4
			Sample	0.2	30.7	0.4
			Average	0.1	27.6	0.4
JP210 (210)	6-Jul-12	2-Aug-12	Sample	0.0	23.5	0.2
			Sample	0.2	23.8	0.1
			Average	0.1	23.7	0.2
JP212	3-Jul-12	2-Aug-12	Sample	2.2	14.3	2.0
JP213 (213)	3-Jul-12	1-Aug-12	Sample	0.0	26.6	0.3
			Sample	0.0	25.9	0.5
			Average	0.0	26.3	0.4
NE7	3-Jul-12	1-Aug-12	Sample	0.2	22.1	0.6
NE10	6-Jul-12	2-Aug-12	Sample	0.2	18.6	0.3
NE11	3-Jul-12	1-Aug-12	Sample	0.8	24.0	1.4
R2	5-Jul-12	3-Aug-12	Sample	1.8	14.6	1.9
SM7	6-Jul-12	2-Aug-12	Sample	0.2	22.9	0.0
SM8	6-Jul-12	2-Aug-12	Sample	0.0	22.1	0.2
WF4	3-Jul-12	1-Aug-12	Sample	0.2	15.3	1.9

August 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3¹	2-Aug-12	21-Aug-12	Sample	0.3	21.8	0.6
			Sample	0.3	23.5	0.5
			Average	0.3	22.7	0.6
AH7	No Samples Deployed/Collected					
AH8-R	1-Aug-12	6-Sep-12	Sample	0.2	16.8	0.1
			Sample	0.2	17.9	0.2
			Average	0.2	17.4	0.2
BM7	1-Aug-12	6-Sep-12	Sample	0.0	19.9	0.3
BM10	1-Aug-12	6-Sep-12	Sample	0.0	15.6	0.2
BM11	1-Aug-12	6-Sep-12	Sample	0.1	19.7	0.4
JP101 (JPL1)	2-Aug-12	7-Sep-12	Sample	0.2	20.6	0.4
			Sample	0.2	26.4	0.4
			Average	0.2	23.5	0.4
JP102 (JPH2)	2-Aug-12	7-Sep-12	Sample	0.9	19.4	1.0
			Sample	1.3	25.8	1.1
			Average	1.1	22.6	1.1
JP104 (JPH4)	3-Aug-12	4-Sep-12	Sample	3.1	19.4	2.9
			Sample	3.1	19.7	2.6
			Average	3.1	19.6	2.8
JP107 (JPL7)	1-Aug-12	6-Sep-12	Sample	0.4	23.2	0.6
			Sample	0.4	22.8	0.6
			Average	0.4	23.0	0.6
JP108 (JPL8)	2-Aug-12	7-Sep-12	Sample	0	19.8	0.2
			Sample	0	13.3	0.2
			Average	0.0	16.6	0.2
JP205 (205)	1-Aug-12	6-Sep-12	Sample	0.2	24.7	0.4
			Sample	0.2	24.3	0.4
			Average	0.2	24.5	0.4
JP210 (210)	2-Aug-12	7-Sep-12	Sample	0.1	21.9	0.3
			Sample	0.1	22.0	0.4
			Average	0.1	22.0	0.4
JP212	2-Aug-12	7-Sep-12	Sample	2.0	13.0	2.5
JP213 (213)	1-Aug-12	6-Sep-12	Sample	0.1	23.7	0.4
			Sample	0.3	23.6	0.5
			Average	0.2	23.7	0.5
NE7	1-Aug-12	6-Sep-12	Sample	0.5	19.0	1.2
NE10	2-Aug-12	7-Sep-12	Sample	0.1	16.2	0.3
NE11	1-Aug-12	6-Sep-12	Sample	1.4	11.8	0.8
R2	3-Aug-12	4-Sep-12	Sample	1.9	12.9	3.0
SM7	2-Aug-12	7-Sep-12	Sample	0.3	20.4	0.1
SM8	2-Aug-12	7-Sep-12	Sample	0.7	17.5	0.3
WF4	1-Aug-12	6-Sep-12	Sample	0.2	11.8	1.7

¹ Passive samples were taken down early at AH3 because the pole tower was being taken down and replaced with a new tower.

September 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Passive Monitoring Results
 Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	7-Sep-12	5-Oct-12	Sample	0.7	19.3	0.6
			Sample	1.0	21.8	0.5
			Average	0.9	20.6	0.6
AH7	7-Sep-12	5-Oct-12	Sample	0.9	20.6	0.8
			Sample	1.0	23.3	0.6
			Average	1.0	22.0	0.7
AH8-R	6-Sep-12	5-Oct-12	Sample	0.3	19.4	0.0
			Sample	0.4	15.5	0.2
			Average	0.4	17.5	0.1
BM7	6-Sep-12	1-Oct-12	Sample	0.0	19.7	0.3
BM10	6-Sep-12	1-Oct-12	Sample	0.0	13.9	0.5
BM11	6-Sep-12	1-Oct-12	Sample	0.0	14.1	0.4
JP101 (JPL1)	7-Sep-12	5-Oct-12	Sample	0.2	18.4	0.3
			Sample	0.3	24.3	0.2
			Average	0.3	21.4	0.3
JP102 (JPH2)	7-Sep-12	5-Oct-12	Sample	1.6	16.1	0.8
			Sample	2.1	16.5	0.8
			Average	1.9	16.3	0.8
JP104 (JPH4)	4-Sep-12	3-Oct-12	Sample	5.8	19.3	2.4
			Sample	4.1	19.4	2.3
			Average	5.0	19.4	2.4
JP107 (JPL7) ¹	No Samples Deployed/Collected					
JP108 (JPL8)	7-Sep-12	5-Oct-12	Sample	0.1	14.2	0.4
			Sample	0.2	14.9	0.3
			Average	0.2	14.6	0.4
JP205 (205)	6-Sep-12	1-Oct-12	Sample	0.2	20.8	0.7
			Sample	0.3	18.2	0.8
			Average	0.3	19.5	0.8
JP210 (210)	7-Sep-12	5-Oct-12	Sample	0.3	19.4	0.3
			Sample	0.2	21.1	0.4
			Average	0.3	20.3	0.4
JP212	7-Sep-12	5-Oct-12	Sample	5.2	9.5	1.2
JP213 (213)	6-Sep-12	10-Oct-12	Sample	0.5	22.0	0.3
			Sample	0.3	28.7	0.3
			Average	0.4	25.4	0.3
JP316	06-Sep-12	05-Oct-12	Sample	0.3	21.7	0.4
			Sample	0.4	23.5	0.4
			Average	0.4	22.6	0.4
NE7	6-Sep-12	1-Oct-12	Sample	0.7	20.8	0.9
NE10	7-Sep-12	5-Oct-12	Sample	0.1	14.5	0.3
NE11	6-Sep-12	1-Oct-12	Sample	1.5	12.7	1.0
R2	4-Sep-12	3-Oct-12	Sample	3.6	11.8	1.6
SM7	7-Sep-12	5-Oct-12	Sample	0.4	18.8	0.2
SM8	7-Sep-12	5-Oct-12	Sample	0.2	19.6	0.2
WF4	6-Sep-12	1-Oct-12	Sample	0.4	11.9	0.9

¹ September passive samples were not collected at JP107 because there was a herd of wild bison at the tower.

October 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
Passive Monitoring Results
Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	5-Oct-12	7-Dec-12	Sample	1.3	25.8	0.7
			Sample	0.9	19.5	0.8
			Average	1.1	22.7	0.8
AH7	5-Oct-12	6-Dec-12	Sample	1.6	19.8	1.1
			Sample	2.0	20.4	1.3
			Average	1.8	20.1	1.2
AH8-R	5-Oct-12	7-Dec-12	Sample	1.1	16.7	0.6
			Sample	1.5	17.8	0.6
			Average	1.3	17.3	0.6
BM7	1-Oct-12	5-Dec-12	Sample	0.0	23.7	0.6
BM10	1-Oct-12	5-Dec-12	Sample	0.4	19.3	0.8
BM11	1-Oct-12	5-Dec-12	Sample	0.1	25.9	1.3
JP101 (JPL1)	5-Oct-12	6-Dec-12	Sample	0.5	24.2	0.9
			Sample	0.6	24.6	1.0
			Average	0.6	24.4	1.0
JP102 (JPH2)	5-Oct-12	7-Dec-12	Sample	2.6	17.2	1.1
			Sample	3.0	20.6	1.2
			Average	2.8	18.9	1.2
JP104 (JPH4)	3-Oct-12	7-Dec-12	Sample	5.2	15.9	0.7
			Sample	MISSING	18.0	0.9
			Average	5.2	17.0	0.8
JP107 (JPL7)¹ No Samples Deployed/Collected						
JP108 (JPL8)	5-Oct-12	6-Dec-12	Sample	0.0	11.1	0.3
			Sample	0.0	12.2	0.3
			Average	0.0	11.7	0.3
JP205 (205)	1-Oct-12	5-Dec-12	Sample	0.1	23.3	0.6
			Sample	0.0	23.9	0.6
			Average	0.1	23.6	0.6
JP210 (210)	5-Oct-12	6-Dec-12	Sample	0.5	21.2	0.5
			Sample	0.6	20.5	0.5
			Average	0.6	20.9	0.5
JP212	5-Oct-12	7-Dec-12	Sample	3.5	16.8	0.6
JP213 (213)	10-Oct-12	5-Dec-12	Sample	0.0	24.8	1.5
			Sample	0.0	24.3	0.5
			Average	0.0	24.6	1.0
JP316	05-Oct-12	6-Dec-12	Sample	0.1	27.0	0.5
			Sample	0.1	23.9	0.5
			Average	0.1	25.5	0.5
NE7	1-Oct-12	5-Dec-12	Sample	0.7	21.0	0.9
NE10	5-Oct-12	6-Dec-12	Sample	0.0	23.2	0.8
NE11	1-Oct-12	5-Dec-12	Sample	1.3	16.7	0.4
R2	3-Oct-12	7-Dec-12	Sample	3.5	14.7	0.6
SM7	5-Oct-12	6-Dec-12	Sample	0.3	26.1	0.6
SM8	5-Oct-12	6-Dec-12	Sample	0.4	25.0	0.9
WF4	1-Oct-12	7-Dec-12	Sample	1.3	15.8	0.7

¹ October passive samples were not deployed at JP107 because there was a herd of wild bison at the tower.

December 2012
WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
 Passive Monitoring Results
 Remote Forestry and Lake Sites

Station	Start	End	Result Type	NO ₂ (ppb)	O ₃ (ppb)	SO ₂ (ppb)
AH3	7-Dec-12	6-Feb-13	Sample	3.5	19.7	1.4
			Sample	3.9	22.8	1.9
			Average	3.7	21.3	1.7
AH7	6-Dec-12	6-Feb-13	Sample	3.6	20.0	2.8
			Sample	3.9	22.9	3.1
			Average	3.8	21.5	3.0
AH8-R	7-Dec-12	6-Feb-13	Sample	2.3	16.6	1.4
			Sample	2.2	18.7	1.2
			Average	2.3	17.7	1.3
BM7	5-Dec-12	6-Feb-13	Sample	0.2	27.9	0.6
BM10	5-Dec-12	6-Feb-13	Sample	1.0	21.7	1.0
BM11	5-Dec-12	6-Feb-13	Sample	0.5	23.7	1.2
JP101 (JPL1)	6-Dec-12	6-Feb-13	Sample	2.0	MISSING	2.2
			Sample	3.0	20.9	2.6
			Average	2.5	20.9	2.4
JP102 (JPH2)	7-Dec-12	6-Feb-13	Sample	6.6	15.8	1.4
			Sample	6.4	14.8	1.3
			Average	6.5	15.3	1.4
JP104 (JPH4)	7-Dec-12	6-Feb-13	Sample	10.0	13.4	1.7
			Sample	10.0	13.3	1.8
			Average	10.0	13.4	1.8
JP107 (JPL7)	5-Dec-12	6-Feb-13	Sample	5.2	21.1	2.5
			Sample	4.1	19.0	2.1
			Average	4.7	20.1	2.3
JP108 (JPL8)	6-Dec-12	6-Feb-13	Sample	0.7	21.6	0.4
			Sample	0.7	19.6	0.4
			Average	0.7	20.6	0.4
JP205 (205)	5-Dec-12	6-Feb-13	Sample	0.9	25.2	1.7
			Sample	0.9	24.8	1.3
			Average	0.9	25.0	1.5
JP210 (210)	6-Dec-12	6-Feb-13	Sample	1.7	21.5	1.6
			Sample	1.7	21.8	1.7
			Average	1.7	21.7	1.7
JP212	7-Dec-12	6-Feb-13	Sample	8.4	14.5	1.0
JP213 (213)	5-Dec-12	6-Feb-13	Sample	0.8	26.3	1.1
			Sample	0.5	23.8	1.0
			Average	0.7	25.1	1.1
JP316	6-Dec-12	6-Feb-13	Sample	1.2	24.9	1.3
			Sample	1.2	25.1	1.3
			Average	1.2	25.0	1.3
NE7	5-Dec-12	6-Feb-13	Sample	5.4	25.4	2.0
NE10	6-Dec-12	6-Feb-13	Sample	0.7	22.8	0.7
NE11	5-Dec-12	6-Feb-13	Sample	3.0	16.1	1.2
R2	7-Dec-12	6-Feb-13	Sample	11.7	13.5	1.5
SM7	6-Dec-12	6-Feb-13	Sample	1.1	25.8	1.2
SM8	6-Dec-12	6-Feb-13	Sample	1.1	24.8	1.9
WF4	7-Dec-12	6-Feb-13	Sample	2.7	15.5	1.4



WOOD BUFFALO ENVIRONMENTAL ASSOCIATION
AAAQO - Alberta Ambient Air Quality Objectives

2012
Indicated Sites and Dates

Substance	Period	Unit	Objective	Exceedance	Station	Date	Comments
Hydrogen sulphide	24Hr	ppbv	3	7.0	AMS 15	28-Jan	Not a valid result due to low sample volume collected over 24-hour period.
Particulate Matter 2.5	24Hr	ug/m3	30	39.8	AMS 1	2-Jun	Continuous analyzer readings used to file exceedance reports to ESRD in real time
Particulate Matter 2.5	24Hr	ug/m3	30	39.8	AMS 6	2-Jun	Continuous analyzer readings used to file exceedance reports to ESRD in real time
Particulate Matter 2.5	24Hr	ug/m3	30	45.8	AMS 7	2-Jun	Continuous analyzer readings used to file exceedance reports to ESRD in real time
Particulate Matter 2.5	24Hr	ug/m3	30	61.3	AMS 1	14-Jul	Continuous analyzer readings used to file exceedance reports to ESRD in real time
Particulate Matter 2.5	24Hr	ug/m3	30	40.5	AMS 6	14-Jul	Continuous analyzer readings used to file exceedance reports to ESRD in real time
Particulate Matter 2.5	24Hr	ug/m3	30	41.8	AMS 14	14-Jul	Continuous analyzer readings used to file exceedance reports to ESRD in real time

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WOOD BUFFALO ENVIRONMENTAL ASSOCIATION

SITE DOCUMENTATION ANNUAL REPORT

ANNUAL 2012

Operations and Data Collection by:
Wood Buffalo Environmental Association
Fort McMurray, Alberta

QA/QC, Data Validation and Reporting by:
Aurora Atmospherics Inc.
Fort McMurray, Alberta

March 7, 2013

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AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 01 – Bertha Ganter

February 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

Continuous ambient air quality and meteorological data are collected through a program administered by the WBEA’s Ambient Air Technical Committee (AATC). The WBEA currently operates 15 continuous monitoring stations, each measuring from 3 to 10 air quality parameters. The continuously measured air quality parameters include CH₄, CO, H₂S, NMHC, NH₃, NO, NO₂, NO_x, O₃, PM_{2.5}, SO₂, THC and TRS. All sites also measure temperature, wind speed and wind direction. Selected sites measure relative humidity, barometric pressure, global radiation, precipitation, dew point, surface wetness and vertical temperature gradient. The ambient air monitoring parameters for each station are summarized in Table 1.

The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

Since 1998 WBEA has maintained semi-continuous (intermittent) sampling for PM2.5, PM10, VOC and PAH. The sampling for intermittent monitoring has evolved with a better understanding of technology, analytical laboratory methods and sample deployment and collection methods. Intermittent samples in the WBEA ambient air monitoring network are taken every 6 days for a 24-hour period. The sampling schedule and procedures are consistent with Environment Canada’s National Air Pollution Surveillance program.

STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH	PRECIP
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X		X	X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X		X				X	X	X	X	X	X	X	X	X					
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X		X	X			X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X		X	X			X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

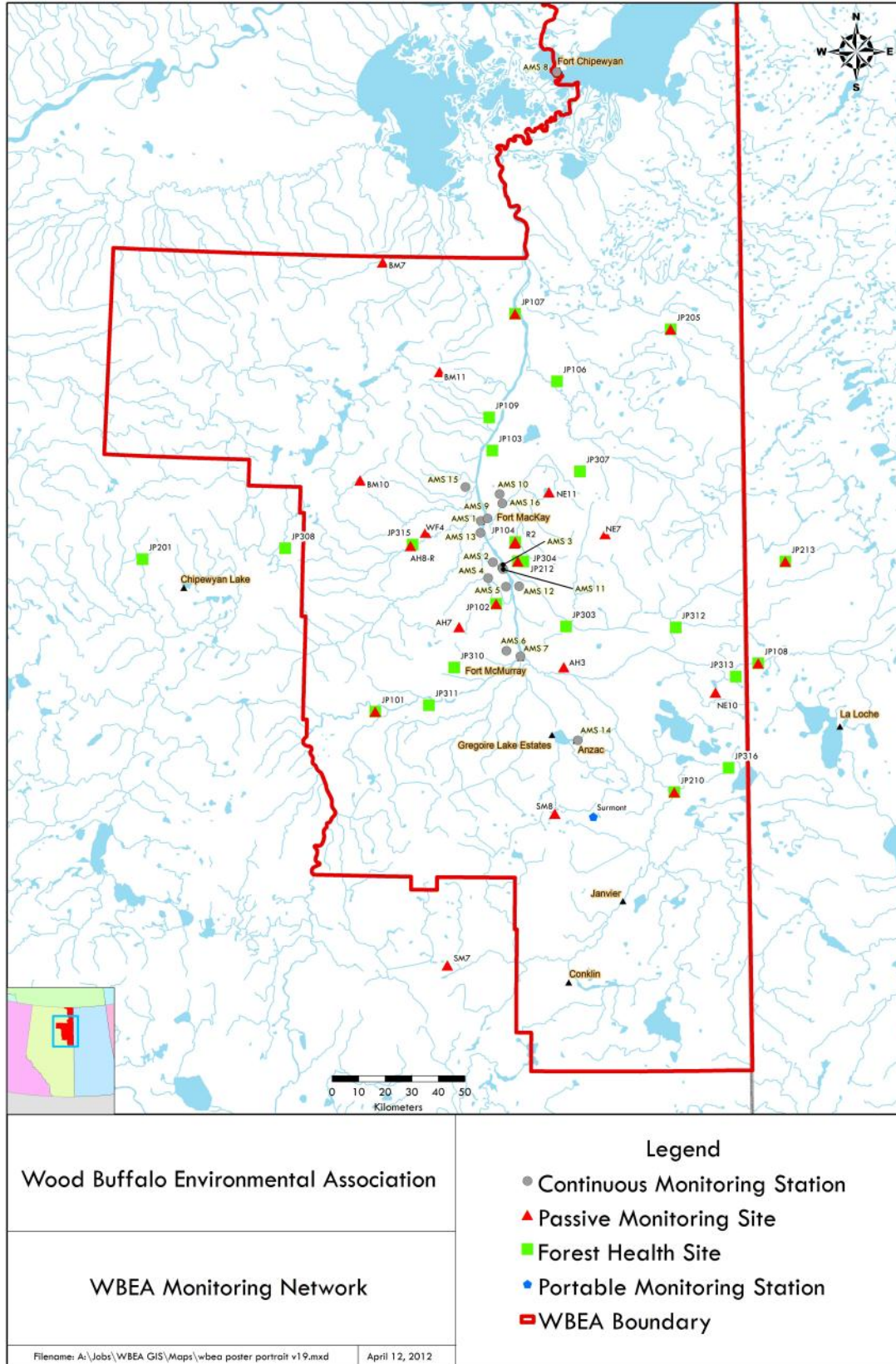


Figure 1.0 – WBEA Monitoring Network Sites

AMS 01 – Bertha Ganter Station Details

General Site Information

The Bertha Ganter – Fort McKay Station is located near the northwest corner of the Fort McKay Water Treatment Plant. This station was built in the fall of 1997 and replaced a nearby station operated by Alberta Environmental Protection.

Item	Description
Station ID	AMS 01
Station Name	Bertha Ganter
General description	The site is located on the North side of the settlement of Fort MacKay.
Community	North of Fort McKay
Station Address	NA
Station Type	Community
Area Land Use	Residential
Angle of elevation to nearby buildings	0 degrees
Average building height in area	NA
Airflow Restrictions (yes/no)	North no East No South no West No
Nearest Tree	Distance 10 metres Height 5 metres
Sample Manifold Type	Stainless Steel stack/Glass
Meteorological Tower Information	Height 10 metres Type Aluma crank-up tower Position Attached to North end of monitoring shelter
Station Install Date	December 1997
Station Origin	Purchased new
Site Preparation	Level gravel pad

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
Water treatment plant	To the South approximately 1 Km	Water treatment plant handles water for the settlement of Fort MacKay		
Name	Type	Traffic Volume	Distance (m)	Description
Roadways	Access road	low	200	Gravel access roads

Table 3.0 – Local Source Information

Area Topographic Map

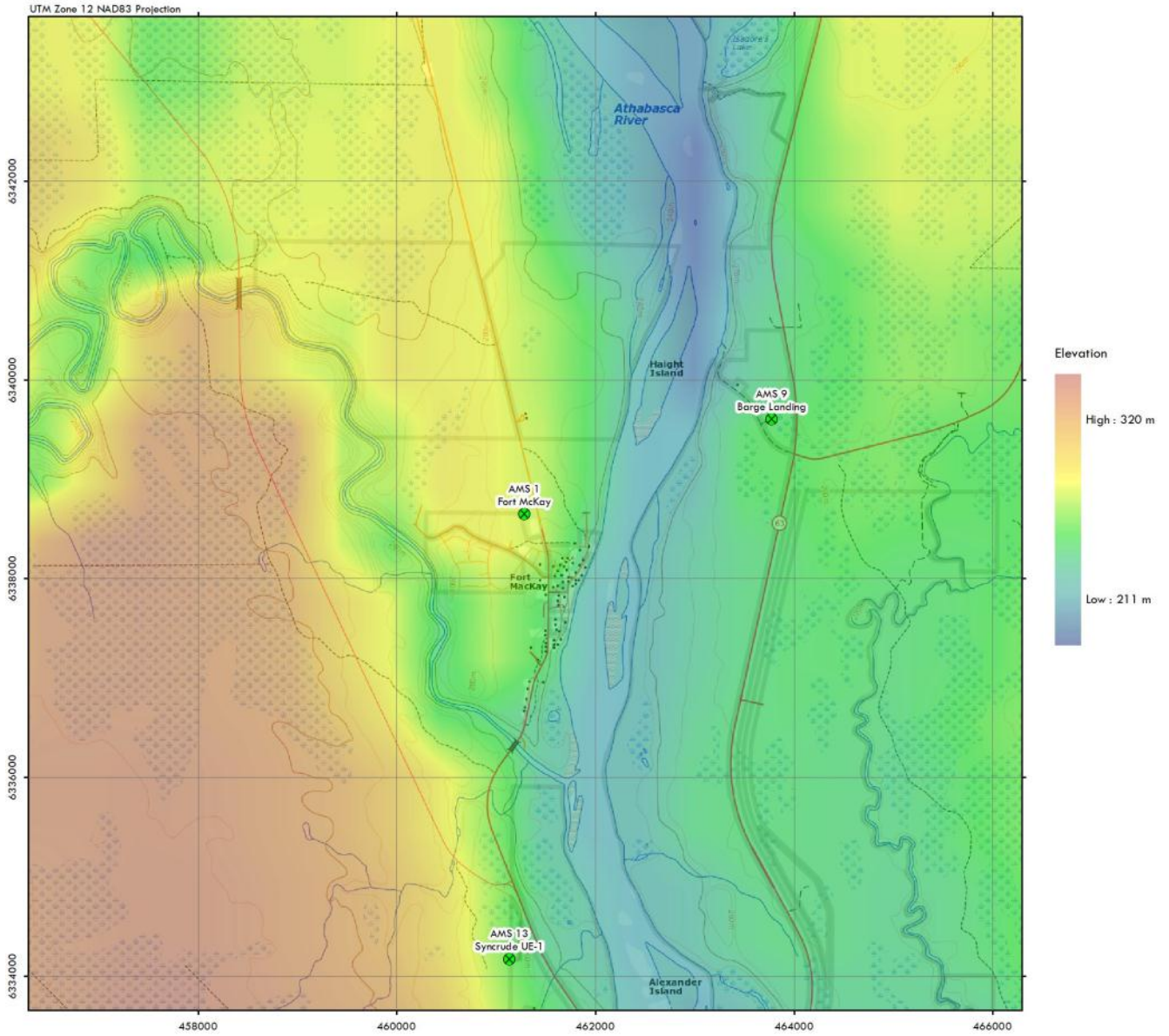


Figure 2.0 – Area Topographic map showing AMS 01 – Bertha Ganter Station

Ariel Photo



Figure 3.0 – Ariel photo showing AMS 01 – Bertha Ganter Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.2 – Sampling Deck



Figure 4.3 PM2.5 and PM 10 samplers



Figure 4.4 – EC/EC Sampler & High Volume PAH Sampler



Figure 4.5 – Sequential Dichotomous sampler & VOC Technologies, Pneumatically Focused Gas Chromatograph



Figure 4.6 – Environ looking North



Figure 4.7 – Environ looking East



Figure 4.8 – Environ looking South



Figure 4.9 – Environ looking West



Figure 4.10 – Outdoor Sample Inlet & Indoor Sample Manifold



Figure 4.11 – East Rack (on the left) & West Rack

Equipment Inventory

Parameter Measured		Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)	
							Ground	Shelter
SO2	Sulfur Dioxide	Thermo Instruments	43c	5091108	0-1000ppb	Pulsed Fluorescence	3	1
TRS	Total Reduced Sulfur	Thermo Instruments	43i TLE	1218153461	0-100ppb	Pulsed Fluorescence	3	1
TRS Converter	Total Reduced Sulfurs	CD NOVA	CDN-101	470	NA	Thermal Oxidizer paired with 43iTLE for TRS measurement	3	1
NO2	Nitrogen Dioxide	Thermo Instruments	42i	1218153357	0-1000ppb	Chemiluminescence	3	1
NH3	Ammonia	Thermo Instruments	17i	922436965	0-2500ppb	Chemiluminescence	3	1
O3	Ozone	Thermo Instruments	49c	60861328	0-500ppb	UV Photometric	3	1
THC/NMHC	Total Hydrocarbons/Non-Methane Hydrocarbons	Thermo Instruments	55i	1118148495	0-50ppm	Gas Chromatography and Flame Ionization	3	1
PM2.5	Particulate Matter <2.5um Continuous	Thermo Instruments	5030	E-803	0-1000ug/m3	Synchronized Nephelometric/Radiometric Particulate Mass Monitor	3	1
VOC	Volatile Organic Compounds. Integrated Sampling	Tish Environmental	TE-123	1018	N/A	Canister Sampler	3	1
PM2.5	Particulate Matter <2.5um. Integrated Sampling	R&P	Partisol 2000	200FB210321003	N/A	Inertial Separator and Cartridge Filter	2	NA
PM10	Particulate Matter <10um. Integrated Sampling	R&P	Partisol 2000	200A2016399610	N/A	Inertial Separator and Cartridge Filter Cartridge Filter	2	NA
Particulate Matter	Coarse and Fine particulate Matter ≤10um (coarse) and ≤2.5um. Integrated Sampling	Thermo Instruments	Partisol 2025	202DA203220811	NA	Inertial Separator and Cartridge Filter Cartridge Filters	3	1
PAH	Polly Aromatic Hydrocarbon. Integrated Sampling	Tish Environmental	TE-1000	2133	N/A	Canister / Filter	2	NA
EC/OC	Particulate Matter <2.5um Elemental Carbon/Organic Carbon. Integrated Sampling	Thermo Instruments	Partisol 200i	20001202221205	N/A	Inertial Separator and Cartridge Filter	2	NA
Precip	AENV Precipitation Sampler. Part of	AUC	MIC			Wetness Sensor Activates a Motorized Lid Which Opens and Allows	3	1

	integrated sampling program.					Precipitation to be Collected in a Bucket.		
WS	Wind Speed	Met One	010C		0-80 Kph	Anemometer	10	
WD	Wind Direction	Met One	020C		0-360 Degrees	Wind Vein	10	
AT	Ambient Temp	Visala	HMP155		-80 to +60 Deg C	Thermometer	2/10	
RH	Relative Humidity	Visala	HMP155		0-100%	Measurement is based on measuring voltage across a capacitive film polymer sensor.	2/10	
LW	Leaf Wetness	Campbell Scientific	CS 237			Measures leaf wetness by simulating a leaf's Surface. Measurement principle is based on a dielectric constant related to the sensors surface.	2	
GR	Global Radiation	Kipp & Zonen	SP Lite	64943		Photovoltaic / Solar Radiation Detection Using a Photodiode Detector.	3	1
PC	Precipitation	R&P	CS 52202-L	5360	NA	Tipping Bucket	3	1
PFGC/SCD	Volatile Organic Hydrocarbons and Sulfur Containing Compounds	VOC Technologies (PFGC) / Agilent (SCD)	PFGC / 355 (SCD)		0.10-1000ppb (PFGC) / 0.05-5000ppb (SCD)	Pneumatically focused gas chromatography and chemiluminescence sulfur detection	3	1
BTEX	Benzene, Toluene, Ethylbenzene, Xylene	Syntech Spectras GC	955	NA	0-300ppb	Measures the suite of BTEX compounds as well as other Volatile Organic Compounds using Gas Chromatography	3	1
ENOSE	Odor Intensity	Odotech				Instrument provides a steady signal output. The amplitude of peaks is indicative of possible odor events.	3	1

Table 4.0 - Analytical Equipment in AMS 01

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger and peripherals such as relay switches and data storage	Campbell Scientific	CR3000	2403
ZAG	Zero Air Generator	Teledyne	701H	587
HVAC	Wall Mount Unit	Bard		
Shelter / Building	Air Quality Monitoring Trailer	ITB		
Gas Dilution Calibrator	Uses Mass Flow Controllers to dilute and deliver calibration gasses at concentrations required for multipoint instrument calibrations, troubleshooting and daily reference points.	Sabio	4010	11571008

Table 5.0 - Support Equipment in AMS 01

Wind Rose

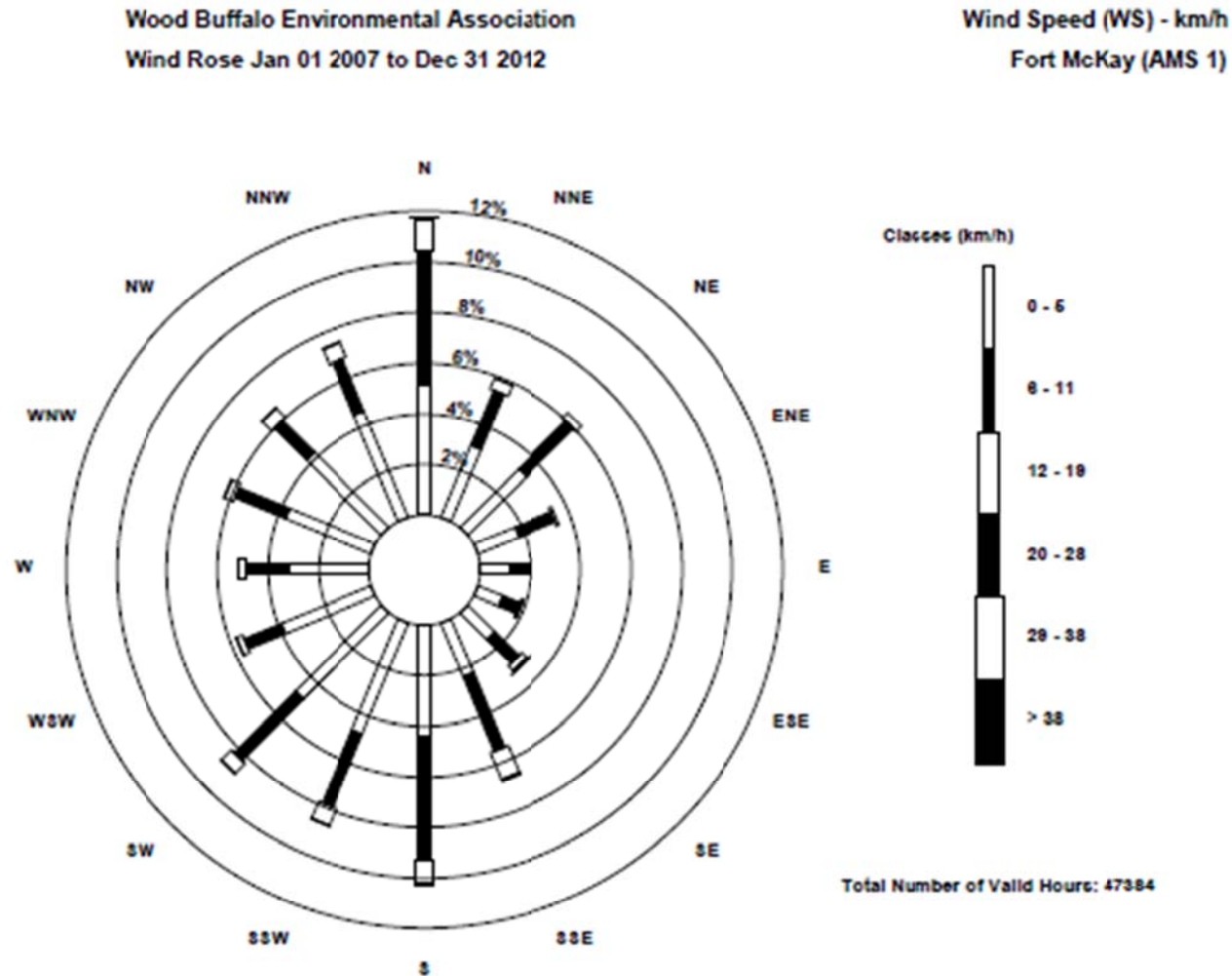


Figure 5.0 – AMS 01 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 02 – Mildred Lake

February 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

Continuous ambient air quality and meteorological data are collected through a program administered by the WBEA’s Ambient Air Technical Committee (AATC). The WBEA currently operates 15 continuous monitoring stations, each measuring from 3 to 10 air quality parameters. The continuously measured air quality parameters include CH₄, CO, H₂S, NMHC, NH₃, NO, NO₂, NO_x, O₃, PM_{2.5}, SO₂, THC and TRS. All sites also measure temperature, wind speed and wind direction. Selected sites measure relative humidity, barometric pressure, global radiation, precipitation, dew point, surface wetness and vertical temperature gradient. The ambient air monitoring parameters for each station are summarized in Table 1.

The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

Since 1998 WBEA has maintained semi-continuous (intermittent) sampling for PM2.5, PM10, VOC and PAH. The sampling for intermittent monitoring has evolved with a better understanding of technology, analytical laboratory methods and sample deployment and collection methods. Intermittent samples in the WBEA ambient air monitoring network are taken every 6 days for a 24-hour period. The sampling schedule and procedures are consistent with Environment Canada’s National Air Pollution Surveillance program.

STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH	PRECIP
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X			X		X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X			X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X			X		X	X				

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

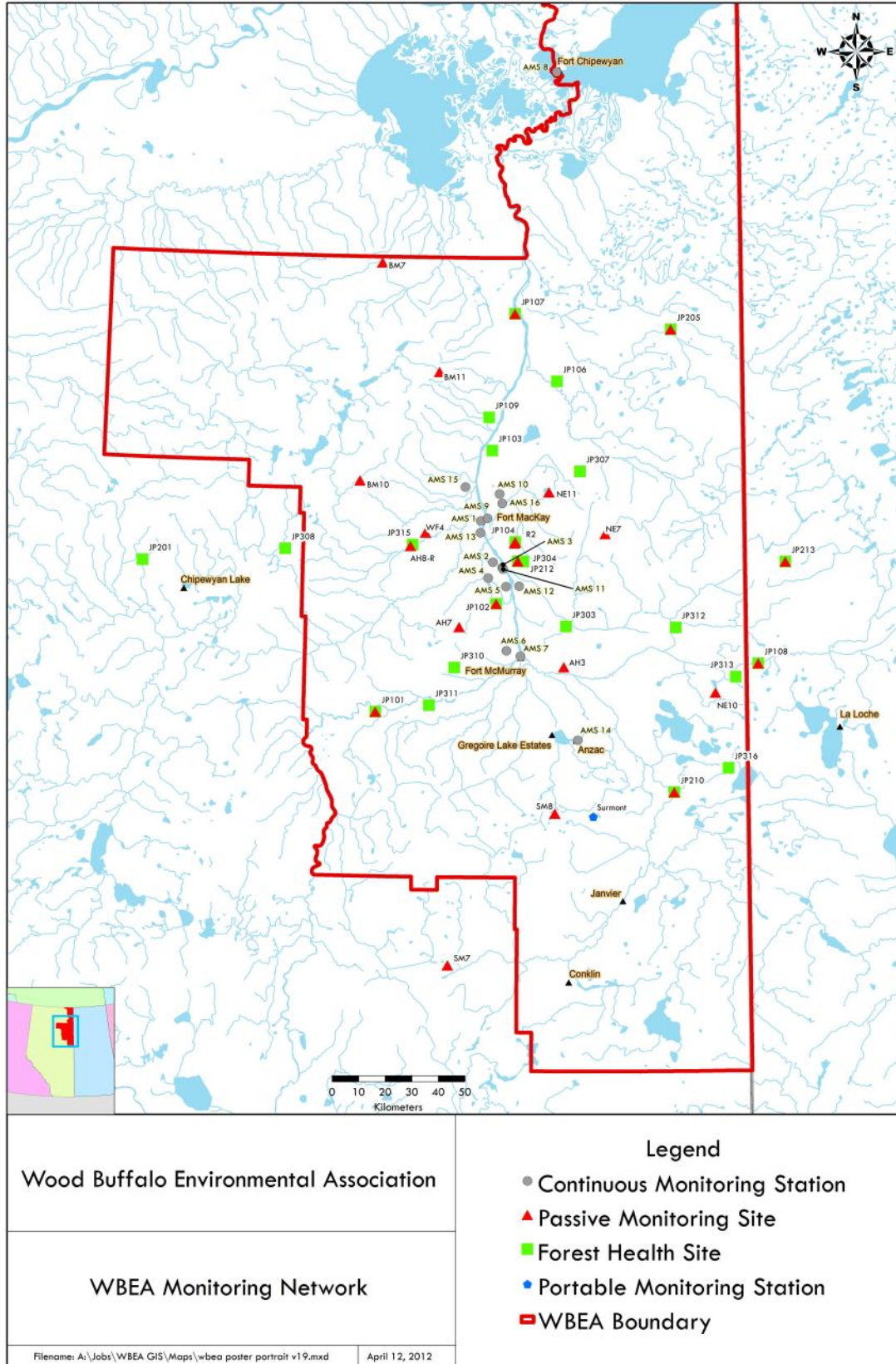


Figure 1.0 – WBEA Monitoring Network Sites

AMS 02 – Mildred Lake Station Details

General Site Information

The Mildred lake station is located at the Syncrude airstrip. This station was originally part of Syncrude's air monitoring network.

The Mildred Lake station contains analyzers that continuously measure SO₂, H₂S, THC, wind speed and direction, and temperature.

Item	Description
Station ID	AMS 02
Station Name	Mildred Lake
General description	Located at the south end of the Syncrude airstrip, 400m west of Hwy 63
Community	N/A
Station Address	N/A
Station Type	Industrial
Area Land Use	Industrial/Aviation
Angle of elevation to nearby buildings	0 degrees
Average building height in area	3-5 metres
Airflow Restrictions (yes/no)	North YES South NO
	East NO West NO
Nearest Tree	Distance 10 metres Height 10 metres
Sample Manifold Type	Glass
Meteorological Tower Information	Height 10 metres Type Aluma crank tower Position NE side of structure
Station Install Date	N/A
Station Origin	N/A
Site Preparation	Level gravel pad

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
Airstrip	80m	Runway for Syncrude aircraft		
Name	Type	Traffic Volume	Distance (m)	Description
roadway	access	medium	60	Asphalt road
Highway 63	highway	high	300	Provincial highway

Table 3.0 – Local Source Information

Area Topographic Map

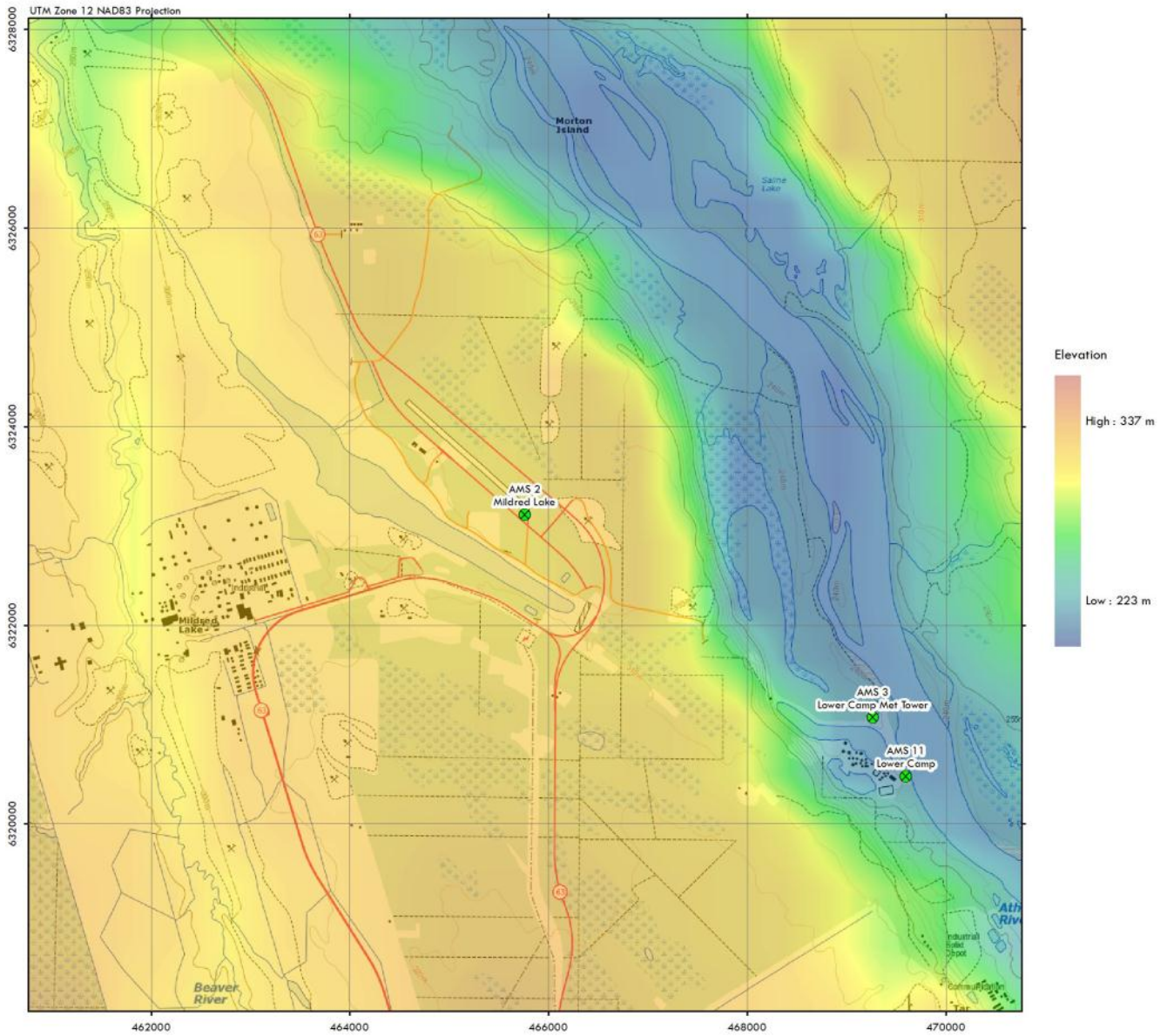


Figure 2.0 – Area Topographic map showing AMS 02 – Mildred Lake Station

Aerial Photo



Figure 3.0 – Aerial photo showing AMS 02 – Mildred Lake Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.2 – Environ looking North



Figure 4.3 – Environ looking East



Figure 4.4 – Environ looking South



Figure 4.5 –Environ looking West



Figure 4.6 – Outdoor Sample Inlet



Figure 4.7 – Equipment Rack

Equipment Inventory

Parameter Measured		Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)	
							Ground	Shelter
SO2	Sulphur Dioxide	Thermo	43C	43C-77879-387	0 – 1000 ppb	UV fluorescence	4	1
THC	Total Hydrocarbons	Thermo	51C-LT	613516799	0 – 25 ppm	FID	4	1
NH3	Ammonia	NA	NA	NA	0 – 50 ppb	NA	4	1
H2S	Hydrogen Sulphide	Thermo	450i	0815129107	0 – 100 ppb	Thermal conversion & UV fluorescence	4	1
AT	Ambient temp	Vaisala	HMP155	NA	-50 - +50 degrees C	Thermistor	4	1
RH	Relative humidity	Vaisala	HMP155	NA	0 – 100 %	Humicap	4	1
WS	Wind speed	RM Young	010-C	NA	0 – 80 Km/Hr	Chopped optical	10	7
WD	Wind direction	RM Young	020-C	NA	0 – 360 degrees	potentiometer	10	7

Table 4.0 - Analytical Equipment in AMS 02

Name	Description	Make	Model	Serial Number
Computer	Tower	Dell	n/a	n/a
Monitor	n/a	Dell	n/a	n/a
Micrologger	n/a	Campbell Scientific	CR300	n/a
16 channel controller	n/a	Campbell Scientific	SDM-CD16AC	n/a
Cell modem	n/a	Sierra wireless	Airlink Raven X	n/a
Thermal Oxidizer	n/a	CD Nova	CDN101	n/a
Calibrator	Dilution calibrator	SABIO	4010	n/a
LAN	network	Lantronix	n/a	n/a
Zero air generator	Clean air source	API	701	n/a
Surge protector	Outlet protection	n/a	LCR 2400	n/a
HVAC	Electric heaters and wall mounted AC	n/a	n/a	n/a
Shelter	Prefab trailer	C&V Accomodation	n/a	n/a
Calibration/support cyclinders	Cal mix, H2S, H2	n/a	n/a	n/a

Table 5.0 - Support Equipment in AMS 02

Wind Rose

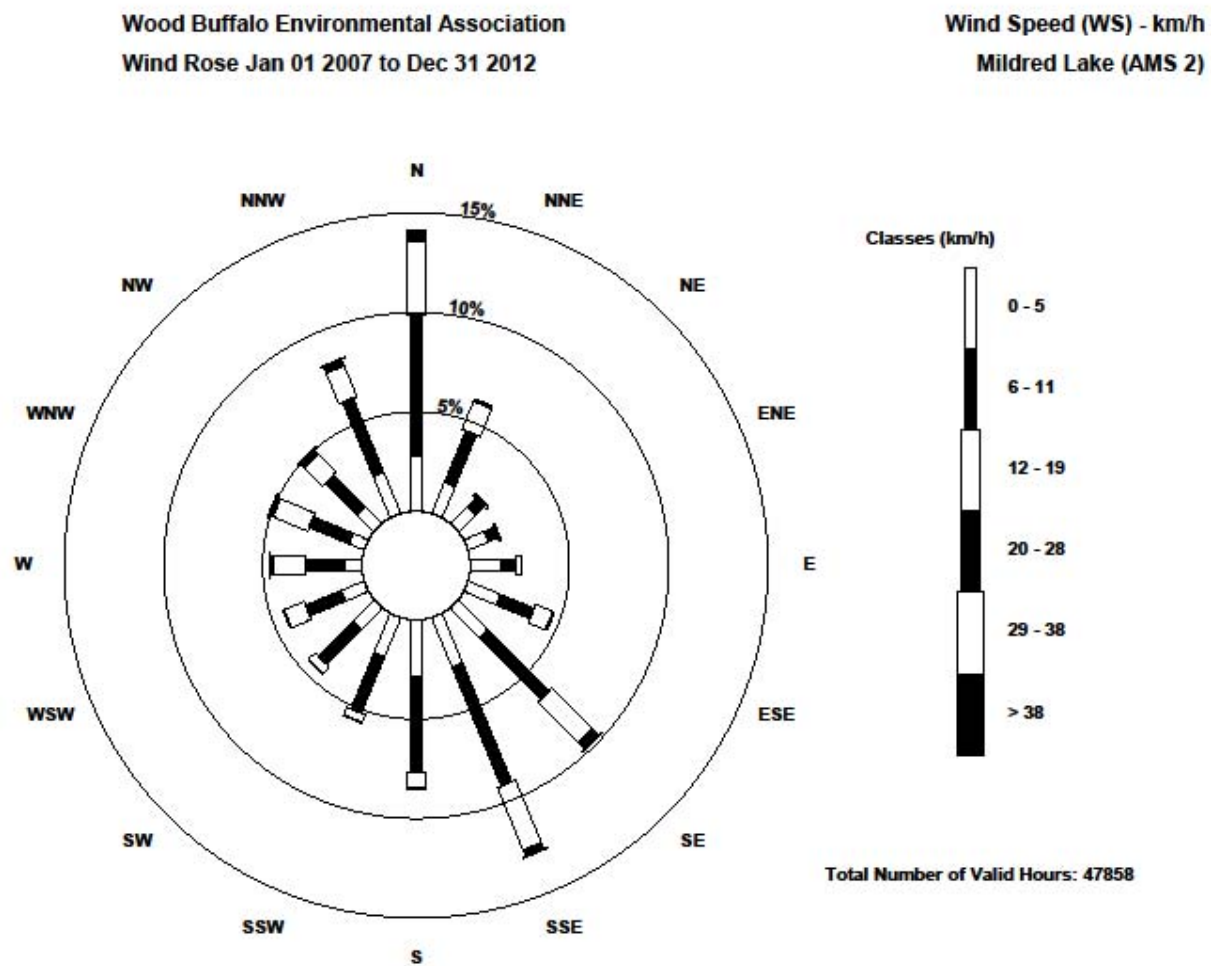


Figure 5.0 – AMS 02 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 04 – Buffalo View Point

February 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X		X	X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X		X				X	X	X	X	X	X	X	X	X					
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X		X	X			X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X		X	X			X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X		X	X			X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X		X	X			X	X	X	X	X	X		X		X	X		X	
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X		X	X			X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

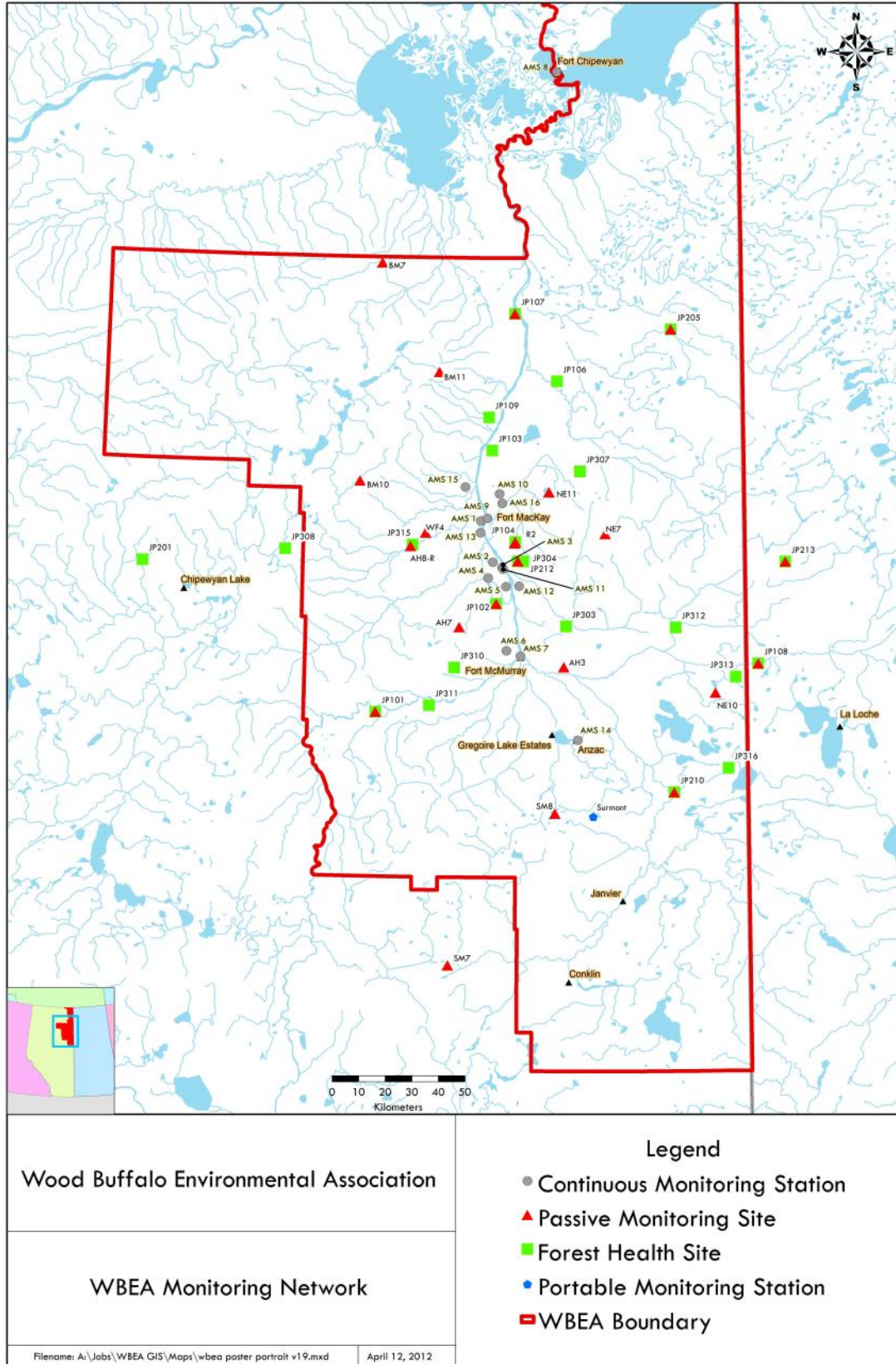


Figure 1.0 – WBEA Monitoring Network Sites

AMS 04 – Buffalo View Point Station Details

General Site Information

The Buffalo View Point station was installed as a Compliance Station. It is situated on a hill in the reclaimed area South of the North American Access Road

Item	Description								
Station ID	AMS 04								
Station Name	Buffalo View Point								
General description	127.8m NW of Highway 63, Along Syncrude North American Road								
Community	Crown Land								
Station Address	Syncrude South Mine								
Station Type	Industrial								
Area Land Use	NA								
Angle of elevation to nearby buildings	0 Degrees								
Average building height in area	NA								
Airflow Restrictions (yes/no)	<table border="1"> <tr> <td>North</td> <td>NO</td> <td>East</td> <td>NO</td> </tr> <tr> <td>South</td> <td>NO</td> <td>West</td> <td>NO</td> </tr> </table>	North	NO	East	NO	South	NO	West	NO
North	NO	East	NO						
South	NO	West	NO						
Nearest Tree	<table border="1"> <tr> <td>Distance</td> <td>10metres</td> <td>Height</td> <td>10metres</td> </tr> </table>	Distance	10metres	Height	10metres				
Distance	10metres	Height	10metres						
Sample Manifold Type	Glass								
Meteorological Tower Information	<table border="1"> <tr> <td>Height</td> <td>10 meters</td> </tr> <tr> <td>Type</td> <td>Aluma crank-up tower</td> </tr> <tr> <td>Position</td> <td>Attached to North end of monitoring shelter</td> </tr> </table>	Height	10 meters	Type	Aluma crank-up tower	Position	Attached to North end of monitoring shelter		
Height	10 meters								
Type	Aluma crank-up tower								
Position	Attached to North end of monitoring shelter								
Station Install Date	N/A								
Station Origin	Station New								
Site Preparation	Leveled with Gravel								

Table 2.0 – General Site Information

Localized Sources

Name	Type	Traffic Volume	Distance (m)	Description
Road Ways	Access Road	Low	3m	Gravel Road
North American Road	Access Road	Medium	17.35m	Gravel Road

Table 3.0 – Local Source Information

Area Topographic Map

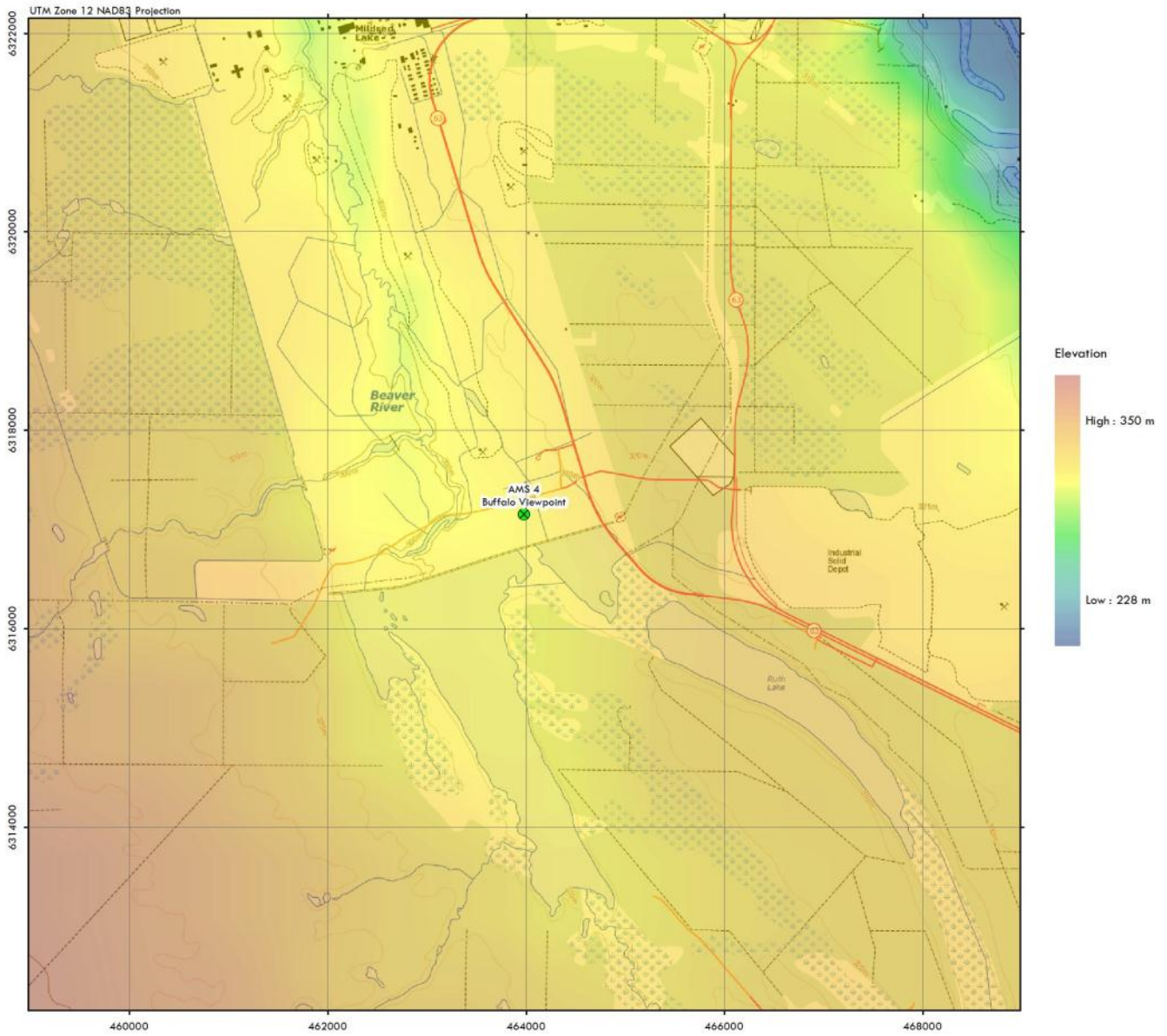


Figure 2.0 – Area Topographic map showing AMS 04 – Buffalo View Point Station

Ariel Photo



Figure 3.0 – Ariel photo showing AMS 04 – Buffalo View Point Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.2 – Environ looking North



Figure 4.3 – Environ looking East



Figure 4.4 – Environ looking South



Figure 4.5 – Environ looking West



Figure 4.6 – Outdoor Sample Inlet & Indoor Sample Manifold



Figure 4.7 –Instrument Rack

Equipment Inventory

Parameter Measured		Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)	
							Ground	Shelter
H2S	Hydrogen Sulfide	Thermo	450i	815129098	100ppb	Conversion with UV fluorescence	4	1
SO2	Sulphur Dioxide	Thermo	43i	108841399	1000ppb	UV fluorescence	4	1
THC	Total Hydrocarbon	Thermo	51iLT	1201659671	25ppm	FID	4	1
WS	Wind Speed	Met One	010C	E5130	0 – 80 KM/Hr	Chopped optical	10	7
WD	Wind Direction	Met One	020C	E4854	0 – 360 degrees	Potentiometer	10	7
AT	Ambient Temperature	Vaisala	HMP155	C91342	-50 - +50 degrees C	Thermistor	4	4

Table 4.0 - Analytical Equipment in AMS 04

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger	Campbell Scientific	CR3000	2586
ZAG	Zero Air Generator	701	API	NA
HVAC	Wall Electric Heater/BARD Air Conditioner	C and V Accomodations	NA	NA
Shelter / Building	NA	C and V Accomodations	NA	NA
Calibrator	Gas Dilution Calibrator	Sabio	4010	11061107

Table 5.0 - Support Equipment in AMS 04

Wind Rose

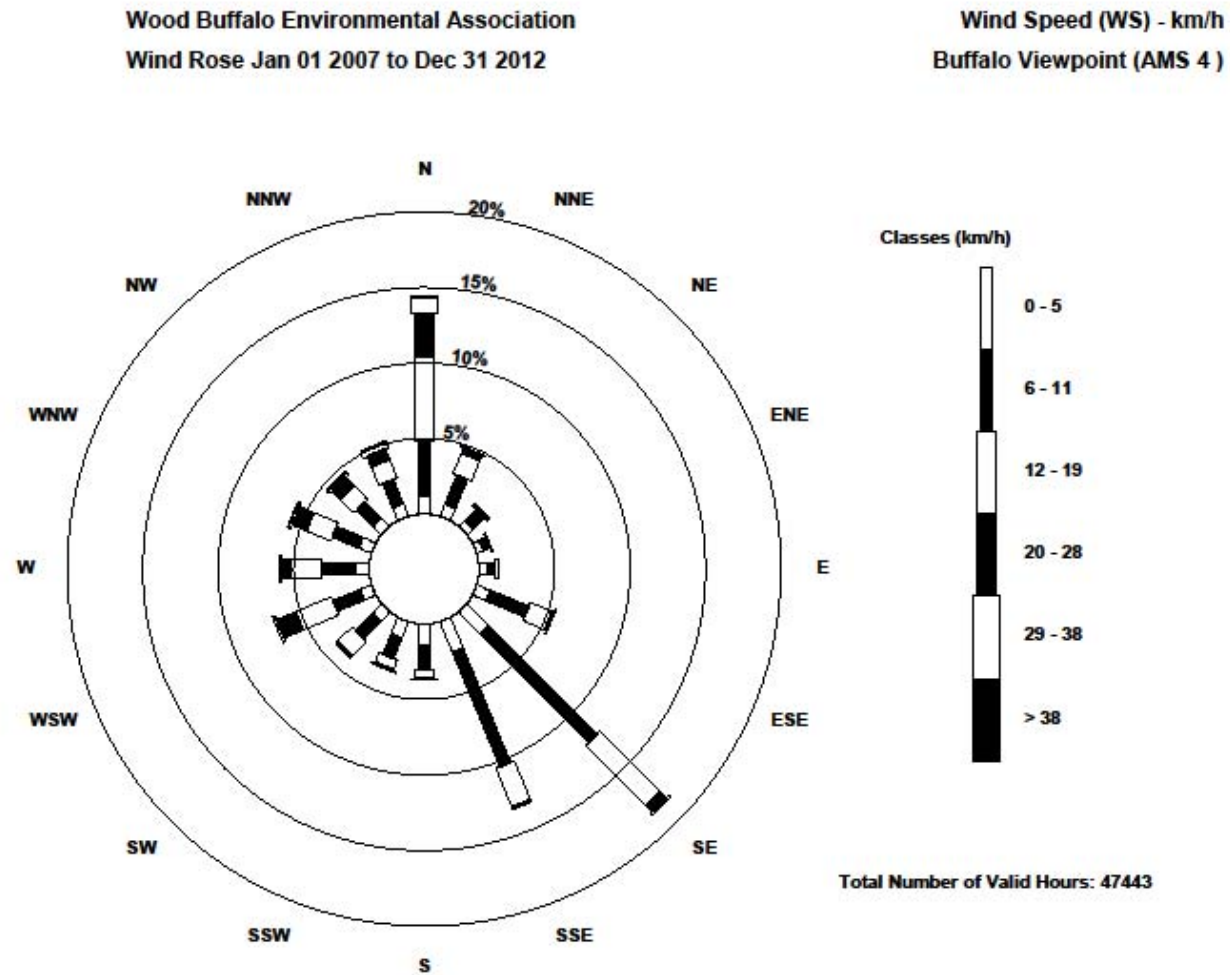


Figure 5.0 – AMS 04 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 05 – Mannix

February 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

Continuous ambient air quality and meteorological data are collected through a program administered by the WBEA’s Ambient Air Technical Committee (AATC). The WBEA currently operates 15 continuous monitoring stations, each measuring from 3 to 10 air quality parameters. The continuously measured air quality parameters include CH₄, CO, H₂S, NMHC, NH₃, NO, NO₂, NO_x, O₃, PM_{2.5}, SO₂, THC and TRS. All sites also measure temperature, wind speed and wind direction. Selected sites measure relative humidity, barometric pressure, global radiation, precipitation, dew point, surface wetness and vertical temperature gradient. The ambient air monitoring parameters for each station are summarized in Table 1.

The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

Since 1998 WBEA has maintained semi-continuous (intermittent) sampling for PM2.5, PM10, VOC and PAH. The sampling for intermittent monitoring has evolved with a better understanding of technology, analytical laboratory methods and sample deployment and collection methods. Intermittent samples in the WBEA ambient air monitoring network are taken every 6 days for a 24-hour period. The sampling schedule and procedures are consistent with Environment Canada’s National Air Pollution Surveillance program.

STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH	PRECIP
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X			X		X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X			X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X			X		X	X				

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

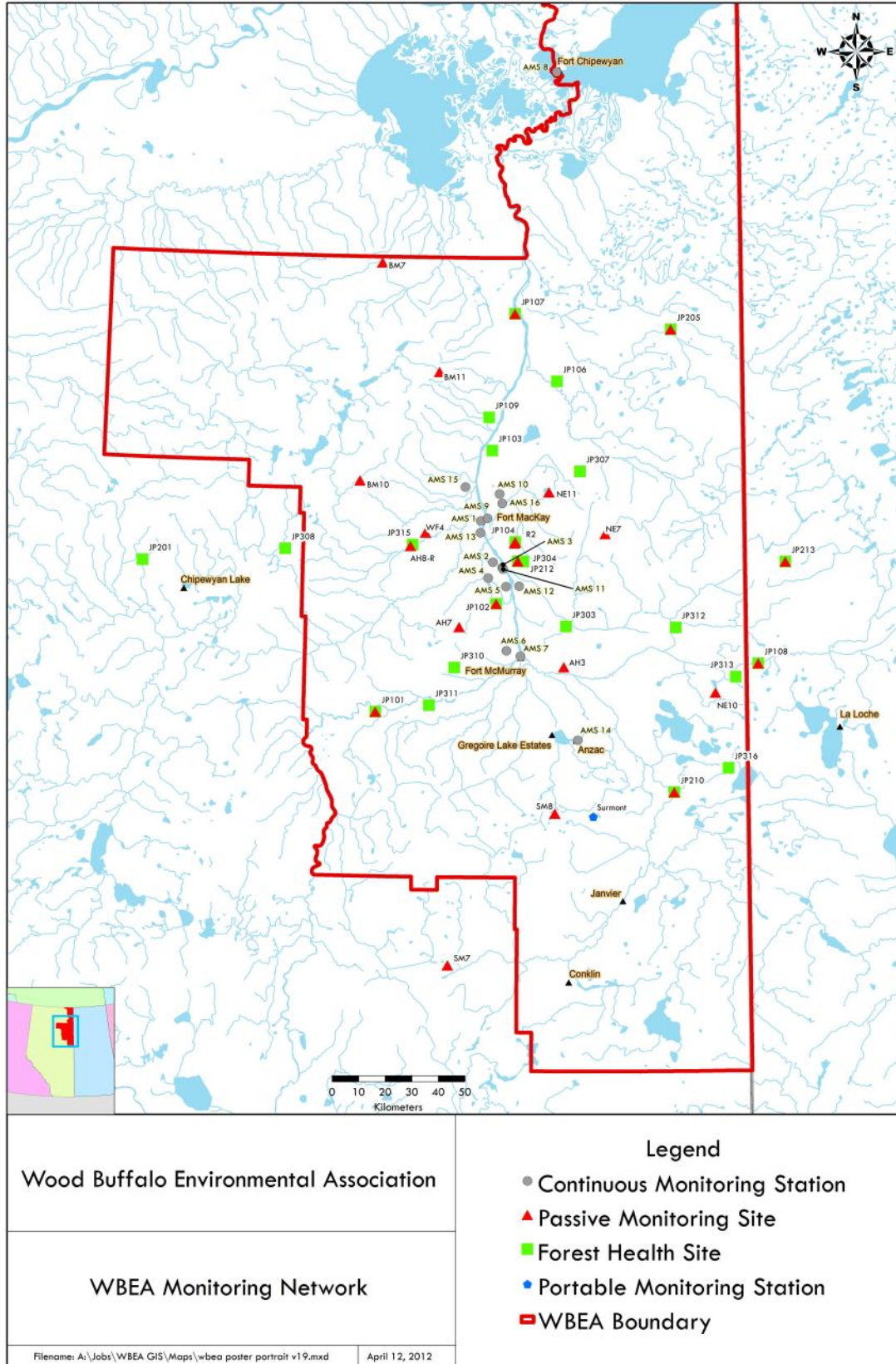


Figure 1.0 – WBEA Monitoring Network Sites

AMS 05 – Mannix Station Details

General Site Information

The Mannix station was originally part of the air monitoring network operated by Suncor. It contains analyzers that continuously measure SO₂, H₂S, and THC. The station is located North of a storage tank complex.

Item	Description
Station ID	AMS 05
Station Name	Mannix
General description	The site is located north of Fort McMurray near Suncor site.
Community	NA
Station Address	NA
Station Type	Compliance
Area Land Use	Industrial
Angle of elevation to nearby buildings	45 degrees
Average building height in area	NA
Airflow Restrictions (yes/no)	North Yes East No South no West No
Nearest Tree	Distance 100 metres Height 20 metres
Sample Manifold Type	Glass stack/Glass Manifold
Meteorological Tower Information	Height 10 metres Type Aluma crank-up tower Position Attached to West end of monitoring shelter
Station Install Date	NA
Station Origin	Donated by Industry
Site Preparation	Level gravel pad

Table 2.0 – General Site Information

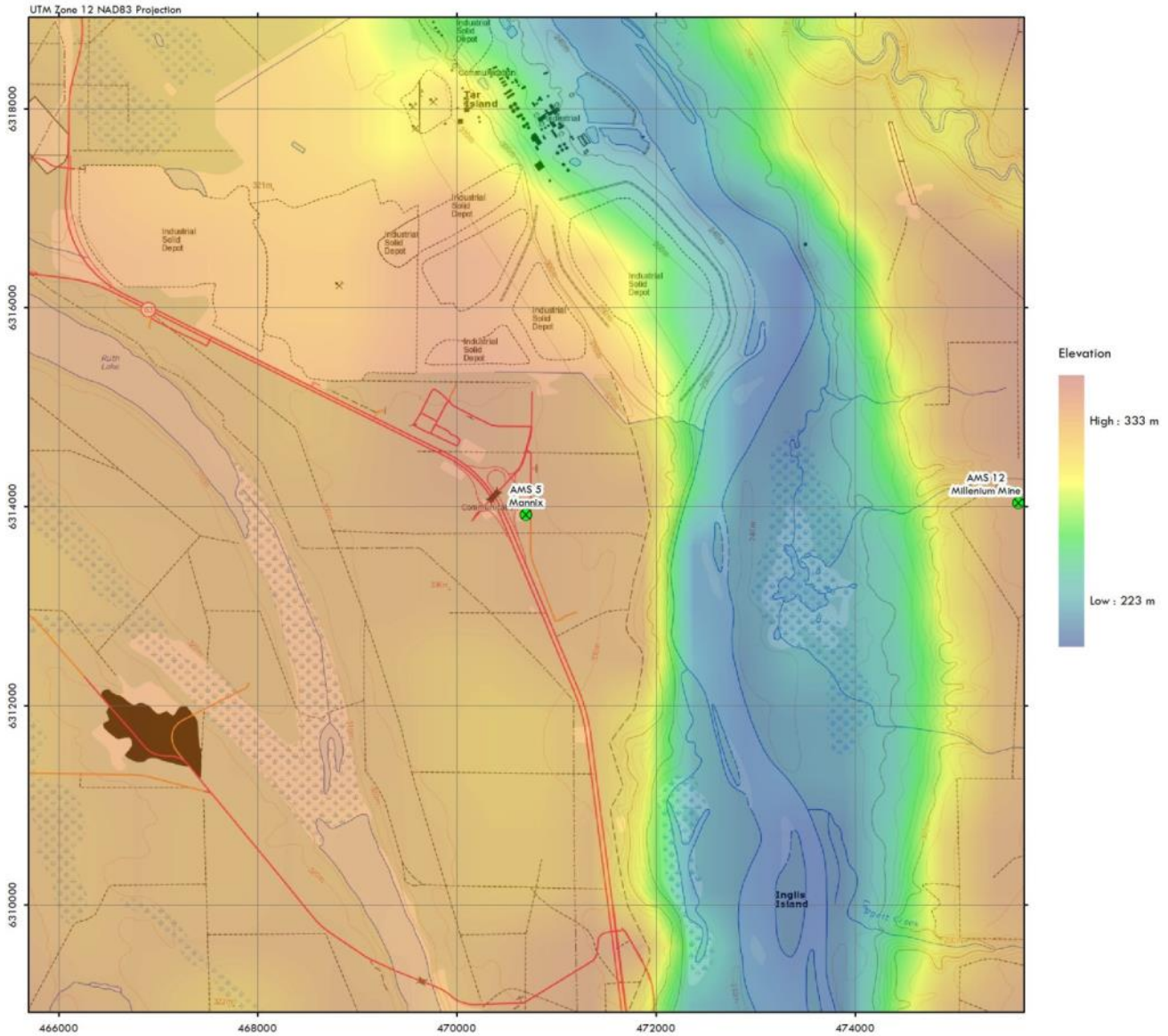
Localized Sources

Type	Distance	Description		
Industrial	300m	Storage tank complex. Possible source of detectable emissions.		
Name	Type	Traffic Volume	Distance (m)	Description
Roadway	Industrial Roadway	Med	100	Paved Road. Frequented by heavy equipment, tractor trailers and pickup trucks.

Table 3.0 – Local Source Information

Area Topographic Map

Figure 2.0 – Area Topographic map showing AMS 05 – Mannix



Ariel Photo

Figure 3.0 – Ariel photo showing AMS05 - Mannix



Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station

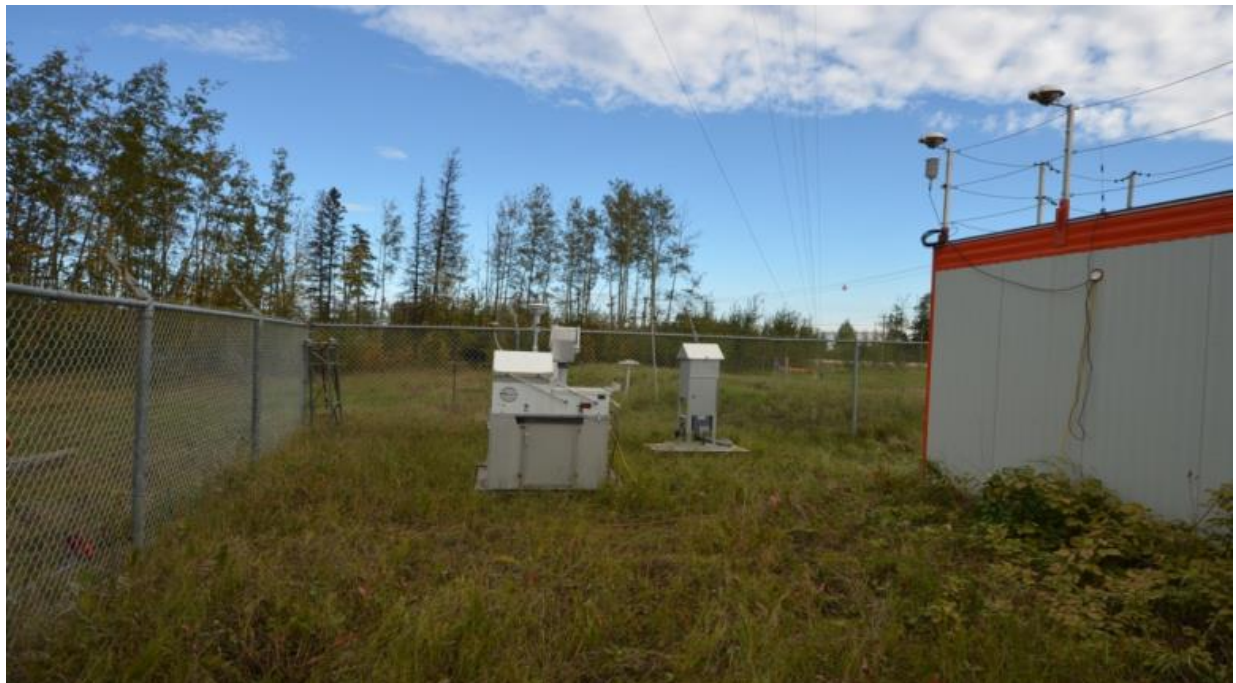


Figure 4.1 – EC/PM Sampler & High Volume PAH Sampler



Figure 4.2 – Passive Samplers



Figure 4.3 – Environ looking North



Figure 4.4 – Environ looking East



Figure 4.5 – Environ looking South



Figure 4.6 – Environ looking West

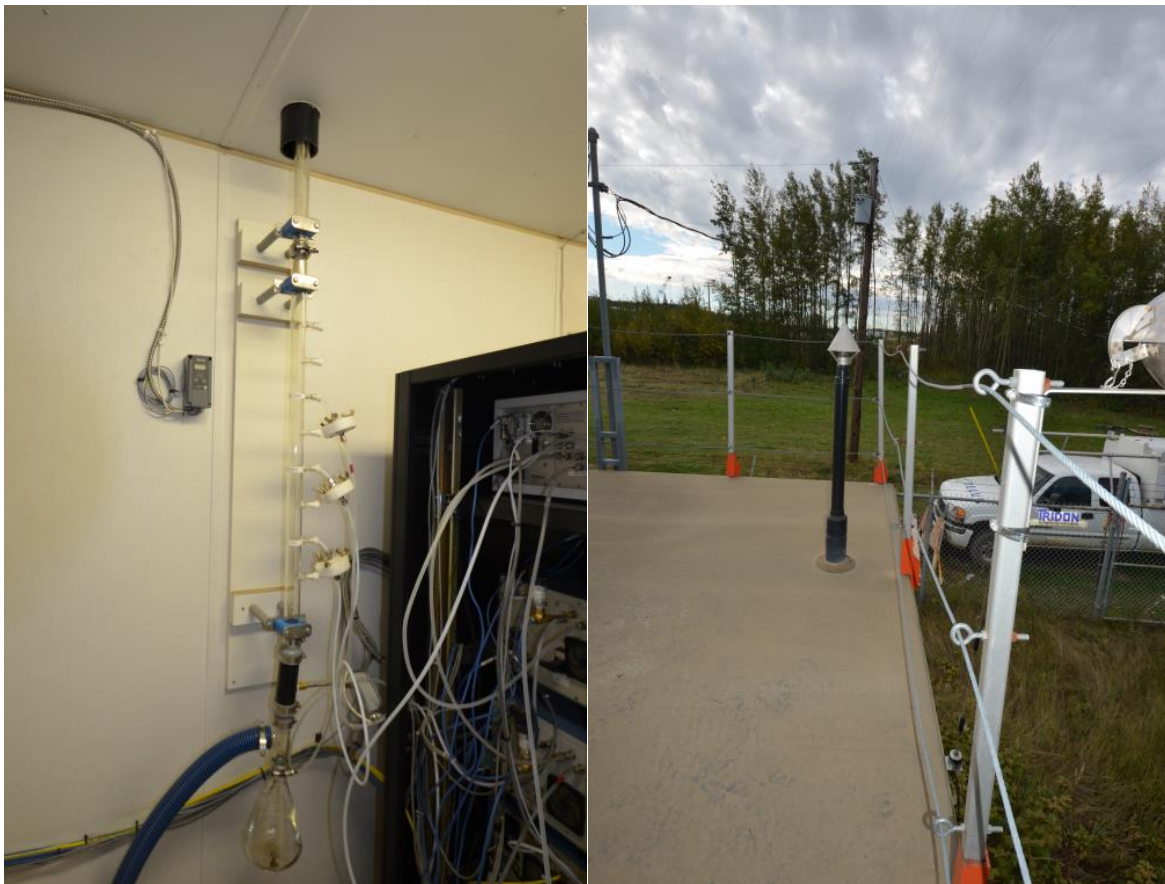


Figure 4.7 –Indoor Sample Manifold & Outdoor Sample Inlet

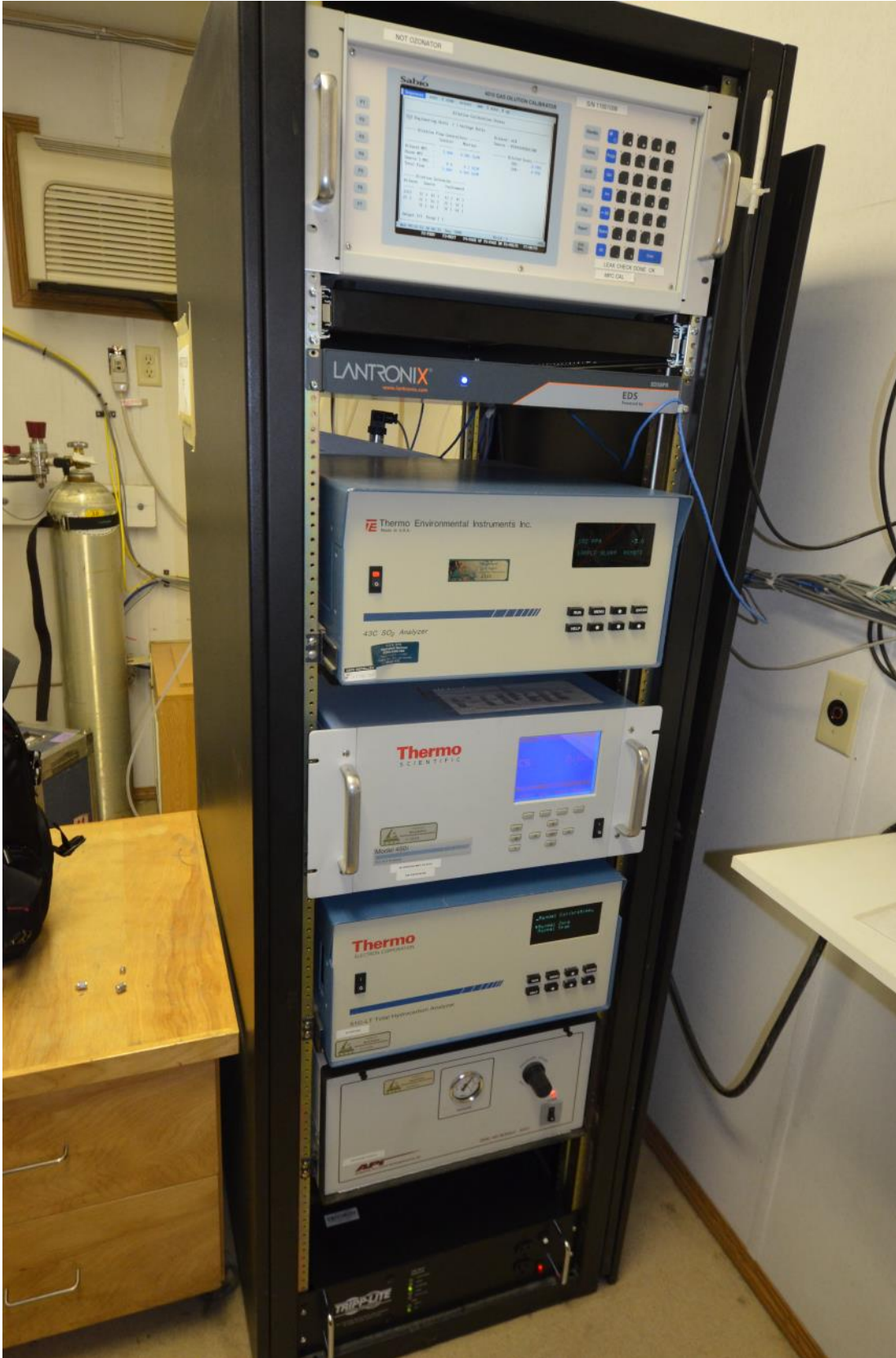


Figure 4.8 –Instrument Rack



Figure 4.9 –Tower Base



Figure 4.10 –Tower



Figure 4.11 –Tower Data Logger

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
SO2	Sulfur Dioxide	Thermo Instruments	43c	65736350	0-1000ppb	Pulsed Fluorescence	3	1
H2S	Hydrogen Sulfide	Thermo Instruments	450i	815129108	0-100ppb	Pulsed Fluorescence paired with a internal Thermo Oxidizer	3	1
THC	Total Hydrocarbons	Thermo Instruments	51C	330202750	0-25ppm	Flame Ionization Detector	3	1
PM2.5	Particulate Matter <2.5um. Integrated Sampling	R&P	Partisol 2000	200FB211141009	N/A	Inertial Separator and Cartridge Filter	2	NA
PAH	Polly Aromatic Hydrocarbon. Integrated Sampling	Tish Environmental	5007	3281	N/A	Canister / Filter Sampler	2	NA
WS	Wind Speed	RM Young	81000	NA	0-80KPh	Three Way Sonic Sensor	20/45/90	NA
WD	Wind Direction	RM Young	81000	NA	0-360 Degrees	Three Way Sonic Sensor	20/45/90	NA
VW	Vertical Wind	RM Young	81000	NA	0-80KPh	Three Way Sonic Sensor	20/45/90	NA
AT	Ambient Temp	Visala	HMP155	NA	-80 to +60 Deg C	Thermometer	2	NA
RH	Relative Humidity	Visala	HMP155	NA	0-100%	Measurement is based on measuring voltage across a capacitive film polymer sensor.	2	NA

Table 4.0 - Analytical Equipment in AMS 05

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger and peripherals such as relay switches and data storage	Campbell Scientific	CR3000	2085
ZAG	Zero Air Generator	API	M701	1083
HVAC	Wall Mount Unit	Bard	NA	NA
Shelter / Building	Air Quality Monitoring Trailer	C&V	NA	5AA81407
Gas Dilution Calibrator	Uses Mass Flow Controllers to dilute and deliver calibration gasses at concentrations required for multipoint instrument calibrations, troubleshooting and daily reference points.	Sabio	4010	11551008

Table 5.0 - Support Equipment in AMS 05

Wind Rose

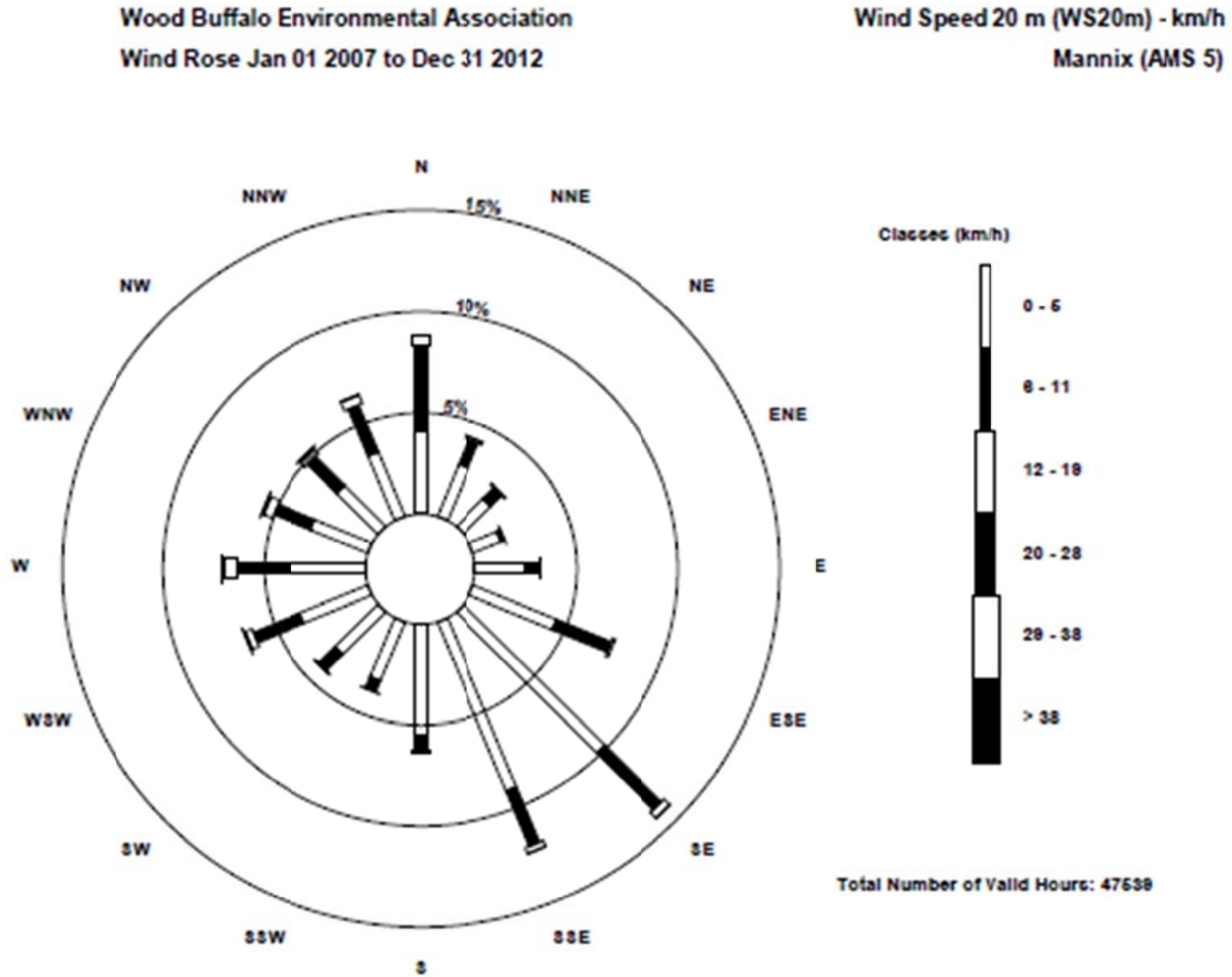


Figure 5.0 – AMS 05 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 06 – Patricia McInnes

February 2013

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Network Background

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The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

Since 1998 WBEA has maintained semi-continuous (intermittent) sampling for PM2.5, PM10, VOC and PAH. The sampling for intermittent monitoring has evolved with a better understanding of technology, analytical laboratory methods and sample deployment and collection methods. Intermittent samples in the WBEA ambient air monitoring network are taken every 6 days for a 24-hour period. The sampling schedule and procedures are consistent with Environment Canada’s National Air Pollution Surveillance program.

STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH	PRECIP
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

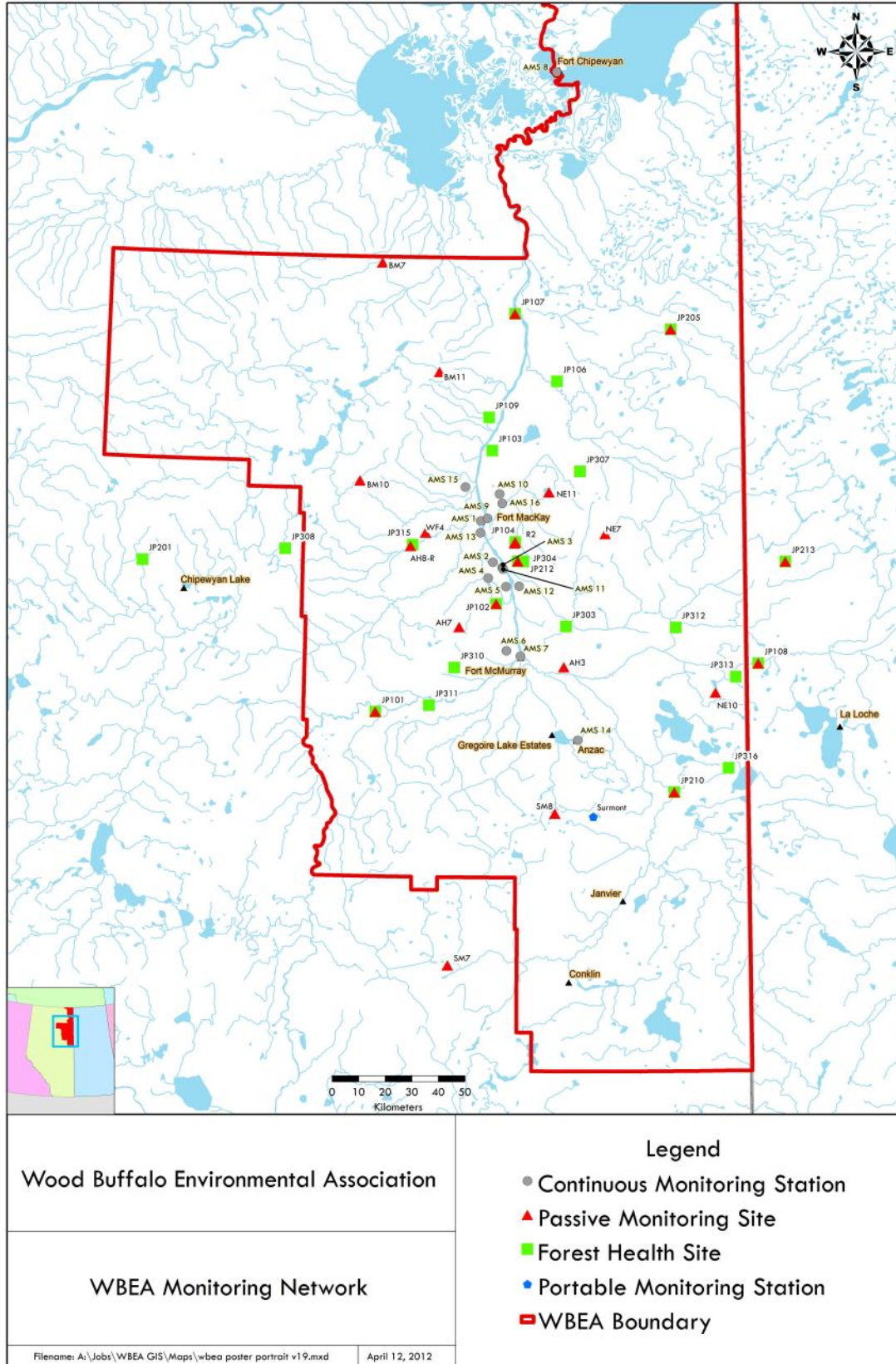


Figure 1.0 – WBEA Monitoring Network Sites

AMS 01 – Patricia McInnes Station Details

General Site Information

The Patricia McInnes station was installed in 1997 as a community station to monitor in the West end of Fort McMurray in the Timberlea subdivision. It is situated on a gravel pad near a local recreation area and baseball field.

Item	Description
Station ID	AMS 06
Station Name	Patricia McInnes
General description	The site is located in West end of Fort McMurray in the Timberlea Sub Division.
Community	Fort McMurray
Station Address	NA
Station Type	Community
Area Land Use	Residential
Angle of elevation to nearby buildings	0 degrees
Average building height in area	NA
Airflow Restrictions (yes/no)	North no East No South no West No
Nearest Tree	Distance 10 metres Height 5 metres
Sample Manifold Type	Stainless Steel stack/Glass
Meteorological Tower Information	Height 10 metres Type Aluma crank-up tower Position Attached to South end of monitoring shelter
Station Install Date	1997
Station Origin	Purchased new
Site Preparation	Level gravel pad

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
Recreation Complex	To the North / North East and North West of the station approximately 50m	Maintenance of the fields and recreation complex. Possible PM and NOx sources. Possibility that herbicides are being sprayed on the fields which lends a risk of a possible VOC source.		
Baseball Field	To the North / North East and North West of the station approximately 500m	Maintenance of the fields and recreation complex. Possible source of PM and NOx.		
Residential Subdivision	To the South / South East of the station approximately 100m	Wood burning observed in the area periodically in wood stoves and backyard fire pits. Possible PM source		
Name	Type	Traffic Volume	Distance (m)	Description
Roadway	Residential Roadway	low	200	Paved Road

Table 3.0 – Local Source Information

Area Topographic Map

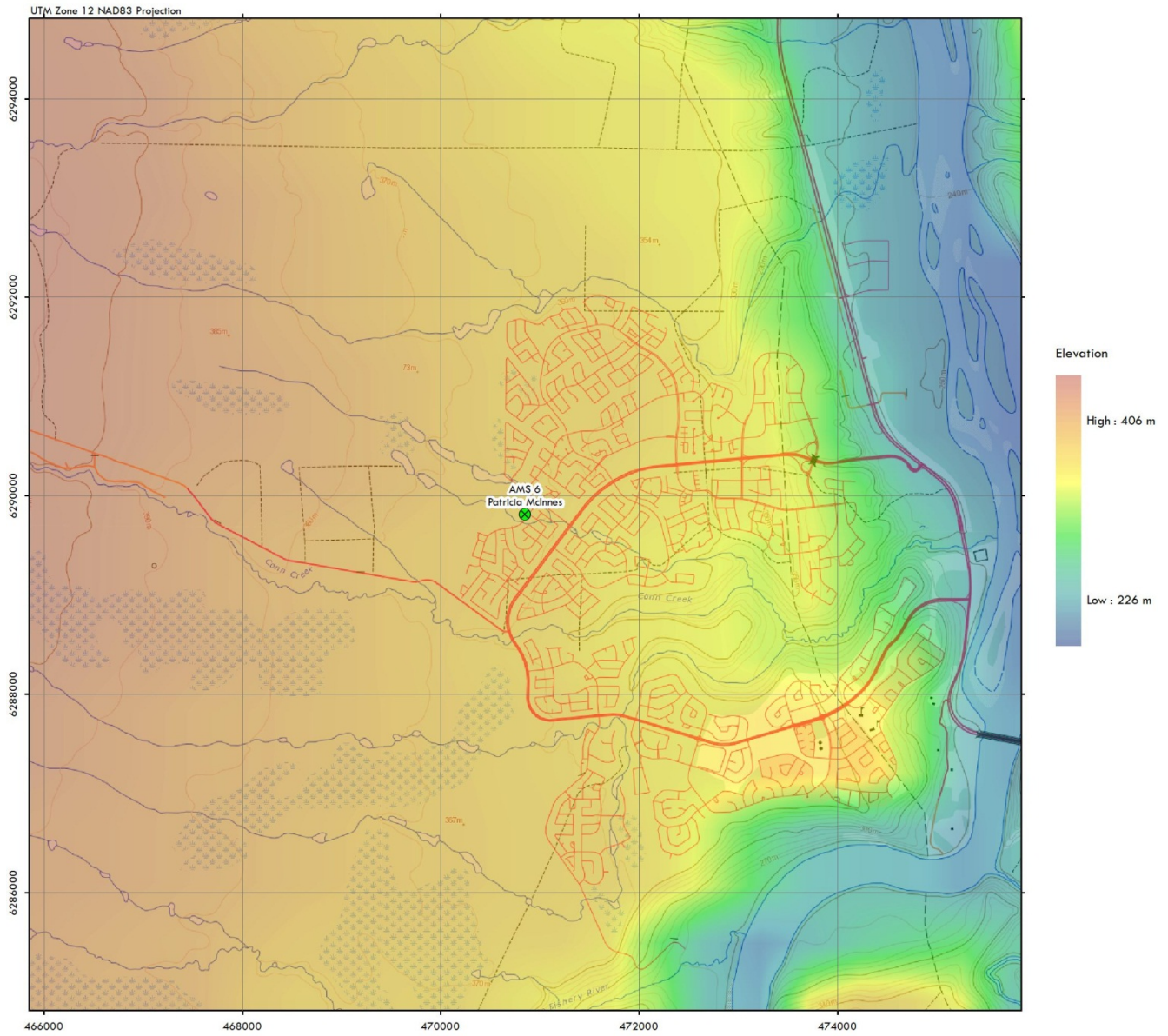


Figure 2.0 – Area Topographic map showing AMS 06 – Patricia McInnes

Ariel Photo



Figure 3.0 – Ariel photo showing AMS06 - Patricia McInnes

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station looking west

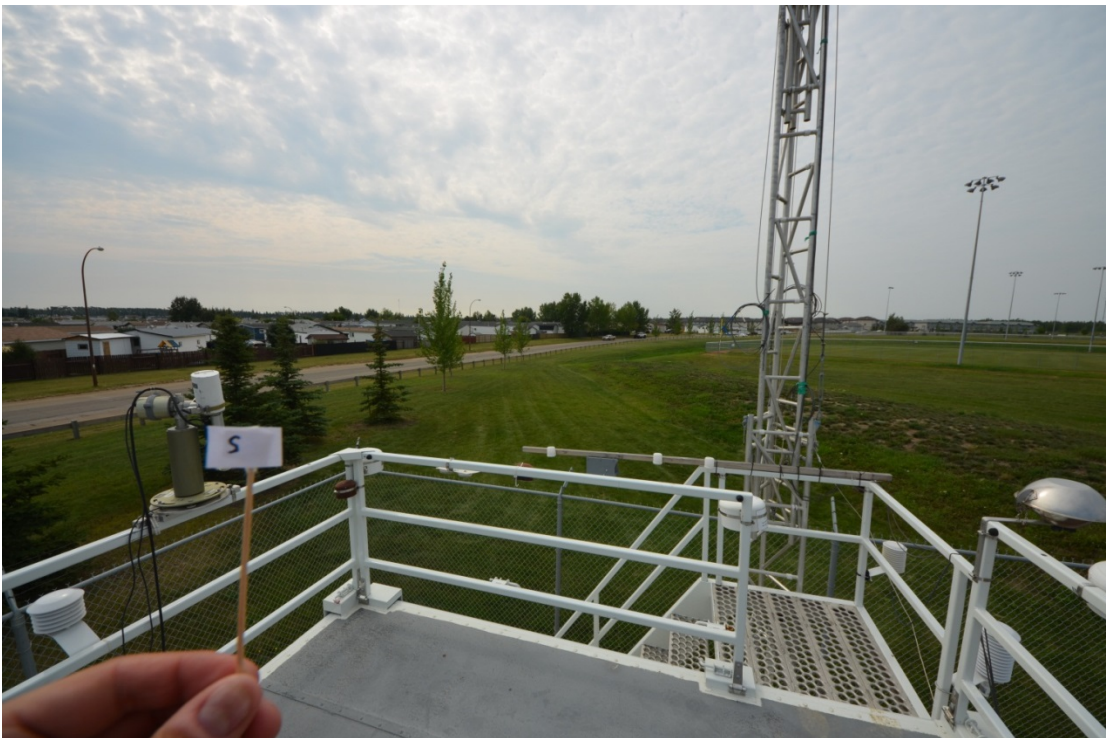


Figure 4.1 – monitoring compound looking south



Figure 4.2 – monitoring compound looking west and sampling deck



Figure 4.3 monitoring compound looking east



Figure 4.4 – monitoring compound looking north



Figure 4.5 – Instrument rack



Figure 4.6 – SHARP 5030 Continuous PM2.5



Figure 4.7 – Manifold



Figure 4.8 – Pump Cabinet

Equipment Inventory

Parameter Measured		Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)	
							Ground	Shelter
SO2	Sulfur Dioxide	Thermo Instruments	43i	1008841397	0-1000ppb	Pulsed Fluorescence	4	1
TRS	Total Reduced Sulfur	Thermo Instruments	43i	1008841398	0-100ppb	Pulsed Fluorescence	4	1
TRS Converter	Total Reduced Sulfurs	CD NOVA	CDN-101	460	NA	Thermal Oxidizer paired with 43iTLE for TRS measurement	4	1
NO2	Nitrogen Dioxide	Thermo Instruments	17c (analyzer)	622817829 (analyzer)	0-1000ppb	Chemiluminescence	4	1
NH3	Ammonia	Thermo Instruments	17c (analyzer and converter)	622817829 (analyzer) / 617817360 (external NH3 converter)	0-2500ppb	Chemiluminescence	4	1
O3	Ozone	Thermo Instruments	49c	5894434	0-500ppb	UV Photometric	4	1
THC/NMHC	Total Hydrocarbons/Non-Methane Hydrocarbons	Thermo Instruments	55i	1118148494	0-50ppm	Gas Chromatography and Flame Ionization	4	1
PM2.5	Particulate Matter <2.5um Continuous	Thermo Instruments	5030	4142	0-1000ug/m3	Synchronized Nephelometric/Radiometric Particulate Mass Monitor	4	1
Hg	Total Gaseous Mercury	Tekran	2537A	89	0-1000ng	Uses Cold Vapour Atomic Fluorescence Spectrometry to measure total gaseous mercury in a sample. Employs two cartridges to do this in order to allow continuous sampling.	4	1
ATM	Optical Thickness and size distribution of Atmosphere (Ozone) / Particle Size and Distribution / Perceptible Water	CIMEL	CE18-2	C902613	NA	Measures solar transmittance and radiance through a large range of scattering angles derived from the use of various filters specific to the following wavelengths (340,380,440,500,675,870,940,1020nm)	4	1
VOC	Volatile Organic Compounds. Integrated Sampling	Tish Environmental	TE-123	1021	N/A	Canister Sampler	4	1
PM2.5	Particulate Matter <2.5um. Integrated Sampling	R&P	Partisol 2000	200FB210401004	N/A	Inertial Separator and Cartridge Filter	2	NA

PM10	Particulate Matter <10um. Integrated Sampling	R&P	Partisol 2000	200FB210301003	N/A	Inertial Separator and Cartridge Filter Cartridge Filter	2	NA
PM2.5	Particulate Matter <2.5um Continuous	R&P	TEOM 1400 (sensor) /1400A (control unit)	140AB213519612 (1400) / 140AB233340011 (1400A)	0-1000ug/m3	Incorporates a Tapered Element Oscillating Microbalance to measure continuous Particulate Matter in the <2.5 um range.	4	1
PAH	Polly Aromatic Hydrocarbon. Integrated Sampling	Tish Environmental	TE-1000	1358	N/A	Canister / Filter Sampler	2	NA
Precip	Automated Sequential Precipitation Sampler	ASPS	ASPS	ASPS01	N/A	Automated precipitation collector capable of collecting several different sets of samples simultaneously. Sample sizes and types of analysis can vary depending on instrument's configuration and applicable sampling programs. Samples are kept in a climate controlled environment until removal. Activation of sampling mechanism similar to that of the AUC MIC samplers used by AENV.	2	NA
Precip	AENV Precipitation Sampler. Part of integrated sampling program.	AUC	MIC	733	NA	Wetness Sensor Activates a Motorized Lid Which Opens and Allows Precipitation to be Collected in a Bucket.	3	1
WS	Wind Speed	Met One	010C	NA	0-80KPh	Anemometer	10	7
WD	Wind Direction	Met One	020C	NA	0-360 Degrees	Wind Vein	10	7
AT	Ambient Temp	Visala	HMP155	NA	-80 to +60 Deg C	Thermometer	4	1
RH	Relative Humidity	Visala	HMP155	NA	0-100%	Measurement is based on measuring voltage across a capacitive film polymer sensor.	4	1

Table 4.0 - Analytical Equipment in AMS 06

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger and peripherals such as relay switches and data storage	Campbell Scientific	CR3000	2582
ZAG	Zero Air Generator	Teledyne	M701	4428
HVAC	Wall Mount Unit	Bard	NA	NA
Shelter / Building	Air Quality Monitoring Trailer	ITB	NA	NA
Gas Dilution Calibrator	Uses Mass Flow Controllers to dilute and deliver calibration gasses at concentrations required for multipoint instrument calibrations, troubleshooting and daily reference points.	Sabio	4010	11031107

Table 5.0 - Support Equipment in AMS 06

Wind Rose

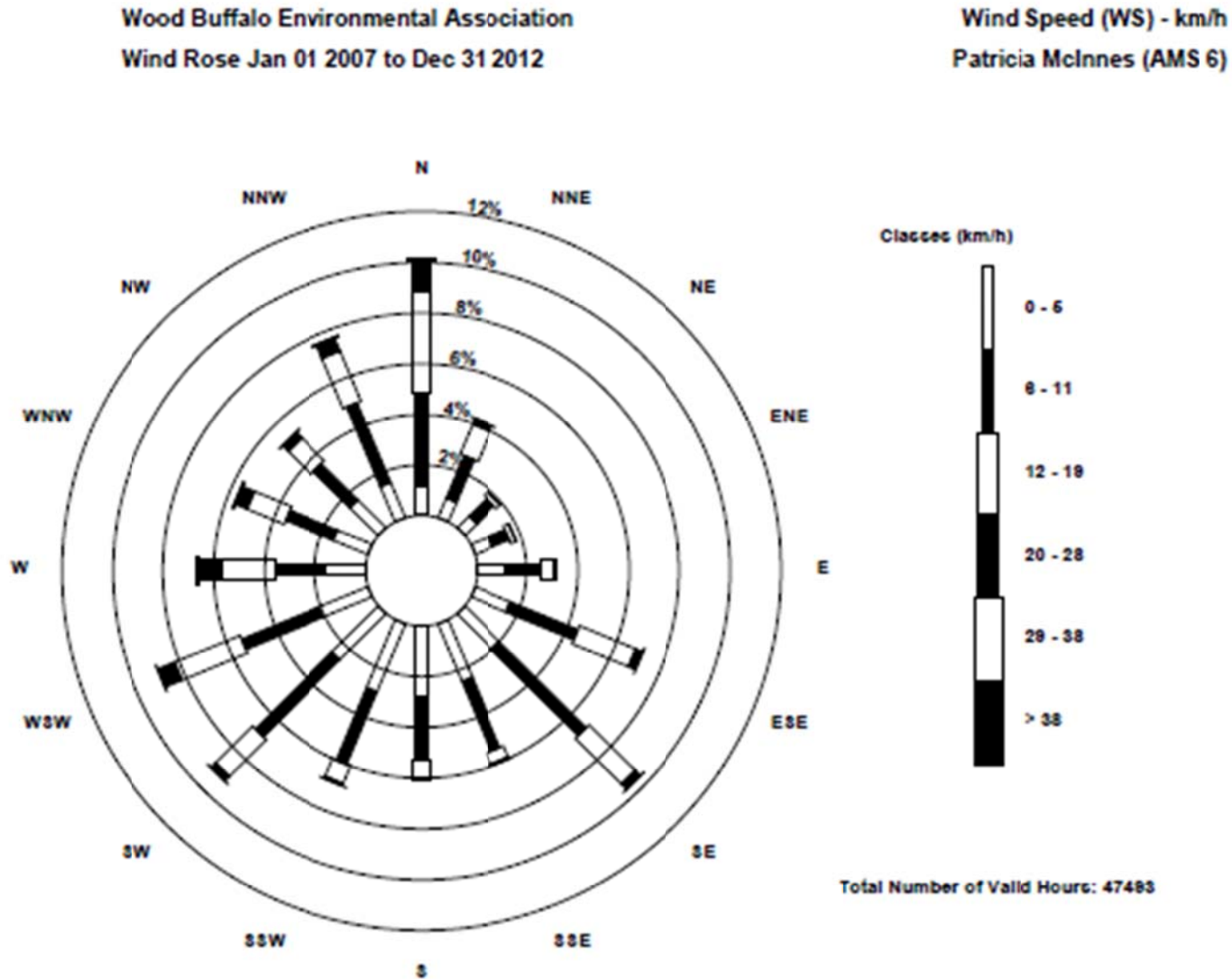


Figure 5.0 – AMS 06 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 07 – Athabasca Valley

January 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

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The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS																NON-CONTINUOUS									
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X	X	X		X		X	X	X		X
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

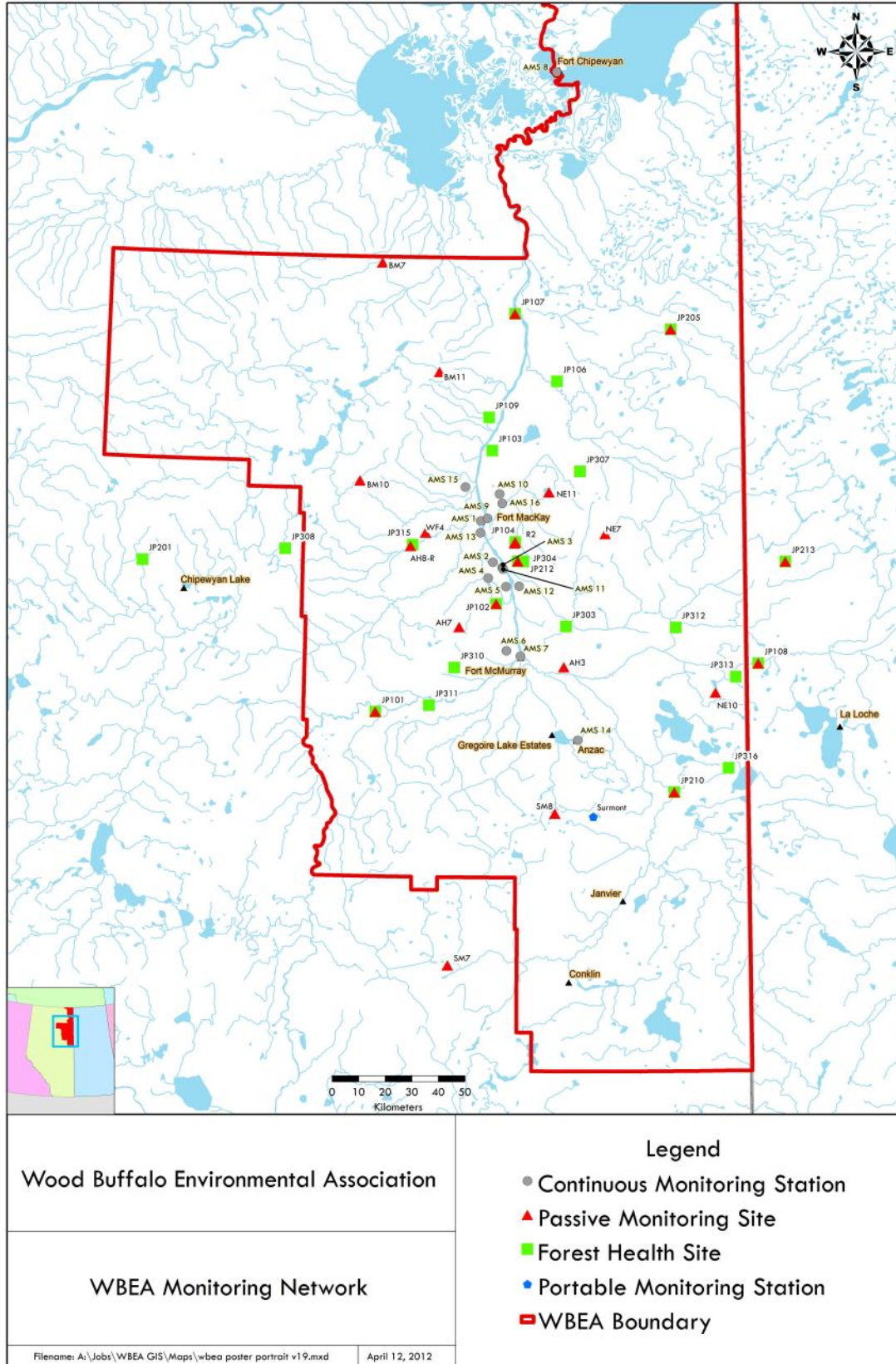


Figure 1.0 – WBEA Monitoring Network Sites

AMS 07 – Athabasca Valley Station Details

General Site Information

The Athabasca Valley Station is located just off the road that takes one to McDonald Island. This station was built and operated by Alberta Environmental Protection until the WBEA took it over in the fall of 1997.

Item	Description									
Station ID	AMS 07									
Station Name	Athabasca Valley									
General description	Located just off the road to Macdonald Island, near the Athabasca river.									
Community	Fort McMurray									
Station Address	NA									
Station Type	Community									
Area Land Use	Recreation									
Angle of elevation to nearby buildings	0 degrees									
Average building height in area	NA									
Airflow Restrictions (yes/no)	<table border="1"> <tr> <td>North</td> <td>No</td> <td>East</td> <td>No</td> </tr> <tr> <td>South</td> <td>No</td> <td>West</td> <td>No</td> </tr> </table>	North	No	East	No	South	No	West	No	
North	No	East	No							
South	No	West	No							
Nearest Tree	<table border="1"> <tr> <td>Distance</td> <td>Meters</td> <td>81</td> <td>Height</td> <td>10 meters</td> </tr> </table>	Distance	Meters	81	Height	10 meters				
Distance	Meters	81	Height	10 meters						
Sample Manifold Type	Stainless Steel stack/Glass									
Meteorological Tower Information	<table border="1"> <tr> <td>Height</td> <td>Meters</td> <td>10 meters</td> </tr> <tr> <td>Type</td> <td colspan="2">Aluma crank-up tower</td> </tr> <tr> <td>Position</td> <td colspan="2">Attached to North end of monitoring shelter</td> </tr> </table>	Height	Meters	10 meters	Type	Aluma crank-up tower		Position	Attached to North end of monitoring shelter	
Height	Meters	10 meters								
Type	Aluma crank-up tower									
Position	Attached to North end of monitoring shelter									
Station Install Date	August 2011									
Station Origin	Purchased new									
Site Preparation	Level gravel pad									

Table 2.0 – General Site Information

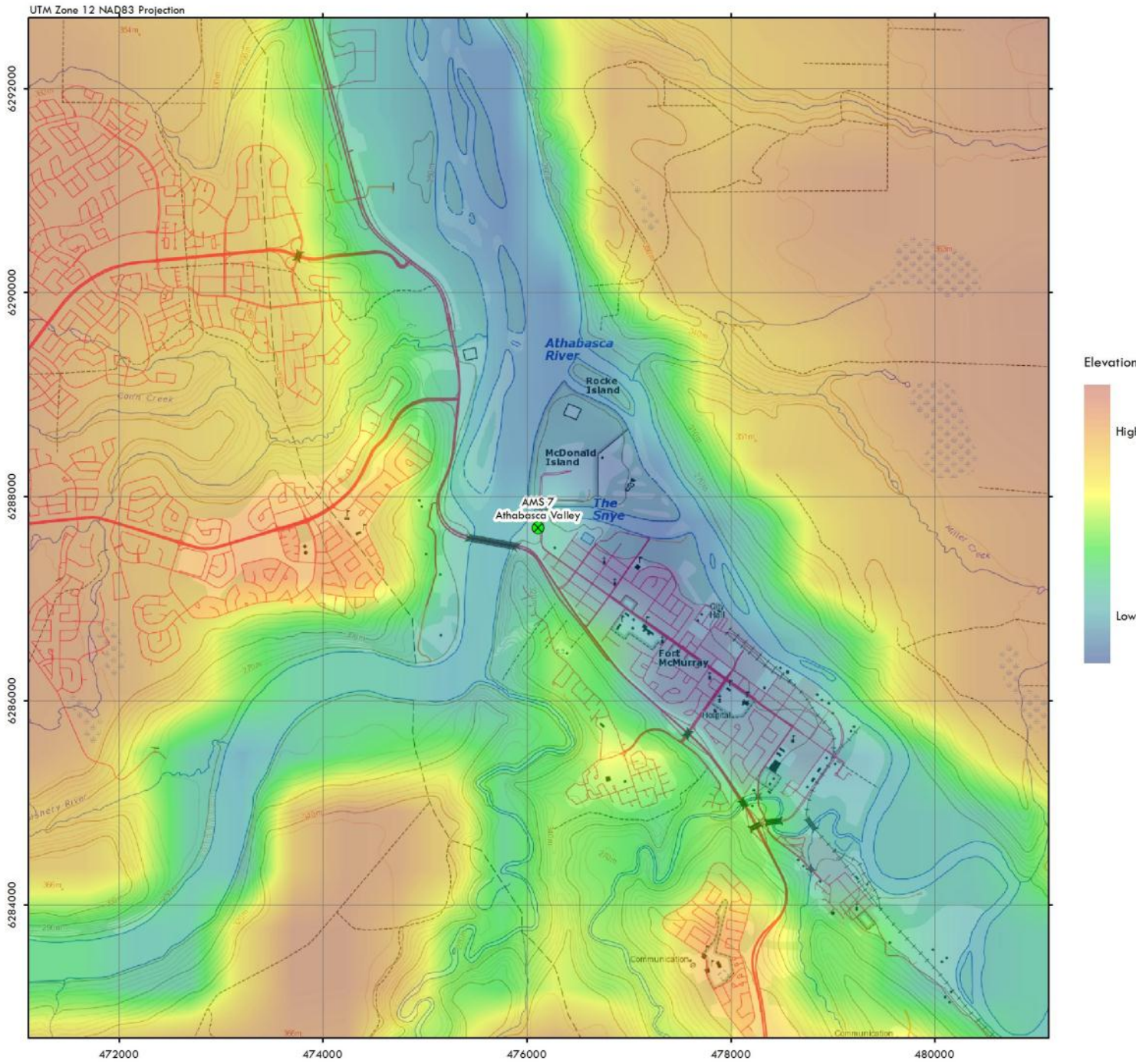
Localized Sources

Type	Distance	Description		
NA	NA	NA		
Name	Type	Traffic Volume	Distance (m)	Description
Macdonald Island BLVD	Boulevard	High	15 meters	Fully paved roadway

Table 3.0 – Local Source Information

Area Topographic Map

Figure 2.0 – Area Topographic map showing AMS 07 – Athabasca Valley Station



Ariel Photo

Figure 3.0 – Ariel photo showing AMS 07 – Athabasca Valley Station



Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.2 – Sampling Deck



Figure 4.6 – Environ looking North



Figure 4.7 – Environ looking East



Figure 4.8 – Environ looking South



Figure 4.9 – Environ looking West

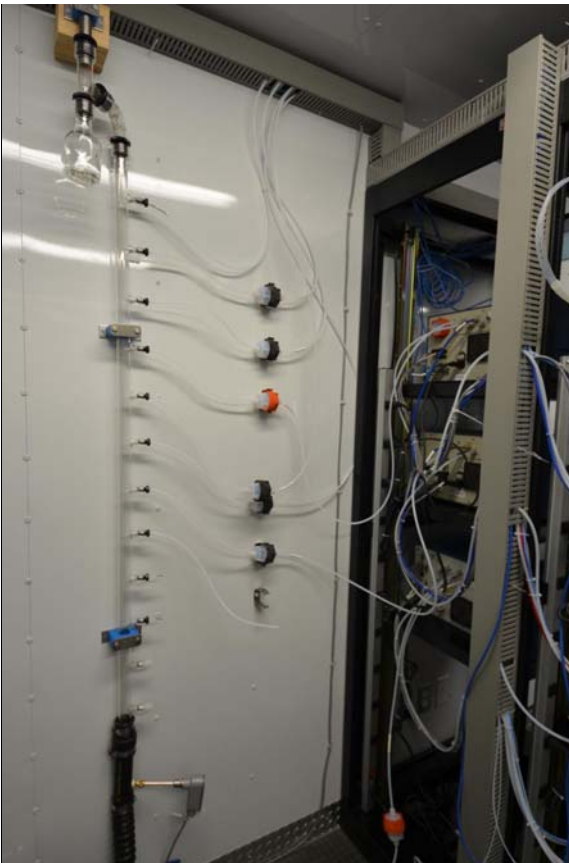


Figure 4.10 –Indoor Sample Manifold



Figure 4.11 – East Rack (on the left) & West Rack

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
PM 2.5	Particulate Matter <2.5µm	Thermo Environmental	SHARP 5030	E-781	0 – 1000 µg.m ³	Nephelometer & Beta Attenuation	4	1
NMHC	Non-Methane Hydrocarbons	Thermo Environmental	55i	1118148494	0 – 25 ppm	FID	4	1
O3	Ozone	Thermo Environmental	49i	1118148500	0 – 500 ppb	UV Absorption	4	1
NO2	Oxides of Nitrogen	Thermo Environmental	42C	601114773	0 – 1000 ppb	Chemiluminescence	4	1
NO2	Trace Level Oxides of Nitrogen	Thermo Environmental	42i-TL	0917536332	0 – 200 ppb	Chemiluminescence	4	1
CO	Carbon Monoxide	Thermo Environmental	48C	508011060	0 – 50 ppm	Gas Filter Correlation	4	1
SO2	Sulphur Dioxide	Thermo Environmental	43C	607415781	0 – 1000 ppb	UV Fluorescence	4	1
TRS	Total Reduced Sulphur	Thermo Environmental	45C	630718530	0 – 100 ppb	Thermal Conversion & UV Fluorescence	4	1
VOC	Volatile Organic Compounds	Xontech	910A	4079	NA	Sample Control	4	1
WS	Wind Speed	Met One	010-C	NA	0 – 80 Km/Hr	Chopped Optical	10	7
WD	Wind Direction	Met One	020-C	NA	0 – 360 degrees	Potentiometer	10	7
AT	Ambient Temperature	Vaisala	HMP155	NA	-50 - +50 degrees C	Thermistor	4	1
PM 2.5	Particulate Matter <2.5µm	Thermo	Partisol 2000	2000A203999710	NA	Sample Control	3	NA
PM 10	Particulate Matter <10µm	Thermo	Partisol 2000	NA	NA	Sample Control	3	NA
PAH	Polycyclic Aromatic Hydrocarbons	Tisch	TE-1000	NA	NA	Sample Control	3	NA

Table 4.0 - Analytical Equipment in AMS 07

Name	Description	Make	Model	Serial Number
Data logger	Micro logger	Campbell	CR3000	5563
Computer	PC	Dell	Optiplex330	5BQOVF
Zero air	Zero air generator	Teledyne API	701	3411
Zero air	Zero air supply	API	701	1864
Calibrator	Dynamic calibrator	Sabio engineering	4010	840031
Shelter	10 X 20 foot shelter	ITB	NA	NA
Tower	10 m telescoping tower	Aluma	T-135	NA

Table 5.0 - Support Equipment in AMS 07

Wind Rose

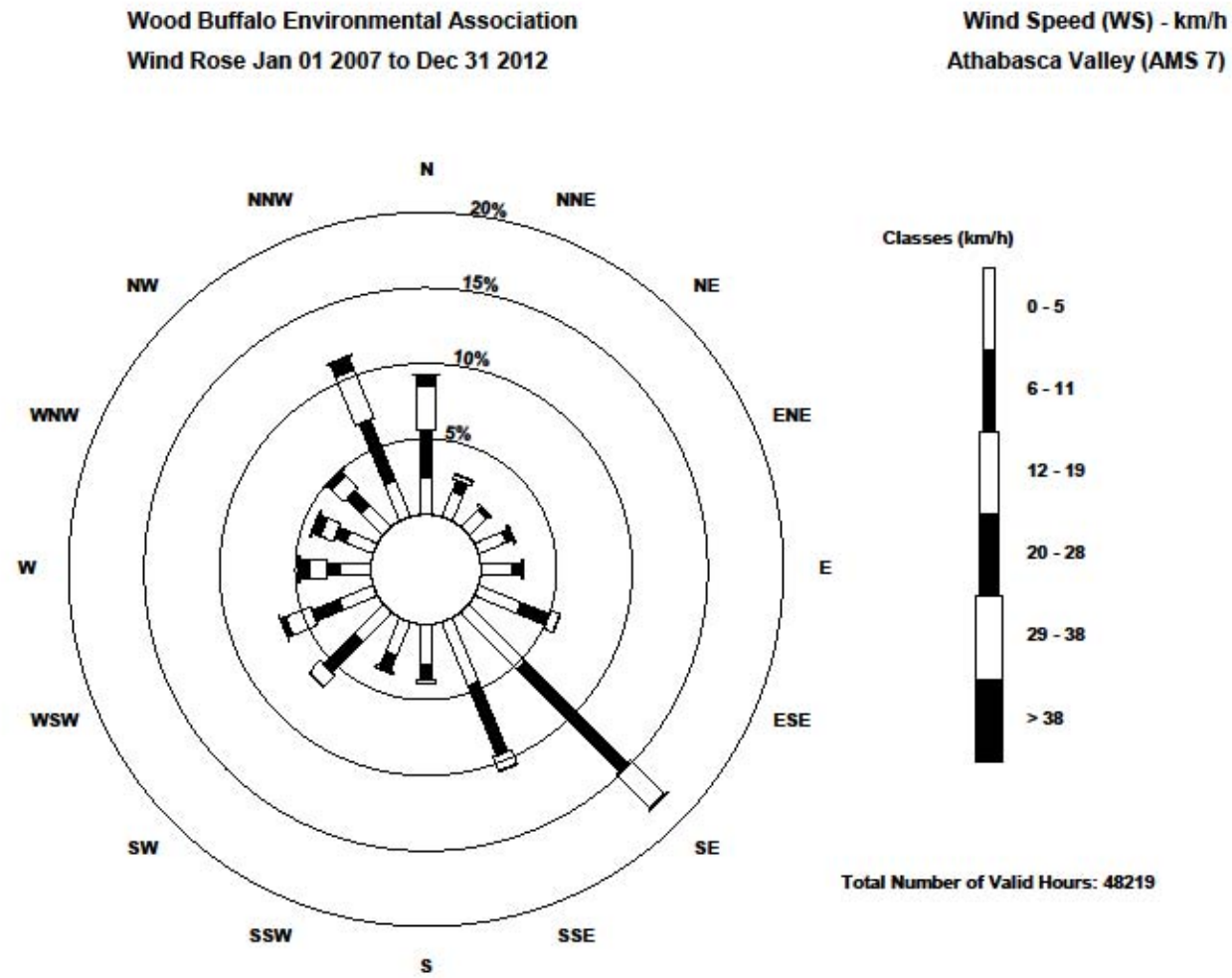


Figure 5.0 – AMS 07 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 08 – Fort Chipewyan

February 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS																NON-CONTINUOUS									
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X		X	
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

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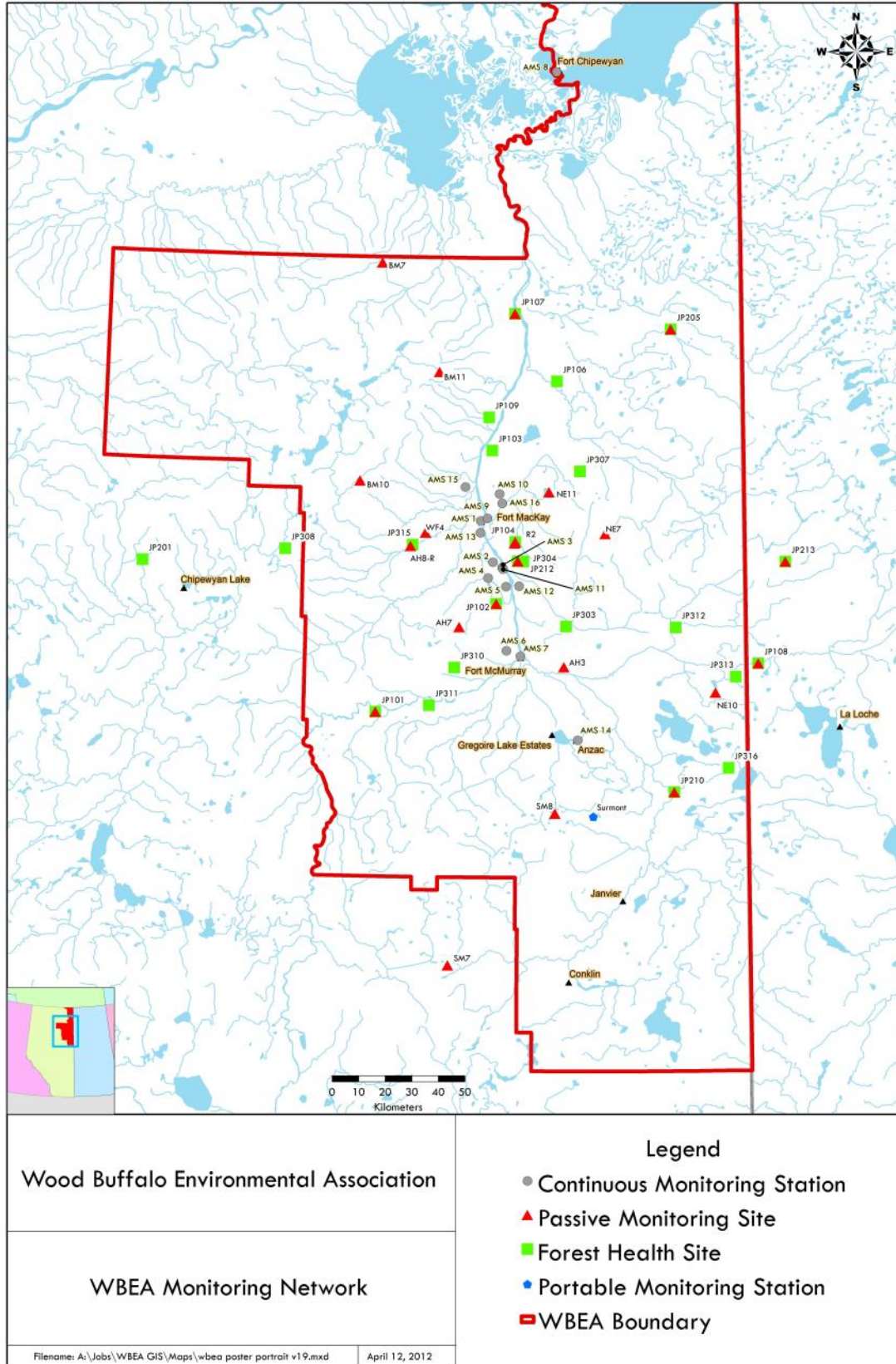


Figure 1.0 – WBEA Monitoring Network Sites

AMS 08 – Fort Chipewyan Station Details

General Site Information

The Fort Chipewyan Station overlooks Lake Athabasca on the outskirts of Fort Chipewyan. This station was constructed during the summer of 1998.

The Fort Chipewyan Station contains analyzers that continuously measure SO₂, O₃, NO, NO₂, NO_x, PM_{2.5}, wind speed and direction, temperature, global radiation, leaf wetness, and humidity.

Item	Description
Station ID	AMS 08
Station Name	Fort Chipewyan
General description	The site is located over 280km far north of Fort McMurray. Station is located at the west end of Fort Chipewyan, on a hill overlooking Lake Athabasca.
Community	Fort Chipewyan
Station Address	NA
Station Type	Community
Area Land Use	Residential
Angle of elevation to nearby buildings	0 degrees
Average building height in area	NA
Airflow Restrictions (yes/no)	North no East No South no West No
Nearest Tree	Distance 10 metres Height 5 metres
Sample Manifold Type	Glass stack/Glass manifold
Meteorological Tower Information	Height 10 metres Type Aluma crank-up tower Position Attached to South end of monitoring shelter
Station Install Date	1998
Station Origin	Purchased new
Site Preparation	Level gravel pad

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
Residential housing.	Approximately 200m South of the station.	Small residential dwelling. Wood burning observed from time to time. Possible source of particulate matter and NO ₂ / NO _x .		
Name	Type	Traffic Volume	Distance (m)	Description
Roadway	Residential Roadway	low	200	Gravel Road

Table 3.0 – Local Source Information

Area Topographic Map

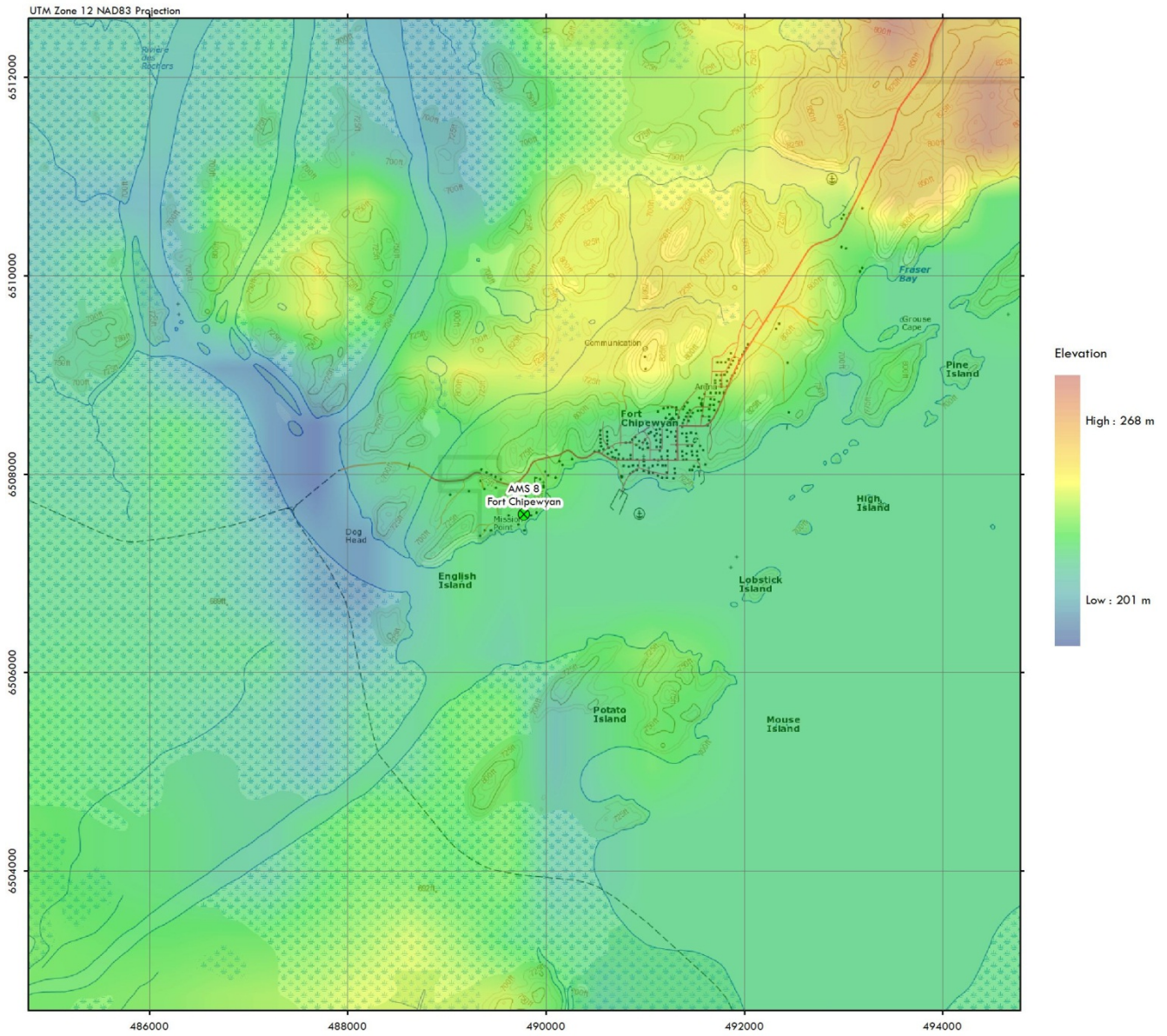


Figure 2.0 – Area Topographic map showing AMS 08 – Fort Chipewyan

Ariel Photo



Figure 3.0 – Ariel photo showing AMS08 – Fort Chipewyan

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station looking North



Figure 4.1 – monitoring compound looking West



Figure 4.2 – monitoring compound looking South

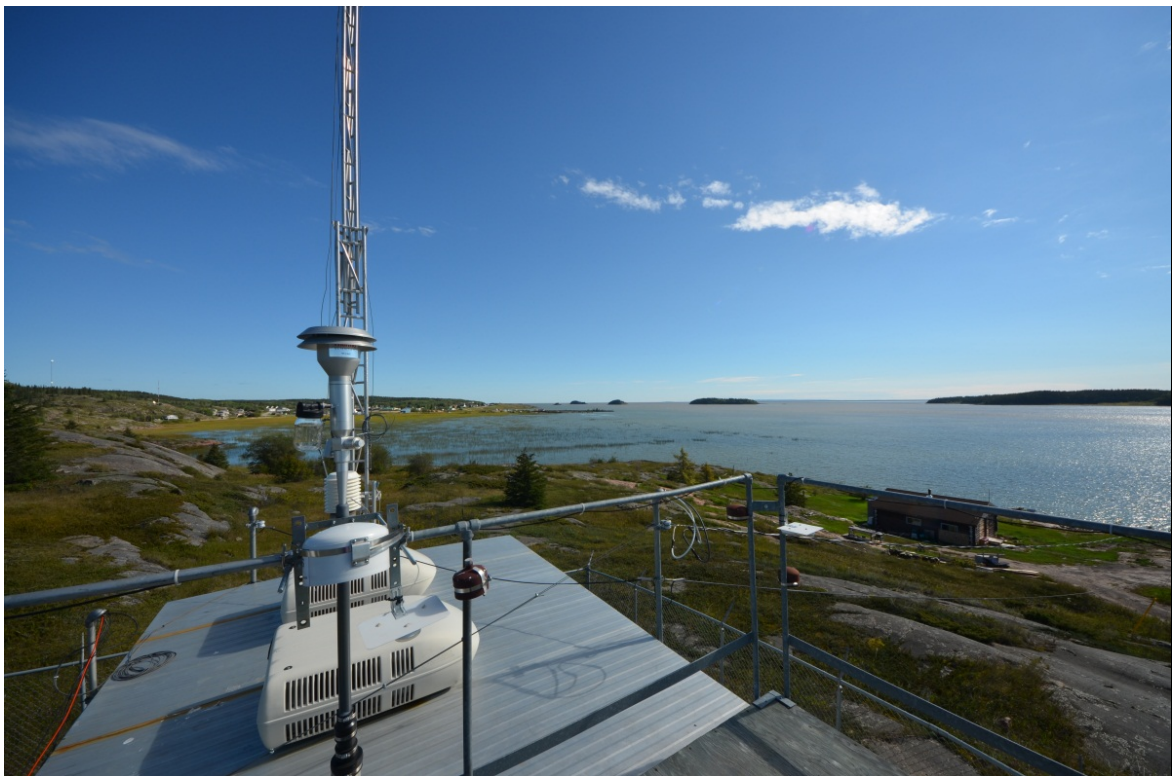


Figure 4.3 monitoring compound looking East



Figure 4.4 Sample Inlet



Figure 4.5 – Tower



Figure 4.6 – Exterior of station looking North



Figure 4.8 – Analyzer Rack

Equipment Inventory

Parameter Measured		Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)	
							Ground	Shelter
SO2	Sulfur Dioxide	Thermo Instruments	43i TL	1136451241	0-20ppb	Pulsed Fluorescence	4	1
NO2	Nitrogen Dioxide	Thermo Instruments	42i	1218153460	0-200ppb	Chemiluminescence	4	1
O3	Ozone	Thermo Instruments	49c	58875321	0-500ppb	UV Photometric	4	1
PM2.5	Particulate Matter <2.5um Continuous	Thermo Instruments	5030	4173	0-1000ug/m3	Synchronized Nephelometric/Radiometric Particulate Mass Monitor	4	1
WS	Wind Speed	Met One	010C		0-80KPh	Anemometer	10	7
WD	Wind Direction	Met One	020C		0-360 Degrees	Wind Vein	10	7
AT	Ambient Temp	Visala	HMP155		-80 to +60 Deg C	Thermometer	4	1
RH	Relative Humidity	Visala	HMP155		0-100%	Measurement is based on measuring voltage across a capacitive film polymer sensor.	4	1
PC	Precipitation	R&P	CS 52202-L			Tipping Bucket	4	1
GR	Global Radiation	Kipp & Zonen	SP Lite			Photovoltaic / Solar Radiation Detection Using a Photodiode Detector.	3	1
LW	Leaf Wetness	Campbell Scientific	CS 237			Measures leaf wetness by simulating a leaf's Surface. Measurement principle is based on a dielectric constant related to the sensors surface.	2	NA

Table 4.0 - Analytical Equipment in AMS 08

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger and peripherals such as relay switches and data storage	Campbell Scientific	CR3000	2575
ZAG	Zero Air Generator	Teledyne	M701	NA
HVAC	Wall Mount Unit	Bard	NA	NA
Shelter / Building	Air Quality Monitoring Trailer	ITB	NA	NA
Gas Dilution Calibrator	Generates calibration gasses at concentrations required for multipoint instrument calibrations, troubleshooting and daily reference points.	Sabio	4010	11561008

Table 5.0 - Support Equipment in AMS 08

Wind Rose

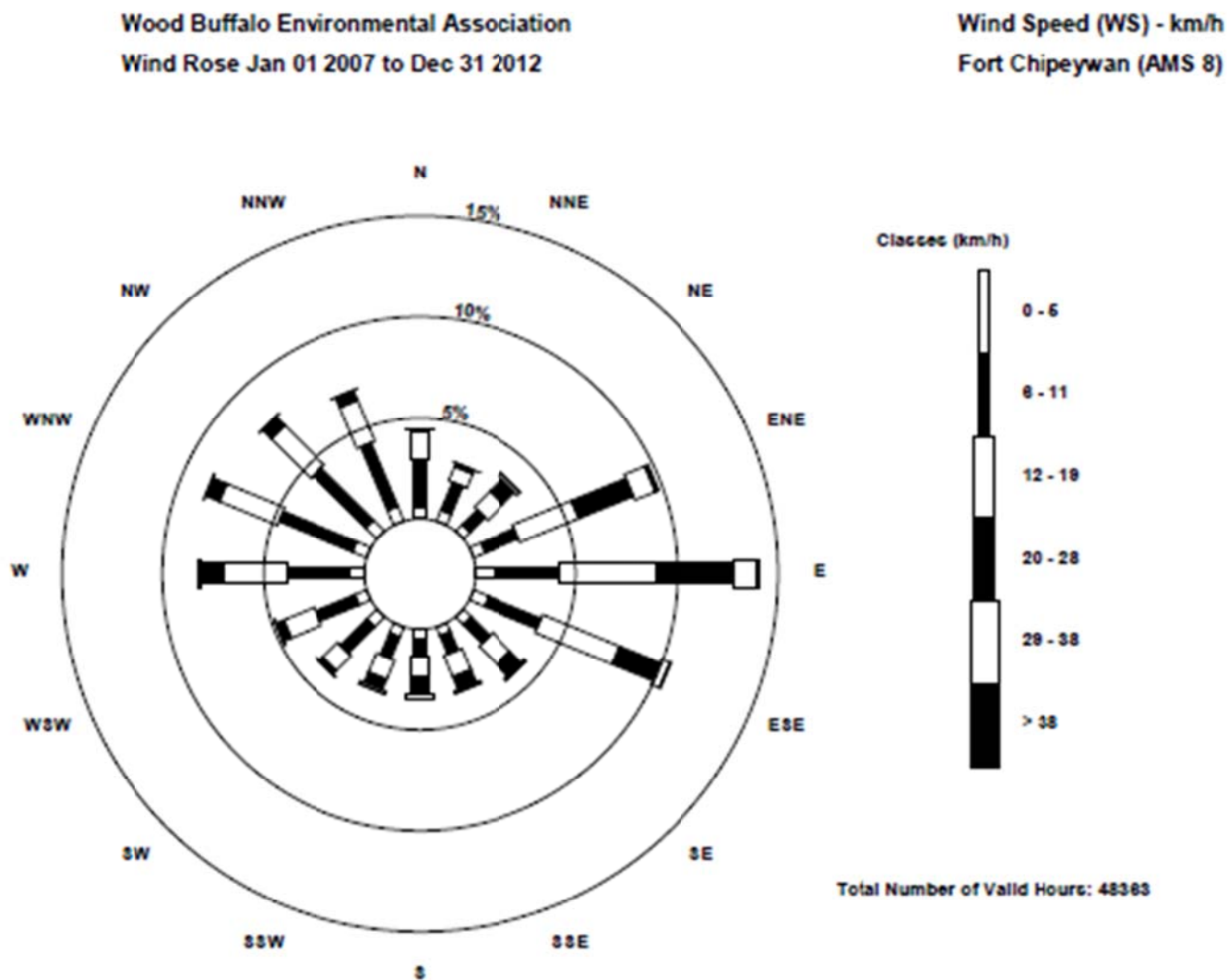


Figure 5.0 – AMS 08 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 09 – Barge Landing

January 2013

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
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Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X			X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

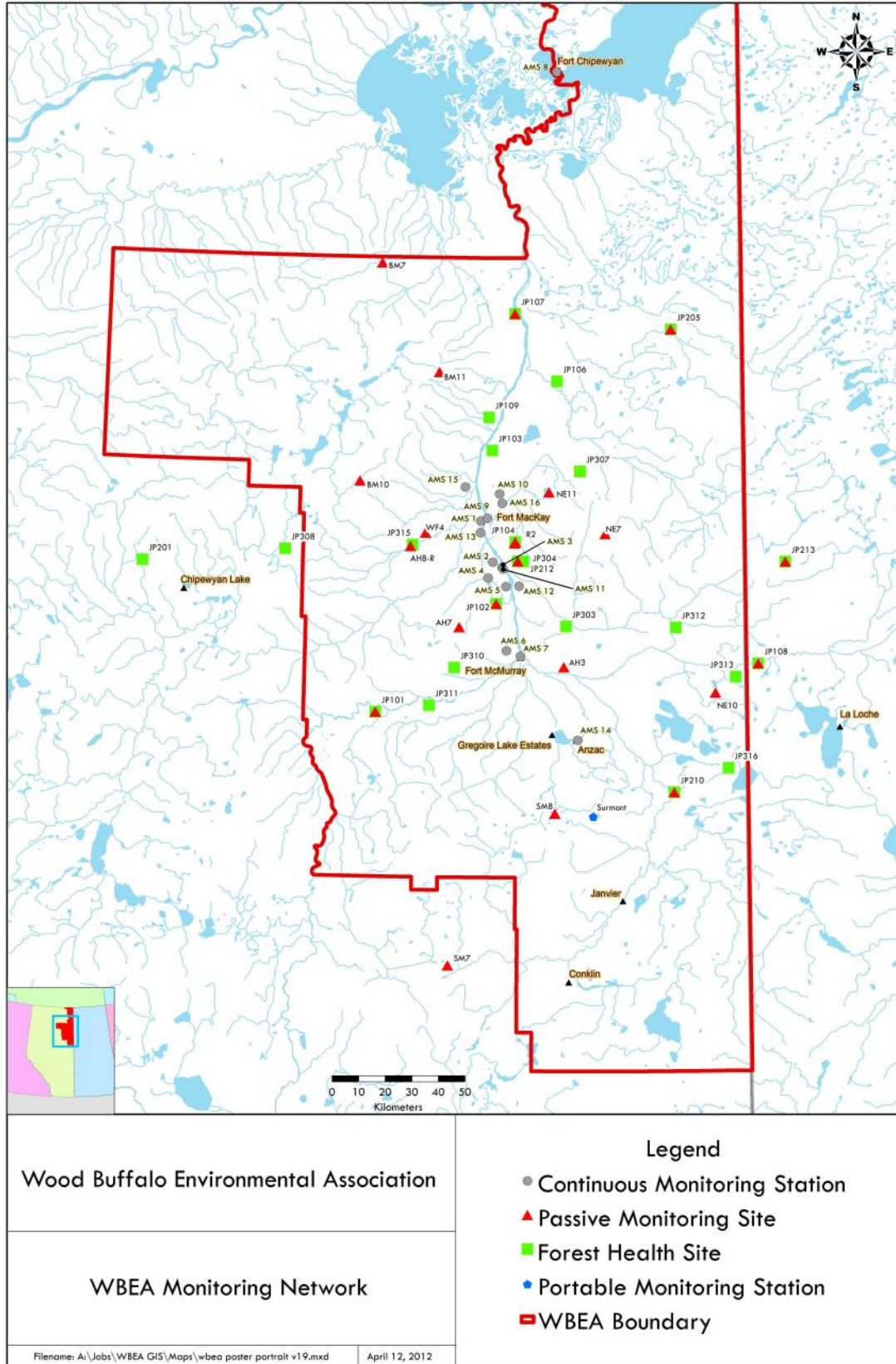


Figure 1.0 – WBEA Monitoring Network Sites

AMS 09 – Barge Landing Station Details

General Site Information

The Barge Landing Station is located on the Barge Road off of Highway 63 North of Fort McKay. This station was built as an Albian Sands Energy Ltd. station and donated to the WBEA in 2001.

Item	Description								
Station ID	AMS 09								
Station Name	Barge Landing								
General description	Located opposite the Shell access road, just off of Highway 63.								
Community	NA								
Station Address	NA								
Station Type	Industrial								
Area Land Use	The surrounding area is used for a camp for people who work on the surrounding sites.								
Angle of elevation to nearby buildings	NA								
Average building height in area	NA								
Airflow Restrictions (yes/no)	<table border="1"> <tr> <td>North</td> <td>No</td> <td>East</td> <td>No</td> </tr> <tr> <td>South</td> <td>No</td> <td>West</td> <td>No</td> </tr> </table>	North	No	East	No	South	No	West	No
North	No	East	No						
South	No	West	No						
Nearest Tree	<table border="1"> <tr> <td>Distance</td> <td>36 meters</td> <td>Height</td> <td>10 meters</td> </tr> </table>	Distance	36 meters	Height	10 meters				
Distance	36 meters	Height	10 meters						
Sample Manifold Type	Stainless Steel stack/Glass								
Meteorological Tower Information	<table border="1"> <tr> <td>Height</td> <td>10 meters</td> </tr> <tr> <td>Type</td> <td>Aluma crank-up tower</td> </tr> <tr> <td>Position</td> <td>Attached to North end of monitoring shelter</td> </tr> </table>	Height	10 meters	Type	Aluma crank-up tower	Position	Attached to North end of monitoring shelter		
Height	10 meters								
Type	Aluma crank-up tower								
Position	Attached to North end of monitoring shelter								
Station Install Date	2001								
Station Origin	Shell Albian Sands								
Site Preparation	Level gravel pad								

Table 2.0 – General Site Information

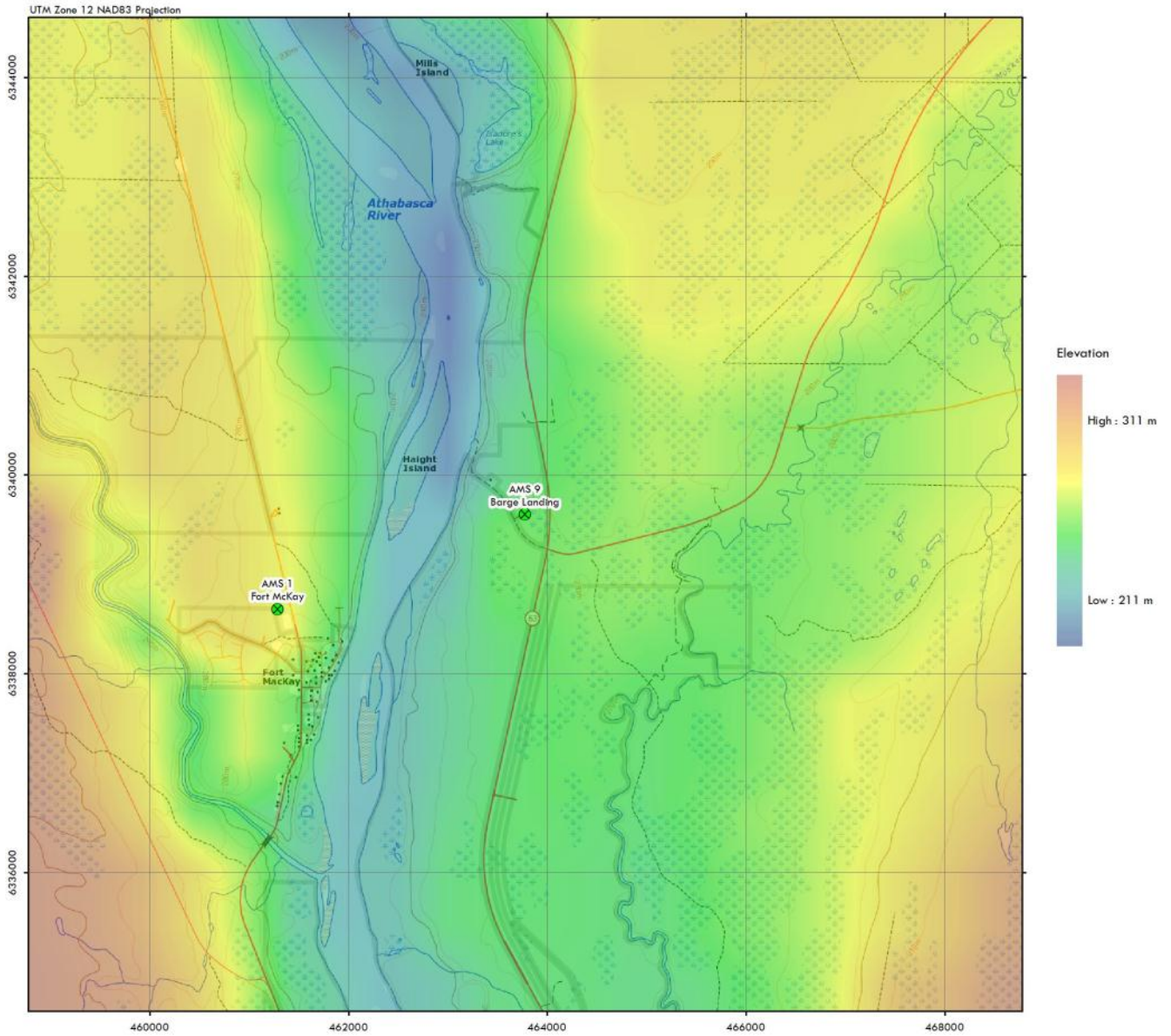
Localized Sources

Type	Distance	Description		
NA	NA	NA		
Name	Type	Traffic Volume	Distance (m)	Description
Roadway	Station access	Very low	70 meters	Dirt road

Table 3.0 – Local Source Information

Area Topographic Map

Figure 2.0 – Area Topographic map showing AMS 09 – Barge Landing Station



Ariel Photo

Figure 3.0 – Ariel photo showing AMS 09 – Barge Landing Station



Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.6 – Environ looking North



Figure 4.7 – Environ looking East



Figure 4.8 – Environ looking South



Figure 4.9 – Environ looking West

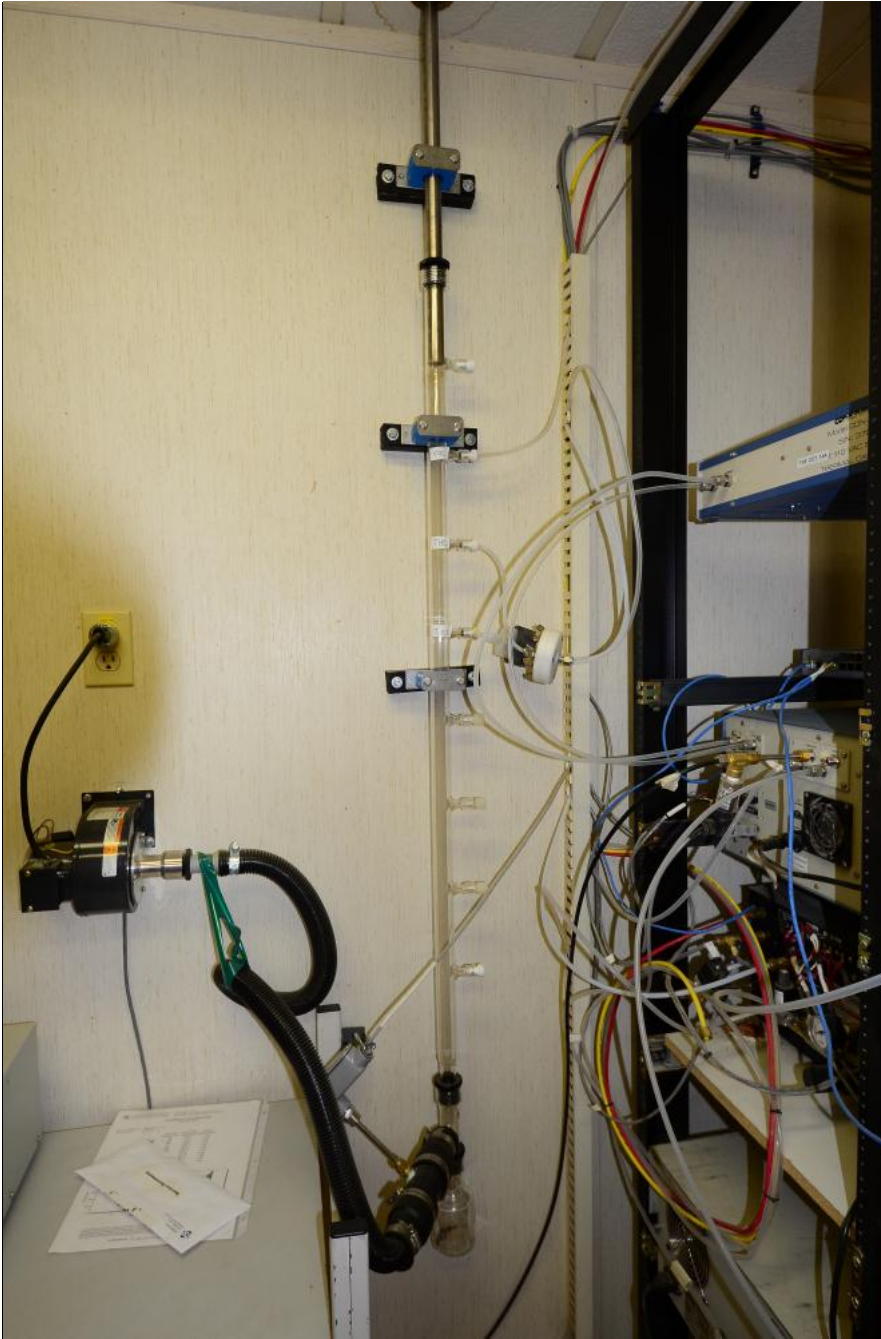


Figure 4.10 –Indoor Sample Manifold

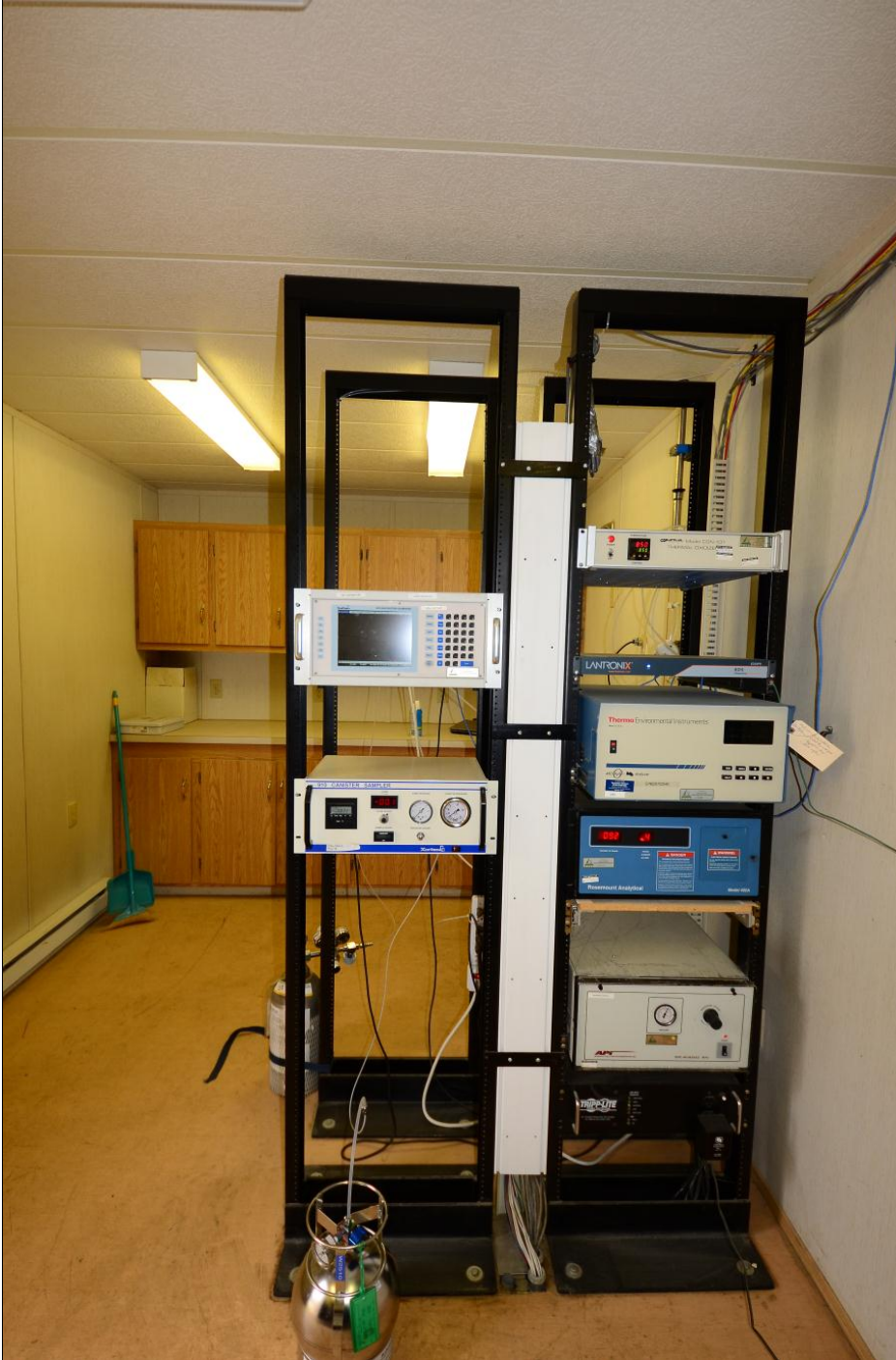


Figure 4.11 – Instrumentation Rack

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
THC	Total Hydrocarbons	Rosemount	400A	U100626	0 – 50 ppm	FID	4	1
VOC	Volatile Organic Compounds	XonTech	910A	6380	NA	Sample Control	4	1
H2S	Hydrogen Sulphide	Thermo	45C	03287025	0 – 100 ppb	Thermal Conversion & UV Fluorescence	4	1
WS	Wind Speed	Met one	010C	B4128	0 – 80 Km/Hr	Chopped Optical	10	7
WD	Wind Direction	Met one	020C	NA	0 – 360 degrees	Potentiometer	10	7
AT	Ambient Temperature	Vaisala	HMP155	NA	-50 - +50 degrees C	Thermistor	4	1

Table 4.0 - Analytical Equipment in AMS 09

Name	Description	Make	Model	Serial Number
Data logger	Data logger	Campbell	CR3000	2635
Computer	PC	Dell	Optiplex 330	2CQVF
Dilution gas	Zero air	API	701	1144
Convertor	TRS Convertor	CD Nova	CD101	376
Calibrator	Dynamic calibrator	Sabio Engineering	4010	1107110
Shelter	10 X 20 foot air monitoring shelter	National Trailer	NA	2N9MF30
Tower	10 m telescoping tower	Aluma	T-135	NA

Table 5.0 - Support Equipment in AMS 09

Wind Rose

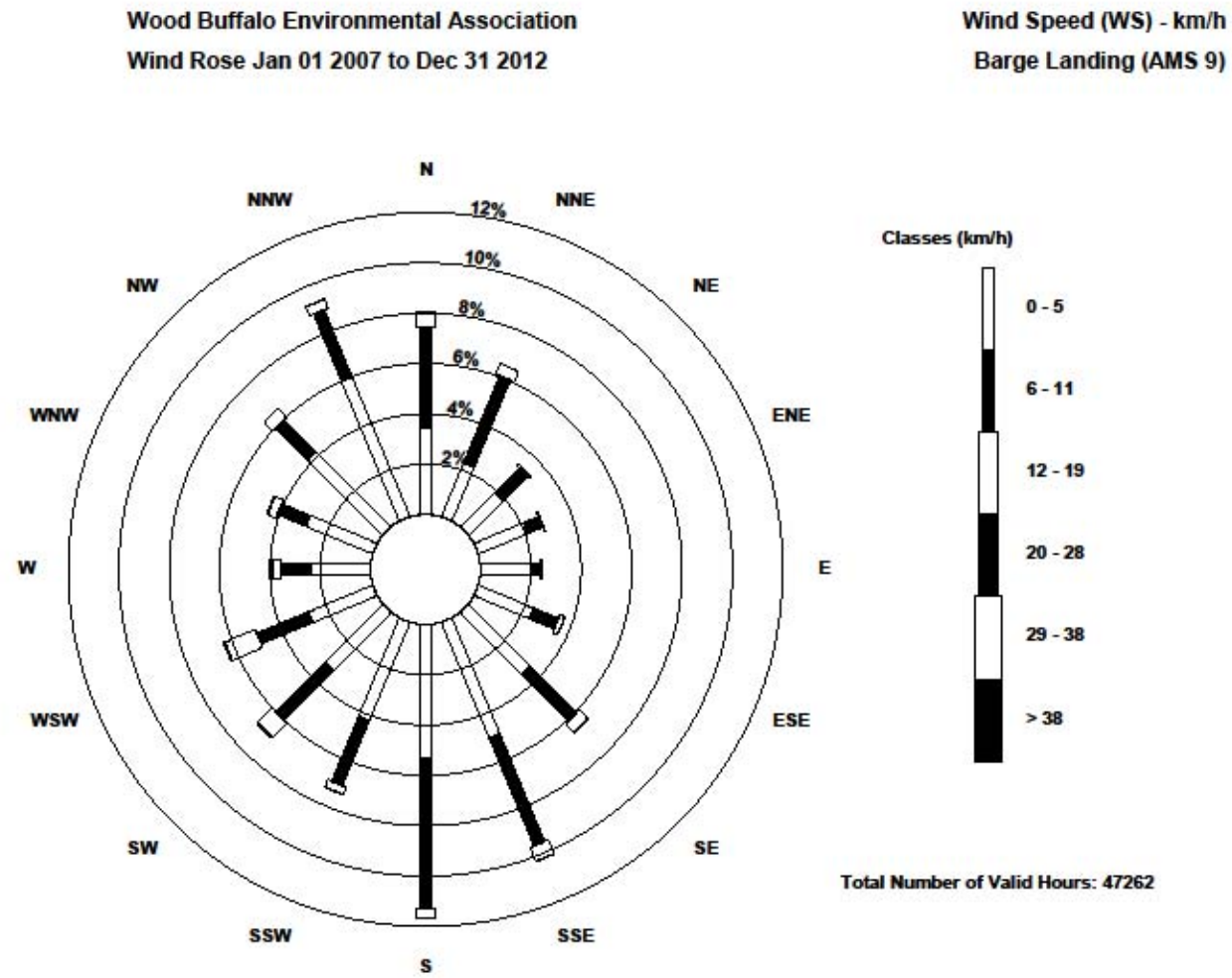


Figure 5.0 – AMS 09 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 11 – Lower Camp

January 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

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The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

Since 1998 WBEA has maintained semi-continuous (intermittent) sampling for PM2.5, PM10, VOC and PAH. The sampling for intermittent monitoring has evolved with a better understanding of technology, analytical laboratory methods and sample deployment and collection methods. Intermittent samples in the WBEA ambient air monitoring network are taken every 6 days for a 24-hour period. The sampling schedule and procedures are consistent with Environment Canada’s National Air Pollution Surveillance program.

STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH	PRECIP
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

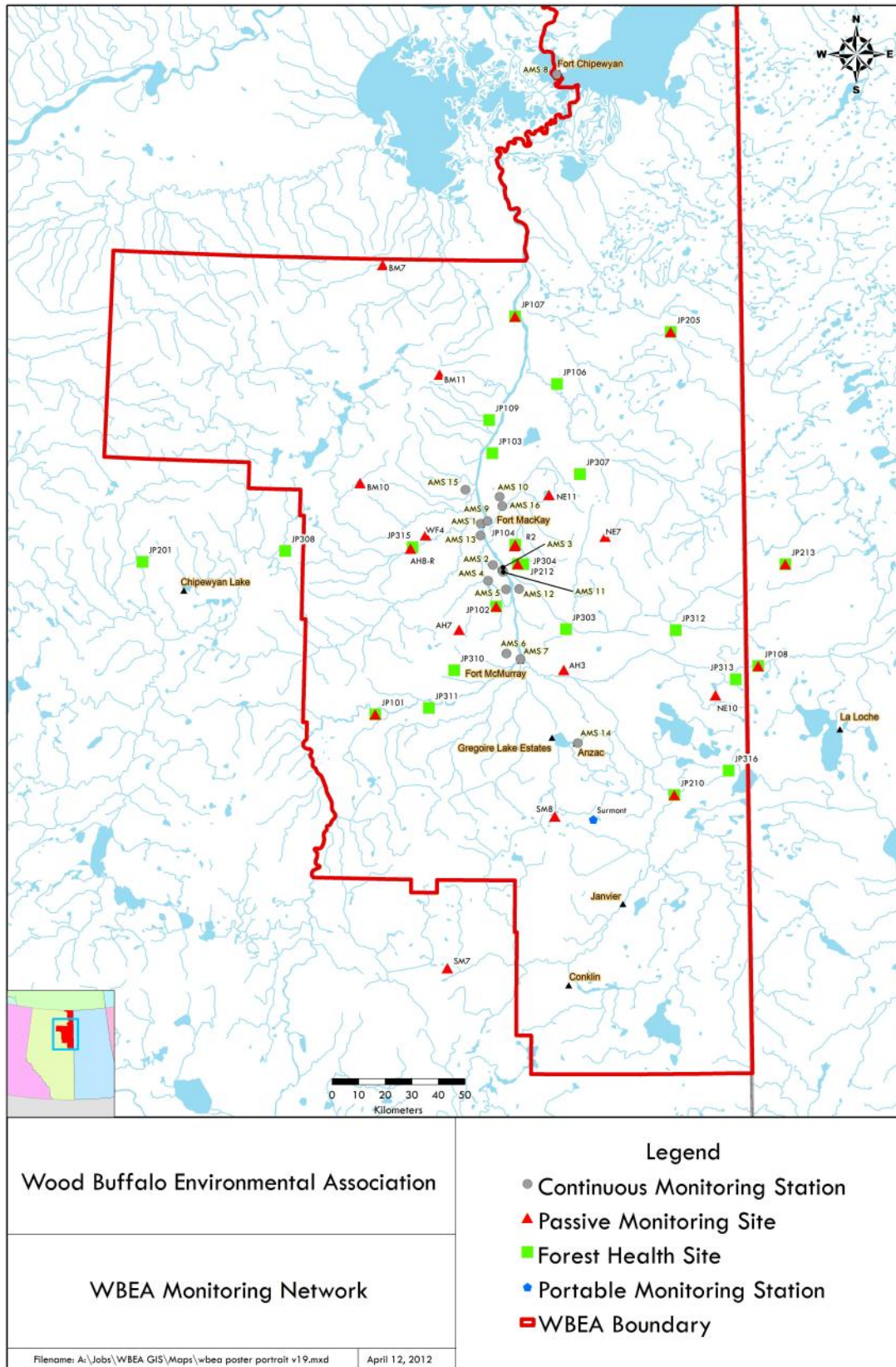


Figure 1.0 – WBEA Monitoring Network Sites

AMS 11 – Lower Camp Station Details

General Site Information

The Lower Camp station was installed as a Compliance Station. It sits in the Athabasca River Valley, North of Suncor and East of Syncrude

Item	Description			
Station ID	11			
Station Name	Lower Camp			
General description	Athabasca River Valley, North of Suncor East of Syncrude, South of the Syncrude pumping Station			
Community	NA			
Station Address	NA			
Station Type	Industrial			
Area Land Use	NA			
Angle of elevation to nearby buildings	0 Degrees			
Average building height in area	NA			
Airflow Restrictions (yes/no)	North	No	East	No
	South	No	West	no
Nearest Tree	Distance	3 meters	Height	2 meters
	Sample Manifold Type Glass			
Meteorological Tower Information	Height	10 meters		
	Type	Aluma crank-up tower		
	Position	Attached to North end of monitoring shelter		
Station Install Date	NA			
Station Origin	New			
Site Preparation	Leveled gravel pad			

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
Laydown	79.21m W	Equipment Laydown		
Water Pond	136.86m NW	Reservoir		
Athabasca River	33.8m E	River		
Pumping Station	114m N	Syncrude Water Pump Station		
Deck	4m E	Has Precipitation, PM2.5, and PUF Samplers on it		
Name	Type	Traffic Volume	Distance (m)	Description
Gravel Road	Gravel	Low	20m	Road Access to Lay down and pumping station

Table 3.0 – Local Source Information

Area Topographic Map

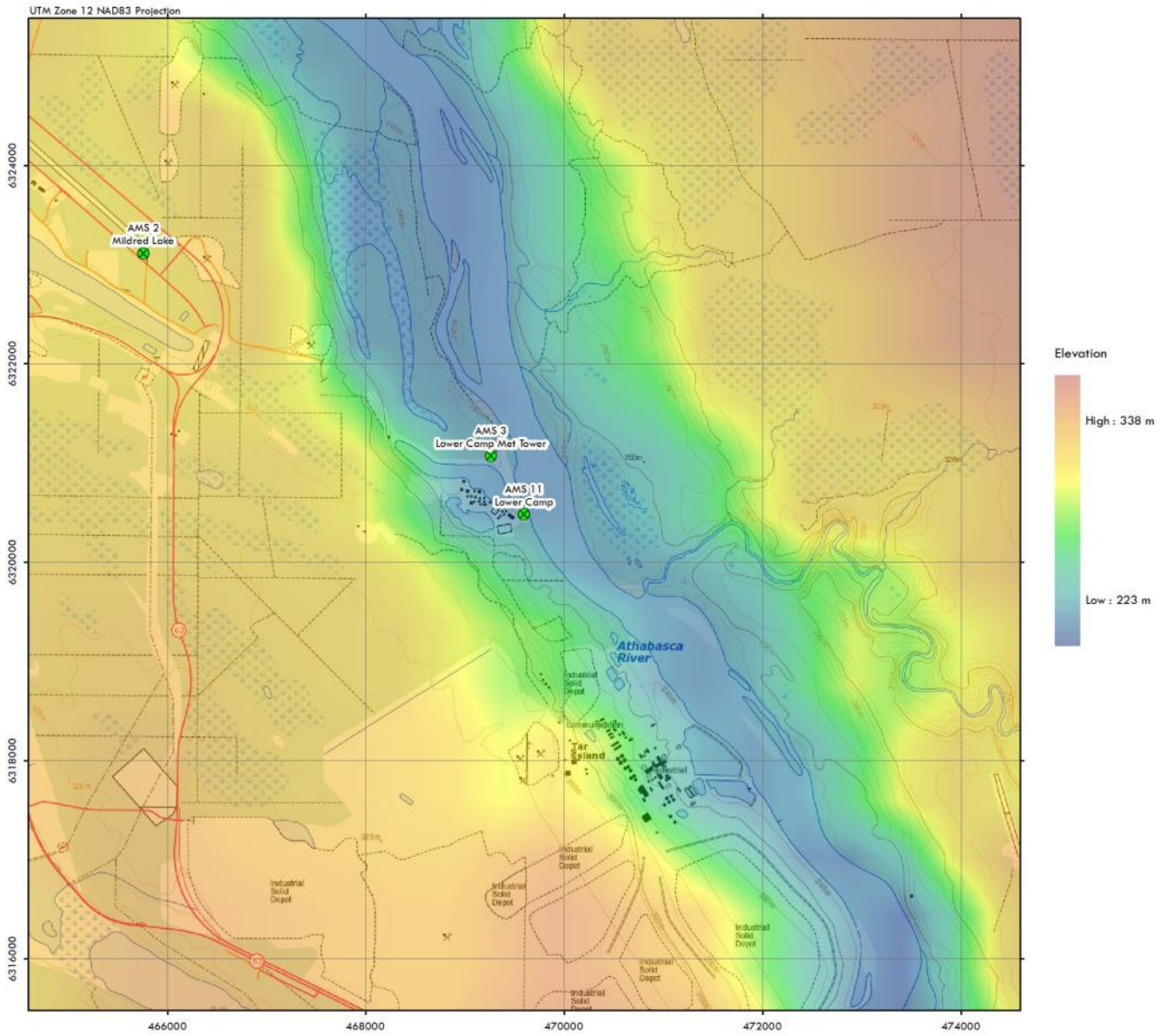


Figure 2.0 – Area Topographic map showing AMS 11 – Lower Camp Station

Ariel Photo



Figure 3.0 – Ariel photo showing AMS 11 – Lower Camp Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking north



Figure 4.2 – Sampling Deck



Figure 4.3 – EC/EC Sampler & High Volume PAH Sampler



Figure 4.4 – Environ looking north



Figure 4.5 – Environ looking east



Figure 4.6 – Environ looking south



Figure 4.8 – Outdoor Sample Inlet & Indoor Sample Manifold

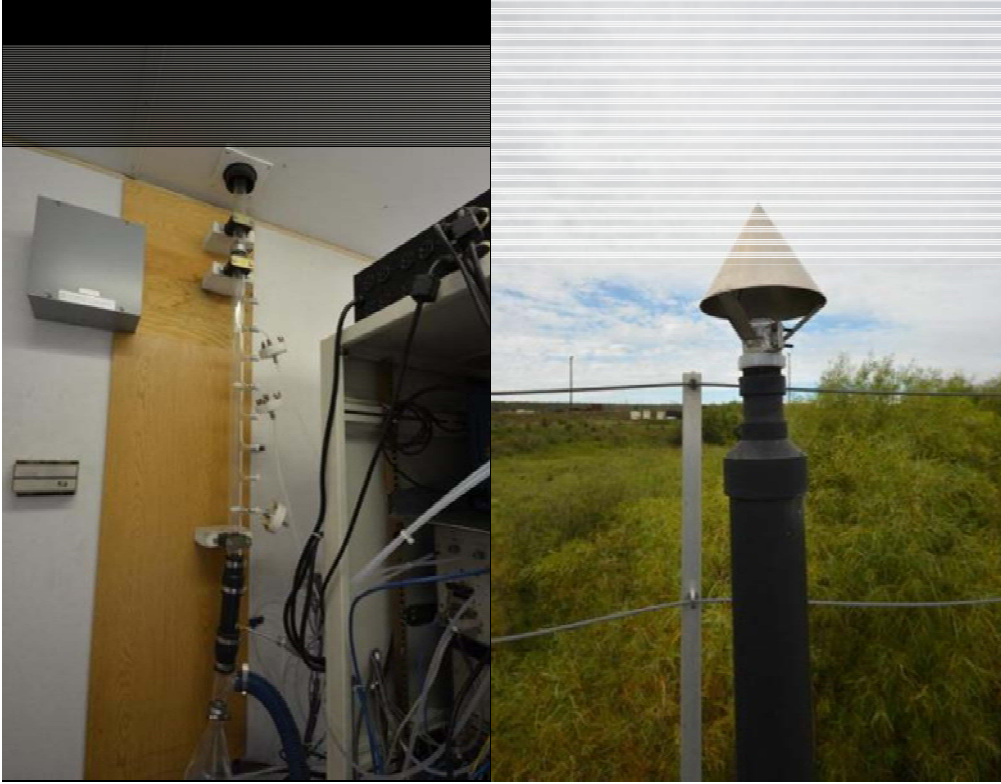


Figure 4.9 – Sample Manifold & Sample Inlet



Figure 4.10 – Instrument Rack

Equipment Inventory

Parameter Measured		Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)	
							Ground	Shelter
SO2	Sulphur Dioxide	Thermo Instruments	51i	0518112184	0 – 1000 ppb	UV Fluorescence	4	1
H2S	Hydrogen Sulfide	Thermo Instruments	43C	0518112183	0 – 100 ppb	Thermal Conversion & UV Fluorescence	4	1
THC	Total Hydrocarbon	Thermo Instruments	43C	1218153580	0 – 50 ppm	FID	4	1
PM2.5	Particulate Matter <2.5um	R&P Partisol 2000	2000	NA	NA	Sample Control	3	NA
WS	Wind Speed	RMYoung 85000	010C	B2027	0 – 80 Km/Hr	Chopped Optical	10	7
WD	Wind Direction	RMYoung 85000	020C	B1462	0 – 360 degrees	Potentiometer	10	7
AT	Ambient Temperature	HMP45C	592	NA	-50 - +50 degrees C	Thermistor	4	1
PC	Organic Precipitation	Environment Canada	NA	NA	NA	Sample Collector	3	NA
PC	Inorganic Precipitation	Environment Canada	NA	NA	NA	Sample Collector	3	NA
Hg	Mercury Analyzer	Tekran	2537B	NA	NA	NA	3	Side port

Table 4.0 - Analytical Equipment in AMS 11

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger	Campbell Scientific	CR3000	2634
ZAG	Zero Air Generator	701	Teledyne	3411
HVAC	Wall Electronic Heater/ BARD Air conditioner	C and V Accomodations	NA	NA
Shelter / Building	NA	C and V Accomodations	NA	NA
Calibrator	Gas Dilution Calibrator	Sabio	4010	11051107

Table 5.0 - Support Equipment in AMS 11

Wind Rose

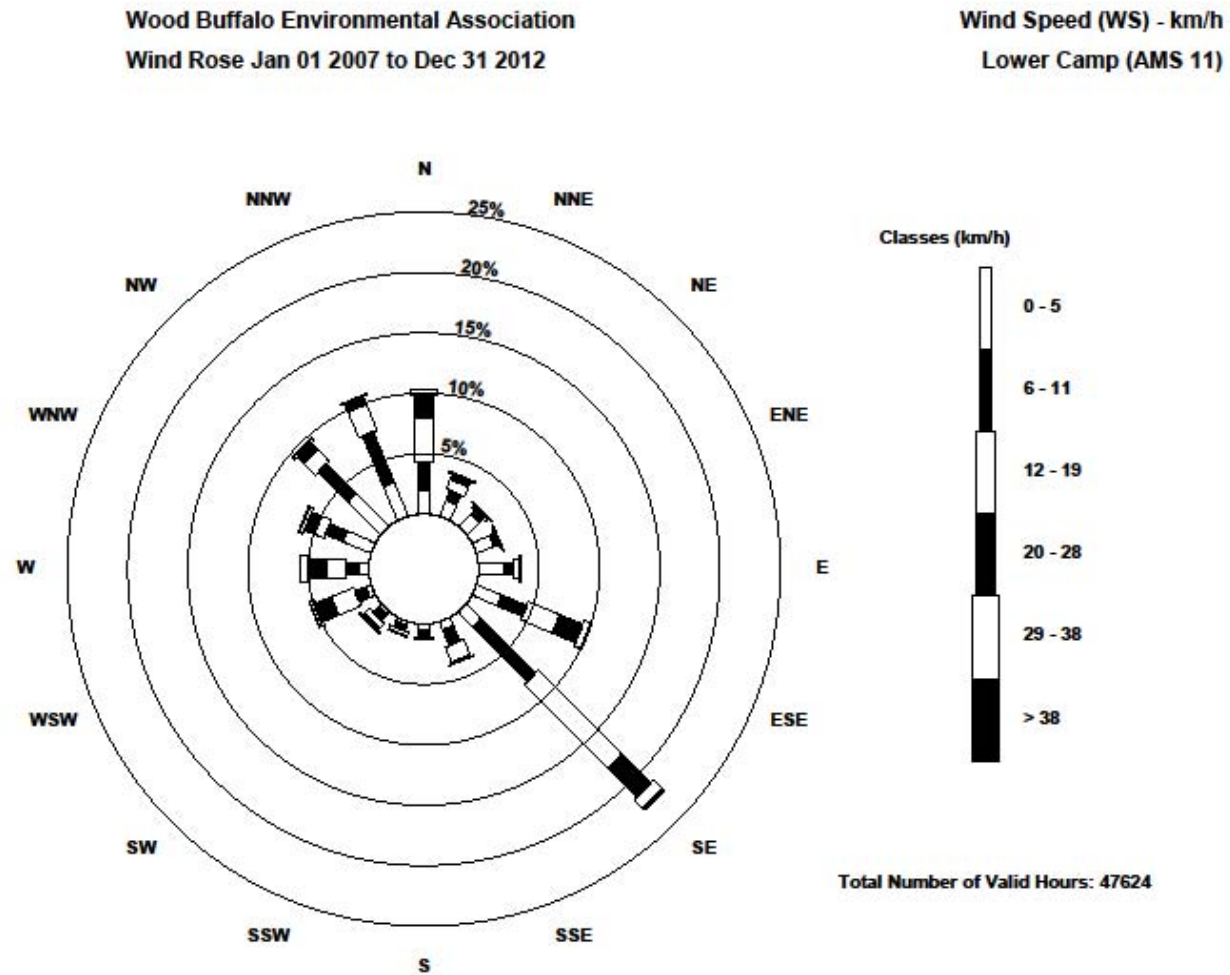


Figure 5.0 – AMS 11 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 12 – Millennium Mine

January 2013

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Network Background

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X	X	X	X		X	X	X	X		X
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X			X			X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

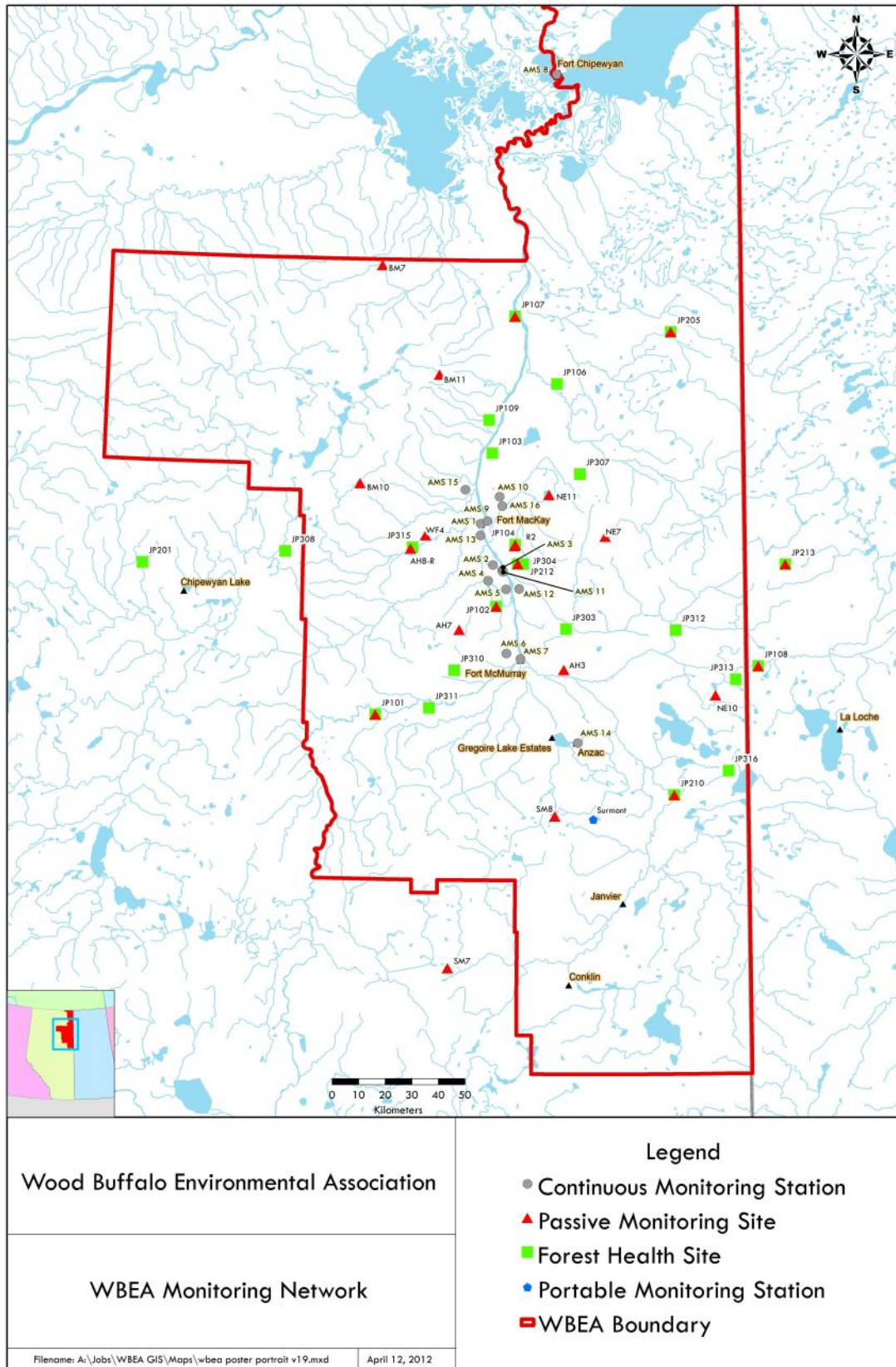


Figure 1.0 – WBEA Monitoring Network Sites

AMS 12 – Millennium Mine Station Details

General Site Information

The Millennium Mine station was installed as a Compliance Station. It is located inside Suncor’s Millennium Mine.

Item	Description			
Station ID	12			
Station Name	Millennium Mine			
General description	Suncor Mine, 1.72km SE of the Millennium Building			
Community	NA			
Station Address	Suncor Millennium Mine			
Station Type	Industrial			
Area Land Use	Mining			
Angle of elevation to nearby buildings	NA			
Average building height in area	NA			
Airflow Restrictions (yes/no)	North	No	East	No
	South	No	West	No
Nearest Tree	Distance	6metres	Height	10metres
	Sample Manifold Type			
Meteorological Tower Information	Height	10metres		
	Type	Aluma crank-up tower		
	Position	Attached to North end of monitoring shelter		
Station Install Date	NA			
Station Origin	New Station			
Site Preparation	Leveled with Gravel			

Table 2.0 – General Site Information

Localized Sources

Type	Distance		Description	
Haul Trucks			Trucks Driving around the Area	
Radio Tower	69.29m SW		Trailer with a Radio Tower	
Tailings Pond	590m N			
Name	Type	Traffic Volume	Distance (m)	Description
Steep Bank Trail	Gravel	High	113m	Main Road For Shift change buses, Main Road for Checking Haul Truck brake testing
Access Road	Gravel	Low	2m	Road to Station

Table 3.0 – Local Source Information

Area Topographic Map

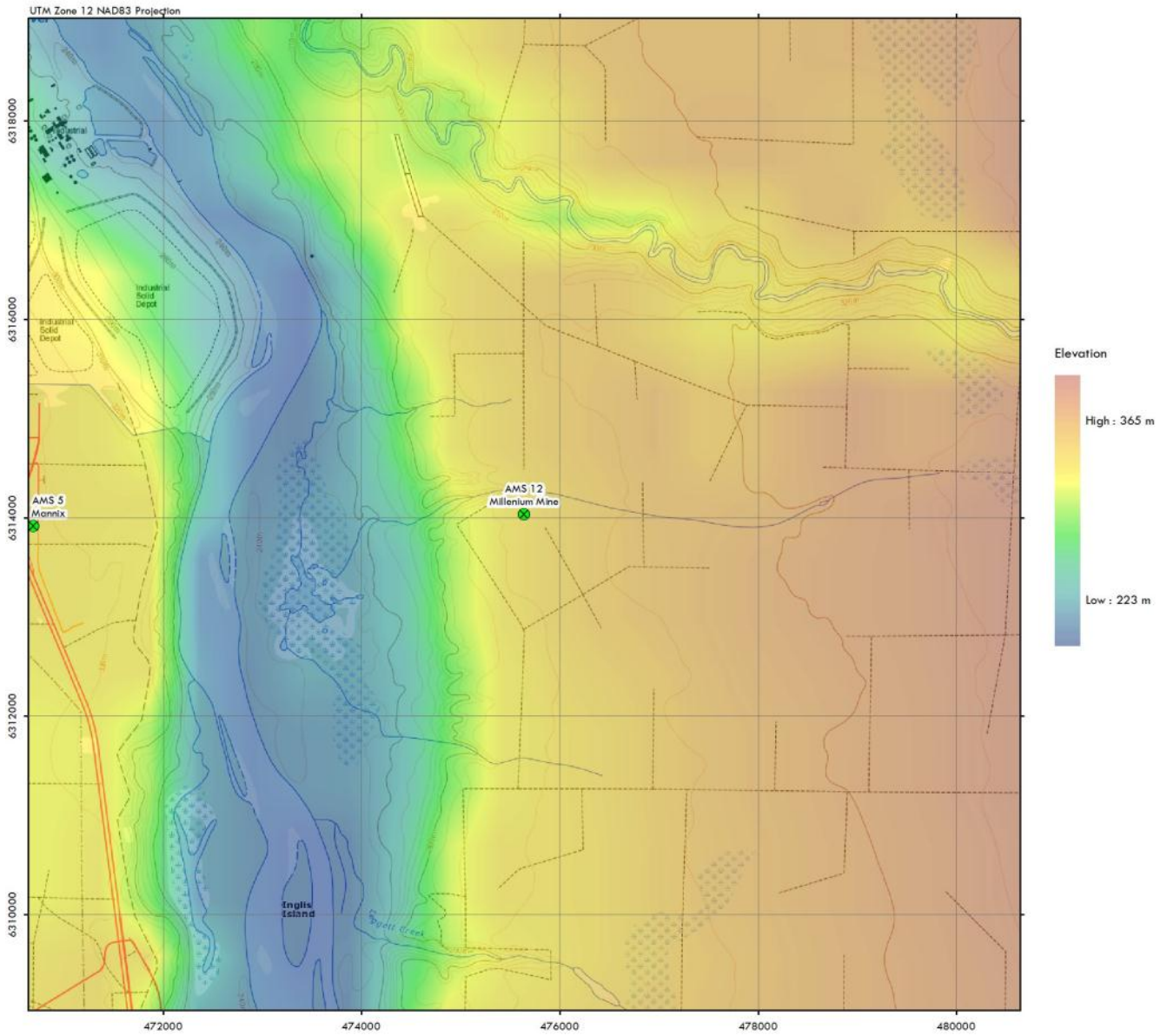


Figure 2.0 – Area Topographic map showing AMS 12 – Millennium Mine Station

Ariel Photo



Figure 3.0 – Ariel photo showing AMS 12 – Millennium Mine Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.2 – PM 10 samplers



Figure 4.3 – Environ looking North



Figure 4.4 – Environ looking East



Figure 4.5 – Environ looking South



Figure 4.6 – Environ looking West



Figure 4.7 – Outdoor Sample Inlet & Indoor Sample Manifold



Figure 4.8 –Instrument Rack

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
SO2	Sulphur Dioxide	Thermo Instruments	43i	0922436967	0 - 1000ppb	UV Fluorescence	4	1
TRS	Total Reduced Sulphur	Thermo Instruments	43C	0509110887	0 - 100ppb	Thermal Conversion & UV Fluorescence	4	1
NO2	Nitrogen Dioxide	API	200A	1557	0 - 1000ppb	Chemiluminescence	4	1
THC	Total Hydrocarbon	Rosemount	400A	U1005199	0 - 25ppm	FID	4	1
PM2.5	Particulate Matter <2.5um	RP TOEM	1400-AB	140AB266060703	-50 to 450 µg/m ³	Tapered Element Oscillating Microbalance	4	1
VOC	Volatile Organic Compounds	TISCH	TE-123	1022	NA	Canister Sampler	4	1
PM2.5	Particulate Matter <10um	R&P Partisol 2000	2000-H	2000B206050101	NA	Particulate Filter	2	NA
WS	Wind Speed	Met One	010-C	NA	0 – 80 Km/Hr	Chopped Optical	10	7
WD	Wind Direction	Met One	020-C	NA	0 – 360 degrees	Potentiometer	10	7
AT	Ambient Temperature	HMP155C	NA	NA	-50 - +50 degrees C	Thermistor	4	1

Table 4.0 - Analytical Equipment in AMS 12

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger	Campbell Scientific	CR3000	2374
ZAG	Zero Air Generator	Teledyne	701	1866
HVAC	Electric baseboard heat, rooftop AC	National/Coleman	NA	NA
Shelter / Building	Woodframe building	National Trailer	10 x 20 foot	NA
Calibrator	Gas Dilution Calibrator	Sabio	4010	11091107

Table 5.0 - Support Equipment in AMS 12

Wind Rose

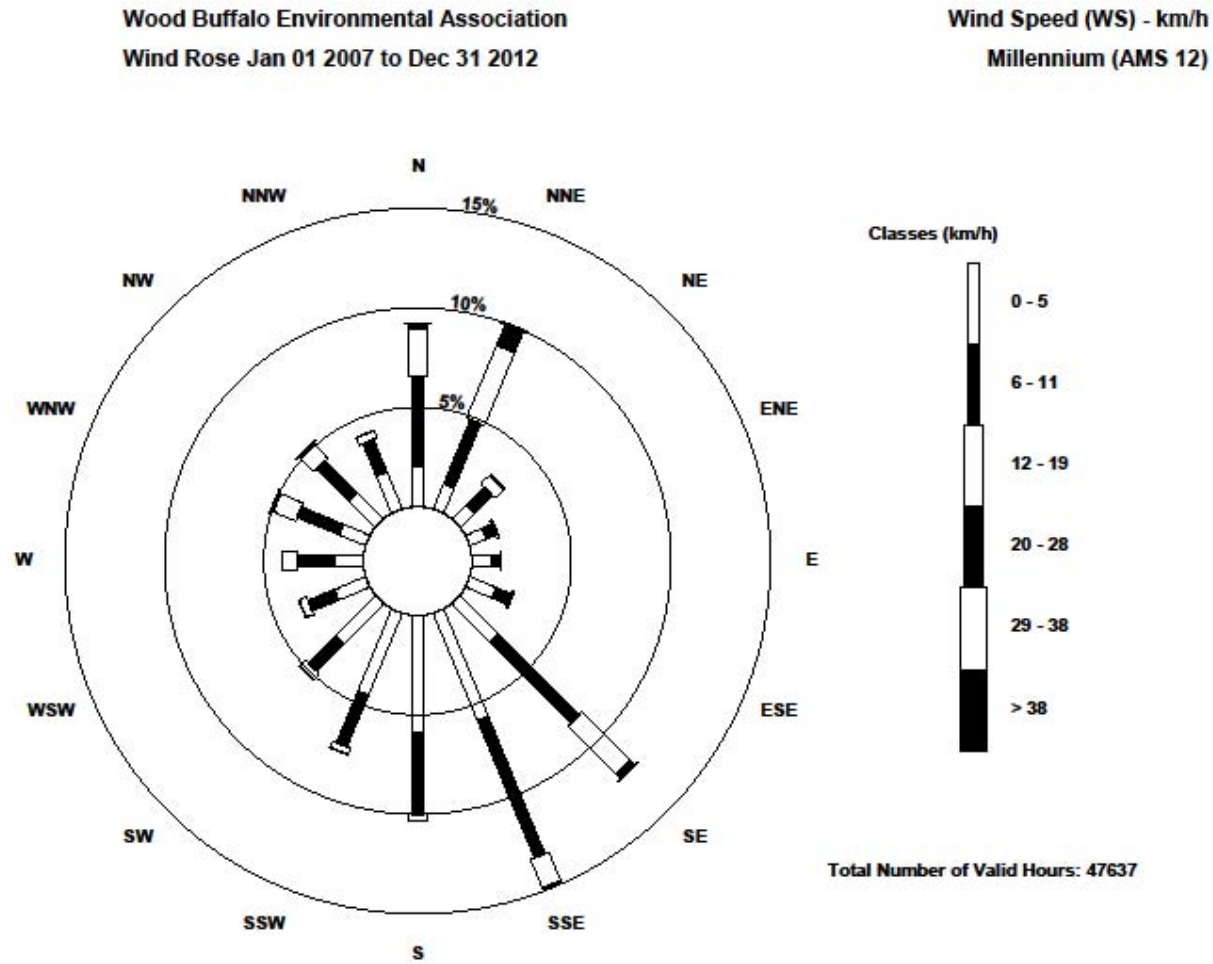


Figure 5.0 – AMS 12 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 13 – Syncrude UE-01

February 2013

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Network Background

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The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS																NON-CONTINUOUS									
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X			X		X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X			X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X			X		X	X				

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

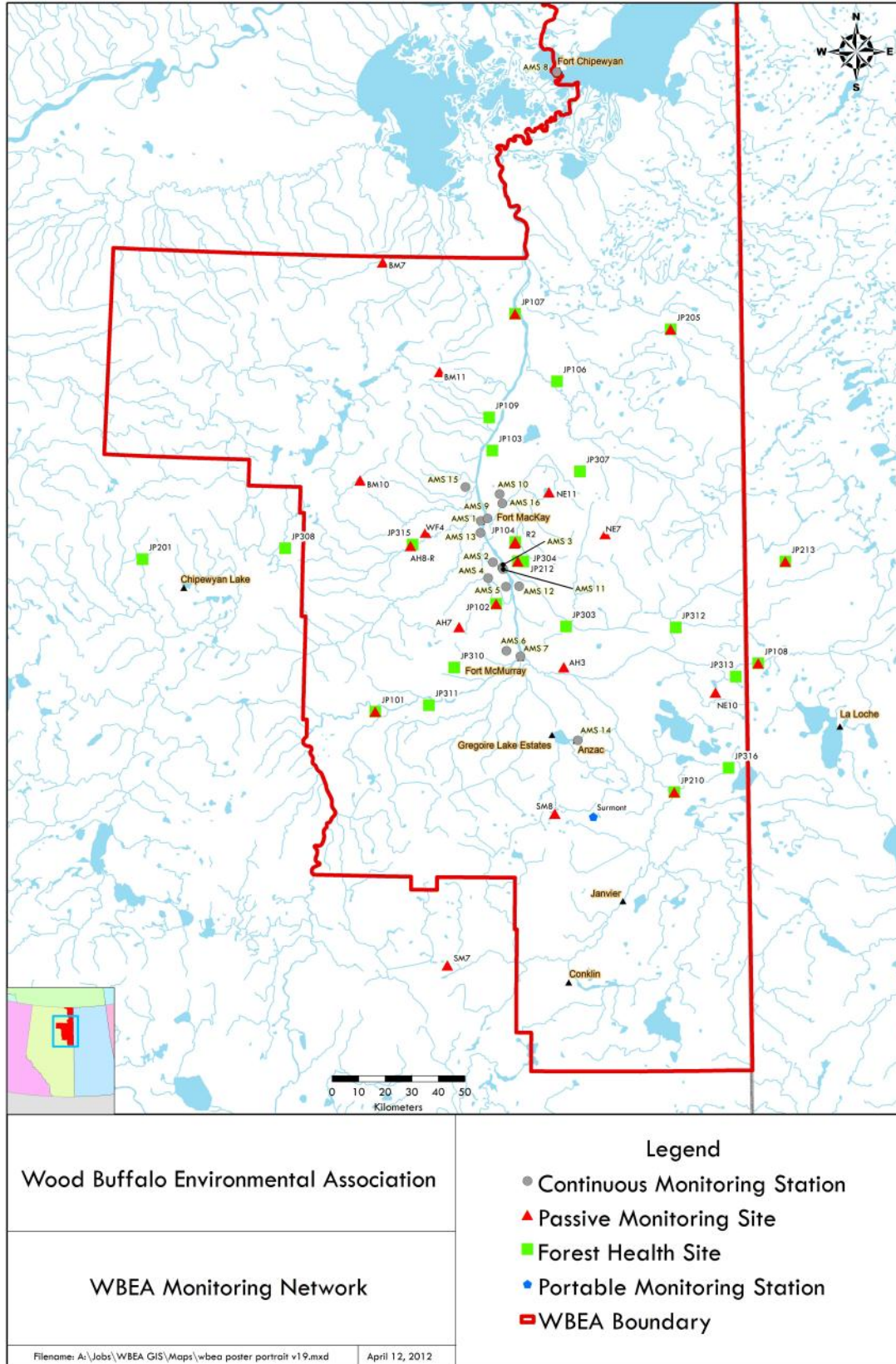


Figure 1.0 – WBEA Monitoring Network Sites

AMS 13 – Syncrude UE-01 Station Details

General Site Information

The Fort McKay South Station is located between the community of Fort McKay and the Syncrude Canada mine site.

The Fort McKay South Station contains analyzers that continuously measure SO₂, O₃, TRS, THC, NO, NO₂, NO_x, PM 2.5, wind speed and direction, and temperature. Non-continuous measurement devices include VOCs and PM₁₀.

Item	Description
Station ID	AMS 13
Station Name	Syncrude UE-01
General description	Approximately 4km south of Fort McKay and approximately 6km north of Syncrude Base Mine
Community	N/A
Station Address	N/A
Station Type	Industrial
Area Land Use	Crown Land
Angle of elevation to nearby buildings	0 degrees
Average building height in area	N/A
Airflow Restrictions (yes/no)	North NO South NO
	East NO West NO
Nearest Tree	Distance 5 metres Height 6 metres
Sample Manifold Type	Glass
Meteorological Tower Information	Height 10 metres Type Aluma crank tower Position N side of structure
Station Install Date	N/A
Station Origin	N/A
Site Preparation	Level gravel pad

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
n/a	n/a	n/a		
Name	Type	Traffic Volume	Distance (m)	Description
roadway	access	Extremely low	10	Gravel/dirt road

Table 3.0 – Local Source Information

Area Topographic Map

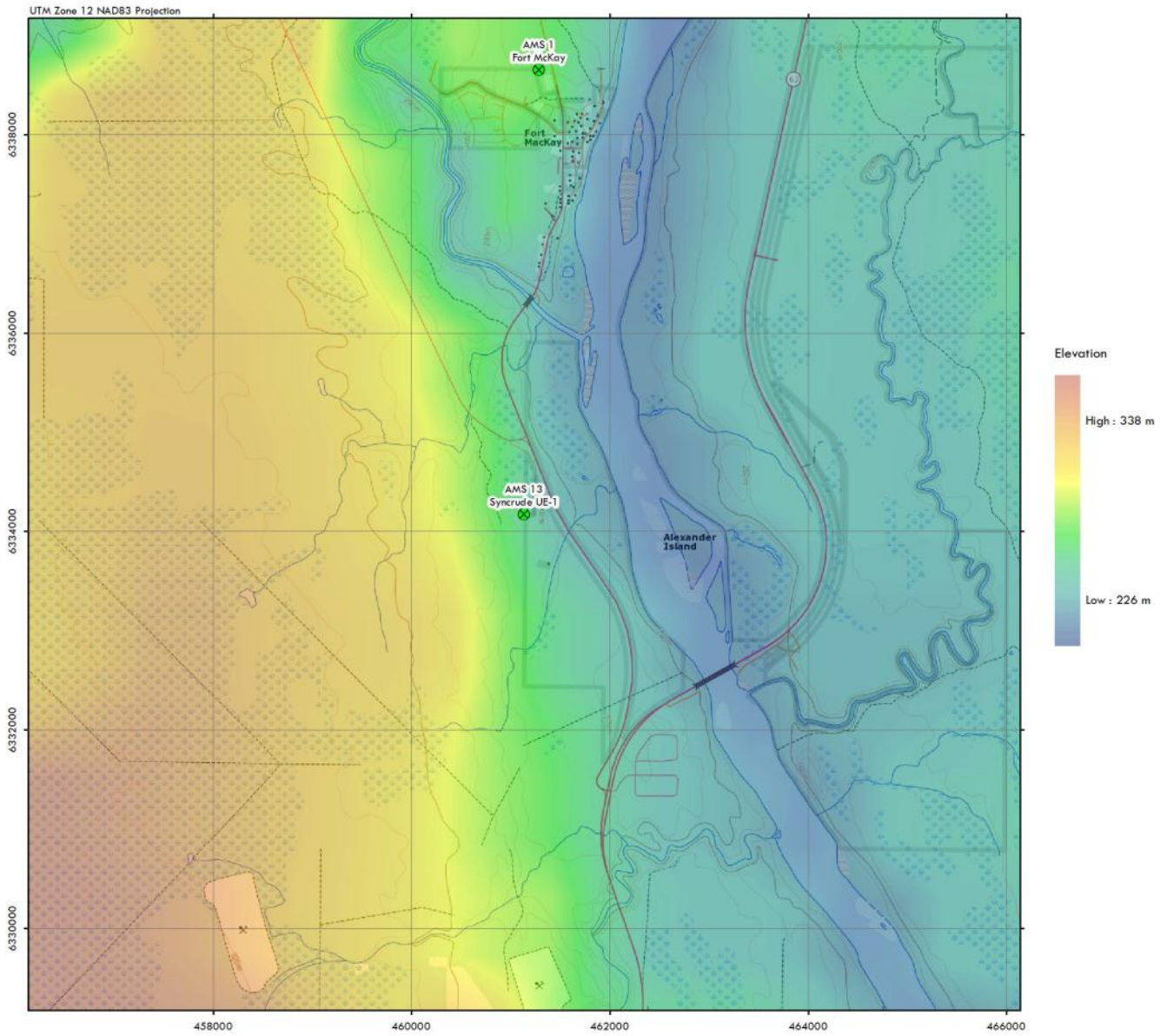


Figure 2.0 – Area Topographic map showing AMS 13 – Syncrude UE-01

Aerial Photo



Figure 3.0 – Aerial photo showing AMS 13 – Syncrude UE-01

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.1 – Exterior of monitoring station



Figure 4.2 – Environ looking North



Figure 4.3 – Environ looking East



Figure 4.4 – Environ looking South



Figure 4.5 –Environ looking West



Figure 4.6 – Outdoor Sample Inlet & Indoor Sample Manifold



Figure 4.7 – Equipment Racks



Figure 4.8 – Samplers, left to right: EC organic precip, EC inorganic precip, EC PM2.5, High volume PUF, PM10

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
SO2	Sulphur dioxide	API	100A	1228	0-1000 ppb	UV Fluorescence	4	1
NOx	NO, NO2, NOx	Thermo	42C	613516798	0-1000 ppb	Chemiluminescence	4	1
THC	Total Hydrocarbons	Thermo	51i-LT	1236656114	0-25 ppm	Flame Ionization	4	1
TRS	Total Reduced Sulphur compounds	Thermo	43i-TLE	1218153359	0-100 ppb	Thermal conversion and UV fluorescence	4	1
O3	Ozone	Thermo	49C	49c-58876-321	0-500 ppb	UV photometer	4	1
PM	Particulate Matter	Thermo	SHARP	E-773	0-1000 ug/m3	Nephelometer & Beta Attenuation	4	1
VOC	Volatile Organic Compounds	RM Environmental	910a	4909	n/a	Sample collector	4	1
VOC	Volatile Organic Compounds	TISCH	TE-123	1023	n/a	Sample collector	4	1
WS	Wind speed	Met One	010c	n/a	0-80 km/h	Chopped optical	10	7
WD	Wind direction	Met One	020c	n/a	0-360 degrees	Potentiometer	10	7
AT	Ambient temp	Vaisala	HMP155C	n/a	-50 to 50 degrees Celsius	Thermistor	4	1
RH	Relative humidity	Vaisala	HMP155C	n/a	0-100% RH	Humicap	4	1
PM2.5	Particulate Matter <2.5um	Thermo	2000	n/a	n/a	Sample collector	2	n/a
PM10	Particulate Matter <10um	Thermo	2000	n/a	n/a	Sample collector	2	n/a
n/a	Inorganic Precip	n/a	n/a	n/a	n/a	Sample collector	2	n/a
n/a	Organic Precip	n/a	n/a	n/a	n/a	Sample collector	2	n/a
PAH	Polycyclic Aromatic Hydrocarbons	TISCH	Hi-vol	TE-1000	n/a	Sample collector	2	n/a

Table 4.0 - Analytical Equipment in AMS 13

Name	Description	Make	Model	Serial Number
Computer	Tower	Dell	n/a	n/a
Monitor	LCD display	Dell	n/a	n/a
Micrologger	Micrologger	Campbell Scientific	CR300	2581
16 channel controller	n/a	Campbell Scientific	SDM-CD16AC	2066
Cell modem	Cell modem	Sierra wireless	Airlink Raven X	1007472358
Thermal Oxidizer	H2S converter	CD Nova	CDN101	456
Calibrator	Dilution calibrator	SABIO	4010	11041107
LAN	network	Lantronix	n/a	n/a
Zero air generator	Clean air source	API	701	825
Surge protector	Outlet protection	n/a	LCR 2400	n/a
HVAC	Electric forced air heat and AC	n/a	n/a	n/a
Shelter	Prefab trailer	C&V Accomodation	n/a	n/a
Calibration/support cylinders	Cal mix, H2S, H2	n/a	n/a	n/a

Table 5.0 - Support Equipment in AMS 13

Wind Rose

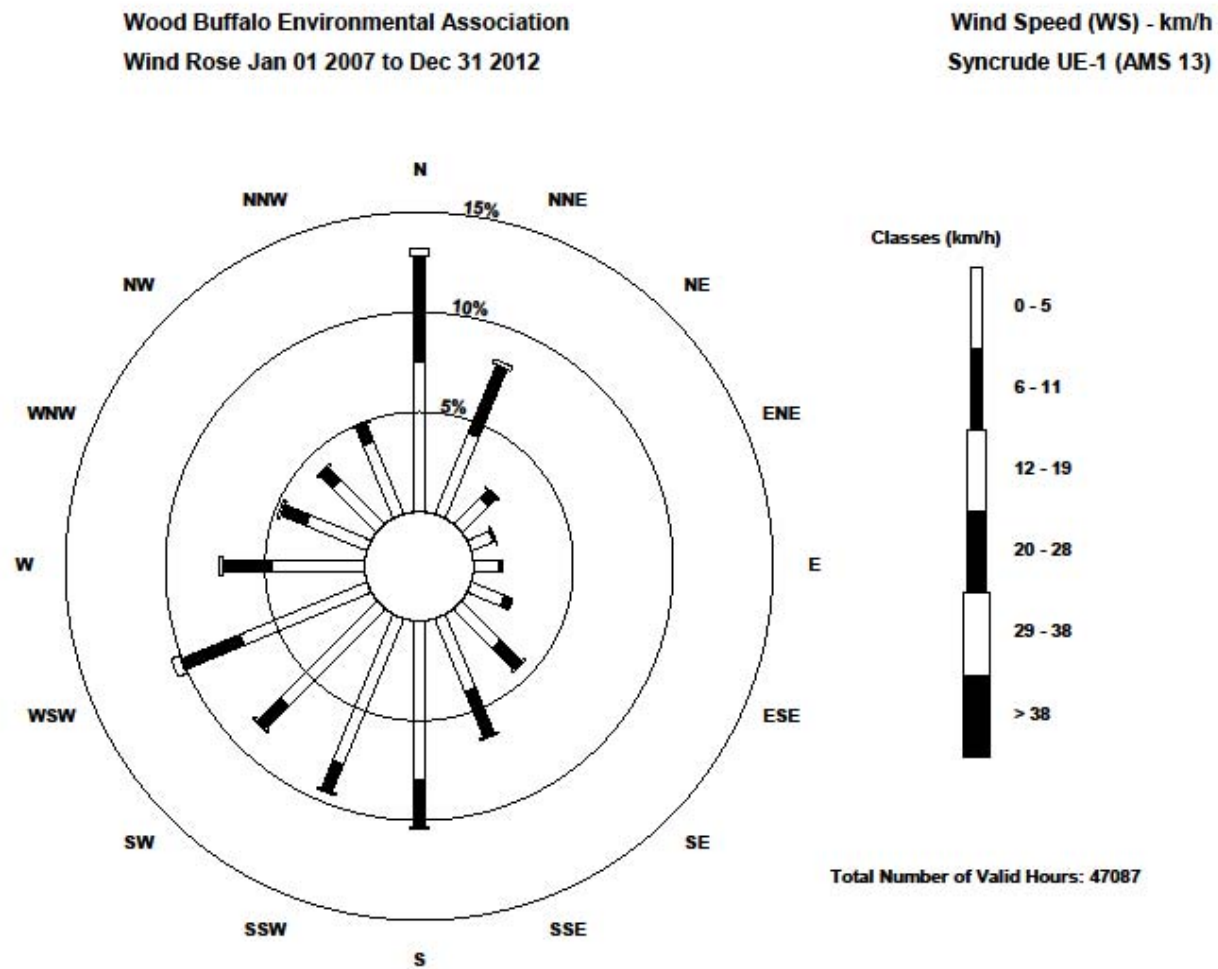


Figure 5.0 – AMS 13 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 14 – Anzac

January 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

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The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

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STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS														NON-CONTINUOUS											
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X		X	X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X		X				X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X		X	X			X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X		X	X			X	X	X	X		X		X	X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X		X				X	X			

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

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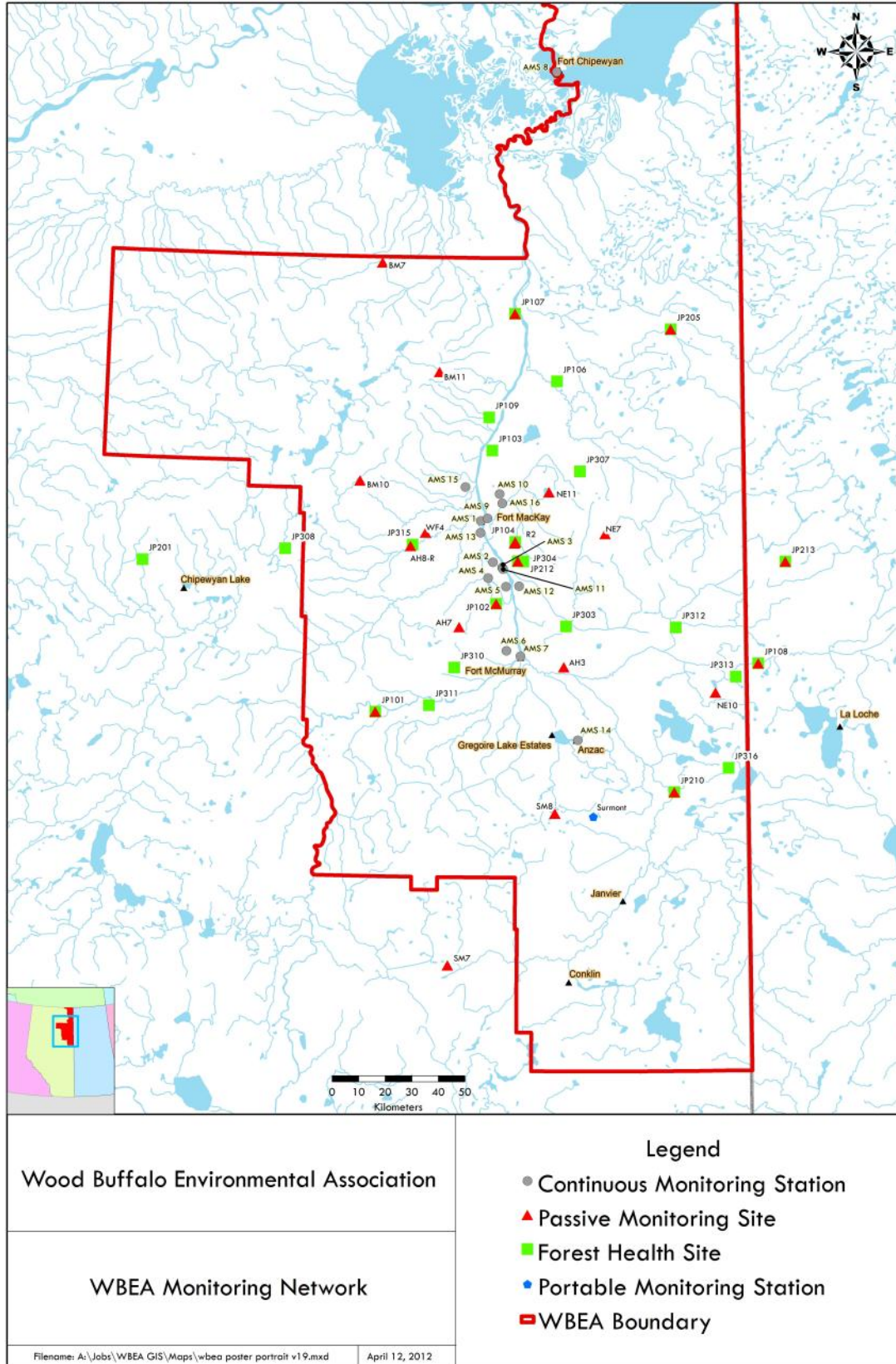


Figure 1.0 – WBEA Monitoring Network Sites

AMS 14 – Anzac Station Details

General Site Information

The Anzac station was installed as a Community and Compliance Station. It is located inside the Anzac Community North of the TELUS Trailer, East of the Rail road Tracks.

Item	Description								
Station ID	14								
Station Name	Anzac								
General description	Located North of the TELUS Building, East of the railroad tracks, inside Anzac								
Community	Anzac								
Station Address	NA								
Station Type	Community/Industrial								
Area Land Use	Residential								
Angle of elevation to nearby buildings	NA								
Average building height in area	4m								
Airflow Restrictions (yes/no)	<table border="1"> <tr> <td>North</td> <td>Yes</td> <td>East</td> <td>No</td> </tr> <tr> <td>South</td> <td>No</td> <td>West</td> <td>Yes</td> </tr> </table>	North	Yes	East	No	South	No	West	Yes
North	Yes	East	No						
South	No	West	Yes						
Nearest Tree	<table border="1"> <tr> <td>Distance</td> <td>23metres</td> <td>Height</td> <td>40metres</td> </tr> </table>	Distance	23metres	Height	40metres				
Distance	23metres	Height	40metres						
Sample Manifold Type									
Meteorological Tower Information	<table border="1"> <tr> <td>Height</td> <td>40metres</td> </tr> <tr> <td>Type</td> <td>Aluma Tower</td> </tr> <tr> <td>Position</td> <td>North side of Trailer</td> </tr> </table>	Height	40metres	Type	Aluma Tower	Position	North side of Trailer		
Height	40metres								
Type	Aluma Tower								
Position	North side of Trailer								
Station Install Date	NA								
Station Origin	New Station								
Site Preparation	Leveled with Gravel								

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
Idling Trucks	23m on West Side	Water, Sewage and Semi Trucks idling next to house and garage		
Garage	23m NW	Where the trucks are housed and fixed, Emissions coming from garage Vents		
House	28m SW	Trucks are idling near, Emissions coming from house vents		
Trains/ Railroad Tracks	77m East side	Trains going through every week, Crews bring Trucks and equipment to fix tracks		
TELUS Trailer	19mS	TELUS trucks idling near TELUS Trailer		
Name	Type	Traffic Volume	Distance (m)	Description
Stony Mountain Road	Pavement	High	62mS	Main Road for Anzac
Access Road	Gravel	Low	16mE	Access road to Station

Table 3.0 – Local Source Information

Area Topographic Map

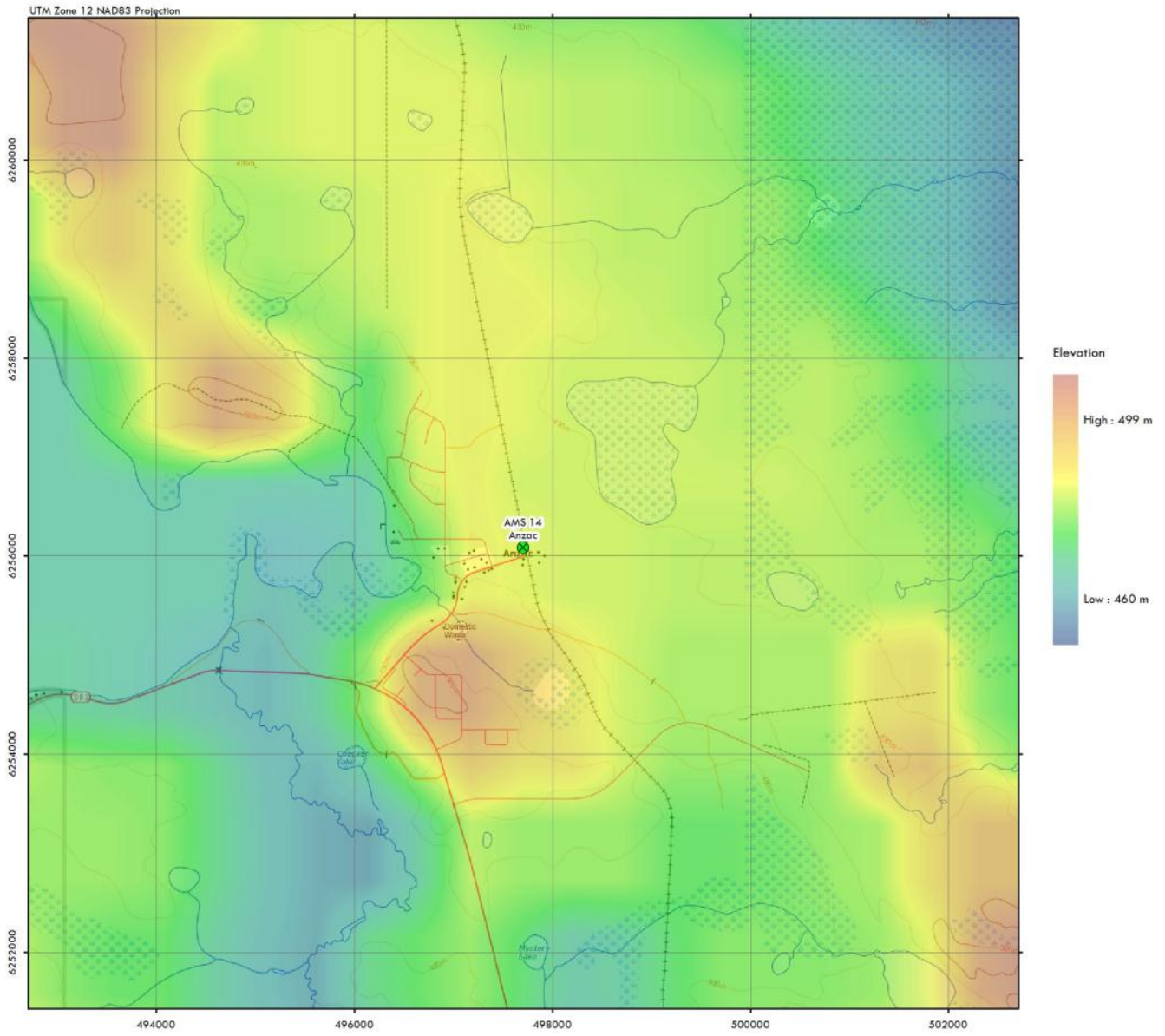


Figure 2.0 – Area Topographic map showing AMS 14 – Anzac Station

Ariel Photo



Figure 3.0 – Ariel photo showing AMS 14 – Anzac Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.2 – Sampling Deck



Figure 4.3 – PM2.5 and PM 10 samplers



Figure 4.4 –High Volume PAH Sampler



Figure 4.5 – EC VAPS



Figure 4.6 – Environ looking North



Figure 4.7 – Environ looking East



Figure 4.8 – Environ looking South



Figure 4.9 – Environ looking West



Figure 4.10 – Outdoor Sample Inlet & Indoor Sample Manifold



Figure 4.11 –Instrument Rack

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
SO2	Sulphur Dioxide	Thermo Instruments	43C	613516095	0 - 1000ppb	UV Fluorescence	4	1
TRS	Total Reduced Sulphur	Thermo Instruments	43C	613516794	100ppb	Thermal Conversion & UV Fluorescence	4	1
NO2	Nitrogen Dioxide	Thermo Instruments	42C	509110890	1000ppb	Chemiluminescence	4	1
O3	Ozone	Thermo Instruments	49C	509110892	500ppb	UV Absorption	4	1
NMHC	Methane Non Methane	Thermo Instrument	55i	1218153355	25ppm	FID	4	1
PM2.5	Particulate Matter <2.5um	Thermo Instruments	SHARP	E-798	<2.5um	Nephelometer & Beta Attenuation	4	1
VOC	Volatile Organic Compounds	Xontech	910-A	NA	NA	Canister Sampler	4	1
PM2.5	Particulate Matter <2.5um	R&P Partisol	2000	200FB210371994	<2.5um	Particulate Sampler	3	NA
PM10	Particulate Matter	R&P Partisol	2000-H	2000B207580411	<10um	Particulate Sampler	3	NA
WS	Wind Speed<10um	Met One	010-C	NA	0 – 80 Km/Hr	Chopped Optical	20	17
WD	Wind Direction	Met One	020-C	NA	0 – 360 degrees	Potentiometer	20	17
AT	Ambient Temperature	Vaisala	HMP155	NA	-50 - +50 degrees C	Thermistor	4	1
RH	Relative Humidity	Vaisala	HMP155	NA	0 – 100 %	Humicap	4	1
LW	Leaf Wetness	Campbell Scientific	LWS-L	NA	NA	Dielectric Constant	2	NA
VAPS	Versatile air pollution sampler	Environment Canada	NA	NA	NA	Denuder Sampler	2	NA
PAH	Polycyclic Aromatic Hydrocarbons	Tisch	TE-1000	NA	NA	PAH Sampler	3	NA
Rain	Rain Gauge	RM Young	52202	NA	NA	Tipping Bucket	4	1

Table 4.0 - Analytical Equipment in AMS 14

Name	Description	Make	Model	Serial Number
Datalogger	Datalogger	Campbell Scientific	CR3000	2372
ZAG	Zero Air Generator	Teledyne 701	3410	3410
HVAC	Bard Heater and Air Conditioner	NA	NA	NA
Shelter / Building	National Trailer	NA	NA	NA
Calibrator	Gas Dilution Calibrator	Sabio	4010	11021107

Table 5.0 - Support Equipment in AMS 14

Wind Rose

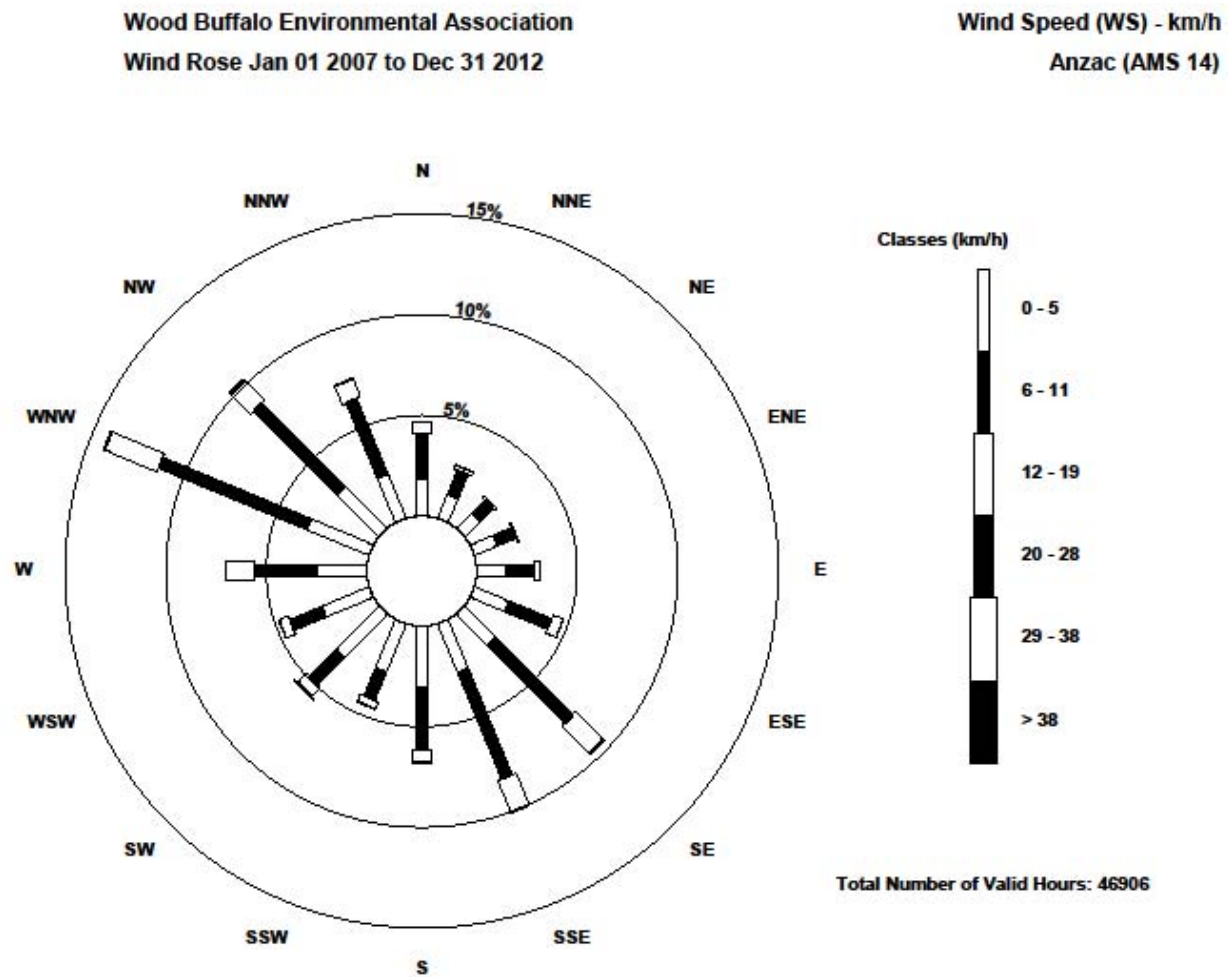


Figure 5.0 – AMS 14 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 15 – CNRL Horizon

January 2013

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Network Background

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		CONTINUOUS																NON-CONTINUOUS									
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X						
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X			X		X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X			X		X	X				

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

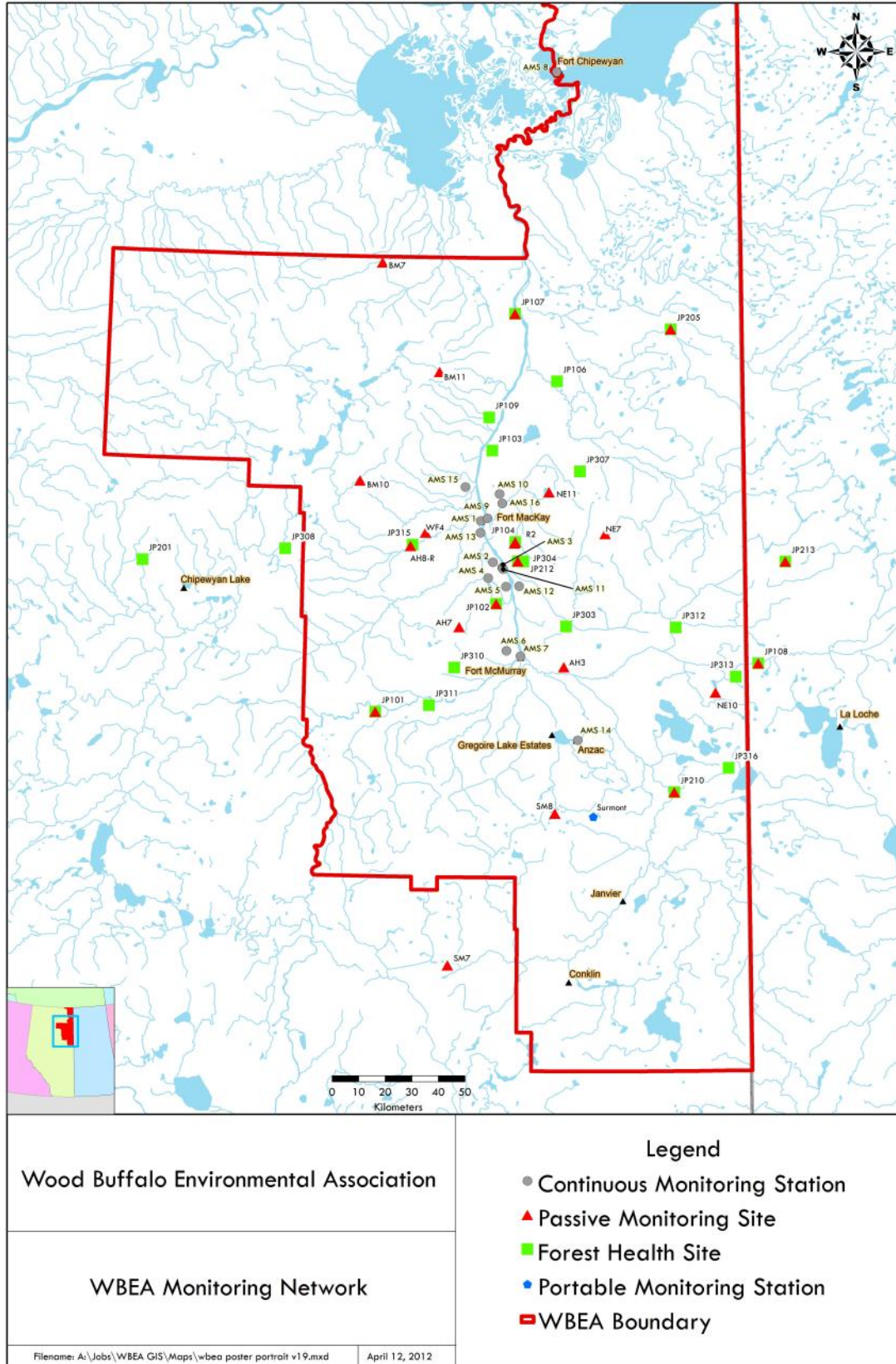


Figure 1.0 – WBEA Monitoring Network Sites

AMS 15 – CNRL Horizon Station Details

General Site Information

The CNRL Horizon Station is located in the regional Municipality of Wood Buffalo, 75 km Northwest of Fort McMurray, Alberta near Fort McKay. The air quality station is a requirement of Alberta Environment approval number 149968-00-01.

Item	Description								
Station ID	AMS 15								
Station Name	CNRL Horizon								
General description	Located near the Total Joslyn camp.								
Community	NA								
Station Address	NA								
Station Type	Industrial								
Area Land Use	The surrounding area is a camp for people who work on the surrounding (Total and CNRL) sites.								
Angle of elevation to nearby buildings	NA								
Average building height in area	NA								
Airflow Restrictions (yes/no)	<table border="1"> <tr> <td>North</td> <td>No</td> <td>East</td> <td>No</td> </tr> <tr> <td>South</td> <td>No</td> <td>West</td> <td>No</td> </tr> </table>	North	No	East	No	South	No	West	No
North	No	East	No						
South	No	West	No						
Nearest Tree	<table border="1"> <tr> <td>Distance</td> <td>15 meters</td> <td>Height</td> <td>10 meters</td> </tr> </table>	Distance	15 meters	Height	10 meters				
Distance	15 meters	Height	10 meters						
Sample Manifold Type									
Meteorological Tower Information	<table border="1"> <tr> <td>Height</td> <td>10 meters</td> </tr> <tr> <td>Type</td> <td>Aluma crank-up tower</td> </tr> <tr> <td>Position</td> <td>Attached to North end of monitoring shelter</td> </tr> </table>	Height	10 meters	Type	Aluma crank-up tower	Position	Attached to North end of monitoring shelter		
Height	10 meters								
Type	Aluma crank-up tower								
Position	Attached to North end of monitoring shelter								
Station Install Date	NA								
Station Origin	NA								
Site Preparation	Level gravel pad								

Table 2.0 – General Site Information

Localized Sources

Type	Distance	Description		
NA	NA	NA		
Name	Type	Traffic Volume	Distance (m)	Description
Roadway	Access road	Very Low	1 m	Dirt Road

Table 3.0 – Local Source Information

Area Topographic Map

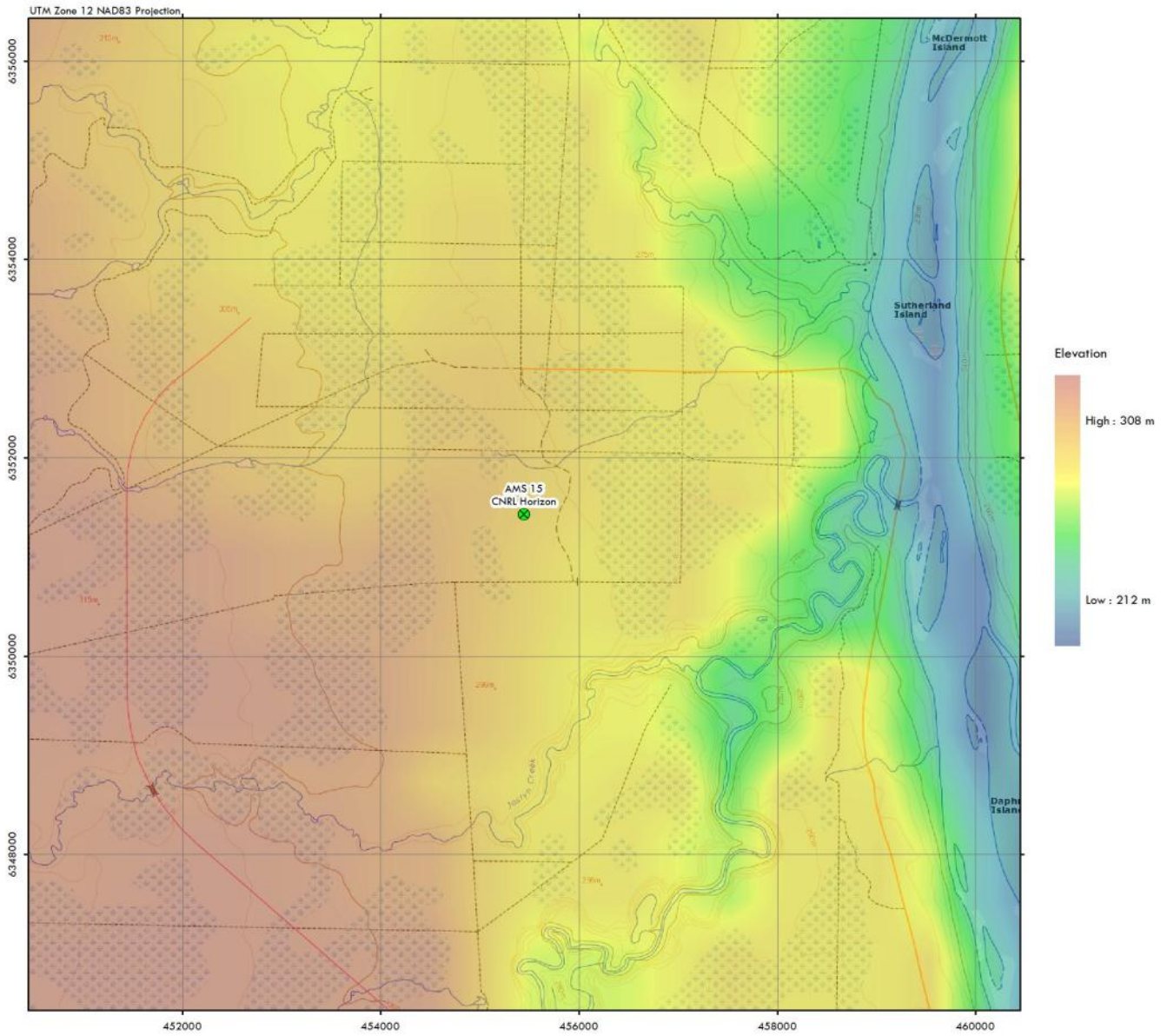


Figure 2.0 – Area Topographic map showing AMS 15 – CNRL Horizon Station

Ariel Photo



Figure 3.0 – Ariel photo showing AMS 15 – CNRL Horizon Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station



Figure 4.1 – monitoring compound looking south



Figure 4.6 – Environ looking North



Figure 4.7 – Environ looking East



Figure 4.8 – Environ looking South



Figure 4.9 – Environ looking West



Figure 4.10 – Outdoor Sample Inlet & Indoor Sample Manifold



Figure 4.11 – East Rack (on the left) & West Rack

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
NO2	NO, NOX, NO2	Thermo	42i	07103214	0-1000 ppb	Chemiluminescence	4	1
TRS	Total Reduced Sulphur compounds	Thermo	43i	07103213	0-100 ppb	Thermal conversion & UV Fluorescence	4	1
SO2	Sulphur Dioxide	Thermo	43i	07103213	0-1000 ppb	UV fluorescence	4	1
PM 10	Particulate Matter <10um	Thermo	2000	2000B2087	n/a	Sample collector	6	3
VOC	Volatile Organic Compounds	RM Environmental	910 A	NSE-132	n/a	Sample collector	4	1
WS	Wind Speed	Met one	010 C	J4337	0-80 km/h	Chopped optical	10	7
WD	Wind Direction	Met one	020 C	J2732	0-360 degrees	Potentiometer	10	7
AT	Ambient Temp	Vaisala	HMP155C	n/a	-50 to 50 degrees Celsius	Thermistor	4	1
RH	Relative Humidity	Vaisala	HMP155C	n/a	0-100%	Humicap	4	1

Table 4.0 - Analytical Equipment in AMS 15

Name	Description	Make	Model	Serial Number
Shelter	10 x 20 foot air monitoring shelter	National Trailer	n/a	2N9MF73
Telescoping tower	10m telescoping tower	Aluma	T-135	n/a
Tipping bucket	Tipping bucket rain gauge	RM Young	52202	TB0536
Micro logger	Micro logger	Campbell	CR3000	1850
Computer	PC	Dell	Optiplex 330	8B00VF
Calibrator	Dynamic calibrator	Sabio Engineering	4010	1088050

Table 5.0 - Support Equipment in AMS 15

Wind Rose

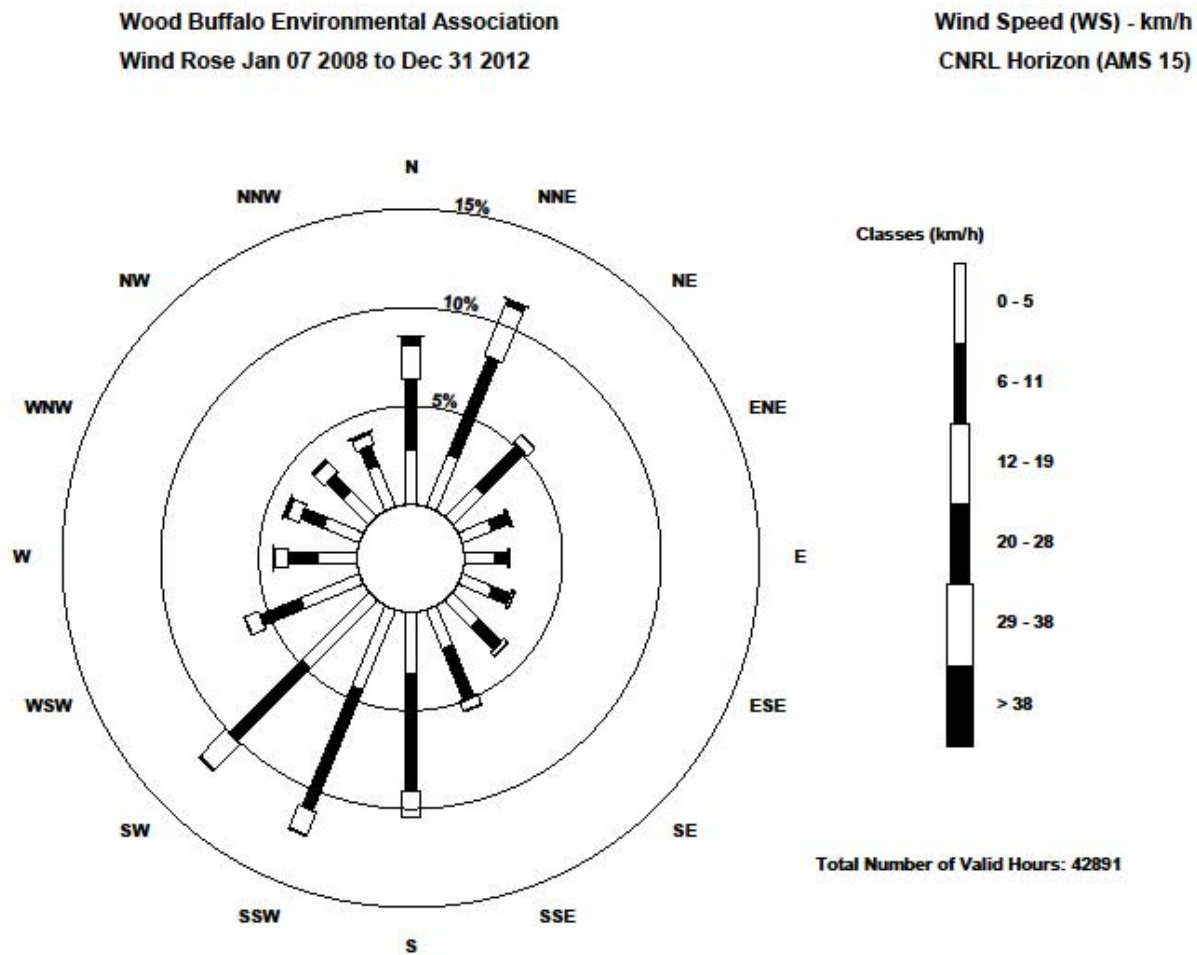


Figure 5.0 – AMS 15 Five Year Wind Rose



AMBIENT MONITORING STATION SITE DOCUMENTATION

AMS 16 – Shell Muskeg River

February 2013

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Network Background

The WBEA vision is to operate a state of the art monitoring system that meets the needs of residents and stakeholders in the Wood Buffalo Region. WBEA’s mission is to monitor air quality and air quality related environmental indicators, to generate accurate and transparent information which enables stakeholders to make informed decisions.

Continuous ambient air quality and meteorological data are collected through a program administered by the WBEA’s Ambient Air Technical Committee (AATC). The WBEA currently operates 15 continuous monitoring stations, each measuring from 3 to 10 air quality parameters. The continuously measured air quality parameters include CH₄, CO, H₂S, NMHC, NH₃, NO, NO₂, NO_x, O₃, PM_{2.5}, SO₂, THC and TRS. All sites also measure temperature, wind speed and wind direction. Selected sites measure relative humidity, barometric pressure, global radiation, precipitation, dew point, surface wetness and vertical temperature gradient. The ambient air monitoring parameters for each station are summarized in Table 1.

The WBEA also maintains and operates a mobile monitoring van and portable monitoring station, equipped to measure H₂S, NH₃, NO, NO₂, NO_x, PM_{2.5}, O₃, SO₂, THC, wind speed, wind direction, temperature and GPS location. The unit is available to WBEA member companies for private, facility-associated monitoring, or can be deployed for public monitoring in areas of special need or interest.

Since 1998 WBEA has maintained semi-continuous (intermittent) sampling for PM2.5, PM10, VOC and PAH. The sampling for intermittent monitoring has evolved with a better understanding of technology, analytical laboratory methods and sample deployment and collection methods. Intermittent samples in the WBEA ambient air monitoring network are taken every 6 days for a 24-hour period. The sampling schedule and procedures are consistent with Environment Canada’s National Air Pollution Surveillance program.

STATION NAME	NUMBER	MONITORED PARAMETERS																									
		CONTINUOUS																NON-CONTINUOUS									
		SO2	H2S	TRS	O3	NO2	NO	NOX	NH3	CO	PM2.5	THC	NMHC	CH4	TEMP	WS	WD	RH	GR	SW	BP	PRECIP	PM2.5	PM10	VOC	EC/OC	PAH	PRECIP
Fort McKay - Bertha Ganther	AMS 1	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Mildred Lake	AMS 2	X	X								X			X	X	X	X										
Lower Camp Met Tower	AMS 3													X	X	X	X										
Buffalo Viewpoint	AMS 4	X	X								X			X	X	X	X										
Mannix	AMS 5	X	X								X			X	X	X	X										
Patricia McInnes	AMS 6	X		X	X	X	X	X	X		X	X	X	X	X	X	X					X	X	X		X	X
Athabasca Valley	AMS 7	X		X	X	X	X	X	X		X	X	X	X	X	X	X			X		X	X	X		X	
Fort Chipewyan	AMS 8	X			X	X	X	X			X			X	X	X	X	X	X	X	X	X					
Barge Landing	AMS 9			X							X			X	X	X	X										
Lower Camp	AMS 11	X	X								X			X	X	X	X										
Millennium Mine	AMS 12	X		X		X	X	X			X	X		X	X	X	X						X	X			
Fort McKay South	AMS 13	X		X	X	X	X	X			X	X		X	X	X	X						X	X			
Anzac	AMS 14	X		X	X	X	X	X			X	X		X	X	X	X			X		X	X	X		X	
CNRL Horizon	AMS 15	X		X		X	X	X			X	X		X	X	X	X	X	X		X		X	X			
Shell-Albian Muskeg River	AMS 16	X		X		X	X	X			X	X		X	X	X	X			X		X	X				

Table 1.0 - Ambient Air monitoring Parameters in the WBEA Network

All the stations listed in table 1 are located throughout the Wood Buffalo Region. The map below shows the location of each station.

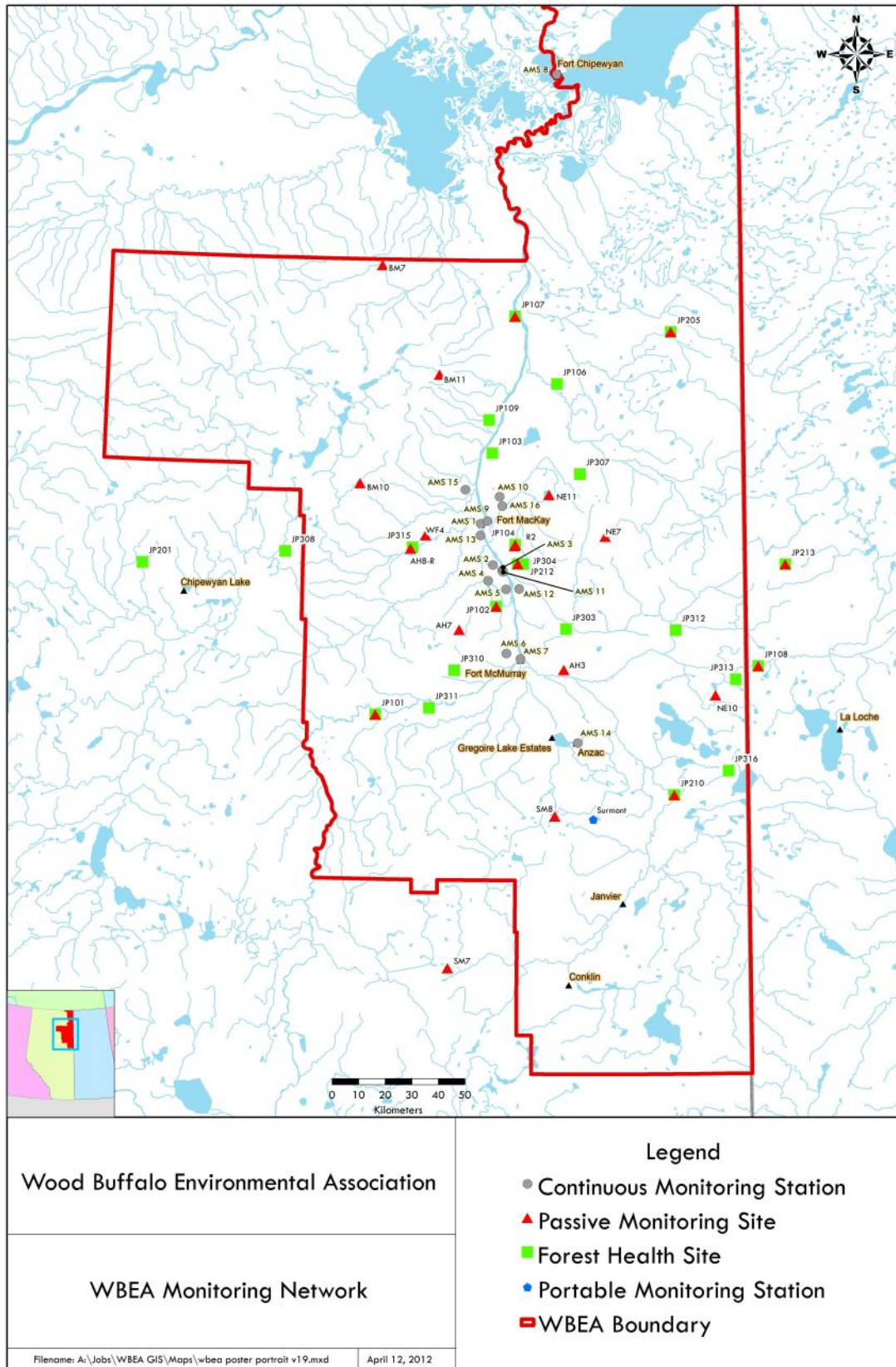


Figure 1.0 – WBEA Monitoring Network Sites

AMS 16 – Shell Muskeg River Station Details

General Site Information

The Shell Muskeg River Station, located about 4 km southeast of the decommissioned Albian Mine Site (AMS 10), commenced operation on February 10, 2009.

The Shell Muskeg River station contains analyzers that continuously measure NO, NO₂, NO_x, SO₂, THC, PM10, wind speed and direction, and temperature. PM10 and PM2.5 are measured intermittently.

Item	Description			
Station ID	AMS 16			
Station Name	Shell Muskeg River			
General description	Located approximately 250m south of Shell MRM plant site			
Community	N/A			
Station Address	N/A			
Station Type	Industrial			
Area Land Use	Industrial			
Angle of elevation to nearby buildings	0 degrees			
Average building height in area	n/a			
Airflow Restrictions (yes/no)	North NO		East NO	
	South NO		West NO	
Nearest Tree	Distance	10 metres	Height	10 metres
	Sample Manifold Type			
Meteorological Tower Information	Height	20 metres		
	Type	Stationary tower		
	Position	NE side of structure		
Station Install Date	February, 2009			
Station Origin	Previously AMS 10			
Site Preparation	Level gravel pad			

Table 2.0 – General Site Information

Localized Sources

Type	Distance		Description	
Communications tower and building	70m		Radio/cell tower and building	
Name	Type	Traffic Volume	Distance (m)	Description
roadway	Plant site access	high	300	Asphalt road
roadway	Station access	low	30	Gravel road

Table 3.0 – Local Source Information

Area Topographic Map

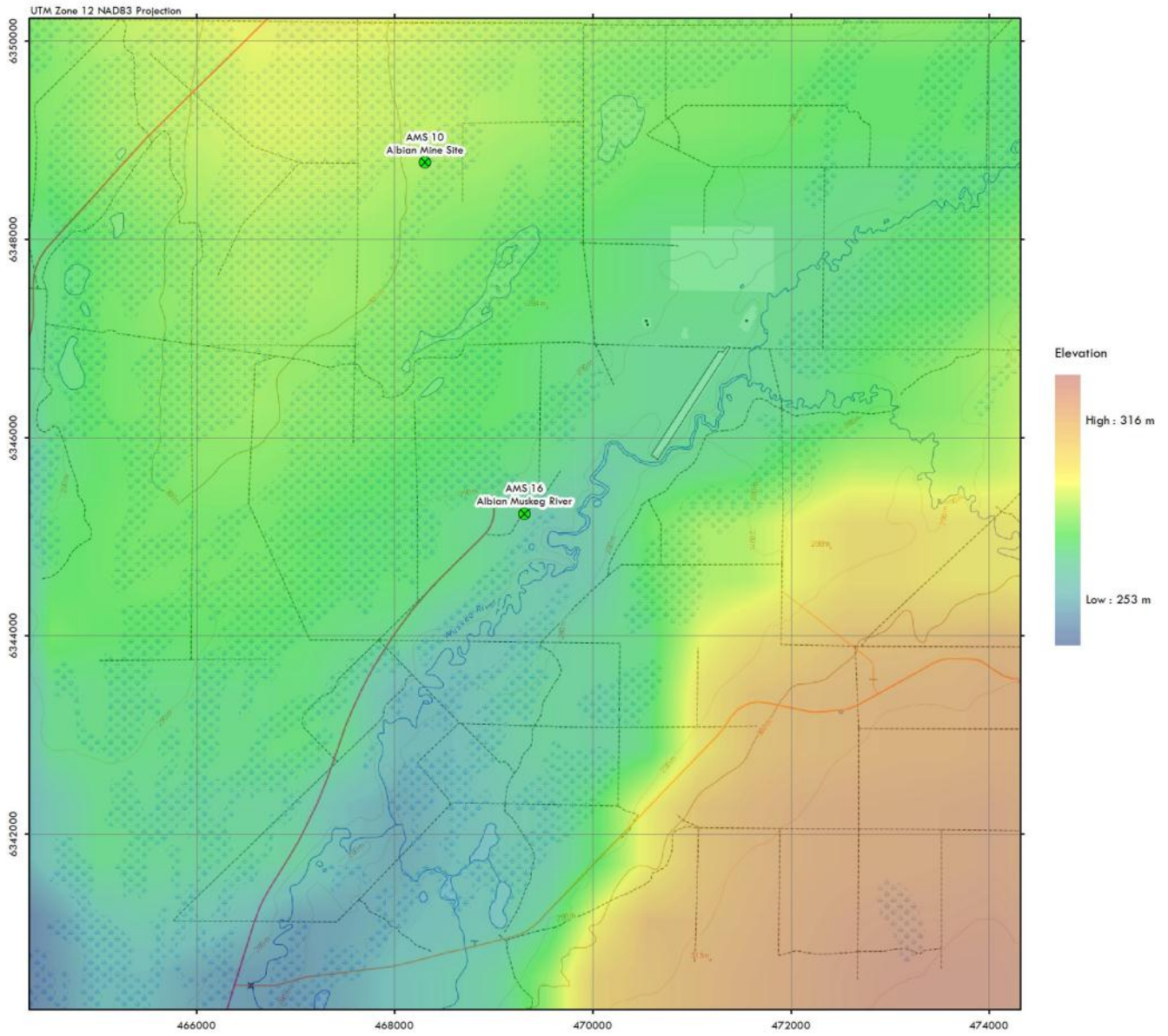


Figure 2.0 – Area Topographic map showing AMS 16 – Shell Muskeg River Station

Aerial Photo



Figure 3.0 – Aerial photo showing AMS 16 – Shell Muskeg River Station

Site photos

The following show photos of the station surroundings as well as the exterior and interior of the station itself.



Figure 4.0 – Exterior of monitoring station looking North



Figure 4.1 – Environ looking North



Figure 4.2 – Environ looking East



Figure 4.3 – Environ looking South



Figure 4.4 –Environ looking West



Figure 4.5 – Equipment Rack



Figure 4.6 – Sample Manifold



Figure 4.7 – Partisol PM10 Sampler, right.

Equipment Inventory

Parameter Measured	Make	Model	Serial Number	Range	Detection Principle	Sampling Height (m)		
						Ground	Shelter	
SO2	Sulphur dioxide	Thermo	43i	1118148498	0-1000 ppb	UV Fluorescence	4	1
THC	Total Hydrocarbons	Thermo	51i-LT	1218153458	0-25 ppm	Flame Ionization	4	1
NOx	NO, NO2, NOx	API	200A	1386	0-1000 ppb	Chemiluminescence	4	1
PM	Continuous particulate	Thermo	SHARP 5030	E-772	0-1000 ug/m3	Nephelometer & Beta Attenuation	4	1
PM10	Particulate matter <10ug	Thermo	2000	n/a	n/a	Sample collector	2	n/a
AT	Ambient temp	Vaisala	HMP155C	n/a	-50 to 50 C	Thermistor	4	1
RH	Relative humidity	Vaisala	HMP155C	n/a	0-100%	Humicap	4	1
WS	Wind speed	Met One	010c	n/a	0-80 km/h	Chopped optical	20	17
WD	Wind direction	Met One	020c	n/a	0-360 degrees	Potentiometer	20	17

Table 4.0 - Analytical Equipment in AMS 16

Name	Description	Make	Model	Serial Number
Computer	Tower	Dell	n/a	n/a
Monitor	LCD display	Dell	n/a	n/a
Datalogger	datalogger	Campbell Scientific	CR3000	3492
16 channel controller	n/a	Campbell Scientific	SDM-CD16AC	2083
Cell modem	Cell modem	Sierra wireless	Airlink Raven X	1007472784
Calibrator	Dilution calibrator	SABIO	4010	11081107
LAN	network	Lantronix	n/a	n/a
Zero air generator	Clean air	Teledyne	701	2155
Surge protector	Power outlet protection	n/a	LCR 2400	n/a
HVAC	Electric baseboard; rooftop AC	n/a	n/a	n/a
Shelter	National trailer	National	n/a	n/a
Calibration/support cylinders	Cal mix, H2S, H2 compressed gas	n/a	n/a	n/a
UPS (2)	Power backup, x2	Mitsubishi	7000	n/a

Table 5.0 - Support Equipment in AMS 16

Wind Rose

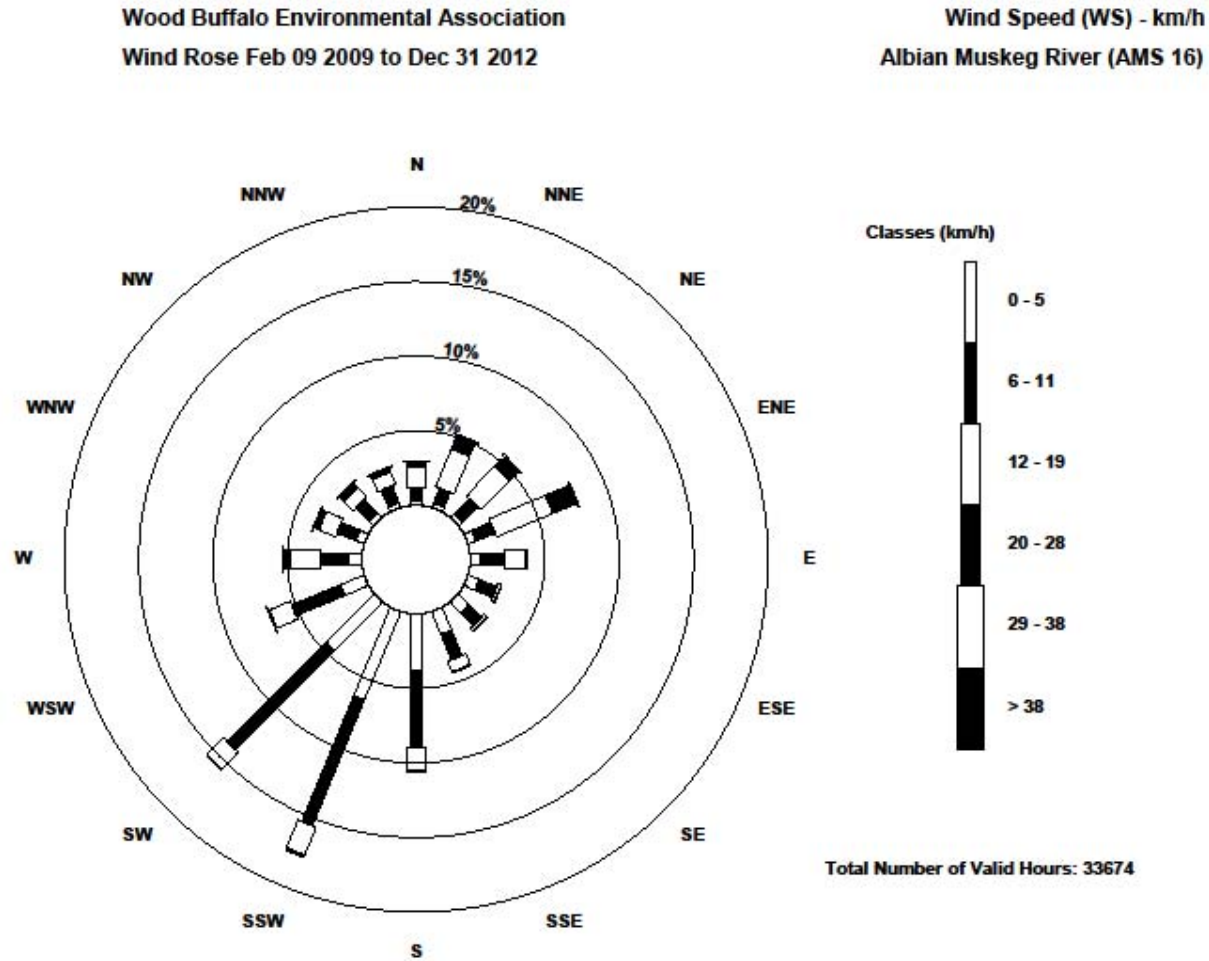


Figure 5.0 – AMS 16 Five Year Wind Rose