

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

June 2011

Prepared By:



July 22, 2011

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
T9N 2J5

Monitoring Location: Cold Lake
Data Period: June 2011

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

The monthly analytical report for passive monitoring:
Authorized by Levi Manchak

The 6-day analytical report for VOCs and PAHs:
Authorized by Petro Oh

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. The calibration conforms to the procedure outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Continuous Ambient Monitoring – June 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO ₂ (PPB)	172	48	0	0	0.27	2	VAR	VAR	VAR	VAR	0.7	VAR	100.0
TRS (PPB)	-	-	-	-	0.36	1	VAR	VAR	VAR	VAR	0.9	VAR	99.3
NO ₂ (PPB)	159	-	0	-	1.92	9	1	6	0.4	135(SE)	3.0	7	99.6
NO (PPB)	-	-	-	-	0.14	5	1	6	0.4	135(SE)	0.5	6	99.6
NO _x (PPB)	-	-	-	-	2.05	13	1	6	0.4	135(SE)	3.2	7	99.6
O ₃ (PPB)	82	-	0	-	29.90	62	9	16	7.1	188(S)	43.7	10	100.0
THC (PPM)	-	-	-	-	2.03	3.0	13	4	3.2	255(WSW)	2.2	VAR	99.9
PM 2.5 (UG/M ³)	-	30	-	1	10.81	187.5	3	3	10.3	358(N)	47.5	7	99.7
TEMPERATURE (DEG C)	-	-	-	-	14.62	26.7	29	17, 18	4.5, 2.9	244(WSW), 237(SW)	21.0	29	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.59	100	15	5	2	147(SE)	94.9	15	100.0
VECTOR WS (KPH)	-	-	-	-	5.56	18.6	26	13	-	329(NNW)	12.0	3	100.0
VECTOR WD (DEGREES)	-	-	-	-	43(NE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – June 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#25	0.5	0.2
H ₂ S	#27	0.31	0.15
NO ₂	#28	1.8	0.7
O ₃	#32	34.9	28.2

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – June 2, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 8, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 14, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 20, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 26, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – June 2, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 8, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 14, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 20, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	3-Methylcholanthrene

PUF cartridge – June 26, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	3-Methylcholanthrene

General Monthly Summary - Cold Lake

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – COLD LAKE

Sulphur Dioxide (PPB)

- Analyzer make / model – Thermo 43i, S/N: 806528242

No operational issues observed during the month. The pump was rebuilt following the as found points on June 17th. The analyzer was allowed time to stabilize, and then a multi-point calibration was performed on June 17th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total Reduced Sulphur (PPB)

- Analyzer make / model –TEI 450i, S/N: 812728560
- Converter - CD NOVA CDN 101, S/N: 250

No operational issues observed during the month. The monthly calibration was performed on June 15th. After the calibration, the converter was replaced. The analyzer was allowed time to stabilize, and a post-repair calibration was performed on June 16th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Ozone (PPB)

- Analyzer make / model –Thermo 49i, S/N: 700419951

No operational issue observed during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Total Hydrocarbon (PPM)

- Analyzer make / model -TECO 51C-LT, S/N: 427408718

No operational issues observed during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

- Analyzer make / model - TECO 42C, S/N: 427408716

No operational issues observed during the month. The pump was rebuilt following the as found points on June 15th. The analyzer was allowed time to stabilize, and a post-repair calibration was performed on June 16th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

The NO₂ guideline was changed on June 15th: the objective for 1-Hour average concentration was changed from 212 ppb to 159 ppb, the objective for 24-Hour average concentration was removed, and the concentration of 24 ppb for the annual average was added by AE.

Particulate Matter 2.5 (ug/m³)

- Analyzer make / model –TEOM1405F, S/N: 1405A201620804

No operational issue was observed this month. A routine Teom audit was performed on June 14th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Two hours of data were invalidated as the data were above –3 ug/m³. One 24-Hour average contravention was recorded and reported to AE this month; reading of 47.5 ug/m³ on June 7th, Ref # 248167.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

- System make / model –RM Young, S/N: 46553

The wind system is reported as vector wind speed and vector wind direction. No operational issue was observed during the month.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3
- No operational issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3
- No operational issues observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61
- No operational issues observed during the month.

Datalogger

- System make / model - ESC 8832, S/N: 263
 - Software make / version - ESC v 5.51a
- The ESC 8832 is connected to a modem with DSL for continuous connection with the base computer.

Trailer

No issue was observed during this month. The manifold was cleaned on June 17th.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Nine hours of AQI values recorded in June 2011 were in the Poor range, and they were all due to PM2.5. Fifty-seven hours of AQI values recorded in June 2011 were in the Fair range; 16 hours were due to ozone and 41 hours were due to PM2.5. Others were within the Good range. The highest hourly concentration of Ozone was 62 ppb and an AQI value of 35, on June 9th, hour of 16. The highest hourly concentration of PM2.5 was 187.5 ug/m³ and an AQI value of 104 on June 3rd, hour of 3.

Passive Network

No issue was noticed this month.

Volatile Organics (VOCs)

The volatile organics were sampled from June 2nd to June 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m³ in 3 significant figures.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs were sampled from June 2nd to June 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m³.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

AIR QUALITY INDEX (AQI)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
DAY	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	MAX
1	23	22	-	19	22	22	20	16	20	27	30	31	32	33	34	33	33	32	27	28	27	25	24	23	34		
2	PM2	PM2	NA	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
3	22	-	22	21	19	20	19	18	17	18	20	24	23	24	27	28	28	25	22	21	19	15	18	19	28		
4	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
5	-	22	43	104	63	46	32	19	12	15	13	14	15	16	18	18	18	17	16	15	13	-	104	-	104		
6	NA	O3	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	PM2	PM2	
7	10	9	8	7	6	7	9	11	12	13	14	15	15	15	17	16	16	16	16	16	15	10	-	7	17		
8	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	PM2	O3	
9	5	4	4	7	4	5	9	10	11	13	15	16	16	15	16	16	16	17	16	14	14	9	-	5	17		
10	O3	O3	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	O3	O3	O3	O3	NA	PM2	PM2	PM2	
11	5	4	5	6	5	7	10	9	13	17	19	20	20	21	21	21	21	21	21	19	-	10	9	8	21		
12	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	PM2	O3	
13	7	7	4	3	9	13	32	45	61	70	79	76	82	65	39	30	23	20	-	21	21	20	18	82	82		
14	PM2	PM2	PM2	O3	O3	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	NA	O3	O3	PM2	PM2	PM2	
15	14	15	19	19	16	18	33	37	32	27	19	28	45	27	21	22	22	-	24	24	18	18	21	45	45		
16	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	PM2	O3	NA	PM2	PM2	PM2	O3	O3	PM2	
17	17	16	16	15	13	14	17	15	18	20	22	25	27	30	32	33	35	-	33	29	27	25	25	23	35	35	
18	O3	O3	O3	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	
19	21	20	18	16	11	13	16	19	22	25	28	29	30	32	33	-	33	33	29	52	19	19	18	52	52		
20	O3	O3	O3	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	PM2	O3	O3	O3	PM2	PM2	
21	19	18	14	12	12	14	12	15	17	19	22	24	25	25	27	-	27	27	25	24	25	24	22	18	27	27	
22	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
23	16	12	16	15	14	13	23	18	17	19	19	20	18	-	22	21	19	19	19	15	9	6	7	23	23		
24	O3	O3	O3	O3	O3	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	
25	6	5	7	3	7	7	9	14	20	20	21	21	23	-	25	26	25	24	22	19	14	8	8	12	26		
26	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	PM2	O3	O3	
27	14	13	13	20	18	16	14	15	-	22	20	-	20	24	22	21	20	17	16	10	10	11	12	24	24		
28	PM2	PM2	O3	O3	O3	O3	O3	O3	PM2	NA	NA	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
29	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	19	20	19	20	21	24	24		
30	13	13	12	7	7	7	10	16	20	21	21	-	-	-	-	-	19	20	19	19	20	20	21	24	24		
31	O3	O3	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	
32	23	17	13	14	14	13	12	11	11	12	-	-	-	-	-	-	21	19	19	18	17	15	16	11	5	23	
33	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	
34	9	10	8	9	11	9	8	10	15	-	-	-	-	-	-	14	12	10	8	8	7	6	7	7	15	15	
35	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
36	8	9	8	8	7	7	8	10	-	11	11	12	14	14	13	14	14	14	13	13	14	13	14	13	12	14	
37	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
38	13	14	15	15	15	14	-	13	13	13	13	13	14	16	15	16	17	16	14	14	13	14	17	17	17	17	
39	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
40	17	16	16	16	15	14	-	14	15	14	14	14	15	15	14	14	14	15	17	17	14	13	12	12	17		
41	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	O3	
42	5	6	4	5	-	5	9	14	19	22	26	26	24	24	24	25	25	26	26	22	16	11	10	11	26		
43	PM2	PM2	PM2	PM2	NA	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	PM2	O3	
44	8	7	5	-	7	8	15	16	18	20	21	21	22	23	24	25	24	23	23	24	23	21	15	15	25		
45	PM2	PM2	PM2	NA	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
46	14	15	-	17	16	16	15	15	15	12	15	17	20	22	24	23	22	22	20	14	8	8	6	24	24		
47	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
48	-	6	6	7	6	6	6	6	9	10	21	23	18	16	23	23	21	17	18	12	10	10	15	13	23		
49	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
50	-	6	8	10	12	14	17	18	20	19	20	18	17	32	15	9	10	11	12	11	9	4	4	-	32		
51	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	PM2	NA	PM2	PM2	
52	4	6	5	5	6	5	8	9	9	12	14	15	16	17	18	18	20	27	31	21	18	17	-	16	31		
53	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	
54	13	12	12	9	8	12	14	14	12	14	14	15	16	15	15	18	17	18	18	17	16	-	15	16	15	20	
55	O3	O3	O3	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	
56	10	12	13	9	11	11	10	12	17	20	19	19	18	17	17	18	18	18	17	16	-	15	16	15	20		
57	O3	O3	PM2	O3	PM2	O3	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	
58	14	15	13	10	9	8	8	9	10	10	11	12	13	15	17	18	19	18	17	-	15	14	12	11	19		
59	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	
60	23	22	43	104	63	46	33	37	45	61	70	79	76	82	65	39	35	33	33	29	52	25	25	24	24		
PEAK	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	

STATUS FLAG CODES		NA - NOT APPLICABLE												V - VARIOUS											
AQI CLASS	OZONE (O ₃)				PARTICULATE MATTER 2.5 (PM _{2.5})				NITROGEN DIOXIDE (NO ₂)				SULPHUR DIOXIDE (SO ₂)				FREQUENCY								
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%								
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%			
POOR (51-100)	0	0.0%	-	-	-	9	1.2%	104	3	3	0	0.0%	-	-	-	0	0.0%	-	-	-	9	1.2%			
FAIR (26-50)	41	5.7%	35	16	9	16	2.2%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	57	7.9%			
GOOD (1-25)	498	69.2%</																							

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
DAY																													
1	0	0	IZS	0	0	0	1	1	1	2	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0.4	24	
2	0	IZS	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	1	0	0	0	1	1	1	0.4	24	
3	IZS	1	1	1	0	0	0	0	0	0	0	1	1	1	1	2	1	1	1	1	1	1	1	1	IZS	2	0.7	24	
4	1	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	0	1	0.4	24	
5	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	0.7	24	
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	IZS	0	0	0	1	0.0	24		
7	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	0	1	0.7	24	
8	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	1	1	1	1	IZS	1	1	0	0	0	1	0.4	24	
9	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	IZS	1	0	1	1	1	1	1	0.6	24	
10	1	1	1	0	0	0	0	1	1	0	1	1	0	0	1	1	IZS	1	1	1	1	1	1	0	0	1	0.6	24	
11	0	0	0	0	0	1	0	1	1	2	1	1	1	1	1	IZS	1	1	1	1	1	0	0	0	0	2	0.6	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	1	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	0.1	24	
14	0	0	0	0	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	0	0	0	0	0	0	0	0	0	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
18	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
19	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22	0	0	0	0	IZS	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.6	24	
23	0	0	0	IZS	0	0	0	0	1	1	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	1	0.2	24	
24	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25	0	IZS	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	1	1	1	1	1	0	1	0.3	24	
26	IZS	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0.1	24	
27	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	IZS	0	1	0.3	24	
28	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	0	IZS	0	0	1	0.4	24	
29	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0.3	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24	
HOURLY MAX	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1				
HOURLY AVG	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.3	0.3	0.5	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.3	0.4	0.3	0.3	0.3	0.2	0.1	0.1			

STATUS FLAG CODES

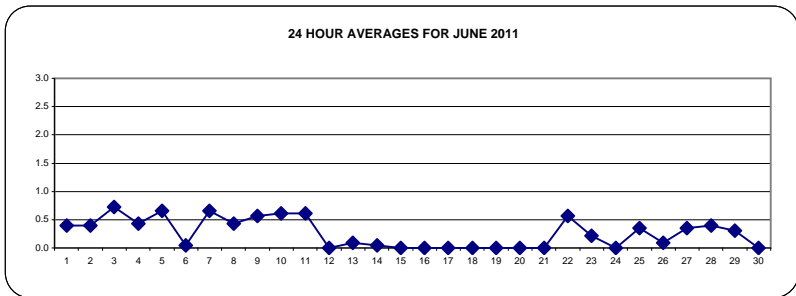
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

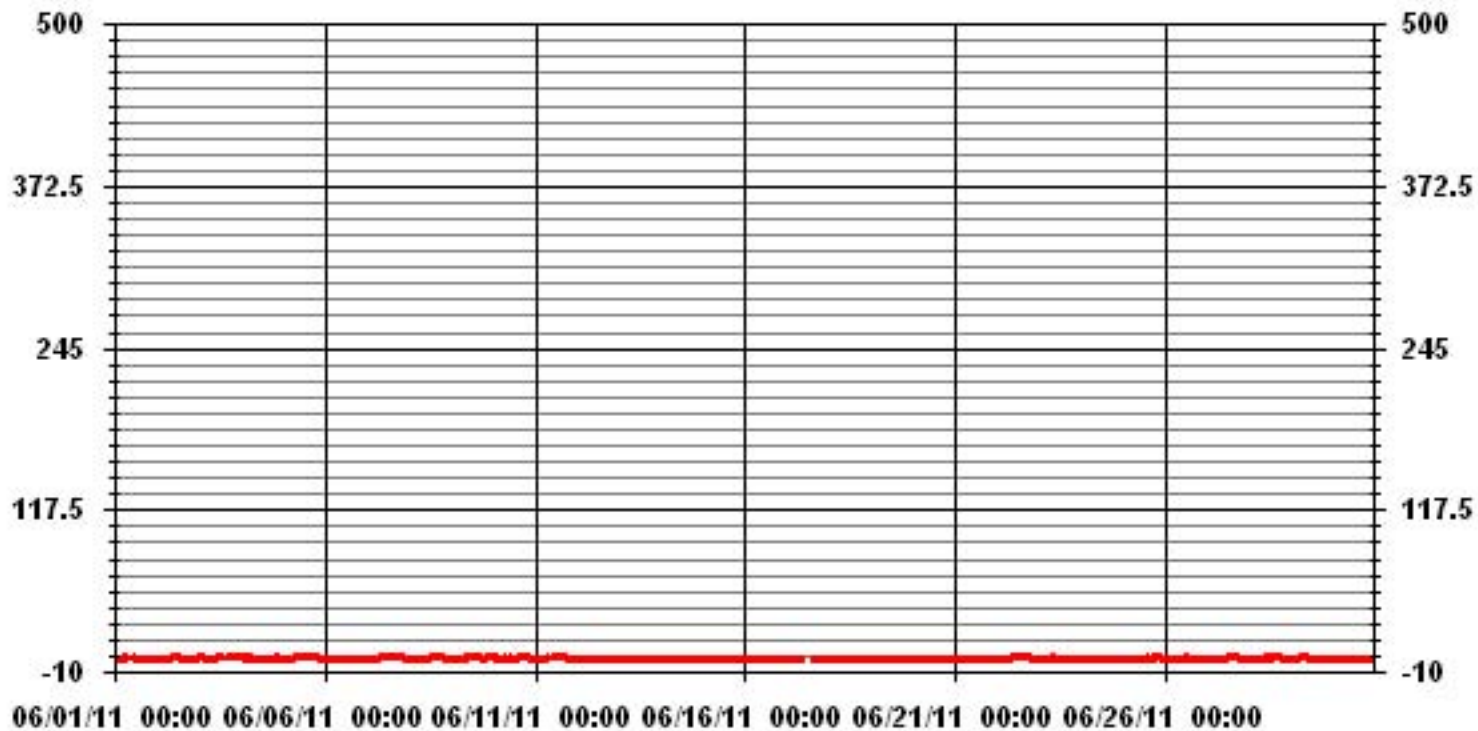
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	178					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.45		MONTHLY AVERAGE:	0.27	PPB	



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00					
DAY																												
1	1	1	IZS	1	1	1	1	1	1	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	3	1.2	24	
2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
3	IZS	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1	1	1	IZS	2	1.3	24	
4	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	1.1	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1.0	24
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1.0	24
8	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	IZS	1	1	1	1	1	1	2	1.0	24
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1.0	24
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1.0	24
11	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	2	1.1	24
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1.0	24
13	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
14	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
15	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
16	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
17	1	1	1	1	1	1	1	1	1	IZS	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
18	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
19	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
20	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
21	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
22	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
23	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
24	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
25	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
26	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1.0	24
HOURLY MAX	2	1	1	1	1	1	2	2	1	3	2	2	2	1	2	2	2	2	2	2	2	1	1	1	1			
HOURLY AVG	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			

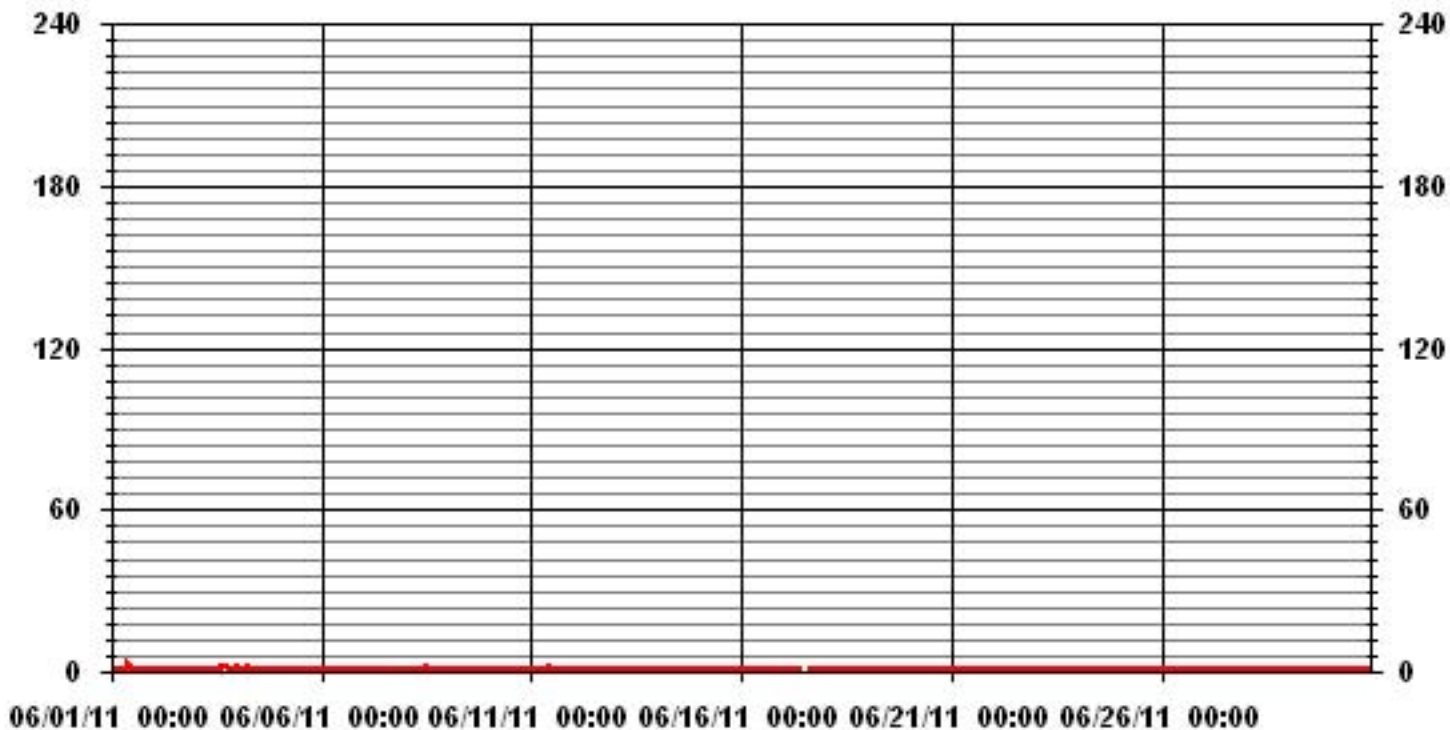
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	683					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	9	ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.16					

01 Hour Averages



— LICA SO2MAX PPB

LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	5.56	8.63	10.83	4.24	8.78	6.14	7.46	4.53	5.41	4.39	6.58	9.51	8.49	2.92	2.92	3.51	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.56	8.63	10.83	4.24	8.78	6.14	7.46	4.53	5.41	4.39	6.58	9.51	8.49	2.92	2.92	3.51	

Calm : .00 %

Total # Operational Hours : 683

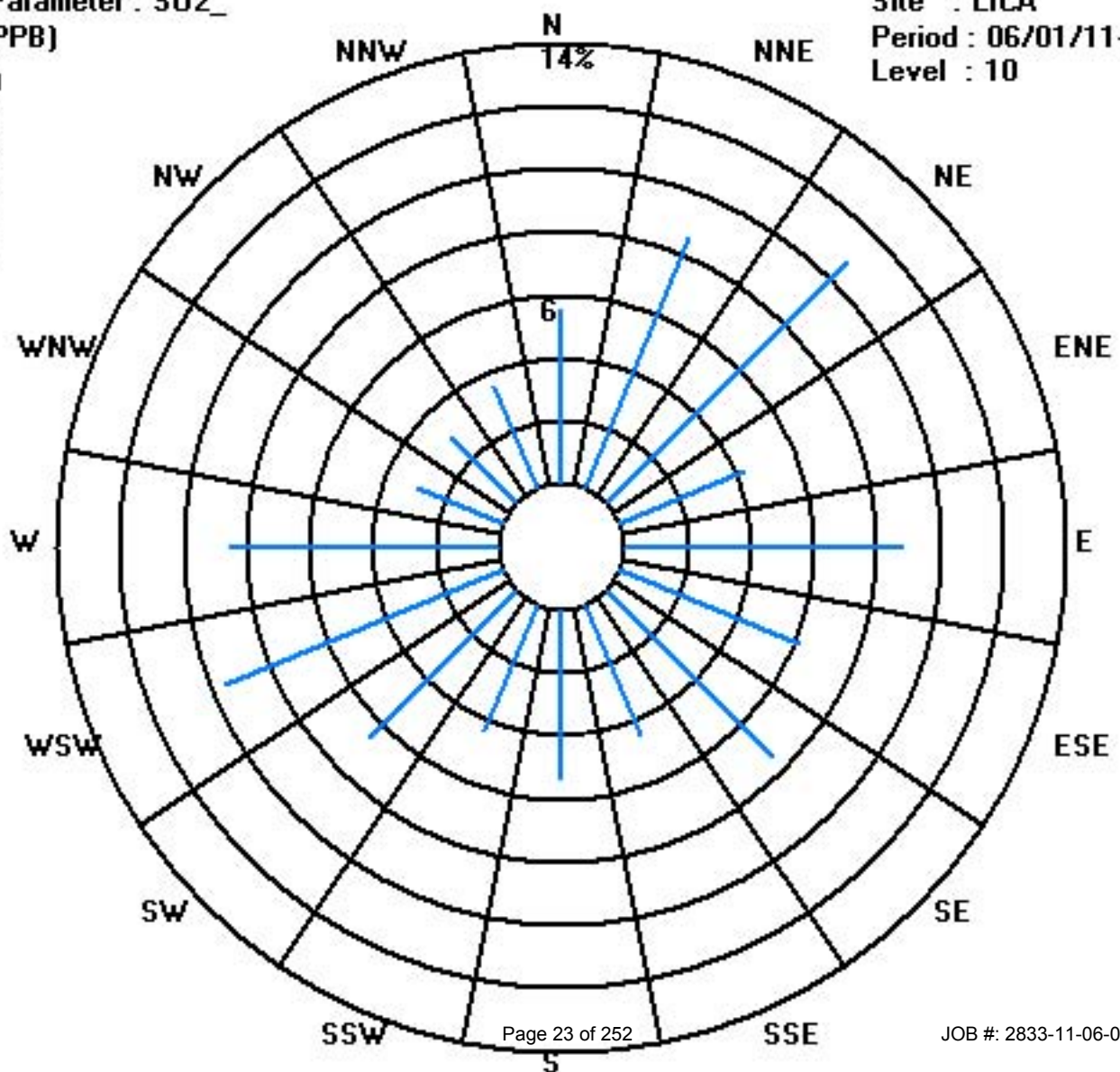
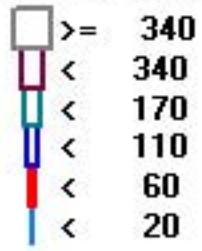
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	38	59	74	29	60	42	51	31	37	30	45	65	58	20	20	24	683
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	38	59	74	29	60	42	51	31	37	30	45	65	58	20	20	24	

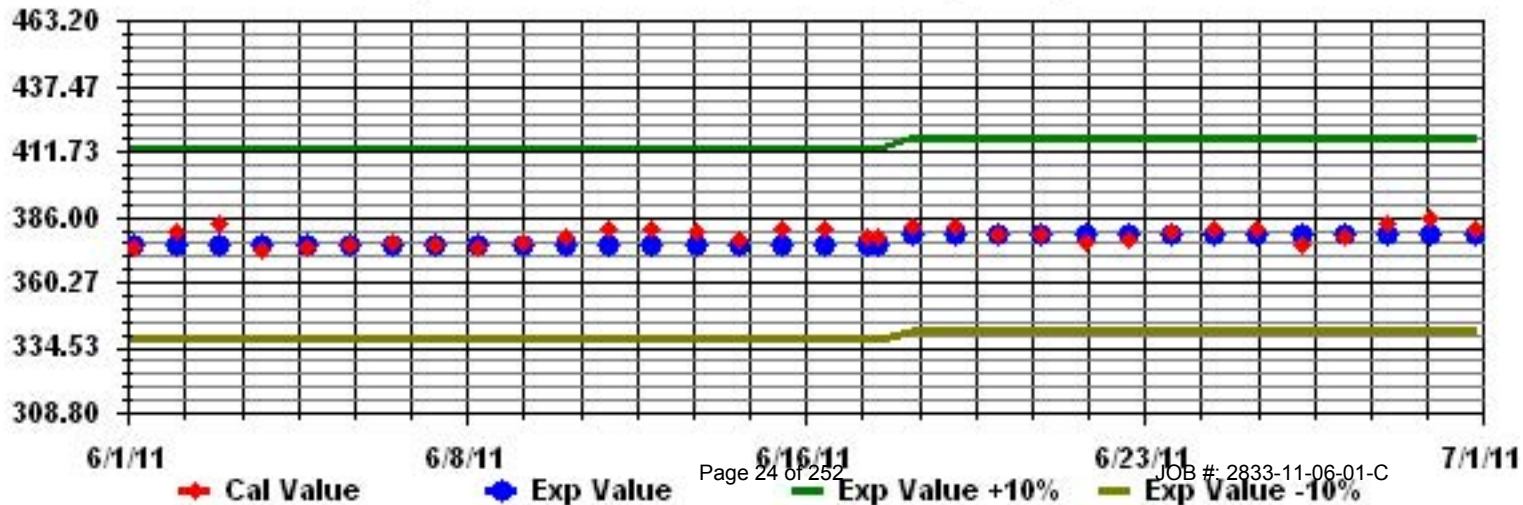
Calm : .00 %

Total # Operational Hours : 683

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAN



Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
DAY																													
1	1	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.9	24	
2	0	IZS	1	1	1	1	1	1	0	0	1	1	1	1	0	0	1	0	0	1	1	1	1	0	1	1	0.7	24	
3	IZS	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0.9	24	
4	1	1	1	0	0	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0.8	24	
5	1	0	0	0	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	1	0.7	24	
6	1	1	1	0	0	1	1	1	1	1	1	1	0	0	1	0	1	1	1	1	1	IZS	1	0	1	1	0.7	24	
7	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
8	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	0	1	1	1	1	0.9	24
9	1	1	1	1	0	1	1	1	1	0	1	0	0	0	1	1	1	1	IZS	1	1	1	0	0	1	1	1	0.7	24
10	0	0	0	0	0	1	1	1	1	0	1	0	0	0	1	0	IZS	1	1	1	1	1	1	1	1	1	1	0.6	24
11	1	1	1	0	1	0	0	1	1	1	0	0	1	0	0	IZS	0	1	1	0	0	1	1	1	1	1	1	0.6	24
12	0	1	1	1	1	0	1	0	0	0	0	0	0	1	IZS	0	1	1	1	1	1	1	1	0	1	1	1	0.6	24
13	1	1	1	1	1	1	1	1	1	0	1	1	1	IZS	0	0	0	1	1	0	1	1	1	1	1	1	1	0.8	24
14	1	1	1	1	0	0	1	1	1	1	0	1	IZS	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0.5	24
15	0	0	0	1	0	1	1	1	1	0	1	IZS	C	C	M	M	M	M	0	0	0	0	0	0	0	1	1	0.3	20
16	0	0	0	0	0	0	0	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
18	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.1	24	
24	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.3	0.4	0.3	0.3	0.3	0.4	0.5	0.5	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.3				

STATUS FLAG CODES

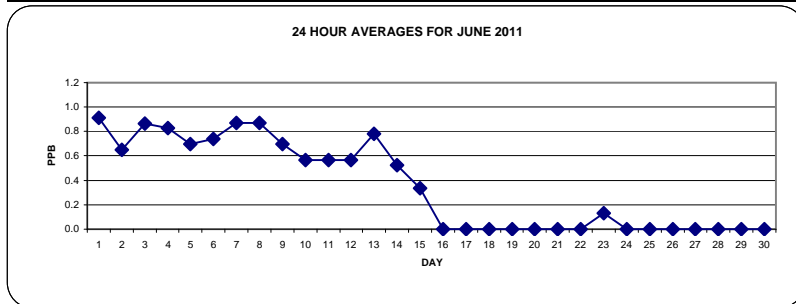
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

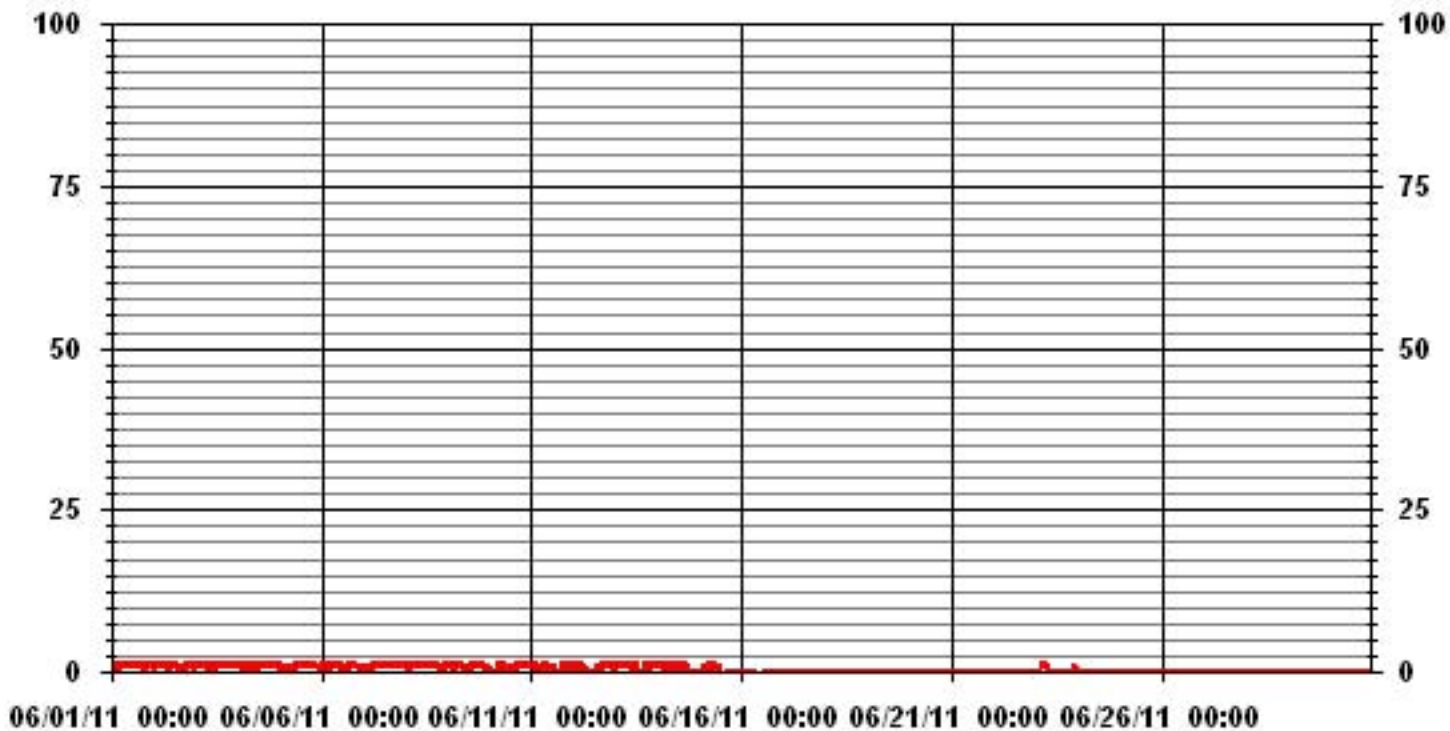
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	241					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.9	PPB			ON DAY(S)	VAR
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	99.3	%	
STANDARD DEVIATION	0.48		MONTHLY AVERAGE	0.36	PPB	



01 Hour Averages



— LICA TRS_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST

DAY	HOUR START																								DAILY 24-HOUR				
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
3	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.0	24	
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24	
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1.0	24	
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1.0	24	
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1.0	24	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1.0	24	
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1.0	24	
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1.0	24	
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1.0	24	
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
13	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
14	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
15	1	1	1	1	1	1	1	1	1	1	1	IZS	C	C	M	M	M	M	0	0	0	0	0	0	0	1	0.6	20	
16	0	0	0	0	0	0	0	C	C	C	C	C	C	1	1	1	1	0	0	1	0	0	0	0	0	1	0.3	24	
17	0	0	1	1	0	0	1	1	0	IZS	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	1	0.2	23
18	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
19	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
23	0	0	0	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.2	24
24	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
25	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
28	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.0	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0	1	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.5	0.6	0.5	0.6	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0			

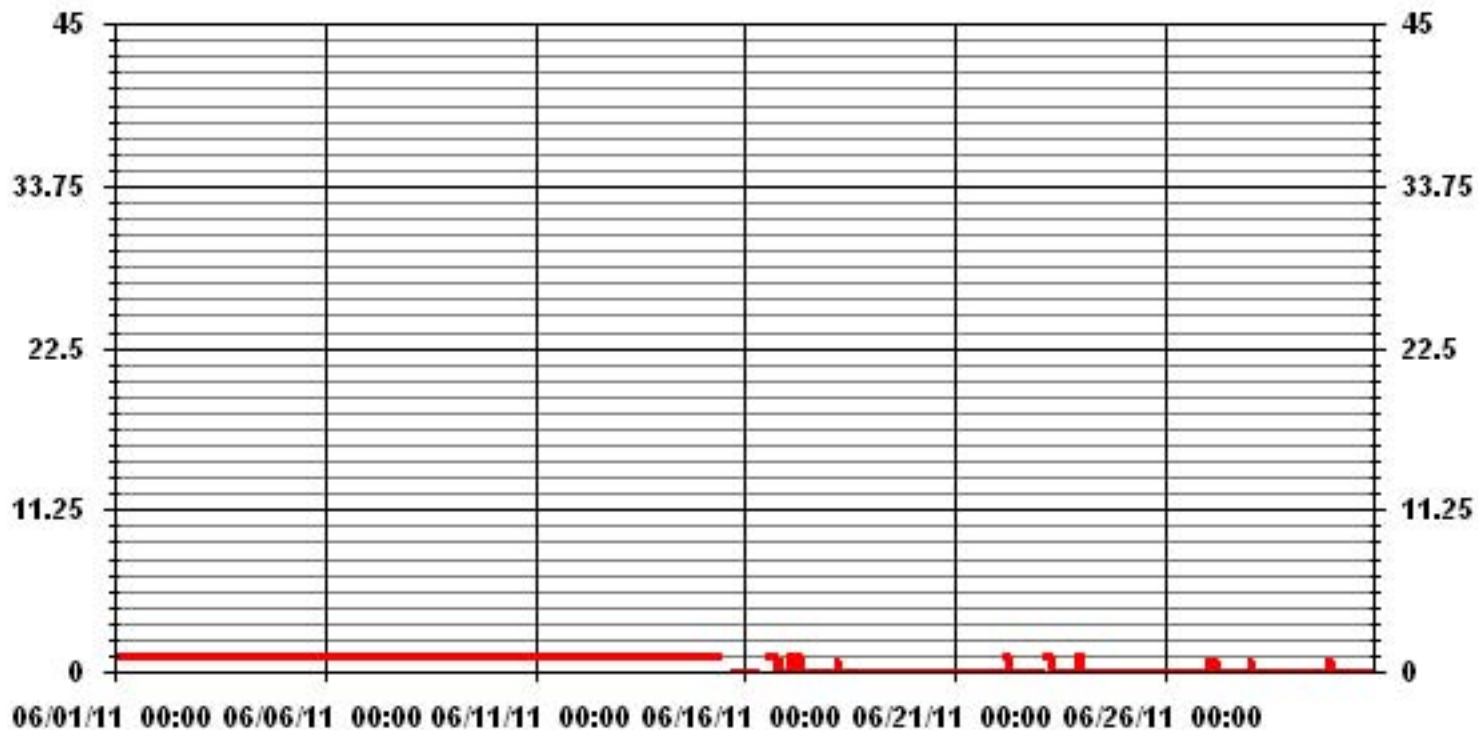
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	354					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
				VAR - VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	0.50					

01 Hour Averages



LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : TRS_
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	5.31	9.30	10.48	4.28	8.86	6.05	7.38	4.43	5.46	4.43	6.64	9.45	8.56	2.80	2.95	3.54	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.31	9.30	10.48	4.28	8.86	6.05	7.38	4.43	5.46	4.43	6.64	9.45	8.56	2.80	2.95	3.54	

Calm : .00 %

Total # Operational Hours : 677

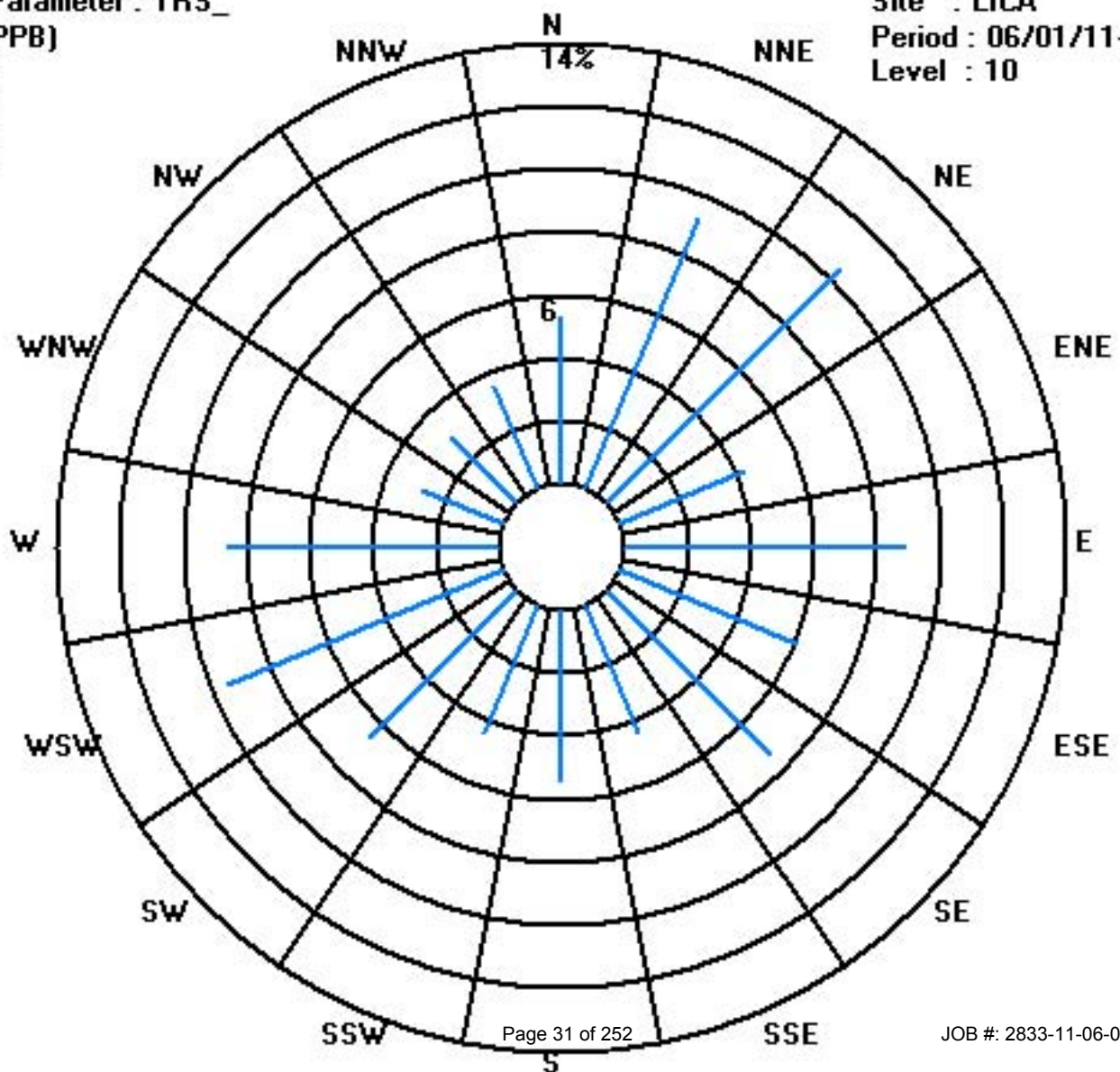
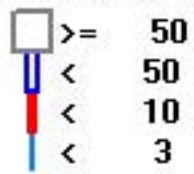
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	36	63	71	29	60	41	50	30	37	30	45	64	58	19	20	24	677
< 10																	
< 50																	
>= 50																	
Totals	36	63	71	29	60	41	50	30	37	30	45	64	58	19	20	24	

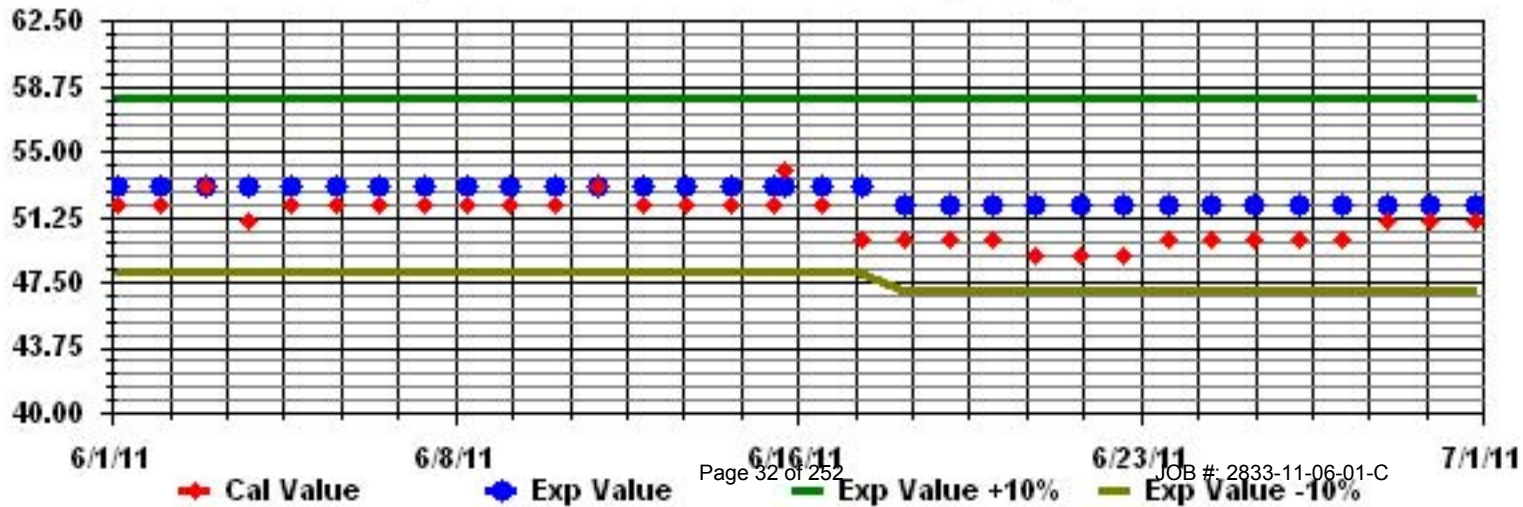
Calm : .00 %

Total # Operational Hours : 677

Class Limits (PPB)



Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	2.4	2.5	IZS	2.6	2.7	2.7	2.6	2.4	2.4	2	2	2	2	2.1	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2.7	2.2	24	
2	1.9	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.0	24	
3	IZS	1.9	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24	
4	2	2	2.1	2.3	2.4	2.6	2.4	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.6	24	
5	2.1	2.3	2.3	2.4	2.4	2.4	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2	2	1.9	2	2	2	2	IZS	2.1	2.2	2.4	2.2	24	
6	2.2	2.3	2.4	2.6	2.8	3	2.8	2.3	2	2	2	2	2	2	1.9	1.9	1.9	2	2	2	2	IZS	2	2.1	2.2	3.0	2.2	24	
7	2.2	2.3	2.4	2.4	2.4	2.4	2.3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	1.9	2	2	2.4	2.1	24	
8	2	2	2	2.1	2.1	2.1	2	2	2	2	1.9	1.9	1.9	2	2	2	2	2	2	2	IZS	1.9	2	2	2	2	2.0	24	
9	2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2	2	2	2	IZS	1.9	2	2.1	2.1	2.1	2.1	2.1	2.2	24	
10	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.1	2	2	2.1	2.1	2	2	2	2	2	IZS	2	2	2	2	2.1	2.1	2.1	2.3	2.1	24	
11	2.1	2.3	2.3	2.3	2.4	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.4	2.1	24	
12	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.0	1.9	24	
13	2	2.1	2.1	2.1	3	2.9	2.3	2	1.9	C	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.1	3.0	2.1	24	
14	2.2	2.3	2.3	2	1.9	1.9	2	2	1.9	2	2	2	1.9	IZS	2	2	2.1	2	2	2	2	2	2.1	2.2	2.1	2.3	2.0	24	
15	2	2	2	2.1	2.1	2.1	2.2	2.1	2	2	2	2	IZS	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.2	2.0	24
16	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	C	C	C	C	1.8	1.9	1.9	1.9	1.9	1.9	2	2	2.0	1.9	24	
17	2	2	2	2	1.9	1.9	2	2	1.9	IZS	1.9	1.9	1.9	1.9	M	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	23	
18	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24
19	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24
20	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24
21	1.9	2	2.1	2.1	2.1	IZS	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.3	2.3	2.0	24	
22	2.4	2.5	2.7	2.9	IZS	2.9	2.5	2.7	2.4	2.1	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2.1	2.9	2.2	24	
23	2.2	2.5	2.5	IZS	2.6	2.4	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.0	24
24	2	1.9	IZS	2	2	2	1.9	1.9	2	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.2	2.0	24
25	2.2	IZS	2.3	2.3	2.4	2.4	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2.1	24
26	IZS	2	2.1	2	2	2	2	2	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.0	24
27	2.2	2.2	2.3	2.2	2.3	2.5	2.6	2.4	2.3	2.1	2.1	2	2	2.1	2	2	2	2	2	2	2	1.9	1.9	1.9	IZS	1.9	2.6	2.1	24
28	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	2	2	2	1.9	2	2.1	2	2	IZS	2.2	2.4	2.4	2.0	24	
29	2.3	2.4	2.5	2.6	2.5	2.4	2.2	2.1	2.1	2	2	2	2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	IZS	1.9	1.8	1.8	2.6	2.1	24	
30	1.8	1.8	1.9	2	2.1	2	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2	2.1	2.2	2.2	1.9	24	
HOURLY MAX		2.4	2.5	2.7	2.9	3.0	3.0	2.8	2.7	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.4				
HOURLY AVG		2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0			

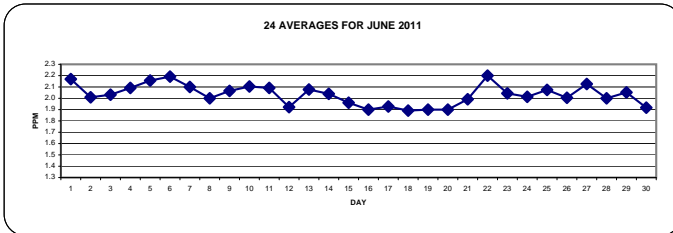
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

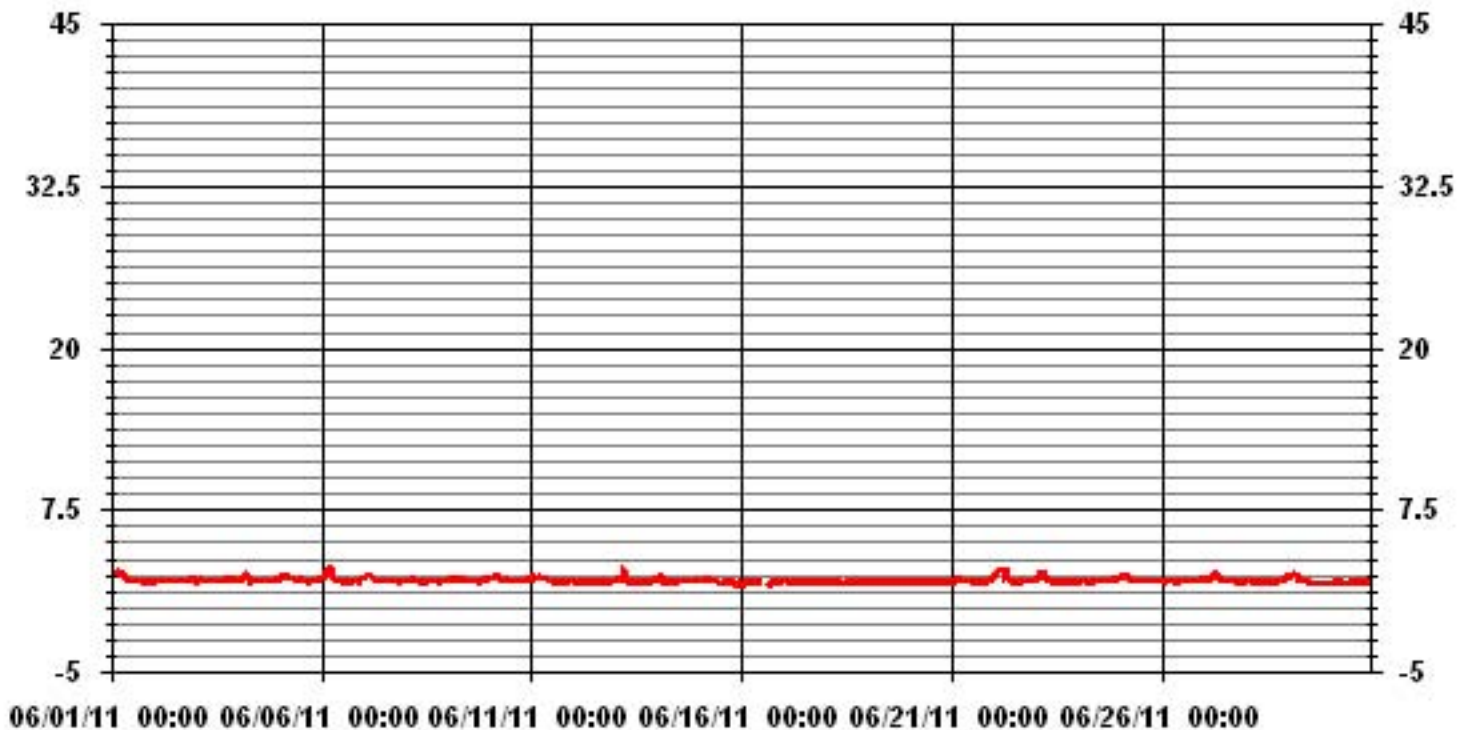
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	682		
MAXIMUM 1-HR AVERAGE:	3.0	PPM @ HOUR(S)	4 ON DAY(S) 13
MAXIMUM 24-HR AVERAGE:	2.2	PPM	ON DAY(S) VAR
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME: 719 HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	0.18		MONTHLY AVERAGE: 2.03 PPM

24 AVERAGES FOR JUNE 2011



01 Hour Averages



— LICA — THC — PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST																										DAILY	24-HOUR			
HOURLY MAX	HOURLY AVG	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																														
1		2.5	2.6	IZS	2.7	2.7	2.8	2.8	2.4	2.6	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	1.9	2	2.8	2.2	24		
2		1.9	IZS	2	2	2	2.3	2	2.2	2.1	2.1	2.1	2	2	2	2	2.2	2.4	2	2.1	2.1	2.2	2.1	2.1	2.1	2.4	2.1	24		
3		IZS	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	24		
4		2.1	2.1	2.3	2.5	2.5	2.7	2.7	2.1	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	IZS	2.1	2.7	24		
5		2.3	2.3	2.4	2.4	2.5	2.5	2.4	2.3	2.3	2.3	2.2	2.3	2.2	2.1	2.1	2	2	2	2	2	2	IZS	2.2	2.3	2.5	2.2	24		
6		2.3	2.3	2.6	2.8	2.9	3.2	3.1	2.7	2.1	2.1	2	2	2.1	2	2	2	2.1	2	2	2	2	IZS	2	2.3	2.3	3.2	24		
7		2.3	2.5	2.5	2.4	2.5	2.6	2.4	2	2	2	2.1	2	2.1	2.1	2	2	2	2	2	2	IZS	2	2	2	2.1	2.6	24		
8		2.1	2	2.1	2.2	2.2	2.2	2.1	2.1	2	2.5	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2.5	2.1	24	
9		2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2	2	IZS	2	2.1	2.7	2.2	2.1	2.2	2.1	2.2	2.7	24		
10		2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.2	2.1	2.1	2.1	2.1	2	2	2	2	IZS	2	2	2	2.1	2.1	2.1	2.2	2.4	2.1	24		
11		2.2	2.4	2.4	2.4	2.5	2.4	2.2	2.3	2.4	2.3	2.2	2.2	2.1	2	2	IZS	1.9	1.9	2	2	2	2	2	2	2.5	2.2	24		
12		2.1	2.1	2.1	2	2	2.1	1.9	2	1.9	1.9	2.2	1.9	2.3	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2.3	2.0	24	
13		2.1	2.2	2.3	2.2	3.9	3.2	2.6	2.3	C	C	1.9	1.9	2	IZS	2.2	2	1.9	1.9	1.9	2	2	2.1	2.2	2.2	3.9	2.2	24		
14		2.3	2.6	2.4	2.1	2	2	2	2.5	2	2.1	2	2	IZS	2	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.3	2.1	2.6	2.1	24		
15		2	2	2.1	2.1	2.2	2.2	2.3	2.1	2.1	2	2	IZS	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.0	24	
16		1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	2.4	IZS	1.9	C	C	C	C	C	1.9	1.9	2	2	2	2	2.1	2.4	2.0	24		
17		2.1	2	2.1	2.1	2.1	2	2.1	2.1	2	IZS	1.9	2	1.9	1.9	M	1.9	1.9	1.9	2	1.9	2	1.9	1.9	1.9	2.1	2.0	23		
18		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2	2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	24	
19		1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2.5	2.2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2.5	1.9	24	
20		1.9	1.9	1.9	1.9	1.9	2	IZS	2	2	1.9	2	1.9	1.9	2	2	1.9	1.9	1.9	2.7	1.9	1.9	1.9	1.9	2	2.7	2.0	24		
21		2	2.1	2.2	2.2	2.2	IZS	2.1	2.1	2.1	2	2	2.1	2.2	1.9	2	2	1.9	2	1.9	2	2	2	2.1	2.3	2.5	2.1	24		
22		2.5	2.6	2.9	3.2	IZS	3.1	2.7	2.9	2.8	2.2	2.1	2	2	2.1	2.1	2	2	2	2	2.2	2.1	2.1	2.1	2.2	3.2	2.3	24		
23		2.4	2.6	2.6	IZS	2.7	2.7	2.2	2.4	2.1	2	2	2	1.9	2	2	2	2	2	2	2.6	1.9	1.9	1.9	2	2	2.7	2.2	24	
24		2	2	IZS	2	2	2	2	2.1	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.3	2.3	2.1	24		
25		2.2	IZS	2.5	2.4	2.5	2.5	2.3	2.1	2	2.1	2.1	2	2.1	2.1	2	2	2.5	2.1	2	2	2.1	2.1	2	2	2.2	2.5	2.2	24	
26		IZS	2.2	2.2	2.1	2	2	2	2.1	2	2	2	2	2	2.1	2.1	2	2	2	2	2	2.1	2.1	2.2	IZS	2.2	2.1	24		
27		2.3	2.2	2.4	2.3	2.5	2.6	2.6	2.6	2.4	2.2	2.1	2.1	2.2	2.2	2.1	2	2	2.1	2.1	2	1.9	2	IZS	2	2.6	2.2	24		
28		2	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.4	2	2	2.1	3.7	2.1	2.1	IZS	2.3	2.6	3.7	2.2	24	
29		2.5	2.6	2.5	3.2	2.7	2.4	2.3	2.2	2.2	2.1	2.2	2.1	2	2	2.3	1.8	2.1	1.9	1.9	1.9	2	IZS	2.4	2.1	2	3.2	2.2	24	
30		1.8	1.8	1.9	2.1	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2	2.2	2.3	2.3	2.0	24	
HOURLY MAX		3	3	3	3	4	3	3	3	3	3	3	3	2	2	2	2	2	3	2	4	2	3	2	2	3				
HOURLY AVG		2.1	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.1	2.1					

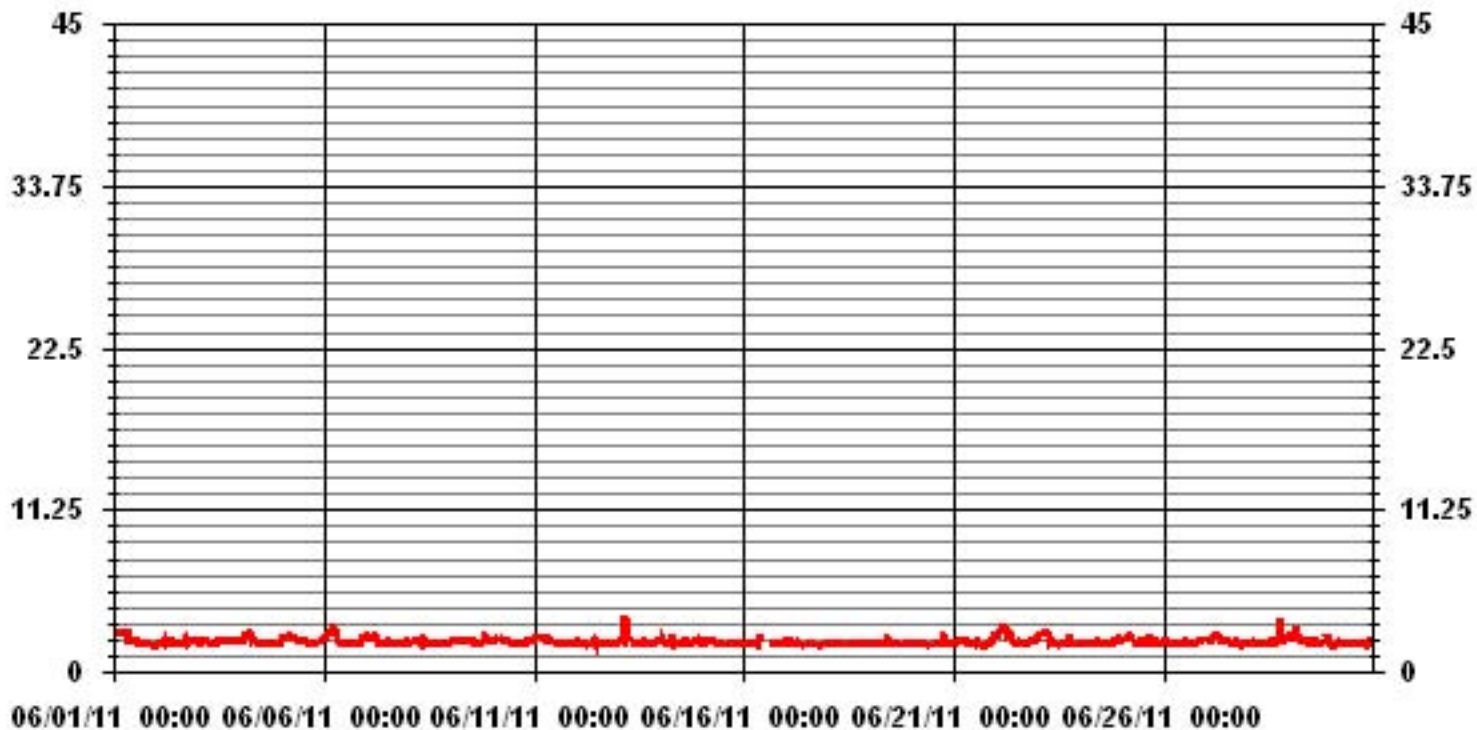
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE
BB - BELOW BACKGROUND OF 1.5 PPM	

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680					
MAXIMUM INSTANTANEOUS VALUE:	3.9	PPM	@ HOUR(S)	4	ON DAY(S)	13
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	719 HRS		
MONTHLY CALIBRATION TIME:	7 HRS					
STANDARD DEVIATION:	0.24					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : THC
 Units : PPM

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	5.57	8.94	10.70	4.10	8.79	6.15	7.47	4.54	5.42	4.39	6.59	9.23	8.50	2.78	2.93	3.51	99.70
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00	.29
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.57	8.94	10.70	4.10	8.79	6.15	7.47	4.54	5.42	4.39	6.59	9.53	8.50	2.78	2.93	3.51	

Calm : .00 %

Total # Operational Hours : 682

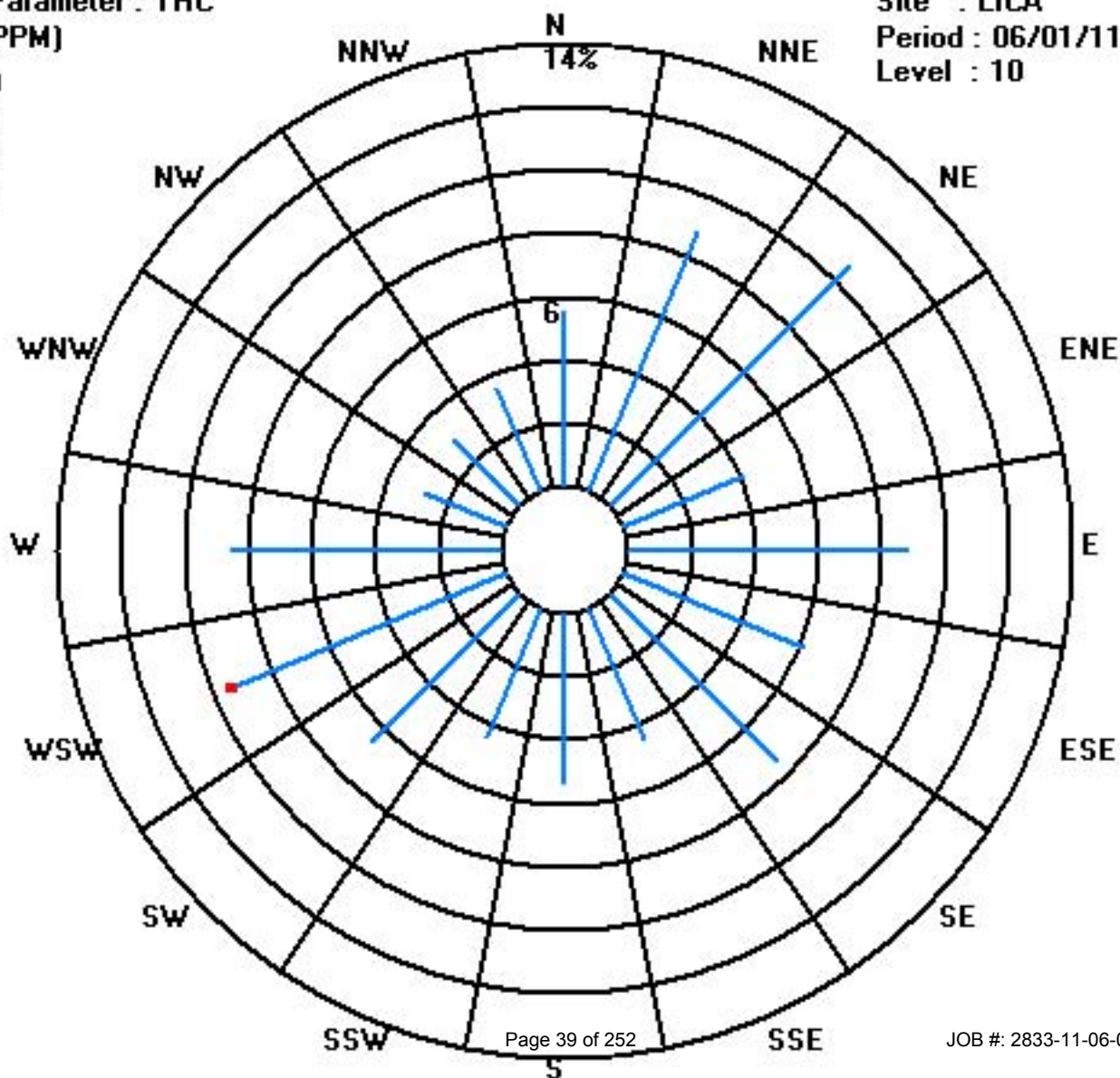
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	38	61	73	28	60	42	51	31	37	30	45	63	58	19	20	24	680
< 10.0												2					2
< 50.0																	
>= 50.0																	
Totals	38	61	73	28	60	42	51	31	37	30	45	65	58	19	20	24	

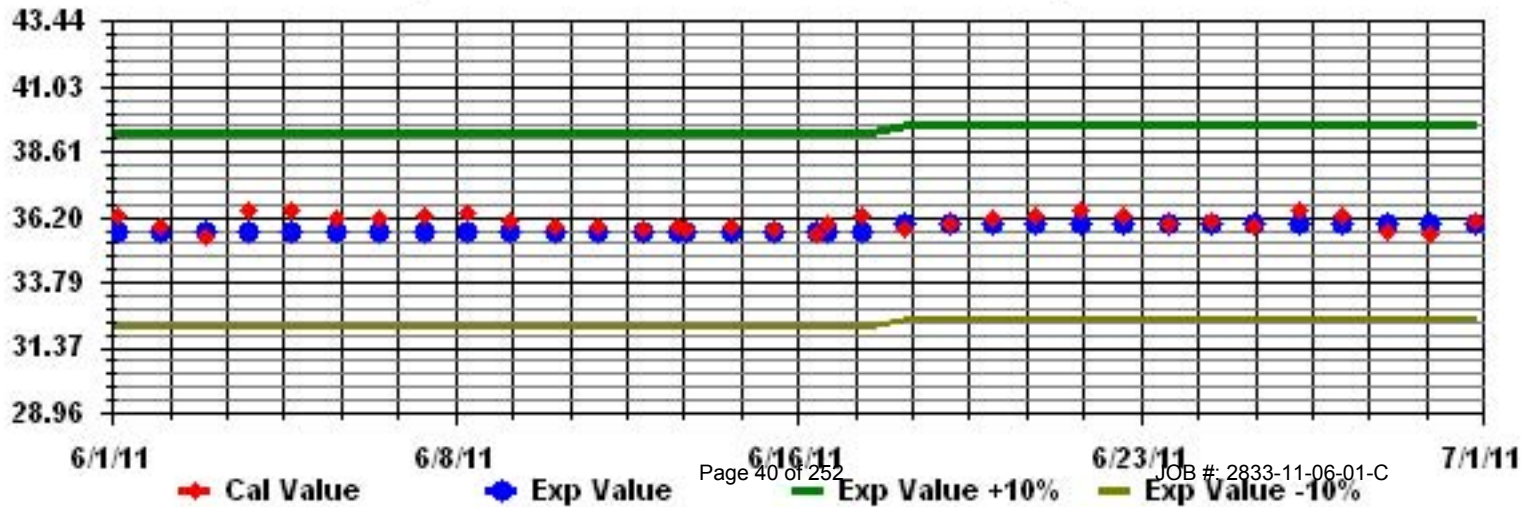
Calm : .00 %

Total # Operational Hours : 682

Class Limits (PPM)



Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m³

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	27.5	25.9	24.5	22.5	25.9	26.4	24.5	18.5	13	9.4	9.4	11.5	16	17	6.9	9.4	8.4	11.5	13.5	13	7.5	9.9	11.5	10.9	27.5	15.6	24	
2	10.5	13.5	13.5	15.5	16	13.9	12	16	15	10.5	15.5	15.5	17.5	14	9.9	10.5	5.5	12	13	13.5	7.9	17.5	8.4	13	17.5	12.9	24	
3	5.9	13.5	65.5	187.5	105	72.5	43.5	23	6	12	11.5	9.4	12.9	8.4	14	11.5	6	14	16.4	12.5	6	10.5	12	5	187.5	28.5	24	
4	11.5	6.4	6.5	6	5.5	1.4	5	3.9	3.5	0.9	5.6	0	2.9	7.7	4.2	0	11.2	0	6.2	5.4	7.5	3.6	7.3	8.8	11.5	5.0	24	
5	3.3	3.3	4.2	7.9	4.8	5.6	5.6	5.8	6.6	5.2	16	11.3	5.6	12	8.6	6.4	20.8	10.6	5.8	4.2	5.2	5.8	5.8	6	20.8	7.4	24	
6	6.4	4.8	6.1	6.9	6.3	7.8	12.4	6.6	4.1	4.9	5.8	1.8	6	7.9	2.9	4	9	3.8	5.1	4.3	10.7	6.4	5.7	9.2	12.4	0.0	24	
7	7.9	8.4	7.9	4	2	10.7	15.8	42.2	70.4	101.1	118.4	137.6	131	143.6	109.2	57	38.2	28	16.2	13	15	16.2	23.4	22.1	143.6	47.5	24	
8	16.5	18.5	23.3	22.8	18.8	21.6	44.7	52.5	42.4	31.6	23.3	34.6	70.4	32.8	22.5	24.7	20.3	18.9	21.2	28.6	28.4	21.7	15.1	17.5	70.4	28.0	24	
9	18	17.5	17	18.1	15.8	16.2	20.4	16.8	17.3	20.5	20	19.1	21.4	9.4	15.5	14.1	16.4	22.6	18.9	16.9	22	20.5	26.4	25.5	26.4	18.6	24	
10	21.7	17	20	18.9	13.5	16	18.9	16.5	16.5	17	10.9	14.5	10.9	12.5	7.5	9.4	10.5	13	9.9	16.5	83	14	18.5	9.4	83.0	17.4	24	
11	9	7.9	10.9	9.5	7.9	13	4.4	1.9	11.5	6.9	9	24	9.4	9	5	13.5	6.9	10.5	15.5	9	9	5	7.5	6.9	24.0	9.3	24	
12	6.4	6.4	6.4	5	5.5	9	27.9	21.5	16.5	7.9	7.9	9.9	13.5	6.4	9.9	1.4	10.5	7.5	4.4	3.4	5	4	5.9	7.9	27.9	8.8	24	
13	7.5	5.5	8.4	4	7.9	7.9	6.9	6.9	8.4	18	16.5	5.5	5	12	16	26.9	14.5	12.5	7.9	8.4	11.5	9.9	9.4	14	26.9	10.5	24	
14	17	16	12.5	7.9	9	15.5	18.5	C	C	9.9	11.5	16	6.9	6.9	11	14.5	9	6	10.9	4.4	9	6	6.4	18.5	10.6	24		
15	5	4.4	6.4	7.9	8.4	6.9	7.5	4.4	6	1.4	4.4	9.4	N	5.5	12	N	5	1.4	1	2.9	2.5	1.4	3.4	0	12.0	4.9	22	
16	0	2.9	3.4	3.4	6.4	4	0	1.4	1	4	7.5	0.4	1.9	5.5	6	1	4.4	2	1.4	2.5	2.9	2.9	4.4	5.5	7.5	3.1	24	
17	2.5	1.4	4	6.9	7.9	7.9	7.9	9.4	6.4	6.4	6	6.5	5.5	9.9	4.4	2.9	3.4	1	0.4	1	1	1.9	3.4	1.4	9.9	4.6	24	
18	1	3.4	4	3.4	3.4	6.4	5.5	5	7.5	2.9	2.5	4	3.4	6.4	5	6	4.4	3.4	5	6	2.9	2.5	2.9	0	7.5	4.0	24	
19	5.5	7.5	1.4	4	2.9	9.4	4.4	5	5.5	0.4	9	5	9	5	2.9	4.4	6	7.5	1.9	3.4	4.4	3.4	6	5.5	9.4	5.0	24	
20	5	2.9	4.4	3.4	6.4	5.5	7.5	4	5	5.5	3.4	6.9	3.4	5.5	0	1.9	6	3.4	5.5	1.4	6.9	2.9	3.4	4.5	7.5	4.4	24	
21	7.9	4	4	2	3.4	5.5	4	4.4	3.4	4	6	4	3.4	4.5	10.5	12	6.4	2.9	4.4	6.4	6.4	9.5	8.4	4.4	12.0	5.5	24	
22	5.5	7.5	4.4	6.4	5.5	5.5	4	5	6	5	7.5	5	4.4	5.5	6	0.4	9.4	8	6.4	6.4	5.5	13	11.5	13.5	13.5	6.6	24	
23	9.4	8	6.4	12	7.9	9	9	10.9	9.4	6.4	7.5	6.9	6.4	3.4	7.5	7.5	4	7.5	7.9	11.5	8.4	10.5	5.5	5	12.0	7.8	24	
24	7.5	7.9	6.4	6	5.5	1.4	1	5	6	7.9	9	7.5	5	5	3.4	6	5.5	2.5	3.4	5.5	3.4	5	5	6	9.0	5.3	24	
25	4.4	6	2.5	0	2.9	1	5.5	2.9	5.5	7.5	5.5	2	1	0	1.9	5.5	2.9	0	3.4	5	6.4	3.4	2.9	4	7.5	3.4	24	
26	5	2.5	0	4.4	2.5	1	5	4.4	4.4	1	2.5	8.5	9.4	42	18	5.5	6.4	5	1	1	1.4	2.5	4.4	5	42.0	6.0	24	
27	4.4	6.9	5.5	5.5	6.9	6	9.9	10.5	5	5	7.9	4.4	5.5	9.9	10	14	22	31.5	39.5	18	7.9	8	7.5	7.9	39.5	10.8	24	
28	7.9	6.9	5	11	9	6.4	3.4	7.9	7.9	11	13	15.5	17.5	18.5	19.5	18.5	18.5	21	20	21	21	22.5	17	14	22.5	13.9	24	
29	10.5	12.5	16	9.4	13	8.5	12	12	11.5	13	7.5	9.9	4	7.9	4	6.9	2.5	1	6.4	4	9	13.5	3.4	2.5	16.0	8.4	24	
30	4	5.5	4	4	0.4	6.4	5	2.9	1.4	3.4	2.5	6	5.5	3.4	4.5	4	0	4	2.9	5.5	5.5	5.5	1.4	5.9	6.4	3.9	24	
HOURLY MAX	28	26	66	188	105	73	45	53	70	101	118	138	131	144	109	57	38	32	40	29	83	23	26	26				
HOURLY AVG	8.5	8.5	10.2	14.2	11.2	10.7	11.6	11.5	11.1	11.4	12.7	13.6	14.6	14.6	11.8	10.2	10.0	9.2	9.0	8.7	10.6	8.7	8.4	8.3				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

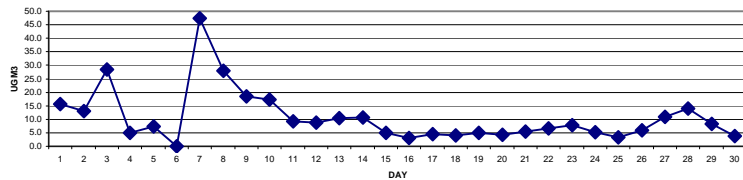
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	-	ug/m ³	24-HR	30	ug/m ³
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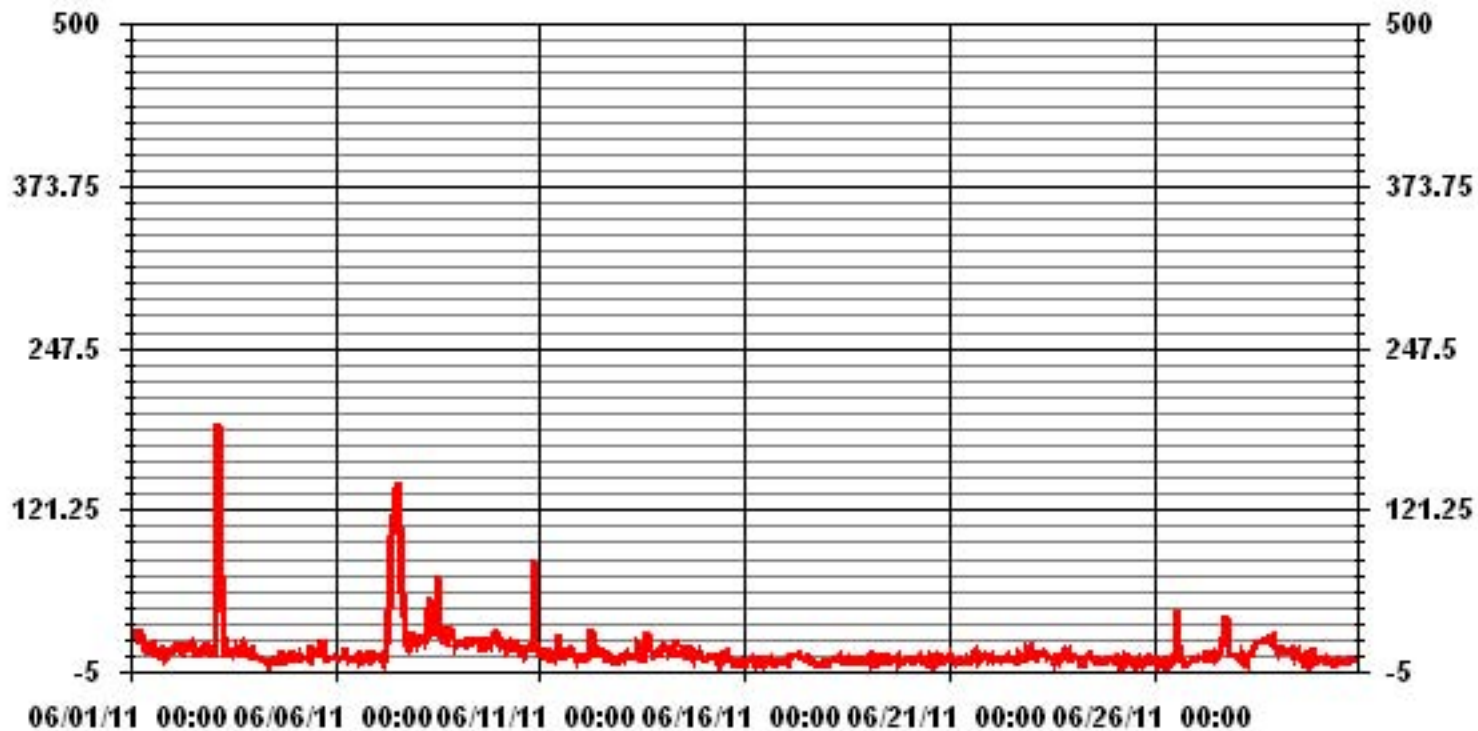
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-	PROPOSED CANADA WIDE GUIDELINE
NUMBER OF 24-HR EXCEEDENCES:	1	
NUMBER OF NON-ZERO READINGS:	703	
MAXIMUM 1-HR AVERAGE:	187.5 UG/M ³	@ HOUR(S) 3 ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	47.5 UG/M ³	ON DAY(S) 7
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME: 718 HRS
MONTHLY CALIBRATION TIME:	2 HRS	AMD OPERATION UPTIME: 99.7 %
STANDARD DEVIATION:	15.73	MONTHLY AVERAGE: 10.81 UG/M ³

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



— LICA PM2 UG/M3

LICA
PM2 / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : PM2
Units : UG/M3

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	4.88	7.68	10.47	4.32	8.79	6.14	6.84	4.60	5.44	4.46	6.42	9.49	8.24	2.93	2.65	2.93	96.36
< 60.0	.55	.27	.27	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00	.00	.13	.27	1.81
< 80.0	.13	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.55
< 120.0	.00	.27	.13	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.13	.69
< 240.0	.13	.27	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.55
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.72	8.65	11.03	4.32	8.79	6.14	7.26	4.60	5.44	4.46	6.42	9.49	8.24	2.93	2.93	3.49	

Calm : .00 %

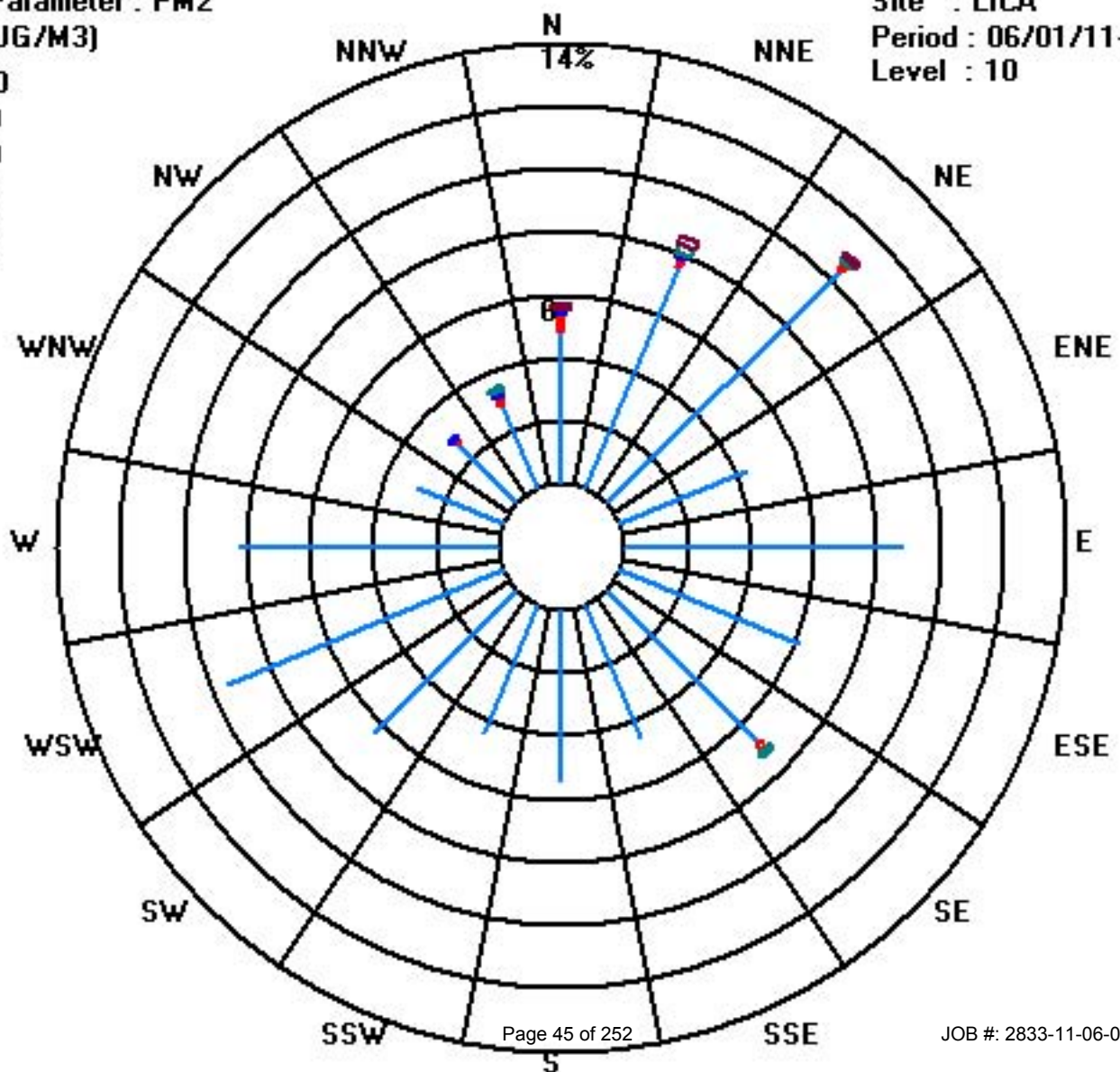
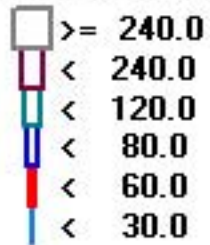
Total # Operational Hours : 716

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	35	55	75	31	63	44	49	33	39	32	46	68	59	21	19	21	690
< 60.0	4	2	2				2								1	2	13
< 80.0	1	1													1	1	4
< 120.0		2	1				1									1	5
< 240.0	1	2	1														4
>= 240.0																	
Totals	41	62	79	31	63	44	52	33	39	32	46	68	59	21	21	25	

Calm : .00 %

Total # Operational Hours : 716



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	5	4	IZS	4	4	6	9	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	9	2.4	24	
2	1	IZS	1	2	3	2	2	2	1	2	2	2	1	1	1	3	2	1	2	3	3	3	2	3	3	3	2.0	24
3	IZS	2	3	5	3	2	2	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	5	1.5	24
4	4	4	3	5	4	4	3	2	1	1	1	1	1	0	1	1	1	1	1	1	1	1	2	IZS	2	5	2.0	24
5	3	3	2	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	IZS	4	5	5	2.5	24
6	3	3	3	3	2	3	4	3	3	1	1	1	1	1	1	1	1	1	1	2	IZS	5	3	4	5	5	2.2	24
7	4	3	3	4	3	3	4	3	3	3	4	5	5	5	4	2	2	1	2	IZS	2	2	1	2	5	3.0	24	
8	2	2	2	2	3	4	5	3	3	2	1	2	2	2	2	3	2	1	IZS	3	3	2	3	2	5	2.4	24	
9	2	2	2	2	1	3	3	3	2	2	2	2	1	2	2	2	2	IZS	2	2	3	3	2	3	3	2.2	24	
10	3	3	3	3	3	3	4	4	2	1	1	2	1	2	1	1	IZS	1	1	2	4	4	3	2	4	2.3	24	
11	2	3	3	3	3	2	3	3	3	4	3	2	2	1	1	IZS	2	2	1	1	1	2	2	2	4	2.2	24	
12	3	2	1	2	2	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	2	3	3	3	3	3	1.7	24	
13	2	2	2	2	5	5	3	2	1	1	1	1	1	1	IZS	1	1	1	1	1	2	3	4	4	5	5	2.2	24
14	4	3	3	2	2	3	4	4	4	2	2	2	IZS	2	1	2	2	2	2	2	2	3	3	2	4	2.5	24	
15	1	1	1	1	2	3	3	2	1	1	2	IZS	C	M	M	C	2	2	2	2	3	2	1	1	3	1.7	22	
16	1	1	1	1	1	1	1	2	1	1	C	C	C	C	C	2	2	2	1	2	2	1	2	3	3	1.5	24	
17	2	3	2	2	2	3	3	3	2	IZS	1	1	1	1	M	1	1	1	1	1	1	1	1	1	3	1.6	23	
18	1	0	0	0	0	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
19	1	1	1	1	1	1	1	IZS	2	1	2	2	1	1	1	1	1	1	2	2	1	1	1	1	2	1.2	24	
20	1	1	1	1	2	3	IZS	3	2	2	2	2	1	1	2	2	1	1	2	2	2	2	1	1	3	1.7	24	
21	1	1	1	1	1	1	IZS	2	2	1	1	2	1	1	1	1	1	1	1	1	2	3	3	3	3	1.5	24	
22	3	2	2	2	IZS	2	4	3	3	2	2	1	1	1	1	1	1	1	1	2	3	3	3	3	4	2.0	24	
23	3	2	2	IZS	3	5	4	3	2	2	3	1	1	1	1	1	1	1	1	2	2	2	2	1	5	2.0	24	
24	2	2	IZS	2	2	2	2	3	1	2	2	2	1	1	1	1	1	1	1	1	2	4	3	3	4	1.8	24	
25	3	IZS	4	2	3	3	2	2	2	2	2	2	2	1	4	1	1	1	3	4	5	5	3	2	5	2.6	24	
26	IZS	3	2	1	1	1	1	1	1	1	0	1	2	1	1	1	0	0	0	1	1	2	1	IZS	3	1.0	24	
27	2	2	1	1	2	3	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2	2	IZS	2	3	1.6	24	
28	2	2	2	1	3	2	2	2	2	1	1	1	1	1	2	2	2	3	4	5	IZS	3	2	5	2.1	24		
29	2	2	2	3	2	3	4	3	2	2	2	1	1	1	1	1	1	1	1	2	IZS	2	1	1	4	1.8	24	
30	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	3	3	3	1.3	24	
HOURLY MAX	5	4	4	5	5	6	9	4	4	4	4	5	5	5	4	3	2	2	3	4	5	5	4	5				
HOURLY AVG	2.3	2.1	1.9	2.2	2.3	2.7	2.8	2.4	1.9	1.6	1.6	1.6	1.3	1.3	1.4	1.4	1.3	1.2	1.4	1.9	2.3	2.4	2.2	2.3				

STATUS FLAG CODES

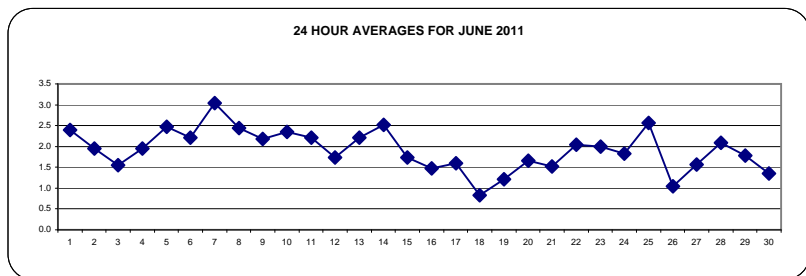
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

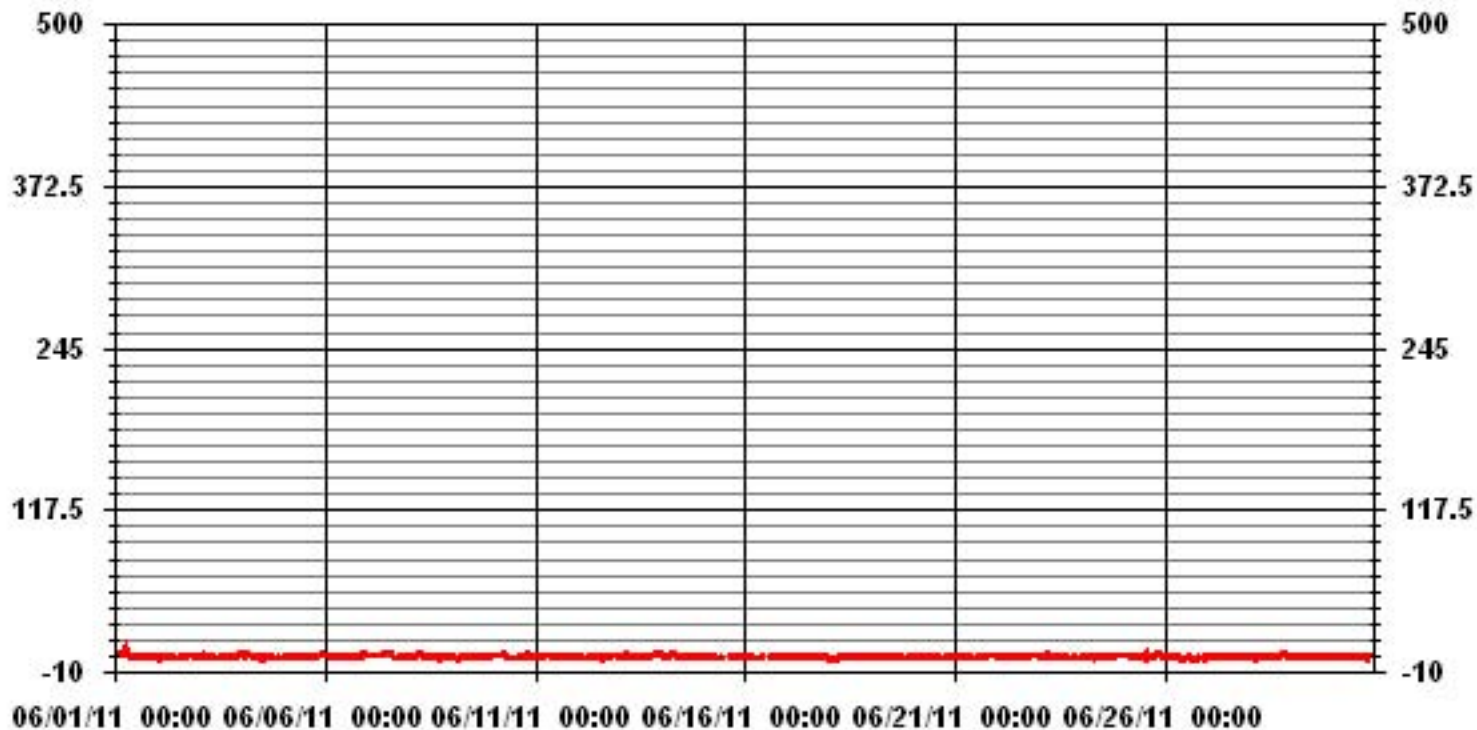
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	670
MAXIMUM 1-HR AVERAGE:	9 PPB @ HOUR(S) 6 ON DAY(S) 1
MAXIMUM 24-HR AVERAGE:	3.0 PPB ON DAY(S) 7
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION	1.07
OPERATIONAL TIME:	717 HRS
AMD OPERATION UPTIME	99.6 %
MONTHLY AVERAGE	1.92 PPB



01 Hour Averages



— LICA NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	6	IZS	5	8	15	14	5	6	3	2	3	1	2	3	3	9	2	2	3	3	2	1	4	15	4.7	24	
2	2	IZS	2	2	6	9	3	5	2	9	7	3	2	4	4	20	14	5	9	13	5	5	3	4	20	6.0	24	
3	IZS	3	5	6	4	3	2	7	3	2	4	3	2	3	5	2	1	2	3	2	2	2	2	IZS	7	3.1	24	
4	5	5	4	8	5	5	5	3	1	1	1	1	1	1	2	7	2	1	1	1	2	5	IZS	3	8	3.0	24	
5	3	3	5	5	7	5	3	3	2	2	3	3	3	2	2	3	4	2	2	2	5	IZS	5	6	7	3.5	24	
6	4	4	3	4	3	5	5	4	5	2	2	1	2	3	2	2	1	2	2	3	IZS	6	6	5	6	3.3	24	
7	5	3	6	6	4	5	5	5	6	3	6	8	11	6	6	10	6	7	9	IZS	3	3	2	3	11	5.6	24	
8	3	3	3	4	5	6	9	6	6	5	3	4	3	3	6	5	2	2	IZS	5	5	4	4	2	9	4.3	24	
9	4	4	2	3	3	5	5	6	3	6	4	5	2	14	6	3	3	IZS	4	9	4	4	3	3	14	4.6	24	
10	3	3	3	5	4	4	6	15	3	3	3	3	2	8	2	2	IZS	2	2	2	2	18	11	4	7	18	5.0	24
11	2	3	6	4	3	3	5	5	4	5	4	3	4	2	2	IZS	2	3	2	2	2	2	3	4	6	3.3	24	
12	4	4	3	2	3	2	1	9	9	1	1	2	4	2	IZS	2	3	3	3	4	4	5	4	4	9	3.4	24	
13	3	3	2	3	8	6	5	3	2	2	2	2	2	4	IZS	3	2	3	7	2	2	7	7	13	7	13	4.2	24
14	6	5	4	3	2	3	7	9	5	11	3	6	IZS	3	2	7	3	4	4	3	5	3	4	3	11	4.6	24	
15	2	2	2	2	3	4	4	4	2	1	9	IZS	C	M	M	C	3	8	3	7	6	3	2	3	9	3.7	22	
16	1	1	2	2	2	6	7	13	4	C	C	C	C	C	C	C	4	3	2	4	4	3	3	5	13	3.9	24	
17	3	3	3	3	10	6	13	10	4	IZS	2	2	3	1	M	1	2	2	2	5	1	1	1	1	13	3.6	23	
18	1	1	1	1	1	1	1	1	IZS	8	2	2	2	3	3	1	3	2	1	4	1	2	1	1	8	1.9	24	
19	1	1	1	2	1	2	2	IZS	3	3	19	5	3	2	3	4	2	2	6	4	3	2	2	2	19	3.3	24	
20	1	2	1	2	3	4	IZS	5	3	3	7	3	2	2	3	6	5	2	5	8	3	3	2	2	8	3.3	24	
21	1	1	2	2	2	IZS	3	3	3	3	4	7	9	7	2	1	1	1	1	7	5	4	4	5	9	3.4	24	
22	4	3	2	2	IZS	3	6	12	4	3	2	2	2	2	2	2	8	5	2	4	7	5	5	5	12	4.0	24	
23	4	3	3	IZS	3	9	5	6	3	6	27	2	6	3	3	6	3	4	3	3	3	2	3	2	27	4.9	24	
24	3	2	IZS	2	3	3	3	11	5	9	3	6	5	4	2	5	1	3	1	2	5	6	4	4	11	4.0	24	
25	4	IZS	6	3	4	4	3	3	2	2	3	3	2	3	11	3	3	3	4	4	6	6	4	3	11	3.9	24	
26	IZS	3	2	2	1	2	1	1	1	1	1	4	3	3	2	2	2	1	1	1	1	2	2	IZS	4	1.8	24	
27	3	2	3	3	3	4	3	4	3	3	2	2	3	2	1	3	2	3	5	3	3	3	IZS	2	5	2.8	24	
28	2	3	3	3	21	5	3	7	3	3	6	3	2	2	17	7	8	5	12	6	11	IZS	5	2	21	6.0	24	
29	2	2	3	3	3	3	5	6	3	3	3	2	2	1	2	3	2	1	1	5	IZS	6	2	4	6	2.9	24	
30	3	2	2	3	3	2	2	3	1	6	1	1	1	2	1	1	3	1	1	IZS	2	2	5	4	6	2.3	24	
HOURLY MAX	7	6	6	8	21	15	14	15	9	11	27	8	11	14	17	20	14	8	12	13	18	11	13	7				
HOURLY AVG	3.1	2.9	3.0	3.3	4.4	4.6	4.7	6.0	3.5	3.9	4.7	3.3	3.1	3.3	3.7	4.2	3.6	3.0	3.3	4.2	4.5	3.9	3.5	3.6				

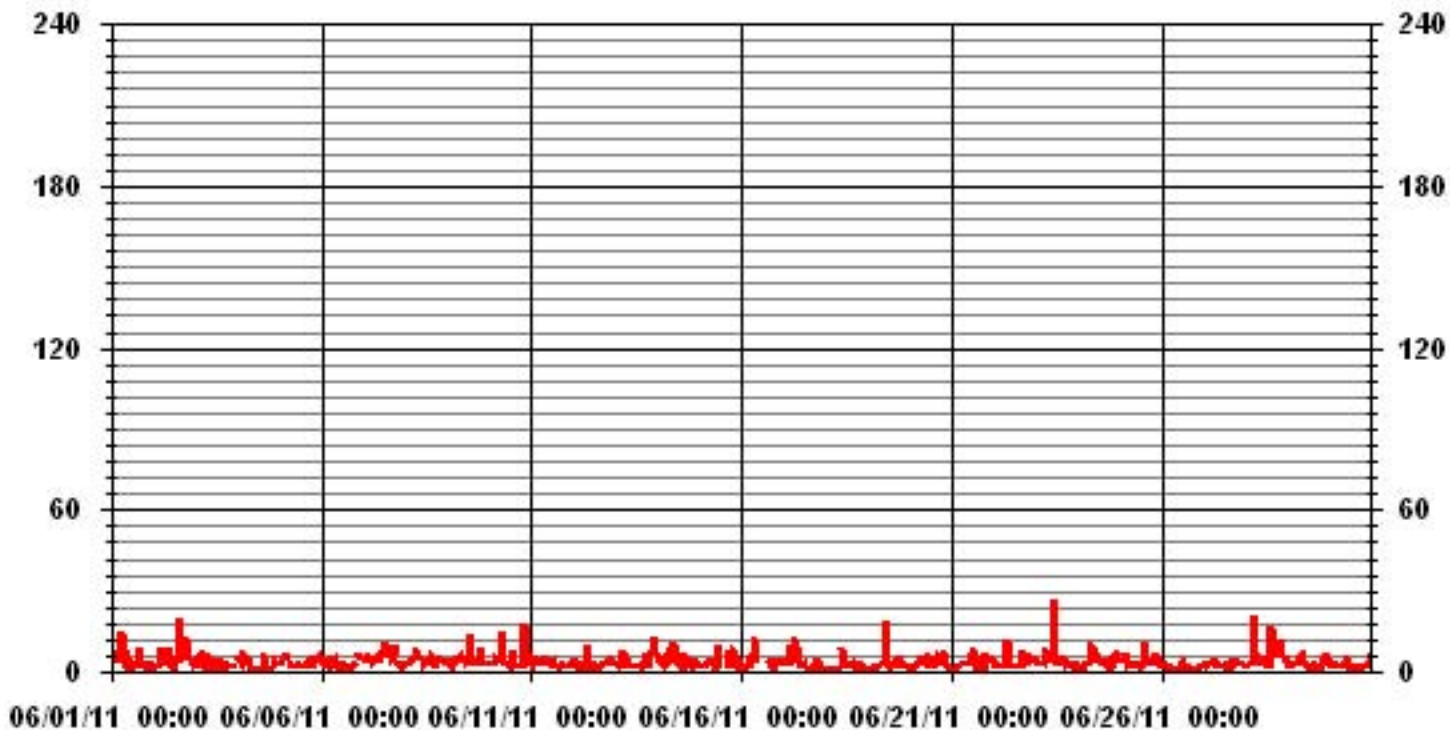
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM INSTANTANEOUS VALUE:	27	PPB	@ HOUR(S)	10	ON DAY(S)	23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	717	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	2.85					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : NO2_
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.44	9.13	10.89	4.12	8.83	6.03	7.36	4.41	5.44	4.41	6.62	9.42	8.54	2.79	2.94	3.53	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.44	9.13	10.89	4.12	8.83	6.03	7.36	4.41	5.44	4.41	6.62	9.42	8.54	2.79	2.94	3.53	

Calm : .00 %

Total # Operational Hours : 679

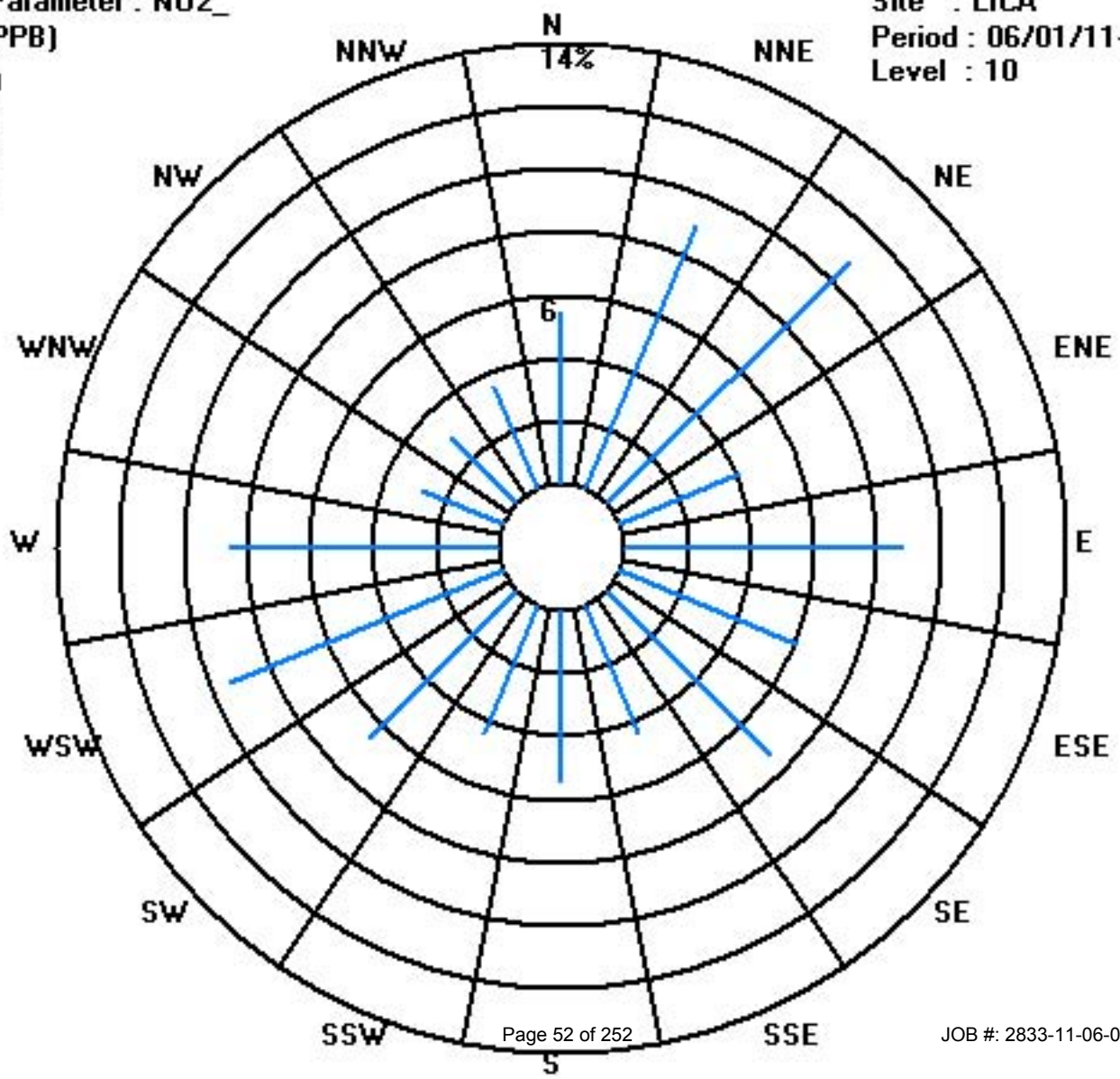
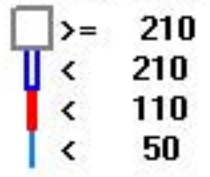
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	37	62	74	28	60	41	50	30	37	30	45	64	58	19	20	24	679
< 110																	
< 210																	
>= 210																	
Totals	37	62	74	28	60	41	50	30	37	30	45	64	58	19	20	24	

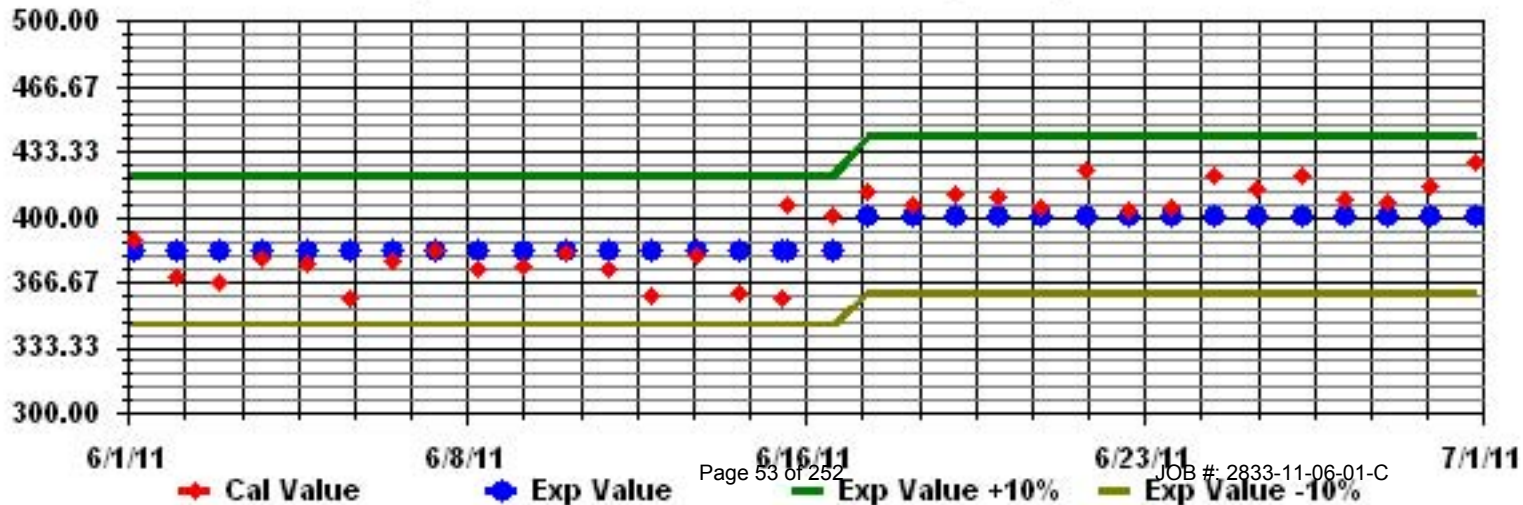
Calm : .00 %

Total # Operational Hours : 679

Class Limits (PPB)

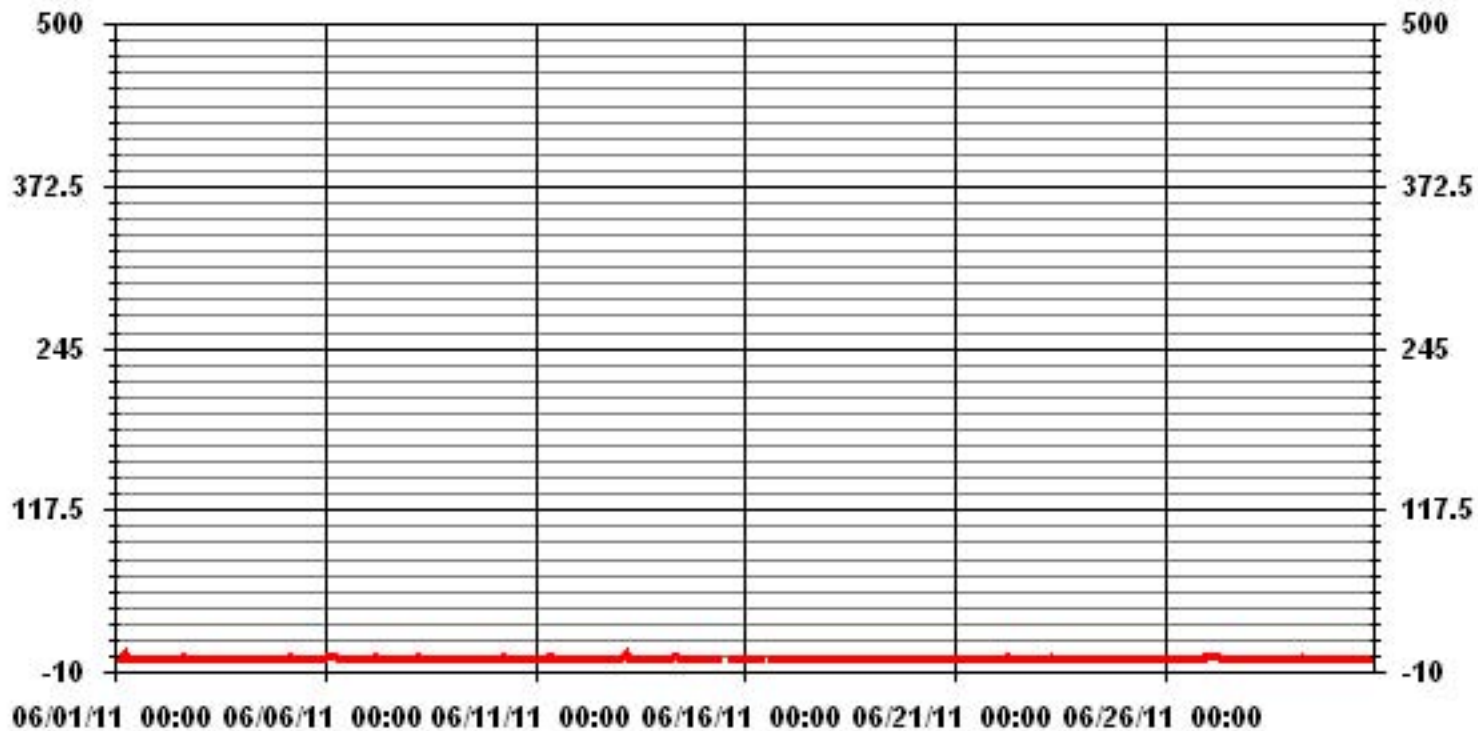


Calibration Graph for Site: LICA Parameter: H02_ Sequence: H02 Phase: SPAN



Nitric Oxide

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	IZS	1	1	13	12	1	2	1	0	2	1	0	1	1	2	3	0	1	0	0	0	0	13	1.8	24	
2	0	IZS	0	0	1	3	1	3	3	29	2	2	0	0	1	10	11	2	0	14	0	0	0	0	29	3.6	24	
3	IZS	0	0	0	0	0	0	5	1	1	6	0	1	1	2	0	1	0	0	0	0	0	0	IZS	6	0.8	24	
4	0	0	0	0	1	3	3	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	IZS	0	3	0.5	24
5	0	0	0	0	5	3	0	1	2	1	0	6	0	0	0	0	1	0	0	0	0	0	IZS	1	1	6	0.9	24
6	1	2	1	1	3	6	3	3	3	1	0	0	0	1	0	1	0	0	0	0	0	IZS	0	0	0	6	1.1	24
7	0	1	2	4	1	3	3	2	2	0	1	1	1	14	0	5	13	2	5	IZS	0	0	0	0	14	2.6	24	
8	0	0	0	1	1	3	2	2	2	1	1	1	0	0	3	0	0	0	IZS	0	0	0	0	0	0	3	0.7	24
9	0	0	0	0	0	0	1	11	0	1	1	1	1	0	6	0	1	IZS	1	1	0	0	0	0	11	1.1	24	
10	0	0	0	0	0	0	1	6	0	0	1	1	0	7	0	1	IZS	0	3	0	1	2	0	1	7	1.0	24	
11	0	0	5	0	0	0	0	7	1	1	1	0	6	0	0	IZS	1	0	0	0	0	0	0	1	7	1.0	24	
12	0	0	0	0	0	0	0	2	2	0	0	0	2	0	IZS	0	0	0	0	1	0	0	0	1	2	0.3	24	
13	2	1	2	1	3	5	3	1	0	0	1	0	0	0	IZS	0	0	2	5	0	0	0	14	0	14	1.7	24	
14	0	0	0	0	0	0	3	7	1	24	1	3	IZS	0	0	1	0	1	0	0	0	0	0	0	24	1.8	24	
15	0	0	0	0	0	0	0	1	0	0	3	IZS	C	M	M	C	1	15	0	3	17	0	1	0	17	2.2	22	
16	0	0	0	0	0	2	3	15	4	C	C	C	C	C	C	1	1	0	7	0	0	0	0	0	15	1.9	24	
17	0	0	0	0	10	1	7	3	1	IZS	0	0	2	0	M	0	0	1	1	1	0	0	0	0	10	1.2	23	
18	0	3	0	0	0	3	0	0	IZS	3	3	1	1	1	1	1	1	1	0	3	0	1	0	0	3	1.0	24	
19	0	0	0	0	0	1	0	IZS	1	3	12	7	2	2	1	2	0	1	5	2	1	1	0	0	12	1.8	24	
20	0	0	0	0	0	3	IZS	2	0	0	2	3	0	0	2	8	5	4	3	0	5	0	0	1	8	1.7	24	
21	0	0	0	0	0	IZS	5	3	3	2	1	3	6	3	2	0	0	0	0	0	0	0	0	0	6	1.2	24	
22	0	0	0	1	IZS	2	4	13	1	0	1	0	0	0	1	1	2	3	0	0	0	0	0	0	13	1.3	24	
23	1	0	1	IZS	2	6	1	6	0	5	17	1	1	5	1	4	0	2	1	0	1	0	0	0	17	2.4	24	
24	0	0	IZS	0	1	0	0	11	1	19	0	4	4	2	0	3	0	1	0	0	0	1	0	0	19	2.0	24	
25	0	IZS	0	0	1	1	1	1	0	0	0	0	1	5	7	0	3	1	1	0	0	0	0	0	7	1.0	24	
26	IZS	0	0	0	0	0	0	0	0	0	0	3	2	0	0	1	1	3	0	0	0	0	0	0	IZS	3	0.5	24
27	2	2	2	2	3	1	1	9	2	5	0	6	6	1	0	2	0	2	8	0	0	0	0	IZS	0	9	2.3	24
28	0	0	1	1	17	5	3	2	1	3	3	2	0	1	3	1	2	1	3	1	11	IZS	2	0	17	2.7	24	
29	0	0	0	0	0	1	1	4	0	0	4	0	0	0	1	1	0	0	0	0	4	IZS	0	0	0	4	0.7	24
30	0	0	0	0	0	0	0	8	0	4	0	0	0	0	0	0	3	0	0	0	IZS	0	0	0	0	8	0.7	24
HOURLY MAX	2	3	5	4	17	13	12	15	4	29	17	7	6	14	7	10	13	15	8	14	17	2	14	1				
HOURLY AVG	0.2	0.3	0.5	0.4	1.7	2.2	2.0	4.5	1.1	3.7	2.1	1.7	1.4	1.6	1.2	1.6	1.8	1.7	1.1	1.4	1.3	0.2	0.6	0.2				

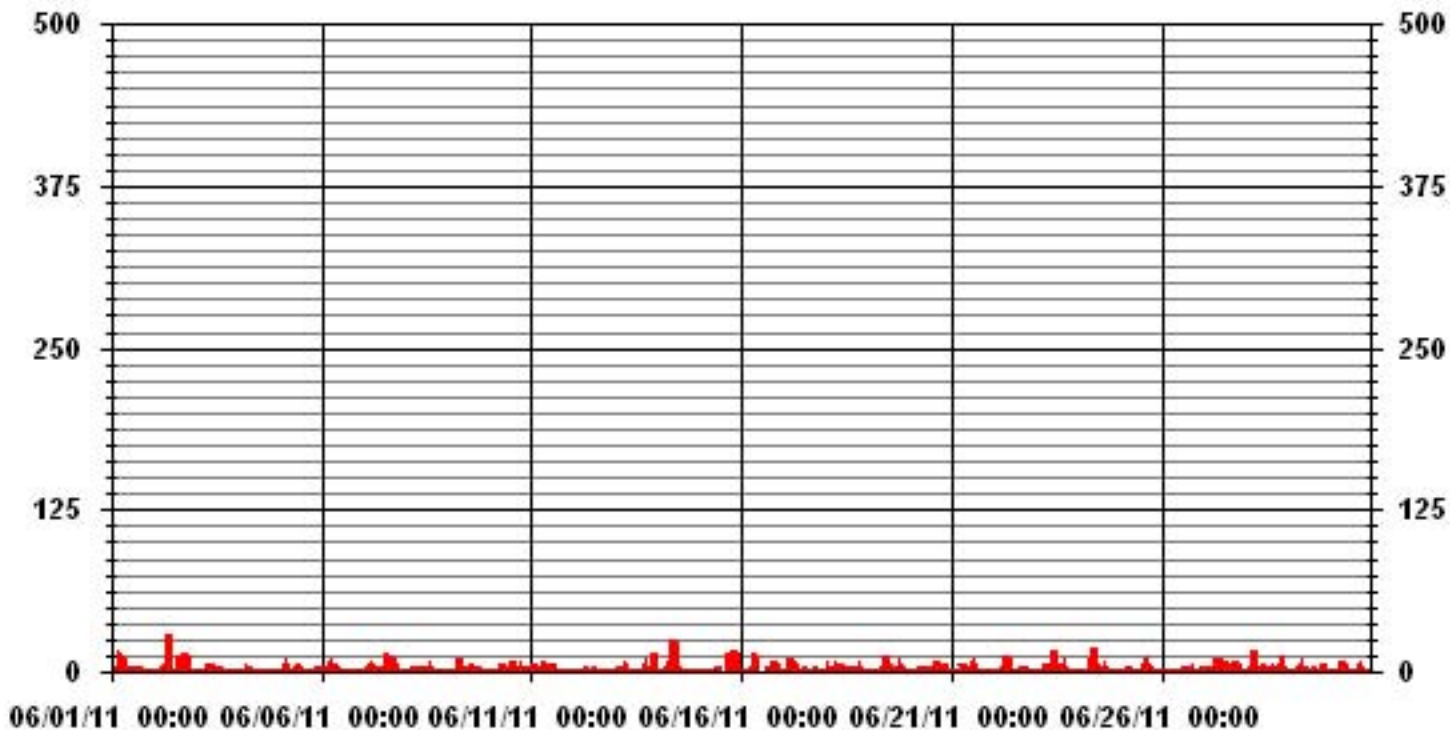
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	307					
MAXIMUM INSTANTANEOUS VALUE:	29	PPB	@ HOUR(S)	9	ON DAY(S)	2
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	717	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION:	3.01					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : NO
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.44	9.13	10.89	4.12	8.83	6.03	7.36	4.41	5.44	4.41	6.62	9.42	8.54	2.79	2.94	3.53	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.44	9.13	10.89	4.12	8.83	6.03	7.36	4.41	5.44	4.41	6.62	9.42	8.54	2.79	2.94	3.53	

Calm : .00 %

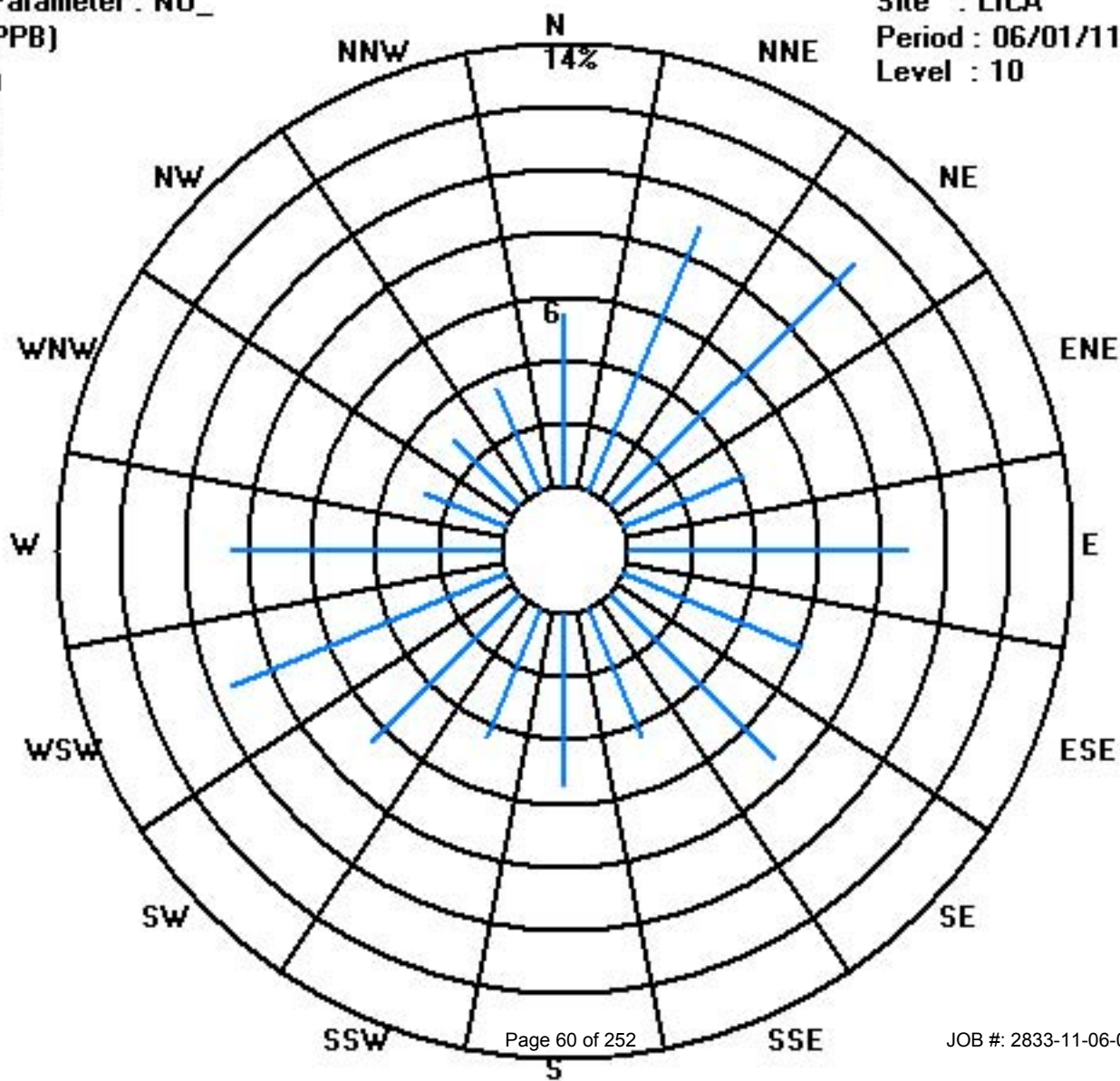
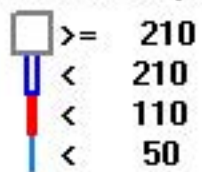
Total # Operational Hours : 679

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	37	62	74	28	60	41	50	30	37	30	45	64	58	19	20	24	679
< 110																	
< 210																	
>= 210																	
Totals	37	62	74	28	60	41	50	30	37	30	45	64	58	19	20	24	

Calm : .00 %

Total # Operational Hours : 679



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

OXIDES OF NITROGEN hourly averages in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	5	4	IZS	4	5	9	13	5	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	13	2.8	24
2	1	IZS	1	1	3	3	2	3	2	3	2	2	1	1	1	4	3	1	2	4	3	3	2	3	4	4	2.2	24
3	IZS	1	3	5	3	2	2	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	IZS	5	1.6	24
4	4	4	3	5	5	5	5	3	1	1	1	1	1	0	1	1	1	1	1	1	1	1	2	IZS	2	5	2.2	24
5	2	3	2	3	4	5	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	IZS	4	5	5	2.6	24
6	4	4	3	3	3	6	6	5	4	1	1	1	1	1	1	1	1	1	1	2	IZS	4	3	4	6	2.7	24	
7	4	3	3	4	4	5	5	3	3	3	4	5	5	5	4	2	2	1	3	IZS	2	1	1	2	5	3.2	24	
8	2	1	2	2	4	5	5	3	3	2	1	2	2	2	2	3	2	2	1	IZS	3	3	2	3	1	5	2.4	24
9	2	2	1	1	1	3	3	3	2	2	2	2	2	1	2	2	2	IZS	2	2	2	3	2	3	3	3	2.0	24
10	3	3	3	3	3	4	4	4	2	2	2	2	1	2	1	1	IZS	1	1	1	1	4	4	3	2	4	2.4	24
11	2	2	3	3	3	3	3	3	4	5	4	2	2	1	1	IZS	2	2	1	1	1	1	2	2	5	2.3	24	
12	3	2	1	1	2	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	2	2	3	3	3	3	3	1.7	24
13	3	3	2	2	6	8	4	2	2	1	1	1	1	1	IZS	1	1	1	1	1	2	3	4	5	5	8	2.6	24
14	4	3	3	2	2	3	4	5	4	4	2	2	IZS	2	1	2	2	2	2	2	2	3	3	2	5	2.7	24	
15	1	1	1	1	2	3	3	2	1	1	2	IZS	C	M	M	C	2	2	2	3	3	2	1	1	3	1.8	22	
16	1	1	1	1	1	1	1	3	1	1	C	C	C	C	2	2	2	2	1	2	2	1	2	3	3	1.5	24	
17	2	3	2	2	2	3	3	3	2	IZS	1	1	1	1	M	1	1	1	1	1	1	1	1	1	3	1.6	23	
18	0	0	0	0	0	1	0	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	0.8	24
19	1	1	1	1	1	1	1	IZS	2	2	3	2	2	1	2	1	1	1	2	2	2	1	1	1	3	1.4	24	
20	1	1	1	1	2	3	IZS	3	2	2	2	2	1	2	2	2	2	2	2	2	2	2	1	1	3	1.8	24	
21	1	1	1	1	1	1	IZS	2	2	2	1	2	2	1	1	1	1	1	1	2	3	3	3	3	3	3	1.7	24
22	3	2	2	2	IZS	4	5	5	3	2	2	1	1	1	1	1	1	1	1	2	3	3	3	3	5	2.3	24	
23	3	2	2	IZS	4	7	4	4	2	3	4	1	1	2	1	1	1	1	2	1	2	1	2	1	7	2.3	24	
24	2	2	IZS	2	2	2	2	3	1	2	2	2	1	1	1	1	1	1	1	1	2	4	3	3	4	1.8	24	
25	3	IZS	4	2	4	4	2	2	2	2	2	2	2	1	4	2	1	1	3	4	5	5	3	2	5	2.7	24	
26	IZS	3	2	1	1	1	1	1	1	1	0	1	2	2	1	1	0	1	0	0	1	2	1	IZS	3	1.1	24	
27	3	3	2	2	3	4	3	3	2	1	1	1	1	1	1	1	2	3	2	2	2	2	IZS	1	4	2.0	24	
28	2	1	2	1	4	2	2	2	2	2	2	2	1	1	2	2	2	3	3	4	5	IZS	3	2	5	2.3	24	
29	2	2	2	2	2	3	4	4	3	2	2	1	1	1	1	1	1	1	1	2	IZS	1	1	1	4	1.8	24	
30	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	3	3	3	1.3	24	
HOURLY MAX	5	4	4	5	6	9	13	5	4	5	4	5	5	5	4	4	3	3	3	4	5	5	5	5	5			
HOURLY AVG	2.3	2.1	1.9	2.1	2.7	3.6	3.2	2.8	2.1	1.9	1.8	1.6	1.4	1.4	1.5	1.5	1.4	1.3	1.6	1.9	2.3	2.3	2.2	2.2				

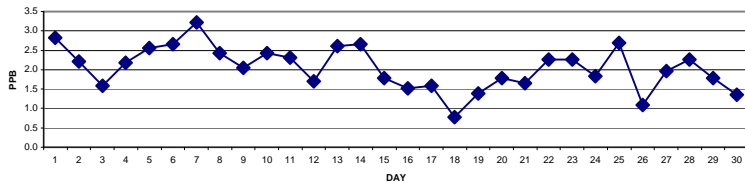
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

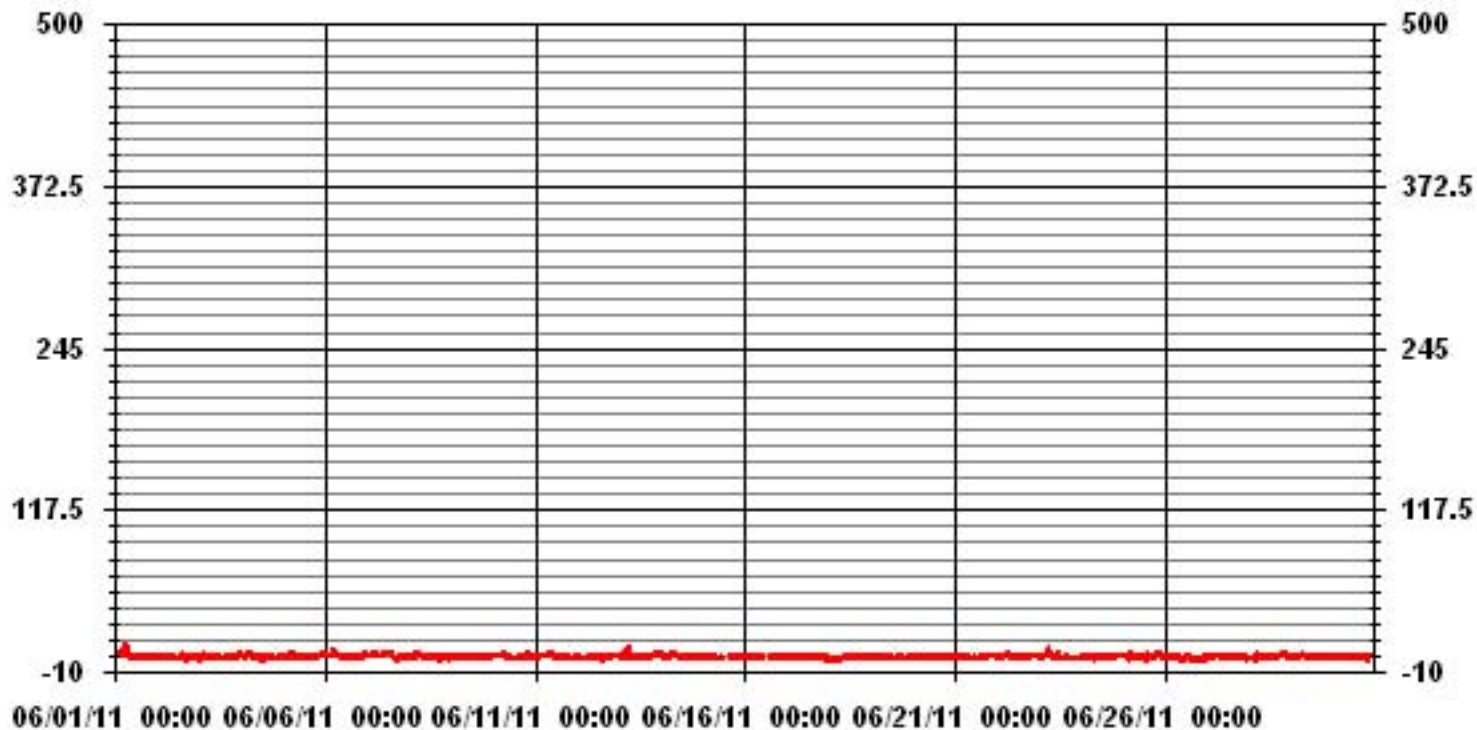
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	668					
MAXIMUM 1-HR AVERAGE:	13	PPB	@ HOUR(S)	6	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	3.2	PPB			ON DAY(S)	7
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	717	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	99.6	%	
STANDARD DEVIATION	1.29		MONTHLY AVERAGE	2.05	PPB	

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	6	IZS	6	10	28	27	6	8	4	2	4	2	2	4	3	10	3	2	4	4	2	1	4	28	6.5	24	
2	2	IZS	2	2	7	13	4	8	3	38	8	4	2	4	4	29	18	7	10	26	5	5	3	4	38	9.0	24	
3	IZS	3	5	6	4	3	2	11	4	3	7	3	3	4	5	2	2	2	4	3	2	2	2	IZS	11	3.7	24	
4	5	5	4	8	6	8	8	5	2	1	2	1	1	2	2	7	2	2	1	1	2	5	IZS	3	8	3.6	24	
5	3	4	5	5	11	8	3	4	3	3	3	6	3	2	3	3	5	2	3	2	5	IZS	5	6	11	4.2	24	
6	5	6	5	5	5	9	7	7	7	4	3	1	3	3	2	3	1	2	1	3	IZS	6	6	5	9	4.3	24	
7	5	4	7	11	6	8	8	8	8	4	6	9	12	12	6	15	18	9	14	IZS	3	3	2	3	18	7.9	24	
8	3	3	4	5	5	9	11	7	8	5	5	5	3	3	8	6	2	2	IZS	5	5	4	4	2	11	5.0	24	
9	4	4	3	3	3	6	6	14	3	7	4	6	3	15	8	3	4	IZS	4	9	4	4	3	3	15	5.3	24	
10	3	3	3	5	4	4	7	21	3	4	4	4	2	11	2	3	IZS	2	4	2	19	13	4	8	21	5.9	24	
11	2	4	7	4	3	3	4	10	5	7	5	3	8	2	2	IZS	3	3	3	3	2	2	3	5	10	4.0	24	
12	4	4	3	2	3	2	1	11	11	2	1	2	5	2	IZS	2	3	3	3	5	4	5	4	5	11	3.8	24	
13	5	4	4	3	10	11	9	4	2	3	3	2	2	IZS	3	2	3	11	2	2	7	7	25	7	25	5.7	24	
14	6	5	4	3	2	3	10	16	7	25	4	9	IZS	3	2	8	3	5	4	3	5	3	4	3	25	6.0	24	
15	2	3	2	2	3	4	4	5	2	2	12	IZS	C	M	M	C	5	14	3	9	23	3	3	3	23	5.5	22	
16	1	1	2	2	2	8	10	25	7	C	C	C	C	C	C	C	5	4	3	11	4	2	3	5	25	5.6	24	
17	3	3	3	3	19	7	19	13	5	IZS	3	3	4	1	M	1	2	3	4	6	1	1	1	1	19	4.8	23	
18	1	2	1	1	1	4	1	1	IZS	11	4	4	3	4	3	2	4	3	2	6	1	3	1	1	11	2.8	24	
19	2	1	1	2	2	3	2	IZS	3	5	30	11	3	3	4	5	2	3	10	6	4	2	2	2	30	4.7	24	
20	1	2	1	3	3	7	IZS	6	4	3	9	5	2	3	5	7	8	4	8	9	9	3	2	3	9	4.7	24	
21	1	1	2	2	2	IZS	7	6	6	4	5	10	15	10	3	1	1	2	1	7	5	4	4	5	15	4.5	24	
22	4	3	2	3	IZS	5	10	24	5	3	4	3	2	2	2	10	6	2	4	7	5	5	5	5	24	5.1	24	
23	5	3	4	IZS	5	14	6	8	4	8	40	3	7	7	4	10	3	7	5	3	4	2	3	2	40	6.8	24	
24	3	3	IZS	2	4	3	3	16	6	17	4	10	7	6	2	7	1	4	1	1	5	6	5	4	17	5.2	24	
25	4	IZS	6	3	5	5	3	3	3	2	3	3	3	6	18	3	5	3	5	4	6	6	4	3	18	4.6	24	
26	IZS	3	2	2	1	2	1	1	1	1	1	6	4	3	3	3	3	3	1	1	1	3	2	IZS	6	2.2	24	
27	5	4	5	5	6	5	4	12	4	7	2	5	5	2	2	4	2	5	9	3	3	3	IZS	2	12	4.5	24	
28	3	3	4	4	38	10	5	8	4	5	9	4	2	2	20	8	10	6	15	6	21	IZS	6	3	38	8.5	24	
29	2	2	3	3	3	4	6	10	3	3	4	2	3	2	2	4	2	1	1	8	IZS	6	1	4	10	3.4	24	
30	3	3	2	3	3	2	5	2	10	1	1	1	2	1	1	3	1	1	1	IZS	2	2	5	4	10	2.6	24	
HOURLY MAX	7	6	7	11	38	28	27	25	11	38	40	11	15	15	20	29	18	14	15	26	23	13	25	8				
HOURLY AVG	3.4	3.3	3.4	3.7	6.1	6.8	6.6	9.5	4.6	6.8	6.5	4.6	4.1	4.4	4.6	5.3	4.8	4.2	4.3	5.4	5.8	4.0	4.0	3.8				

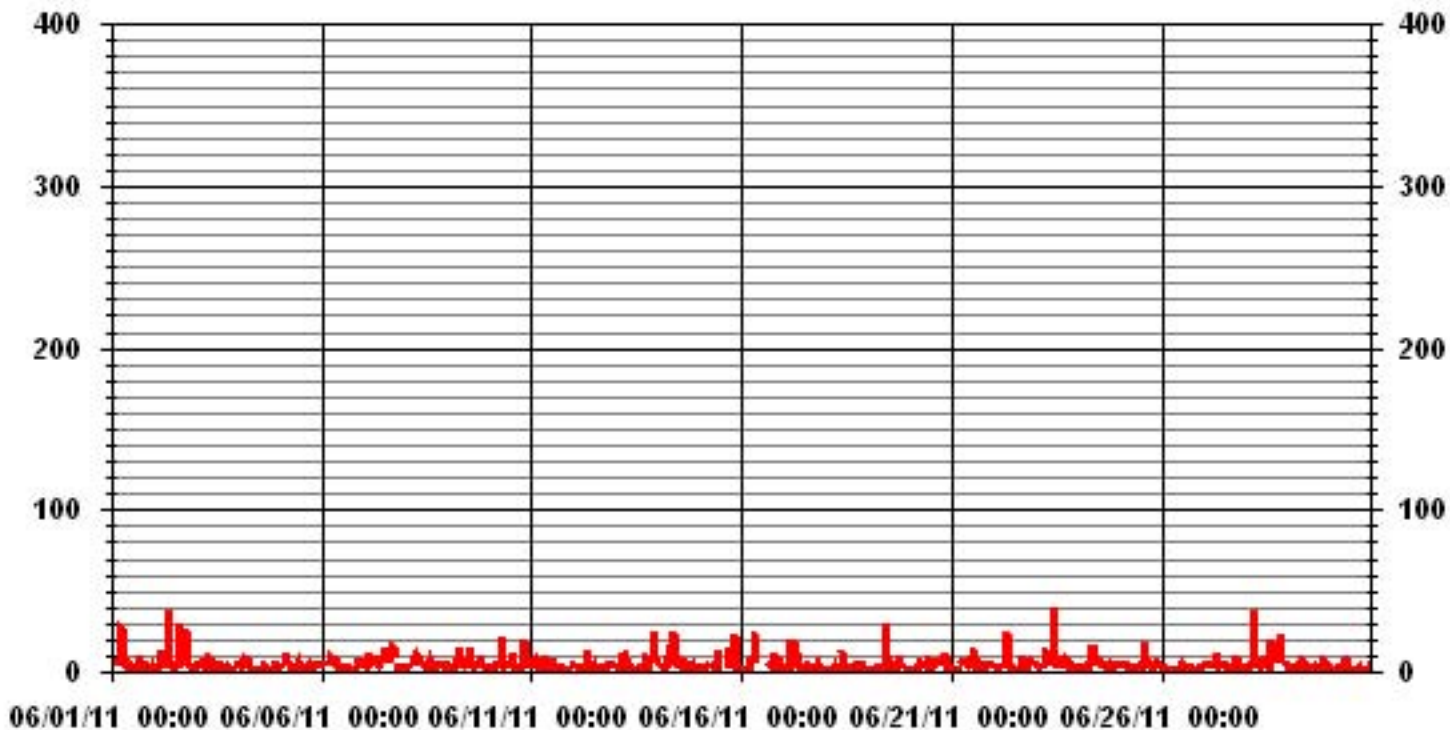
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677				
MAXIMUM INSTANTANEOUS VALUE:	40	PPB	@ HOUR(S)	10	ON DAY(S) 23
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	717	HRS
MONTHLY CALIBRATION TIME:	9	HRS			
STANDARD DEVIATION:	4.78				

01 Hour Averages



— LICA NOXMAX PPB

LICA
 NOX_ / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : NOX_
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.44	9.13	10.89	4.12	8.83	6.03	7.36	4.41	5.44	4.41	6.62	9.42	8.54	2.79	2.94	3.53	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.44	9.13	10.89	4.12	8.83	6.03	7.36	4.41	5.44	4.41	6.62	9.42	8.54	2.79	2.94	3.53	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	37	62	74	28	60	41	50	30	37	30	45	64	58	19	20	24	679
< 110																	
< 210																	
>= 210																	
Totals	37	62	74	28	60	41	50	30	37	30	45	64	58	19	20	24	

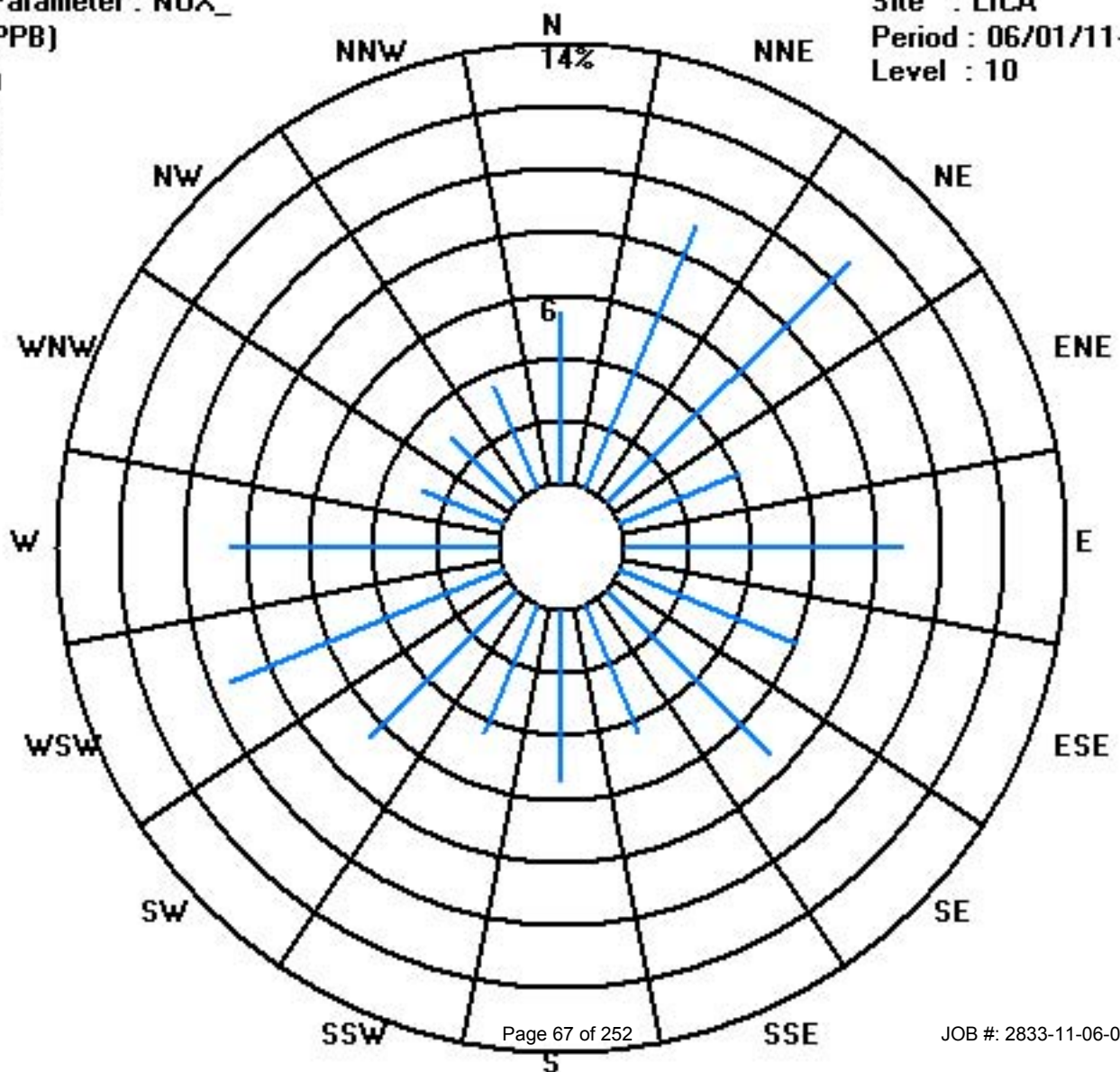
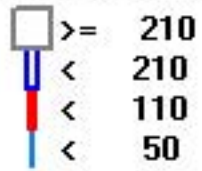
Calm : .00 %

Total # Operational Hours : 679

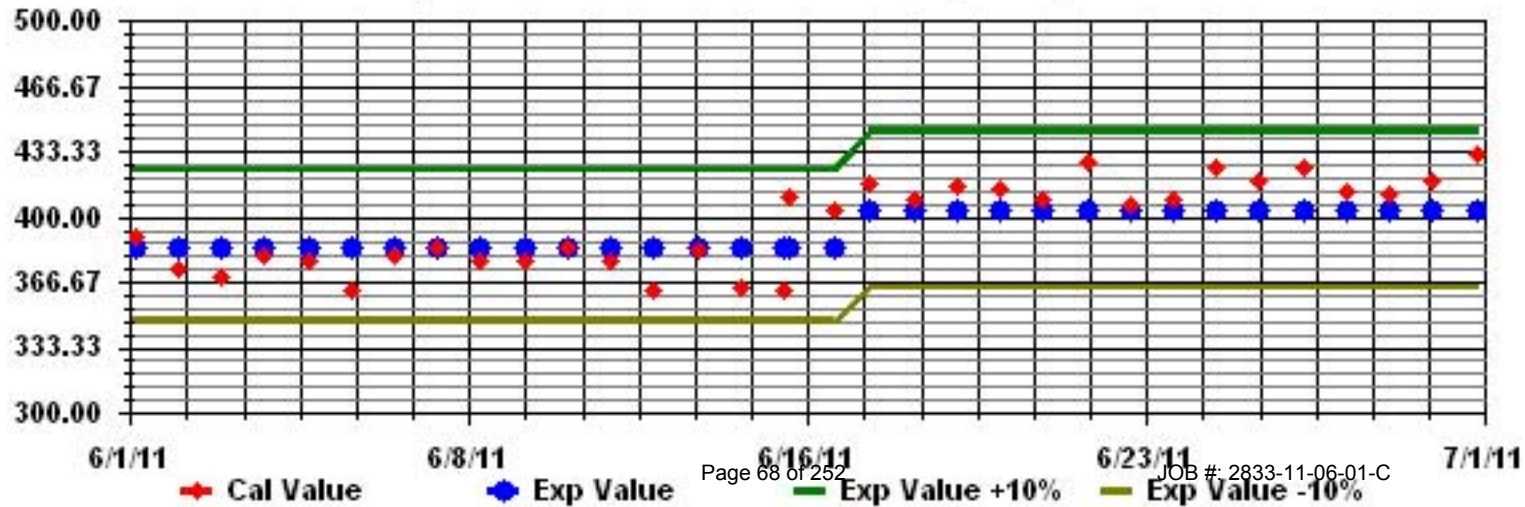
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

OZONE (O₃) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	17	17	IZS	9	7	8	18	32	40	52	56	57	58	59	61	60	60	58	52	53	52	50	48	45	61	42.1	24	
2	44	IZS	44	42	38	40	38	35	34	36	40	47	46	48	52	54	54	49	43	41	38	30	36	37	54	42.0	24	
3	IZS	43	40	32	30	24	23	23	24	24	29	25	28	29	31	35	35	35	33	32	31	29	25	IZS	43	30.0	24	
4	19	17	16	13	12	14	17	21	24	26	28	29	30	30	33	32	31	31	32	31	30	20	IZS	12	33	23.8	24	
5	9	8	8	6	4	8	17	20	22	26	29	31	32	30	31	31	32	31	28	28	18	IZS	8	6	32	20.1	24	
6	3	2	1	1	2	5	13	17	26	33	37	40	40	41	41	41	42	42	42	37	IZS	20	18	13	42	24.2	24	
7	11	10	7	7	5	8	16	34	40	44	44	44	43	49	55	50	47	45	40	IZS	41	41	38	26	55	32.4	24	
8	21	18	12	7	5	9	24	31	31	32	33	26	35	38	42	40	43	44	IZS	28	29	33	35	41	44	28.6	24	
9	34	31	32	24	16	14	24	30	36	40	43	49	52	56	58	60	62	IZS	60	55	52	50	49	45	62	42.3	24	
10	42	39	36	25	20	21	26	37	44	50	53	55	56	56	58	59	IZS	60	59	55	43	38	37	36	60	43.7	24	
11	37	35	28	23	24	28	24	30	33	37	43	48	49	50	52	IZS	52	52	50	47	50	48	43	36	52	40.0	24	
12	31	23	32	30	27	25	33	34	34	37	38	38	39	36	IZS	43	42	38	37	37	30	17	12	6	43	31.3	24	
13	3	3	1	2	3	5	17	28	40	40	41	42	46	IZS	50	51	50	48	44	38	27	16	11	7	51	26.7	24	
14	12	16	26	39	36	31	27	23	26	34	43	39	IZS	39	48	43	42	40	33	31	20	20	22	24	48	31.0	24	
15	26	26	23	12	12	14	20	32	40	41	42	IZS	38	37	41	37	37	40	38	38	40	39	42	48	48	33.2	24	
16	45	33	26	28	28	25	23	22	22	IZS	41	44	42	43	42	37	38	35	33	30	31	22	10	45	31.5	24		
17	18	20	15	18	22	18	16	20	29	IZS	C	C	C	C	27	23	19	16	15	13	12	13	14	29	18.2	24		
18	15	17	15	15	14	14	16	19	IZS	22	22	24	27	27	26	27	27	27	26	26	27	27	25	24	27	22.1	24	
19	26	27	29	29	29	29	28	IZS	26	26	25	26	28	31	30	32	33	32	28	28	26	27	33	33	33	28.7	24	
20	33	31	31	31	30	28	IZS	27	29	28	27	28	30	30	27	28	28	30	34	33	27	25	23	24	34	28.8	24	
21	23	21	24	22	23	IZS	24	26	27	28	32	30	29	25	30	35	38	38	38	33	16	12	9	7	38	25.7	24	
22	6	4	3	2	IZS	5	17	27	38	44	51	51	48	48	48	50	50	51	51	43	32	19	14	13	51	31.1	24	
23	9	7	4	IZS	2	8	29	31	35	39	41	42	44	45	48	49	48	46	46	47	45	41	30	29	49	33.3	24	
24	27	30	IZS	33	32	31	31	30	30	29	23	30	34	39	44	47	46	44	43	40	27	15	15	12	47	31.8	24	
25	16	IZS	12	13	11	11	12	12	17	19	42	46	36	31	46	46	41	33	36	24	19	20	29	25	46	26.0	24	
26	IZS	12	15	20	24	28	34	35	39	38	39	35	34	22	19	18	19	21	23	21	17	7	5	IZS	39	23.9	24	
27	1	1	1	1	3	5	10	13	18	24	28	29	32	34	36	36	39	43	41	41	35	33	IZS	32	43	23.3	24	
28	26	23	23	17	11	23	27	27	23	23	27	28	28	31	29	30	30	32	30	17	15	IZS	12	12	32	23.7	24	
29	20	23	24	17	18	21	20	23	34	39	38	37	36	34	33	35	35	35	34	31	IZS	29	32	30	39	29.5	24	
30	28	29	25	20	18	16	15	17	19	20	22	23	26	30	33	36	37	35	34	IZS	29	28	24	21	37	25.4	24	
HOURLY MAX	45	43	44	42	38	40	38	37	44	52	56	57	58	59	61	60	62	60	60	55	52	50	49	48				
HOURLY AVG	21.5	20.2	19.8	18.6	17.4	17.8	22.0	26.1	30.3	32.9	36.3	37.1	38.1	38.1	40.9	40.5	40.0	39.2	38.1	35.1	30.7	27.8	25.4	23.9				

STATUS FLAG CODES

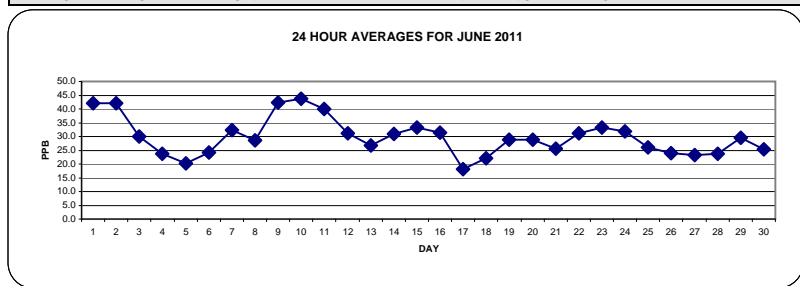
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

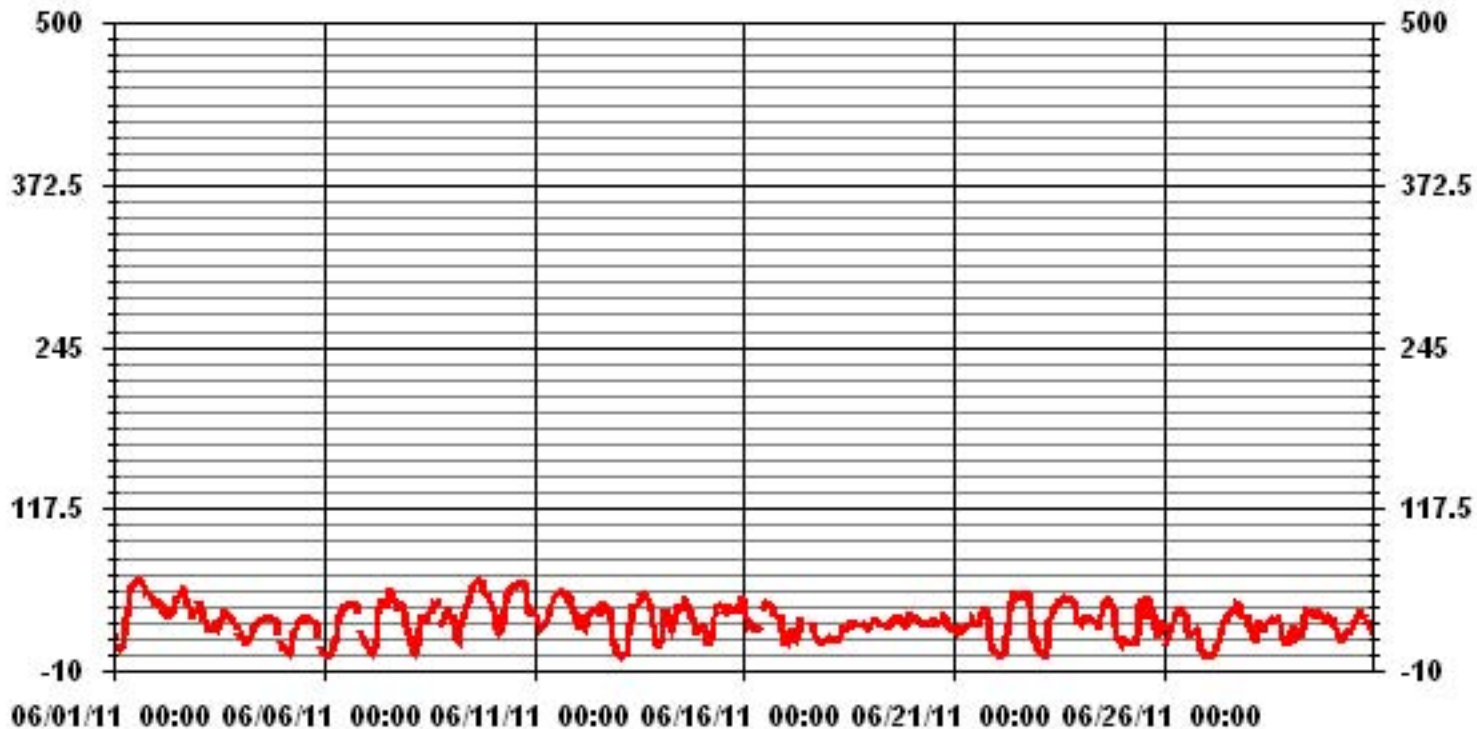
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	683					
MAXIMUM 1-HR AVERAGE:	62	PPB	@ HOUR(S)	16	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	43.7	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	13.14		MONTHLY AVERAGE	29.90	PPB	



01 Hour Averages



— LICA 03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	24	21	IZS	12	9	14	28	35	49	56	58	59	60	62	62	62	61	60	55	58	54	51	50	46	62	45.5	24
2	46	IZS	45	44	42	43	40	38	35	38	46	49	47	51	55	58	59	55	45	43	42	34	39	44	59	45.1	24
3	IZS	47	41	37	34	26	24	26	26	29	32	29	30	33	33	37	37	36	35	33	33	30	27	IZS	47	32.5	24
4	22	18	17	16	14	16	20	23	26	28	29	30	31	32	34	32	32	33	32	31	24	IZS	14	34	25.5	24	
5	13	11	10	8	5	16	18	22	24	29	32	33	35	31	33	34	34	32	30	30	27	IZS	12	9	35	23.0	24
6	6	2	3	2	3	11	15	22	31	36	40	41	42	42	42	43	43	44	44	42	IZS	27	25	17	44	27.1	24
7	16	12	10	9	7	10	30	38	44	46	47	47	45	60	58	54	49	48	43	IZS	43	44	42	34	60	36.3	24
8	27	21	19	10	8	20	32	32	35	33	35	33	39	44	44	45	45	46	IZS	36	32	35	43	44	46	33.0	24
9	39	34	34	31	21	19	30	32	44	41	49	52	54	58	61	62	64	IZS	63	59	54	53	51	47	64	45.7	24
10	43	41	39	31	25	30	32	42	49	52	55	57	58	58	59	60	IZS	61	61	58	53	42	42	40	61	47.3	24
11	39	37	35	28	29	29	28	33	37	40	48	50	51	53	54	IZS	54	54	52	51	51	50	48	40	54	43.1	24
12	37	29	37	33	29	29	36	35	36	40	40	40	42	43	IZS	46	46	42	39	39	37	26	16	10	46	35.1	24
13	8	4	3	3	6	9	24	36	43	42	42	47	48	IZS	52	52	52	51	45	42	32	20	16	13	52	30.0	24
14	18	23	37	42	40	34	32	27	28	45	46	45	IZS	48	51	45	45	43	39	41	28	29	27	26	51	36.5	24
15	28	28	29	20	16	17	27	36	44	46	49	IZS	48	44	45	44	43	45	41	41	44	44	50	50	50	38.2	24
16	48	44	28	29	29	26	24	23	23	29	IZS	46	50	46	44	44	40	40	40	36	33	33	29	17	50	34.8	24
17	23	26	22	22	23	22	20	30	33	IZS	C	C	C	C	30	27	23	17	17	16	13	14	15	33	21.8	24	
18	17	17	15	16	15	15	18	21	IZS	22	23	28	29	30	28	29	29	28	27	28	28	28	26	25	30	23.6	24
19	28	29	30	30	30	30	30	IZS	28	27	27	28	31	33	33	35	35	33	33	30	28	31	34	34	35	30.7	24
20	34	32	32	31	32	30	IZS	29	31	30	29	29	32	32	29	30	31	34	36	36	29	26	25	25	36	30.6	24
21	24	23	25	24	25	IZS	26	28	32	34	35	33	32	27	35	38	40	40	39	39	22	15	12	10	40	28.6	24
22	7	6	5	4	IZS	9	22	32	42	49	53	53	51	51	50	53	53	54	53	52	46	25	18	16	54	35.0	24
23	11	12	7	IZS	4	25	32	34	39	41	44	44	47	47	50	52	50	48	49	51	48	46	36	36	52	37.1	24
24	35	32	IZS	34	33	32	32	32	32	32	28	33	37	41	46	50	49	46	44	42	38	19	21	18	50	35.0	24
25	18	IZS	15	14	13	12	13	14	20	21	51	48	45	42	51	50	45	38	42	29	21	27	32	29	51	30.0	24
26	IZS	17	19	25	27	33	36	38	42	42	42	39	36	31	21	19	21	23	24	23	20	12	7	IZS	42	27.1	24
27	3	3	3	3	6	8	12	16	23	27	29	32	34	37	38	39	43	44	43	46	39	37	IZS	33	46	26.0	24
28	32	27	27	23	15	27	29	28	26	25	32	32	21	33	31	32	32	38	38	19	19	IZS	19	23	38	27.3	24
29	23	25	26	23	23	22	22	28	40	41	40	40	39	37	35	37	37	36	36	36	IZS	32	33	33	41	32.3	24
30	31	31	28	22	21	17	16	20	21	21	23	26	30	32	35	39	39	36	35	IZS	31	30	27	22	39	27.5	24
HOURLY MAX	48	47	45	44	42	43	40	42	49	56	58	59	60	62	62	62	64	61	63	59	54	53	51	50			
HOURLY AVG	25.0	23.3	22.9	21.6	20.1	21.8	25.8	29.3	33.9	35.9	39.4	40.1	40.9	42.1	43.2	43.1	42.6	41.7	40.7	38.9	35.0	31.5	29.3	27.5			

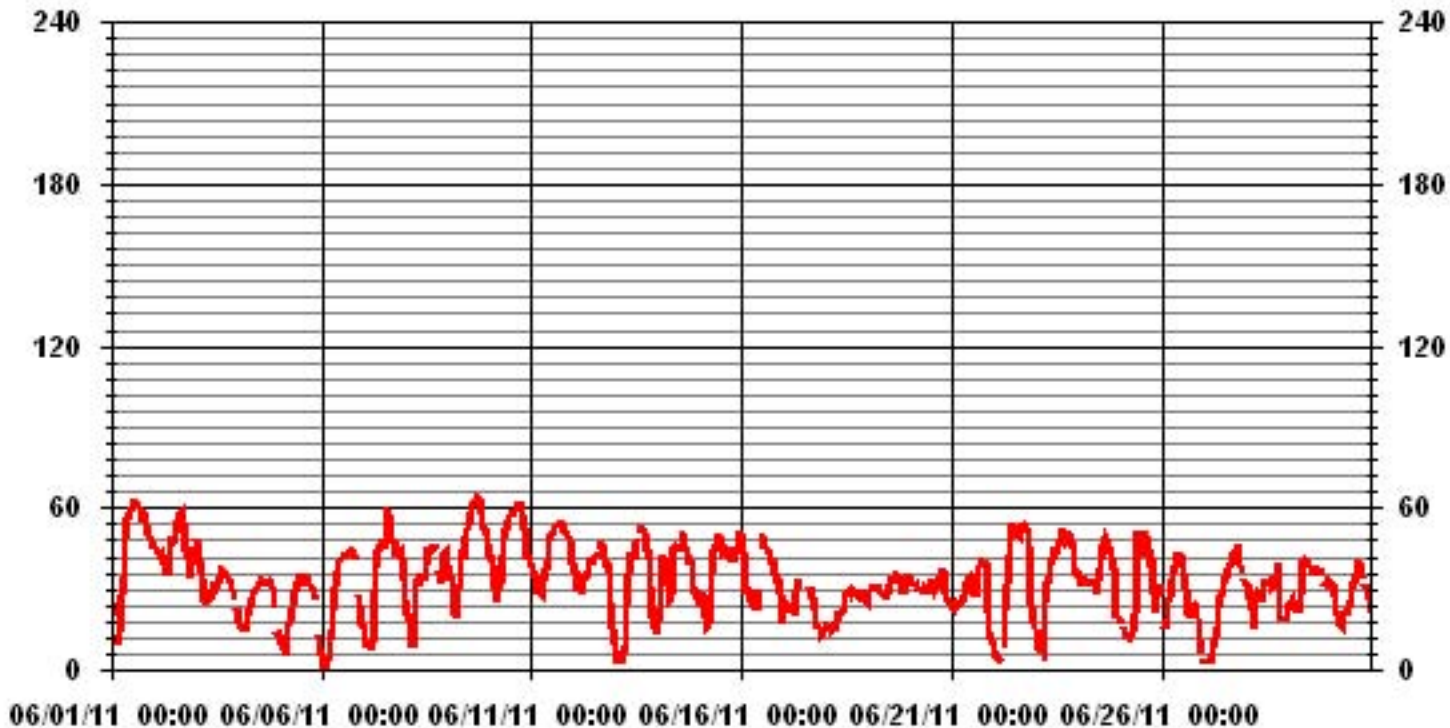
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	683				
MAXIMUM INSTANTANEOUS VALUE:	64	PPB	@ HOUR(S)	16	ON DAY(S) 9
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	13.13				

01 Hour Averages



— LICA O3MAX PPB

LICA
 O3_ / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : O3
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.56	8.05	9.80	4.24	8.49	6.14	6.58	3.22	3.95	3.51	5.56	9.37	8.49	2.92	2.92	3.51	92.38
< 110	.00	.58	1.02	.00	.29	.00	.87	1.31	1.46	.87	1.02	.14	.00	.00	.00	.00	7.61
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.56	8.63	10.83	4.24	8.78	6.14	7.46	4.53	5.41	4.39	6.58	9.51	8.49	2.92	2.92	3.51	

Calm : .00 %

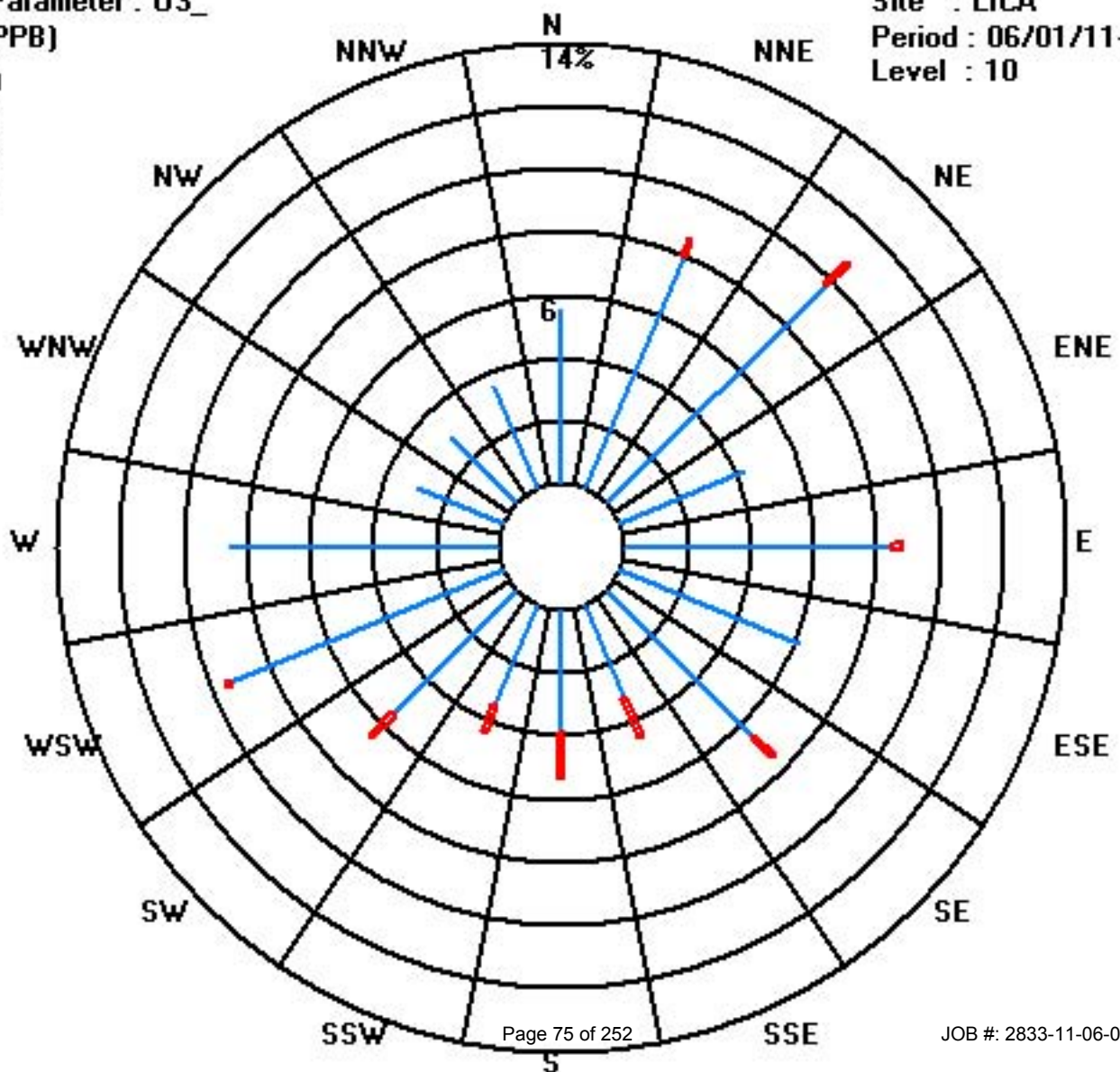
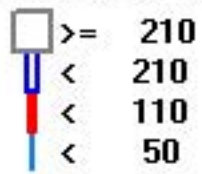
Total # Operational Hours : 683

Distribution By Samples

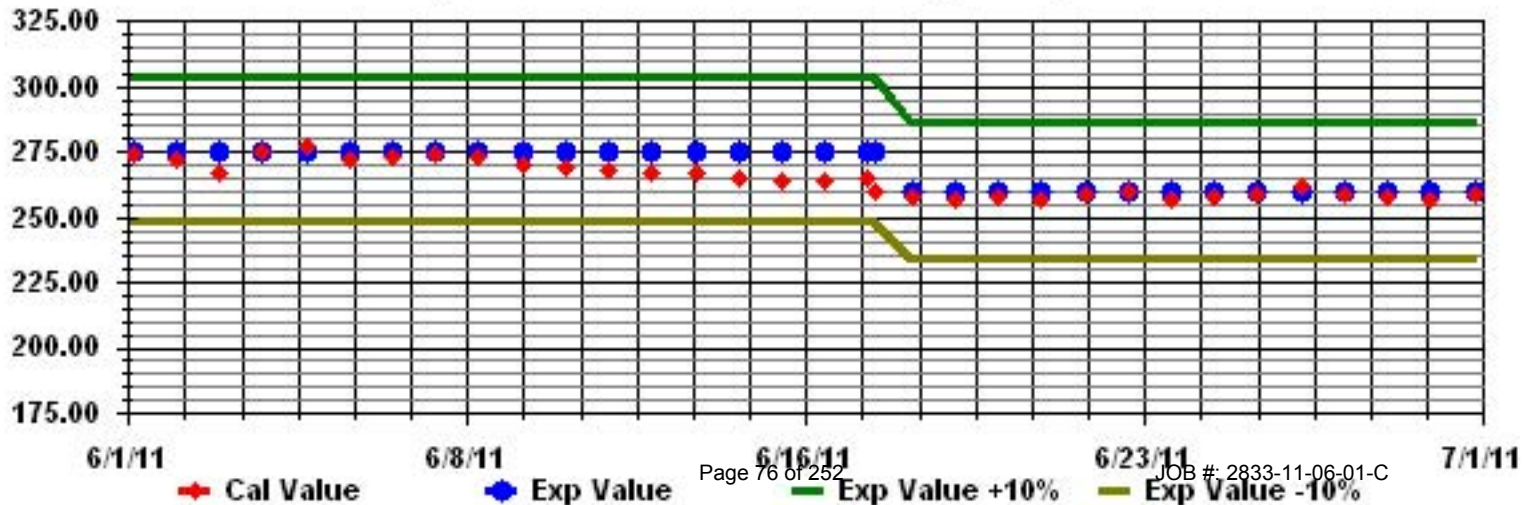
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	38	55	67	29	58	42	45	22	27	24	38	64	58	20	20	24	631
< 110		4	7		2		6	9	10	6	7	1					52
< 210																	
>= 210																	
Totals	38	59	74	29	60	42	51	31	37	30	45	65	58	20	20	24	

Calm : .00 %

Total # Operational Hours : 683



Calibration Graph for Site: LICA Parameter: 03_ Sequence: 03 Phase: SPAll



Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

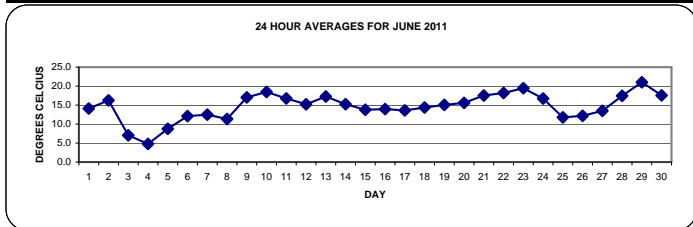
JUNE 2011

AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1		5.7	4.3	3.5	2.6	2.6	5.2	10.3	14.2	17.1	19.6	20.6	21.1	21.6	21.5	22.2	22.1	21.3	20	16.9	14.8	13.3	12.8	12.8	12.3	22.2	14.1	24	
2		11.7	11.2	10.7	10.4	10.3	11	12.1	13	14.7	16.7	18.3	18.9	20.2	21.5	22.2	22.2	21.7	21.2	20.5	19.6	17.7	15.3	14.8	14	22.2	16.2	24	
3		13.9	13.8	12.8	11.2	11.4	9.6	7.7	7.4	7.1	6.9	7.5	7.4	8	7.1	6.1	6.2	6.4	5.7	4.2	2.6	2.3	1.7	0.9	1	13.9	7.0	24	
4		0.5	-1.1	-2.1	-2.9	-3.2	-1	1.5	3.5	4.8	5.7	7	8.7	9.1	9.8	9.8	9.7	10	9.8	9.3	8.9	7.9	4.7	2.7	1.6	10.0	4.8	24	
5		0.8	1	1.4	0.9	0.8	3.3	6.2	8.5	10.8	12.8	14	14.9	14.6	12.2	12.9	12.2	13	13.4	13.9	13.5	10.7	7.4	6	4.9	14.9	8.8	24	
6		3.6	2.4	1.1	0.1	0	3.4	7	10.9	14.4	16.4	17.3	18.2	18.6	19.3	20.1	20.3	20	20.4	19.5	17.6	14.7	10.6	8.1	6.5	20.4	12.1	24	
7		4.8	3.7	3.1	2.5	2.3	6.2	10.2	11.8	13.6	14.9	16.1	15.9	16	17.5	19.6	20	19.9	19.8	18.7	16.7	14.9	12.2	11.1	7.9	20.0	12.5	24	
8		6.2	4.1	3	2.2	2.1	5.4	9.5	11.4	12.5	13.3	14.1	13.1	14.9	15.1	15.3	15.3	16.5	16.7	15.9	14.6	13.5	13	12.5	11.9	16.7	11.3	24	
9		11.2	11.1	11	10.3	9.8	10.1	12	13.3	15.5	17.5	19	20.5	21.5	22	22.2	22.7	23.4	23.6	23.1	21.2	18.9	17.3	16.2	15.5	23.6	17.0	24	
10		14.9	13.9	12.7	9.9	9.2	11.7	14.1	17.5	19.2	21.1	22.3	23.2	24.1	24.2	24.6	24.3	24.5	24	23.4	22.1	18.9	15.9	14.4	12.9	24.6	18.5	24	
11		12.2	12.2	11.1	9.6	10	12.8	13.2	14.4	16	18.3	19.4	19.9	21	20.8	21	21.8	21.7	21.6	21.4	20.3	17.6	16.5	15	14.2	21.8	16.8	24	
12		13.2	12	13.2	12.7	12.1	12.9	15.5	15.4	16.4	17.7	19.3	19.7	18.8	15.2	15.9	17	16.4	17	16.8	16.5	15.6	13.5	11.7	10.7	19.7	15.2	24	
13		9.6	9.3	8.8	8.5	8.5	9.8	14.4	17.1	18.7	19.5	20.4	21.6	22.5	22.8	23.4	23.5	23.8	23.4	22.4	21.1	19	16.3	15.3	14.5	23.8	17.3	24	
14		14.6	14.6	14.4	13.5	13.1	13.1	13.6	13.9	14.6	16.2	17.7	16.4	15.3	16.2	18.9	20	19.7	16.3	14.6	14.4	13.9	13.6	13.5	13.6	20.0	15.2	24	
15		13.4	13	12.8	12.7	12.8	12.9	13.4	14	15.1	15.8	15.2	15.1	14.5	16.2	15.1	13.1	13.4	13.5	13.8	13.7	13.3	12.7	12.7	12.4	16.2	13.8	24	
16		12.5	12.9	13.2	12.9	12.6	12.5	12.6	12.6	12.8	13.7	14.1	12.2	15.4	16.9	17.3	16.3	13.6	16.9	17	16.2	14.8	13.6	11.9	10.1	17.3	13.9	24	
17		10.5	10.7	9.6	9.7	10.8	11	11.1	11.5	12.1	12.9	15.7	17.4	18.1	18	18	17.8	15.5	14.7	14.4	13.8	13.3	13.2	13.3	13.6	18.1	13.6	24	
18		13.7	13.8	13.8	13.6	13.8	13.8	13.8	13.7	13.6	13.9	15.1	16	15.7	15.7	16.3	15.7	15.5	14.9	14.7	13.9	13.8	13.6	13.2	13.2	16.3	14.4	24	
19		13.2	13	13.1	12.8	12.7	13.2	13.6	13.7	14.2	14.4	15.2	15.6	16.1	17.5	16.7	18	17.9	17.9	16.9	16.5	15.2	15	14.7	14.1	18.0	15.1	24	
20		13.9	13.6	13.6	13.5	13.5	13.6	13.8	14.2	14.4	14.7	15.3	15.8	17	17.3	16.6	17.2	17.4	18.3	17.7	17.3	16.7	16.4	16.4	15.9	18.3	15.6	24	
21		15.3	14.5	14.3	14	14.1	14.5	15	16	16.8	17.5	18.3	18.2	19.2	21.4	21.8	22.1	22.7	23.1	23	21.5	17.7	15	12.9	11.8	23.1	17.5	24	
22		10.5	9.4	8.4	7.9	7.8	11.7	14.7	17.2	19.5	21.2	22.5	23.5	24.1	24.6	25.3	25.3	25.5	25.4	25.1	24	20.5	16	13.9	12.6	25.5	18.2	24	
23		11.4	10.7	9.9	9.4	9.6	14	17.5	19.2	20.8	22	23.7	24.7	25.6	26.4	26.5	26.7	26.5	25.9	25.3	21.1	19.3	17.1	16.9	16.6	26.7	19.5	24	
24		16	16.1	16.3	16.4	16.2	15.7	15.8	16.5	17.2	17.6	16.1	15.8	17.2	18.4	18.9	19.6	19.9	20.3	19.8	19.2	16.3	12.9	11.9	11.4	20.3	16.7	24	
25		11.9	11.4	10.8	10.3	10.4	11.5	12.4	13.1	13.7	13.9	9.1	8.8	10.5	11.3	12.3	13.5	14.1	13.9	12.9	12.4	11.7	11.2	10.8	10.6	14.1	11.8	24	
26		10	8.8	8	7.9	8.8	9.5	11.7	12.5	14.1	14.8	15.9	17	18.1	15.6	12.7	12.1	12.5	14	15.4	14.8	13	9.8	8.1	7.1	18.1	12.2	24	
27		6.2	5.2	4.7	4.9	6.2	7.8	10.3	11.1	12.9	15.4	16.6	17.7	18.9	20	20.5	21.3	21.8	21.2	20.5	12.1	12.1	12.3	11.9	12.1	21.8	13.5	24	
28		11.9	11.9	12.1	11.4	10.9	11.8	12.1	14.1	14.8	16.5	18.6	19.5	19.7	21.8	22.8	23.3	23.2	24	23.7	22.3	20.4	18	17.3	16.3	24.0	17.4	24	
29		16.8	16.6	16.5	14.6	14.8	17	18.5	19.9	21.6	22.8	23.8	24.7	25.2	25.6	25.9	26.2	26.1	26.7	26.7	25	21.8	17.8	14.8	15.1	26.7	21.0	24	
30		15.1	14.8	14.5	14.1	14	14.2	14.9	16.2	18.1	19.4	20	20.7	21.1	20.8	21.2	21.2	21.4	21.2	20.6	19.1	17.7	15.5	13.5	12.3	21.4	17.6	24	
HOURLY MAX		16.8	16.6	16.5	16.4	16.2	17.0	18.5	19.9	21.6	22.8	23.8	24.7	25.6	26.4	26.5	26.7	26.5	26.7	26.7	25.0	21.8	18.0	17.3	16.6				
HOURLY AVG		10.8	10.3	9.9	9.3	9.3	10.6	12.3	13.6	14.9	16.1	16.9	17.4	18.1	18.4	18.7	18.9	18.8	18.8	18.3	16.9	15.2	13.4	12.3	11.6				

STATUS FLAG CODES

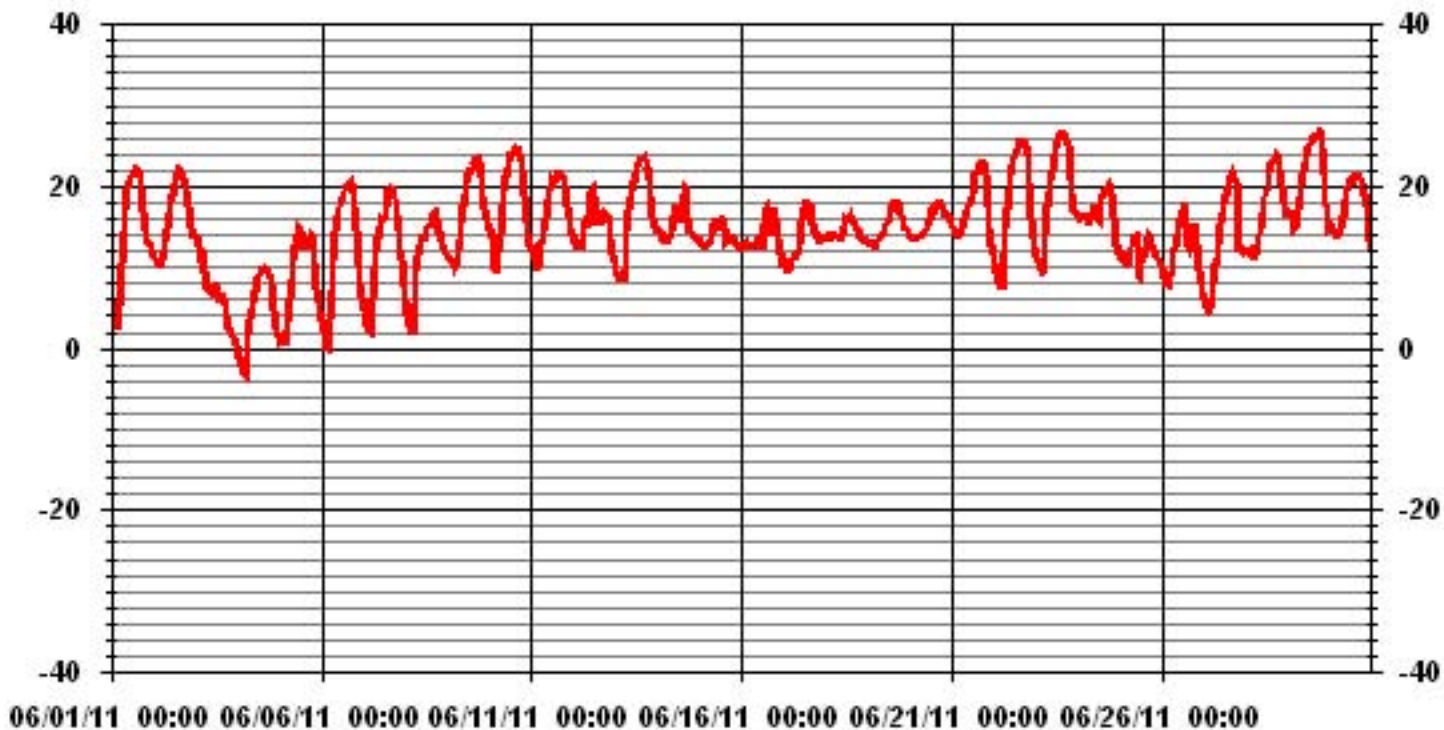
S	- OUT OF SERVICE	OD	- OUTSIDE DETECTION LIMITS
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-3.2 °C	@ HOUR(S)	4	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	26.7 °C	@ HOUR(S)	17, 18	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	21.0 °C			ON DAY(S)	29
				VAR-VARIOUS	
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS		
		AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	5.53	MONTHLY AVERAGE:	14.62 °C		

01 Hour Averages



— LICA TPX DGC

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

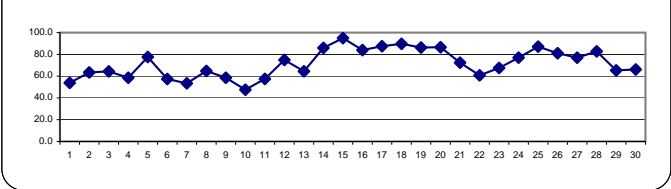
RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS	
1	1	77	83	87	88	87	80	64	53	44	31	29	26	26	26	24	23	25	29	45	57	67	70	73	78	88	53.8	24	
2	2	83	85	88	89	88	84	81	77	72	63	57	50	48	42	36	29	30	39	51	54	61	73	69	73	89	63.4	24	
3	3	69	70	74	79	78	80	80	76	71	68	61	59	54	53	53	50	50	51	56	58	58	61	68	68	80	64.4	24	
4	4	73	82	84	85	86	76	64	50	43	40	36	33	33	34	37	42	47	50	52	55	60	75	82	85	86	58.5	24	
5	5	87	88	88	90	89	84	81	73	67	63	59	56	62	81	77	81	74	70	68	64	80	92	93	94	94	77.5	24	
6	6	94	94	94	94	95	92	88	75	55	40	33	30	29	27	26	26	27	26	28	36	50	66	74	78	95	57.4	24	
7	7	84	87	87	90	90	80	71	57	47	45	39	40	40	34	27	26	26	29	37	41	48	58	72	90	53.4	24		
8	8	79	87	89	88	87	81	73	64	58	54	48	68	55	50	45	49	45	43	49	62	65	64	71	80	89	64.8	24	
9	9	85	87	85	90	93	94	84	77	64	55	51	44	38	37	37	35	32	32	32	39	47	52	56	58	94	58.5	24	
10	10	60	63	68	79	80	73	66	52	44	37	33	32	29	29	27	29	29	28	29	33	46	54	58	63	80	47.5	24	
11	11	65	64	72	78	76	68	75	71	63	53	50	49	45	45	44	41	41	40	41	47	55	57	68	71	78	57.5	24	
12	12	77	83	77	78	79	79	72	73	69	64	58	57	61	87	81	70	70	71	71	70	76	87	93	94	94	74.9	24	
13	13	95	95	95	96	97	95	81	72	60	53	50	45	38	36	35	33	31	37	45	53	65	77	80	83	97	64.5	24	
14	14	81	84	87	89	92	94	93	93	91	81	71	78	91	85	68	68	69	80	93	93	95	96	95	95	96	85.9	24	
15	15	95	97	98	99	99	100	99	94	87	84	89	93	94	87	86	98	98	97	96	97	97	98	98	98	100	94.9	24	
16	16	99	97	96	95	94	95	96	97	98	94	91	83	72	68	67	70	84	66	64	65	71	75	85	93	99	84.0	24	
17	17	90	88	93	95	93	91	92	94	90	87	75	70	67	68	70	71	90	94	95	97	97	97	98	98	98	87.5	24	
18	18	97	97	97	97	98	97	96	95	96	95	88	80	77	77	75	77	80	85	85	90	91	93	95	94	98	89.7	24	
19	19	94	96	94	95	96	93	90	91	88	86	84	82	83	75	82	73	72	73	86	84	89	88	87	90	96	86.3	24	
20	20	91	91	90	91	91	91	90	89	88	88	86	85	80	79	86	83	82	77	76	81	88	90	91	93	93	86.5	24	
21	21	94	95	92	93	92	91	90	85	81	77	72	73	67	53	46	42	38	37	38	45	71	85	89	91	95	72.4	24	
22	22	94	94	95	95	95	86	79	69	59	52	44	41	35	32	30	29	29	31	39	55	76	83	87	95	60.8	24		
23	23	91	93	93	94	91	79	74	69	64	60	54	50	46	43	39	38	40	44	47	61	73	91	94	92	94	67.5	24	
24	24	93	88	84	83	84	90	91	87	82	77	90	87	74	64	60	55	53	51	52	56	74	90	91	92	93	77.0	24	
25	25	89	90	92	93	92	89	87	87	85	85	93	92	87	83	76	73	73	78	81	88	93	95	94	95	95	87.1	24	
26	26	96	97	97	97	96	95	89	86	77	74	68	66	65	74	78	77	73	65	59	64	75	90	93	94	97	81.0	24	
27	27	95	95	95	96	96	96	90	87	73	60	55	51	51	51	51	53	55	59	63	93	96	95	96	95	96	77.0	24	
28	28	96	98	98	98	98	99	100	90	88	83	75	74	73	67	66	64	65	61	63	75	80	92	91	92	100	82.8	24	
29	29	87	85	83	91	90	82	79	75	65	59	54	50	47	41	40	40	41	40	40	47	60	77	97	97	97	65.3	24	
30	30	98	96	98	98	98	96	92	83	75	68	63	58	53	48	41	37	33	36	37	43	49	55	63	69	98	66.1	24	
HOURLY MAX		99	98	98	99	99	100	100	97	98	95	93	93	94	87	86	98	98	97	96	97	97	98	98	98				
HOURLY AVG		86.933	88.3	89	90.767	90.667	87.667	83.567	78.033	71.467	65.867	61.867	60.067	57.333	55.867	53.667	52.733	53.4	53.8	56.733	62.767	70.833	78.633	82.767	85.4				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

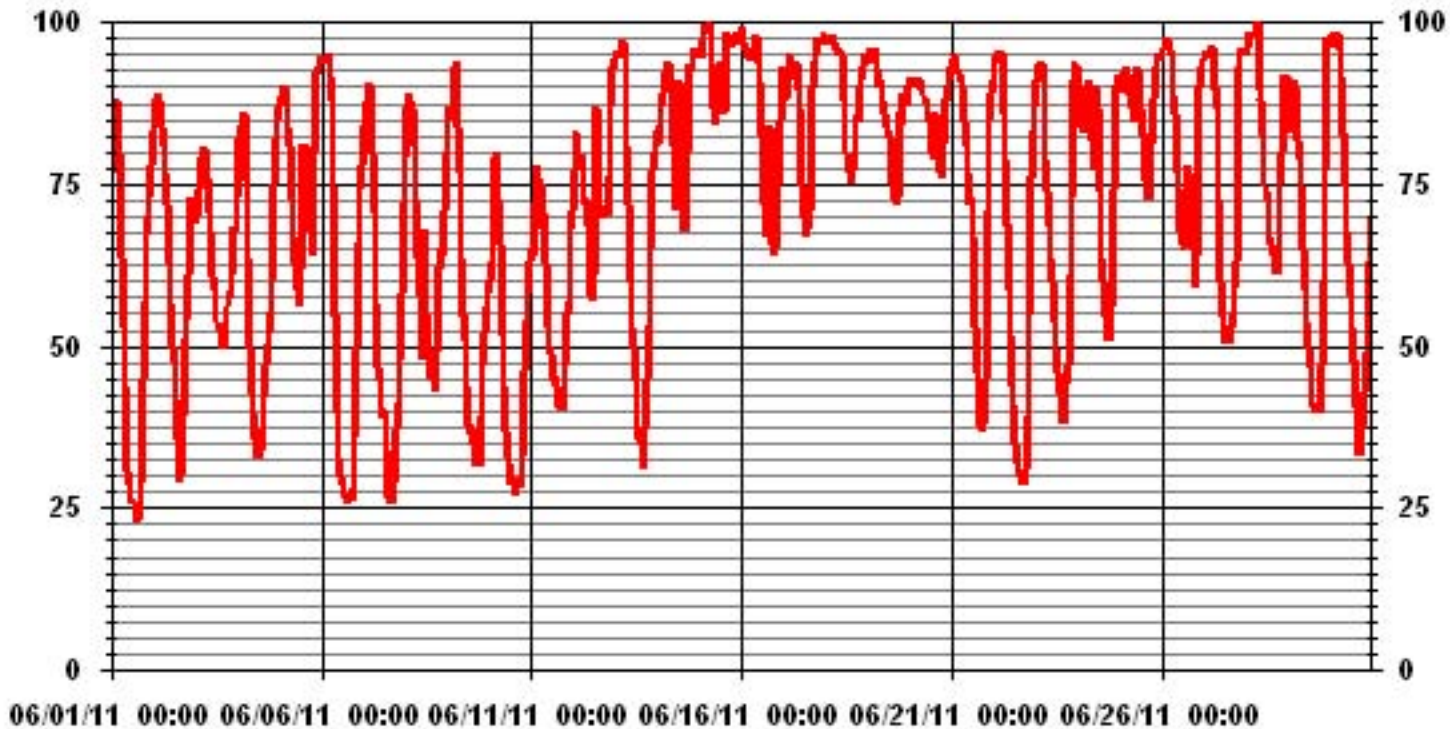
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	100	%	@ HOUR(S)	5	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	94.9	%			ON DAY(S)	15
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	21.20		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	71.59	%	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0.9	1.2	0.4	0.5	0.9	0.3	0.4	2	5	5.7	6.2	6.7	7.8	6.7	8.3	8.3	8.9	8.7	10	7.7	11.2	10.2	10.8	7.5	11.2	4.9	24	
2	7.8	7.8	8.7	5	3.6	5.4	5.9	7.1	5.7	2.4	6.1	7.4	3.7	2.6	3.7	6.2	5	8.1	6.8	5.4	2.7	1.8	2.7	8.3	8.7	3.7	24	
3	6.5	7.5	9.7	10.3	11.4	15.9	15.4	14.5	14.4	16.4	16.9	17.4	16.5	16.2	16.1	15.7	14.5	14.5	12.2	11.4	8.4	6.3	3.3	3.5	17.4	12	24	
4	3.1	4.2	3.5	2.8	2.1	1.8	3.6	5	5.8	7.9	7.8	7.8	7.7	7.9	10.7	11.5	11.3	10.2	10.1	6.5	3.8	1.9	1.4	0.2	11.5	5.1	24	
5	0.3	0.3	0.4	0.8	0.5	0.4	3.6	4.5	4.8	3.1	3.5	2.4	2.7	7	4.2	4.8	4	2.6	3.2	5.2	3.3	3.5	3.3	2.7	7.0	3.0	24	
6	0.4	0.6	0.5	0.5	0.4	1.7	6	5.8	6	9.1	8.9	7.2	8.8	8.6	7.6	7.5	4.7	5	3.6	2.4	1.6	1.3	0.4	1	9.1	4.2	24	
7	0.5	0.9	0.6	0.6	1.1	1.1	2.1	6.8	8	10.3	7.8	7	5.3	1	5	8.8	8.6	8.5	7.6	4.2	3.1	3.4	2.3	1.5	10.3	4.4	24	
8	0.1	0.8	0.1	0.8	0.1	0.5	3.1	4.1	4	3.6	2.9	1	3	2.7	1.7	3.1	2.7	3.1	1.8	1.6	2.3	3.2	4.2	3.7	4.2	2.3	24	
9	1.3	2.7	5.1	2	1.2	0.9	2.5	2.5	3.1	4.2	3.3	5.4	6.5	7.8	6.2	6.4	7.1	6.2	5.1	3.1	4.1	3.6	3	4.1	7.8	4.1	24	
10	4.8	4.1	3.2	1.5	0.6	1.2	3.4	7	8.1	8.6	10.2	7.4	6.8	7.1	7.8	7.7	5.8	8.9	6.1	3.9	2.2	4.2	4.2	4.5	10.2	5.4	24	
11	4.3	4	0.7	2.5	1.9	3.3	3.5	8.7	6.2	5.6	3.8	5.3	7	5.9	3.3	3.5	4.6	4.9	4.3	3.2	3.8	4	2.8	1	8.7	4.1	24	
12	1	1.5	1.8	1.4	2	2.2	7.3	6.1	6.8	7.7	6.4	6	5.8	2.9	7.5	7.5	6.2	4.3	4.1	2.1	1.9	0.9	1.4	1.1	7.7	4.0	24	
13	0.5	0.5	0.8	1.8	3.2	2.3	3	4.3	5.5	6.5	7	4.8	6	6.4	5.7	7.1	5.2	5.2	6.2	2.9	0.4	0.4	0.8	0.8	7.1	3.6	24	
14	0.8	3	6.5	9.8	5.7	2.1	0.6	0.5	2.8	6	5.1	2.6	1.2	5.6	4.2	3.4	3.3	9	1.5	0.8	1.6	0.8	2.8	2.4	9.8	3.4	24	
15	2.7	2.7	1.5	1.2	1.2	2	1.6	4.1	5	4.2	4.6	2.7	1.4	3	5.2	1.4	3.6	2.1	2.6	4.1	1.7	1.7	5.9	6.6	6.6	3.0	24	
16	6.2	7.3	6.4	8.1	8.7	8.3	7.2	6.8	7	7.1	5.7	1.9	1.7	1.3	7.5	6.2	3.4	7.7	4.7	5.7	5.2	6.3	1.8	1.3	8.7	5.6	24	
17	2.3	2.6	2.1	2.9	4.5	1.8	2.8	1.6	2.6	5.8	7.7	8.3	9.9	9.3	10.7	10.5	7.1	6.3	7	9	9.5	8.8	9.3	9.9	10.7	6.3	24	
18	10.8	12.5	11.3	11.2	10.2	10.4	10.8	10.8	11.1	11.4	10.8	12.5	12.9	11.4	11.7	13.1	11.9	11.9	13.3	10.9	11	9.9	10.2	8.5	13.3	11.3	24	
19	8	7.2	8.8	8.4	8.7	9.4	9.7	8.1	8.5	9.5	10.4	11.2	11.8	11.9	8.7	10.2	10.9	10.3	9	7.5	7	7.1	9.2	10.1	11.9	9.2	24	
20	10.7	7.7	8	5	5.6	5.9	6.9	8.2	10.2	10.1	9.3	10.7	11.8	11.2	9.5	11.1	10.1	9.1	8.3	8.7	8.3	8	7.8	6.9	11.8	8.7	24	
21	7.5	7.5	9.9	8	7.2	4.5	6.9	6.9	7.4	7.4	5.6	6.2	7.1	9.2	8.2	9.3	7.8	5.2	5.1	2.6	1.6	0.8	0.7	1.1	9.9	6.0	24	
22	0.7	0.9	1	0.5	0.7	5.4	3.5	4.1	4.2	3.4	3.5	3.6	4	4.4	4.1	4.9	4.8	3.3	4.1	1.2	1.1	1.8	0.9	1	5.4	2.8	24	
23	0.3	0.4	0.2	0.6	0.6	1.2	5	5.5	6.9	7.5	9.7	10.5	11.7	10.5	11.2	14.2	12.4	11.4	9	13.3	12.4	7.3	1.8	1.4	14.2	6.9	24	
24	2.5	4.5	6.2	8	8.4	8.2	7.8	8.4	9.2	10	4.5	6.1	7.7	10.1	9.5	8	7.4	7	6.2	3.9	2	3	2.5	2.7	10.1	6.4	24	
25	3.6	2.7	4.8	4.9	3.2	4.8	5.7	4.9	7.5	5.2	9.9	7.2	3.1	5.7	2.2	4.1	3.1	1.1	3.9	3.7	3.7	4.4	3.2	1.5	9.9	4.3	24	
26	3.5	2.4	3	5.4	2.5	4.6	7.2	5.9	9.7	9.5	11	10.7	13.1	18.6	14.8	10.5	9.6	7.1	1.8	3	3.4	1.2	0.5	0.4	18.6	6.6	24	
27	0.8	1.1	0.5	0.5	0.8	1	2.4	4.1	4.4	5.7	7.7	8.8	7.6	6.9	7.8	7	7.3	7	4.5	11.3	6.4	5.3	6.1	8.2	11.3	5.1	24	
28	1.2	0.7	1.1	1.1	0.7	3.8	5.8	5	4.4	3.1	4.2	4.6	6.3	4	7.1	6.1	5.4	0.6	1.1	2.3	1.8	1	3.9	4.3	7.1	3.3	24	
29	6.3	7.2	3.6	0.8	2.8	5.9	8	6.3	6.3	7.1	7	6.7	7.8	8.4	7.3	5.8	3.3	4.5	2.9	2.2	2.5	11.5	7	3.5	11.5	5.6	24	
30	2.2	3.2	5.1	3.7	6.3	6	7	8	7.7	8.8	10.2	10.4	11.3	12.8	12.9	13.2	12.8	10.3	10.9	8.6	7.7	6	4.5	5.4	13.2	8.1	24	
HOURLY MAX	10.8	12.5	11.3	11.2	11.4	15.9	15.4	14.5	14.4	16.4	16.9	17.4	16.5	18.6	16.1	15.7	14.5	14.5	13.3	13.3	12.4	11.5	10.8	10.1				
HOURLY AVG	3.4	3.7	3.9	3.7	3.6	4.1	5.3	5.9	6.6	7.1	7.3	7.0	7.3	7.6	7.7	7.9	7.1	6.8	5.9	5.3	4.5	4.3	4.0	3.8				

STATUS FLAG CODES

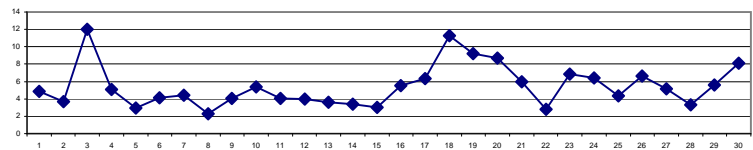
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 23, 2010

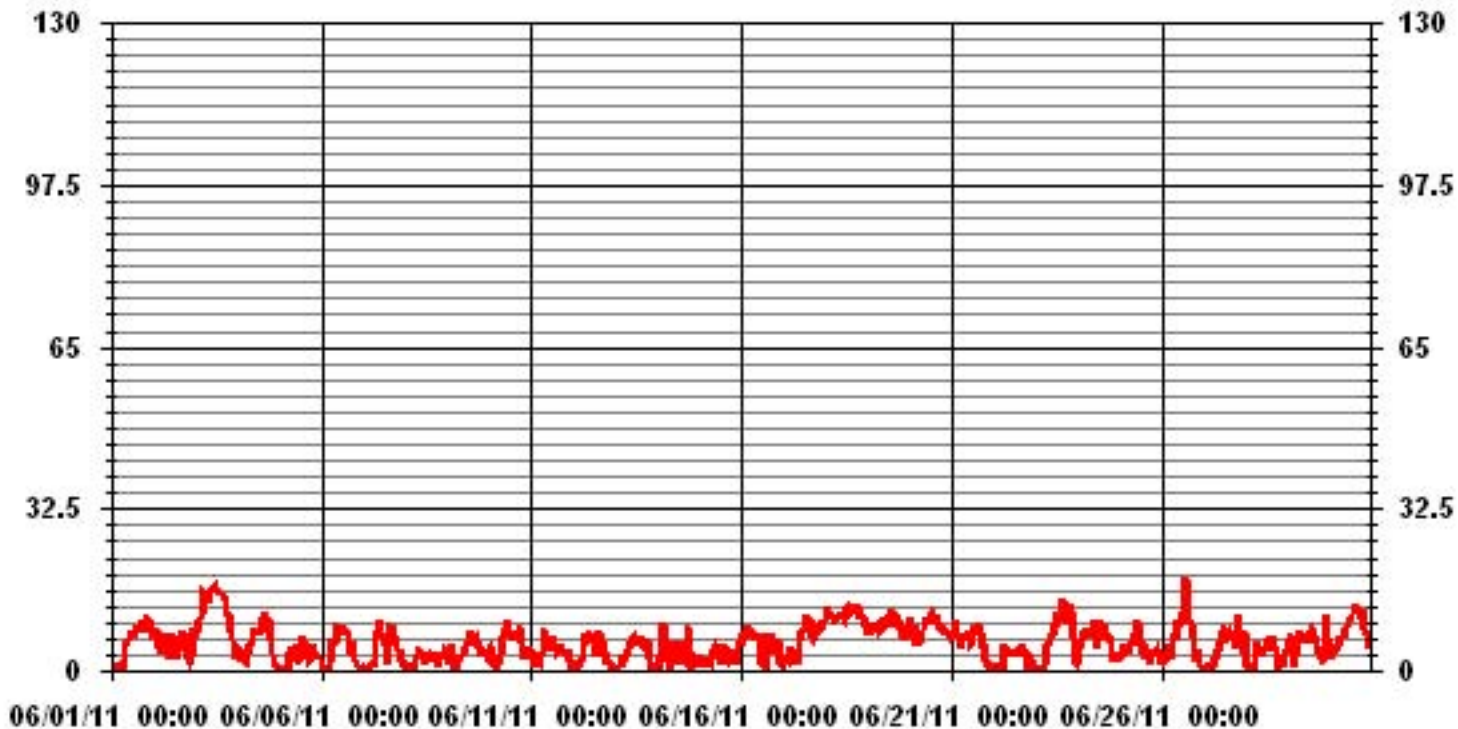
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	18.6	KPH	@ HOUR(S)	13	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	12.0	KPH			ON DAY(S)	3
CALMS (≤ 0 KPH)	1.21	%	OPERATIONAL TIME:		720	HRS
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:		100.0	%
STANDARD DEVIATION:	3.63		MONTHLY AVERAGE:		5.56	KPH

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
DAY	PEAK	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
1		4.7	4.8	2.8	4.2	3.3	4.5	2.3	6.2	10.2	13.1	12.5	16.4	17.6	17.3	18.9	19.6	14.3	19.1	17.7	14.5	17.6	13.5	16.8	12	19.6
2		11.7	14.6	14.3	9	7	9.5	10.6	13	14.1	6.6	12.8	12.4	11.7	12.3	10.1	11.1	8.9	13.1	12.9	11.9	8.4	7.7	5.5	17.2	17.2
3		14.5	10.7	14.6	16.1	19.8	21.9	22.1	23.6	26.2	22.7	24.8	25.1	23.7	24.2	23.9	23.4	22.9	23.5	19	17.8	16.7	12.2	5.9	5.2	26.2
4		4.6	5.7	4.6	3.9	5.1	4.7	7.6	12.6	15	18.6	14.8	16.6	16.2	14.6	18.9	21	19.2	17	14.7	10.6	6.9	3.9	2.5	1.2	21
5		1.9	1.8	2.8	3.1	2.9	2.3	6.7	7.4	12	10.3	8.4	10.7	9.6	14.4	9.2	12.4	9	6.4	6.5	12	4.9	4.4	4.2	4.4	14.4
6		2.8	2.8	3.1	3.8	3	6.6	9.6	10.7	10.8	13.9	14.7	17.7	17.8	15.3	16.9	10.3	8.6	8	4.2	3.2	3.2	2.1	3.9	17.8	
7		2.9	3.8	4	7.8	7.8	4.2	7.7	10.2	13.4	14.8	13	10.7	11	5.9	13	14.4	13.8	13.9	15.4	6.7	5.5	5.9	5.3	3.2	15.4
8		3.1	3.2	2.1	1.9	2.1	3.5	5.8	7	6.8	7.6	7.8	4	7.1	6.4	5.6	6.7	6.4	6.1	3.8	3.2	5	4.4	7.2	10.5	10.5
9		4	5.5	10	4.7	4.1	3.8	5.3	6	8.4	10.6	10.4	15.7	16	16.8	16.3	15.1	14.6	14.9	10.9	8.9	6.1	5.9	5.8	6.8	16.8
10		8.3	7.1	7.8	3.7	2.3	3.3	6.9	12.6	14	15.7	18.4	17.5	18.5	16.2	17.7	14.8	13.1	17	11.7	8.6	4.7	5.9	5.6	6	18.5
11		7	8.4	11.3	5.4	4.8	7.1	7.4	13.6	11.7	11.9	8.8	11.6	15.1	11.8	9.1	9	10.5	8.4	8.2	9.9	7.2	6.9	5.9	4.3	15.1
12		7.9	3.1	5.8	5	4.4	6.4	14.6	14	12.3	13.1	10.3	9.9	13.7	12	11.8	14.1	10.7	8.8	7.1	5	4.1	4	2.9	3.3	14.6
13		3.5	3.4	3.1	3.6	6.3	4.8	6.3	7.9	9.6	11.3	13.4	14.4	14.2	12	11.4	14.3	11.9	12.6	10.5	6.1	2.1	3.4	2.6	4.7	14.4
14		5.1	7.2	12.8	17.5	11	5.9	3.8	4.5	9.5	12.1	10.6	7.4	5.8	10.1	9.2	8.3	9.7	19	6.8	4.1	4	3.9	4.7	4	19
15		5	4.2	4.2	2.3	2.7	3.7	4.5	6.9	10.4	8.3	12.7	5.3	9.1	11.1	20.6	8.4	6.3	5.6	5.8	8.3	8.1	7.2	14.2	10.5	20.6
16		10.2	11.1	10	12.5	13.8	15.6	12.4	9.2	13.1	11.4	14.6	10.5	5.6	10.6	14.7	12.7	10.6	13.7	9.5	11.9	9.7	10.6	4.6	4.2	15.6
17		4.6	6.2	4.1	5.1	8.1	4.9	6.6	11.8	8	11.1	14	13.2	14.4	14.3	17.5	17	11.1	10.1	11.9	13	14.6	13.7	13.4	15.5	17.5
18		16.1	19.2	17.4	15.2	15	14.5	15.1	15.6	17.1	16.6	18	19.4	18.5	17.5	17.3	21.2	18.4	18.8	20.5	17.6	15.1	15.1	16.5	12.7	21.2
19		12.3	10.3	13.4	13.3	12.5	14.5	17.5	13.4	15.9	16.7	17.2	19.1	19.2	21.6	19.3	16.7	17	19.6	18.7	10.9	10.8	10.5	15.8	16.1	21.6
20		19.1	12	12.4	10.1	9.9	9.9	13.6	16.1	17.8	14.9	16.9	16.8	20.9	18.9	17.5	16.8	21	16.2	13.6	13.6	13.6	11.5	11.8	11.2	21
21		11.4	14.3	13.4	13.1	10.5	10.1	12.4	13	13.7	13.9	12.7	12.4	12.8	18.7	13	17.2	14	12	9.7	7	2.3	3	4.4	4	18.7
22		2.7	2.1	3.6	2.4	2.2	31.4	8	7.1	9.7	10.6	8.5	10.3	12.8	11.6	11.6	10	9.9	9	7.6	7.4	6.6	4	2.3	1.8	31.4
23		1.4	1.6	1.3	2.2	2.5	3.2	12.1	9.7	12.1	11.8	18.6	16.2	20.1	17.6	19.5	24.5	22.3	18.7	13.5	28.5	28.5	24.1	4.8	5.7	28.5
24		7	8.4	12	12.1	14.3	13.4	14.2	14.5	16.3	15.8	9.3	14	14.2	16.6	13.9	13	12.8	11.7	10.7	7.1	3.7	4.3	4.1	5.2	16.6
25		5.4	4.8	8	8.3	7.3	8.2	9.1	8.2	11.7	10	20.3	12.7	14.5	9.3	6.9	8.6	8.4	6.2	8	6.2	6	8.1	5.6	4.2	20.3
26		5	5.5	5	9.3	6.3	8.3	12	10	15.7	17.3	18.7	19	24.1	26.6	24.5	16	14.9	12.2	6.4	5.8	7.3	2.8	3.4	2.2	26.6
27		2.1	2.3	2.9	2.8	2.4	3.6	6.5	10.1	11.1	14.5	20	15.2	12.6	16.4	17.7	14	13.8	11.2	21.6	26.5	15.9	10.9	11.2	11.8	26.5
28		5.8	12.5	5	5	2.5	9.8	8.9	9.1	6.7	8.1	9.8	11.9	10.2	9.2	11.6	9.4	9.5	5.4	5.7	4	4.3	1.9	6.7	8.4	12.5
29		7.9	10.9	10.3	2.7	6.2	8.8	15.4	11.5	12	13.2	14.2	11.2	13.7	15.1	14.3	12.1	12.6	11.2	6.3	7	4.9	26.1	14.1	14.4	26.1
30		10	12.4	9.8	6	8.7	9.6	10.7	13	14.2	15.8	19.1	17.2	18.8	20.9	19.7	20	20.8	17	18.6	12	10.5	8.9	7	9.1	20.9
PEAK		19.1	19.2	17.4	17.5	19.8	31.4	22.1	23.6	26.2	22.7	24.8	25.1	24.1	26.6	24.5	24.5	22.9	23.5	21.6	28.5	28.5	26.1	16.8	17.2	

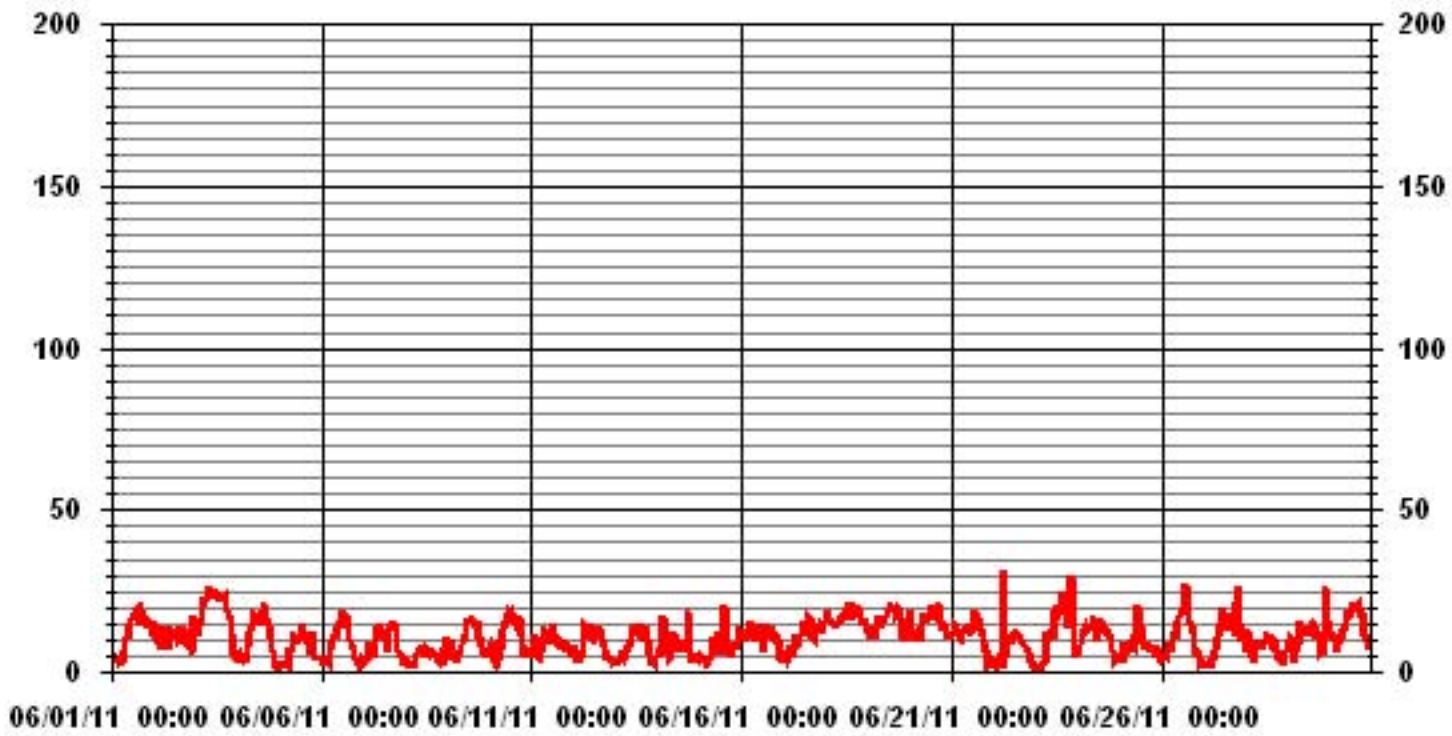
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	31.4	KPH	@ HOUR(S)	5
			ON DAY(S)	22

01 Hour Averages



— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : WSP
Units : KPH

Wind Parameter : WD
Instrument Height : 10 Meters

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	3.19	3.33	4.86	2.36	4.30	2.91	4.02	2.77	3.61	3.61	4.16	6.38	4.02	1.80	2.36	.83	54.58	
< 12.0	1.94	5.00	5.69	1.80	4.30	2.63	3.19	1.52	1.80	.69	2.22	3.19	3.75	.83	.41	.97	40.00	
< 20.0	.55	.41	.27	.00	.00	.41	.13	.00	.00	.00	.00	.00	.41	.13	.13	1.66	4.16	
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	5.69	8.75	10.83	4.16	8.61	5.97	7.36	4.30	5.41	4.30	6.38	9.58	8.19	2.77	2.91	3.47		

Calm : 1.25 %

Total # Operational Hours : 720

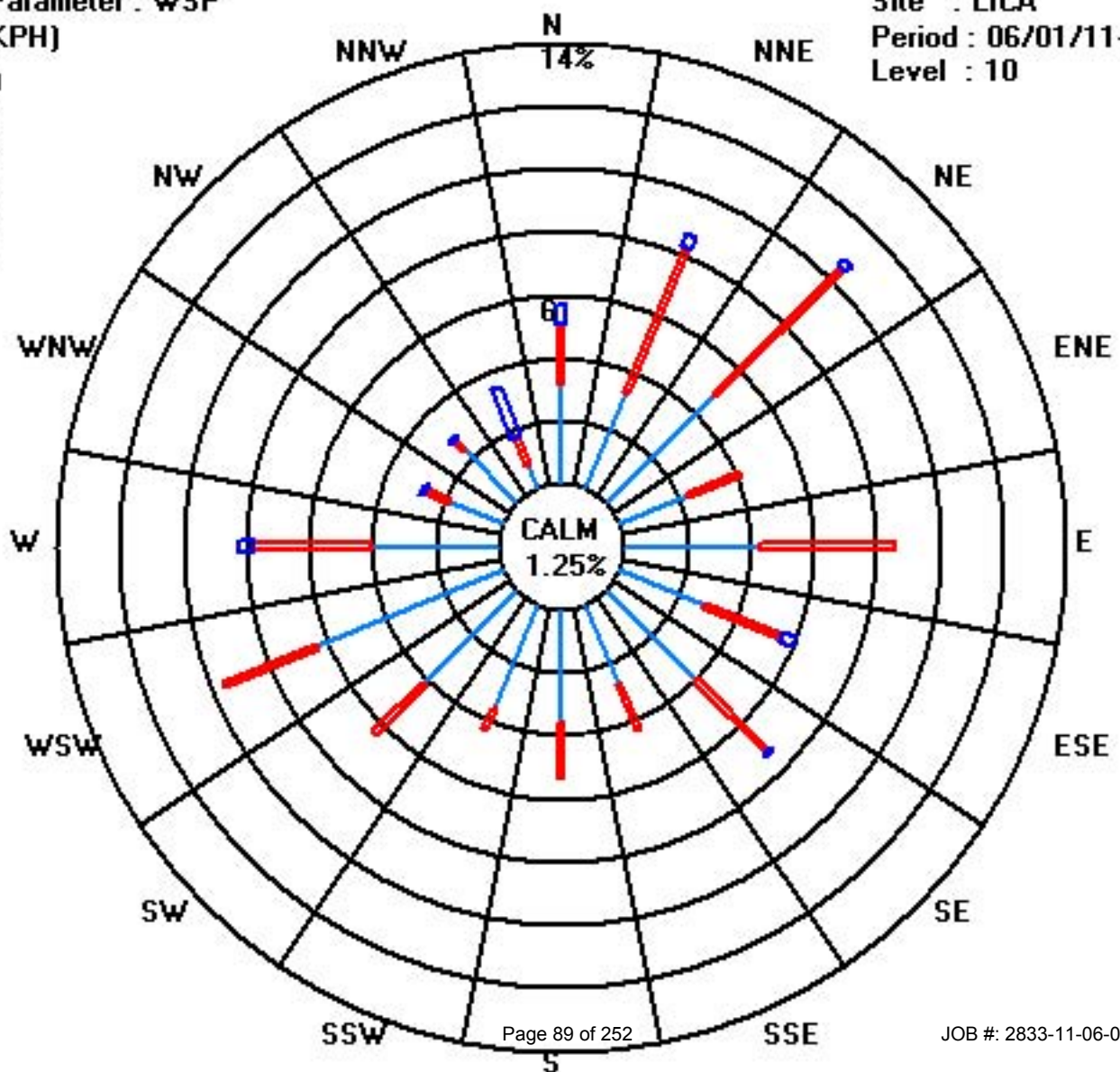
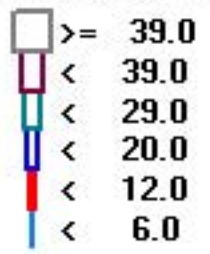
Distribution By Samples

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	23	24	35	17	31	21	29	20	26	26	30	46	29	13	17	6	393	
< 12.0	14	36	41	13	31	19	23	11	13	5	16	23	27	6	3	7	288	
< 20.0	4	3	2			3	1						3	1	1	12	30	
< 29.0																		
< 39.0																		
>= 39.0																		
Totals	41	63	78	30	62	43	53	31	39	31	46	69	59	20	21	25		

Calm : 1.25 %

Total # Operational Hours : 720

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT		
DAY																												
1	92	187	221	243	106	15	135	218	240	216	184	175	155	170	152	150	144	153	196	161	130	127	128	124	157	SSE	24	
2	106	118	116	93	76	106	100	113	108	109	358	50	77	63	48	40	87	123	136	79	91	270	301	309	89	E	24	
3	330	333	350	358	343	340	341	349	345	332	339	331	347	346	342	346	350	4	6	1	2	355	312	294	345	NNW	24	
4	276	268	248	256	242	250	286	281	289	294	267	254	270	212	223	220	230	236	237	229	224	187	147	72	246	WSW	24	
5	116	194	105	146	93	127	129	126	148	176	268	297	312	349	341	17	21	13	271	303	238	246	252	244	301	WNW	24	
6	221	128	204	185	245	242	239	242	246	261	263	257	266	248	245	254	270	253	230	193	182	139	38	133	248	WSW	24	
7	193	201	48	120	256	201	306	28	33	31	34	40	27	16	29	12	37	40	50	37	25	9	43	40	32	NNE	24	
8	51	249	80	80	158	281	11	2	10	41	22	0	305	323	192	209	261	280	207	187	205	205	185	150	279	W	24	
9	84	115	139	244	248	185	120	166	183	186	169	154	168	194	189	204	188	188	195	156	137	148	180	200	175	S	24	
10	207	218	220	197	162	241	216	233	229	224	229	213	187	175	184	172	195	141	149	144	141	133	138	135	190	S	24	
11	129	132	206	142	153	187	210	245	276	313	18	42	50	45	55	85	17	37	38	149	217	283	260	40	34	NE	24	
12	89	227	325	344	51	26	43	24	10	9	23	22	53	334	7	22	36	48	9	13	7	347	301	210	20	NNE	24	
13	222	172	249	226	255	278	321	342	35	33	62	77	35	39	23	44	83	89	132	149	4	170	89	99	51	NE	24	
14	64	154	214	268	285	260	83	44	16	17	36	96	251	218	304	257	267	103	175	221	242	325	18	19	278	W	24	
15	9	354	279	210	199	147	165	132	121	122	93	10	256	3	119	136	358	353	26	46	79	157	87	63	77	ENE	24	
16	44	49	60	51	43	38	35	38	43	39	44	151	297	69	32	45	9	140	133	109	109	124	88	93	60	ENE	24	
17	94	76	52	37	53	55	140	28	17	3	22	33	30	19	12	8	24	17	26	29	32	32	28	30	28	NNE	24	
18	28	32	34	33	32	33	35	34	41	45	38	33	35	44	36	35	34	31	24	29	29	35	32	32	34	NE	24	
19	38	34	45	42	46	59	55	58	66	74	72	76	82	89	95	111	100	98	75	68	45	69	79	86	71	ENE	24	
20	89	91	86	75	66	70	75	82	88	94	87	89	81	91	89	93	95	102	113	95	89	91	101	104	90	E	24	
21	124	129	129	130	136	155	218	244	230	231	238	252	264	294	278	270	280	275	247	228	161	193	180	109	224	SW	24	
22	171	170	217	174	244	84	260	229	232	259	231	207	204	219	222	228	239	184	233	222	2	131	122	97	216	SW	24	
23	156	68	296	85	79	60	113	107	99	102	108	112	119	111	118	127	122	124	114	111	105	119	43	107	113	ESE	24	
24	74	87	95	100	95	92	97	122	127	136	184	226	230	241	237	234	239	256	259	267	273	247	254	244	181	S	24	
25	253	277	240	247	254	246	277	273	287	264	246	265	276	312	351	250	244	246	1	289	262	262	260	329	268	W	24	
26	315	286	292	324	312	307	316	313	344	356	345	343	319	329	343	350	11	37	319	234	223	219	163	138	335	NNW	24	
27	47	162	93	107	122	172	198	189	190	171	162	149	166	184	182	186	153	142	128	340	101	130	142	129	155	SSE	24	
28	66	58	45	349	50	12	44	29	6	15	57	21	23	36	28	28	359	44	100	11	51	112	128	134	36	NE	24	
29	135	129	142	221	205	221	246	262	286	273	251	259	244	245	237	249	201	244	237	82	50	269	319	62	244	WSW	24	
30	13	40	265	253	265	260	269	282	274	284	279	276	279	279	267	274	283	270	262	257	258	259	250	250	272	W	24	
HOURLY AVG	330	354	350	358	343	340	341	349	345	356	358	343	347	349	351	350	359	353	319	340	273	355	319	329				

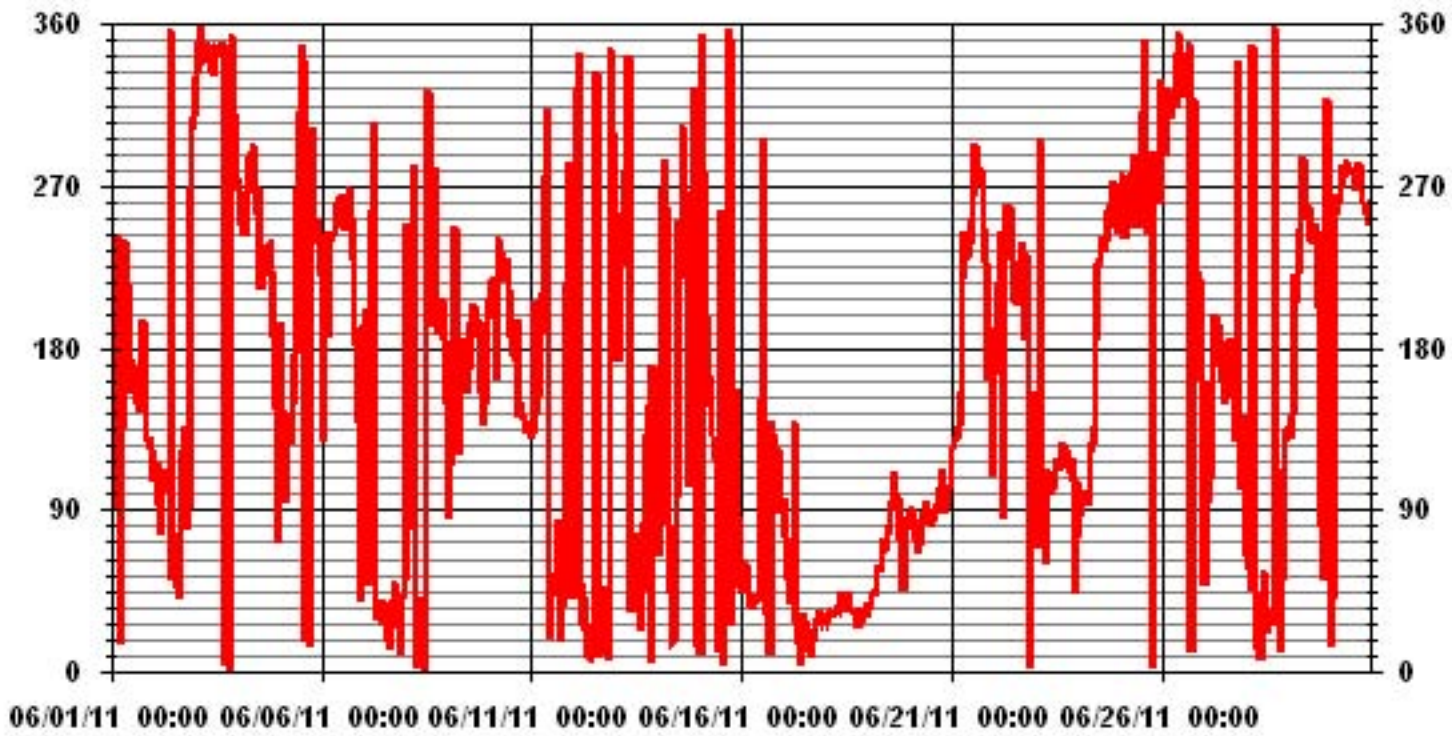
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION:	November 23, 2010
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION	100.94		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	43	DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JUNE 2011

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	46	60	49	54	46	39	66	47	31	36	42	45	41	36	40	33	26	32	36	32	14	13	17	19
2	23	21	22	26	25	25	24	22	32	60	35	32	49	53	58	28	28	18	16	22	36	54	34	19
3	18	16	16	19	20	18	18	18	20	17	20	19	22	24	18	20	21	20	21	20	19	21	15	14
4	16	14	11	17	24	48	39	36	44	35	36	42	35	37	27	28	29	27	25	23	24	23	24	74
5	59	70	66	43	58	77	17	21	38	54	51	48	37	25	36	42	33	45	25	18	11	8	6	41
6	71	54	64	57	52	41	22	28	31	26	29	38	35	28	35	28	34	26	25	23	28	36	54	53
7	70	51	63	51	56	58	22	22	21	22	27	23	23	54	39	25	25	24	21	20	22	26	30	36
8	49	64	72	40	51	59	23	25	26	34	38	63	33	34	57	35	40	30	26	28	19	23	29	31
9	49	19	31	23	35	48	27	34	44	47	66	50	44	43	46	39	41	40	38	28	18	27	38	30
10	30	22	22	24	48	46	32	25	28	31	28	46	43	44	41	37	42	28	31	22	21	13	14	13
11	12	24	71	26	48	39	40	23	41	43	54	42	38	41	48	42	34	26	30	31	29	21	30	35
12	37	27	26	52	32	26	23	25	23	23	35	31	28	34	21	24	24	28	20	30	29	35	37	33
13	61	56	54	25	22	27	27	34	28	31	31	49	42	40	45	29	48	27	17	20	51	51	46	48
14	55	40	33	23	27	50	53	39	41	33	32	29	54	23	46	46	40	23	54	41	44	33	23	23
15	21	19	20	19	20	19	37	20	24	27	30	34	33	30	37	69	24	36	29	23	48	45	45	21
16	20	18	20	18	19	20	20	21	20	22	30	68	62	51	28	46	41	33	26	22	21	16	37	32
17	19	30	46	24	24	44	40	61	50	20	29	22	25	23	21	20	21	22	20	20	21	22	21	22
18	21	21	22	21	21	23	20	24	19	18	23	21	20	20	21	20	22	22	21	22	21	23	22	21
19	21	21	19	21	18	20	19	21	22	21	23	23	23	24	21	24	24	22	21	20	19	20	21	21
20	21	23	21	26	22	23	21	21	20	21	23	21	23	21	23	22	24	24	21	22	20	20	23	22
21	17	16	11	13	17	30	29	27	28	29	36	31	31	27	28	25	25	31	24	22	15	42	29	64
22	56	38	55	45	36	68	20	30	32	48	49	48	54	50	56	43	41	36	24	43	47	17	29	17
23	50	50	62	41	62	43	31	27	28	26	25	24	22	24	23	18	21	19	22	19	19	26	53	42
24	28	26	22	21	22	20	24	19	15	17	35	30	28	24	25	28	28	30	25	20	14	13	21	47
25	16	19	19	16	26	22	22	22	23	30	29	27	54	24	50	42	36	37	22	18	17	18	30	40
26	13	26	17	17	28	19	16	20	21	21	22	23	20	18	19	20	22	25	46	21	22	44	46	60
27	47	50	68	62	50	54	51	35	42	41	40	35	37	43	40	41	35	23	35	28	24	31	33	20
28	52	33	48	29	47	23	20	24	21	47	36	40	29	47	28	25	27	53	34	20	22	32	11	14
29	9	12	42	67	42	25	23	26	27	26	29	34	30	32	34	33	43	39	32	28	26	34	20	43
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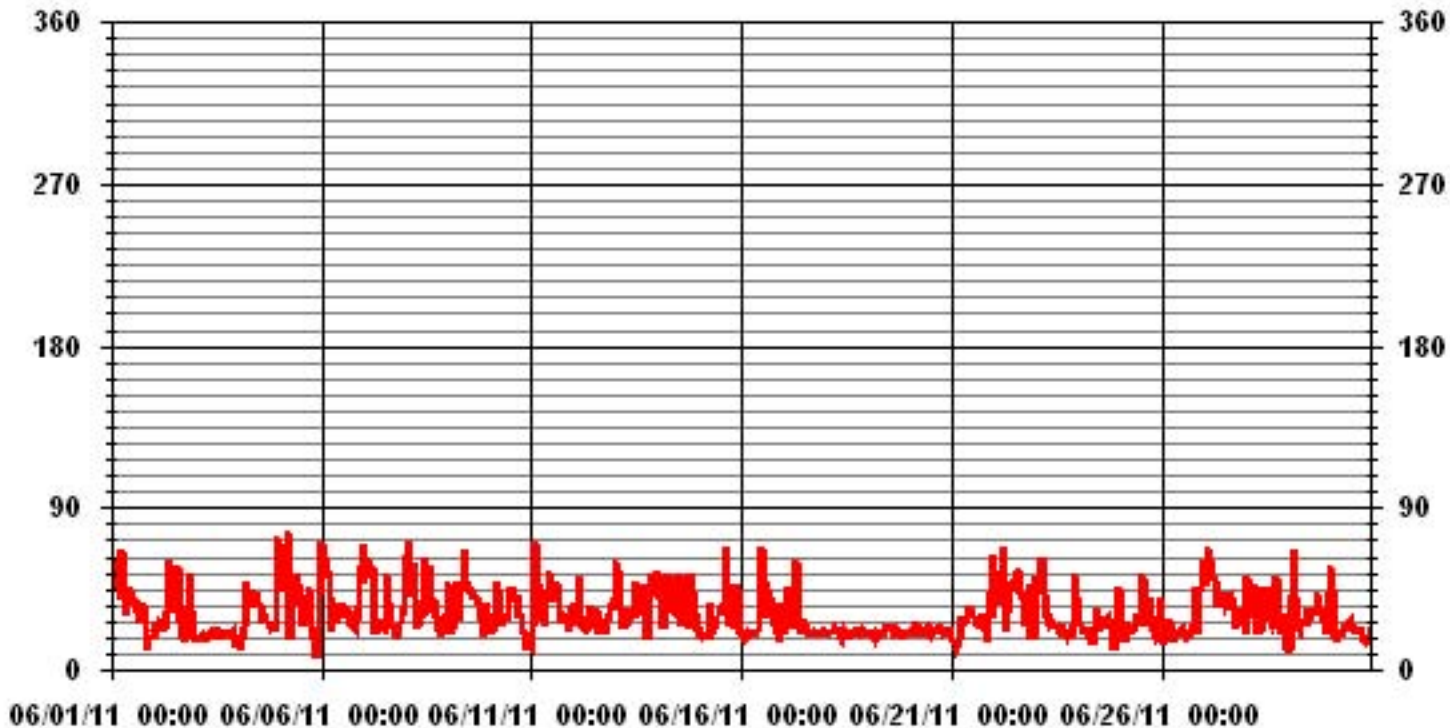
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 8, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages

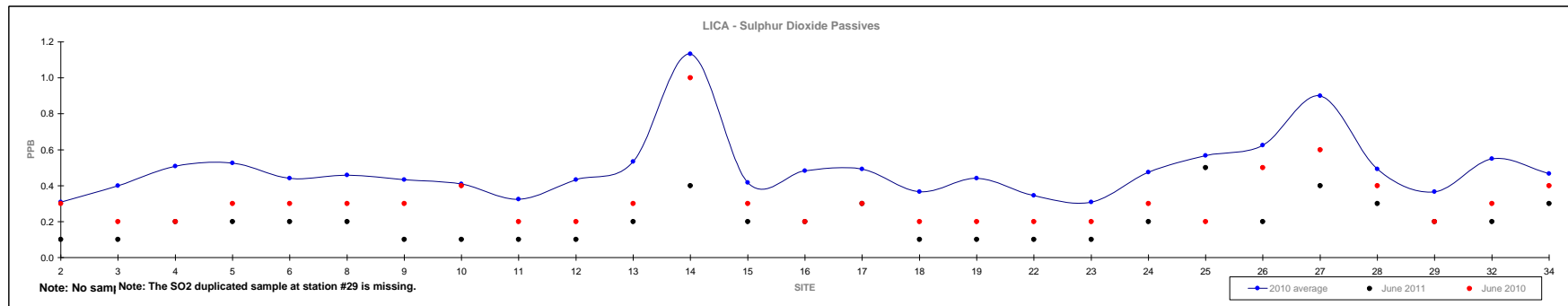


— LICA STDWDIR DEG

Non-Continuous Monitoring

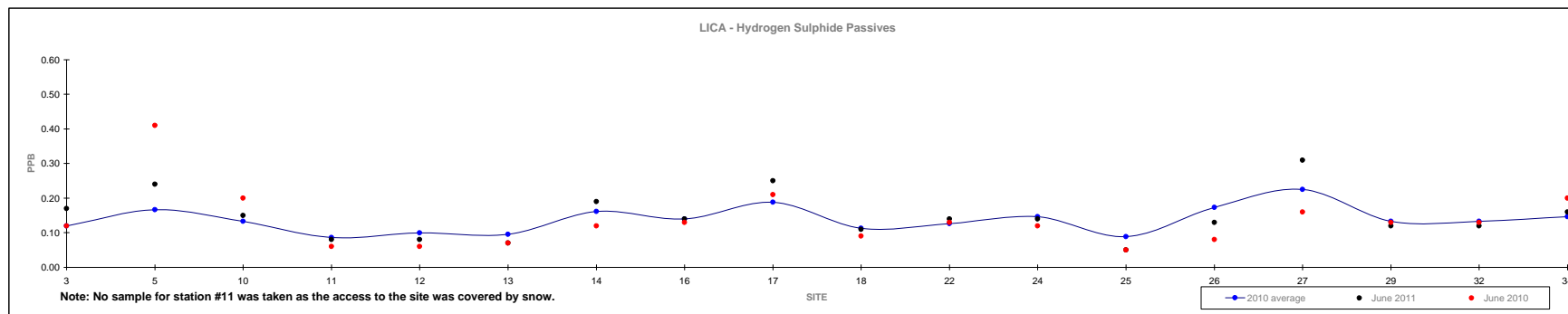
Passive Summary Results for June 2011 Lakeland Industry & Community Association

	Sulphur Dioxide ppb																																		June 2011	Site
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	25	26	27	28	29	32	34	Reading	Site							
Mean	0.3	0.4	0.5	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.5	1.1	0.4	0.5	0.5	0.4	0.4	0.3	0.3	0.5	0.6	0.6	0.9	0.5	0.4	0.6	0.5	0.2	-							
Minimum	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.2	0.2	0.1	0.1	<0.1	VAR								
Maximum	0.7	0.8	1.2	1.1	1.1	0.9	0.8	0.8	0.8	1.0	1.0	2.3	0.9	1.0	1.3	0.9	1.0	0.7	0.7	1.1	1.1	1.3	1.5	0.8	0.7	1.2	1.0	0.5	#25							



Passive Summary Results for June 2011 Lakeland Industry & Community Association

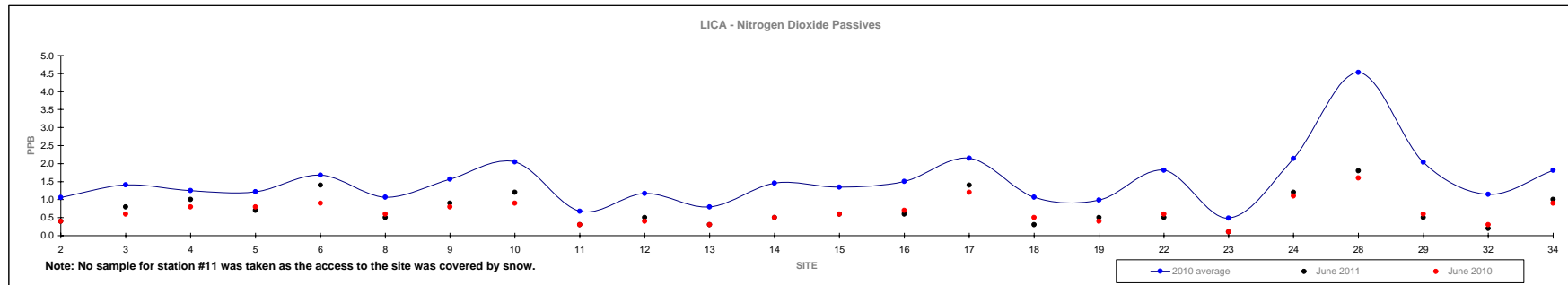
	2010															June 2011				
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	34	Reading	Site
Mean	0.13	0.26	0.15	0.08	0.10	0.09	0.14	0.13	0.17	0.11	0.11	0.14	0.08	0.12	0.21	0.13	0.14	0.15	0.15	-
Minimum	0.05	0.10	0.08	0.03	0.05	0.03	0.08	0.04	0.09	0.04	0.02	0.07	0.05	0.07	0.07	0.06	0.08	0.10	0.05	#25
Maximum	0.21	0.47	0.22	0.18	0.24	0.16	0.20	0.24	0.27	0.20	0.19	0.23	0.16	0.20	0.55	0.20	0.19	0.21	0.31	#27



Passive Summary Results for June 2011

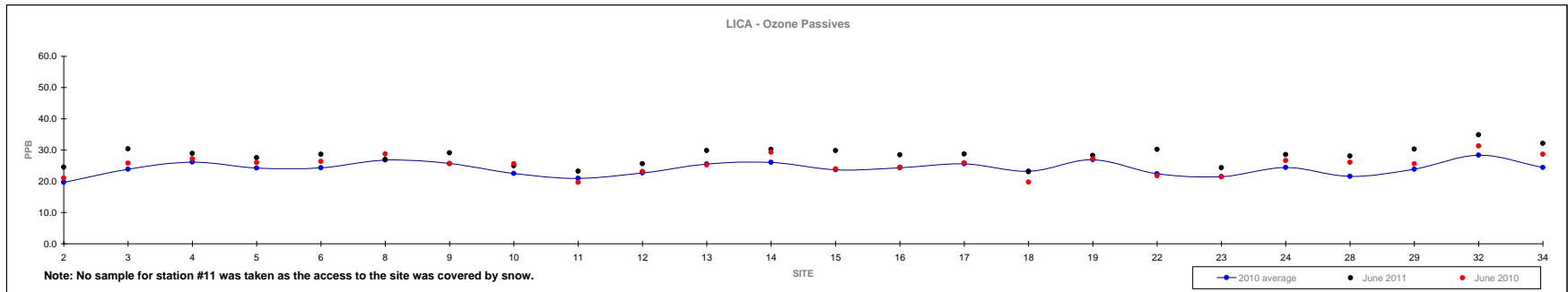
Lakeland Industry & Community Association

	Nitrogen Dioxide ppb																								June 2011	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	34	Reading	Site
Mean	1.1	1.4	1.3	1.2	1.7	1.1	1.6	2.1	0.7	1.2	0.8	1.5	1.3	1.5	2.2	1.1	1.0	1.8	0.5	2.1	4.5	2.0	1.2	1.8	0.7	-
Minimum	0.3	0.5	0.4	0.3	0.7	0.3	0.6	0.7	0.2	0.4	0.2	0.4	0.4	0.4	0.9	0.3	0.3	0.5	0.1	0.6	1.6	0.5	0.3	0.6	<0.1	#23
Maximum	2.8	3.5	3.1	2.8	3.4	2.8	3.7	3.9	1.5	2.8	1.7	3.4	2.6	3.2	4.5	2.3	2.3	4.4	1.1	4.5	9.6	6.0	3.0	4.6	1.8	#28



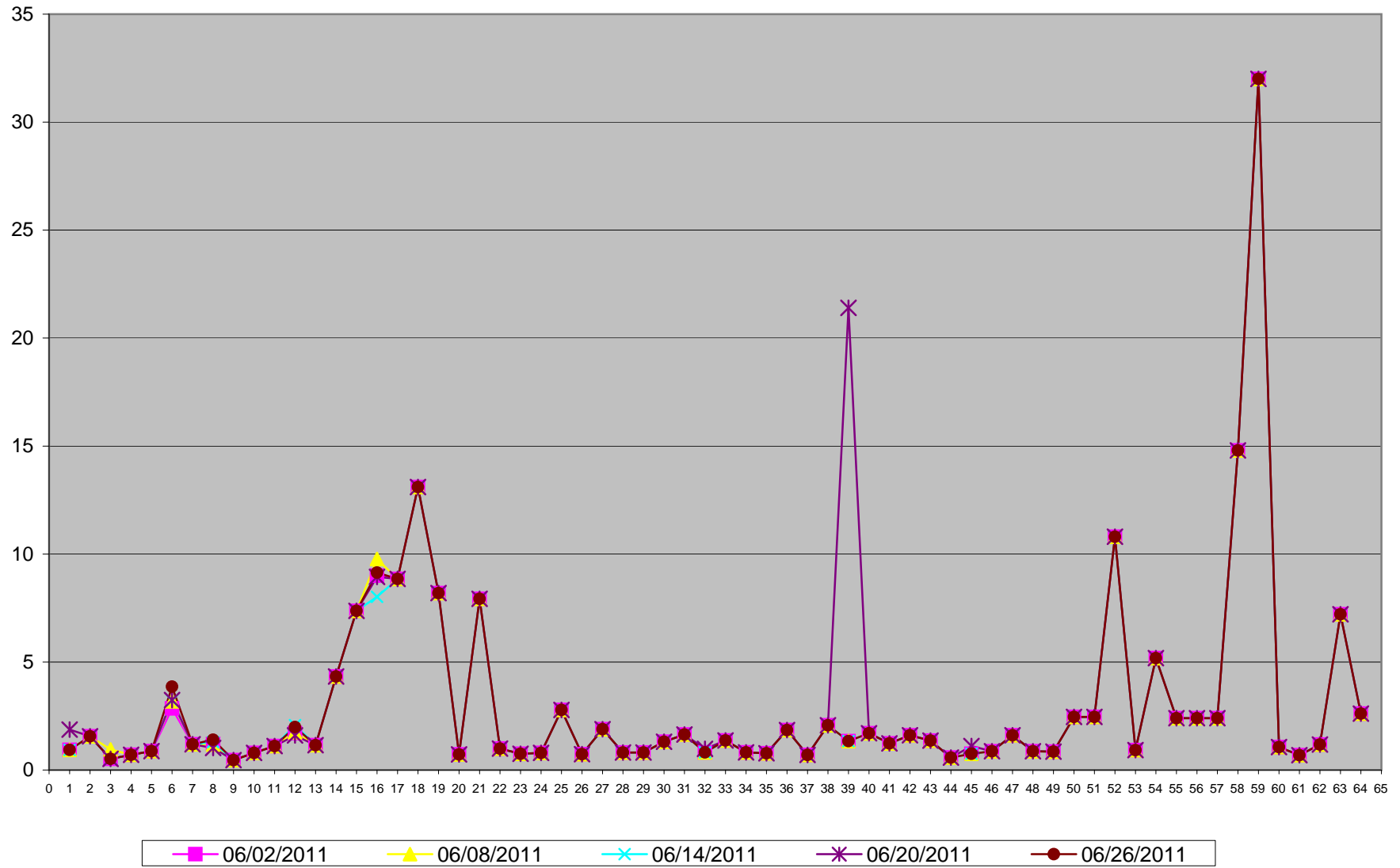
Passive Summary Results for June 2011 Lakeland Industry & Community Association

	Ozone ppb																												June 2011	Site
	2	3	4	5	6	8	9	10	11	12	2010	13	14	15	16	17	18	19	22	23	24	28	29	32	34	Reading				
Mean	19.7	23.8	26.2	24.3	24.3	26.8	25.7	22.4	20.9	22.7	25.5	26.0	23.7	24.3	25.6	23.2	26.8	22.3	21.5	24.4	21.5	23.9	28.4	24.4	28.2	-				
Minimum	12.1	15.3	17.1	15.6	15.2	16.5	15.6	13.6	12.6	13.7	16.4	18.1	14.7	17.4	16.5	14.5	18.1	15.3	12.8	16.2	14.9	16.9	20.5	17.3	23.0	#18				
Maximum	31.3	35.5	41.0	36.8	38.2	40.4	39.3	34.7	33.3	34.6	39.4	35.6	35.2	37.3	39.7	34.8	37.5	33.7	35.1	39.3	31.1	36.6	39.2	34.7	34.9	#32				



Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Cold Lake South



1	2,2,4-Trimethylpentane	33	1,1,2,2-Tetrachloroethane
2	Carbon Disulfide	34	cis-1,3-Dichloropropene
3	Propene	35	trans-1,3-Dichloropropene
4	Vinyl Acetate	36	1,2-Dichloropropane
5	Vinyl Bromide	37	Bromomethane
6	Dichlorodifluoromethane (FREON 12)	38	Bromoform
7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
12	Trichlorofluoromethane (FREON 11)	44	Benzene
13	Trichlorotrifluoroethane	45	Toluene
14	Ethanol	46	Ethylbenzene
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Methyl Ethyl Ketone (2-Butanone)	49	Styrene
18	Methyl Isobutyl Ketone	50	1,3,5-Trimethylbenzene
19	Methyl Butyl Ketone (2-Hexanone)	51	1,2,4-Trimethylbenzene
20	Methyl t-butyl ether (MTBE)	52	4-ethyltoluene
21	Ethyl Acetate	53	Chlorobenzene
22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
25	Methylene Chloride (Dichloromethane)	57	1,2-Dichlorobenzene
26	Chloroform	58	1,2,4-Trichlorobenzene
27	Carbon Tetrachloride	59	Hexachlorobutadiene
28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

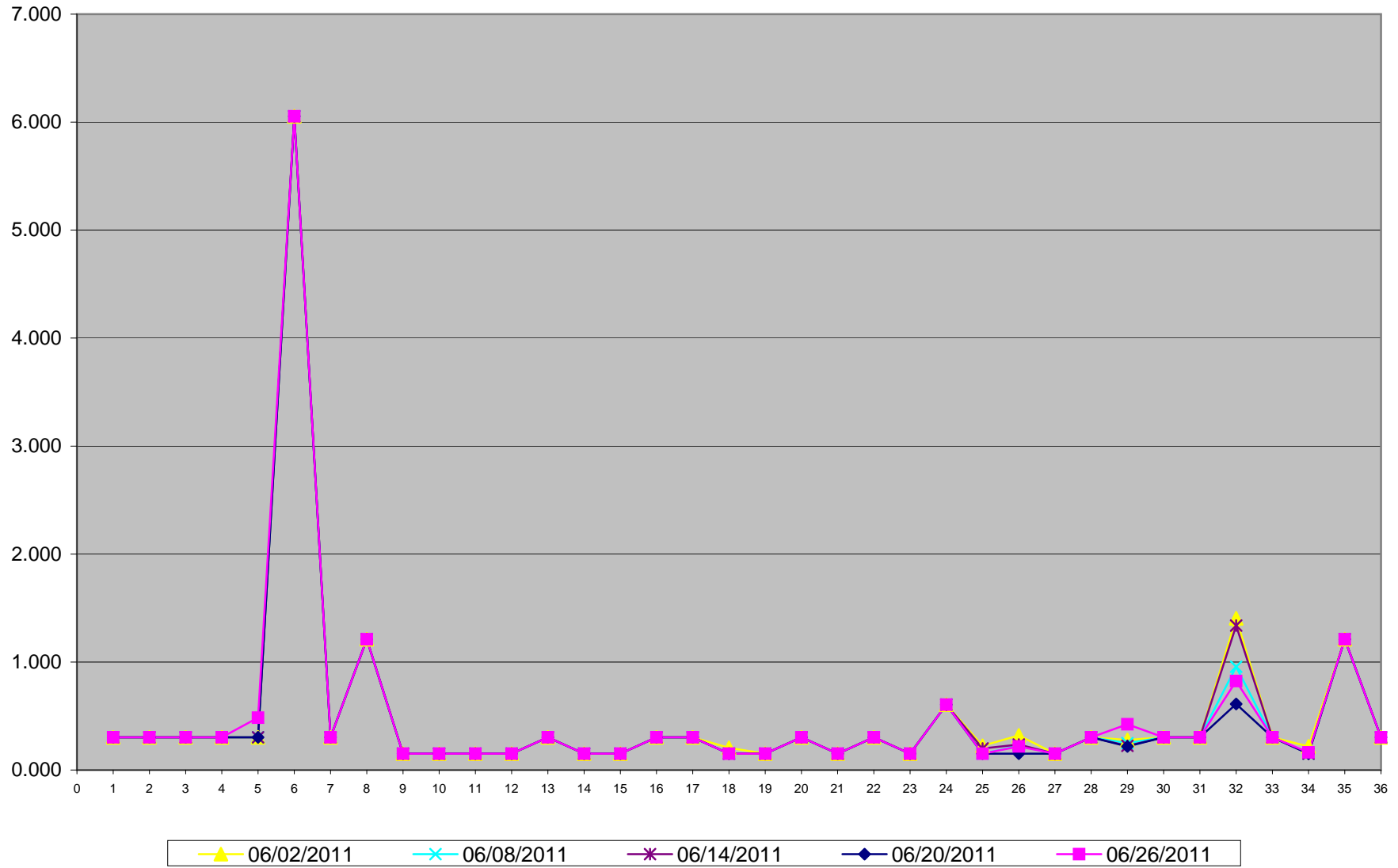
Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for June 2011
LICA- Cold Lake South Site
Unit: ng/m3

PAHs	06/02/2011	06/08/2011	06/14/2011	06/20/2011	06/26/2011
Sample Volume (unit: m3)	330.33	330.35	330.34	330.33	330.33
1 1-Methylnaphthalene	0.303	0.303	0.303	0.303	0.303
2 1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4 2-Methylantracene	0.303	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	0.303	0.303	0.303	0.303	0.484
6 3-Methylcholanthrene	6.054	6.054	6.054	6.055	6.055
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.151	0.151	0.151	0.151	0.151
10 Acenaphthylene	0.151	0.151	0.151	0.151	0.151
11 Anthracene	0.151	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	0.151	0.151	0.151	0.151	0.151
16 Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	0.206	0.151	0.151	0.151	0.151
19 Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20 Biphenyl	0.303	0.303	0.303	0.303	0.303
21 Chrysene	0.151	0.151	0.151	0.151	0.151
22 Coronene	0.303	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25 Fluoranthene	0.224	0.151	0.200	0.151	0.151
26 Fluorene	0.321	0.224	0.236	0.151	0.218
27 Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151
28 m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29 Naphthalene	0.278	0.248	0.224	0.218	0.424
30 o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31 Perylene	0.303	0.303	0.303	0.303	0.303
32 Phenanthrene	1.405	0.957	1.338	0.612	0.823
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.218	0.151	0.151	0.151	0.163
35 Quinoline	1.211	1.211	1.211	1.211	1.211
36 Tetralin	0.303	0.303	0.303	0.303	0.303

Note: - values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.

PAHs in ng/m3 Site: LICA - Cold Lake South



1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methlyanthracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylanthracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,l)perylene
19	Benzo(k)fluoranthene
20	Biphenyl
21	Chrysene
22	Coronene
23	Dibenz(a,h)anthracene
24	Dibenzo(a,e)pyrene
25	Fluoranthene
26	Fluorene
27	Indeno(1,2,3-cd)pyrene
28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report Station Information

Calibration Date	June 17, 2011	Previous Calibration	May 4, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	9:59	End Time (MST)	14:49
Reason:	Monthly Calibration		
Barometric Pressure	0.935 atm	Station Temperature	24 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822 Cal Gas Expiry date
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000		ppb		
Sample Flow / Box Temp	448 ccm	30.7 Deg C	446 ccm	30	Deg C
HVPS / Lamp Setting	-632	743	-632	743	
PMT / RxCell Temp	OK Deg C	45.1 Deg C	OK Deg C	45.1	Deg C
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0	Deg C
Offset / Slope	5.4	1.015	5.4	1.015	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4959	40.8	400	401	0.9971
4995	0.0	0	0	1.0000
4959	40.8	400	402	0.9947
4980	20.4	200	203	0.9847
4981	15.3	150	153	0.9807
4996	0	0	0	N/A
Sum of Least Squares				3.4996
New Correction Factor				0.9947

Before Calibration

Auto Zero	0.4	After Calibration	0.4
Auto Span	374.0		379.0
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9996
Current Correction Factor Before Span Adjust:	0.9947
Percent Change:	0.5%

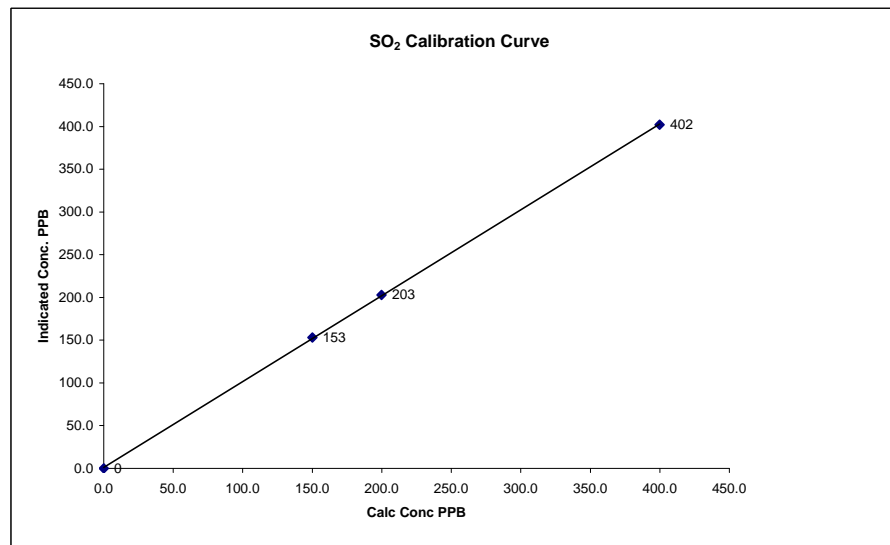
Notes: N/A : Not applicable

Calibration Performed by: Ting Xu

SO2 Calibration Curve

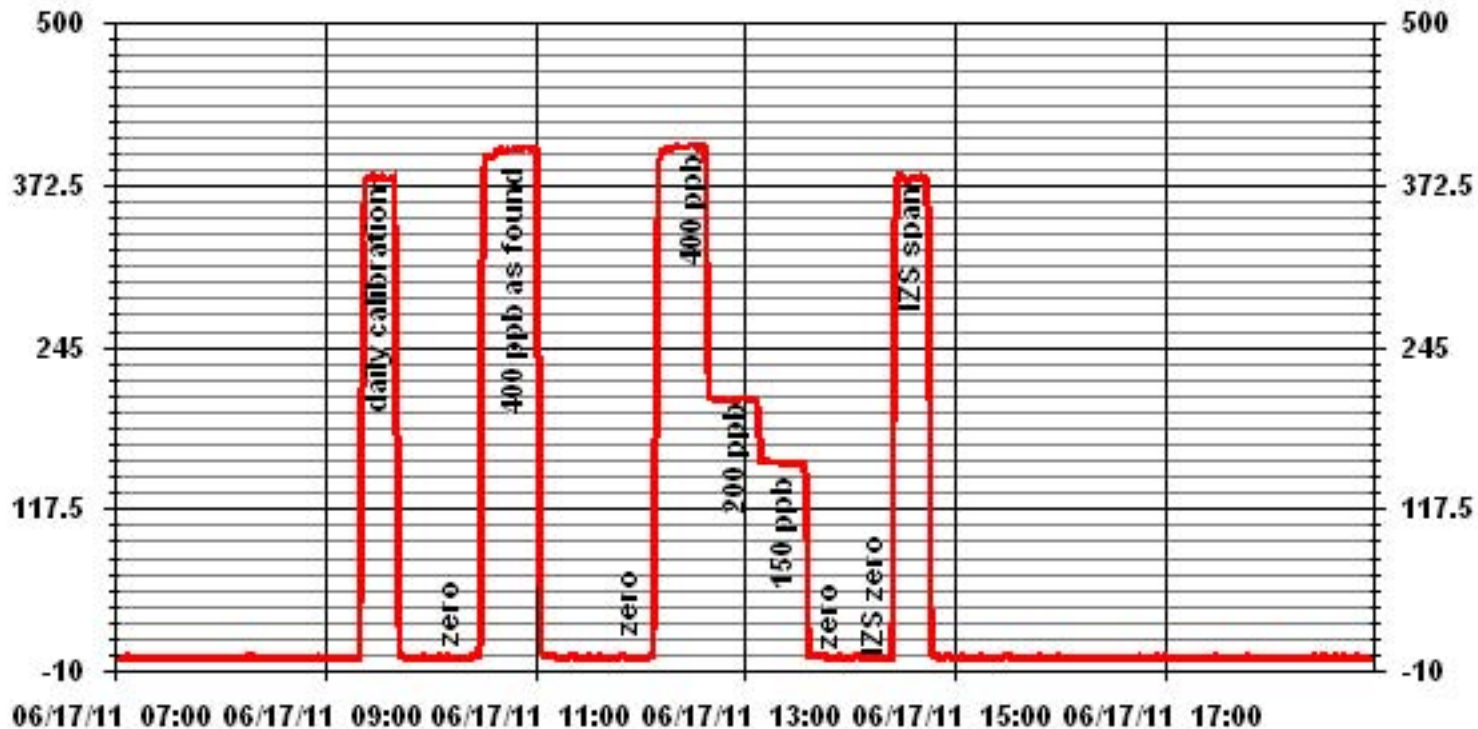
Calibration Date	June 17, 2011
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	9:59
End Time (MST)	14:49

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)	(≥ 0.995)
0	0	n/a		0.999948
150	153	0.9807		1.004690
200	203	0.9847		
400	402	0.9947		1.168158



Notes:

01 Minute Averages



Total Reduced Sulphur

TRS Calibration Report
Station Information

Calibration Date	June 15, 2011	Previous Calibration	May 3, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	11:51	End Time (MST)	12:19
Reason:	Monthly Calibration		
Barometric Pressure	0.93 atm	Station Temperature	23 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	LL84150
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 10 Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100		
Sample Flow / Box Temp	353 ccm, 32.1 Deg C	354 ccm, 31.2 Deg C	
HVPS / Lamp Setting	-623.5, 752	-623.1, 751	
PMT / RxCell Temp	OK Deg C, 44.9 Deg C	OK Deg C, 45 Deg C	
Converter / IZS Temp	850 Deg C, 45 Deg C	849 Deg C, 45.0 Deg C	
Offset / Slope	11.9, 1.236	11.9, 1.236	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
4959	39.2	80	79	1.0126
4980	19.6	40	40	1.0000
4986	11.2	23	23	1.0000
4996	0.0	0	0	N/A
Sum of Least Squares				1.0090
New Correction Factor				

Before Calibration

Auto Zero	0.4	NA
Auto Span	52.0	NA
Sample Lines Connected		NO

After Calibration

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0126
Percent Change:	-1.3%

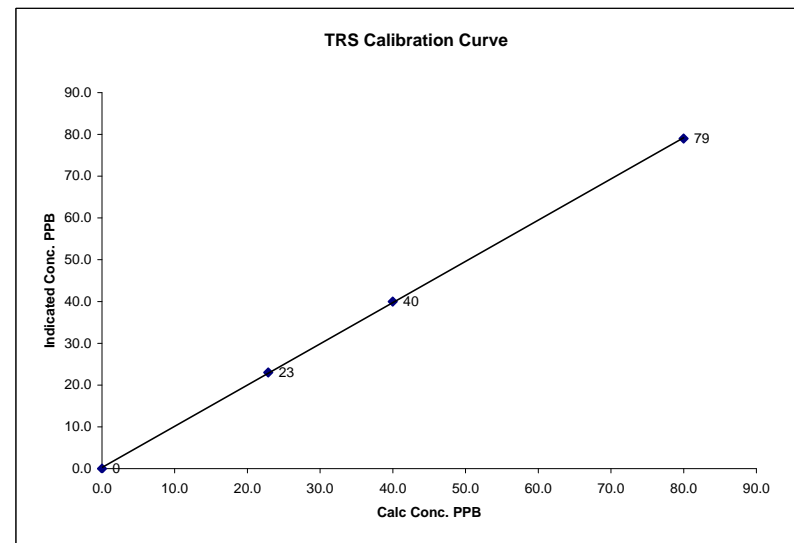
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

TRS Calibration Curve

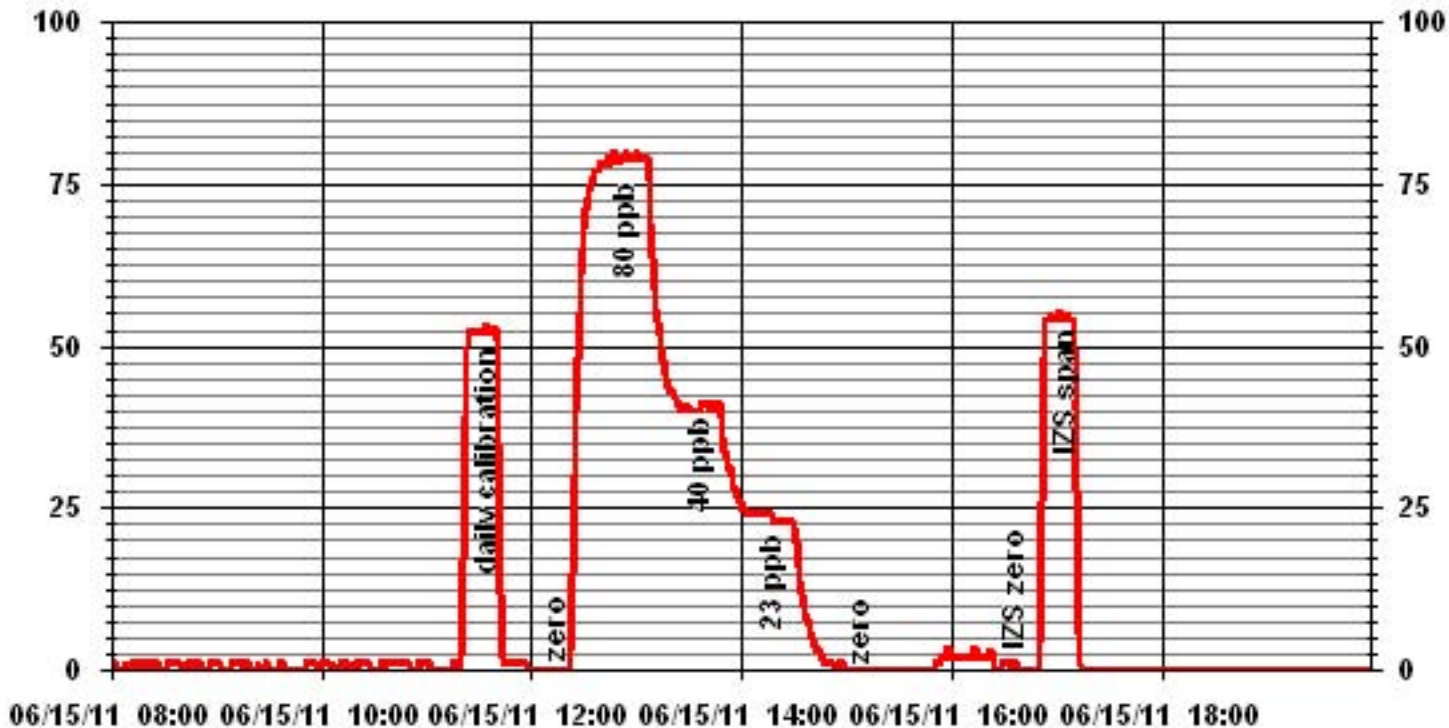
Calibration Date	June 15, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	11:51
End Time (MST)	12:19

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	Correlation Coefficient Intercept	(≥ 0.995)	(0.85 to 1.15)	(± 3% F.S.)
0	0	n/a			0.999934	0.986585	0.267862
23	23	0.0000					
40	40	0.5715					
80	79	0.5062					



Notes:

01 Minute Averages



TRS Calibration Report
Station Information

Calibration Date	June 16, 2011	Previous Calibration	-
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	7:43	End Time (MST)	13:08
Reason:	Post -Repair Calibration		
Barometric Pressure	0.93 atm	Station Temperature	23 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	LL84150
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 10 Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100		
Sample Flow / Box Temp	351 ccm, 31.2 Deg C	349 ccm, 31.1 Deg C	
HVPS / Lamp Setting	-623.5, 751	-623.1, 751	
PMT / RxCell Temp	OK, 44.9 Deg C	OK, 45 Deg C	
Converter / IZS Temp	810, 45 Deg C	810, 45.0 Deg C	
Offset / Slope	12.8, 1.236	12.2, 1.178	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
4959	39.2	80	80	1.0000
4980	19.6	40	41	0.9753
4986	11.8	24	23	1.0471
4996	0.0	0	0	N/A
Sum of Least Squares				0.9983
New Correction Factor				

Before Calibration

Auto Zero	0.1	0.4
Auto Span	54.0	52.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.0%

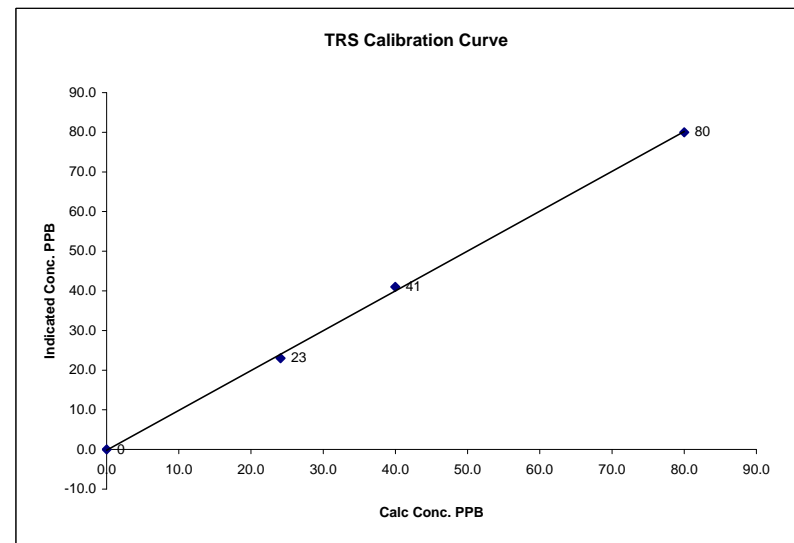
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

TRS Calibration Curve

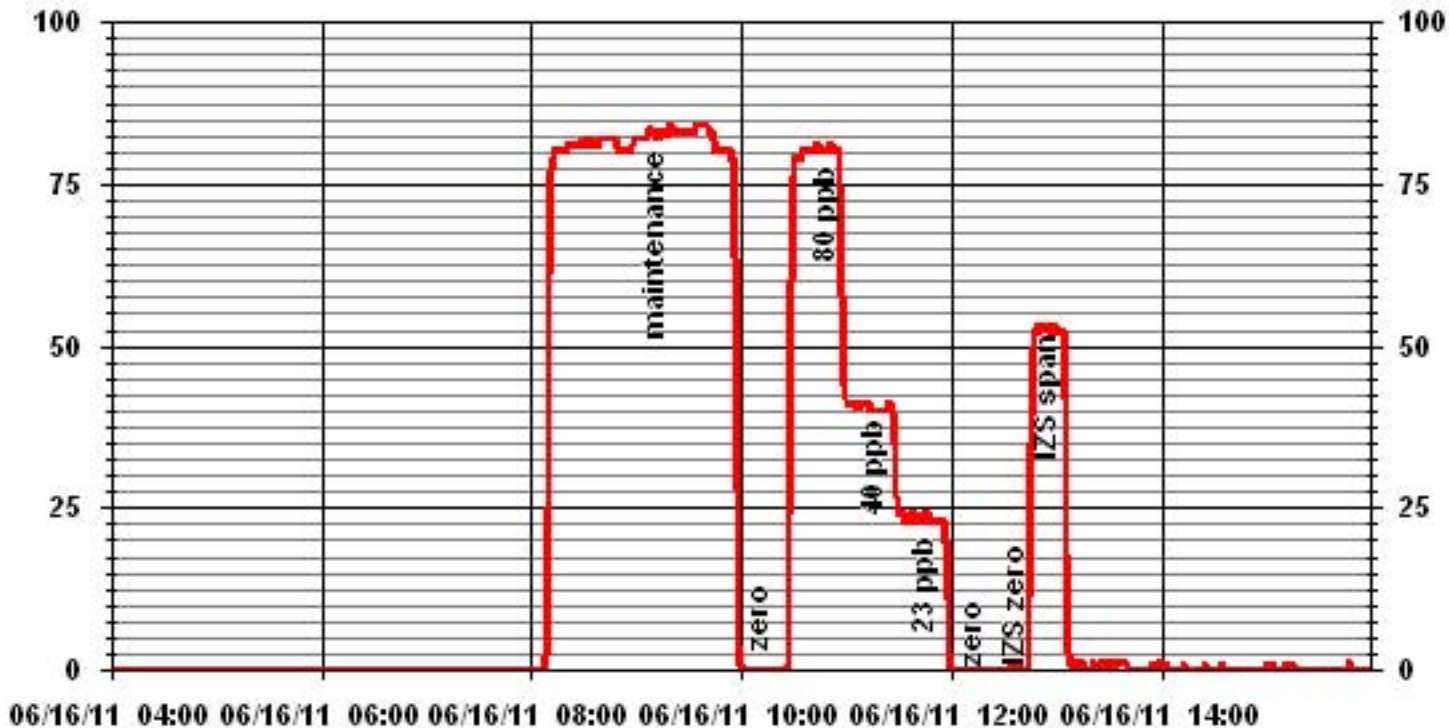
Calibration Date	June 16, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	7:43
End Time (MST)	13:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	Slope	Intercept	(≥ 0.995)	(0.85 to 1.15)	(± 3% F.S.)
0	0	n/a	0.999384	1.005039	-0.198153			
24	23	0.0000						
40	41	0.5874						
80	80	0.4998						



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	June 16, 2011	Previous Calibration	May 3, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	12:30	End Time (MST)	16:09
Reason:	Monthly Calibration		
Barometric Pressure:	0.931 atm	Station Temperature:	23 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	3485
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information			
Make / Model	TEI 51C-LT	S/N :	427408718
Method	Flame Ionization		

Analyzer Settings				
	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.5	psi	6.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	20	psi	20	psi

Calibration Data				
Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	0.1	NA
1998	0.0	0.0	0.0	NA
1999	70.0	39.6	39.7	0.9982
1999	70.0	39.6	39.9	0.9931
1999	34.9	20.1	19.8	1.0150
1998	20.0	11.6	11.4	1.0182
1998	0.0	0.0	0.4	NA
New Correction Factor:				0.9931

Percent Change	
Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	0.9982
Percent Change:	-0.5%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	35.6	36.0
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1400 psi	Hydrogen	700 psi
		Zero Air	32 psi

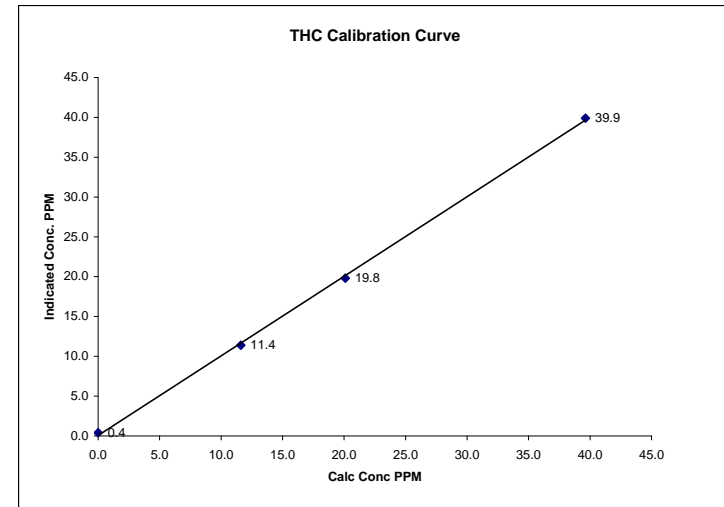
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

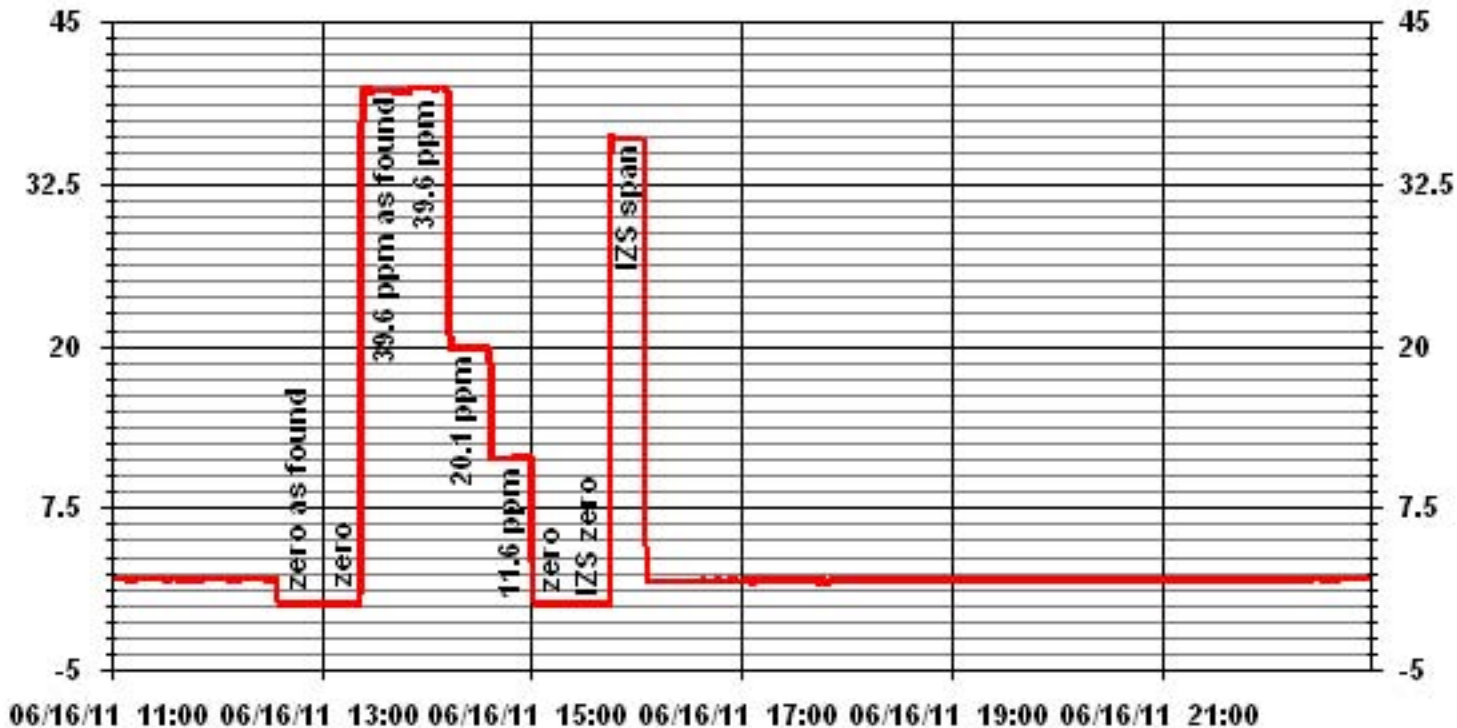
Calibration Date	June 16, 2011		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA1/Cold Lake		
Start Time (MST)	12:30	End Time (MST)	16:09

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)
0.0	0.4	NA	Intercept	(±3% F.S.)
11.6	11.4	1.0182		0.999570
20.1	19.8	1.0150		0.999337
39.6	39.9	0.9931		0.05374



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	June 14, 2011	Make/Model:	Streamline FTS
Station Name:	LICA 1	Serial Number:	Hi 091001
Location:	Cold Lake South	Cell s/n:	Lo 091099
Operator:	LICA	Thermometer s/n:	VWR90758398

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1775	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A201620804	Filter Load (%)	41.1%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	14.3
		Press (ATM)	0.935

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as BOLD in Brackets

Audit

Status			
Noise <0.10ug	0.011	Warnings	None
0.36	0.34		
Temperature/Pressure			
Measured Temp (± 2 °C)	14.2	D °C	0.2
Measured Press (± 0.01atm)	0.932	DATM	0.003
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	1.15%
Measured Main Flow (l/min)	3.01	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	1.24%
Measured Bypass Flow (l/min)	13.57	Flow Adjusted to Measured?	Yes
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	Base 0.06, Ref 0.05	Flow Control = Active	
Aux (< 0.6 l/min)	Base 0.26, Ref 0.24	Report Conditions = Standard (25.0 C and 1atm)	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 8:07 **Finish Time:** 10:30

Sample Inlet Cleaned: Yes **New Filters Installed:** YES
New Filter Loading %: 22.1%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	June 15, 2011	Previous Calibration	May 3, 2011
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	11:51	End Time (MST)	15:16
Reason:	As found		
Barometric Pressure	0.93 atm	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822		MFCF 0
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	658 ccm	317 Deg C		711 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	200.2 Hg-A		OK ccm	180.3 Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.9 Deg C	-2.4 Deg C		49.5 Deg C	-2.4 Deg C		
Box Temp / IZS Temp	27.6 Deg C	OK Deg C		27.3 Deg C	OK Deg C		
Offset	4 NOx	3.6 NO		4 NOx	3.6 NO		
Slope	1.024 NOx	0.937 NO		1.024 NOx	0.937 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	NA		0.998 NO2	AN		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
4954	39.6	NA	410	400	NA	367	359	8	1.1171	1.1133

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.1171	NO= 1.1133	NO2=
				Average Converter Efficiency=		

Before Calibration				After Calibration			
Auto Zero	0.1 NOx	0.1 NO2		0.1 NOx	0.2 NO2		
Auto Span	362 NOx	359 NO2		411 NOx	383 NO2		
Sample Lines Connected				YES			

Percent Change from Previous Calibration	NOx -10.3%	NO -10.3%	NO2 #VALUE!
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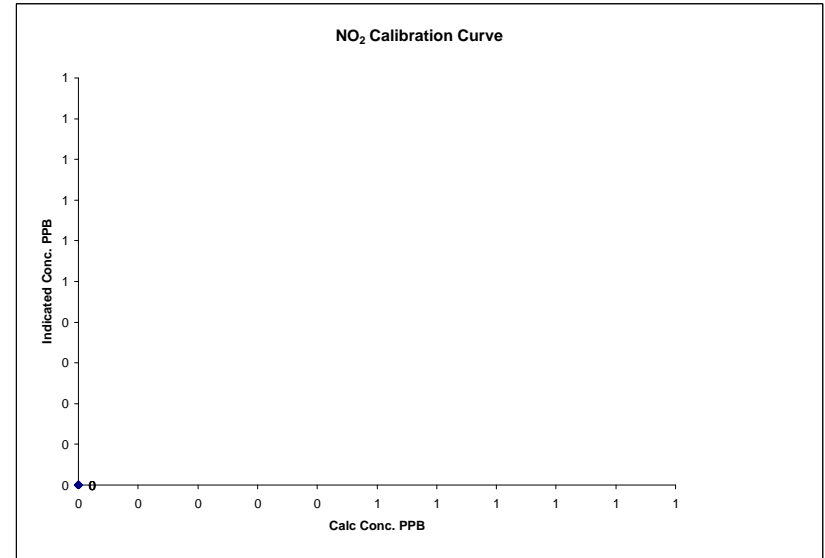
Notes: **NA : Not Applicable**
 Performed the ad found point, then rebuilt the pump.

Calibration Performed by: Ting Xu

NO2 Calibration Curve

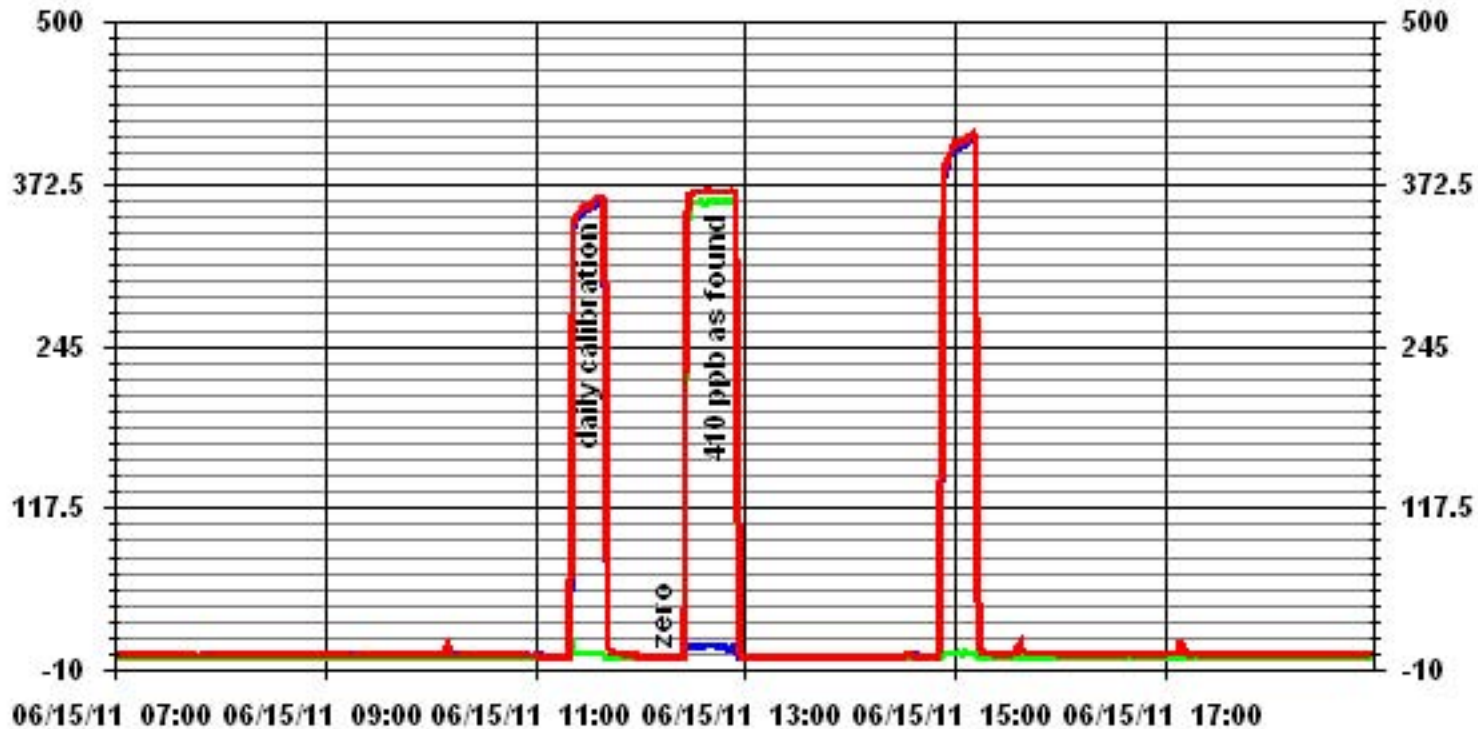
Calibration Date	June 15, 2011
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	11:51
End Time (MST)	15:16

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	#DIV/0!
0	0	N/A	Intercept	(± 3% F.S.)	#DIV/0!
0	0	#DIV/0!			#DIV/0!
0	0	#DIV/0!			#DIV/0!
0	0	#DIV/0!			#DIV/0!



Notes:

01 Minute Averages



NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	June 16, 2011	Previous Calibration	June 15, 2011
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	9:45	End Time (MST)	15:08
Reason:	Monthly Calibration		
Barometric Pressure	0.931 atm	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822	MFCF	0
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 1000			ppb			
Sample Flow/Conv. Temp	712 ccm	317 Deg C		711 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	180.7 Hg-A		OK ccm	180.5 Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.9 Deg C	-2.5 Deg C		49.8 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	27.2 Deg C	OK Deg C		26.9 Deg C	OK Deg C		
Offset	4 NOx	3.6 NO		3.9 NOx	3.5 NO		
Slope	1.024 NOx	0.937 NO		1.027 NOx	0.910 NO		
NO2 COEF / Conv Efficiency	0.998 NO2	NA		0.998 NO2	NA		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
No Zero Adj Requ										
4954	39.6	NA	410	400	NA	421	412	10	0.9738	0.9701
4954	39.6	NA	410	400	NA	411	400	11	0.9975	1.0000
4973	19.8	NA	205	200	NA	207	202	5	0.9905	0.9895
4984	9.9	NA	102	100	NA	105	102	3	0.9761	0.9795
4995	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4954	39.6	NA	410	400	NA	409	399	10	NA	NA
No Adj Required										
4954	39.6	350	410	NA	332	410	77	333	0.9970	100.31%
4954	39.6	150	410	NA	149	410	260	150	0.9933	100.72%
4954	39.6	75	410	NA	80	410	329	80	1.0000	100.00%

Linearity	Sum of Least Squares	NOx= 0.995	NO= 0.996	NO2= 0.997
OK?	Yes	NOx= 0.9975	NO= 1.0000	NO2= 0.9970
Average Converter Efficiency= 100.34%				

Before Calibration				After Calibration			
Auto Zero	0.1 NOx	0.2 NO2		0.1 NOx	0.2 NO2		
Auto Span	411 NOx	407 NO2		404 NOx	401 NO2		
Sample Lines Connected YES							
Percent Change from Previous Calibration	NOx	NA	NO	NA	NO2	NA	

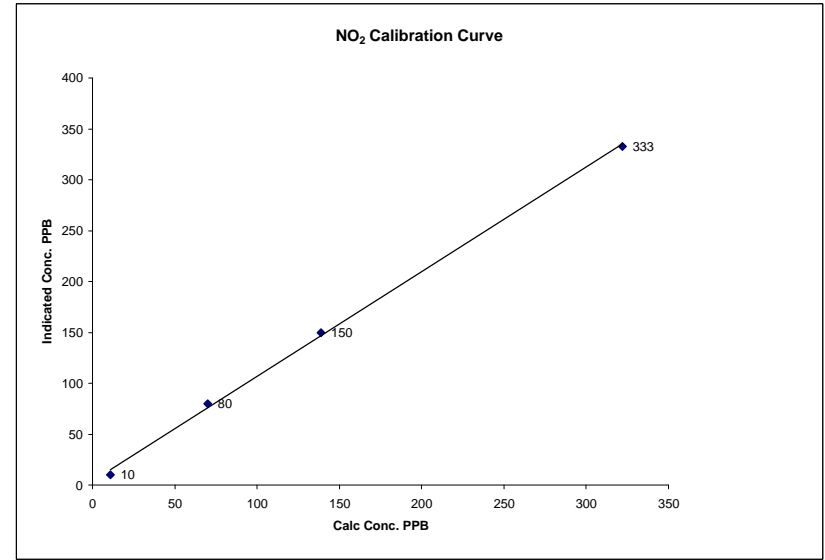
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	June 16, 2011
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	9:45
End Time (MST)	15:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998993
11	10	N/A	Intercept	(± 3% F.S.)	3.87875
70	80	0.8750			
139	150	0.9267			
322	333	0.9670			

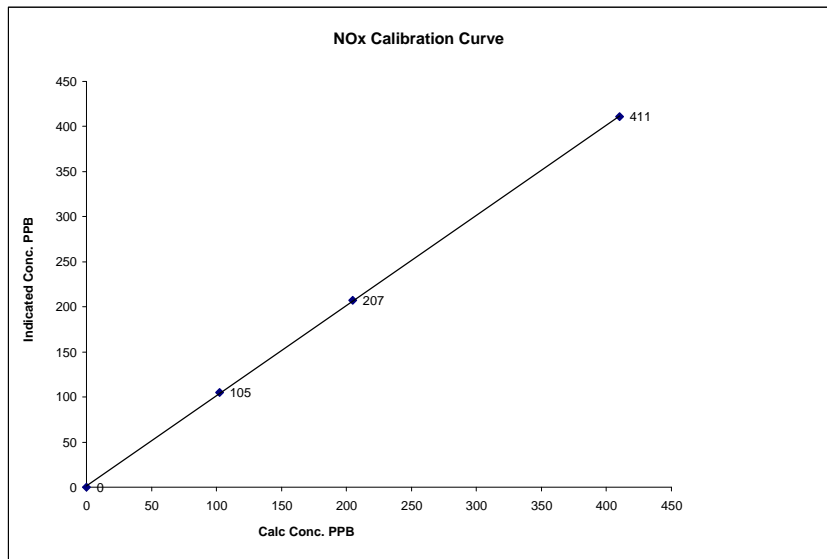


Notes:

NOx Calibration Curve

Calibration Date June 16, 2011
 Company LICA
 Plant / Location Cold Lake South
 Start Time (MST) 9:45 End Time (MST) 15:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999961
0	0	N/A	Intercept	(± 3% F.S.)	1.19587
102	105	0.9761			
205	207	0.9905			
410	411	0.9975			

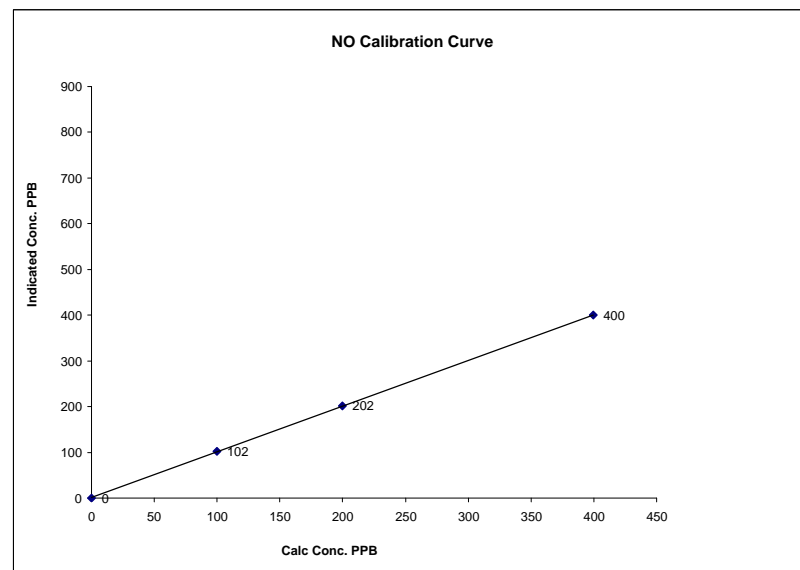


Notes:

NO Calibration Curve

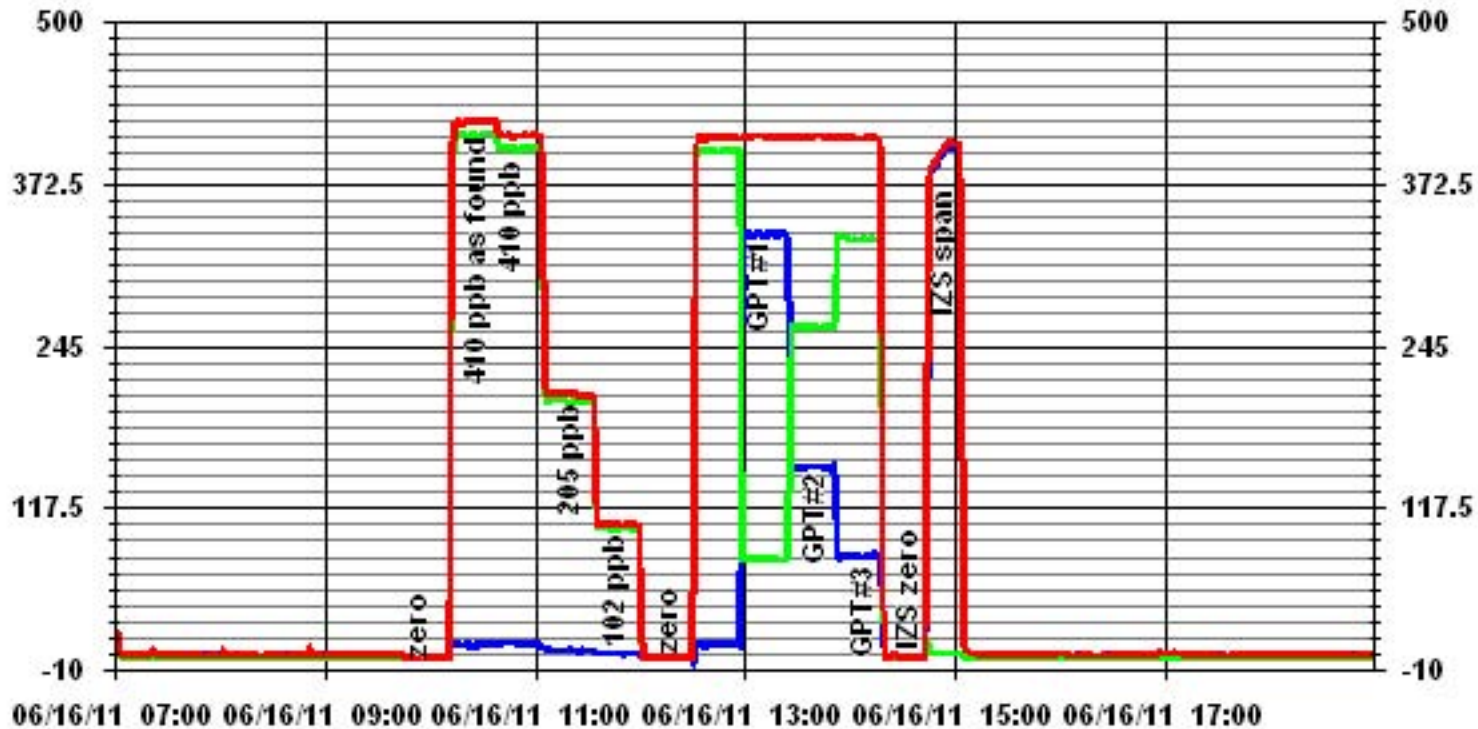
Calibration Date June 16, 2011
 Company LICA
 Plant / Location Cold Lake South
 Start Time (MST) 9:45 End Time (MST) 15:08

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999956
0	0	N/A	Intercept	(± 3% F.S.)	3.9365
100	102	0.9795			
200	202	0.9895			
400	400	0.9992			



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	June 17, 2011	Previous Calibration	May 4, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	9:59	End Time (MST)	13:43
Reason:	Monthly Calibration		
Barometric Pressure	0.935 atm	Station Temperature	24 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermon 49i	S/N :	700419951	Method:	Fluorescent
Calibrator Make / Model:	Enviroincs 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

Analyzer Settings

	Before Calibration			After Calibration		
Concentration Range	0 - 500			ppb		
Cell A Flow/ Cell B Flow	709 ccm	752 ccm	708	702 ccm	751 ccm	
Pressure	703 mmHg			702 mmHg		
Bench Lamp Temp	53.5 Deg C			53.5 Deg C		
O ₃ Lamp/Box Temp	67.6 Deg C	29.3 Deg C		67.6 Deg C	28.1 Deg C	
Offset / Slope	0.1	1.006		0.1	0.981	

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4996	350	322	329	0.9787
4996	350	322	321	1.0031
4996	150	139	139	1.0000
4996	75	70	69	1.0145
4996	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0031

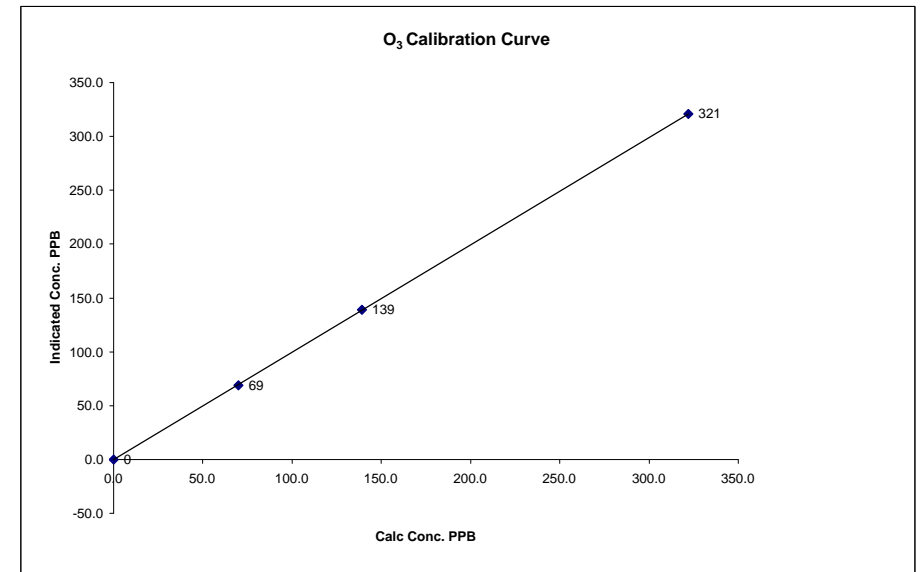
	Before Calibration	After Calibration
Auto Zero	-0.3	-0.4
Auto Span	265	260
Sample Lines Connected		YES
Percent Change from Previous Calibration		2.5%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

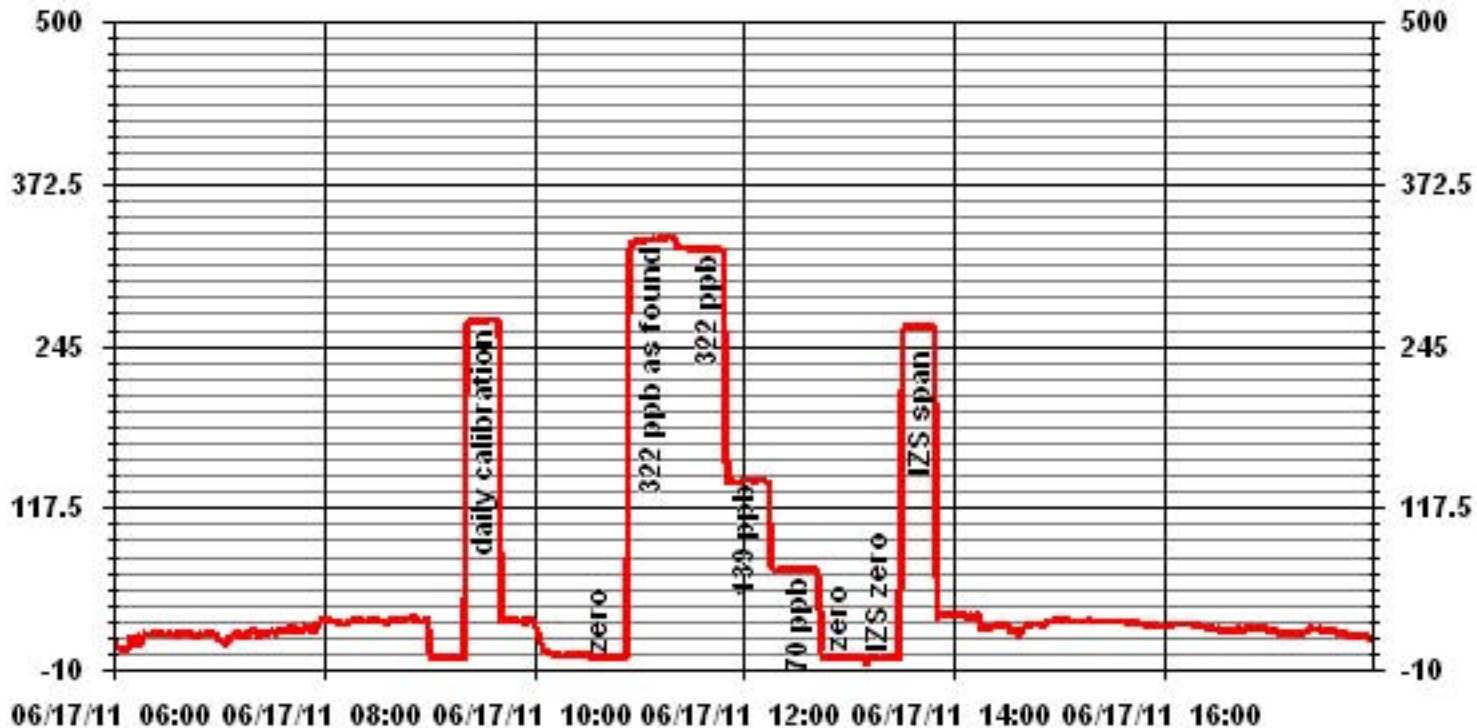
Calibration Date	June 17, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	9:59
End Time (MST)	13:43

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999987
0	0	n/a	Intercept	($\pm 3\% F.S.$)	-0.207516
70	69	1.0145			
139	139	1.0000			
322	321	1.0031			



Notes:

01 Minute Averages



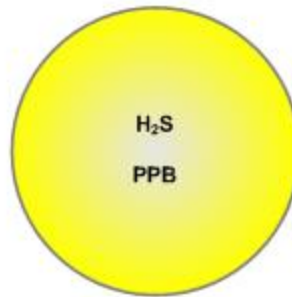
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

JUNE 2011

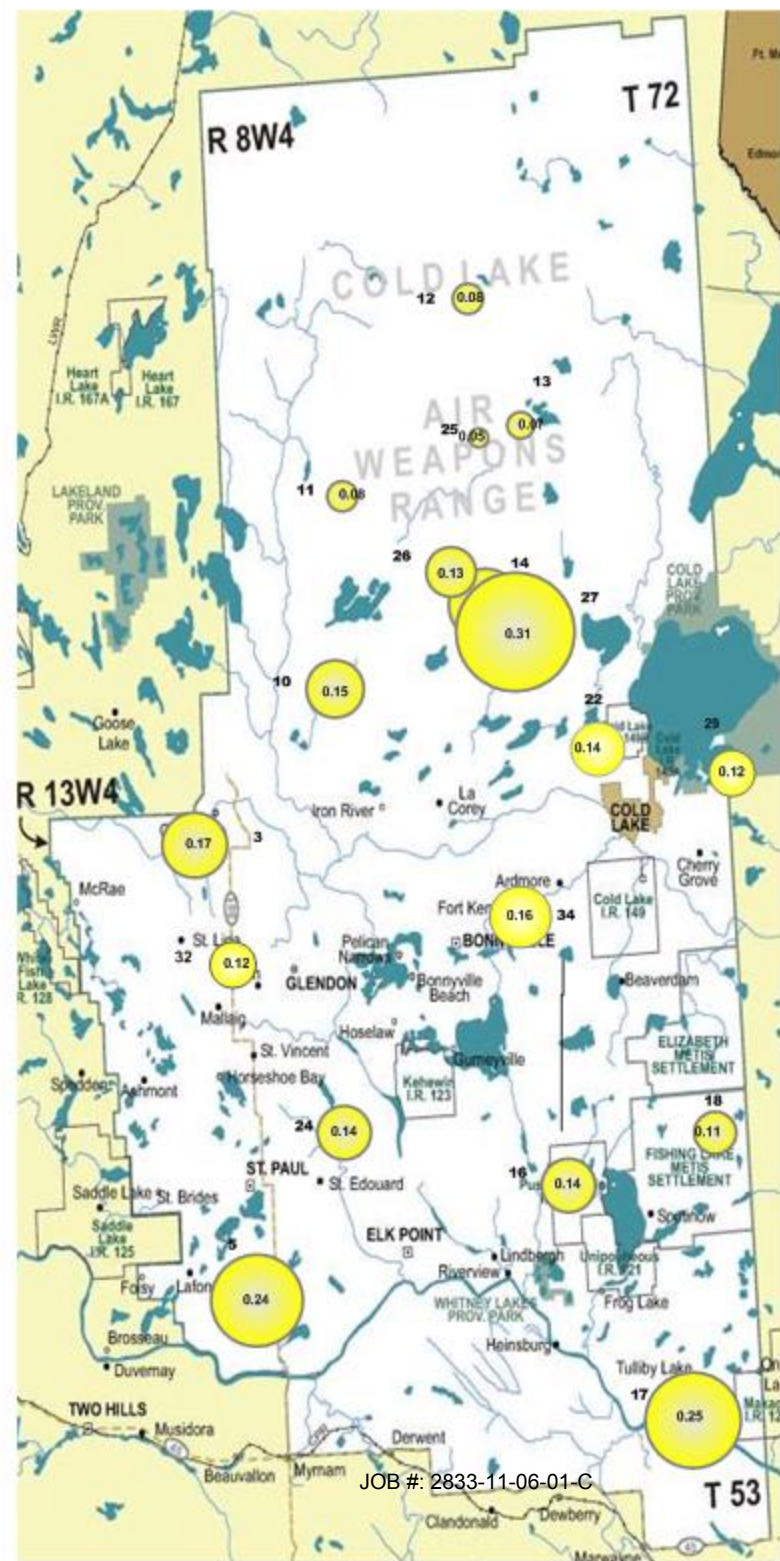
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.17 PPB	0.16 PPB
5 – Lake Eliza	0.24 PPB	NA
10 – La Corey	0.15 PPB	NA
11 – Wolf Lake	0.08 PPB	0.07 PPB
12 – Foster Creek	0.08 PPB	NA
13 – Primrose	0.07 PPB	0.07 PPB
14 – Maskwa	0.19 PPB	NA
16 – Frog Lake	0.14 PPB	0.13 PPB
17 – Clear Range	0.25 PPB	NA
18 – Fishing Lake	0.10 PPB	0.11 PPB
22 – Cold Lake South	0.14 PPB	NA
24 – Fort George	0.14 PPB	NA
25 – Burnt Lake	0.04 PPB	0.05 PPB
26 – Mahihkan	0.13 PPB	NA
27 – Mahkeses	0.30 PPB	0.32 PPB
29 – Cold Lake South 2	0.12 PPB	NA
32 – St. Lina	0.12 PPB	NA
34 – Portable	0.16 PPB	NA



Summary

Minimum : 0.05 PPB – Burnt Lake
Maximum: 0.31 PPB – Mahkeses
Average: 0.15 PPB *Includes Duplicates



Lakeland Industry & Community Association NO₂ Passive Bubble Map

JUNE 2011

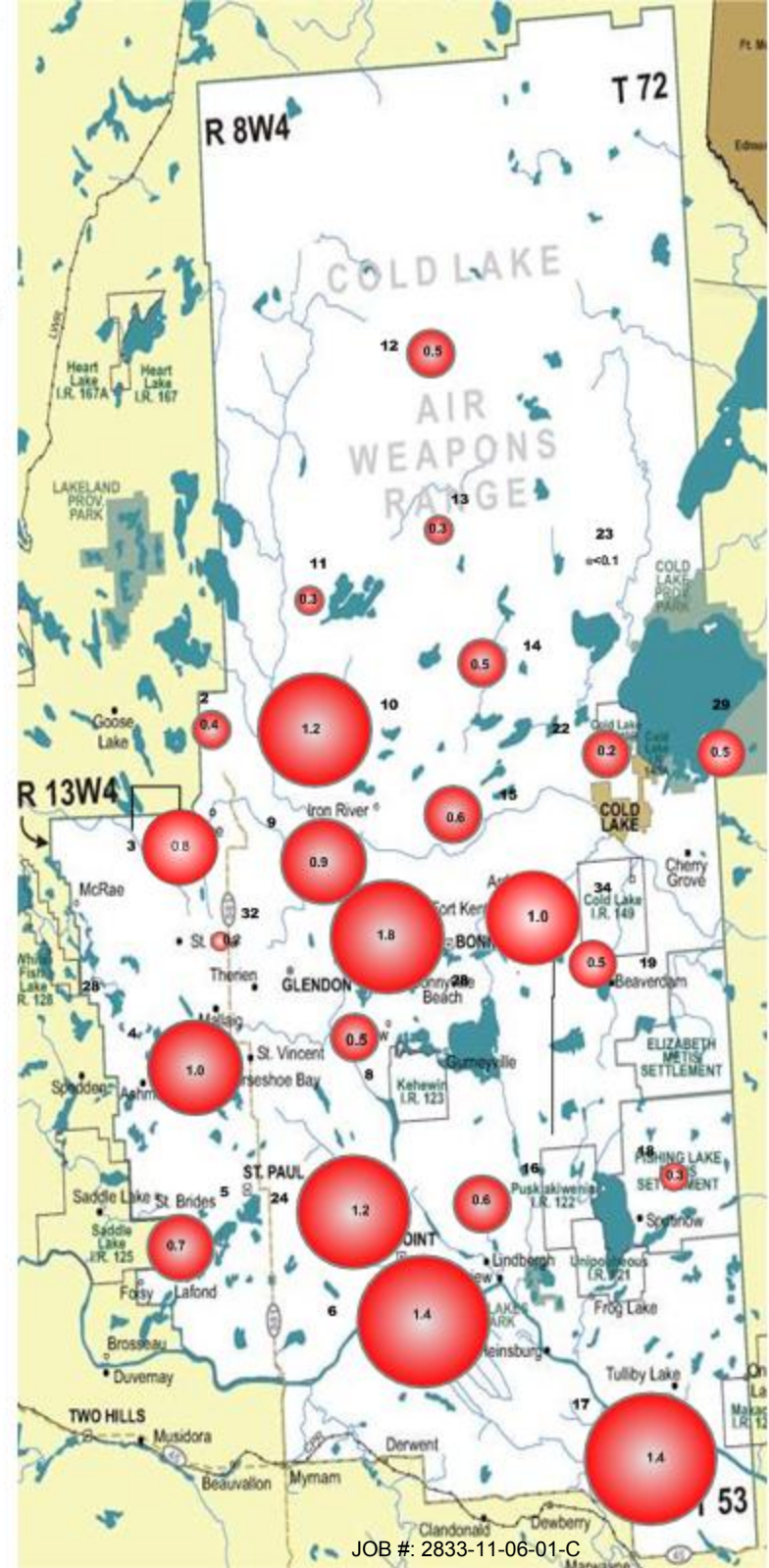
PASSIVE STATIONS

Station Name	NO ₂ (PPB)	Duplicate (PPB)
2 – Sand River	0.4 PPB	0.4 PPB
3 – Therien	0.8 PPB	NA
4 – Flat Lake	1.1 PPB	0.9 PPB
5 – Lake Eliza	0.7 PPB	NA
6 – Telegraph Creek	1.2 PPB	1.6 PPB
8 – Muriel-Kehewin	0.5 PPB	NA
9 – Dupre	0.7 PPB	1.0 PPB
10 – La Corey	1.2 PPB	NA
11 – Wolf Lake	0.3 PPB	0.3 PPB
12 – Foster Creek	0.5 PPB	NA
13 – Primrose	0.2 PPB	0.3 PPB
14 – Maskwa	0.5 PPB	NA
15 – Ardmore	0.6 PPB	0.5 PPB
16 – Frog Lake	0.6 PPB	NA
17 – Clear Range	1.3 PPB	1.5 PPB
18 – Fishing Lake	0.3 PPB	NA
19 – Beaverdam	0.6 PPB	0.4 PPB
22 – Cold Lake South	0.5 PPB	NA
23 – Medley-Martineau	<0.1 PPB	NA
24 – Fort George	1.1 PPB	1.2 PPB
28 – Town of Bonnyville	1.8 PPB	NA
29 – Cold Lake South 2	0.5 PPB	0.5 PPB
32 – St. Lina	0.2 PPB	NA
34 – Portable	1.0 PPB	NA



Summary

Minimum :< 0.1 PPB – Medley-Martineau
 Maximum: 1.8 PPB – Town of Bonnyville
 Average: 0.7 PPB *Includes Duplicates

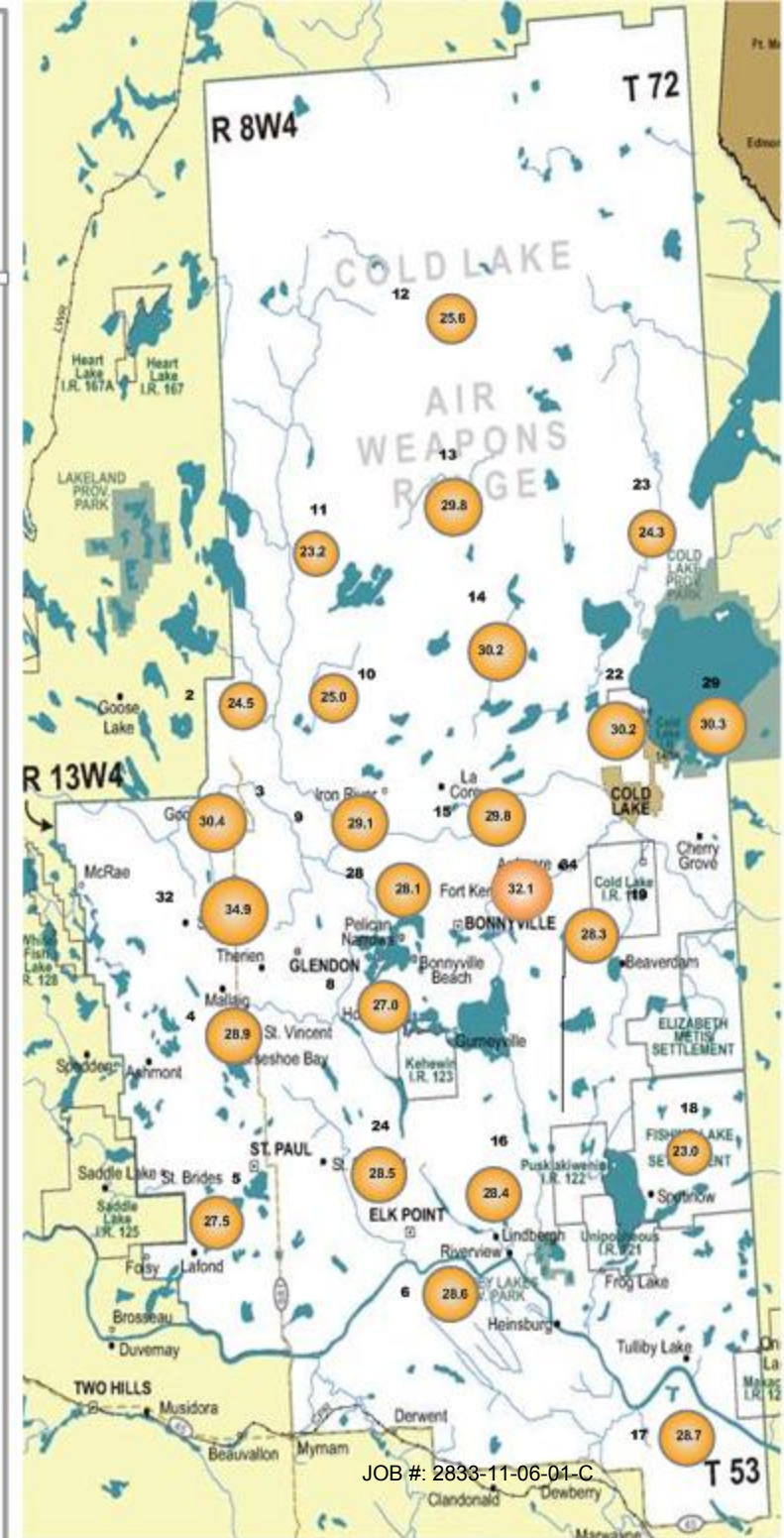
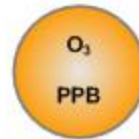


Lakeland Industry & Community Association O₃ Passive Bubble Map

JUNE 2011

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	23.0 PPB	25.9 PPB
3 – Therien	30.4 PPB	NA
4 – Flat Lake	29.2 PPB	28.5 PPB
5 – Lake Eliza	27.5 PPB	NA
6 – Telegraph Creek	28.6 PPB	28.6 PPB
8 – Muriel-Kehewin	27.0 PPB	NA
9 – Dupre	28.5 PPB	29.7 PPB
10 – La Corey	25.0 PPB	NA
11 – Wolf Lake	22.8 PPB	23.5 PPB
12 – Foster Creek	25.6 PPB	NA
13 – Primrose	28.7 PPB	30.9 PPB
14 – Maskwa	30.2 PPB	NA
15 – Ardmore	30.0 PPB	29.5 PPB
16 – Frog Lake	28.4 PPB	NA
17 – Clear Range	29.3 PPB	28.1 PPB
18 – Fishing Lake	23.0 PPB	NA
19 – Beaverdam	28.8 PPB	27.7 PPB
22 – Cold Lake South	30.2 PPB	NA
23 – Medley-Martineau	24.3 PPB	NA
24 – Fort George	29.4 PPB	27.5 PPB
28 – Town of Bonnyville	34.1 PPB	NA
29 – Cold Lake South 2	30.5 PPB	30.1 PPB
32 – St. Lina	34.9 PPB	NA
34 – Portable	32.1 PPB	NA



Lakeland Industry & Community Association SO₂ Passive Bubble Map

JUNE 2011

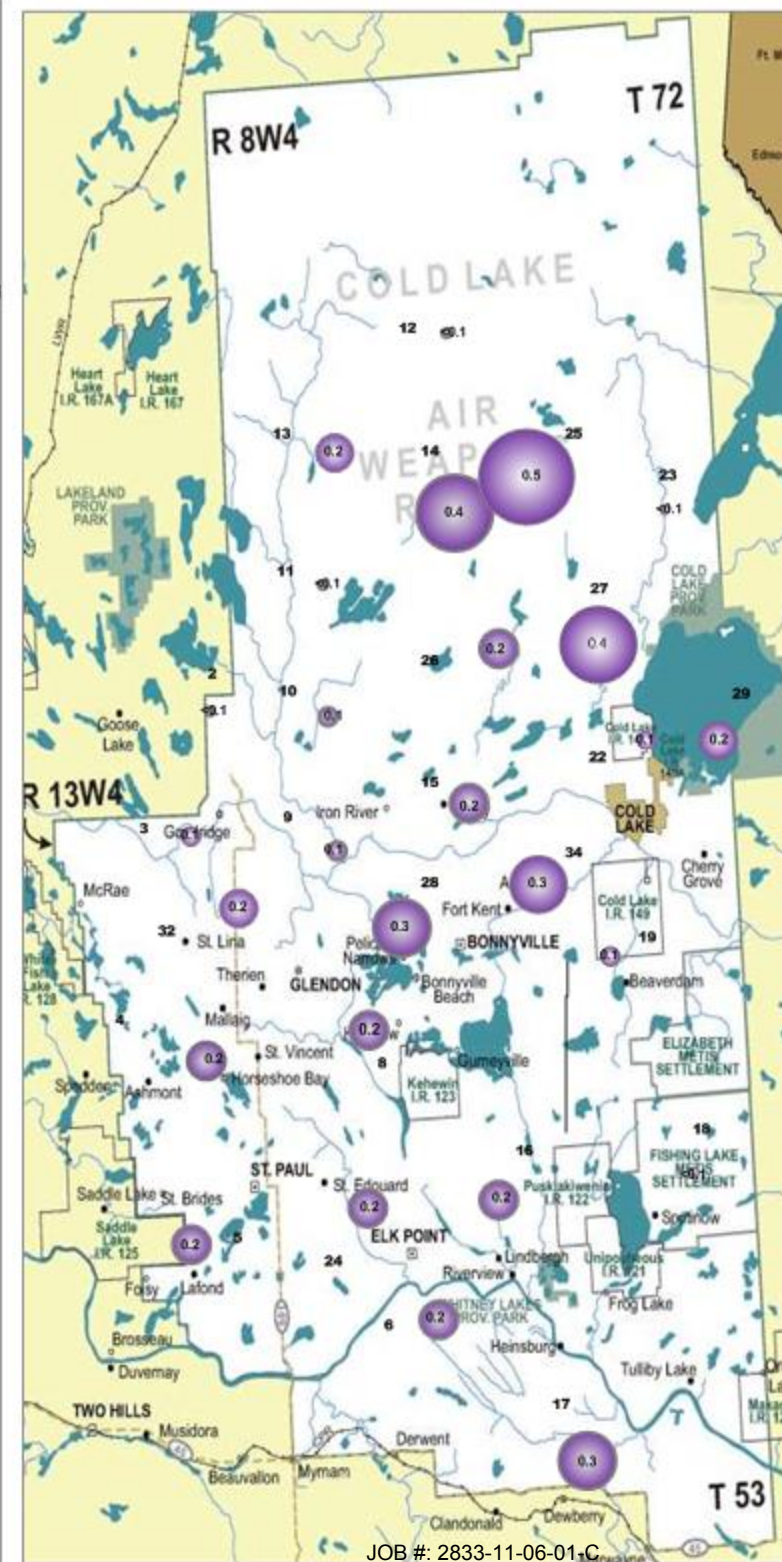
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	<0.1 PPB	<0.1 PPB
3 – Therien	0.1 PPB	NA
4 – Flat Lake	0.1 PPB	0.2 PPB
5 – Lake Eliza	0.2 PPB	NA
6 – Telegraph Creek	0.2 PPB	0.2 PPB
8 – Muriel-Kehewin	0.2 PPB	NA
9 – Dupre	0.1 PPB	0.1 PPB
10 – La Corey	0.1 PPB	NA
11 – Wolf Lake	<0.1 PPB	0.1 PPB
12 – Foster Creek	<0.1 PPB	NA
13 – Primrose	0.2 PPB	0.1 PPB
14 – Maskwa	0.4 PPB	NA
15 – Ardmore	0.2 PPB	0.1 PPB
16 – Frog Lake	0.2 PPB	NA
17 – Clear Range	0.3 PPB	0.3 PPB
18 – Fishing Lake	<0.1 PPB	NA
19 – Beaverdam	0.1 PPB	<0.1 PPB
22 – Cold Lake South	0.1 PPB	NA
23 – Medley-Martineau	<0.1 PPB	NA
24 – Fort George	0.2 PPB	0.2 PPB
25 – Burnt Lake	0.5 PPB	NA
26 – Mahikan	0.2 PPB	0.2 PPB
27 – Mahkeses	0.4 PPB	NA
28 – Town of Bonnyville	0.3 PPB	0.3 PPB
29 – Cold Lake South 2	0.2 PPB	NA
32 – St. Lina	0.2 PPB	NA
34 – Portable	0.3 PPB	NA



Summary

Minimum : <0.1 PPB – Various Stations
Maximum: 0.5 PPB – Burnt Lake
Average: 0.2 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	04/27/11	10:32	05/31/11	10:39	
2A (Dup)	NA	NA	NA	NA	NA	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	09:45	05/31/11	09:41	
3A (Dup)	SO ₂ /NO ₂ /O ₃	04/27/11	09:45	05/31/11	09:41	
4	SO ₂ /NO ₂ /O ₃	04/29/11	14:20	06/02/11	14:10	
4A (Dup)	NA	NA	NA	NA	NA	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	13:40	06/02/11	13:18	
5A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	13:40	06/02/11	13:18	
6	SO ₂ /NO ₂ /O ₃	04/29/11	12:09	06/02/11	11:45	
6A (Dup)	NA	NA	NA	NA	NA	
8	SO ₂ /NO ₂ /O ₃	04/29/11	15:19	06/02/11	15:13	
8A (Dup)	SO ₂ /NO ₂ /O ₃	04/29/11	15:19	06/02/11	15:13	
9	SO ₂ /NO ₂ /O ₃	04/28/11	14:40	05/31/11	07:38	
9A (Dup)	NA	NA	NA	NA	NA	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	11:22	05/31/11	11:45	
10A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	11:22	05/31/11	11:45	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	11:59	05/31/11	12:22	
11A (Dup)	NA	NA	NA	NA	NA	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	13:28	05/31/11	13:54	
12A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	13:28	05/31/11	13:54	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	15:03	06/01/11	11:45	
13A (Dup)	NA	NA	NA	NA	NA	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	15:48	06/01/11	12:40	
14A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	15:48	06/01/11	12:40	
15	SO ₂ /NO ₂ /O ₃	04/28/11	09:38	06/01/11	10:59	
15A (Dup)	NA	NA	NA	NA	NA	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	10:14	06/02/11	09:54	
16A (Dup)	SO ₂ /NO ₂ /O ₃	04/29/11	10:14	06/02/11	09:54	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	11:17	06/02/11	10:50	
17A (Dup)	H ₂ S	04/29/11	11:17	06/02/11	10:50	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	09:18	06/02/11	09:05	
18A (Dup)	SO ₂ /NO ₂ /O ₃	04/29/11	09:18	06/02/11	09:05	
19	SO ₂ /NO ₂ /O ₃	04/29/11	08:13	06/02/11	07:59	
19A (Dup)	NA	NA	NA	NA	NA	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	04/28/11	08:38	06/01/11	08:24	
22A (Dup)	NA	NA	NA	NA	NA	
23	SO ₂ /NO ₂ /O ₃	04/27/11	17:16	06/01/11	14:02	
23A (Dup)	SO ₂ /NO ₂ /O ₃	04/27/11	17:16	06/01/11	14:02	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	12:40	06/02/11	12:17	
24A (Dup)	H ₂ S	04/29/11	12:40	06/02/11	12:7	
25	H ₂ S/SO ₂	04/27/11	14:46	05/31/11	15:29	
25A (Dup)	SO ₂	04/27/11	14:46	05/31/11	15:29	
26	H ₂ S/SO ₂	04/27/11	15:36	06/01/11	12:25	
26A (Dup)	H ₂ S	04/27/11	15:36	06/01/11	12:25	
27	H ₂ S/SO ₂	04/27/11	16:10	06/01/11	12:59	
27A (Dup)	SO ₂	04/27/11	16:10	06/01/11	12:59	
28	SO ₂ /NO ₂ /O ₃	04/28/11	14:19	05/31/11	07:57	
28A (Dup)	NO ₂ /O ₃	04/28/11	14:19	05/31/11	07:57	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	04/28/11	08:22	06/01/11	08:10	
29A (Dup)	H ₂ S/SO ₂	04/28/11	08:22	06/01/11	08:10	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	09:02	05/31/11	09:01	
32A (Dup)	NA	NA	NA	NA	NA	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	04/28/11	15:02	06/01/11	10:01	
34A (Dup)	NA	NA	NA	NA	NA	

Passive Network Laboratory Analysis



Your Project #: 2011/05/31 - 2011/06/28
Site:LICA

Attention: MICHAEL BISAGA
LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
PO BOX 8237
5107W- 50TH STREET
BONNYVILLE, AB
CANADA T9N 2J5

Report Date: 2011/07/12

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B158915
Received: 2011/07/05, 13:21

Sample Matrix: Air
Samples Received: 45

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (l)	25	2011/07/11	2011/07/12	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (l)	20	2011/07/10	2011/07/12	EINDSOP-00148	Tang Passive NO2 in
NO2 Passive Analysis (l)	15	2011/07/11	2011/07/12	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (l)	35	2011/07/12	2011/07/12	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (l)	39	2011/07/10	2011/07/12	EINDSOP-00149	Tang Passive SO2 in

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The detection limit is based on a 30 day sampling period.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Levi Manchak, Customer Service
Email: LManchak@maxxam.ca
Phone# (780) 378-8500

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1



Maxxam Job #: B158915
 Report Date: 2011/07/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/05/31 - 2011/06/28
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AX4815	AX4816	AX4817	AX4818	AX4819		
Sampling Date		2011/05/31 10:39	2011/05/31 10:39	2011/05/31 09:41	2011/05/31 09:41	2011/06/02 14:10		
	Units	2	2A (DUP)	3	3A (DUP)	4	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.17	0.16		0.02	4994487
Calculated NO2	ppb	0.4	0.4	0.8		1.1	0.1	4994364
Calculated O3	ppb	23.0	25.9	30.4		29.2	0.1	4997870
Calculated SO2	ppb	<0.1	<0.1	0.1		0.1	0.1	4994367
RDL = Reportable Detection Limit								

Maxxam ID		AX4820	AX4821	AX4822	AX4823	AX4824		
Sampling Date		2011/06/02 14:10	2011/06/02 13:18	2011/06/02 11:45	2011/06/02 11:45	2011/06/02 15:13		
	Units	4A (DUP)	5	6	6A (DUP)	8	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.24				0.02	4994487
Calculated NO2	ppb	0.9	0.7	1.2	1.6	0.5	0.1	4994364
Calculated O3	ppb	28.5	27.5	28.6	28.6	27.0	0.1	4997870
Calculated SO2	ppb	0.2	0.2	0.2	0.2	0.2	0.1	4994367
RDL = Reportable Detection Limit								

Maxxam ID		AX4825	AX4826	AX4827	AX4828	AX4829		
Sampling Date		2011/05/31 07:38	2011/05/31 07:38	2011/05/31 11:45	2011/05/31 12:22	2011/05/31 12:22		
	Units	9	9A (DUP)	10	11	11A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.15	0.08	0.07	0.02	4994487
Calculated NO2	ppb	0.7	1.0	1.2	0.3	0.3	0.1	4994364
Calculated O3	ppb	28.5	29.7	25.0	22.8	23.5	0.1	4997870
Calculated SO2	ppb	0.1	0.1	0.1	<0.1	0.1	0.1	4994367
RDL = Reportable Detection Limit								



Maxxam Job #: B158915
 Report Date: 2011/07/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/05/31 - 2011/06/28
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AX4830		AX4831	AX4832	AX4833		
Sampling Date		2011/05/31 13:54		2011/06/01 11:45	2011/06/01 11:45	2011/06/01 12:40		
	Units	12	QC Batch	13	13A (DUP)	14	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.08	4994487	0.07	0.07	0.19	0.02	4994487
Calculated NO2	ppb	0.5	4994364	0.2	0.3	0.5	0.1	4994364
Calculated O3	ppb	25.6	4997870	28.7	30.9	30.2	0.1	4997876
Calculated SO2	ppb	<0.1	4994367	0.2	0.1	0.4	0.1	4994367
RDL = Reportable Detection Limit								

Maxxam ID		AX4834	AX4835		AX4836	AX4837		
Sampling Date		2011/06/01 10:59	2011/06/01 10:59		2011/06/02 09:54	2011/06/02 09:54		
	Units	15	15A (DUP)	QC Batch	16	16A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			4994487	0.14	0.13	0.02	4994487
Calculated NO2	ppb	0.6	0.5	4994364	0.6		0.1	4994894
Calculated O3	ppb	30.0	29.5	4997876	28.4		0.1	4997876
Calculated SO2	ppb	0.2	0.1	4994370	0.2		0.1	4994370
RDL = Reportable Detection Limit								

Maxxam ID		AX4838	AX4839	AX4840	AX4841	AX4842		
Sampling Date		2011/06/02 10:50	2011/06/02 10:50	2011/06/02 09:05	2011/06/02 09:05	2011/06/02 07:59		
	Units	17	17A (DUP)	18	18A (DUP)	19	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.25		0.10	0.11		0.02	4994487
Calculated NO2	ppb	1.3	1.5	0.3		0.6	0.1	4994894
Calculated O3	ppb	29.3	28.1	23.0		28.8	0.1	4997876
Calculated SO2	ppb	0.3	0.3	<0.1		0.1	0.1	4994370
RDL = Reportable Detection Limit								



Maxxam Job #: B158915
 Report Date: 2011/07/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/05/31 - 2011/06/28
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AX4843	AX4844	AX4845	AX4846	AX4847		
Sampling Date		2011/06/02 07:59	2011/06/01 08:24	2011/06/01 14:02	2011/06/02 12:17	2011/06/02 12:17		
	Units	19A (DUP)	22	23	24	24A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.14		0.14		0.02	4994487
Calculated NO2	ppb	0.4	0.5	<0.1	1.1	1.2	0.1	4994894
Calculated O3	ppb	27.7	30.2	24.3	29.4	27.5	0.1	4997876
Calculated SO2	ppb	<0.1	0.1	<0.1	0.2	0.2	0.1	4994370
RDL = Reportable Detection Limit								

Maxxam ID		AX4848	AX4849	AX4850	AX4851	AX4852		
Sampling Date		2011/05/31 15:29	2011/05/31 15:29	2011/06/01 12:25	2011/06/01 12:25	2011/06/01 12:59		
	Units	25	25A (DUP)	26	26A (DUP)	27	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.04	0.05	0.13		0.30	0.02	4994487
Calculated SO2	ppb	0.5		0.2	0.2	0.4	0.1	4994370
RDL = Reportable Detection Limit								

Maxxam ID		AX4853	AX4854	AX4855	AX4856	AX4857		
Sampling Date		2011/06/01 12:59	2011/05/31 07:57	2011/05/31 07:57	2011/06/01 08:10	2011/06/01 08:10		
	Units	27A (DUP)	28	28A (DUP)	29	29A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.32			0.12		0.02	4994487
Calculated NO2	ppb		1.8		0.5	0.5	0.1	4994894
Calculated O3	ppb		28.1		30.5	30.1	0.1	4997876
Calculated SO2	ppb		0.3	0.3	0.2		0.1	4994370
RDL = Reportable Detection Limit								



Maxxam Job #: B158915
Report Date: 2011/07/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/05/31 - 2011/06/28
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AX4898	AX4899		
Sampling Date		2011/05/31 09:01	2011/06/01 10:01		
	Units	32	34	RDL	QC Batch

Passive Monitoring					
Calculated H2S	ppb	0.12	0.16	0.02	4994487
Calculated NO2	ppb	0.2	1.0	0.1	4994894
Calculated O3	ppb	34.9	32.1	0.1	4997876
Calculated SO2	ppb	0.2	0.3	0.1	4994370
RDL = Reportable Detection Limit					



Maxxam Job #: B158915
Report Date: 2011/07/12

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/05/31 - 2011/06/28
Site Reference: LICA
Sampler Initials: SB

General Comments

Results relate only to the items tested.



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Attention: MICHAEL BISAGA
 Client Project #: 2011/05/31 - 2011/06/28
 P.O. #:
 Site Reference: LICA

Quality Assurance Report
 Maxxam Job Number: PB158915

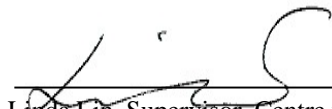
QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4994364 DF4	Calibration Check	Calculated NO2	2011/07/10		99	%	76 - 118
	Spiked Blank	Calculated NO2	2011/07/10		101	%	N/A
	Method Blank	Calculated NO2	2011/07/10	<0.1		ppb	
4994367 DF4	Calibration Check	Calculated SO2	2011/07/10		98	%	95 - 105
	Spiked Blank	Calculated SO2	2011/07/10		95	%	N/A
	Method Blank	Calculated SO2	2011/07/10	<0.1		ppb	
4994370 DF4	Calibration Check	Calculated SO2	2011/07/10		99	%	95 - 105
	Spiked Blank	Calculated SO2	2011/07/10		95	%	N/A
	Method Blank	Calculated SO2	2011/07/10	<0.1		ppb	
4994487 TM5	Calibration Check	Calculated H2S	2011/07/11		103	%	80 - 120
	Spiked Blank	Calculated H2S	2011/07/11		100	%	N/A
4994894 DF4	Calibration Check	Calculated NO2	2011/07/11		102	%	76 - 118
	Spiked Blank	Calculated NO2	2011/07/11		100	%	N/A
	Method Blank	Calculated NO2	2011/07/11	<0.1		ppb	
4997870 OZ	Calibration Check	Calculated O3	2011/07/12		99	%	91 - 107
	Spiked Blank	Calculated O3	2011/07/12		99	%	N/A
	Method Blank	Calculated O3	2011/07/12	<0.1		ppb	
4997876 OZ	Calibration Check	Calculated O3	2011/07/12		100	%	91 - 107
	Spiked Blank	Calculated O3	2011/07/12		100	%	N/A
	Method Blank	Calculated O3	2011/07/12	<0.1		ppb	

Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Validation Signature Page

Maxxam Job #: B158915

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in black ink, appearing to be "Linda Lin", written over a horizontal line.

Linda Lin, Supervisor, Centre for Passive Sampling Technology

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7834
Station ID: Lica 1 Canister Installation Date/Time: Jun 01, 2011 @ 6:45 mst
Field Sample ID: LICA VOC/ CLS /Jun 02,11 Canister Removal Date/Time: Jun 03, 2011 @ 7:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
02-Jun-11	06/02/2011 0:00	06/03/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06169

Technician Signiture: Ting Xu



Your C.O.C. #: 06169

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B182250

Received: 2011/06/08, 08:50

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/10	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/10	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B182250
 Report Date: 2011/06/15

RESULTS OF ANALYSES OF AIR

Maxxam ID		JT5018	JT5019	
Sampling Date		2011/06/02	2011/06/02	
COC Number		06169	06169	
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	LICA VOC/PORT/JUNE 02,11 - 7828	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2519327

QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5018				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2519158
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2519158
Propene	ppbv	<0.30	0.30	<0.516	0.516	2519158
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2519158
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2519158
Dichlorodifluoromethane (FREON 12)	ppbv	0.58	0.20	2.85	0.989	2519158
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2519158
Chloromethane	ppbv	0.58	0.30	1.20	0.620	2519158
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2519158
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2519158
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2519158
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.71	1.12	2519158
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2519158
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2519158
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2519158
2-Propanone	ppbv	3.79	0.80	9.00	1.90	2519158
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2519158
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2519158
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2519158
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2519158
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2519158
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2519158
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2519158
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2519158
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2519158
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2519158
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2519158
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2519158
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2519158

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5018				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2519158
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2519158
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2519158
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2519158
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2519158
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2519158
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2519158
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2519158
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2519158
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2519158
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2519158
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2519158
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2519158
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2519158
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2519158
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2519158
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2519158
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2519158
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2519158
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2519158
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2519158
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2519158
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2519158
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2519158
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2519158
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2519158
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2519158
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2519158
QC Batch = Quality Control Batch						

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5018				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	77		N/A	N/A	2519158
D5-Chlorobenzene	%	71		N/A	N/A	2519158
Difluorobenzene	%	77		N/A	N/A	2519158

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5019				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/PORT/JUNE 02,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2519158
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2519158
Propene	ppbv	<0.30	0.30	<0.516	0.516	2519158
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2519158
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2519158
Dichlorodifluoromethane (FREON 12)	ppbv	0.60	0.20	2.94	0.989	2519158
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2519158
Chloromethane	ppbv	0.70	0.30	1.45	0.620	2519158
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2519158
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2519158
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2519158
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.72	1.12	2519158
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2519158
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2519158
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2519158
2-Propanone	ppbv	4.53	0.80	10.8	1.90	2519158
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2519158
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2519158
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2519158
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2519158
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2519158
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2519158
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2519158
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2519158
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2519158
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2519158
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2519158
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2519158
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2519158
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5019				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/PORT/JUNE 02,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2519158
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2519158
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2519158
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2519158
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2519158
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2519158
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2519158
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2519158
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2519158
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2519158
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2519158
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2519158
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2519158
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2519158
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2519158
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2519158
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2519158
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2519158
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2519158
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2519158
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2519158
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2519158
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2519158
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2519158
Cyclohexane	ppbv	0.28	0.20	0.965	0.688	2519158
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2519158
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2519158
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2519158
QC Batch = Quality Control Batch						

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5019				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/PORT/JUNE 02,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	76		N/A	N/A	2519158
D5-Chlorobenzene	%	72		N/A	N/A	2519158
Difluorobenzene	%	76		N/A	N/A	2519158

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B182250
Report Date: 2011/06/15

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB182250

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2519158	DVO	Spiked Blank					
		Bromochloromethane	2011/06/10		93	%	60 - 140
		D5-Chlorobenzene	2011/06/10		93	%	60 - 140
		Difluorobenzene	2011/06/10		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/10		110	%	70 - 130
		Carbon Disulfide	2011/06/10		101	%	70 - 130
		Propene	2011/06/10		105	%	70 - 130
		Vinyl Acetate	2011/06/10		110	%	70 - 130
		Vinyl Bromide	2011/06/10		114	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/10		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/10		120	%	70 - 130
		Chloromethane	2011/06/10		103	%	70 - 130
		Vinyl Chloride	2011/06/10		104	%	70 - 130
		Chloroethane	2011/06/10		98	%	70 - 130
		1,3-Butadiene	2011/06/10		111	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/10		98	%	70 - 130
		Trichlorotrifluoroethane	2011/06/10		103	%	70 - 130
		Ethanol	2011/06/10		107	%	70 - 130
		2-propanol	2011/06/10		117	%	70 - 130
		2-Propanone	2011/06/10		99	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/10		114	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/10		101	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/10		100	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/10		109	%	70 - 130
		Ethyl Acetate	2011/06/10		111	%	70 - 130
		1,1-Dichloroethylene	2011/06/10		102	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/10		99	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/10		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/10		92	%	70 - 130
		Chloroform	2011/06/10		100	%	70 - 130
		Carbon Tetrachloride	2011/06/10		94	%	70 - 130
		1,1-Dichloroethane	2011/06/10		99	%	70 - 130
		1,2-Dichloroethane	2011/06/10		100	%	70 - 130
		Ethylene Dibromide	2011/06/10		99	%	70 - 130
		1,1,1-Trichloroethane	2011/06/10		95	%	70 - 130
		1,1,2-Trichloroethane	2011/06/10		97	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/10		95	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/10		98	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/10		102	%	70 - 130
		1,2-Dichloropropane	2011/06/10		95	%	70 - 130
		Bromomethane	2011/06/10		102	%	70 - 130
		Bromoform	2011/06/10		117	%	70 - 130
		Bromodichloromethane	2011/06/10		102	%	70 - 130
		Dibromochloromethane	2011/06/10		108	%	70 - 130
		Heptane	2011/06/10		103	%	70 - 130
		Trichloroethylene	2011/06/10		94	%	70 - 130
		Tetrachloroethylene	2011/06/10		95	%	70 - 130
		Benzene	2011/06/10		96	%	70 - 130
		Toluene	2011/06/10		97	%	70 - 130
		Ethylbenzene	2011/06/10		102	%	70 - 130
		p+m-Xylene	2011/06/10		100	%	70 - 130
		o-Xylene	2011/06/10		100	%	70 - 130
		Styrene	2011/06/10		103	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/10		93	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/10		91	%	70 - 130
		4-ethyltoluene	2011/06/10		104	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB182250

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2519158 DVO	Spiked Blank	Chlorobenzene	2011/06/10		101	%	70 - 130	
		Benzyl chloride	2011/06/10		110	%	70 - 130	
1,3-Dichlorobenzene		2011/06/10		93	%	70 - 130		
1,4-Dichlorobenzene		2011/06/10		97	%	70 - 130		
1,2-Dichlorobenzene		2011/06/10		84	%	70 - 130		
1,2,4-Trichlorobenzene		2011/06/10		65 (1)	%	70 - 130		
Hexachlorobutadiene		2011/06/10		82	%	70 - 130		
Hexane		2011/06/10		105	%	70 - 130		
Cyclohexane		2011/06/10		103	%	70 - 130		
Tetrahydrofuran		2011/06/10		112	%	70 - 130		
Method Blank		1,4-Dioxane	2011/06/10		103	%	70 - 130	
		Bromochloromethane	2011/06/10		85	%	60 - 140	
		D5-Chlorobenzene	2011/06/10		80	%	60 - 140	
		Difluorobenzene	2011/06/10		86	%	60 - 140	
		2,2,4-Trimethylpentane	2011/06/10	<0.20			ppbv	
		Carbon Disulfide	2011/06/10	<0.50			ppbv	
		Propene	2011/06/10	<0.30			ppbv	
		Vinyl Acetate	2011/06/10	<0.20			ppbv	
		Vinyl Bromide	2011/06/10	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/10	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/10	<0.17			ppbv	
		Chloromethane	2011/06/10	<0.30			ppbv	
		Vinyl Chloride	2011/06/10	<0.18			ppbv	
		Chloroethane	2011/06/10	<0.30			ppbv	
		1,3-Butadiene	2011/06/10	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/10	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/06/10	<0.15			ppbv	
		Ethanol	2011/06/10	<2.3			ppbv	
		2-propanol	2011/06/10	<3.0			ppbv	
		2-Propanone	2011/06/10	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/10	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/06/10	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/10	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/10	<0.20			ppbv	
		Ethyl Acetate	2011/06/10	<2.2			ppbv	
		1,1-Dichloroethylene	2011/06/10	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/06/10	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/06/10	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/10	<0.80			ppbv	
		Chloroform	2011/06/10	<0.15			ppbv	
Carbon Tetrachloride	2011/06/10	<0.30			ppbv			
1,1-Dichloroethane	2011/06/10	<0.20			ppbv			
1,2-Dichloroethane	2011/06/10	<0.20			ppbv			
Ethylene Dibromide	2011/06/10	<0.17			ppbv			
1,1,1-Trichloroethane	2011/06/10	<0.30			ppbv			
1,1,2-Trichloroethane	2011/06/10	<0.15			ppbv			
1,1,2,2-Tetrachloroethane	2011/06/10	<0.20			ppbv			
cis-1,3-Dichloropropene	2011/06/10	<0.18			ppbv			
trans-1,3-Dichloropropene	2011/06/10	<0.17			ppbv			
1,2-Dichloropropane	2011/06/10	<0.40			ppbv			
Bromomethane	2011/06/10	<0.18			ppbv			
Bromoform	2011/06/10	<0.20			ppbv			
Bromodichloromethane	2011/06/10	<0.20			ppbv			
Dibromochloromethane	2011/06/10	<0.20			ppbv			
Heptane	2011/06/10	<0.30			ppbv			

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB182250

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2519158	DVO	Method Blank					
		Trichloroethylene	2011/06/10	<0.30		ppbv	
		Tetrachloroethylene	2011/06/10	<0.20		ppbv	
		Benzene	2011/06/10	<0.18		ppbv	
		Toluene	2011/06/10	<0.20		ppbv	
		Ethylbenzene	2011/06/10	<0.20		ppbv	
		p+m-Xylene	2011/06/10	<0.37		ppbv	
		o-Xylene	2011/06/10	<0.20		ppbv	
		Styrene	2011/06/10	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/10	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/10	<0.50		ppbv	
		4-ethyltoluene	2011/06/10	<2.2		ppbv	
		Chlorobenzene	2011/06/10	<0.20		ppbv	
		Benzyl chloride	2011/06/10	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/10	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/10	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/10	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/10	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/10	<3.0		ppbv	
		Hexane	2011/06/10	<0.30		ppbv	
		Cyclohexane	2011/06/10	<0.20		ppbv	
		Tetrahydrofuran	2011/06/10	<0.40		ppbv	
		1,4-Dioxane	2011/06/10	<2.0		ppbv	
		Xylene (Total)	2011/06/10	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: S1903
Station ID: Lica 1 Canister Installation Date/Time: Jun 06, 2011 @ 10:28 mst
Field Sample ID: LICA VOC/ CLS /Jun 08,11 Canister Removal Date/Time: Jun 09, 2011 @ 7:20 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jun-11	06/08/2011 0:00	06/09/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	22

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06232

Technician Signiture: Ting Xu



Your C.O.C. #: 06232

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B184925

Received: 2011/06/11, 11:05

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B184925
 Report Date: 2011/06/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		JU7515	JU7516	
Sampling Date		2011/06/08	2011/06/08	
COC Number		06232	06232	
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	LICA VOC/ PORT/ JUNE 08,11 - S2383	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2522014
QC Batch = Quality Control Batch				

Maxxam Job #: B184925
 Report Date: 2011/06/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JU7515			JU7516				
Sampling Date		2011/06/08			2011/06/08				
COC Number		06232			06232				
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	ug/m3	DL (ug/m3)	LICA VOC/ PORT/ JUNE 08,11 - S2383	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2522106
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2522106
Propene	ppbv	0.55	0.949	0.516	<0.30	0.30	<0.516	0.516	2522106
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2522106
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2522106
Dichlorodifluoromethane (FREON 12)	ppbv	0.64	3.18	0.989	0.63	0.20	3.12	0.989	2522106
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2522106
Chloromethane	ppbv	0.57	1.18	0.620	0.54	0.30	1.13	0.620	2522106
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2522106
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2522106
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2522106
Trichlorofluoromethane (FREON 11)	ppbv	0.31	1.75	1.12	0.32	0.20	1.78	1.12	2522106
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2522106
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2522106
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2522106
2-Propanone	ppbv	4.11	9.77	1.90	1.76	0.80	4.19	1.90	2522106
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2522106
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2522106
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2522106
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2522106
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2522106
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2522106
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2522106
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2522106
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2522106
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2522106
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2522106
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2522106
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2522106
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2522106

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B184925
 Report Date: 2011/06/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JU7515			JU7516				
Sampling Date		2011/06/08			2011/06/08				
COC Number		06232			06232				
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	ug/m3	DL (ug/m3)	LICA VOC/ PORT/ JUNE 08,11 - S2383	RDL	ug/m3	DL (ug/m3)	QC Batch

1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2522106
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2522106
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2522106
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2522106
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2522106
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2522106
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2522106
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2522106
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2522106
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2522106
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2522106
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2522106
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2522106
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2522106
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2522106
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2522106
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2522106
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2522106
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2522106
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2522106
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2522106
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2522106
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2522106
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2522106
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2522106
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2522106
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2522106
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2522106
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2522106
Hexane	ppbv	<0.30	<1.06	1.06	0.42	0.30	1.49	1.06	2522106
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.63	0.20	2.18	0.688	2522106
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2522106

QC Batch = Quality Control Batch

Maxxam Job #: B184925
 Report Date: 2011/06/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JU7515			JU7516				
Sampling Date		2011/06/08			2011/06/08				
COC Number		06232			06232				
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	ug/m3	DL (ug/m3)	LICA VOC/ PORT/ JUNE 08,11 - S2383	RDL	ug/m3	DL (ug/m3)	QC Batch

1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2522106
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2522106
Surrogate Recovery (%)									
Bromochloromethane	%	76	N/A	N/A	73		N/A	N/A	2522106
D5-Chlorobenzene	%	76	N/A	N/A	72		N/A	N/A	2522106
Difluorobenzene	%	75	N/A	N/A	73		N/A	N/A	2522106

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B184925
Report Date: 2011/06/16

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	Spiked Blank	Bromochloromethane	2011/06/15		96	%	60 - 140
		D5-Chlorobenzene	2011/06/15		99	%	60 - 140
		Difluorobenzene	2011/06/15		98	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/15		97	%	70 - 130
		Carbon Disulfide	2011/06/15		96	%	70 - 130
		Propene	2011/06/15		97	%	70 - 130
		Vinyl Acetate	2011/06/15		98	%	70 - 130
		Vinyl Bromide	2011/06/15		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/15		109	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/15		122	%	70 - 130
		Chloromethane	2011/06/15		107	%	70 - 130
		Vinyl Chloride	2011/06/15		106	%	70 - 130
		Chloroethane	2011/06/15		102	%	70 - 130
		1,3-Butadiene	2011/06/15		103	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/15		108	%	70 - 130
		Trichlorotrifluoroethane	2011/06/15		105	%	70 - 130
		Ethanol	2011/06/15		95	%	70 - 130
		2-propanol	2011/06/15		116	%	70 - 130
		2-Propanone	2011/06/15		113	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/15		105	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/15		102	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/15		100	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/15		101	%	70 - 130
		Ethyl Acetate	2011/06/15		103	%	70 - 130
		1,1-Dichloroethylene	2011/06/15		108	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/15		104	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/15		102	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/15		96	%	70 - 130
		Chloroform	2011/06/15		107	%	70 - 130
		Carbon Tetrachloride	2011/06/15		106	%	70 - 130
		1,1-Dichloroethane	2011/06/15		104	%	70 - 130
		1,2-Dichloroethane	2011/06/15		109	%	70 - 130
		Ethylene Dibromide	2011/06/15		97	%	70 - 130
		1,1,1-Trichloroethane	2011/06/15		106	%	70 - 130
		1,1,2-Trichloroethane	2011/06/15		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/15		97	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/15		102	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/15		95	%	70 - 130
		1,2-Dichloropropane	2011/06/15		105	%	70 - 130
		Bromomethane	2011/06/15		105	%	70 - 130
		Bromoform	2011/06/15		99	%	70 - 130
		Bromodichloromethane	2011/06/15		104	%	70 - 130
		Dibromochloromethane	2011/06/15		106	%	70 - 130
		Heptane	2011/06/15		102	%	70 - 130
		Trichloroethylene	2011/06/15		100	%	70 - 130
		Tetrachloroethylene	2011/06/15		102	%	70 - 130
		Benzene	2011/06/15		102	%	70 - 130
		Toluene	2011/06/15		102	%	70 - 130
		Ethylbenzene	2011/06/15		101	%	70 - 130
		p+m-Xylene	2011/06/15		100	%	70 - 130
		o-Xylene	2011/06/15		101	%	70 - 130
		Styrene	2011/06/15		95	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/15		98	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/15		95	%	70 - 130
		4-ethyltoluene	2011/06/15		98	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	Spiked Blank	Chlorobenzene	2011/06/15		96	%	70 - 130
		Benzyl chloride	2011/06/15		81	%	70 - 130
		1,3-Dichlorobenzene	2011/06/15		84	%	70 - 130
		1,4-Dichlorobenzene	2011/06/15		77	%	70 - 130
		1,2-Dichlorobenzene	2011/06/15		84	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/15		67 (1)	%	70 - 130
		Hexachlorobutadiene	2011/06/15		86	%	70 - 130
		Hexane	2011/06/15		99	%	70 - 130
		Cyclohexane	2011/06/15		100	%	70 - 130
		Tetrahydrofuran	2011/06/15		103	%	70 - 130
		1,4-Dioxane	2011/06/15		103	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/15		77	%	60 - 140
		D5-Chlorobenzene	2011/06/15		76	%	60 - 140
		Difluorobenzene	2011/06/15		77	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/15	<0.20		ppbv	
		Carbon Disulfide	2011/06/15	<0.50		ppbv	
		Propene	2011/06/15	<0.30		ppbv	
		Vinyl Acetate	2011/06/15	<0.20		ppbv	
		Vinyl Bromide	2011/06/15	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/15	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/15	<0.17		ppbv	
		Chloromethane	2011/06/15	<0.30		ppbv	
		Vinyl Chloride	2011/06/15	<0.18		ppbv	
		Chloroethane	2011/06/15	<0.30		ppbv	
		1,3-Butadiene	2011/06/15	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/15	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/15	<0.15		ppbv	
		Ethanol	2011/06/15	<2.3		ppbv	
		2-propanol	2011/06/15	<3.0		ppbv	
		2-Propanone	2011/06/15	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/15	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/15	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/15	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/15	<0.20		ppbv	
		Ethyl Acetate	2011/06/15	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/15	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/15	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/15	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/15	<0.80		ppbv	
		Chloroform	2011/06/15	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/15	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/15	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/15	<0.20		ppbv	
		Ethylene Dibromide	2011/06/15	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/15	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/15	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/15	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/15	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/15	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/15	<0.40		ppbv	
		Bromomethane	2011/06/15	<0.18		ppbv	
		Bromoform	2011/06/15	<0.20		ppbv	
		Bromodichloromethane	2011/06/15	<0.20		ppbv	
		Dibromochloromethane	2011/06/15	<0.20		ppbv	
		Heptane	2011/06/15	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	Method Blank	Trichloroethylene	2011/06/15	<0.30		ppbv	
		Tetrachloroethylene	2011/06/15	<0.20		ppbv	
		Benzene	2011/06/15	<0.18		ppbv	
		Toluene	2011/06/15	<0.20		ppbv	
		Ethylbenzene	2011/06/15	<0.20		ppbv	
		p+m-Xylene	2011/06/15	<0.37		ppbv	
		o-Xylene	2011/06/15	<0.20		ppbv	
		Styrene	2011/06/15	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/15	<0.50		ppbv	
		4-ethyltoluene	2011/06/15	<2.2		ppbv	
		Chlorobenzene	2011/06/15	<0.20		ppbv	
		Benzyl chloride	2011/06/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/15	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/15	<3.0		ppbv	
		Hexane	2011/06/15	<0.30		ppbv	
		Cyclohexane	2011/06/15	<0.20		ppbv	
		Tetrahydrofuran	2011/06/15	<0.40		ppbv	
		1,4-Dioxane	2011/06/15	<2.0		ppbv	
		Xylene (Total)	2011/06/15	<0.60		ppbv	
	RPD - Sample/Sample Dup	Carbon Disulfide	2011/06/15	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/06/15	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/06/15	NC		%	25
		Chloromethane	2011/06/15	NC		%	25
		Vinyl Chloride	2011/06/15	NC		%	25
		Chloroethane	2011/06/15	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/06/15	NC		%	25
		Trichlorotrifluoroethane	2011/06/15	NC		%	25
		Ethanol	2011/06/15	NC		%	25
		2-propanol	2011/06/15	NC		%	25
		2-Propanone	2011/06/15	1.5		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/06/15	NC		%	25
		Methyl Isobutyl Ketone	2011/06/15	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/06/15	NC		%	25
		Ethyl Acetate	2011/06/15	NC		%	25
		1,1-Dichloroethylene	2011/06/15	NC		%	25
		cis-1,2-Dichloroethylene	2011/06/15	NC		%	25
		trans-1,2-Dichloroethylene	2011/06/15	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/06/15	NC		%	25
		Chloroform	2011/06/15	NC		%	25
		Carbon Tetrachloride	2011/06/15	NC		%	25
		1,1-Dichloroethane	2011/06/15	NC		%	25
		1,2-Dichloroethane	2011/06/15	NC		%	25
		Ethylene Dibromide	2011/06/15	NC		%	25
		1,1,1-Trichloroethane	2011/06/15	NC		%	25
		1,1,2-Trichloroethane	2011/06/15	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/06/15	NC		%	25
		cis-1,3-Dichloropropene	2011/06/15	NC		%	25
		trans-1,3-Dichloropropene	2011/06/15	NC		%	25
		1,2-Dichloropropane	2011/06/15	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	RPD - Sample/Sample Dup	Bromomethane	2011/06/15	NC		%	25
		Bromoform	2011/06/15	NC		%	25
		Heptane	2011/06/15	NC		%	25
		Trichloroethylene	2011/06/15	NC		%	25
		Tetrachloroethylene	2011/06/15	NC		%	25
		Benzene	2011/06/15	NC		%	25
		Toluene	2011/06/15	NC		%	25
		Ethylbenzene	2011/06/15	NC		%	25
		p+m-Xylene	2011/06/15	NC		%	25
		o-Xylene	2011/06/15	NC		%	25
		Styrene	2011/06/15	NC		%	25
		1,3,5-Trimethylbenzene	2011/06/15	NC		%	25
		1,2,4-Trimethylbenzene	2011/06/15	NC		%	25
		Chlorobenzene	2011/06/15	NC		%	25
		1,4-Dichlorobenzene	2011/06/15	NC		%	25
		1,2-Dichlorobenzene	2011/06/15	NC		%	25
		1,2,4-Trichlorobenzene	2011/06/15	NC		%	25
		Hexachlorobutadiene	2011/06/15	NC		%	25
		Hexane	2011/06/15	NC		%	25
		Cyclohexane	2011/06/15	NC		%	25
		Tetrahydrofuran	2011/06/15	NC		%	25
		1,4-Dioxane	2011/06/15	NC		%	25
		Xylene (Total)	2011/06/15	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7867
Station ID: Lica 1 Canister Installation Date/Time: Jun 13, 2011 @ 7:50 mst
Field Sample ID: LICA VOC/ CLS /Jun 14,11 Canister Removal Date/Time: Jun 15, 2011 @ 7:51 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jun-11	06/14/2011 0:00	06/15/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06298

Technician Signiture: Ting Xu



Your C.O.C. #: 06298

Attention: Michael Bisaga

Maxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B188404

Received: 2011/06/17, 09:05

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/20	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/20	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B188404
 Report Date: 2011/06/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		JW3623	JW3624	
Sampling Date		2011/06/14	2011/06/14	
COC Number		06298	06298	
	Units	LICA VOC/CLS/JUNE 14,11 - 7867	LICA VOC/PORT/JUNE 14,11 - 7830	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2527184

QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3623				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/CLS/JUNE 14,11 - 7867	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2527182
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2527182
Propene	ppbv	<0.30	0.30	<0.516	0.516	2527182
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2527182
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2527182
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.23	0.989	2527182
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2527182
Chloromethane	ppbv	0.63	0.30	1.29	0.620	2527182
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2527182
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2527182
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2527182
Trichlorofluoromethane (FREON 11)	ppbv	0.37	0.20	2.08	1.12	2527182
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2527182
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2527182
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2527182
2-Propanone	ppbv	3.38	0.80	8.02	1.90	2527182
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2527182
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2527182
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2527182
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2527182
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2527182
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2527182
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2527182
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2527182
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2527182
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2527182
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2527182
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2527182
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2527182

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3623				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/CLS/JUNE 14,11 - 7867	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2527182
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2527182
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2527182
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2527182
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2527182
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2527182
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2527182
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2527182
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2527182
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2527182
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2527182
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2527182
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2527182
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2527182
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2527182
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2527182
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2527182
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2527182
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2527182
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2527182
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2527182
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2527182
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2527182
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2527182
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2527182
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2527182
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2527182
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2527182
QC Batch = Quality Control Batch						

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3623				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/CLS/JUNE				
		14,11 - 7867				

Surrogate Recovery (%)						
Bromochloromethane	%	78		N/A	N/A	2527182
D5-Chlorobenzene	%	77		N/A	N/A	2527182
Difluorobenzene	%	79		N/A	N/A	2527182

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3624				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/PORT/JUNE 14,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2527182
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2527182
Propene	ppbv	<0.30	0.30	<0.516	0.516	2527182
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2527182
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2527182
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.19	0.989	2527182
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2527182
Chloromethane	ppbv	0.70	0.30	1.44	0.620	2527182
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2527182
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2527182
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2527182
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.73	1.12	2527182
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2527182
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2527182
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2527182
2-Propanone	ppbv	3.42	0.80	8.12	1.90	2527182
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2527182
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2527182
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2527182
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2527182
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2527182
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2527182
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2527182
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2527182
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2527182
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2527182
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2527182
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2527182
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2527182
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3624				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/PORT/JUNE 14,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2527182
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2527182
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2527182
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2527182
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2527182
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2527182
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2527182
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2527182
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2527182
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2527182
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2527182
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2527182
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2527182
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2527182
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2527182
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2527182
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2527182
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2527182
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2527182
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2527182
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2527182
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2527182
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2527182
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2527182
Cyclohexane	ppbv	0.41	0.20	1.41	0.688	2527182
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2527182
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2527182
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2527182
QC Batch = Quality Control Batch						

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3624				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JUNE				
		14,11 - 7830				

Surrogate Recovery (%)						
Bromochloromethane	%	78		N/A	N/A	2527182
D5-Chlorobenzene	%	76		N/A	N/A	2527182
Difluorobenzene	%	78		N/A	N/A	2527182

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B188404
Report Date: 2011/06/24

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB188404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2527182 VEA	Spiked Blank	Bromochloromethane	2011/06/20		100	%	60 - 140
		D5-Chlorobenzene	2011/06/20		101	%	60 - 140
		Difluorobenzene	2011/06/20		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/20		105	%	70 - 130
		Carbon Disulfide	2011/06/20		93	%	70 - 130
		Propene	2011/06/20		98	%	70 - 130
		Vinyl Acetate	2011/06/20		109	%	70 - 130
		Vinyl Bromide	2011/06/20		123	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/20		99	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/20		123	%	70 - 130
		Chloromethane	2011/06/20		110	%	70 - 130
		Vinyl Chloride	2011/06/20		103	%	70 - 130
		Chloroethane	2011/06/20		118	%	70 - 130
		1,3-Butadiene	2011/06/20		113	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/20		102	%	70 - 130
		Trichlorotrifluoroethane	2011/06/20		105	%	70 - 130
		Ethanol	2011/06/20		116	%	70 - 130
		2-propanol	2011/06/20		98	%	70 - 130
		2-Propanone	2011/06/20		100	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/20		118	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/20		99	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/20		102	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/20		107	%	70 - 130
		Ethyl Acetate	2011/06/20		109	%	70 - 130
		1,1-Dichloroethylene	2011/06/20		100	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/20		101	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/20		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/20		95	%	70 - 130
		Chloroform	2011/06/20		106	%	70 - 130
		Carbon Tetrachloride	2011/06/20		95	%	70 - 130
		1,1-Dichloroethane	2011/06/20		108	%	70 - 130
		1,2-Dichloroethane	2011/06/20		103	%	70 - 130
		Ethylene Dibromide	2011/06/20		99	%	70 - 130
		1,1,1-Trichloroethane	2011/06/20		97	%	70 - 130
		1,1,2-Trichloroethane	2011/06/20		101	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/20		99	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/20		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/20		98	%	70 - 130
		1,2-Dichloropropane	2011/06/20		102	%	70 - 130
		Bromomethane	2011/06/20		117	%	70 - 130
		Bromoform	2011/06/20		122	%	70 - 130
		Bromodichloromethane	2011/06/20		110	%	70 - 130
		Dibromochloromethane	2011/06/20		115	%	70 - 130
		Heptane	2011/06/20		111	%	70 - 130
		Trichloroethylene	2011/06/20		95	%	70 - 130
		Tetrachloroethylene	2011/06/20		101	%	70 - 130
		Benzene	2011/06/20		100	%	70 - 130
		Toluene	2011/06/20		100	%	70 - 130
		Ethylbenzene	2011/06/20		100	%	70 - 130
		p+m-Xylene	2011/06/20		98	%	70 - 130
		o-Xylene	2011/06/20		99	%	70 - 130
		Styrene	2011/06/20		91	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/20		94	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/20		91	%	70 - 130
		4-ethyltoluene	2011/06/20		120	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB188404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2527182 VEA	Spiked Blank	Chlorobenzene	2011/06/20		100	%	70 - 130
		Benzyl chloride	2011/06/20		109	%	70 - 130
		1,3-Dichlorobenzene	2011/06/20		95	%	70 - 130
		1,4-Dichlorobenzene	2011/06/20		99	%	70 - 130
		1,2-Dichlorobenzene	2011/06/20		94	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/20		85	%	70 - 130
		Hexachlorobutadiene	2011/06/20		88	%	70 - 130
		Hexane	2011/06/20		114	%	70 - 130
		Cyclohexane	2011/06/20		103	%	70 - 130
		Tetrahydrofuran	2011/06/20		107	%	70 - 130
		1,4-Dioxane	2011/06/20		99	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/20		80	%	60 - 140
		D5-Chlorobenzene	2011/06/20		79	%	60 - 140
		Difluorobenzene	2011/06/20		81	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/20	<0.20		ppbv	
		Carbon Disulfide	2011/06/20	<0.50		ppbv	
		Propene	2011/06/20	<0.30		ppbv	
		Vinyl Acetate	2011/06/20	<0.20		ppbv	
		Vinyl Bromide	2011/06/20	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/20	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/20	<0.17		ppbv	
		Chloromethane	2011/06/20	<0.30		ppbv	
		Vinyl Chloride	2011/06/20	<0.18		ppbv	
		Chloroethane	2011/06/20	<0.30		ppbv	
		1,3-Butadiene	2011/06/20	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/20	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/20	<0.15		ppbv	
		Ethanol	2011/06/20	<2.3		ppbv	
		2-propanol	2011/06/20	<3.0		ppbv	
		2-Propanone	2011/06/20	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/20	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/20	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/20	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/20	<0.20		ppbv	
		Ethyl Acetate	2011/06/20	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/20	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/20	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/20	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/20	<0.80		ppbv	
		Chloroform	2011/06/20	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/20	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/20	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/20	<0.20		ppbv	
		Ethylene Dibromide	2011/06/20	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/20	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/20	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/20	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/20	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/20	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/20	<0.40		ppbv	
		Bromomethane	2011/06/20	<0.18		ppbv	
		Bromoform	2011/06/20	<0.20		ppbv	
		Bromodichloromethane	2011/06/20	<0.20		ppbv	
		Dibromochloromethane	2011/06/20	<0.20		ppbv	
		Heptane	2011/06/20	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB188404

QA/QC Batch				Date Analyzed				
Num Init	QC Type	Parameter		yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2527182	VEA	Method Blank	Trichloroethylene	2011/06/20	<0.30		ppbv	
			Tetrachloroethylene	2011/06/20	<0.20		ppbv	
			Benzene	2011/06/20	<0.18		ppbv	
			Toluene	2011/06/20	<0.20		ppbv	
			Ethylbenzene	2011/06/20	<0.20		ppbv	
			p+m-Xylene	2011/06/20	<0.37		ppbv	
			o-Xylene	2011/06/20	<0.20		ppbv	
			Styrene	2011/06/20	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2011/06/20	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2011/06/20	<0.50		ppbv	
			4-ethyltoluene	2011/06/20	<2.2		ppbv	
			Chlorobenzene	2011/06/20	<0.20		ppbv	
			Benzyl chloride	2011/06/20	<1.0		ppbv	
			1,3-Dichlorobenzene	2011/06/20	<0.40		ppbv	
			1,4-Dichlorobenzene	2011/06/20	<0.40		ppbv	
			1,2-Dichlorobenzene	2011/06/20	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2011/06/20	<2.0		ppbv	
			Hexachlorobutadiene	2011/06/20	<3.0		ppbv	
			Hexane	2011/06/20	<0.30		ppbv	
			Cyclohexane	2011/06/20	<0.20		ppbv	
			Tetrahydrofuran	2011/06/20	<0.40		ppbv	
			1,4-Dioxane	2011/06/20	<2.0		ppbv	
			Xylene (Total)	2011/06/20	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7832
Station ID: Lica 1 Canister Installation Date/Time: Jun 17, 2011 @ 15:53 mst
Field Sample ID: LICA VOC/ CLS /Jun 20,11 Canister Removal Date/Time: Jun 22, 2011 @ 7:24 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jun-11	06/20/2011 0:00	06/21/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21.5

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06365

Technician Signiture: Ting Xu_____

Your C.O.C. #: 06365

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/07/06

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B192834****Received: 2011/06/24, 09:30**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/28	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/28	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

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Maxxam Job #: B192834
 Report Date: 2011/07/06

RESULTS OF ANALYSES OF AIR

Maxxam ID		JY5270	JY5271	
Sampling Date		2011/06/20	2011/06/20	
COC Number		06365	06365	
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	LICA VOC/PORT/ JUN 20,11 - 7849	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	20	2537734
QC Batch = Quality Control Batch				

Maxxam Job #: B192834
 Report Date: 2011/07/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JY5270			JY5271				
Sampling Date		2011/06/20			2011/06/20				
COC Number		06365			06365				
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JUN 20,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.40	<1.87	1.87	<0.40	0.40	<1.87	1.87	2537735
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2537735
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2537735
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2537735
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2537735
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	3.24	0.989	0.66	0.20	3.25	0.989	2537735
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2537735
Chloromethane	ppbv	0.50	1.02	0.620	0.50	0.30	1.03	0.620	2537735
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2537735
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2537735
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2537735
Trichlorofluoromethane (FREON 11)	ppbv	0.29	1.60	1.12	0.28	0.20	1.58	1.12	2537735
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2537735
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2537735
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2537735
2-Propanone	ppbv	3.76	8.94	1.90	5.80	0.80	13.8	1.90	2537735
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2537735
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2537735
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2537735
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2537735
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2537735
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2537735
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2537735
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2537735
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2537735
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2537735
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2537735
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2537735
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2537735
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2537735

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B192834
 Report Date: 2011/07/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JY5270			JY5271				
Sampling Date		2011/06/20			2011/06/20				
COC Number		06365			06365				
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JUN 20,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2537735
1,1,2-Trichloroethane	ppbv	<0.18	<0.982	0.982	<0.18	0.18	<0.982	0.982	2537735
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2537735
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2537735
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2537735
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2537735
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2537735
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2537735
Bromodichloromethane	ppbv	<3.2	<21.4	21.4	<3.2	3.2	<21.4	21.4	2537735
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2537735
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2537735
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2537735
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2537735
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2537735
Toluene	ppbv	0.29	1.11	0.753	<0.20	0.20	<0.753	0.753	2537735
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2537735
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2537735
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2537735
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2537735
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2537735
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2537735
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2537735
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2537735
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2537735
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2537735
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2537735
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2537735
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2537735
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2537735
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2537735
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2537735
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2537735

QC Batch = Quality Control Batch

Maxxam Job #: B192834
 Report Date: 2011/07/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JY5270			JY5271				
Sampling Date		2011/06/20			2011/06/20				
COC Number		06365			06365				
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JUN 20,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2537735
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2537735
Surrogate Recovery (%)									
Bromochloromethane	%	112	N/A	N/A	109		N/A	N/A	2537735
D5-Chlorobenzene	%	116	N/A	N/A	113		N/A	N/A	2537735
Difluorobenzene	%	115	N/A	N/A	114		N/A	N/A	2537735

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B192834
 Report Date: 2011/07/06

Test Summary

Maxxam ID JY5270 **Collected** 2011/06/20
Sample ID LICA VOC/CLS/ JUN 20,11 - 7832 **Shipped**
Matrix AIR **Received** 2011/06/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2537734	N/A	2011/06/28	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2537735	N/A	2011/06/28	VALERIE RANDALL

Maxxam ID JY5271 **Collected** 2011/06/20
Sample ID LICA VOC/PORT/ JUN 20,11 - 7849 **Shipped**
Matrix AIR **Received** 2011/06/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2537734	N/A	2011/06/28	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2537735	N/A	2011/06/28	VALERIE RANDALL

Maxxam Job #: B192834
Report Date: 2011/07/06

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB192834

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537735 VEA	Spiked Blank	Bromochloromethane	2011/06/28		98	%	60 - 140
		D5-Chlorobenzene	2011/06/28		98	%	60 - 140
		Difluorobenzene	2011/06/28		100	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/28		82	%	70 - 130
		Carbon Disulfide	2011/06/28		83	%	70 - 130
		Propene	2011/06/28		77	%	70 - 130
		Vinyl Acetate	2011/06/28		86	%	70 - 130
		Vinyl Bromide	2011/06/28		91	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/28		90	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/28		95	%	70 - 130
		Chloromethane	2011/06/28		85	%	70 - 130
		Vinyl Chloride	2011/06/28		86	%	70 - 130
		Chloroethane	2011/06/28		86	%	70 - 130
		1,3-Butadiene	2011/06/28		92	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/28		86	%	70 - 130
		Trichlorotrifluoroethane	2011/06/28		86	%	70 - 130
		Ethanol	2011/06/28		90	%	70 - 130
		2-propanol	2011/06/28		89	%	70 - 130
		2-Propanone	2011/06/28		79	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/28		86	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/28		79	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/28		83	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/28		90	%	70 - 130
		Ethyl Acetate	2011/06/28		86	%	70 - 130
		1,1-Dichloroethylene	2011/06/28		88	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/28		88	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/28		89	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/28		81	%	70 - 130
		Chloroform	2011/06/28		89	%	70 - 130
		Carbon Tetrachloride	2011/06/28		89	%	70 - 130
		1,1-Dichloroethane	2011/06/28		83	%	70 - 130
		1,2-Dichloroethane	2011/06/28		91	%	70 - 130
		Ethylene Dibromide	2011/06/28		88	%	70 - 130
		1,1,1-Trichloroethane	2011/06/28		87	%	70 - 130
		1,1,2-Trichloroethane	2011/06/28		86	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/28		80	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/28		88	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/28		91	%	70 - 130
		1,2-Dichloropropane	2011/06/28		84	%	70 - 130
		Bromomethane	2011/06/28		87	%	70 - 130
		Bromoform	2011/06/28		98	%	70 - 130
		Bromodichloromethane	2011/06/28		87	%	70 - 130
		Dibromochloromethane	2011/06/28		95	%	70 - 130
		Heptane	2011/06/28		73	%	70 - 130
		Trichloroethylene	2011/06/28		87	%	70 - 130
		Tetrachloroethylene	2011/06/28		88	%	70 - 130
		Benzene	2011/06/28		84	%	70 - 130
		Toluene	2011/06/28		84	%	70 - 130
		Ethylbenzene	2011/06/28		86	%	70 - 130
		p+m-Xylene	2011/06/28		84	%	70 - 130
		o-Xylene	2011/06/28		83	%	70 - 130
		Styrene	2011/06/28		93	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/28		84	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/28		83	%	70 - 130
		4-ethyltoluene	2011/06/28		85	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB192834

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537735 VEA	Spiked Blank	Chlorobenzene	2011/06/28		88	%	70 - 130
		Benzyl chloride	2011/06/28		97	%	70 - 130
		1,3-Dichlorobenzene	2011/06/28		89	%	70 - 130
		1,4-Dichlorobenzene	2011/06/28		90	%	70 - 130
		1,2-Dichlorobenzene	2011/06/28		84	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/28		84	%	70 - 130
		Hexachlorobutadiene	2011/06/28		73	%	70 - 130
		Hexane	2011/06/28		75	%	70 - 130
		Cyclohexane	2011/06/28		84	%	70 - 130
		Tetrahydrofuran	2011/06/28		89	%	70 - 130
		1,4-Dioxane	2011/06/28		90	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/28		113	%	60 - 140
		D5-Chlorobenzene	2011/06/28		117	%	60 - 140
		Difluorobenzene	2011/06/28		115	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/28	<0.40		ppbv	
		Carbon Disulfide	2011/06/28	<0.50		ppbv	
		Propene	2011/06/28	<0.30		ppbv	
		Vinyl Acetate	2011/06/28	<0.20		ppbv	
		Vinyl Bromide	2011/06/28	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/28	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/28	<0.17		ppbv	
		Chloromethane	2011/06/28	<0.30		ppbv	
		Vinyl Chloride	2011/06/28	<0.18		ppbv	
		Chloroethane	2011/06/28	<0.30		ppbv	
		1,3-Butadiene	2011/06/28	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/28	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/28	<0.15		ppbv	
		Ethanol	2011/06/28	<2.3		ppbv	
		2-propanol	2011/06/28	<3.0		ppbv	
		2-Propanone	2011/06/28	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/28	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/28	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/28	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/28	<0.20		ppbv	
		Ethyl Acetate	2011/06/28	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/28	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/28	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/28	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/28	<0.80		ppbv	
		Chloroform	2011/06/28	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/28	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/28	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/28	<0.20		ppbv	
		Ethylene Dibromide	2011/06/28	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/28	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/28	<0.18		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/28	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/28	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/28	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/28	<0.40		ppbv	
		Bromomethane	2011/06/28	<0.18		ppbv	
		Bromoform	2011/06/28	<0.20		ppbv	
		Bromodichloromethane	2011/06/28	<3.2		ppbv	
		Dibromochloromethane	2011/06/28	<0.20		ppbv	
		Heptane	2011/06/28	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB192834

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537735 VEA	Method Blank	Trichloroethylene	2011/06/28	<0.30		ppbv	
		Tetrachloroethylene	2011/06/28	<0.20		ppbv	
		Benzene	2011/06/28	<0.18		ppbv	
		Toluene	2011/06/28	<0.20		ppbv	
		Ethylbenzene	2011/06/28	<0.20		ppbv	
		p+m-Xylene	2011/06/28	<0.37		ppbv	
		o-Xylene	2011/06/28	<0.20		ppbv	
		Styrene	2011/06/28	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/28	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/28	<0.50		ppbv	
		4-ethyltoluene	2011/06/28	<2.2		ppbv	
		Chlorobenzene	2011/06/28	<0.20		ppbv	
		Benzyl chloride	2011/06/28	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/28	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/28	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/28	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/28	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/28	<3.0		ppbv	
		Hexane	2011/06/28	<0.30		ppbv	
		Cyclohexane	2011/06/28	<0.20		ppbv	
		Tetrahydrofuran	2011/06/28	<0.40		ppbv	
		1,4-Dioxane	2011/06/28	<2.0		ppbv	
		Xylene (Total)	2011/06/28	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7852
Station ID: Lica 1 Canister Installation Date/Time: Jun 23, 2011 @ 7:49 mst
Field Sample ID: LICA VOC/ CLS /Jun 26,11 Canister Removal Date/Time: Jun 27, 2011 @ 7:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jun-11	06/26/2011 0:00	06/27/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 05027

Technician Signiture: Ting Xu

Your C.O.C. #: 05027

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/07/12

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B197505****Received: 2011/06/29, 10:02**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/07	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/07	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 11

Maxxam Job #: B197505
 Report Date: 2011/07/12

RESULTS OF ANALYSES OF AIR

Maxxam ID		KA6926	KA6927	
Sampling Date		2011/06/26	2011/06/26	
COC Number		05027	05027	
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	LICA VOC/PORT/JUN 26,11 - 7820	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	20	2544739
QC Batch = Quality Control Batch				

Maxxam Job #: B197505
 Report Date: 2011/07/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KA6926			KA6927				
Sampling Date		2011/06/26			2011/06/26				
COC Number		05027			05027				
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	ug/m3	DL (ug/m3)	LICA VOC/PORT/JUN 26,11 - 7820	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2544751
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2544751
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2544751
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2544751
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2544751
Dichlorodifluoromethane (FREON 12)	ppbv	0.78	3.86	0.989	0.79	0.20	3.92	0.989	2544751
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2544751
Chloromethane	ppbv	0.68	1.40	0.620	0.70	0.30	1.45	0.620	2544751
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2544751
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2544751
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2544751
Trichlorofluoromethane (FREON 11)	ppbv	0.35	1.99	1.12	0.36	0.20	2.04	1.12	2544751
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2544751
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2544751
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2544751
2-Propanone	ppbv	3.85	9.14	1.90	3.80	0.80	9.02	1.90	2544751
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2544751
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2544751
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2544751
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2544751
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2544751
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2544751
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2544751
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2544751
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2544751
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2544751
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2544751
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2544751
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2544751
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2544751

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B197505
 Report Date: 2011/07/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KA6926			KA6927				
Sampling Date		2011/06/26			2011/06/26				
COC Number		05027			05027				
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	ug/m3	DL (ug/m3)	LICA VOC/PORT/JUN 26,11 - 7820	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2544751
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2544751
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2544751
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2544751
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2544751
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2544751
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2544751
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2544751
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2544751
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2544751
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2544751
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2544751
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2544751
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2544751
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2544751
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2544751
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2544751
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2544751
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2544751
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2544751
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2544751
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2544751
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2544751
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2544751
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2544751
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2544751
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2544751
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2544751
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2544751
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2544751
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.32	0.20	1.11	0.688	2544751
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2544751
QC Batch = Quality Control Batch									

Maxxam Job #: B197505
 Report Date: 2011/07/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KA6926			KA6927				
Sampling Date		2011/06/26			2011/06/26				
COC Number		05027			05027				
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	ug/m3	DL (ug/m3)	LICA VOC/PORT/JUN 26,11 - 7820	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2544751
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2544751
Surrogate Recovery (%)									
Bromochloromethane	%	87	N/A	N/A	86		N/A	N/A	2544751
D5-Chlorobenzene	%	94	N/A	N/A	93		N/A	N/A	2544751
Difluorobenzene	%	90	N/A	N/A	90		N/A	N/A	2544751
N/A = Not Applicable QC Batch = Quality Control Batch									

Maxxam Job #: B197505
Report Date: 2011/07/12

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	Spiked Blank	Bromochloromethane	2011/07/07		98	%	60 - 140
		D5-Chlorobenzene	2011/07/07		97	%	60 - 140
		Difluorobenzene	2011/07/07		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/07		99	%	70 - 130
		Carbon Disulfide	2011/07/07		93	%	70 - 130
		Propene	2011/07/07		90	%	70 - 130
		Vinyl Acetate	2011/07/07		96	%	70 - 130
		Vinyl Bromide	2011/07/07		103	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/07		99	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/07		115	%	70 - 130
		Chloromethane	2011/07/07		97	%	70 - 130
		Vinyl Chloride	2011/07/07		99	%	70 - 130
		Chloroethane	2011/07/07		99	%	70 - 130
		1,3-Butadiene	2011/07/07		82	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/07		99	%	70 - 130
		Trichlorotrifluoroethane	2011/07/07		99	%	70 - 130
		Ethanol	2011/07/07		91	%	70 - 130
		2-propanol	2011/07/07		93	%	70 - 130
		2-Propanone	2011/07/07		89	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/07		88	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/07		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/07		91	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/07		98	%	70 - 130
		Ethyl Acetate	2011/07/07		95	%	70 - 130
		1,1-Dichloroethylene	2011/07/07		97	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/07		96	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/07		99	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/07		89	%	70 - 130
		Chloroform	2011/07/07		99	%	70 - 130
		Carbon Tetrachloride	2011/07/07		103	%	70 - 130
		1,1-Dichloroethane	2011/07/07		100	%	70 - 130
		1,2-Dichloroethane	2011/07/07		98	%	70 - 130
		Ethylene Dibromide	2011/07/07		96	%	70 - 130
		1,1,1-Trichloroethane	2011/07/07		99	%	70 - 130
		1,1,2-Trichloroethane	2011/07/07		98	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/07		90	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/07		100	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/07		96	%	70 - 130
		1,2-Dichloropropane	2011/07/07		97	%	70 - 130
		Bromomethane	2011/07/07		102	%	70 - 130
		Bromoform	2011/07/07		112	%	70 - 130
		Bromodichloromethane	2011/07/07		102	%	70 - 130
		Dibromochloromethane	2011/07/07		108	%	70 - 130
		Heptane	2011/07/07		97	%	70 - 130
		Trichloroethylene	2011/07/07		100	%	70 - 130
		Tetrachloroethylene	2011/07/07		100	%	70 - 130
		Benzene	2011/07/07		98	%	70 - 130
		Toluene	2011/07/07		97	%	70 - 130
		Ethylbenzene	2011/07/07		99	%	70 - 130
		p+m-Xylene	2011/07/07		97	%	70 - 130
		o-Xylene	2011/07/07		98	%	70 - 130
		Styrene	2011/07/07		95	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/07		86	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/07		82	%	70 - 130
		4-ethyltoluene	2011/07/07		92	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	Spiked Blank	Chlorobenzene	2011/07/07		102	%	70 - 130
		Benzyl chloride	2011/07/07		84	%	70 - 130
		1,3-Dichlorobenzene	2011/07/07		86	%	70 - 130
		1,4-Dichlorobenzene	2011/07/07		87	%	70 - 130
		1,2-Dichlorobenzene	2011/07/07		82	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/07		114	%	70 - 130
		Hexachlorobutadiene	2011/07/07		109	%	70 - 130
		Hexane	2011/07/07		98	%	70 - 130
		Cyclohexane	2011/07/07		97	%	70 - 130
		Tetrahydrofuran	2011/07/07		95	%	70 - 130
		1,4-Dioxane	2011/07/07		96	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/07		92	%	60 - 140
		D5-Chlorobenzene	2011/07/07		94	%	60 - 140
		Difluorobenzene	2011/07/07		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/07	<0.20		ppbv	
		Carbon Disulfide	2011/07/07	<0.50		ppbv	
		Propene	2011/07/07	<0.30		ppbv	
		Vinyl Acetate	2011/07/07	<0.20		ppbv	
		Vinyl Bromide	2011/07/07	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/07	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/07	<0.17		ppbv	
		Chloromethane	2011/07/07	<0.30		ppbv	
		Vinyl Chloride	2011/07/07	<0.18		ppbv	
		Chloroethane	2011/07/07	<0.30		ppbv	
		1,3-Butadiene	2011/07/07	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/07	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/07	<0.15		ppbv	
		Ethanol	2011/07/07	<2.3		ppbv	
		2-propanol	2011/07/07	<3.0		ppbv	
		2-Propanone	2011/07/07	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/07	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/07	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/07	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/07	<0.20		ppbv	
		Ethyl Acetate	2011/07/07	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/07	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/07	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/07	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/07	<0.80		ppbv	
		Chloroform	2011/07/07	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/07	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/07	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/07	<0.20		ppbv	
		Ethylene Dibromide	2011/07/07	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/07	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/07	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/07	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/07	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/07	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/07	<0.40		ppbv	
		Bromomethane	2011/07/07	<0.18		ppbv	
		Bromoform	2011/07/07	<0.20		ppbv	
		Bromodichloromethane	2011/07/07	<0.20		ppbv	
		Dibromochloromethane	2011/07/07	<0.20		ppbv	
		Heptane	2011/07/07	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	Method Blank	Trichloroethylene	2011/07/07	<0.30		ppbv	
		Tetrachloroethylene	2011/07/07	<0.20		ppbv	
		Benzene	2011/07/07	<0.18		ppbv	
		Toluene	2011/07/07	<0.20		ppbv	
		Ethylbenzene	2011/07/07	<0.20		ppbv	
		p+m-Xylene	2011/07/07	<0.37		ppbv	
		o-Xylene	2011/07/07	<0.20		ppbv	
		Styrene	2011/07/07	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/07	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/07	<0.50		ppbv	
		4-ethyltoluene	2011/07/07	<2.2		ppbv	
		Chlorobenzene	2011/07/07	<0.20		ppbv	
		Benzyl chloride	2011/07/07	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/07	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/07	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/07	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/07	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/07	<3.0		ppbv	
		Hexane	2011/07/07	<0.30		ppbv	
		Cyclohexane	2011/07/07	<0.20		ppbv	
		Tetrahydrofuran	2011/07/07	<0.40		ppbv	
		1,4-Dioxane	2011/07/07	<2.0		ppbv	
		Xylene (Total)	2011/07/07	<0.60		ppbv	
	RPD - Sample/Sample Dup	Carbon Disulfide	2011/07/07	0.6		%	25
		Dichlorodifluoromethane (FREON 12)	2011/07/07	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/07/07	NC		%	25
		Chloromethane	2011/07/07	NC		%	25
		Vinyl Chloride	2011/07/07	NC		%	25
		Chloroethane	2011/07/07	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/07/07	NC		%	25
		Trichlorotrifluoroethane	2011/07/07	NC		%	25
		Ethanol	2011/07/07	NC		%	25
		2-propanol	2011/07/07	NC		%	25
		2-Propanone	2011/07/07	1.1		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/07/07	0.6		%	25
		Methyl Isobutyl Ketone	2011/07/07	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/07/07	NC		%	25
		Ethyl Acetate	2011/07/07	NC		%	25
		1,1-Dichloroethylene	2011/07/07	NC		%	25
		cis-1,2-Dichloroethylene	2011/07/07	NC		%	25
		trans-1,2-Dichloroethylene	2011/07/07	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/07/07	NC		%	25
		Chloroform	2011/07/07	0.5		%	25
		Carbon Tetrachloride	2011/07/07	NC		%	25
		1,1-Dichloroethane	2011/07/07	NC		%	25
		1,2-Dichloroethane	2011/07/07	NC		%	25
		Ethylene Dibromide	2011/07/07	NC		%	25
		1,1,1-Trichloroethane	2011/07/07	NC		%	25
		1,1,2-Trichloroethane	2011/07/07	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/07/07	NC		%	25
		cis-1,3-Dichloropropene	2011/07/07	NC		%	25
		trans-1,3-Dichloropropene	2011/07/07	NC		%	25
		1,2-Dichloropropane	2011/07/07	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	RPD - Sample/Sample Dup	Bromomethane	2011/07/07	NC		%	25
		Bromoform	2011/07/07	NC		%	25
		Heptane	2011/07/07	NC		%	25
		Trichloroethylene	2011/07/07	NC		%	25
		Tetrachloroethylene	2011/07/07	1.7		%	25
		Benzene	2011/07/07	NC		%	25
		Toluene	2011/07/07	1.6		%	25
		Ethylbenzene	2011/07/07	4.0		%	25
		p+m-Xylene	2011/07/07	3.4		%	25
		o-Xylene	2011/07/07	2.5		%	25
		Styrene	2011/07/07	NC		%	25
		1,3,5-Trimethylbenzene	2011/07/07	1.4		%	25
		1,2,4-Trimethylbenzene	2011/07/07	1.3		%	25
		Chlorobenzene	2011/07/07	NC		%	25
		1,4-Dichlorobenzene	2011/07/07	2.0		%	25
		1,2-Dichlorobenzene	2011/07/07	NC		%	25
		1,2,4-Trichlorobenzene	2011/07/07	NC		%	25
		Hexachlorobutadiene	2011/07/07	NC		%	25
		Hexane	2011/07/07	NC		%	25
		Cyclohexane	2011/07/07	NC		%	25
		Tetrahydrofuran	2011/07/07	0.6		%	25
		1,4-Dioxane	2011/07/07	NC		%	25
		Xylene (Total)	2011/07/07	3.2		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jun 02,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jun 01, 2011 @ 6:55 mst
 Removal Date/Time: Jun 03, 2011 @ 7:40 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
02-Jun-11	06/02/2011 0:00	06/03/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
27-May-11	06-Jun-11	09-Jun-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
702	229	17.0	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 07626
GB160455 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jun 02, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07626

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B182355**

Received: 2011/06/08, 09:05

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/09	2011/06/21	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

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Maxxam Job #: B182355
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JT5615	JT5616		
Sampling Date		2011/06/02	2011/06/02		
COC Number		07626	07626		
	Units	LICA PUFF+QFF/CLS/JUN 02,11	LICA PUFF+QFF/PORT/JUN 02,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2514904
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2514904
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2514904
2-Methylantracene	ug	<0.10	<0.10	0.10	2514904
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2514904
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2514904
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2514904
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2514904
Acenaphthene	ug	<0.050	<0.050	0.050	2514904
Acenaphthylene	ug	<0.050	<0.050	0.050	2514904
Anthracene	ug	<0.050	<0.050	0.050	2514904
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2514904
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2514904
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2514904
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2514904
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2514904
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2514904
Benzo(g,h,i)perylene	ug	0.068	<0.050	0.050	2514904
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2514904
Biphenyl	ug	<0.10	<0.10	0.10	2514904
Chrysene	ug	<0.050	<0.050	0.050	2514904
Coronene	ug	<0.10	<0.10	0.10	2514904
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2514904
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2514904
Fluoranthene	ug	0.074	<0.050	0.050	2514904
Fluorene	ug	0.106	<0.050	0.050	2514904
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2514904
m-Terphenyl	ug	<0.10	<0.10	0.10	2514904
Naphthalene	ug	0.092	0.100	0.072	2514904
o-Terphenyl	ug	<0.10	<0.10	0.10	2514904
Perylene	ug	<0.10	<0.10	0.10	2514904

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B182355
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JT5615	JT5616		
Sampling Date		2011/06/02	2011/06/02		
COC Number		07626	07626		
	Units	LICA PUFF+QFF/CLS/JUN 02,11	LICA PUFF+QFF/PORT/JUN 02,11	RDL	QC Batch

Phenanthrene	ug	0.464	0.118	0.050	2514904
p-Terphenyl	ug	<0.10	<0.10	0.10	2514904
Pyrene	ug	0.072	<0.050	0.050	2514904
Quinoline	ug	<0.40	<0.40	0.40	2514904
Tetralin	ug	<0.10	<0.10	0.10	2514904
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	76	82		2514904
D10-Fluoranthene	%	90	90		2514904
D10-Fluorene (FS)	%	6.2 (1)	6.8 (1)		2514904
D10-Phenanthrene	%	86	86		2514904
D12-Benzo(a)anthracene	%	94	94		2514904
D12-Benzo(a)pyrene	%	92	92		2514904
D12-Benzo(b)fluoranthene	%	88	90		2514904
D12-Benzo(ghi)perylene	%	96	92		2514904
D12-Benzo(k)fluoranthene	%	86	88		2514904
D12-Chrysene	%	80	82		2514904
D12-Indeno(1,2,3-cd)pyrene	%	100	94		2514904
D12-Perylene	%	102	102		2514904
D14-Dibenzo(a,h)anthracene	%	100	96		2514904
D14-Terphenyl (FS)	%	84	78		2514904
D8-Acenaphthylene	%	84	90		2514904
D8-Naphthalene	%	72	80		2514904

QC Batch = Quality Control Batch
 (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B182355
Report Date: 2011/06/24

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

9,10-Dimethylanthracene, 7,12-dimethylbenzo(a)anthracene and anthanthrene are above 25% RSD in continuing calibration.

Anthanthrene is above 25% RSD in continuing calibration.

Pyrene is statistically out of control at 88% recovery in the spike and at 85% recovery in the spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JT5615-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JT5616-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB182355

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2514904 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/21		76	%	50 - 150
		D10-Fluoranthene	2011/06/21		94	%	50 - 150
		D10-Phenanthrene	2011/06/21		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/21		94	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/21		102	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/21		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/21		94	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/21		88	%	50 - 150
		D12-Chrysene	2011/06/21		84	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/21		100	%	50 - 150
		D12-Perylene	2011/06/21		108	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/21		100	%	50 - 150
		D8-Acenaphthylene	2011/06/21		82	%	50 - 150
		D8-Naphthalene	2011/06/21		74	%	50 - 150
	RPD	Acenaphthene	2011/06/21	0.3		%	60 - 130
	Spiked Blank	Acenaphthene	2011/06/21			%	50
	RPD	Acenaphthylene	2011/06/21		77	%	60 - 130
	RPD	Acenaphthylene	2011/06/21	1.3		%	50
	Spiked Blank	Anthracene	2011/06/21		74	%	60 - 130
	RPD	Anthracene	2011/06/21	0		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/21		83	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/21	0.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/21		80	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/21	2.8		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/21		82	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/21	4.0		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/21		84	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/21	1.2		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/21		84	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/21	0.9		%	50
	Spiked Blank	Chrysene	2011/06/21		79	%	60 - 130
	RPD	Chrysene	2011/06/21	2.3		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/21		86	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/21	1.8		%	50
	Spiked Blank	Fluoranthene	2011/06/21		88	%	60 - 130
	RPD	Fluoranthene	2011/06/21	2.3		%	50
	Spiked Blank	Fluorene	2011/06/21		74	%	60 - 130
	RPD	Fluorene	2011/06/21	0.7		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/21		86	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/21	2.9		%	50
Spiked Blank	Naphthalene	2011/06/21		73	%	60 - 130	
RPD	Naphthalene	2011/06/21	2.4		%	50	
Spiked Blank	Phenanthrene	2011/06/21		77	%	60 - 130	
RPD	Phenanthrene	2011/06/21	1		%	50	
Spiked Blank	Pyrene	2011/06/21		88	%	60 - 130	
RPD	Pyrene	2011/06/21	3.5		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/06/21			86	%	50 - 150
	D10-Fluoranthene	2011/06/21			80	%	50 - 150
	D10-Phenanthrene	2011/06/21			78	%	50 - 150
	D12-Benzo(a)anthracene	2011/06/21			88	%	50 - 150
	D12-Benzo(a)pyrene	2011/06/21			92	%	50 - 150
	D12-Benzo(b)fluoranthene	2011/06/21			88	%	50 - 150
	D12-Benzo(ghi)perylene	2011/06/21			90	%	50 - 150
	D12-Benzo(k)fluoranthene	2011/06/21			88	%	50 - 150
	D12-Chrysene	2011/06/21			84	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB182355

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2514904 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/21		92	%	50 - 150
		D12-Perylene	2011/06/21		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/21		90	%	50 - 150
		D8-Acenaphthylene	2011/06/21		86	%	50 - 150
		D8-Naphthalene	2011/06/21		86	%	50 - 150
		1-Methylnaphthalene	2011/06/21	<0.10		ug	
		1-Methylphenanthrene	2011/06/21	<0.10		ug	
		2-Chloronaphthalene	2011/06/21	<0.10		ug	
		2-Methylantracene	2011/06/21	<0.10		ug	
		2-Methylnaphthalene	2011/06/21	<0.10		ug	
		3-Methylcholanthrene	2011/06/21	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/21	<0.10		ug	
		9,10-Dimethylantracene	2011/06/21	<0.40		ug	
		Acenaphthene	2011/06/21	<0.050		ug	
		Acenaphthylene	2011/06/21	<0.050		ug	
		Anthracene	2011/06/21	<0.050		ug	
		Benzo(a)anthracene	2011/06/21	<0.050		ug	
		Benzo(a)fluorene	2011/06/21	<0.10		ug	
		Benzo(a)pyrene	2011/06/21	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/21	<0.050		ug	
		Benzo(b)fluorene	2011/06/21	<0.10		ug	
		Benzo(e)pyrene	2011/06/21	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/21	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/21	<0.050		ug	
		Biphenyl	2011/06/21	<0.10		ug	
		Chrysene	2011/06/21	<0.050		ug	
		Coronene	2011/06/21	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/21	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/21	<0.20		ug	
		Fluoranthene	2011/06/21	<0.050		ug	
		Fluorene	2011/06/21	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/21	<0.050		ug	
		m-Terphenyl	2011/06/21	<0.10		ug	
		Naphthalene	2011/06/21	<0.072		ug	
		o-Terphenyl	2011/06/21	<0.10		ug	
		Perylene	2011/06/21	<0.10		ug	
		Phenanthrene	2011/06/21	<0.050		ug	
		p-Terphenyl	2011/06/21	<0.10		ug	
		Pyrene	2011/06/21	<0.050		ug	
		Quinoline	2011/06/21	<0.40		ug	
		Tetralin	2011/06/21	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jun 08,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jun 06, 2011 @ 10:39 mst
 Removal Date/Time: Jun 09, 2011 @ 7:30 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
08-Jun-11	06/08/2011 0:00	06/09/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
02-Jun-11	09-Jun-11	16-Jun-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
715	229	12.6	330.35

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 06233
GB176335 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jun 08, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06233

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B184928****Received: 2011/06/11, 10:00**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/15	2011/06/22	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

Page 1 of 7

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JU7523	JU7524		
Sampling Date		2011/06/08	2011/06/08		
COC Number		06233	06233		
	Units	LICA PUFF+QFF/CLS/ JUN 08,11	LICA PUFF+QFF/PORT/ JUN 08,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	0.16	0.10	2520242
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2520242
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2520242
2-Methylantracene	ug	<0.10	<0.10	0.10	2520242
2-Methylnaphthalene	ug	<0.10	0.38	0.10	2520242
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2520242
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2520242
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2520242
Acenaphthene	ug	<0.050	<0.050	0.050	2520242
Acenaphthylene	ug	<0.050	<0.050	0.050	2520242
Anthracene	ug	<0.050	<0.050	0.050	2520242
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2520242
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2520242
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2520242
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2520242
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2520242
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2520242
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2520242
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2520242
Biphenyl	ug	<0.10	<0.10	0.10	2520242
Chrysene	ug	<0.050	<0.050	0.050	2520242
Coronene	ug	<0.10	<0.10	0.10	2520242
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2520242
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2520242
Fluoranthene	ug	<0.050	0.066	0.050	2520242
Fluorene	ug	0.074	0.082	0.050	2520242
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2520242
m-Terphenyl	ug	<0.10	<0.10	0.10	2520242
Naphthalene	ug	0.082	0.158	0.072	2520242
o-Terphenyl	ug	<0.10	<0.10	0.10	2520242
Perylene	ug	<0.10	<0.10	0.10	2520242

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JU7523	JU7524		
Sampling Date		2011/06/08	2011/06/08		
COC Number		06233	06233		
	Units	LICA PUFF+QFF/CLS/ JUN 08,11	LICA PUFF+QFF/PORT/ JUN 08,11	RDL	QC Batch

Phenanthrene	ug	0.316	0.176	0.050	2520242
p-Terphenyl	ug	<0.10	<0.10	0.10	2520242
Pyrene	ug	<0.050	<0.050	0.050	2520242
Quinoline	ug	<0.40	<0.40	0.40	2520242
Tetralin	ug	<0.10	<0.10	0.10	2520242
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	60	70		2520242
D10-Fluoranthene	%	98	98		2520242
D10-Fluorene (FS)	%	8.4 (1)	8.8 (1)		2520242
D10-Phenanthrene	%	90	90		2520242
D12-Benzo(a)anthracene	%	104	104		2520242
D12-Benzo(a)pyrene	%	98	98		2520242
D12-Benzo(b)fluoranthene	%	96	98		2520242
D12-Benzo(ghi)perylene	%	98	100		2520242
D12-Benzo(k)fluoranthene	%	92	94		2520242
D12-Chrysene	%	88	90		2520242
D12-Indeno(1,2,3-cd)pyrene	%	102	104		2520242
D12-Perylene	%	104	104		2520242
D14-Dibenzo(a,h)anthracene	%	102	106		2520242
D14-Terphenyl (FS)	%	88	89		2520242
D8-Acenaphthylene	%	72	78		2520242
D8-Naphthalene	%	56	66		2520242

QC Batch = Quality Control Batch
 (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B184928
 Report Date: 2011/06/24

Test Summary

Maxxam ID JU7523 **Collected** 2011/06/08
Sample ID LICA PUFF+QFF/CLS/ JUN 08,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2520242	2011/06/15	2011/06/22	JIE WU

Maxxam ID JU7524 **Collected** 2011/06/08
Sample ID LICA PUFF+QFF/PORT/ JUN 08,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2520242	2011/06/15	2011/06/22	JIE WU

Maxxam Job #: B184928
Report Date: 2011/06/24

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Anthanthrene is above 25% RSD in continuing calibration.

9,10-Dimethylantracene and anthanthrene are above 25% RSD in continuing calibration.

Low recovery of naphthalene in spike and spike:dup. Suspect low on hotplate due to acceptable recovery in mspike.

Low recovery of acenaphthene in spike.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JU7523-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JU7524-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB184928

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2520242 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/22		62	%	50 - 150
		D10-Fluoranthene	2011/06/22		94	%	50 - 150
		D10-Phenanthrene	2011/06/22		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		102	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		104	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		98	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		100	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		96	%	50 - 150
		D12-Chrysene	2011/06/22		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/22		104	%	50 - 150
		D12-Perylene	2011/06/22		112	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		104	%	50 - 150
		D8-Acenaphthylene	2011/06/22		68	%	50 - 150
		D8-Naphthalene	2011/06/22		62	%	50 - 150
		Acenaphthene	2011/06/22		60 (1)	%	60 - 130
	RPD	Acenaphthene	2011/06/22	4.5		%	50
	Spiked Blank	Acenaphthylene	2011/06/22		62	%	60 - 130
	RPD	Acenaphthylene	2011/06/22	4.4		%	50
	Spiked Blank	Anthracene	2011/06/22		68	%	60 - 130
	RPD	Anthracene	2011/06/22	4.1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/22		86	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/22	4.8		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/22		80	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/22	3.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/22		87	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/22	7.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/22		84	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/22	3.9		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/22		87	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/22	3.1		%	50
	Spiked Blank	Chrysene	2011/06/22		83	%	60 - 130
	RPD	Chrysene	2011/06/22	1.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/22		85	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/22	4.2		%	50
	Spiked Blank	Fluoranthene	2011/06/22		85	%	60 - 130
	RPD	Fluoranthene	2011/06/22	4.2		%	50
	Spiked Blank	Fluorene	2011/06/22		63	%	60 - 130
	RPD	Fluorene	2011/06/22	2.8		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/22		86	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/22	4.1		%	50
	Spiked Blank	Naphthalene	2011/06/22		58 (1)	%	60 - 130
	RPD	Naphthalene	2011/06/22	3.0		%	50
	Spiked Blank	Phenanthrene	2011/06/22		72	%	60 - 130
	RPD	Phenanthrene	2011/06/22	3.2		%	50
	Spiked Blank	Pyrene	2011/06/22		85	%	60 - 130
	RPD	Pyrene	2011/06/22	4.8		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/06/22		74	%	50 - 150
		D10-Fluoranthene	2011/06/22		90	%	50 - 150
		D10-Phenanthrene	2011/06/22		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		94	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		92	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		92	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		88	%	50 - 150
		D12-Chrysene	2011/06/22		86	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184928

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2520242	JIW	Method Blank					
		D12-Indeno(1,2,3-cd)pyrene	2011/06/22		96	%	50 - 150
		D12-Perylene	2011/06/22		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		94	%	50 - 150
		D8-Acenaphthylene	2011/06/22		78	%	50 - 150
		D8-Naphthalene	2011/06/22		74	%	50 - 150
		1-Methylnaphthalene	2011/06/22	<0.10		ug	
		1-Methylphenanthrene	2011/06/22	<0.10		ug	
		2-Chloronaphthalene	2011/06/22	<0.10		ug	
		2-Methylanthracene	2011/06/22	<0.10		ug	
		2-Methylnaphthalene	2011/06/22	<0.10		ug	
		3-Methylcholanthrene	2011/06/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/22	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/22	<0.40		ug	
		Acenaphthene	2011/06/22	<0.050		ug	
		Acenaphthylene	2011/06/22	<0.050		ug	
		Anthracene	2011/06/22	<0.050		ug	
		Benzo(a)anthracene	2011/06/22	<0.050		ug	
		Benzo(a)fluorene	2011/06/22	<0.10		ug	
		Benzo(a)pyrene	2011/06/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/22	<0.050		ug	
		Benzo(b)fluorene	2011/06/22	<0.10		ug	
		Benzo(e)pyrene	2011/06/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/22	<0.050		ug	
		Biphenyl	2011/06/22	<0.10		ug	
		Chrysene	2011/06/22	<0.050		ug	
		Coronene	2011/06/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/22	<0.20		ug	
		Fluoranthene	2011/06/22	<0.050		ug	
		Fluorene	2011/06/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/22	<0.050		ug	
		m-Terphenyl	2011/06/22	<0.10		ug	
		Naphthalene	2011/06/22	<0.072		ug	
		o-Terphenyl	2011/06/22	<0.10		ug	
		Perylene	2011/06/22	<0.10		ug	
		Phenanthrene	2011/06/22	<0.050		ug	
		p-Terphenyl	2011/06/22	<0.10		ug	
		Pyrene	2011/06/22	<0.050		ug	
		Quinoline	2011/06/22	<0.40		ug	
		Tetralin	2011/06/22	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jun 14,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jun 13, 2011 @ 7:59 mst
Removal Date/Time: Jun 15, 2011 @ 7:57 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
14-Jun-11	06/14/2011 0:00	06/15/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
09-Jun-11	16-Jun-11	24-Jun-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
707	229	16.4	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 06299

GB176337 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jun 14, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06299

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B188547****Received: 2011/06/17, 09:12**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/21	2011/06/22	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

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Total cover pages: 1

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Maxxam Job #: B188547
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JW4666	JW4667		
Sampling Date		2011/06/14	2011/06/14		
COC Number		06299	06299		
	Units	LICA PUFF+QFF/CLS/JUN 14,11	LICA PUFF+QFF/PORT/JUN14,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2526781
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2526781
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2526781
2-Methylanthracene	ug	<0.10	<0.10	0.10	2526781
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2526781
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2526781
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2526781
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2526781
Acenaphthene	ug	<0.050	<0.050	0.050	2526781
Acenaphthylene	ug	<0.050	<0.050	0.050	2526781
Anthracene	ug	<0.050	<0.050	0.050	2526781
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2526781
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2526781
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2526781
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2526781
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2526781
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2526781
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2526781
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2526781
Biphenyl	ug	<0.10	<0.10	0.10	2526781
Chrysene	ug	<0.050	<0.050	0.050	2526781
Coronene	ug	<0.10	<0.10	0.10	2526781
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2526781
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2526781
Fluoranthene	ug	0.066	0.062	0.050	2526781
Fluorene	ug	0.078	<0.050	0.050	2526781
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2526781
m-Terphenyl	ug	<0.10	<0.10	0.10	2526781
Naphthalene	ug	0.074	0.090	0.072	2526781
o-Terphenyl	ug	<0.10	<0.10	0.10	2526781
Perylene	ug	<0.10	<0.10	0.10	2526781

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B188547
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JW4666	JW4667		
Sampling Date		2011/06/14	2011/06/14		
COC Number		06299	06299		
	Units	LICA PUFF+QFF/CLS/JUN 14,11	LICA PUFF+QFF/PORT/JUN14,11	RDL	QC Batch

Phenanthrene	ug	0.442	0.124	0.050	2526781
p-Terphenyl	ug	<0.10	<0.10	0.10	2526781
Pyrene	ug	<0.050	<0.050	0.050	2526781
Quinoline	ug	<0.40	<0.40	0.40	2526781
Tetralin	ug	<0.10	<0.10	0.10	2526781
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	72		2526781
D10-Fluoranthene	%	94	86		2526781
D10-Fluorene (FS)	%	5.6 (1)	5.8 (1)		2526781
D10-Phenanthrene	%	88	82		2526781
D12-Benzo(a)anthracene	%	98	100		2526781
D12-Benzo(a)pyrene	%	96	94		2526781
D12-Benzo(b)fluoranthene	%	92	92		2526781
D12-Benzo(ghi)perylene	%	90	86		2526781
D12-Benzo(k)fluoranthene	%	90	88		2526781
D12-Chrysene	%	86	88		2526781
D12-Indeno(1,2,3-cd)pyrene	%	92	90		2526781
D12-Perylene	%	102	100		2526781
D14-Dibenzo(a,h)anthracene	%	92	90		2526781
D14-Terphenyl (FS)	%	87	83		2526781
D8-Acenaphthylene	%	78	78		2526781
D8-Naphthalene	%	66	70		2526781

QC Batch = Quality Control Batch

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B188547
Report Date: 2011/06/24

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Anthanthrene is above 25% RSD in continuing calibrations.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JW4666-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JW4667-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB188547

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2526781 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/22		82	%	50 - 150
		D10-Fluoranthene	2011/06/22		80	%	50 - 150
		D10-Phenanthrene	2011/06/22		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		90	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		88	%	50 - 150
		D12-Chrysene	2011/06/22		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/22		88	%	50 - 150
		D12-Perylene	2011/06/22		100	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		88	%	50 - 150
		D8-Acenaphthylene	2011/06/22		80	%	50 - 150
		D8-Naphthalene	2011/06/22		82	%	50 - 150
		Acenaphthene	2011/06/22		76	%	60 - 130
	RPD	Acenaphthene	2011/06/22	4.2		%	50
	Spiked Blank	Acenaphthylene	2011/06/22		75	%	60 - 130
	RPD	Acenaphthylene	2011/06/22	5.5		%	50
	Spiked Blank	Anthracene	2011/06/22		66	%	60 - 130
	RPD	Anthracene	2011/06/22	7.6		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/22		81	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/22	2.1		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/22		76	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/22	2.3		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/22		81	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/22	1.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/22		79	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/22	2.5		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/22		91	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/22	1.9		%	50
	Spiked Blank	Chrysene	2011/06/22		86	%	60 - 130
	RPD	Chrysene	2011/06/22	2.9		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/22		77	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/22	4.4		%	50
	Spiked Blank	Fluoranthene	2011/06/22		76	%	60 - 130
	RPD	Fluoranthene	2011/06/22	3.9		%	50
	Spiked Blank	Fluorene	2011/06/22		72	%	60 - 130
	RPD	Fluorene	2011/06/22	6.4		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/22		79	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/22	3.1		%	50
	Spiked Blank	Naphthalene	2011/06/22		83	%	60 - 130
	RPD	Naphthalene	2011/06/22	1.8		%	50
	Spiked Blank	Phenanthrene	2011/06/22		71	%	60 - 130
	RPD	Phenanthrene	2011/06/22	7.2		%	50
	Spiked Blank	Pyrene	2011/06/22		74	%	60 - 130
	RPD	Pyrene	2011/06/22	5.3		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/06/22		82	%	50 - 150
		D10-Fluoranthene	2011/06/22		80	%	50 - 150
		D10-Phenanthrene	2011/06/22		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		92	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		86	%	50 - 150
		D12-Chrysene	2011/06/22		90	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB188547

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2526781 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/22		86	%	50 - 150
		D12-Perylene	2011/06/22		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		86	%	50 - 150
		D8-Acenaphthylene	2011/06/22		80	%	50 - 150
		D8-Naphthalene	2011/06/22		84	%	50 - 150
		1-Methylnaphthalene	2011/06/22	<0.10		ug	
		1-Methylphenanthrene	2011/06/22	<0.10		ug	
		2-Chloronaphthalene	2011/06/22	<0.10		ug	
		2-Methylantracene	2011/06/22	<0.10		ug	
		2-Methylnaphthalene	2011/06/22	<0.10		ug	
		3-Methylcholanthrene	2011/06/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/22	<0.10		ug	
		9,10-Dimethylantracene	2011/06/22	<0.40		ug	
		Acenaphthene	2011/06/22	<0.050		ug	
		Acenaphthylene	2011/06/22	<0.050		ug	
		Anthracene	2011/06/22	<0.050		ug	
		Benzo(a)anthracene	2011/06/22	<0.050		ug	
		Benzo(a)fluorene	2011/06/22	<0.10		ug	
		Benzo(a)pyrene	2011/06/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/22	<0.050		ug	
		Benzo(b)fluorene	2011/06/22	<0.10		ug	
		Benzo(e)pyrene	2011/06/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/22	<0.050		ug	
		Biphenyl	2011/06/22	<0.10		ug	
		Chrysene	2011/06/22	<0.050		ug	
		Coronene	2011/06/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/22	<0.20		ug	
		Fluoranthene	2011/06/22	<0.050		ug	
		Fluorene	2011/06/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/22	<0.050		ug	
		m-Terphenyl	2011/06/22	<0.10		ug	
		Naphthalene	2011/06/22	<0.072		ug	
		o-Terphenyl	2011/06/22	<0.10		ug	
		Perylene	2011/06/22	<0.10		ug	
		Phenanthrene	2011/06/22	<0.050		ug	
		p-Terphenyl	2011/06/22	<0.10		ug	
		Pyrene	2011/06/22	<0.050		ug	
		Quinoline	2011/06/22	<0.40		ug	
		Tetralin	2011/06/22	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
 Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: Cold Lake South
Station ID: Lica1
Field Sample ID: LICA PUF/CLS/Jun 20,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jun 17, 2011 @ 15:14 mst
Removal Date/Time: Jun 22, 2011 @ 7:32 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
20-Jun-11	06/20/2011 0:00	06/21/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Jun-11	22-Jun-11	04-Jul-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
708	229	15.4	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 07155

GB180864 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jun 20, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07155

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/30

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B192858****Received: 2011/06/24, 08:30**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/27	2011/06/29	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B192858
 Report Date: 2011/06/30

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JY5368	JY5369		
Sampling Date		2011/06/20	2011/06/20		
COC Number		07155	07155		
	Units	LICAPUFF+QFF/CLS/JUN 20,11	LICAPUFF+QFF/PORT/JUN 20,11	RDL	QC Batch
Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2533537
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2533537
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2533537
2-Methylantracene	ug	<0.10	<0.10	0.10	2533537
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2533537
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2533537
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2533537
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2533537
Acenaphthene	ug	<0.050	<0.050	0.050	2533537
Acenaphthylene	ug	<0.050	<0.050	0.050	2533537
Anthracene	ug	<0.050	<0.050	0.050	2533537
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2533537
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2533537
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2533537
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2533537
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2533537
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2533537
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2533537
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2533537
Biphenyl	ug	<0.10	<0.10	0.10	2533537
Chrysene	ug	<0.050	<0.050	0.050	2533537
Coronene	ug	<0.10	<0.10	0.10	2533537
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2533537
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2533537
Fluoranthene	ug	<0.050	<0.050	0.050	2533537
Fluorene	ug	<0.050	<0.050	0.050	2533537
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2533537
m-Terphenyl	ug	<0.10	<0.10	0.10	2533537
Naphthalene	ug	<0.072	<0.072	0.072	2533537
o-Terphenyl	ug	<0.10	<0.10	0.10	2533537
Perylene	ug	<0.10	<0.10	0.10	2533537
Phenanthrene	ug	0.202	0.078	0.050	2533537
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B192858
 Report Date: 2011/06/30

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JY5368	JY5369		
Sampling Date		2011/06/20	2011/06/20		
COC Number		07155	07155		
	Units	LICAPUFF+QFF/CLS/JUN 20,11	LICAPUFF+QFF/PORT/JUN 20,11	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	2533537
Pyrene	ug	<0.050	<0.050	0.050	2533537
Quinoline	ug	<0.40	<0.40	0.40	2533537
Tetralin	ug	<0.10	<0.10	0.10	2533537
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	74	70		2533537
D10-Fluoranthene	%	94	84		2533537
D10-Fluorene (FS)	%	7.4 (1)	6.0 (1)		2533537
D10-Phenanthrene	%	86	78		2533537
D12-Benzo(a)anthracene	%	96	92		2533537
D12-Benzo(a)pyrene	%	96	90		2533537
D12-Benzo(b)fluoranthene	%	92	88		2533537
D12-Benzo(ghi)perylene	%	90	84		2533537
D12-Benzo(k)fluoranthene	%	92	88		2533537
D12-Chrysene	%	92	90		2533537
D12-Indeno(1,2,3-cd)pyrene	%	92	84		2533537
D12-Perylene	%	106	100		2533537
D14-Dibenzo(a,h)anthracene	%	92	82		2533537
D14-Terphenyl (FS)	%	89	82		2533537
D8-Acenaphthylene	%	80	74		2533537
D8-Naphthalene	%	70	66		2533537
QC Batch = Quality Control Batch (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.					

Maxxam Job #: B192858
Report Date: 2011/06/30

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

9,10-Dimethylanthracene, 7,12-dimethylbenzo(a)anthracene, coronene and dibenzo(a,e)pyrene are above 25% RSD in continuing calibration. No positives found for these compounds.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JY5368-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JY5369-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB192858

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2533537 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/29		78	%	50 - 150
		D10-Fluoranthene	2011/06/29		86	%	50 - 150
		D10-Phenanthrene	2011/06/29		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/29		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/29		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/29		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/29		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/29		88	%	50 - 150
		D12-Chrysene	2011/06/29		86	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/29		88	%	50 - 150
		D12-Perylene	2011/06/29		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/29		88	%	50 - 150
		D8-Acenaphthylene	2011/06/29		78	%	50 - 150
	D8-Naphthalene		2011/06/29		78	%	50 - 150
	Acenaphthene	2011/06/29		74	%	60 - 130	
		RPD	Acenaphthene	2011/06/29	5.3		%
	Spiked Blank	Acenaphthylene	2011/06/29		76	%	60 - 130
		RPD	Acenaphthylene	2011/06/29	7.6		%
	Spiked Blank	Anthracene	2011/06/29		70	%	60 - 130
		RPD	Anthracene	2011/06/29	5.6		%
	Spiked Blank	Benzo(a)anthracene	2011/06/29		80	%	60 - 130
		RPD	Benzo(a)anthracene	2011/06/29	4.6		%
	Spiked Blank	Benzo(a)pyrene	2011/06/29		81	%	60 - 130
		RPD	Benzo(a)pyrene	2011/06/29	4.6		%
	Spiked Blank	Benzo(b)fluoranthene	2011/06/29		79	%	60 - 130
		RPD	Benzo(b)fluoranthene	2011/06/29	2.5		%
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/29		79	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2011/06/29	4.9		%
	Spiked Blank	Benzo(k)fluoranthene	2011/06/29		91	%	60 - 130
		RPD	Benzo(k)fluoranthene	2011/06/29	4.0		%
	Spiked Blank	Chrysene	2011/06/29		82	%	60 - 130
		RPD	Chrysene	2011/06/29	2.1		%
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/29		80	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2011/06/29	4.0		%
	Spiked Blank	Fluoranthene	2011/06/29		83	%	60 - 130
		RPD	Fluoranthene	2011/06/29	5.9		%
	Spiked Blank	Fluorene	2011/06/29		72	%	60 - 130
		RPD	Fluorene	2011/06/29	5.1		%
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/29		81	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2011/06/29	4.8		%
Spiked Blank	Naphthalene	2011/06/29		79	%	60 - 130	
	RPD	Naphthalene	2011/06/29	3.7		%	50
Spiked Blank	Phenanthrene	2011/06/29		71	%	60 - 130	
	RPD	Phenanthrene	2011/06/29	4.8		%	50
Spiked Blank	Pyrene	2011/06/29		84	%	60 - 130	
	RPD	Pyrene	2011/06/29	4.7		%	50
Method Blank	D10-2-Methylnaphthalene	2011/06/29		82	%	50 - 150	
	D10-Fluoranthene	2011/06/29		86	%	50 - 150	
	D10-Phenanthrene	2011/06/29		76	%	50 - 150	
	D12-Benzo(a)anthracene	2011/06/29		84	%	50 - 150	
	D12-Benzo(a)pyrene	2011/06/29		94	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/06/29		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/06/29		86	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/06/29		90	%	50 - 150	
	D12-Chrysene	2011/06/29		88	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB192858

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2533537 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/29		88	%	50 - 150
		D12-Perylene	2011/06/29		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/29		86	%	50 - 150
		D8-Acenaphthylene	2011/06/29		82	%	50 - 150
		D8-Naphthalene	2011/06/29		80	%	50 - 150
		1-Methylnaphthalene	2011/06/29	<0.10		ug	
		1-Methylphenanthrene	2011/06/29	<0.10		ug	
		2-Chloronaphthalene	2011/06/29	<0.10		ug	
		2-Methylantracene	2011/06/29	<0.10		ug	
		2-Methylnaphthalene	2011/06/29	<0.10		ug	
		3-Methylcholanthrene	2011/06/29	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/29	<0.10		ug	
		9,10-Dimethylantracene	2011/06/29	<0.40		ug	
		Acenaphthene	2011/06/29	<0.050		ug	
		Acenaphthylene	2011/06/29	<0.050		ug	
		Anthracene	2011/06/29	<0.050		ug	
		Benzo(a)anthracene	2011/06/29	<0.050		ug	
		Benzo(a)fluorene	2011/06/29	<0.10		ug	
		Benzo(a)pyrene	2011/06/29	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/29	<0.050		ug	
		Benzo(b)fluorene	2011/06/29	<0.10		ug	
		Benzo(e)pyrene	2011/06/29	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/29	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/29	<0.050		ug	
		Biphenyl	2011/06/29	<0.10		ug	
		Chrysene	2011/06/29	<0.050		ug	
		Coronene	2011/06/29	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/29	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/29	<0.20		ug	
		Fluoranthene	2011/06/29	<0.050		ug	
		Fluorene	2011/06/29	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/29	<0.050		ug	
		m-Terphenyl	2011/06/29	<0.10		ug	
		Naphthalene	2011/06/29	<0.072		ug	
		o-Terphenyl	2011/06/29	<0.10		ug	
		Perylene	2011/06/29	<0.10		ug	
		Phenanthrene	2011/06/29	<0.050		ug	
		p-Terphenyl	2011/06/29	<0.10		ug	
		Pyrene	2011/06/29	<0.050		ug	
		Quinoline	2011/06/29	<0.40		ug	
		Tetralin	2011/06/29	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jun 26,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jun 23, 2011 @ 7:58 mst
 Removal Date/Time: Jun 27, 2011 @ 7:44 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
26-Jun-11	06/26/2011 0:00	06/27/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
21-Jun-11	27-Jun-11	12-Jul-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 05-May-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
708	229	13.3	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 05028

GB180866 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jun 26, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05028

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/07/11

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B195642**

Received: 2011/06/29, 09:15

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/30	2011/07/10	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

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Maxxam Job #: B195642
 Report Date: 2011/07/11

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JZ7915	JZ7916		
Sampling Date		2011/06/26	2011/06/26		
COC Number		05028	05028		
	Units	LICA PUFF+QFF/CLS/JUN 26,11	LICA PUFF+QFF/PORT/JUN 26,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2537118
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2537118
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2537118
2-Methylantracene	ug	<0.10	<0.10	0.10	2537118
2-Methylnaphthalene	ug	0.16	<0.10	0.10	2537118
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2537118
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2537118
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2537118
Acenaphthene	ug	<0.050	<0.050	0.050	2537118
Acenaphthylene	ug	<0.050	<0.050	0.050	2537118
Anthracene	ug	<0.050	<0.050	0.050	2537118
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2537118
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2537118
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2537118
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2537118
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2537118
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2537118
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2537118
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2537118
Biphenyl	ug	<0.10	<0.10	0.10	2537118
Chrysene	ug	<0.050	<0.050	0.050	2537118
Coronene	ug	<0.10	<0.10	0.10	2537118
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2537118
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2537118
Fluoranthene	ug	<0.050	<0.050	0.050	2537118
Fluorene	ug	0.072	0.054	0.050	2537118
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2537118
m-Terphenyl	ug	<0.10	<0.10	0.10	2537118
Naphthalene	ug	0.140	0.116	0.072	2537118
o-Terphenyl	ug	<0.10	<0.10	0.10	2537118
Perylene	ug	<0.10	<0.10	0.10	2537118

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B195642
 Report Date: 2011/07/11

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JZ7915	JZ7916		
Sampling Date		2011/06/26	2011/06/26		
COC Number		05028	05028		
	Units	LICA PUFF+QFF/CLS/JUN 26,11	LICA PUFF+QFF/PORT/JUN 26,11	RDL	QC Batch

Phenanthrene	ug	0.272	0.136	0.050	2537118
p-Terphenyl	ug	<0.10	<0.10	0.10	2537118
Pyrene	ug	0.054	<0.050	0.050	2537118
Quinoline	ug	<0.40	<0.40	0.40	2537118
Tetralin	ug	<0.10	<0.10	0.10	2537118
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	66		2537118
D10-Fluoranthene	%	94	96		2537118
D10-Fluorene (FS)	%	7.8 (1)	8.2 (1)		2537118
D10-Phenanthrene	%	88	86		2537118
D12-Benzo(a)anthracene	%	90	90		2537118
D12-Benzo(a)pyrene	%	88	86		2537118
D12-Benzo(b)fluoranthene	%	88	88		2537118
D12-Benzo(ghi)perylene	%	90	90		2537118
D12-Benzo(k)fluoranthene	%	84	82		2537118
D12-Chrysene	%	84	82		2537118
D12-Indeno(1,2,3-cd)pyrene	%	92	92		2537118
D12-Perylene	%	86	84		2537118
D14-Dibenzo(a,h)anthracene	%	92	92		2537118
D14-Terphenyl (FS)	%	94	93		2537118
D8-Acenaphthylene	%	74	74		2537118
D8-Naphthalene	%	64	62		2537118

QC Batch = Quality Control Batch
 (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B195642
Report Date: 2011/07/11

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Dibenzo(a,e)pyrene is above 25% RSD in continuing calibration. No positive found for this compound.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JZ7915-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JZ7916-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report

Maxxam Job Number: GB195642

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537118 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/07/10		76	%	50 - 150
		D10-Fluoranthene	2011/07/10		90	%	50 - 150
		D10-Phenanthrene	2011/07/10		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/07/10		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/07/10		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/07/10		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/07/10		88	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/07/10		84	%	50 - 150
		D12-Chrysene	2011/07/10		84	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/07/10		88	%	50 - 150
		D12-Perylene	2011/07/10		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/10		90	%	50 - 150
		RPD	D8-Acenaphthylene	2011/07/10		80	%
	D8-Naphthalene		2011/07/10		74	%	50 - 150
	Spiked Blank	Acenaphthene	2011/07/10		75	%	60 - 130
		Acenaphthene	2011/07/10	6.2		%	50
	Spiked Blank	Acenaphthylene	2011/07/10		78	%	60 - 130
		Acenaphthylene	2011/07/10	6.3		%	50
	Spiked Blank	Anthracene	2011/07/10		76	%	60 - 130
		Anthracene	2011/07/10	1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/07/10		79	%	60 - 130
		Benzo(a)anthracene	2011/07/10	1.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/07/10		71	%	60 - 130
		Benzo(a)pyrene	2011/07/10	4.8		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/07/10		76	%	60 - 130
		Benzo(b)fluoranthene	2011/07/10	1.6		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/07/10		80	%	60 - 130
		Benzo(g,h,i)perylene	2011/07/10	3.1		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/07/10		85	%	60 - 130
		Benzo(k)fluoranthene	2011/07/10	0.3		%	50
	Spiked Blank	Chrysene	2011/07/10		80	%	60 - 130
		Chrysene	2011/07/10	0.3		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/07/10		79	%	60 - 130
		Dibenz(a,h)anthracene	2011/07/10	0.9		%	50
	Spiked Blank	Fluoranthene	2011/07/10		86	%	60 - 130
		Fluoranthene	2011/07/10	0.9		%	50
	Spiked Blank	Fluorene	2011/07/10		76	%	60 - 130
		Fluorene	2011/07/10	5.0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/07/10		80	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/07/10	2.2		%	50
Spiked Blank	Naphthalene	2011/07/10		75	%	60 - 130	
	Naphthalene	2011/07/10	3.4		%	50	
Spiked Blank	Phenanthrene	2011/07/10		75	%	60 - 130	
	Phenanthrene	2011/07/10	2.4		%	50	
Spiked Blank	Pyrene	2011/07/10		80	%	60 - 130	
	Pyrene	2011/07/10	6.4		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/07/10		72	%	50 - 150	
	D10-Fluoranthene	2011/07/10		92	%	50 - 150	
	D10-Phenanthrene	2011/07/10		80	%	50 - 150	
	D12-Benzo(a)anthracene	2011/07/10		88	%	50 - 150	
	D12-Benzo(a)pyrene	2011/07/10		90	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/07/10		88	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/07/10		90	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/07/10		86	%	50 - 150	
	D12-Chrysene	2011/07/10		86	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB195642

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537118 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/07/10		90	%	50 - 150
		D12-Perylene	2011/07/10		90	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/10		92	%	50 - 150
		D8-Acenaphthylene	2011/07/10		76	%	50 - 150
		D8-Naphthalene	2011/07/10		66	%	50 - 150
		1-Methylnaphthalene	2011/07/10	<0.10		ug	
		1-Methylphenanthrene	2011/07/10	<0.10		ug	
		2-Chloronaphthalene	2011/07/10	<0.10		ug	
		2-Methylanthracene	2011/07/10	<0.10		ug	
		2-Methylnaphthalene	2011/07/10	<0.10		ug	
		3-Methylcholanthrene	2011/07/10	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/07/10	<0.10		ug	
		9,10-Dimethylanthracene	2011/07/10	<0.40		ug	
		Acenaphthene	2011/07/10	<0.050		ug	
		Acenaphthylene	2011/07/10	<0.050		ug	
		Anthracene	2011/07/10	<0.050		ug	
		Benzo(a)anthracene	2011/07/10	<0.050		ug	
		Benzo(a)fluorene	2011/07/10	<0.10		ug	
		Benzo(a)pyrene	2011/07/10	<0.050		ug	
		Benzo(b)fluoranthene	2011/07/10	<0.050		ug	
		Benzo(b)fluorene	2011/07/10	<0.10		ug	
		Benzo(e)pyrene	2011/07/10	<0.10		ug	
		Benzo(g,h,i)perylene	2011/07/10	<0.050		ug	
		Benzo(k)fluoranthene	2011/07/10	<0.050		ug	
		Biphenyl	2011/07/10	<0.10		ug	
		Chrysene	2011/07/10	<0.050		ug	
		Coronene	2011/07/10	<0.10		ug	
		Dibenz(a,h)anthracene	2011/07/10	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/07/10	<0.20		ug	
		Fluoranthene	2011/07/10	<0.050		ug	
		Fluorene	2011/07/10	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/07/10	<0.050		ug	
		m-Terphenyl	2011/07/10	<0.10		ug	
		Naphthalene	2011/07/10	<0.072		ug	
		o-Terphenyl	2011/07/10	<0.10		ug	
		Perylene	2011/07/10	<0.10		ug	
		Phenanthrene	2011/07/10	<0.050		ug	
		p-Terphenyl	2011/07/10	<0.10		ug	
		Pyrene	2011/07/10	<0.050		ug	
		Quinoline	2011/07/10	<0.40		ug	
		Tetralin	2011/07/10	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
 Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Lakeland Industry & Community Association

Maskwa Monitoring Site
Ambient Air Monitoring
Data Report
For
June 2011

Prepared By:



July 21, 2011

Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
T9N 2J5

Monitoring Location: Maskwa
Data Period: June 2011

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

The calibrations conducted at the LICA - Maskwa Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. All calibration's and maintenance conforms to the procedures outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – MASKWA

Continuous Ambient Monitoring – June 2011

LICA MASKWA SITE						MAXIMUM VALUES						OPERATIONAL TIME (PERCENT)	
						OBJECTIVES			EXCEEDENCES		MONTHLY AVERAGE		1-HOUR
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING			DAY
SO2 (PPB)	172	48	0	0	0.22	8	25	5	3.9	306(NW)	1.4	25	99.7
H2S (PPB)	10	3	0	0	0.19	5	23	0	0.7	66(ENE)	0.8	23	99.7
THC (PPM)	-	-	-	-	2.03	2.8	27	6	5.5	197(SSW)	2.2	VAR	99.7
NOx (PPB)	-	-	-	-	1.66	19	25	5	3.9	306(NW)	5.2	25	97.2
NO (PPB)	-	-	-	-	0.21	10	25	5	3.9	306(NW)	1.7	25	97.2
NO ₂ (PPB)	159	-	0	-	1.43	15	24	4	5	103(ESE)	3.5	25	97.2
VECTOR WS (KPH)	-	-	-	-	5.77	17.2	18	12	-	32(NNE)	14.6	18	48.2
VECTOR WD (DEGREES)	-	-	-	-	55(NE)	-	-	-	-	-	-	-	48.2
RELATIVE HUMIDITY (%)	-	-	-	-	70.55	93	VAR	VAR	VAR	VAR	88.8	15	100.0
TEMPERATURE (DEG C)	-	-	-	-	14.31	27.7	23	14	7.7	107(ESE)	20.9	29	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	937	950	4	VAR	VAR	VAR	947.7	4	100.0
PRECIPITATION (MM)	-	-	-	-	0.29	23.0	27	18	10.1	5(N)	37.3	15	100.0

NA-NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – Maskwa

Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E, S/N: 508

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101E, S/N: 511

No operational issue was observed during the month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

- Analyzer make / model –TECO 51C-LT, S/N: 436609738

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. The Hydrogen gas cylinder was changed on June 13th. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

- Analyzer make / model - API 200E, S/N: 594

The monthly calibration was performed on June 10th. The daily span result went above full scale on June 11th due to a loosing wire. The wire was tightened and a daily calibration check was run on June 11th. The result was OK. Data between June 10th at 15:00 and June 11th at 7:00 were invalidated. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

The NO2 guideline was changed on June 15th: the objective for 1-Hour average concentration was changed from 212 ppb to 159 ppb, the objective for 24-Hour average concentration was removed, and the concentration of 24 ppb for the annual average was added by AE.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

- System make / model - RM Young 5103VK, S/N: 46553

The wind system is reported as vector wind speed and vector wind direction.

On June 13th, it was noticed that the wind speed seemed to be reading high (20-26KHP), but the observed wind conditions were low (3-8KPH). The zero and span checks as per manual instructions. The span check result was OK, but the zero check failed; the measured voltage was 0.0-0.14vdc, should be 0.0vdc steady. Contacted manufacturer and was advised to return the wind system to them for service. The MetOne wind system was removed on June 16th, and a replacement RM Young 5103 VK wind system was installed following an installation calibration on June 16th. As a result, 372 hours of data between June 1st and June 16th at 11:00 were invalidated.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Precipitation (MM)

- System make / model - Met One 387

No operational issues observed during this month.

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issue was observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issue was observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Datalogger

- System make / model - ESC 8832
- Software make/version - ESC v 5.51a

No operational issue was observed during the month.

Trailer

The manifold was cleaned on June 13th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	0	0	0	0	0	0	0	0	0	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
2	2	0	0	0	0	0	0	1	1	2	2	IZS	1	1	1	0	0	0	0	0	0	0	3	5	5	0.8	24	
3	6	1	0	0	0	0	0	0	0	0	0	IZS	0	1	1	1	0	0	0	0	0	0	0	2	6	0.5	24	
4	2	0	0	0	0	0	3	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
5	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	1	2	2	0	0	0	2	0.3	24		
6	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
7	0	0	0	0	0	0	IZS	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24		
8	0	0	0	0	0	IZS	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	0.1	24		
9	0	0	0	0	IZS	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	1	0	1	0.1	24		
10	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	IZS	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	2	0.2	24		
12	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
13	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	IZS	0	0.0	23	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	IZS	0	1	0.1	24	
15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	23		
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	0	1	1	0	0	0	0	1	0.1	24		
21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.0	24	
22	0	0	0	0	0	0	0	1	1	2	1	0	0	0	IZS	0	0	0	1	0	0	0	0	0	2	0.3	24	
23	0	0	0	0	0	0	0	0	0	1	2	1	1	IZS	1	1	0	0	0	0	0	0	0	0	2	0.3	24	
24	0	0	1	1	2	1	0	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
25	2	3	0	1	2	8	5	3	1	2	3	IZS	0	1	0	0	0	1	0	0	0	0	0	8	1.4	24		
26	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	1	0.0	24		
27	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28	1	0	0	0	0	0	0	0	IZS	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24	
29	1	1	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	1	3	1	0	3	0.6	24	
30	0	2	1	0	2	3	IZS	1	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0.6	24		
HOURLY MAX	6	3	1	1	2	8	5	3	3	2	3	1	1	1	2	1	0	1	1	2	2	3	3	5				
HOURLY AVG	0.5	0.2	0.1	0.1	0.2	0.4	0.3	0.3	0.3	0.4	0.4	0.1	0.1	0.3	0.3	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

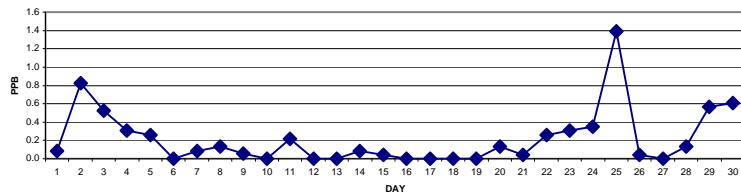
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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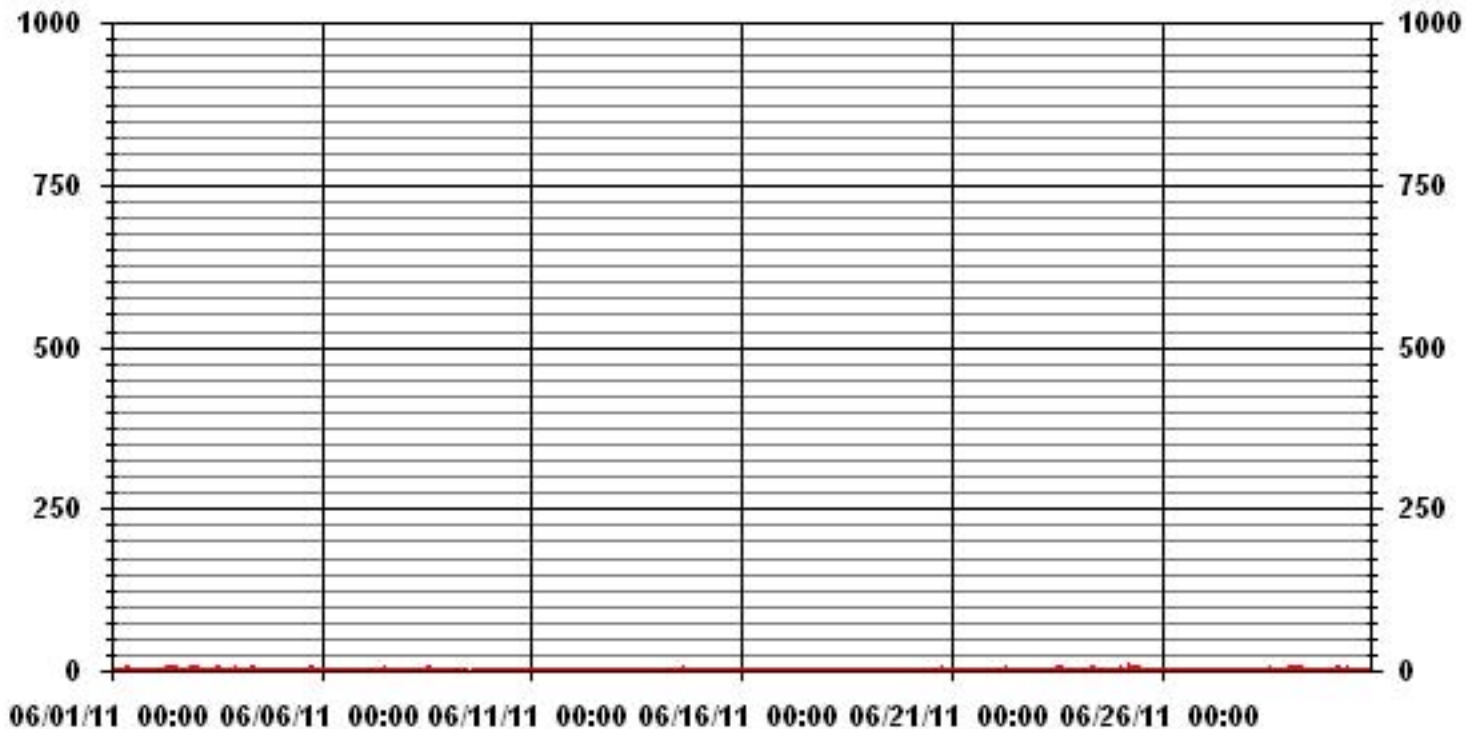
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	96		
MAXIMUM 1-HR AVERAGE:	8 PPB @ HOUR(S) 5 ON DAY(S) 25		
MAXIMUM 24-HR AVERAGE:	1.4 PPB ON DAY(S) 25		
IZS CALIBRATION TIME:	31 HRS	OPERATIONAL TIME:	718 HRS
MONTHLY CALIBRATION TIME:	5 HRS	AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.69	MONTHLY AVERAGE:	0.22 PPB

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JUNE 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY	DAY																												
1	1	0	0	0	0	0	0	0	2	2	3	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	1	3	0.5	24
2	2	5	3	1	1	1	0	0	3	2	10	10	IZS	3	3	3	2	1	2	3	3	1	3	17	18	18	4.1	24	
3	3	29	2	1	1	1	1	0	0	0	0	IZS	1	1	2	2	1	0	1	0	0	0	0	2	4	29	2.1	24	
4	4	5	2	1	0	1	1	12	4	4	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	1.3	24	
5	5	0	0	0	0	0	0	0	1	IZS	1	1	1	2	1	0	0	1	4	4	6	6	1	0	0	6	1.3	24	
6	6	0	0	0	0	0	0	0	IZS	1	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0.3	24	
7	7	0	0	0	0	0	0	IZS	0	1	1	1	1	7	6	1	1	0	0	0	0	0	0	0	0	7	0.8	24	
8	8	0	0	0	0	0	IZS	0	0	0	1	4	1	0	4	4	1	1	1	0	0	0	0	0	0	4	0.7	24	
9	9	0	0	0	0	IZS	0	0	1	1	0	1	C	C	C	C	C	1	1	1	1	1	1	1	1	1	0.6	24	
10	10	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
11	11	0	0	IZS	0	0	0	0	4	M	1	2	4	2	2	2	1	1	1	1	0	7	1	1	1	7	1.4	23	
12	12	0	IZS	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
13	13	IZS	0	0	0	0	0	0	0	0	0	1	0	1	M	M	0	M	M	0	1	1	0	0	IZS	1	0.2	20	
14	14	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	5	1	0	0	0	0	0	0	IZS	0	5	0.5	24
15	15	0	0	0	4	2	0	0	0	0	1	0	0	1	1	1	0	1	0	0	0	0	0	IZS	0	0	4	0.5	24
16	16	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24	
18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24	
19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	IZS	0	0	0	0	0	0	2	0.2	24	
20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	IZS	1	2	3	1	0	0	2	3	0.5	24	
21	21	1	0	0	0	0	0	0	0	0	0	0	0	2	5	0	IZS	0	0	0	0	0	0	0	0	5	0.3	24	
22	22	0	0	0	0	0	0	0	2	2	2	2	1	0	0	IZS	0	0	2	6	0	0	0	0	0	6	0.7	24	
23	23	0	0	0	0	0	0	0	0	3	4	3	3	IZS	6	3	2	1	1	1	3	1	1	0	6	1.4	24		
24	24	0	1	3	3	3	3	1	2	2	2	1	1	IZS	0	0	0	1	0	0	0	0	0	1	2	3	1.1	24	
25	25	4	11	2	5	5	15	10	10	4	6	14	IZS	3	5	1	1	1	2	1	1	1	1	1	1	15	4.6	24	
26	26	1	1	0	1	0	1	1	0	0	0	0	IZS	8	3	0	0	0	0	2	0	0	0	0	0	8	0.8	24	
27	27	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	2	1	0	1	0	0	3	3	0.3	24	
28	28	2	2	0	0	0	0	1	1	IZS	1	1	1	1	4	5	1	1	1	1	1	1	1	1	1	5	1.2	24	
29	29	1	2	2	1	1	1	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	3	1	8	1.5	24
30	30	1	8	3	1	6	9	IZS	4	11	7	7	2	0	0	7	0	0	0	0	0	0	0	0	11	2.9	24		
HOURLY MAX		29	11	3	5	6	15	12	10	11	10	14	8	7	6	6	7	2	4	6	6	7	8	17	18				
HOURLY AVG		1.7	1.1	0.5	0.6	0.7	1.1	1.0	1.2	1.1	1.4	2.0	1.0	1.1	1.3	1.3	1.0	0.5	0.7	0.8	0.6	0.8	0.6	1.0	1.2				

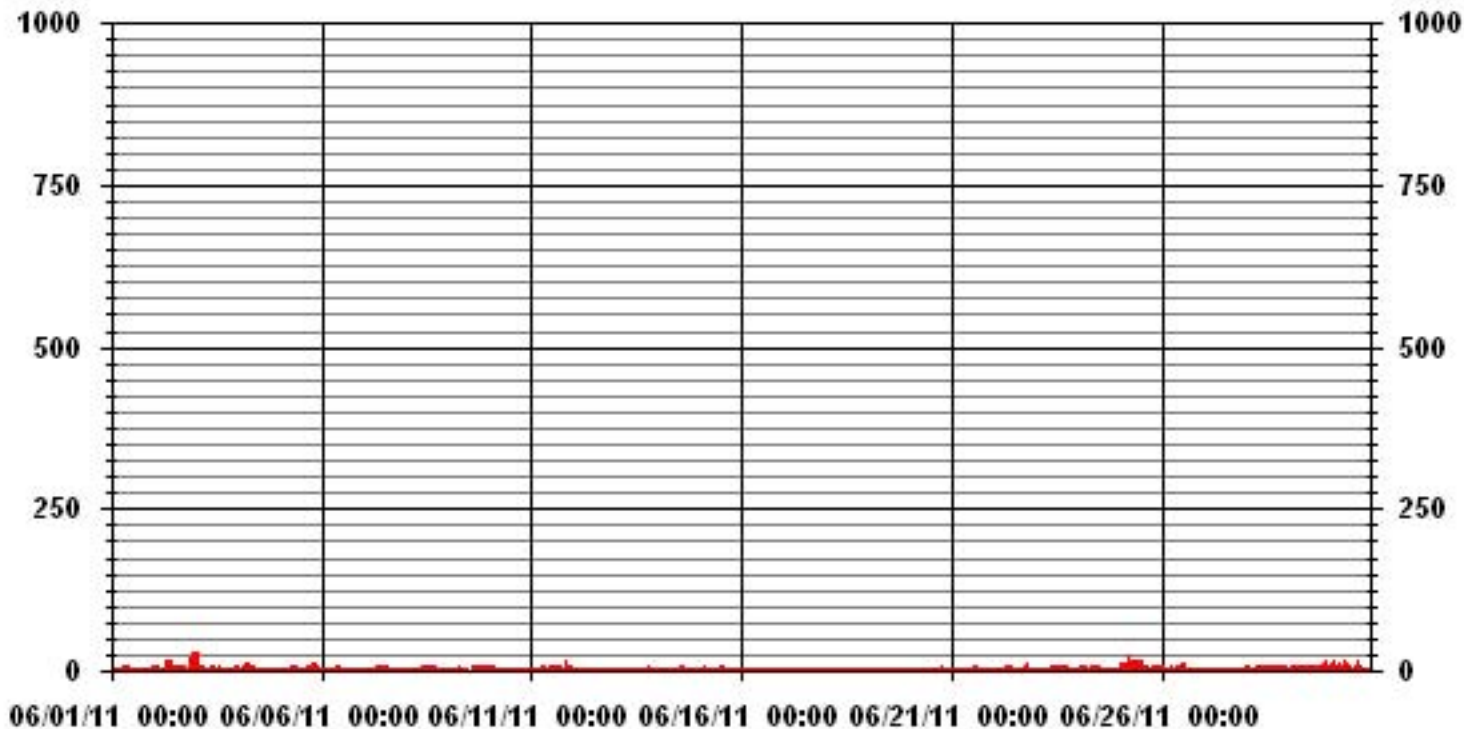
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	262					
MAXIMUM INSTANTANEOUS VALUE:	29	PPB	@ HOUR(S)	0	ON DAY(S)	3
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	714	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	2.35					

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : SO2_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	

Calm : .00 %

Total # Operational Hours : 332

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	332
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	

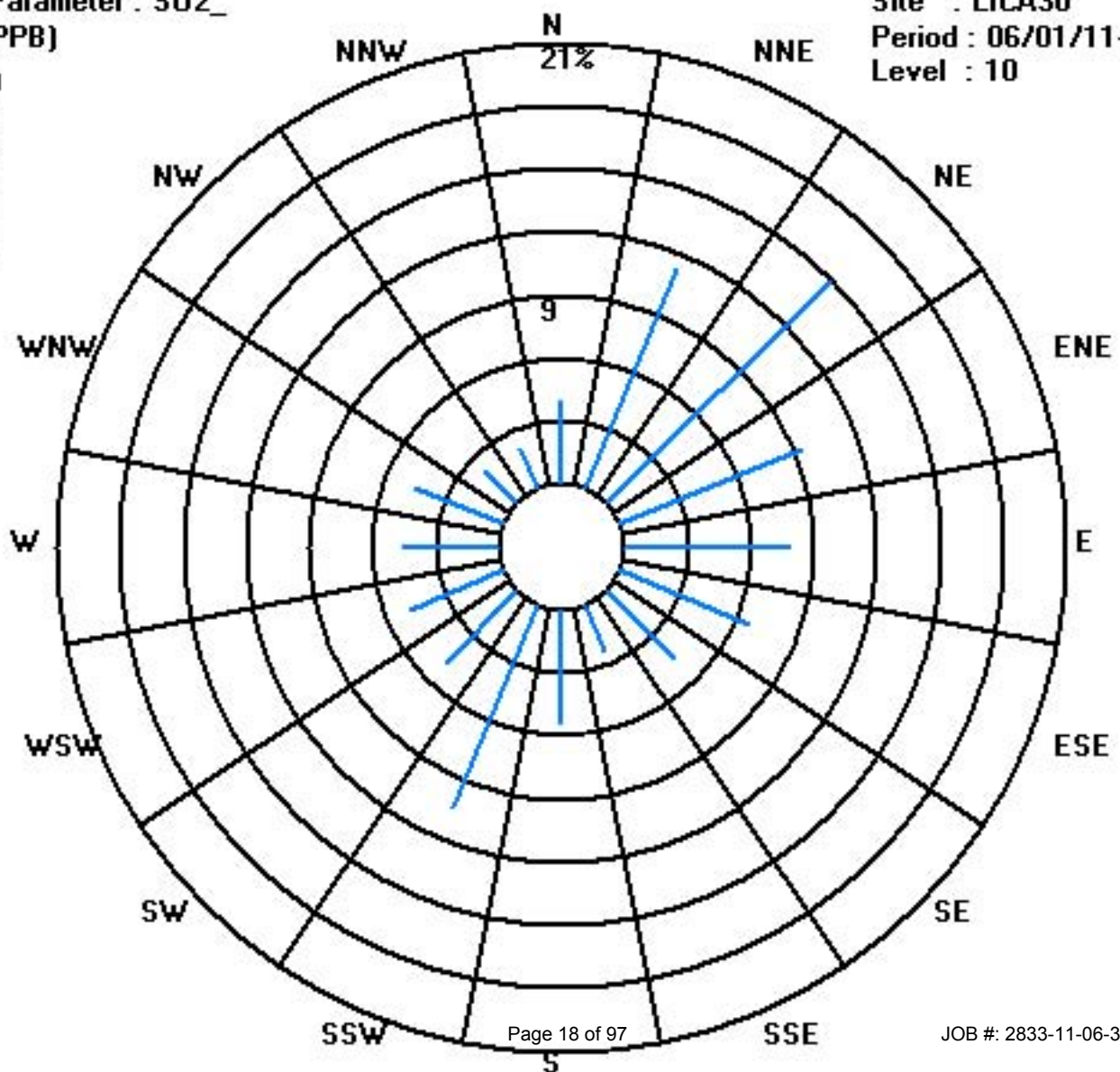
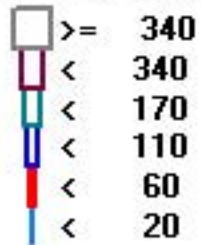
Calm : .00 %

Total # Operational Hours : 332

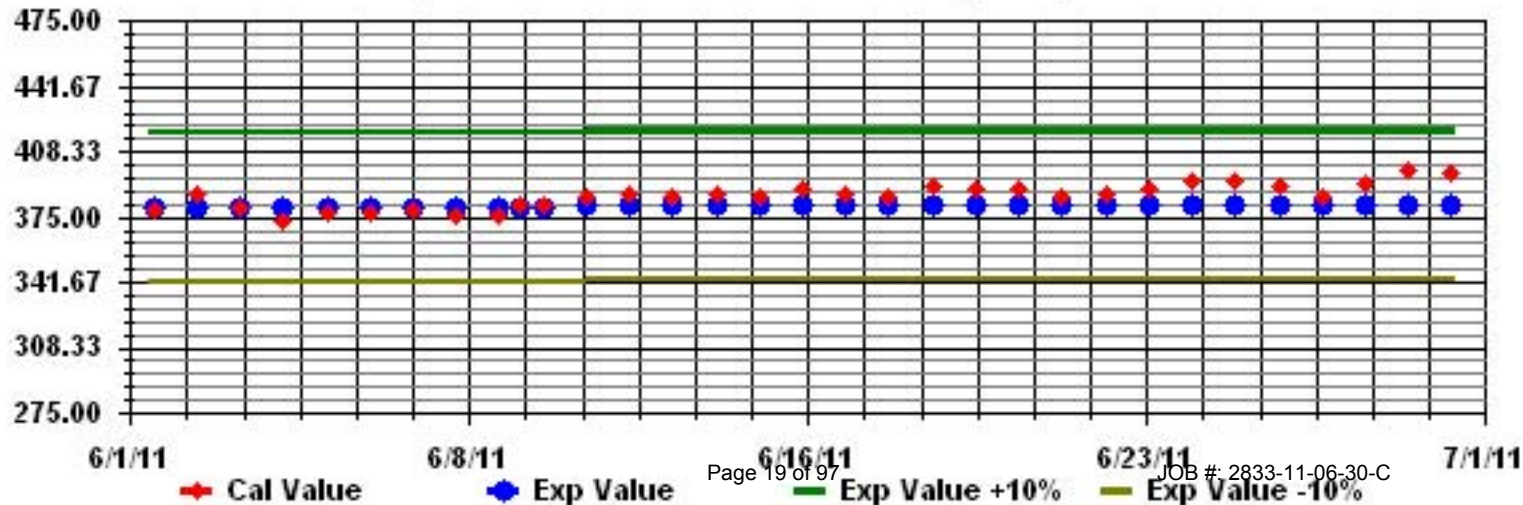
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA30 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																														
1		0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24	
2		0	0	0	0	0	0	0	0	1	0	0	0	IZS	0	0	0	0	0	0	0	1	1	0	0	1	1	0.2	24	
3		0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.6	24	
5		1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
6		0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
7		0	0	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
8		0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
9		0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
10		1	0	0	IZS	0	1	0	0	0	0	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
11		1	1	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	2	0.3	24	
12		0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0	24	
13		IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	IZS	0.0	23	
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	IZS	0	0.1	24	
15		0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	IZS	0	0	0.1	24		
16		0	0	0	0	0	0	0	0	0	0	0	0	M	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	23	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24		
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	1	0.0	24
19		1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.1	24
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0.0	24
21		0	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	3	0.2	24
22		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
23		5	4	2	1	1	0	0	0	0	0	0	0	1	IZS	0	0	0	0	1	2	0	0	1	1	0	5	0.8	24	
24		0	1	0	0	0	0	0	0	1	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0	1	0.2	24	
25		1	0	0	1	1	1	0	0	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
26		0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
27		0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0.1	24	
28		1	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0	0	0	0	0	1	2	2	1	3	1	1	0.6	24	
29		0	0	0	1	1	1	1	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0.4	24	
30		1	1	1	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
HOURLY MAX		5	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	3	1	2				
HOURLY AVG		0.4	0.4	0.2	0.3	0.3	0.2	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.3	0.2	0.3				

STATUS FLAG CODES

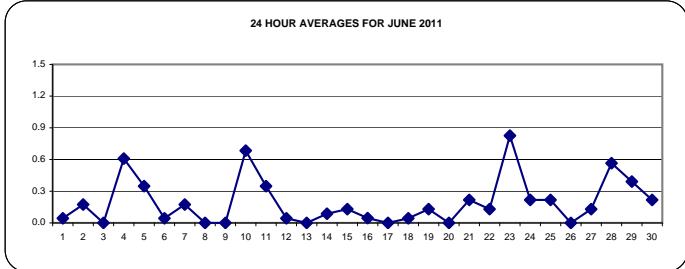
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

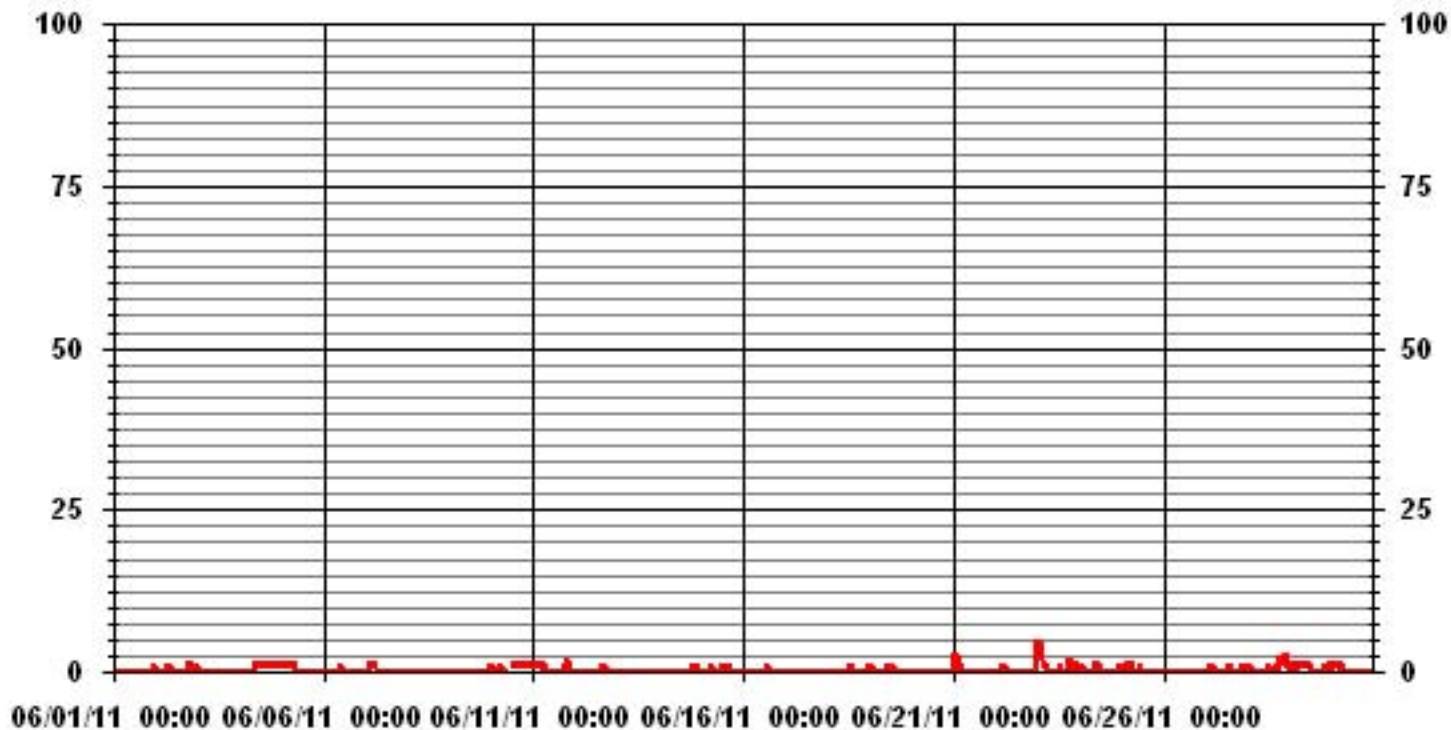
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	114
MAXIMUM 1-HR AVERAGE:	5 PPB @ HOUR(S) 0 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	0.8 PPB ON DAY(S) 23
	VAR-VARIOUS
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	4 HRS
OPERATIONAL TIME:	718 HRS
AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.49
MONTHLY AVERAGE:	0.19 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppt

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00					
DAY																												
1	0	0	1	1	0	1	0	0	1	0	0	0	IZS	0	0	0	0	0	1	1	1	1	0	2	2	0.4	24	
2	1	1	1	1	0	0	1	1	1	1	0	IZS	0	0	0	0	1	0	1	1	1	1	1	1	1	1	0.7	24
3	1	1	0	0	0	1	1	0	0	1	IZS	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0.3	24	
4	1	1	1	0	0	0	0	0	0	0	IZS	1	1	1	1	2	2	2	1	1	1	1	1	1	1	2	0.9	24
5	1	1	1	2	2	2	2	2	IZS	0	1	1	0	1	1	1	0	0	0	1	1	0	0	0	2	0.9	24	
6	0	0	0	1	1	1	1	IZS	0	1	1	1	0	1	0	0	0	0	0	1	1	1	0	0	1	0.5	24	
7	0	1	2	2	1	1	IZS	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.4	24	
8	0	0	0	0	1	IZS	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1	0.2	24	
9	0	0	1	0	IZS	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0.2	24	
10	1	1	1	1	IZS	1	1	1	0	1	C	C	C	C	1	1	2	1	2	1	1	2	2	1	2	1.2	24	
11	2	2	IZS	1	1	1	1	1	M	1	1	1	1	1	1	1	1	1	2	3	1	0	1	1	3	1.2	23	
12	1	IZS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	0.2	24	
13	IZS	1	0	0	1	1	0	1	1	1	1	1	M	M	0	M	M	0	0	0	0	1	IZS	1	1	0.6	20	
14	0	0	0	1	0	1	1	1	1	0	1	0	1	0	0	1	1	0	1	1	1	1	1	IZS	0	1	0.6	24
15	1	1	1	0	1	1	1	0	1	1	0	1	1	1	1	1	1	0	0	1	1	IZS	0	1	1	0.7	24	
16	1	1	0	1	1	0	0	1	0	1	0	M	1	1	1	0	1	1	0	0	IZS	1	1	0	1	0.6	23	
17	0	0	0	0	1	1	0	2	0	0	0	0	1	1	1	1	0	0	0	IZS	0	0	0	0	2	0.3	24	
18	1	1	0	0	1	0	1	0	1	1	1	1	1	1	1	1	0	IZS	1	0	1	1	0	1	0.7	24		
19	1	1	0	1	1	0	1	1	0	1	1	1	1	1	1	1	0	IZS	3	1	0	0	1	1	3	0.8	24	
20	0	1	1	0	1	0	0	0	0	0	0	0	1	0	1	0	IZS	1	1	1	0	1	0	1	1	0.4	24	
21	1	4	3	3	1	1	1	0	0	0	0	0	0	0	0	IZS	1	0	1	0	0	0	0	0	4	0.7	24	
22	1	0	0	1	1	1	0	1	0	1	0	0	0	0	IZS	0	0	0	0	0	1	0	0	7	7	0.6	24	
23	8	5	3	1	1	1	0	1	1	1	0	1	1	IZS	1	1	1	2	3	2	2	1	7	0	8	1.9	24	
24	1	1	1	1	1	0	1	1	1	2	1	1	IZS	0	1	0	0	0	0	0	1	1	1	1	2	0.7	24	
25	1	1	1	1	1	1	1	0	0	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
26	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0.1	24	
27	0	1	1	1	1	1	1	1	1	IZS	0	0	1	1	1	0	0	1	2	0	1	1	1	2	2	0.8	24	
28	2	1	1	1	0	0	0	0	IZS	1	1	1	1	1	1	0	1	1	3	3	2	5	2	2	5	1.3	24	
29	1	1	2	1	1	1	1	IZS	2	2	1	0	0	0	1	1	1	1	0	1	1	1	1	1	2	1.0	24	
30	1	2	1	1	1	1	IZS	1	1	1	1	1	0	0	1	0	1	1	0	0	0	0	0	0	2	0.7	24	
HOURLY MAX	8	5	3	3	2	2	2	2	2	2	1	1	1	1	1	2	2	2	3	3	2	5	7	7				
HOURLY AVG	1.0	1.0	0.8	0.8	0.8	0.7	0.6	0.5	0.5	0.7	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.9				

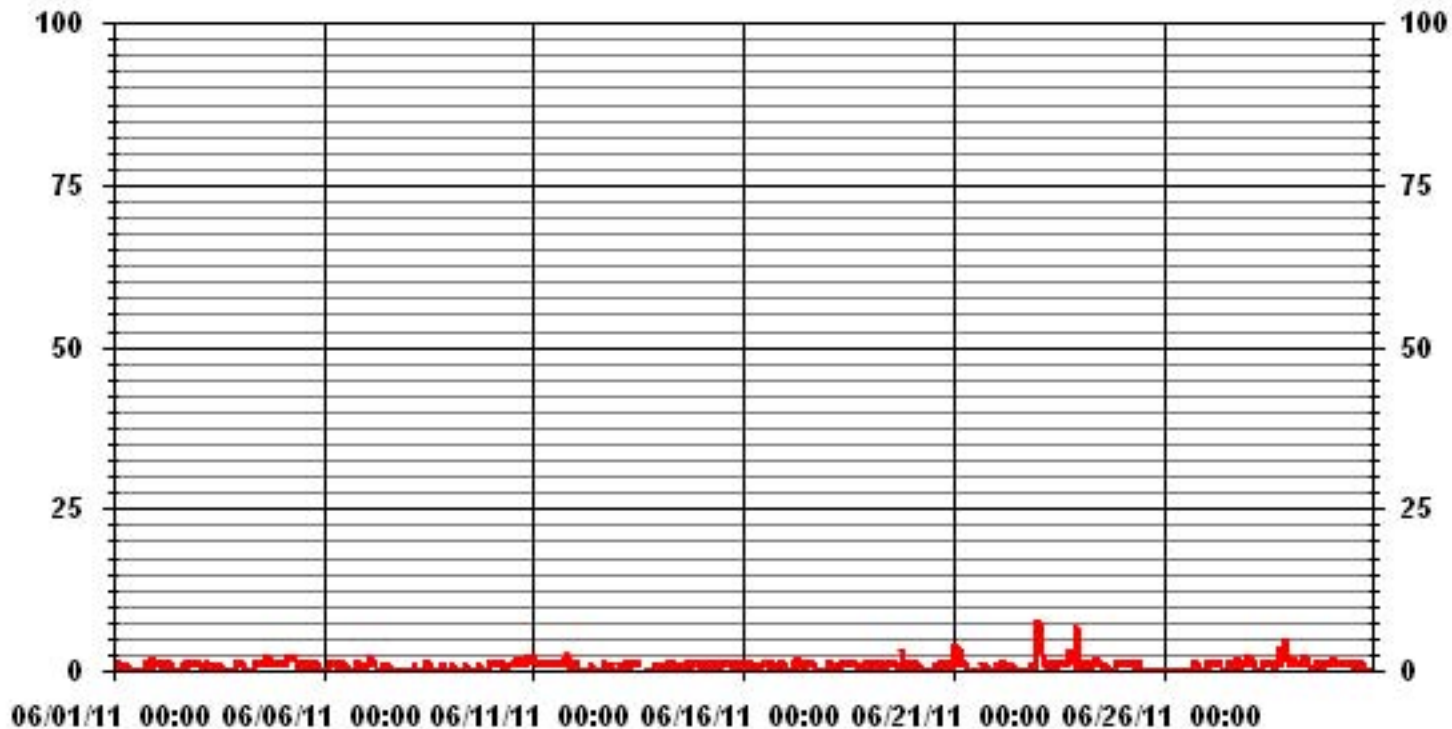
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	370
MAXIMUM INSTANTANEOUS VALUE:	8 PPB @ HOUR(S) 0 ON DAY(S) 23
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.82
OPERATIONAL TIME:	714 HRS

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	3.91	11.44	14.75	9.03	7.83	6.02	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	98.79
< 10	.00	.00	.30	.30	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.20
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	

Calm : .00 %

Total # Operational Hours : 332

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	13	38	49	30	26	20	15	8	18	35	16	16	15	15	7	7	328
< 10			1	1		2											4
< 50																	
>= 50																	
Totals	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	

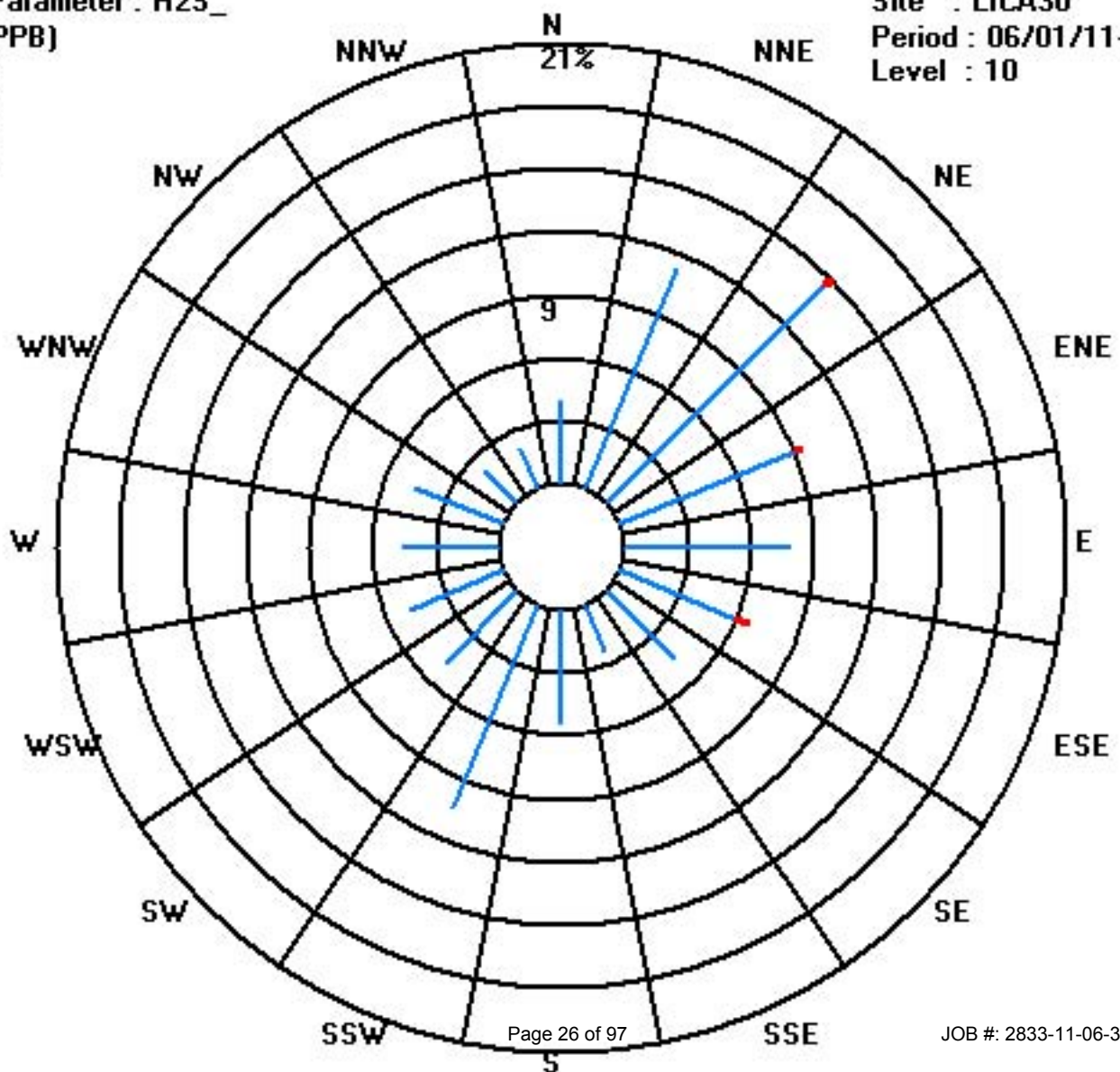
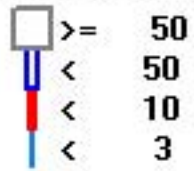
Calm : .00 %

Total # Operational Hours : 332

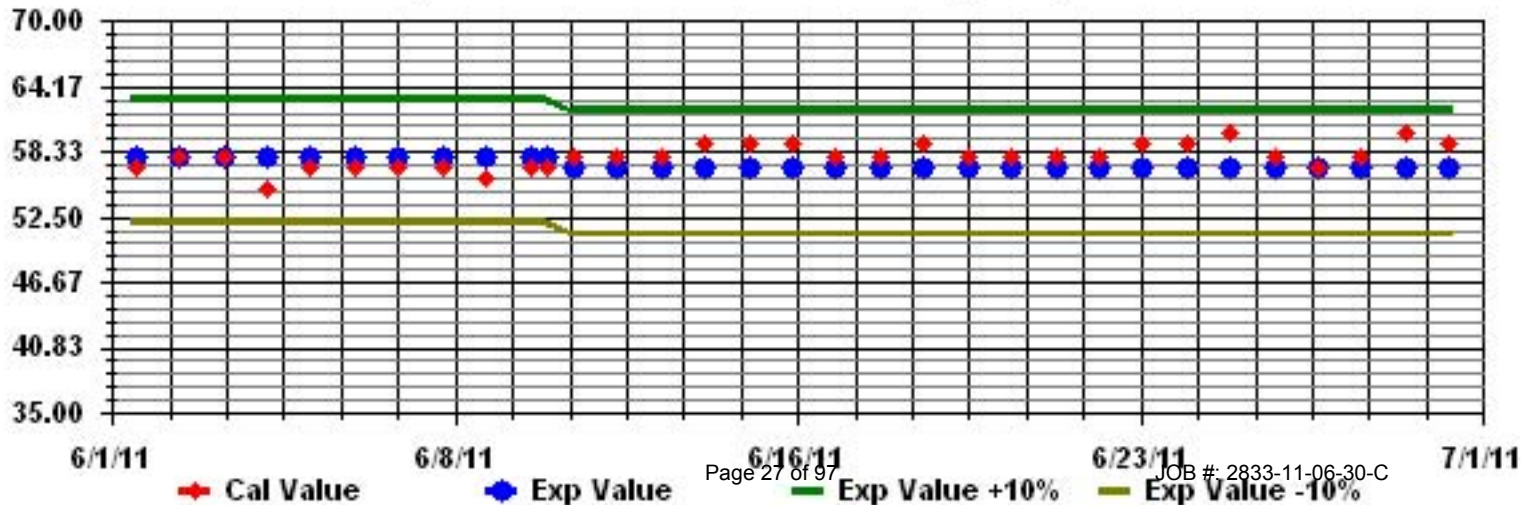
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10

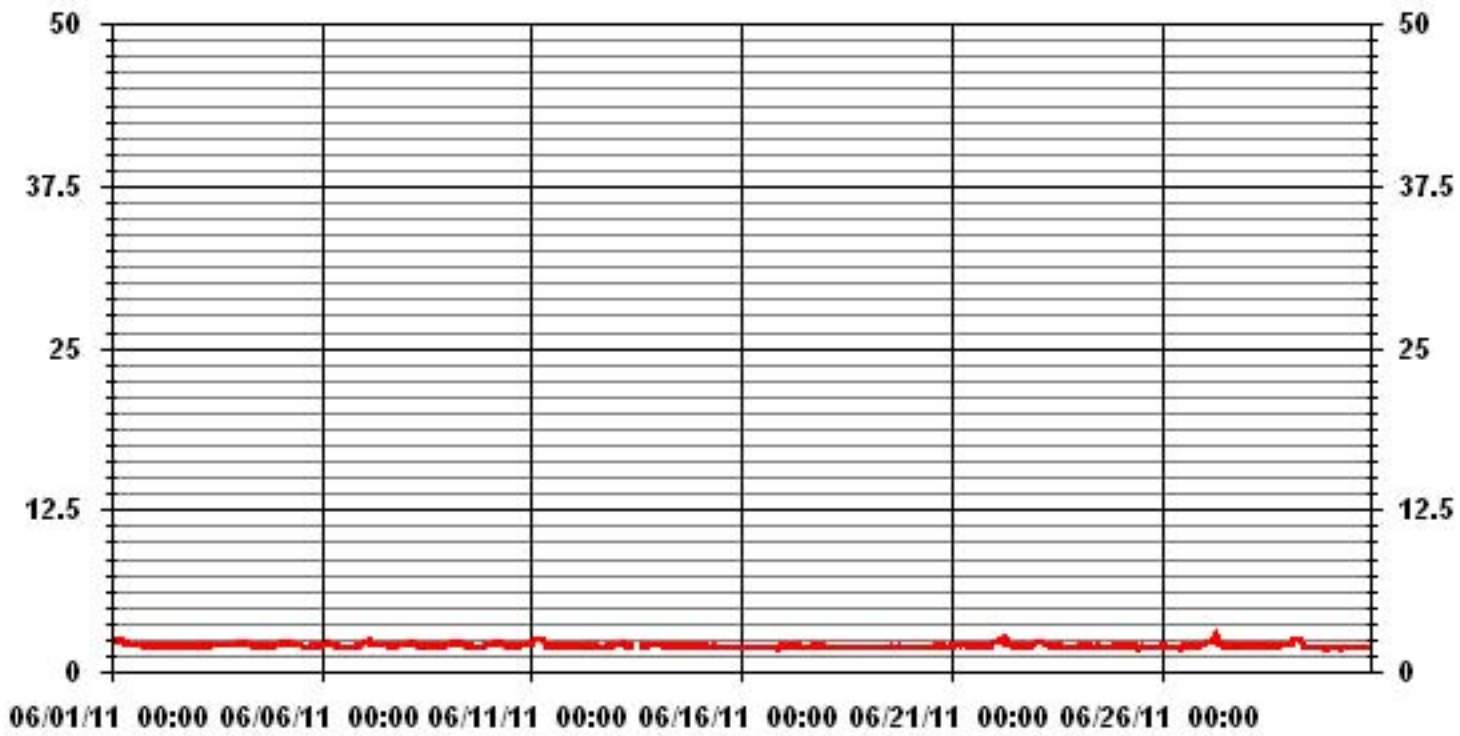


Calibration Graph for Site: LICA30 Parameter: H2S_ Sequence: H2S Phase: SPAll



Total Hydrocarbons

01 Hour Averages



— LICA30 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	2.3	2.4	2.4	2.5	2.6	2.6	2.5	2.3	2.2	2.5	2.3	2.2	IZS	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2.6	2.3	24		
2	2.2	2	2.1	2.1	2	2	2	2.1	2.1	2.3	2.2	IZS	2	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.1	2.3	2.3	2.1	24	
3	2.1	2.1	2.2	2.1	2.1	2.1	2	2	2	2	2	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
4	2.4	2.3	2.6	2.2	2.3	2.3	2.2	2.2	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.6	2.1	24
5	2.2	2.3	2.2	2.3	2.3	2.3	2.3	2.3	2.3	IZS	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.3	2.1	24
6	2.1	2.1	2.1	2.2	2.2	2.3	2.1	IZS	2.2	2.1	2	2	2	2	2	2	1.9	1.9	1.9	2	2	2	2.1	2.1	2.1	2.3	2.1	24	
7	2.3	2.3	2.5	2.4	2.3	2.2	IZS	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24	
8	2.1	2.1	2.1	2.4	2.3	IZS	2.1	2.1	2	2	2	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.4	2.1	24	
9	2.2	2.2	2.2	2.4	IZS	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2	2.1	2.1	2	2	2	2	2	2	2	2.1	2.2	2.2	2.4	2.1	24	
10	2.2	2.2	2.2	IZS	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.1	24	
11	2.2	2.3	IZS	2.5	2.5	2.6	2.7	2.5	M	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.5	2.7	2.2	23	
12	2.1	IZS	2	2.1	2.2	2.2	2	2	2	2	2	2	2	2	2	2	1.9	2.1	2	2	2	2	2	2.1	2.1	2.2	2.0	24	
13	IZS	2.1	2.1	2.3	2.3	2.3	2.2	2	2	2	C	C	C	C	C	2	M	M	2	2.3	2.2	2.1	2.1	IZS	2.3	2.1	22		
14	2.2	2.2	2.4	2.3	2.1	2.2	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	IZS	2	2.4	2.1	24	
15	2	2	2	2	2	2	2	2	2	2.1	1.9	1.9	2	2	2	1.9	2	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2.1	2.0	24	
16	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	M	2	2	2	2	1.9	1.9	1.9	1.9	1.9	IZS	2	2	2	2	1.9	23	
17	2	2	2	2	2	2	2	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2	2	IZS	2	2	2	2	2.1	2.0	24	
18	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	24
19	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2	1.9	IZS	2.1	2	1.9	1.9	2	1.9	2.1	1.9	2.1	1.9	24
20	1.9	1.9	1.9	2	2	2	1.9	1.9	1.9	1.9	2	1.9	2	1.9	2.1	2.1	IZS	2.1	2.1	2.2	2	1.9	2	2.2	2.2	2.0	2.0	24	
21	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2	2	2.1	2	2	IZS	2	2	2	2	2	2.1	2.1	2.2	2.4	2.4	2.1	2.4	24
22	2.3	2.3	2.3	2.4	2.6	2.8	2.8	2.3	2.3	2.3	2.2	2	2	2	IZS	2	2	2	2	2	2	2	2.1	2.2	2.2	2.8	2.2	24	
23	2.2	2.4	2.4	2.5	2.3	2.3	2.2	2.1	2	2.2	2.1	2.1	2.1	IZS	2.2	2	2	1.9	1.9	2	2	2	2.1	1.9	2.5	2.1	24		
24	2	2.2	2.4	2.3	2.2	2.2	2	2.1	2.1	1.9	2	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.1	2.1	2.4	2.0	24	
25	2.1	2	2.1	2.2	2.1	2.1	2.2	2.2	2	2.1	2	IZS	2	1.9	1.9	1.9	2	2	1.9	1.9	2	2	2	2.1	2.2	2.0	2.4	24	
26	2	2	2	2	2	1.9	2	1.9	1.9	1.9	IZS	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.0	24	
27	2.2	2.3	2.3	2.4	2.4	2.8	3.1	2.7	2.4	IZS	2.2	2.1	2	2	2	2	2	2.1	2.3	2.3	2.1	2.2	2.3	3.1	2.3	2.3	2.1	24	
28	2.2	2.2	2.1	2.1	2.1	2.1	2	2	IZS	2	2	2	2	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.3	2.2	2.3	2.1	24	
29	2.1	2.1	2.3	2.4	2.5	2.5	2.5	IZS	2.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	1.9	2	2.5	2.1	24		
30	1.9	2	1.9	2	2	2	IZS	2	2	1.9	2	2	2	1.9	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.0	2.4	24	
HOURLY MAX	2	2	3	3	3	3	3	3	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3				
HOURLY AVG	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1				

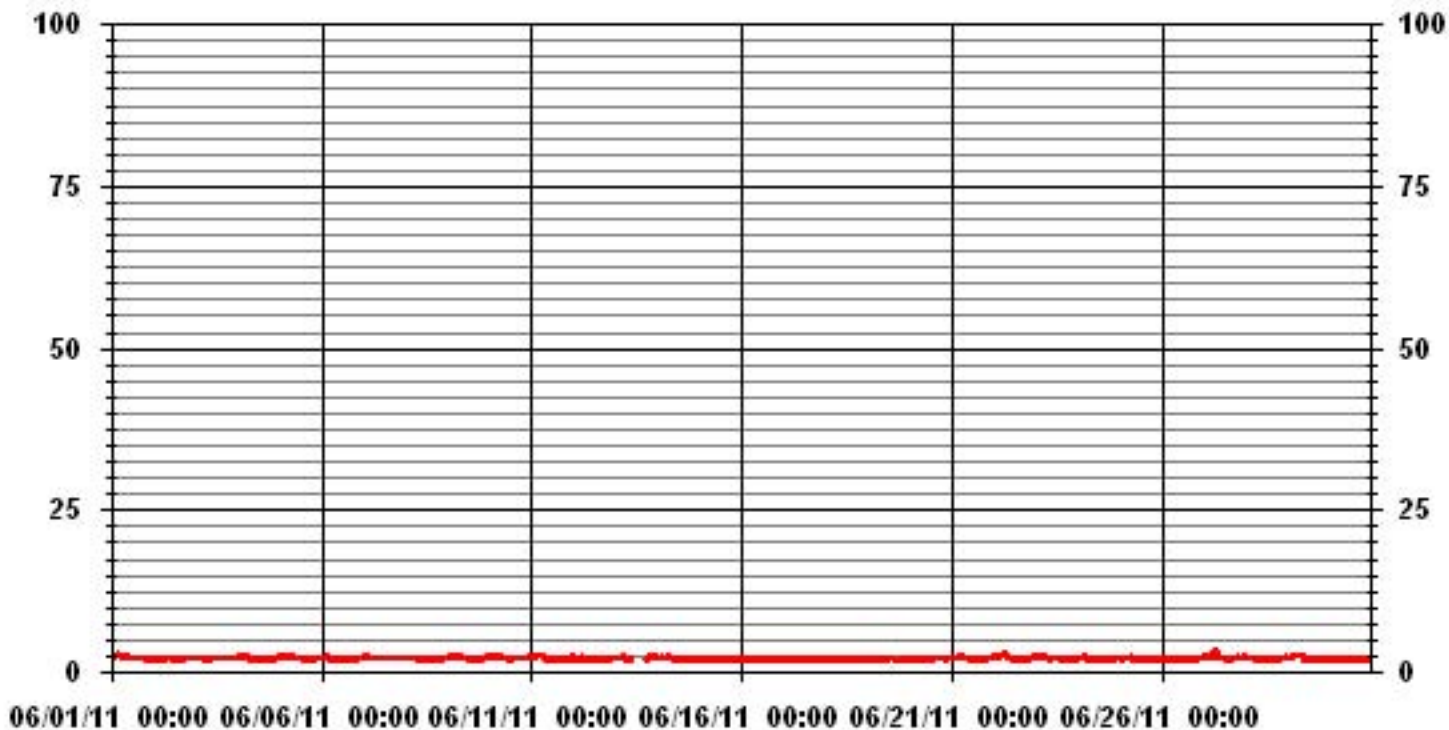
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680					
MAXIMUM INSTANTANEOUS VALUE:	3.1	PPM	@ HOUR(S)	6	ON DAY(S)	27
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.16					

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	

Calm : .00 %

Total # Operational Hours : 332

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	332
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	

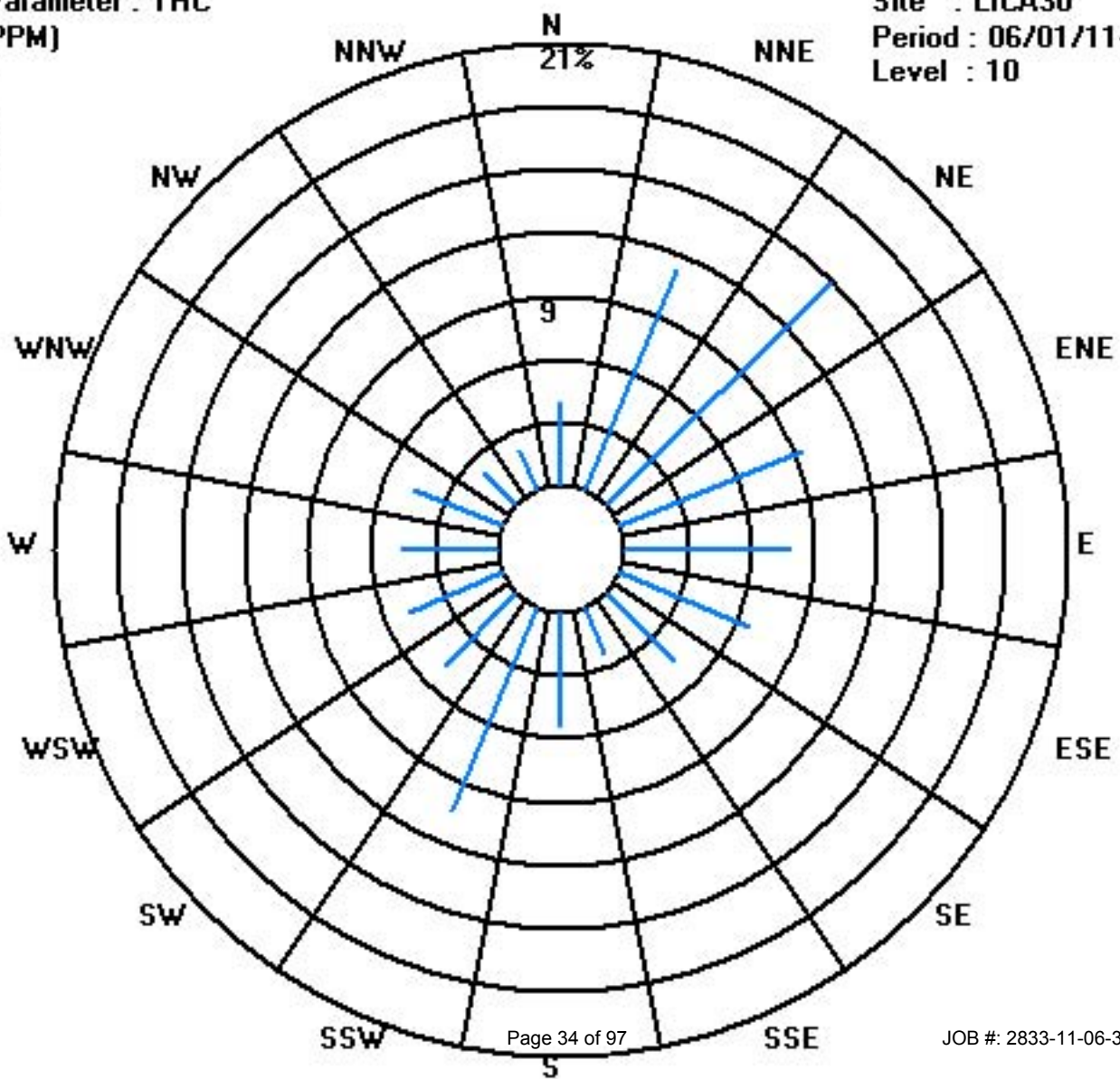
Calm : .00 %

Total # Operational Hours : 332

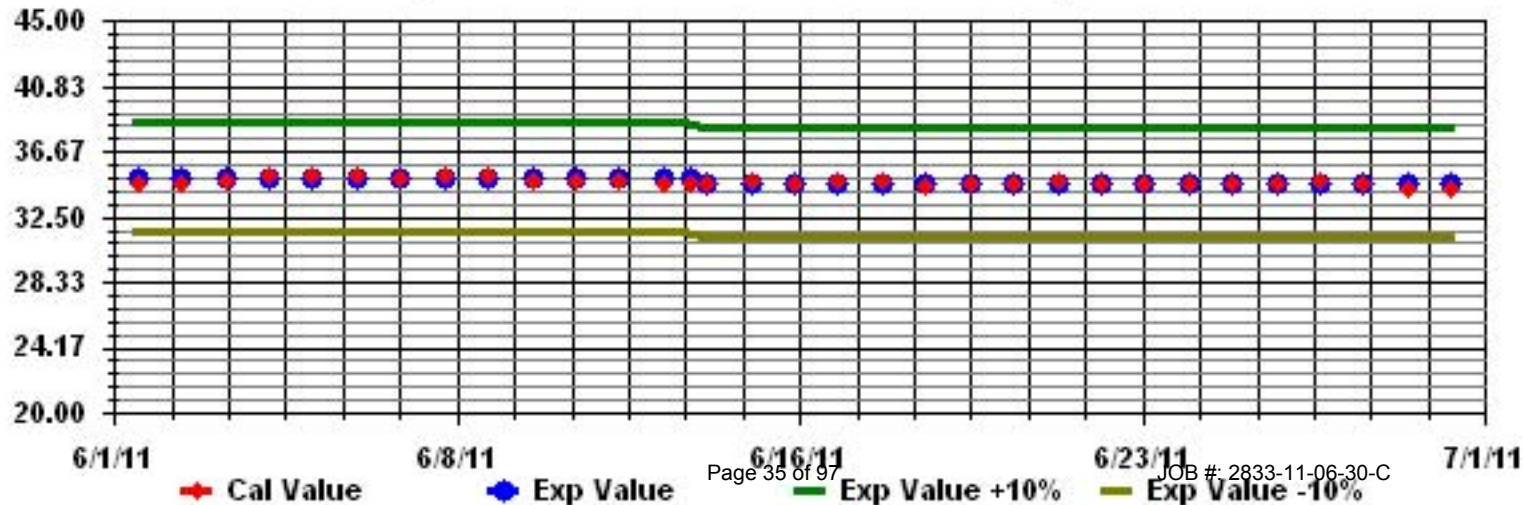
Class Limits (PPM)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA30 Parameter: THC Sequence: THC Phase: SPAll



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2	2	2	2	4	2	4	5	3	2	2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	2	5	1.9	24
2		9	1	1	1	1	1	1	3	3	4	4	IZS	1	1	1	1	0	0	0	1	1	1	1	6	9	2.2	24	
3		7	2	5	4	2	2	1	1	1	1	IZS	1	1	1	1	0	0	0	0	0	1	1	1	5	7	1.7	24	
4		5	6	5	2	1	4	4	4	2	IZS	0	1	1	1	1	1	2	2	2	2	2	2	2	2	6	2.3	24	
5		2	2	2	2	2	2	2	3	IZS	1	1	1	2	0	0	0	2	3	3	4	1	0	0	4	1.6	24		
6		3	3	3	8	6	4	4	IZS	3	1	2	2	1	1	1	1	0	0	1	1	1	1	1	2	8	2.2	24	
7		2	1	1	1	2	2	IZS	2	2	3	3	3	5	5	3	1	0	0	0	0	0	0	0	0	5	1.6	24	
8		0	0	1	1	1	IZS	2	4	2	1	3	3	6	4	1	1	0	0	0	0	0	1	1	6	1.5	24		
9		1	1	1	1	IZS	1	2	2	1	1	1	1	0	0	1	1	1	1	0	1	1	1	1	2	2	1.0	24	
10		2	2	2	IZS	4	4	4	4	3	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	4	3.1	15	
11		N	N	N	N	N	N	N	M	C	1	1	2	3	4	2	2	2	1	1	3	2	1	3	4	2.0	15		
12		1	IZS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
13		IZS	0	1	1	1	1	1	2	1	1	1	1	1	2	2	3	M	2	3	3	3	3	3	IZS	3	1.6	23	
14		0	0	1	2	1	4	7	1	1	1	0	0	0	1	2	1	1	0	0	0	0	0	0	IZS	1	7	1.0	24
15		1	1	1	5	3	1	1	1	1	2	1	1	1	1	0	1	0	0	0	0	0	0	IZS	0	5	1.0	24	
16		0	0	0	0	0	0	0	0	0	0	0	M	1	2	2	1	1	1	1	1	1	IZS	0	0	2	0.5	23	
17		0	0	0	0	0	0	1	2	2	2	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	2	0.4	24	
18		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	IZS	1	0	0	0	0	2	0.2	24	
20		1	0	0	0	0	0	0	0	0	0	1	1	1	0	2	4	IZS	2	4	8	1	0	1	4	8	1.3	24	
21		8	2	1	1	1	2	2	2	2	1	1	1	2	1	1	IZS	0	0	0	0	0	0	0	1	8	1.3	24	
22		1	1	1	1	2	3	4	5	4	4	2	1	1	0	IZS	0	0	0	2	0	0	1	1	0	5	1.5	24	
23		0	0	0	0	0	1	1	1	1	2	5	3	2	IZS	2	2	1	1	0	2	1	1	3	0	5	1.2	24	
24		0	2	5	4	15	8	2	7	6	2	1	1	IZS	1	1	0	1	0	0	0	0	0	1	5	15	2.7	24	
25		8	5	4	8	8	9	5	3	1	3	3	IZS	4	3	1	1	2	3	1	1	1	1	3	2	9	3.5	24	
26		1	1	0	1	1	2	1	1	1	0	IZS	1	2	1	0	0	0	0	0	0	0	0	0	2	0.6	24		
27		1	1	1	0	0	2	4	3	2	IZS	1	0	0	1	0	1	1	1	2	2	10	3	2	3	10	1.8	24	
28		8	2	1	0	0	0	1	1	IZS	1	0	0	0	1	1	1	0	0	0	1	0	1	0	1	8	0.9	24	
29		2	3	3	2	2	3	5	IZS	2	0	1	1	0	0	1	1	0	0	0	0	1	7	1	2	7	1.6	24	
30		2	6	3	4	11	9	IZS	5	3	2	2	1	0	0	0	1	0	0	0	0	0	0	0	11	2.1	24		
HOURLY MAX		9	6	5	8	15	9	7	7	6	4	5	3	5	6	4	4	3	3	4	8	10	7	6	9				
HOURLY AVG		2.4	1.6	1.6	1.8	2.4	2.3	2.2	2.3	1.8	1.3	1.4	1.0	1.1	1.3	1.3	0.9	0.6	0.6	0.7	1.0	1.1	1.0	1.0	1.6				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

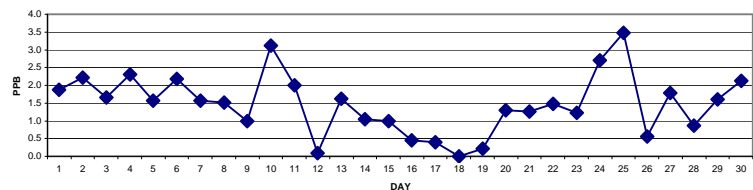
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 159 PPB

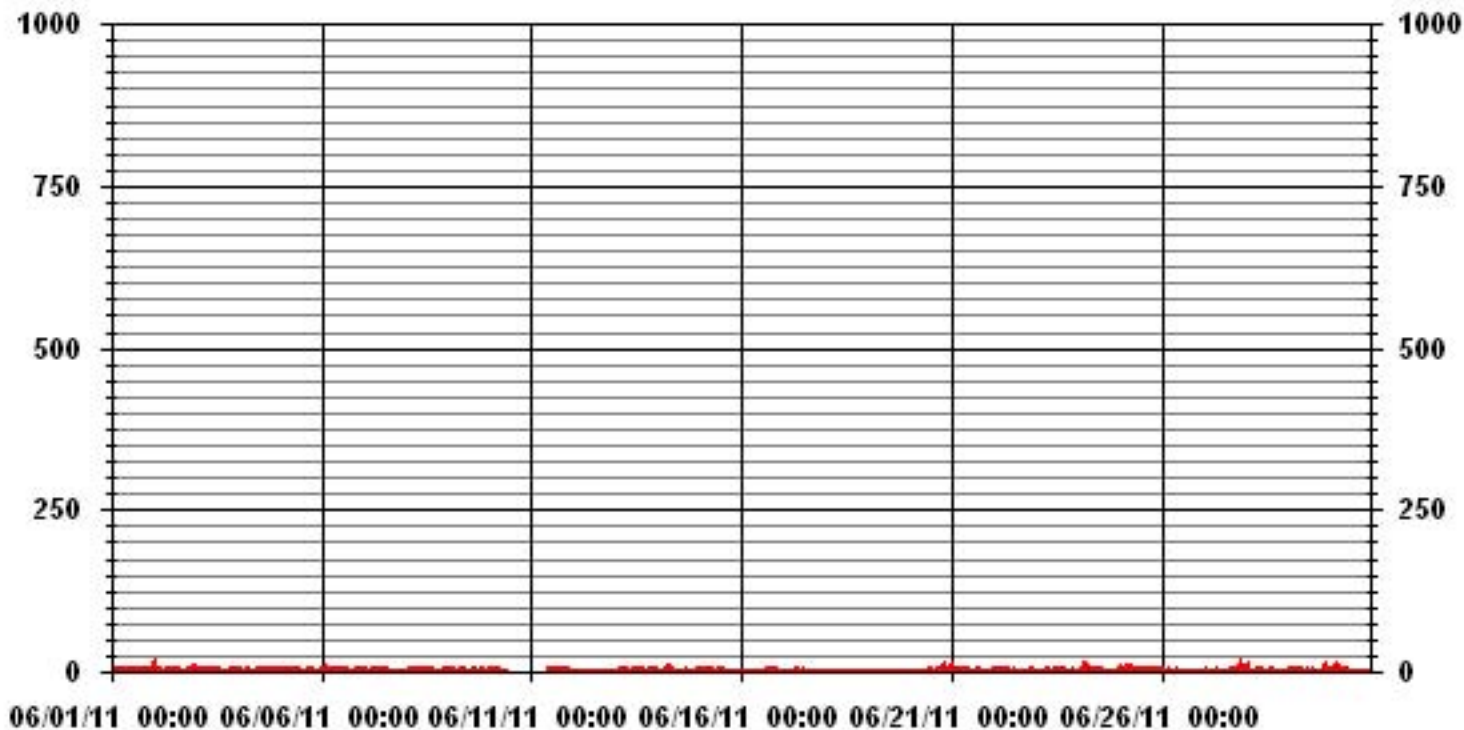
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	431					
MAXIMUM 1-HR AVERAGE:	15	PPB	@ HOUR(S)	4	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	3.5	PPB			ON DAY(S)	25
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	700	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	97.2	%	
STANDARD DEVIATION:	1.83		MONTHLY AVERAGE:	1.43	PPB	

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	2	2	3	2	8	3	8	7	6	3	3	2	IZS	2	2	2	2	2	2	3	2	2	2	8	8	3.4	24	
2	13	7	3	2	2	2	2	8	5	11	12	IZS	2	2	3	2	1	0	3	4	2	11	27	26	27	6.5	24	
3	40	3	7	6	3	3	2	2	1	2	IZS	2	2	2	2	1	1	1	1	1	1	2	3	8	40	4.2	24	
4	9	8	7	3	5	6	7	8	5	IZS	1	2	1	1	2	2	2	2	2	3	3	2	3	3	9	3.8	24	
5	3	3	3	2	2	4	3	4	IZS	1	1	2	4	7	1	1	1	8	7	6	7	3	1	0	8	3.2	24	
6	10	7	4	11	10	8	7	IZS	4	3	5	24	11	5	3	3	3	1	1	2	1	2	2	2	24	5.6	24	
7	2	2	2	2	3	3	IZS	3	3	4	4	4	11	10	4	2	1	1	1	1	1	1	1	1	11	2.9	24	
8	1	2	2	2	2	IZS	4	5	3	2	6	5	6	11	10	3	2	1	1	1	1	1	1	2	11	3.2	24	
9	2	2	2	2	IZS	2	5	5	2	2	2	2	1	1	2	1	1	1	1	1	2	2	2	2	5	2.0	24	
10	3	3	3	IZS	4	6	6	6	4	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	6	4.4	15	
11	N	N	N	N	N	N	N	N	M	C	2	3	3	4	5	3	4	3	3	1	10	4	4	11	11	4.3	15	
12	2	IZS	0	0	0	1	1	0	2	2	3	2	0	1	0	0	0	0	0	0	0	0	0	0	3	0.7	24	
13	IZS	1	1	2	3	2	2	3	3	1	2	2	2	M	M	3	M	M	4	5	4	4	5	IZS	5	2.7	20	
14	1	1	3	3	2	7	16	2	3	3	1	14	1	2	6	4	2	0	1	1	1	1	IZS	1	16	3.3	24	
15	2	2	2	11	9	2	2	2	2	6	1	1	3	3	2	1	5	1	1	1	1	IZS	1	1	11	2.7	24	
16	1	1	1	1	1	1	1	1	1	1	1	M	2	5	5	3	2	2	1	2	IZS	1	1	1	5	1.6	23	
17	1	1	1	1	1	1	3	6	4	4	3	1	1	1	1	1	1	1	1	IZS	0	1	1	1	6	1.6	24	
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1.0	24	
19	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4	3	1	IZS	6	1	1	1	1	1	6	1.6	24	
20	1	1	1	1	1	1	1	1	1	1	3	1	2	1	6	11	IZS	6	9	15	3	1	3	12	15	3.6	24	
21	13	5	2	2	2	3	3	3	2	2	2	11	5	2	IZS	1	1	1	1	1	1	2	1	1	13	3.0	24	
22	2	1	2	2	3	6	6	6	6	6	4	2	1	1	IZS	1	1	4	8	1	1	1	2	1	8	3.0	24	
23	1	1	1	1	1	1	2	1	2	8	11	6	7	IZS	7	4	4	2	2	4	8	5	13	1	13	4.0	24	
24	1	7	13	11	21	18	5	11	13	5	2	2	IZS	1	2	1	2	1	1	1	1	1	5	7	21	5.7	24	
25	16	16	9	11	11	15	11	10	5	5	8	IZS	8	9	2	2	4	6	2	2	2	2	5	4	16	7.2	24	
26	1	1	1	1	2	1	3	2	1	1	IZS	10	4	2	1	1	1	0	1	1	1	1	1	1	10	1.7	24	
27	1	2	1	1	1	4	6	4	3	IZS	8	1	1	6	1	2	2	5	6	12	14	6	4	10	14	4.4	24	
28	11	7	2	1	1	1	1	2	IZS	1	1	1	1	3	3	2	1	1	1	1	1	2	1	2	11	2.1	24	
29	3	5	4	3	3	5	6	IZS	5	1	2	2	1	1	3	1	1	2	1	1	2	17	13	4	17	3.7	24	
30	5	24	13	7	17	15	IZS	7	8	6	5	4	1	1	2	9	1	1	1	0	1	1	1	1	24	5.7	24	
HOURLY MAX	40	24	13	11	21	18	16	11	13	11	12	24	11	11	10	11	5	8	9	15	14	17	27	26				
HOURLY AVG	5.3	4.2	3.3	3.3	4.3	4.4	4.3	4.1	3.6	3.2	3.5	3.8	3.3	3.4	3.1	2.5	1.8	2.0	2.5	2.6	2.6	2.8	3.8	4.0				

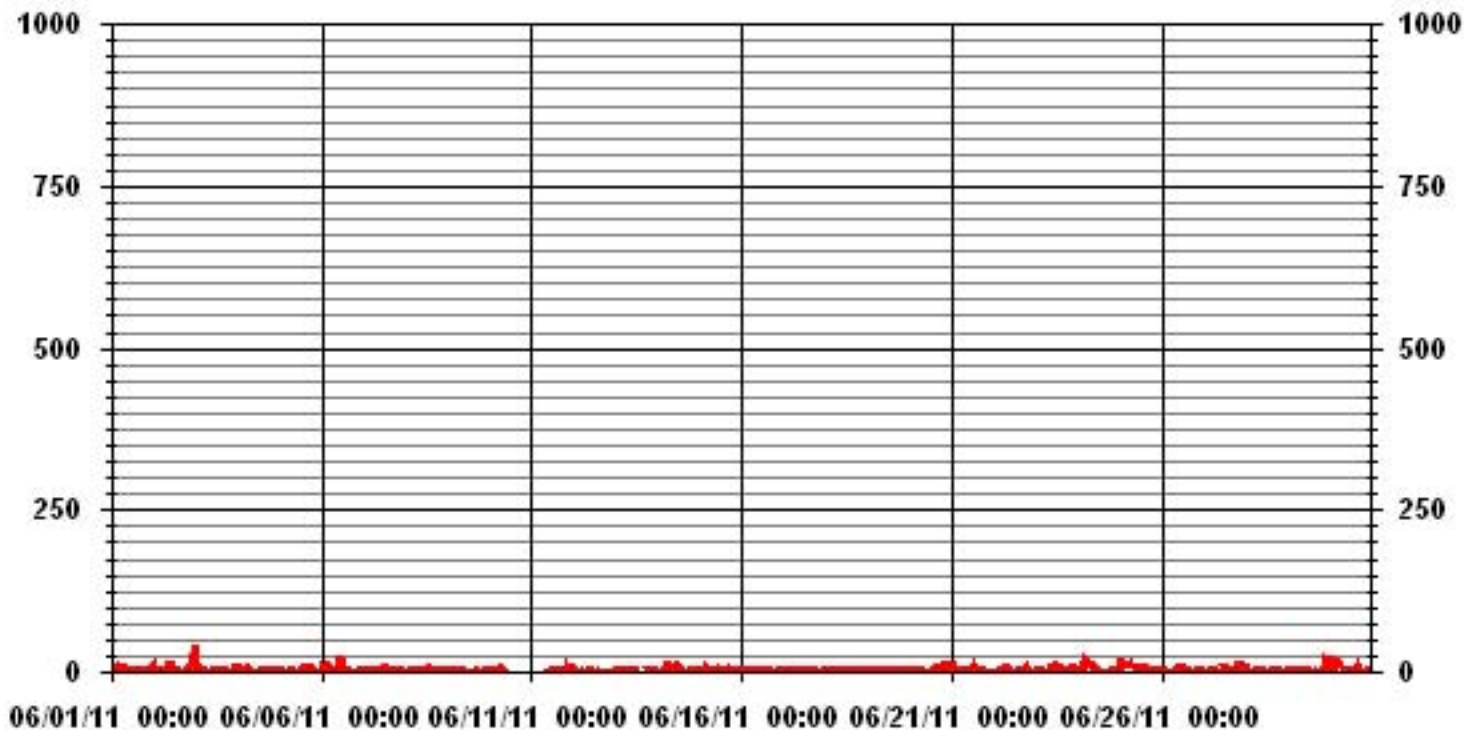
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	640					
MAXIMUM INSTANTANEOUS VALUE:	40	PPB	@ HOUR(S)	0	ON DAY(S)	3
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	697	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	3.97					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
NO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : NO2_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	

Calm : .00 %

Total # Operational Hours : 332

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	332
< 110																	
< 210																	
>= 210																	
Totals	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	

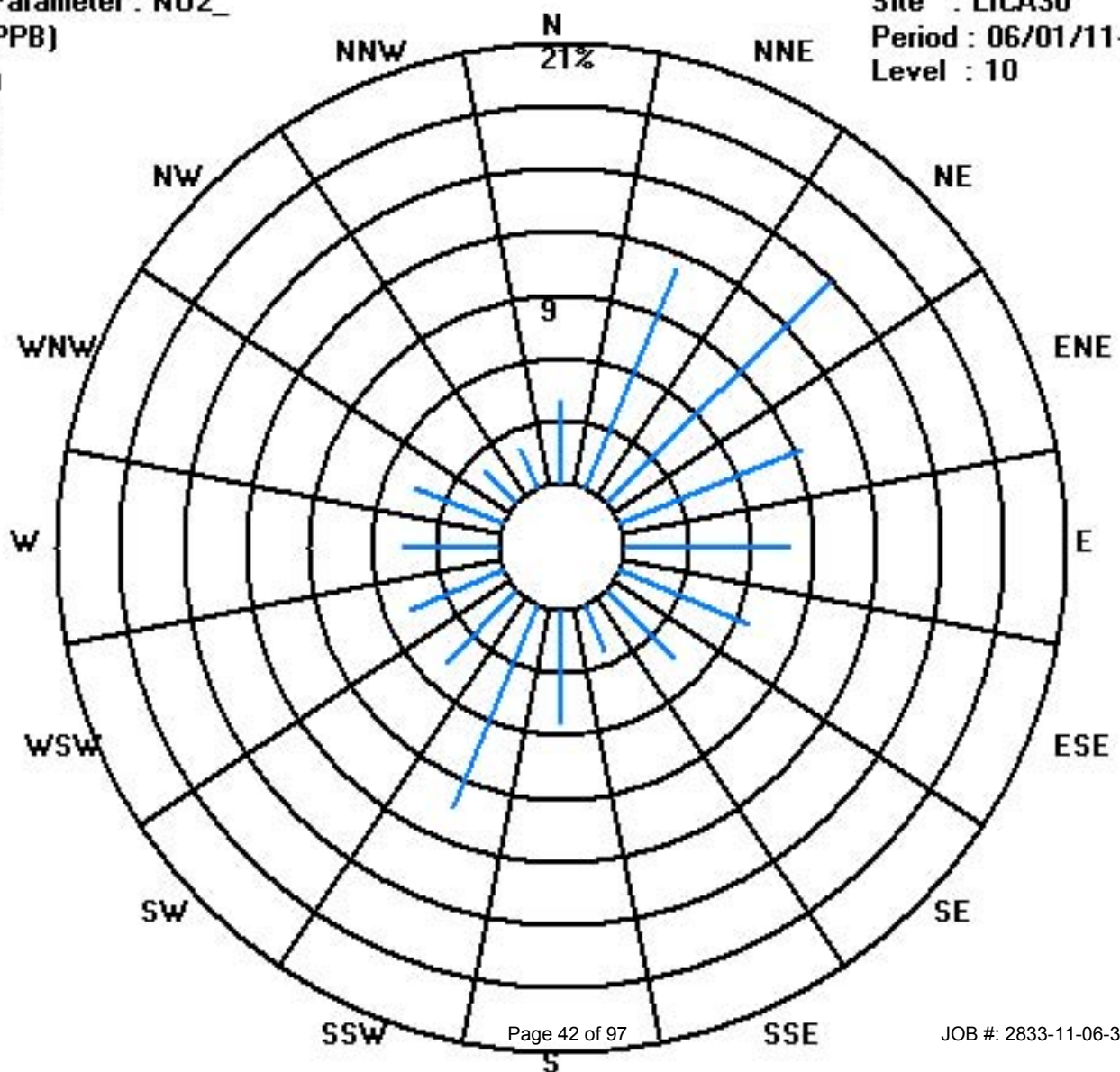
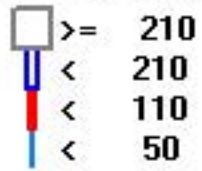
Calm : .00 %

Total # Operational Hours : 332

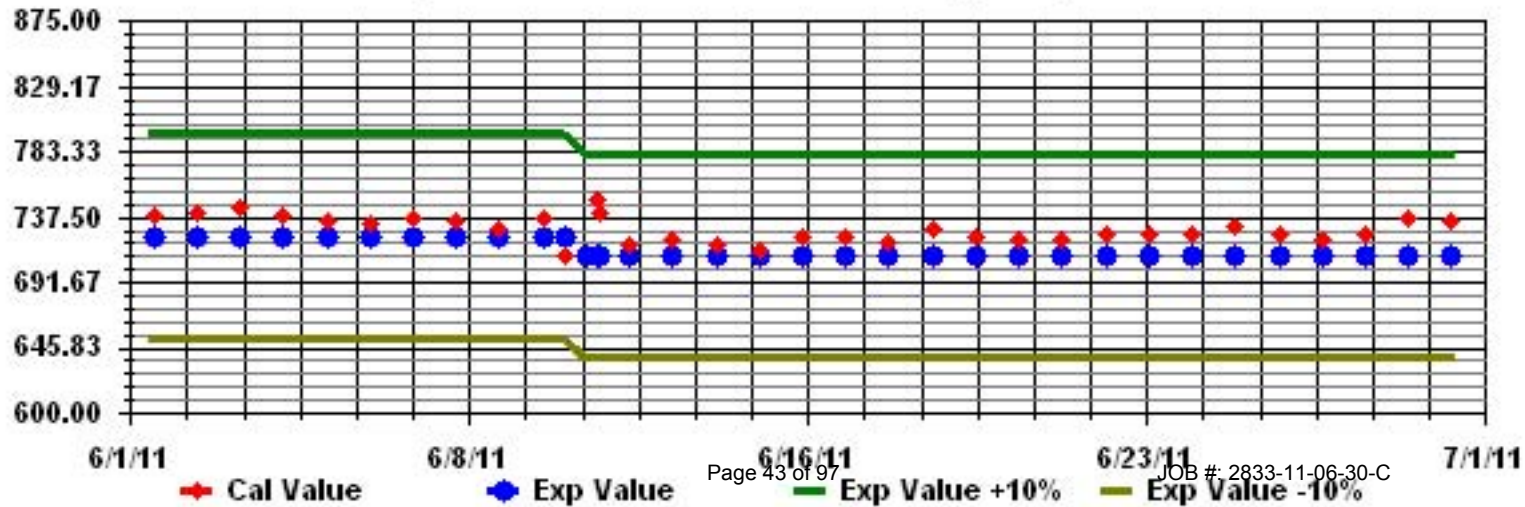
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA30 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

JUNE 2011

NITRIC OXIDE hourly averages in ppb

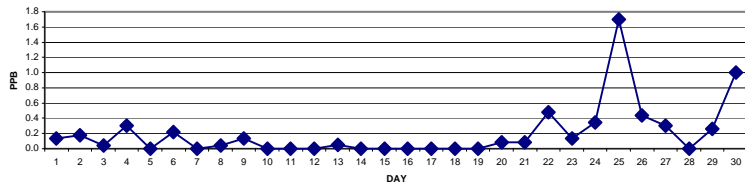
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	0	0	1	1	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
2	0	0	0	0	0	0	0	0	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	24
3	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
4	0	0	0	0	0	1	2	3	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24
5	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	2	2	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24
7	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	IZS	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
9	0	0	0	0	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
10	0	0	0	IZS	0	0	0	0	0	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	0	0.0	15
11	N	N	N	N	N	N	N	N	M	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	15
12	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	IZS	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	1	0.0	23
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	23
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	0	0	1	0	0	0	0	0	1	0.1	24
21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.1	24
22	0	0	1	0	1	2	2	2	2	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	2	0.5	24
23	0	0	0	0	0	0	0	0	0	1	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24
24	0	0	0	0	2	1	0	1	2	1	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
25	1	2	0	1	3	10	4	2	1	3	2	IZS	1	1	1	1	1	1	1	1	1	1	0	0	1	10	1.7	24
26	0	1	0	1	0	1	1	1	1	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0.4	24
27	0	1	0	0	1	1	2	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
28	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	IZS	2	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0.3	24
30	0	3	0	1	5	6	IZS	4	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	1.0	24	
HOURLY MAX	1	3	1	1	5	10	4	4	3	3	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1			
HOURLY AVG	0.1	0.3	0.0	0.1	0.4	0.9	0.6	0.6	0.6	0.3	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

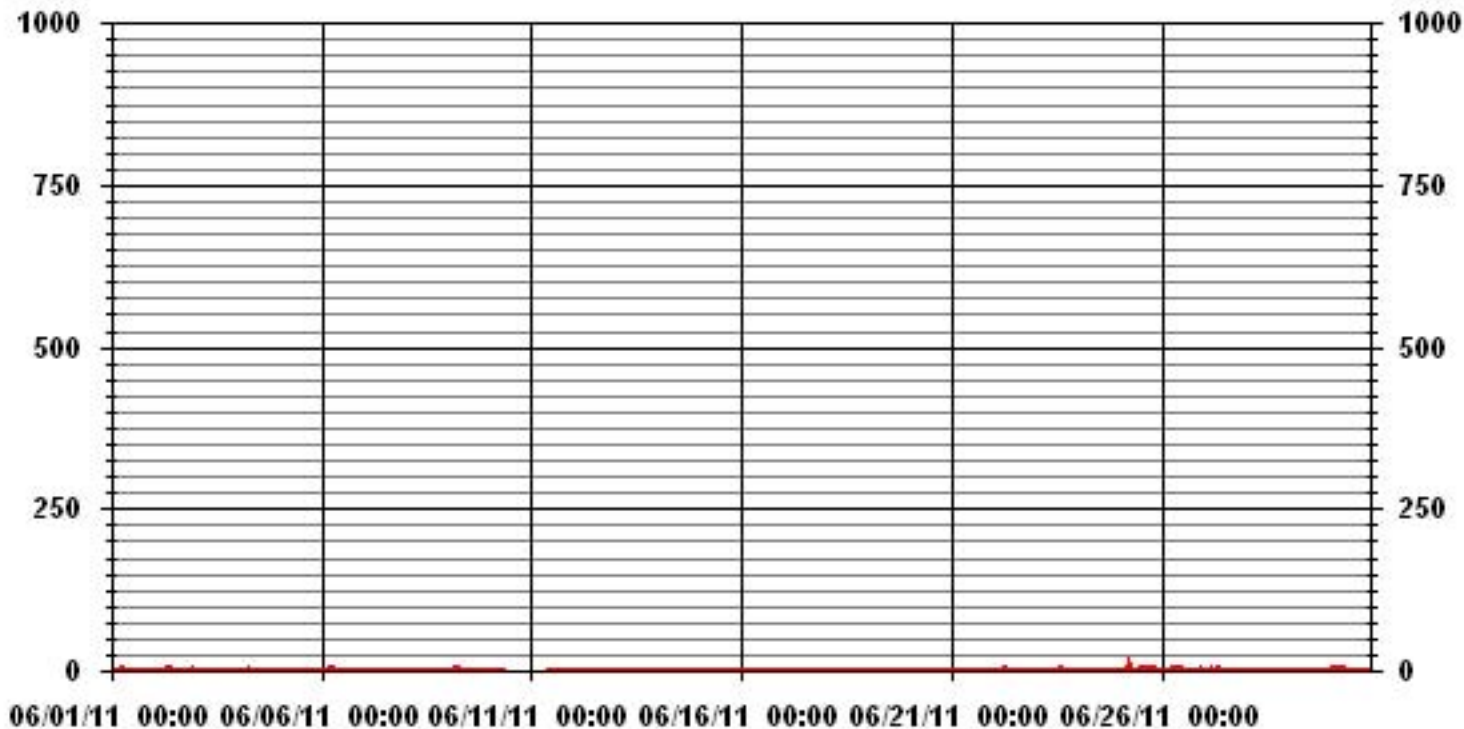
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	87
MAXIMUM 1-HR AVERAGE:	10 PPB @ HOUR(S) 5 ON DAY(S) 25
MAXIMUM 24-HR AVERAGE:	1.7 PPB ON DAY(S) 25
IZS CALIBRATION TIME:	30 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.71
OPERATIONAL TIME:	700 HRS
AMD OPERATION UPTIME:	97.2 %
MONTHLY AVERAGE:	0.21 PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
1	1	1	1	1	1	1	2	2	2	1	1	1	IZS	1	1	1	1	1	0	8	1	1	1	1	1	8	1.4	24	
2	1	1	1	1	1	1	1	2	2	5	5	IZS	2	1	1	0	0	0	1	0	0	1	7	5	7	1.7	24		
3	9	0	0	1	1	1	1	1	1	1	IZS	1	0	1	1	0	0	0	0	0	0	0	0	1	9	0.9	24		
4	1	0	0	0	1	4	6	8	4	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1.0	24		
5	0	0	0	0	0	2	1	1	IZS	1	0	0	0	1	0	0	0	2	1	0	0	0	0	0	2	0.4	24		
6	0	0	0	2	2	6	4	IZS	3	0	1	22	2	2	1	1	0	0	0	0	0	0	0	0	22	2.0	24		
7	0	0	0	0	0	0	IZS	1	1	1	1	1	2	2	1	0	0	1	0	0	1	1	1	1	2	0.7	24		
8	1	1	1	1	1	IZS	1	2	1	0	1	0	2	2	3	0	0	0	0	0	0	0	0	0	3	0.7	24		
9	0	0	0	0	IZS	1	2	2	1	1	1	1	1	0	1	0	0	1	1	1	1	0	0	1	1	2	0.7	24	
10	1	1	0	IZS	0	0	1	1	0	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	N	1	0.5	15	
11	N	N	N	N	N	N	N	N	M	C	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0.8	15		
12	1	IZS	1	0	1	1	1	1	1	1	1	0	0	1	0	1	0	0	0	1	0	0	0	0	1	0.5	24		
13	IZS	1	1	1	1	2	1	1	0	0	1	0	0	M	M	1	M	M	0	1	0	0	0	0	IZS	2	0.6	20	
14	1	1	1	1	1	1	2	1	1	1	0	14	0	0	2	1	1	0	0	0	1	1	1	IZS	1	14	1.4	24	
15	0	1	0	0	0	0	0	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	IZS	1	0	1	0.3	24
16	0	0	1	0	0	0	0	0	0	0	0	M	0	0	0	1	0	1	1	1	0	1	1	0	1	0.3	23		
17	1	1	1	1	0	0	0	2	1	1	1	1	0	0	0	0	0	0	0	0	IZS	1	1	0	0	2	0.5	24	
18	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.1	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	IZS	1	0	1	0	0	0	0	2	0.3	24	
20	0	0	0	0	0	0	0	0	1	0	1	0	1	0	2	4	IZS	2	2	2	0	0	0	2	4	0.7	24		
21	2	0	0	0	1	0	1	1	1	0	1	4	5	1	IZS	1	1	1	1	1	1	1	1	1	1	5	1.1	24	
22	1	1	2	1	2	3	4	4	3	2	1	1	1	1	IZS	0	0	0	1	0	0	0	0	0	0	4	1.2	24	
23	0	0	0	0	0	0	0	0	0	2	3	1	2	IZS	3	1	1	1	1	1	1	1	1	1	1	3	0.9	24	
24	1	1	1	1	3	4	1	2	3	2	1	1	IZS	2	2	1	1	1	1	1	1	1	1	1	1	4	1.5	24	
25	3	7	1	7	7	23	11	10	3	5	8	IZS	2	2	2	2	1	2	1	1	1	1	1	1	23	4.4	24		
26	1	1	1	1	1	1	1	1	1	1	1	IZS	4	2	1	1	1	1	1	1	1	1	1	1	1	4	1.2	24	
27	1	1	1	1	1	3	4	3	2	IZS	11	0	0	10	0	1	0	0	0	0	0	0	0	0	11	1.7	24		
28	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24		
29	0	0	0	0	0	1	1	IZS	3	1	1	1	1	1	2	1	1	1	1	1	1	1	7	4	1	7	1.3	24	
30	1	19	5	1	14	16	IZS	7	8	5	4	2	0	0	0	4	0	0	0	0	0	0	0	0	19	3.7	24		
HOURLY MAX	9	19	5	7	14	23	11	10	8	5	11	22	4	10	3	4	1	2	2	8	1	7	7	5					
HOURLY AVG	1.0	1.4	0.7	0.8	1.4	2.6	1.7	2.0	1.6	1.3	1.6	2.1	0.9	1.4	1.1	0.8	0.3	0.6	0.5	0.7	0.4	0.6	0.8	0.6					

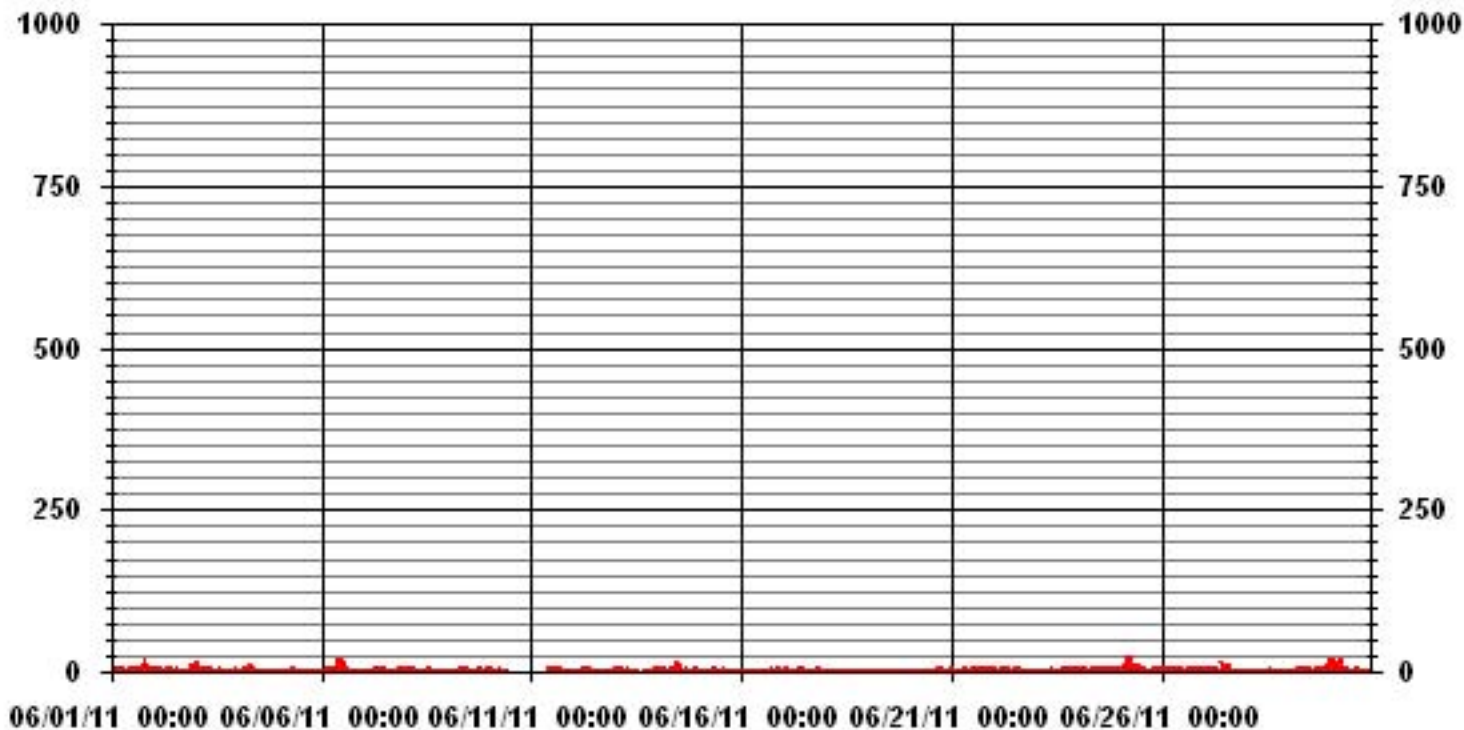
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	370					
MAXIMUM INSTANTANEOUS VALUE:	23	PPB	@ HOUR(S)	5	ON DAY(S)	25
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	697	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	2.24					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NO_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	

Calm : .00 %

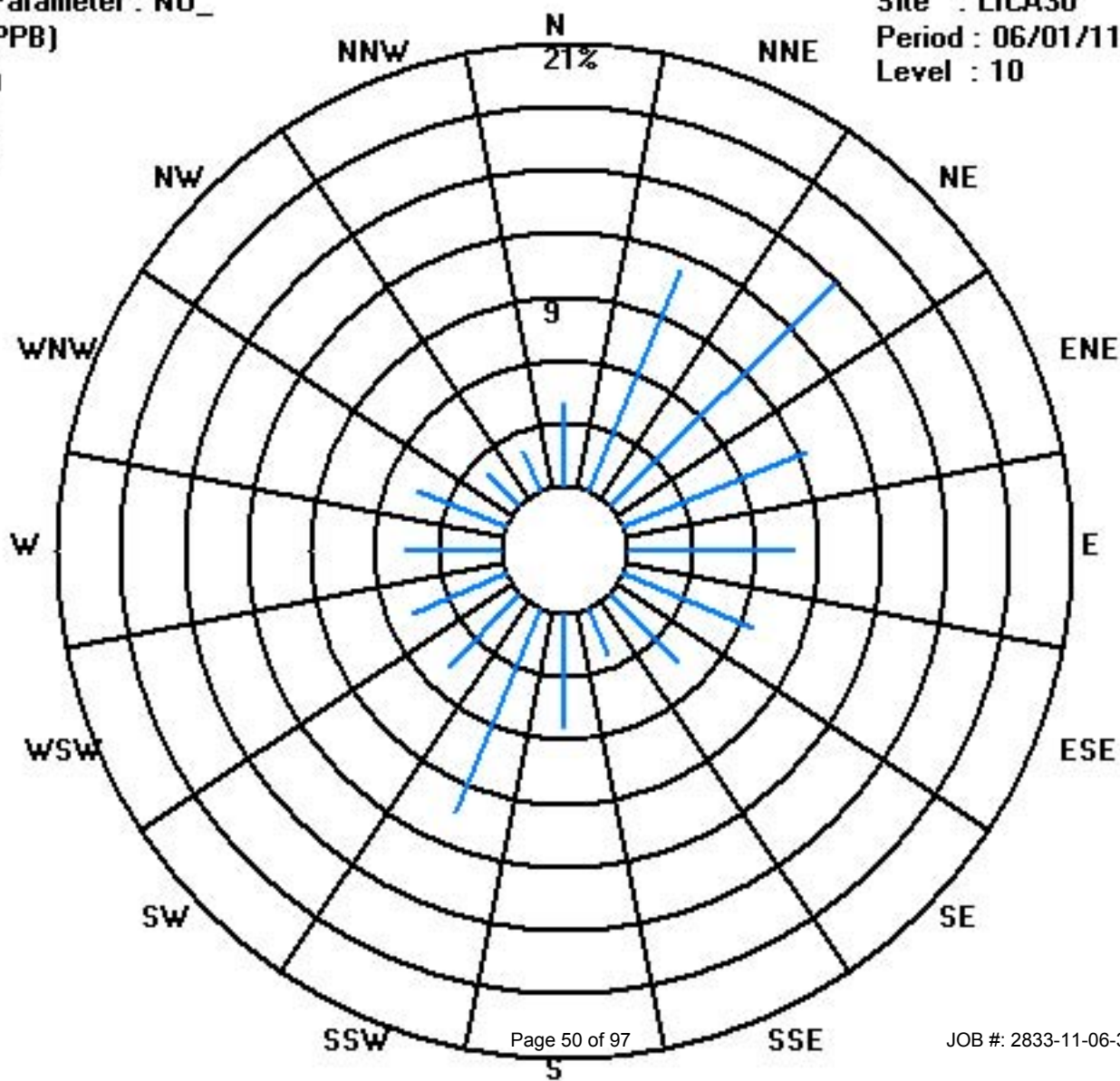
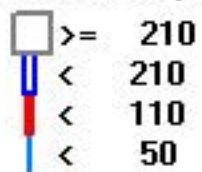
Total # Operational Hours : 332

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	332
< 110																	
< 210																	
>= 210																	
Totals	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	

Calm : .00 %

Total # Operational Hours : 332



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	1	1	2	1	4	2	5	5	3	2	2	1	IZS	1	1	1	1	1	0	1	1	0	1	2	5	1.7	24	
2	9	1	1	1	1	1	1	3	4	5	4	IZS	2	2	2	1	0	0	0	1	1	2	7	10	10	2.6	24	
3	9	2	6	4	3	2	2	1	1	2	IZS	2	2	2	2	1	1	1	1	1	1	1	2	6	9	2.4	24	
4	5	7	5	2	2	6	7	8	5	IZS	0	0	0	0	1	1	1	1	1	1	1	1	1	2	8	2.5	24	
5	2	2	2	1	1	2	2	3	IZS	2	2	2	2	3	1	1	1	4	4	4	5	2	0	0	5	2.1	24	
6	3	3	4	9	7	8	7	IZS	4	1	2	3	1	1	1	0	0	0	0	0	0	0	1	1	9	2.4	24	
7	1	1	1	1	2	1	IZS	3	3	3	4	4	6	6	3	1	1	0	0	1	0	0	1	6	1.9	24		
8	1	1	2	1	1	IZS	4	5	3	1	4	3	5	8	6	2	2	1	1	1	0	1	1	2	8	2.4	24	
9	2	2	1	2	IZS	1	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	3	1.5	24	
10	2	3	2	IZS	3	4	5	5	3	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	5	3.4	15	
11	N	N	N	N	N	N	N	N	M	C	1	1	2	3	4	2	2	2	1	0	3	1	1	3	4	1.9	15	
12	1	IZS	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
13	IZS	0	0	0	1	2	1	1	1	0	1	0	1	1	1	2	3	M	2	3	2	2	2	IZS	3	1.2	23	
14	1	1	1	3	2	5	8	2	2	1	0	1	0	1	3	2	2	0	0	0	1	1	IZS	0	8	1.6	24	
15	0	1	1	5	3	0	1	1	1	2	0	0	1	1	0	0	1	0	0	0	0	0	IZS	0	5	0.8	24	
16	0	0	0	0	0	0	0	0	0	0	0	M	0	1	2	1	0	0	0	0	0	IZS	0	0	2	0.2	23	
17	0	0	0	0	0	0	0	2	2	2	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	2	0.3	24	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	IZS	1	0	0	0	0	0	0	2	0.2	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	IZS	2	4	9	0	0	0	4	9	1.1	24	
21	9	2	1	0	1	1	2	2	1	1	0	0	2	1	1	IZS	0	0	0	0	0	0	0	0	9	1.0	24	
22	0	0	1	1	3	4	6	6	5	4	2	0	0	0	IZS	0	0	0	1	0	0	0	0	0	6	1.4	24	
23	0	0	0	0	0	0	0	0	0	3	6	3	2	IZS	2	1	1	0	0	1	1	1	0	2	0	6	1.0	24
24	0	1	5	3	16	9	1	8	7	2	0	1	IZS	1	1	1	1	1	1	0	0	1	2	5	16	2.9	24	
25	10	7	4	9	11	19	9	6	2	6	5	IZS	5	4	2	2	2	4	2	1	1	2	4	3	19	5.2	24	
26	1	1	1	1	2	1	3	1	1	1	IZS	2	2	1	1	1	0	0	0	1	1	1	1	1	3	1.1	24	
27	1	1	1	1	1	3	6	4	3	IZS	1	2	0	0	1	0	0	0	1	2	2	10	3	1	2	10	1.9	24
28	7	2	0	0	0	0	1	1	IZS	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	7	0.6	24	
29	1	2	2	1	2	3	5	IZS	4	1	1	2	1	1	2	1	1	1	1	1	1	9	2	3	9	2.1	24	
30	3	9	4	5	16	15	IZS	9	7	4	3	1	0	0	1	0	0	0	0	0	0	0	0	16	3.3	24		
HOURLY MAX	10	9	6	9	16	19	9	9	7	6	6	4	6	8	6	5	3	4	4	9	10	9	7	10				
HOURLY AVG	2.5	1.8	1.6	1.8	2.9	3.2	2.9	2.9	2.4	1.8	1.6	1.0	1.3	1.5	1.5	1.0	0.8	0.7	0.8	1.0	1.1	1.0	1.1	1.7				

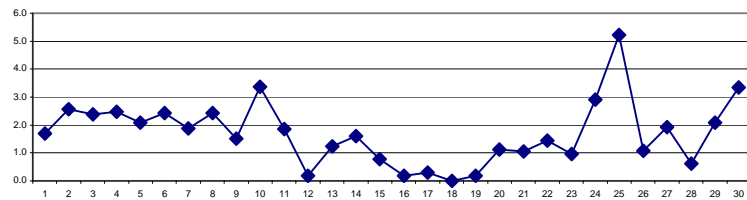
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

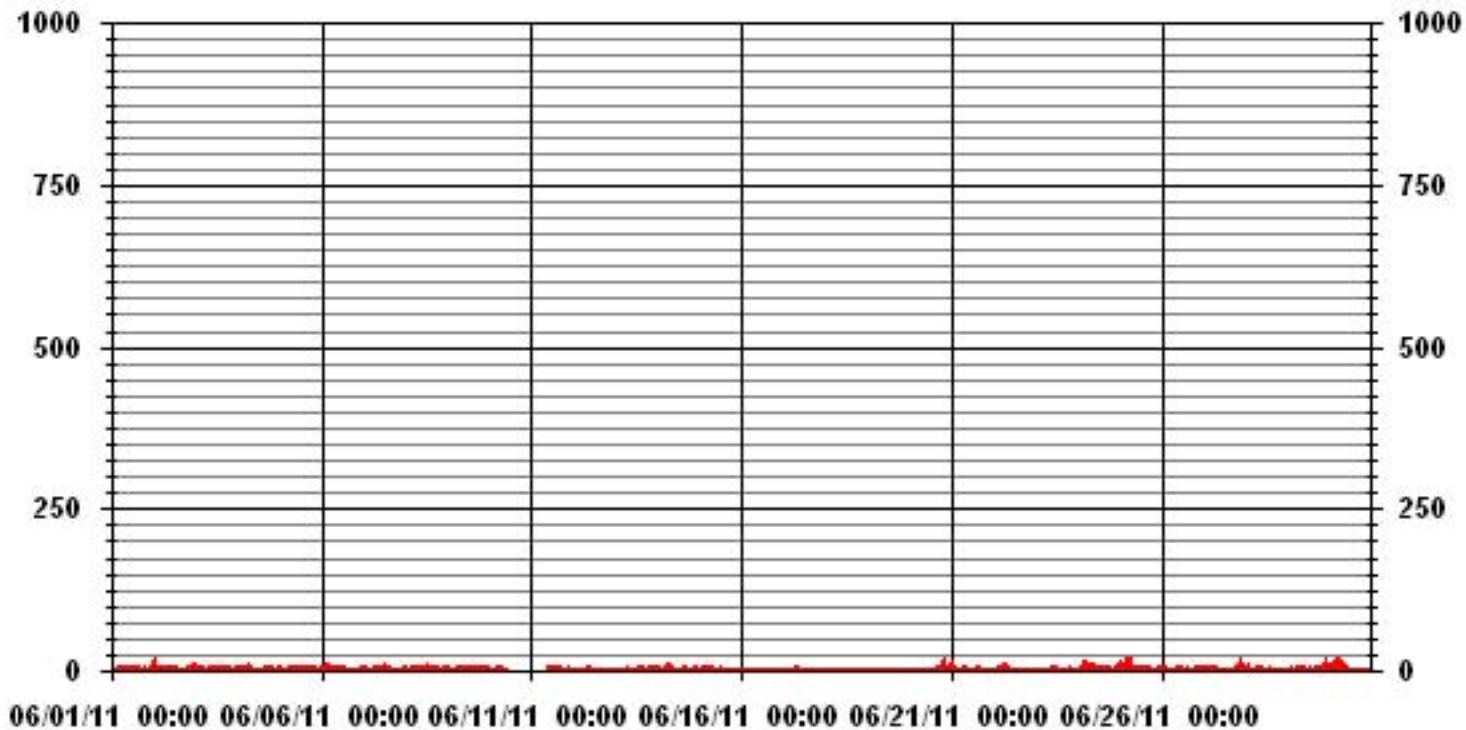
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	421					
MAXIMUM 1-HR AVERAGE:	19	PPB	@ HOUR(S)	5	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	5.2	PPB			ON DAY(S)	25
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	700	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	97.2	%	
STANDARD DEVIATION	2.35		MONTHLY AVERAGE	1.66	PPB	

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

OXIDES OF NITROGEN MAX hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	2	2	3	2	8	2	9	8	7	3	3	2	IZS	2	2	1	1	1	1	10	1	1	1	8	10	3.5	24
2	13	7	2	1	1	1	2	9	7	16	16	IZS	5	3	4	3	1	1	4	5	2	12	34	31	34	7.8	24
3	49	3	7	6	4	3	3	2	2	2	IZS	3	3	4	3	2	1	1	2	2	2	2	4	10	49	5.2	24
4	10	9	8	3	7	11	14	17	10	IZS	1	1	1	1	1	2	2	2	2	2	2	2	2	2	17	4.9	24
5	3	3	3	2	2	6	3	4	IZS	3	2	3	6	10	2	1	2	11	9	7	8	4	2	1	11	4.2	24
6	11	7	4	14	12	15	11	IZS	7	2	6	46	13	8	4	3	3	0	1	1	1	1	1	2	46	7.5	24
7	2	1	2	1	3	3	IZS	4	4	4	4	5	13	12	5	2	1	1	1	2	1	1	1	1	13	3.2	24
8	2	2	3	2	2	IZS	6	6	6	3	8	6	10	14	14	4	3	2	2	2	1	2	2	2	14	4.5	24
9	3	3	2	2	IZS	3	7	7	3	3	2	3	2	2	3	2	2	2	2	2	2	2	3	3	7	2.8	24
10	3	3	3	IZS	4	6	8	8	4	C	C	C	C	C	C	N	N	N	N	N	N	N	N	N	8	4.9	15
11	N	N	N	N	N	N	N	N	M	C	3	4	3	5	5	3	4	2	2	1	10	3	3	11	11	4.2	15
12	2	IZS	1	1	1	1	1	1	3	3	3	3	1	2	2	1	0	0	0	1	0	1	1	0	3	1.3	24
13	IZS	1	1	1	3	2	2	3	2	1	2	1	2	M	M	3	M	M	4	4	3	3	4	IZS	4	2.3	20
14	2	2	4	4	3	8	18	3	4	4	1	25	2	2	9	5	3	0	1	1	1	2	IZS	1	25	4.6	24
15	1	2	1	11	8	1	2	2	2	7	1	1	3	3	2	1	5	0	0	0	0	IZS	1	0	11	2.3	24
16	0	0	0	0	0	0	1	1	1	0	0	M	2	4	5	4	1	1	1	2	IZS	1	1	0	5	1.1	23
17	1	1	0	1	1	0	3	8	4	5	2	1	0	1	1	0	0	0	1	IZS	1	0	1	0	8	1.4	24
18	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	IZS	0	1	0	0	0	1	0.2	24
19	0	0	1	0	0	0	0	1	1	0	1	1	1	4	6	3	1	IZS	7	1	1	1	1	1	7	1.4	24
20	1	1	1	1	1	0	1	1	1	1	3	1	1	0	8	14	IZS	7	11	17	3	1	3	13	17	4.0	24
21	14	5	2	1	2	2	3	4	3	2	1	3	15	10	3	IZS	1	0	1	1	0	1	0	1	15	3.3	24
22	1	1	1	2	4	8	8	8	7	7	4	2	1	1	IZS	1	1	4	9	1	1	1	2	0	9	3.3	24
23	1	0	0	0	0	1	2	1	1	10	14	7	9	IZS	9	4	4	2	1	4	8	4	13	0	14	4.1	24
24	0	7	13	11	22	21	5	12	16	6	1	2	IZS	3	4	1	3	2	1	1	1	2	5	9	22	6.4	24
25	18	22	10	18	18	38	22	20	8	11	15	IZS	10	10	2	3	5	7	2	2	2	3	5	5	38	11.1	24
26	2	2	2	2	2	2	4	3	2	1	IZS	15	6	3	1	1	1	1	2	1	1	2	2	2	15	2.6	24
27	2	2	2	1	2	6	8	6	4	IZS	14	1	1	16	1	2	1	4	5	12	14	6	3	9	16	5.3	24
28	11	7	1	1	1	1	2	2	IZS	1	1	1	1	3	4	2	1	1	1	1	1	1	1	1	11	2.0	24
29	2	4	4	2	3	6	6	IZS	9	2	2	3	2	3	4	2	2	2	2	2	2	24	17	4	24	4.7	24
30	5	43	18	8	32	31	IZS	15	16	11	9	6	1	1	2	12	0	0	0	0	0	0	0	0	43	9.1	24
HOURLY MAX	49	43	18	18	32	38	22	20	16	16	16	46	15	16	14	14	5	11	11	17	14	24	34	31			
HOURLY AVG	5.8	5.0	3.4	3.5	5.2	6.4	5.6	5.8	5.0	4.2	4.4	5.7	4.2	4.7	3.9	2.9	1.9	2.0	2.7	3.0	2.5	3.0	4.0	4.2			

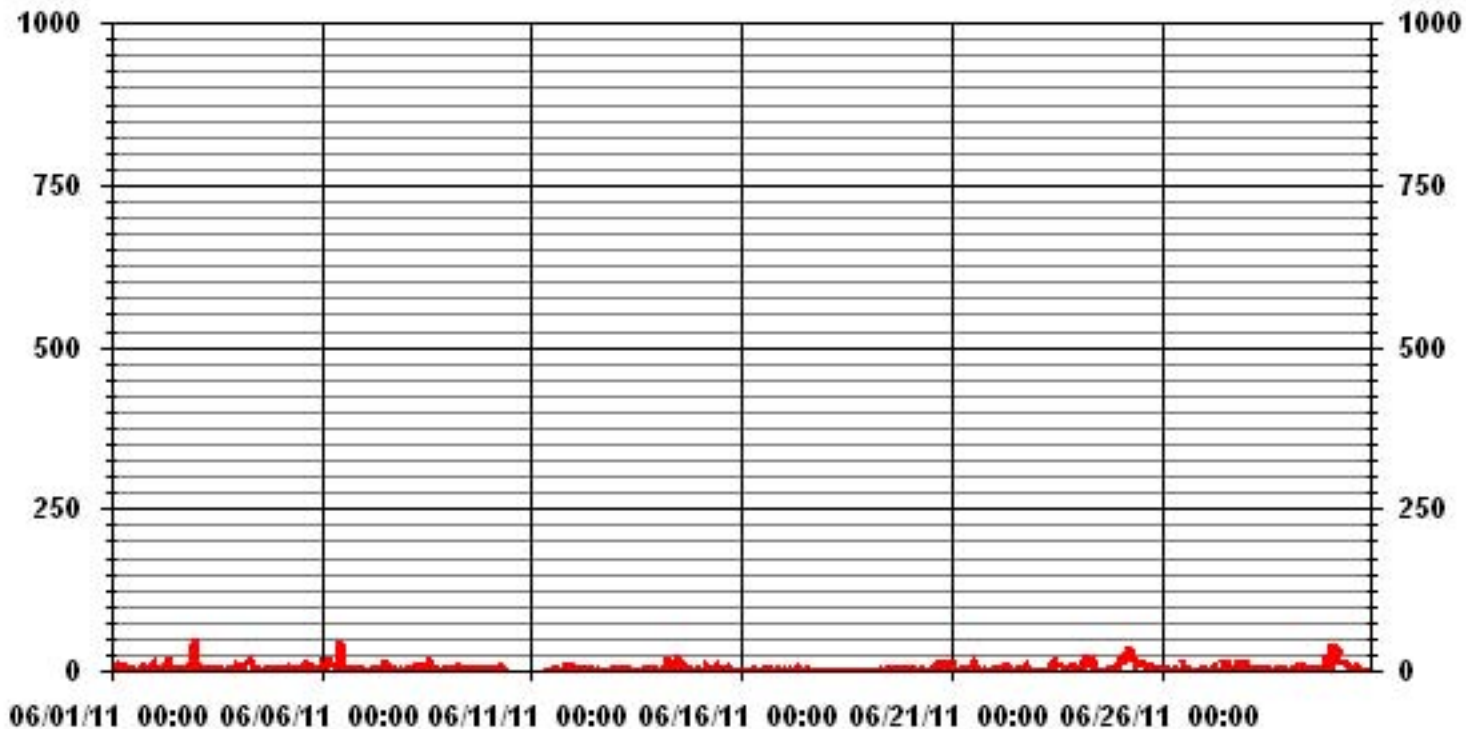
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	585				
MAXIMUM INSTANTANEOUS VALUE:	49	PPB	@ HOUR(S)	0	ON DAY(S) 3
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	697	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION:	5.73				

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : NOX_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.91	11.44	15.06	9.33	7.83	6.62	4.51	2.40	5.42	10.54	4.81	4.81	4.51	4.51	2.10	2.10	

Calm : .00 %

Total # Operational Hours : 332

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	332
< 110																	
< 210																	
>= 210																	
Totals	13	38	50	31	26	22	15	8	18	35	16	16	15	15	7	7	

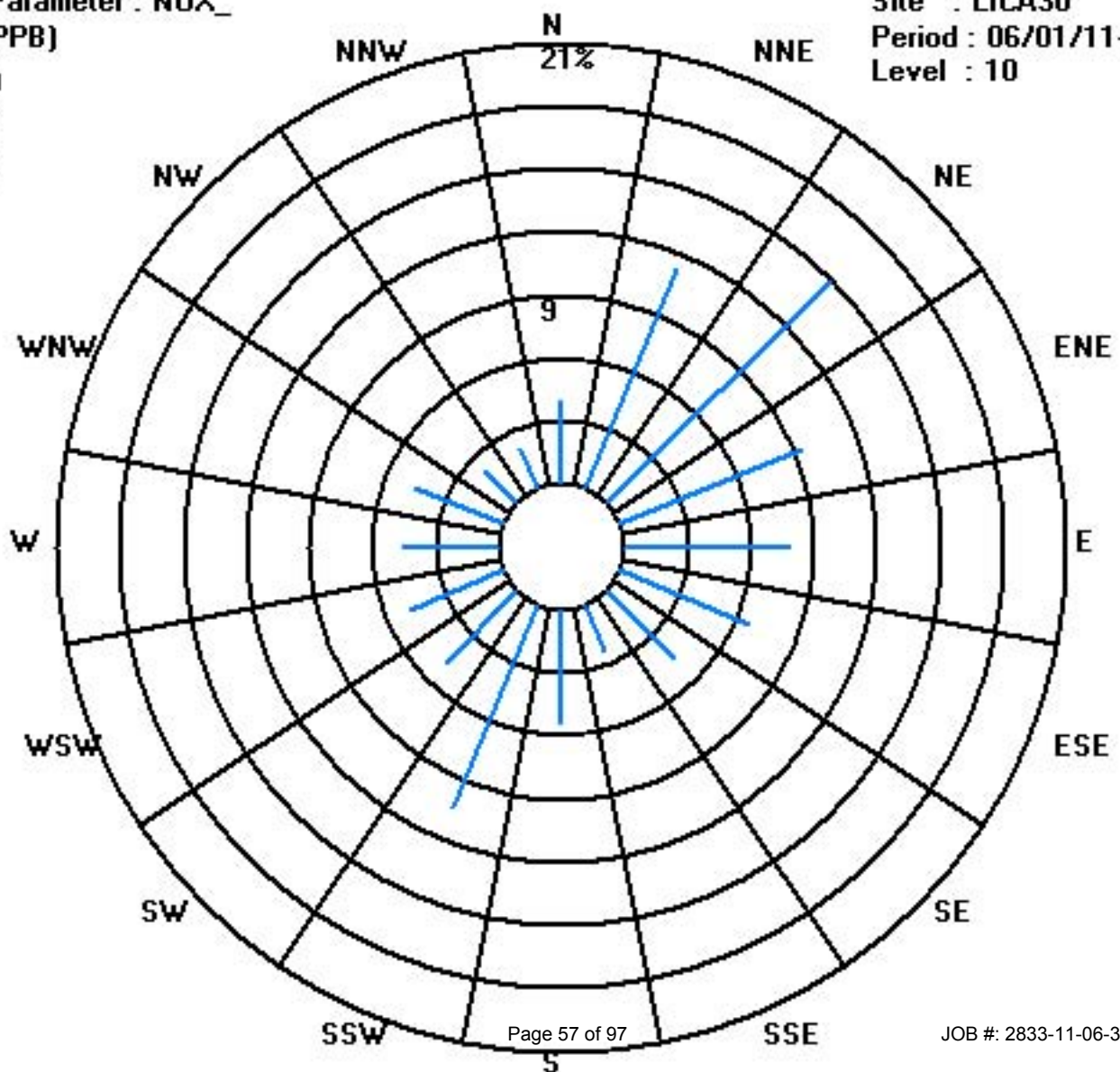
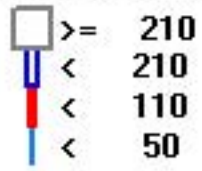
Calm : .00 %

Total # Operational Hours : 332

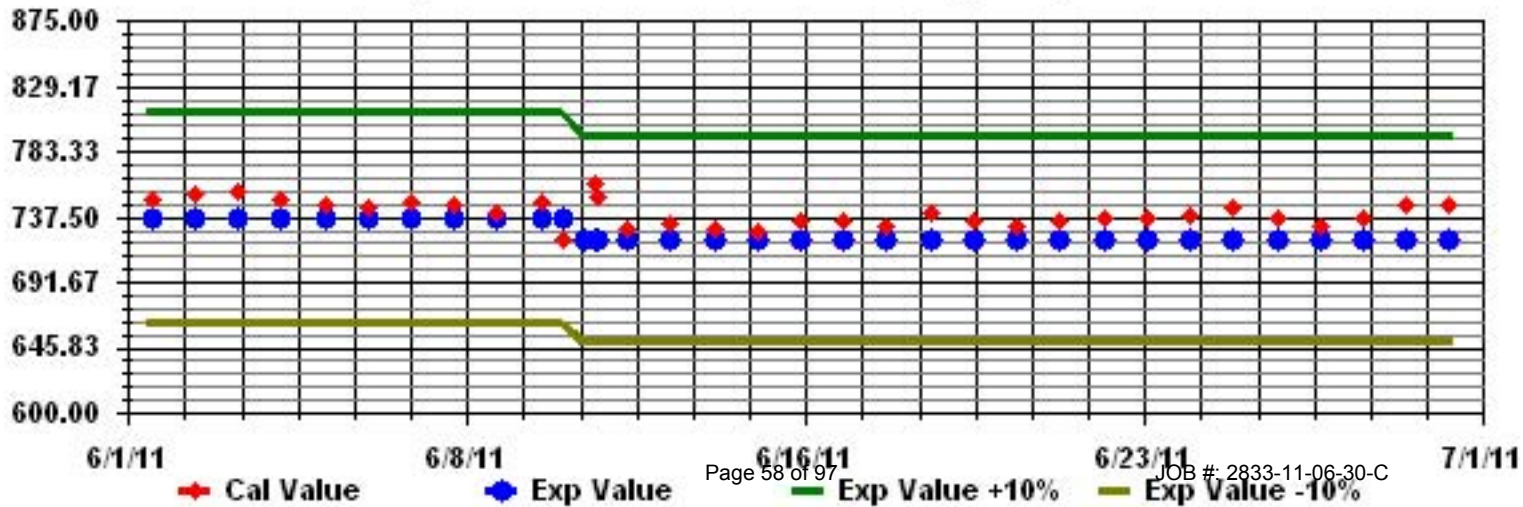
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA30 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																													
1		5.1	4.3	3.3	3	4.8	6.8	12.3	16	18.7	20.3	21.3	20.5	21.5	21.8	21.7	21.4	21.5	19.6	17.3	14.4	13.2	12.6	11.7	10.6	21.8	14.3	24	
2		10.5	9.9	9.4	8.4	8	9.9	11.7	12.9	16.2	18.7	20.5	21.8	23.4	24.7	23.2	23.8	23.1	21.6	19.1	17	15.5	14.2	13.2	13.1	24.7	16.2	24	
3		12.7	11.7	10.6	10.6	9.1	7.2	6.5	6	5.3	6.1	6.1	7.6	7.4	6	5.8	6.8	6.3	4.4	3.1	1.9	1.4	0.7	0.4	0.6	12.7	6.0	24	
4		-1.1	-2.7	-3.3	-3.7	-3.2	-0.7	2.7	4.9	5.7	6.6	8.5	8.8	10.4	10.6	10.9	10.5	9.8	9.4	9	8.4	6.2	3.7	3.1	2.5	10.9	4.9	24	
5		2.5	2.8	2.5	1.1	1.1	2.7	6	9.7	12.8	14.2	14.8	15.1	12.5	12.2	11.8	13.8	14.1	13.7	14	13.1	10.4	6.9	5.3	4.5	15.1	9.1	24	
6		3.1	2.2	1.4	0.8	0.8	5.2	9.5	12.9	15.8	18.4	18.8	20	20.7	20.5	20.9	21	21.7	19.7	19.9	17.9	14.1	9.7	7.5	5.4	21.7	12.8	24	
7		4.3	3.5	2.6	2.3	3.1	7.6	9.7	11.3	12	14.6	14.1	14.6	18.4	19.5	20.4	21	21.2	19.8	18.6	17	13.4	9.2	6.7	6.1	21.2	12.1	24	
8		3.8	2.7	2.2	1.2	0.6	4	6.8	10	14.6	15.6	15.2	14	13.7	15.8	17.5	15.9	16	16.9	16	14.2	12.6	12	11.8	11.1	17.5	11.0	24	
9		9	8.8	8.7	8.8	9	9.6	12	15.4	15.6	17.6	20.1	21.7	21.5	21.3	22.8	22.9	22.9	22.8	22	20.6	18.4	16.5	15.2	14.6	22.9	16.6	24	
10		13.6	12.8	12	11.6	10.8	12.4	14.1	17.2	19.7	22.2	23.4	24.1	24.8	25.5	25.4	25.4	25.4	24.6	23.5	21.3	18	16.7	15.3	13.5	25.5	18.9	24	
11		12.8	13	10.9	11.2	11.9	13.4	13.5	14.3	16.7	18.2	20.5	22.5	22	21.7	23.1	23.4	22.4	21.1	19.9	18.1	17.2	15.5	14.8	13.9	23.4	17.2	24	
12		13.3	12.1	10.8	10.9	10.8	11.4	13.2	14.5	15	14.3	16.1	18.5	19.7	17.7	13.6	16.2	16.4	16.9	16.3	15.6	14.2	12.2	10.7	9.7	19.7	14.2	24	
13		10	10.2	9.5	8.2	8.2	11.5	15.2	17.4	19.3	21	23	21.3	21.1	23.3	24.5	25.2	24.1	21.8	21	19.1	16.1	14	12.8	12.2	25.2	17.1	24	
14		12.4	12.5	13.6	12.8	12.2	12.3	12.8	13.3	14.8	15.8	17.6	18.9	18.5	17.1	20.7	19.6	19.2	14.1	13.7	13.3	13	12.6	12.4	12.4	20.7	14.8	24	
15		12.1	12.2	12.2	12.4	12.4	12.8	13.1	13.5	14.8	15.9	14.4	15	15.7	16.8	16.6	14.8	14.9	13.3	13.1	13.1	13.1	13.1	12.9	12.5	16.8	13.8	24	
16		11.8	12.1	12	11.9	11.8	11.7	12	12.2	12.1	12.5	13.8	14.3	16	13.3	9.5	12.8	15.8	13.2	15.6	14.1	12	10.6	9.8	8.9	16.0	12.5	24	
17		8.5	8.1	7.8	7.6	8.2	9.4	10.9	10.7	10.9	12.2	14.6	17.5	18.3	18.6	18	18.3	16.4	14.5	13.7	13.2	12.8	12.6	12.6	12.9	18.6	12.8	24	
18		13.2	13.3	13.2	13.3	13.4	13.4	13.4	13.4	13	13	13.4	15.5	16.3	15.9	15.5	16.1	15	14.7	14.2	13.9	13.1	12.9	12.6	12.6	16.3	13.9	24	
19		12.7	12.7	12.5	12.2	11.9	12	12.3	12.6	12.8	13.7	15	17.1	17.7	18.9	19.2	17.7	17.8	17	15	14.2	13.8	13.5	13.6	13	19.2	14.5	24	
20		12.7	12.5	12.4	12.1	12.3	12.6	12.7	13	13.5	14.3	14.4	15.4	17.1	17.7	18.1	17.1	17.2	17.5	17.9	16	15.1	15.2	15.4	15.2	18.1	14.9	24	
21		15	14.7	14.2	13.7	13.4	13.5	14.4	16	17.4	18.6	19.2	19.5	20.7	22.2	22.9	23.5	23.7	23	21.9	21.1	16.6	13.1	11.4	10.1	23.7	17.5	24	
22		9.2	8.4	8	7.5	8.1	11.3	15.1	18.2	20	22	23.6	24.6	24.5	25.5	25.7	26.1	25.1	24.2	23.1	21.6	17.3	14.8	13	10.9	26.1	17.8	24	
23		10.2	9.3	8.9	8.7	8.6	11.2	15.9	19.6	22.4	23.6	24	26.3	26.8	27.5	27.7	27.4	27.2	25.8	24.4	22.1	20	18.8	15.5	14.6	27.7	19.4	24	
24		14.7	15	15.2	15.3	15.3	15	15	15.3	16.4	17.6	17.4	15.1	15.4	17.2	19.3	20.2	20.5	20.7	20.1	18.3	14.5	11.9	11.1	11.5	20.7	16.2	24	
25		12.3	11.8	10.9	9.8	10.1	12.1	12.2	12.8	13.7	14.8	15.2	9.7	9.1	9.7	10.6	11.8	11.8	11.7	10.9	10.7	10.3	10.2	9.9	8.5	15.2	11.3	24	
26		8.2	7.7	7.8	8.4	8.9	10	11	12.9	13.3	14.2	15.8	17.5	15.4	12	11.2	11.8	13.8	15.8	16.9	14.5	11.2	9.1	7.2	6.3	17.5	11.7	24	
27		5.1	4	4	5.2	6.2	7.7	8.8	10.4	12	14.1	16	17.4	18.9	19.5	20.8	21.2	21.1	18.5	13	11.8	11.9	11.7	11.4	11.3	21.2	12.6	24	
28		11.3	11.1	10.5	9.5	9.4	9.4	11.5	13.6	13.6	16.1	17.1	19.7	21.3	22.6	23.6	24.3	23.9	23.7	22.2	21.1	18	15.6	15.1	16.4	24.3	16.7	24	
29		18	17.1	17.1	15.8	15.2	16.6	16.9	18.6	21.4	24	24.7	25	25.3	26	26	27.1	26.4	25.8	25.6	23.2	18.8	16.9	14.7	14.4	27.1	20.9	24	
30		14.3	14.2	13.4	12.9	13.3	13.6	14.3	17.5	18.8	20.1	21.5	22.3	22.2	22.1	22.5	22.4	21.7	21.5	20.7	18.8	16.1	14.6	13	11.8	22.5	17.7	24	
HOURLY MAX		18.0	17.1	17.1	15.8	15.3	16.6	16.9	19.6	22.4	24.0	24.7	26.3	26.8	27.5	27.7	27.4	27.2	25.8	25.6	23.2	20.0	18.8	15.5	16.4				
HOURLY AVG		10.0	9.6	9.1	8.8	8.9	10.2	11.9	13.5	14.9	16.3	17.3	18.0	18.5	18.8	19.0	19.3	19.2	18.2	17.4	16.0	13.9	12.4	11.3	10.7				

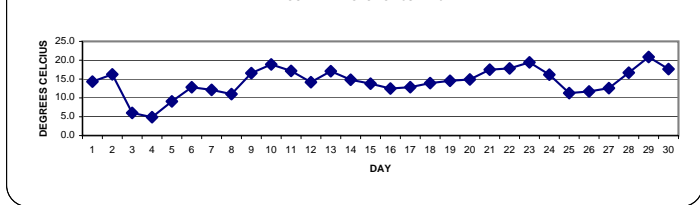
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

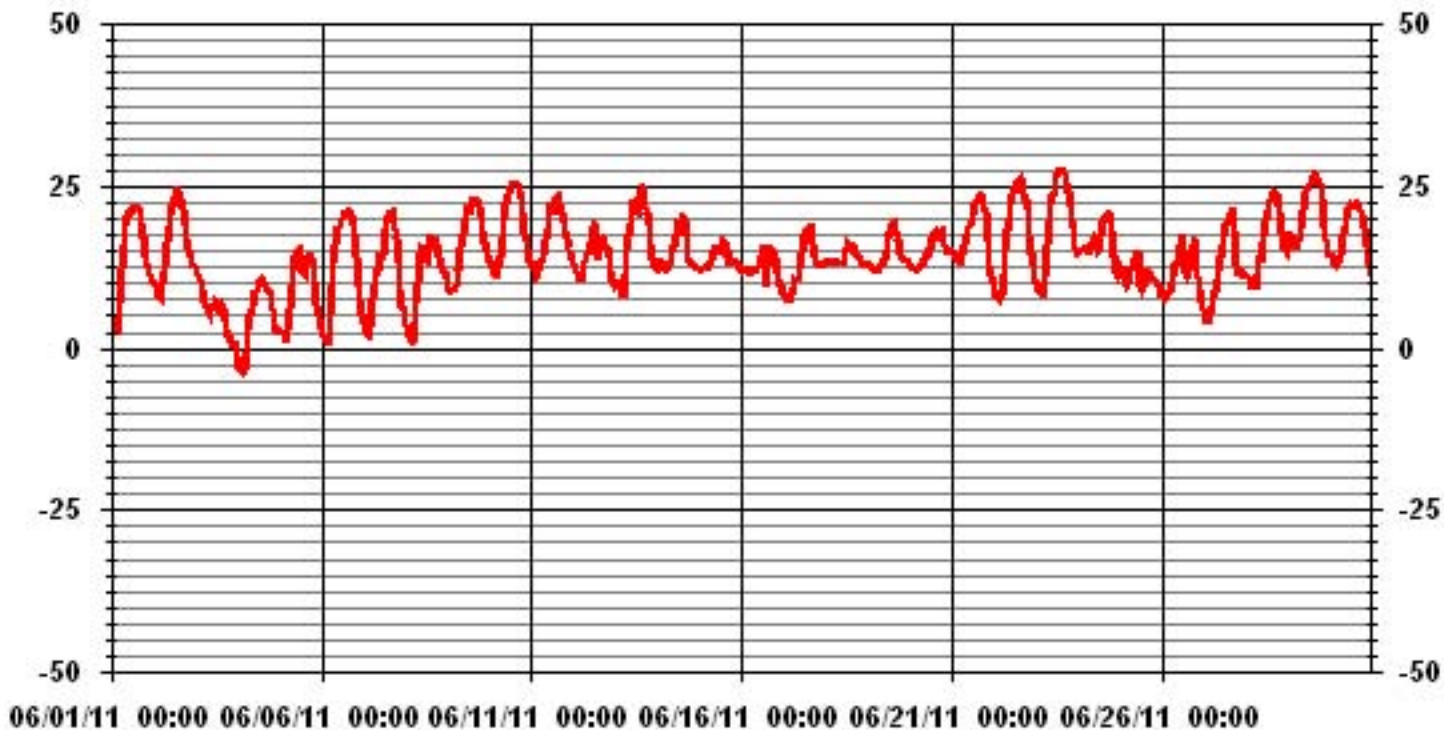
MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-3.7 °C	@ HOUR(S)	3	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	27.7 °C	@ HOUR(S)	14	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	20.9 °C			ON DAY(S)	29
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS		
STANDARD DEVIATION:	5.81	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	14.31 °C		

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	TOTAL	RDGS.	
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	0.3	0.5	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.1	0.2	0.4	0.7	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
5		0	0	0	0	0	0	0	0	0	0	0	0	0.8	0.3	0.1	0	0	0	0	0	0	0	0	0	0	0.8	1.2	24
6		0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8		0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
9		0	0	0	0.1	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	24
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
12		0	0	0	0	0	0	0	0	0.4	1.8	0.1	0	0	7.6	8.5	0	0	0	0	0	0	0	0	0	0	8.5	18.4	24
13		0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
14		0	0	0	1.4	1.9	0.4	0.2	0	0	0	0	0	0.2	0.1	0	1.3	22.6	1.7	0.2	0	0.2	0.1	0.4	22.6	30.7	24		
15		0.4	1.8	0.7	1.8	3.2	1	0.7	0.1	0	0	0.4	0.1	0.2	0	4	0.7	1.5	6.5	0.9	1.7	1.1	1.2	6.6	2.7	6.6	37.3	24	
16		3.8	0.2	0	0	0	0	0	0	0.4	0.9	0.5	1.8	0	15.4	2.1	0.1	2.2	0.1	0	0	0	0	0	0	15.4	27.5	24	
17		0	0	0	0.1	0	0	0.1	4.7	1.4	0	0	0	0	0	0	0	0.4	1.4	2.8	2.5	1.2	2.3	3.7	4.7	20.6	24		
18		0.9	2.3	1.1	1.2	2.2	2.3	1.3	0.1	0.9	0.1	0	0	0	0	0	0	0.2	0.1	0	0.3	0.2	1	1.5	0.1	2.3	15.8	24	
19		0	0	0.5	0.8	3.1	0.6	0.1	0.2	0.6	0	0	0	0	0	0	0	1.8	1	0	0	0	0	0	0	3.1	8.7	24	
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0.1	0.1	0.2	24
21		0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.3	24
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
23		0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	1.9	0	1.9	2.6	24
24		0.3	0	0.1	0	0.2	0.5	0	0	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.5	24
25		0	0	0	0	0	0	0	0	0	0	0	3.1	1.2	0	0	0	0	0.1	0.8	0.6	0.4	2	0.5	0	3.1	8.7	24	
26		0	0	0.1	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	23	4.4	0.2	0	0	0	23.0	29.7	24	
28		0.2	0.3	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.7	24
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	5.1	0.3	5.1	5.8	24
30		0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24
HOURLY MAX		3.8	2.3	1.1	1.8	3.2	2.3	1.3	4.7	1.4	1.8	0.5	3.1	1.2	15.4	8.5	0.7	2.2	22.6	23.0	4.4	2.5	2.0	6.6	3.7				

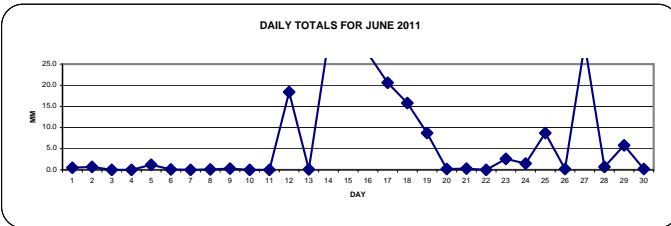
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	MD	-MISSING DATA

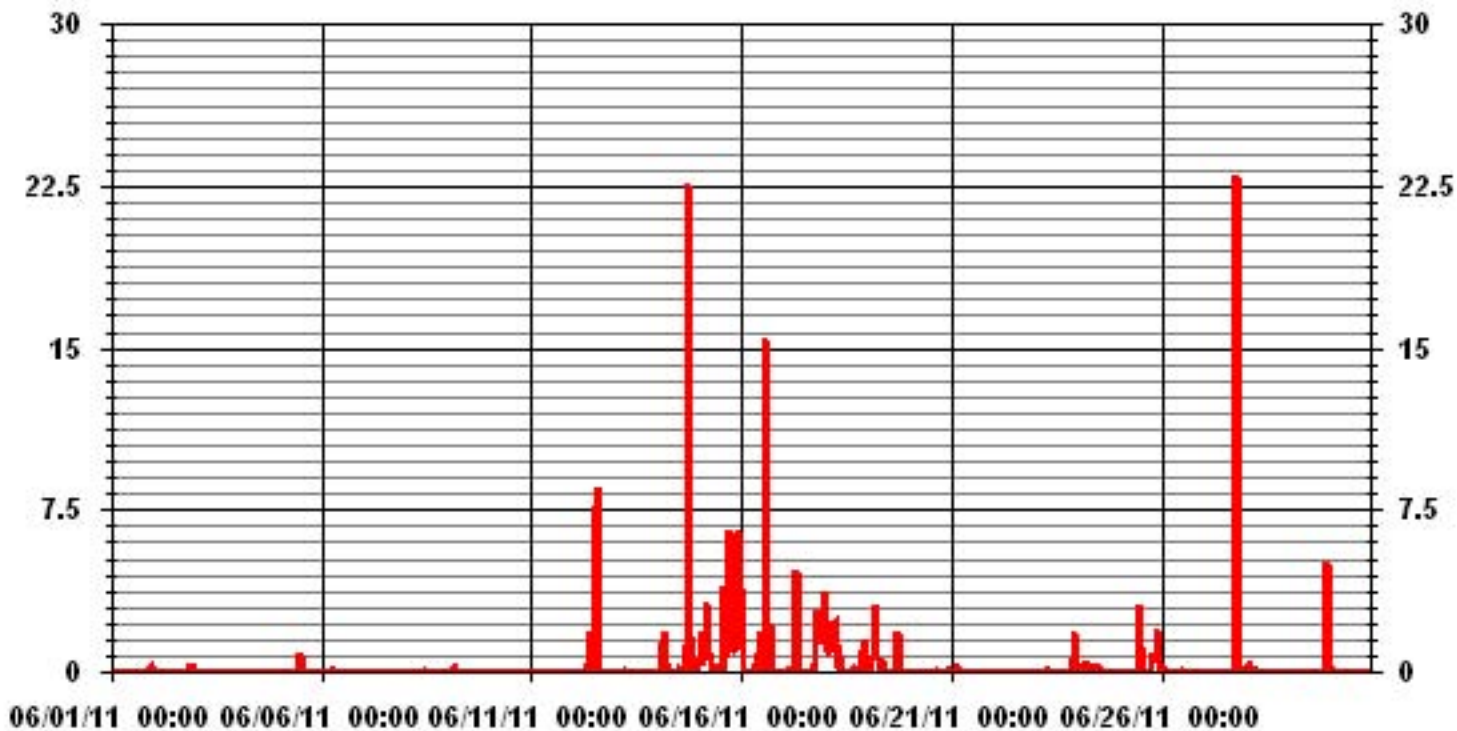
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	23.0	MM	HOURL(S)	18	ON DAY(S)	27
MAXIMUM DAILY TOTAL	37.3	MM			ON DAY(S)	15
MONTHLY TOTAL	211.9	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	1.54		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.29	MM	

DAILY TOTALS FOR JUNE 2011



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

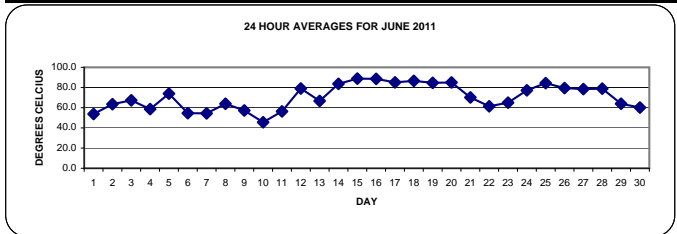
JUNE 2011

RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1		78	81	85	88	85	82	63	48	39	33	29	30	28	27	26	26	26	30	42	56	62	67	75	85	88	53.8	24
2		86	87	89	92	92	87	81	78	66	56	49	41	38	32	34	31	32	39	47	63	69	78	79	77	92	63.5	24
3		73	80	82	81	81	83	82	79	75	70	66	58	54	57	55	51	51	56	59	60	62	65	68	68	83	67.3	24
4		75	81	81	83	81	71	57	48	42	39	36	36	33	34	36	43	49	54	56	58	68	78	82	86	86	58.6	24
5		86	85	87	88	89	86	79	70	61	57	55	54	74	77	77	67	62	62	59	62	72	85	90	91	91	74.0	24
6		91	92	92	92	92	92	77	58	48	35	31	29	27	27	25	25	23	28	27	33	50	63	72	81	92	54.6	24
7		87	88	90	89	86	71	65	58	55	46	49	49	39	30	29	26	23	28	31	34	44	57	65	67	90	54.4	24
8		78	83	86	88	89	83	72	63	48	42	46	55	65	53	45	56	48	50	58	65	67	68	71	89	63.9	24	
9		82	82	84	85	90	91	81	66	62	56	47	41	36	36	37	36	36	34	36	39	47	53	57	60	91	57.3	24
10		61	62	66	68	71	66	62	54	46	37	34	31	28	28	27	28	28	28	30	36	45	49	52	57	71	45.6	24
11		59	60	70	69	67	65	67	63	60	55	47	43	44	43	39	40	41	48	51	57	59	68	68	69	70	56.3	24
12		73	77	80	80	82	81	75	73	75	84	80	68	55	67	85	78	79	78	81	83	87	91	92	93	93	79.0	24
13		93	93	93	93	93	92	79	67	57	48	43	48	50	42	38	34	39	49	55	63	75	82	86	89	93	66.7	24
14		87	84	82	88	91	92	91	90	87	82	75	67	69	78	61	70	70	90	91	91	92	93	93	93	93	83.6	24
15		92	93	93	92	92	93	91	90	85	80	87	86	84	78	78	88	87	91	92	92	92	92	92	92	93	88.8	24
16		92	92	92	92	91	91	90	89	91	91	88	89	81	83	90	87	80	84	79	85	91	92	93	93	93	88.6	24
17		93	93	93	93	93	93	93	91	89	86	81	70	67	65	66	66	76	87	90	91	91	92	92	92	93	85.1	24
18		92	92	92	92	92	92	91	90	91	91	90	82	77	75	76	74	79	82	83	84	89	90	91	91	92	86.6	24
19		91	90	91	91	92	92	92	92	89	85	76	72	68	65	71	73	77	87	87	90	90	89	89	92	92	84.6	24
20		90	90	90	91	91	90	90	88	86	86	83	77	75	74	79	78	78	78	84	86	88	89	90	91	91	85.0	24
21		90	90	90	90	91	91	89	83	78	73	70	67	59	48	44	39	37	38	43	48	68	79	88	91	91	70.2	24
22		92	92	92	93	93	91	75	65	60	51	44	38	37	33	31	30	33	34	40	45	63	73	79	89	93	61.4	24
23		91	92	92	93	93	88	75	65	57	53	53	48	45	43	41	40	40	44	49	56	59	67	86	90	93	65.0	24
24		92	89	86	85	85	89	89	89	85	79	78	87	82	71	60	57	53	52	53	58	75	85	88	86	92	77.2	24
25		82	82	85	88	87	83	85	84	82	77	73	82	87	84	83	79	79	81	87	89	91	91	92	92	92	84.4	24
26		92	93	92	92	92	89	88	81	80	78	73	66	75	81	79	74	66	55	49	61	81	87	91	92	93	79.5	24
27		92	92	92	92	92	92	90	85	79	69	61	56	54	55	53	54	58	73	89	89	90	92	92	92	92	78.5	24
28		92	92	92	93	93	93	92	88	87	80	78	69	63	62	60	61	62	64	68	68	77	87	89	83	93	78.9	24
29		76	77	75	80	84	80	81	76	67	52	50	48	44	43	43	38	40	45	44	61	73	77	90	91	91	64.0	24
30		91	92	91	93	92	89	86	74	68	63	55	50	44	41	34	32	32	34	36	42	50	47	51	57	93	60.2	24
HOURLY MAX		93	93	93	93	93	93	93	92	92	91	90	89	87	84	90	88	87	91	92	92	92	93	93	93			
HOURLY AVG		85.0	85.9	86.8	87.8	88.1	85.9	80.9	74.9	70.0	64.6	61.3	58.2	56.3	54.5	53.0	52.6	52.9	56.4	59.4	64.4	72.1	77.5	81.3	83.2			

STATUS FLAG CODES

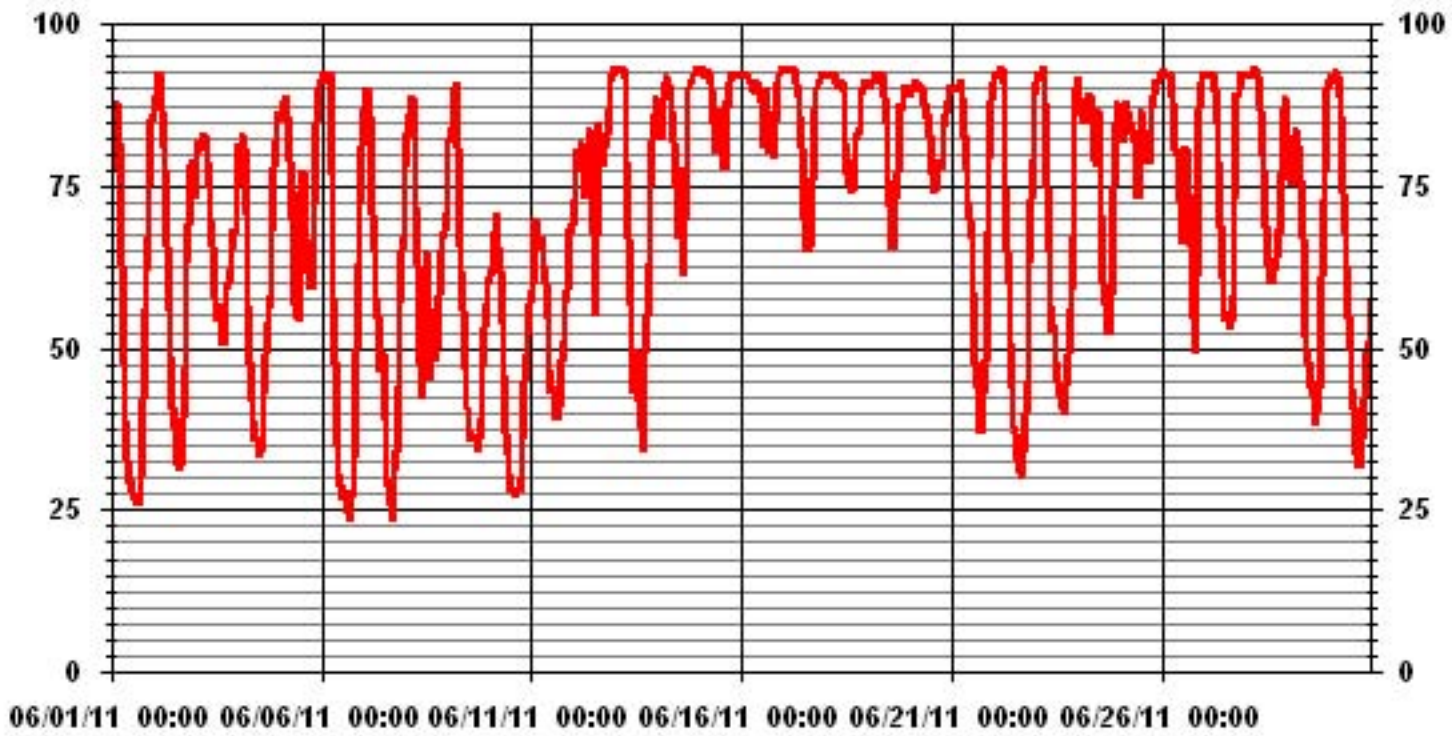
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	93	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	88.8	%			ON DAY(S)	15
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	20.16		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	70.55	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

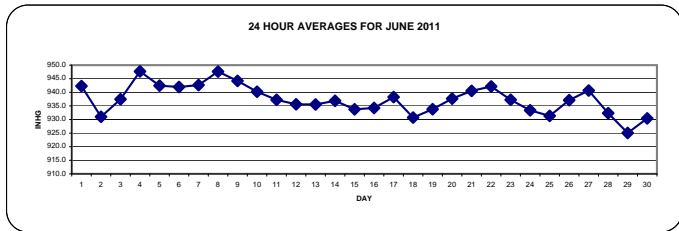
JUNE 2011

BAROMETRIC PRESSURE hourly averages (millibar)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	944	944	944	944	944	944	945	945	945	945	944	943	943	942	941	940	940	940	940	939	939	938	937	945	942.3	24		
2	2	936	935	935	934	933	933	933	933	933	932	931	931	930	929	929	929	928	928	928	928	928	927	928	936	931.0	24		
3	3	927	928	928	929	930	931	932	933	934	935	936	937	939	940	940	941	942	943	943	945	945	946	947	948	948	937.5	24	
4	4	948	948	948	949	949	949	950	950	950	950	950	949	949	948	947	947	946	946	946	945	945	945	944	950	947.7	24		
5	5	944	944	943	943	943	943	942	943	943	943	942	942	942	942	942	942	942	942	942	942	942	942	942	944	942.5	24		
6	6	942	942	942	942	942	943	944	944	944	944	944	943	943	942	942	941	941	941	940	941	940	940	940	944	942.0	24		
7	7	939	939	939	939	939	941	942	942	943	943	943	943	943	944	944	943	944	944	944	945	945	945	945	946	946	942.7	24	
8	8	946	946	946	946	946	947	947	948	949	949	949	948	949	949	949	948	948	948	948	948	947	947	947	949	947.6	24		
9	9	946	946	946	946	946	946	946	947	946	946	946	945	945	944	944	943	943	942	942	942	941	941	941	941	947	944.2	24	
10	10	941	941	941	941	941	942	942	942	942	942	942	941	941	940	940	940	939	939	938	938	938	938	937	942	940.2	24		
11	11	936	937	936	936	936	937	937	938	938	938	938	938	938	938	938	937	937	937	937	937	937	937	937	938	937.3	24		
12	12	937	936	936	936	936	936	936	936	936	936	936	936	936	935	935	935	935	935	935	935	935	935	935	935	937	935.6	24	
13	13	935	935	935	935	935	936	936	936	936	936	936	936	936	936	936	935	935	935	935	936	936	936	935	936	935.5	24		
14	14	935	935	935	936	936	936	937	937	937	938	938	938	938	937	938	937	937	937	937	937	937	937	937	937	938	936.9	24	
15	15	936	936	935	935	934	934	934	934	934	934	934	933	933	933	934	933	934	933	933	933	933	933	932	933	936	933.8	24	
16	16	933	933	933	933	933	933	933	933	934	933	934	934	933	934	934	935	935	935	936	936	936	937	937	937	937	934.3	24	
17	17	937	937	937	936	938	938	938	940	939	940	939	940	940	940	939	939	939	939	939	938	938	937	936	935	940	938.3	24	
18	18	935	934	933	932	932	930	930	930	930	930	930	930	930	930	930	930	930	930	930	930	931	930	930	935	930.7	24		
19	19	931	931	931	931	932	932	933	933	933	934	934	934	935	935	935	935	935	936	935	935	935	935	935	936	935	933.8	24	
20	20	936	936	936	937	937	937	937	938	938	938	938	938	939	939	939	938	938	938	938	938	938	938	938	938	939	937.7	24	
21	21	937	938	938	938	938	939	940	940	941	941	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	940.5	24	
22	22	942	942	942	942	942	943	943	943	944	944	944	943	943	943	942	942	942	942	941	941	941	941	940	940	944	942.2	24	
23	23	940	940	939	939	939	939	940	939	939	939	939	939	938	937	937	936	935	935	935	935	934	934	935	934	940	937.3	24	
24	24	933	933	933	932	932	932	932	932	932	932	933	933	934	934	934	935	935	935	935	935	934	934	934	935	933.4	24		
25	25	934	933	933	932	932	932	932	932	932	931	931	932	930	931	930	931	931	931	931	931	930	930	931	930	934	931.3	24	
26	26	930	930	930	930	931	932	933	934	935	935	936	937	938	939	940	941	941	942	942	943	943	943	943	943	943	937.1	24	
27	27	943	943	943	943	943	943	943	943	943	943	942	942	941	941	940	940	939	938	938	938	937	937	936	937	943	940.7	24	
28	28	936	936	935	935	935	935	936	936	936	935	935	934	934	933	933	932	931	931	930	929	929	928	927	926	925	936	932.3	24
29	29	924	923	923	923	923	924	925	925	926	926	926	926	926	926	926	926	926	926	925	925	925	925	925	926	925	925.0	24	
30	30	925	924	925	926	926	927	928	929	929	930	931	931	932	932	932	933	933	933	933	934	934	934	934	934	935	935	930.4	24
HOURLY MAX		948	948	948	949	949	949	950	950	950	950	950	949	949	949	949	948	948	948	948	948	947	948	947	948				
HOURLY AVG		936.93	936.83	936.67	936.67	936.77	937.1	937.5	937.83	937.97	938.1	938.1	937.97	938	937.97	937.7	937.53	937.5	937.4	937.23	937.37	937.1	937.27	936.87	936.83				

STATUS FLAG CODES

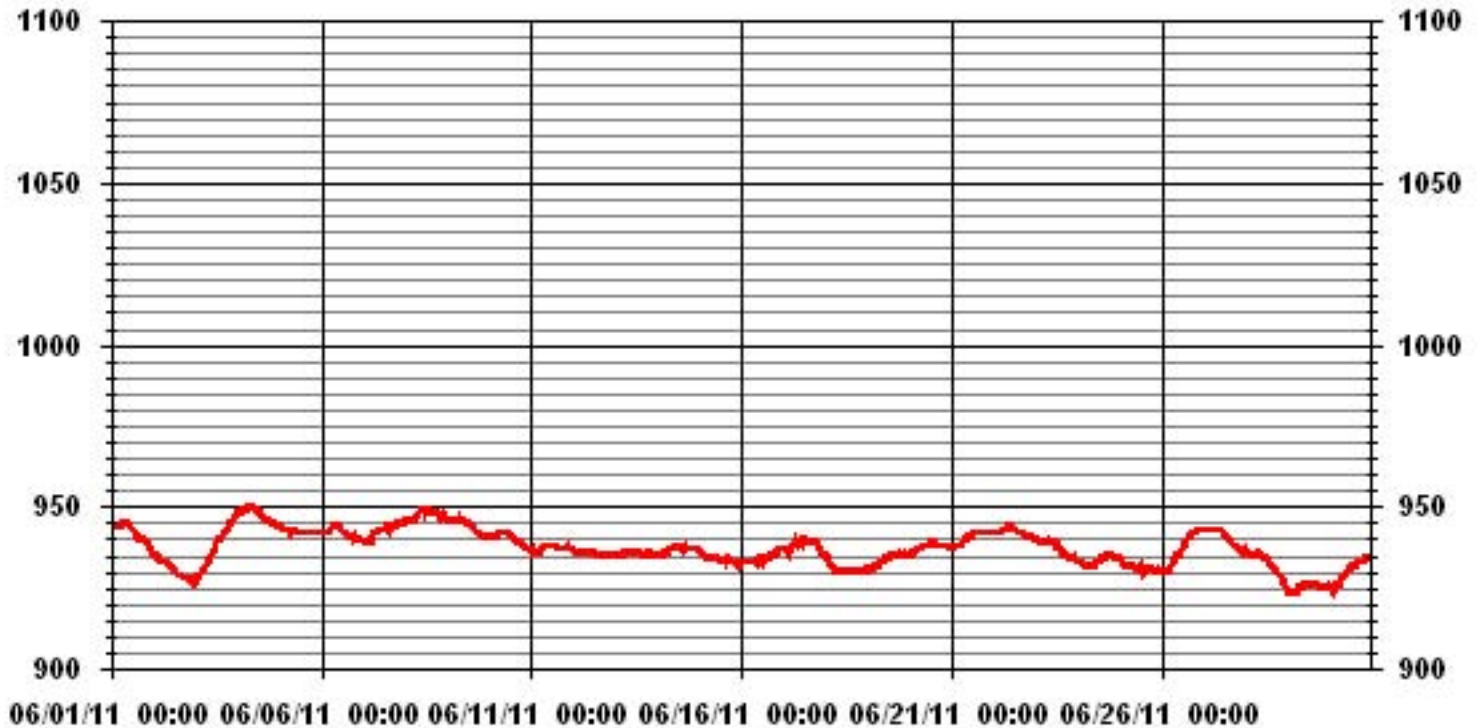
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	950	MB	@ HOUR(S)	VAR	ON DAY(S)	4
MAXIMUM 24-HR AVERAGE:	947.7	MB			ON DAY(S)	4
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.68		MONTHLY AVERAGE:	937	MB	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
6	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
7	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
8	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
10	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
11	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
12	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
16	N	N	N	N	N	N	N	N	N	N	N	N	N	M	1	2.8	5.2	4.1	4	3.9	4.8	3.5	1.9	2	2.8	5.2	3.2	11
17	2.4	2.3	3.3	4.8	3	2.8	1.9	5.6	1.1	3.5	8.9	9.3	10	8.6	8.8	8.4	10	10	9.6	9.5	10.8	9	11.9	10.9	11.9	6.5	24	
18	12.4	14.2	13.9	14.1	15.3	14.5	14.3	15	13.4	10.7	11.5	14.4	17.2	15.7	16.6	16.5	15.9	15.3	15.9	16.7	15.8	14.8	15.3	11.7	17.2	14.6	24	
19	11.8	10.1	11.3	10.9	9.5	8.3	8.5	8.2	7.8	7.7	8.8	8.6	10.8	10.6	8.8	8	7.2	5.3	3.9	6	6	6.6	6.5	5.9	11.8	7.7	24	
20	5.1	5.6	5	5	4.1	5.4	6.1	6.7	6.7	6.6	6.2	7.5	9	9.2	7.6	6.6	7.3	6.7	6.9	5.3	4.2	4.1	5.9	6.2	9.2	5.9	24	
21	5.6	5.3	5.4	5.8	7.1	6.7	5.9	4.7	6.7	5.3	5.1	5.1	6.3	7.2	5.2	5.1	4.4	4.1	2.5	2.4	3.5	2.9	1	0.9	7.2	2.7	24	
22	0.9	0.6	1.2	0.7	1.6	2.3	4	3.6	5.4	4.5	4.5	5.2	8.2	6.8	6.8	5.9	5.9	5.8	5.2	4.9	1.2	2.4	2.5	0.3	8.2	2.6	24	
23	0.7	0.1	0	0.9	1.9	3	4.1	4.6	5.9	7.2	7.4	7.2	8.4	8.3	7.7	8.4	7.8	8.1	7.5	9.8	3.8	11.5	4.2	2.2	11.5	4.8	24	
24	2.4	3.9	5.5	4.5	5	6.2	5.8	6.3	4.5	5.7	7.5	7.6	6.2	5.8	8.1	6.1	4.4	3.6	3.6	2.3	0.8	1.4	1.7	1.7	8.1	2.3	24	
25	3.2	2.9	1.1	1.6	2.3	3.9	4.3	3.8	3.2	5.8	4.2	2.3	4.5	1.6	1.9	2.8	1	4.1	3.5	0.6	1.5	1.4	0.9	2.6	5.8	1.8	24	
26	3.6	3.1	3.8	4.2	4.9	4.2	4.2	7.7	8.4	6.9	7.2	7.1	9.6	10.7	10.4	10.5	7.7	5.2	4.6	0.4	2.9	2.7	2.5	1.4	10.7	4.7	24	
27	0.6	1.7	0.9	0.4	0.7	2.2	5.5	5.4	7.8	8.2	8.1	11.7	10.3	9.3	10	11	8.4	3.8	10.1	4.2	2.8	1.2	3.1	2.3	11.7	3.8	24	
28	2	1.4	0.8	1.7	1.4	2.2	2.5	4.7	3.7	4.5	7.2	5.5	5	4.7	4.8	5	4.5	3.8	4	3.4	3.1	3.1	2.4	6	7.2	2.8	24	
29	6.2	6.3	7.3	6.2	6.2	6.5	3.4	3.5	4.9	4.3	5.1	6.9	8.2	5.1	4.7	2.9	3.5	4.3	3.9	0.9	0.9	11.7	0.8	3.3	11.7	3.7	24	
30	0.9	3.2	1.1	1.9	3.4	4.5	4.2	5.4	6	6.7	6.2	6.5	7.9	8.4	9.9	8.1	7.6	7.1	5.6	4.1	3.2	4.8	3.3	3.1	9.9	4.9	24	
HOURLY MAX	12.4	14.2	13.9	14.1	15.3	14.5	14.3	15.0	13.4	10.7	11.5	14.4	17.2	15.7	16.6	16.5	15.9	15.3	15.9	16.7	15.8	14.8	15.3	11.7				
HOURLY AVG	4.1	4.3	4.3	4.5	4.7	5.2	5.3	6.1	6.1	6.3	7.0	7.5	8.7	7.5	7.6	7.4	6.6	6.1	6.0	5.0	4.3	5.3	4.3	4.1				

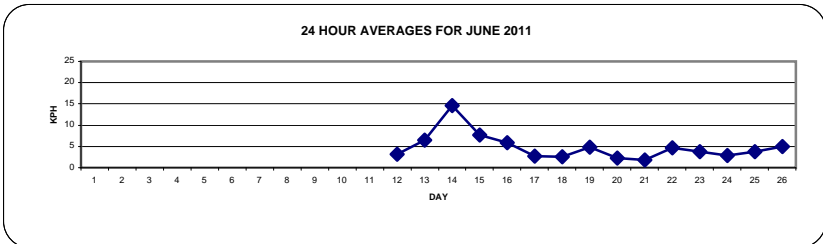
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

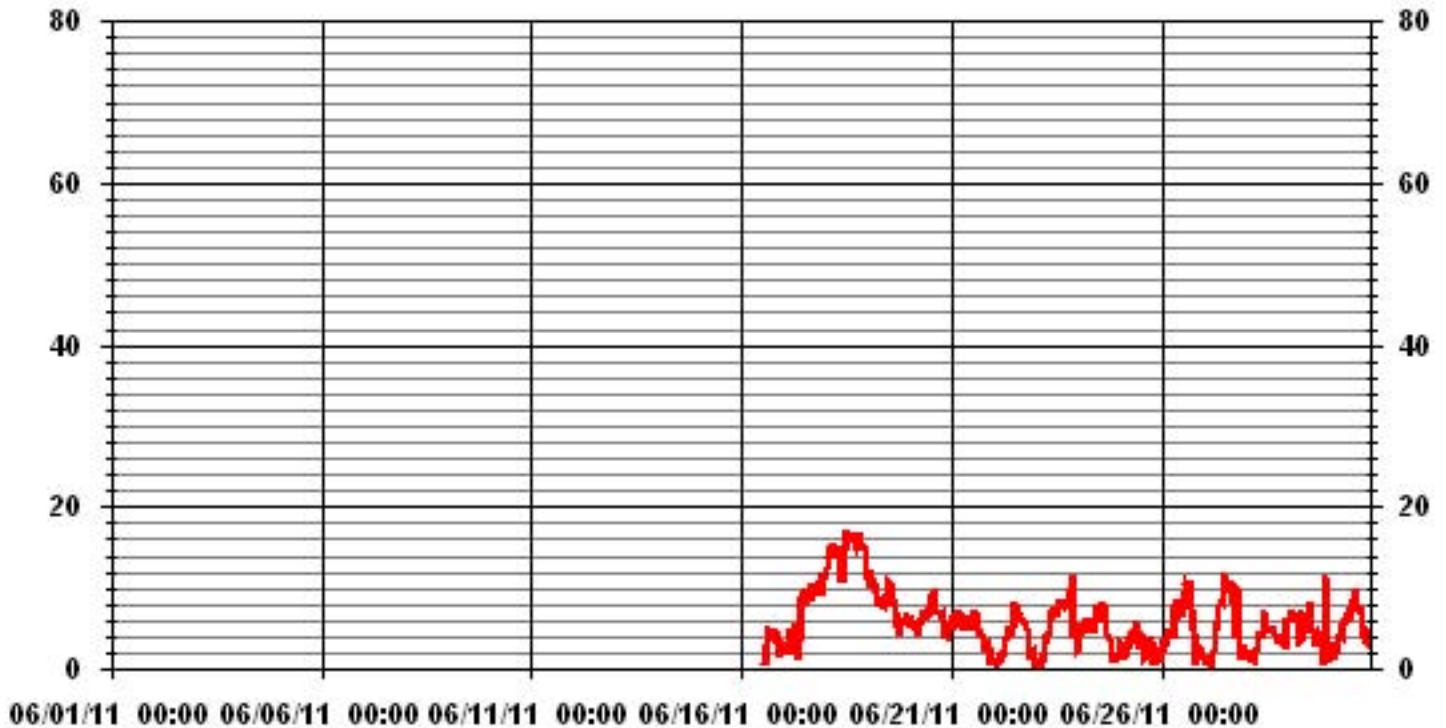
LAST CALIBRATION: March 10, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	17.2	KPH	@ HOUR(S)	12	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	14.6	KPH			ON DAY(S)	18
CALMS (≤ 1 KPH)	1.88	%	OPERATIONAL TIME:	347	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	48.2	%	
STANDARD DEVIATION	3.65		MONTHLY AVERAGE	5.77	KPH	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	
DAY																											
1		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
2		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
3		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
6		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
7		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
8		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
9		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
10		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
11		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
14		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
15		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16		N	N	N	N	N	N	N	N	N	N	N	N	N	27.6	12.8	19.3	23.7	19.9	8.6	13.4	9.3	9.4	6.6	8.1	27.6	
17		6.5	7.8	8.3	11.9	9.2	10	11.5	32.8	12.7	11.3	20.4	23.4	23.8	24.7	22.7	23.7	27.2	24.2	24.4	27.6	30.8	23.1	25.5	21.2	32.8	
18		30.3	34.3	30.1	31.6	33.1	34	34.9	35.5	32.1	30.3	32.6	36.2	51.2	40.8	41	45.4	39.7	34.9	36.8	35.7	36	39.6	35.3	34.7	51.2	
19		24.1	27.1	30.1	29.2	25	25.8	22	21.7	20.9	28.2	29.4	37.5	42.8	41.3	31.2	32.1	26.4	24.9	14.1	22.5	19.8	24.8	26.2	23.4	42.8	
20		18.8	18.4	19.7	13.3	11.7	15.2	18.4	20.2	20.9	21.8	23.5	28.2	30.7	30.7	28.9	25.4	28.8	23.7	28.2	19.4	14.7	13.7	21.3	24.8	30.7	
21		17	16.4	15.4	17.9	18.9	19	15.6	16.1	22	23.4	22.6	22.1	28.2	28.4	26.7	20.2	20.2	20.5	11.9	7.3	6.4	7.4	4.3	6	28.4	
22		6	3.5	4.4	4.2	5	9.4	9.9	11.5	14.5	14.7	15.6	19.2	22.6	22.9	20.5	18.2	16.3	18.6	17.6	12.3	6.4	5.8	4.8	2	22.9	
23		4.4	1.8	1.1	3.6	5.7	7.8	9.5	12.9	25.1	23.1	23.3	25.5	31.3	26.8	25.1	29.2	26.4	30.5	25.3	33.6	19.3	36.3	25.1	6.9	36.3	
24		9.8	17.2	21.9	18	20.8	25.4	20.1	20.4	15.6	19.6	21.4	19.9	15.7	18.6	23.4	18.7	17.8	15.2	13.5	10.5	5.4	5.4	10.4	7.2	25.4	
25		14	11.9	9.3	10.8	10.9	19.7	15.7	15.3	15.4	20.9	33.1	25.3	19.5	13	9.1	8.9	4.7	10	9.1	5.7	5.8	7.1	7.7	7.2	33.1	
26		10.8	9.9	16.4	13.4	19.7	16.1	16.8	28	25.6	19.7	23.1	28.5	34.2	33.6	29.6	27.7	21.2	22.4	15.9	11.6	9.5	7.6	6.4	4.6	34.2	
27		3.5	5.6	4.2	3.7	4.1	8.6	12.5	13.6	18.7	21.3	24.8	28.2	28.8	24.3	26.5	30.7	23.2	23.6	41.8	25.7	15.1	13.8	21.9	15.6	41.8	
28		14.5	8.5	4.5	5.8	4.7	7.2	6.6	10.9	9.4	12.7	17.6	16.4	13.3	17.7	17.1	15.9	15.2	13.1	10.7	9	5.2	7	7.6	16.4	17.7	
29		14.6	14.1	19.2	14.1	13.1	15.1	12	10.2	18.8	16.2	18.2	22.4	22.3	27.6	19.7	19.3	16.8	13.2	10.1	4.3	37.2	46.5	26	17.5	46.5	
30		10.4	18.4	11.9	11.5	14.6	21.1	16.1	22.6	24.5	24.1	26.4	24.5	28.1	29.3	34.1	32.7	28.6	29	30.5	19.2	25.2	19.5	18.6	14.1	34.1	
PEAK		30.3	34.3	30.1	31.6	33.1	34.0	34.9	35.5	32.1	30.3	33.1	37.5	51.2	41.3	41.0	45.4	39.7	34.9	41.8	35.7	37.2	46.5	35.3	34.7		

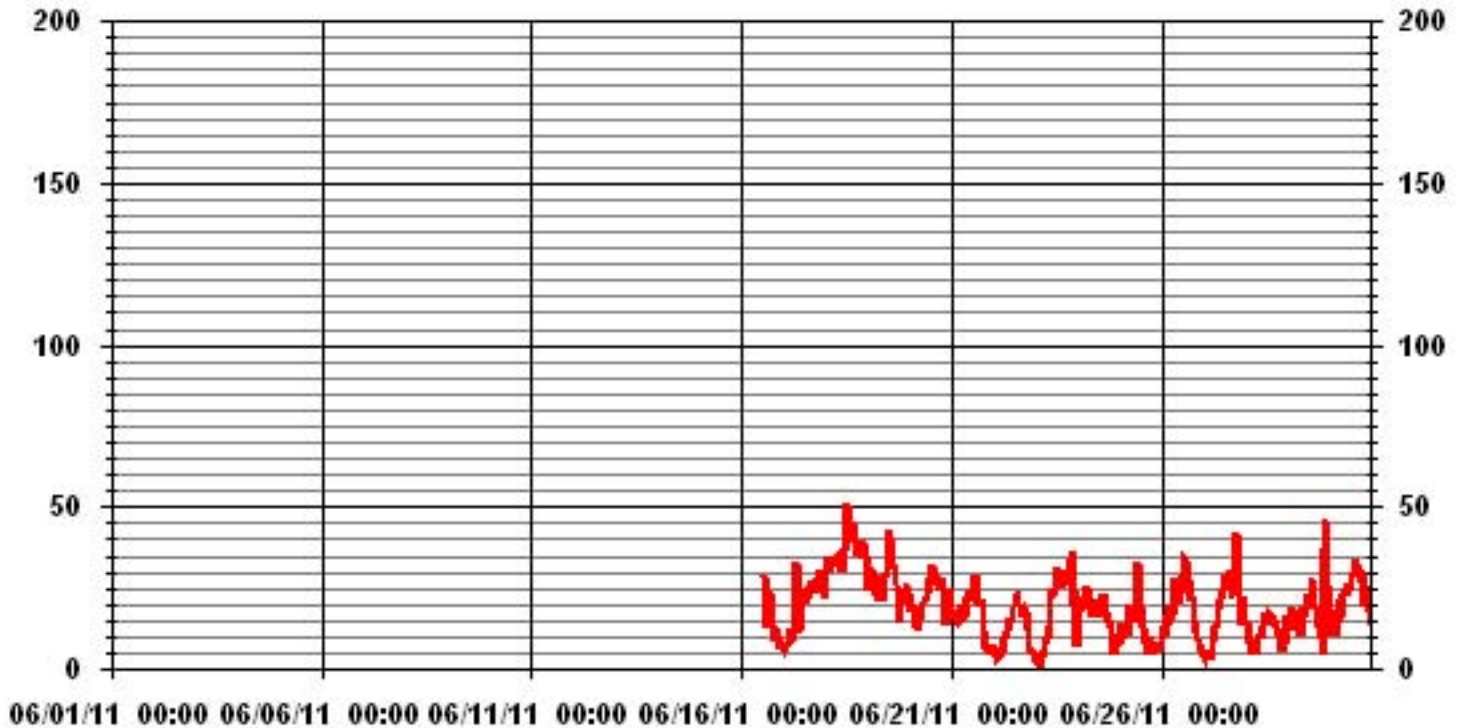
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	51.2	KPH	@ HOUR(S)	12
			ON DAY(S)	18

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	2.01	3.74	7.49	5.18	4.03	4.89	2.59	1.15	2.88	7.20	4.03	4.89	3.74	1.72	2.01	1.44	59.07
< 12.0	2.01	3.17	5.76	3.74	4.32	1.44	1.72	1.15	2.59	3.74	.57	.00	.86	2.88	.00	.57	34.58
< 20.0	.00	4.61	1.44	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.05
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.03	11.52	14.69	8.93	8.35	6.34	4.32	2.30	5.47	10.95	4.61	4.89	4.61	4.61	2.01	2.01	

Calm : .28 %

Total # Operational Hours : 347

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	7	13	26	18	14	17	9	4	10	25	14	17	13	6	7	5	205
< 12.0	7	11	20	13	15	5	6	4	9	13	2		3	10		2	120
< 20.0		16	5														21
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	14	40	51	31	29	22	15	8	19	38	16	17	16	16	7	7	

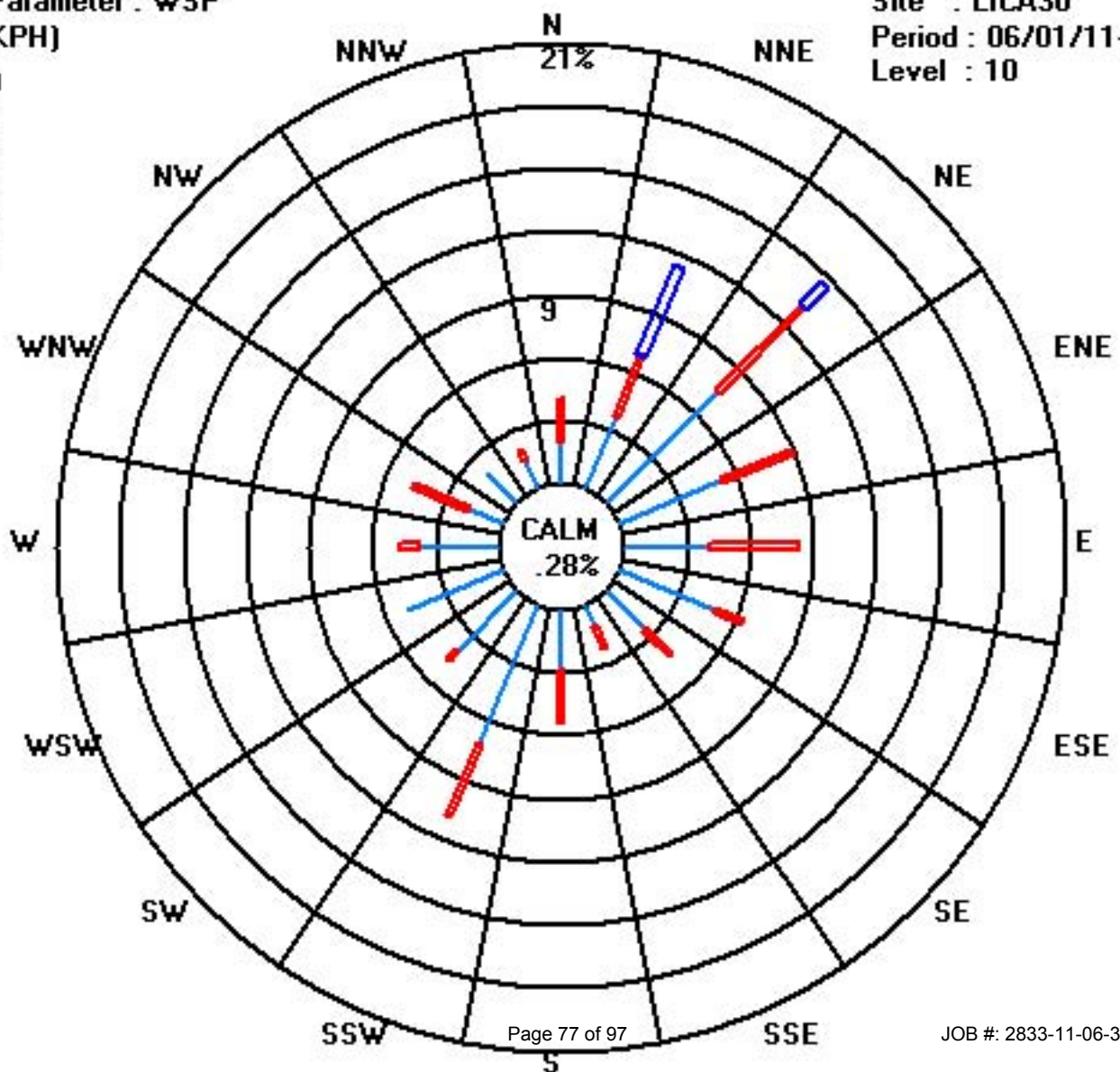
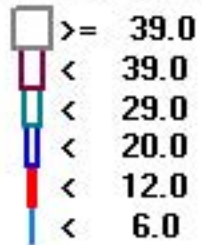
Calm : .28 %

Total # Operational Hours : 347

Class Limits (KPH)

Period : 06/01/11-06/30/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

WIND DIRECTION hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	24-HOUR	24-HOUR		
DAY	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	AVG.	RDGS.
1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
6	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
7	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
8	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
10	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
11	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
12	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
16	N	N	N	N	N	N	N	N	N	N	N	N	N	M	65	32	31	38	37	46	31	47	43	32	64	40	NE	11		
17	50	49	46	30	47	41	75	164	14	29	31	41	34	50	39	40	40	35	31	33	33	34	28	28	38	NE	24			
18	30	30	30	29	28	29	33	35	34	38	39	37	32	35	33	33	35	29	28	29	28	31	29	34	32	NNE	24			
19	31	35	33	34	39	43	44	51	50	61	60	73	82	81	89	66	65	101	71	56	47	69	75	80	58	ESE	24			
20	64	55	63	35	45	50	59	58	67	74	77	82	92	73	90	87	100	89	98	96	61	70	87	96	76	ESE	24			
21	110	121	118	122	153	170	200	223	215	231	248	240	286	286	279	269	255	238	232	204	198	192	148	170	210	SSW	24			
22	189	183	180	181	194	205	198	206	197	218	220	210	198	203	203	208	195	202	4	12	72	107	129	110	201	SSW	24			
23	66	39	42	78	59	34	34	44	65	91	95	108	113	96	107	117	125	127	125	129	102	133	81	69	103	ESE	24			
24	69	89	108	90	103	94	91	107	110	117	146	196	202	213	209	211	258	254	247	246	236	229	236	238	160	SSE	24			
25	293	345	279	262	266	306	313	321	313	299	268	250	318	297	204	192	47	28	32	266	243	247	224	16	303	WNW	24			
26	11	357	353	358	346	346	339	1	4	3	5	340	344	360	10	15	17	13	9	320	175	192	193	150	1	N	24			
27	125	198	146	179	182	189	197	197	189	183	173	181	186	193	189	195	181	114	5	8	95	135	175	91	180	S	24			
28	101	21	41	61	48	42	40	39	40	57	31	49	57	101	124	124	123	123	119	125	119	105	131	150	87	E	24			
29	154	154	172	197	206	205	227	213	218	248	229	221	208	238	232	267	213	193	201	129	167	294	226	91	212	SSW	24			
30	95	324	331	237	281	298	284	295	295	298	294	292	285	281	292	290	276	278	277	263	253	270	266	244	284	WNW	24			
HOURLY AVG	293	357	353	358	346	346	339	321	313	299	294	340	344	360	292	290	276	278	277	320	253	294	266	244						

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION:	March 10, 2011
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	347 HRS
STANDARD DEVIATION	97.13	AMD OPERATION UPTIME	48.2 %
		MONTHLY AVERAGE	55 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JUNE 2011

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
3	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
6	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
7	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
8	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
10	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
11	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
12	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N	N	47	29	40	48	24	18	17	20	44	13	19
17	14	14	14	12	18	18	31	26	46	19	16	23	23	28	24	26	23	19	17	17	18	21	15	16
18	16	17	17	16	16	16	19	19	20	23	22	22	21	21	20	20	20	18	17	16	17	18	15	19
19	17	21	19	20	24	24	24	26	25	29	29	33	33	36	37	31	29	34	25	22	23	26	29	30
20	31	22	24	16	22	22	25	26	29	34	32	34	35	33	35	33	35	33	33	30	24	29	32	33
21	32	28	26	27	22	20	20	34	31	41	48	40	41	42	46	47	46	49	35	17	8	25	24	63
22	60	9	13	10	2	13	24	33	23	39	42	45	31	39	34	35	31	39	38	22	10	13	6	4
23	17	2	1	9	15	14	25	25	30	38	34	38	40	37	39	33	31	33	30	28	33	27	28	25
24	28	29	30	30	35	33	33	34	36	33	27	23	22	31	29	34	44	47	42	34	34	21	41	38
25	39	31	36	38	43	43	37	42	41	39	46	55	40	48	37	32	32	18	14	25	21	36	57	13
26	16	26	30	30	33	34	35	32	27	29	29	39	39	32	25	23	27	31	30	45	23	43	18	29
27	20	16	13	53	8	67	17	20	20	23	28	23	26	22	25	21	25	21	56	56	50	46	53	34
28	64	67	34	18	15	22	25	22	21	29	21	38	38	38	41	33	30	27	21	11	7	11	14	17
29	15	17	20	16	16	20	32	31	31	47	43	35	29	45	43	58	47	30	18	15	40	34	50	49
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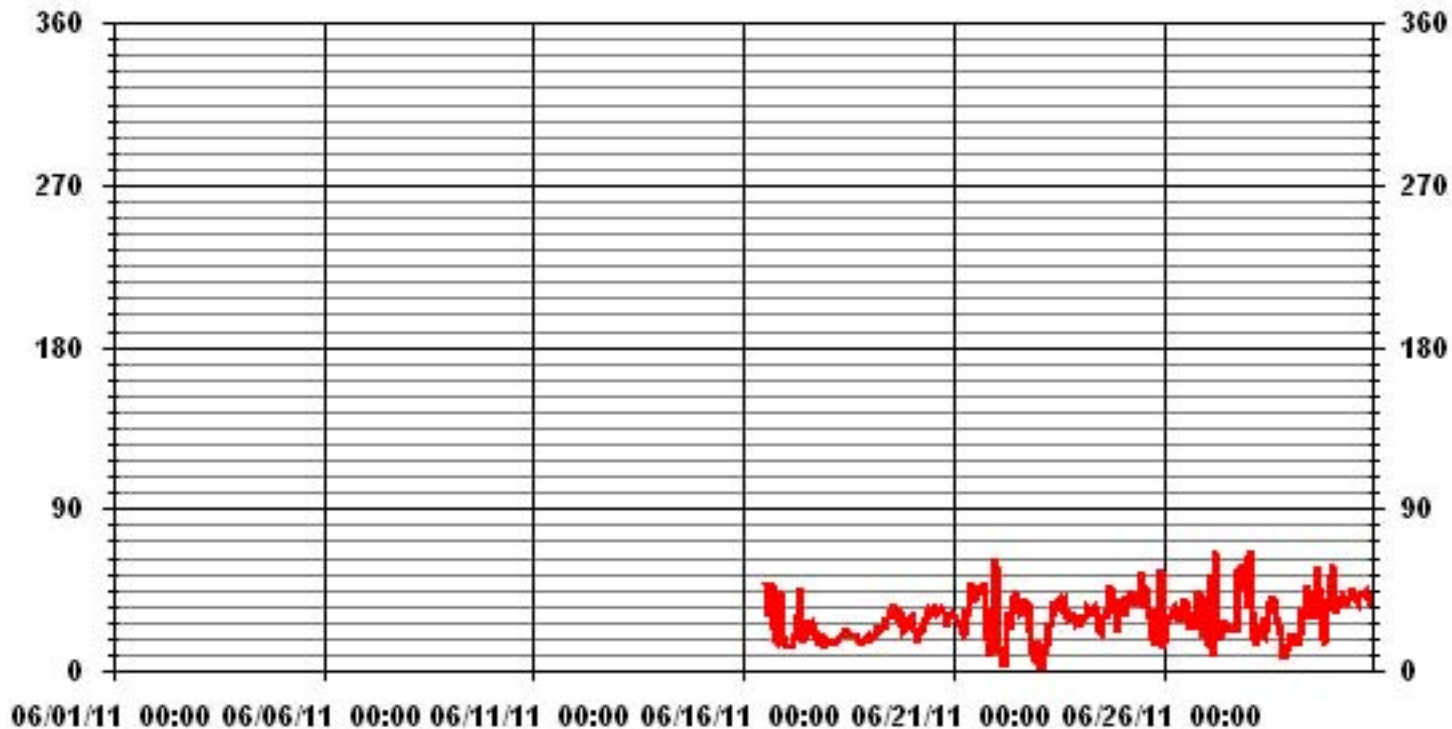
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: March 10, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 347 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report Station Information

Calibration Date	June 9, 2011	Previous Calibration	May 6, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	11:21	End Time (MST)	15:15
Reason:	Monthly Calibration		
Barometric Pressure	945 mmHg	Station Temperature	24 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822 Cal Gas Expiry date
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	508	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	
Sample Flow / Box Temp	593 ccm, 31.6 Deg C	590 ccm, 31.7 Deg C	
HVPS / Lamp Setting	494, 2936	494, 2938	
PMT / RxCell Temp	7.7 Deg C, 50 Deg C	7.7 Deg C, 50 Deg C	
Converter / IZS Temp	NA Deg C, 45 Deg C	NA Deg C, 45.0 Deg C	
Offset / Slope	35.3, 1.118	36.1, 1.127	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	N/A
4995	0	0	0	N/A
4922	76.5	750	744	1.0080
4922	76.5	750	751	0.9986
4960	40.8	400	396	1.0095
4981	17.3	170	169	1.0035
4996	0	0	0	N/A
Sum of Least Squares				1.0081
New Correction Factor				0.9986

Before Calibration

Auto Zero	1.0	After Calibration	0.4
Auto Span	376.0		381.0
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0012
Current Correction Factor Before Span Adjust:	1.0080
Percent Change:	-0.7%

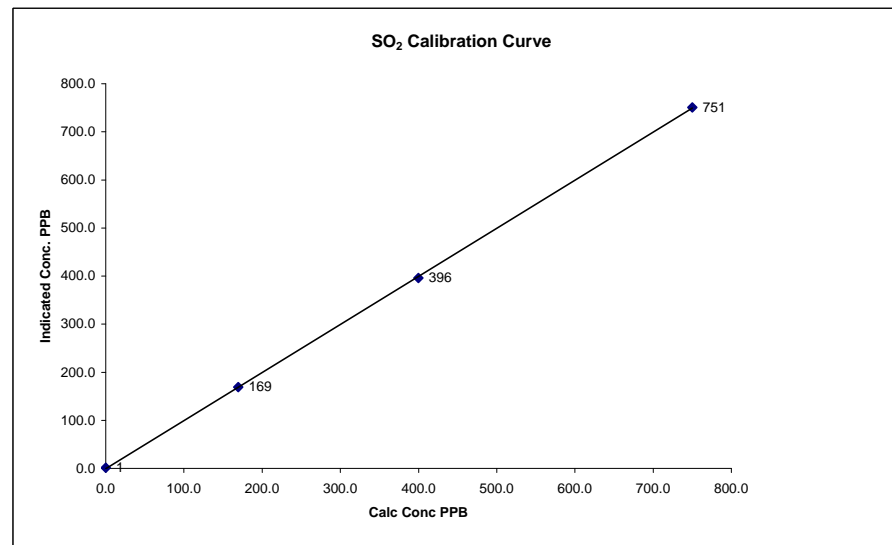
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

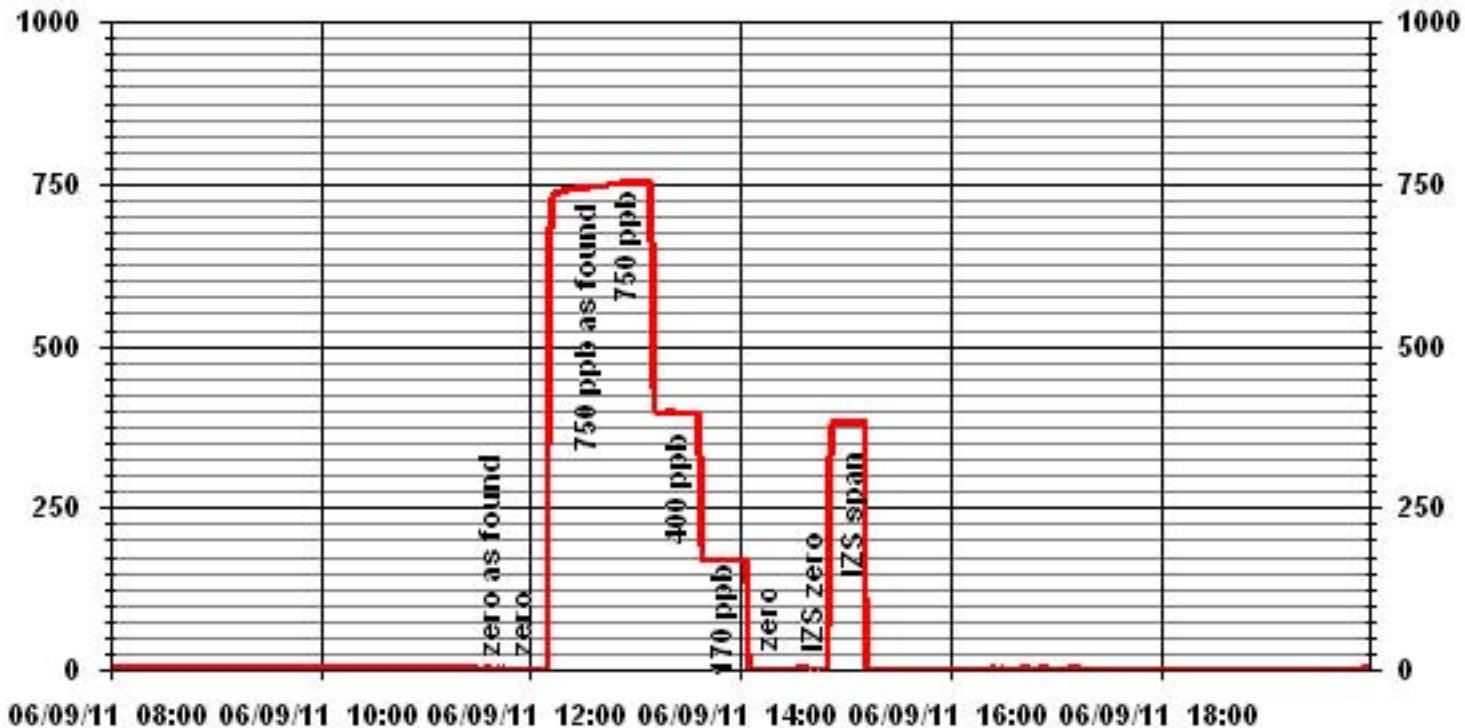
Calibration Date	June 9, 2011
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	11:21
End Time (MST)	15:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)	(≥ 0.995) 0.999951
0	1	n/a		0.999853
170	169	1.0035		-0.526021
400	396	1.0095		
750	751	0.9986		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	June 10, 2011	Previous Calibration	May 5, 2011
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	9:15	End Time (MST)	12:52
Reason:	Monthly Calibration		
Barometric Pressure	942 mmHg	Station Temperature	22 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	bim000804
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	511	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 100		ppb	
Sample Flow / Box Temp	522 ccm	38.6 Deg C	518 ccm	39.2 Deg C
HVPS / Lamp Setting	552	2106	552	2102
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C
Converter / IZS Temp	315.8 Deg C	45 Deg C	315.4 Deg C	45.0 Deg C
Offset / Slope	30	1.016	30	1.027

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	1	NA
	No Adj required.			
4959	39.2	80	79	1.0126
4959	39.2	80	80	1.0000
4979	19.6	40	41	0.9755
4986	11.2	23	23	1.0000
4996	0	0	-1	NA
Sum of Least Squares			0.9949	
New Correction Factor			1.0000	

	Before Calibration	After Calibration
Auto Zero	0.1	-0.6
Auto Span	57.0	57.0
Sample Lines Connected		

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0126
Percent Change:	-1.3%

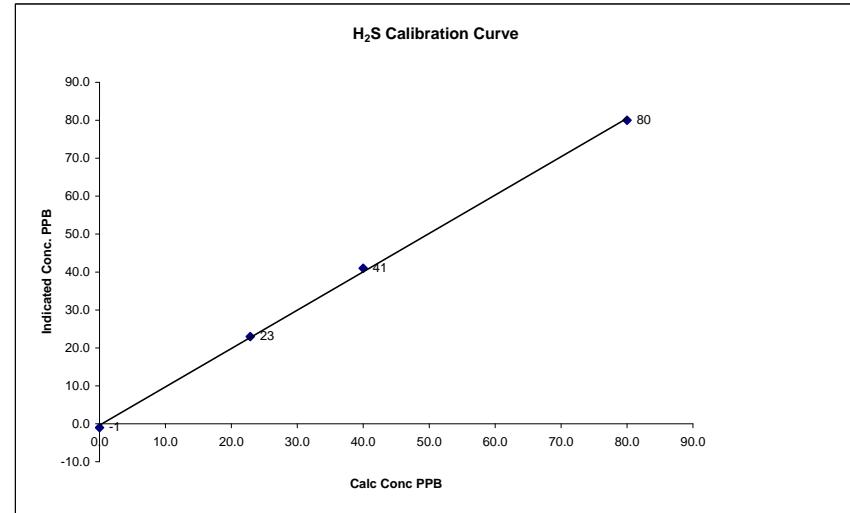
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

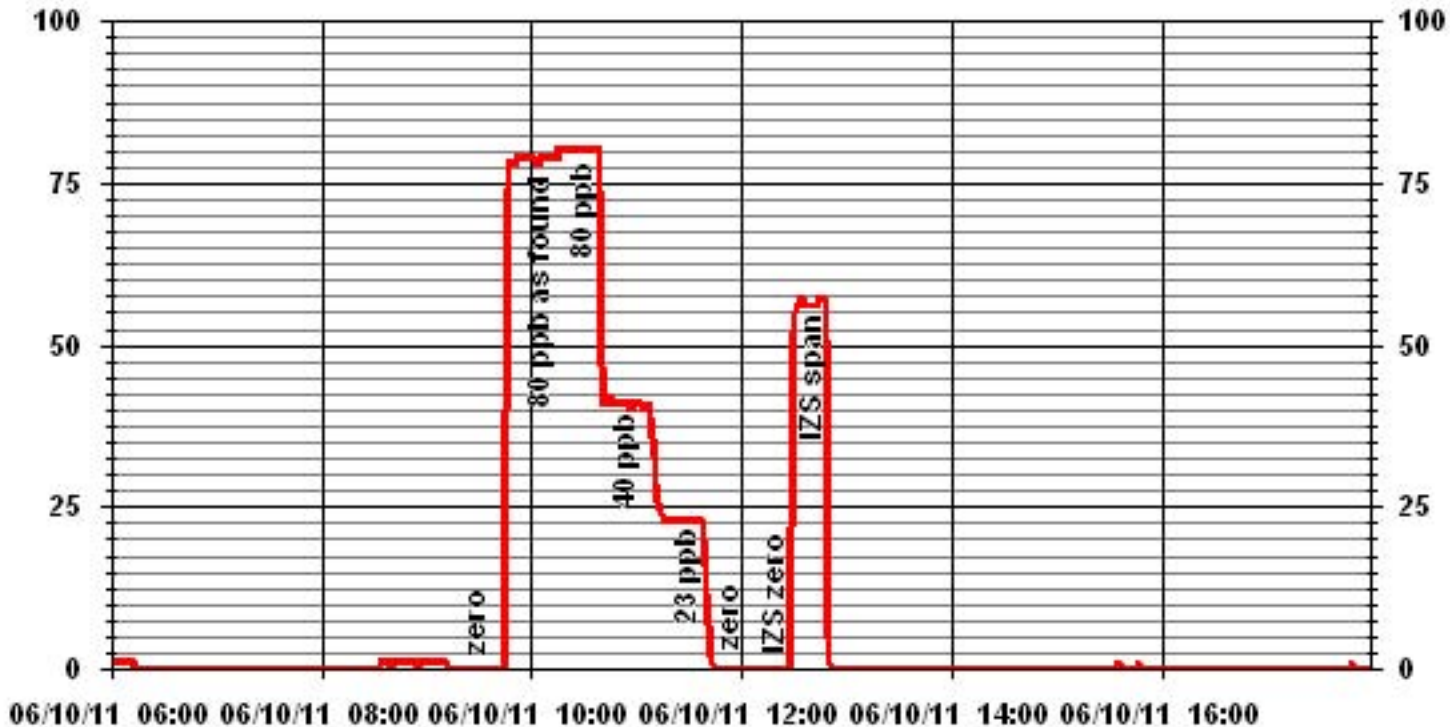
Calibration Date	June 10, 2011
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	9:15
End Time (MST)	12:52

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999545
0	-1		Intercept	(± 3% F.S.)	-0.363862
23	23	0.9939			
40	41	0.9755			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	June 13, 2011	Previous Calibration	May 5, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	Maskwa		
Start Time (MST)	10:01	End Time (MST)	14:19
Reason:	Monthly Calibration		
Barometric Pressure:	936 mmHg	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO 791
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information			
Make / Model	Thermo 51C-LT	S/N :	436609738
Method	Flame Ionization		

Analyzer Settings				
	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	7.5	psi	7.5	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	20	psi	20	psi

Calibration Data				
Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	-0.5	NA
1998	0.0	0.0	0.0	NA
1998	70.0	39.6	39.4	1.0062
1998	70.0	39.6	39.9	0.9936
1998	34.9	20.1	20.0	1.0054
1998	20.0	11.6	11.6	1.0000
1999	0.0	0.0	0.0	NA
New Correction Factor:				0.9936

Percent Change	
Previous Calibration Correction Factor:	0.9911
Current Correction Factor Before Span Adjust:	1.0062
Percent Change:	-1.5%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.7	34.7
Sample Lines Connected	YES	

Cylinder Pressures			
Span	700 psi	Hydrogen	2000 psi
Zero Air	34 psi		

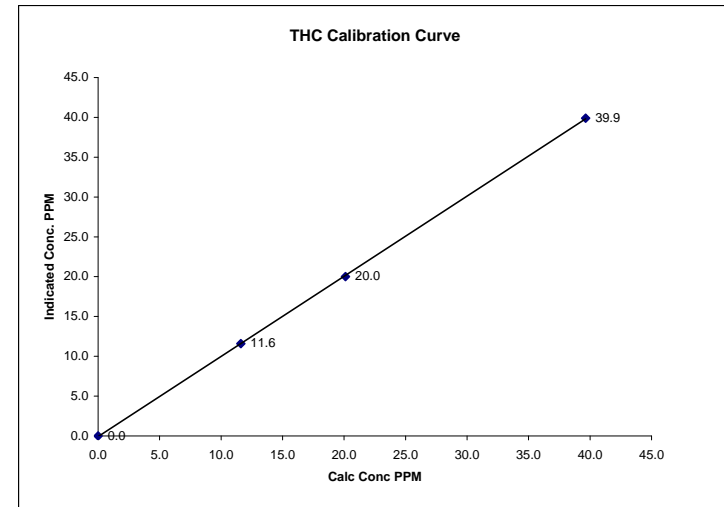
Notes: **NA : Not Applicable**
 When did the second span point, a pressure warning appeared. Clear warning and re-did the point.

Calibration Performed by: Ting Xu

THC Calibration Curve

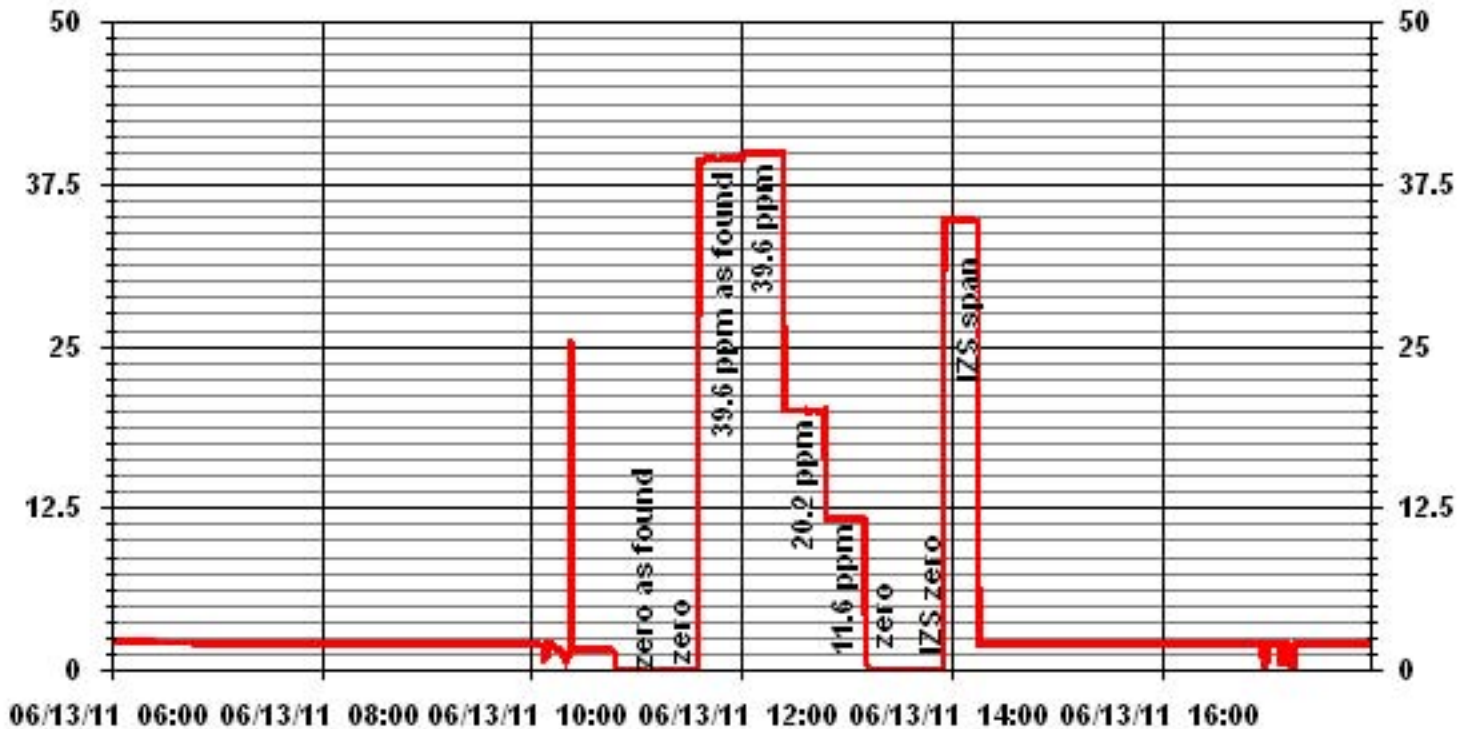
Calibration Date	June 13, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Maskwa		
Start Time (MST)	10:01	End Time (MST)	14:19

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)	0.999956
0.0	0.0	NA	Intercept	(±3% F.S.)	-0.07926
11.6	11.6	1.0007			
20.1	20.0	1.0054			
39.6	39.9	0.9936			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	June 10, 2011	Previous Calibration	May 5, 2011
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	9:15	End Time (MST)	14:57
Reason:	Monthly Calibration		
Barometric Pressure	942 mmHg	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822		MFCF 1
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	594	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N :	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000		ppb		
Sample Flow/Conv. Temp	459 ccm	316.6 Deg C	456 ccm	315 Deg C	
Ozone Flow / Vacuum	79 ccm	6.5 "Hg-A	78 ccm	6.5 "Hg-A	
HVPS / A ZERO	767 Volts	16.7 MV	767 Volts	17.2 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C	50.0 Deg C	6.6 Deg C	
Box Temp / IZS Temp	31.7 Deg C	45.3 Deg C	31.3 Deg C	45.1 Deg C	
Offset	2.2 NOx	1.2 NO	2.2 NOx	1.2 NO	
Slope	1.134 NOx	1.122 NO	1.094 NOx	1.079 NO	
NO2 COEF / Conv Efficiency	NA NO2	0.994	NA NO2	0.994	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	2	-1	2	NA	NA
No Adj Required										
4921	74.2	NA	768	749	NA	795	776	19	0.9684	0.9635
4921	74.2	NA	768	749	NA	769	750	19	1.0013	0.9969
4960	34.6	NA	358	349	NA	359	350	9	1.0032	0.9947
4973	19.8	NA	205	200	NA	206	201	5	1.0050	0.9895
4996	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	NA	768	749	NA	769	754	15	NA	NA
No Adj Required										
4921	74.2	600	768	NA	572	768	197	571	1.0053	99.82%
4921	74.2	250	768	NA	246	769	523	247	1.0041	100.43%
4921	74.2	140	768	NA	144	769	625	145	1.0070	100.78%

Linearity	Sum of Least Squares		NOx= 0.998	NO= 0.998	NO2= 1.000
OK?	Yes	No	Correction Factors: NOx= 1.0013	NO= 0.9969	NO2= 1.0053
Average Converter Efficiency= 100.34%					

Before Calibration			After Calibration		
Auto Zero	0.4 NOx	0.4 NO2	0.1 NOx	-0.2 NO2	
Auto Span	748 NOx	736 NO2	722 NOx	710 NO2	
Sample Lines Connected YES					
Percent Change from Previous Calibration			NOx 3.3%	NO 3.5%	NO2 -0.7%

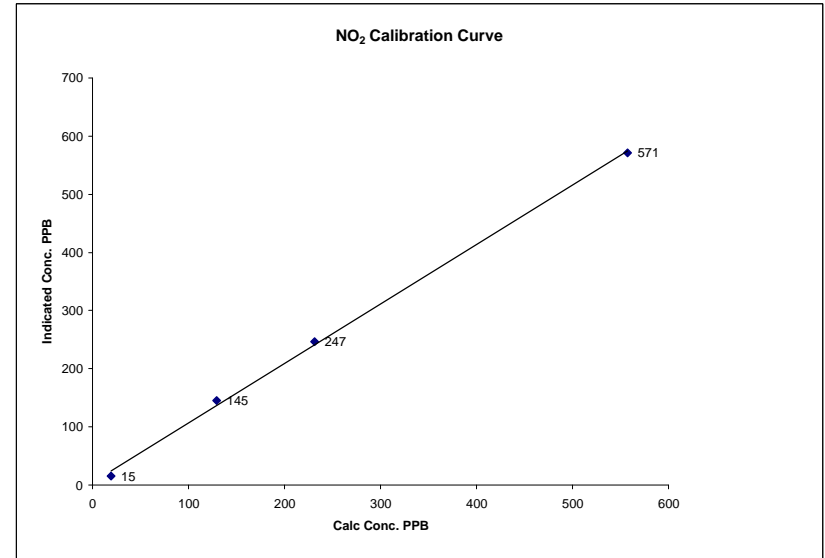
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	June 10, 2011	Company	LICA
Plant / Location	Maskwa	Start Time (MST)	9:15
End Time (MST)	14:57		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998816
19	15	N/A	Intercept	(± 3% F.S.)	5.20854
129	145	0.8897			
231	247	0.9352			
557	571	0.9755			

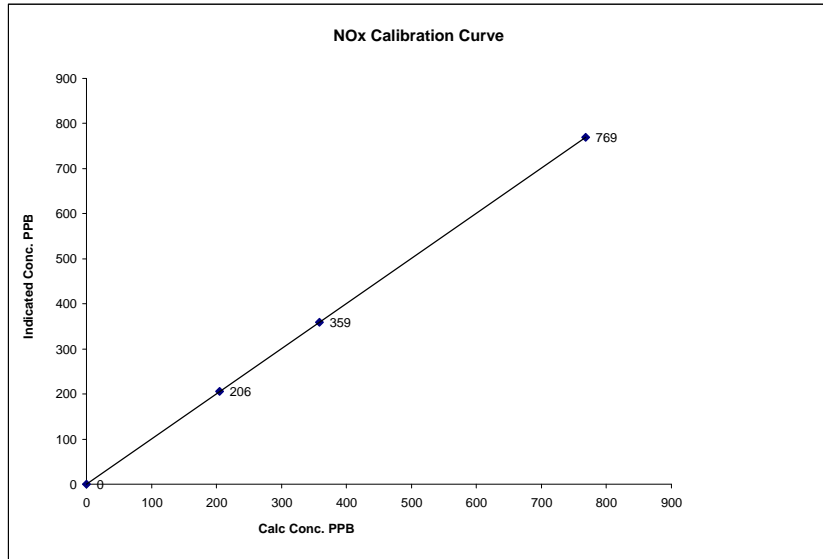


Notes:

NOx Calibration Curve

Calibration Date June 10, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 9:15 End Time (MST) 14:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999999
0	0	N/A	Intercept	(± 3% F.S.)	0.34941
205	206	0.9953			
358	359	0.9976			
768	769	0.9987			

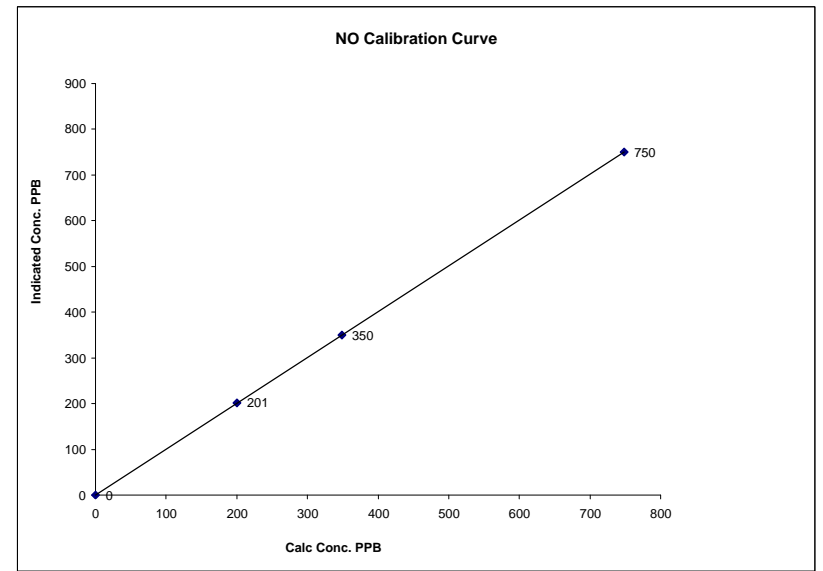


Notes:

NO Calibration Curve

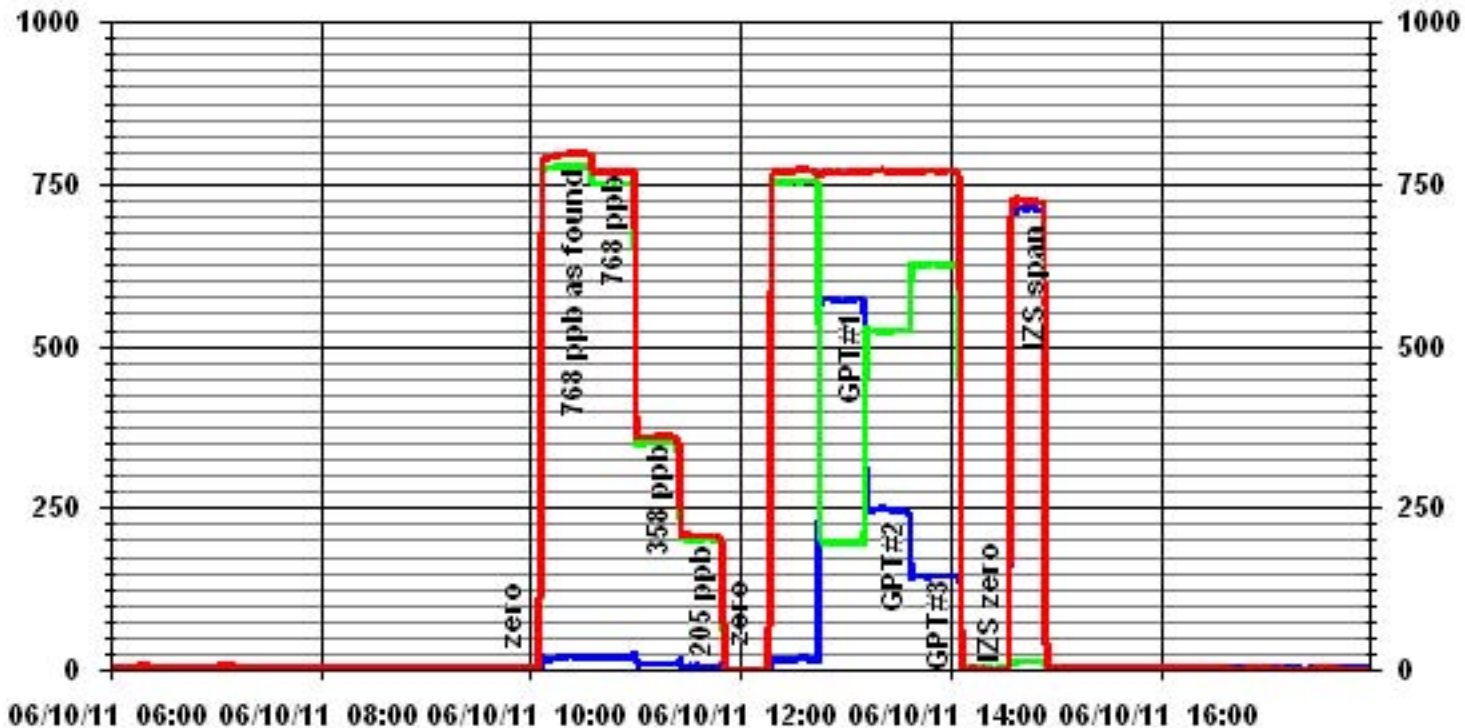
Calibration Date June 10, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 9:15 End Time (MST) 14:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999999
0	0	N/A	Intercept	(± 3% F.S.)	0.4264
200	201	0.9944			
349	350	0.9976			
749	750	0.9982			



Notes:

01 Minute Averages



— LICA30

NOX_ PPB

— LICA30

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NO_ PPB

— LICA30

JOB #: 2833-11-06-30-C

NO2_ PPB

Lakeland Industry & Community Association

Portable / Devon Wellsite 13-16-62-5 W4M Monitoring Site

Ambient Air Monitoring Data Report

For

June 2011

Prepared By:



July 21, 2011

Lakeland Industry & Community Association Portable / Devon Wellsite 13-16-62-5 W4M Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga
Lakeland Industry & Community Association
Box 8237
5107W – 50 Street
Bonnyville, Alberta
T9N 2J5

Monitoring Location: Portable / Devon Wellsite 13-16-62-5 W4M
Data Period: June 2011

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

The 6-days analytical report for VOCs and PAHs:
Authorized by Petro Oh

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. The calibration conforms to the procedure outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Continuous Ambient Monitoring – June 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / DEVON WELLSITE 13-16-62-5 W4M SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO ₂ (PPB)	172	48	0	0	0.06	4	9	10	8.9	193(S)	0.6	28	100.0
H ₂ S (PPB)	10	3	0	0	0.06	3	1	6	3.4	155(SSE)	0.4	1	99.9
THC (PPM)	-	-	-	-	2.32	9.8	8	3	2.8	13(NNE)	3.3	7, 8	99.9
NO ₂ (PPB)	159	-	0	-	2.51	19	14	0	2.7	32(NNE)	5.7	7	99.9
NO (PPB)	-	-	-	-	0.66	14	15	8	5.6	169(SSE)	2.1	13	99.9
NO _x (PPB)	-	-	-	-	3.16	28	8	3	2.8	13(NNE)	7.6	16	99.9
O ₃ (PPB)	82	-	0	-	29.32	59	9	15	13.2	183(S)	41.9	10	100.0
PM 2.5 (UG/M ³)	-	30	-	2	11.04	262.7	3	3	14	356(N)	43.5	7	98.9
VECTOR WS (KPH)	-	-	-	-	9.57	26.6	18	11	-	48(NE)	21.2	18	100.0
VECTOR WD (DEGREES)	-	-	-	-	56(NE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Xontech Model 910A – June 2, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 8, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 14, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 20, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Xontech Model 910A – June 26, 2011

Maximum reading (ug/m3)	Volatile Organic
<32.0	Hexachlorobutadiene

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

PUF cartridge – June 2, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 8, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 14, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 20, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.054	3-Methylcholanthrene

PUF cartridge – June 26, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	3-Methylcholanthrene

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – PORTABLE

Sulphur Dioxide (PPB)

- Analyzer make / model – API 100E, S/N: 467

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed. One hour of the maximum reading was invalidated due to a small power outage on June 22nd at 14:00. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model – API 101E, S/N: 509
- Converter - Internal

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed. One hour of the maximum reading was invalidated due to a small power outage on June 22nd at 14:00. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

- Analyzer make / model – API 200E, S/N: 593

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed on June 11th. One hour of the maximum reading was invalidated due to a small power outage on June 22nd at 14:00. Data was corrected using daily zero information.

The NO₂ guideline was changed on June 15th: the objective for 1-Hour average concentration was changed from 212 ppb to 159 ppb, the objective for 24-Hour average concentration was removed, and the concentration of 24 ppb for the annual average was added by AE.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Ozone (PPB)

- Analyzer make / model –Thermo 49i, S/N: 1002240372

No operational issues observed during the month. The inlet filter was replaced before the monthly calibration was started. One hour of the maximum reading was invalidated due to a small power outage on June 22nd at 14:00. Data was corrected using daily zero information.

THC (PPM)

- Analyzer make / model – TECO 51C, S/N: 04366-09739

No operational issues observed during the month. The H2 gas cylinder was replaced on June 20th. The inlet filter was replaced before the monthly calibration was performed. One hour of the maximum reading was invalidated due to a small power outage on June 22nd at 14:00. Two hours of THC maximum reading were recorded as 54.1 ppm, which were above the full scale. The actual concentrations for these three hours could be higher than they were recorded. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

- Analyzer make / model –TEOM 1405F, S/N: 1405A207691003

A routine Teom audit was performed on June 23rd. The Teom filter and FDMS filter were replaced on June 23rd. Data was corrected using Alberta air quality guideline for PM2.5 analyzer. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. 8 hours of data were invalidated as they were below –3.0 ug/m³. Two 24-Hour average contraventions were recorded this month; reading of 34.3 ug/m³ on June 3rd, Ref # 248008, and reading of 43.5 ug/m³ on June 7th, Ref # 248167.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

- System make / model – RM Young 5103VK, S/N: 41334

No operational issues observed during the month. The wind system is reported as vector wind speed and vector wind direction. One hour of the maximum wind speed reading was invalidated due to a small power outage on June 22nd at 14:00.

Datalogger

- System make / model - ESC 8832, S/N: AO717
- Software make / version - ESC v 5.51a

The ESC 8832 is connected to a modem with DSL for continuous connection with the base computer.

Trailer

No issue was observed this month.

The manifold was cleaned on June 23rd.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Nine hours of AQI values recorded in June 2011 were in the Poor range, and they were all due to PM2.5. Sixty-three hours of AQI values recorded in June 2011 were in the Fair range; 33 hours were due to ozone and 30 hours were due to PM2.5. Others were within the Good range. The highest hourly concentration of Ozone was 59 ppb and an AQI value of 33, on June 9th, hour of 15. The highest hourly concentration of PM2.5 was 157.6 ug/m³ on June 3rd at hour of 3, but no AQI was calculated, as the field tech was at site performing maintenances. The highest AQI value for PM2.5 was 89 on June 3rd, hour of 2.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)

The volatile organics were sampled from June 3rd to June 27th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

The values for the VOCs in this report were reported as ug/m3 in 3 significant figures.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs were sampled from June 2nd to June 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m3.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

AIR QUALITY INDEX (AQI)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
DAY	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	MAX
1	26	25	17	16	18	-	26	19	24	25	28	29	31	32	32	31	30	27	25	25	24	23	20	18	32		
2	17	16	15	14	-	14	17	19	18	19	22	24	24	26	28	29	30	30	22	17	17	21	16	18	30		
3	23	21	89	-	83	44	29	12	11	12	14	14	14	14	15	15	16	15	15	15	15	14	13	10	6	141	
4	7	7	-	9	-	7	10	12	12	13	13	-	15	15	15	15	14	14	15	15	13	11	9	8	15		
5	4	-	9	7	7	4	5	9	11	13	14	15	16	16	16	15	15	15	15	14	11	9	10	8	16		
6	6	10	7	5	6	8	11	13	17	18	-	19	20	20	21	21	21	21	19	17	10	7	-	21			
7	5	4	9	3	5	7	9	21	42	57	76	42	64	83	57	54	29	27	21	19	19	19	-	18	83		
8	18	23	20	22	20	29	34	37	37	31	33	31	29	28	22	22	22	22	22	20	18	18	-	17	37		
9	15	14	14	17	14	18	19	18	18	22	26	28	28	30	31	33	32	30	29	24	-	22	22	22	33		
10	20	19	17	16	13	14	15	18	21	24	25	28	28	29	29	30	30	29	28	-	19	18	16	14	30		
11	13	13	8	10	12	12	12	16	19	22	23	26	25	26	25	24	23	23	-	23	23	19	19	18	26		
12	12	8	8	9	9	6	9	10	11	13	13	17	18	19	20	21	-	18	16	14	12	9	11	21			
13	12	11	12	11	12	10	10	13	18	21	22	22	22	22	21	22	-	24	22	29	35	41	36	36	41		
14	36	31	18	18	17	16	17	16	16	14	16	20	22	22	23	-	25	25	20	-	20	17	11	14	36		
15	10	12	10	11	10	12	12	14	14	21	22	19	20	21	-	22	21	21	20	17	15	18	20	23	23		
16	23	21	16	14	14	13	13	14	13	12	14	16	22	-	20	21	19	19	19	-	13	17	13	7	23		
17	10	7	7	7	7	9	10	14	14	18	19	21	-	20	19	18	17	13	8	7	8	7	7	7	21		
18	9	8	8	8	7	7	8	10	10	11	11	-	14	14	13	14	13	13	13	12	13	13	12	11	14		
19	12	13	14	14	14	13	13	12	12	-	13	14	15	16	16	16	16	17	16	15	14	13	14	15	17		
20	15	15	14	15	14	14	14	14	14	-	-	-	-	-	-	-	16	16	17	16	14	11	13	13	17		
21	10	12	12	12	11	10	11	13	-	15	14	14	13	15	17	19	19	19	18	14	12	9	13	14	19		
22	11	9	7	8	7	9	8	-	21	23	25	-	-	-	-	25	25	25	24	22	18	14	14	11	25		
23	11	10	9	6	5	7	-	13	16	-	20	21	22	24	24	23	23	22	22	21	21	21	19	24			
24	17	15	16	15	14	-	13	13	12	14	15	17	19	21	22	21	21	20	18	17	15	-	9	7	22		
25	7	6	7	6	-	6	5	7	7	8	17	23	22	25	21	13	12	11	10	9	10	9	8	6	25		
26	7	10	10	-	16	18	16	16	19	19	18	18	16	57	44	12	11	11	12	11	7	7	6	4	57		
27	12	14	-	18	25	24	18	12	10	13	14	16	16	17	19	29	30	31	19	18	17	15	13	31			
28	11	-	7	7	6	9	11	15	14	16	18	20	21	20	19	19	23	21	18	14	11	9	10	9	23		
29	12	13	12	12	9	10	15	17	19	19	17	17	17	17	17	17	17	17	18	14	14	-	17	-	19		
30	16	12	8	6	8	8	8	8	10	11	12	13	15	16	17	17	17	16	15	15	14	13	-	10	17		
PEAK	36	31	89	22	83	44	34	37	42	57	76	42	64	83	57	54	32	30	31	29	35	41	36	36	36		
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	

STATUS FLAG CODES NA - NOT APPLICABLE

AQI CLASS	OZONE (O ₃)				PARTICULATE MATTER 2.5 (PM _{2.5})				NITROGEN DIOXIDE (NO ₂)				SULPHUR DIOXIDE (SO ₂)				FREQUENCY					
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
POOR (51-100)	0	0.0%	-	-	-	9	1.2%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	9	1.2%
FAIR (26-50)	33	4.6%	33	15	9	30	4.2%	89	2	3	0	0.0%	-	-	-	0	0.0%	-	-	-	63	8.8%
GOOD (1-25)	509	70.7%	-	-	-	87	12.1%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	596	82.8%
OVERALL	542	75.3%	-	-	-	126	17.5%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	668	92.8%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	7.2%

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	25:00	26:00	27:00	28:00	29:00	30:00	DAILY MAX.	24-HOUR AVG.	RDGS.				
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00														
DAY																																						
1	0	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
2	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	0.3	24
3	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
4	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
6	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24
8	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
9	0	0	0	0	0	0	0	0	0	1	4	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.3	24	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
13	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
HOURLY MAX	0	0	1	0	0	0	1	2	2	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		

STATUS FLAG CODES

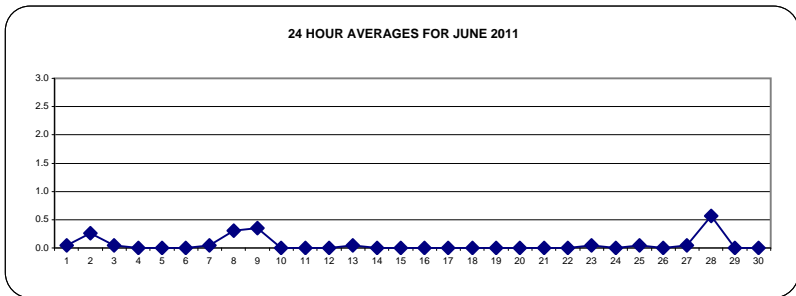
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

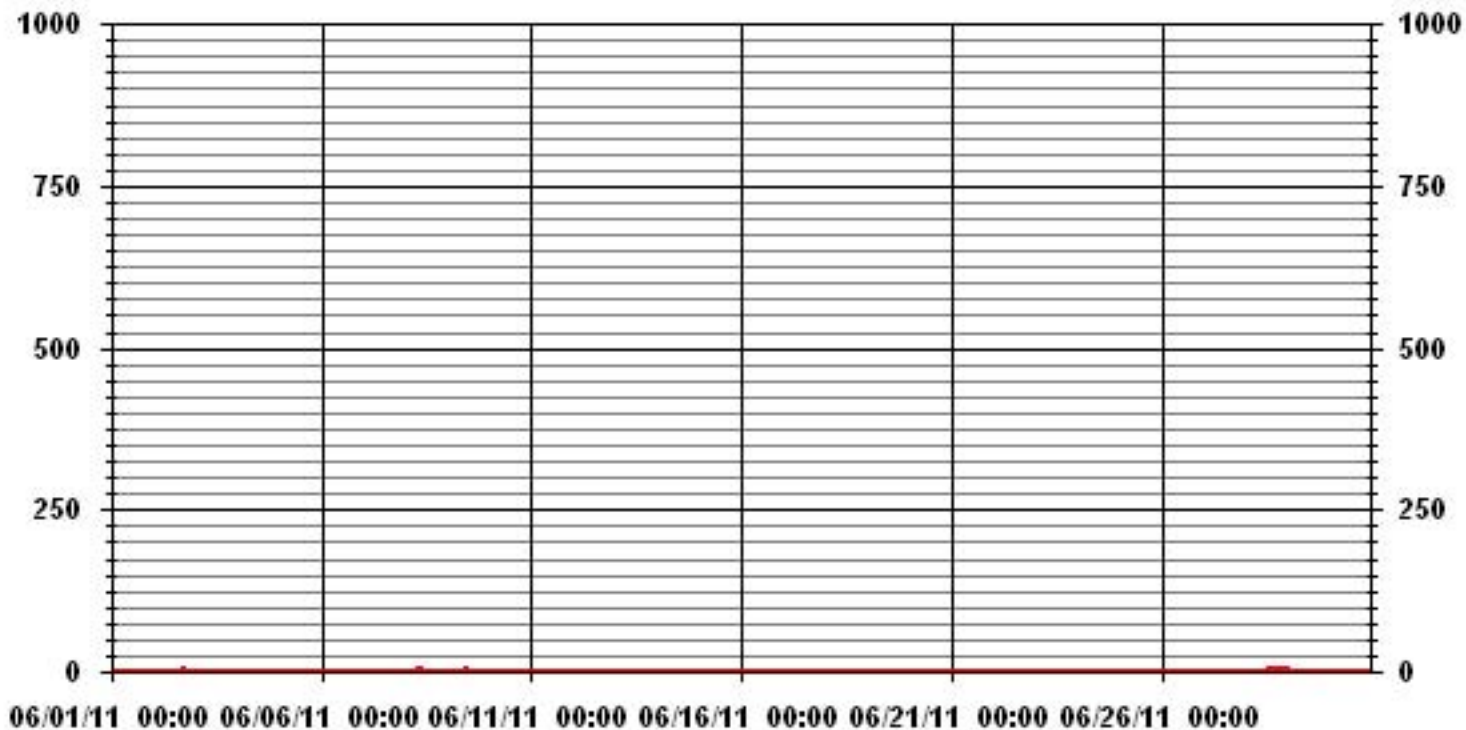
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	36					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	10	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	0.6	PPB			ON DAY(S)	28
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:	0.06	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLE SITE

JUNE 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		1	1	1	1	1	IZS	0	1	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.2	24	
2		1	1	1	1	IZS	1	1	1	1	1	1	2	1	1	2	1	2	2	2	2	1	1	1	2	2	2	1.3	24
3		2	1	2	IZS	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
4		0	0	IZS	0	0	0	0	0	0	1	0	0	1	0	0	0	1	1	1	1	0	1	1	0	1	0.3	24	
5		1	IZS	1	1	1	1	1	1	1	1	2	1	1	1	1	1	3	1	1	1	1	1	1	1	3	1.1	24	
6		IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	IZS	2	1.0	24	
7		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	0.2	24	
8		1	1	1	2	1	1	3	4	3	3	2	2	1	1	1	1	1	1	1	1	1	IZS	1	1	4	1.5	24	
9		1	1	1	1	1	1	1	1	1	5	7	3	2	1	2	1	3	1	1	1	IZS	0	0	0	7	1.6	24	
10		0	1	0	0	0	0	1	0	0	3	0	1	0	0	1	1	0	1	0	1	0	IZS	0	0	1	3	0.5	24
11		0	0	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	IZS	0	1	1	0	1	1	0.7	24	
12		0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	0.9	24	
13		1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	1.0	24	
14		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1.0	24	
15		1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1.0	24	
16		1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
17		1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
18		1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
19		1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	3	1	1	1	3	1.1	24	
20		1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
21		1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
22		1	1	1	1	1	1	1	IZS	1	1	C	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1.0	24	
23		1	1	1	0	1	1	IZS	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
24		1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
25		1	1	1	1	IZS	1	1	1	1	1	P	1	1	1	1	2	1	1	1	1	2	1	1	2	1.1	23		
26		1	2	1	IZS	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
27		1	1	IZS	1	1	0	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	2	1.0	24	
28		1	IZS	1	1	1	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.7	24	
29		IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1.0	24	
30		1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	IZS	1	0.9	24		
HOURLY MAX		2	2	2	2	1	1	3	4	4	5	7	3	2	2	2	3	2	2	2	2	3	2	2	2				
HOURLY AVG		0.9	0.9	0.9	0.9	0.9	0.8	1.0	0.9	1.0	1.3	1.3	1.1	1.0	0.9	1.0	1.0	1.1	1.0	1.0	0.9	1.0	0.9	0.9	1.0				

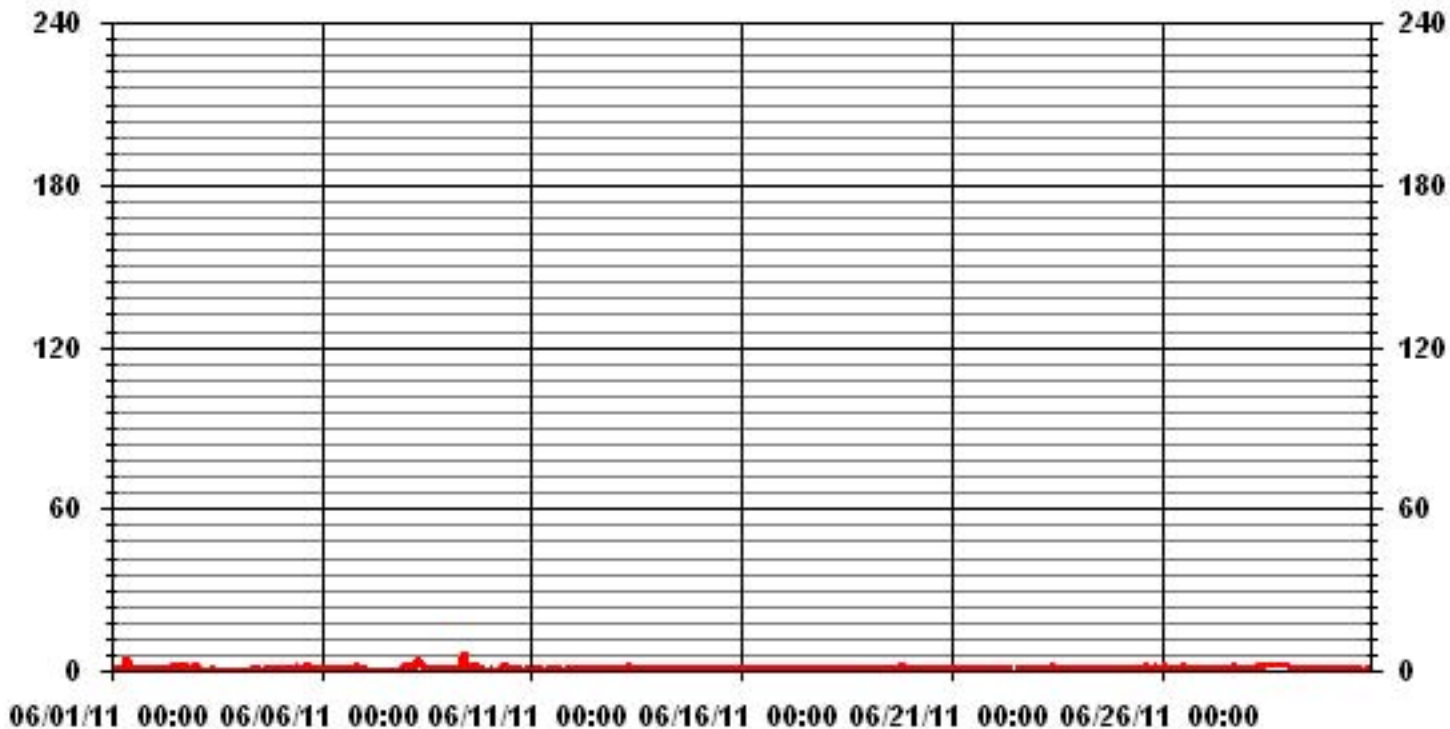
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MAINTENANCE
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	596					
MAXIMUM INSTANTANEOUS VALUE:	7	PPB	@ HOUR(S)	10	ON DAY(S)	9
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.59					

01 Hour Averages



LICA33
 SO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	4.67	7.74	10.38	7.01	9.06	5.11	3.21	4.97	5.55	4.82	8.18	5.55	5.99	6.87	4.67	6.14	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.67	7.74	10.38	7.01	9.06	5.11	3.21	4.97	5.55	4.82	8.18	5.55	5.99	6.87	4.67	6.14	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	32	53	71	48	62	35	22	34	38	33	56	38	41	47	32	42	684
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	32	53	71	48	62	35	22	34	38	33	56	38	41	47	32	42	

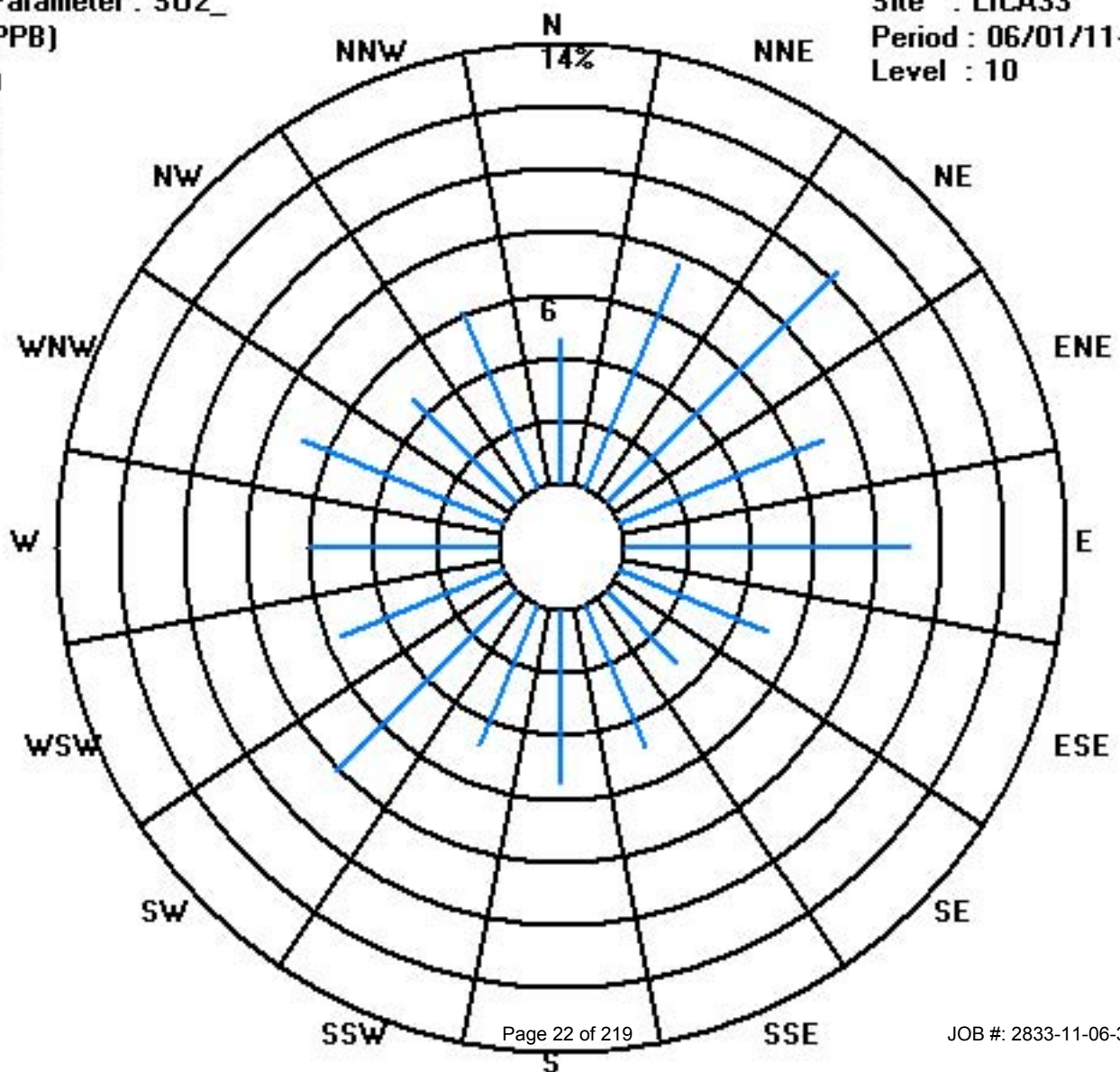
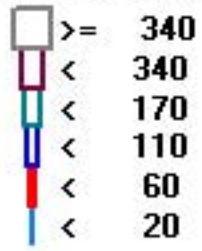
Calm : .00 %

Total # Operational Hours : 684

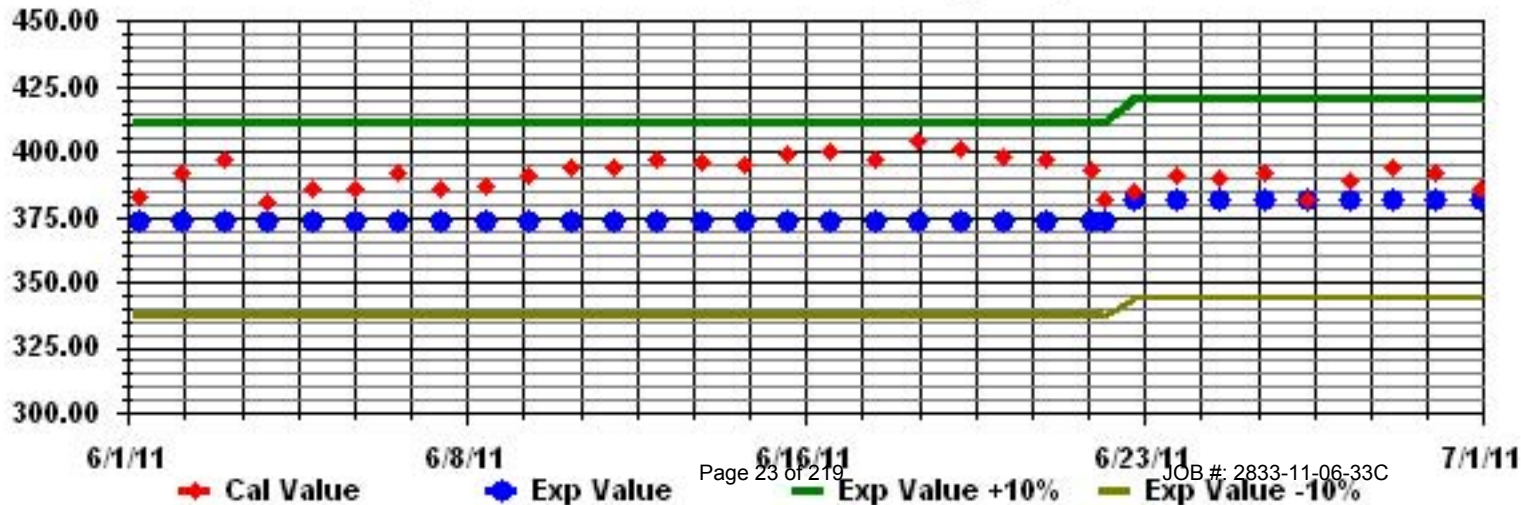
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

JUNE 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR				
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY	1	0	0	1	1	1	IZS	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0.3	24		
2	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
3	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
4	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
5	0	0	IZS	2	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0.2	24		
6	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24	
7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.0	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	1	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	1	0.1	24
10	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	IZS	0	0	0	0	1	0.4	24	
11	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	IZS	0	0	0	0	0	2	0.1	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0.0	24	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.0	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	23	
23	0	2	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
24	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
25	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0.3	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
HOURLY MAX	NA	2	2	1	1	1	3	1	1	0	0	0	1	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	
HOURLY AVG	NA	0.1	0.3	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0		

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

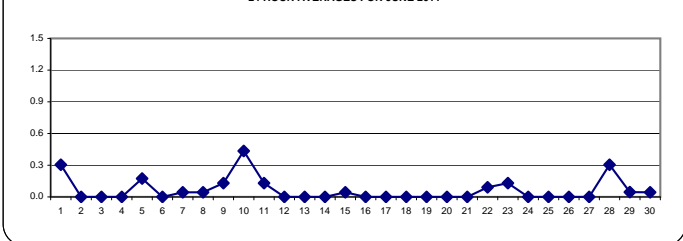
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

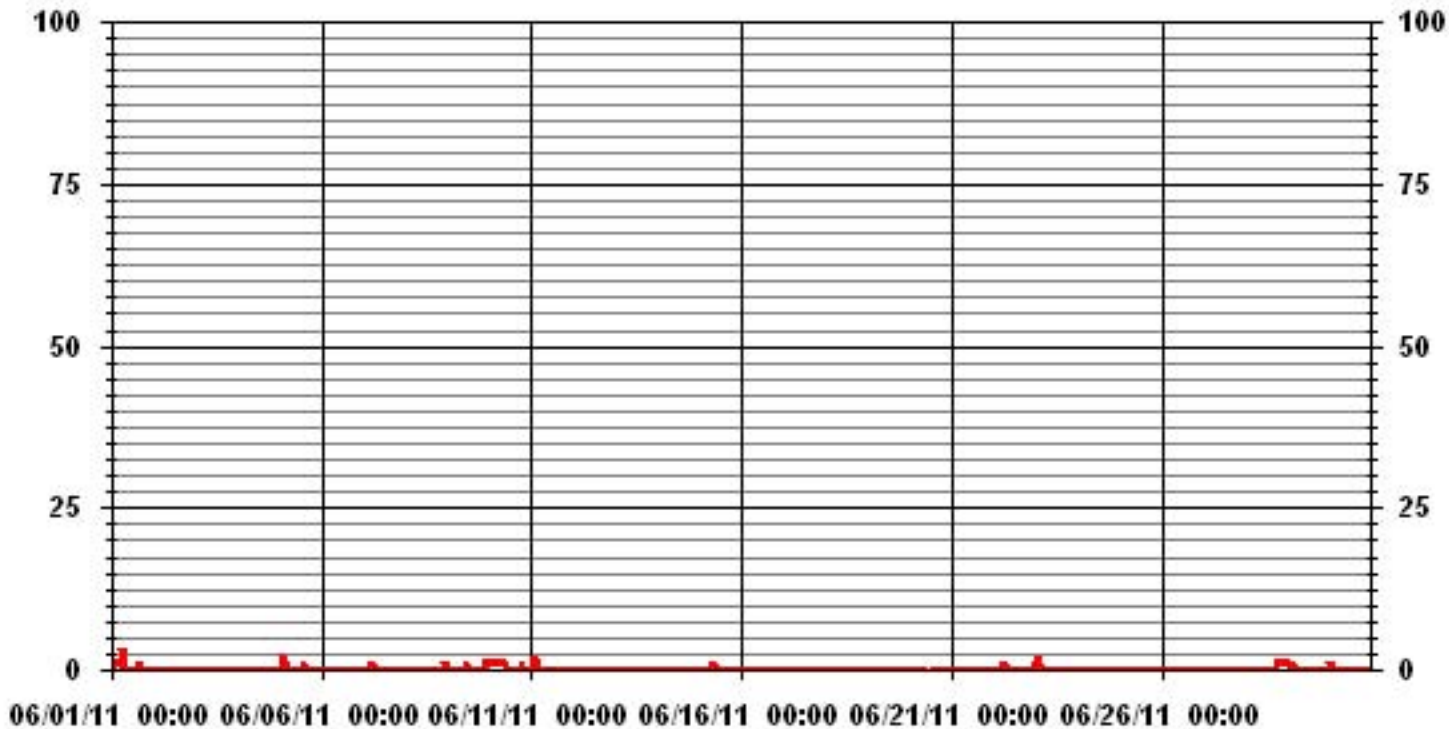
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	39
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) 6 ON DAY(S) 1
MAXIMUM 24-HR AVERAGE:	0.4 PPB ON DAY(S) 1
VAR-VARIOUS	
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	4 HRS
OPERATIONAL TIME:	719 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.28
MONTHLY AVERAGE:	0.06 PPB

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

DAY	HOUR START																								DAILY 24-HOUR			
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	0	0	1	1	2	IZS	4	2	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	4	1.0	24	
2	1	1	3	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
3	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
4	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	0.2	24	
5	1	IZS	3	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	3	1.0	24		
6	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24	
7	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0.1	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0.1	24	
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24	
10	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	IZS	0	0	0	0	2	0.9	24	
11	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	3	0.3	24	
12	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.1	24	
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0	0	1	0.0	24	
14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	4	0	4	0.3	24	
15	0	1	1	0	0	0	0	1	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.2	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	0	0	0	0	0	0	0	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18	0	0	1	0	0	1	1	1	0	1	0	IZS	0	0	0	1	0	1	1	0	1	1	1	1	1	0.5	24	
19	1	0	0	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.2	24	
20	1	0	0	0	0	1	1	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0.2	24	
21	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22	0	0	1	0	1	1	1	IZS	0	0	0	0	2	0	M	0	0	0	0	0	0	0	2	2	2	0.5	23	
23	2	3	1	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0.3	24	
24	1	1	0	1	1	IZS	1	1	1	1	1	17	0	0	0	0	0	0	0	0	0	0	0	0	17	1.1	24	
25	0	0	0	0	IZS	1	0	0	0	0	P	1	1	0	1	1	1	1	0	1	0	1	1	1	0.5	23		
26	1	0	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0.3	24	
27	0	0	IZS	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.2	24	
28	1	IZS	1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.0	24	
29	IZS	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
30	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0.1	24	
HOURLY MAX	2	3	3	3	2	2	4	2	1	1	1	17	2	1	1	1	1	1	1	1	1	4	2	2				
HOURLY AVG	0.5	0.4	0.7	0.4	0.4	0.4	0.4	0.4	0.3	0.2	0.2	0.8	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.4	0.5	0.6				

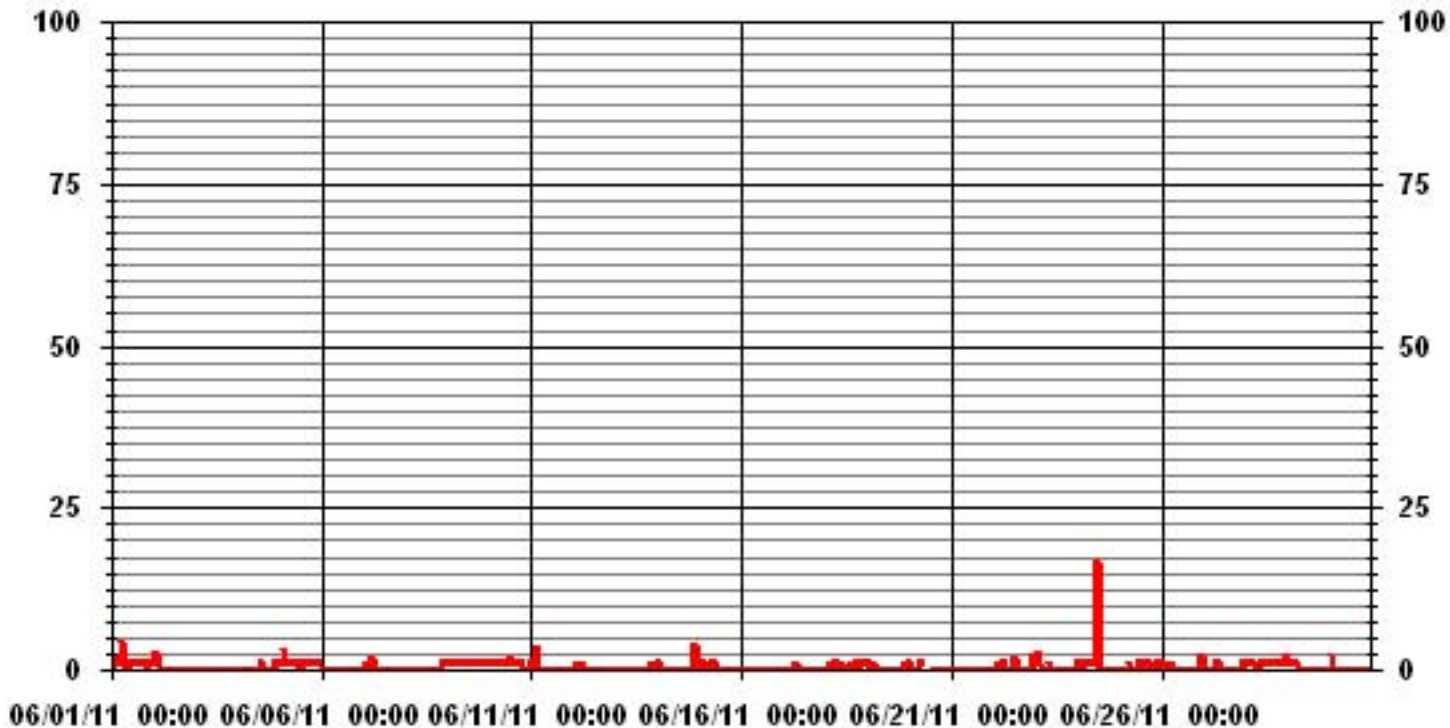
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MAINTENANCE
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	198					
MAXIMUM INSTANTANEOUS VALUE:	17	PPB	@ HOUR(S)	11	ON DAY(S)	24
	VAR - VARIOUS					
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.86					

01 Hour Averages



LICA33
H2S_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	4.67	7.74	10.38	7.01	8.62	5.11	3.21	5.11	5.55	4.97	8.18	5.55	5.99	6.87	4.67	6.14	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.67	7.74	10.38	7.01	8.62	5.11	3.21	5.26	5.55	4.97	8.18	5.55	5.99	6.87	4.67	6.14	

Calm : .00 %

Total # Operational Hours : 684

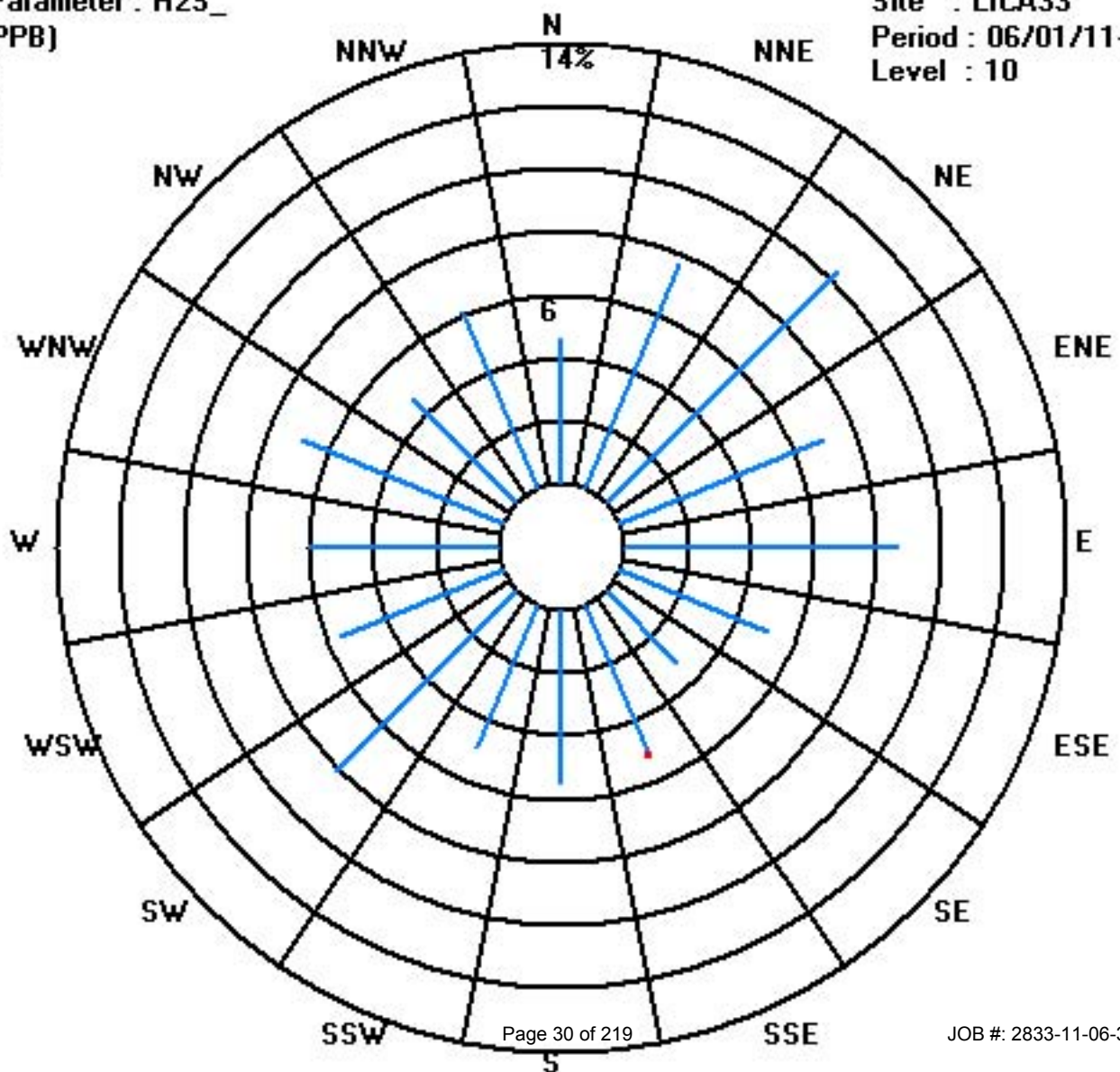
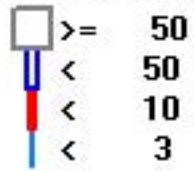
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	32	53	71	48	59	35	22	35	38	34	56	38	41	47	32	42	683
< 10								1									1
< 50																	
>= 50																	
Totals	32	53	71	48	59	35	22	36	38	34	56	38	41	47	32	42	

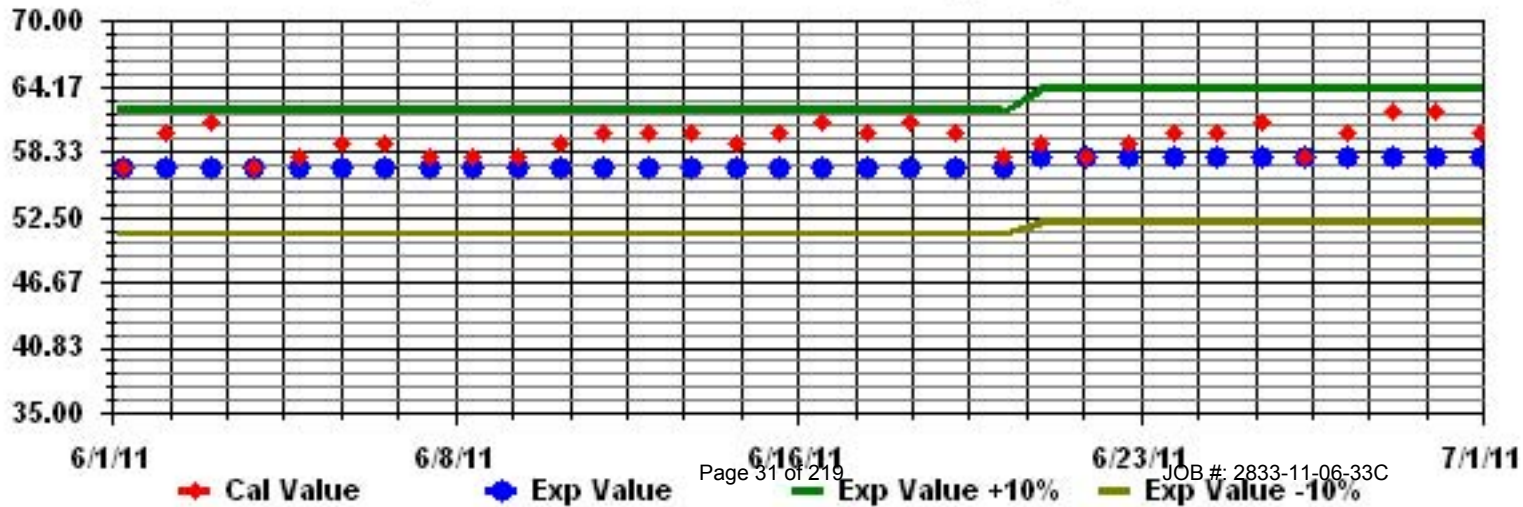
Calm : .00 %

Total # Operational Hours : 684

Class Limits (PPB)



Calibration Graph for Site: LICA33 Parameter: H2S_ Sequence: H2S Phase: SPAll



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m³

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	30.2	29.6	19.9	19.7	22	24.1	30.5	19.8	7.6	10.1	0.4	0	1.4	11.4	21.9	23.7	18.4	9.2	18.3	9.7	9.1	9.8	10.5	10.2	30.5	15.3	24
2	14.7	11.8	15.4	17.1	20.2	15.1	20	22.8	19.8	22.9	15.5	8.3	15.1	5.8	12.6	14.9	12.5	16.9	9.8	16.4	18.6	16.4	18.4	10.1	22.9	15.5	24
3	1.7	10.7	157.6	262.7	145.2	68.3	35.7	14.2	9.2	12.6	17.1	16.9	12.2	11.3	4.3	5.3	5.8	11.5	8.2	0.8	0.3	2.4	5.3	4.3	262.7	34.3	24
4	3.3	5.3	4.2	10.3	N	0.8	3.8	1.7	0	0	0.3	N	0	1.3	3.3	3.3	3.8	2.3	4.8	0.3	6.3	1.3	4.3	10.3	2.9	22	
5	3.8	10.3	10.3	8.3	8.8	1.3	6.3	10.3	13.3	8.8	12.8	8.8	11.3	2.8	4.8	12.8	7.3	3.8	1.3	8.3	0.8	0.8	3.3	5.8	13.3	6.9	24
6	5.8	2.8	11.8	8.8	5.8	7.3	6.8	11.3	6.8	4.3	5.8	N	12.3	0	8.8	0	8.3	6.8	0.3	6.8	10.3	7.3	7.8	5.8	12.3	0.0	23
7	6.3	4.3	10.8	3.3	5.8	8.3	11.3	24.8	63.9	92.4	130.9	63.4	107.4	144.9	91.9	86.9	37.3	31.8	17.8	17.3	17.3	18.8	24.3	21.8	144.9	43.5	24
8	21.8	27.3	24.3	25.8	24.3	35.8	47.3	53.8	53.3	40.8	45.4	41.3	36.8	34.3	25.3	23.3	19.8	23.3	19.8	18.8	21.3	18.3	20.3	15.3	53.8	29.9	24
9	17.8	16.3	16.3	20.8	17.3	21.3	22.8	21.8	20.8	22.8	15.3	15.3	21.3	17.8	22.3	16.8	26.8	14.3	9.8	27.3	22.3	20.8	13.8	10.3	27.3	18.8	24
10	11.8	14.8	13.3	12.3	10.8	16.3	12.8	14.8	17.8	9.8	9.3	13.3	8.8	9.3	13.8	1.3	17.8	0	17.3	4.3	12.8	15.3	6.8	10.8	17.8	11.5	24
11	15.8	6.8	6.8	4.8	7.3	4.8	7.8	17.3	9.8	3.3	6.8	5.3	5.3	0	10.8	2.3	6.8	2.8	8.8	7.8	6.8	2.3	9.8	10.8	17.3	7.1	24
12	7.8	4.3	9.3	10.8	10.3	5.8	10.3	5.3	9.8	8.8	8.3	8.3	8.3	11.8	9.8	3.8	1.8	5.8	8.3	6.8	7.3	14.3	10.8	13.3	14.3	8.4	24
13	14.3	12.8	13.8	12.8	14.3	12.3	15.3	9.8	19.3	14.8	11.3	11.8	14.3	16.8	18.3	22.3	19.8	24.8	36.3	48.8	61.4	50.4	51.9	61.4	22.5	24	
14	50.4	39.9	5.3	6.3	13.3	9.8	13.8	10.8	14.8	10.8	13.3	14.3	7.3	9.3	12.8	7.8	9.3	6.8	1.8	N	0	3.8	7.3	7.3	50.4	12.0	23
15	5.3	14.3	6.3	12.8	8.3	5.3	6.8	14.3	3.8	0	7.3	5.8	0.3	0	7.8	2.3	1.8	2.3	9.8	2.7	2.3	2.8	0	4.8	14.3	5.3	24
16	1.3	4.3	1.8	3.3	1.8	3.3	2.8	3.8	2.3	3.8	3.8	0.8	1.8	0.8	7.3	5.3	6.3	6.3	1.8	6.8	1.3	1.3	2.8	0.8	7.3	3.2	24
17	0.8	1.8	4.3	4.8	2.8	5.8	5.8	6.8	1.3	0.3	0.8	3.8	5.8	2.8	5.8	4.3	3.3	0.8	2.3	N	3.8	0.3	5.8	1.8	6.8	3.3	23
18	N	4.3	0	1.8	8.8	7.3	6.8	12.3	5.8	1.8	2.8	0.3	4.3	2.3	5.3	6.3	2.3	5.3	6.8	5.3	0.8	2.3	2.8	3.8	12.3	4.3	23
19	0.8	5.3	2.8	2.8	3.3	0.8	2.3	2.8	3.8	9.3	4.8	2.3	0.8	7.3	0.3	0.3	0.3	0	1.3	0.3	4.3	6.3	0	7.3	9.3	2.9	24
20	1.3	9.8	12.3	2.8	0	5.3	5.3	1.8	4.8	4.8	6.8	1.8	2.8	1.3	3.3	5.3	4.3	1.8	0	1.8	0	5.3	3.8	4.8	12.3	3.8	24
21	8.3	0	6.8	6.8	0	2.3	5.8	3.3	0	7.3	2.8	4.8	4.8	2.8	1.8	3.8	6.8	2.3	1.8	5.3	4.8	3.3	4.8	3.8	8.3	3.9	24
22	5.3	3.8	6.3	4.3	2.8	3.8	2.3	5.3	0.3	0.8	5.8	2.3	4.8	5.3	3.8	9.3	4.4	2.3	5.3	3.8	5.7	8.8	7.8	12.8	12.8	4.9	24
23	12.8	6.9	2.7	6.8	3.3	8.3	10.2	8.8	7.3	C	C	4.7	6.9	5.2	4.2	5.5	3.7	2.3	6.2	2	5.2	4.9	4.4	5.1	12.8	5.8	24
24	3.2	7.5	2.7	3.9	7.7	11.9	0	6.9	1.5	5.6	6.9	0	0.8	2	4.5	0.4	0.7	0	0	0	1.9	N	4.9	1.8	11.9	3.3	23
25	3.6	0	1.6	1.5	0.5	0	1.4	1.8	2.6	0	0.3	1.8	0	0	0	1.8	1.3	6.8	0.3	2.8	0	1.8	1.3	4.8	6.8	1.5	24
26	3.3	0	3.3	0.3	0	2.8	3.8	1.3	4.3	3.3	1.3	3.8	12.3	92.4	67.9	14.3	7.8	4.8	10.3	7.3	6.3	8.8	7.3	5.3	92.4	11.3	24
27	13.8	16.8	18.3	21.3	29.8	28.8	21.8	14.8	11.8	1.8	5.3	5.3	4.8	10.3	14.3	16.8	36.8	37.8	40.3	10.8	10.8	10.3	7.8	11.3	40.3	16.7	24
28	9.3	6.8	4.3	8.8	6.3	10.3	10.8	12.3	9.8	9.3	15.3	18.8	18.3	16.8	22.8	21.3	16.3	15.8	15.8	16.3	13.3	10.3	11.8	9.8	22.8	12.9	24
29	9.8	10.8	13.8	12.3	14.3	7.3	9.8	17.8	12.3	11.3	4.8	9.8	2.3	6.3	1.3	3.8	5.8	4.8	5.3	0.8	4.3	N	0	0.3	17.8	7.4	23
30	2.3	1.3	0	2.3	3.8	5.3	2.8	3.8	5.3	1.8	2.3	5.8	5.3	2.3	1.3	2.3	3.3	3.3	0.3	3.3	5.8	2.3	4.3	0.8	5.8	3.0	24
HOURLY MAX	50	40	158	263	145	68	47	54	64	92	131	63	107	145	92	87	37	38	40	36	49	61	50	52			
HOURLY AVG	9.9	9.7	13.5	17.3	13.8	11.3	11.3	12.1	11.1	11.3	12.7	9.9	11.2	14.4	13.7	10.8	10.1	8.4	8.5	8.4	8.2	9.5	8.7	8.7			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

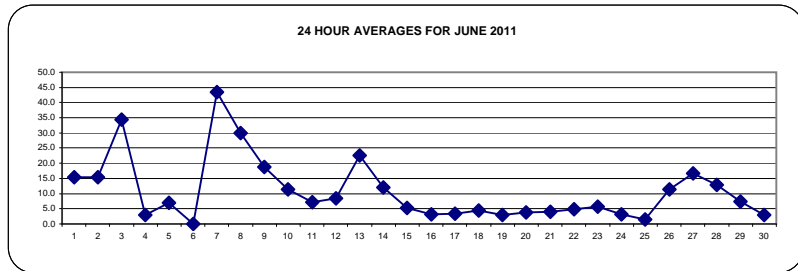
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	-	PPB	24-HR	30	PPB
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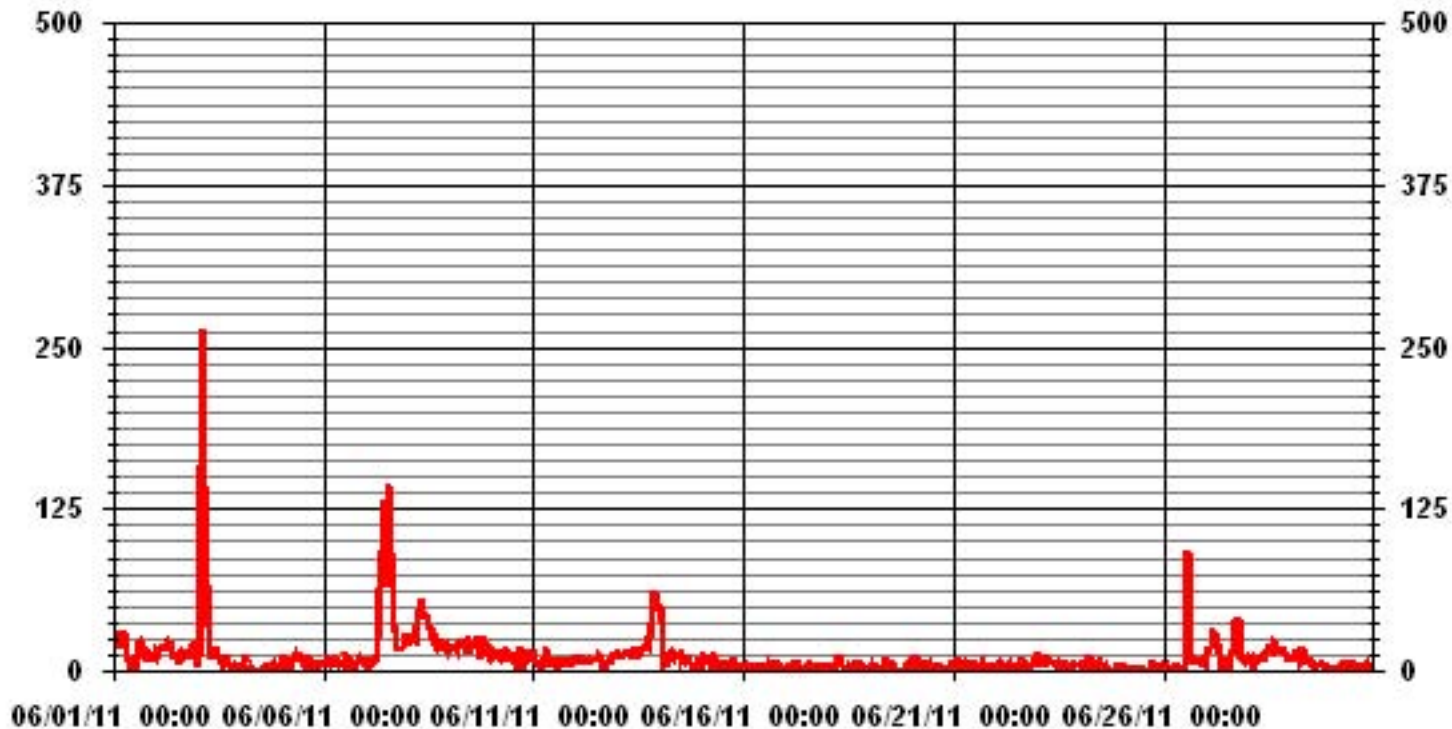
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-	PROPOSED CANADA WIDE GUIDELINE	
NUMBER OF 24-HR EXCEEDENCES:	2		
NUMBER OF NON-ZERO READINGS:	673		
MAXIMUM 1-HR AVERAGE:	262.7	UG/M ³	@ HOUR(S) 3 ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	43.5	UG/M ³	ON DAY(S) 7
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME: 712 HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME: 98.9 %
STANDARD DEVIATION:	18.44		MONTHLY AVERAGE: 11.04 UG/M ³

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



— LICA33 PM2 UG/M3

LICA33
PM2 / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : PM2
Units : UG/M3

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	3.94	6.19	10.00	6.76	9.01	5.07	3.23	5.35	5.21	4.92	7.88	5.49	5.63	6.47	4.36	5.07	94.64
< 60.0	.28	.98	.14	.00	.00	.00	.00	.14	.42	.14	.00	.00	.14	.14	.28	.56	3.23
< 80.0	.14	.14	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.70
< 120.0	.00	.14	.28	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.70
< 240.0	.14	.00	.00	.28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.56
>= 240.0	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
Totals	4.64	7.46	10.70	7.18	9.01	5.07	3.23	5.49	5.63	5.07	7.88	5.49	5.77	6.61	4.64	6.05	

Calm : .00 %

Total # Operational Hours : 710

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	28	44	71	48	64	36	23	38	37	35	56	39	40	46	31	36	672
< 60.0	2	7	1					1	3	1			1	1	2	4	23
< 80.0	1	1	2													1	5
< 120.0		1	2	1												1	5
< 240.0	1			2												1	4
>= 240.0	1																1
Totals	33	53	76	51	64	36	23	39	40	36	56	39	41	47	33	43	

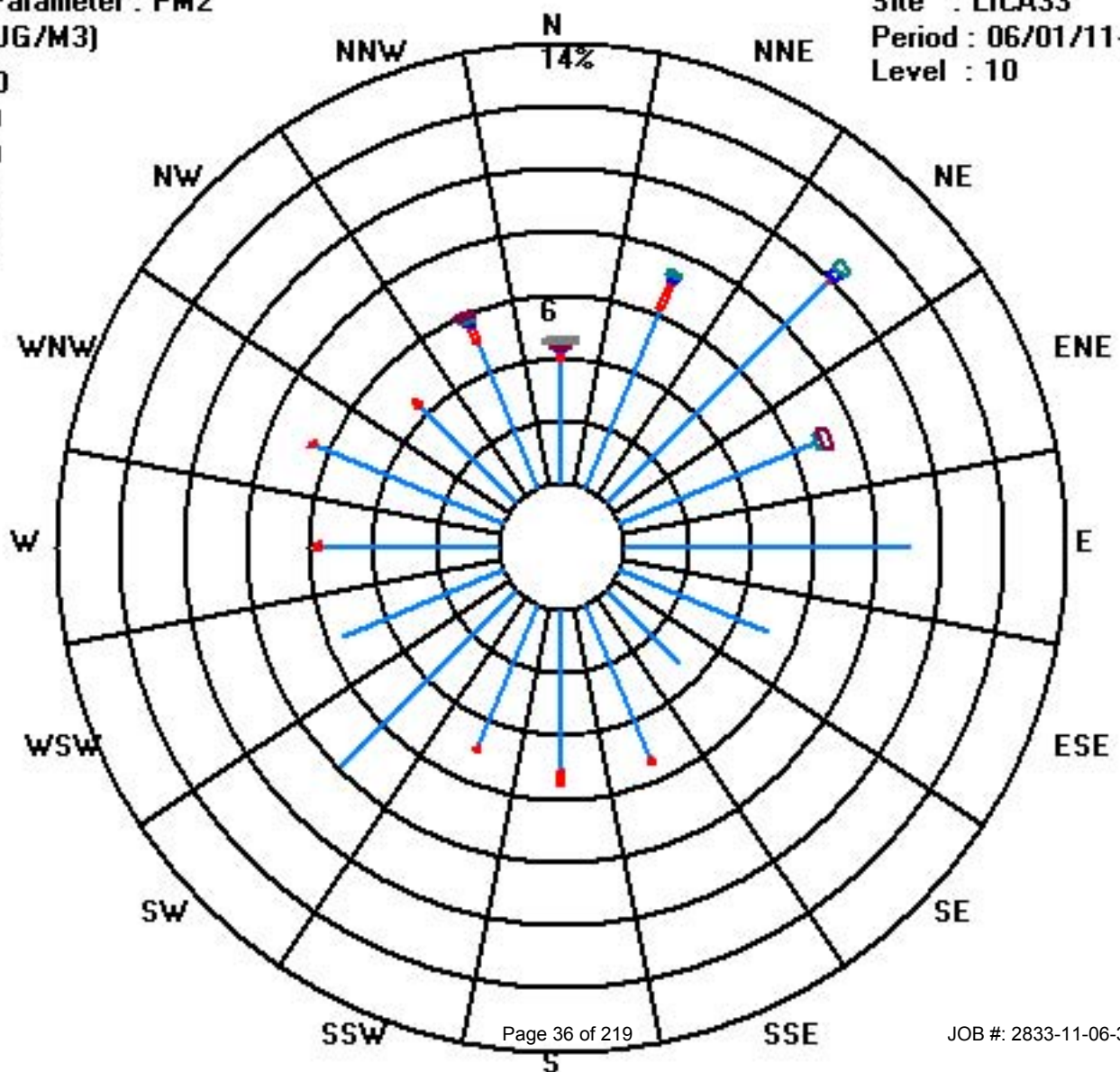
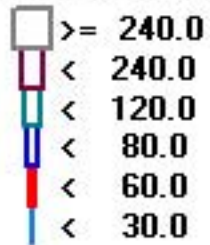
Calm : .00 %

Total # Operational Hours : 710

Class Limits (UG/M3)

Period : 06/01/11-06/30/11

Level : 10



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
1		5	7	12	7	8	IZS	7	5	1	2	1	1	0	0	1	0	1	1	1	0	1	1	2	3	12	2.9	24	
2		3	3	4	5	IZS	4	2	2	1	2	1	1	1	1	0	1	2	1	2	2	2	4	3	5	2.1	24		
3		2	2	6	IZS	4	3	2	1	2	2	1	1	1	1	0	0	1	1	1	1	1	5	4	6	1.9	24		
4		5	4	IZS	7	7	5	1	0	0	0	0	0	0	1	1	1	1	1	1	1	2	3	5	5	7	2.2	24	
5		7	IZS	6	8	8	6	5	4	2	2	2	1	1	1	1	1	1	1	1	4	6	5	5	8	3.5	24		
6		IZS	6	6	7	7	5	3	2	2	1	0	0	0	0	0	0	0	0	1	3	6	8	12	IZS	12	3.1	24	
7		15	14	11	13	8	8	9	4	3	3	4	2	4	4	3	3	2	3	2	4	3	4	IZS	6	15	5.7	24	
8		6	10	7	15	11	8	9	10	10	7	7	6	2	1	1	1	1	1	2	2	4	IZS	2	3	15	5.5	24	
9		7	12	7	9	10	8	6	3	2	2	2	1	1	1	1	1	1	1	2	2	IZS	3	3	2	12	3.8	24	
10		3	3	3	3	4	4	4	3	2	1	1	1	1	1	1	1	1	1	1	IZS	3	4	5	5	5	2.4	24	
11		6	5	5	4	4	4	4	2	1	0	1	1	1	0	0	0	0	0	IZS	1	1	2	1	2	6	2.0	24	
12		5	7	8	6	7	9	5	3	5	3	4	2	2	1	2	1	IZS	1	2	3	4	6	6	8	9	4.4	24	
13		9	10	12	11	10	9	6	6	4	2	1	1	1	1	1	IZS	1	2	6	7	14	10	5	14	5.7	24		
14		19	9	2	2	2	2	2	2	2	3	4	3	2	1	1	IZS	1	1	2	1	1	2	10	7	19	3.5	24	
15		6	12	5	5	4	4	5	7	13	4	1	1	1	0	IZS	0	2	2	2	2	2	1	0	13	3.5	24		
16		1	1	1	1	0	0	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	1	3	8	8	1.0	24	
17		4	5	5	5	3	2	1	2	2	1	0	0	IZS	0	0	1	0	1	0	1	2	1	1	2	1	5	1.7	24
18		2	1	1	1	1	1	1	0	0	0	0	0	IZS	0	0	0	0	0	1	1	1	1	1	1	2	2	0.7	24
19		2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0.3	24
20		0	1	0	0	0	1	1	0	0	C	C	C	C	C	C	C	C	C	0	0	0	0	1	0	0	1	0.2	24
21		0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	3	5	9	3	2	9	1.4	24
22		5	5	4	3	3	5	7	IZS	2	1	1	1	1	1	M	1	1	1	1	1	3	7	3	5	7	2.8	23	
23		9	6	4	4	7	5	IZS	3	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1	2	9	2.5	24	
24		2	2	2	2	2	IZS	1	1	2	2	1	1	1	1	1	1	1	1	1	1	2	6	6	5	6	2.0	24	
25		6	6	4	5	IZS	2	1	0	0	0	1	4	3	1	1	0	0	0	1	2	1	1	3	5	6	2.0	24	
26		4	3	2	IZS	1	1	2	2	1	2	1	1	1	3	2	1	1	1	1	1	2	2	2	2	4	1.7	24	
27		4	4	IZS	3	3	3	3	2	2	1	1	1	1	1	1	2	2	2	3	3	2	2	3	4	2.2	24		
28		4	IZS	4	5	6	7	4	2	2	2	2	2	2	2	1	1	1	2	2	2	2	3	3	3	7	2.8	24	
29		IZS	0	1	1	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	0.3	24
30		0	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	1	IZS	6	0.7	24	
HOURLY MAX		19	14	12	15	11	9	9	10	13	7	7	6	4	4	3	3	2	3	2	6	7	14	12	8				
HOURLY AVG		5.0	5.0	4.4	4.8	4.4	3.8	3.2	2.3	2.2	1.6	1.4	1.3	1.1	0.9	0.9	0.7	0.8	0.9	1.1	1.6	2.4	3.3	3.6	3.6				

STATUS FLAG CODES

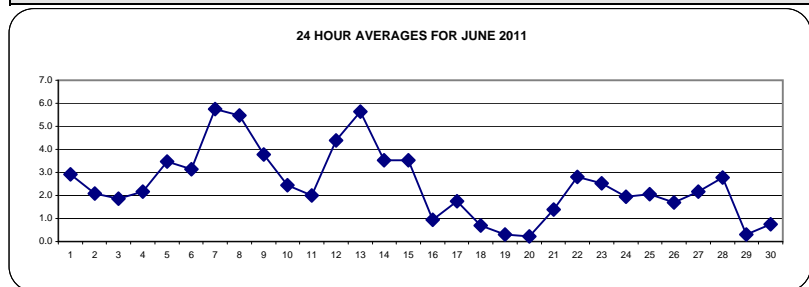
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

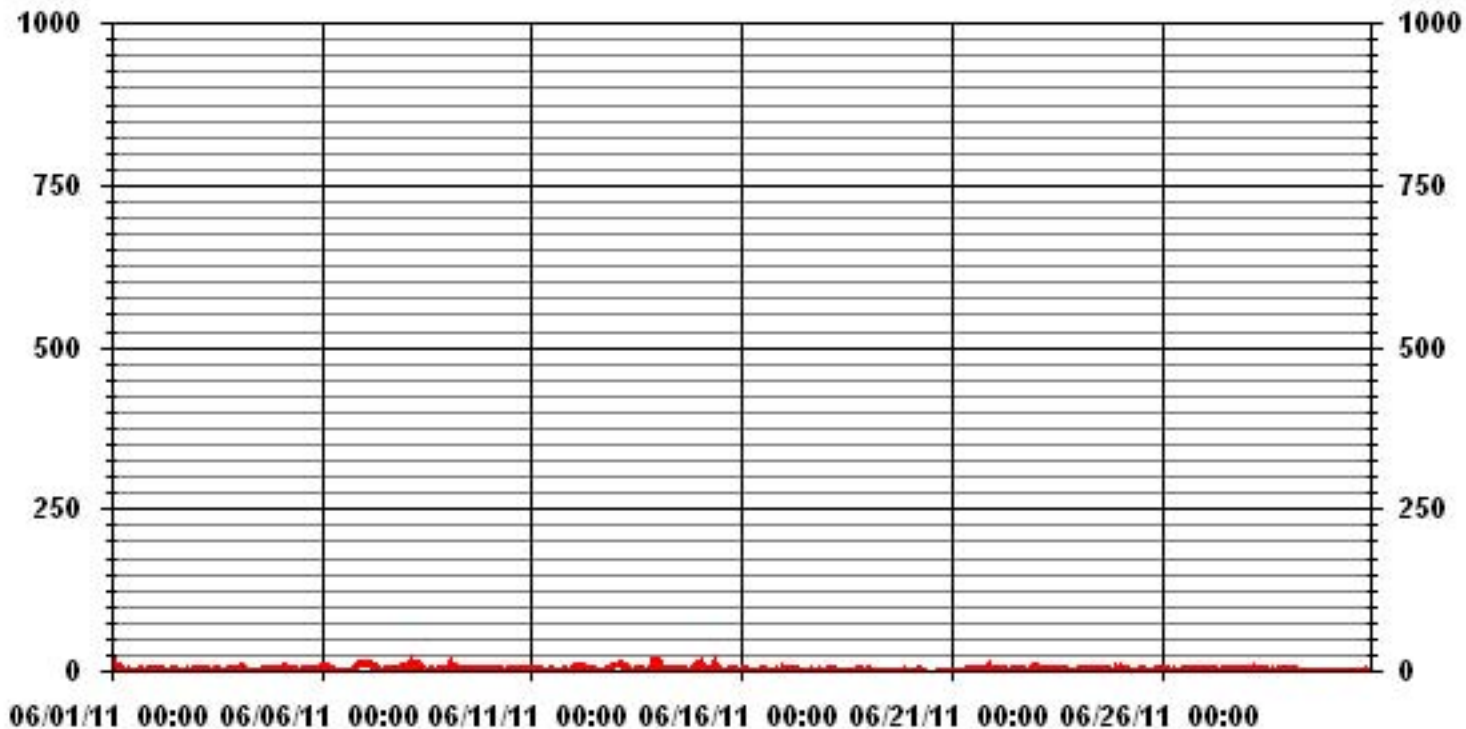
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	551					
MAXIMUM 1-HR AVERAGE:	19	PPB	@ HOUR(S)	0	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	5.7	PPB			ON DAY(S)	7
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	2.80		MONTHLY AVERAGE:	2.51	PPB	



01 Hour Averages



— LICA33 IIO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	9	17	11	13	IZS	10	7	3	3	1	1	1	1	1	1	1	1	1	1	1	1	3	4	17	4.3	24	
2	4	4	7	10	IZS	5	3	2	2	3	2	2	1	2	1	1	1	4	2	5	4	16	16	9	16	4.6	24	
3	3	3	8	IZS	5	4	3	2	3	3	2	1	1	1	1	1	1	1	2	3	2	7	5	8	2.7	24		
4	8	5	IZS	9	10	8	3	1	1	1	1	1	1	1	1	2	2	2	2	3	6	7	6	10	3.6	24		
5	9	IZS	7	10	14	9	7	5	3	2	2	2	2	2	2	2	2	2	2	3	5	8	8	8	14	5.0	24	
6	IZS	8	8	9	9	9	4	3	9	1	1	1	1	1	1	1	1	1	2	7	9	12	14	IZS	14	5.1	24	
7	21	19	14	18	12	14	12	6	5	4	5	3	5	5	4	4	3	6	7	6	6	6	IZS	11	21	8.5	24	
8	9	17	16	22	18	10	12	11	13	9	10	7	4	2	2	2	2	3	3	2	6	IZS	3	5	22	8.2	24	
9	13	23	10	14	17	10	8	4	4	4	4	2	2	2	2	2	2	2	2	3	IZS	4	4	3	23	6.1	24	
10	3	4	4	4	6	5	5	5	2	2	1	2	1	1	1	1	2	1	1	IZS	4	5	6	6	6	3.1	24	
11	7	6	7	5	4	7	8	2	1	1	1	1	1	1	1	1	1	1	IZS	1	3	5	2	8	8	3.3	24	
12	8	13	15	12	8	16	8	4	6	5	8	4	3	3	3	4	3	IZS	7	8	10	9	10	9	16	7.7	24	
13	11	13	14	12	12	11	7	8	5	4	2	1	1	2	3	3	3	IZS	2	3	11	11	25	18	13	25	8.3	24
14	33	15	4	4	3	4	3	4	3	4	5	4	3	2	2	IZS	1	2	5	2	2	7	18	15	33	6.3	24	
15	16	15	12	6	9	6	6	40	61	38	2	2	4	1	IZS	1	5	5	3	4	5	6	4	1	61	11.0	24	
16	2	2	2	2	1	1	1	1	1	1	1	4	2	IZS	1	1	2	2	1	1	1	5	7	17	17	2.6	24	
17	5	13	8	8	9	3	2	5	5	2	1	1	1	IZS	1	1	2	2	1	2	3	3	2	3	2	13	3.7	24
18	3	2	2	2	2	2	2	1	1	1	0	IZS	0	0	0	0	0	0	1	0	1	1	1	1	2	3	1.1	24
19	2	1	1	0	0	0	0	0	0	0	IZS	1	1	1	0	1	1	1	1	1	1	2	2	1	1	2	0.8	24
20	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	C	0	0	0	0	0	3	2	0	3	0.8	24
21	0	0	0	0	0	1	1	0	IZS	2	2	1	1	1	1	2	3	3	5	5	9	14	8	4	14	2.7	24	
22	9	7	7	4	4	8	12	IZS	3	3	2	2	2	2	M	2	2	2	2	2	5	18	6	9	18	5.1	23	
23	12	11	5	6	12	11	IZS	4	3	2	2	2	1	1	1	1	1	1	2	2	3	2	2	3	12	3.9	24	
24	4	4	3	3	3	IZS	2	2	3	3	8	2	2	2	2	2	2	2	3	2	3	12	10	7	12	3.7	24	
25	10	10	6	8	IZS	5	4	3	3	3	P	11	7	4	4	3	3	3	7	8	5	4	11	12	12	6.1	23	
26	9	9	5	IZS	3	2	3	2	3	2	2	2	3	4	3	2	3	2	2	3	4	3	4	3	4	9	3.3	24
27	6	5	IZS	17	3	4	4	3	3	2	2	1	2	2	2	2	2	2	3	5	5	2	5	6	17	3.8	24	
28	7	IZS	10	8	11	11	7	2	3	2	2	2	3	2	2	2	2	2	2	2	3	3	4	4	11	4.2	24	
29	IZS	6	3	4	6	4	5	5	3	3	3	3	3	2	2	2	2	1	2	3	8	2	4	IZS	8	3.5	24	
30	3	4	4	12	3	3	3	2	15	1	1	2	1	1	1	1	2	2	4	9	10	6	IZS	14	15	4.5	24	
HOURLY MAX	33	23	17	22	18	16	12	40	61	38	10	11	7	5	4	4	5	6	7	11	11	25	18	17				
HOURLY AVG	8.0	8.2	7.1	7.9	7.1	6.2	5.0	4.7	6.0	3.8	2.7	2.4	2.1	1.8	1.7	1.7	1.9	2.0	2.7	3.6	4.6	6.6	6.7	6.7				

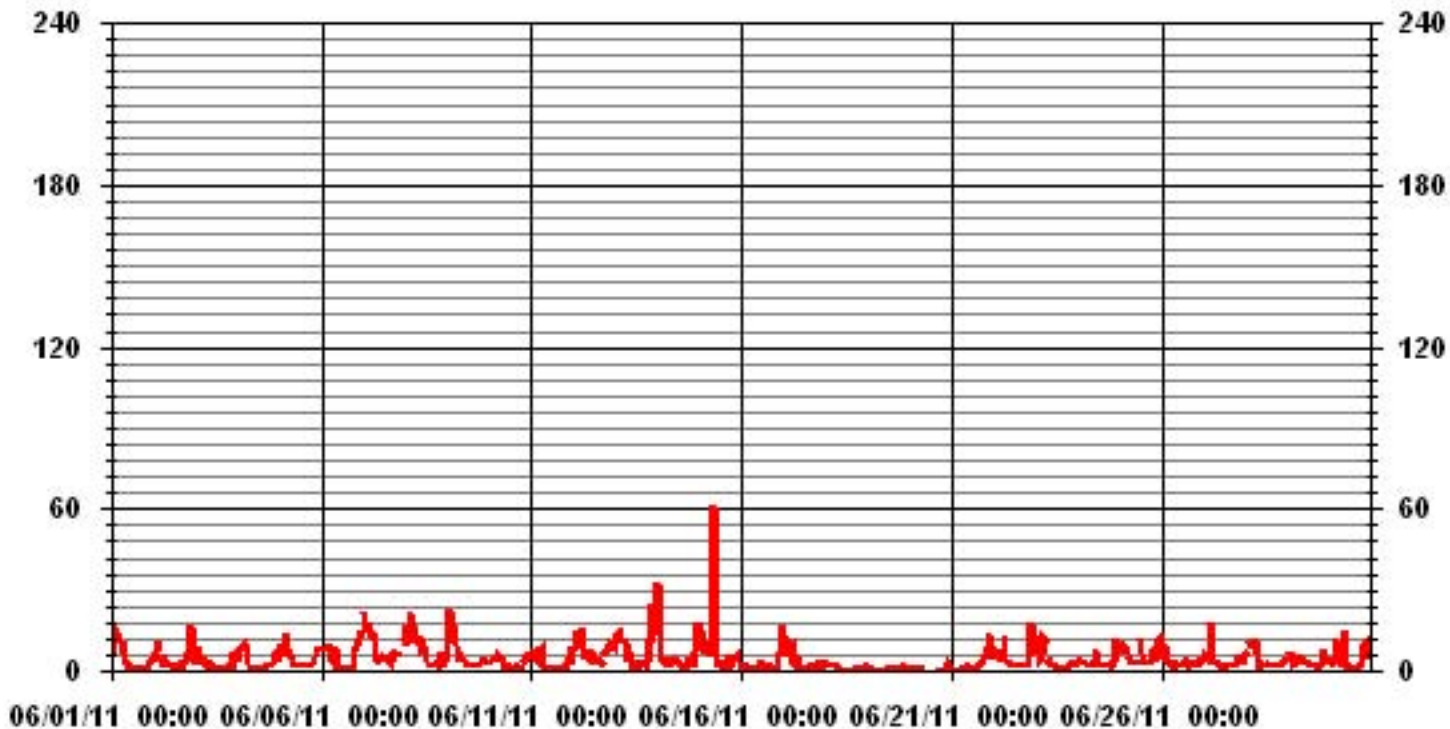
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	-MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	652					
MAXIMUM INSTANTANEOUS VALUE:	61	PPB	@ HOUR(S)	8	ON DAY(S)	15
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	5.17					

01 Hour Averages



LICA33
 NO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	4.69	7.78	10.42	7.04	8.22	5.13	3.23	5.28	5.58	4.99	8.22	5.58	6.02	6.90	4.69	6.16	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.69	7.78	10.42	7.04	8.22	5.13	3.23	5.28	5.58	4.99	8.22	5.58	6.02	6.90	4.69	6.16	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	32	53	71	48	56	35	22	36	38	34	56	38	41	47	32	42	681
< 110																	
< 210																	
>= 210																	
Totals	32	53	71	48	56	35	22	36	38	34	56	38	41	47	32	42	

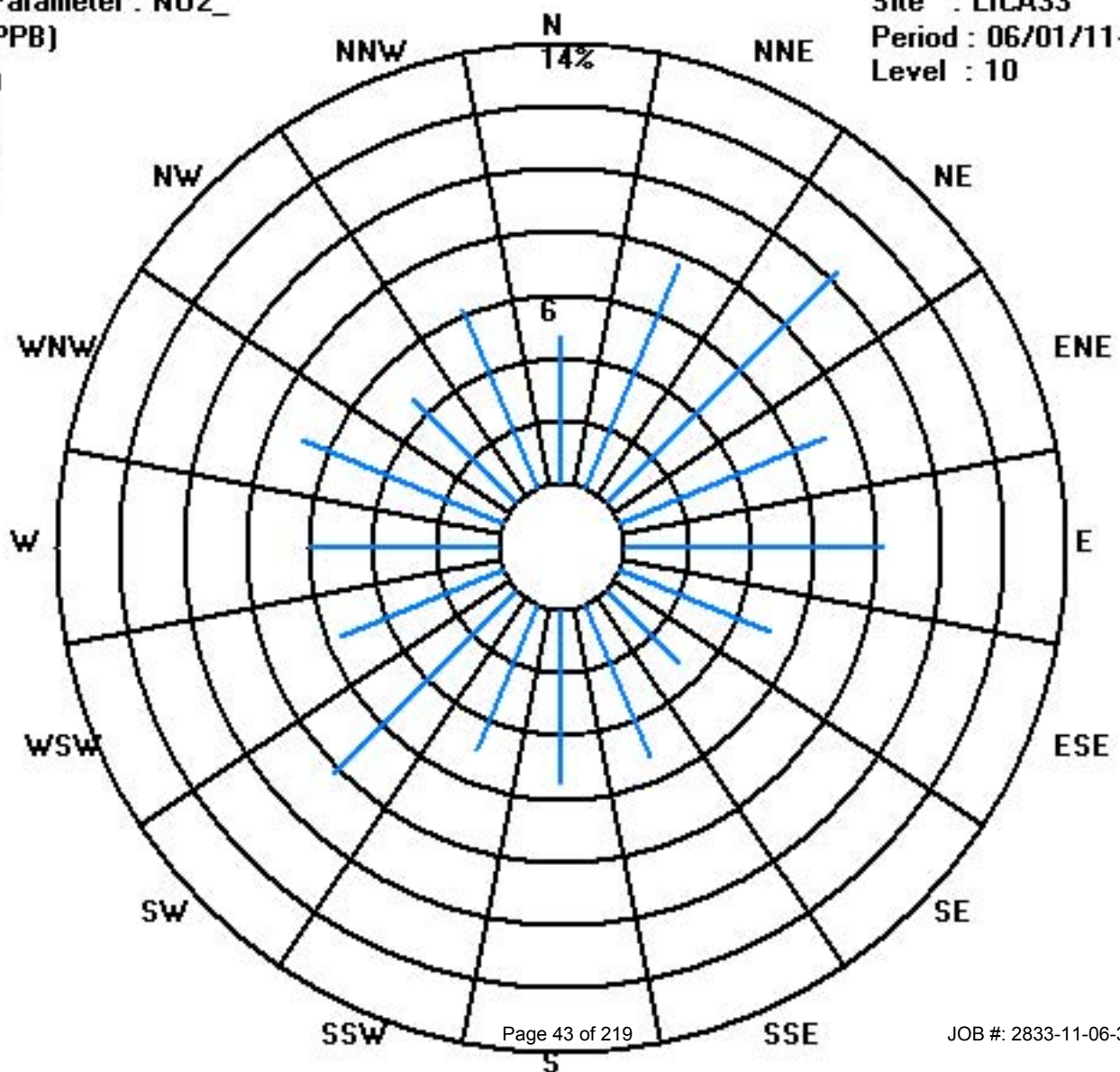
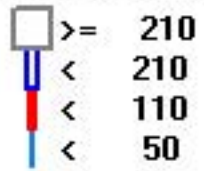
Calm : .00 %

Total # Operational Hours : 681

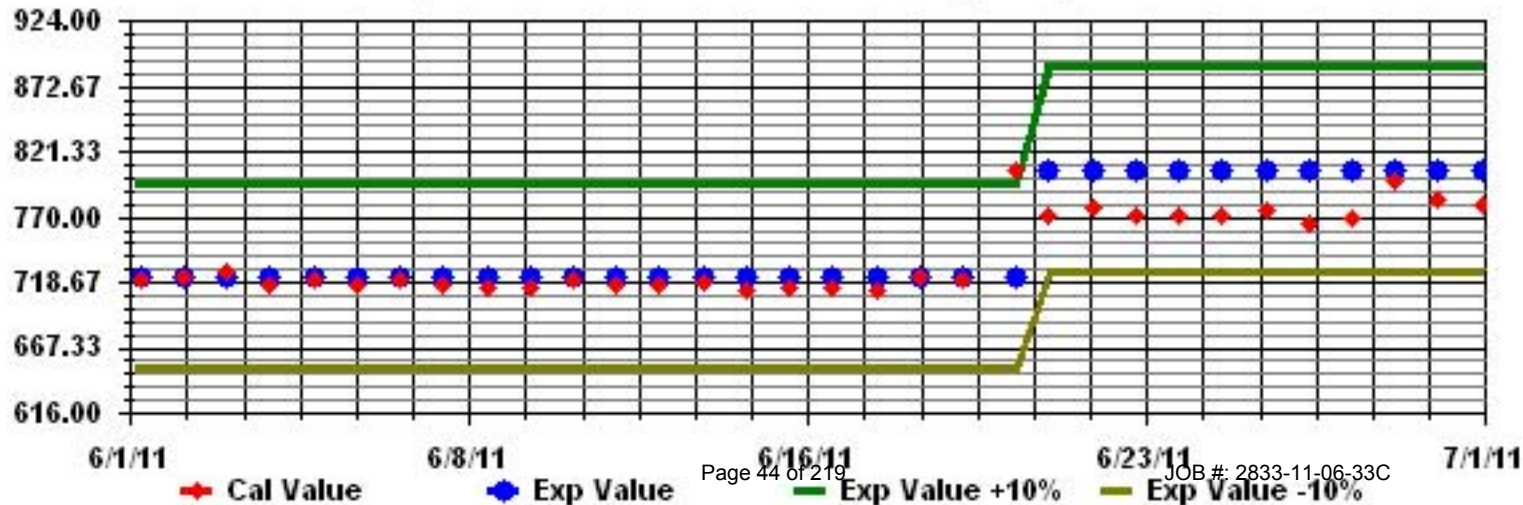
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

NITRIC OXIDE hourly averages in ppb

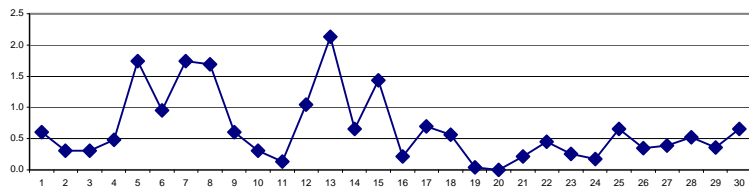
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR				
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																													
1	1	1	2	1	2	IZS	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.6	24	
2	0	1	0	0	IZS	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
3	0	0	0	IZS	1	0	0	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0.3	24	
4	1	0	IZS	1	2	3	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0.5	24	
5	2	IZS	2	3	11	4	4	2	2	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	11	1.7	24	
6	IZS	1	1	1	2	3	2	2	2	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	IZS	3	1.0	24	
7	2	6	2	5	4	13	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	13	1.7	24
8	1	1	1	12	6	3	3	3	2	1	2	2	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0	12	1.7	24
9	0	1	1	1	1	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0	2	0.6	24	
10	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	1	0.3	24	
11	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	1	0.1	24	
12	1	1	1	0	1	3	1	1	2	1	1	1	1	0	0	1	0	0	0	IZS	1	1	1	1	2	2	3	1.0	24
13	2	4	2	2	5	8	5	4	2	1	0	0	0	0	0	0	IZS	1	1	1	1	1	8	1	1	8	2.1	24	
14	7	1	0	0	0	0	0	0	1	1	1	1	0	0	0	IZS	1	0	0	0	0	0	0	1	1	7	0.7	24	
15	1	3	0	0	0	0	1	8	14	3	0	0	0	0	0	IZS	1	1	1	0	0	0	0	0	0	14	1.4	24	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	0	3	3	0.2	24	
17	0	2	1	1	1	0	0	0	1	1	0	0	IZS	1	1	1	1	0	0	1	1	1	1	1	0	2	0.7	24	
18	1	0	1	1	1	1	1	0	0	0	0	0	IZS	1	1	1	0	1	1	1	0	0	0	0	1	1	0.6	24	
19	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
20	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	0.2	24	
22	0	0	0	0	1	1	6	IZS	1	1	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	6	0.5	23	
23	1	0	0	0	1	2	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
24	0	0	0	0	0	IZS	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0.2	24	
25	1	1	0	2	IZS	2	1	1	0	1	1	1	1	0	1	0	0	0	0	0	1	0	0	0	1	2	0.7	24	
26	0	0	0	IZS	1	1	1	1	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	1	0.3	24		
27	0	0	IZS	3	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24	
28	0	IZS	1	1	2	3	2	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24	
29	IZS	1	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
30	1	1	0	2	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	IZS	3	0.7	24		
HOURLY MAX	7	6	2	12	11	13	6	8	14	3	2	2	1	1	1	1	1	1	1	1	1	1	1	8	2	3			
HOURLY AVG	0.8	0.9	0.6	1.3	1.6	1.9	1.6	1.2	1.3	0.7	0.5	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.3	0.6	0.4	0.5					

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

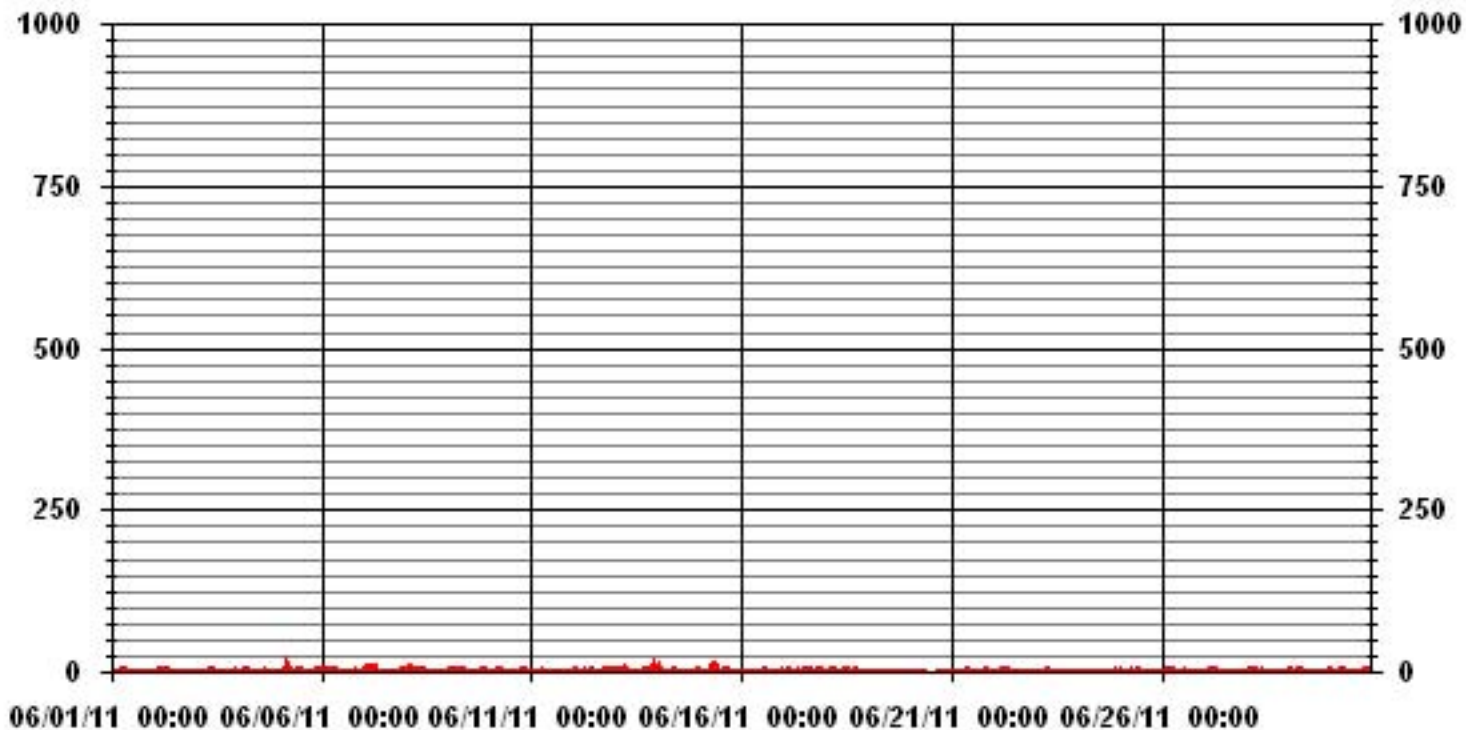
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	270					
MAXIMUM 1-HR AVERAGE:	14	PPB	@ HOUR(S)	8	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	2.1	PPB			ON DAY(S)	13
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	1.39		MONTHLY AVERAGE:	0.66	PPB	

01 Hour Averages



— LICA33 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2	2	8	2	5	IZS	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	1.9	24
2	1	1	1	1	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	2	2	1.2	24
3	1	1	1	IZS	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.1	24
4	3	1	IZS	2	5	5	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.6	24
5	9	IZS	4	9	42	9	10	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1	42	4.6	24	
6	IZS	3	2	3	5	5	3	4	15	1	2	1	1	1	1	1	1	1	1	1	1	2	6	IZS	15	2.8	24	
7	4	12	6	13	14	48	8	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	48	5.3	24
8	1	2	3	31	24	5	5	4	4	2	3	3	2	1	1	1	1	1	1	1	1	1	IZS	2	1	31	4.3	24
9	1	4	1	4	4	3	3	1	2	2	2	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	4	1.7	24
10	1	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	3	1.2	24
11	1	1	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	3	1.2	24
12	2	4	5	2	4	8	2	2	3	2	10	2	1	1	1	1	1	IZS	2	1	1	4	7	3	3	10	3.0	24
13	8	9	7	5	7	18	7	6	3	1	1	1	1	1	1	1	IZS	2	1	1	3	53	3	1	53	6.1	24	
14	51	2	1	1	1	1	1	1	1	2	2	1	1	1	1	IZS	2	1	1	1	1	1	3	3	51	3.5	24	
15	5	4	2	1	1	1	2	139	114	37	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	139	13.9	24	
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	12	12	1.5	24
17	1	9	2	4	5	1	1	2	2	1	1	1	1	IZS	2	1	1	1	1	2	1	2	2	1	9	2.0	24	
18	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	2	1.0	24
19	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
20	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	1	0.5	24
21	0	0	0	0	0	0	0	0	IZS	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2	0.7	24
22	1	1	1	1	1	4	18	IZS	2	4	1	1	1	1	M	1	1	1	1	1	1	1	1	1	1	18	2.1	23
23	1	1	1	1	4	5	IZS	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.4	24
24	1	1	1	1	1	IZS	2	1	1	1	5	1	1	1	1	1	1	1	1	1	1	3	3	1	5	1.4	24	
25	3	3	1	4	IZS	3	1	1	1	1	P	1	1	1	1	1	1	1	1	2	1	1	3	4	1.5	23		
26	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	3	1.1	24	
27	1	1	IZS	38	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	38	2.7	24	
28	1	IZS	2	2	6	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	1.6	24	
29	IZS	3	1	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.2	24	
30	2	1	1	10	1	2	2	1	8	1	1	1	1	1	1	2	1	1	1	3	3	3	IZS	6	10	2.3	24	
HOURLY MAX	51	12	8	38	42	48	18	139	114	37	10	3	2	2	2	2	2	2	2	3	3	53	7	12				
HOURLY AVG	3.8	2.6	2.1	5.1	5.1	4.9	3.2	6.6	6.3	2.6	1.7	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1	3.2	1.7	1.8				

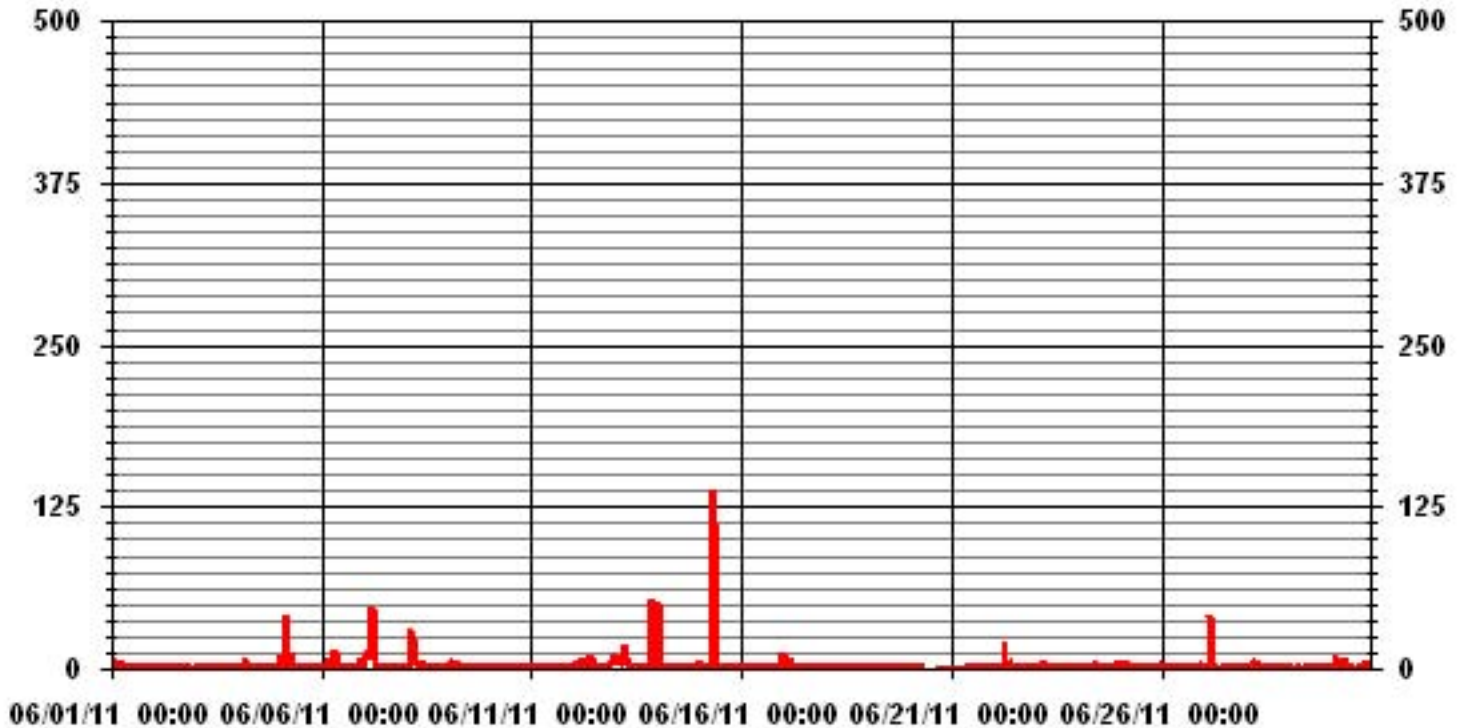
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	663					
MAXIMUM INSTANTANEOUS VALUE:	139	PPB	@ HOUR(S)	7	ON DAY(S)	15
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION:	8.27					

01 Hour Averages



LICA33
 NO_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : NO
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	4.69	7.78	10.42	7.04	8.22	5.13	3.23	5.28	5.58	4.99	8.22	5.58	6.02	6.90	4.69	6.16	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.69	7.78	10.42	7.04	8.22	5.13	3.23	5.28	5.58	4.99	8.22	5.58	6.02	6.90	4.69	6.16	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	32	53	71	48	56	35	22	36	38	34	56	38	41	47	32	42	681
< 110																	
< 210																	
>= 210																	
Totals	32	53	71	48	56	35	22	36	38	34	56	38	41	47	32	42	

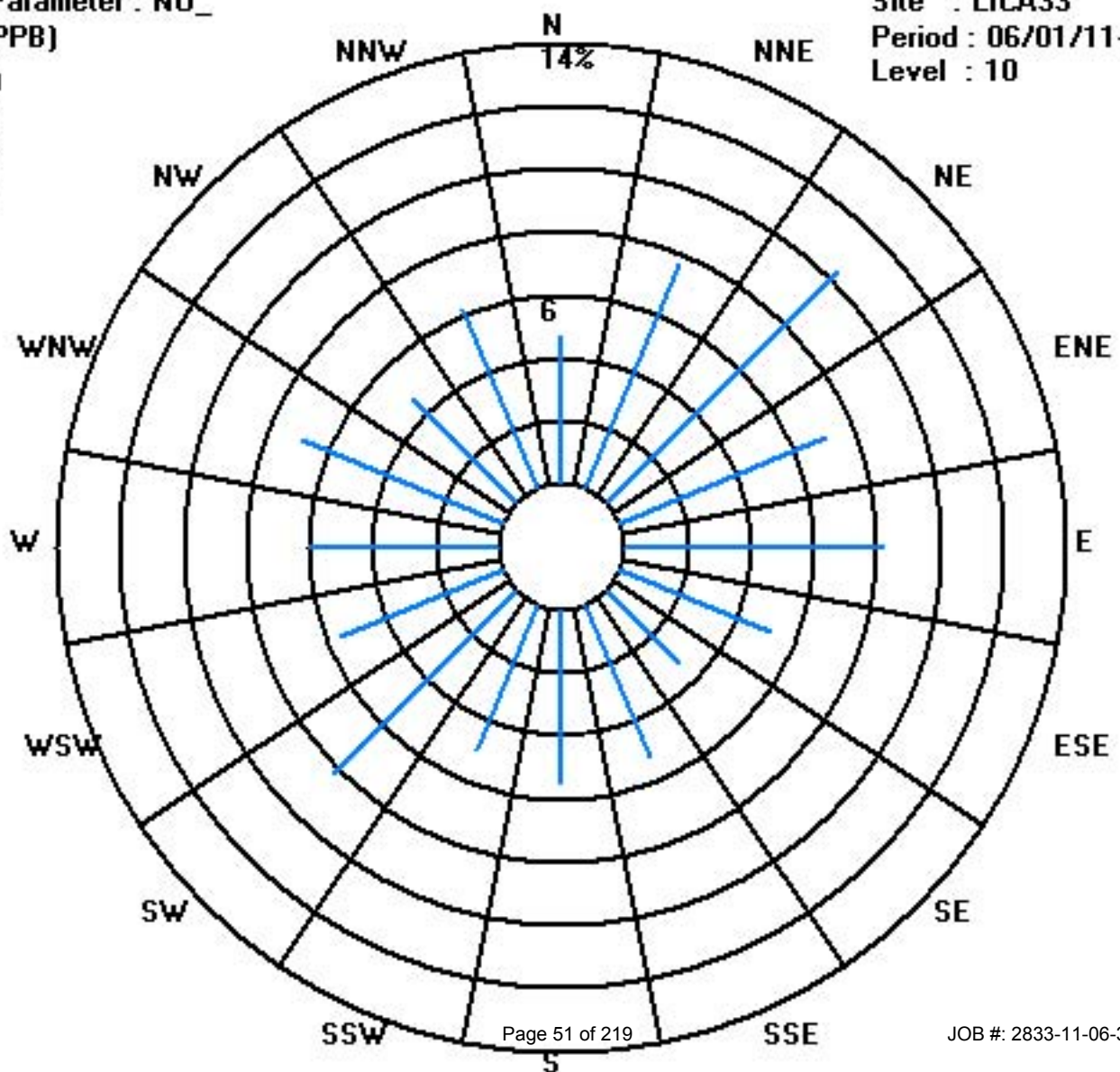
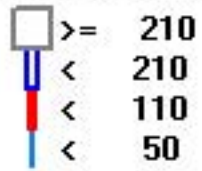
Calm : .00 %

Total # Operational Hours : 681

Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

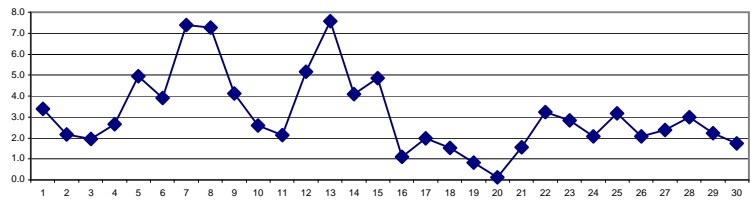
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	6	8	14	8	9	IZS	10	7	2	2	1	1	0	0	0	1	0	0	1	1	1	1	2	3	14	3.4	24	
2	3	3	4	5	IZS	5	3	2	1	2	2	1	1	1	0	0	1	2	1	2	2	2	4	3	5	2.2	24	
3	2	2	6	IZS	4	3	2	2	2	2	1	1	1	1	1	0	1	1	1	1	1	1	5	4	6	2.0	24	
4	6	4	IZS	8	9	8	2	1	0	0	0	0	0	1	1	1	1	1	1	1	1	2	4	5	5	9	2.7	24
5	9	IZS	8	10	20	10	9	6	4	3	2	2	2	1	1	1	1	1	1	2	4	6	5	6	20	5.0	24	
6	IZS	7	7	8	8	8	4	3	4	1	1	0	0	0	0	0	0	0	1	4	7	9	14	IZS	14	3.9	24	
7	17	20	12	18	12	21	14	5	3	3	4	2	4	4	3	3	2	3	3	4	3	4	IZS	6	21	7.4	24	
8	7	11	8	28	16	11	12	12	13	9	9	8	3	2	1	1	1	2	2	2	4	IZS	3	3	28	7.3	24	
9	7	13	8	9	11	10	7	3	3	2	2	1	1	1	1	1	1	1	2	2	IZS	3	3	3	13	4.1	24	
10	3	3	3	3	4	5	5	4	2	1	1	1	1	1	1	1	1	1	1	1	IZS	4	4	5	5	5	2.6	24
11	6	5	6	5	4	4	5	2	1	0	1	1	0	0	0	0	0	0	IZS	1	1	3	1	2	6	2.1	24	
12	5	8	10	6	8	12	6	3	6	4	5	2	2	2	2	2	2	IZS	3	3	5	6	8	9	12	5.2	24	
13	11	14	14	13	15	17	10	10	5	2	1	1	1	1	2	2	IZS	2	3	6	7	21	10	6	21	7.6	24	
14	25	9	3	2	2	3	3	2	2	3	5	3	2	1	1	IZS	2	1	2	1	1	3	11	7	25	4.1	24	
15	7	15	6	5	4	4	5	15	27	7	1	1	1	0	IZS	1	2	2	2	2	2	2	1	0	27	4.9	24	
16	1	1	1	1	0	0	1	0	0	0	0	1	1	IZS	1	1	0	1	0	0	1	1	3	10	10	1.1	24	
17	4	7	5	5	4	2	1	2	2	1	1	0	IZS	0	0	1	1	0	1	2	2	2	2	1	7	2.0	24	
18	2	1	1	1	1	2	2	1	0	0	0	IZS	2	1	2	1	2	2	2	2	2	3	2	3	3	1.5	24	
19	3	2	2	2	2	1	2	1	1	1	IZS	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0.8	24	
20	0	0	0	0	0	1	0	0	0	C	C	C	C	C	C	C	C	C	0	0	0	0	1	0	0	1	0.1	24
21	0	0	0	0	0	0	0	0	IZS	2	2	1	1	1	1	1	1	1	2	2	3	5	9	3	2	9	1.6	24
22	5	5	4	3	3	6	12	IZS	3	2	1	1	1	1	M	2	1	1	1	1	1	3	7	3	5	12	3.2	23
23	9	6	4	5	8	7	IZS	4	3	2	2	1	1	1	1	1	1	1	1	1	2	1	1	2	9	2.8	24	
24	2	2	2	2	2	IZS	2	1	2	2	1	1	1	1	1	1	1	2	2	1	2	6	6	5	6	2.1	24	
25	6	7	4	7	IZS	4	3	2	1	1	2	5	4	2	2	1	1	1	2	4	2	2	4	6	7	3.2	24	
26	5	4	3	IZS	2	2	2	2	2	2	1	1	2	3	2	2	2	1	1	1	2	2	2	2	5	2.1	24	
27	4	4	IZS	6	3	3	4	3	2	1	1	1	1	1	1	1	2	2	2	3	3	2	2	3	6	2.4	24	
28	4	IZS	5	5	7	10	5	2	2	2	2	2	2	2	1	1	1	1	2	2	2	3	3	3	10	3.0	24	
29	IZS	3	3	3	4	4	4	5	3	2	2	1	2	1	1	1	1	1	1	2	2	1	2	IZS	5	2.2	24	
30	1	2	2	7	1	1	2	1	1	0	0	0	0	0	0	0	0	0	1	3	6	2	IZS	10	10	1.7	24	
HOURLY MAX	NA	20	14	28	20	21	14	15	27	9	9	8	4	4	3	3	2	3	3	6	7	21	14	10				
HOURLY AVG	NA	5.9	5.2	6.3	5.8	5.9	4.7	3.5	3.3	2.0	1.8	1.4	1.4	1.1	1.0	1.0	1.0	1.1	1.4	2.0	2.7	3.9	3.9	4.1				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

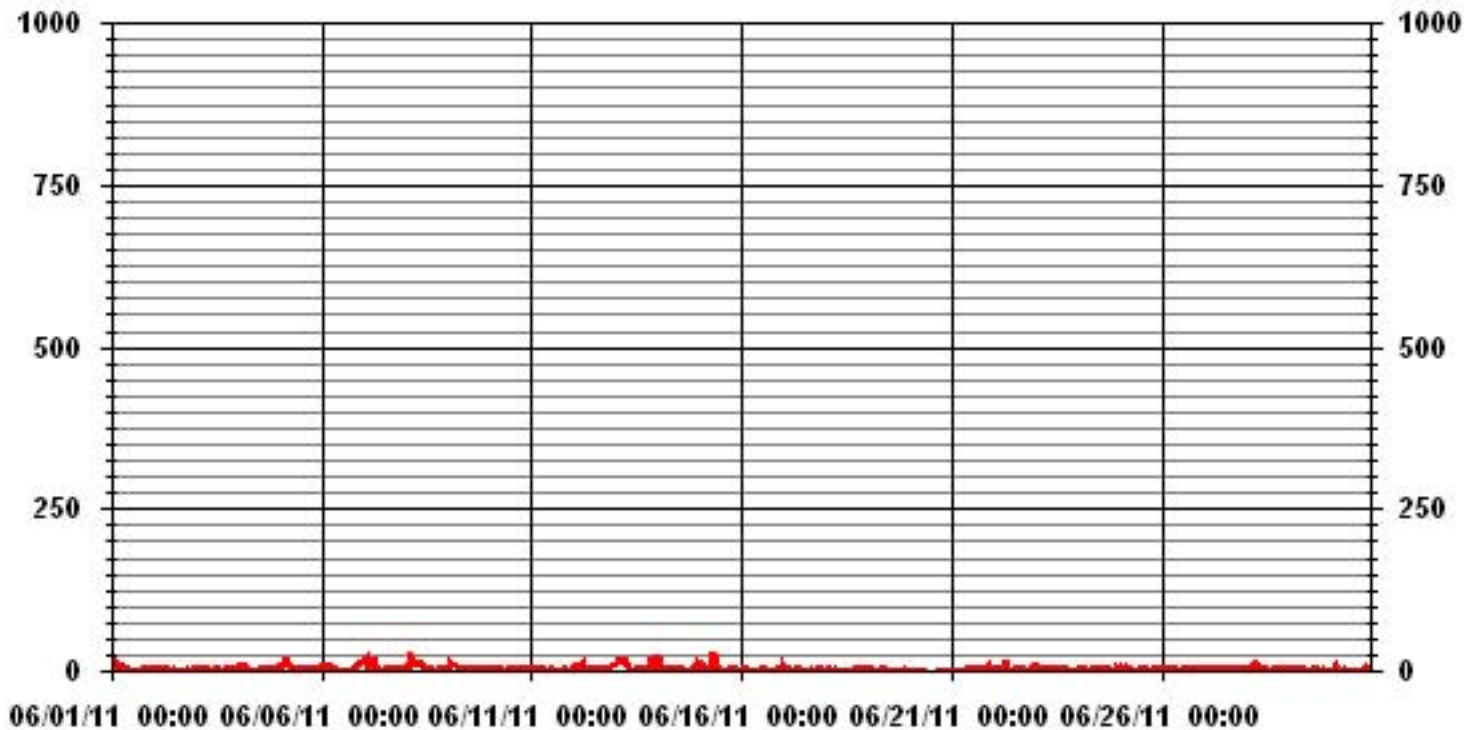
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	594					
MAXIMUM 1-HR AVERAGE:	28	PPB	@ HOUR(S)	3	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	7.6	PPB			ON DAY(S)	13
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	3.74		MONTHLY AVERAGE	3.16	PPB	

01 Hour Averages



— LICA33 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	8	10	23	13	18	IZS	15	10	3	4	2	1	1	1	1	1	1	1	1	1	1	1	2	4	23	5.3	24	
2	5	5	7	11	IZS	7	3	3	3	3	3	2	2	2	1	1	1	4	2	6	4	18	18	10	18	5.3	24	
3	3	3	9	IZS	6	4	3	3	4	4	2	2	2	2	2	2	2	2	2	2	3	2	7	6	9	3.3	24	
4	11	5	IZS	10	14	12	4	2	1	2	1	1	1	1	1	2	2	3	2	2	3	7	7	6	14	4.3	24	
5	16	IZS	10	18	53	18	17	8	4	3	3	3	3	2	3	2	2	2	2	4	6	9	9	9	53	9.0	24	
6	IZS	10	8	11	14	14	6	6	24	2	2	1	1	1	1	1	1	1	2	8	10	13	18	IZS	24	7.0	24	
7	23	23	19	30	22	61	20	9	5	4	5	3	5	5	4	5	3	6	7	6	6	7	IZS	11	61	12.6	24	
8	10	18	19	49	41	14	17	15	17	11	12	10	5	3	2	2	2	3	3	3	6	IZS	4	5	49	11.8	24	
9	13	27	10	17	20	13	10	4	4	5	5	2	2	2	2	2	2	2	2	3	IZS	4	4	3	27	6.9	24	
10	3	4	4	4	6	6	6	7	3	2	2	2	1	2	1	1	1	1	1	1	IZS	5	5	6	6	7	3.4	24
11	7	6	7	6	5	9	10	3	2	1	1	1	1	1	1	1	1	1	IZS	2	3	6	2	8	10	3.7	24	
12	8	17	19	14	12	22	10	5	8	6	13	5	3	3	3	5	3	IZS	8	8	10	12	16	12	22	9.7	24	
13	16	18	20	15	16	28	13	13	7	4	2	1	1	2	3	3	IZS	3	4	12	13	74	21	13	74	13.1	24	
14	74	16	4	4	3	4	3	4	4	5	5	5	3	2	2	IZS	3	2	5	2	1	7	21	17	74	8.5	24	
15	20	19	13	7	9	6	6	179	151	71	3	2	4	1	IZS	2	6	6	3	4	5	6	4	1	179	23.0	24	
16	1	2	2	2	1	1	2	1	1	1	1	4	2	IZS	3	1	2	3	1	1	1	5	8	28	28	3.2	24	
17	5	22	9	11	13	4	2	7	6	3	1	1	IZS	1	1	2	3	1	3	4	3	3	3	3	3	22	4.8	24
18	3	2	2	2	2	2	2	2	1	1	0	IZS	3	2	3	2	3	3	3	3	3	3	3	4	4	4	2.3	24
19	4	3	3	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	0	0	1	2	2	0	1	4	1.6	24	
20	1	1	1	1	1	1	1	1	1	1	C	C	C	C	C	C	C	0	0	0	1	0	3	3	0	3	0.9	24
21	0	0	0	0	0	1	2	0	IZS	4	3	2	1	1	1	2	4	3	5	6	9	15	8	4	15	3.1	24	
22	9	7	7	4	4	12	29	IZS	4	4	2	2	2	2	M	3	2	2	2	2	5	18	6	10	29	6.3	23	
23	13	11	5	6	15	15	IZS	6	4	2	2	2	1	1	1	1	1	1	2	2	3	2	2	3	15	4.4	24	
24	4	3	3	3	3	IZS	3	2	3	3	11	2	2	2	2	3	2	3	3	2	3	15	13	7	15	4.2	24	
25	13	13	6	12	IZS	6	4	3	2	2	P	11	6	3	3	3	2	1	7	8	4	3	11	13	13	6.2	23	
26	8	9	4	IZS	5	2	3	2	3	2	2	2	3	4	3	2	3	3	3	2	2	5	4	4	9	3.5	24	
27	5	5	IZS	49	4	4	4	4	4	2	2	1	1	2	2	2	2	2	4	5	5	2	5	7	49	5.3	24	
28	7	IZS	11	8	16	15	11	2	3	3	2	2	2	2	2	2	2	2	2	3	3	3	3	3	16	4.7	24	
29	IZS	8	4	4	8	5	6	6	4	3	3	3	4	2	2	2	2	1	2	3	8	2	4	IZS	8	3.9	24	
30	4	5	4	21	4	4	4	3	22	2	2	2	1	1	1	2	3	3	4	12	11	8	IZS	20	22	6.2	24	
HOURLY MAX	74	27	23	49	53	61	29	179	151	71	13	11	6	5	4	5	6	6	8	12	13	74	21	28				
HOURLY AVG	10.5	9.7	8.3	11.9	11.3	10.4	7.5	10.8	10.7	5.6	3.4	2.7	2.3	1.9	1.9	2.1	2.1	2.2	2.9	4.1	4.8	9.0	7.6	7.8				

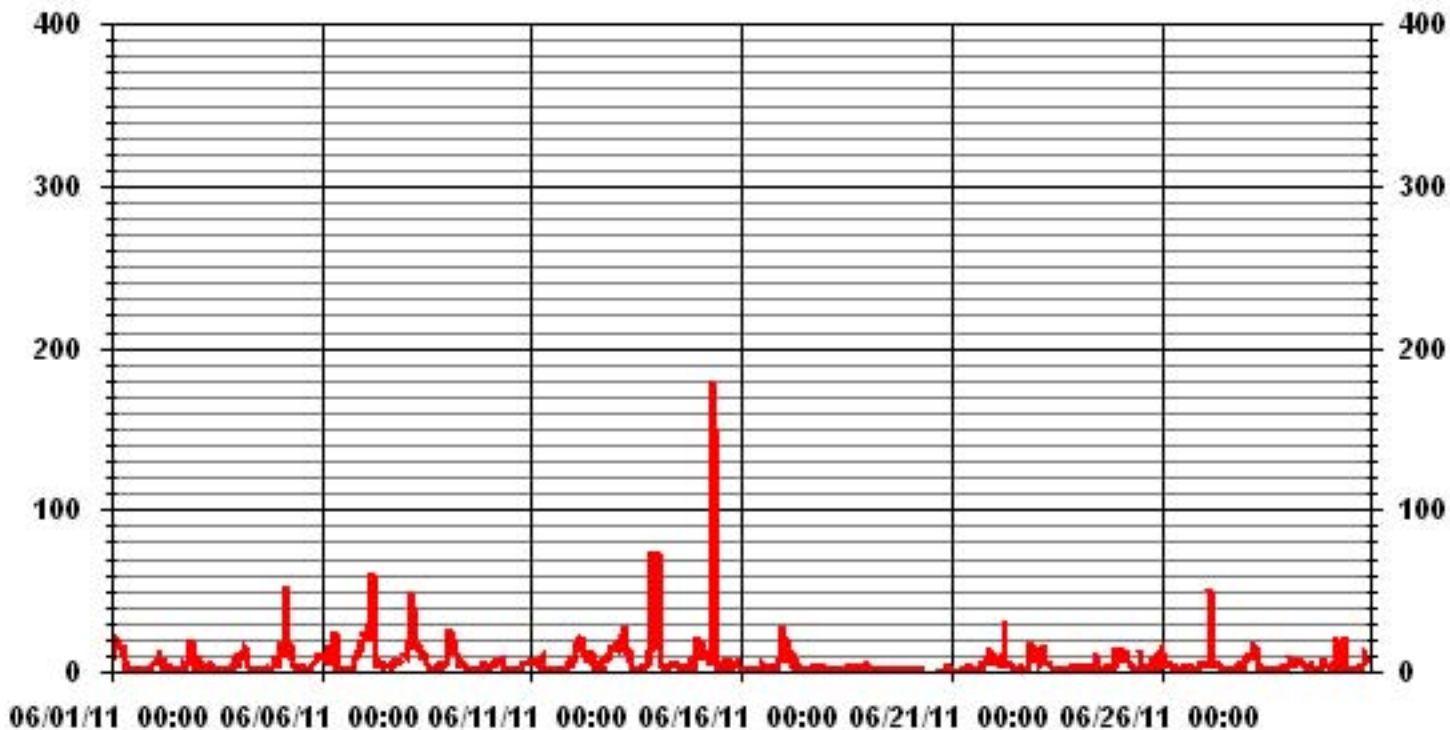
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	664
MAXIMUM INSTANTANEOUS VALUE:	179 PPB @ HOUR(S) 7 ON DAY(S) 15
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	8 HRS
STANDARD DEVIATION:	11.75
OPERATIONAL TIME:	718 HRS

01 Hour Averages



LICA33
 NOX_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : NOX_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	4.69	7.78	10.42	7.04	8.22	5.13	3.23	5.28	5.58	4.99	8.22	5.58	6.02	6.90	4.69	6.16	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.69	7.78	10.42	7.04	8.22	5.13	3.23	5.28	5.58	4.99	8.22	5.58	6.02	6.90	4.69	6.16	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	32	53	71	48	56	35	22	36	38	34	56	38	41	47	32	42	681
< 110																	
< 210																	
>= 210																	
Totals	32	53	71	48	56	35	22	36	38	34	56	38	41	47	32	42	

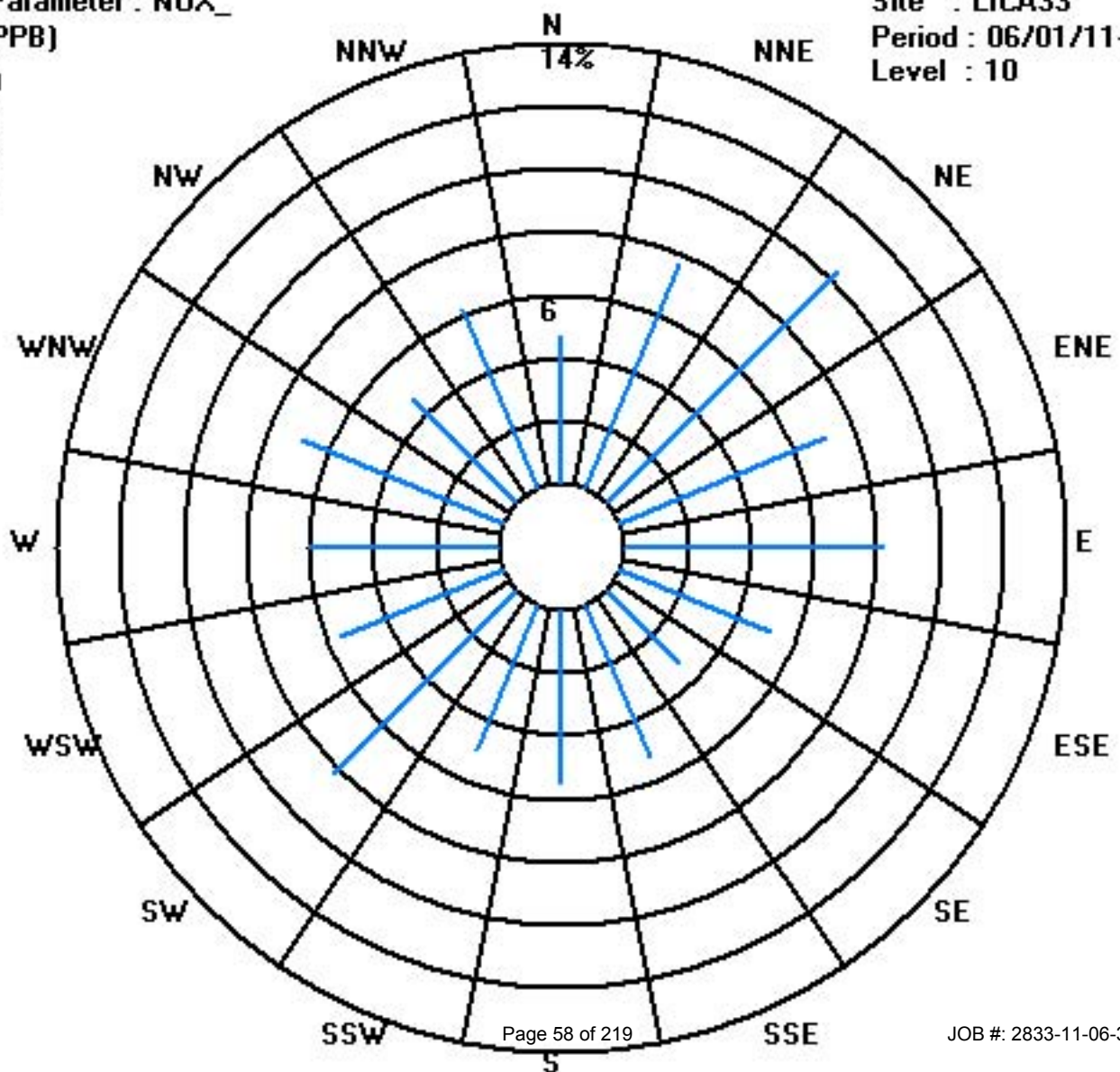
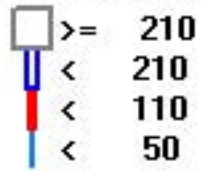
Calm : .00 %

Total # Operational Hours : 681

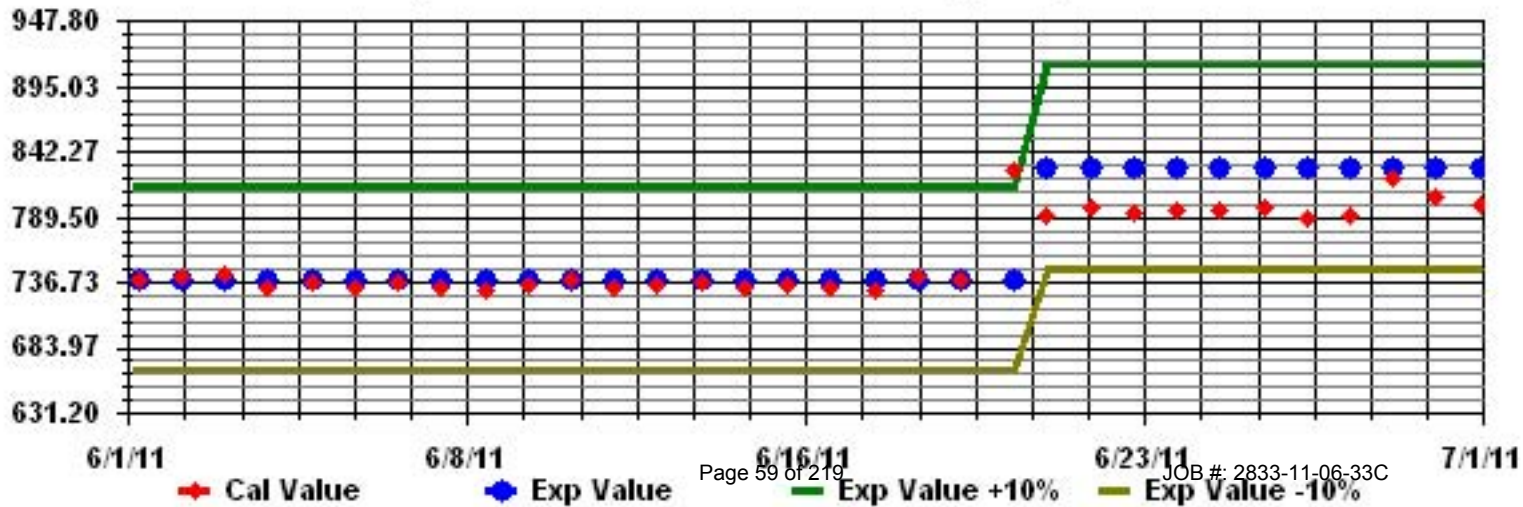
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: NOX_ Sequence: NO2 Phase: SPAll



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

OZONE (O₃) hourly averages in ppb

MST

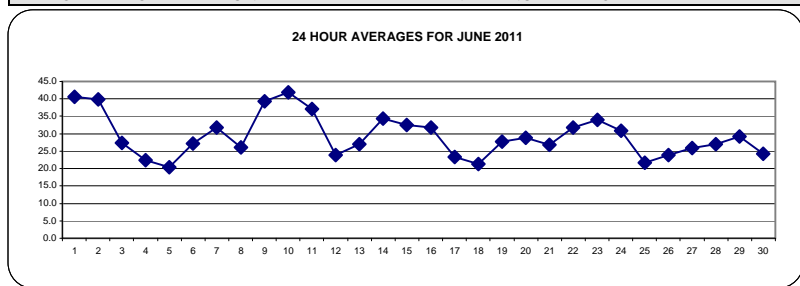
DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	23	16	7	9	10	IZS	22	37	47	50	53	55	57	58	58	57	56	52	49	49	48	46	39	36	58	40.6	24	
2	33	31	29	27	IZS	27	33	33	35	38	43	47	48	51	54	55	56	56	44	33	34	41	32	35	56	39.8	24	
3	45	42	31	IZS	24	24	23	23	22	23	25	27	28	28	29	30	32	29	29	29	28	26	20	12	45	27.3	24	
4	13	13	IZS	9	10	14	20	23	24	25	26	28	29	30	29	29	27	28	29	29	25	21	17	16	30	22.3	24	
5	7	IZS	5	3	3	7	8	14	22	25	28	30	31	32	32	29	30	30	30	28	22	18	19	15	32	20.3	24	
6	IZS	11	11	8	8	10	16	21	25	33	36	38	37	39	40	41	41	42	41	38	33	20	10	IZS	42	27.2	24	
7	6	2	8	4	5	6	13	24	36	46	48	44	48	55	53	53	48	44	42	38	38	38	IZS	30	55	31.7	24	
8	22	17	14	5	8	10	15	17	16	19	17	22	38	42	43	44	44	43	40	36	32	IZS	29	26	44	26.0	24	
9	25	17	17	13	9	13	23	32	35	44	51	54	53	56	57	59	58	56	55	47	IZS	44	44	43	59	39.3	24	
10	39	37	33	32	25	24	30	35	42	47	50	53	53	55	55	56	56	55	53	IZS	38	36	32	28	56	41.9	24	
11	21	25	16	20	24	23	23	31	38	43	46	51	50	51	49	47	46	46	IZS	46	45	38	38	36	51	37.1	24	
12	23	16	10	16	12	11	16	20	22	25	26	33	34	36	38	40	42	IZS	35	32	27	16	12	6	42	23.8	24	
13	6	3	4	3	4	6	12	19	36	42	44	43	43	44	41	43	IZS	47	44	40	38	17	20	22	47	27.0	24	
14	9	18	35	36	34	32	33	32	31	27	31	39	43	44	45	IZS	50	49	39	39	40	33	22	27	50	34.3	24	
15	20	11	20	20	20	24	24	27	28	41	44	38	39	42	IZS	43	42	41	39	34	30	35	39	46	46	32.5	24	
16	46	41	32	27	27	26	25	27	25	24	27	32	43	IZS	39	42	38	38	38	35	26	33	25	13	46	31.7	24	
17	19	14	14	14	14	17	19	28	27	35	38	41	IZS	40	37	36	34	26	16	14	15	14	13	13	41	23.4	24	
18	14	17	16	15	14	13	15	18	20	21	22	IZS	27	28	26	27	26	26	26	24	25	25	24	22	28	21.3	24	
19	23	26	27	28	28	27	26	25	24	24	IZS	26	28	29	31	31	31	34	32	30	27	25	28	30	34	27.8	24	
20	30	30	28	29	28	28	28	28	27	IZS	28	29	30	31	30	31	31	31	31	33	32	28	22	25	25	33	28.8	24
21	19	24	23	23	22	19	22	26	IZS	29	28	27	25	30	34	37	37	37	35	27	23	17	25	27	37	26.8	24	
22	22	18	14	15	14	17	16	IZS	41	46	49	C	C	C	C	49	50	50	48	43	36	27	28	22	50	31.8	24	
23	15	19	18	12	10	14	IZS	26	31	38	40	40	41	44	47	47	46	46	44	43	41	41	41	38	47	34.0	24	
24	33	30	31	29	28	IZS	26	25	23	27	30	34	37	42	43	42	41	39	36	33	29	20	17	14	43	30.8	24	
25	13	11	13	12	IZS	11	10	13	14	16	33	46	44	49	42	26	23	21	20	18	20	18	15	12	49	21.7	24	
26	13	20	20	IZS	32	35	31	32	37	37	36	35	32	26	20	19	21	22	23	22	14	10	7	6	37	23.9	24	
27	5	6	IZS	5	11	10	12	14	20	25	27	31	31	34	37	38	44	45	40	38	35	34	29	25	45	25.9	24	
28	22	IZS	14	11	11	12	21	29	27	32	36	39	41	40	37	38	45	41	36	27	17	14	16	17	45	27.1	24	
29	IZS	24	25	23	16	18	20	22	33	37	37	33	33	33	34	34	33	34	35	27	27	30	33	IZS	37	29.1	24	
30	32	24	16	11	15	15	15	16	19	22	23	26	29	31	34	34	33	32	30	29	27	26	IZS	19	34	24.3	24	
HOURLY MAX	46	42	35	36	34	35	33	37	47	50	53	55	57	58	58	59	58	56	55	49	48	46	44	46				
HOURLY AVG	21.4	20.1	19.0	16.4	16.6	17.6	20.6	24.7	28.5	32.4	35.2	37.2	38.3	40.0	39.8	39.9	40.0	39.3	36.6	33.1	29.9	27.1	25.0	23.6				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

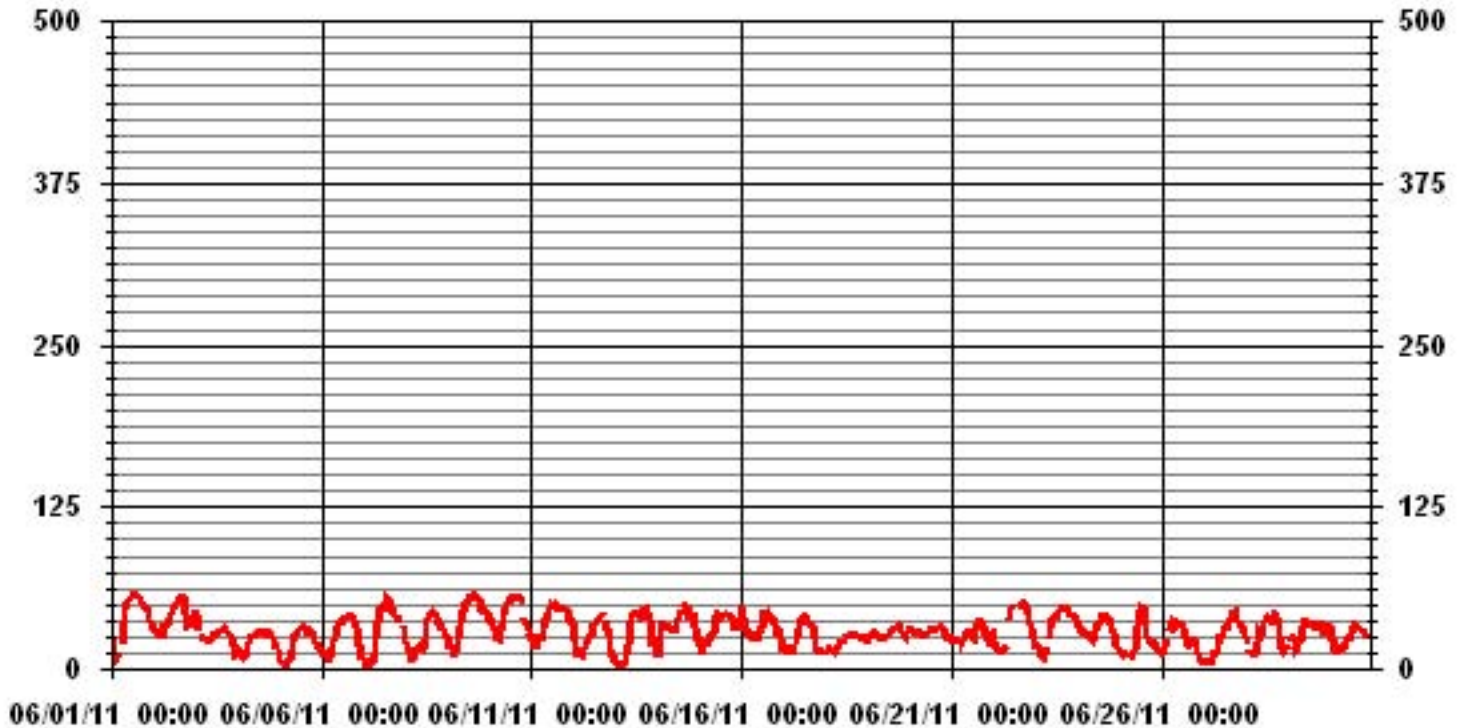
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	684					
MAXIMUM 1-HR AVERAGE:	59	PPB	@ HOUR(S)	15	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	41.9	PPB			ON DAY(S)	10
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	12.43		MONTHLY AVERAGE	29.32	PPB	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	34	27	19	13	15	IZS	32	46	49	53	54	57	58	60	59	59	57	56	51	51	50	48	45	39	60	44.9	24	
2	38	35	33	32	IZS	32	35	34	37	41	45	50	50	53	55	57	58	60	57	36	42	51	41	46	60	44.3	24	
3	48	48	37	IZS	27	26	25	25	24	27	29	30	31	31	32	32	34	34	31	30	29	28	25	18	48	30.5	24	
4	16	16	IZS	13	13	18	23	25	25	26	27	29	31	31	31	31	28	29	30	31	27	26	21	19	31	24.6	24	
5	16	IZS	8	5	7	10	10	21	25	26	31	31	34	34	34	30	32	31	31	31	31	26	23	21	19	34	23.3	24
6	IZS	14	12	10	10	13	20	24	30	35	38	40	39	40	41	43	43	44	44	41	44	31	22	IZS	44	30.8	24	
7	13	4	12	7	12	11	17	32	41	52	52	47	54	58	55	55	54	47	45	41	40	41	IZS	34	58	35.8	24	
8	32	23	19	13	13	14	19	19	23	23	20	32	41	44	44	45	45	45	43	40	38	IZS	33	32	45	30.4	24	
9	32	26	24	25	15	21	30	34	41	48	54	55	55	58	59	60	60	58	57	51	IZS	45	45	45	60	43.4	24	
10	42	38	36	35	33	29	33	38	45	49	53	55	55	56	57	58	57	57	56	IZS	46	39	37	33	58	45.1	24	
11	28	33	20	28	28	27	30	36	42	45	49	52	52	52	51	48	48	47	IZS	48	50	47	41	42	52	41.0	24	
12	31	25	17	18	18	16	19	21	26	27	28	36	38	40	41	43	45	IZS	41	38	32	27	19	9	45	28.5	24	
13	9	6	6	5	5	9	16	31	41	45	45	45	44	46	43	47	IZS	48	46	44	43	31	24	27	48	30.7	24	
14	14	29	39	39	37	34	36	34	32	30	34	42	47	47	49	IZS	53	52	48	43	44	40	30	34	53	38.6	24	
15	30	17	24	23	25	28	28	32	35	47	47	42	42	45	IZS	46	49	44	44	37	34	47	48	51	51	37.6	24	
16	49	45	38	30	29	28	27	28	27	26	34	42	48	IZS	41	44	44	40	40	39	30	37	35	21	49	35.7	24	
17	21	20	20	19	17	18	23	34	37	43	42	44	IZS	44	40	38	37	30	22	16	17	16	14	14	44	27.2	24	
18	16	19	18	16	16	14	16	20	21	22	25	IZS	29	29	29	28	27	28	27	25	26	IZS	25	24	29	22.7	23	
19	26	28	28	29	29	28	27	26	26	25	IZS	28	30	32	35	34	33	36	35	34	29	27	31	31	36	29.9	24	
20	31	31	29	31	30	29	29	29	28	IZS	30	30	34	33	32	33	35	34	40	34	30	28	27	27	40	31.0	24	
21	22	25	24	29	27	23	24	29	IZS	32	30	30	28	33	37	38	38	39	38	30	26	21	28	30	39	29.6	24	
22	28	24	18	19	21	21	29	IZS	45	49	C	C	C	C	51	51	52	51	46	42	34	31	31	52	35.7	24		
23	20	26	24	15	15	21	IZS	28	36	40	43	43	44	47	50	49	48	47	47	45	42	42	44	41	50	37.3	24	
24	38	31	32	31	29	IZS	28	26	26	31	35	37	41	44	45	44	43	41	40	37	34	27	21	17	45	33.8	24	
25	15	15	14	14	IZS	12	12	14	15	18	P	53	51	52	48	28	24	23	24	20	23	21	18	18	53	24.2	23	
26	17	23	22	IZS	34	37	35	34	40	40	39	37	35	29	23	22	22	24	24	26	17	13	9	8	40	26.5	24	
27	8	9	IZS	8	14	12	15	16	24	26	30	32	33	36	39	44	47	47	46	41	38	36	35	28	47	28.9	24	
28	28	IZS	20	15	15	17	27	31	29	36	38	41	23	42	38	40	49	48	42	32	23	16	21	19	49	30.0	24	
29	IZS	30	28	27	22	21	22	30	37	39	40	36	35	34	35	35	35	36	36	33	30	31	36	IZS	40	32.2	24	
30	37	32	19	13	17	16	16	18	21	24	24	28	31	34	35	36	35	34	32	33	31	30	IZS	23	37	26.9	24	
HOURLY MAX	49	48	39	39	37	37	36	46	49	53	54	57	58	60	59	60	60	60	57	51	50	51	48	51				
HOURLY AVG	26.4	25.0	22.9	20.1	20.5	20.9	24.2	28.1	32.0	35.3	37.6	40.1	40.5	42.3	42.1	42.0	42.4	41.8	40.3	36.3	33.9	32.3	29.5	27.9				

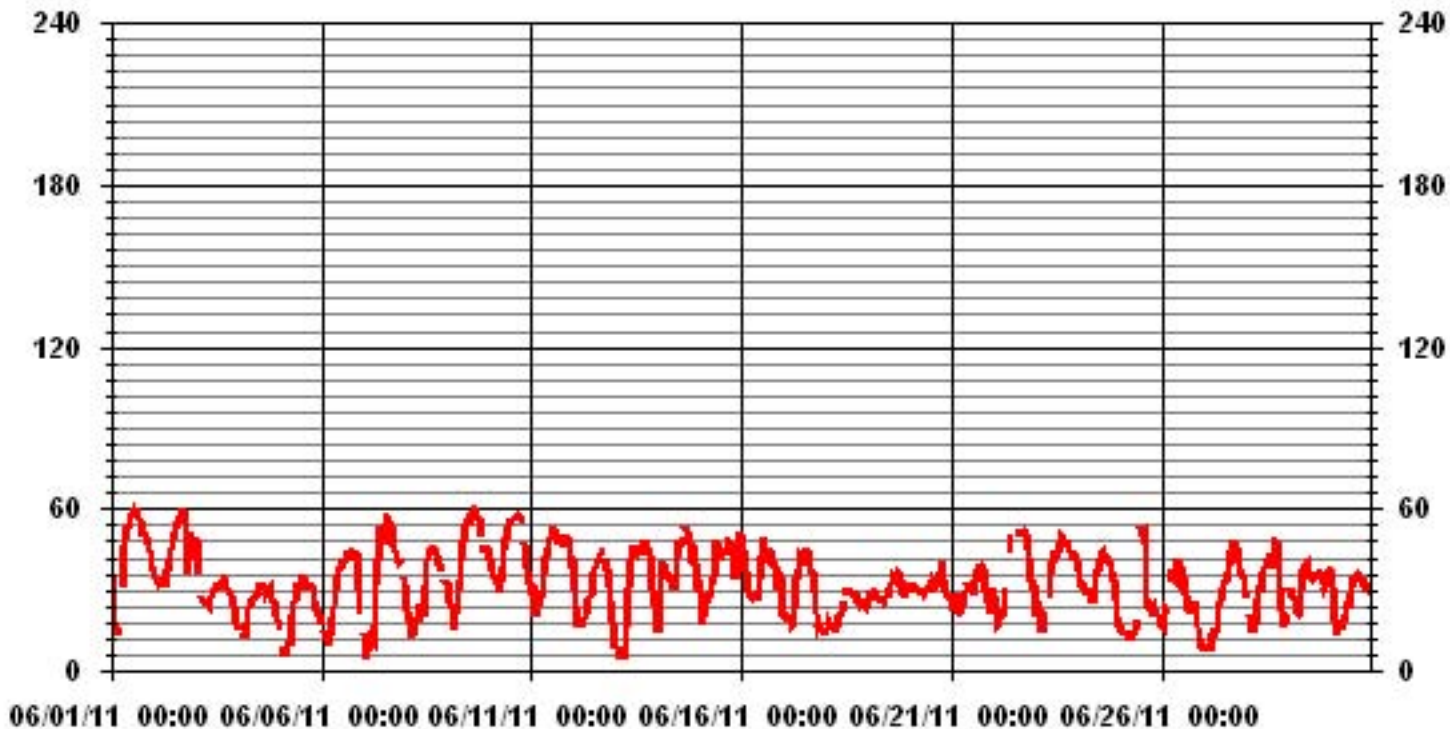
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681				
MAXIMUM INSTANTANEOUS VALUE:	60	PPB	@ HOUR(S)	13, 17	ON DAY(S) 1, 2
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	12.17				

01 Hour Averages



— LICA33 O3MAX PPB

LICA33
O3_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : O3
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	4.38	7.30	10.23	6.72	8.91	5.11	3.21	3.94	3.36	3.94	7.89	5.55	5.99	6.87	4.53	5.99	94.00
< 110	.29	.43	.14	.29	.14	.00	.00	1.02	2.19	.87	.29	.00	.00	.00	.14	.14	5.99
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.67	7.74	10.38	7.01	9.06	5.11	3.21	4.97	5.55	4.82	8.18	5.55	5.99	6.87	4.67	6.14	

Calm : .00 %

Total # Operational Hours : 684

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	30	50	70	46	61	35	22	27	23	27	54	38	41	47	31	41	643
< 110	2	3	1	2	1			7	15	6	2				1	1	41
< 210																	
>= 210																	
Totals	32	53	71	48	62	35	22	34	38	33	56	38	41	47	32	42	

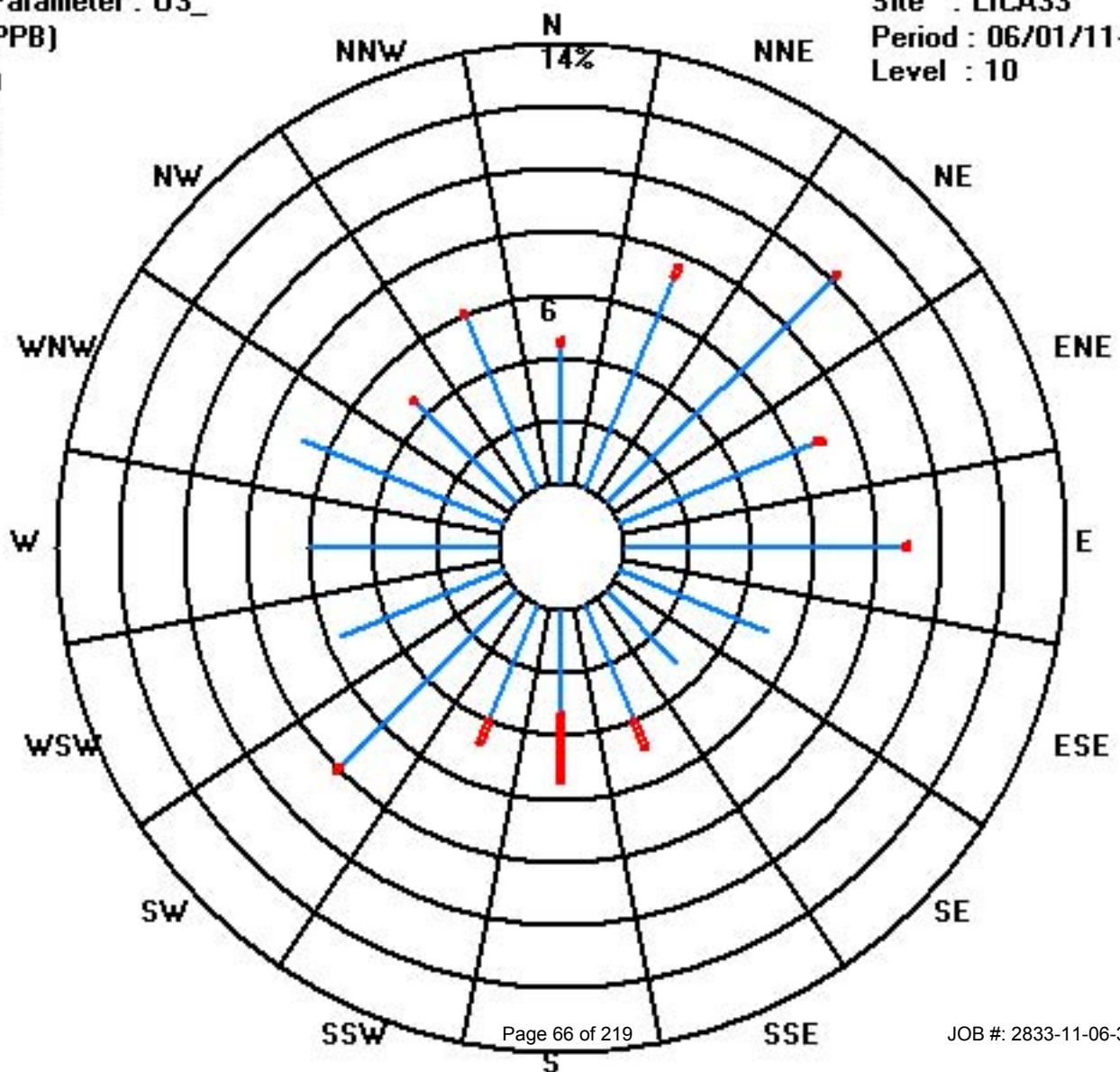
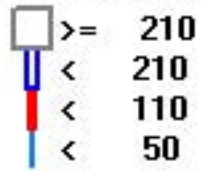
Calm : .00 %

Total # Operational Hours : 684

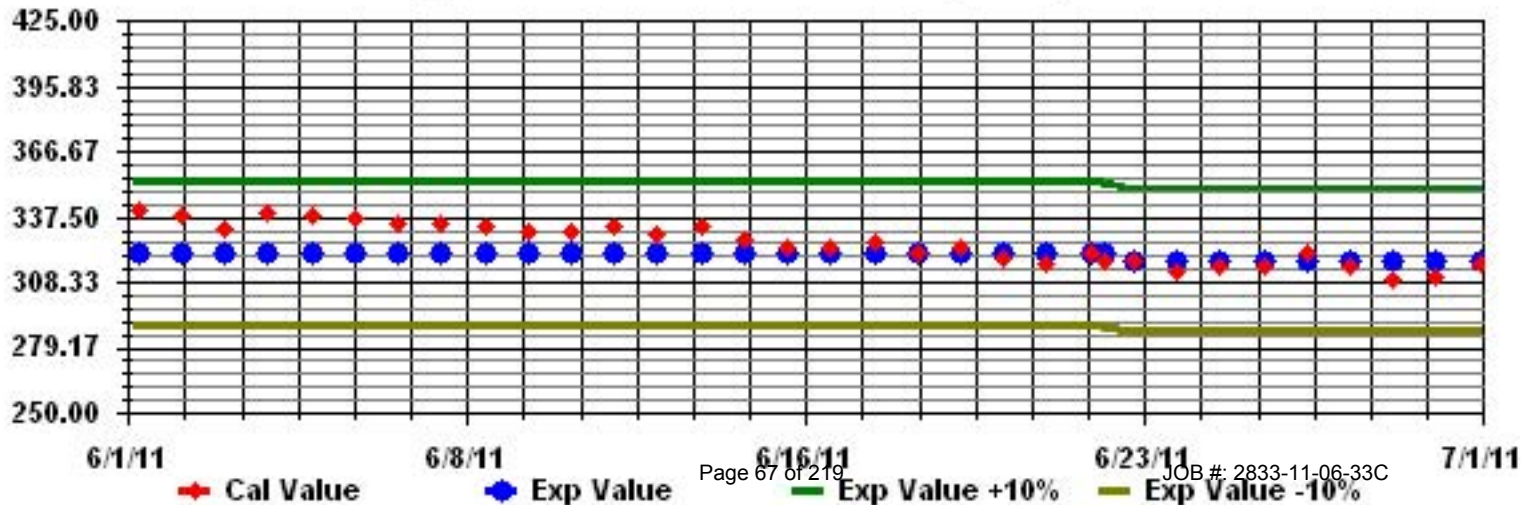
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: 03_ Sequence: 03 Phase: SPAN



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

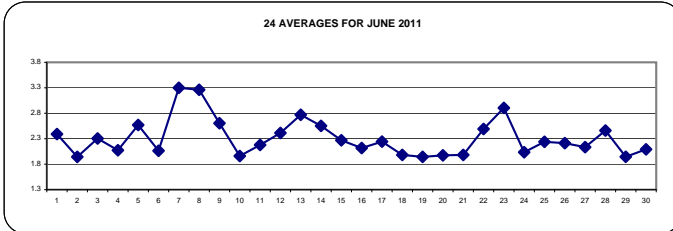
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR					
HOURLY START	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.			
DAY																															
1		2.7	2.6	4.7	5.3	3.6	IZS	3.3	2.1	1.9	2	2	2	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.9	2.1	2	5.3	2.4	24				
2		2.2	2.2	2	2.3	IZS	2.2	1.8	1.9	1.8	2.1	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.8	1.7	1.8	2.1	2.2	2.2	2.3	2.3	1.9	24			
3		2	2.1	2.7	IZS	2.3	2.2	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	4.1	2.3	4.1	2.3	24			
4		2.6	2.5	IZS	2.6	2.6	2.4	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.6	2.1	24			
5		2.4	IZS	3	4.6	6.1	3.6	3.7	2.9	2.3	2.1	2	2	1.9	1.8	1.8	1.9	2.1	2.3	1.9	1.9	1.9	2.3	2.2	2.4	6.1	2.6	24			
6		IZS	2.3	2.6	2.6	2.6	2.2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.2	2.4	IZS	2.6	2.1	24			
7		5.6	4.4	3.2	8.2	4.8	6.3	4.4	2.6	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	3	5.3	IZS	2.4	8.2	3.3	24			
8		4.5	5.4	5.4	9.8	6.9	3.9	3.5	2.8	3	2.4	2.1	2.5	2.1	2	2.1	2.1	2	2.1	2.2	2	2	IZS	2.1	2.1	9.8	3.3	24			
9		3.5	5.5	4.2	4.5	5.2	3.1	2.6	2.2	2.1	2	1.9	1.9	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	5.5	2.6	24			
10		1.9	1.9	1.9	2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	IZS	2	2.2	2.3	2.4	2.4	2.0	24			
11		2.8	2.5	3.1	2.6	2.3	2.5	2.5	2	2	2	1.9	2	1.9	2	2	2	2.1	2	IZS	1.8	1.8	2.3	1.8	2.2	3.1	2.2	24			
12		2.3	2.5	3.6	3.2	2.9	4.6	2.2	1.9	2.4	2	1.8	1.8	1.8	1.8	1.9	1.9	IZS	2.1	2.1	3.1	2.7	2.6	2.5	4.6	2.4	24				
13		2.7	3	3	3	3.4	4	3.1	3.2	2.3	2	2	2	1.9	2	2.1	1.9	IZS	1.9	1.9	3	3.3	4.6	4.1	3.3	4.6	2.8	24			
14		9.3	3.5	1.9	1.9	1.9	2.1	2.4	2.3	2.1	2.2	2.1	2.1	2.3	2	2	IZS	2	1.9	2.1	1.9	1.9	2.2	3.6	3	9.3	2.6	24			
15		3.1	3.4	2.4	2.4	2.4	2.2	2.1	2	2	1.8	1.9	1.9	2.1	2	IZS	2.3	2.4	2.3	2.7	2.5	2.1	2.2	2	2	3.4	2.3	24			
16		2	1.9	2	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	2	2	IZS	2.2	2	2.1	2.1	2.1	2	2.2	2.5	3	3.6	3.6	2.1	24			
17		2.6	3.2	3.1	2.6	2.3	2.2	2.2	2.5	2.2	2.1	2.1	2.1	IZS	2	1.9	2	2	1.9	2.1	2.2	2.1	2.1	2.1	2	3.2	2.2	24			
18		2	1.9	2	2	2.1	2.1	2	1.9	1.8	1.8	1.8	IZS	1.9	1.9	2	2	2	2	2	2	2.2	2.1	2	2.1	2.2	2.0	24			
19		2.1	2	2	1.9	1.9	1.9	1.9	1.9	2	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	2	2.1	2.1	1.9	1.9	2.1	1.9	24			
20		1.9	1.9	2	1.9	2	2	1.9	1.9	2	IZS	1.9	1.9	C	C	C	C	1.9	1.9	1.9	2	2.2	2.2	2.1	2	2.2	2.0	24			
21		2.2	2.2	2.2	2.1	1.9	2	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	2.1	2.1	2	2.2	2.0	24		
22		2.5	2.4	2.2	2.3	2.3	2.3	4.4	IZS	1.9	1.9	1.9	1.9	1.9	1.9	M	1.9	1.9	1.9	1.9	1.9	2.2	3.2	2.4	2.6	7	7.0	2.5	23		
23		6.8	4.6	5.5	6.9	5.9	3.4	IZS	2.5	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	2	1.9	1.9	2.1	6.9	2.9	24			
24		2.2	2.2	1.9	2	1.9	IZS	2	2	2	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2.7	2.5	2.5	2.7	2.0	24			
25		2.5	2.6	2.4	2.5	IZS	2.3	2.1	1.9	1.9	1.9	2.2	2.5	2.3	2	2	1.9	1.9	1.9	2.2	2.1	2.2	2.1	2.6	2.8	2.8	2.2	24			
26		3.2	2.7	2	IZS	2	1.9	2	1.9	2.1	2.2	2.1	2	2	2.2	2.3	2.2	2.1	2	2	2.1	2.1	2.2	2.9	2.7	3.2	2.2	24			
27		2.5	2.6	IZS	3.1	2.4	2.3	2.2	2.2	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2.2	2.3	3.1	2.1	24			
28		2.4	IZS	2.3	2.5	3.5	4.9	2.4	2.1	2.2	2	2.1	2	2	2	2	2	2	2.1	2.1	2.1	2.8	3.1	3.1	2.9	4.9	2.5	24			
29		IZS	2.3	2.3	2.2	2.5	1.9	2	2.1	1.9	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	2.2	2.1	1.7	2.2	IZS	2.5	1.9	24			
30		2	2.1	2.3	3.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.3	2.4	2.1	IZS	2.9	3.1	2.1	24			
HOURLY MAX		9.3	5.5	5.5	9.8	6.9	6.3	4.4	3.2	3.0	2.4	2.2	2.5	2.3	2.2	2.3	2.3	2.4	2.3	2.7	3.0	3.3	5.3	4.1	7.0						
HOURLY AVG		3.0	2.8	2.8	3.3	3.0	2.7	2.4	2.2	2.1	2.0	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.4	2.5	2.6						

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

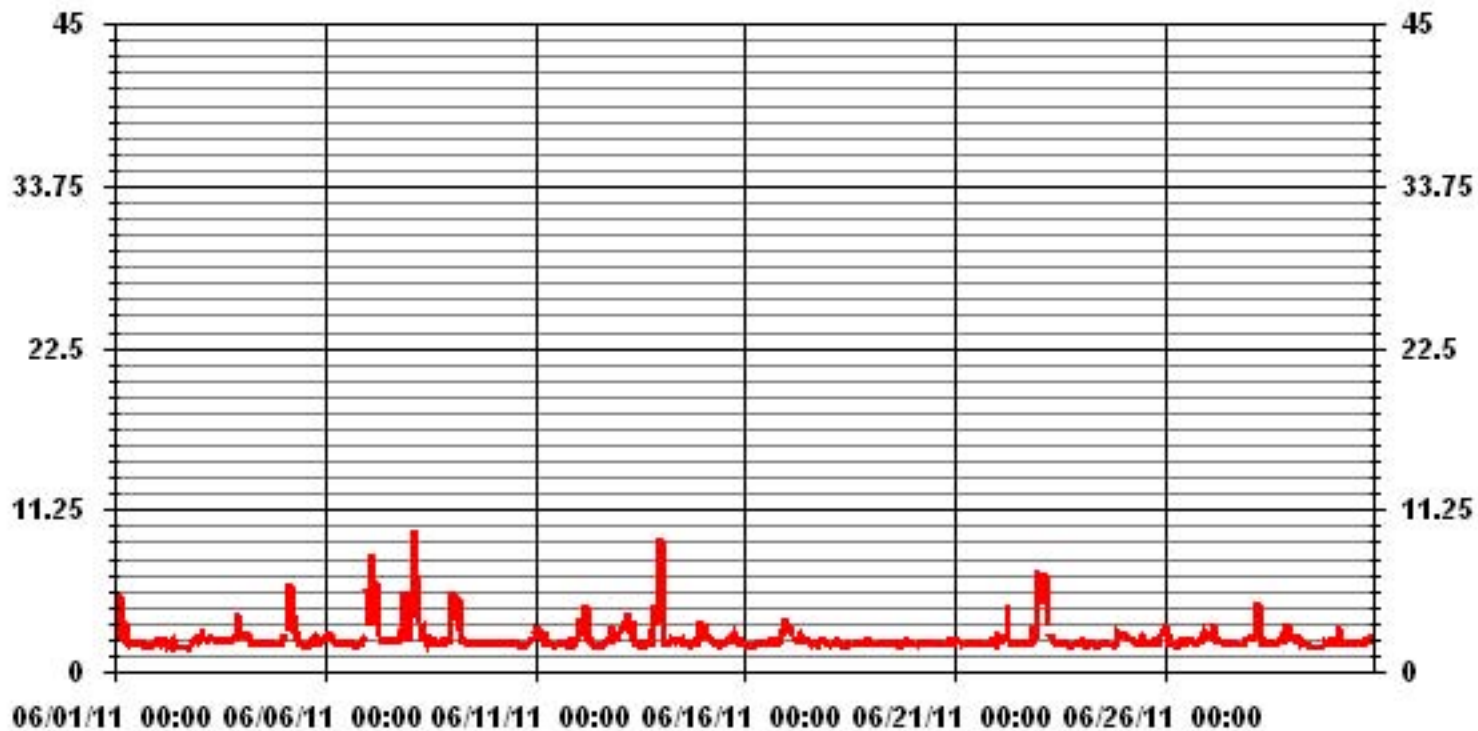
24 AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	683					
MAXIMUM 1-HR AVERAGE:	9.8	PPM	@ HOUR(S)	3	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	3.3	PPM			ON DAY(S)	7, 8
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.88		MONTHLY AVERAGE:	2.32	PPM	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7.6	5	10	36.3	8.6	IZS	4.4	2.3	2	2.1	2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.5	2.8	36.3	4.6	24	
2	3.7	3.7	3.2	4.1	IZS	4	2.7	2.5	3.1	2.6	2.4	2.3	2.2	2.4	5.2	1.9	2.4	2.9	2.9	2	5.9	8.5	3.6	4.5	8.5	3.4	24	
3	3	3.1	9.6	IZS	2.8	2.7	2.7	2.7	2.7	3	2.6	2.4	2.4	2.3	2.6	2.8	2.6	2.6	2.5	2.3	3	2.5	7.5	3.4	9.6	3.2	24	
4	3.8	2.7	IZS	2.9	3	3.3	2.4	2.2	2.3	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2.1	2.3	2.1	3.8	2.3	24	
5	6.7	IZS	5.9	10	31.1	6.4	5.3	4.3	2.4	2.2	2.1	2.1	2	1.9	2	2.4	2.6	2.9	2.8	2	2.2	3.2	2.9	3.2	31.1	4.7	24	
6	IZS	2.5	3.3	3.2	2.7	2.4	2.1	2.1	2.2	2.1	2	2	2	1.9	2	3.3	2.1	2.7	2.1	1.9	2.4	6.8	5.3	IZS	6.8	2.7	24	
7	9.2	6.2	3.8	19.8	8.5	11.7	5.7	3.8	5.8	2.5	2.6	2.8	2.8	2.9	3.1	2.9	3	2.7	2.7	14.6	23.1	IZS	7.5	23.1	6.5	24		
8	13.7	16.5	16.9	17.9	13.4	6.6	5.5	3.4	5.5	4.9	2.5	12.6	3.6	2.5	3	3	3.5	3.7	4.7	4	2.1	IZS	5.1	3.1	17.9	6.9	24	
9	7.1	9.9	8.2	7.4	10.4	4.9	3.6	2.4	2.2	2	2	2	2.2	2.1	1.9	1.9	1.9	1.9	1.9	2.1	IZS	1.9	1.9	1.9	10.4	3.6	24	
10	1.9	1.9	2	4	4.9	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2.1	2.2	2.8	3.6	4.9	2.3	24	
11	4.2	7.2	5.3	3.4	3.4	6.4	4.7	2.4	2.4	2.3	2.3	2.5	2.7	2.3	2.8	2.8	8.5	6.6	IZS	1.9	2	3.4	1.9	4.6	8.5	3.7	24	
12	6.1	5.6	12.8	5.5	5.3	10.5	3.7	2	3.4	2.6	1.9	2.3	1.8	1.9	2.2	3.1	3.5	IZS	3.6	2.8	6.4	6.8	7.1	2.7	12.8	4.5	24	
13	4	5.8	4.9	3.8	3.6	11.3	3.5	7.9	6.3	2.8	2.5	2.8	2.4	2.8	2.8	2	IZS	1.9	2.1	5.6	10.8	11.5	8.4	6.8	11.5	5.1	24	
14	30.3	6.7	1.9	2.2	2	2.6	3.2	3.5	3.2	3.4	3.5	7.9	8.5	3	2.9	IZS	3.3	1.9	3.3	2.8	3.5	4.1	5.3	4.7	30.3	4.9	24	
15	6.8	6.1	3.3	4.3	3.3	2.6	2.2	3	2.4	2	2.6	3.1	3.4	2.7	IZS	20.9	3.8	3.2	3.7	3.8	3.5	3.6	2.9	2.5	20.9	4.2	24	
16	2.5	2.5	2.7	2.7	2.1	2.2	2.2	2.4	2.4	2.3	2.4	3	2.9	IZS	4.1	2.4	3.2	2.7	2.5	2.1	2.3	4.4	5.9	9.1	9.1	3.1	24	
17	4.1	11	11.3	4.2	4.2	3.1	2.9	4.6	2.5	2.8	2.4	2.7	IZS	2.8	2.6	2.4	2.5	2.8	7.7	2.7	2.5	2.3	2.4	2.2	11.3	3.9	24	
18	2.4	2.3	2.2	2.2	4.9	5.1	2.2	2.1	2.2	2	2.1	IZS	2.1	2.2	2.2	2.2	2.2	2.1	2.2	2.2	4.5	4.8	2.2	2.5	5.1	2.7	24	
19	2.5	3.2	2.4	2.3	2.2	2.2	2.2	2.2	2.3	2.4	IZS	2.4	2.5	2.4	2.2	2.1	2.4	2.1	2.3	2.4	2.5	2.7	2.2	2.4	3.2	2.4	24	
20	2.5	2.2	2.5	2.2	2.9	2.4	2.2	2.5	2.9	IZS	2.1	2.1	C	C	C	C	C	2.2	2.2	2.3	3.2	3.6	3.6	2.5	3.6	2.6	24	
21	3.1	3	2.7	2.3	2	2.6	2.4	2.1	IZS	2.1	2.5	2.1	1.9	1.9	2	2.2	2.5	2.6	2.4	2	2.3	2.4	2.2	2.9	3.1	2.4	24	
22	4.6	5.5	3.7	6.7	2.7	6.6	13.8	IZS	2.2	2.3	2	2.1	2	2.3	M	2.1	2	2	1.9	4.6	8.1	4.6	3.5	54.1	54.1	6.3	23	
23	54.1	20.1	21.2	25	13.4	6.5	IZS	3.6	2.8	2.6	2.4	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.4	2.5	54.1	7.8	24
24	3.5	3.3	2.2	2.4	2.2	IZS	2.5	2.4	2.4	2.1	1.9	1.9	2.1	1.9	2.2	2.3	2.3	2.5	2.3	2	2.1	4.8	4.1	2.6	4.8	2.5	24	
25	3.8	4.1	3.4	3.6	IZS	2.9	2.2	2	2	1.9	P	4.4	3.8	2.9	2.4	2	1.9	1.9	4.2	3.2	3.6	4.1	5.2	4	5.2	3.2	23	
26	5.2	5.4	2.2	IZS	2.8	2.2	2.1	2	2.7	2.9	2.7	2.5	2	2.7	2.7	2.7	2.6	2.6	3	3.1	3.4	3.9	5.3	4.3	5.4	3.1	24	
27	3.2	5.3	IZS	11.9	4	3.2	2.2	2.5	2.4	2.2	2.1	2	2	2	2	2	1.9	1.9	2.3	2.4	2.4	2.4	5	3.8	11.9	3.1	24	
28	3.3	IZS	3.6	5.4	8.6	9.3	4.1	3	3.3	2.6	2.7	2.5	4.5	3.1	2.4	2.7	2.5	2.1	2.2	2.3	4.1	3.6	4.8	3.3	9.3	3.7	24	
29	IZS	3.3	2.8	3.1	6.1	2.1	2.3	2.5	2.1	2.4	2.1	2	2.1	1.8	1.8	1.9	1.9	1.8	3.2	3.8	5.9	1.9	3.5	IZS	6.1	2.7	24	
30	3.7	3.8	3.5	6.8	2.2	2.3	2.3	2	1.9	1.9	1.9	1.9	1.9	1.9	2.3	1.9	2.6	2.3	2.5	4	3.1	3.3	IZS	6.5	6.8	2.9	24	
HOURLY MAX	54	20	21	36	31	12	14	8	6	5	4	13	9	3	5	21	9	7	8	6	15	23	8	54				
HOURLY AVG	7.4	5.6	5.6	7.3	5.8	4.7	3.4	2.8	2.8	2.4	2.3	2.9	2.6	2.3	2.5	3.0	2.7	2.5	2.8	2.7	4.0	4.6	4.0	5.6				

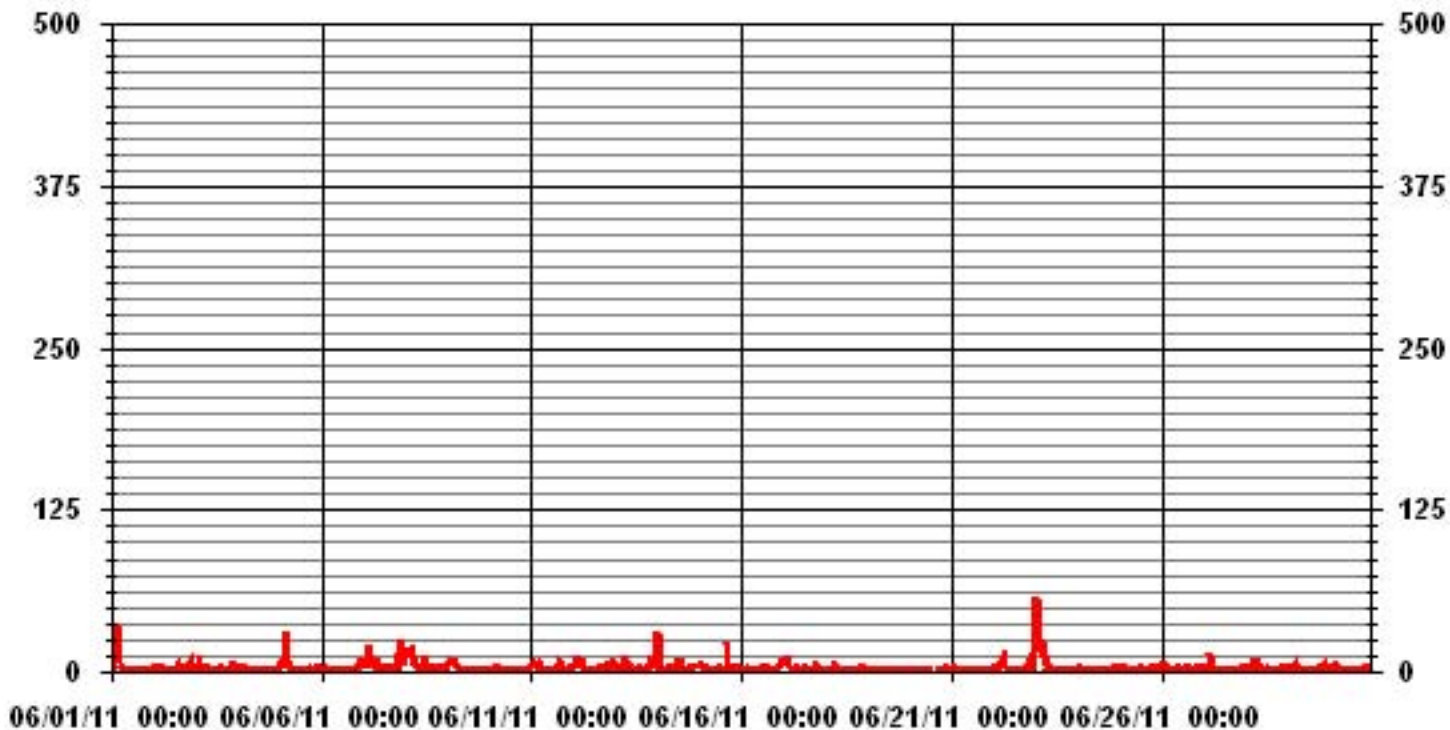
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	681					
MAXIMUM INSTANTANEOUS VALUE:	54.1	PPM	@ HOUR(S)	23, 0	ON DAY(S)	22, 23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	718	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	4.38					

01 Hour Averages



— LICA33 THCMAX PPM

LICA33
 THC / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	3.80	6.29	9.51	6.00	7.61	4.39	2.78	5.12	5.27	4.68	7.46	5.12	5.41	6.29	4.24	4.83	88.87
< 10.0	.87	1.46	.87	1.02	.87	.73	.43	.14	.29	.29	.73	.43	.58	.58	.43	1.31	11.12
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.68	7.75	10.39	7.02	8.49	5.12	3.22	5.27	5.56	4.97	8.19	5.56	6.00	6.88	4.68	6.14	

Calm : .00 %

Total # Operational Hours : 683

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	26	43	65	41	52	30	19	35	36	32	51	35	37	43	29	33	607
< 10.0	6	10	6	7	6	5	3	1	2	2	5	3	4	4	3	9	76
< 50.0																	
>= 50.0																	
Totals	32	53	71	48	58	35	22	36	38	34	56	38	41	47	32	42	

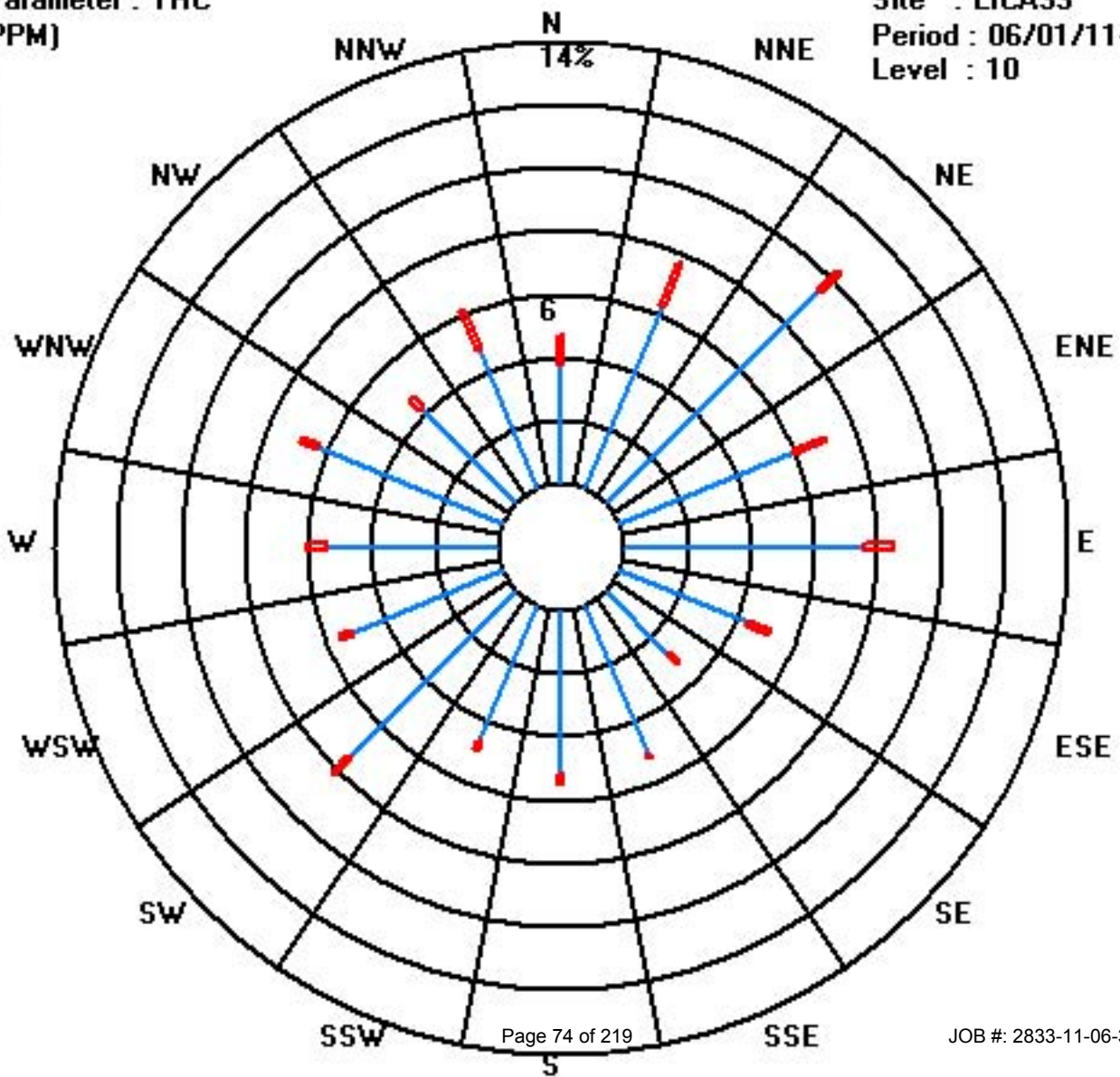
Calm : .00 %

Total # Operational Hours : 683

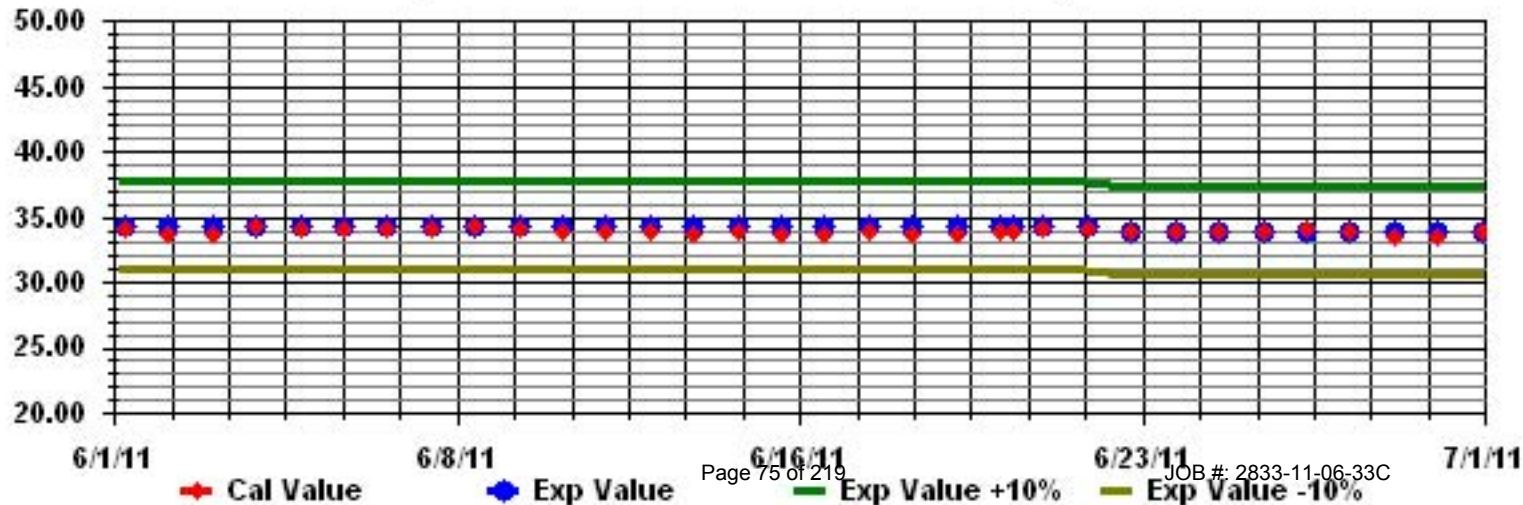
Class Limits (PPM)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA33 Parameter: THC Sequence: THC Phase: SPAll



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	
DAY																												
1		2.1	1	1.1	2.2	1.1	1.3	3.4	8.2	9.1	9.2	14.9	19	19.2	20.4	21	19	18.4	19.7	23	24.1	17.6	15.9	11.7	11.5	24.1	10.8	24
2		7.9	8.5	8.5	8.2	7.7	7	10.2	10.5	5.1	3.1	4.7	5.7	3.1	1.1	3.8	5.7	7.4	9	10.3	2.7	6.3	1	2.8	11.1	11.1	4.6	24
3		11	12.7	16.5	14	18.8	20.2	17.7	19.9	17.2	16.8	19.4	19.9	19.5	21	20.7	16.3	17.4	16.4	17.8	15.5	11	8.5	4	4.1	21	15.2	24
4		4.5	5.3	4.6	4.3	2.7	3	6.1	6.7	7.7	8.4	6.9	9	11.8	16.1	18.1	19.8	18.5	13.2	10.3	8.8	5.1	3.4	3.4	4	19.8	7.7	24
5		1.1	3.6	2.7	3	3.6	4.3	5	5.8	4.8	6.4	6.5	7.6	14.6	12.4	9.7	8.2	8.9	11.8	8.1	6.8	4.7	5.2	7.1	3.9	14.6	6.5	24
6		3.5	5.3	4.2	5.5	5.4	5.7	7.6	6.4	7.7	10.6	9.5	8.8	9.4	6.8	8.5	5.3	1.3	5.1	9.1	8.4	2.8	1.8	2.1	3	10.6	6.0	24
7		0.9	2.7	3.2	7	0.2	0.8	3.4	9.6	13.2	16.4	18.9	15.1	12.9	12.3	10.4	9.5	13	8.7	11.4	9.9	7.8	7.5	8.7	6.9	18.9	8.8	24
8		2	4	3.2	2.8	3.2	3.6	3.8	3.1	3.6	1.7	4	6.9	8.5	7	3.1	4.4	2.9	4.6	4.9	3.1	4.7	8.2	5.1	5.9	8.5	4.3	24
9		5.2	4.2	0.6	0.8	2	1.9	3.9	8.1	9.3	7.5	8.9	10	12.9	13.8	12.4	13.2	10.8	11.4	10.9	9.9	11.6	9.7	4.8	7.3	13.8	8.0	24
10		7.5	5.5	5	7.3	1.8	3.7	7.3	10.9	12.5	12.1	13.7	14	13.4	15.2	18.1	17.9	14.9	15.3	14.4	12.1	7.8	7.5	7.6	6.4	18.1	10.5	24
11		3.5	2.4	4.6	3.8	3.5	2.8	7.2	9.1	9.1	8.9	6.3	4.5	4.7	1.8	3.2	4	3.1	2.3	10.4	14.2	6.6	6.5	6.6	4.1	14.2	5.6	24
12		2.6	4.8	4.4	5.4	0.7	4.6	6.3	8.5	9.4	6.1	8.8	7.8	11.3	9.4	13.4	12	10.9	10.3	6.7	3	3.8	4	5.8	7.3	13.4	7.0	24
13		3.1	3.4	4.9	3.1	3	3.9	3.6	5.1	7.1	10.5	7.7	8	5.3	4.4	7.4	8.4	6.3	7.5	7	4.9	5.5	1.6	4.4	2.5	10.5	5.4	24
14		2.7	7.6	17.8	12	13.7	9.2	2.1	4.7	4.3	5.1	1.8	1.5	1.8	5.4	2.5	4.2	1.9	3.6	12.9	7.2	2.8	1.2	6	6.1	17.8	5.8	24
15		5.2	7.3	1.4	3.2	2.6	2.7	2.3	3	5.6	3.1	3.9	6.3	10.3	11.3	4.2	3.6	5.1	5.6	3.9	5	5.2	8.3	8	14.9	14.9	5.5	24
16		14.5	10.8	13.4	14.5	17.1	15	15.3	17.5	15.6	15.1	14.4	9.2	13	10.8	10.6	17.3	12.1	11.9	13.6	10.7	6.4	10.6	5.3	4.4	17.5	12.5	24
17		8	5.4	7.2	8	9.5	10.4	8.1	1.2	12.9	12.9	15.4	16.1	14.1	14.4	15.3	14.8	15	16.3	12.6	11.9	14.7	14.9	15	16	16.3	12.1	24
18		16	19.3	20.6	20.1	18.8	17.8	19.1	20.3	20.6	21.4	23.7	26.6	25.7	23	22.4	24.9	23.4	23.1	24.6	22.9	19.9	19.4	17.8	17	26.6	21.2	24
19		15.3	14.8	17.3	17.8	18.8	18.1	17.4	17.9	20.4	18.8	18.6	22.1	23.4	21.2	21.1	19	20.4	23.6	20.2	19.6	16.5	16.4	19.6	15.7	23.6	18.9	24
20		16.7	17.5	17.2	16.4	10.9	14.8	16.1	16.9	17.4	20.5	19.1	18.6	19.6	20	23.2	21.9	20.8	18	17.9	14.6	10.5	8.7	12.6	13.2	23.2	16.8	24
21		8.9	10.1	10.1	8.5	8.6	12.5	11.5	8.3	10.6	11.9	10.4	13	13.6	11.3	8.9	7.8	7.6	4.9	5.6	5.3	5.1	4.5	7.7	7.2	13.6	8.9	24
22		2.9	2.9	3.3	2	3.5	2.2	1.9	8	5.7	4.8	4.2	4.5	5.5	4.5	5.5	4.7	4.1	3.3	3.9	2.9	7.8	3.8	3.7	1.9	8.0	4.1	24
23		2.2	1.8	2.3	3.9	3.6	5.9	9.4	10.5	12.2	15.4	17	18.1	20.3	19.2	20.4	21.7	22.6	22.4	20.3	20.5	18.4	21	17	15.3	22.6	14.2	24
24		8	12.8	14.5	14.6	14.3	14.2	14.6	13.3	13	9.9	17	17.3	10.3	10	10	8.5	8.1	6.8	5.1	5.1	5.7	5.2	6.4	5.4	17.3	10.4	24
25		6	6.6	7.7	6.7	10.3	9	10.8	11.8	13.1	16.2	4.5	5.1	8.4	4.3	2.2	11	7.9	8.5	6.2	4.5	3.4	5	4.6	2.6	16.2	7.4	24
26		3.8	4.9	6.3	10	9.9	7.7	9.9	8.8	13.3	15.4	12.4	12.2	15.2	19.2	16.6	16.3	12.3	7.6	5.8	1.4	5	1.9	2.6	1.3	19.2	9.2	24
27		2.6	1.4	1.8	2.1	1.7	4.6	2.8	6.4	11.6	16.6	18.8	16.9	16.2	14.7	11.6	15.2	18.3	13.5	5	17.4	12.5	8.4	5.3	6.7	18.8	9.7	24
28		4.4	3	4.6	4.1	4.3	3.7	7.7	8.8	6.4	7.4	8.7	6.8	6.5	7.2	8	5	7.8	7.4	6.1	5.7	4.5	6	5.6	7.4	8.8	6.1	24
29		6.2	9.1	4.6	3.6	5.8	7.5	7	4.8	5.1	8.8	7.5	8.1	9.7	7.1	6.3	5.8	7.2	4.2	1.7	6.6	21.2	20.3	8.8	8	21.2	7.7	24
30		10.2	11.2	3.1	5.4	14.3	12.1	11.7	13.1	15.4	18.9	18.7	18.3	17.7	17.7	17.7	17.2	14.7	12.6	6.9	7.9	7.6	6.2	6.8	6.2	19.2	12.2	24
HOURLY MAX		16.7	19.3	20.6	20.1	18.8	20.2	19.1	20.3	20.6	21.4	23.7	26.6	25.7	23.0	23.2	24.9	23.4	23.6	24.6	24.1	21.2	21.0	19.6	17.0			
HOURLY AVG		6.3	7.0	7.2	7.3	7.4	7.7	8.4	9.6	10.6	11.3	11.5	11.9	12.6	12.1	11.9	12.2	11.4	11.0	10.6	9.8	8.8	8.1	7.6	7.6			

STATUS FLAG CODES

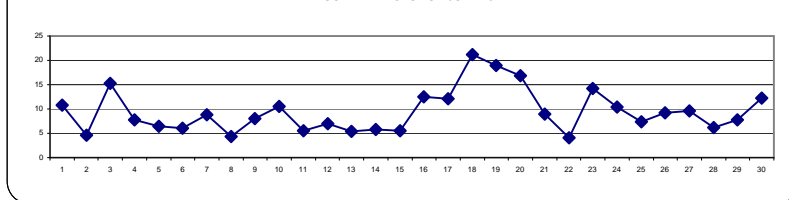
S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MAINTENANCE
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

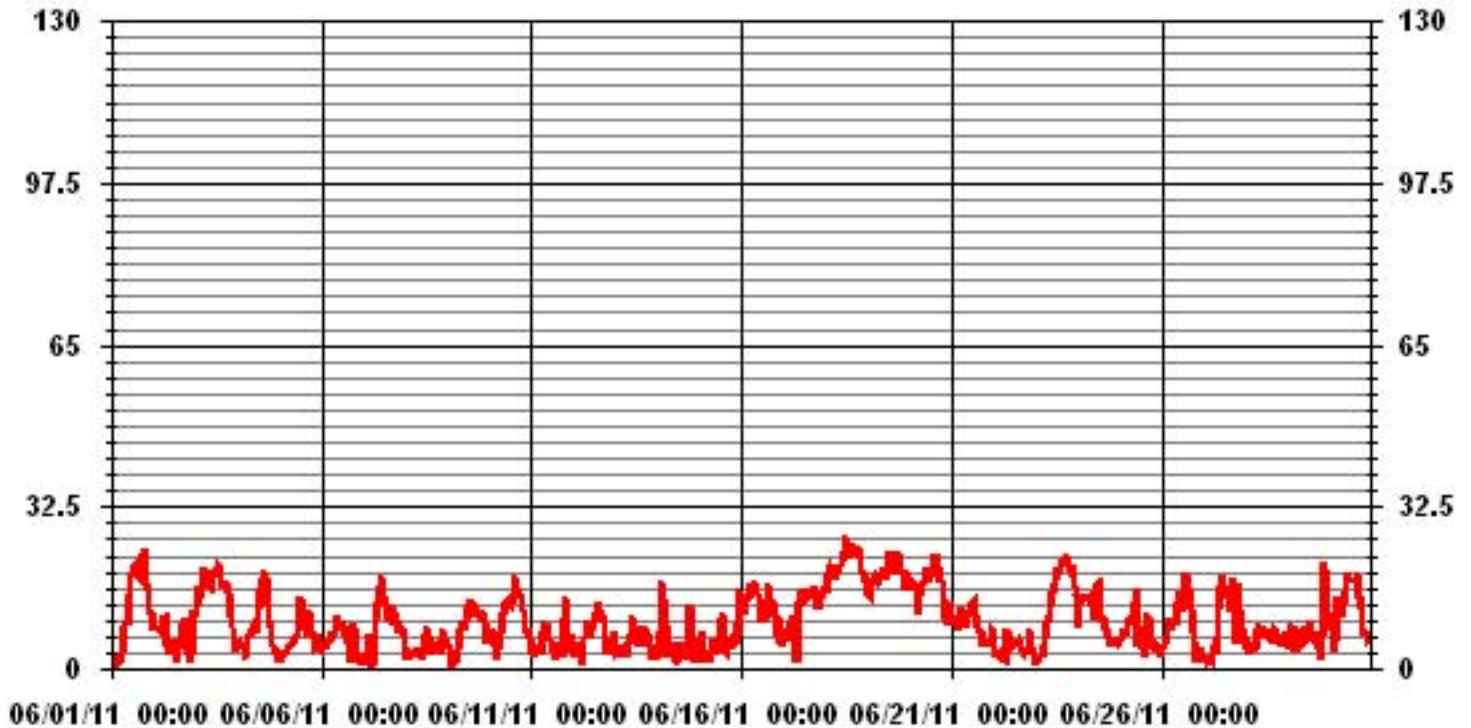
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	26.6 KPH	@ HOUR(S)	11	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	21.2 KPH			ON DAY(S)	18
CALMS (≤ 1 KPH)	0.13 %			OPERATIONAL TIME:	720 HRS
MONTHLY CALIBRATION TIME:	0 HRS			AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	5.93			MONTHLY AVERAGE:	9.57 KPH

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



— LICA33 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	
DAY																											
1		5.8	9.2	6.4	6.3	6	4.1	9.9	17.5	18.2	28.6	29.7	36.3	39.6	39	34.7	32.2	35.2	40.8	50.8	42.1	32.2	25.3	17.6	17.3	50.8	
2		13.1	13.2	13.3	12.1	11.7	14.7	17	19.8	17.7	10.1	15.6	18.8	14.9	16.4	16.6	21.3	18.3	18	18.4	8.7	33.3	19	25.6	28	33.3	
3		29.1	25.1	29.1	29.1	41.5	45.9	38.5	36.9	34.2	31.3	35.9	37.9	38.8	39.8	40.2	32.8	34.6	31.7	30.5	28.7	20.6	17.8	11.7	8.4	45.9	
4		8.2	8	8.1	7.1	5.7	8.1	13.8	19.4	18.3	26.6	33.1	25.2	33	33.8	33	32.2	29.9	24.5	20.7	17.9	11.1	6.9	7.9	7.6	33.8	
5		4	6	5.4	6.1	6.1	8.2	8	12.7	13.3	17.8	17.8	20.5	33.3	29.3	33.2	17.9	17.9	21.7	15.9	13.1	8.9	9.4	11.6	9.2	33.3	
6		6.8	9	7.1	9.5	9.6	10.8	12.1	14	17.8	22.4	36.7	22.9	31.1	23.9	27.6	21.6	7.6	12.9	16.1	12.6	7.8	6.6	8	8.2	36.7	
7		9.5	10.7	12.1	15.2	8.7	10.4	8.8	16.9	22.3	28	31.7	27.4	22.8	23.9	26.7	21.4	27.5	18	19.1	17.7	12.7	14.5	13.5	16.1	31.7	
8		5.4	7	6.7	7	6.8	7.3	7.5	7.9	6.8	8.9	8.4	13	17.5	17.7	8.7	13.4	9.1	10.3	8.1	6	11.2	14	10.4	9.6	17.7	
9		9.5	9.4	4.9	9.6	7.4	9.4	8.8	15.1	21	17.3	19.8	33.4	31.6	29.3	28.8	31	28.7	29.5	27.5	15	18.6	17.9	14.6	15.4	33.4	
10		13.9	15.2	14.4	16	13.2	8.6	14.4	18.8	22.5	25.9	31.3	30.9	31	37.8	35.3	37.6	28.9	28.1	24.5	20.2	11.1	10.1	10.4	8.9	37.8	
11		24.2	22.7	8.2	11.5	10	12.4	17.1	17.1	18.8	17.2	17.2	14.4	16.2	13.6	15.5	13.9	13.3	15.3	14.6	31.9	22.5	18.6	13	12.8	31.9	
12		8.1	8.4	11.7	13.5	4.6	10.5	20.5	14.3	16	14.2	15.1	16.6	17.4	17.8	21.2	20.6	21.6	17.8	13.8	10.1	6.2	8.8	7.8	8.9	21.6	
13		8	7.1	8	6.1	6.8	7.7	6.3	12.4	17.5	22.4	21.3	20.5	12.9	13.9	15	18	14.1	14.1	13	8.9	7.7	6.7	6.4	6.8	22.4	
14		8.5	27.7	35.6	32.4	24	18.4	9.2	9.2	8.9	10.2	6.8	5.8	9.9	10	10.5	11.8	8.3	7.4	25	17.6	10.4	8.9	10.7	9.8	35.6	
15		9.9	11.4	7.2	5.1	4.6	4.8	4.8	9.6	9.9	11	19.2	17.1	18.9	17.9	14.8	10.7	9.5	9.2	8.4	8.9	9	16	20.1	24.7	24.7	
16		24.6	25.3	25.2	24.6	27.6	23.8	25.7	27.2	24.7	25.1	23.4	24.6	20.8	20.4	26.7	30	31	19.4	22.8	21.8	10.1	28.8	10.5	8.1	31	
17		11.6	9.1	12.1	12.5	16.1	15.5	15.8	18.7	26	23.1	25.8	26	23.9	22.8	25.2	24.1	24.9	28.2	20.9	20.1	23.1	29.6	23.4	27.9	29.6	
18		30.9	35.4	35.3	31.8	34.2	29.5	31.4	34.2	33.3	35.7	39.1	41.6	43.3	40.3	40.1	42.8	42.5	40.9	42.2	42.8	38.1	35.2	30.8	28.1	43.3	
19		31.6	24.3	29.8	28.6	31.8	29.1	28.2	28	31.1	29	29.8	39.3	41.4	37.4	44	38.9	33.9	37	33.2	31	25.4	24.8	30.5	24.6	44	
20		28.5	28.8	26.4	28.5	19.1	24.5	24.9	25.4	27.9	31.6	28.3	29.7	30	30.8	35.9	37.6	29.9	27.2	38.4	24	16.5	12.7	24.7	22	38.4	
21		14.2	18.4	17.1	21.9	17.3	22.9	21	16.6	22.6	23.5	23.8	27.8	29	24.6	24.4	21.7	17.5	16.3	13.1	10	7.5	9.2	11.3	17.1	29	
22		5.7	5.7	7.6	6	7.9	7.5	12.8	13.5	12.6	14	14.2	14	12.9	13.7	14.5	13.5	13.8	10.1	7.5	19.2	12.5	7.7	6.9	3.8	19.2	
23		6.5	5.2	4.4	6.4	8	12.1	14.1	15.8	21.5	24.7	27.5	27.8	33.9	32.9	31.1	32.9	37.8	35.7	34.1	38.3	30.4	34	30.8	24.2	38.3	
24		19	19.2	21.4	24	20.4	22	24.3	18.3	20.5	22.8	27.1	28.2	23.5	19.9	21.6	22.1	20.3	15.4	11.5	8.8	9.3	10.8	12.6	8.8	28.2	
25		10.9	12.4	15.5	17	19.2	17.5	19.4	20.1	23.8	28.1	P	15.9	21.9	26.9	16.7	24.3	18.1	18.5	13.8	7.8	6.4	7.1	6.9	7.8	28.1	
26		7.2	9.5	15.3	21.8	21.6	17.9	16.4	20.1	30.3	30.6	27.3	26.4	34.7	37.2	32.6	31.3	24.4	17.6	14.2	13.4	13	7.5	7.1	5.1	37.2	
27		7	8.9	6	5.5	5	11.3	8.6	14.7	21.7	29	27.9	29.6	28.3	27.2	25.7	27.1	30.8	25.2	60.4	42.5	22.5	16.6	13.9	12.3	60.4	
28		12.5	10.8	7.5	9.2	7.7	8.5	13.8	14.6	11.1	14	19.6	14.7	16.7	17.4	17.2	13.8	15	15.2	10	8.2	6	8.4	9	9.4	19.6	
29		10.9	17.2	12.6	14.3	13.3	13.7	15.7	12.8	11.9	20.3	24.9	24.2	21.9	20.4	18.2	15	15.2	12.1	8.2	9.7	50.5	53.5	22	22.9	53.5	
30		28.8	24.3	12.6	12.4	27	22.3	25.5	24.4	29.4	32.4	30.8	30.2	35.1	35.3	34.9	35.5	28.9	28.1	22.8	20.6	21.6	16.9	16.7	14	35.5	
PEAK		31.6	35.4	35.6	32.4	41.5	45.9	38.5	36.9	34.2	35.7	39.1	41.6	43.3	40.3	44.0	42.8	42.5	40.9	60.4	42.8	50.5	53.5	30.8	28.1		

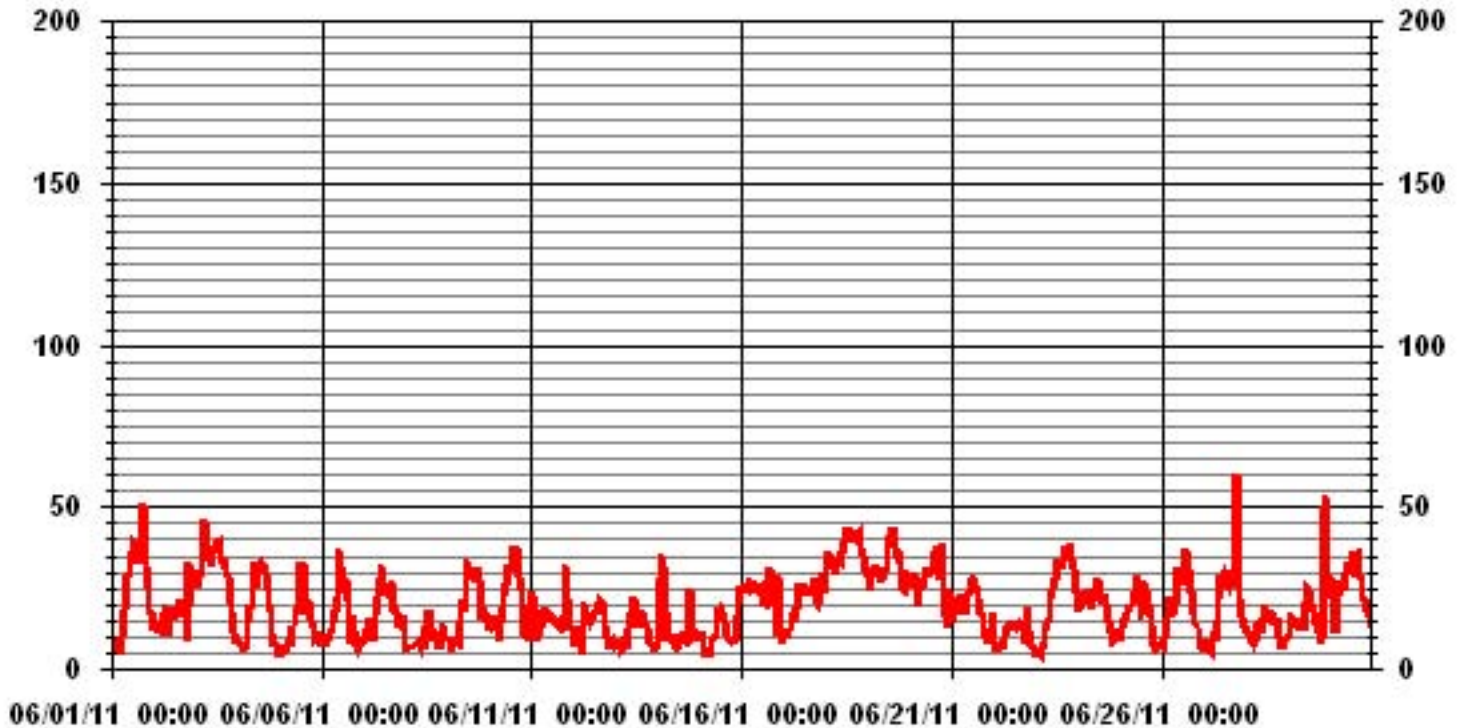
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	60.4	KPH	@ HOUR(S)	18
			ON DAY(S)	27

01 Hour Averages



LICA33
WSP / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	2.36	3.19	1.94	1.38	1.80	1.80	1.66	1.94	1.66	3.47	3.47	2.22	2.50	2.08	1.52	1.94	35.00
< 12.0	.83	1.94	2.22	2.50	2.77	1.11	1.25	1.52	1.52	1.38	2.77	3.47	2.77	2.08	2.77	1.80	32.77
< 20.0	1.11	2.22	4.44	2.77	3.33	.97	.41	1.52	2.22	.13	1.66	.00	.55	2.22	.27	2.08	25.97
< 29.0	.27	.27	1.94	.41	1.25	1.11	.00	.41	.13	.00	.00	.00	.00	.27	.00	.13	6.25
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	4.58	7.63	10.55	7.08	9.16	5.00	3.33	5.41	5.55	5.00	7.91	5.69	5.83	6.66	4.58	5.97	

Calm : .00 %

Total # Operational Hours : 720

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	17	23	14	10	13	13	12	14	12	25	25	16	18	15	11	14	252
< 12.0	6	14	16	18	20	8	9	11	11	10	20	25	20	15	20	13	236
< 20.0	8	16	32	20	24	7	3	11	16	1	12		4	16	2	15	187
< 29.0	2	2	14	3	9	8		3	1					2		1	45
< 39.0																	
>= 39.0																	
Totals	33	55	76	51	66	36	24	39	40	36	57	41	42	48	33	43	

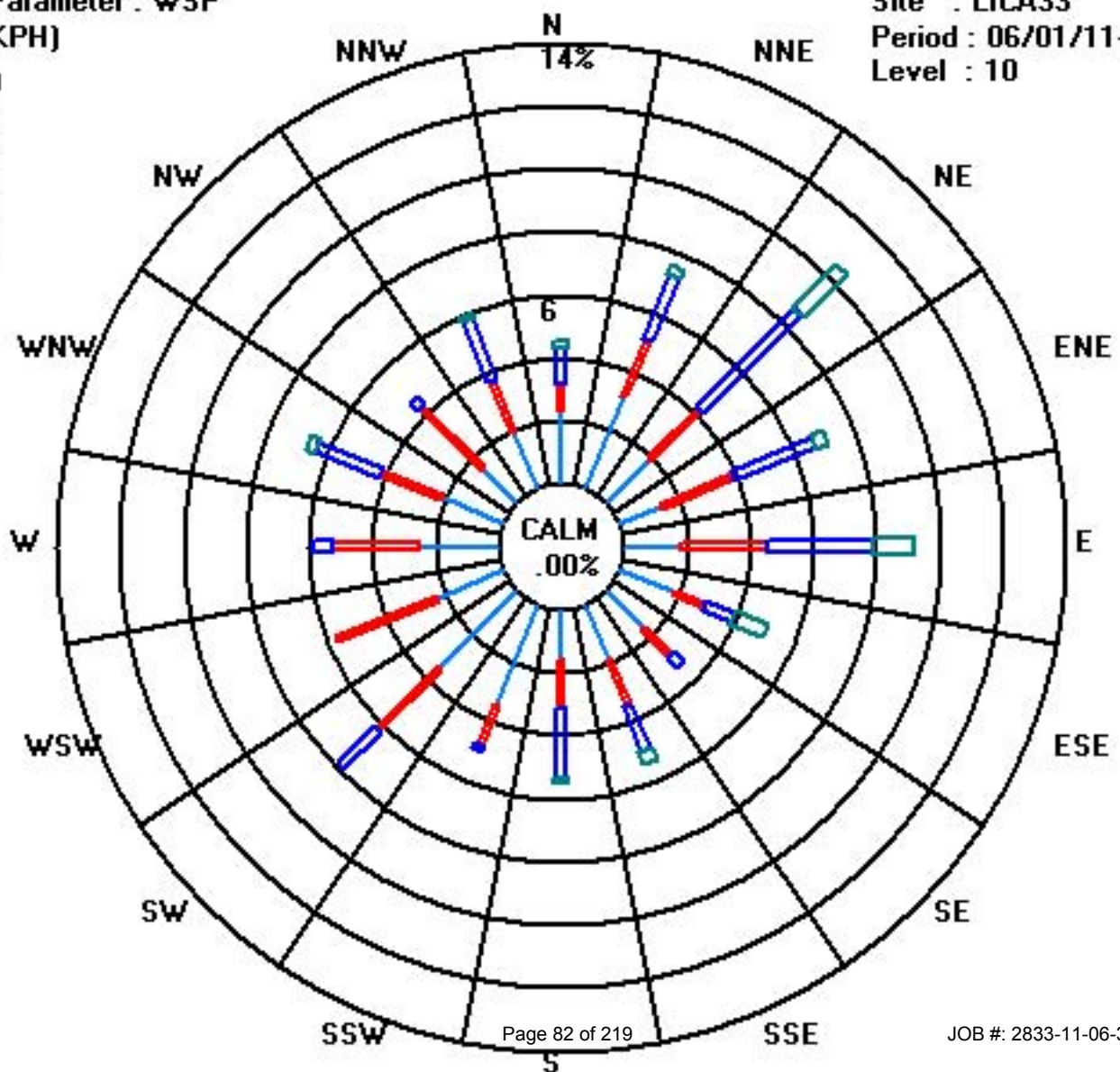
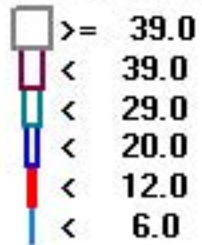
Calm : .00 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 06/01/11-06/30/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	RDGS	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT		
DAY																												
1	205	138	132	143	217	65	155	222	228	192	173	165	161	167	160	164	171	180	178	162	139	124	102	89	162	SSE	24	
2	75	74	52	52	45	64	88	88	93	355	42	28	32	79	2	351	26	38	115	200	355	167	12	322	49	NE	24	
3	339	344	360	356	341	349	346	350	344	336	332	334	335	343	351	346	342	358	10	16	5	7	331	264	347	NNW	24	
4	278	287	273	245	256	244	241	268	301	275	247	218	211	222	228	226	225	232	220	223	208	192	202	213	235	SW	24	
5	166	150	108	90	58	87	73	111	193	209	241	268	302	317	291	2	341	347	322	313	254	264	276	260	304	WNW	24	
6	244	288	270	274	231	224	227	246	257	276	258	253	253	244	234	204	323	156	156	169	174	184	194	26	236	SW	24	
7	228	171	205	329	280	100	28	33	40	40	57	37	49	63	58	28	28	38	24	27	10	17	24	27	36	NE	24	
8	64	342	339	13	321	276	341	347	16	302	307	345	30	22	344	17	66	48	55	152	192	176	153	106	19	NNE	24	
9	28	347	223	297	234	259	123	158	164	208	193	182	175	173	180	183	194	189	178	172	176	177	199	210	182	S	24	
10	213	207	217	217	243	181	219	223	222	217	214	196	186	175	164	170	176	172	161	150	152	156	153	150	185	S	24	
11	137	144	117	228	214	236	241	292	338	344	339	342	304	200	352	6	317	357	133	159	238	329	314	334	295	WNW	24	
12	123	239	350	320	359	334	255	320	348	308	308	334	294	321	22	36	39	50	54	23	347	301	303	296	342	NNW	24	
13	289	249	268	257	284	283	294	333	21	51	62	74	137	10	349	309	326	300	312	7	23	30	21	8	349	NNW	24	
14	32	178	223	264	294	326	31	84	112	34	41	13	94	118	5	41	23	303	50	138	179	266	29	36	3	N	24	
15	40	34	332	309	271	239	230	171	169	149	49	65	73	75	107	163	344	0	353	50	30	61	71	74	61	ENE	24	
16	56	63	65	57	45	46	43	54	51	53	50	79	71	100	35	50	76	80	106	137	124	82	82	75	65	ENE	24	
17	91	63	65	50	53	60	122	15	23	62	56	69	77	65	51	41	44	53	40	32	31	32	30	24	50	NE	24	
18	27	29	32	35	33	34	33	43	45	48	53	48	45	45	41	39	35	34	34	33	32	33	29	34	38	NE	24	
19	34	46	41	43	43	48	48	48	55	53	57	70	75	81	81	88	84	87	76	72	65	67	77	75	64	ENE	24	
20	77	83	74	86	80	82	85	78	83	87	90	85	79	82	87	93	96	92	94	93	75	59	90	105	86	E	24	
21	115	122	125	197	214	232	233	241	241	275	275	286	293	287	287	272	272	261	237	227	227	227	226	230	245	WSW	24	
22	246	224	215	207	206	210	213	225	251	238	216	210	168	157	192	221	215	206	167	25	34	72	129	97	202	SSW	24	
23	119	129	97	49	66	52	81	80	89	89	87	101	104	108	112	111	114	116	121	110	104	112	116	99	104	ESE	24	
24	100	80	85	97	90	84	99	110	129	233	224	227	241	229	237	235	246	269	277	288	282	273	281	305	175	S	24	
25	273	279	271	267	285	279	297	297	297	293	270	4	314	100	209	294	309	313	331	45	114	99	60	13	300	WNW	24	
26	321	318	307	334	322	319	288	304	343	354	342	335	318	335	343	360	2	322	290	158	153	206	126	179	332	NNW	24	
27	234	216	205	216	176	169	170	162	174	165	160	162	169	173	175	163	170	175	305	24	103	140	87	100	159	SSE	24	
28	25	51	30	34	3	11	42	89	91	86	75	77	86	100	116	130	161	166	134	130	116	111	122	121	95	E	24	
29	130	143	187	208	222	227	253	251	269	287	262	254	242	239	225	224	210	226	131	82	295	286	23	150	245	WSW	24	
30	98	289	287	255	286	280	280	300	290	291	288	289	297	287	282	290	279	274	266	265	258	258	252	254	283	W	24	
HOURLY AVG	339	347	360	356	359	349	346	350	348	355	342	345	335	343	352	360	344	358	353	313	355	329	331	334				

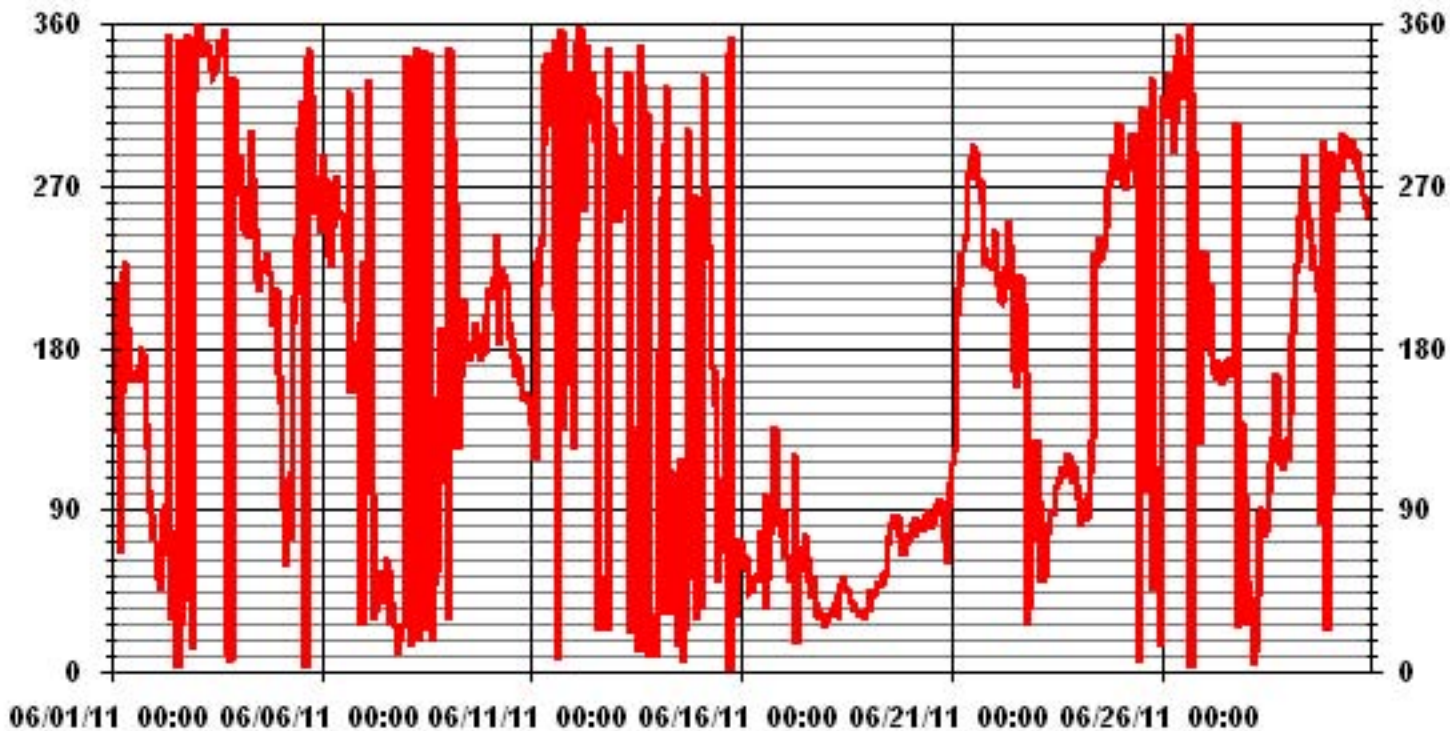
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION:	September 24, 2009
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION	105.52	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	56 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JUNE 2011

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	18	54	51	29	58	19	17	13	19	24	18	16	16	13	13	13	16	16	15	9	8	7	5	6
2	8	8	4	7	8	9	9	12	63	48	38	46	59	49	69	56	30	11	17	23	53	46	48	14
3	23	15	14	15	15	15	15	15	15	16	16	16	16	17	16	17	18	17	13	12	13	11	14	11
4	16	5	10	11	12	16	21	25	27	31	37	32	23	20	14	13	12	14	18	13	17	17	16	10
5	41	7	18	32	11	12	13	17	34	30	42	27	13	13	23	18	17	15	14	11	13	12	9	14
6	11	9	13	22	9	12	12	21	25	23	26	28	32	43	38	39	48	30	13	7	22	46	27	39
7	28	22	25	16	47	47	18	10	10	12	13	19	11	17	22	34	21	17	10	8	9	11	7	9
8	25	11	14	21	17	16	17	26	18	46	14	18	18	28	32	37	42	20	10	12	18	11	16	11
9	9	21	33	20	47	44	41	14	17	28	28	31	23	19	22	20	23	20	15	8	9	14	26	22
10	19	24	26	15	33	20	13	13	14	20	22	22	25	19	16	13	16	15	9	8	5	5	5	7
11	41	53	10	19	22	27	30	19	18	20	32	55	48	40	60	39	51	44	7	8	17	22	19	46
12	39	12	32	33	46	15	23	10	11	20	13	24	12	17	14	11	13	11	8	11	12	14	4	2
13	25	14	8	36	25	11	12	17	21	25	33	23	33	35	18	17	20	14	11	10	6	35	10	35
14	21	22	15	22	12	14	48	17	22	16	59	55	55	15	54	36	63	24	15	17	27	31	11	6
15	7	7	32	10	12	13	17	24	13	28	55	19	12	8	18	48	17	12	14	10	13	14	23	7
16	8	14	11	9	8	8	8	8	9	9	10	23	9	12	15	10	9	12	10	7	8	11	9	9
17	7	13	10	8	8	9	18	42	11	12	10	12	12	13	11	10	10	9	9	10	9	9	10	10
18	10	11	10	9	9	9	9	9	9	9	9	9	9	10	10	12	10	10	10	10	10	9	9	9
19	8	10	8	8	8	8	8	9	8	8	9	9	10	10	11	10	10	9	8	7	7	7	7	7
20	8	8	8	9	9	8	8	9	9	8	8	8	9	9	8	10	9	9	8	6	7	7	9	7
21	9	7	13	19	18	15	15	20	20	20	26	18	18	21	29	29	22	24	18	7	8	8	6	11
22	12	18	9	33	28	30	25	10	23	36	48	38	40	31	38	36	31	40	18	35	7	9	10	11
23	15	12	15	13	9	12	8	11	11	11	13	12	11	10	10	10	8	8	8	7	9	8	9	6
24	19	8	8	9	7	7	9	7	9	20	11	13	22	19	21	26	26	25	19	11	10	18	11	15
25	23	14	18	25	10	20	11	12	12	12	P	42	29	56	53	19	18	12	16	11	10	8	8	20
26	12	11	14	14	13	16	12	15	16	15	17	16	15	16	15	15	13	19	22	42	31	47	21	28
27	26	51	28	25	29	14	16	16	15	12	11	27	14	18	19	13	10	12	20	12	13	19	27	14
28	15	16	10	19	15	15	10	12	14	18	16	21	32	26	18	37	17	9	7	6	5	5	5	5
29	31	14	21	44	26	14	23	26	29	27	27	27	23	31	35	31	27	35	32	8	33	20	25	17
30	17	21	45	22	10	15	16	15	14	12	13	15	15	16	19	13	18	19	25	24	25	23	22	22

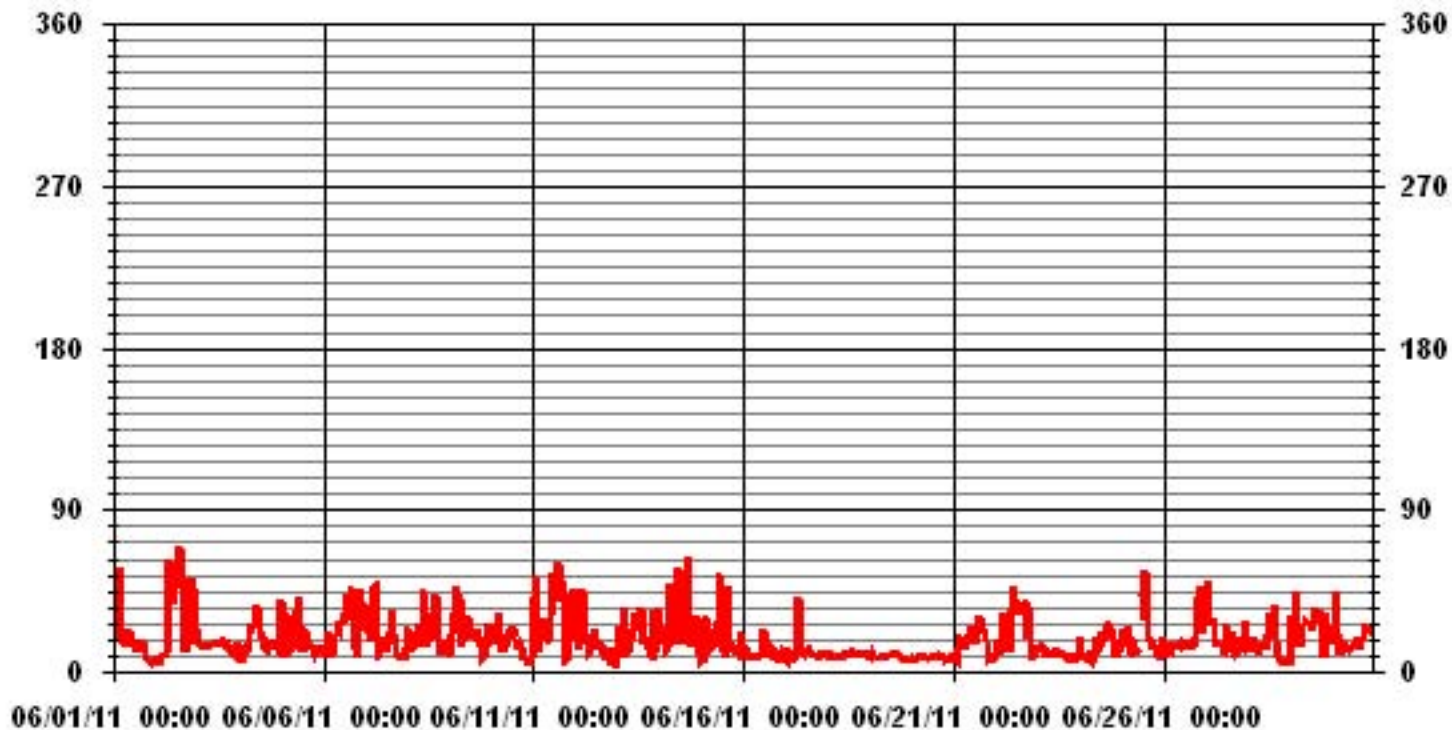
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

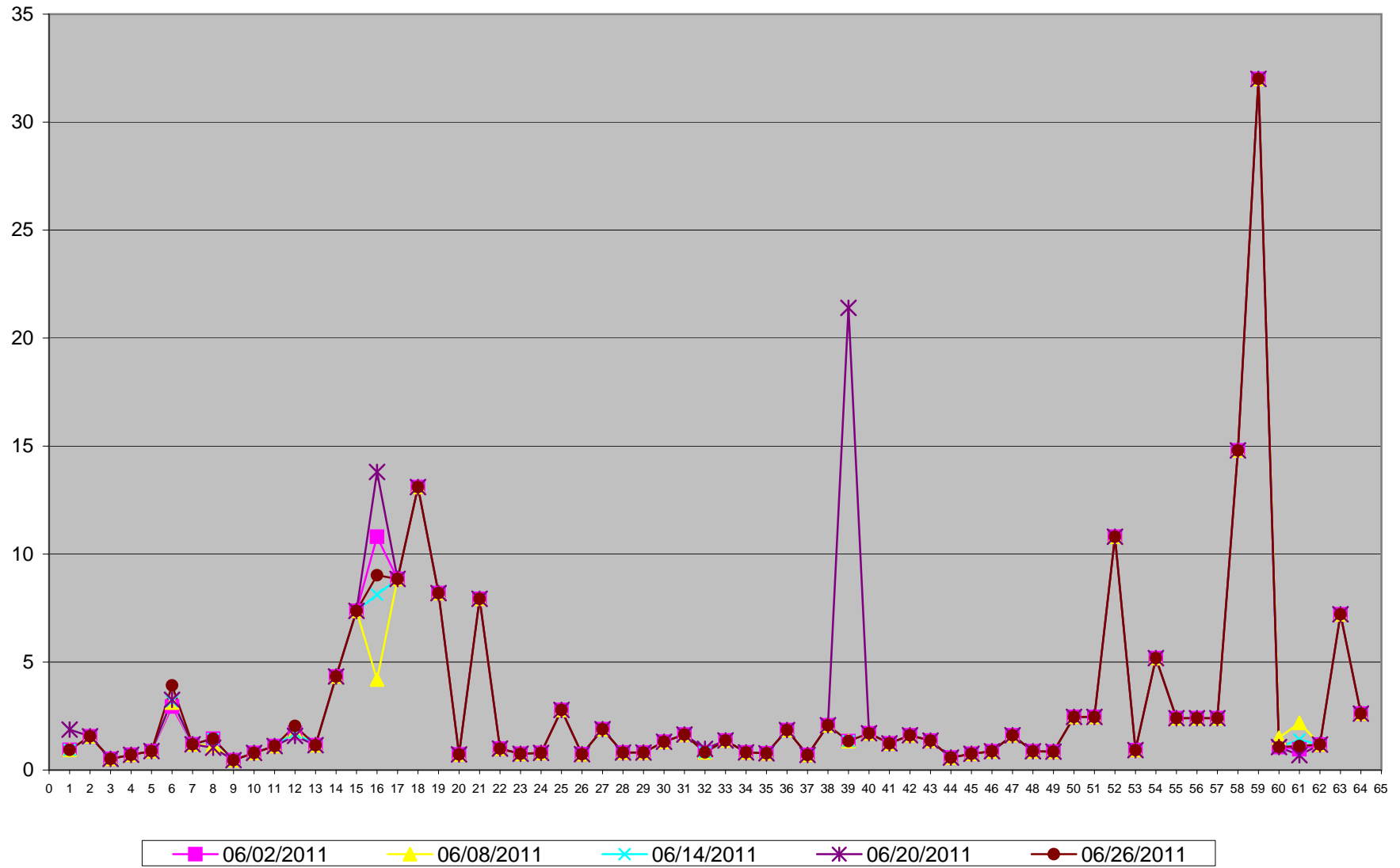
CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 719 HRS

01 Hour Averages



Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Portable Site



1	2,2,4-Trimethylpentane	33	1,1,2,2-Tetrachloroethane
2	Carbon Disulfide	34	cis-1,3-Dichloropropene
3	Propene	35	trans-1,3-Dichloropropene
4	Vinyl Acetate	36	1,2-Dichloropropane
5	Vinyl Bromide	37	Bromomethane
6	Dichlorodifluoromethane (FREON 12)	38	Bromoform
7	1,2-Dichlorotetrafluoroethane	39	Bromodichloromethane
8	Chloromethane	40	Dibromochloromethane
9	Vinyl Chloride	41	Heptane
10	Chloroethane	42	Trichloroethylene
11	1,3-Butadiene	43	Tetrachloroethylene
12	Trichlorofluoromethane (FREON 11)	44	Benzene
13	Trichlorotrifluoroethane	45	Toluene
14	Ethanol	46	Ethylbenzene
15	2-Propanol	47	p+m-Xylene
16	2-Propanone	48	o-Xylene
17	Methyl Ethyl Ketone (2-Butanone)	49	Styrene
18	Methyl Isobutyl Ketone	50	1,3,5-Trimethylbenzene
19	Methyl Butyl Ketone (2-Hexanone)	51	1,2,4-Trimethylbenzene
20	Methyl t-butyl ether (MTBE)	52	4-ethyltoluene
21	Ethyl Acetate	53	Chlorobenzene
22	1,1-Dichloroethylene	54	Benzyl chloride
23	cis-1,2-Dichloroethylene	55	1,3-Dichlorobenzene
24	trans-1,2-Dichloroethylene	56	1,4-Dichlorobenzene
25	Methylene Chloride (Dichloromethane)	57	1,2-Dichlorobenzene
26	Chloroform	58	1,2,4-Trichlorobenzene
27	Carbon Tetrachloride	59	Hexachlorobutadiene
28	1,1-Dichloroethane	60	Hexane
29	1,2-Dichloroethane	61	Cyclohexane
30	Ethylene Dibromide	62	Tetrahydrofuran
31	1,1,1-Trichloroethane	63	1,4-Dioxane
32	1,1,2-Trichloroethane	64	Xylene (Total)

Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for June 2011

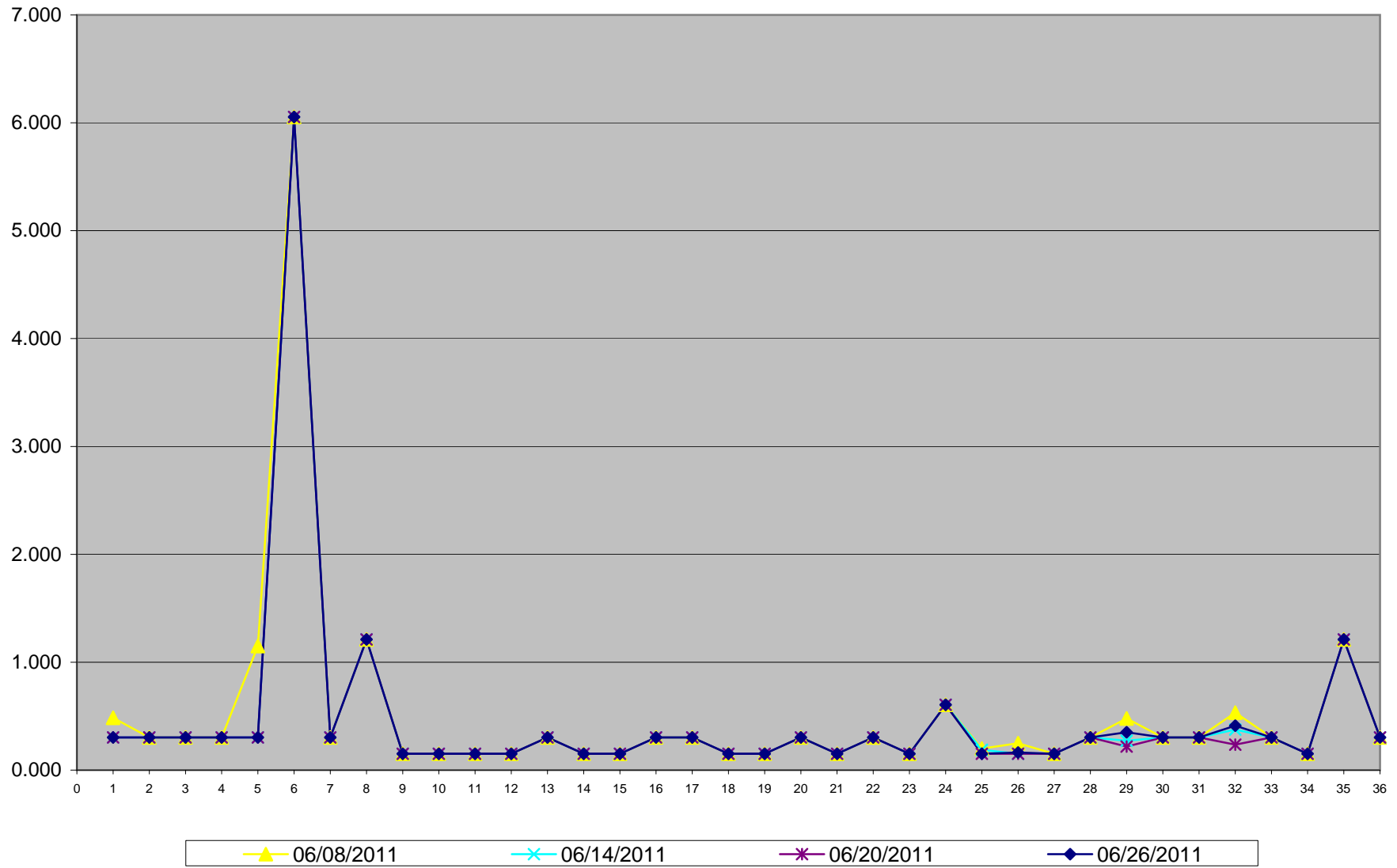
LICA- Portable Site

Unit: ng/m³

PAHs	06/02/2011	06/08/2011	06/14/2011	06/20/2011	06/26/2011
Sample Volume (unit: m3)	330.34	330.34	330.33	330.34	330.33
1 1-Methylnaphthalene	0.303	0.484	0.303	0.303	0.303
2 1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4 2-Methylantracene	0.303	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	0.303	1.150	0.303	0.303	0.303
6 3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.055
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.151	0.151	0.151	0.151	0.151
10 Acenaphthylene	0.151	0.151	0.151	0.151	0.151
11 Anthracene	0.151	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	0.151	0.151	0.151	0.151	0.151
16 Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	0.151	0.151	0.151	0.151	0.151
19 Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20 Biphenyl	0.303	0.303	0.303	0.303	0.303
21 Chrysene	0.151	0.151	0.151	0.151	0.151
22 Coronene	0.303	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25 Fluoranthene	0.151	0.200	0.188	0.151	0.151
26 Fluorene	0.151	0.248	0.151	0.151	0.163
27 Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151
28 m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29 Naphthalene	0.303	0.478	0.272	0.218	0.351
30 o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31 Perylene	0.303	0.303	0.303	0.303	0.303
32 Phenanthrene	0.357	0.533	0.375	0.236	0.412
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.151	0.151	0.151	0.151	0.151
35 Quinoline	1.211	1.211	1.211	1.211	1.211
36 Tetralin	0.303	0.303	0.303	0.303	0.303

Note: - values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
 - Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
 - See analytical for details.

PAHs in ng/m3 Site: LICA - Portable Site



1	1-Methylnaphthalene
2	1-Methylphenanthrene
3	2-Chloronaphthalene
4	2-Methlyanthracene
5	2-Methylnaphthalene
6	3-Methylcholanthrene
7	7,12-Dimethylbenzo(a)anthracene
8	9,10-Dimethylanthracene
9	Acenaphthene
10	Acenaphthylene
11	Anthracene
12	Benzo(a)anthracene
13	Benzo(a)fluorene
14	Benzo(a)pyrene
15	Benzo(b)fluoranthene
16	Benzo(b)fluorene
17	Benzo(e)pyrene
18	Benzo(g,h,l)perylene
19	Benzo(k)fluoranthene
20	Biphenyl
21	Chrysene
22	Coronene
23	Dibenz(a,h)anthracene
24	Dibenzo(a,e)pyrene
25	Fluoranthene
26	Fluorene
27	Indeno(1,2,3-cd)pyrene
28	m-Terphenyl
29	Naphthalene
30	o-Terphenyl
31	Perylene
32	Phenanthrene
33	p-Terphenyl
34	Pyrene
35	Quinoline
36	Tetralin

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report
Station Information

Calibration Date	June 22, 2011	Previous Calibration	May 12, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	10:53	End Time (MST)	14:41
Reason:	Monthly Calibration		
Barometric Pressure	0.936 atm	Station Temperature	25 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 4, 2013
		Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000				
Sample Flow / Box Temp	570 ccm	32.6 Deg C	569 ccm	32	Deg C
HVPS / Lamp Setting	612	2005	612	2003	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.1 Deg C	50	Deg C
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0	Deg C
Offset / Slope	69	1.056	72.9	1.038	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	3	N/A
4996	0	0	0	N/A
4922	76.5	750	762	0.9842
4922	76.5	750	750	1.0000
4959	40.8	400	397	1.0072
4981	17.3	170	170	1.0000
4998	0	0	0	N/A
Sum of Least Squares				0.9895
New Correction Factor				1.0000

Before Calibration

After Calibration

Auto Zero	3.2	0.9
Auto Span	393.0	382.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9986
Current Correction Factor Before Span Adjust:	0.9842
Percent Change:	1.5%

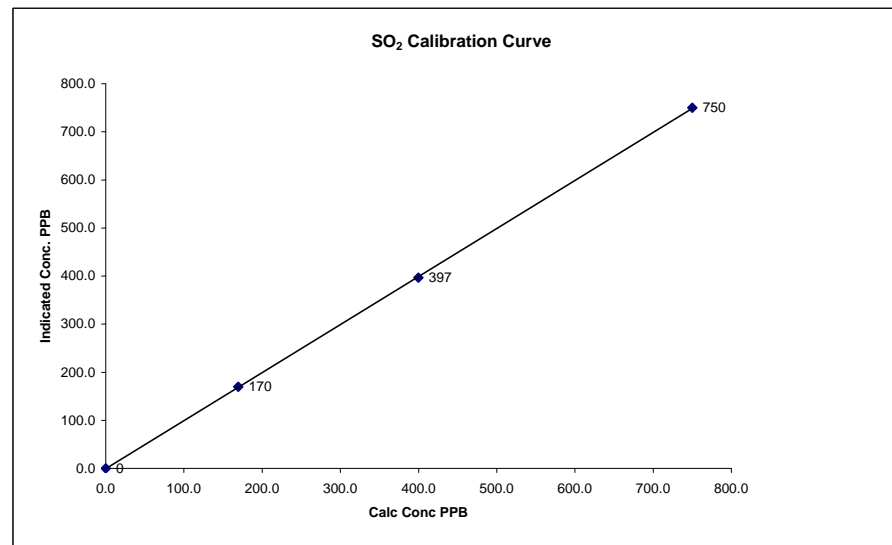
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

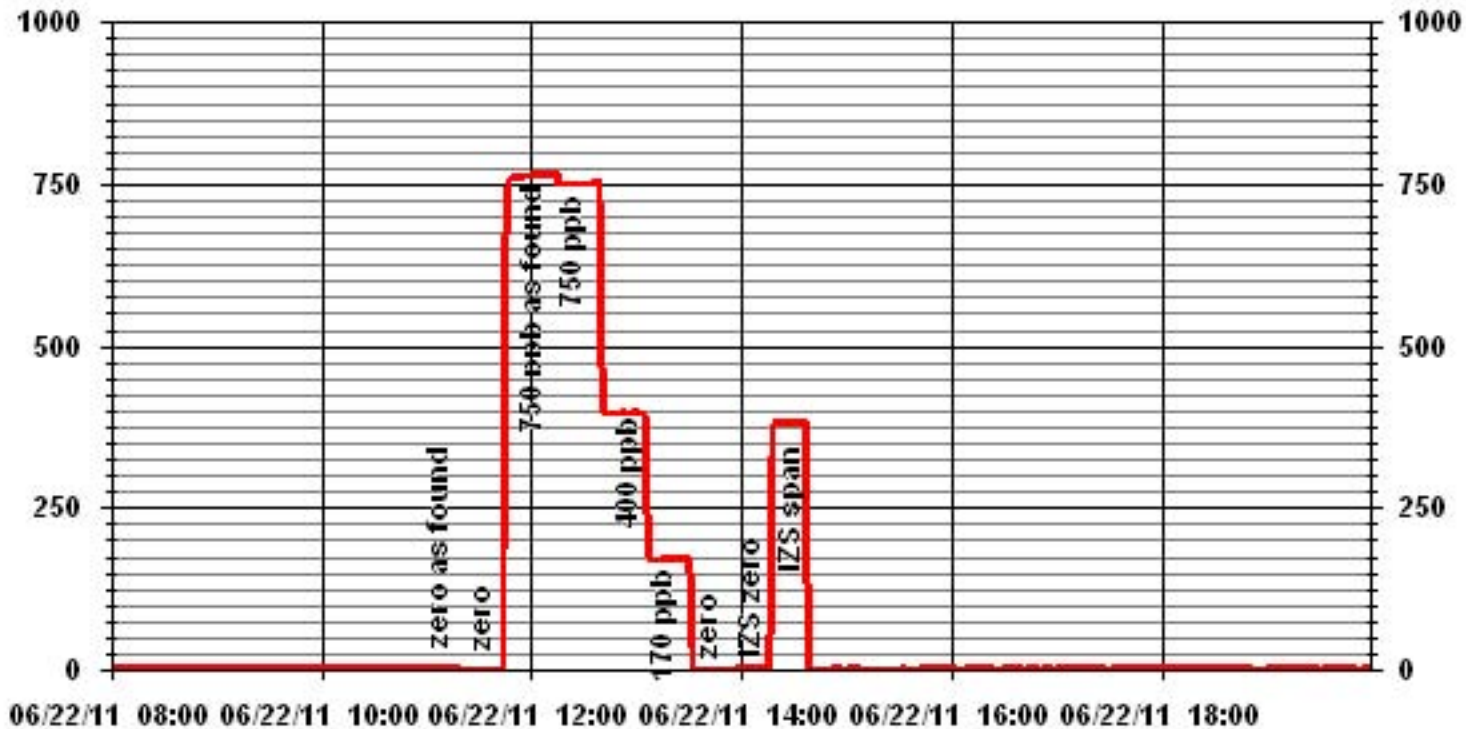
Calibration Date	June 22, 2011
Company	Lakeland Community and Industry Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	10:53
End Time (MST)	14:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999979
170	170	0.9976		0.999263
400	397	1.0072		-0.351426
750	750	0.9999		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	June 20, 2011	Previous Calibration	May 11, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M		
Start Time (MST)	8:56	End Time (MST)	12:36
Reason:	Monthly Calibration		
Barometric Pressure	0.932 atm	Station Temperature	24 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	bim000804
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	509	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100 ppb		
Sample Flow / Box Temp	528 ccm 33.6 Deg C	527 ccm 32.5 Deg C	
HV/PS / Lamp Setting	540 2082	540 2083	
PMT / RxCell Temp	7.9 Deg C 50 Deg C	7.9 Deg C 50 Deg C	
Converter / IZS Temp	314.6 Deg C 45 Deg C	314.7 Deg C 45.0 Deg C	
Offset / Slope	53.4 1.048	57.5 1.077	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	2	NA
4995	0	0	0	1.0000
4959	39.2	80	80	1.0000
No Span Adj Required				
4981	19.6	40	41	0.9751
4885	11.2	23	23	1.0000
4996	0	0	0	NA
Sum of Least Squares				0.9961
New Correction Factor				

Before Calibration		After Calibration	
Auto Zero	2.2		0.2
Auto Span	60.0		58.0
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.0%

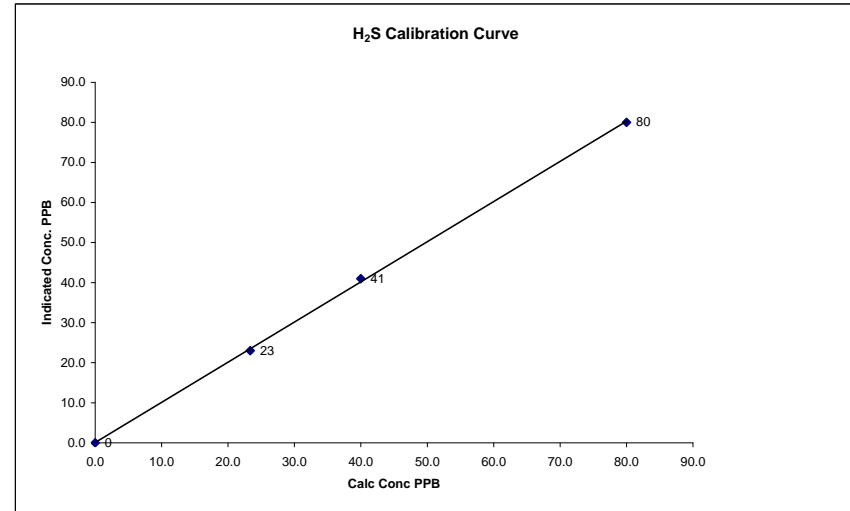
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

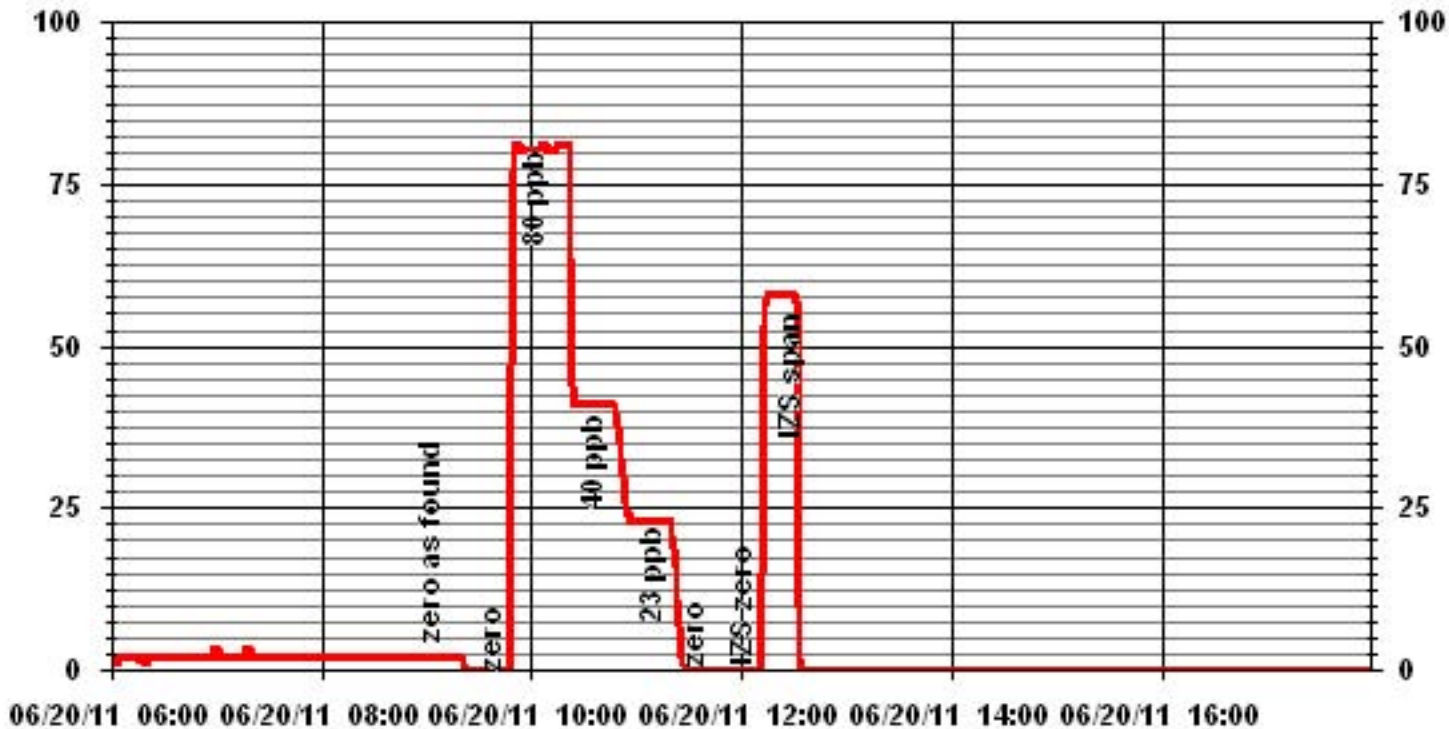
Calibration Date	June 20, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M
Start Time (MST)	8:56
End Time (MST)	12:36

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0			0.999705
23	23	1.0145		1.002504
40	41	0.9751		0.083199
80	80	1.0000		



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	<u>June 23, 2011</u>	Make/Model:	<u>Streamline FTS</u>
Station Name:	<u>Lica Portable (CASA # 33)</u>	Serial Number:	<u>Hi 091001</u>
Location:	<u>Devon Wellsite 13-16-62-5 W4M</u>	Cell s/n:	<u>Lo 091099</u>
Operator:	<u>LICA</u>	Thermometer s/n:	<u>Fisher Brad 15-021B</u>

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	<u>Thermo Scientific Series 1405F</u>	F-Main Set Pt (l/min)	<u>3.00</u>
Unit #	<u>NA</u>	F-Aux Set Pt (l/min)	<u>13.67</u>
Unit s/n	<u>1405A207691003</u>	Filter Load (%)	<u>37.6%</u>
Firmware Ver.	<u>1.51</u>	K _o Factor	<u>15634.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>22.1</u>
		Press (ATM)	<u>0.931</u>

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as BOLD in Brackets

Audit

Status			
Noise <0.10ug	<u>0.003</u>	Warnings	<u>None</u>
0.32	<u>0.32</u>	Pump Gauge (inHg)	<u>-19</u>
Temperature/Pressure			
Measured Temp (± 2 °C)	<u>22.0</u>	D °C	<u>0.1</u>
Measured Press (± 0.01atm)	<u>0.932</u>	DATM	<u>-0.001</u>
Flow Audit			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>1.03%</u>
Measured Main Flow (l/min)	<u>3.04</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.67</u>	Bypass Flow Drift (±10.0%)	<u>0.16%</u>
Measured Bypass Flow (l/min)	<u>13.58</u>	Flow Adjusted to Measured?	<u>Yes</u>
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	<u>Base 0.00, Ref 0.00</u>	<u>Flow Control = Active</u>	
Aux (< 0.6 l/min)	<u>Base 0.00, Ref 0.00</u>	<u>Report Conditions = Actual</u>	
K_o Factor			
Measured	<u>NA</u>		
K _o Difference (± 2.5%)	<u>NA</u>		

Start Time: 9:40 **Finish Time:** 11:32

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 16.3%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	June 20, 2011	Previous Calibration	May 11, 2011
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:56	End Time (MST)	15:22
Reason:	Monthly Calibration		
Barometric Pressure	0.932 atm	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822	MFCF	0
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N :	1991		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Envionics 6100	S/N :	1991		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000		ppb		
Sample Flow/Conv. Temp	481 ccm	315.7 Deg C	480 ccm	315	Deg C
Ozone Flow / Vacuum	78 ccm	4.2 "Hg-A	78 ccm	4.2	"Hg-A
HVPS / A ZERO	662 Volts	7.2 MV	662 Volts	7.3	MV
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C	50.0 Deg C	6.8	Deg C
Box Temp / IZS Temp	33.1 Deg C	45.0 Deg C	33 Deg C	45.3	Deg C
Offset	2.9 NOx	-0.2 NO	2.9 NOx	-0.2	NO
Slope	1.104 NOx	1.076 NO	1.190 NOx	1.163	NO
NO2 COEF / Conv Efficiency	NA NO2	0.996	NA NO2	0.996	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	4	0	4	NA	NA
No Zero Adj Requ										
4921	74.2	NA	768	749	NA	711	691	20	1.0862	1.0834
4921	74.2	NA	768	749	NA	769	750	19	1.0039	0.9982
4954	39.6	NA	410	400	NA	410	399	11	1.0000	1.0017
4973	19.8	NA	205	200	NA	206	201	5	1.0150	0.9944
4995	0.0	NA	0	0	NA	1	1	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	NA	768	749	NA	770	753	17	NA	NA
No Adj Required										
4921	74.2	550	768	NA	552	771	218	553	1.0055	100.19%
4921	74.2	300	768	NA	237	772	533	239	1.0085	100.91%
4921	74.2	120	768	NA	138	772	632	141	1.0073	102.48%

Linearity	Sum of Least Squares		NOx= 0.999	NO= 0.999	NO2= 0.996
OK?	Yes	No	Correction Factors: NOx= 1.0039	NO= 0.9982	NO2= 1.0055
Average Converter Efficiency= 101.19%					

Before Calibration			After Calibration		
Auto Zero	-1.4 NOx	-1.4 NO2	0.3 NOx	-1.9 NO2	
Auto Span	738 NOx	720 NO2	829 NOx	807 NO2	
Sample Lines Connected YES					
Percent Change from Previous Calibration			NOx -7.6%	NO -7.7%	NO2 3.2%

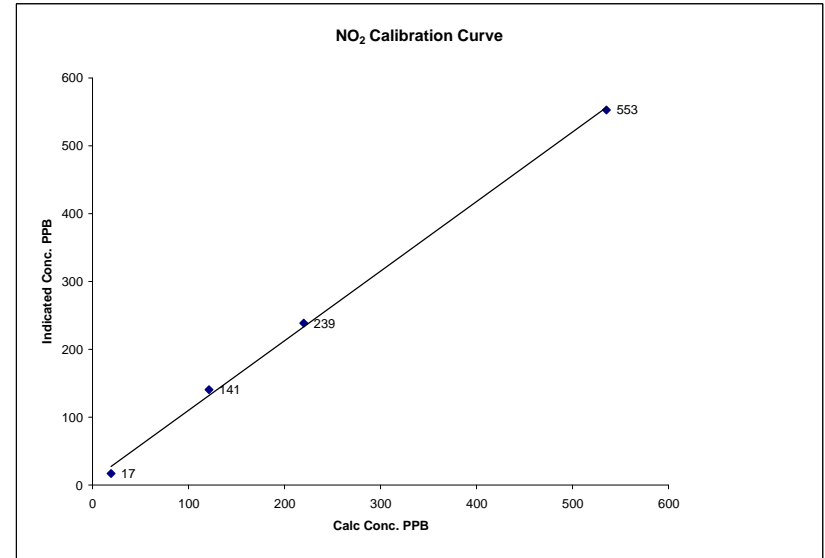
Notes: **NA : Not Applicable**
Additional GPT was done for O3 clibration. O3 set point 420, NOx=772, NO=381, NO2=391

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	June 20, 2011
Company	LICA
Plant / Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:56
End Time (MST)	15:22

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998529
19	17	N/A	Intercept	(± 3% F.S.)	7.92934
121	141	0.8582			
220	239	0.9205			
535	553	0.9675			

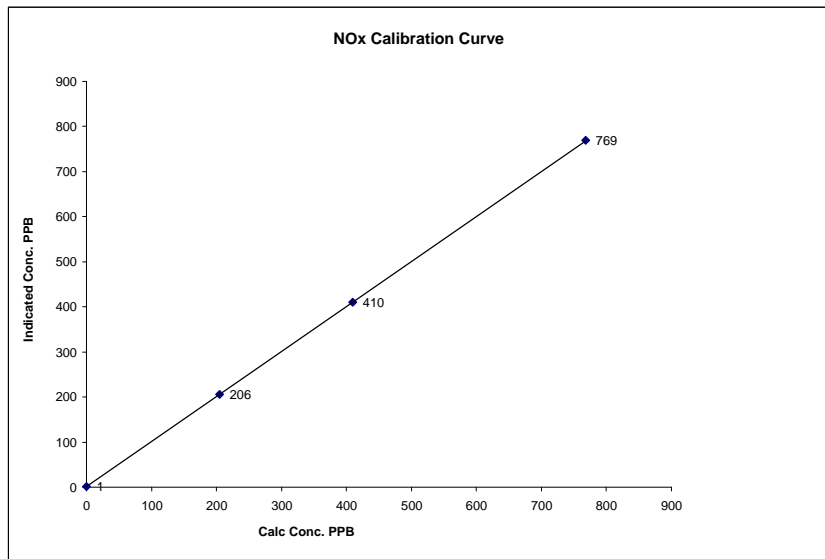


Notes:

NOx Calibration Curve

Calibration Date June 20, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:56 End Time (MST) 15:22

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999998
0	1	N/A	Slope (0.85 to 1.15)	0.999860
205	206	0.9953	Intercept (± 3% F.S.)	0.80306
410	410	1.0000		
768	769	0.9987		

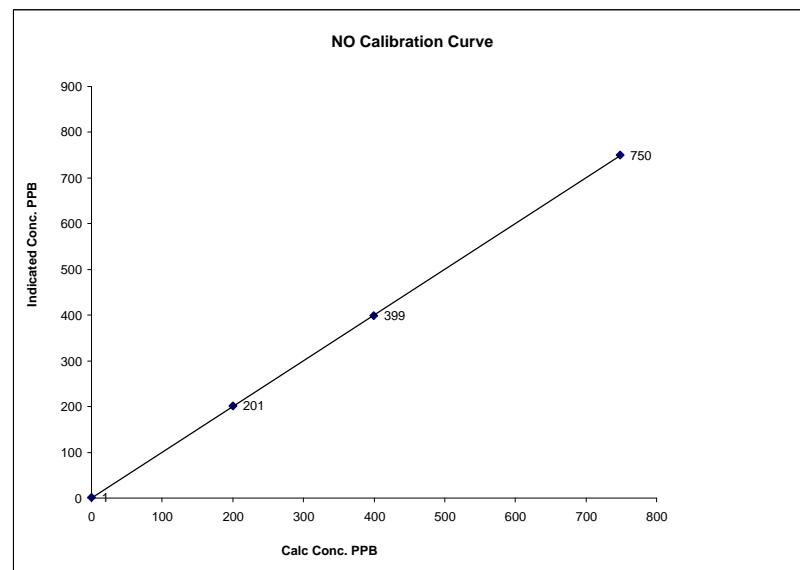


Notes:

NO Calibration Curve

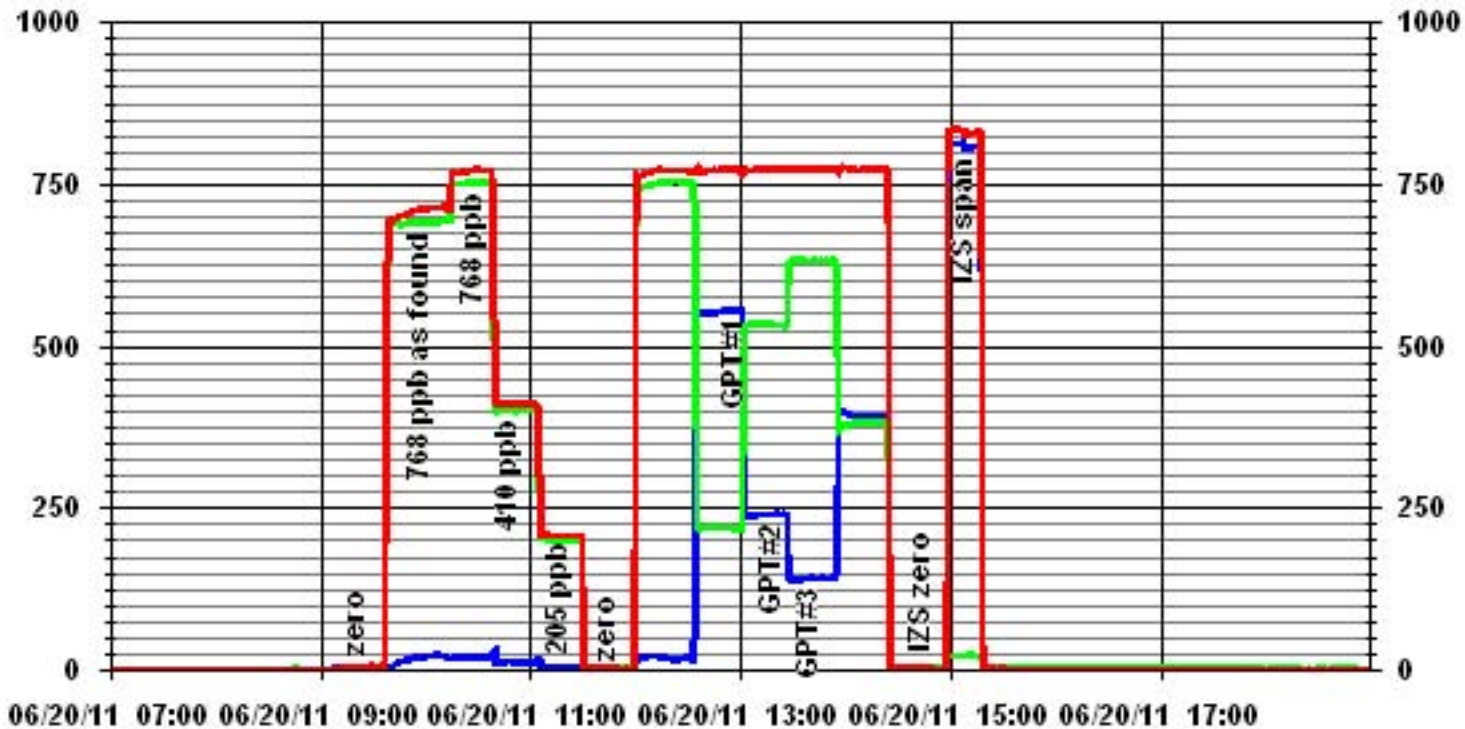
Calibration Date June 20, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:56 End Time (MST) 15:22

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999992
0	1	N/A	Slope (0.85 to 1.15)	1.001004
200	201	0.9944	Intercept (± 3% F.S.)	-2.9987
400	399	1.0017		
749	750	0.9982		



Notes:

01 Minute Averages



— LICA33 IIOX_ PPB

— LICA33 IIO_ PPB

— LICA33 IIO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	06/22/	Previous Calibration	May 12, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	10:53	End Time (MST)	14:41
Reason:	Monthly Calibration		
Barometric Pressure	0.936 atm	Station Temperature	25 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	EnviroNics 2000	S/N :	1991	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500			
Cell A Flow / Cell B Flow	757 ccm	766 ccm	756 ccm	764 Deg C
Pressure	702 mmHg		700 mmHg	
Bench Lamp Temp	54.1 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	31.9 Deg C	68.2 Deg C	31.8 Deg C
Offset/Slop	0	0.951	0	0.935

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4995	420	372	376	0.9894
4995	420	372	372	1.0000
4995	250	220	222	0.9910
4995	140	121	124	0.9758
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0000

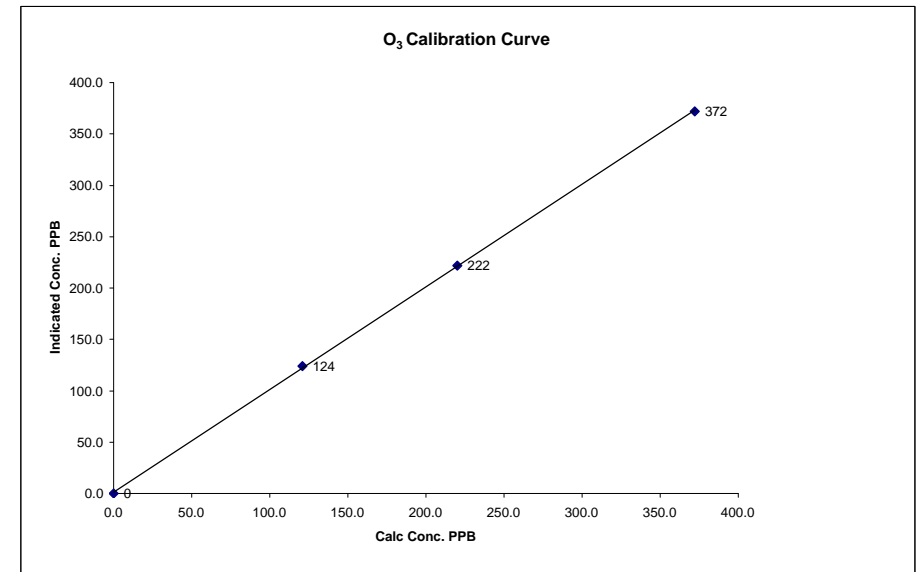
	Before Calibration	After Calibration
Auto Zero	-0.2	-0.1
Auto Span	322	318
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.8%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

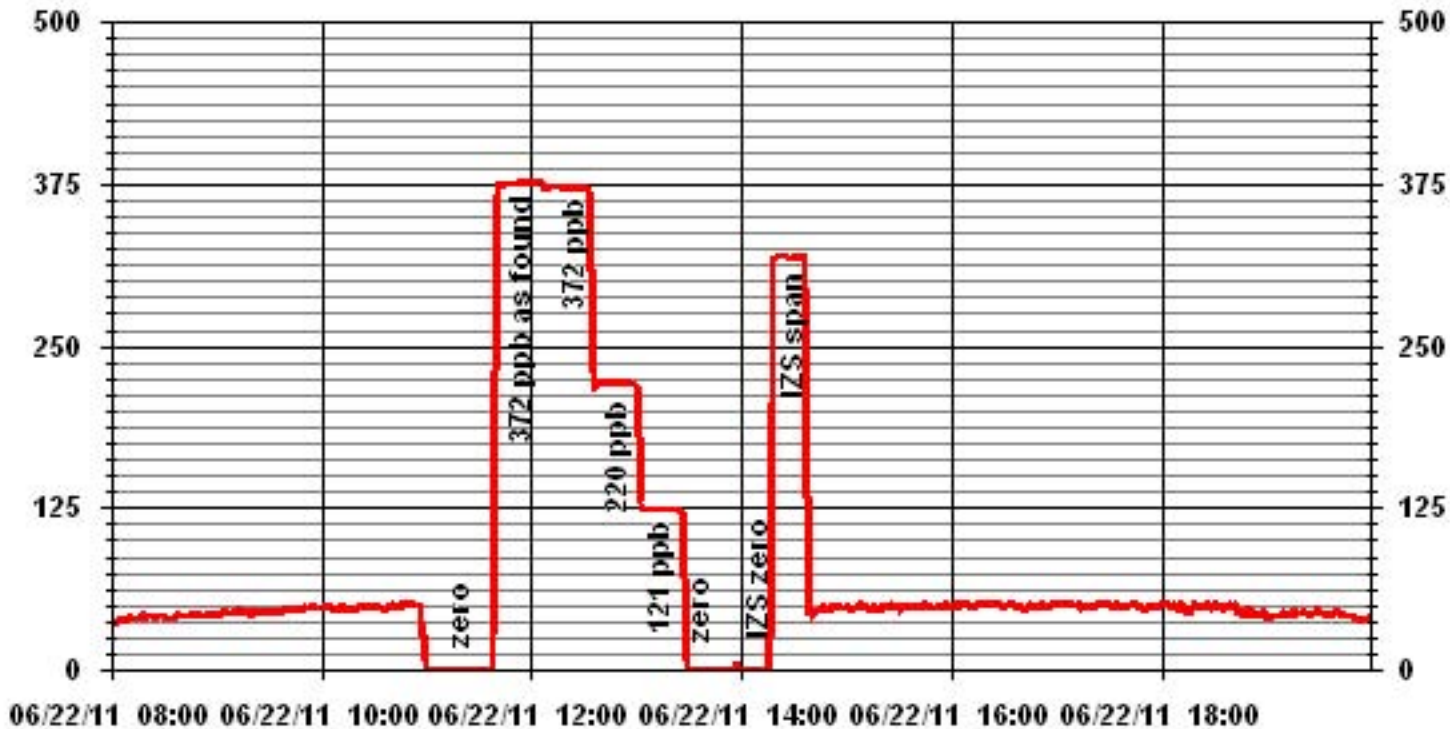
Calibration Date	06/22/
Company	Lakeland Industry & Community Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	10:53
End Time (MST)	14:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)	
0	0	n/a			0.999910
121	124	0.9758			0.998813
220	222	0.9910			
372	372	1.0000			1.461624



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	June 20, 2011	Previous Calibration:	May 12, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	12:07	End Time (MST)	16:06
Reason:	Monthly Calibration		
Barometric Pressure:	0.931 atm	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information

Make / Model	Thermo 51C	S/N :	04366-09739	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.8	psi	6.8	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	-1.1	NA
1999	0.0	0.0	0.0	NA
1999	70.0	39.6	38.9	1.0187
1999	70.0	39.6	39.9	0.9931
1998	34.9	20.1	19.8	1.0155
1998	20.0	11.6	11.4	1.0182
1998	0.0	0.0	0.0	NA
New Correction Factor:				0.9931

Percent Change

Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	1.0187
Percent Change:	-2.5%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	0.0
Auto Span	35.0	33.9
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1400 psi	Hydrogen	2000 psi
		Zero Air	35 psi

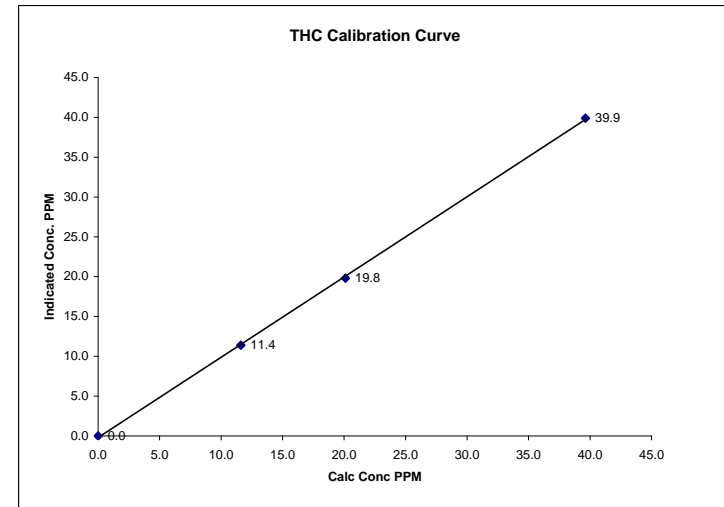
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

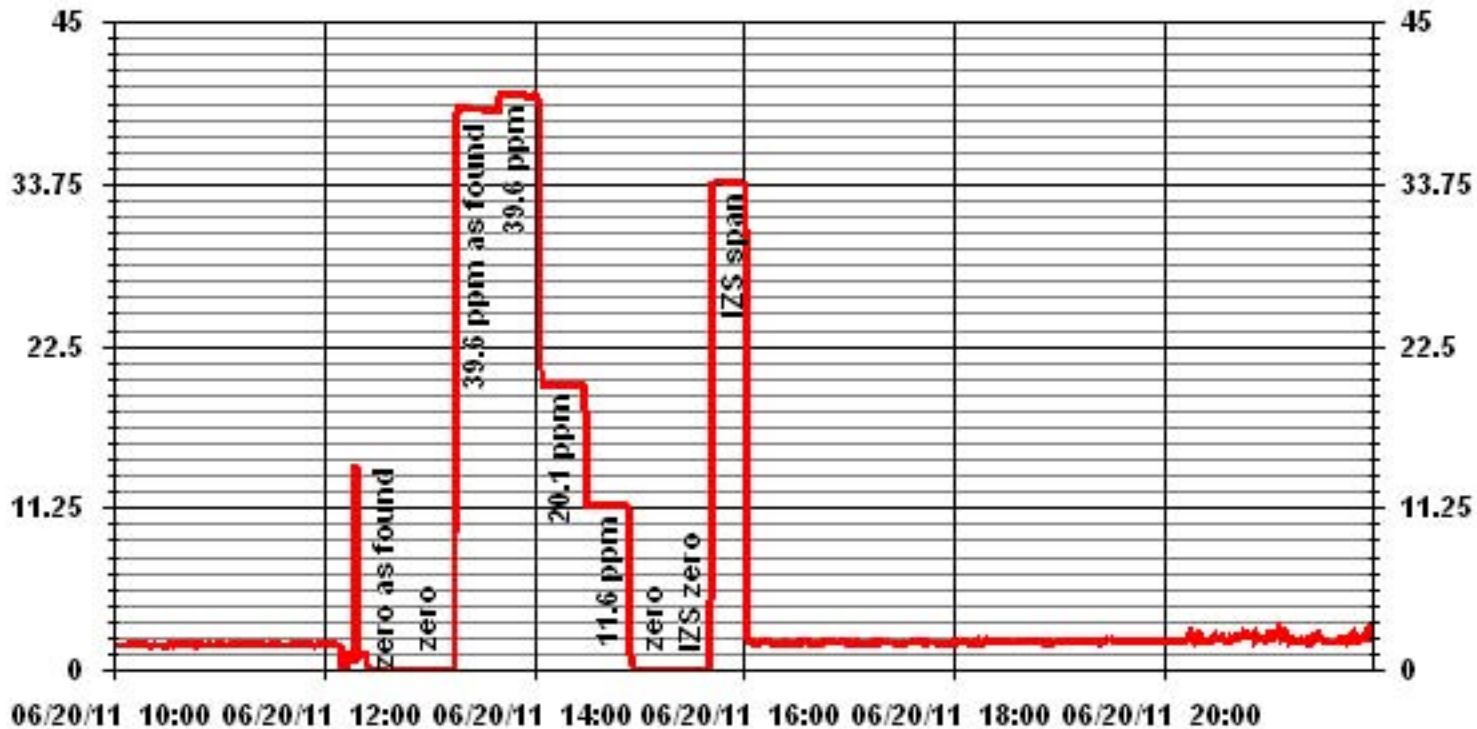
Calibration Date	June 20, 2011
Company	Lakeland Industry and Community Association
Plant / Location	Portable Station Devon Wellsite 13-16-62-5W4M
Start Time (MST)	12:07
End Time (MST)	16:06

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)	0.999828
0.0	0.0	NA	Intercept	(±3% F.S.)	-0.20022
11.6	11.4	1.0182			
20.1	19.8	1.0155			
39.6	39.9	0.9931			



Notes:

01 Minute Averages



Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7828
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jun 01, 11 @ 8:40 mst
Field Sample ID: LICA VOC/PORT/ Jun 02, 11 Canister Removal Date/Time: Jun 03, 11 @ 10:40 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
2-Jun-11	06/02/2011 0:00	06/03/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06169

Technician Signiture: Ting Xu_____

Your C.O.C. #: 06169

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/15

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B182250****Received: 2011/06/08, 08:50**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/10	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/10	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

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JOB #: 2833-11-06-33C

Maxxam Job #: B182250
 Report Date: 2011/06/15

RESULTS OF ANALYSES OF AIR

Maxxam ID		JT5018	JT5019	
Sampling Date		2011/06/02	2011/06/02	
COC Number		06169	06169	
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	LICA VOC/PORT/JUNE 02,11 - 7828	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2519327

QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5018				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2519158
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2519158
Propene	ppbv	<0.30	0.30	<0.516	0.516	2519158
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2519158
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2519158
Dichlorodifluoromethane (FREON 12)	ppbv	0.58	0.20	2.85	0.989	2519158
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2519158
Chloromethane	ppbv	0.58	0.30	1.20	0.620	2519158
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2519158
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2519158
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2519158
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.71	1.12	2519158
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2519158
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2519158
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2519158
2-Propanone	ppbv	3.79	0.80	9.00	1.90	2519158
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2519158
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2519158
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2519158
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2519158
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2519158
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2519158
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2519158
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2519158
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2519158
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2519158
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2519158
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2519158
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2519158

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5018				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2519158
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2519158
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2519158
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2519158
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2519158
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2519158
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2519158
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2519158
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2519158
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2519158
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2519158
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2519158
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2519158
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2519158
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2519158
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2519158
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2519158
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2519158
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2519158
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2519158
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2519158
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2519158
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2519158
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2519158
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2519158
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2519158
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2519158
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2519158
QC Batch = Quality Control Batch						

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5018				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/CLS/JUNE 02,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	77		N/A	N/A	2519158
D5-Chlorobenzene	%	71		N/A	N/A	2519158
Difluorobenzene	%	77		N/A	N/A	2519158

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5019				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/PORT/JUNE 02,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2519158
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2519158
Propene	ppbv	<0.30	0.30	<0.516	0.516	2519158
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2519158
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2519158
Dichlorodifluoromethane (FREON 12)	ppbv	0.60	0.20	2.94	0.989	2519158
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2519158
Chloromethane	ppbv	0.70	0.30	1.45	0.620	2519158
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2519158
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2519158
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2519158
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.72	1.12	2519158
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2519158
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2519158
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2519158
2-Propanone	ppbv	4.53	0.80	10.8	1.90	2519158
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2519158
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2519158
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2519158
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2519158
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2519158
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2519158
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2519158
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2519158
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2519158
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2519158
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2519158
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2519158
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2519158
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2519158
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5019				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/PORT/JUNE 02,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2519158
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2519158
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2519158
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2519158
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2519158
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2519158
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2519158
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2519158
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2519158
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2519158
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2519158
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2519158
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2519158
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2519158
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2519158
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2519158
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2519158
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2519158
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2519158
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2519158
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2519158
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2519158
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2519158
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2519158
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2519158
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2519158
Cyclohexane	ppbv	0.28	0.20	0.965	0.688	2519158
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2519158
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2519158
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2519158
QC Batch = Quality Control Batch						

Maxxam Job #: B182250
 Report Date: 2011/06/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JT5019				
Sampling Date		2011/06/02				
COC Number		06169				
	Units	LICA VOC/PORT/JUNE 02,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	76		N/A	N/A	2519158
D5-Chlorobenzene	%	72		N/A	N/A	2519158
Difluorobenzene	%	76		N/A	N/A	2519158

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B182250
 Report Date: 2011/06/15

Test Summary

Maxxam ID JT5018 **Collected** 2011/06/02
Sample ID LICA VOC/CLS/JUNE 02,11 - 7834 **Shipped**
Matrix AIR **Received** 2011/06/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2519327	N/A	2011/06/10	DIANE VOYER
Volatile Organics in Air (TO-15)	GC/MS	2519158	N/A	2011/06/10	DIANE VOYER

Maxxam ID JT5019 **Collected** 2011/06/02
Sample ID LICA VOC/PORT/JUNE 02,11 - 7828 **Shipped**
Matrix AIR **Received** 2011/06/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2519327	N/A	2011/06/10	DIANE VOYER
Volatile Organics in Air (TO-15)	GC/MS	2519158	N/A	2011/06/10	DIANE VOYER

Maxxam Job #: B182250
Report Date: 2011/06/15

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB182250

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2519158 DVO	Spiked Blank	Bromochloromethane	2011/06/10		93	%	60 - 140
		D5-Chlorobenzene	2011/06/10		93	%	60 - 140
		Difluorobenzene	2011/06/10		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/10		110	%	70 - 130
		Carbon Disulfide	2011/06/10		101	%	70 - 130
		Propene	2011/06/10		105	%	70 - 130
		Vinyl Acetate	2011/06/10		110	%	70 - 130
		Vinyl Bromide	2011/06/10		114	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/10		102	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/10		120	%	70 - 130
		Chloromethane	2011/06/10		103	%	70 - 130
		Vinyl Chloride	2011/06/10		104	%	70 - 130
		Chloroethane	2011/06/10		98	%	70 - 130
		1,3-Butadiene	2011/06/10		111	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/10		98	%	70 - 130
		Trichlorotrifluoroethane	2011/06/10		103	%	70 - 130
		Ethanol	2011/06/10		107	%	70 - 130
		2-propanol	2011/06/10		117	%	70 - 130
		2-Propanone	2011/06/10		99	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/10		114	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/10		101	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/10		100	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/10		109	%	70 - 130
		Ethyl Acetate	2011/06/10		111	%	70 - 130
		1,1-Dichloroethylene	2011/06/10		102	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/10		99	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/10		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/10		92	%	70 - 130
		Chloroform	2011/06/10		100	%	70 - 130
		Carbon Tetrachloride	2011/06/10		94	%	70 - 130
		1,1-Dichloroethane	2011/06/10		99	%	70 - 130
		1,2-Dichloroethane	2011/06/10		100	%	70 - 130
		Ethylene Dibromide	2011/06/10		99	%	70 - 130
		1,1,1-Trichloroethane	2011/06/10		95	%	70 - 130
		1,1,2-Trichloroethane	2011/06/10		97	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/10		95	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/10		98	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/10		102	%	70 - 130
		1,2-Dichloropropane	2011/06/10		95	%	70 - 130
		Bromomethane	2011/06/10		102	%	70 - 130
		Bromoform	2011/06/10		117	%	70 - 130
		Bromodichloromethane	2011/06/10		102	%	70 - 130
		Dibromochloromethane	2011/06/10		108	%	70 - 130
		Heptane	2011/06/10		103	%	70 - 130
		Trichloroethylene	2011/06/10		94	%	70 - 130
		Tetrachloroethylene	2011/06/10		95	%	70 - 130
		Benzene	2011/06/10		96	%	70 - 130
		Toluene	2011/06/10		97	%	70 - 130
		Ethylbenzene	2011/06/10		102	%	70 - 130
		p+m-Xylene	2011/06/10		100	%	70 - 130
		o-Xylene	2011/06/10		100	%	70 - 130
		Styrene	2011/06/10		103	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/10		93	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/10		91	%	70 - 130
		4-ethyltoluene	2011/06/10		104	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB182250

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2519158 DVO	Spiked Blank	Chlorobenzene	2011/06/10		101	%	70 - 130	
		Benzyl chloride	2011/06/10		110	%	70 - 130	
1,3-Dichlorobenzene		2011/06/10		93	%	70 - 130		
1,4-Dichlorobenzene		2011/06/10		97	%	70 - 130		
1,2-Dichlorobenzene		2011/06/10		84	%	70 - 130		
1,2,4-Trichlorobenzene		2011/06/10		65 (1)	%	70 - 130		
Hexachlorobutadiene		2011/06/10		82	%	70 - 130		
Hexane		2011/06/10		105	%	70 - 130		
Cyclohexane		2011/06/10		103	%	70 - 130		
Tetrahydrofuran		2011/06/10		112	%	70 - 130		
Method Blank		1,4-Dioxane	2011/06/10		103	%	70 - 130	
		Bromochloromethane	2011/06/10		85	%	60 - 140	
		D5-Chlorobenzene	2011/06/10		80	%	60 - 140	
		Difluorobenzene	2011/06/10		86	%	60 - 140	
		2,2,4-Trimethylpentane	2011/06/10	<0.20			ppbv	
		Carbon Disulfide	2011/06/10	<0.50			ppbv	
		Propene	2011/06/10	<0.30			ppbv	
		Vinyl Acetate	2011/06/10	<0.20			ppbv	
		Vinyl Bromide	2011/06/10	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/10	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/10	<0.17			ppbv	
		Chloromethane	2011/06/10	<0.30			ppbv	
		Vinyl Chloride	2011/06/10	<0.18			ppbv	
		Chloroethane	2011/06/10	<0.30			ppbv	
		1,3-Butadiene	2011/06/10	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/10	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/06/10	<0.15			ppbv	
		Ethanol	2011/06/10	<2.3			ppbv	
		2-propanol	2011/06/10	<3.0			ppbv	
		2-Propanone	2011/06/10	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/10	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/06/10	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/10	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/10	<0.20			ppbv	
		Ethyl Acetate	2011/06/10	<2.2			ppbv	
		1,1-Dichloroethylene	2011/06/10	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/06/10	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/06/10	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/10	<0.80			ppbv	
		Chloroform	2011/06/10	<0.15			ppbv	
		Carbon Tetrachloride	2011/06/10	<0.30			ppbv	
		1,1-Dichloroethane	2011/06/10	<0.20			ppbv	
		1,2-Dichloroethane	2011/06/10	<0.20			ppbv	
		Ethylene Dibromide	2011/06/10	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/06/10	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/06/10	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/10	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/06/10	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/06/10	<0.17			ppbv			
1,2-Dichloropropane	2011/06/10	<0.40			ppbv			
Bromomethane	2011/06/10	<0.18			ppbv			
Bromoform	2011/06/10	<0.20			ppbv			
Bromodichloromethane	2011/06/10	<0.20			ppbv			
Dibromochloromethane	2011/06/10	<0.20			ppbv			
Heptane	2011/06/10	<0.30			ppbv			

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB182250

QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2519158	DVO	Method Blank	2011/06/10	<0.30		ppbv		
		Trichloroethylene	2011/06/10	<0.20		ppbv		
		Tetrachloroethylene	2011/06/10	<0.18		ppbv		
		Benzene	2011/06/10	<0.20		ppbv		
		Toluene	2011/06/10	<0.20		ppbv		
		Ethylbenzene	2011/06/10	<0.20		ppbv		
		p+m-Xylene	2011/06/10	<0.37		ppbv		
		o-Xylene	2011/06/10	<0.20		ppbv		
		Styrene	2011/06/10	<0.20		ppbv		
		1,3,5-Trimethylbenzene	2011/06/10	<0.50		ppbv		
		1,2,4-Trimethylbenzene	2011/06/10	<0.50		ppbv		
		4-ethyltoluene	2011/06/10	<2.2		ppbv		
		Chlorobenzene	2011/06/10	<0.20		ppbv		
		Benzyl chloride	2011/06/10	<1.0		ppbv		
		1,3-Dichlorobenzene	2011/06/10	<0.40		ppbv		
		1,4-Dichlorobenzene	2011/06/10	<0.40		ppbv		
		1,2-Dichlorobenzene	2011/06/10	<0.40		ppbv		
		1,2,4-Trichlorobenzene	2011/06/10	<2.0		ppbv		
		Hexachlorobutadiene	2011/06/10	<3.0		ppbv		
		Hexane	2011/06/10	<0.30		ppbv		
		Cyclohexane	2011/06/10	<0.20		ppbv		
		Tetrahydrofuran	2011/06/10	<0.40		ppbv		
		1,4-Dioxane	2011/06/10	<2.0		ppbv		
		Xylene (Total)	2011/06/10	<0.60		ppbv		

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: S2383
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jun 06, 11 @ 13:35 mst
Field Sample ID: LICA VOC/PORT/ Jun 08, 11 Canister Removal Date/Time: Jun 09, 11 @ 8:40 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
8-Jun-11	06/08/2011 0:00	06/09/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20.5

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06232

Technician Signiture: Ting Xu_____

Your C.O.C. #: 06232

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/16

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B184925****Received: 2011/06/11, 11:05**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/15	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/15	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

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Maxxam Job #: B184925
 Report Date: 2011/06/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		JU7515	JU7516	
Sampling Date		2011/06/08	2011/06/08	
COC Number		06232	06232	
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	LICA VOC/ PORT/ JUNE 08,11 - S2383	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2522014
QC Batch = Quality Control Batch				

Maxxam Job #: B184925
 Report Date: 2011/06/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JU7515			JU7516				
Sampling Date		2011/06/08			2011/06/08				
COC Number		06232			06232				
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	ug/m3	DL (ug/m3)	LICA VOC/ PORT/ JUNE 08,11 - S2383	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2522106
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2522106
Propene	ppbv	0.55	0.949	0.516	<0.30	0.30	<0.516	0.516	2522106
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2522106
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2522106
Dichlorodifluoromethane (FREON 12)	ppbv	0.64	3.18	0.989	0.63	0.20	3.12	0.989	2522106
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2522106
Chloromethane	ppbv	0.57	1.18	0.620	0.54	0.30	1.13	0.620	2522106
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2522106
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2522106
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2522106
Trichlorofluoromethane (FREON 11)	ppbv	0.31	1.75	1.12	0.32	0.20	1.78	1.12	2522106
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2522106
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2522106
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2522106
2-Propanone	ppbv	4.11	9.77	1.90	1.76	0.80	4.19	1.90	2522106
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2522106
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2522106
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2522106
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2522106
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2522106
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2522106
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2522106
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2522106
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2522106
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2522106
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2522106
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2522106
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2522106
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2522106

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B184925
 Report Date: 2011/06/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JU7515			JU7516				
Sampling Date		2011/06/08			2011/06/08				
COC Number		06232			06232				
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	ug/m3	DL (ug/m3)	LICA VOC/ PORT/ JUNE 08,11 - S2383	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2522106
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2522106
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2522106
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2522106
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2522106
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2522106
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2522106
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2522106
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2522106
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2522106
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2522106
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2522106
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2522106
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2522106
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2522106
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2522106
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2522106
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2522106
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2522106
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2522106
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2522106
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2522106
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2522106
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2522106
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2522106
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2522106
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2522106
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2522106
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2522106
Hexane	ppbv	<0.30	<1.06	1.06	0.42	0.30	1.49	1.06	2522106
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.63	0.20	2.18	0.688	2522106
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2522106
QC Batch = Quality Control Batch									

Maxxam Job #: B184925
 Report Date: 2011/06/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JU7515			JU7516				
Sampling Date		2011/06/08			2011/06/08				
COC Number		06232			06232				
	Units	LICA VOC/ CLS/ JUNE 08,11 - S1903	ug/m3	DL (ug/m3)	LICA VOC/ PORT/ JUNE 08,11 - S2383	RDL	ug/m3	DL (ug/m3)	QC Batch

1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2522106
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2522106
Surrogate Recovery (%)									
Bromochloromethane	%	76	N/A	N/A	73		N/A	N/A	2522106
D5-Chlorobenzene	%	76	N/A	N/A	72		N/A	N/A	2522106
Difluorobenzene	%	75	N/A	N/A	73		N/A	N/A	2522106

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B184925
 Report Date: 2011/06/16

Test Summary

Maxxam ID JU7515 **Collected** 2011/06/08
Sample ID LICA VOC/ CLS/ JUNE 08,11 - S1903 **Shipped**
Matrix AIR **Received** 2011/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2522014	N/A	2011/06/15	SPOMENKA SMILJANIC
Volatile Organics in Air (TO-15)	GC/MS	2522106	N/A	2011/06/15	SPOMENKA SMILJANIC

Maxxam ID JU7516 **Collected** 2011/06/08
Sample ID LICA VOC/ PORT/ JUNE 08,11 - S2383 **Shipped**
Matrix AIR **Received** 2011/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2522014	N/A	2011/06/15	SPOMENKA SMILJANIC
Volatile Organics in Air (TO-15)	GC/MS	2522106	N/A	2011/06/15	SPOMENKA SMILJANIC

Maxxam Job #: B184925
Report Date: 2011/06/16

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	Spiked Blank	Bromochloromethane	2011/06/15		96	%	60 - 140
		D5-Chlorobenzene	2011/06/15		99	%	60 - 140
		Difluorobenzene	2011/06/15		98	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/15		97	%	70 - 130
		Carbon Disulfide	2011/06/15		96	%	70 - 130
		Propene	2011/06/15		97	%	70 - 130
		Vinyl Acetate	2011/06/15		98	%	70 - 130
		Vinyl Bromide	2011/06/15		98	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/15		109	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/15		122	%	70 - 130
		Chloromethane	2011/06/15		107	%	70 - 130
		Vinyl Chloride	2011/06/15		106	%	70 - 130
		Chloroethane	2011/06/15		102	%	70 - 130
		1,3-Butadiene	2011/06/15		103	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/15		108	%	70 - 130
		Trichlorotrifluoroethane	2011/06/15		105	%	70 - 130
		Ethanol	2011/06/15		95	%	70 - 130
		2-propanol	2011/06/15		116	%	70 - 130
		2-Propanone	2011/06/15		113	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/15		105	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/15		102	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/15		100	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/15		101	%	70 - 130
		Ethyl Acetate	2011/06/15		103	%	70 - 130
		1,1-Dichloroethylene	2011/06/15		108	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/15		104	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/15		102	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/15		96	%	70 - 130
		Chloroform	2011/06/15		107	%	70 - 130
		Carbon Tetrachloride	2011/06/15		106	%	70 - 130
		1,1-Dichloroethane	2011/06/15		104	%	70 - 130
		1,2-Dichloroethane	2011/06/15		109	%	70 - 130
		Ethylene Dibromide	2011/06/15		97	%	70 - 130
		1,1,1-Trichloroethane	2011/06/15		106	%	70 - 130
		1,1,2-Trichloroethane	2011/06/15		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/15		97	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/15		102	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/15		95	%	70 - 130
		1,2-Dichloropropane	2011/06/15		105	%	70 - 130
		Bromomethane	2011/06/15		105	%	70 - 130
		Bromoform	2011/06/15		99	%	70 - 130
		Bromodichloromethane	2011/06/15		104	%	70 - 130
		Dibromochloromethane	2011/06/15		106	%	70 - 130
		Heptane	2011/06/15		102	%	70 - 130
		Trichloroethylene	2011/06/15		100	%	70 - 130
		Tetrachloroethylene	2011/06/15		102	%	70 - 130
		Benzene	2011/06/15		102	%	70 - 130
		Toluene	2011/06/15		102	%	70 - 130
		Ethylbenzene	2011/06/15		101	%	70 - 130
		p+m-Xylene	2011/06/15		100	%	70 - 130
		o-Xylene	2011/06/15		101	%	70 - 130
		Styrene	2011/06/15		95	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/15		98	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/15		95	%	70 - 130
		4-ethyltoluene	2011/06/15		98	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2522106 S_S	Spiked Blank	Chlorobenzene	2011/06/15		96	%	70 - 130	
		Benzyl chloride	2011/06/15		81	%	70 - 130	
1,3-Dichlorobenzene		2011/06/15		84	%	70 - 130		
1,4-Dichlorobenzene		2011/06/15		77	%	70 - 130		
1,2-Dichlorobenzene		2011/06/15		84	%	70 - 130		
1,2,4-Trichlorobenzene		2011/06/15		67 (1)	%	70 - 130		
Hexachlorobutadiene		2011/06/15		86	%	70 - 130		
Hexane		2011/06/15		99	%	70 - 130		
Cyclohexane		2011/06/15		100	%	70 - 130		
Tetrahydrofuran		2011/06/15		103	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/06/15		103	%	70 - 130	
		Bromochloromethane	2011/06/15		77	%	60 - 140	
		D5-Chlorobenzene	2011/06/15		76	%	60 - 140	
		Difluorobenzene	2011/06/15		77	%	60 - 140	
		2,2,4-Trimethylpentane	2011/06/15	<0.20			ppbv	
		Carbon Disulfide	2011/06/15	<0.50			ppbv	
		Propene	2011/06/15	<0.30			ppbv	
		Vinyl Acetate	2011/06/15	<0.20			ppbv	
		Vinyl Bromide	2011/06/15	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/15	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/15	<0.17			ppbv	
		Chloromethane	2011/06/15	<0.30			ppbv	
		Vinyl Chloride	2011/06/15	<0.18			ppbv	
		Chloroethane	2011/06/15	<0.30			ppbv	
		1,3-Butadiene	2011/06/15	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/15	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/06/15	<0.15			ppbv	
		Ethanol	2011/06/15	<2.3			ppbv	
		2-propanol	2011/06/15	<3.0			ppbv	
		2-Propanone	2011/06/15	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/15	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/06/15	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/15	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/15	<0.20			ppbv	
		Ethyl Acetate	2011/06/15	<2.2			ppbv	
		1,1-Dichloroethylene	2011/06/15	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/06/15	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/06/15	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/15	<0.80			ppbv	
		Chloroform	2011/06/15	<0.15			ppbv	
		Carbon Tetrachloride	2011/06/15	<0.30			ppbv	
		1,1-Dichloroethane	2011/06/15	<0.20			ppbv	
		1,2-Dichloroethane	2011/06/15	<0.20			ppbv	
		Ethylene Dibromide	2011/06/15	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/06/15	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/06/15	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/15	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/06/15	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/06/15	<0.17			ppbv			
1,2-Dichloropropane	2011/06/15	<0.40			ppbv			
Bromomethane	2011/06/15	<0.18			ppbv			
Bromoform	2011/06/15	<0.20			ppbv			
Bromodichloromethane	2011/06/15	<0.20			ppbv			
Dibromochloromethane	2011/06/15	<0.20			ppbv			
Heptane	2011/06/15	<0.30			ppbv			

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	Method Blank	Trichloroethylene	2011/06/15	<0.30		ppbv	
		Tetrachloroethylene	2011/06/15	<0.20		ppbv	
		Benzene	2011/06/15	<0.18		ppbv	
		Toluene	2011/06/15	<0.20		ppbv	
		Ethylbenzene	2011/06/15	<0.20		ppbv	
		p+m-Xylene	2011/06/15	<0.37		ppbv	
		o-Xylene	2011/06/15	<0.20		ppbv	
		Styrene	2011/06/15	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/15	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/15	<0.50		ppbv	
		4-ethyltoluene	2011/06/15	<2.2		ppbv	
		Chlorobenzene	2011/06/15	<0.20		ppbv	
		Benzyl chloride	2011/06/15	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/15	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/15	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/15	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/15	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/15	<3.0		ppbv	
		Hexane	2011/06/15	<0.30		ppbv	
		Cyclohexane	2011/06/15	<0.20		ppbv	
		Tetrahydrofuran	2011/06/15	<0.40		ppbv	
		1,4-Dioxane	2011/06/15	<2.0		ppbv	
		Xylene (Total)	2011/06/15	<0.60		ppbv	
	RPD - Sample/Sample Dup	Carbon Disulfide	2011/06/15	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/06/15	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/06/15	NC		%	25
		Chloromethane	2011/06/15	NC		%	25
		Vinyl Chloride	2011/06/15	NC		%	25
		Chloroethane	2011/06/15	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/06/15	NC		%	25
		Trichlorotrifluoroethane	2011/06/15	NC		%	25
		Ethanol	2011/06/15	NC		%	25
		2-propanol	2011/06/15	NC		%	25
		2-Propanone	2011/06/15	1.5		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/06/15	NC		%	25
		Methyl Isobutyl Ketone	2011/06/15	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/06/15	NC		%	25
		Ethyl Acetate	2011/06/15	NC		%	25
		1,1-Dichloroethylene	2011/06/15	NC		%	25
		cis-1,2-Dichloroethylene	2011/06/15	NC		%	25
		trans-1,2-Dichloroethylene	2011/06/15	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/06/15	NC		%	25
		Chloroform	2011/06/15	NC		%	25
		Carbon Tetrachloride	2011/06/15	NC		%	25
		1,1-Dichloroethane	2011/06/15	NC		%	25
		1,2-Dichloroethane	2011/06/15	NC		%	25
		Ethylene Dibromide	2011/06/15	NC		%	25
		1,1,1-Trichloroethane	2011/06/15	NC		%	25
		1,1,2-Trichloroethane	2011/06/15	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/06/15	NC		%	25
		cis-1,3-Dichloropropene	2011/06/15	NC		%	25
		trans-1,3-Dichloropropene	2011/06/15	NC		%	25
		1,2-Dichloropropane	2011/06/15	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184925

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2522106 S_S	RPD - Sample/Sample Dup	Bromomethane	2011/06/15	NC		%	25
		Bromoform	2011/06/15	NC		%	25
		Heptane	2011/06/15	NC		%	25
		Trichloroethylene	2011/06/15	NC		%	25
		Tetrachloroethylene	2011/06/15	NC		%	25
		Benzene	2011/06/15	NC		%	25
		Toluene	2011/06/15	NC		%	25
		Ethylbenzene	2011/06/15	NC		%	25
		p+m-Xylene	2011/06/15	NC		%	25
		o-Xylene	2011/06/15	NC		%	25
		Styrene	2011/06/15	NC		%	25
		1,3,5-Trimethylbenzene	2011/06/15	NC		%	25
		1,2,4-Trimethylbenzene	2011/06/15	NC		%	25
		Chlorobenzene	2011/06/15	NC		%	25
		1,4-Dichlorobenzene	2011/06/15	NC		%	25
		1,2-Dichlorobenzene	2011/06/15	NC		%	25
		1,2,4-Trichlorobenzene	2011/06/15	NC		%	25
		Hexachlorobutadiene	2011/06/15	NC		%	25
		Hexane	2011/06/15	NC		%	25
		Cyclohexane	2011/06/15	NC		%	25
		Tetrahydrofuran	2011/06/15	NC		%	25
		1,4-Dioxane	2011/06/15	NC		%	25
		Xylene (Total)	2011/06/15	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7830
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jun 13, 11 @ 15:24 mst
Field Sample ID: LICA VOC/PORT/ Jun 14, 11 Canister Removal Date/Time: Jun 15, 11 @ 8:58 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jun-11	06/14/2011 0:00	06/15/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06298

Technician Signiture: Ting Xu_____

Your C.O.C. #: 06298

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B188404****Received: 2011/06/17, 09:05**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/20	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/20	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

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JOB #: 2833-11-06-33C

Maxxam Job #: B188404
 Report Date: 2011/06/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		JW3623	JW3624	
Sampling Date		2011/06/14	2011/06/14	
COC Number		06298	06298	
	Units	LICA VOC/CLS/JUNE 14,11 - 7867	LICA VOC/PORT/JUNE 14,11 - 7830	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2527184

QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3623				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/CLS/JUNE 14,11 - 7867	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2527182
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2527182
Propene	ppbv	<0.30	0.30	<0.516	0.516	2527182
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2527182
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2527182
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.23	0.989	2527182
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2527182
Chloromethane	ppbv	0.63	0.30	1.29	0.620	2527182
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2527182
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2527182
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2527182
Trichlorofluoromethane (FREON 11)	ppbv	0.37	0.20	2.08	1.12	2527182
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2527182
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2527182
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2527182
2-Propanone	ppbv	3.38	0.80	8.02	1.90	2527182
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2527182
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2527182
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2527182
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2527182
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2527182
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2527182
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2527182
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2527182
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2527182
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2527182
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2527182
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2527182
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2527182

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3623				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/CLS/JUNE 14,11 - 7867	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2527182
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2527182
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2527182
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2527182
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2527182
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2527182
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2527182
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2527182
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2527182
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2527182
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2527182
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2527182
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2527182
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2527182
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2527182
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2527182
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2527182
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2527182
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2527182
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2527182
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2527182
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2527182
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2527182
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2527182
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2527182
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2527182
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2527182
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2527182
QC Batch = Quality Control Batch						

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3623				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/CLS/JUNE				
		14,11 - 7867				

Surrogate Recovery (%)						
Bromochloromethane	%	78		N/A	N/A	2527182
D5-Chlorobenzene	%	77		N/A	N/A	2527182
Difluorobenzene	%	79		N/A	N/A	2527182

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3624				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/PORT/JUNE 14,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2527182
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2527182
Propene	ppbv	<0.30	0.30	<0.516	0.516	2527182
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2527182
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2527182
Dichlorodifluoromethane (FREON 12)	ppbv	0.65	0.20	3.19	0.989	2527182
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2527182
Chloromethane	ppbv	0.70	0.30	1.44	0.620	2527182
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2527182
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2527182
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2527182
Trichlorofluoromethane (FREON 11)	ppbv	0.31	0.20	1.73	1.12	2527182
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2527182
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2527182
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2527182
2-Propanone	ppbv	3.42	0.80	8.12	1.90	2527182
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2527182
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2527182
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2527182
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2527182
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2527182
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2527182
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2527182
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2527182
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2527182
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2527182
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2527182
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2527182
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2527182
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2527182
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3624				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA VOC/PORT/JUNE 14,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2527182
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2527182
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2527182
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2527182
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2527182
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2527182
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2527182
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2527182
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2527182
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2527182
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2527182
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2527182
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2527182
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2527182
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2527182
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2527182
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2527182
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2527182
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2527182
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2527182
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2527182
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2527182
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2527182
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2527182
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2527182
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2527182
Cyclohexane	ppbv	0.41	0.20	1.41	0.688	2527182
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2527182
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2527182
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2527182
QC Batch = Quality Control Batch						

Maxxam Job #: B188404
 Report Date: 2011/06/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JW3624				
Sampling Date		2011/06/14				
COC Number		06298				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JUNE				
		14,11 - 7830				

Surrogate Recovery (%)						
Bromochloromethane	%	78		N/A	N/A	2527182
D5-Chlorobenzene	%	76		N/A	N/A	2527182
Difluorobenzene	%	78		N/A	N/A	2527182

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B188404
Report Date: 2011/06/24

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB188404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2527182 VEA	Spiked Blank	Bromochloromethane	2011/06/20		100	%	60 - 140
		D5-Chlorobenzene	2011/06/20		101	%	60 - 140
		Difluorobenzene	2011/06/20		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/20		105	%	70 - 130
		Carbon Disulfide	2011/06/20		93	%	70 - 130
		Propene	2011/06/20		98	%	70 - 130
		Vinyl Acetate	2011/06/20		109	%	70 - 130
		Vinyl Bromide	2011/06/20		123	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/20		99	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/20		123	%	70 - 130
		Chloromethane	2011/06/20		110	%	70 - 130
		Vinyl Chloride	2011/06/20		103	%	70 - 130
		Chloroethane	2011/06/20		118	%	70 - 130
		1,3-Butadiene	2011/06/20		113	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/20		102	%	70 - 130
		Trichlorotrifluoroethane	2011/06/20		105	%	70 - 130
		Ethanol	2011/06/20		116	%	70 - 130
		2-propanol	2011/06/20		98	%	70 - 130
		2-Propanone	2011/06/20		100	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/20		118	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/20		99	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/20		102	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/20		107	%	70 - 130
		Ethyl Acetate	2011/06/20		109	%	70 - 130
		1,1-Dichloroethylene	2011/06/20		100	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/20		101	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/20		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/20		95	%	70 - 130
		Chloroform	2011/06/20		106	%	70 - 130
		Carbon Tetrachloride	2011/06/20		95	%	70 - 130
		1,1-Dichloroethane	2011/06/20		108	%	70 - 130
		1,2-Dichloroethane	2011/06/20		103	%	70 - 130
		Ethylene Dibromide	2011/06/20		99	%	70 - 130
		1,1,1-Trichloroethane	2011/06/20		97	%	70 - 130
		1,1,2-Trichloroethane	2011/06/20		101	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/20		99	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/20		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/20		98	%	70 - 130
		1,2-Dichloropropane	2011/06/20		102	%	70 - 130
		Bromomethane	2011/06/20		117	%	70 - 130
		Bromoform	2011/06/20		122	%	70 - 130
		Bromodichloromethane	2011/06/20		110	%	70 - 130
		Dibromochloromethane	2011/06/20		115	%	70 - 130
		Heptane	2011/06/20		111	%	70 - 130
		Trichloroethylene	2011/06/20		95	%	70 - 130
		Tetrachloroethylene	2011/06/20		101	%	70 - 130
		Benzene	2011/06/20		100	%	70 - 130
		Toluene	2011/06/20		100	%	70 - 130
		Ethylbenzene	2011/06/20		100	%	70 - 130
		p+m-Xylene	2011/06/20		98	%	70 - 130
		o-Xylene	2011/06/20		99	%	70 - 130
		Styrene	2011/06/20		91	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/20		94	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/20		91	%	70 - 130
		4-ethyltoluene	2011/06/20		120	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB188404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2527182 VEA	Spiked Blank	Chlorobenzene	2011/06/20		100	%	70 - 130
		Benzyl chloride	2011/06/20		109	%	70 - 130
		1,3-Dichlorobenzene	2011/06/20		95	%	70 - 130
		1,4-Dichlorobenzene	2011/06/20		99	%	70 - 130
		1,2-Dichlorobenzene	2011/06/20		94	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/20		85	%	70 - 130
		Hexachlorobutadiene	2011/06/20		88	%	70 - 130
		Hexane	2011/06/20		114	%	70 - 130
		Cyclohexane	2011/06/20		103	%	70 - 130
		Tetrahydrofuran	2011/06/20		107	%	70 - 130
		1,4-Dioxane	2011/06/20		99	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/20		80	%	60 - 140
		D5-Chlorobenzene	2011/06/20		79	%	60 - 140
		Difluorobenzene	2011/06/20		81	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/20	<0.20		ppbv	
		Carbon Disulfide	2011/06/20	<0.50		ppbv	
		Propene	2011/06/20	<0.30		ppbv	
		Vinyl Acetate	2011/06/20	<0.20		ppbv	
		Vinyl Bromide	2011/06/20	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/20	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/20	<0.17		ppbv	
		Chloromethane	2011/06/20	<0.30		ppbv	
		Vinyl Chloride	2011/06/20	<0.18		ppbv	
		Chloroethane	2011/06/20	<0.30		ppbv	
		1,3-Butadiene	2011/06/20	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/20	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/20	<0.15		ppbv	
		Ethanol	2011/06/20	<2.3		ppbv	
		2-propanol	2011/06/20	<3.0		ppbv	
		2-Propanone	2011/06/20	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/20	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/20	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/20	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/20	<0.20		ppbv	
		Ethyl Acetate	2011/06/20	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/20	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/20	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/20	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/20	<0.80		ppbv	
		Chloroform	2011/06/20	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/20	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/20	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/20	<0.20		ppbv	
		Ethylene Dibromide	2011/06/20	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/20	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/20	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/20	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/20	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/20	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/20	<0.40		ppbv	
		Bromomethane	2011/06/20	<0.18		ppbv	
		Bromoform	2011/06/20	<0.20		ppbv	
		Bromodichloromethane	2011/06/20	<0.20		ppbv	
		Dibromochloromethane	2011/06/20	<0.20		ppbv	
		Heptane	2011/06/20	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB188404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2527182 VEA	Method Blank	Trichloroethylene	2011/06/20	<0.30		ppbv	
		Tetrachloroethylene	2011/06/20	<0.20		ppbv	
		Benzene	2011/06/20	<0.18		ppbv	
		Toluene	2011/06/20	<0.20		ppbv	
		Ethylbenzene	2011/06/20	<0.20		ppbv	
		p+m-Xylene	2011/06/20	<0.37		ppbv	
		o-Xylene	2011/06/20	<0.20		ppbv	
		Styrene	2011/06/20	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/20	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/20	<0.50		ppbv	
		4-ethyltoluene	2011/06/20	<2.2		ppbv	
		Chlorobenzene	2011/06/20	<0.20		ppbv	
		Benzyl chloride	2011/06/20	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/20	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/20	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/20	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/20	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/20	<3.0		ppbv	
		Hexane	2011/06/20	<0.30		ppbv	
		Cyclohexane	2011/06/20	<0.20		ppbv	
		Tetrahydrofuran	2011/06/20	<0.40		ppbv	
		1,4-Dioxane	2011/06/20	<2.0		ppbv	
		Xylene (Total)	2011/06/20	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7849
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jun 17, 11 @ 8:24 mst
Field Sample ID: LICA VOC/PORT/ Jun 20, 11 Canister Removal Date/Time: Jun 22, 11 @ 8:29 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jun-11	06/20/2011 0:00	06/21/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 06365

Technician Signiture: Ting Xu_____

Your C.O.C. #: 06365

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/07/06

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B192834****Received: 2011/06/24, 09:30**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/06/28	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/06/28	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 10

Maxxam Job #: B192834
 Report Date: 2011/07/06

RESULTS OF ANALYSES OF AIR

Maxxam ID		JY5270	JY5271	
Sampling Date		2011/06/20	2011/06/20	
COC Number		06365	06365	
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	LICA VOC/PORT/ JUN 20,11 - 7849	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	20	2537734
QC Batch = Quality Control Batch				

Maxxam Job #: B192834
 Report Date: 2011/07/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JY5270			JY5271				
Sampling Date		2011/06/20			2011/06/20				
COC Number		06365			06365				
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JUN 20,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.40	<1.87	1.87	<0.40	0.40	<1.87	1.87	2537735
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2537735
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2537735
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2537735
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2537735
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	3.24	0.989	0.66	0.20	3.25	0.989	2537735
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2537735
Chloromethane	ppbv	0.50	1.02	0.620	0.50	0.30	1.03	0.620	2537735
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2537735
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2537735
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2537735
Trichlorofluoromethane (FREON 11)	ppbv	0.29	1.60	1.12	0.28	0.20	1.58	1.12	2537735
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2537735
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2537735
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2537735
2-Propanone	ppbv	3.76	8.94	1.90	5.80	0.80	13.8	1.90	2537735
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2537735
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2537735
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2537735
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2537735
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2537735
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2537735
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2537735
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2537735
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2537735
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2537735
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2537735
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2537735
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2537735
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2537735

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B192834
 Report Date: 2011/07/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JY5270			JY5271				
Sampling Date		2011/06/20			2011/06/20				
COC Number		06365			06365				
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JUN 20,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2537735
1,1,2-Trichloroethane	ppbv	<0.18	<0.982	0.982	<0.18	0.18	<0.982	0.982	2537735
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2537735
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2537735
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2537735
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2537735
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2537735
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2537735
Bromodichloromethane	ppbv	<3.2	<21.4	21.4	<3.2	3.2	<21.4	21.4	2537735
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2537735
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2537735
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2537735
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2537735
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2537735
Toluene	ppbv	0.29	1.11	0.753	<0.20	0.20	<0.753	0.753	2537735
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2537735
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2537735
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2537735
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2537735
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2537735
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2537735
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2537735
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2537735
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2537735
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2537735
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2537735
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2537735
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2537735
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2537735
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2537735
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2537735
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2537735

QC Batch = Quality Control Batch

Maxxam Job #: B192834
 Report Date: 2011/07/06

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JY5270			JY5271				
Sampling Date		2011/06/20			2011/06/20				
COC Number		06365			06365				
	Units	LICA VOC/CLS/ JUN 20,11 - 7832	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JUN 20,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2537735
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2537735
Surrogate Recovery (%)									
Bromochloromethane	%	112	N/A	N/A	109		N/A	N/A	2537735
D5-Chlorobenzene	%	116	N/A	N/A	113		N/A	N/A	2537735
Difluorobenzene	%	115	N/A	N/A	114		N/A	N/A	2537735

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B192834
 Report Date: 2011/07/06

Test Summary

Maxxam ID JY5270 **Collected** 2011/06/20
Sample ID LICA VOC/CLS/ JUN 20,11 - 7832 **Shipped**
Matrix AIR **Received** 2011/06/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2537734	N/A	2011/06/28	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2537735	N/A	2011/06/28	VALERIE RANDALL

Maxxam ID JY5271 **Collected** 2011/06/20
Sample ID LICA VOC/PORT/ JUN 20,11 - 7849 **Shipped**
Matrix AIR **Received** 2011/06/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2537734	N/A	2011/06/28	VALERIE RANDALL
Volatile Organics in Air (TO-15)	GC/MS	2537735	N/A	2011/06/28	VALERIE RANDALL

Maxxam Job #: B192834
Report Date: 2011/07/06

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB192834

QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2537735 VEA	Spiked Blank	Bromochloromethane	2011/06/28		98	%	60 - 140	
		D5-Chlorobenzene	2011/06/28		98	%	60 - 140	
		Difluorobenzene	2011/06/28		100	%	60 - 140	
		2,2,4-Trimethylpentane	2011/06/28		82	%	70 - 130	
		Carbon Disulfide	2011/06/28		83	%	70 - 130	
		Propene	2011/06/28		77	%	70 - 130	
		Vinyl Acetate	2011/06/28		86	%	70 - 130	
		Vinyl Bromide	2011/06/28		91	%	70 - 130	
		Dichlorodifluoromethane (FREON 12)	2011/06/28		90	%	70 - 130	
		1,2-Dichlorotetrafluoroethane	2011/06/28		95	%	70 - 130	
		Chloromethane	2011/06/28		85	%	70 - 130	
		Vinyl Chloride	2011/06/28		86	%	70 - 130	
		Chloroethane	2011/06/28		86	%	70 - 130	
		1,3-Butadiene	2011/06/28		92	%	70 - 130	
		Trichlorofluoromethane (FREON 11)	2011/06/28		86	%	70 - 130	
		Trichlorotrifluoroethane	2011/06/28		86	%	70 - 130	
		Ethanol	2011/06/28		90	%	70 - 130	
		2-propanol	2011/06/28		89	%	70 - 130	
		2-Propanone	2011/06/28		79	%	70 - 130	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/28		86	%	70 - 130	
		Methyl Isobutyl Ketone	2011/06/28		79	%	70 - 130	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/28		83	%	70 - 130	
		Methyl t-butyl ether (MTBE)	2011/06/28		90	%	70 - 130	
		Ethyl Acetate	2011/06/28		86	%	70 - 130	
		1,1-Dichloroethylene	2011/06/28		88	%	70 - 130	
		cis-1,2-Dichloroethylene	2011/06/28		88	%	70 - 130	
		trans-1,2-Dichloroethylene	2011/06/28		89	%	70 - 130	
		Methylene Chloride(Dichloromethane)	2011/06/28		81	%	70 - 130	
		Chloroform	2011/06/28		89	%	70 - 130	
		Carbon Tetrachloride	2011/06/28		89	%	70 - 130	
		1,1-Dichloroethane	2011/06/28		83	%	70 - 130	
		1,2-Dichloroethane	2011/06/28		91	%	70 - 130	
		Ethylene Dibromide	2011/06/28		88	%	70 - 130	
		1,1,1-Trichloroethane	2011/06/28		87	%	70 - 130	
		1,1,2-Trichloroethane	2011/06/28		86	%	70 - 130	
		1,1,2,2-Tetrachloroethane	2011/06/28		80	%	70 - 130	
		cis-1,3-Dichloropropene	2011/06/28		88	%	70 - 130	
		trans-1,3-Dichloropropene	2011/06/28		91	%	70 - 130	
		1,2-Dichloropropane	2011/06/28		84	%	70 - 130	
		Bromomethane	2011/06/28		87	%	70 - 130	
		Bromoform	2011/06/28		98	%	70 - 130	
		Bromodichloromethane	2011/06/28		87	%	70 - 130	
		Dibromochloromethane	2011/06/28		95	%	70 - 130	
		Heptane	2011/06/28		73	%	70 - 130	
		Trichloroethylene	2011/06/28		87	%	70 - 130	
		Tetrachloroethylene	2011/06/28		88	%	70 - 130	
		Benzene	2011/06/28		84	%	70 - 130	
		Toluene	2011/06/28		84	%	70 - 130	
		Ethylbenzene	2011/06/28		86	%	70 - 130	
		p+m-Xylene	2011/06/28		84	%	70 - 130	
		o-Xylene	2011/06/28		83	%	70 - 130	
		Styrene	2011/06/28		93	%	70 - 130	
		1,3,5-Trimethylbenzene	2011/06/28		84	%	70 - 130	
		1,2,4-Trimethylbenzene	2011/06/28		83	%	70 - 130	
		4-ethyltoluene	2011/06/28		85	%	70 - 130	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB192834

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2537735 VEA	Spiked Blank	Chlorobenzene	2011/06/28		88	%	70 - 130	
		Benzyl chloride	2011/06/28		97	%	70 - 130	
1,3-Dichlorobenzene		2011/06/28		89	%	70 - 130		
1,4-Dichlorobenzene		2011/06/28		90	%	70 - 130		
1,2-Dichlorobenzene		2011/06/28		84	%	70 - 130		
1,2,4-Trichlorobenzene		2011/06/28		84	%	70 - 130		
Hexachlorobutadiene		2011/06/28		73	%	70 - 130		
Hexane		2011/06/28		75	%	70 - 130		
Cyclohexane		2011/06/28		84	%	70 - 130		
Tetrahydrofuran		2011/06/28		89	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/06/28		90	%	70 - 130	
		Bromochloromethane	2011/06/28		113	%	60 - 140	
		D5-Chlorobenzene	2011/06/28		117	%	60 - 140	
		Difluorobenzene	2011/06/28		115	%	60 - 140	
		2,2,4-Trimethylpentane	2011/06/28	<0.40			ppbv	
		Carbon Disulfide	2011/06/28	<0.50			ppbv	
		Propene	2011/06/28	<0.30			ppbv	
		Vinyl Acetate	2011/06/28	<0.20			ppbv	
		Vinyl Bromide	2011/06/28	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/28	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/28	<0.17			ppbv	
		Chloromethane	2011/06/28	<0.30			ppbv	
		Vinyl Chloride	2011/06/28	<0.18			ppbv	
		Chloroethane	2011/06/28	<0.30			ppbv	
		1,3-Butadiene	2011/06/28	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/28	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/06/28	<0.15			ppbv	
		Ethanol	2011/06/28	<2.3			ppbv	
		2-propanol	2011/06/28	<3.0			ppbv	
		2-Propanone	2011/06/28	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/28	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/06/28	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/28	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/28	<0.20			ppbv	
		Ethyl Acetate	2011/06/28	<2.2			ppbv	
		1,1-Dichloroethylene	2011/06/28	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/06/28	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/06/28	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/28	<0.80			ppbv	
		Chloroform	2011/06/28	<0.15			ppbv	
		Carbon Tetrachloride	2011/06/28	<0.30			ppbv	
		1,1-Dichloroethane	2011/06/28	<0.20			ppbv	
		1,2-Dichloroethane	2011/06/28	<0.20			ppbv	
		Ethylene Dibromide	2011/06/28	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/06/28	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/06/28	<0.18			ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/28	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/06/28	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/06/28	<0.17			ppbv			
1,2-Dichloropropane	2011/06/28	<0.40			ppbv			
Bromomethane	2011/06/28	<0.18			ppbv			
Bromoform	2011/06/28	<0.20			ppbv			
Bromodichloromethane	2011/06/28	<3.2			ppbv			
Dibromochloromethane	2011/06/28	<0.20			ppbv			
Heptane	2011/06/28	<0.30			ppbv			

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB192834

QA/QC Batch				Date Analyzed				
Num Init	QC Type	Parameter		yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537735	VEA	Method Blank	Trichloroethylene	2011/06/28	<0.30		ppbv	
			Tetrachloroethylene	2011/06/28	<0.20		ppbv	
			Benzene	2011/06/28	<0.18		ppbv	
			Toluene	2011/06/28	<0.20		ppbv	
			Ethylbenzene	2011/06/28	<0.20		ppbv	
			p+m-Xylene	2011/06/28	<0.37		ppbv	
			o-Xylene	2011/06/28	<0.20		ppbv	
			Styrene	2011/06/28	<0.20		ppbv	
			1,3,5-Trimethylbenzene	2011/06/28	<0.50		ppbv	
			1,2,4-Trimethylbenzene	2011/06/28	<0.50		ppbv	
			4-ethyltoluene	2011/06/28	<2.2		ppbv	
			Chlorobenzene	2011/06/28	<0.20		ppbv	
			Benzyl chloride	2011/06/28	<1.0		ppbv	
			1,3-Dichlorobenzene	2011/06/28	<0.40		ppbv	
			1,4-Dichlorobenzene	2011/06/28	<0.40		ppbv	
			1,2-Dichlorobenzene	2011/06/28	<0.40		ppbv	
			1,2,4-Trichlorobenzene	2011/06/28	<2.0		ppbv	
			Hexachlorobutadiene	2011/06/28	<3.0		ppbv	
			Hexane	2011/06/28	<0.30		ppbv	
			Cyclohexane	2011/06/28	<0.20		ppbv	
			Tetrahydrofuran	2011/06/28	<0.40		ppbv	
			1,4-Dioxane	2011/06/28	<2.0		ppbv	
			Xylene (Total)	2011/06/28	<0.60		ppbv	

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7820
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jun 23, 11 @ 9:20 mst
Field Sample ID: LICA VOC/PORT/ Jun 26, 11 Canister Removal Date/Time: Jun 27, 11 @ 9:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jun-11	06/26/2011 0:00	06/27/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

Canister valve open prior to sampling?: YES / NO
Timer set to 0.00 minutes prior to sampling? YES / NO
Canister valve closed prior to disconnection?: YES / NO

Comments: System leak check prior to sampling. COC # 05027

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05027

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/07/12

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B197505****Received: 2011/06/29, 10:02**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/07	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/07	BRL SOP-00304	EPA TO-15

(1) Air sampling canisters have been cleaned in accordance with U.S. EPA Method TO14A. At the end of the cleaning, evacuation, and pressurization cycles, one canister was selected and was pressurized with Zero Air. This canister was then analyzed via TO14A on a GC/MS. The canister must have been found to contain <0.2 ppbv concentration of all target analytes in order for the batch to have been considered clean. Each canister also underwent a leak check prior to shipment.

Please Note: SUMMA® canister samples will be retained by Maxxam for a period of 5 calendar days from the date of this report, after which time they will be cleaned for reuse. If you require a longer sample storage period, please contact your service representative.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 11

Maxxam Job #: B197505
 Report Date: 2011/07/12

RESULTS OF ANALYSES OF AIR

Maxxam ID		KA6926	KA6927	
Sampling Date		2011/06/26	2011/06/26	
COC Number		05027	05027	
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	LICA VOC/PORT/JUN 26,11 - 7820	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	20	2544739
QC Batch = Quality Control Batch				

Maxxam Job #: B197505
 Report Date: 2011/07/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KA6926			KA6927				
Sampling Date		2011/06/26			2011/06/26				
COC Number		05027			05027				
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	ug/m3	DL (ug/m3)	LICA VOC/PORT/JUN 26,11 - 7820	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	<0.20	<0.934	0.934	<0.20	0.20	<0.934	0.934	2544751
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2544751
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2544751
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2544751
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2544751
Dichlorodifluoromethane (FREON 12)	ppbv	0.78	3.86	0.989	0.79	0.20	3.92	0.989	2544751
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2544751
Chloromethane	ppbv	0.68	1.40	0.620	0.70	0.30	1.45	0.620	2544751
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2544751
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2544751
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2544751
Trichlorofluoromethane (FREON 11)	ppbv	0.35	1.99	1.12	0.36	0.20	2.04	1.12	2544751
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2544751
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2544751
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2544751
2-Propanone	ppbv	3.85	9.14	1.90	3.80	0.80	9.02	1.90	2544751
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2544751
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2544751
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2544751
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2544751
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2544751
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2544751
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2544751
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2544751
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2544751
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2544751
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2544751
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2544751
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2544751
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2544751

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B197505
 Report Date: 2011/07/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KA6926			KA6927				
Sampling Date		2011/06/26			2011/06/26				
COC Number		05027			05027				
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	ug/m3	DL (ug/m3)	LICA VOC/PORT/JUN 26,11 - 7820	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2544751
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2544751
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2544751
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2544751
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2544751
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2544751
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2544751
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2544751
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2544751
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2544751
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2544751
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2544751
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2544751
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2544751
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2544751
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2544751
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2544751
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2544751
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2544751
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2544751
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2544751
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2544751
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2544751
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2544751
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2544751
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2544751
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2544751
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2544751
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2544751
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2544751
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.32	0.20	1.11	0.688	2544751
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2544751
QC Batch = Quality Control Batch									

Maxxam Job #: B197505
 Report Date: 2011/07/12

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KA6926			KA6927				
Sampling Date		2011/06/26			2011/06/26				
COC Number		05027			05027				
	Units	LICA VOC/CLS/ JUN 26,11 - 7852	ug/m3	DL (ug/m3)	LICA VOC/PORT/JUN 26,11 - 7820	RDL	ug/m3	DL (ug/m3)	QC Batch

1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2544751
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2544751
Surrogate Recovery (%)									
Bromochloromethane	%	87	N/A	N/A	86		N/A	N/A	2544751
D5-Chlorobenzene	%	94	N/A	N/A	93		N/A	N/A	2544751
Difluorobenzene	%	90	N/A	N/A	90		N/A	N/A	2544751

N/A = Not Applicable
 QC Batch = Quality Control Batch

Maxxam Job #: B197505
Report Date: 2011/07/12

Test Summary

Maxxam ID KA6926 **Collected** 2011/06/26
Sample ID LICA VOC/CLS/ JUN 26,11 - 7852 **Shipped**
Matrix AIR **Received** 2011/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2544739	N/A	2011/07/07	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2544751	N/A	2011/07/07	YAO LIANG SUN

Maxxam ID KA6927 **Collected** 2011/06/26
Sample ID LICA VOC/PORT/JUN 26,11 - 7820 **Shipped**
Matrix AIR **Received** 2011/06/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2544739	N/A	2011/07/07	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2544751	N/A	2011/07/07	YAO LIANG SUN

Maxxam Job #: B197505
Report Date: 2011/07/12

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	Spiked Blank	Bromochloromethane	2011/07/07		98	%	60 - 140
		D5-Chlorobenzene	2011/07/07		97	%	60 - 140
		Difluorobenzene	2011/07/07		99	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/07		99	%	70 - 130
		Carbon Disulfide	2011/07/07		93	%	70 - 130
		Propene	2011/07/07		90	%	70 - 130
		Vinyl Acetate	2011/07/07		96	%	70 - 130
		Vinyl Bromide	2011/07/07		103	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/07		99	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/07		115	%	70 - 130
		Chloromethane	2011/07/07		97	%	70 - 130
		Vinyl Chloride	2011/07/07		99	%	70 - 130
		Chloroethane	2011/07/07		99	%	70 - 130
		1,3-Butadiene	2011/07/07		82	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/07		99	%	70 - 130
		Trichlorotrifluoroethane	2011/07/07		99	%	70 - 130
		Ethanol	2011/07/07		91	%	70 - 130
		2-propanol	2011/07/07		93	%	70 - 130
		2-Propanone	2011/07/07		89	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/07		88	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/07		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/07		91	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/07		98	%	70 - 130
		Ethyl Acetate	2011/07/07		95	%	70 - 130
		1,1-Dichloroethylene	2011/07/07		97	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/07		96	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/07		99	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/07		89	%	70 - 130
		Chloroform	2011/07/07		99	%	70 - 130
		Carbon Tetrachloride	2011/07/07		103	%	70 - 130
		1,1-Dichloroethane	2011/07/07		100	%	70 - 130
		1,2-Dichloroethane	2011/07/07		98	%	70 - 130
		Ethylene Dibromide	2011/07/07		96	%	70 - 130
		1,1,1-Trichloroethane	2011/07/07		99	%	70 - 130
		1,1,2-Trichloroethane	2011/07/07		98	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/07		90	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/07		100	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/07		96	%	70 - 130
		1,2-Dichloropropane	2011/07/07		97	%	70 - 130
		Bromomethane	2011/07/07		102	%	70 - 130
		Bromoform	2011/07/07		112	%	70 - 130
		Bromodichloromethane	2011/07/07		102	%	70 - 130
		Dibromochloromethane	2011/07/07		108	%	70 - 130
		Heptane	2011/07/07		97	%	70 - 130
		Trichloroethylene	2011/07/07		100	%	70 - 130
		Tetrachloroethylene	2011/07/07		100	%	70 - 130
		Benzene	2011/07/07		98	%	70 - 130
		Toluene	2011/07/07		97	%	70 - 130
		Ethylbenzene	2011/07/07		99	%	70 - 130
		p+m-Xylene	2011/07/07		97	%	70 - 130
		o-Xylene	2011/07/07		98	%	70 - 130
		Styrene	2011/07/07		95	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/07		86	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/07		82	%	70 - 130
		4-ethyltoluene	2011/07/07		92	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	Spiked Blank	Chlorobenzene	2011/07/07		102	%	70 - 130
		Benzyl chloride	2011/07/07		84	%	70 - 130
		1,3-Dichlorobenzene	2011/07/07		86	%	70 - 130
		1,4-Dichlorobenzene	2011/07/07		87	%	70 - 130
		1,2-Dichlorobenzene	2011/07/07		82	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/07		114	%	70 - 130
		Hexachlorobutadiene	2011/07/07		109	%	70 - 130
		Hexane	2011/07/07		98	%	70 - 130
		Cyclohexane	2011/07/07		97	%	70 - 130
		Tetrahydrofuran	2011/07/07		95	%	70 - 130
		1,4-Dioxane	2011/07/07		96	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/07		92	%	60 - 140
		D5-Chlorobenzene	2011/07/07		94	%	60 - 140
		Difluorobenzene	2011/07/07		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/07	<0.20		ppbv	
		Carbon Disulfide	2011/07/07	<0.50		ppbv	
		Propene	2011/07/07	<0.30		ppbv	
		Vinyl Acetate	2011/07/07	<0.20		ppbv	
		Vinyl Bromide	2011/07/07	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/07	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/07	<0.17		ppbv	
		Chloromethane	2011/07/07	<0.30		ppbv	
		Vinyl Chloride	2011/07/07	<0.18		ppbv	
		Chloroethane	2011/07/07	<0.30		ppbv	
		1,3-Butadiene	2011/07/07	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/07	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/07	<0.15		ppbv	
		Ethanol	2011/07/07	<2.3		ppbv	
		2-propanol	2011/07/07	<3.0		ppbv	
		2-Propanone	2011/07/07	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/07	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/07	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/07	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/07	<0.20		ppbv	
		Ethyl Acetate	2011/07/07	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/07	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/07	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/07	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/07	<0.80		ppbv	
		Chloroform	2011/07/07	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/07	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/07	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/07	<0.20		ppbv	
		Ethylene Dibromide	2011/07/07	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/07	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/07	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/07	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/07	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/07	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/07	<0.40		ppbv	
		Bromomethane	2011/07/07	<0.18		ppbv	
		Bromoform	2011/07/07	<0.20		ppbv	
		Bromodichloromethane	2011/07/07	<0.20		ppbv	
		Dibromochloromethane	2011/07/07	<0.20		ppbv	
		Heptane	2011/07/07	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	Method Blank	Trichloroethylene	2011/07/07	<0.30		ppbv	
		Tetrachloroethylene	2011/07/07	<0.20		ppbv	
		Benzene	2011/07/07	<0.18		ppbv	
		Toluene	2011/07/07	<0.20		ppbv	
		Ethylbenzene	2011/07/07	<0.20		ppbv	
		p+m-Xylene	2011/07/07	<0.37		ppbv	
		o-Xylene	2011/07/07	<0.20		ppbv	
		Styrene	2011/07/07	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/07	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/07	<0.50		ppbv	
		4-ethyltoluene	2011/07/07	<2.2		ppbv	
		Chlorobenzene	2011/07/07	<0.20		ppbv	
		Benzyl chloride	2011/07/07	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/07	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/07	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/07	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/07	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/07	<3.0		ppbv	
		Hexane	2011/07/07	<0.30		ppbv	
		Cyclohexane	2011/07/07	<0.20		ppbv	
		Tetrahydrofuran	2011/07/07	<0.40		ppbv	
		1,4-Dioxane	2011/07/07	<2.0		ppbv	
		Xylene (Total)	2011/07/07	<0.60		ppbv	
	RPD - Sample/Sample Dup	Carbon Disulfide	2011/07/07	0.6		%	25
		Dichlorodifluoromethane (FREON 12)	2011/07/07	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/07/07	NC		%	25
		Chloromethane	2011/07/07	NC		%	25
		Vinyl Chloride	2011/07/07	NC		%	25
		Chloroethane	2011/07/07	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/07/07	NC		%	25
		Trichlorotrifluoroethane	2011/07/07	NC		%	25
		Ethanol	2011/07/07	NC		%	25
		2-propanol	2011/07/07	NC		%	25
		2-Propanone	2011/07/07	1.1		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/07/07	0.6		%	25
		Methyl Isobutyl Ketone	2011/07/07	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/07/07	NC		%	25
		Ethyl Acetate	2011/07/07	NC		%	25
		1,1-Dichloroethylene	2011/07/07	NC		%	25
		cis-1,2-Dichloroethylene	2011/07/07	NC		%	25
		trans-1,2-Dichloroethylene	2011/07/07	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/07/07	NC		%	25
		Chloroform	2011/07/07	0.5		%	25
		Carbon Tetrachloride	2011/07/07	NC		%	25
		1,1-Dichloroethane	2011/07/07	NC		%	25
		1,2-Dichloroethane	2011/07/07	NC		%	25
		Ethylene Dibromide	2011/07/07	NC		%	25
		1,1,1-Trichloroethane	2011/07/07	NC		%	25
		1,1,2-Trichloroethane	2011/07/07	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/07/07	NC		%	25
		cis-1,3-Dichloropropene	2011/07/07	NC		%	25
		trans-1,3-Dichloropropene	2011/07/07	NC		%	25
		1,2-Dichloropropane	2011/07/07	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB197505

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2544751 LSY	RPD - Sample/Sample Dup	Bromomethane	2011/07/07	NC		%	25
		Bromoform	2011/07/07	NC		%	25
		Heptane	2011/07/07	NC		%	25
		Trichloroethylene	2011/07/07	NC		%	25
		Tetrachloroethylene	2011/07/07	1.7		%	25
		Benzene	2011/07/07	NC		%	25
		Toluene	2011/07/07	1.6		%	25
		Ethylbenzene	2011/07/07	4.0		%	25
		p+m-Xylene	2011/07/07	3.4		%	25
		o-Xylene	2011/07/07	2.5		%	25
		Styrene	2011/07/07	NC		%	25
		1,3,5-Trimethylbenzene	2011/07/07	1.4		%	25
		1,2,4-Trimethylbenzene	2011/07/07	1.3		%	25
		Chlorobenzene	2011/07/07	NC		%	25
		1,4-Dichlorobenzene	2011/07/07	2.0		%	25
		1,2-Dichlorobenzene	2011/07/07	NC		%	25
		1,2,4-Trichlorobenzene	2011/07/07	NC		%	25
		Hexachlorobutadiene	2011/07/07	NC		%	25
		Hexane	2011/07/07	NC		%	25
		Cyclohexane	2011/07/07	NC		%	25
		Tetrahydrofuran	2011/07/07	0.6		%	25
		1,4-Dioxane	2011/07/07	NC		%	25
		Xylene (Total)	2011/07/07	3.2		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: 13-16-62-5 W4M
Station ID: Lica 33 (Portable)
Field Sample ID: LICA PUF/PORT/Jun 02, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jun 01, 2011 @ 8:50 mst
Removal Date/Time: Jun 03, 2011 @ 10:48 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
02-Jun-11	06/02/2011 0:00	06/03/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
27-May-11	06-Jun-11	09-Jun-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
702	229	16.2	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 07626

GB160455 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jun 02, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07626

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B182355**

Received: 2011/06/08, 09:05

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/09	2011/06/21	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

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Maxxam Job #: B182355
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JT5615	JT5616		
Sampling Date		2011/06/02	2011/06/02		
COC Number		07626	07626		
	Units	LICA PUFF+QFF/CLS/JUN 02,11	LICA PUFF+QFF/PORT/JUN 02,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2514904
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2514904
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2514904
2-Methylantracene	ug	<0.10	<0.10	0.10	2514904
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2514904
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2514904
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2514904
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2514904
Acenaphthene	ug	<0.050	<0.050	0.050	2514904
Acenaphthylene	ug	<0.050	<0.050	0.050	2514904
Anthracene	ug	<0.050	<0.050	0.050	2514904
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2514904
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2514904
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2514904
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2514904
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2514904
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2514904
Benzo(g,h,i)perylene	ug	0.068	<0.050	0.050	2514904
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2514904
Biphenyl	ug	<0.10	<0.10	0.10	2514904
Chrysene	ug	<0.050	<0.050	0.050	2514904
Coronene	ug	<0.10	<0.10	0.10	2514904
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2514904
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2514904
Fluoranthene	ug	0.074	<0.050	0.050	2514904
Fluorene	ug	0.106	<0.050	0.050	2514904
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2514904
m-Terphenyl	ug	<0.10	<0.10	0.10	2514904
Naphthalene	ug	0.092	0.100	0.072	2514904
o-Terphenyl	ug	<0.10	<0.10	0.10	2514904
Perylene	ug	<0.10	<0.10	0.10	2514904

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B182355
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JT5615	JT5616		
Sampling Date		2011/06/02	2011/06/02		
COC Number		07626	07626		
	Units	LICA PUFF+QFF/CLS/JUN 02,11	LICA PUFF+QFF/PORT/JUN 02,11	RDL	QC Batch

Phenanthrene	ug	0.464	0.118	0.050	2514904
p-Terphenyl	ug	<0.10	<0.10	0.10	2514904
Pyrene	ug	0.072	<0.050	0.050	2514904
Quinoline	ug	<0.40	<0.40	0.40	2514904
Tetralin	ug	<0.10	<0.10	0.10	2514904
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	76	82		2514904
D10-Fluoranthene	%	90	90		2514904
D10-Fluorene (FS)	%	6.2 (1)	6.8 (1)		2514904
D10-Phenanthrene	%	86	86		2514904
D12-Benzo(a)anthracene	%	94	94		2514904
D12-Benzo(a)pyrene	%	92	92		2514904
D12-Benzo(b)fluoranthene	%	88	90		2514904
D12-Benzo(ghi)perylene	%	96	92		2514904
D12-Benzo(k)fluoranthene	%	86	88		2514904
D12-Chrysene	%	80	82		2514904
D12-Indeno(1,2,3-cd)pyrene	%	100	94		2514904
D12-Perylene	%	102	102		2514904
D14-Dibenzo(a,h)anthracene	%	100	96		2514904
D14-Terphenyl (FS)	%	84	78		2514904
D8-Acenaphthylene	%	84	90		2514904
D8-Naphthalene	%	72	80		2514904

QC Batch = Quality Control Batch
 (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B182355
 Report Date: 2011/06/24

Test Summary

Maxxam ID	JT5615	Collected	2011/06/02
Sample ID	LICA PUFF+QFF/CLS/JUN 02,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2514904	2011/06/09	2011/06/21	JIE WU

Maxxam ID	JT5616	Collected	2011/06/02
Sample ID	LICA PUFF+QFF/PORT/JUN 02,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/08

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2514904	2011/06/09	2011/06/21	JIE WU

Maxxam Job #: B182355
Report Date: 2011/06/24

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

9,10-Dimethylanthracene, 7,12-dimethylbenzo(a)anthracene and anthanthrene are above 25% RSD in continuing calibration.

Anthanthrene is above 25% RSD in continuing calibration.

Pyrene is statistically out of control at 88% recovery in the spike and at 85% recovery in the spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug

. Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JT5615-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JT5616-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report

Maxxam Job Number: GB182355

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2514904 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/21		76	%	50 - 150	
		D10-Fluoranthene	2011/06/21		94	%	50 - 150	
		D10-Phenanthrene	2011/06/21		84	%	50 - 150	
		D12-Benzo(a)anthracene	2011/06/21		94	%	50 - 150	
		D12-Benzo(a)pyrene	2011/06/21		102	%	50 - 150	
		D12-Benzo(b)fluoranthene	2011/06/21		90	%	50 - 150	
		D12-Benzo(ghi)perylene	2011/06/21		94	%	50 - 150	
		D12-Benzo(k)fluoranthene	2011/06/21		88	%	50 - 150	
		D12-Chrysene	2011/06/21		84	%	50 - 150	
		D12-Indeno(1,2,3-cd)pyrene	2011/06/21		100	%	50 - 150	
		D12-Perylene	2011/06/21		108	%	50 - 150	
		D14-Dibenzo(a,h)anthracene	2011/06/21		100	%	50 - 150	
		D8-Acenaphthylene	2011/06/21		82	%	50 - 150	
		D8-Naphthalene	2011/06/21		74	%	50 - 150	
	RPD	Acenaphthene	2011/06/21	0.3		%	60 - 130	
	Spiked Blank	Acenaphthene	2011/06/21				50	
	RPD	Acenaphthylene	2011/06/21		77	%	60 - 130	
	RPD	Acenaphthylene	2011/06/21	1.3		%	50	
	Spiked Blank	Anthracene	2011/06/21		74	%	60 - 130	
	RPD	Anthracene	2011/06/21	0		%	50	
	Spiked Blank	Benzo(a)anthracene	2011/06/21		83	%	60 - 130	
	RPD	Benzo(a)anthracene	2011/06/21	0.9		%	50	
	Spiked Blank	Benzo(a)pyrene	2011/06/21		80	%	60 - 130	
	RPD	Benzo(a)pyrene	2011/06/21	2.8		%	50	
	Spiked Blank	Benzo(b)fluoranthene	2011/06/21		82	%	60 - 130	
	RPD	Benzo(b)fluoranthene	2011/06/21	4.0		%	50	
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/21		84	%	60 - 130	
	RPD	Benzo(g,h,i)perylene	2011/06/21	1.2		%	50	
	Spiked Blank	Benzo(k)fluoranthene	2011/06/21		84	%	60 - 130	
	RPD	Benzo(k)fluoranthene	2011/06/21	0.9		%	50	
	Spiked Blank	Chrysene	2011/06/21		79	%	60 - 130	
	RPD	Chrysene	2011/06/21	2.3		%	50	
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/21		86	%	60 - 130	
	RPD	Dibenz(a,h)anthracene	2011/06/21	1.8		%	50	
	Spiked Blank	Fluoranthene	2011/06/21		88	%	60 - 130	
	RPD	Fluoranthene	2011/06/21	2.3		%	50	
	Spiked Blank	Fluorene	2011/06/21		74	%	60 - 130	
	RPD	Fluorene	2011/06/21	0.7		%	50	
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/21		86	%	60 - 130	
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/21	2.9		%	50	
Spiked Blank	Naphthalene	2011/06/21		73	%	60 - 130		
RPD	Naphthalene	2011/06/21	2.4		%	50		
Spiked Blank	Phenanthrene	2011/06/21		77	%	60 - 130		
RPD	Phenanthrene	2011/06/21	1		%	50		
Spiked Blank	Pyrene	2011/06/21		88	%	60 - 130		
RPD	Pyrene	2011/06/21	3.5		%	50		
Method Blank	D10-2-Methylnaphthalene	2011/06/21				86	%	50 - 150
	D10-Fluoranthene	2011/06/21				80	%	50 - 150
	D10-Phenanthrene	2011/06/21				78	%	50 - 150
	D12-Benzo(a)anthracene	2011/06/21				88	%	50 - 150
	D12-Benzo(a)pyrene	2011/06/21				92	%	50 - 150
	D12-Benzo(b)fluoranthene	2011/06/21				88	%	50 - 150
	D12-Benzo(ghi)perylene	2011/06/21				90	%	50 - 150
	D12-Benzo(k)fluoranthene	2011/06/21				88	%	50 - 150
	D12-Chrysene	2011/06/21				84	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB182355

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2514904 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/21		92	%	50 - 150
		D12-Perylene	2011/06/21		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/21		90	%	50 - 150
		D8-Acenaphthylene	2011/06/21		86	%	50 - 150
		D8-Naphthalene	2011/06/21		86	%	50 - 150
		1-Methylnaphthalene	2011/06/21	<0.10		ug	
		1-Methylphenanthrene	2011/06/21	<0.10		ug	
		2-Chloronaphthalene	2011/06/21	<0.10		ug	
		2-Methylanthracene	2011/06/21	<0.10		ug	
		2-Methylnaphthalene	2011/06/21	<0.10		ug	
		3-Methylcholanthrene	2011/06/21	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/21	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/21	<0.40		ug	
		Acenaphthene	2011/06/21	<0.050		ug	
		Acenaphthylene	2011/06/21	<0.050		ug	
		Anthracene	2011/06/21	<0.050		ug	
		Benzo(a)anthracene	2011/06/21	<0.050		ug	
		Benzo(a)fluorene	2011/06/21	<0.10		ug	
		Benzo(a)pyrene	2011/06/21	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/21	<0.050		ug	
		Benzo(b)fluorene	2011/06/21	<0.10		ug	
		Benzo(e)pyrene	2011/06/21	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/21	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/21	<0.050		ug	
		Biphenyl	2011/06/21	<0.10		ug	
		Chrysene	2011/06/21	<0.050		ug	
		Coronene	2011/06/21	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/21	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/21	<0.20		ug	
		Fluoranthene	2011/06/21	<0.050		ug	
		Fluorene	2011/06/21	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/21	<0.050		ug	
		m-Terphenyl	2011/06/21	<0.10		ug	
		Naphthalene	2011/06/21	<0.072		ug	
		o-Terphenyl	2011/06/21	<0.10		ug	
		Perylene	2011/06/21	<0.10		ug	
		Phenanthrene	2011/06/21	<0.050		ug	
		p-Terphenyl	2011/06/21	<0.10		ug	
		Pyrene	2011/06/21	<0.050		ug	
		Quinoline	2011/06/21	<0.40		ug	
		Tetralin	2011/06/21	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Jun 08, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jun 06, 2011 @ 13:45 mst
 Removal Date/Time: Jun 09, 2011 @ 8:50 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jun-11	06/08/2011 0:00	06/09/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
02-Jun-11	09-Jun-11	16-Jun-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
715	229	11.4	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 06233

GB176335 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jun 02, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06233

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B184928****Received: 2011/06/11, 10:00**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/15	2011/06/22	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

Page 1 of 7

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JU7523	JU7524		
Sampling Date		2011/06/08	2011/06/08		
COC Number		06233	06233		
	Units	LICA PUFF+QFF/CLS/ JUN 08,11	LICA PUFF+QFF/PORT/ JUN 08,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	0.16	0.10	2520242
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2520242
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2520242
2-Methylantracene	ug	<0.10	<0.10	0.10	2520242
2-Methylnaphthalene	ug	<0.10	0.38	0.10	2520242
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2520242
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2520242
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2520242
Acenaphthene	ug	<0.050	<0.050	0.050	2520242
Acenaphthylene	ug	<0.050	<0.050	0.050	2520242
Anthracene	ug	<0.050	<0.050	0.050	2520242
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2520242
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2520242
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2520242
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2520242
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2520242
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2520242
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2520242
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2520242
Biphenyl	ug	<0.10	<0.10	0.10	2520242
Chrysene	ug	<0.050	<0.050	0.050	2520242
Coronene	ug	<0.10	<0.10	0.10	2520242
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2520242
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2520242
Fluoranthene	ug	<0.050	0.066	0.050	2520242
Fluorene	ug	0.074	0.082	0.050	2520242
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2520242
m-Terphenyl	ug	<0.10	<0.10	0.10	2520242
Naphthalene	ug	0.082	0.158	0.072	2520242
o-Terphenyl	ug	<0.10	<0.10	0.10	2520242
Perylene	ug	<0.10	<0.10	0.10	2520242

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JU7523	JU7524		
Sampling Date		2011/06/08	2011/06/08		
COC Number		06233	06233		
	Units	LICA PUFF+QFF/CLS/ JUN 08,11	LICA PUFF+QFF/PORT/ JUN 08,11	RDL	QC Batch

Phenanthrene	ug	0.316	0.176	0.050	2520242
p-Terphenyl	ug	<0.10	<0.10	0.10	2520242
Pyrene	ug	<0.050	<0.050	0.050	2520242
Quinoline	ug	<0.40	<0.40	0.40	2520242
Tetralin	ug	<0.10	<0.10	0.10	2520242
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	60	70		2520242
D10-Fluoranthene	%	98	98		2520242
D10-Fluorene (FS)	%	8.4 (1)	8.8 (1)		2520242
D10-Phenanthrene	%	90	90		2520242
D12-Benzo(a)anthracene	%	104	104		2520242
D12-Benzo(a)pyrene	%	98	98		2520242
D12-Benzo(b)fluoranthene	%	96	98		2520242
D12-Benzo(ghi)perylene	%	98	100		2520242
D12-Benzo(k)fluoranthene	%	92	94		2520242
D12-Chrysene	%	88	90		2520242
D12-Indeno(1,2,3-cd)pyrene	%	102	104		2520242
D12-Perylene	%	104	104		2520242
D14-Dibenzo(a,h)anthracene	%	102	106		2520242
D14-Terphenyl (FS)	%	88	89		2520242
D8-Acenaphthylene	%	72	78		2520242
D8-Naphthalene	%	56	66		2520242

QC Batch = Quality Control Batch
 (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B184928
 Report Date: 2011/06/24

Test Summary

Maxxam ID	JU7523	Collected	2011/06/08
Sample ID	LICA PUFF+QFF/CLS/ JUN 08,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2520242	2011/06/15	2011/06/22	JIE WU

Maxxam ID	JU7524	Collected	2011/06/08
Sample ID	LICA PUFF+QFF/PORT/ JUN 08,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/11

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2520242	2011/06/15	2011/06/22	JIE WU

Maxxam Job #: B184928
Report Date: 2011/06/24

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Anthanthrene is above 25% RSD in continuing calibration.

9,10-Dimethylantracene and anthanthrene are above 25% RSD in continuing calibration.

Low recovery of naphthalene in spike and spike:dup. Suspect low on hotplate due to acceptable recovery in mspike.

Low recovery of acenaphthene in spike.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JU7523-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JU7524-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB184928

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2520242 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/22		62	%	50 - 150
		D10-Fluoranthene	2011/06/22		94	%	50 - 150
		D10-Phenanthrene	2011/06/22		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		102	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		104	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		98	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		100	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		96	%	50 - 150
		D12-Chrysene	2011/06/22		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/22		104	%	50 - 150
		D12-Perylene	2011/06/22		112	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		104	%	50 - 150
		D8-Acenaphthylene	2011/06/22		68	%	50 - 150
		D8-Naphthalene	2011/06/22		62	%	50 - 150
		Acenaphthene	2011/06/22		60 (1)	%	60 - 130
	RPD	Acenaphthene	2011/06/22	4.5		%	50
	Spiked Blank	Acenaphthylene	2011/06/22		62	%	60 - 130
	RPD	Acenaphthylene	2011/06/22	4.4		%	50
	Spiked Blank	Anthracene	2011/06/22		68	%	60 - 130
	RPD	Anthracene	2011/06/22	4.1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/22		86	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/22	4.8		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/22		80	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/22	3.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/22		87	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/22	7.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/22		84	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/22	3.9		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/22		87	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/22	3.1		%	50
	Spiked Blank	Chrysene	2011/06/22		83	%	60 - 130
	RPD	Chrysene	2011/06/22	1.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/22		85	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/22	4.2		%	50
	Spiked Blank	Fluoranthene	2011/06/22		85	%	60 - 130
	RPD	Fluoranthene	2011/06/22	4.2		%	50
	Spiked Blank	Fluorene	2011/06/22		63	%	60 - 130
	RPD	Fluorene	2011/06/22	2.8		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/22		86	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/22	4.1		%	50
	Spiked Blank	Naphthalene	2011/06/22		58 (1)	%	60 - 130
	RPD	Naphthalene	2011/06/22	3.0		%	50
	Spiked Blank	Phenanthrene	2011/06/22		72	%	60 - 130
	RPD	Phenanthrene	2011/06/22	3.2		%	50
	Spiked Blank	Pyrene	2011/06/22		85	%	60 - 130
	RPD	Pyrene	2011/06/22	4.8		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/06/22		74	%	50 - 150
		D10-Fluoranthene	2011/06/22		90	%	50 - 150
		D10-Phenanthrene	2011/06/22		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		94	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		92	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		92	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		88	%	50 - 150
		D12-Chrysene	2011/06/22		86	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB184928

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2520242 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/22		96	%	50 - 150
		D12-Perylene	2011/06/22		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		94	%	50 - 150
		D8-Acenaphthylene	2011/06/22		78	%	50 - 150
		D8-Naphthalene	2011/06/22		74	%	50 - 150
		1-Methylnaphthalene	2011/06/22	<0.10		ug	
		1-Methylphenanthrene	2011/06/22	<0.10		ug	
		2-Chloronaphthalene	2011/06/22	<0.10		ug	
		2-Methylantracene	2011/06/22	<0.10		ug	
		2-Methylnaphthalene	2011/06/22	<0.10		ug	
		3-Methylcholanthrene	2011/06/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/22	<0.10		ug	
		9,10-Dimethylantracene	2011/06/22	<0.40		ug	
		Acenaphthene	2011/06/22	<0.050		ug	
		Acenaphthylene	2011/06/22	<0.050		ug	
		Anthracene	2011/06/22	<0.050		ug	
		Benzo(a)anthracene	2011/06/22	<0.050		ug	
		Benzo(a)fluorene	2011/06/22	<0.10		ug	
		Benzo(a)pyrene	2011/06/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/22	<0.050		ug	
		Benzo(b)fluorene	2011/06/22	<0.10		ug	
		Benzo(e)pyrene	2011/06/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/22	<0.050		ug	
		Biphenyl	2011/06/22	<0.10		ug	
		Chrysene	2011/06/22	<0.050		ug	
		Coronene	2011/06/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/22	<0.20		ug	
		Fluoranthene	2011/06/22	<0.050		ug	
		Fluorene	2011/06/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/22	<0.050		ug	
		m-Terphenyl	2011/06/22	<0.10		ug	
		Naphthalene	2011/06/22	<0.072		ug	
		o-Terphenyl	2011/06/22	<0.10		ug	
		Perylene	2011/06/22	<0.10		ug	
		Phenanthrene	2011/06/22	<0.050		ug	
		p-Terphenyl	2011/06/22	<0.10		ug	
		Pyrene	2011/06/22	<0.050		ug	
		Quinoline	2011/06/22	<0.40		ug	
		Tetralin	2011/06/22	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: 13-16-62-5 W4M
Station ID: Lica 33 (Portable)
Field Sample ID: LICA PUF/PORT/Jun 14, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jun 13, 2011 @ 15:32 mst
Removal Date/Time: Jun 15, 2011 @ 9:02 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jun-11	06/14/2011 0:00	06/15/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
09-Jun-11	15-Jun-11	24-Jun-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
707	229	15.3	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 06299

GB176337 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jun 14, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06299

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B188547****Received: 2011/06/17, 09:12**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/21	2011/06/22	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B188547
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JW4666	JW4667		
Sampling Date		2011/06/14	2011/06/14		
COC Number		06299	06299		
	Units	LICA PUFF+QFF/CLS/JUN 14,11	LICA PUFF+QFF/PORT/JUN14,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2526781
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2526781
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2526781
2-Methylanthracene	ug	<0.10	<0.10	0.10	2526781
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2526781
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2526781
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2526781
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2526781
Acenaphthene	ug	<0.050	<0.050	0.050	2526781
Acenaphthylene	ug	<0.050	<0.050	0.050	2526781
Anthracene	ug	<0.050	<0.050	0.050	2526781
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2526781
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2526781
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2526781
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2526781
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2526781
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2526781
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2526781
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2526781
Biphenyl	ug	<0.10	<0.10	0.10	2526781
Chrysene	ug	<0.050	<0.050	0.050	2526781
Coronene	ug	<0.10	<0.10	0.10	2526781
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2526781
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2526781
Fluoranthene	ug	0.066	0.062	0.050	2526781
Fluorene	ug	0.078	<0.050	0.050	2526781
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2526781
m-Terphenyl	ug	<0.10	<0.10	0.10	2526781
Naphthalene	ug	0.074	0.090	0.072	2526781
o-Terphenyl	ug	<0.10	<0.10	0.10	2526781
Perylene	ug	<0.10	<0.10	0.10	2526781

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B188547
 Report Date: 2011/06/24

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JW4666	JW4667		
Sampling Date		2011/06/14	2011/06/14		
COC Number		06299	06299		
	Units	LICA PUFF+QFF/CLS/JUN 14,11	LICA PUFF+QFF/PORT/JUN14,11	RDL	QC Batch

Phenanthrene	ug	0.442	0.124	0.050	2526781
p-Terphenyl	ug	<0.10	<0.10	0.10	2526781
Pyrene	ug	<0.050	<0.050	0.050	2526781
Quinoline	ug	<0.40	<0.40	0.40	2526781
Tetralin	ug	<0.10	<0.10	0.10	2526781
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	72		2526781
D10-Fluoranthene	%	94	86		2526781
D10-Fluorene (FS)	%	5.6 (1)	5.8 (1)		2526781
D10-Phenanthrene	%	88	82		2526781
D12-Benzo(a)anthracene	%	98	100		2526781
D12-Benzo(a)pyrene	%	96	94		2526781
D12-Benzo(b)fluoranthene	%	92	92		2526781
D12-Benzo(ghi)perylene	%	90	86		2526781
D12-Benzo(k)fluoranthene	%	90	88		2526781
D12-Chrysene	%	86	88		2526781
D12-Indeno(1,2,3-cd)pyrene	%	92	90		2526781
D12-Perylene	%	102	100		2526781
D14-Dibenzo(a,h)anthracene	%	92	90		2526781
D14-Terphenyl (FS)	%	87	83		2526781
D8-Acenaphthylene	%	78	78		2526781
D8-Naphthalene	%	66	70		2526781

QC Batch = Quality Control Batch

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B188547
Report Date: 2011/06/24

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Anthanthrene is above 25% RSD in continuing calibrations.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JW4666-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JW4667-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB188547

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2526781 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/22		82	%	50 - 150
		D10-Fluoranthene	2011/06/22		80	%	50 - 150
		D10-Phenanthrene	2011/06/22		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		90	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		88	%	50 - 150
		D12-Chrysene	2011/06/22		92	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/22		88	%	50 - 150
		D12-Perylene	2011/06/22		100	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		88	%	50 - 150
		D8-Acenaphthylene	2011/06/22		80	%	50 - 150
		D8-Naphthalene	2011/06/22		82	%	50 - 150
		Acenaphthene	2011/06/22		76	%	60 - 130
	RPD	Acenaphthene	2011/06/22	4.2		%	50
	Spiked Blank	Acenaphthylene	2011/06/22		75	%	60 - 130
	RPD	Acenaphthylene	2011/06/22	5.5		%	50
	Spiked Blank	Anthracene	2011/06/22		66	%	60 - 130
	RPD	Anthracene	2011/06/22	7.6		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/22		81	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/22	2.1		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/22		76	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/22	2.3		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/22		81	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/22	1.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/22		79	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/22	2.5		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/22		91	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/22	1.9		%	50
	Spiked Blank	Chrysene	2011/06/22		86	%	60 - 130
	RPD	Chrysene	2011/06/22	2.9		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/22		77	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/22	4.4		%	50
	Spiked Blank	Fluoranthene	2011/06/22		76	%	60 - 130
	RPD	Fluoranthene	2011/06/22	3.9		%	50
	Spiked Blank	Fluorene	2011/06/22		72	%	60 - 130
	RPD	Fluorene	2011/06/22	6.4		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/22		79	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/22	3.1		%	50
	Spiked Blank	Naphthalene	2011/06/22		83	%	60 - 130
	RPD	Naphthalene	2011/06/22	1.8		%	50
	Spiked Blank	Phenanthrene	2011/06/22		71	%	60 - 130
	RPD	Phenanthrene	2011/06/22	7.2		%	50
	Spiked Blank	Pyrene	2011/06/22		74	%	60 - 130
	RPD	Pyrene	2011/06/22	5.3		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/06/22		82	%	50 - 150
		D10-Fluoranthene	2011/06/22		80	%	50 - 150
		D10-Phenanthrene	2011/06/22		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/22		92	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/22		90	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/22		90	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/22		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/22		86	%	50 - 150
		D12-Chrysene	2011/06/22		90	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB188547

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2526781 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/22		86	%	50 - 150
		D12-Perylene	2011/06/22		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/22		86	%	50 - 150
		D8-Acenaphthylene	2011/06/22		80	%	50 - 150
		D8-Naphthalene	2011/06/22		84	%	50 - 150
		1-Methylnaphthalene	2011/06/22	<0.10		ug	
		1-Methylphenanthrene	2011/06/22	<0.10		ug	
		2-Chloronaphthalene	2011/06/22	<0.10		ug	
		2-Methylanthracene	2011/06/22	<0.10		ug	
		2-Methylnaphthalene	2011/06/22	<0.10		ug	
		3-Methylcholanthrene	2011/06/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/22	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/22	<0.40		ug	
		Acenaphthene	2011/06/22	<0.050		ug	
		Acenaphthylene	2011/06/22	<0.050		ug	
		Anthracene	2011/06/22	<0.050		ug	
		Benzo(a)anthracene	2011/06/22	<0.050		ug	
		Benzo(a)fluorene	2011/06/22	<0.10		ug	
		Benzo(a)pyrene	2011/06/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/22	<0.050		ug	
		Benzo(b)fluorene	2011/06/22	<0.10		ug	
		Benzo(e)pyrene	2011/06/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/22	<0.050		ug	
		Biphenyl	2011/06/22	<0.10		ug	
		Chrysene	2011/06/22	<0.050		ug	
		Coronene	2011/06/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/22	<0.20		ug	
		Fluoranthene	2011/06/22	<0.050		ug	
		Fluorene	2011/06/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/22	<0.050		ug	
		m-Terphenyl	2011/06/22	<0.10		ug	
		Naphthalene	2011/06/22	<0.072		ug	
		o-Terphenyl	2011/06/22	<0.10		ug	
		Perylene	2011/06/22	<0.10		ug	
		Phenanthrene	2011/06/22	<0.050		ug	
		p-Terphenyl	2011/06/22	<0.10		ug	
		Pyrene	2011/06/22	<0.050		ug	
		Quinoline	2011/06/22	<0.40		ug	
		Tetralin	2011/06/22	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
 Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
Location: 13-16-62-5 W4M
Station ID: Lica 33 (Portable)
Field Sample ID: LICA PUF/PORT/Jun 20, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jun 17, 2011 @ 8:38 mst
Removal Date/Time: Jun 22, 2011 @ 8:33 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jun-11	06/20/2011 0:00	06/21/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Jun-11	22-Jun-11	04-Jul-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
707	229	15.3	330.34

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 07155

GB180864 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jun 20, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07155

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/06/30

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B192858****Received: 2011/06/24, 08:30**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/27	2011/06/29	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763

=====

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B192858
 Report Date: 2011/06/30

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JY5368	JY5369		
Sampling Date		2011/06/20	2011/06/20		
COC Number		07155	07155		
	Units	LICAPUFF+QFF/CLS/JUN 20,11	LICAPUFF+QFF/PORT/JUN 20,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2533537
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2533537
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2533537
2-Methylantracene	ug	<0.10	<0.10	0.10	2533537
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2533537
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2533537
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2533537
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2533537
Acenaphthene	ug	<0.050	<0.050	0.050	2533537
Acenaphthylene	ug	<0.050	<0.050	0.050	2533537
Anthracene	ug	<0.050	<0.050	0.050	2533537
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2533537
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2533537
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2533537
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2533537
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2533537
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2533537
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2533537
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2533537
Biphenyl	ug	<0.10	<0.10	0.10	2533537
Chrysene	ug	<0.050	<0.050	0.050	2533537
Coronene	ug	<0.10	<0.10	0.10	2533537
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2533537
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2533537
Fluoranthene	ug	<0.050	<0.050	0.050	2533537
Fluorene	ug	<0.050	<0.050	0.050	2533537
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2533537
m-Terphenyl	ug	<0.10	<0.10	0.10	2533537
Naphthalene	ug	<0.072	<0.072	0.072	2533537
o-Terphenyl	ug	<0.10	<0.10	0.10	2533537
Perylene	ug	<0.10	<0.10	0.10	2533537
Phenanthrene	ug	0.202	0.078	0.050	2533537

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B192858
 Report Date: 2011/06/30

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JY5368	JY5369		
Sampling Date		2011/06/20	2011/06/20		
COC Number		07155	07155		
	Units	LICAPUFF+QFF/CLS/JUN 20,11	LICAPUFF+QFF/PORT/JUN 20,11	RDL	QC Batch
p-Terphenyl	ug	<0.10	<0.10	0.10	2533537
Pyrene	ug	<0.050	<0.050	0.050	2533537
Quinoline	ug	<0.40	<0.40	0.40	2533537
Tetralin	ug	<0.10	<0.10	0.10	2533537
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	74	70		2533537
D10-Fluoranthene	%	94	84		2533537
D10-Fluorene (FS)	%	7.4 (1)	6.0 (1)		2533537
D10-Phenanthrene	%	86	78		2533537
D12-Benzo(a)anthracene	%	96	92		2533537
D12-Benzo(a)pyrene	%	96	90		2533537
D12-Benzo(b)fluoranthene	%	92	88		2533537
D12-Benzo(ghi)perylene	%	90	84		2533537
D12-Benzo(k)fluoranthene	%	92	88		2533537
D12-Chrysene	%	92	90		2533537
D12-Indeno(1,2,3-cd)pyrene	%	92	84		2533537
D12-Perylene	%	106	100		2533537
D14-Dibenzo(a,h)anthracene	%	92	82		2533537
D14-Terphenyl (FS)	%	89	82		2533537
D8-Acenaphthylene	%	80	74		2533537
D8-Naphthalene	%	70	66		2533537
QC Batch = Quality Control Batch (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.					

Maxxam Job #: B192858
 Report Date: 2011/06/30

Test Summary

Maxxam ID	JY5368	Collected	2011/06/20
Sample ID	LICAPUFF+QFF/CLS/JUN 20,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2533537	2011/06/27	2011/06/29	JIE WU

Maxxam ID	JY5369	Collected	2011/06/20
Sample ID	LICAPUFF+QFF/PORT/JUN 20,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/24

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2533537	2011/06/27	2011/06/29	JIE WU

Maxxam Job #: B192858
Report Date: 2011/06/30

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

9,10-Dimethylanthracene, 7,12-dimethylbenzo(a)anthracene, coronene and dibenzo(a,e)pyrene are above 25% RSD in continuing calibration. No positives found for these compounds.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JY5368-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JY5369-01: PAHMS-F

Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB192858

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2533537 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/06/29		78	%	50 - 150
		D10-Fluoranthene	2011/06/29		86	%	50 - 150
		D10-Phenanthrene	2011/06/29		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/29		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/29		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/29		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/29		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/29		88	%	50 - 150
		D12-Chrysene	2011/06/29		86	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/29		88	%	50 - 150
		D12-Perylene	2011/06/29		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/29		88	%	50 - 150
		D8-Acenaphthylene	2011/06/29		78	%	50 - 150
		D8-Naphthalene	2011/06/29		78	%	50 - 150
		Acenaphthene	2011/06/29		74	%	60 - 130
	RPD	Acenaphthene	2011/06/29	5.3		%	50
	Spiked Blank	Acenaphthylene	2011/06/29		76	%	60 - 130
	RPD	Acenaphthylene	2011/06/29	7.6		%	50
	Spiked Blank	Anthracene	2011/06/29		70	%	60 - 130
	RPD	Anthracene	2011/06/29	5.6		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/29		80	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/29	4.6		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/29		81	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/29	4.6		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/29		79	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/29	2.5		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/29		79	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/29	4.9		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/29		91	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/29	4.0		%	50
	Spiked Blank	Chrysene	2011/06/29		82	%	60 - 130
	RPD	Chrysene	2011/06/29	2.1		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/29		80	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/29	4.0		%	50
	Spiked Blank	Fluoranthene	2011/06/29		83	%	60 - 130
	RPD	Fluoranthene	2011/06/29	5.9		%	50
	Spiked Blank	Fluorene	2011/06/29		72	%	60 - 130
	RPD	Fluorene	2011/06/29	5.1		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/29		81	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/29	4.8		%	50
	Spiked Blank	Naphthalene	2011/06/29		79	%	60 - 130
	RPD	Naphthalene	2011/06/29	3.7		%	50
	Spiked Blank	Phenanthrene	2011/06/29		71	%	60 - 130
	RPD	Phenanthrene	2011/06/29	4.8		%	50
	Spiked Blank	Pyrene	2011/06/29		84	%	60 - 130
	RPD	Pyrene	2011/06/29	4.7		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/06/29		82	%	50 - 150
		D10-Fluoranthene	2011/06/29		86	%	50 - 150
		D10-Phenanthrene	2011/06/29		76	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/29		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/29		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/29		88	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/29		86	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/29		90	%	50 - 150
		D12-Chrysene	2011/06/29		88	%	50 - 150

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB192858

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2533537 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/29		88	%	50 - 150
		D12-Perylene	2011/06/29		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/29		86	%	50 - 150
		D8-Acenaphthylene	2011/06/29		82	%	50 - 150
		D8-Naphthalene	2011/06/29		80	%	50 - 150
		1-Methylnaphthalene	2011/06/29	<0.10		ug	
		1-Methylphenanthrene	2011/06/29	<0.10		ug	
		2-Chloronaphthalene	2011/06/29	<0.10		ug	
		2-Methylanthracene	2011/06/29	<0.10		ug	
		2-Methylnaphthalene	2011/06/29	<0.10		ug	
		3-Methylcholanthrene	2011/06/29	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/29	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/29	<0.40		ug	
		Acenaphthene	2011/06/29	<0.050		ug	
		Acenaphthylene	2011/06/29	<0.050		ug	
		Anthracene	2011/06/29	<0.050		ug	
		Benzo(a)anthracene	2011/06/29	<0.050		ug	
		Benzo(a)fluorene	2011/06/29	<0.10		ug	
		Benzo(a)pyrene	2011/06/29	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/29	<0.050		ug	
		Benzo(b)fluorene	2011/06/29	<0.10		ug	
		Benzo(e)pyrene	2011/06/29	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/29	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/29	<0.050		ug	
		Biphenyl	2011/06/29	<0.10		ug	
		Chrysene	2011/06/29	<0.050		ug	
		Coronene	2011/06/29	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/29	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/29	<0.20		ug	
		Fluoranthene	2011/06/29	<0.050		ug	
		Fluorene	2011/06/29	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/29	<0.050		ug	
		m-Terphenyl	2011/06/29	<0.10		ug	
		Naphthalene	2011/06/29	<0.072		ug	
		o-Terphenyl	2011/06/29	<0.10		ug	
		Perylene	2011/06/29	<0.10		ug	
		Phenanthrene	2011/06/29	<0.050		ug	
		p-Terphenyl	2011/06/29	<0.10		ug	
		Pyrene	2011/06/29	<0.050		ug	
		Quinoline	2011/06/29	<0.40		ug	
		Tetralin	2011/06/29	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
 Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Jun 26, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jun 23, 2011 @ 9:29 mst
 Removal Date/Time: Jun 27, 2011 @ 9:16 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jun-11	06/26/2011 0:00	06/27/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
21-Jun-11	27-Jun-11	12-Jul-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
707	229	12.2	330.33

Time set correctly prior to sampling? YES
Timer set correctly prior to sampling? YES
Sampling data saved to memory card after sampling? YES

Comments: COC# 05028

GB180866 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jun 26, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05028

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7

Report Date: 2011/07/11

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B195642****Received: 2011/06/29, 09:15**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/30	2011/07/10	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
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Total cover pages: 1

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Maxxam Job #: B195642
 Report Date: 2011/07/11

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JZ7915	JZ7916		
Sampling Date		2011/06/26	2011/06/26		
COC Number		05028	05028		
	Units	LICA PUFF+QFF/CLS/JUN 26,11	LICA PUFF+QFF/PORT/JUN 26,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2537118
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2537118
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2537118
2-Methylantracene	ug	<0.10	<0.10	0.10	2537118
2-Methylnaphthalene	ug	0.16	<0.10	0.10	2537118
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2537118
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2537118
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2537118
Acenaphthene	ug	<0.050	<0.050	0.050	2537118
Acenaphthylene	ug	<0.050	<0.050	0.050	2537118
Anthracene	ug	<0.050	<0.050	0.050	2537118
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2537118
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2537118
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2537118
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2537118
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2537118
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2537118
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2537118
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2537118
Biphenyl	ug	<0.10	<0.10	0.10	2537118
Chrysene	ug	<0.050	<0.050	0.050	2537118
Coronene	ug	<0.10	<0.10	0.10	2537118
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2537118
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2537118
Fluoranthene	ug	<0.050	<0.050	0.050	2537118
Fluorene	ug	0.072	0.054	0.050	2537118
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2537118
m-Terphenyl	ug	<0.10	<0.10	0.10	2537118
Naphthalene	ug	0.140	0.116	0.072	2537118
o-Terphenyl	ug	<0.10	<0.10	0.10	2537118
Perylene	ug	<0.10	<0.10	0.10	2537118

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B195642
 Report Date: 2011/07/11

SEMI-VOLATILE ORGANICS BY GC-MS (PUF AND FILTER)

Maxxam ID		JZ7915	JZ7916		
Sampling Date		2011/06/26	2011/06/26		
COC Number		05028	05028		
	Units	LICA PUFF+QFF/CLS/JUN 26,11	LICA PUFF+QFF/PORT/JUN 26,11	RDL	QC Batch

Phenanthrene	ug	0.272	0.136	0.050	2537118
p-Terphenyl	ug	<0.10	<0.10	0.10	2537118
Pyrene	ug	0.054	<0.050	0.050	2537118
Quinoline	ug	<0.40	<0.40	0.40	2537118
Tetralin	ug	<0.10	<0.10	0.10	2537118
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	66		2537118
D10-Fluoranthene	%	94	96		2537118
D10-Fluorene (FS)	%	7.8 (1)	8.2 (1)		2537118
D10-Phenanthrene	%	88	86		2537118
D12-Benzo(a)anthracene	%	90	90		2537118
D12-Benzo(a)pyrene	%	88	86		2537118
D12-Benzo(b)fluoranthene	%	88	88		2537118
D12-Benzo(ghi)perylene	%	90	90		2537118
D12-Benzo(k)fluoranthene	%	84	82		2537118
D12-Chrysene	%	84	82		2537118
D12-Indeno(1,2,3-cd)pyrene	%	92	92		2537118
D12-Perylene	%	86	84		2537118
D14-Dibenzo(a,h)anthracene	%	92	92		2537118
D14-Terphenyl (FS)	%	94	93		2537118
D8-Acenaphthylene	%	74	74		2537118
D8-Naphthalene	%	64	62		2537118

QC Batch = Quality Control Batch
 (1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B195642
Report Date: 2011/07/11

GENERAL COMMENTS

PAHMS-F

7,12-dimethylbenzo(a)anthracene is above 25% RSD in initial calibration. No positive found for this compound.

Dibenzo(a,e)pyrene is above 25% RSD in continuing calibration. No positive found for this compound.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene and triphenylene. An estimated mdl for each of these compounds is 0.1ug.

Since dibenzo(a,c)anthracene co-elutes with dibenz(a,h)anthracene and triphenylene with chrysene each would have a value below estimated mdl.

Benzo(b)anthracene elutes after benzo(a)anthracene and chrysene. Picene elutes after dibenz(a,h)anthracene. Searched for ions specific to these 2 compounds in the appropriate retention time range with no possible positives detected.

Sample JZ7915-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JZ7916-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB195642

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2537118 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/07/10		76	%	50 - 150	
		D10-Fluoranthene	2011/07/10		90	%	50 - 150	
		D10-Phenanthrene	2011/07/10		82	%	50 - 150	
		D12-Benzo(a)anthracene	2011/07/10		88	%	50 - 150	
		D12-Benzo(a)pyrene	2011/07/10		90	%	50 - 150	
		D12-Benzo(b)fluoranthene	2011/07/10		86	%	50 - 150	
		D12-Benzo(ghi)perylene	2011/07/10		88	%	50 - 150	
		D12-Benzo(k)fluoranthene	2011/07/10		84	%	50 - 150	
		D12-Chrysene	2011/07/10		84	%	50 - 150	
		D12-Indeno(1,2,3-cd)pyrene	2011/07/10		88	%	50 - 150	
		D12-Perylene	2011/07/10		88	%	50 - 150	
		D14-Dibenzo(a,h)anthracene	2011/07/10		90	%	50 - 150	
		D8-Acenaphthylene	2011/07/10		80	%	50 - 150	
		D8-Naphthalene	2011/07/10		74	%	50 - 150	
			Acenaphthene	2011/07/10		75	%	60 - 130
		RPD	Acenaphthene	2011/07/10	6.2		%	50
		Spiked Blank	Acenaphthylene	2011/07/10		78	%	60 - 130
		RPD	Acenaphthylene	2011/07/10	6.3		%	50
		Spiked Blank	Anthracene	2011/07/10		76	%	60 - 130
		RPD	Anthracene	2011/07/10	1		%	50
		Spiked Blank	Benzo(a)anthracene	2011/07/10		79	%	60 - 130
		RPD	Benzo(a)anthracene	2011/07/10	1.3		%	50
		Spiked Blank	Benzo(a)pyrene	2011/07/10		71	%	60 - 130
		RPD	Benzo(a)pyrene	2011/07/10	4.8		%	50
		Spiked Blank	Benzo(b)fluoranthene	2011/07/10		76	%	60 - 130
		RPD	Benzo(b)fluoranthene	2011/07/10	1.6		%	50
		Spiked Blank	Benzo(g,h,i)perylene	2011/07/10		80	%	60 - 130
		RPD	Benzo(g,h,i)perylene	2011/07/10	3.1		%	50
		Spiked Blank	Benzo(k)fluoranthene	2011/07/10		85	%	60 - 130
		RPD	Benzo(k)fluoranthene	2011/07/10	0.3		%	50
		Spiked Blank	Chrysene	2011/07/10		80	%	60 - 130
		RPD	Chrysene	2011/07/10	0.3		%	50
		Spiked Blank	Dibenz(a,h)anthracene	2011/07/10		79	%	60 - 130
		RPD	Dibenz(a,h)anthracene	2011/07/10	0.9		%	50
		Spiked Blank	Fluoranthene	2011/07/10		86	%	60 - 130
		RPD	Fluoranthene	2011/07/10	0.9		%	50
		Spiked Blank	Fluorene	2011/07/10		76	%	60 - 130
		RPD	Fluorene	2011/07/10	5.0		%	50
		Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/07/10		80	%	60 - 130
		RPD	Indeno(1,2,3-cd)pyrene	2011/07/10	2.2		%	50
		Spiked Blank	Naphthalene	2011/07/10		75	%	60 - 130
		RPD	Naphthalene	2011/07/10	3.4		%	50
	Spiked Blank	Phenanthrene	2011/07/10		75	%	60 - 130	
	RPD	Phenanthrene	2011/07/10	2.4		%	50	
	Spiked Blank	Pyrene	2011/07/10		80	%	60 - 130	
	RPD	Pyrene	2011/07/10	6.4		%	50	
	Method Blank	D10-2-Methylnaphthalene	2011/07/10		72	%	50 - 150	
		D10-Fluoranthene	2011/07/10		92	%	50 - 150	
		D10-Phenanthrene	2011/07/10		80	%	50 - 150	
		D12-Benzo(a)anthracene	2011/07/10		88	%	50 - 150	
		D12-Benzo(a)pyrene	2011/07/10		90	%	50 - 150	
		D12-Benzo(b)fluoranthene	2011/07/10		88	%	50 - 150	
		D12-Benzo(ghi)perylene	2011/07/10		90	%	50 - 150	
		D12-Benzo(k)fluoranthene	2011/07/10		86	%	50 - 150	
		D12-Chrysene	2011/07/10		86	%	50 - 150	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB195642

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2537118 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/07/10		90	%	50 - 150
		D12-Perylene	2011/07/10		90	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/10		92	%	50 - 150
		D8-Acenaphthylene	2011/07/10		76	%	50 - 150
		D8-Naphthalene	2011/07/10		66	%	50 - 150
		1-Methylnaphthalene	2011/07/10	<0.10		ug	
		1-Methylphenanthrene	2011/07/10	<0.10		ug	
		2-Chloronaphthalene	2011/07/10	<0.10		ug	
		2-Methylanthracene	2011/07/10	<0.10		ug	
		2-Methylnaphthalene	2011/07/10	<0.10		ug	
		3-Methylcholanthrene	2011/07/10	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/07/10	<0.10		ug	
		9,10-Dimethylanthracene	2011/07/10	<0.40		ug	
		Acenaphthene	2011/07/10	<0.050		ug	
		Acenaphthylene	2011/07/10	<0.050		ug	
		Anthracene	2011/07/10	<0.050		ug	
		Benzo(a)anthracene	2011/07/10	<0.050		ug	
		Benzo(a)fluorene	2011/07/10	<0.10		ug	
		Benzo(a)pyrene	2011/07/10	<0.050		ug	
		Benzo(b)fluoranthene	2011/07/10	<0.050		ug	
		Benzo(b)fluorene	2011/07/10	<0.10		ug	
		Benzo(e)pyrene	2011/07/10	<0.10		ug	
		Benzo(g,h,i)perylene	2011/07/10	<0.050		ug	
		Benzo(k)fluoranthene	2011/07/10	<0.050		ug	
		Biphenyl	2011/07/10	<0.10		ug	
		Chrysene	2011/07/10	<0.050		ug	
		Coronene	2011/07/10	<0.10		ug	
		Dibenz(a,h)anthracene	2011/07/10	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/07/10	<0.20		ug	
		Fluoranthene	2011/07/10	<0.050		ug	
		Fluorene	2011/07/10	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/07/10	<0.050		ug	
		m-Terphenyl	2011/07/10	<0.10		ug	
		Naphthalene	2011/07/10	<0.072		ug	
		o-Terphenyl	2011/07/10	<0.10		ug	
		Perylene	2011/07/10	<0.10		ug	
		Phenanthrene	2011/07/10	<0.050		ug	
		p-Terphenyl	2011/07/10	<0.10		ug	
		Pyrene	2011/07/10	<0.050		ug	
		Quinoline	2011/07/10	<0.40		ug	
		Tetralin	2011/07/10	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

Lakeland Industry & Community Association

St. Lina Monitoring Site
Ambient Air Monitoring
Data Report
For
June 2011

Prepared By:



July 21, 2011

Lakeland Industry & Community Association

St. Lina

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

Mr. Mike Bisaga

Lakeland Industry & Community Association

Box 8237

5107W – 50 Street

Bonnyville, Alberta

T9N 2J5

Monitoring Location: St. Lina

Data Period: June 2011

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

Calibration Procedure

The following calibration procedure applies to all calibrations conducted at the Lakeland Industry & Community Association Air Monitoring Station.

Calibration gas concentrations are generated using a dynamic mass flow controlled calibrator. EPA Protocol one gases are diluted with zero air generated on site. The Mass Flow Controllers in the calibrator are referenced using an NIST traceable flow meter once per month. All listed flows are reported as corrected to Standard Temperature and Pressure (STP).

Generated zero gas is introduced to the analyzer first. Three concentrations of calibration gas are then generated in order to introduce points at approximately 50-80%, 25-40% & 10-20% of the analyzer's full-scale range. An auto zero and span are then performed to validate the daily zero and span values recorded to the next multi-point calibration.

All indicated concentrations are taken from the ESC data logger used to collect the data for monthly reporting.

The calibrations conducted at the LICA – St. Lina Air Monitoring Stations conform to the following Maxxam Standard Operation Procedures:

- CAL SOP-00211
- CAL SOP-00209
- CAL SOP-00213
- CAL SOP-00214
- CAL SOP-00208
- CAL SOP-00215

Conformance of each calibration to Alberta Environment regulations is outlined in the individual calibration reports. The slope and correlation coefficient are derived from the calculated and indicated analyzer responses. The percent change is calculated using the previous calibration correction factor and the current correction factor before adjustment. All calibration's and maintenance conforms to the procedures outlined in the *Air Monitoring Directive, Appendix A-10, Section 1.6*.

MONTHLY CONTINUOUS DATA SUMMARY

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – ST. LINA

Continuous Ambient Monitoring – June 2011

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.05	2	28, 30	23, 22	9.6, 9.5	133(SE), 103(ESE)	0.4	29	100.0
H2S (PPB)	10	3	0	0	0.10	1	VAR	VAR	VAR	VAR	0.6	9	99.9
THC (PPM)	-	-	-	-	2.05	2.9	26	19	11.3	187(S)	2.2	8	99.3
OZONE (PPB)	82	-	0	-	34.2	59	9	16	14.4	293(WNW)	46.4	9	100.0
NOx (PPB)	-	-	-	-	1.51	7	10	6	11.6	344(NNW)	2.5	8	99.9
NO (PPB)	-	-	-	-	0.17	2	10	6	11.6	344(NNW)	1.0	13	99.9
NO2 (PPB)	159	-	0	-	1.35	5	10, 26	VAR	VAR	VAR	2.3	8, 10	99.9
PM2.5 (ug/m3)	-	30	-	3	12.14	291.0	26	14	3.4	290(WNW)	51.0	26	99.4
TEMPERATURE (DEGREE C)	-	-	-	-	14.74	26.2	29	14	3.4	290(WNW)	20.4	23	100.0
BP (MILLIBAR)	-	-	-	-	927	939	4, 8	VAR	VAR	VAR	937.0	8	100.0
RH (%)	-	-	-	-	66.74	92	VAR	VAR	VAR	VAR	87.4	19	100.0
PRECIPITATION (MM)	-	-	-	-	0.17	13.4	29	19	12.2	331(NNW)	23.4	18	100.0
VECTOR WS (KPH)	-	-	-	-	9.18	17.6	18	2, 3	-	333(NNW), 333(NNW)	14.6	18	100.0
VECTOR WD (DEGREES)	-	-	-	-	333(NNW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

General Monthly Summary

Equipment Operation

The following summary outlines the analyzer performance. Any non-conformances, problems or maintenance performed are detailed at the end of each section.

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

Analyzer make / model - API 100E, S/N: 468

The analyzer was working well throughout the month. The monthly calibration was performed on June 8th. The inlet filter was changed before the monthly calibration was started. Four hours of hourly data for the maximum concentration were invalidated due to power failures. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

Analyzer make / model - API 101E, S/N: 510

The analyzer was working well throughout the month. The pump was replaced following the as found point performed on June 7th, then the monthly calibration was performed. The inlet filter was changed before the monthly calibration was started. Four hours of hourly data for the maximum concentration were invalidated due to power failures. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

Analyzer make / model –TECO 51C, S/N: 77021-384

The monthly calibration was performed on June 7th. The inlet filter was changed before the monthly calibration was started. The analyzer flamed out on June 16th due to a power failure, and it was re-lit four hours later. Four hours of data were invalidated. Also, four hours of hourly data for the maximum concentration were invalidated due to power failures. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – St. Lina

Ozone (PPB)

Analyzer make / model –Thermo 49C, S/N: 49C-54926-302

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. Four hours of hourly data for the maximum concentration were invalidated due to power failures. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

Analyzer make / model - API 200E, S/N: 592

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. Four hours of hourly data for the maximum concentration were invalidated due to power failures. Data was corrected using daily zero information.

The NO₂ guideline was changed on June 15th: the objective for 1-Hour average concentration was changed from 212 ppb to 159 ppb, the objective for 24-Hour average concentration was removed, and the concentration of 24 ppb for the annual average was added by AE.

Particulate Matter 2.5 (UG/M3)

Analyzer make / model – Thermo Scientific Series 1405F, S/N: 1405A208301003

No operational issue was observed this month. A routine Teom audit was performed on June 14th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Four hours of data were invalidated as the data were above –3 ug/m³. Three 24-Hour average contraventions were recorded and reported to AE this month; reading of 31.2 ug/m³ on June 7th, Ref # 248168, reading of 51.0 ug/m³ on June 26th, Ref # 248924, and reading of 34.2 ug/m³ on June 27th, Ref # 248950.

General Monthly Summary

AQM STATION – LICA – St. Lina

Temperature (Degree C)

Analyzer make / model – Met One 060

No operational issue was observed during the month.

Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

No operational issue was observed during this month.

Relative Humidity (%)

Analyzer make / model - Met One 083

No operational issue was observed during this month.

Precipitation (MM)

Analyzer make / model - Met One 387

No operational issue was observed during this month.

Vector Wind Speed (KPH) & Vector Wind Direction (DEG)

System make / model – Met 50.5, S/N: H12635

The wind system is reported as vector wind speed and vector wind direction. Four hours of hourly data for the maximum wind speed were invalidated due to power failures.

Datalogger

System make / model - ESC 8832, S/N: AO717

Software make/version - ESC v 5.51a

The station is connected to a modem to allow for daily polling of the station.

General Monthly Summary

AQM STATION – LICA – St. Lina

Trailer

No issue was observed this month. The manifold was cleaned on June 8th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Six hours of AQI values recorded in June 2011 were in the Poor range, and they were all due to PM2.5. Fifty hours of AQI values recorded in June 2011 were in the Fair range; 17 hours were due to ozone and 33 hours were due to PM2.5. Others were within the Good range. The highest hourly concentration of Ozone was 59 ppb and an AQI value of 33, on June 9th, hour of 16. The highest hourly concentration of PM2.5 was 291.0 ug/m3 and an AQI value of 154 on June 26th, hour of 14.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JUNE 2011

AIR QUALITY INDEX (AQI)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	
HOUR START		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	
DAY	HOUR END																										
1	28	27	25	21	19	18	16	18	22	24	27	28	29	29	-	26	25	24	23	36	23	23	22	22	22	36	
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	PM2	O3_	O3_	O3_	O3_	O3_	PM2	
2	21	18	17	15	14	14	18	17	18	18	21	23	24	-	29	28	28	27	25	26	24	21	20	29			
	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
3	21	23	22	39	72	48	27	15	15	12	14	13	-	13	13	14	16	16	17	16	15	15	14	72			
	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2		
4	14	13	13	14	13	11	11	13	14	14	15	-	14	14	14	14	15	15	14	12	12	12	11	15			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
5	11	11	11	11	10	11	9	10	11	14	-	15	14	16	17	17	18	17	16	16	15	14	18				
	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
6	13	13	12	12	12	7	9	12	14	-	19	20	21	22	24	24	25	25	25	24	23	23	22	25			
	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
7	22	22	23	22	18	16	14	13	-	-	-	-	-	-	-	-	-	48	48	35	31	31	22	23	21	48	
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	NA	NA	NA	NA	NA	NA	NA	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	PM2		
8	19	19	20	23	26	24	29	-	33	-	-	-	-	30	31	29	22	21	21	20	20	19	19	20	33		
	O3_	PM2	PM2	PM2	PM2	PM2	PM2	NA	PM2	NA	NA	NA	NA	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	PM2	PM2	PM2	PM2		
9	20	19	19	20	20	23	-	19	20	24	25	28	30	32	31	32	33	32	31	28	27	25	25	22	33		
	O3_	PM2	PM2	PM2	PM2	PM2	NA	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
10	20	19	17	16	16	-	14	16	20	23	26	29	28	29	28	29	28	28	27	25	24	23	24	22	29		
	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
11	20	18	19	21	-	18	16	17	19	20	21	22	22	22	21	21	21	21	20	18	19	20	19	22			
	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
12	20	19	18	-	15	15	14	15	14	14	16	15	18	18	20	20	20	-	-	17	16	18	20	20	20		
	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	NA	O3_	O3_	O3_	O3_	O3_	O3_		
13	20	19	-	15	17	15	12	16	19	21	21	22	21	24	25	27	28	28	25	23	22	20	18	28			
	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
14	18	-	21	22	19	18	17	17	18	21	21	22	-	22	21	18	17	18	16	13	12	11	12	22			
	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	NA	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
15	-	13	17	18	17	15	17	18	16	15	16	16	17	18	16	14	15	15	17	19	17	16	14	-	19		
	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_		
16	19	23	22	19	16	14	14	13	13	14	14	13	13	19	22	23	24	20	19	19	16	15	-	11	24		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_		
17	9	10	10	10	8	8	9	13	20	21	21	21	22	23	22	21	21	19	17	14	10	-	9	8	23		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_		
18	8	9	9	8	9	8	7	9	11	11	12	13	14	14	15	15	14	13	13	-	12	12	12	15			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_		
19	12	12	12	12	13	14	14	13	13	14	14	15	14	15	15	15	14	15	14	-	13	13	13	12	15		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_		
20	13	13	12	12	12	13	13	13	13	13	13	13	15	15	16	15	16	15	-	14	14	14	13	12	16		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_		
21	11	10	12	13	11	11	12	12	13	11	11	14	17	18	20	21	21	-	22	18	17	18	19	22			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
22	18	20	19	18	13	13	13	18	20	22	24	24	24	24	25	25	-	25	25	24	22	21	20	19	25		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
23	19	21	22	21	18	17	15	15	17	20	22	23	24	26	25	-	25	24	23	22	21	22	22	21	26		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
24	23	20	17	15	15	14	13	14	15	17	18	20	21	21	-	21	20	19	18	15	15	14	13	12	23		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
25	11	11	10	9	9	8	7	8	10	12	12	13	13	-	13	13	13	13	13	12	10	12	15	12	15		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
26	12	12	12	15	15	17	17	15	19	21	21	17	-	68	154	114	91	57	35	32	34	36	35	37	154		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2		
27	36	37	40	44	49	44	32	23	13	15	15	-	19	22	31	31	35	32	27	24	24	20	17	18	49		
	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	NA	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	PM2		
28	18	19	20	14	12	9	9	11	16	18	-	21	23	24	24	26	25	23	23	22	21	21	21	26			
	O3_	O3_	O3_	O3_	PM2	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
29	19	16	14	11	11	13	13	17	19	-	16	16	17	16	17	17	16	18	18	16	15	14	13	12	19		
	O3_	O3_	PM2	PM2	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
30	12	11	9	8	9	9	9	10	-	13	14	15	16	17	17	17	18	18	17	15	15	15	15	18			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		
PEAK	36	37	40	44	72	48	32	23	33	24	27	29	30	68	154	114	91	57	35	36	34	36	35	37			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_		

STATUS FLAG CODES NA - NOT APPLICABLE

V - VARIOUS

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
DAY 1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	0	0	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0	1	1	1	0.1	24
5	1	1	0	0	0	0	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
6	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
8	0	0	0	0	0	0	0	IZS	1	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
9	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
10	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	1	0.0	24
28	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	0	0	0	0	0	0	1	2	2	0.3	24
29	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.4	24
30	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2	0.1	24
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	0	0	1	1	2	2			
HOURLY AVG	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

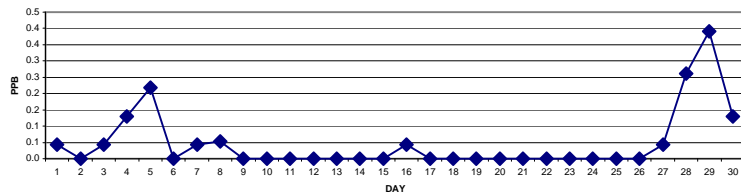
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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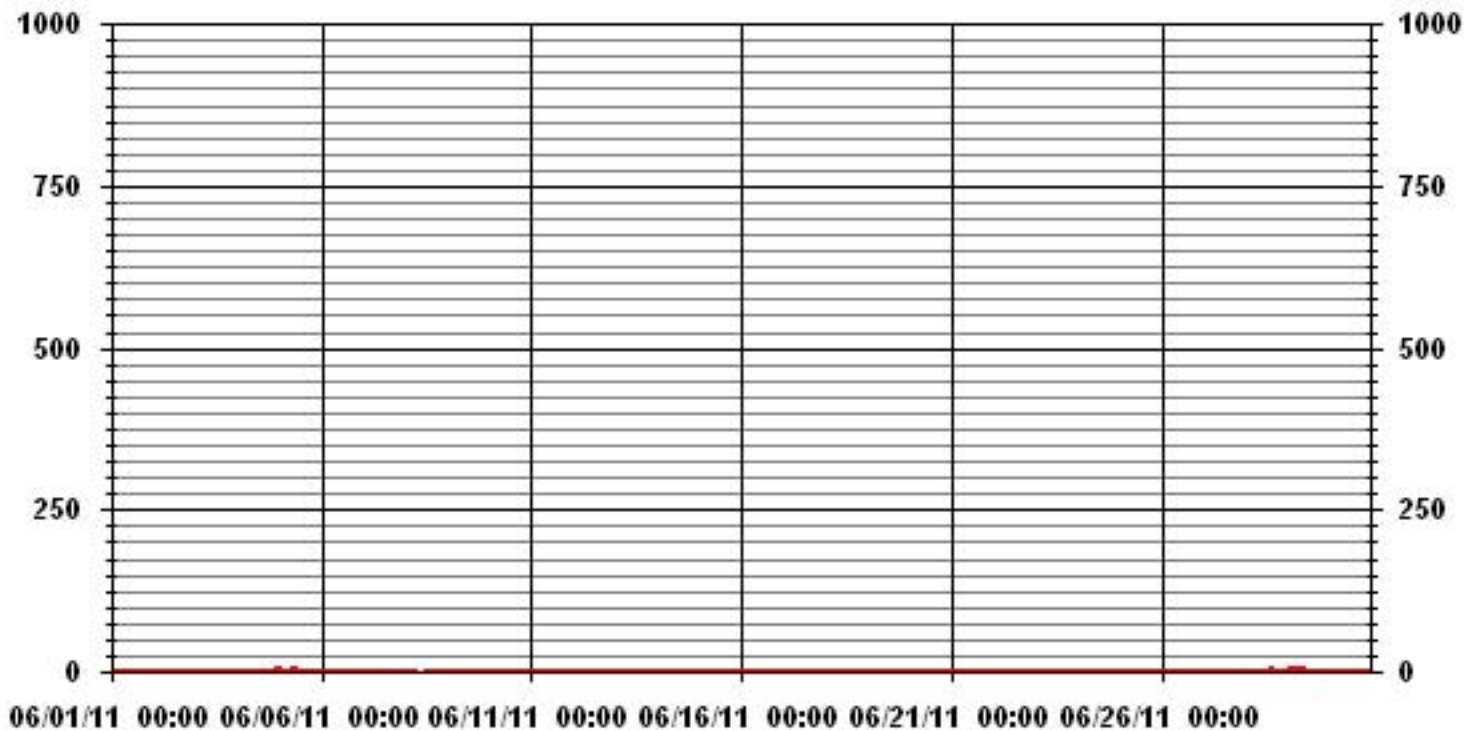
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	30					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	23, 22	ON DAY(S)	28, 30
MAXIMUM 24-HR AVERAGE:	0.4	PPB			ON DAY(S)	29
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720 HRS		
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	0.22		MONTHLY AVERAGE:	0.05 PPB		

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	1	2	1	1	0	0	0	IZS	0	0	0	0	1	1	1	1	1	1	2	0.4	24
2		1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
3		1	1	1	1	1	1	1	2	2	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24	
4		0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24
5		1	1	1	1	1	1	1	2	2	3	IZS	1	1	0	1	0	0	1	1	0	1	1	0	0	3	0.9	24	
6		0	0	0	0	0	0	0	0	0	IZS	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0.5	24	
7		0	0	0	0	0	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	0.8	24
8		1	1	1	1	1	1	1	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
9		0	0	0	0	0	0	IZS	1	2	1	0	1	0	1	1	1	0	1	1	0	1	1	0	0	2	0.5	24	
10		0	0	1	0	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
11		1	1	1	1	IZS	1	1	1	1	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	23	
12		1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
13		1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
14		1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
15		IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1.0	24
16		0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24	
18		0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	1	1	1	1	1	IZS	0	0	1	0.4	24	
19		0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	IZS	0	0	P	0	1	0.2	23	
20		0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0.1	24	
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0.0	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0.0	24	
23		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
24		1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0	1	1	1	1	1	1	1	1	1.0	24
25		1	0	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
26		1	1	1	1	1	1	1	1	1	0	1	IZS	1	1	1	1	0	1	1	0	0	0	0	0	1	0.7	24	
27		0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	2	1	1	1	1	1	1	1	2	0.6	24	
28		1	1	1	1	1	1	1	1	1	1	IZS	1	1	2	1	1	1	1	1	1	1	1	2	3	3	1.2	24	
29		2	2	2	2	2	2	2	1	2	IZS	0	0	0	0	0	0	0	0	0	P	0	0	0	0	2	0.8	23	
30		0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	3	3	2	3	0.4	24	
HOURLY MAX		2	2	2	2	2	2	2	2	3	1	1	1	2	1	1	2	1	1	1	1	1	3	3	3				
HOURLY AVG		0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.9	0.7	0.5	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.7	0.7	0.7	0.7				

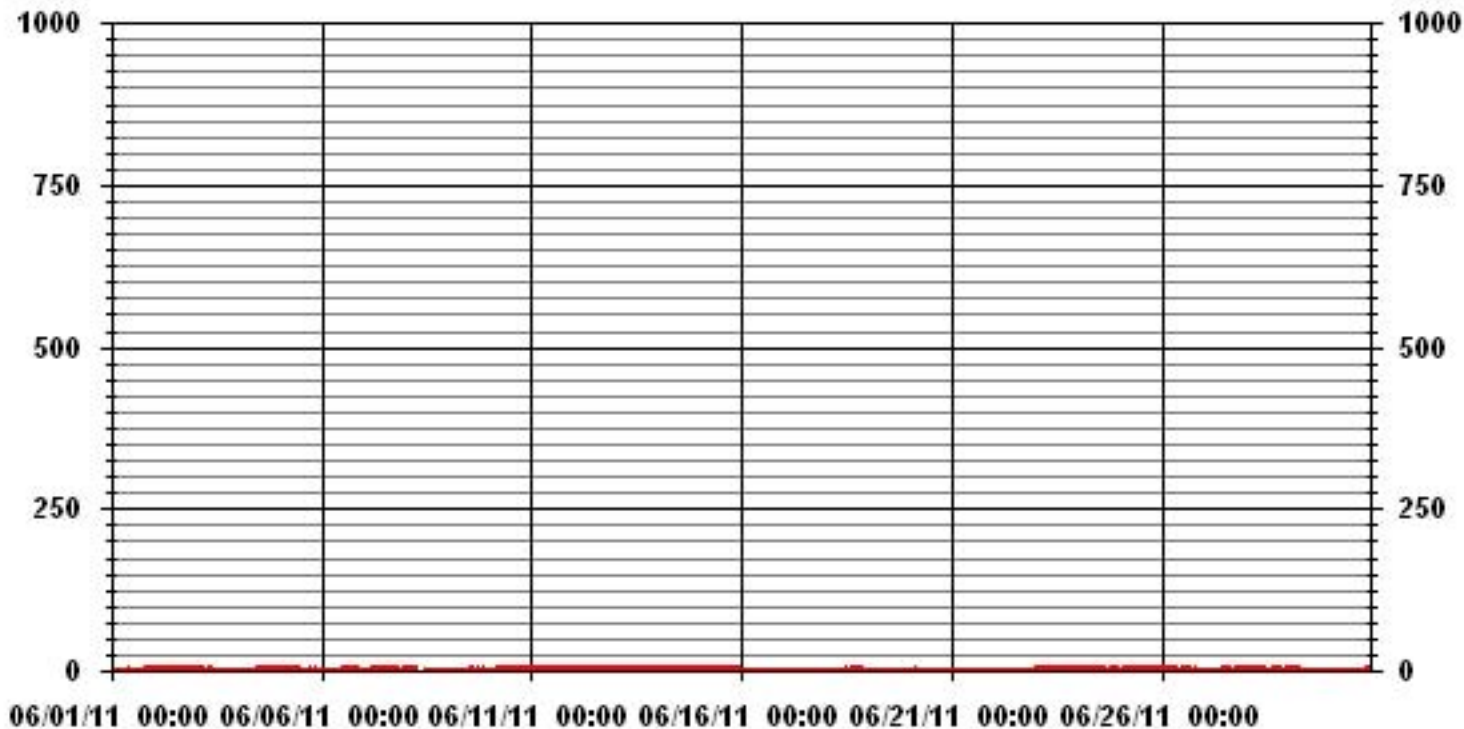
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	400					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.57					

01 Hour Averages



LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : SO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	6.13	4.96	7.15	6.42	4.23	4.81	4.67	5.25	7.88	3.50	3.06	2.91	7.00	11.97	11.09	8.90	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.13	4.96	7.15	6.42	4.23	4.81	4.67	5.25	7.88	3.50	3.06	2.91	7.00	11.97	11.09	8.90	

Calm : .00 %

Total # Operational Hours : 685

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	42	34	49	44	29	33	32	36	54	24	21	20	48	82	76	61	685
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	42	34	49	44	29	33	32	36	54	24	21	20	48	82	76	61	

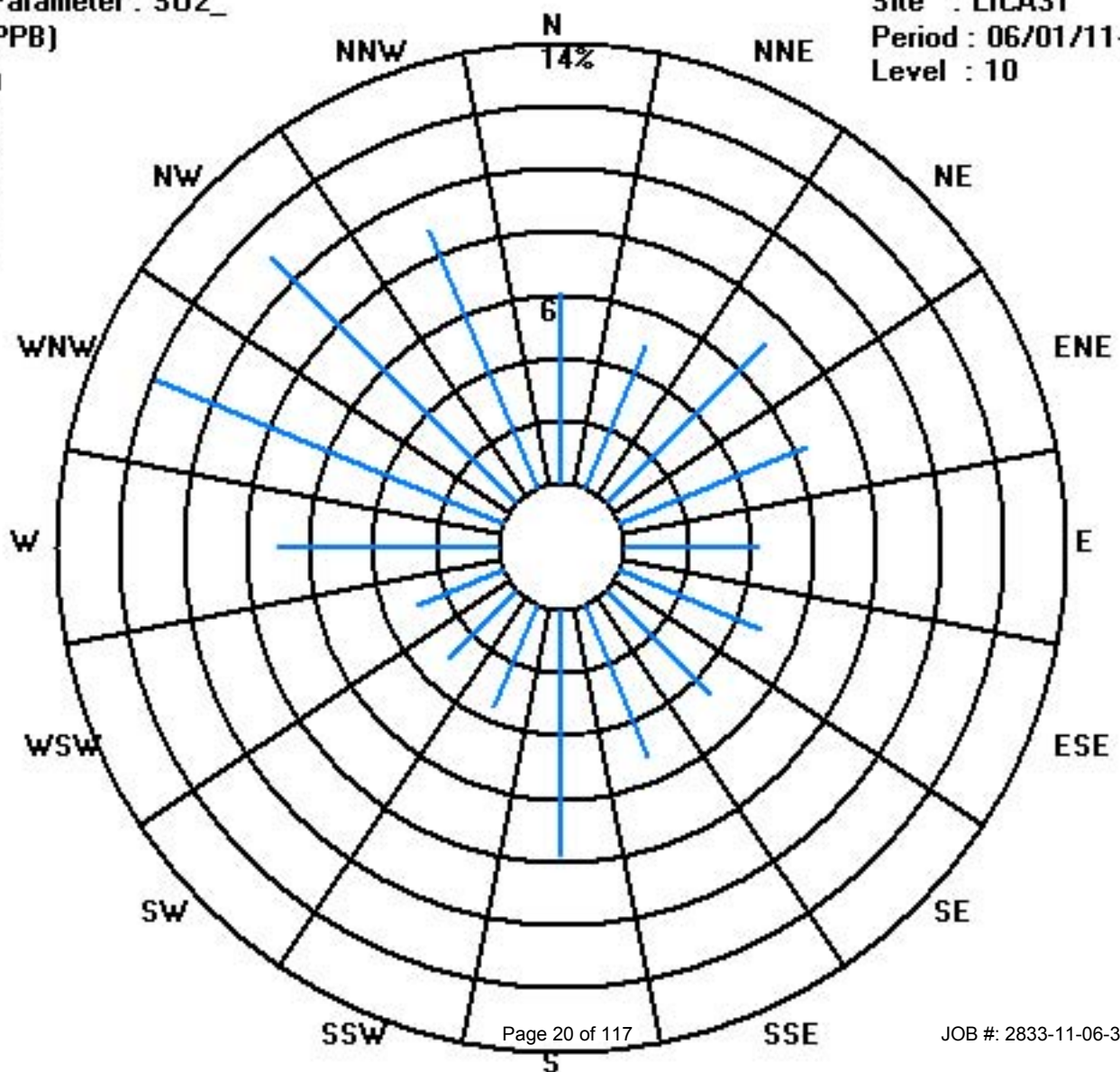
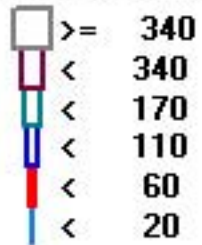
Calm : .00 %

Total # Operational Hours : 685

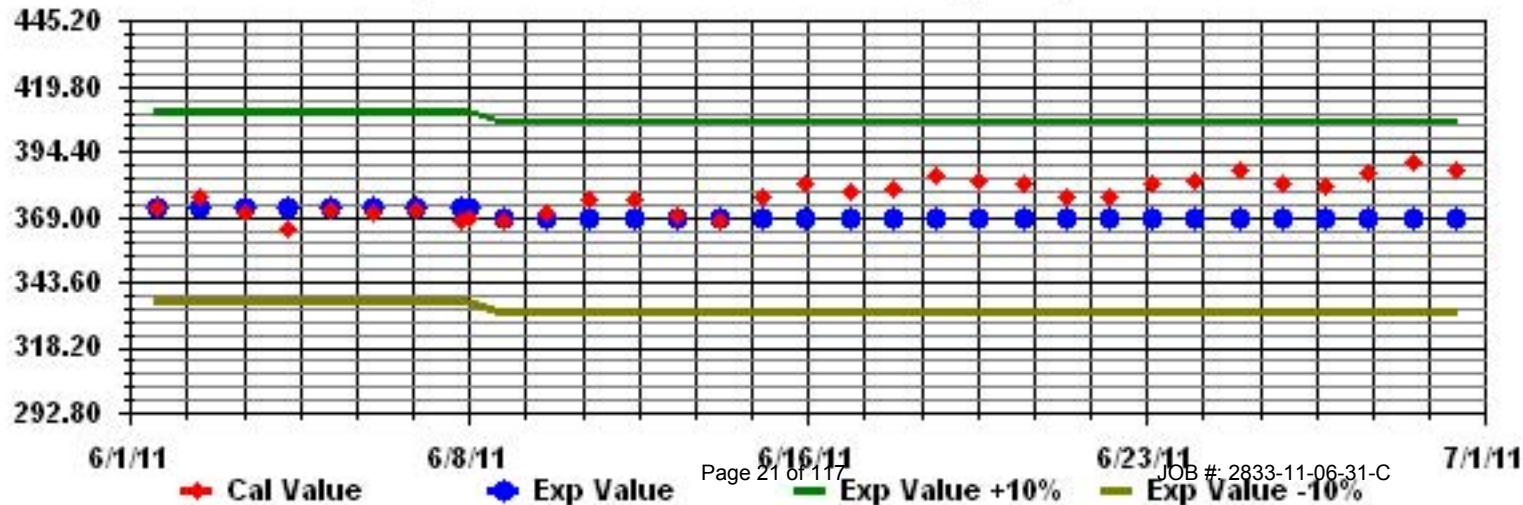
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSCOIATION - ST. LINA

JUNE 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY 24-HOUR	RDGS.	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.4	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
9	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	24
10	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	24
30	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	24
HOURLY MAX		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG		0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1		

STATUS FLAG CODES

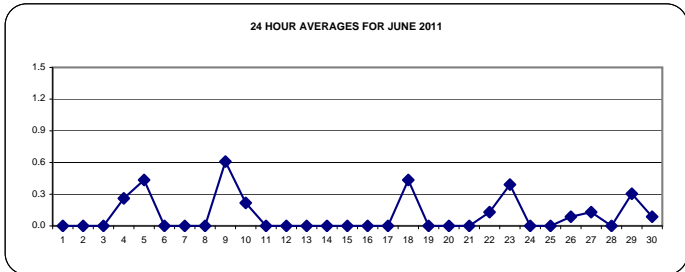
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

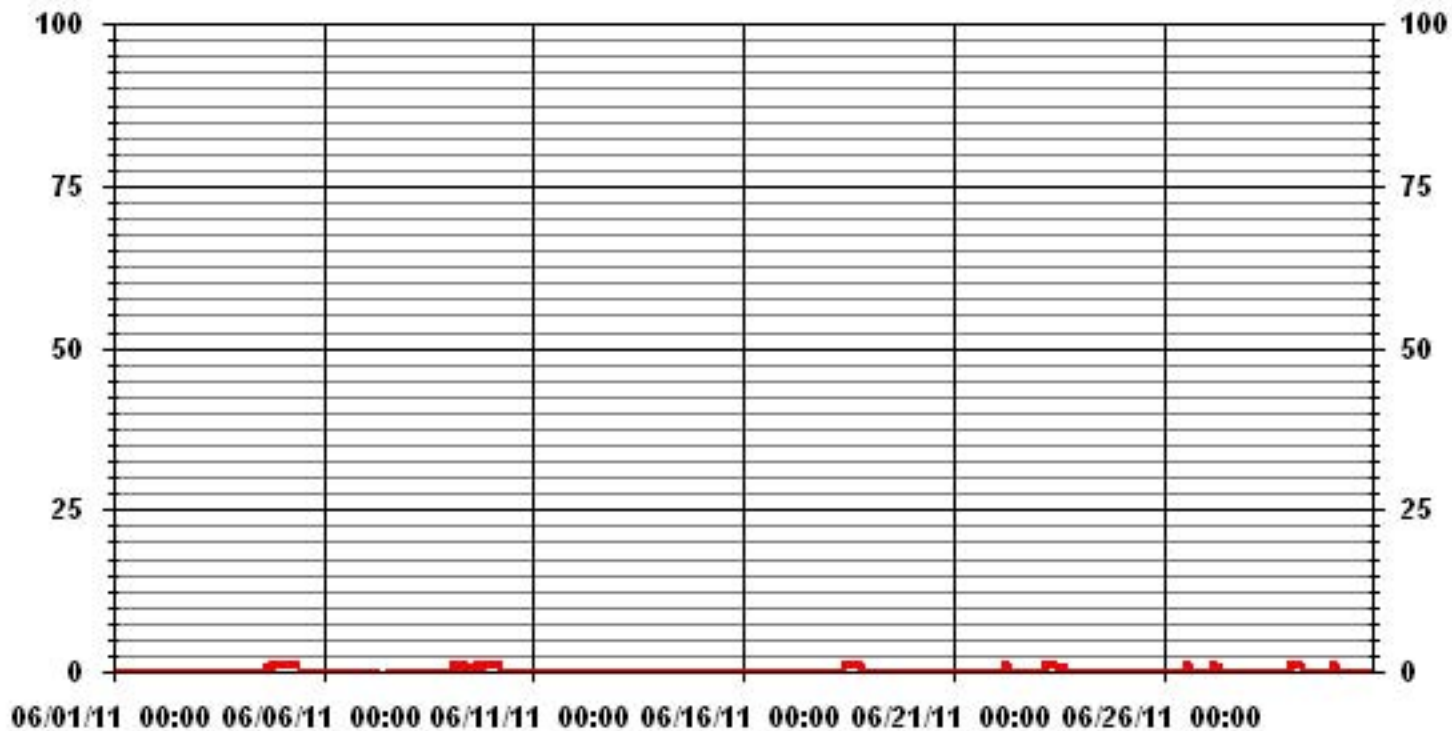
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	71
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.6 PPB ON DAY(S) VAR-VARIOUS 9
IZS CALIBRATION TIME:	31 HRS OPERATIONAL TIME: 719 HRS
MONTHLY CALIBRATION TIME:	5 HRS AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	0.31 MONTHLY AVERAGE: 0.10 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppt

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00					
DAY																												
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	1	0	0	1	0	0	1	0	0	0	1	IZS	1	0	1	1	1	1	1	1	1	1	1	1	0.6	24
3	1	1	1	1	1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
4	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24
5	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
6	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
7	0	0	0	0	0	0	1	0	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
8	0	0	0	0	0	0	0	IZS	0	0	0	0	M	0	1	0	0	0	0	0	0	1	0	0	1	0.1	23	
9	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
10	1	1	1	1	1	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
11	0	0	0	0	IZS	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
12	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	IZS	0	0	0	0	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	0.2	24
15	IZS	0	0	0	0	0	0	1	1	0	1	0	1	0	1	0	1	1	1	0	0	0	1	IZS	1	0.4	24	
16	1	0	0	1	1	1	0	1	1	0	0	P	0	0	0	0	0	0	1	0	0	0	IZS	0	1	0.3	23	
17	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	0	0	1	0.2	24	
18	0	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	2	0.8	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	P	0	0.0	23	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	0.2	24
21	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.3	24
22	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	1	0.2	24
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	1	0.7	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	0	0	1	1	0.4	24
27	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24
28	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0.2	24
29	1	1	1	1	1	1	1	1	0	IZS	0	0	0	1	0	0	0	1	1	P	1	0	1	1	1	1	0.6	23
30	1	1	1	1	1	1	0	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
HOURLY MAX	1	1	1	1	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
HOURLY AVG	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.2	0.2	0.1	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.3	0.3	0.3			

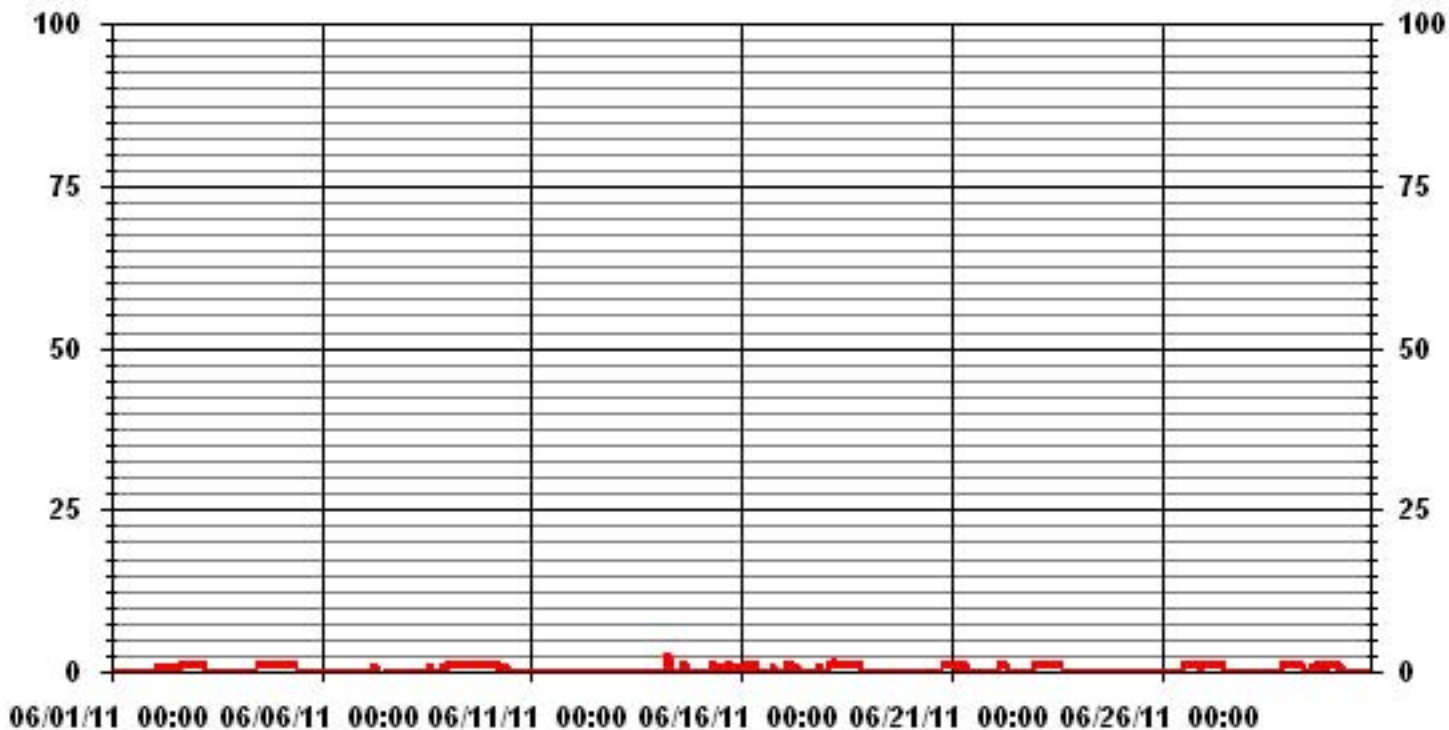
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	191
MAXIMUM INSTANTANEOUS VALUE:	3 PPB @ HOUR(S) 6 ON DAY(S) 14
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION:	0.46
OPERATIONAL TIME:	715 HRS

01 Hour Averages



— LICA31 H2S MAX PPB

LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	6.14	4.97	7.17	6.44	4.24	4.83	4.68	5.27	7.90	3.51	3.07	2.92	7.02	12.44	10.39	8.93	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.14	4.97	7.17	6.44	4.24	4.83	4.68	5.27	7.90	3.51	3.07	2.92	7.02	12.44	10.39	8.93	

Calm : .00 %

Total # Operational Hours : 683

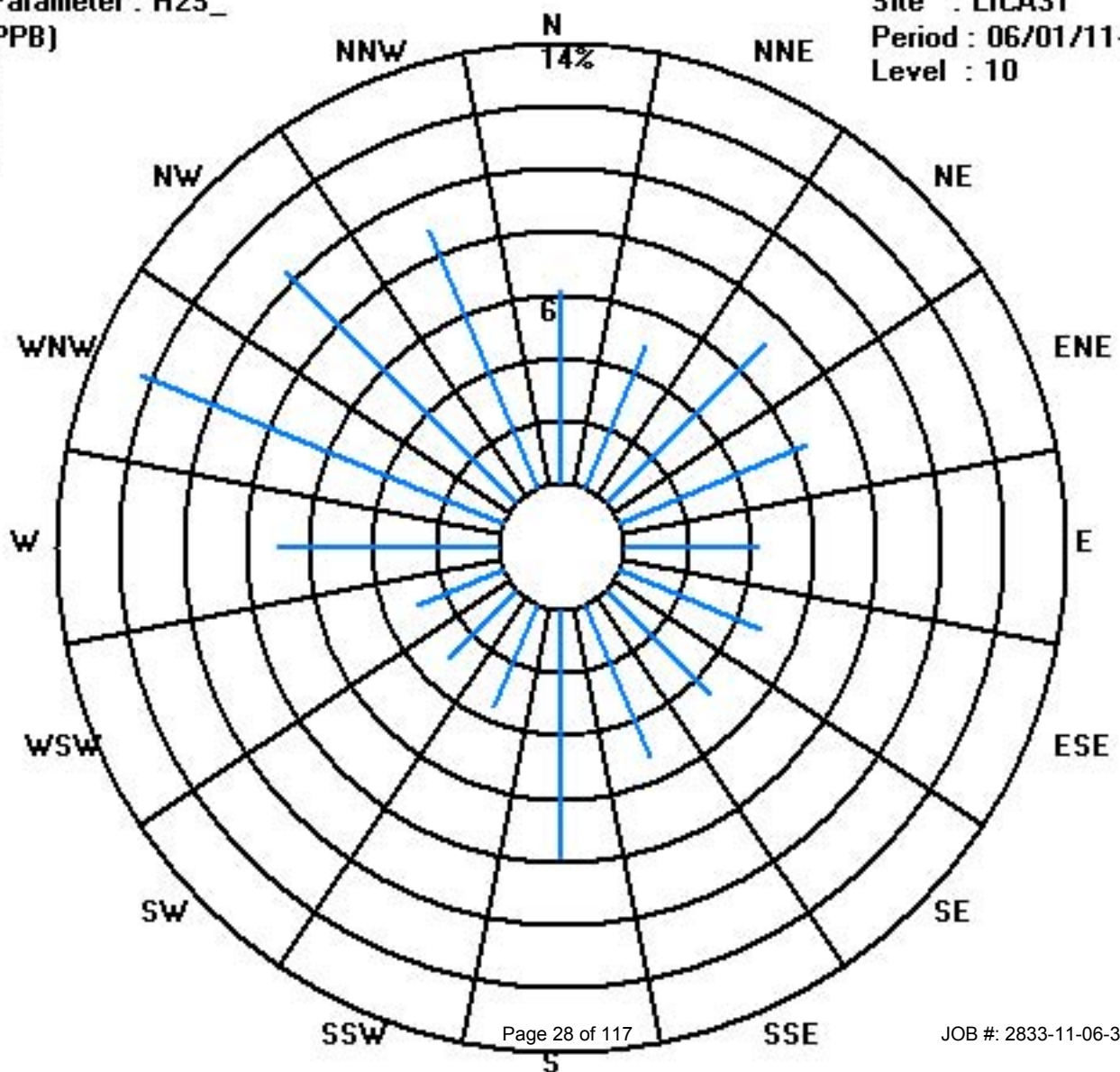
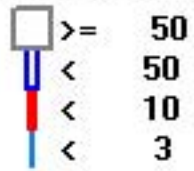
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	42	34	49	44	29	33	32	36	54	24	21	20	48	85	71	61	683
< 10																	
< 50																	
>= 50																	
Totals	42	34	49	44	29	33	32	36	54	24	21	20	48	85	71	61	

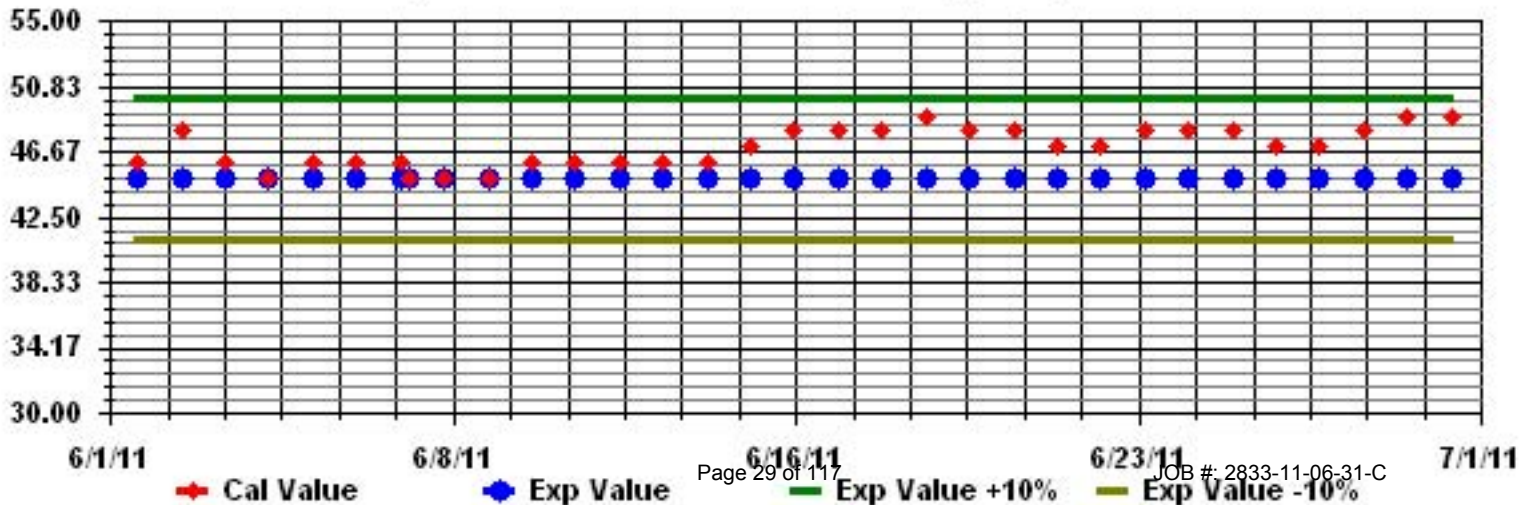
Calm : .00 %

Total # Operational Hours : 683

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAll



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

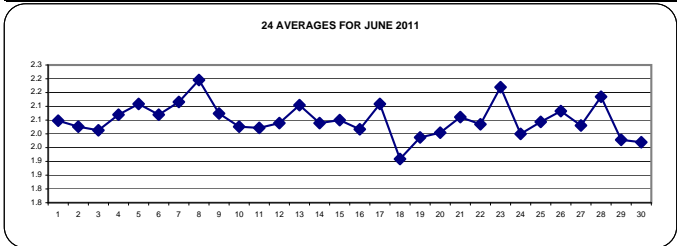
JUNE 2011

TOTAL HYDROCARBONS hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2.2	2.0	24	
2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	IZS	2	1.9	1.9	1.9	1.9	2	1.9	2	2	2	2.2	2.0	24	
3	2	2	2	2	2.1	2	2	2	2	2	2	2	2	IZS	2	2.1	2	2.1	2	2	2	2	2	2	2	2.1	2.0	24	
4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	24	
5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2.1	2.1	2.2	2.1	2.1	2	2	2	2.5	2.2	2.1	2.1	2.5	2.1	24	
6	2.3	2	2.1	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2.4	24	
7	2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	IZS	2.3	2.1	2	2	2	C	C	C	C	2	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.1	24	
8	2.4	2.4	2.5	2.5	2.4	2.4	2.3	IZS	2.1	2.1	2	2	2	M	2.1	2.2	2.3	2.2	2.1	2	2	2	2.1	2.1	2.1	2.5	2.2	23	
9	2.1	2.1	2.7	2.2	2.2	2.2	IZS	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.7	2.1	24	
10	2	2	2.1	2.1	2.1	IZS	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.2	24	
11	2.1	2	2	2.1	IZS	2.2	2.1	2.2	1.9	2	1.9	2	2	2	2	2	2	2	2	1.9	1.9	2	2	2	2.2	2.2	2.0	24	
12	2	2	2	IZS	2.2	2.3	2.1	2	2	2.1	2.1	2.1	2.2	2.1	1.9	1.9	1.9	1.9	2	2.1	1.9	1.9	2	2.2	2.3	2.0	24		
13	2.1	2.3	IZS	2.5	2.6	2.3	2.2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2	2	2.1	2.1	2.6	2.1	24	
14	2.1	IZS	1.9	2	2.1	1.9	2	2	2	2	2	2	2	1.9	2	1.9	2	1.9	2	2.1	2.2	2.2	2.1	2.2	2.1	2.2	2.0	24	
15	IZS	2.1	2.1	2	2.1	2.5	2.6	2.3	2	2	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	1.9	1.9	2	IZS	2.6	2.1	24	
16	2	1.9	2	2	2	2	2	2	1.9	1.9	1.9	N	N	N	N	C	2	2	2	2	2	2.1	2.3	IZS	2.3	2.3	20		
17	2.4	2.4	2.5	2.3	2.3	2.3	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.5	2.1	24	
18	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2.0	1.9	24	
19	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2.0	2.0	24
20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	24	
21	2.5	2.4	2	2	2.1	2.1	2	2	2	2	2.1	2.1	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2.1	2.5	24	
22	2	2	2	2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2.1	2.1	2.1	2.2	2.2	2.0	24	
23	2.2	2.3	2.3	2.3	2.6	2.5	2.5	2.4	2.4	2.3	2.1	2.1	2	1.9	2	IZS	2	2	2	2	2	2	2	2	2	2.6	2.2	24	
24	1.9	1.9	2	2.1	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	2.1	1.9	2.2	2.1	2.3	2.2	2.3	24	
25	2.1	2	2	2.1	2.2	2.3	2.2	2.1	2	1.9	2	2	2	2	IZS	1.9	1.9	2	2.1	2.1	2.1	1.9	2.1	2.1	1.9	2.3	2.0	24	
26	2	1.9	1.9	1.9	2.1	2	2	2	1.9	1.9	2	2	IZS	2.2	2.1	2.1	2.1	2	2	2.9	2.5	2.2	2.1	2.1	2.9	2.1	24		
27	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24	
28	2	2.1	2.1	2.1	2.2	2.4	2.5	2.5	2.2	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.5	2.1	24	
29	2	2	2	2	2.1	2.5	2.2	2.1	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.0	24	
30	1.9	2	2	2.1	1.9	2	2	2	IZS	2	2	2	2	1.9	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.0	24
HOURLY MAX	2.5	2.4	2.7	2.5	2.6	2.5	2.6	2.5	2.4	2.3	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.1	2.2	2.9	2.5	2.3	2.3	2.4				
HOURLY AVG	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1				

STATUS FLAG CODES

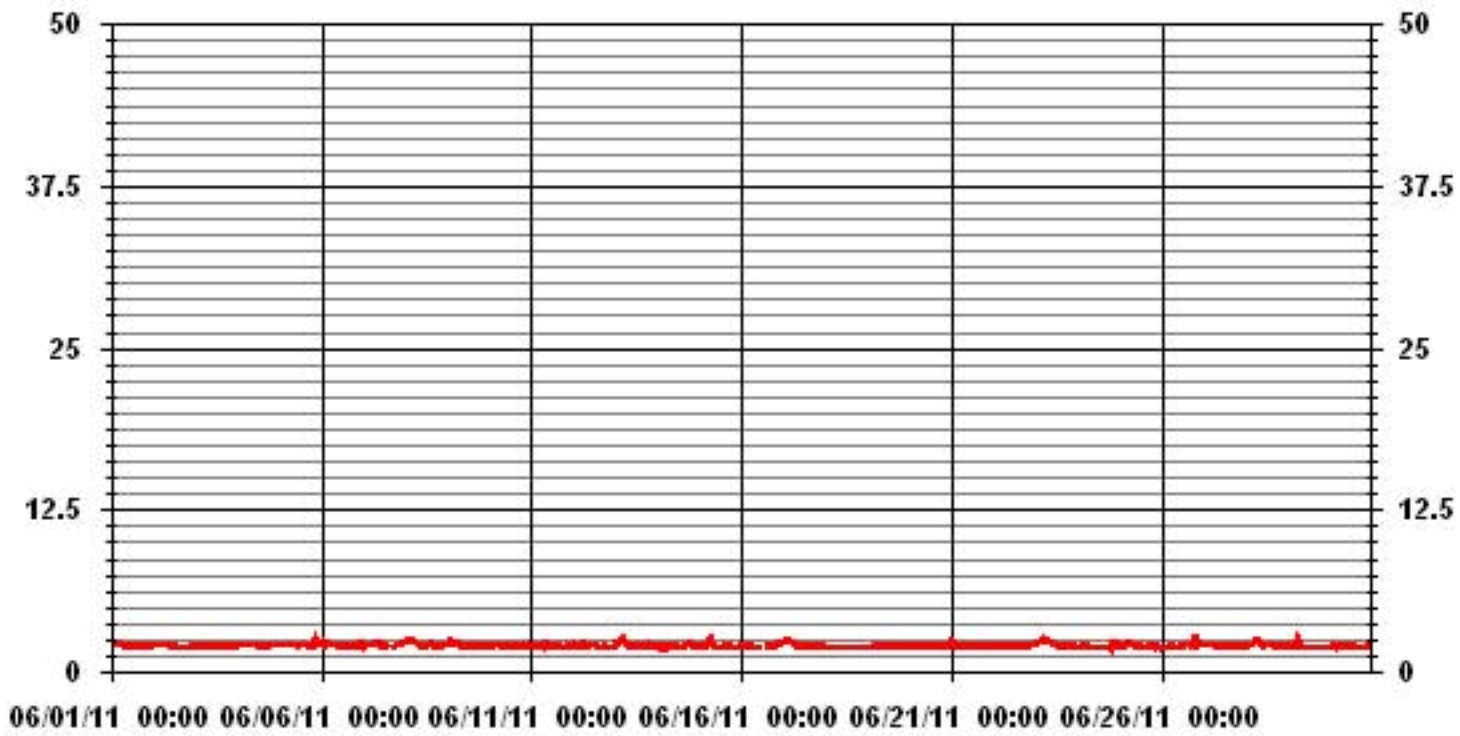
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	679					
MAXIMUM 1-HR AVERAGE:	2.9	PPM	@ HOUR(S)	19	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)	8
					VAR- VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.3	%	
STANDARD DEVIATION:	0.13		MONTHLY AVERAGE:	2.05	PPM	

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST																									DAILY	24-HOUR																										
HOURLY MAX	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.																								
DAY																																																				
1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2.1	2.1	2.2	2.1	2.2	2.1	2.4																							
2	2.4	2.5	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1	3	2.3	IZS	3.2	2.5	2.4	2	1.9	3.3	2.8	2.1	2.3	2	3.3	2.4	2.4	2.4																								
3	2	3	2	2.1	2.2	2.2	2	2	2.2	2.1	2.1	2.2	IZS	2.2	2.8	2.4	2.6	2.6	3	2	2.1	2.1	2.1	2	3	2.3	2.4	2.4																								
4	2.1	2.1	3.1	2.6	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	3.1	2.2	2.4	2.4																								
5	2.4	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.9	IZS	2.6	3.4	3.1	3	2.7	2.8	2.1	2.3	2.6	5.3	4.1	4	2.8	5.3	2.8	2.4	2.4																								
6	3.7	2.4	4.7	4.4	2.5	2.2	2.1	2.1	2.8	IZS	3.5	2.6	2.1	2.4	2.5	2	2.4	2.7	2.1	2.6	2	2.2	2.1	5.9	5.9	2.8	2.4	2.4																								
7	2.6	4	2.1	2.3	2.1	2.2	2.3	2.3	IZS	2.6	2.1	2.1	2.1	C	C	C	C	C	2.1	2.1	2.1	2.2	2.3	2.3	4	2.3	2.4	2.4																								
8	2.4	2.5	2.6	2.5	2.5	2.5	2.4	IZS	2.1	2.1	2	2	2.1	P	11.6	2.6	2.9	3	2.4	2.1	2	2.1	2.3	2.3	2.2	11.6	2.8	2.3																								
9	3.3	2.1	7.9	2.2	2.2	2.2	IZS	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2.3	2	2.2	7.9	2.4	2.4																								
10	2.2	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3.6	3.6	2.1	2.4																								
11	6.9	4.4	2.6	3.8	IZS	3.2	3.4	3.8	2	P	2.2	2.6	2.4	2.5	3	2.8	2.6	3.5	2.4	2	3.6	2.9	2.5	7.5	7.5	3.3	2.3																									
12	2	2	2	IZS	3.4	2.9	2.6	2.2	2.1	4.3	4.9	3	3.3	3.2	2.1	2.1	2.2	3.8	3.4	2	1.9	2	2	4	4.9	2.8	2.4	2.4																								
13	3.4	4.5	IZS	5.7	4.2	3.5	3.6	2.1	2	2	2.1	2.5	3.3	2.1	2.1	2.1	2.1	2.3	2.2	3.2	2.1	2.1	2.4	2.3	5.7	2.8	2.4	2.4																								
14	2.8	IZS	1.9	2.9	3.3	2	2.3	2.9	2	2	2	2	2.1	2.1	2.2	2.3	2.6	2.6	3	3	3.6	3.1	3.1	3.3	3.6	2.6	2.4	2.4																								
15	IZS	2.2	2.3	2.2	2.7	7.8	11.7	3.6	2.6	2.8	2.3	1.9	2	1.9	2.2	2.2	2.4	3.3	2	2	1.9	2	2.1	IZS	11.7	3.0	2.4	2.4																								
16	2.1	2	2	2.1	2	2	2	2	2	2	2	N	N	N	N	C	C	2.4	2.2	2.2	2.6	2.5	IZS	2.5	2.6	2.2	2.0	2.4																								
17	2.8	2.7	3	2.5	2.3	2.4	2.4	2.4	2	2.1	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2	IZS	2	3	2.2	2.4	2.4																								
18	2	2	2	2	1.9	2	1.9	1.9	2	2	2	1.9	1.9	1.9	2	2	2	2	2	2	1.9	IZS	1.9	1.9	2	2.0	2.4	2.4																								
19	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.1	2.1	IZS	2	2.1	P	2.1	2.2	2.0	2.3																								
20	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2	2	2.1	2.2	2.1	2.4																								
21	7.8	4	2.1	2.1	2.1	2.1	2.1	2	2.5	2.5	3.4	2.8	2.3	2.6	2.2	2.2	2.2	IZS	2.4	2	2	2	2	2	2.9	7.8	2.6	2.4																								
22	2	2	2	2	3	2.1	2.2	2.1	2.1	2	2	2	2	2	2	2	IZS	2	2	2	2	2.2	2.4	2.3	2.5	3	2.1	2.4																								
23	2.6	2.4	2.4	2.5	2.9	2.8	2.6	2.6	2.5	2.4	2.2	2.2	2	2	2	IZS	2	2	2	2	2	2.1	2.1	2	2.9	2.3	2.4	2.4																								
24	1.9	2.1	2.1	2.3	2.3	2.1	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2.2	2.5	3.8	2.7	6.7	2.9	5.3	4.4	6.7	2.6	2.4	2.4																								
25	3.4	2.4	2.6	2.8	3.3	3.8	3.3	2.9	2.3	2.2	2.6	2.5	2.9	IZS	2.2	2	2.5	2.6	2.6	3.9	2	5.5	3.7	2	5.5	2.9	2.4	2.4																								
26	2	2	2	2	3.5	2.6	2.6	2.3	2	2	2.4	3.2	IZS	2.4	2.2	2.1	2.1	2	2	8.9	8.8	5	2.5	2.1	8.9	3.0	2.4	2.4																								
27	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2.3	2.5	2.1	2.5	2.1	2.4																								
28	2.1	2.1	2.2	2.4	2.3	2.4	2.6	2.6	2.5	2.2	IZS	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2	2	2.1	2.1	2.1	2.1	2.6	2.2	2.4	2.4																								
29	2.1	2.1	2	2	3.7	4.9	3.7	3	2.9	IZS	2	2.2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	2.1	P	2.6	3	2.9	2.7	4.9	2.5	2.3																								
30	2.6	2.6	2.7	3.2	2.2	2.7	2.4	2.8	IZS	2.5	2.5	2.4	2.4	2.3	3.2	2.4	2.4	2.2	2.1	1.9	2	2	2	3.2	2.4	2.4	2.4	2.4																								
HOURLY MAX	8	5	8	6	4	8	12	4	3	4	5	3	3	12	3	3	3	4	4	9	9	6	5	8																												
HOURLY AVG	2.8	2.5	2.5	2.5	2.5	2.7	2.7	2.4	2.2	2.3	2.3	2.3	2.3	2.6	2.3	2.2	2.3	2.3	2.3	2.5	2.7	2.5	2.5	2.8																												

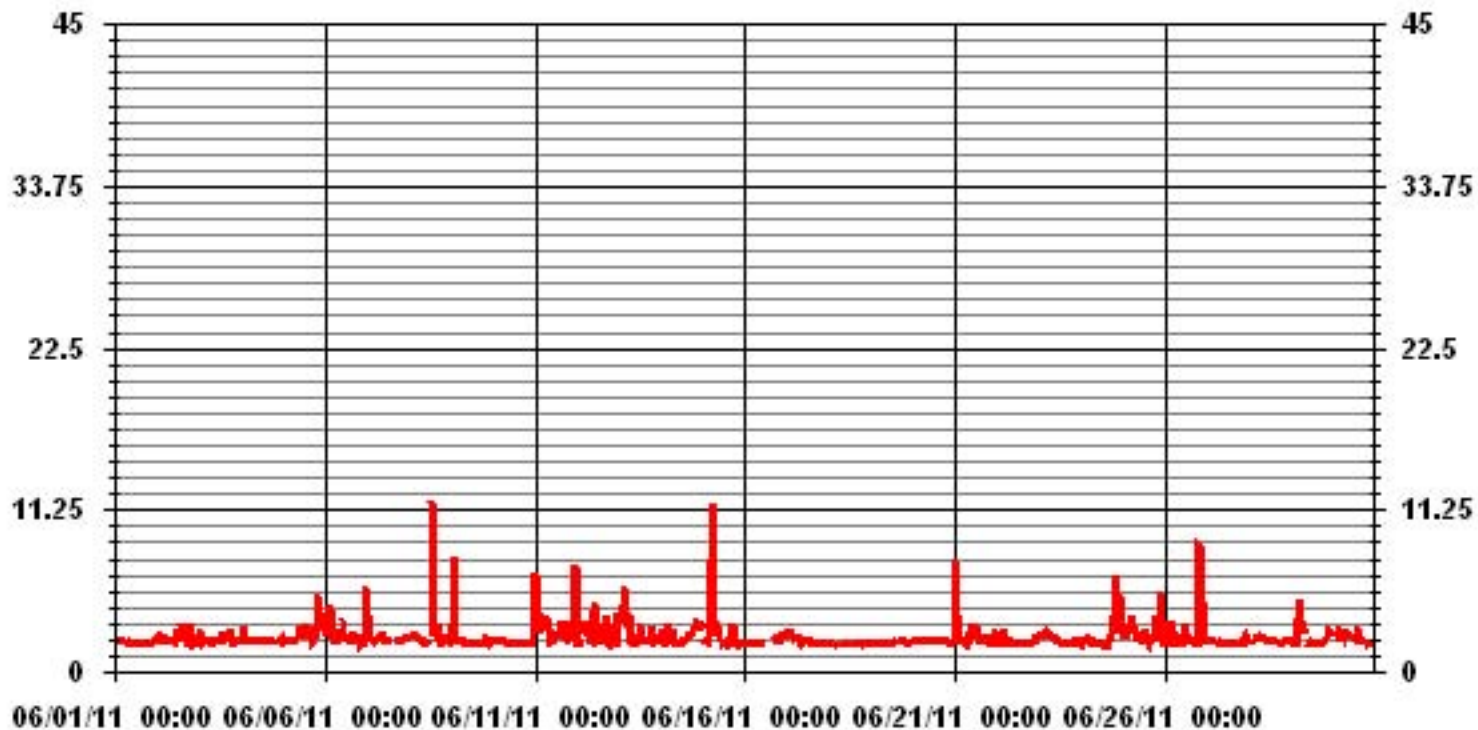
STATUS FLAG CODES

S - OUT OF SERVICE	IZS - IZS - DAILY ZERO/SPAN CHECK
N - INVALID DATA	M - MISSING DATA
D - INSTRUMENT DRIFT	P - POWER FAILURE
C - CALIBRATION	NA - NOT APPLICABLE
BB - BELOW BACKGROUND OF 1.5 PPM	

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	674					
MAXIMUM INSTANTANEOUS VALUE:	11.7	PPM	@ HOUR(S)	6	ON DAY(S)	15
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	712 HRS		
MONTHLY CALIBRATION TIME:	7 HRS					
STANDARD DEVIATION:	0.97					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	6.18	4.86	7.06	6.48	4.27	4.86	4.27	5.15	7.80	3.53	3.09	2.94	7.06	12.51	10.89	8.98	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.18	4.86	7.06	6.48	4.27	4.86	4.27	5.15	7.80	3.53	3.09	2.94	7.06	12.51	10.89	8.98	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	42	33	48	44	29	33	29	35	53	24	21	20	48	85	74	61	679
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	42	33	48	44	29	33	29	35	53	24	21	20	48	85	74	61	

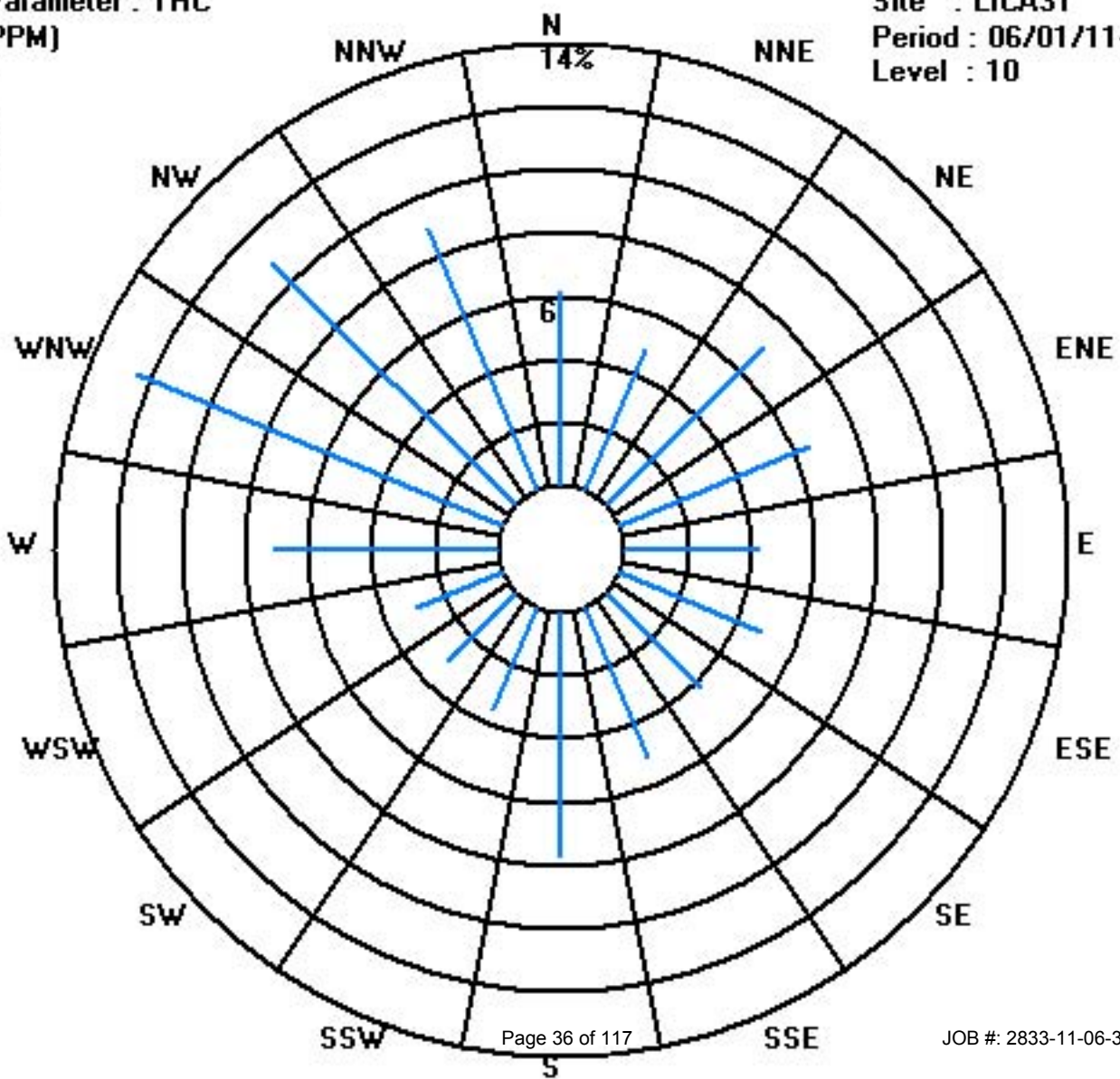
Calm : .00 %

Total # Operational Hours : 679

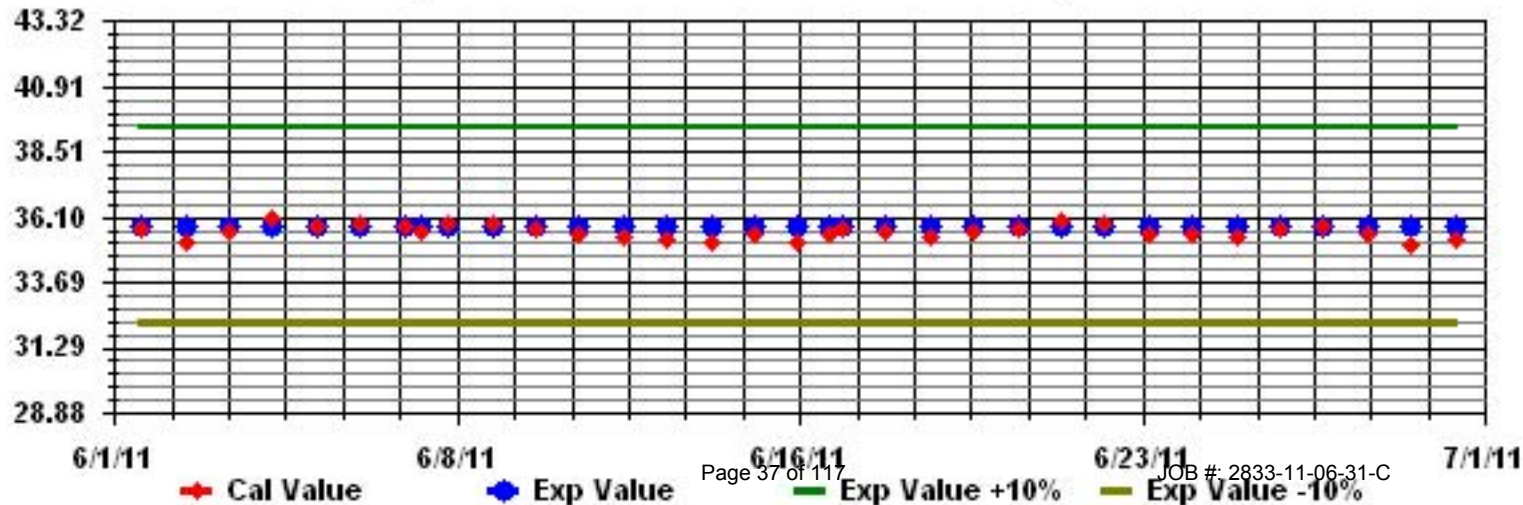
Class Limits (PPM)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAll



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

OZONE (O₃) hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	54	52	49	41	37	35	32	36	43	48	52	53	55	55	IZS	51	50	48	45	46	46	45	44	43	55	46.1	24	
2	41	36	34	30	28	27	26	27	32	36	42	45	48	IZS	55	54	54	53	52	50	51	48	42	40	55	41.3	24	
3	42	46	44	39	29	25	25	23	21	24	27	26	IZS	25	26	28	31	32	33	32	32	30	29	27	46	30.3	24	
4	27	25	25	27	26	21	22	25	27	28	29	IZS	28	27	27	27	29	30	29	28	24	23	23	21	30	26.0	24	
5	21	21	22	22	20	18	17	18	22	27	IZS	30	28	32	34	33	35	34	33	32	31	31	29	27	35	26.8	24	
6	26	25	23	24	23	14	17	24	28	IZS	38	40	42	44	47	48	49	49	49	48	46	46	44	43	49	36.4	24	
7	44	43	45	43	35	31	28	26	IZS	38	46	51	50	45	45	51	51	46	45	43	41	43	45	42	51	42.5	24	
8	37	34	31	31	31	29	28	IZS	29	C	C	C	C	36	38	40	39	41	42	40	39	37	35	38	42	35.5	24	
9	40	38	31	28	30	27	IZS	32	39	47	50	54	56	58	57	58	59	58	57	54	52	50	49	43	59	46.4	24	
10	40	38	34	32	31	IZS	27	32	39	46	51	55	54	55	55	54	54	53	52	50	47	46	47	44	55	45.0	24	
11	40	36	37	41	IZS	35	32	33	38	39	41	43	44	44	43	42	41	41	41	39	36	37	39	38	44	39.1	24	
12	40	38	35	IZS	30	29	28	30	28	27	31	30	35	36	39	40	39	38	36	34	32	36	39	39	40	34.3	24	
13	39	37	IZS	30	33	29	24	31	38	41	41	43	41	47	50	52	53	53	50	49	45	44	40	35	53	41.1	24	
14	35	IZS	41	44	38	35	33	34	36	41	41	43	43	44	44	42	36	34	35	31	26	24	22	23	44	35.9	24	
15	IZS	25	33	35	33	30	33	36	32	29	32	32	34	36	31	27	29	30	33	38	34	31	28	IZS	38	31.9	24	
16	38	46	43	38	32	27	27	26	26	27	27	25	26	38	44	45	47	39	37	37	32	29	IZS	22	47	33.8	24	
17	17	19	19	19	15	16	18	25	40	41	41	42	44	45	43	42	41	38	34	27	20	IZS	18	15	45	29.5	24	
18	16	17	17	16	17	15	14	14	17	21	22	23	26	28	28	29	30	27	25	25	IZS	23	24	24	30	21.7	24	
19	23	23	24	24	26	28	27	27	26	26	27	27	29	28	29	30	28	29	28	IZS	26	26	25	24	30	26.5	24	
20	26	26	24	24	24	25	25	25	25	25	26	26	29	30	31	30	31	30	IZS	28	28	27	25	23	31	26.7	24	
21	21	20	24	25	22	22	23	24	25	21	21	27	34	36	39	41	42	IZS	43	36	33	36	38	38	43	30.0	24	
22	36	39	37	36	25	26	26	36	39	44	47	47	48	48	49	49	IZS	50	50	48	44	41	39	38	50	41.0	24	
23	38	41	43	41	35	34	30	29	33	40	44	45	48	51	50	IZS	49	47	46	44	42	43	43	41	51	41.6	24	
24	46	40	34	30	29	27	26	28	30	34	36	40	42	41	IZS	42	40	38	36	30	29	27	26	24	46	33.7	24	
25	22	22	19	18	17	15	14	16	19	23	23	25	26	IZS	25	25	25	25	23	20	23	30	24	30	21.9	24		
26	23	23	24	30	29	33	33	30	37	41	41	34	IZS	33	38	38	34	33	34	31	31	29	31	26	41	32.0	24	
27	23	26	24	21	19	19	19	22	26	29	30	IZS	37	43	48	50	54	48	46	47	47	39	34	35	54	34.2	24	
28	36	37	40	27	21	17	18	22	31	36	IZS	41	46	48	48	51	49	46	45	44	43	41	41	41	51	37.8	24	
29	37	31	26	22	21	25	26	33	38	IZS	32	32	34	32	33	34	32	36	35	31	30	28	26	23	38	30.3	24	
30	24	21	18	16	18	17	17	20	IZS	25	27	29	31	33	34	33	33	36	36	34	29	30	29	29	36	26.9	24	
HOURLY MAX	54	52	49	44	38	35	33	36	43	48	52	55	56	58	57	58	59	58	57	54	52	50	49	44				
HOURLY AVG	32.8	31.9	31.0	29.4	26.7	25.2	24.7	27.0	30.9	33.5	35.7	37.3	39.2	39.9	40.4	40.9	40.8	40.1	39.7	37.9	35.7	34.9	33.9	32.1				

STATUS FLAG CODES

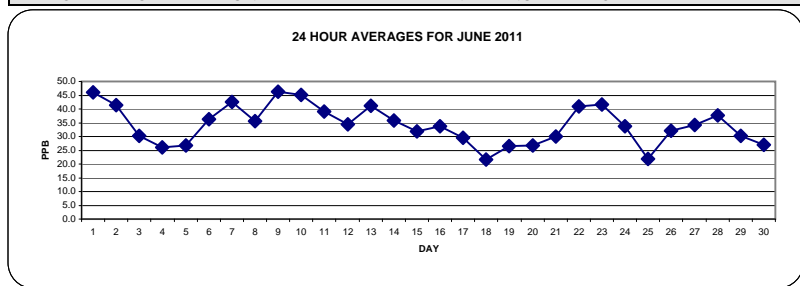
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

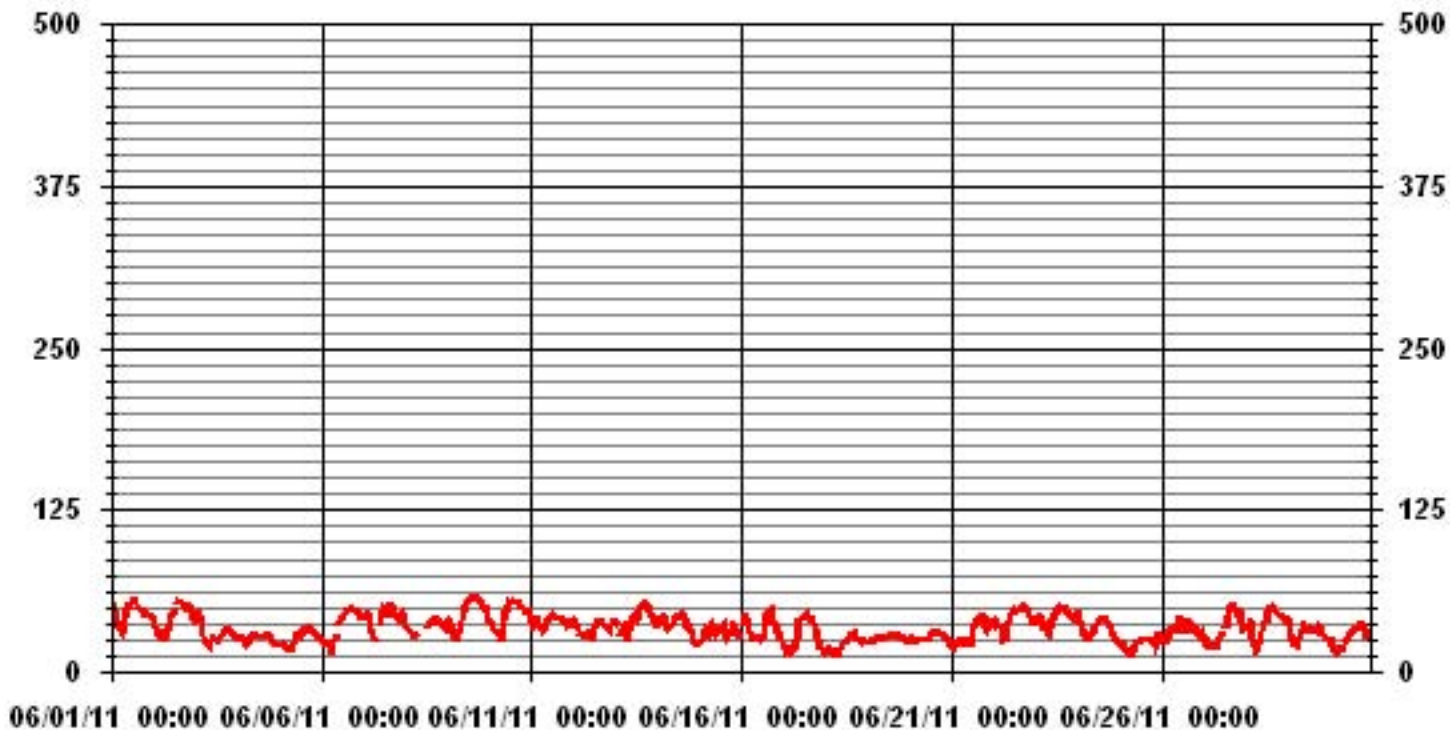
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	685					
MAXIMUM 1-HR AVERAGE:	59	PPB	@ HOUR(S)	16	ON DAY(S)	9
MAXIMUM 24-HR AVERAGE:	46.4	PPB			ON DAY(S)	9
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	9.90		MONTHLY AVERAGE	34.2	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	57	57	52	45	38	38	34	39	46	49	54	55	56	56	IZS	53	52	49	46	47	47	46	45	44	57	48.0	24
2	43	38	36	32	30	29	28	30	36	39	45	47	50	IZS	56	56	55	54	54	52	52	51	44	43	56	43.5	24
3	45	49	45	43	32	27	27	25	23	27	29	29	IZS	27	28	30	33	33	34	33	32	32	31	28	49	32.3	24
4	28	26	27	28	27	23	24	26	29	29	31	IZS	29	28	28	29	32	32	29	28	27	24	24	22	32	27.4	24
5	22	22	23	22	21	19	18	20	24	30	IZS	32	30	33	35	36	37	36	34	33	32	32	30	29	37	28.3	24
6	27	26	25	27	26	18	23	27	32	IZS	39	43	43	46	48	48	50	51	50	50	47	47	46	45	51	38.4	24
7	46	45	46	45	42	32	30	28	IZS	44	49	53	53	48	47	53	53	49	46	45	42	46	46	44	53	44.9	24
8	39	36	32	32	32	32	29	IZS	C	C	C	C	C	45	42	43	41	42	44	43	40	39	37	41	45	38.3	24
9	41	40	33	29	31	28	IZS	35	45	51	52	55	57	59	58	59	59	59	59	57	53	52	50	47	59	48.2	24
10	41	40	37	33	32	IZS	29	37	42	49	54	56	56	57	56	56	55	54	53	52	49	48	48	46	57	47.0	24
11	45	38	39	43	IZS	37	33	36	41	P	43	45	45	45	45	43	43	42	42	41	37	39	42	41	45	41.1	23
12	41	41	38	IZS	31	32	33	32	29	29	35	35	37	40	40	41	41	40	38	35	34	39	42	40	42	36.7	24
13	40	39	IZS	32	34	32	28	34	42	43	43	45	43	50	52	54	55	55	52	52	48	46	44	43	55	43.7	24
14	37	IZS	46	47	41	37	36	36	39	44	42	45	46	46	46	48	39	39	41	35	28	25	23	25	48	38.7	24
15	IZS	29	38	38	37	35	37	40	35	32	35	35	37	37	36	31	31	32	39	40	37	35	32	IZS	40	35.4	24
16	44	50	47	39	39	28	28	28	27	30	31	P	32	44	47	49	52	43	39	39	35	32	IZS	25	52	37.6	23
17	22	21	20	20	16	17	20	34	42	43	44	43	46	47	45	43	43	41	36	32	22	IZS	19	16	47	31.8	24
18	18	18	17	17	18	18	15	16	20	23	23	25	28	30	31	32	32	29	26	27	IZS	24	25	25	32	23.3	24
19	24	24	27	25	28	29	28	28	27	27	28	29	31	29	32	32	32	31	30	IZS	28	27	P	25	32	28.2	23
20	27	27	25	26	25	26	26	26	26	26	28	28	31	32	32	32	32	31	IZS	31	30	29	28	25	32	28.2	24
21	22	22	26	27	25	24	24	26	27	24	24	30	36	39	41	42	43	IZS	45	41	37	38	40	39	45	32.3	24
22	39	40	39	39	34	33	32	40	42	46	48	48	50	50	50	50	IZS	51	52	50	49	48	40	40	52	43.9	24
23	40	44	44	43	37	35	32	32	36	43	45	47	51	53	53	IZS	50	49	47	45	43	45	45	42	53	43.5	24
24	49	44	37	31	30	29	28	29	34	35	40	43	44	43	IZS	43	41	40	38	33	31	28	27	25	49	35.7	24
25	24	23	20	19	18	16	15	17	21	25	24	26	26	IZS	25	26	26	26	26	25	22	33	33	28	33	23.7	24
26	26	24	26	33	31	35	34	34	40	44	43	41	IZS	41	41	40	37	35	36	35	34	32	32	31	44	35.0	24
27	25	27	27	23	20	356	20	25	28	30	33	IZS	39	47	49	53	55	51	50	49	54	44	39	39	356	51.4	24
28	38	40	42	36	25	20	20	28	34	38	IZS	45	41	50	50	53	51	48	47	46	44	42	42	42	53	40.1	24
29	38	34	28	24	23	28	31	37	39	IZS	34	34	35	34	34	36	35	37	38	P	117	31	29	24	117	36.4	23
30	25	23	18	18	19	18	18	22	IZS	27	29	31	32	35	36	35	36	37	38	36	32	31	30	30	38	28.5	24
HOURLY MAX	57	57	52	47	42	356	37	40	46	51	54	56	57	59	58	59	59	59	59	57	117	52	50	47			
HOURLY AVG	34.9	34.0	33.1	31.6	29.0	39.0	26.9	29.9	33.6	35.7	38.0	40.2	40.9	42.5	42.3	43.0	42.8	41.9	41.7	40.4	40.8	37.4	36.2	34.3			

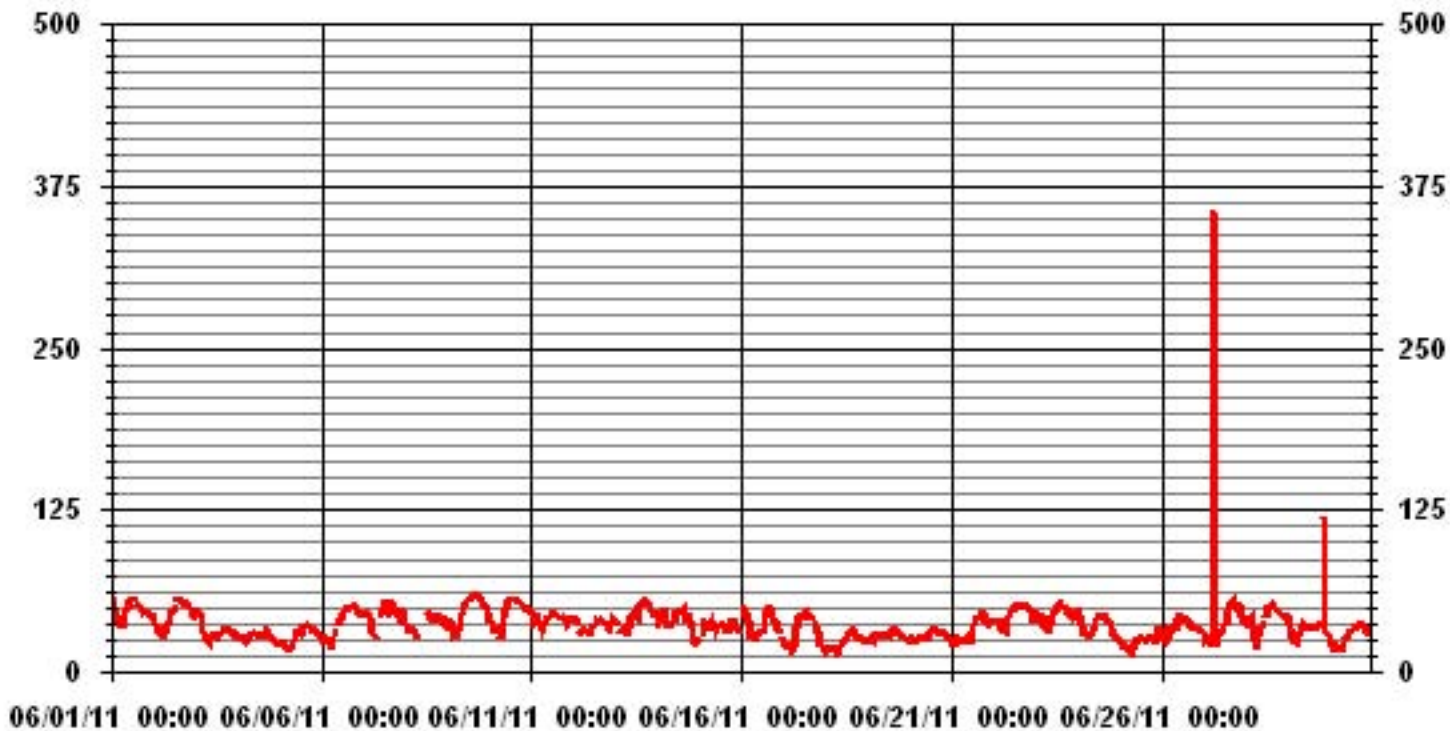
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	680				
MAXIMUM INSTANTANEOUS VALUE:	356	PPB	@ HOUR(S)	19	ON DAY(S) 30
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	716	HRS
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	16.10				

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : O3
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5.69	4.81	7.15	6.27	4.23	4.67	4.23	4.96	6.42	2.91	2.77	2.91	6.71	10.51	9.92	8.02	92.26
< 110	.43	.14	.00	.14	.00	.14	.43	.29	1.45	.58	.29	.00	.29	1.45	1.16	.87	7.73
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.13	4.96	7.15	6.42	4.23	4.81	4.67	5.25	7.88	3.50	3.06	2.91	7.00	11.97	11.09	8.90	

Calm : .00 %

Total # Operational Hours : 685

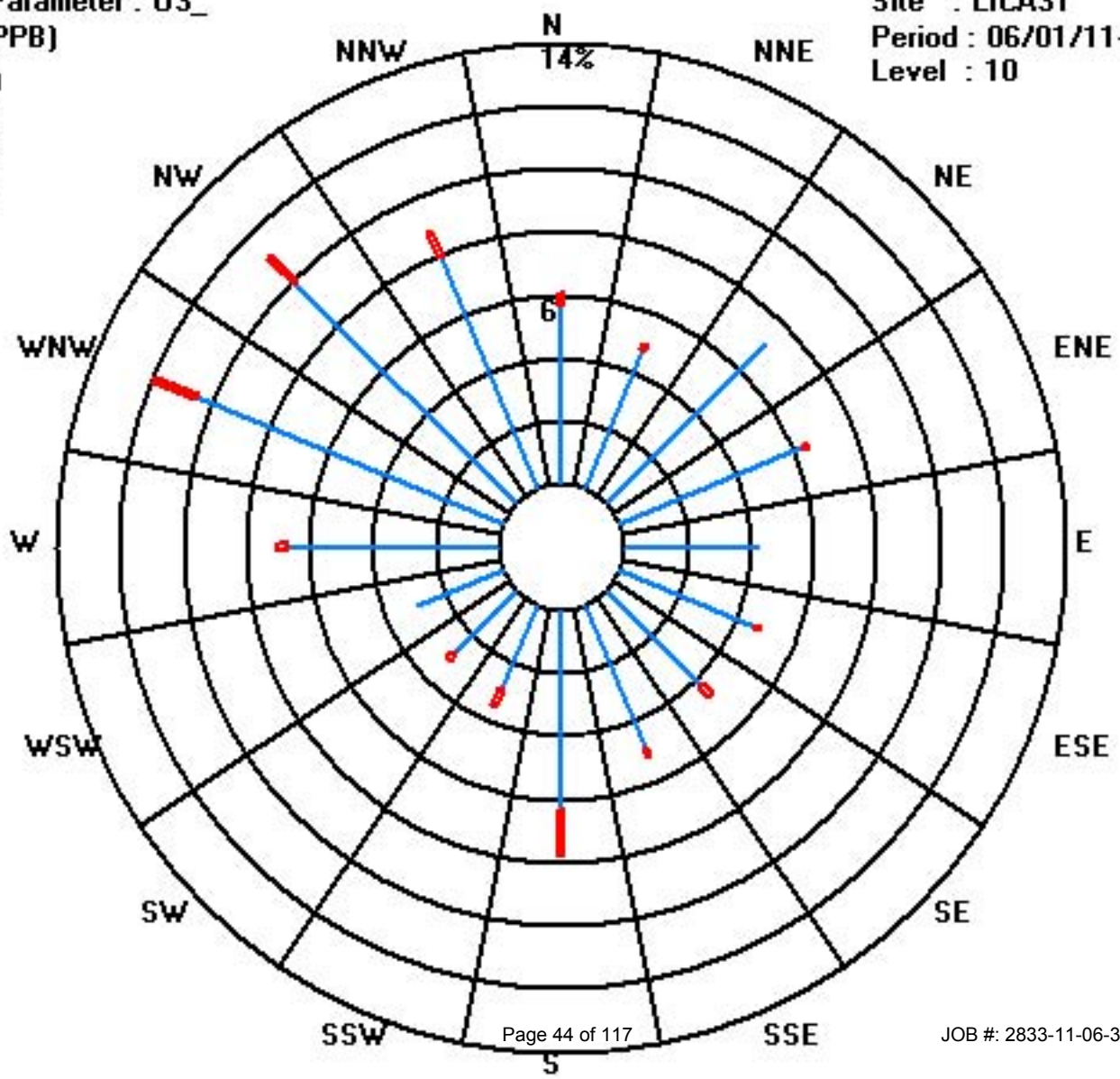
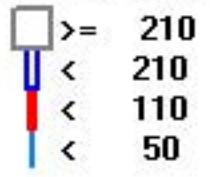
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	33	49	43	29	32	29	34	44	20	19	20	46	72	68	55	632
< 110	3	1		1		1	3	2	10	4	2		2	10	8	6	53
< 210																	
>= 210																	
Totals	42	34	49	44	29	33	32	36	54	24	21	20	48	82	76	61	

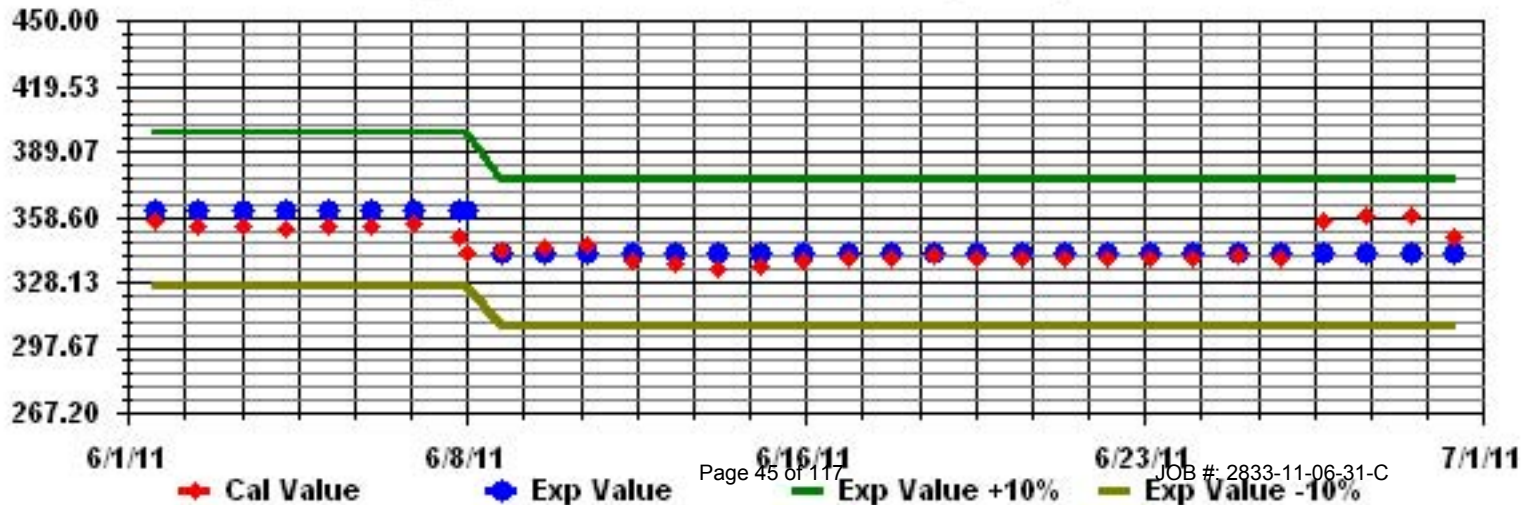
Calm : .00 %

Total # Operational Hours : 685

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: 03_ Sequence: 03 Phase: SPAN



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

NITROGEN DIOXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	2	2	2	3	3	4	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.7	24
2	2	2	2	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	1.6	24
3	3	2	1	2	3	4	2	1	2	2	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	4	0.9	24
4	4	0	0	0	0	0	0	1	0	0	0	0	0	IZS	1	1	1	1	1	1	1	2	3	2	2	3	3	0.9	24
5	5	2	2	2	2	3	3	3	2	2	2	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.6	24
6	6	1	1	1	1	1	2	2	1	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.1	24
7	7	1	1	2	1	1	2	3	3	IZS	C	C	C	C	C	C	C	1	1	0	0	0	0	0	0	1	3	1.1	24
8	8	2	3	4	4	3	4	3	IZS	3	2	1	1	M	3	2	2	1	1	1	2	2	2	2	3	4	2.3	23	
9	9	2	2	2	3	3	4	IZS	3	3	2	2	2	2	1	1	1	2	2	1	2	2	2	2	3	4	2.1	24	
10	10	4	4	4	5	5	IZS	5	4	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	5	2.3	24	
11	11	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
12	12	1	1	1	IZS	2	3	2	2	3	3	2	2	1	1	1	1	1	1	1	2	2	2	2	1	1	3	1.7	24
13	13	1	2	IZS	1	2	2	2	2	1	2	2	2	2	1	1	1	1	1	2	2	2	3	3	4	4	1.8	24	
14	14	3	IZS	2	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24
15	15	IZS	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24
16	16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
17	17	2	2	2	2	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.5	24
18	18	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.9	24	
19	19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
20	20	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	1	1	1	1	2	1.0	24
21	21	1	2	1	1	1	2	1	1	1	1	0	1	0	0	1	0	0	IZS	0	1	1	1	2	2	2	2	1.0	24
22	22	2	1	1	2	3	2	2	1	1	1	1	1	0	0	0	IZS	0	0	1	1	1	1	2	2	3	1.1	24	
23	23	2	2	2	2	2	2	2	3	2	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	3	1.5	24	
24	24	1	1	1	2	2	2	2	1	1	1	1	1	1	1	IZS	0	0	0	0	1	1	1	1	1	1	2	1.0	24
25	25	1	1	1	1	1	1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	1	1	1	1	1	0.5	24
26	26	1	1	1	1	1	1	1	1	1	0	1	1	IZS	5	5	3	2	2	1	2	2	1	2	2	2	5	1.7	24
27	27	2	2	2	2	3	2	2	1	1	1	1	1	IZS	1	1	2	2	2	2	2	2	2	2	2	2	3	1.7	24
28	28	2	2	2	2	2	3	3	3	2	2	IZS	2	2	2	2	1	1	1	2	1	2	2	2	2	3	2.0	24	
29	29	2	3	3	3	3	2	2	1	1	IZS	1	1	1	1	1	0	1	1	1	1	1	1	1	1	3	1.4	24	
30	30	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	1	1	3	4	3	4	0.9	24	
HOURLY MAX		4	4	4	5	5	4	5	4	3	3	2	2	2	5	5	3	2	2	2	2	3	3	4	4				
HOURLY AVG		1.6	1.6	1.7	1.8	2.0	2.0	1.9	1.6	1.4	1.2	0.9	1.0	1.0	1.1	1.1	0.9	0.9	0.9	0.9	1.1	1.2	1.3	1.4	1.7				

STATUS FLAG CODES

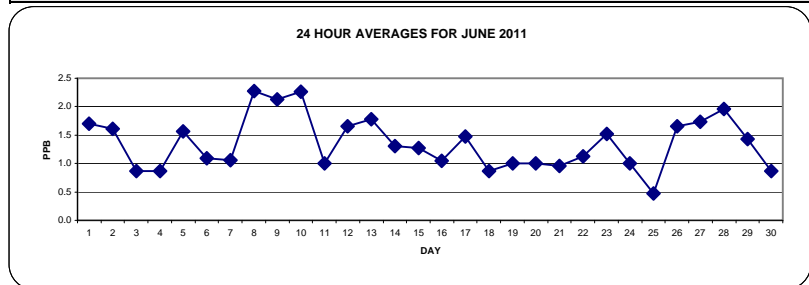
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

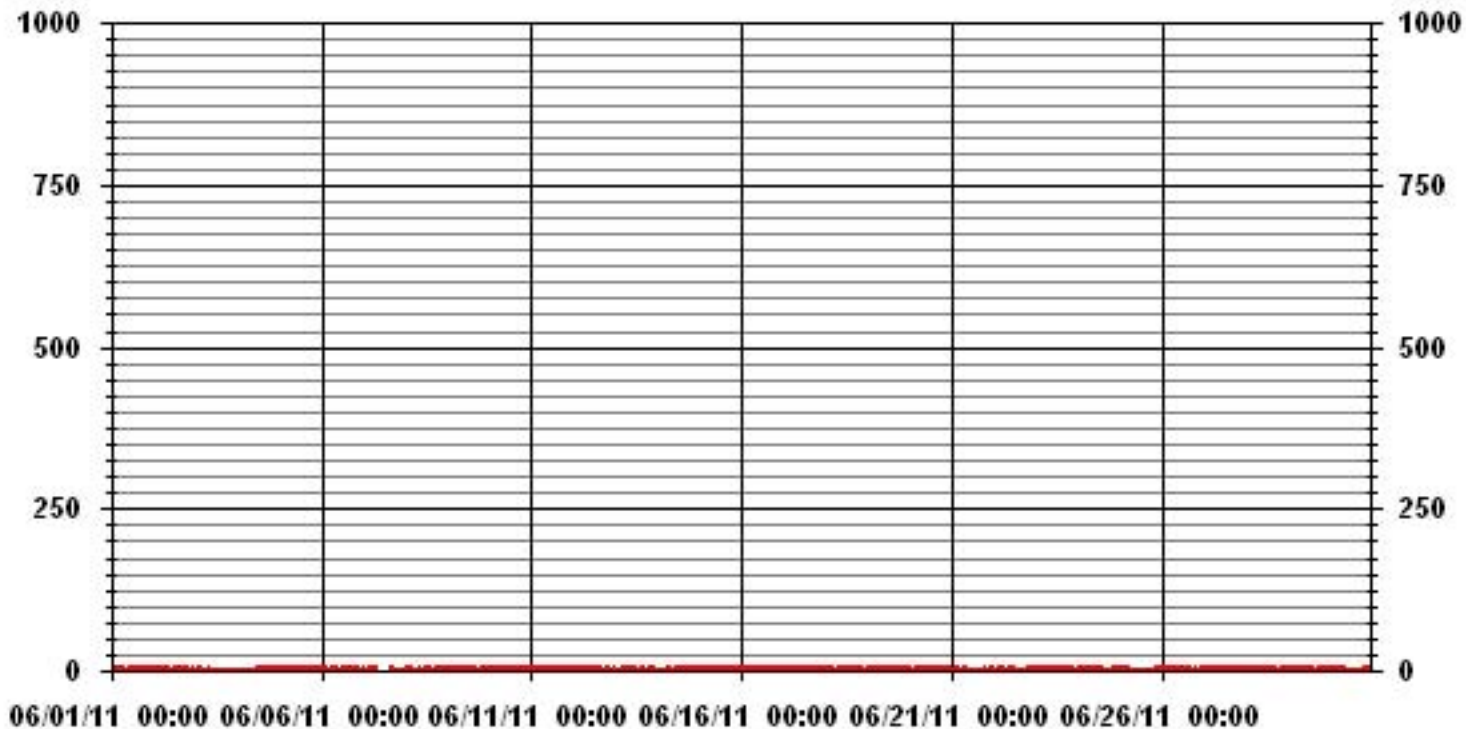
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	609				
MAXIMUM 1-HR AVERAGE:	5	PPB	@ HOUR(S)	VAR	ON DAY(S) 10, 26
MAXIMUM 24-HR AVERAGE:	2.3	PPB			ON DAY(S) 8, 10
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.88		MONTHLY AVERAGE:	1.35	PPB



01 Hour Averages



— LICA31 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JUNE 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	3	3	3	4	4	6	5	4	3	2	2	2	1	1	IZS	1	2	2	2	2	2	2	2	2	2	6	2.6	24
2	3	3	4	3	3	3	3	3	3	2	3	2	2	IZS	1	2	1	2	2	5	4	2	3	3	5	2.7	24	
3	3	2	3	5	5	3	2	3	3	2	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	5	1.9	24	
4	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	2	2	2	3	6	4	3	3	6	1.9	24	
5	3	3	3	3	3	4	4	3	3	3	IZS	3	2	2	3	2	2	2	2	2	2	2	3	2	4	2.7	24	
6	2	2	2	2	2	3	3	2	2	IZS	1	1	2	1	1	2	2	1	1	1	2	2	2	3	3	1.8	24	
7	2	2	3	2	2	3	3	4	IZS	C	C	C	C	C	C	2	2	1	1	1	1	1	1	2	4	2.0	24	
8	3	4	5	4	4	5	5	IZS	4	4	2	2	M	52	3	3	2	2	2	2	2	2	3	3	52	5.4	23	
9	3	3	3	4	4	5	IZS	4	4	3	2	3	2	2	2	2	3	3	2	10	5	3	3	4	10	3.4	24	
10	5	5	5	5	6	IZS	6	5	3	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	6	3.2	24	
11	2	2	2	2	IZS	2	2	3	2	P	2	2	2	2	1	2	1	2	2	2	1	1	2	2	3	1.9	23	
12	1	1	2	IZS	3	4	3	3	4	5	3	3	2	2	2	2	2	2	3	4	3	3	2	2	5	2.7	24	
13	2	2	IZS	3	2	4	3	2	2	2	2	2	2	2	2	2	2	2	3	2	3	4	4	6	6	2.6	24	
14	4	IZS	4	2	2	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	2.3	24	
15	IZS	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	3	2.3	24	
16	1	2	2	2	2	2	2	2	2	1	1	P	2	2	2	3	2	2	2	2	2	2	IZS	2	3	1.9	23	
17	3	3	3	4	4	4	4	3	2	1	1	1	2	1	1	1	2	2	2	2	2	IZS	1	2	4	2.2	24	
18	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	2	1	IZS	1	1	1	2	1.1	24	
19	1	1	2	2	2	2	2	2	2	2	1	1	1	2	1	1	2	2	1	IZS	1	2	P	2	2	1.6	23	
20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	IZS	1	2	2	2	2	2	1.9	24	
21	2	2	2	2	2	2	2	1	2	2	1	1	2	2	1	1	2	IZS	1	1	3	3	3	5	5	2.0	24	
22	3	2	2	3	4	4	2	2	2	2	2	2	1	1	1	1	IZS	1	1	1	2	2	4	3	4	2.1	24	
23	3	3	3	2	3	3	3	4	3	3	2	2	1	2	2	IZS	2	2	2	2	2	2	2	2	4	2.4	24	
24	2	1	2	2	2	2	2	2	2	1	2	1	11	1	IZS	1	1	1	1	2	2	2	2	1	11	2.0	24	
25	1	1	2	1	2	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	1	1	2	1	2	2	1.2	24	
26	2	2	1	1	2	2	2	1	1	1	1	1	IZS	8	7	4	3	2	7	5	2	3	4	8	8	2.8	24	
27	3	3	3	3	4	3	3	2	2	1	2	IZS	2	2	3	3	3	4	2	3	3	3	3	3	4	2.7	24	
28	2	2	2	3	4	3	4	4	3	2	IZS	3	2	2	3	2	2	2	4	2	3	3	3	3	4	2.7	24	
29	3	3	4	4	4	3	3	2	2	IZS	2	2	1	1	1	1	2	1	2	P	2	2	2	2	4	2.2	23	
30	2	2	1	2	1	2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	3	4	5	4	5	1.7	24	
HOURLY MAX	5	5	5	5	6	6	6	5	4	5	3	3	11	52	7	4	3	4	4	10	6	4	5	6				
HOURLY AVG	2.3	2.3	2.6	2.7	2.9	2.9	2.8	2.5	2.4	2.0	1.7	1.8	2.0	3.7	1.9	1.8	1.8	1.8	1.9	2.4	2.4	2.3	2.4	2.6				

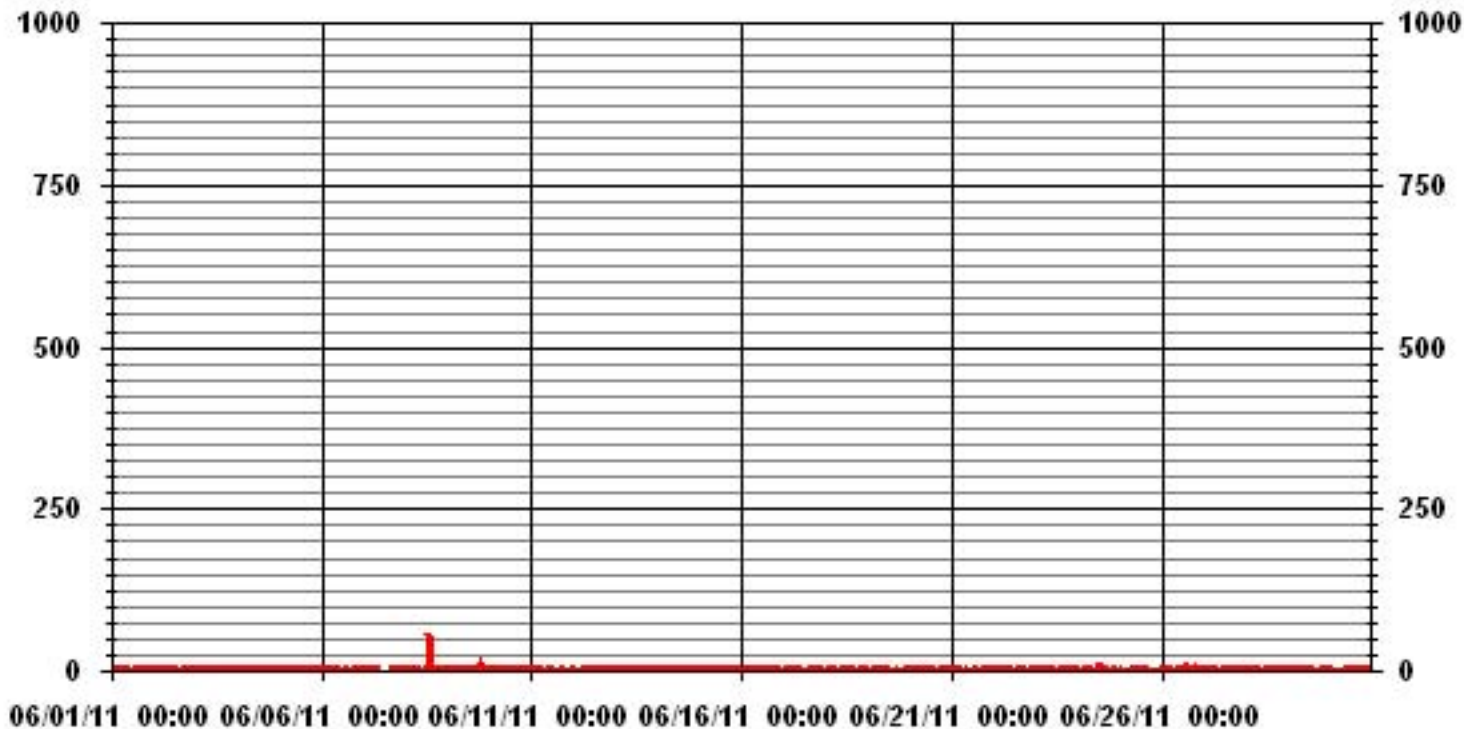
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM INSTANTANEOUS VALUE:	52	PPB	@ HOUR(S)	13	ON DAY(S)	8
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	2.23					

01 Hour Averages



— LICA31 IIO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	6.16	4.99	7.19	6.46	4.25	4.84	4.69	5.13	7.78	3.52	3.08	2.93	7.04	12.48	10.42	8.95	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.16	4.99	7.19	6.46	4.25	4.84	4.69	5.13	7.78	3.52	3.08	2.93	7.04	12.48	10.42	8.95	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	42	34	49	44	29	33	32	35	53	24	21	20	48	85	71	61	681
< 110																	
< 210																	
>= 210																	
Totals	42	34	49	44	29	33	32	35	53	24	21	20	48	85	71	61	

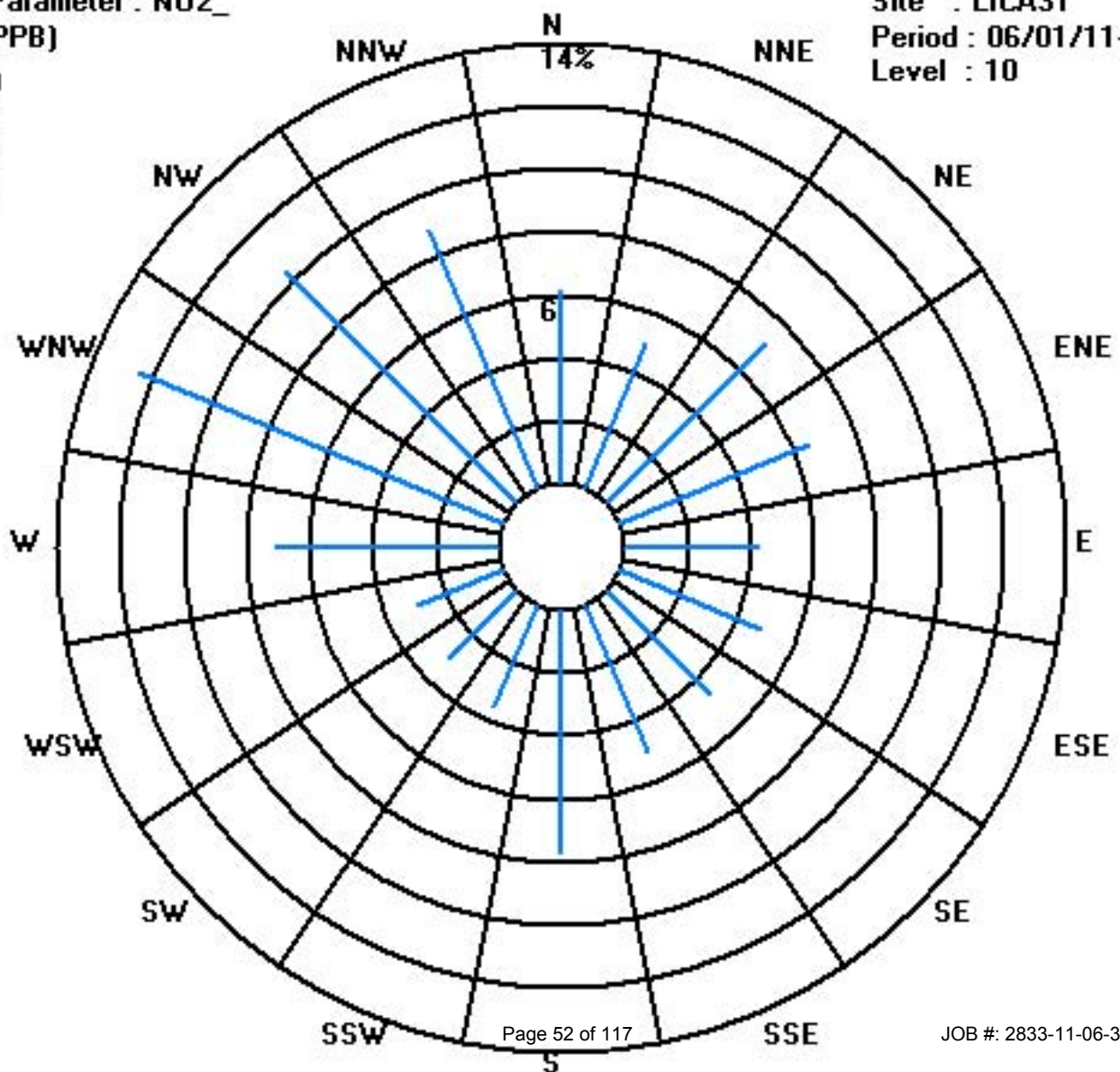
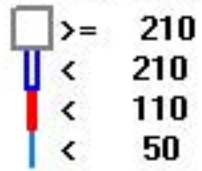
Calm : .00 %

Total # Operational Hours : 681

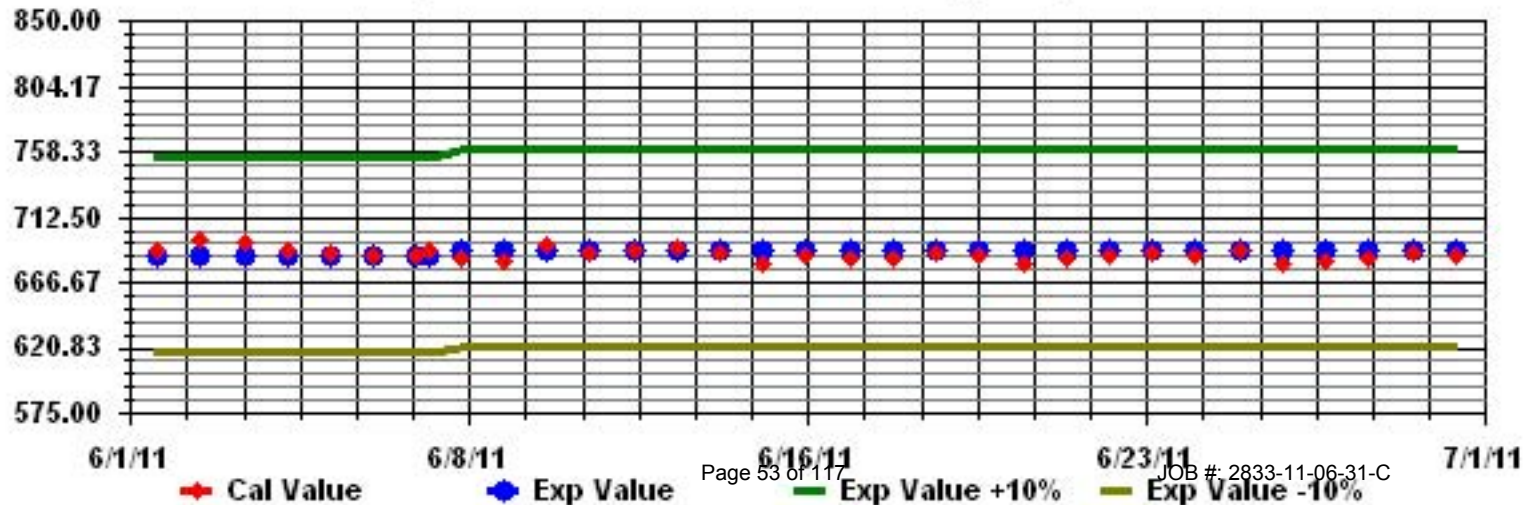
Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

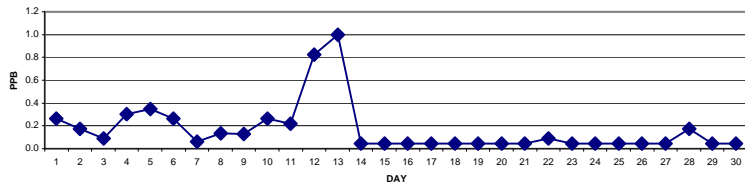
NITRIC OXIDE hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
DAY	HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.	
1	0	0.1	0	0	0	0	1	1	1	1	1	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.3	24	
2	0	0.1	0	0	0	0	0	0	1	1	1	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	0.2	24	
3	0	0.1	0	0	0	0	0	0	1	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	0.1	24	
4	0	0.1	0	0	0	0	0	0	1	0	0	0	0	0	IZS	1	1	1	1	0	1	0	0	1	0	0	1	0.3	24
5	0	0.1	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
6	0	0.1	0	0	0	0	1	1	1	1	1	IZS	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
7	0	0.1	0	0	0	0	0	0	1	IZS	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	1	0.1	24	
8	0	0.1	0	0	0	0	0	0	IZS	1	1	0	0	0	M	1	0	0	0	0	0	0	0	0	0	1	0.1	23	
9	0	0.1	0	0	0	0	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
10	0	0.3	0	0	0	0	IZS	2	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
11	0	0.2	0	0	0	IZS	1	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0.2	24	
12	0	0.8	0	0	IZS	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24
13	1	1.0	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
14	1	0.0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
15	IZS	0.0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
16	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
17	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
18	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
19	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	1	0.0	24	
20	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	1	0.0	24	
21	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	1	0.0	24	
22	0	0.1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	1	0.1	24	
23	0	0.0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
24	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.0	24	
25	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.0	24	
26	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.0	24	
27	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.0	24	
28	0	0.2	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
29	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
30	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

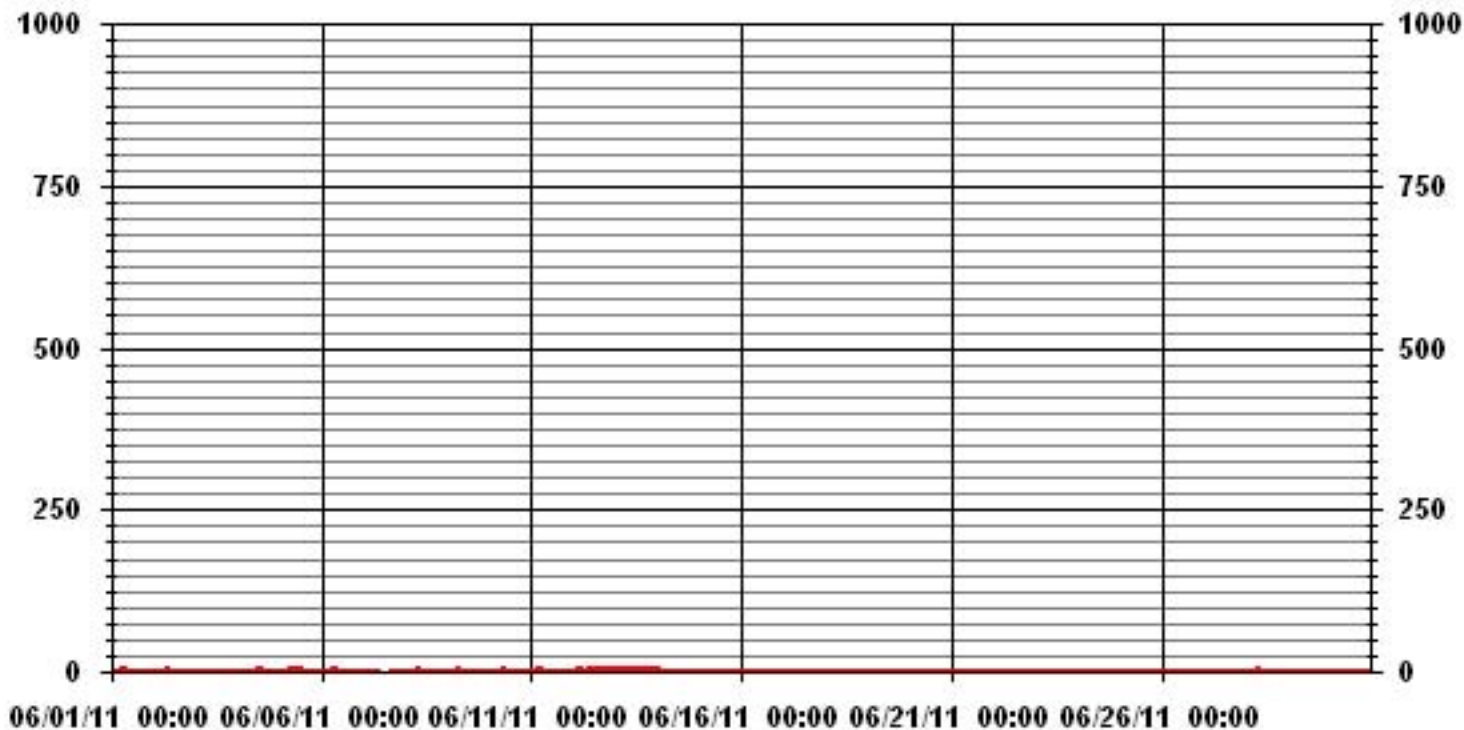
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	113
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) 6 ON DAY(S) 10
MAXIMUM 24-HR AVERAGE:	1.0 PPB ON DAY(S) 13
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	0.38
OPERATIONAL TIME:	719 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	0.17 PPB

01 Hour Averages



— LICA31 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	2	1.1	24	
2	1	1	1	1	1	1	1	2	2	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	2	1.1	24	
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1	1	1	1	1	1	1	1	3	1.1	24	
4	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	2	1	1	1	1	1	1	2	1	1	3	1.2	24	
5	1	1	1	1	1	1	2	2	2	1	IZS	3	2	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24	
6	1	1	1	1	1	1	2	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24	
7	1	1	1	1	1	1	1	2	IZS	C	C	C	C	C	C	C	1	0	0	0	0	0	0	0	2	0.6	24	
8	0	0	0	0	0	0	0	IZS	2	1	1	1	1	M	51	1	1	1	1	1	1	1	1	1	51	3.0	23	
9	1	1	1	1	1	2	IZS	2	2	1	1	1	1	1	1	1	1	1	1	8	1	1	1	1	8	1.4	24	
10	1	1	1	1	1	IZS	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.2	24	
11	1	1	1	1	IZS	2	1	1	1	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	23	
12	1	1	1	IZS	2	1	1	1	1	3	1	2	1	1	2	2	2	2	2	2	2	2	1	1	3	1.4	24	
13	1	1	IZS	2	2	2	2	2	2	1	2	1	1	1	2	1	2	2	2	2	1	1	2	2	1	2	1.5	24
14	1	IZS	2	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.5	24	
15	IZS	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	0	1	1	1	IZS	2	1.0	24	
16	2	1	1	0	1	1	1	0	1	1	1	P	1	1	1	7	1	1	1	0	1	1	IZS	2	7	1.2	23	
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	IZS	2	1	2	0.9	24	
18	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	IZS	2	1	1	2	1.0	24	
19	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0	1	1	1	1	IZS	2	1	P	1	2	1.0	23	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	2	1.0	24	
21	1	1	0	1	1	1	1	1	1	1	1	1	2	2	0	1	1	IZS	2	1	1	1	1	2	2	1.1	24	
22	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	2	1.1	24	
23	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	2	1.1	24	
24	1	1	1	1	1	0	1	1	1	1	1	1	5	0	IZS	2	1	1	1	1	1	1	2	1	5	1.2	24	
25	1	1	1	1	1	1	1	1	1	1	1	1	0	IZS	2	1	1	1	1	1	1	1	1	1	2	1.0	24	
26	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	2	1	1	1	1	2	1.1	24	
27	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	0	1	2	1.0	24	
28	1	1	1	1	1	1	1	2	1	1	IZS	2	1	1	1	1	1	1	1	1	1	0	1	1	2	1.0	24	
29	1	1	1	1	1	1	1	1	1	1	IZS	2	2	1	1	1	1	1	0	P	1	1	1	0	2	1.0	23	
30	1	1	0	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
HOURLY MAX	2	2	2	2	2	2	3	2	2	3	2	3	5	51	2	7	2	2	2	8	2	2	2	2	2			
HOURLY AVG	1.0	1.0	0.9	1.0	1.0	1.0	1.2	1.3	1.2	1.2	1.0	1.2	1.3	3.0	1.0	1.3	1.0	1.0	1.0	1.2	1.0	1.0	1.0	1.0				

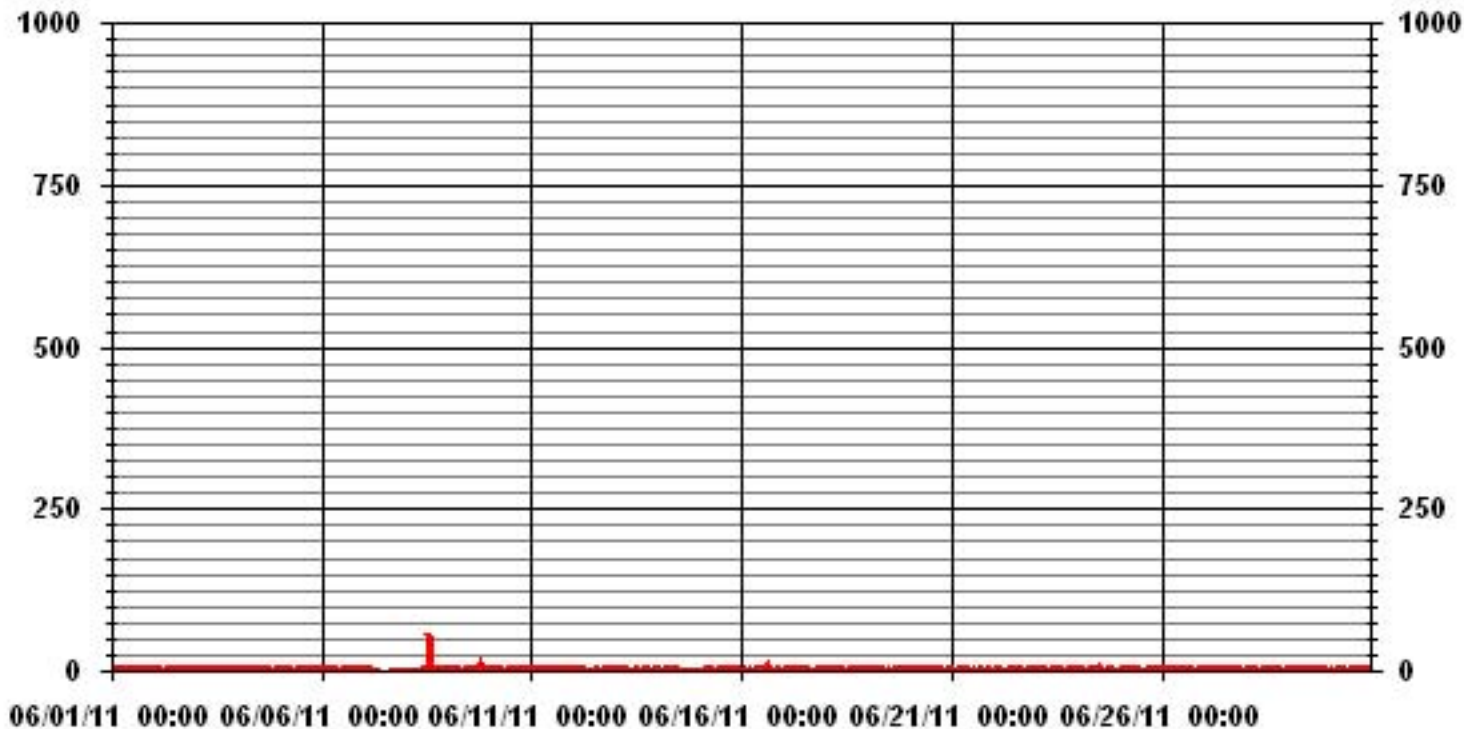
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	631
MAXIMUM INSTANTANEOUS VALUE:	51 PPB @ HOUR(S) 13 ON DAY(S) 8
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	2.01
OPERATIONAL TIME:	715 HRS

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NO
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	6.16	4.99	7.19	6.46	4.25	4.84	4.69	5.13	7.78	3.52	3.08	2.93	7.04	12.48	10.42	8.95	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.16	4.99	7.19	6.46	4.25	4.84	4.69	5.13	7.78	3.52	3.08	2.93	7.04	12.48	10.42	8.95	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	42	34	49	44	29	33	32	35	53	24	21	20	48	85	71	61	681
< 110																	
< 210																	
>= 210																	
Totals	42	34	49	44	29	33	32	35	53	24	21	20	48	85	71	61	

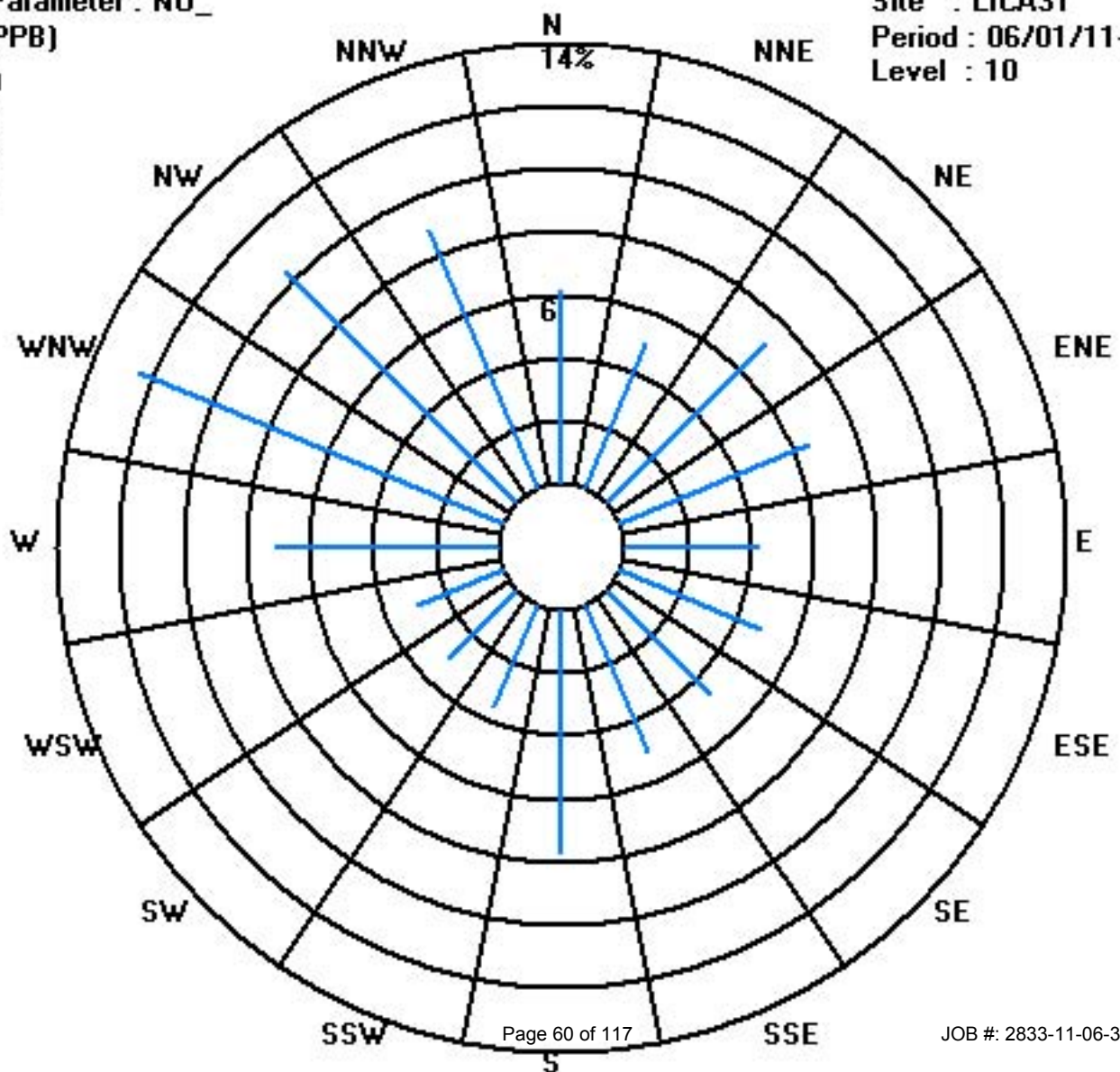
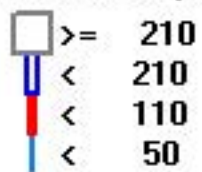
Calm : .00 %

Total # Operational Hours : 681

Class Limits (PPB)

Period : 06/01/11-06/30/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

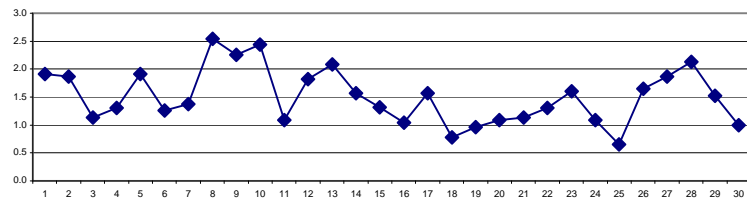
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2	2	2	3	3	5	5	4	3	2	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	5	1.9	24
2	2	3	3	3	2	2	3	3	3	2	2	1	1	IZS	1	1	1	1	1	2	1	1	2	2	3	1.9	24	
3	2	1	2	3	4	2	2	2	2	1	0	0	IZS	1	0	1	1	0	1	0	0	1	0	0	4	1.1	24	
4	0	1	1	0	0	0	1	1	0	0	0	0	IZS	2	2	2	2	2	2	2	3	2	2	3	3	1.3	24	
5	2	3	2	2	3	3	4	4	3	2	IZS	2	2	1	1	1	1	1	1	1	1	1	2	1	4	1.9	24	
6	1	1	2	1	2	2	3	2	2	IZS	1	1	1	1	1	1	1	0	0	1	1	1	1	2	3	1.3	24	
7	1	1	2	1	1	2	3	4	IZS	C	C	C	C	C	C	C	2	1	1	1	0	0	1	4	1.4	24		
8	2	3	4	4	4	4	3	IZS	4	3	2	1	M	4	2	2	1	1	2	2	2	2	3	4	2.5	23		
9	2	2	2	3	3	4	IZS	4	4	2	2	2	2	2	1	1	2	2	1	2	2	2	2	3	4	2.3	24	
10	4	4	4	5	5	IZS	7	5	3	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	7	2.4	24	
11	1	1	1	1	IZS	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
12	0	0	1	IZS	3	3	2	2	3	3	2	2	2	2	1	2	2	2	2	2	2	2	1	1	3	1.8	24	
13	1	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	3	3	4	4	2.1	24	
14	4	IZS	3	2	2	2	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1.6	24	
15	IZS	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	2	1.3	24	
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.0	24	
17	2	2	2	3	4	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1.6	24	
18	0	1	1	0	1	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	IZS	1	1	1	1	0.8	24	
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	IZS	1	1	1	1	1.0	24	
20	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	2	2	1.1	24	
21	2	2	1	1	1	2	1	1	1	1	0	1	1	0	0	1	0	IZS	1	1	2	2	2	2	2	1.1	24	
22	2	1	1	2	3	3	2	1	1	1	1	1	0	1	1	IZS	1	1	0	1	1	2	2	3	1.3	24		
23	2	2	2	2	3	2	2	3	3	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	3	1.6	24	
24	1	1	1	2	1	2	2	1	1	1	1	1	1	0	IZS	1	1	1	1	1	1	1	1	1	2	1.1	24	
25	1	1	1	1	1	1	1	1	1	0	0	0	0	IZS	1	0	0	0	1	0	1	1	1	1	1	0.7	24	
26	1	1	1	1	0	1	1	1	1	0	0	1	IZS	6	5	3	2	2	1	3	2	1	2	2	6	1.7	24	
27	2	2	2	2	3	3	2	1	1	1	1	1	IZS	2	2	2	2	2	2	2	1	2	2	2	3	1.9	24	
28	1	2	2	2	2	3	4	4	3	2	IZS	2	2	2	2	1	1	2	2	2	2	2	2	2	4	2.1	24	
29	3	3	3	3	3	3	2	1	1	IZS	1	1	1	1	1	0	1	1	1	1	1	1	1	1	3	1.5	24	
30	1	1	0	1	1	1	1	1	IZS	1	1	0	0	0	0	0	0	0	1	1	2	3	4	3	4	1.0	24	
HOURLY MAX	NA	4	4	5	5	5	7	5	4	3	2	2	2	6	5	3	2	2	2	3	3	3	4	4				
HOURLY AVG	NA	1.7	1.8	1.9	2.1	2.1	2.2	2.0	1.8	1.4	1.0	1.1	1.2	1.4	1.2	1.1	1.1	1.1	1.1	1.2	1.3	1.4	1.5	1.7				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

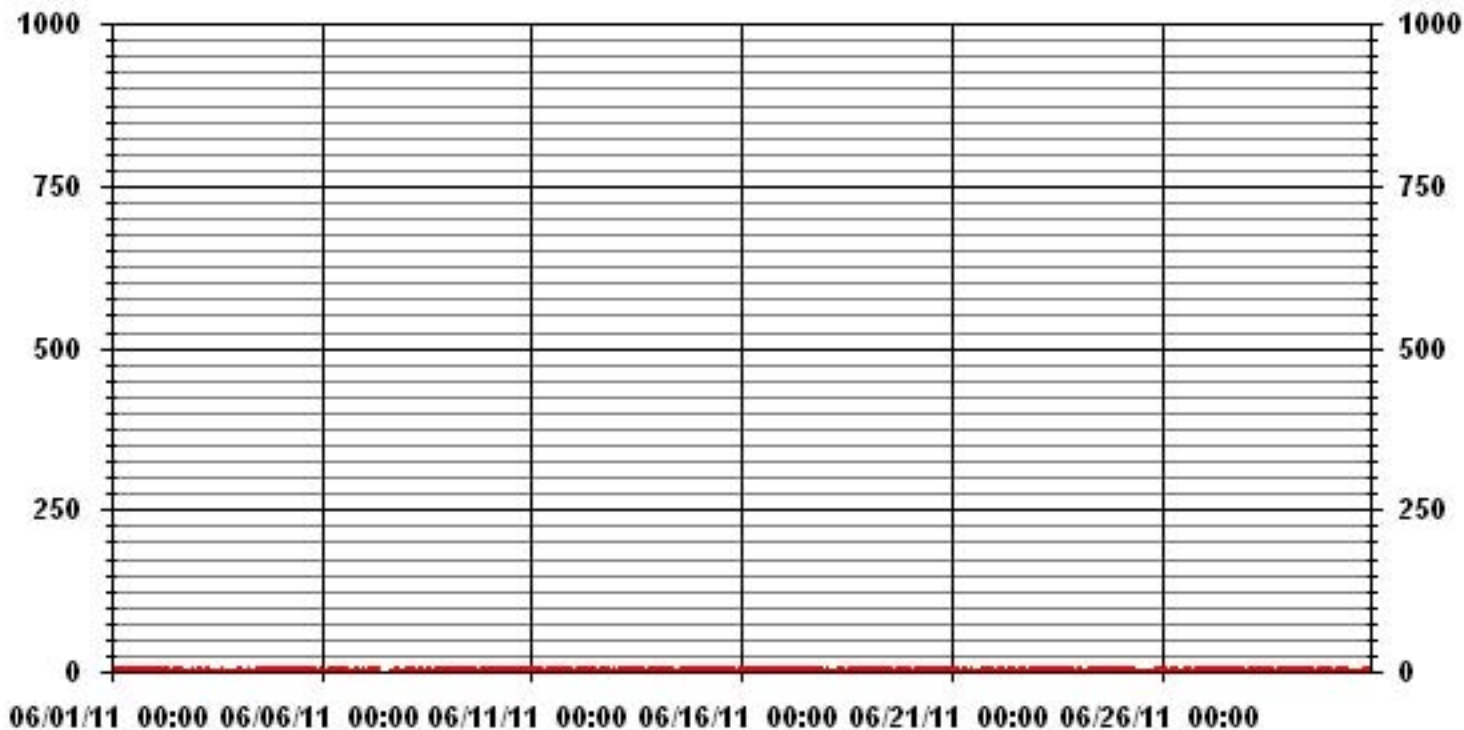
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	627					
MAXIMUM 1-HR AVERAGE:	7	PPB	@ HOUR(S)	6	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	2.5	PPB			ON DAY(S)	8
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	719	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	0.98		MONTHLY AVERAGE	1.51	PPB	

01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	3	3	3	4	4	7	6	5	4	3	2	2	1	2	IZS	3	2	2	2	2	2	2	2	2	7	3.0	24	
2	3	3	4	3	3	3	4	4	4	3	3	2	2	IZS	2	2	1	2	2	6	5	2	3	3	6	3.0	24	
3	3	2	3	5	5	3	2	3	3	2	1	2	IZS	3	1	2	1	2	1	1	1	2	1	1	5	2.2	24	
4	1	1	1	1	1	1	2	2	1	1	1	IZS	3	3	2	3	2	3	2	3	8	4	3	4	8	2.3	24	
5	3	3	3	3	4	4	4	4	4	3	IZS	4	3	2	3	2	2	2	2	2	3	2	3	2	4	2.9	24	
6	2	3	2	2	3	3	4	3	3	IZS	2	1	3	2	1	2	2	1	1	1	2	2	3	3	4	2.2	24	
7	2	2	3	2	2	3	4	5	IZS	C	C	C	C	C	C	C	3	2	1	1	1	1	1	2	5	2.2	24	
8	3	4	5	4	5	5	5	IZS	5	4	3	2	M	103	3	3	2	2	2	2	2	3	3	103	7.8	23		
9	3	3	3	4	4	5	IZS	6	5	3	3	3	3	3	2	2	2	4	3	3	13	6	3	3	4	13	3.9	24
10	5	5	5	5	6	IZS	8	6	4	3	2	2	2	2	2	2	2	1	2	2	2	2	3	3	8	3.3	24	
11	2	2	2	2	IZS	2	2	3	2	P	2	1	2	2	1	2	1	2	2	2	1	2	2	2	3	1.9	23	
12	1	1	1	IZS	4	4	3	3	4	7	3	4	2	2	2	2	2	3	3	5	3	3	2	3	7	2.9	24	
13	2	2	IZS	3	3	4	3	3	2	2	2	2	2	2	2	2	2	2	3	3	3	4	5	6	6	2.8	24	
14	4	IZS	5	3	2	3	3	3	2	2	2	2	2	2	2	2	2	3	3	2	2	3	3	2	5	2.6	24	
15	IZS	4	4	3	3	3	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	3	IZS	4	2.5	24	
16	2	2	2	2	2	2	2	2	2	1	2	P	2	2	2	5	2	2	2	2	2	2	IZS	3	5	2.1	23	
17	3	3	3	4	5	4	4	3	2	2	1	2	1	1	2	1	1	1	2	2	2	IZS	3	1	5	2.3	24	
18	1	1	1	1	1	1	1	1	2	2	1	1	1	2	1	1	1	2	2	2	IZS	2	2	1	2	1.3	24	
19	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	IZS	2	2	P	2	2	1.6	23	
20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	IZS	2	2	2	2	2	2	1.8	24	
21	2	2	2	2	2	2	2	2	2	1	2	3	2	1	2	2	IZS	3	2	4	3	3	7	7	2.4	24		
22	3	2	2	4	5	4	3	2	2	3	2	2	1	1	1	IZS	2	1	1	2	2	3	3	3	5	2.3	24	
23	3	3	3	3	3	3	3	4	3	3	2	2	1	1	1	IZS	2	2	2	2	2	2	2	2	4	2.3	24	
24	2	1	2	2	2	2	3	2	2	2	2	2	14	1	IZS	2	1	1	2	3	2	3	3	2	14	2.5	24	
25	2	1	2	1	1	1	2	1	1	1	1	1	1	IZS	2	1	1	1	2	1	1	2	2	2	2	1.3	24	
26	3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	8	8	4	3	3	2	8	7	2	2	4	8	2.8	24
27	4	3	3	3	4	4	3	2	2	2	2	IZS	3	2	4	2	2	5	2	2	3	3	3	3	5	2.9	24	
28	2	2	2	3	4	4	5	4	4	3	IZS	3	2	2	3	2	2	3	4	2	2	3	3	3	5	2.9	24	
29	3	4	4	4	4	4	3	2	2	IZS	2	2	1	1	2	1	2	2	2	P	1	1	2	1	4	2.3	23	
30	2	1	1	2	2	2	2	2	IZS	2	2	1	1	1	1	1	1	2	1	2	3	5	5	4	5	2.0	24	
HOURLY MAX	5	5	5	5	6	7	8	6	5	7	3	4	14	103	8	5	4	5	4	13	8	5	5	7				
HOURLY AVG	2.5	2.3	2.6	2.8	3.1	3.0	3.1	2.9	2.6	2.5	1.9	2.0	2.3	5.8	2.0	2.0	1.8	2.1	2.1	2.8	2.7	2.4	2.7	2.8				

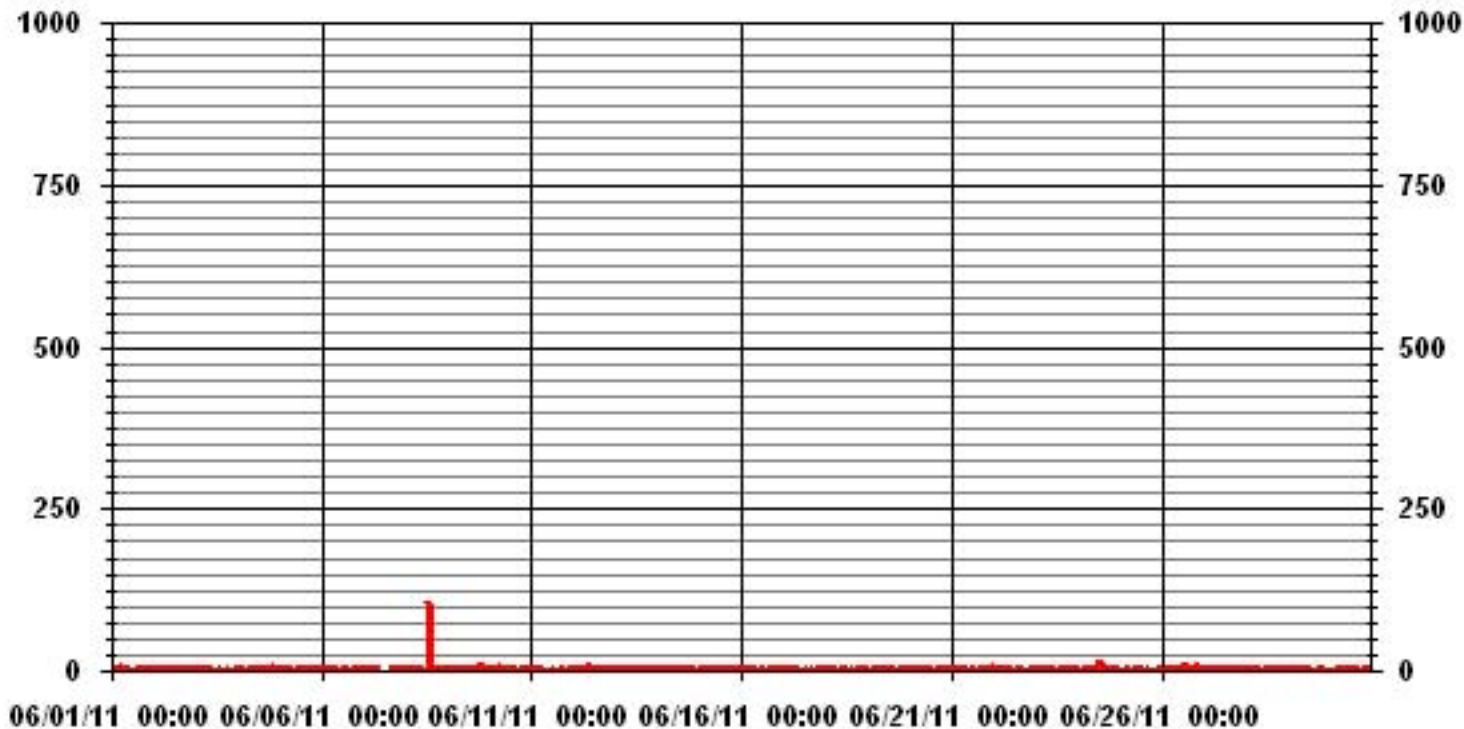
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	677					
MAXIMUM INSTANTANEOUS VALUE:	103	PPB	@ HOUR(S)	13	ON DAY(S)	8
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	715	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	4.09					

01 Hour Averages



— LICA31 NOXMAX PPB

LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
 Site Name : LICA31
 Parameter : NOX_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	6.16	4.99	7.19	6.46	4.25	4.84	4.69	5.13	7.78	3.52	3.08	2.93	7.04	12.48	10.42	8.95	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.16	4.99	7.19	6.46	4.25	4.84	4.69	5.13	7.78	3.52	3.08	2.93	7.04	12.48	10.42	8.95	

Calm : .00 %

Total # Operational Hours : 681

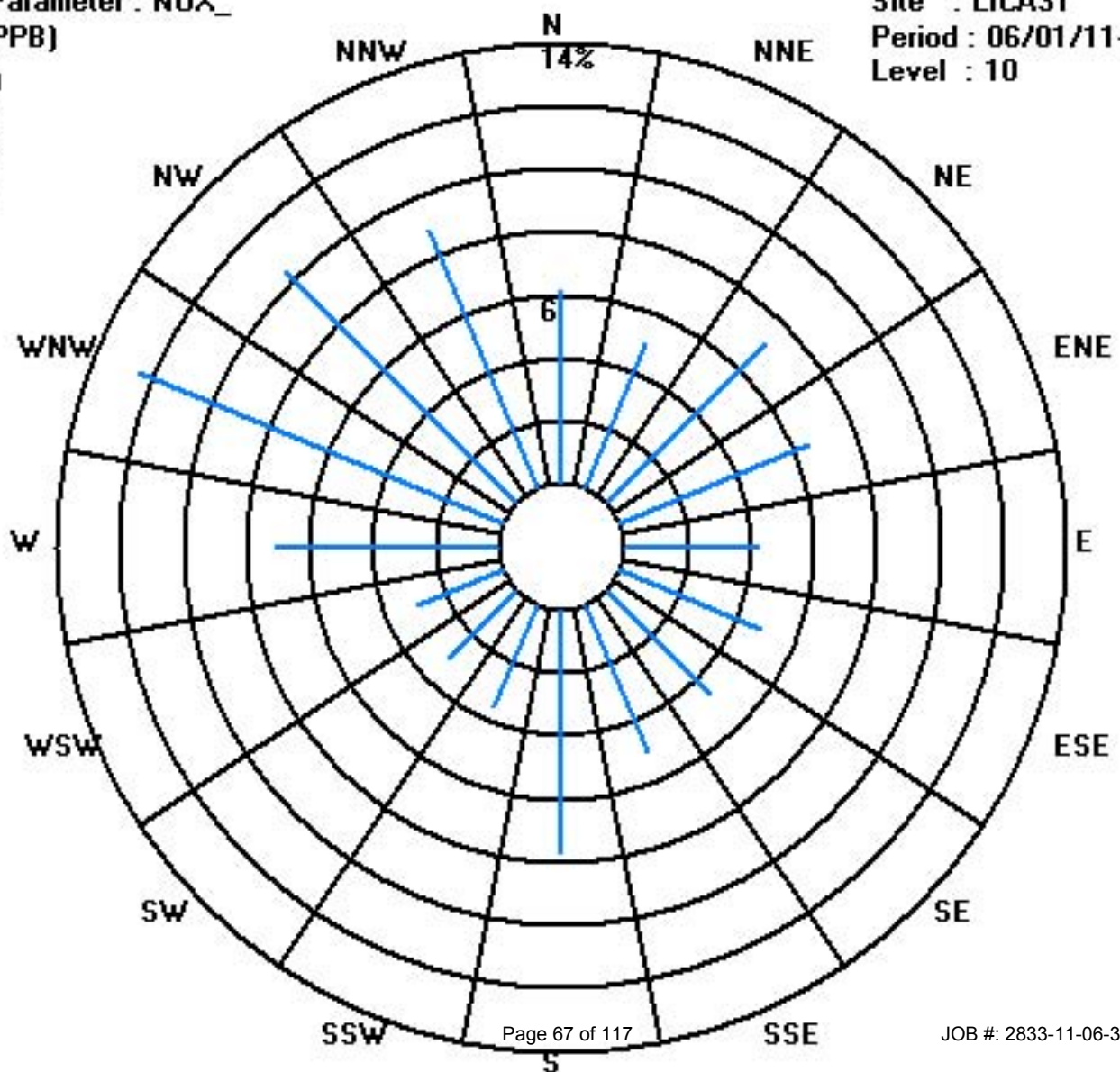
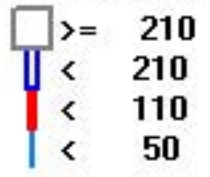
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	42	34	49	44	29	33	32	35	53	24	21	20	48	85	71	61	681
< 110																	
< 210																	
>= 210																	
Totals	42	34	49	44	29	33	32	35	53	24	21	20	48	85	71	61	

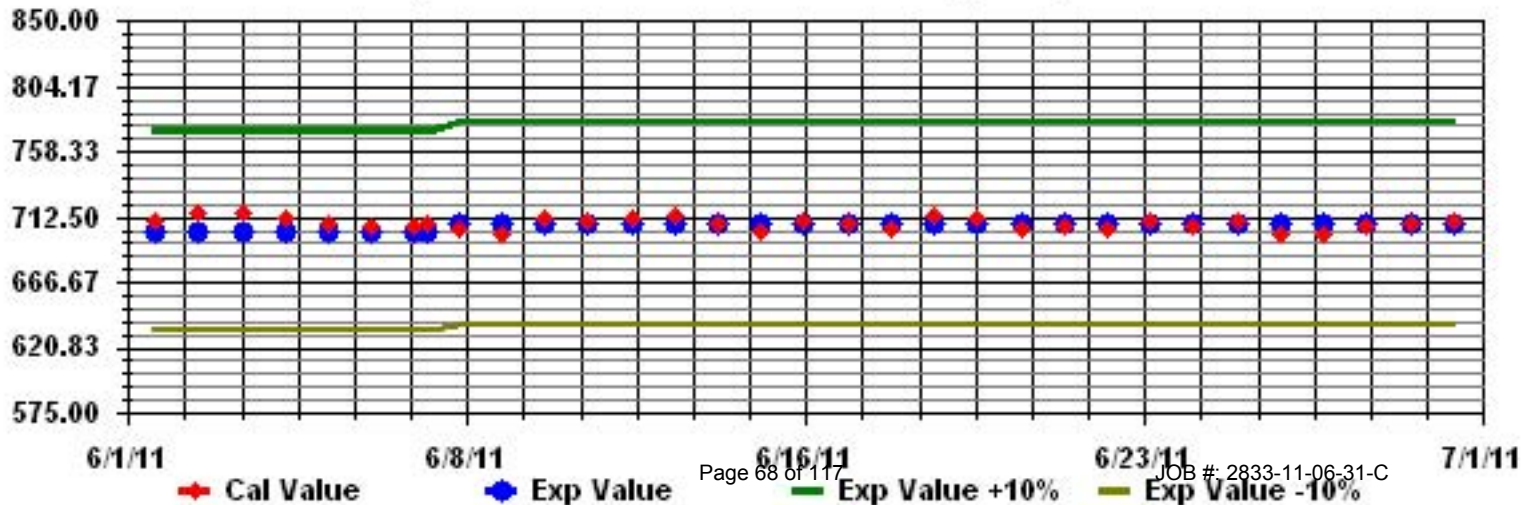
Calm : .00 %

Total # Operational Hours : 681

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

PARTICULATE MATTER 2.5 (PM2.5) hourly averages in ug/m³

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1	1	15.2	14.9	15.3	14.6	14.5	15.1	12.7	9.3	8.5	6.3	5.1	7.9	10	11.2	12.2	10.6	7.8	8.7	15	50.5	25.8	14.3	12	12.7	50.5	13.8	24
2	2	13.9	13.5	14.7	14.9	16.9	17	21.4	20.3	21.7	19	19.1	17.5	17.7	13.9	14.8	13.4	12.5	12.4	9.8	7.4	6.9	9	10.5	11	21.7	14.6	24
3	3	13.6	10.4	15.4	56.4	122.7	76.5	32.1	18.1	18.3	14.8	9.7	3.8	1.7	2.3	2.5	0.5	0.7	0.5	3.2	2.3	4.9	5.9	3.1	2.3	122.7	17.6	24
4	4	2.9	2.8	2.3	2.8	3.9	2.4	3.1	2.6	1.3	3.5	0.7	0	2.6	2.5	3.2	4.3	6.1	6	5.4	7.2	8.1	10.2	11.4	11.7	11.7	4.5	24
5	5	11.8	9.8	9.7	10.2	10.2	12.6	11.1	12.1	12.3	11.3	8.6	7	7.8	6.2	3.4	6.8	8.5	5.6	4.6	3.4	5.4	5.7	5.8	6.5	12.6	8.2	24
6	6	7.2	6.6	7.2	8.7	7	8.3	11.4	12.9	15.1	17.7	11.8	9.6	10.3	13.4	10.5	11.4	9.8	9.6	8	7.5	8.3	8.3	5.1	5.8	17.7	0.0	24
7	7	7.5	7.9	7.6	6.8	8	5.9	7.4	9.4	10.6	17.4	45.7	51.5	74.5	69.6	28.2	42.1	76.1	75.6	49.5	40.4	40.2	26.6	19	21.4	76.1	31.2	24
8	8	22.1	23.3	24.4	28	30.5	28.2	35.4	40.1	45.1	N	N	36.1	34	38.8	40.3	35.9	26.8	24.9	22.5	18.8	20	22.2	22.5	23.9	45.1	29.3	22
9	9	22.8	23.1	22.8	23.9	24	27	27.5	22.5	16.5	16	17.8	19.2	19.4	22.1	16.4	15.4	14.1	14.8	12.2	15.2	14.4	17.9	15.7	13.3	27.5	18.9	24
10	10	13.6	14.8	13.9	15.1	14	11.7	13.5	15	16.1	14.8	11	8.2	9.3	7.2	9.9	9	8.9	6	7	7.1	6.2	6.3	8.5	7.2	16.1	10.6	24
11	11	9.5	11.1	5.7	6.1	8.4	7.7	8.3	10.2	9.8	0.9	0.5	5.4	5.5	3.5	3.6	7.7	6	4.4	6	4.3	6.1	6.3	6.6	5.6	11.1	6.2	24
12	12	4.8	3.6	3.2	4.7	6.6	8.7	9.7	7.3	5.2	6.9	6.7	12.6	9.4	5.3	5	0	0	N	N	2.8	11.2	6.6	6	10	12.6	6.2	22
13	13	12.9	11.4	13.3	10.7	10.2	10	9	13.2	12.6	16.9	21.4	21.7	23.4	20.1	8.1	11	10.5	8.3	7.9	8	14.9	15.9	18.2	14	23.4	13.5	24
14	14	8.8	12.6	11.2	7.7	10.3	10.7	13	11.3	13.8	14.4	5.7	12	C	C	7	8.7	11.4	10.3	11.5	11.6	12.2	10.6	10.7	12.4	14.4	10.8	24
15	15	11.9	11.7	10.2	9.8	9.2	9.8	9.5	8.6	5.3	6.1	6	4.4	4.7	4.4	4.2	2.6	5.4	4.9	7	4.8	4.3	3.6	4.2	6.3	11.9	6.6	24
16	16	4.3	2.9	2.7	1.3	4.6	3.6	5.6	6.7	5.5	4.2	1.6	0	0.6	3	2.3	8.1	7.2	4.5	2.3	4.7	5.8	5.5	6.6	7.4	8.1	4.2	24
17	17	5.1	6.2	6	7.1	6.5	6.1	5.9	9.2	4.4	2.8	1.6	4.2	7.6	6.9	6.3	8.7	7.6	9.7	9	1.3	2	6.2	5.5	2.2	9.7	5.8	24
18	18	3.2	2	1.2	3.2	4.8	4.4	3.1	2.9	5.1	3.6	4	5.5	5.7	6.2	8.9	7.5	3.2	7.6	8.5	7.1	6.6	5.3	5.3	4.4	8.9	5.0	24
19	19	5	5.2	5.7	5.6	4.7	3.9	2.9	3.4	5	5.1	5.1	2.8	4.2	4.5	5.2	4.3	0	2.3	4.9	2	5.8	3.7	0.2	0.7	5.8	3.8	24
20	20	3.8	4.5	6.6	5.6	7.9	7.8	8.5	6.6	9	9.5	8.2	9.7	8.6	5.1	3.3	3.9	5.5	4.1	2.3	1.9	4.9	6.2	3.3	3.1	9.7	5.8	24
21	21	4.8	4.9	6.3	6.2	6	8.3	4.8	4.6	6.3	5.8	3.3	3.3	5.4	8.7	10	0.7	0	5.9	4.2	4	2.8	2.9	6.4	6.3	10.0	5.1	24
22	22	6.7	6.6	5.6	4.6	4.9	4.8	6.1	6.4	6.6	2.8	5.5	4.7	4.1	5	8.8	6.1	5.2	7.7	7.7	6.3	5.7	2.5	6.2	9.8	9.8	5.9	24
23	23	11.6	11.1	7.8	6	5.6	4.8	8.3	11.6	9	9	4.7	6.6	7	8.6	14.3	0	3.1	10.8	4.4	4.5	5.7	10.3	11.2	8.1	14.3	7.7	24
24	24	2.5	2.7	6.1	4.8	3.4	1.2	4.7	7.3	7	8.2	4.2	1.2	1.8	3.4	2.3	4.9	4	3.6	4.8	2.8	1.8	4.4	4.8	5	8.2	4.0	24
25	25	3.1	3.9	4.4	3.5	3.6	4.4	3.3	2.4	2.7	3.6	3.9	4.4	2.6	1.2	0.9	2	5.7	2.8	0.2	2.8	0.4	3.6	4.8	1.9	5.7	3.0	24
26	26	4.4	6	2.6	6.7	4.2	2.4	4.2	0	5.2	5.1	4.4	7.9	13.5	114.6	291	208.8	161.2	91.5	49.7	43.4	47.2	49.9	48.2	52.1	291.0	51.0	24
27	27	51.8	52.6	59.5	66.5	77.3	66.5	43.4	27.5	8.7	6.4	9.7	15.7	18.6	24.8	39.6	41.4	48.5	42.4	32.7	20.5	13.8	20.5	16.7	15.2	77.3	34.2	24
28	28	14.4	12.6	12.4	10.6	14.4	9	8.5	10.6	10.1	12.4	13.7	18.4	20.8	21.9	22.8	20	23.5	19	18.3	18.7	20.2	16.6	16.5	19.1	23.5	16.0	24
29	29	15.8	16.4	16.4	13.7	10.6	13.5	13.9	16.9	13.8	9.5	10.1	6.1	4.5	5.3	3	2.7	5.2	4.3	7.4	0	0.2	5.8	3.6	0.9	16.9	8.3	24
30	30	1.5	5.2	5.8	5.9	4	5.1	3	5.8	8	3.4	4.5	0.8	3.3	1.2	1.1	4.1	2.8	4.3	6.5	3.6	3.2	1.9	3.8	4.9	8.0	3.9	24
HOURLY MAX		52	53	60	67	123	77	43	40	45	19	46	52	75	115	291	209	161	92	50	51	47	50	48	52			
HOURLY AVG		10.6	10.7	10.9	12.4	15.3	13.2	11.7	11.2	10.6	8.9	8.8	10.3	11.7	15.2	19.6	16.8	16.2	14.2	11.5	10.5	10.5	10.5	10.1	10.2			

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

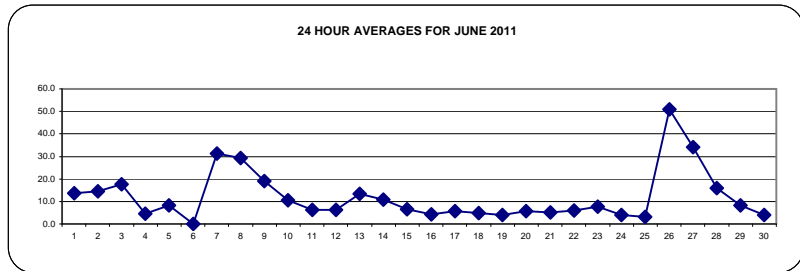
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	-	ug/m ³	24-HR	30	ug/m ³
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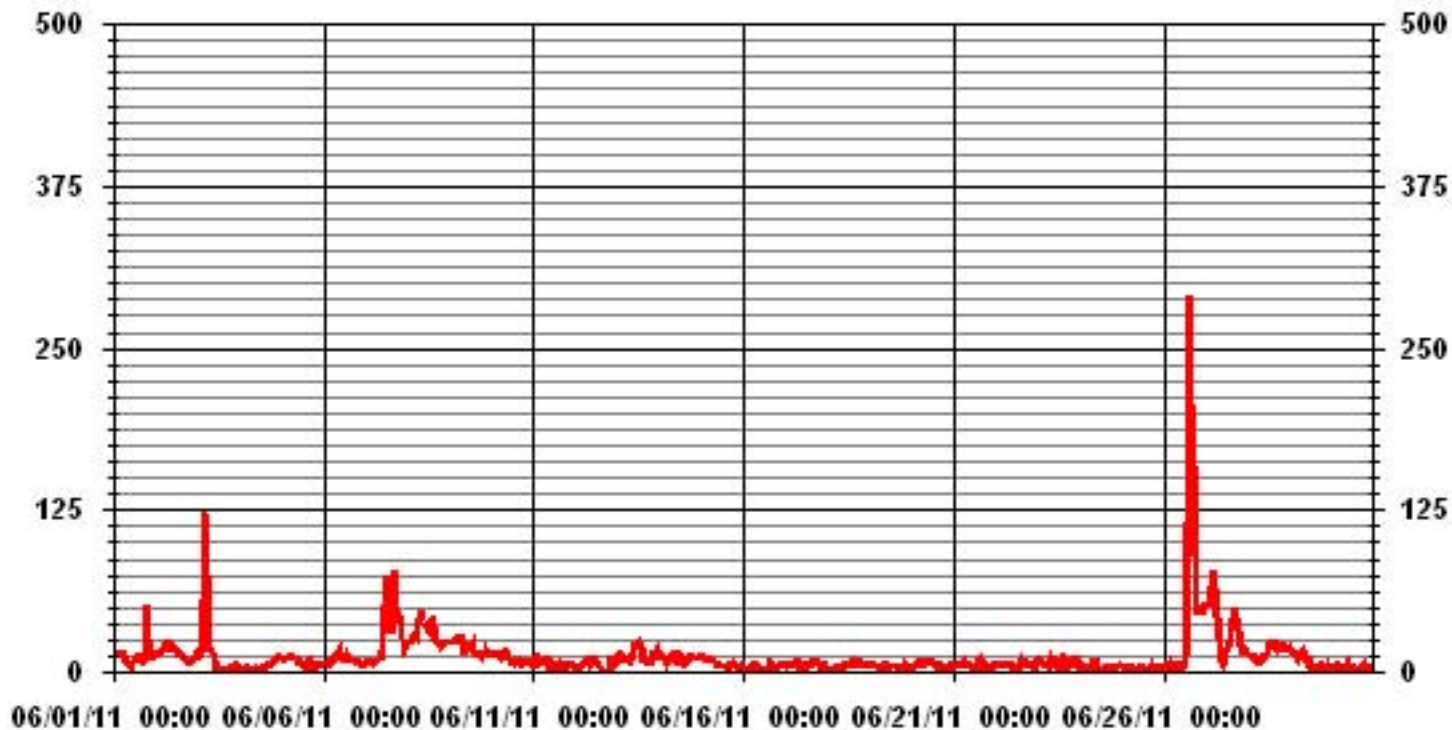
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-				
NUMBER OF 24-HR EXCEEDENCES:	3	PROPOSED CANADA WIDE GUIDELINE			
NUMBER OF NON-ZERO READINGS:	705				
MAXIMUM 1-HR AVERAGE:	291.0	UG/M ³	@ HOUR(S)	14	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	51.0	UG/M ³			ON DAY(S)
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	716	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:	99.4	%
STANDARD DEVIATION:	19.22		MONTHLY AVERAGE:	12.14	UG/M ³

24 HOUR AVERAGES FOR JUNE 2011



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : PM2
Units : UG/M3

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	6.16	5.04	7.00	6.16	4.20	4.62	4.48	4.90	6.86	2.52	2.52	2.94	6.16	10.64	10.78	8.40	93.41
< 60.0	.00	.00	.00	.14	.00	.00	.14	.28	.70	.70	.28	.14	.42	1.54	.28	.00	4.62
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.28	.14	.00	.00	.14	.14	.42	.00	1.12
< 120.0	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.14	.28
< 240.0	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.00	.00	.00	.00	.00	.42
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
Totals	6.30	5.04	7.00	6.30	4.20	4.62	4.62	5.32	7.84	3.50	2.94	3.08	6.72	12.46	11.48	8.54	

Calm : .00 %

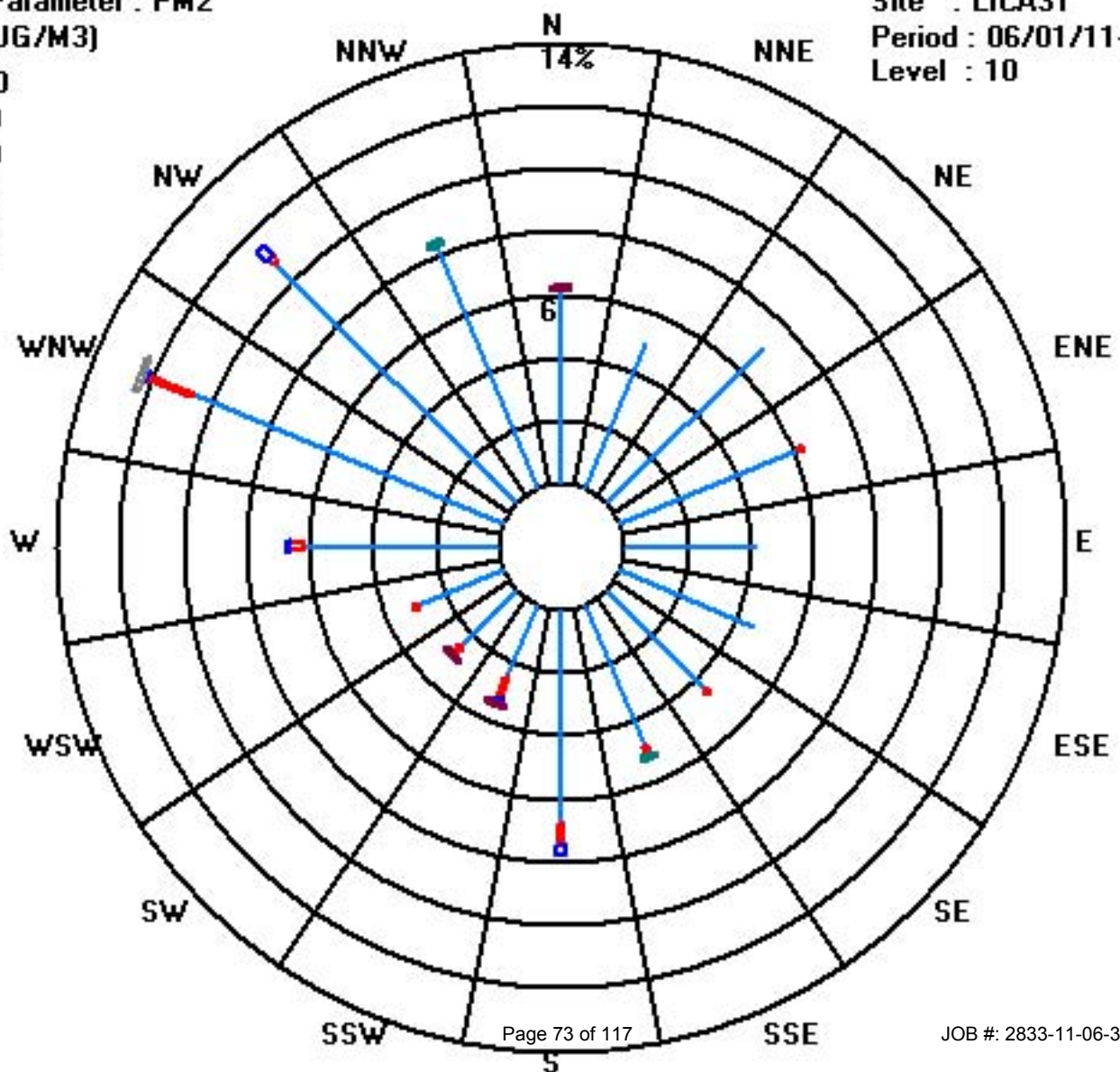
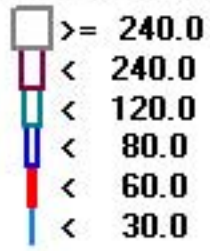
Total # Operational Hours : 714

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	44	36	50	44	30	33	32	35	49	18	18	21	44	76	77	60	667
< 60.0				1			1	2	5	5	2	1	3	11	2		33
< 80.0									2	1			1	1	3		8
< 120.0								1								1	2
< 240.0	1									1	1						3
>= 240.0														1			1
Totals	45	36	50	45	30	33	33	38	56	25	21	22	48	89	82	61	

Calm : .00 %

Total # Operational Hours : 714



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

AMBIENT TEMPERATURE hourly averages (Degrees C)

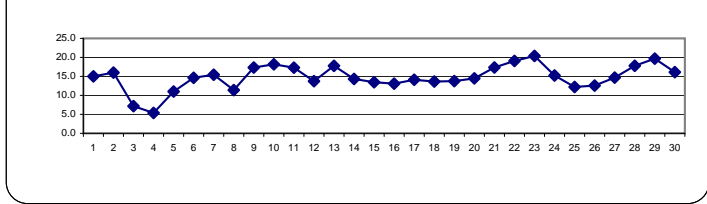
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR	MAX.	AVG.	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	12.7	11.5	11.2	9.9	9.7	10.4	12.6	15.3	17.7	19	20.1	19.6	20.6	20	19.7	19.6	18.7	16.5	14	13.3	12.6	12.1	11.8	11.6	20.6	15.0	24	
2	11.1	10.4	10	8.6	8.2	8.5	9.3	12.7	16.3	18	19.9	21.6	21.9	21.8	23.4	23	22.4	21.2	19.4	18.1	16.5	15.7	13.4	12.3	23.4	16.0	24	
3	12.4	12.3	11.2	10.5	10	8.5	7.4	6.6	5.6	5.8	6.5	7.8	7.7	7.7	7.8	8.6	8.2	7.1	6.4	4.7	3.6	2.7	1.6	1.2	12.4	7.2	24	
4	1.3	0.6	-1	-0.4	0	2.6	2.5	6.1	6.8	8.1	8.5	8.4	8	7.7	6.9	7.2	7.4	8.6	8.8	8.3	6.8	5.3	5.3	5.1	8.8	5.4	24	
5	5.5	6	5.9	5.8	6	6.7	7.5	10.4	14.6	16.1	16.5	13.5	12.8	14.8	14.6	14.1	14.8	13.9	13.3	12.9	10.9	9.6	9.2	8.7	16.5	11.0	24	
6	8.4	7.4	6.3	6.4	6.2	7.3	10.3	12.8	16	17.2	18.1	18.8	19.8	20.3	20.8	20.5	20.6	20	19.5	17.9	15.7	14.4	13.7	12.6	20.8	14.6	24	
7	13.1	12.3	12.7	11.8	9.5	12	10.6	13.5	17.3	18.1	19.3	19.8	18.3	18.8	20.1	20.3	19.4	18.6	17.7	16.1	14.4	12.9	12.1	11.7	20.3	15.4	24	
8	10.5	9.3	8	7.6	8	7.8	7.4	8.1	9.7	10	12.6	16.1	15.1	12.9	13.8	13.9	13.9	14.8	15.3	13.8	12.7	11.4	10.2	10.5	16.1	11.4	24	
9	10.6	10.9	9.6	9.1	9.9	10.5	12.5	15	17.3	19.4	20.8	21.5	21.8	22.7	23.5	24.2	24.2	22.8	22.9	21.2	18.4	17.2	15.8	14.2	24.2	17.3	24	
10	13.3	12.5	11.2	10.7	10.1	10.2	13.8	17.5	19.1	21.3	22.8	23.5	23.4	23.7	23.8	23.7	23.3	22.9	21.7	20.4	18.8	16.9	16.3	15.4	23.8	18.2	24	
11	13.1	11.9	11.4	11.8	11.3	11.2	12.6	14.3	16.6	18.2	20.7	21.6	21.6	23.3	23	23.1	22.6	22.3	20.7	18.8	17	16.4	16.1	15.3	23.3	17.3	24	
12	14.8	14.6	13.6	12.2	12.5	12.9	12.7	13	12.4	12.5	12.7	13.1	13.8	14.3	16.1	17	17.3	16	15.4	14.7	13.1	12	11.9	11.1	17.3	13.7	24	
13	11.1	10.8	10.3	9.6	10.5	12	14.6	17.4	19.9	20.5	21.8	22.3	20.4	23.2	23	23.4	23.3	22.3	21.7	20.4	18.3	17.5	16.9	15.4	23.4	17.8	24	
14	14.1	12.8	11.7	11.5	11.4	11.6	11.9	13.4	14.4	15.4	16.2	18.1	17.4	18	18.8	16.2	15.3	14.9	14.2	13.9	13.6	13.2	13	12.7	18.8	14.3	24	
15	12.7	12.7	12.4	12	11.8	11.8	12.1	12.3	12.7	13.6	14.4	15.3	17.1	16.3	14.3	13.7	14.4	15	14.2	13.6	13	12.6	12.6	12.5	17.1	13.5	24	
16	11.9	11.5	11.4	11.5	11.8	11.7	11.7	11.8	12.4	13.8	14.5	13.7	12.9	16.1	17.6	17.5	15.1	11.6	13.8	14.3	12.3	11.9	11.7	11.6	17.6	13.1	24	
17	10.8	10.1	10	9.9	9.8	9.7	9.9	10.3	15.3	16	16.6	17.5	18.5	19.3	19.5	18.7	18.1	17.2	16	14.1	13.3	12.9	12.6	12.5	19.5	14.1	24	
18	12.4	12.4	12.5	12.7	12.8	12.9	13	13.1	13.2	13.1	13.2	14.5	15.7	15.8	15.9	15.9	15.8	14.3	14.1	13.6	13.2	12.5	12.5	12.3	15.9	13.6	24	
19	12.2	12.1	12.1	12	12.1	12	12	12.3	12.9	13.5	14.5	15.7	15.8	14.5	15.4	16.1	15.3	15.1	15	14.4	14.2	14	13.6	13.3	16.1	13.8	24	
20	13	12.8	12.6	12.5	12.5	12.5	12.6	12.9	13.4	13.6	13.9	14.9	17.5	17.4	17.9	15.6	15.4	16	16	16	15.5	14.6	14.1	14.1	17.9	14.5	24	
21	14	13.9	13.6	13.3	13	12.7	13.4	15.3	16.5	18.7	19.1	20.4	21.6	22.6	21.8	22.7	22.5	22.2	20.2	18.8	17.5	15	14	13.3	22.7	17.3	24	
22	12.8	13	11.9	12	10.6	13.9	16.4	19	20.1	21.2	22.5	22.7	23.5	24.5	25	25.4	24.7	24.2	23.2	22.3	20.2	17.4	15.8	15.2	25.4	19.1	24	
23	14.9	15.1	15.8	15.2	14.4	15.6	17	17.8	20.7	22.5	23.9	24.9	25.6	25.7	25.7	25.7	25.2	24.5	23.2	21.5	19.9	18.8	18.1	17.5	25.7	20.4	24	
24	15.6	14.4	14.3	14.1	14.1	14.3	14.2	13.3	13.7	14	14.9	15.6	16.6	17.8	18.7	18.9	18.5	18.5	17.6	16	14.4	13.2	11.8	10.9	18.9	15.2	24	
25	10.1	10.4	10.1	9.6	9.4	9.6	10	10.9	12.4	13.7	14.9	14.2	14.5	14.6	13.7	14.8	14.8	14.2	13.6	12.5	12	11.7	11	10.4	14.9	12.2	24	
26	10	10.3	9.8	9	8.6	9.6	10.5	11.9	14.8	16.1	16.3	16.4	15.7	14.2	13.8	14.2	14.1	14.9	14.5	14	12.4	10.8	10.2	9.6	16.4	12.6	24	
27	8.6	8.8	8.5	8.3	8.5	8.8	9.2	10.6	13.4	14.8	16.9	18.6	20	21.6	22.2	22.8	22.6	20.9	18.2	14.9	15.7	13.5	12.7	12.1	22.8	14.7	24	
28	12.1	11.7	12	10.1	9.6	10.6	11.5	13.3	16.3	17.9	19.7	21.1	21.8	22.6	23.3	23.8	23.5	23	23.2	22.1	20.6	19.5	18.9	18.6	23.8	17.8	24	
29	17.7	16.3	15.4	14.8	14.9	15.3	17.2	21.6	21.9	22.7	23.7	24.5	25	25.7	26.2	26.1	25.6	25.1	22.3	15	13.7	13.7	13.8	13.7	26.2	19.7	24	
30	13.4	13.1	12.9	12.6	12.5	12.5	14.4	15.5	16.2	16.8	18	19	19.8	20.5	20.8	20.5	20.2	20.2	18.9	17	14.7	13.2	12.3	11.7	20.8	16.1	24	
HOURLY MAX	17.7	16.3	15.8	15.2	14.9	15.6	17.2	21.6	21.9	22.7	23.9	24.9	25.6	25.7	26.2	26.1	25.6	25.1	23.2	22.3	20.6	19.5	18.9	18.6				
HOURLY AVG	11.8	11.4	10.9	10.5	10.3	10.9	11.7	13.3	15.0	16.1	17.1	17.8	18.1	18.6	18.9	18.9	18.6	18.0	17.2	15.8	14.5	13.4	12.8	12.2				

STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

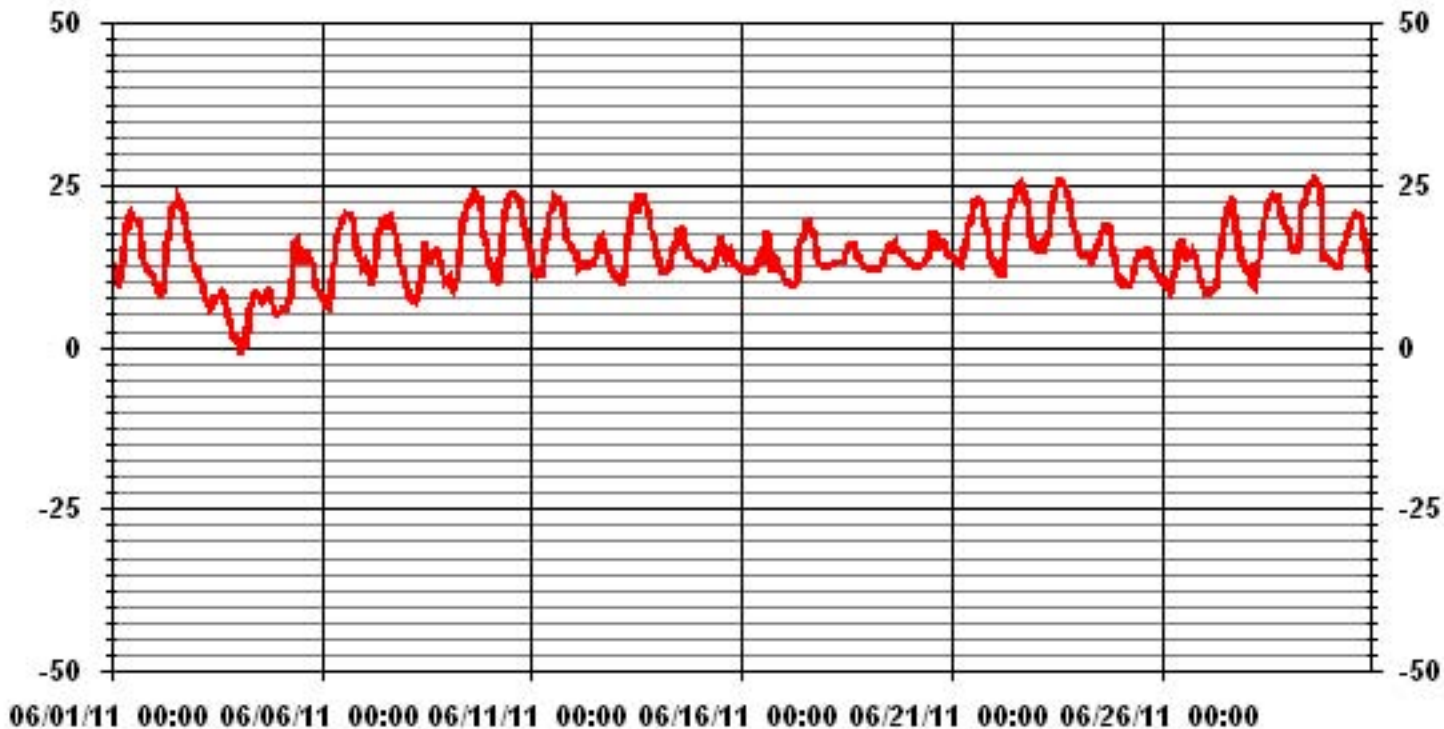
24 HOUR AVERAGES FOR JUNE 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-1 °C	@ HOUR(S)	2	ON DAY(S)	4
MAXIMUM 1-HR AVERAGE:	26.2 °C	@ HOUR(S)	14	ON DAY(S)	29
MAXIMUM 24-HR AVERAGE:	20.4 °C			ON DAY(S)	23
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS		
STANDARD DEVIATION:	4.87	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	14.74 °C		

01 Hour Averages



— LICA31 TPX DGC

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

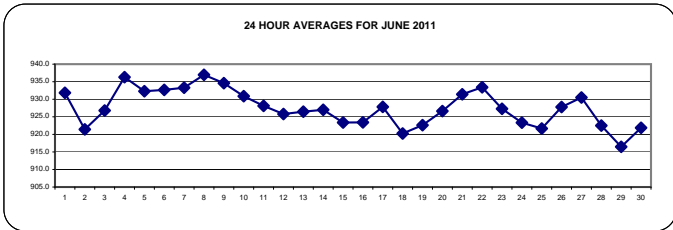
JUNE 2011

BAROMETRIC PRESSURE hourly averages (millibar)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS		
DAY																														
1		934	934	934	934	933	933	934	934	935	935	935	934	933	933	932	931	931	930	929	928	928	927	927	926	935	931.8	24		
2		925	924	923	922	922	922	921	921	922	923	923	923	922	922	922	922	921	921	920	920	919	918	918	918	918	925	921.4	24	
3		918	918	918	919	920	921	921	922	923	924	926	927	928	929	930	931	931	932	932	933	934	935	935	936	936	936	936	926.8	24
4		936	937	936	936	937	937	938	938	939	939	938	938	938	937	937	936	936	935	935	935	934	933	933	933	933	939	936.3	24	
5		933	932	932	931	931	931	931	931	932	933	933	932	932	932	932	932	933	933	933	933	934	933	933	933	934	934	932.3	24	
6		932	932	932	932	932	932	933	933	934	935	935	934	934	934	934	933	933	933	933	933	933	931	930	930	930	935	932.7	24	
7		930	930	930	930	929	930	931	932	933	934	934	934	935	935	935	935	935	935	935	935	935	935	935	936	936	936	933.3	24	
8		936	935	935	935	935	936	936	937	937	937	938	939	939	938	938	938	938	938	939	938	937	937	936	935	935	939	937.0	24	
9		935	935	935	935	935	935	935	936	936	936	936	936	936	935	935	935	935	934	934	934	934	933	932	932	931	936	934.6	24	
10		931	931	931	931	931	931	931	932	933	933	933	933	932	932	932	931	930	930	930	929	929	929	928	927	927	933	930.9	24	
11		927	926	926	926	926	927	927	928	929	929	930	930	930	930	930	930	930	930	929	928	928	928	928	927	930	928.1	24		
12		927	926	926	926	926	926	926	925	926	926	926	926	926	926	925	926	926	927	926	926	926	925	925	925	924	927	925.8	24	
13		924	924	924	924	925	925	925	926	927	927	928	928	928	928	928	928	928	928	928	927	928	927	926	926	926	928	926.5	24	
14		925	926	926	926	925	925	926	926	927	928	928	929	929	928	929	928	928	928	928	928	927	927	927	926	926	929	927.0	24	
15		926	925	925	925	924	924	924	923	923	923	923	923	924	924	923	923	923	923	923	923	922	922	922	921	926	923.4	24		
16		921	921	921	921	922	922	922	922	923	923	924	924	924	924	925	925	925	924	925	926	925	925	926	926	926	926	923.4	24	
17		926	926	926	926	926	927	928	928	928	929	929	930	930	930	930	930	929	929	928	928	927	927	926	925	930	927.8	24		
18		924	923	922	921	921	920	920	919	919	919	919	919	920	920	920	920	920	920	920	920	920	920	920	920	920	924	920.3	24	
19		920	920	920	920	921	921	921	922	922	923	923	923	924	924	924	924	924	924	924	924	924	924	924	924	924	924	922.6	24	
20		925	925	925	925	925	925	925	926	926	927	927	927	928	928	928	928	927	927	928	928	928	927	927	927	927	928	926.6	24	
21		927	927	927	928	928	929	929	930	931	932	932	933	933	934	934	934	934	934	934	933	934	933	932	932	932	934	931.4	24	
22		932	932	932	932	932	932	933	934	934	935	935	935	935	935	935	935	935	935	935	934	934	933	932	931	930	935	933.4	24	
23		930	930	930	929	929	929	929	929	929	929	929	929	928	928	928	927	926	926	925	924	923	923	923	923	930	927.3	24		
24		922	922	921	921	920	921	921	921	922	923	923	923	924	925	925	926	926	926	926	926	925	924	924	924	926	923.3	24		
25		923	924	923	923	922	922	922	922	922	922	922	922	922	922	922	921	921	922	921	921	920	920	920	920	924	921.7	24		
26		920	920	920	921	921	922	923	924	925	927	928	929	929	930	930	931	932	933	934	935	934	933	933	933	935	927.8	24		
27		932	932	932	932	932	932	932	932	932	932	932	932	932	932	931	931	930	929	929	928	927	927	926	926	932	930.5	24		
28		926	925	925	924	924	923	924	924	924	925	925	925	924	924	923	923	923	921	921	920	919	917	916	915	926	922.5	24		
29		914	914	913	914	914	915	915	916	917	918	918	919	919	919	919	919	919	919	917	916	916	915	915	915	919	916.5	24		
30		915	915	916	916	917	918	919	920	921	921	922	923	924	924	925	925	925	926	926	926	925	925	925	925	926	921.9	24		
HOURLY MAX		936	937	936	936	937	938	938	939	939	938	939	939	938	938	938	938	938	938	939	938	937	937	936	936					
HOURLY AVG		927	926	926	926	926	927	927	928	928	928	929	929	929	929	929	929	929	928	928	928	927	927	927	926					

STATUS FLAG CODES

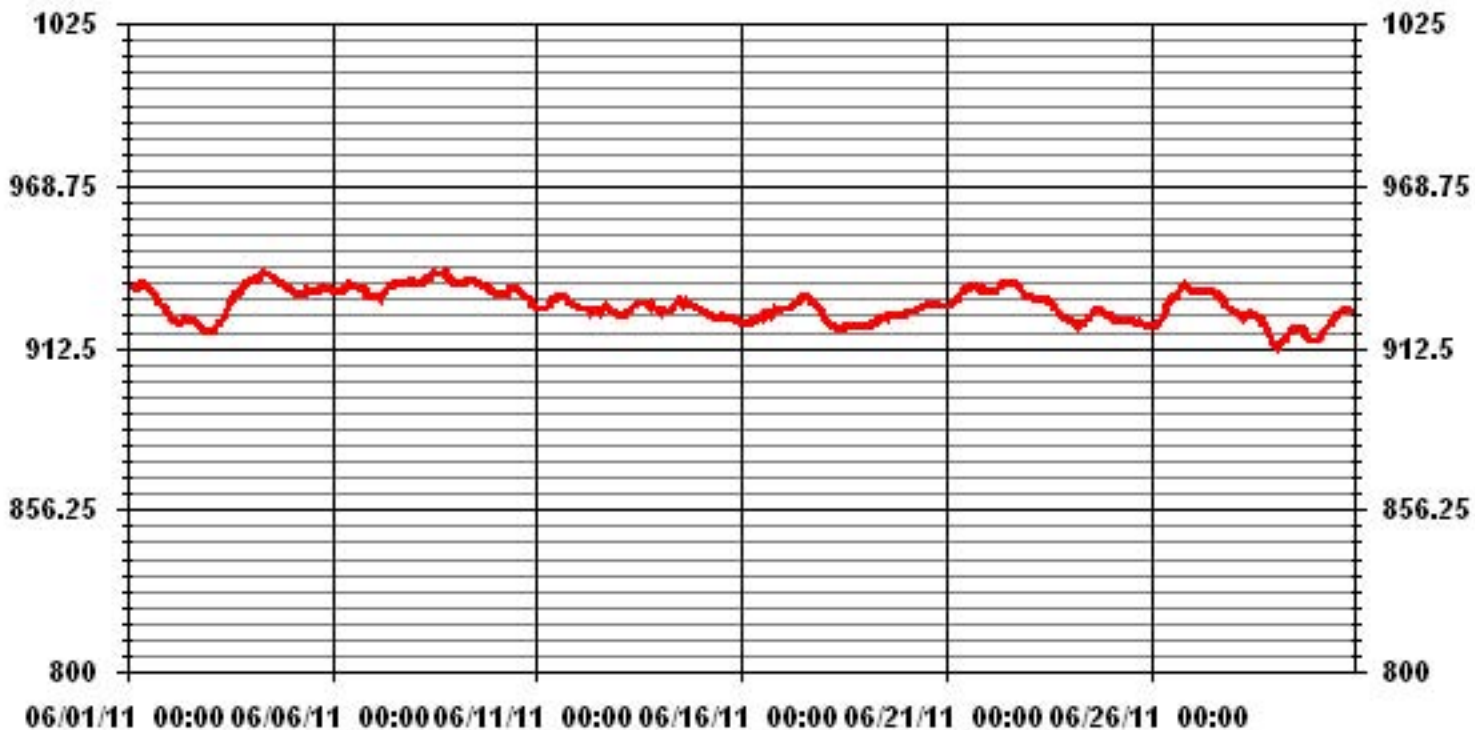
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	939	MB	@ HOUR(S)	VAR	ON DAY(S)	4, 8
MAXIMUM 24-HR AVERAGE:	937.0	MB			ON DAY(S)	8
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	5.58		MONTHLY AVERAGE:	927	MB	

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

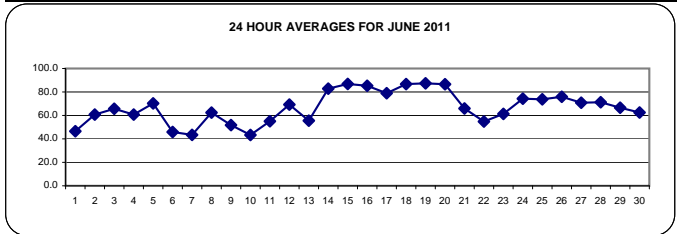
JUNE 2011

RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
1		43	47	48	55	57	54	52	46	40	35	30	29	26	27	28	30	33	43	59	60	64	68	70	73	73	46.5	24
2		77	82	84	90	91	91	90	79	64	59	51	44	40	38	33	34	35	37	42	45	48	55	72	76	91	60.7	24
3		74	72	76	78	81	82	80	79	78	74	69	62	57	55	54	49	49	52	52	57	58	61	63	64	82	65.7	24
4		60	64	69	64	63	63	58	42	41	39	40	45	53	58	64	67	63	61	63	66	72	80	81	81	81	60.7	24
5		80	79	80	82	82	82	81	74	61	52	49	66	76	64	65	70	63	60	60	61	68	75	78	78	82	70.3	24
6		79	82	85	83	81	77	69	61	50	39	34	30	25	24	22	21	20	22	24	27	32	34	38	42	85	45.9	24
7		43	46	38	45	63	56	62	56	49	44	37	33	36	37	34	30	33	34	36	42	46	47	48	63	43.4	24	
8		53	58	63	65	65	68	73	73	69	69	61	48	50	65	63	59	60	54	50	56	61	67	74	74	74	62.4	24
9		74	73	81	85	82	80	75	68	59	47	40	39	37	32	29	28	28	31	31	34	41	46	49	53	85	51.8	24
10		57	60	65	67	70	70	62	53	47	39	31	26	27	26	25	26	27	27	30	33	38	42	44	48	70	43.3	24
11		62	72	75	80	84	86	82	77	66	60	50	44	39	33	34	33	33	33	36	42	49	48	52	51	86	55.0	24
12		50	53	60	72	73	73	79	76	83	86	83	83	76	71	61	56	54	57	61	65	72	73	72	73	86	69.3	24
13		71	74	82	81	75	71	67	61	51	49	47	45	50	40	39	36	35	37	41	46	54	54	60	67	82	55.5	24
14		72	83	89	90	91	91	90	87	82	78	74	67	69	67	65	79	86	87	88	89	90	91	91	92	92	82.8	24
15		92	92	92	91	92	92	91	91	89	85	81	77	70	71	82	88	87	84	86	87	89	91	92	92	92	86.8	24
16		92	91	92	92	92	91	92	91	86	83	85	89	74	66	65	70	85	82	79	88	89	90	90	92	92	85.3	24
17		91	92	92	91	92	92	91	90	70	67	68	66	62	57	58	61	63	68	73	86	90	91	91	92	92	78.9	24
18		92	92	92	92	92	92	92	92	92	92	90	86	79	76	75	73	72	83	85	85	86	90	90	91	92	86.7	24
19		91	91	91	91	91	91	91	89	88	84	81	79	85	83	81	84	85	85	87	89	89	90	90	91	92	87.4	24
20		91	91	91	91	91	91	91	90	89	88	87	85	78	77	75	84	84	82	82	83	85	89	91	92	92	86.6	24
21		92	92	92	92	92	90	81	75	67	62	52	43	40	40	37	37	36	42	54	61	69	70	74	92	65.9	24	
22		77	75	80	79	87	76	71	62	58	52	49	46	40	31	30	31	32	33	33	38	48	57	63	67	87	54.8	24
23		68	66	67	71	76	74	73	74	68	62	57	54	46	42	44	45	49	53	57	60	64	64	67	70	76	61.3	24
24		77	88	89	91	91	91	91	91	88	81	76	69	63	59	55	53	53	53	56	65	69	74	78	81	91	74.3	24
25		83	83	86	87	88	87	86	81	72	63	61	60	59	60	63	61	61	63	67	74	79	79	81	86	88	73.8	24
26		88	89	90	90	90	89	86	83	71	66	64	68	72	74	70	68	67	62	61	64	70	78	79	83	90	75.9	24
27		87	84	85	87	88	86	84	76	63	59	59	57	56	55	52	51	53	64	63	73	66	82	85	85	88	70.8	24
28		84	84	80	89	91	91	90	87	78	72	68	66	62	59	57	52	53	55	56	62	67	69	69	69	91	71.3	24
29		71	77	82	85	86	85	79	64	60	56	50	49	48	42	37	40	41	42	51	87	92	91	91	92	92	66.6	24
30		91	92	92	91	90	88	77	71	65	60	54	47	45	39	38	38	40	36	39	45	59	64	68	71	92	62.5	24
HOURLY MAX		92	92	92	92	92	92	92	92	92	92	90	86	89	85	83	88	87	87	88	89	92	91	92	92			
HOURLY AVG		75.4	77.5	79.6	81.6	82.9	81.8	79.8	74.9	68.6	63.8	59.6	57.0	55.1	52.6	51.4	51.5	52.2	54.0	56.4	61.7	66.5	70.2	72.9	74.8			

STATUS FLAG CODES

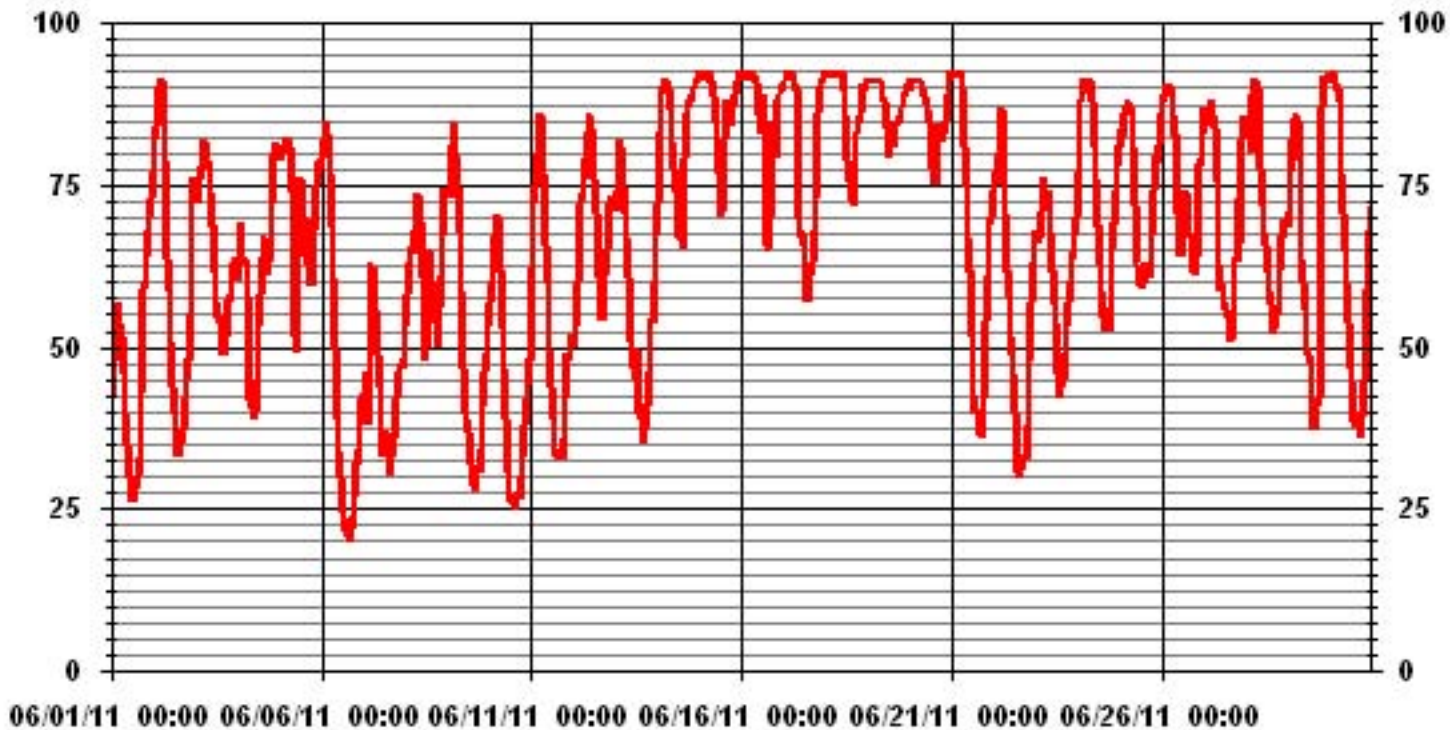
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	87.4	%			ON DAY(S)	19
VAR-VARIOUS						
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
STANDARD DEVIATION:	19.30		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	66.74	%	

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	TOTAL	RDGS.		
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
5		0	0	0	0	0	0	0	0	0	0	0	0	0.9	0.1	0	0.4	0.2	0	0	0	0	0	0	0	0	0.9	1.6	24
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0.5	0.5	24	
9		0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
11		0	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0.7	24	
12		0	0	0	0	0	0	0.5	0	0.2	1.3	0.9	0.8	0	0.1	0	0	0	0	0	0	0	0	0	0	1.3	3.8	24	
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
14		0	2.9	3.9	1.9	0.8	0.6	0.1	0.1	0	0	0	0	0	0	0.2	2.9	0	0	0	0.1	0	0.1	0	0	3.9	13.6	24	
15		0.1	0	0	0	1.1	1.1	1	0.7	0.3	0	0	0	0	0	1	0.9	0.5	0.2	0	0	0.1	0	1.5	3.4	3.4	11.9	24	
16		0.8	0	0.1	0	0.8	0.1	0.1	0.3	0.2	0	0	0.9	1.7	0	0	0	4.9	0.1	0	1.9	0	0	0	0	4.9	11.9	24	
17		0	0	0.1	0	0	0	0.4	1.9	0	0	0	0	0	0	0	0	0	0	0	0.4	0.8	0.8	1.9	1	1.9	7.3	24	
18		3.8	2.8	3.2	2.6	1.4	2.1	1	1.4	1.6	0.4	0	0.1	0	0	0	0	0	0.5	0	0	0.2	1.4	0	0.9	3.8	23.4	24	
19		1.3	0.2	0.7	0.1	0.1	0.2	0.8	0.1	0	1	0.2	0.1	0.2	0.5	2.7	0.2	2.2	0.2	0.4	0.3	0.2	0.1	0	0	2.7	11.8	24	
20		0	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	1	0	0	0	0	1.6	1.8	0.4	1.8	5.0	24		
21		0.7	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.1	1.8	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
24		2.1	1.7	1.5	1.9	0	0	0.2	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	7.8	24	
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0.4	0.1	0.3	0	0.5	1.3	24	
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13.4	3.5	0.1	0.3	0.1	13.4	17.4	24
30		0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
HOURLY MAX		3.8	2.9	3.9	2.6	1.4	2.1	1.0	1.9	1.6	1.3	0.9	0.9	1.7	0.5	2.7	2.9	4.9	0.5	0.4	13.4	3.5	1.6	1.9	3.4				

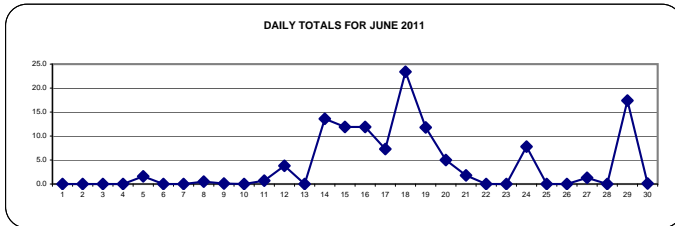
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	MD	-MISSING DATA

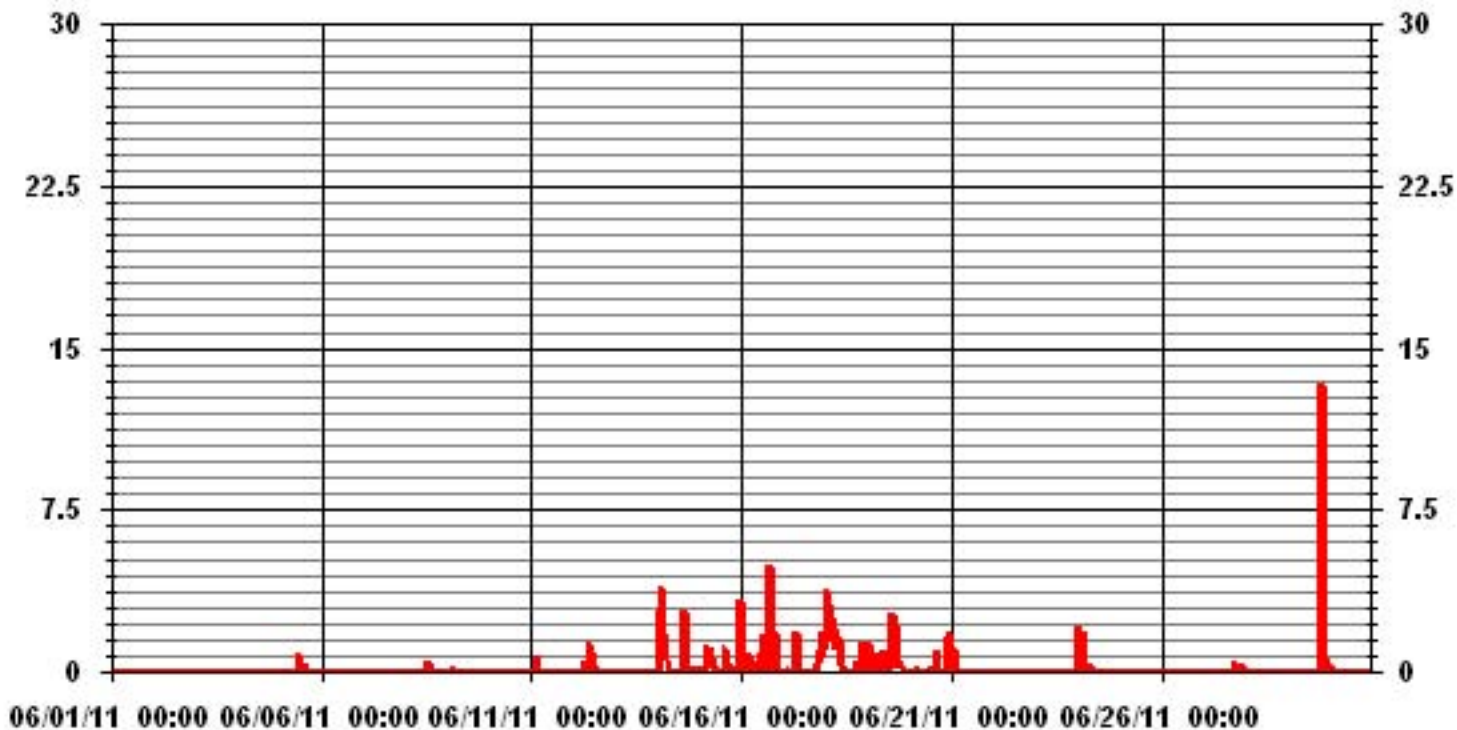
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	13.4	MM	HOUR(S)	19	ON DAY(S)	29
MAXIMUM DAILY TOTAL	23.4	MM			ON DAY(S)	18
MONTHLY TOTAL	120.0	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.72		MONTHLY AVERAGE:	0.17	MM	

DAILY TOTALS FOR JUNE 2011



01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

WIND SPEED hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	8.6	8.8	9.6	7.5	7.3	6.7	4.4	6.7	9.1	12.1	13.9	1.2	6.2	4.2	2.2	1	2.7	9.9	3.9	10.1	14.1	13.3	14.1	11	14.1	3.7	24
2	11.9	10.9	14.7	14.3	14.2	13.9	11.4	6.5	8.9	9.3	8.5	3.1	3.5	2.5	11.8	8.4	9.6	9.9	12.2	12.2	11.5	8.2	12	12	14.7	6.4	24
3	9.9	9.1	4.5	4.2	5.1	7.6	4.8	8.1	4.7	4.9	8.8	8.2	7	8.5	9.7	8.8	9.9	7.5	7	5.9	11.7	6.7	7	6.5	11.7	3.2	24
4	5.6	15.7	14.9	4.3	9.6	15.5	15.8	11.7	10.7	12.5	12.8	9.3	8.6	11.5	9.2	10.7	10.5	13.3	12.7	13.4	13.9	13.1	13.2	12.6	15.8	7.9	24
5	13.1	11	11.7	11.4	10.3	12.3	14.1	13.1	10.4	8.5	8.8	8.1	6.2	10.5	6.8	9	11.8	12.7	13	13.5	13.3	12.4	10.5	9.9	14.1	7.7	24
6	9.2	9.6	10.3	10.2	9.9	12.9	12	9.5	9.2	8.7	8.4	9	8	6.8	8	5.1	9.5	0.7	2.9	4.1	7.4	7.8	8.4	5.1	12.9	6.8	24
7	2.2	3.6	3.6	3.5	8.4	6.8	7.2	5.2	11.8	12.3	12.5	11.5	13.8	4.8	11.1	6.8	12.4	13.3	12.2	12.2	14.4	14.3	13.1	11.9	14.4	6.3	24
8	12.5	12.8	13.2	11.9	12.3	10.4	13.8	13.6	14	13.3	12.7	11.6	11.8	12.4	9.4	10.7	12.6	12.6	12.5	14.5	15.9	12.7	11.8	8.7	15.9	11.7	24
9	6.1	5.5	5.7	7.8	8.1	8.4	7.1	5.3	9.7	10.4	9.2	7.7	3.5	5.1	10.3	12.6	14.4	9.4	12.7	13.7	12.2	10.8	10.4	8.7	14.4	5.6	24
10	8.4	9.4	8.9	9.4	11.9	11.8	11.6	10.3	8.2	8.6	8.9	6.8	5.2	1.6	7.5	1.7	2.5	3.9	3.5	8.7	11.4	11.3	11.4	4.5	11.9	6	24
11	10.7	8.9	12.2	10.8	5.6	7.7	6.8	4.5	6.4	3.9	7.5	5.6	7.7	9.7	9.6	9.7	9.8	9.9	6.4	12.1	12	11.3	2.5	8.3	12.2	1.5	24
12	6.2	6.6	6.7	5.3	4.6	3.4	7.2	10.1	6.6	1.8	3.4	8	11.1	10.9	12.2	10.7	9.4	8.1	6.8	6.2	5.5	7	7.2	7	12.2	5.6	24
13	9.1	8.9	9	10.7	13.2	12.8	13.1	13	11.6	11.2	10.7	1.5	2.3	8.4	2.1	9.1	3.8	12.7	4.8	4.4	6	5.6	6.4	9.8	13.2	3.2	24
14	8.7	10.3	5.7	6.6	11.2	10	4.5	1.5	5.5	5.2	12.8	2.1	11.7	11	1.7	4.4	10.8	10.5	7.6	7.7	8.8	7.2	7.5	7.5	12.8	2.3	24
15	5.3	4.2	7.7	7	4.6	1.8	3.1	6.4	8.5	8.4	9.6	10.3	5.1	8.7	1.1	3.7	3.7	3	5.3	6.4	5.1	6.4	5.6	8	10.3	2.1	24
16	12.3	13.2	11.2	12	10.9	14.3	13.9	12.4	11.2	11	13.4	11.5	10.2	11	12.5	11.8	2.3	10.9	11.5	9.8	11.7	10.6	10.2	10	14.3	4.5	24
17	10.4	11.1	10.4	9.4	10.5	9.3	7.1	10	12.9	9	5.7	3.1	7.2	9.2	11.2	10.2	11.3	10.9	9.9	10.1	12.9	13.3	14.4	14.9	14.9	9.8	24
18	15.6	16.3	17.6	17.6	16.2	15.6	15.3	15	14.1	12.8	11.9	12.1	13.3	13.2	12.8	14	13.7	13.7	14.4	16.3	15.1	15.4	15.3	15.5	17.6	14.6	24
19	13.6	14	12.6	12.3	13.4	13.8	14.7	12.9	12	13.5	14.8	12.7	6.4	6.6	5.4	6.3	10.2	10.1	10.1	10.5	11.7	9.2	6.8	12.9	14.8	7.8	24
20	11.9	12.2	11.4	12	12.4	12.8	12.4	11.6	10.4	12.2	13.2	9.6	7.8	7.3	6.3	3.9	6.5	6.7	9	12.3	12.6	12.7	13.8	10.6	13.8	3.7	24
21	5.2	5.7	10.6	9.1	11.9	10.4	12.1	14.2	13.7	12.6	6.1	10	6.4	9	8.3	7.1	7.3	5.1	9.9	13.7	14	14.1	13.5	12.4	14.2	1.1	24
22	10.9	11.1	10.3	10.1	12.8	13.2	12.7	6	3.5	4.8	8.7	8.2	7.1	5.1	7.9	9.9	4.8	6.6	5.3	4.6	6.9	7.4	10.3	9.9	13.2	6.6	24
23	10.6	11.7	13.3	15.4	13	11.7	10.2	9.7	3.7	5	3.3	5	6.6	5.1	4.9	6.1	5.6	4.6	5.8	6.9	6.1	6.1	5.1	8.3	15.4	3.3	24
24	16.9	9.3	9.1	6.9	8.2	8.8	7.8	8.4	9.1	8.2	7.8	6.4	7.8	6.5	8.5	5.9	4.6	6.1	11.3	14.1	5.2	7.1	8	7.7	16.9	2.9	24
25	6.7	7.8	8.3	8.7	8.8	8.1	8.8	9.5	11.2	12.2	8.2	8.5	6.6	7.9	6.9	7.7	9.2	9.5	11.5	13.3	14.4	5.3	4.3	2.7	14.4	4	24
26	5.5	7.9	9.8	10.3	8.6	10.2	9.8	11.4	5.2	13	12.8	12.9	16.9	16.9	3.4	9.4	3.2	8.2	12.6	11.3	3	5.3	5.4	5.9	16.9	4.8	24
27	6	6.4	6.6	6.4	10.6	10.9	10.5	15.1	9.5	2.7	0.7	4.8	4.9	5.8	13.6	13.4	13.5	7.2	3.4	9.9	7.6	3.8	13	13.1	15.1	4.3	24
28	11.4	10.9	8.4	12.1	11.4	13.8	13.5	13	10.1	5.3	11	11.4	11.2	10.9	9.6	7.7	9.8	4.3	4.1	5	5.5	8.8	8.7	9.6	13.8	4	24
29	10.2	10.8	7.9	8.9	8.4	6.2	6.3	4.5	9.7	4.1	8.9	7.9	7.8	9.1	10	7.4	8	11.8	9.6	12.2	7.5	6.2	1.7	2.3	12.2	0.8	24
30	7.2	11	11.8	8.1	9.7	10.3	12.1	12.4	15.7	16.1	7.7	6.2	5.1	2.1	8	6.8	5.8	2.3	3.4	4.8	7.7	6.9	9.5	11.6	16.1	2.5	24
HOURLY MAX	16.9	16.3	17.6	17.6	16.2	15.6	15.8	15.1	15.7	16.1	14.8	12.9	16.9	16.9	13.6	14.0	14.4	13.7	14.4	16.3	15.9	15.4	15.3	15.5			
HOURLY AVG	9.4	9.8	9.9	9.5	10.1	10.4	10.1	9.7	9.6	9.1	9.4	7.8	7.9	8.1	8.1	8.0	8.3	8.5	8.5	10.0	10.2	9.3	9.4	9.3			

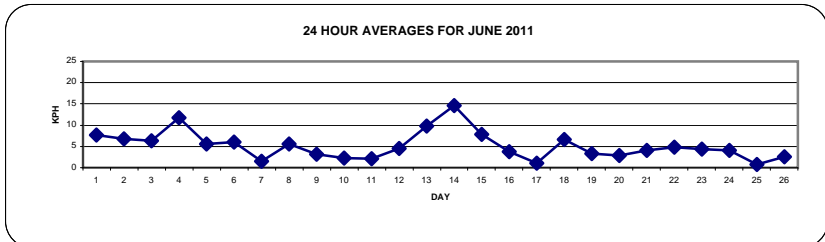
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

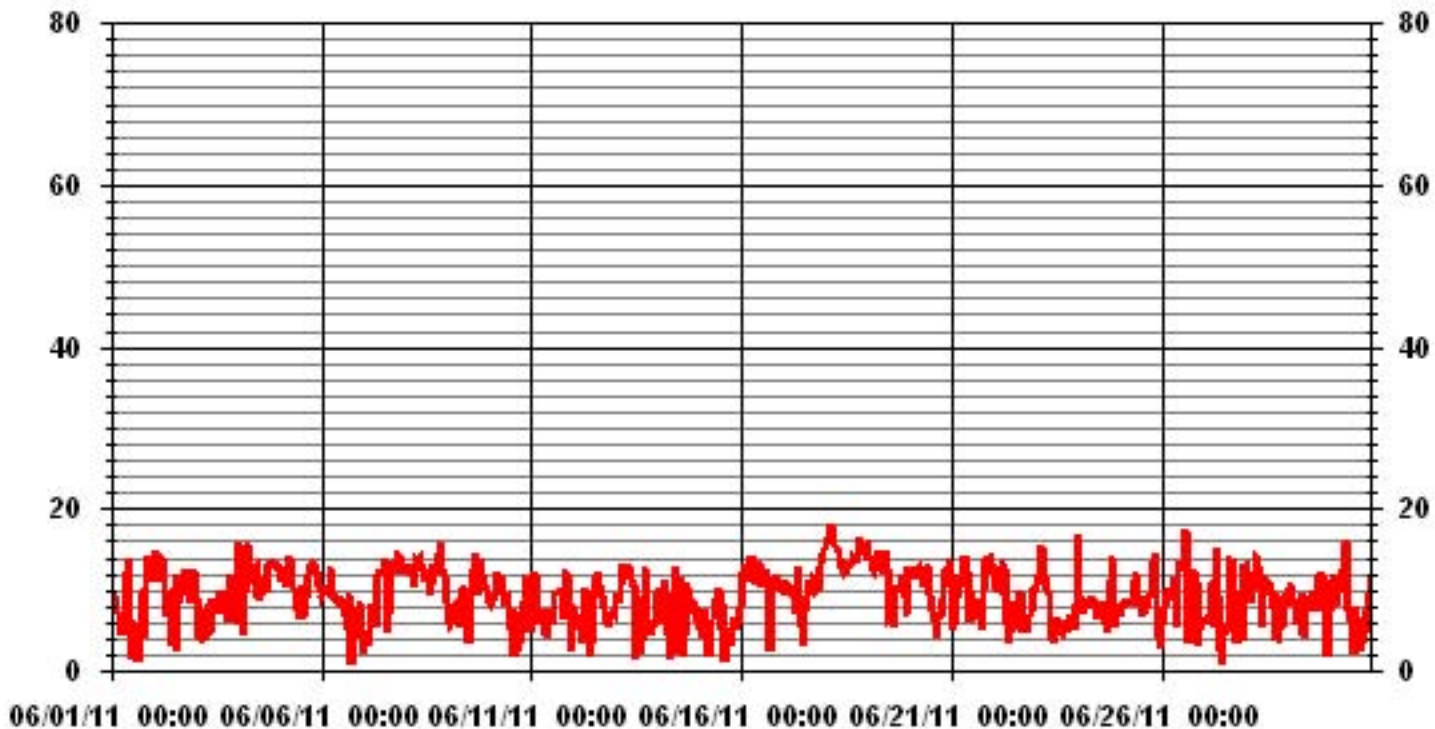
LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	17.6	KPH	@ HOUR(S)	2, 3	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	14.6	KPH			ON DAY(S)	18
CALMS (≤ 0 KPH)	0.27	%	OPERATIONAL TIME:	720	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	3.46		MONTHLY AVERAGE	9.18	KPH	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JUNE 2011

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY	1	20.6	13.4	15.8	17.3	11.6	11	13	15.8	28.2	32	38.9	40.3	41.4	45.7	38.7	41.6	45.1	58.4	45.7	35.5	29.1	24.1	26.7	20.6	58.4
2	29.1	22.8	22.1	20.8	21.9	20.8	19.7	20.8	21.2	23.8	23.2	27.2	23.2	24.9	23.4	29.6	27.1	26	20.2	20	18.8	29.3	28	20.6	29.6	
3	23.2	28.9	41.6	37.7	34.6	48.4	46.8	53	57.6	44	52.7	53.4	44.6	40.5	38.1	39.4	33.5	35.5	37.2	37.4	33.7	22.5	26.9	16.2	57.6	
4	23.2	23.6	21.7	25	20.4	21.5	21.9	22.1	22.6	26.5	31.8	33.7	36.6	30	30.9	23.9	30.2	23.7	20.6	21	19.5	17.5	17.3	17.5	36.6	
5	17.1	19.3	16.5	17.3	18	19.9	20.6	22.5	21	23.9	23.6	26.3	26.3	21.7	24.7	27.6	29.2	33.6	28	30.9	19.3	17.5	16.4	16.7	33.6	
6	17.3	17.5	18.4	17.5	16.9	16.9	17.7	16.9	18.4	18.8	21	27.6	27.4	29.8	23	25.8	22.1	20.8	10.1	11	11.7	11.7	14.5	15.1	29.8	
7	7	8.1	6.8	9.2	20	14.2	13.4	26.9	21.7	33.5	36.8	31.8	39	31.1	26.7	30.4	30	22.3	27.4	33.5	21.7	21.9	21.5	23.6	39	
8	20.6	18.9	18.4	18.8	21	25.2	21	21.5	56.7	24.7	23.2	29.8	21.5	20.8	19.7	19.5	20.4	19.9	19.1	19.7	19.1	18.8	17.7	20.4	56.7	
9	9.6	12.3	9.9	15.3	23.9	22.1	19.3	23.6	28	25.2	26.9	35.5	47.5	41.6	38.7	41.1	38.3	32.4	27.1	23	20.4	26.1	19.1	18.4	47.5	
10	18.8	23	16.2	21.7	18.9	18.6	21.2	22.3	29.6	34.2	38.7	41	47.3	42.4	39	37.2	42.9	39.6	37.6	29.8	17.3	17.3	19.3	26	47.3	
11	19.1	20.1	26.3	26.5	17.1	18.4	19.1	26	27.1	0	27.4	30.2	29.1	31.8	25.8	28.5	28.9	27.1	28	23.2	19.7	21.2	8	25.6	31.8	
12	15.3	14.9	17.1	14.2	11.8	7	25.9	29.8	22.8	11.8	14.9	19.5	25.2	31.4	33.9	28.9	30.2	21.2	20.6	13.4	11.2	11.7	11.6	13.4	33.9	
13	15.1	16.2	17.3	18.8	18.6	19.3	20.6	23	23	24.3	23	24.6	19.5	23	24.3	21.4	23.2	20.8	20.1	9.2	9.6	7.5	8.3	18.2	24.6	
14	16.9	38.8	26.3	17.7	24.7	27.4	21.7	6.8	35.5	23	19.9	22.5	20.6	21.2	21.9	20.6	25	23.5	20.8	21.9	18.8	17.7	19.5	17.1	38.8	
15	14.7	11.4	19.1	15.8	13.8	7.4	9	17.3	19.1	19.3	18	18.4	19.7	19.5	13.4	8.3	9.4	7.7	18.4	22.1	11.6	17.3	15.4	24.7	24.7	
16	30.4	34.6	24.7	30.4	28.1	35	33.7	30.7	29.6	27.1	31.1	0	37.9	24.3	25.4	30.4	34.8	18.4	19.3	19.5	19.3	19.7	18.8	19.1	37.9	
17	18.4	18.2	18.8	18	19.5	18.8	30.4	21.3	20.6	24.7	23.6	19.7	19.9	21.6	21.6	20	23.2	22.5	23	23.8	26.5	30.4	38.1	36.1	38.1	
18	38.7	40.1	42.9	43.1	38.5	38.3	34	38.7	35.5	42.9	40.3	34.8	39.2	43.2	38.3	45.7	43.3	30.9	33.9	43.1	34.6	38.3	34.8	34.6	45.7	
19	38.5	33.1	32.2	32.7	35.2	36.8	35.7	29.8	30.9	33.3	34.9	44.5	32.8	31.8	25.8	21.9	34.2	21	21.9	21.7	20.8	19.3	0	29.6	44.5	
20	27.1	26.5	26.9	26.5	27	27.6	27.4	28	26.5	32	29.4	27.8	25.6	24.3	26.9	27.1	19.3	20.1	19.5	20.1	19.1	18.8	19.9	20.4	32	
21	11.2	13.2	23	18.8	20.1	19.5	22.3	26	29.3	32.9	24.7	26	27.8	26.9	24.1	21.4	20.8	23	18.6	17.7	20.1	19.3	17.7	17.5	32.9	
22	13.4	17.5	14.2	13.6	17.7	20.4	20.1	21	23	23.4	24.3	27.6	29.6	26.9	25.8	24.8	25.6	25.2	24.7	8.3	10.5	14.4	23.7	21.7	29.6	
23	21.2	21	21.7	21	22.3	21.9	22.8	21.4	26	19.3	20.8	23.4	30.4	27.4	30.9	28.7	28.7	26.7	36.1	25.6	19.3	20.6	30.9	34.1	36.1	
24	46	18.2	18.2	18.4	20.3	19.7	29.1	22.8	20.8	24.9	34.4	25.4	30.3	24.1	32	32	21.2	18.6	19.3	19.9	20	15.1	15.3	15.5	46	
25	12.3	14	14.8	17.1	20.1	19.3	21	24.1	25.4	36.8	31.5	32.4	25.8	20.1	18.6	24.7	23	21.2	23	19.3	20.1	22.1	14	6.8	36.8	
26	12.9	29.6	28.5	32.2	22.1	28.5	32	35.2	44.6	35.9	34.2	33.3	41.4	49.7	47.1	49.4	40.3	32	32	20.8	5.5	7.7	7.5	10.3	49.7	
27	12.1	11.4	13.4	14	29	68.3	30.9	34.2	41.6	40.1	40.7	35.7	33.8	36.4	35.7	35.7	36.8	22.1	56.2	32.2	43.2	22.1	19.7	20.1	68.3	
28	17.3	18.2	20.6	19.1	21.5	21.2	19.7	21	22.1	21.9	21.5	24.7	20.6	26.5	30.4	26.2	27.3	21.9	16.9	16	10.7	17.1	15.3	17.3	30.4	
29	26.2	27.6	21.5	18.4	19.9	13.1	14	14	24.5	24.3	20.6	22.8	26.2	27.3	23.8	24.1	22.7	23.7	20.1	0	35.9	25.4	38.5	22.8	38.5	
30	18.6	27.6	25.6	16.9	21	24.3	27.4	33.1	36.8	45.7	32.8	23.4	25.6	24.9	28.2	21.4	20.9	17.5	21.4	17.7	18.2	15.3	16.4	17.6	45.7	
PEAK		46.0	40.1	42.9	43.1	38.5	68.3	46.8	53.0	57.6	45.7	52.7	53.4	47.5	49.7	47.1	49.4	45.1	58.4	56.2	43.1	43.2	38.3	38.5	36.1	

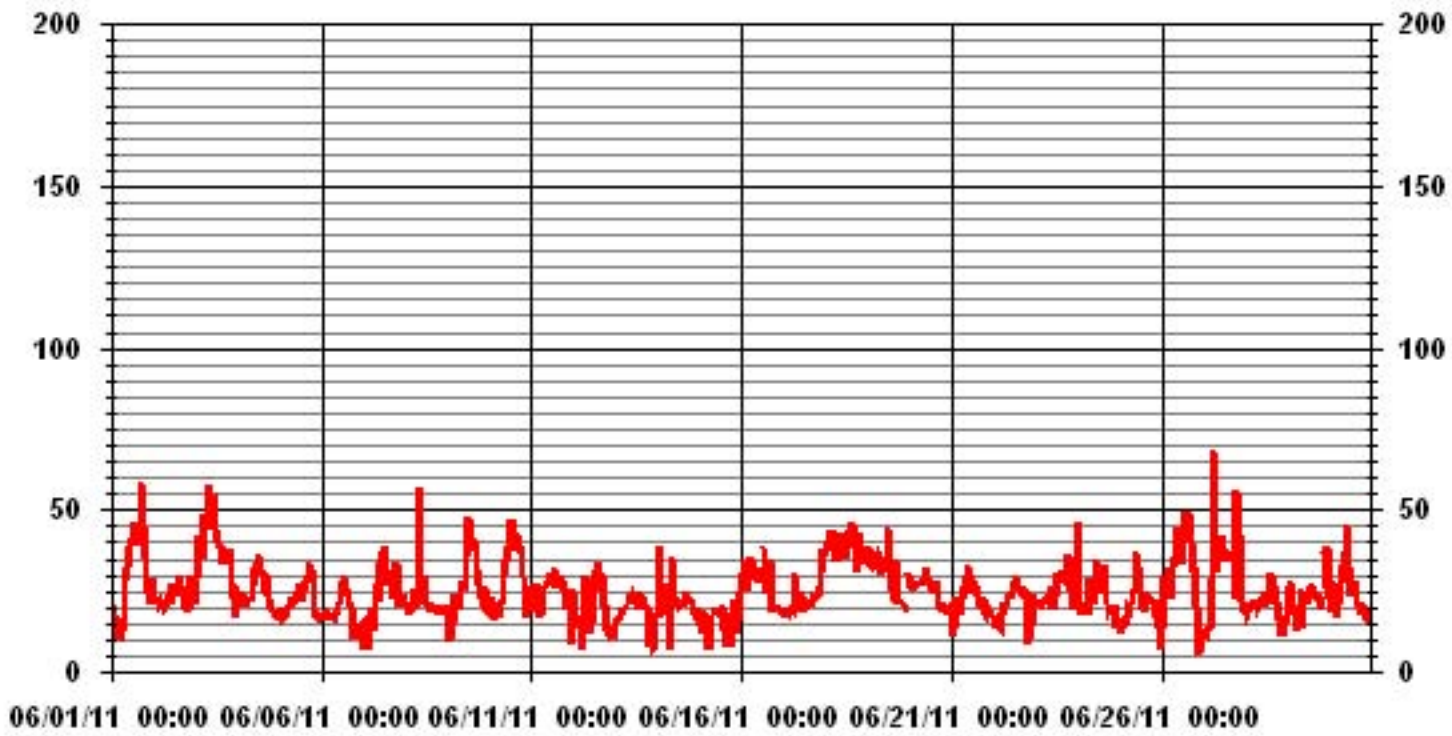
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	68.3	KPH	@ HOUR(S)	5
			ON DAY(S)	27

01 Hour Averages



— LICA31 WSMAX KPH

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

June 2011

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : WSP
Units : KPH

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	1.52	1.38	.83	.69	.83	.27	1.11	1.66	1.94	1.25	.97	.83	.97	1.80	1.52	1.66	19.30
< 12.0	3.19	2.77	3.75	3.19	2.63	2.91	2.77	2.22	4.44	1.52	1.94	1.52	5.13	7.22	6.25	4.02	55.55
< 20.0	1.52	.83	2.36	2.36	.55	1.38	.55	1.38	1.38	.69	.00	.69	.83	3.61	3.75	2.91	24.86
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	6.25	5.00	6.94	6.25	4.02	4.58	4.44	5.27	7.77	3.47	2.91	3.05	6.94	12.63	11.52	8.61	

Calm : .27 %

Total # Operational Hours : 720

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	11	10	6	5	6	2	8	12	14	9	7	6	7	13	11	12	139
< 12.0	23	20	27	23	19	21	20	16	32	11	14	11	37	52	45	29	400
< 20.0	11	6	17	17	4	10	4	10	10	5		5	6	26	27	21	179
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	45	36	50	45	29	33	32	38	56	25	21	22	50	91	83	62	

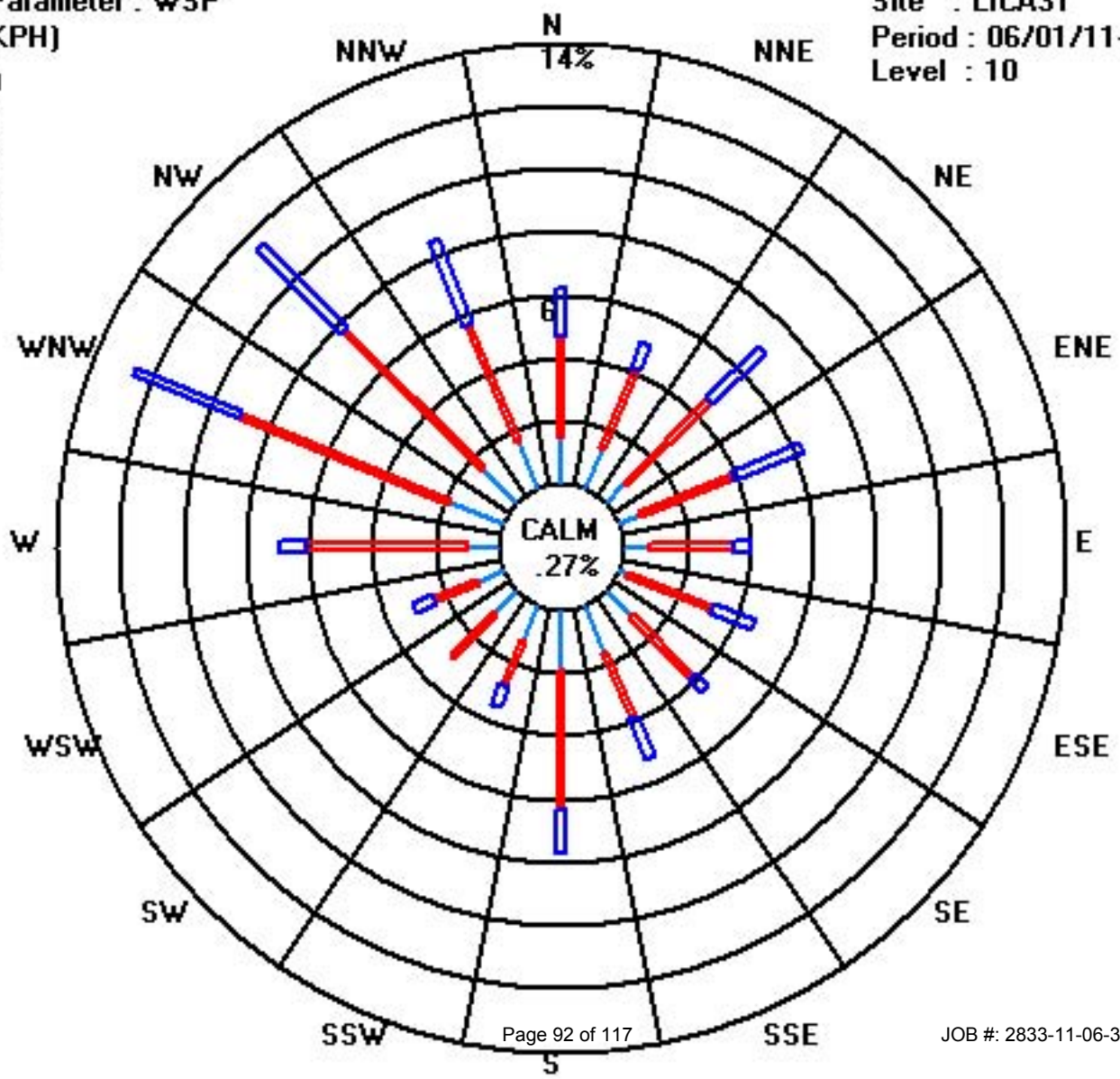
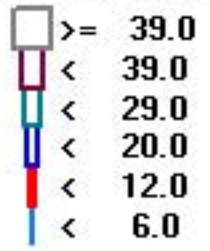
Calm : .27 %

Total # Operational Hours : 720

Class Limits (KPH)

Period : 06/01/11-06/30/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JUNE 2011

WIND DIRECTION hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG			
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.		
DAY																														
1		145	171	170	196	189	190	193	197	159	159	183	331	70	108	354	335	124	155	146	59	53	38	44	39	130	SE	24		
2		55	131	149	150	146	149	152	290	274	280	281	65	348	155	182	188	185	192	189	198	202	173	134	154	171	S	24		
3		160	191	170	172	221	270	280	330	284	271	324	273	254	260	245	232	237	224	217	23	16	14	6	24	265	W	24		
4		178	177	174	176	350	354	357	341	337	307	308	310	306	307	328	331	328	316	333	346	346	351	4	4	332	NNW	24		
5		10	13	19	15	10	4	360	350	321	290	278	269	344	73	348	344	48	44	47	60	73	84	86	78	22	NNE	24		
6		65	76	84	71	92	111	106	101	93	90	99	120	124	135	128	176	95	96	81	152	148	140	156	307	106	ESE	24		
7		28	154	174	49	30	54	41	348	298	325	321	315	321	317	156	171	320	296	303	299	300	304	301	312	315	NW	24		
8		304	298	295	292	295	307	296	295	292	298	303	303	296	293	283	275	269	263	261	249	246	252	275	255	283	W	24		
9		134	167	249	225	191	181	185	327	340	339	334	316	294	289	287	284	293	320	315	318	340	336	343	340	305	WNW	24		
10		344	342	359	351	347	353	344	334	321	306	295	287	293	161	203	344	12	360	10	6	13	30	33	246	343	NNW	24		
11		186	222	280	317	310	298	325	341	25	347	317	28	34	43	53	55	51	51	175	184	170	160	69	349	7	N	24		
12		5	5	32	28	358	48	46	28	174	242	345	288	305	318	335	341	352	330	323	337	4	9	0	322	347	NNW	24		
13		319	314	305	214	204	207	198	178	167	164	166	187	301	287	320	276	293	269	291	82	74	57	86	115	215	SSW	24		
14		86	161	165	71	48	26	340	335	244	213	104	228	259	259	251	217	276	305	312	298	287	295	299	299	290	WNW	24		
15		334	30	68	61	55	12	315	298	283	282	260	248	200	132	93	54	44	353	12	5	11	11	34	60	1	N	24		
16		62	61	55	58	53	49	48	53	53	55	58	55	33	138	142	130	99	281	287	280	269	273	273	268	46	NE	24		
17		272	280	271	289	290	301	281	296	292	317	306	262	265	273	288	302	302	313	312	308	306	308	322	321	298	WNW	24		
18		329	327	333	333	329	326	325	323	327	333	335	335	336	332	333	338	341	320	321	330	325	325	323	326	329	NNW	24		
19		16	26	29	31	40	43	45	51	49	52	62	58	340	313	296	312	310	301	308	304	302	306	6	65	16	NNE	24		
20		65	71	72	72	76	75	77	78	80	73	74	70	308	314	321	286	279	284	286	283	287	294	290	290	23	NNE	24		
21		321	314	265	261	245	251	242	258	272	286	317	56	81	70	79	89	93	132	92	100	109	111	111	108	129	SE	24		
22		109	94	105	108	109	113	112	116	199	214	115	214	171	172	117	125	200	216	185	143	111	74	112	106	126	SE	24		
23		69	114	49	38	49	128	111	89	79	282	275	232	186	175	181	172	158	188	176	215	236	219	154	177	128	SE	24		
24		205	260	290	282	271	256	215	125	170	174	177	173	189	155	252	205	108	106	76	74	322	293	310	318	214	SSW	24		
25		288	284	278	292	298	302	301	299	300	313	18	14	34	54	70	50	46	53	63	81	96	264	298	15	354	N	24		
26		6	355	12	352	317	324	323	342	322	3	14	321	312	334	290	353	195	164	177	187	251	235	233	201	326	NW	24		
27		203	194	195	189	192	191	184	175	158	150	143	12	5	167	155	148	146	203	267	171	339	147	8	16	169	SSE	24		
28		8	16	53	178	170	160	152	159	140	279	283	281	268	245	218	214	135	150	192	171	133	129	132	133	174	S	24		
29		165	190	204	252	275	321	306	285	288	6	104	114	123	136	112	121	341	3	29	331	7	341	324	9	353	N	24		
30		295	289	286	286	278	285	296	299	303	301	351	51	73	72	56	64	81	131	141	125	129	106	103	96	326	NW	24		
HOURLY AVG		344	355	359	352	358	354	360	350	340	347	351	335	348	334	354	353	352	360	333	346	346	351	343	349					

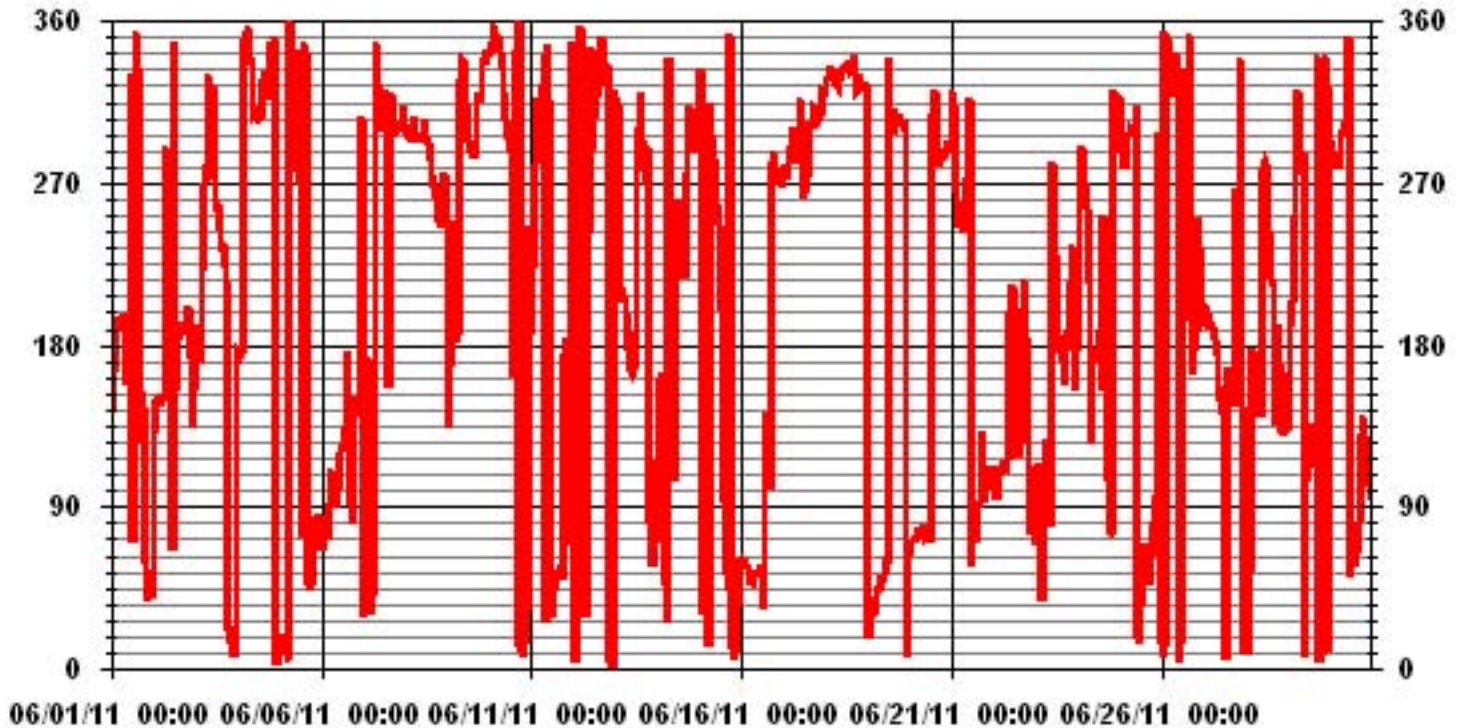
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION:	June 17, 2010
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	720 HRS
STANDARD DEVIATION	110.37	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	333 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JUNE 2011

STANDARD DEVIATION WIND DIRECTION (STDWDIR) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00
DAY																								
1	19	8	7	11	8	9	18	20	52	48	44	79	54	73	75	79	83	53	76	34	18	18	20	18
2	39	50	18	24	25	22	30	32	64	51	56	76	66	50	29	46	32	24	12	10	13	31	41	14
3	16	22	54	56	55	52	69	66	68	67	60	54	54	50	45	42	37	44	54	49	17	22	18	15
4	15	5	19	16	19	6	9	21	32	36	31	40	42	30	31	24	24	19	17	14	7	6	4	4
5	5	8	6	7	10	8	9	16	46	52	57	37	30	24	30	26	28	40	36	26	15	6	9	12
6	15	14	11	11	13	3	6	11	20	28	38	41	54	56	50	67	35	62	38	19	6	7	7	41
7	19	24	8	21	10	13	12	33	22	43	30	29	32	56	30	45	44	31	44	44	26	17	13	18
8	14	13	9	8	11	45	15	20	20	31	32	31	31	24	23	17	9	11	9	11	10	9	4	34
9	10	20	10	11	14	11	16	31	26	26	34	46	76	71	47	36	28	33	22	11	10	16	11	14
10	19	16	12	16	7	7	16	24	35	43	46	60	64	78	60	69	72	64	60	26	6	9	12	37
11	13	26	14	21	44	16	19	36	71	54	63	75	60	44	56	45	38	46	37	12	27	43	14	18
12	18	16	14	14	14	15	15	25	27	37	30	15	16	18	18	20	31	18	16	15	18	11	12	9
13	10	10	11	22	9	11	11	16	21	25	44	72	55	48	38	58	56	34	38	13	6	8	5	12
14	18	31	43	34	23	57	58	42	49	57	28	75	44	49	60	20	16	18	19	17	17	17	16	18
15	18	22	17	16	16	21	15	17	17	19	14	15	38	32	37	16	22	26	21	19	17	22	19	16
16	17	17	17	16	17	16	16	17	16	18	19	17	21	41	30	44	61	11	15	22	9	11	13	14
17	11	10	11	16	12	25	35	32	21	34	57	76	37	26	23	25	20	23	28	28	21	32	37	30
18	34	28	30	26	27	27	28	28	28	28	30	29	29	30	28	28	28	26	26	26	28	30	29	31
19	23	17	19	20	17	18	17	17	18	17	18	37	58	46	55	49	31	22	25	22	16	24	22	15
20	17	17	17	16	16	16	16	17	17	18	17	41	39	42	50	61	41	38	23	10	10	12	26	22
21	13	18	12	14	10	11	10	13	18	20	31	30	50	36	39	36	31	51	21	3	19	8	5	3
22	4	6	5	5	4	23	10	32	59	51	58	56	61	70	43	44	67	55	32	11	6	13	29	36
23	18	9	20	14	44	41	31	17	50	55	70	56	54	61	67	59	63	65	62	48	44	45	68	44
24	21	19	22	33	24	27	26	25	21	32	35	44	38	41	27	44	51	37	20	31	21	12	10	13
25	12	13	12	13	14	16	17	18	20	39	52	46	51	33	33	38	30	27	17	8	23	20	18	20
26	18	18	18	17	15	17	18	20	53	44	40	20	18	21	80	58	66	41	25	26	18	8	6	11
27	10	8	11	14	14	15	14	13	52	88	86	61	60	59	40	43	40	33	61	28	38	62	22	10
28	8	10	36	12	11	11	15	27	52	54	18	27	19	32	49	65	58	30	24	13	7	9	10	11
29	13	13	18	12	13	13	20	23	20	35	40	51	54	34	26	59	54	30	20	29	38	56	42	54
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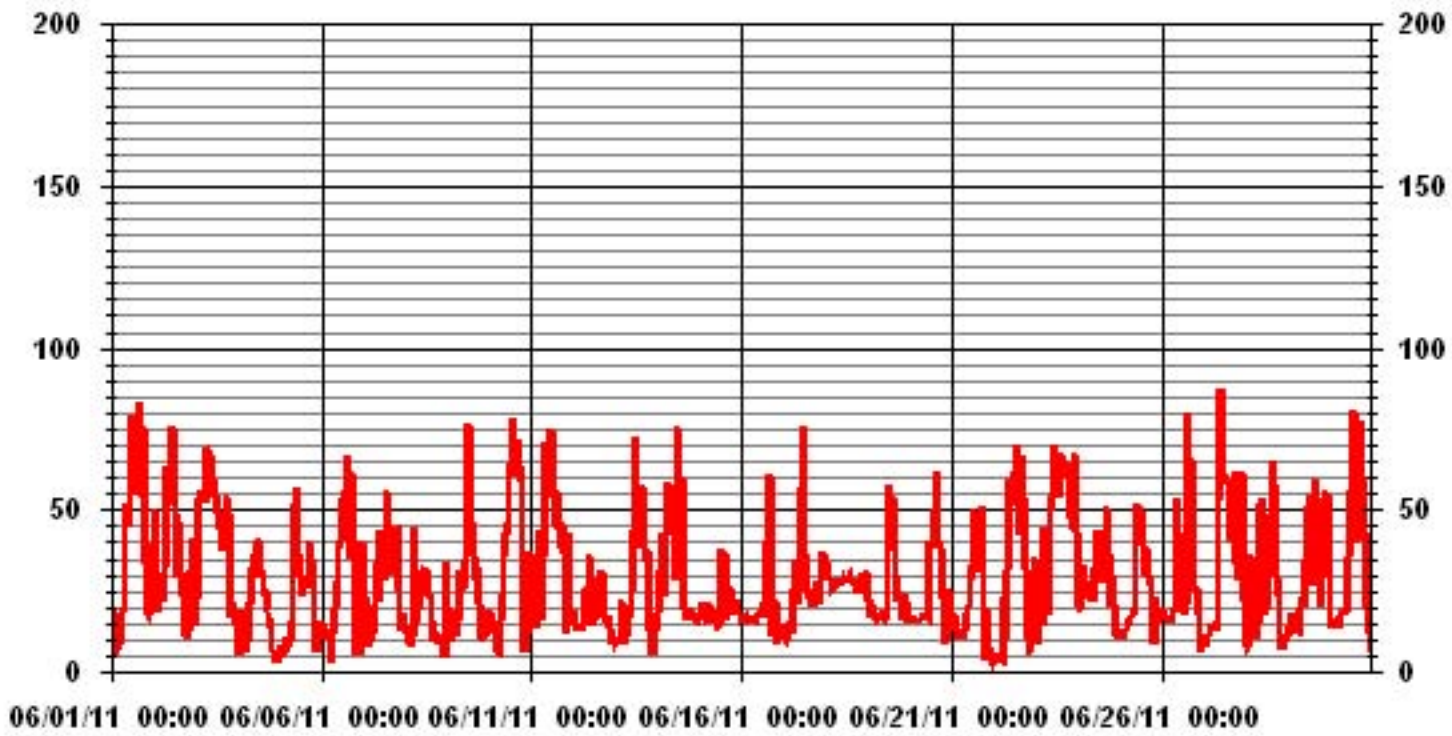
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: June 17, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 720 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report
Station Information

Calibration Date	June 8, 2011	Previous Calibration	May 30, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	8:51	End Time (MST)	12:45
Reason:	Monthly Calibration		
Barometric Pressure	937 mmHg	Station Temperature	23 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822 Cal Gas Expiry date
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts
February 4, 2013			

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	
Sample Flow / Box Temp	528 ccm, 30.6 Deg C	529 ccm, 31.4 Deg C	
HVPS / Lamp Setting	529, 2423	529, 2425	
PMT / RxCell Temp	7.8 Deg C, 50 Deg C	7.8 Deg C, 50 Deg C	
Converter / IZS Temp	NA Deg C, 40 Deg C	NA Deg C, 40.0 Deg C	
Offset / Slope	65.7, 1.128	65.7, 1.131	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4922	76.5	750	746	1.0053
4922	76.5	750	750	1.0000
4959	40.8	400	398	1.0047
4979	17.3	170	170	1.0000
4998	0	0	0	N/A
Sum of Least Squares				1.0049
New Correction Factor				1.0000

Before Calibration

After Calibration

Auto Zero	0.6	0.8
Auto Span	368.0	369.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	#VALUE!
Current Correction Factor Before Span Adjust:	1.0053
Percent Change:	#VALUE!

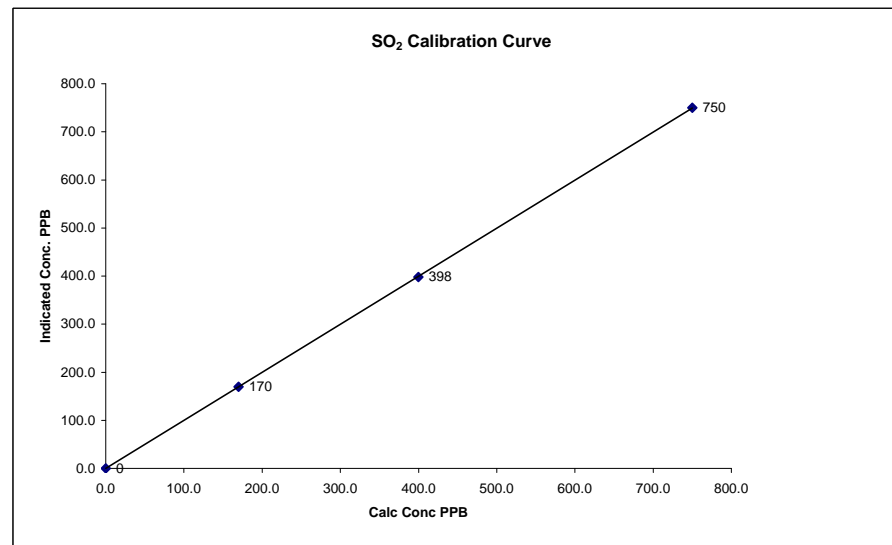
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

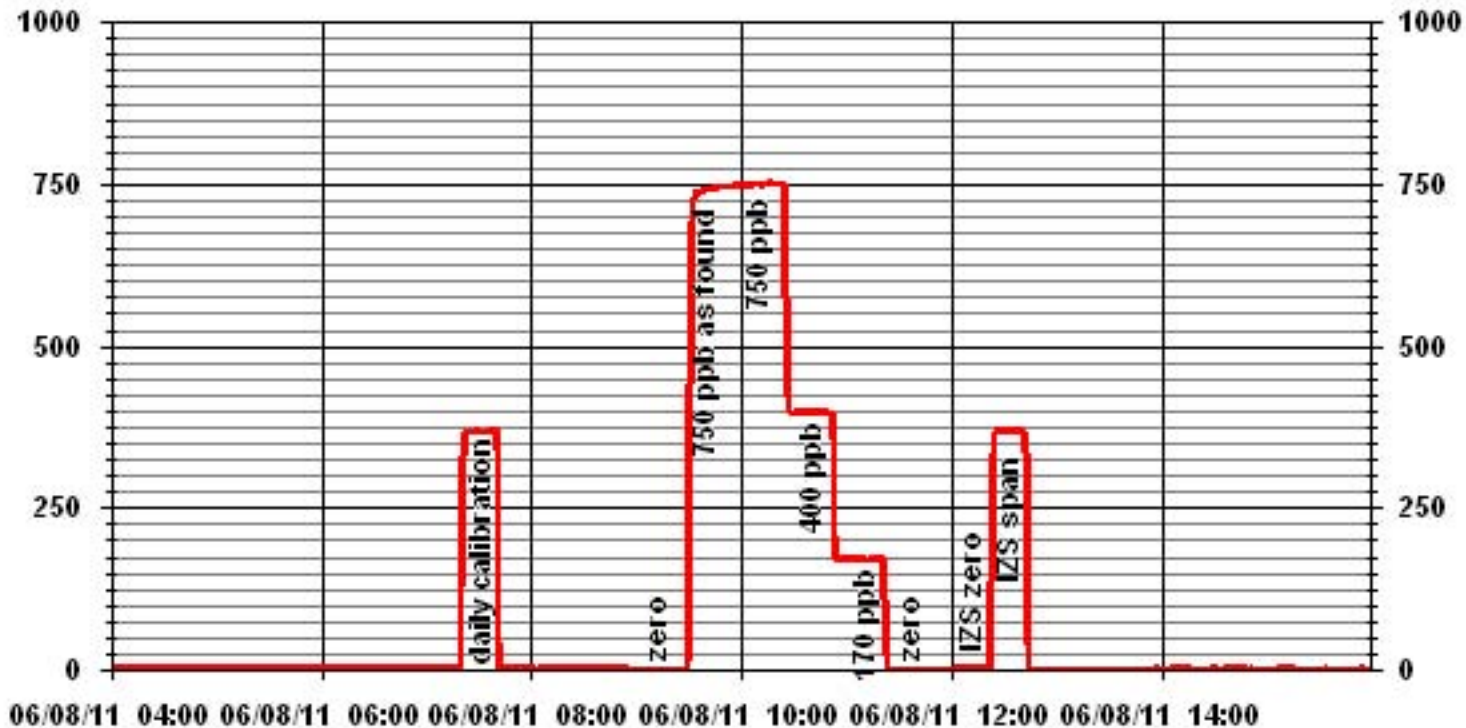
Calibration Date	June 8, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	8:51
End Time (MST)	12:45

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999991
170	170	0.9980		0.999519
400	398	1.0047		-0.202904
750	750	0.9999		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	June 7, 2011	Previous Calibration	May 24, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	9:27	End Time (MST)	13:50
Reason:	Monthly Calibration		
Barometric Pressure	934 mmHg	Station Temperature	23 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	bim000804
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A0717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 100			
Sample Flow / Box Temp	549 ccm	33.4 Deg C	551 ccm	32.6 Deg C
HV/PS / Lamp Setting	518	2507	518	2504
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C	50 Deg C
Converter / IZS Temp	314.7 Deg C	45 Deg C	315.5 Deg C	45.0 Deg C
Offset / Slope	60.6	1.045	61.5	1.051

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	NA
4958	39.2	80	81	0.9878
4995	0.0	0	0	1.0000
4959	39.2	80	80	1.0000
4979	19.6	40	41	0.9755
4985	11.2	23	23	1.0000
4995	0	0	0	NA
Sum of Least Squares				0.9949
New Correction Factor				1.0000

	Before Calibration	After Calibration
Auto Zero	1.2	0.9
Auto Span	46.0	45.0
Sample Lines Connected		

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	0.0%

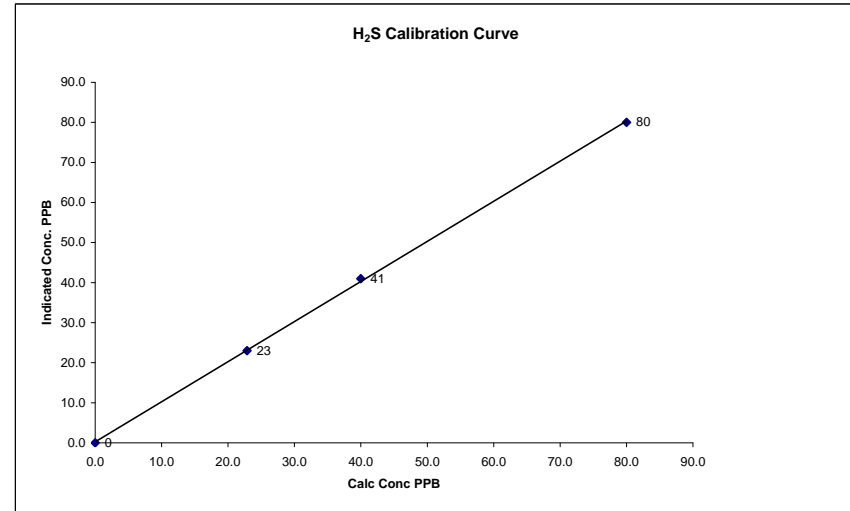
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

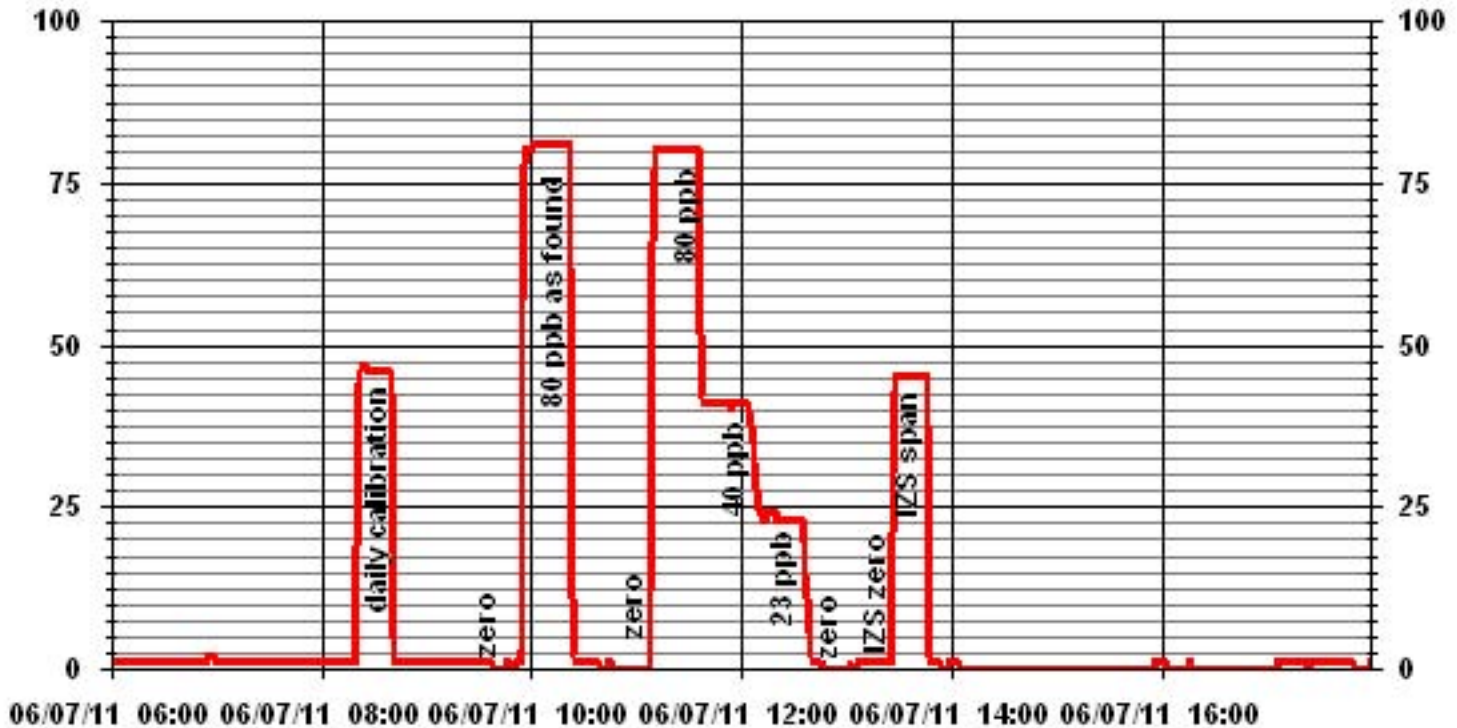
Calibration Date	June 7, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	9:27
End Time (MST)	13:50

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0			0.999796
23	23	0.9941		1.000793
40	41	0.9755		0.257320
80	80	1.0000		



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	June 7, 2011	Previous Calibration	May 9, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	13:13	End Time (MST)	17:12
Reason:	Monthly Calibration		
Barometric Pressure:	934 mmHg	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information

Make / Model	TECO 51C	S/N :	77021-384	Method	Flame Ionization
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Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	21	psi	21	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	-0.4	NA
1998	0.0	0.0	0.0	NA
1998	70.0	39.6	39.7	0.9986
1998	70.0	39.6	40.0	0.9911
1998	34.9	20.1	19.9	1.0104
1998	20.0	11.6	11.5	1.0094
1999	0.0	0.0	0.4	NA
New Correction Factor:				0.9911

Percent Change

Previous Calibration Correction Factor:	0.9911
Current Correction Factor Before Span Adjust:	0.9986
Percent Change:	-0.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	35.8	35.6
Sample Lines Connected		YES

Cylinder Pressures			
Span	1400 psi	Hydrogen	2000 psi
		Zero Air	34 psi

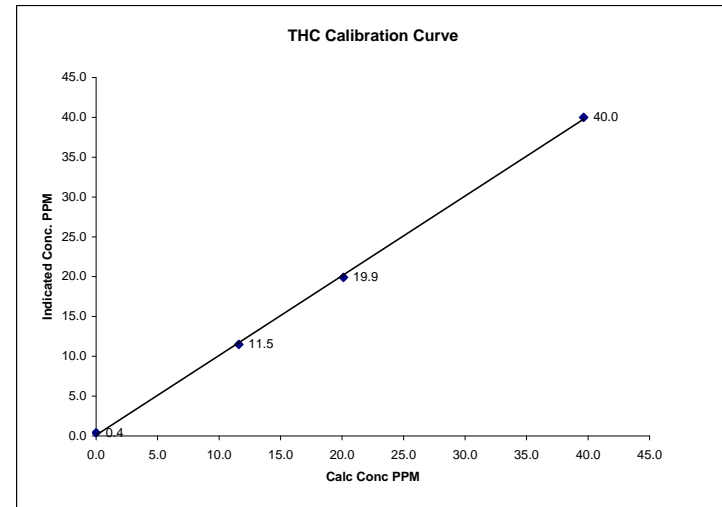
Notes: **NA : Not Applicable**
 When did the second span point, a pressure warning appeared. Clear warning and re-did the point.

Calibration Performed by: Ting Xu

THC Calibration Curve

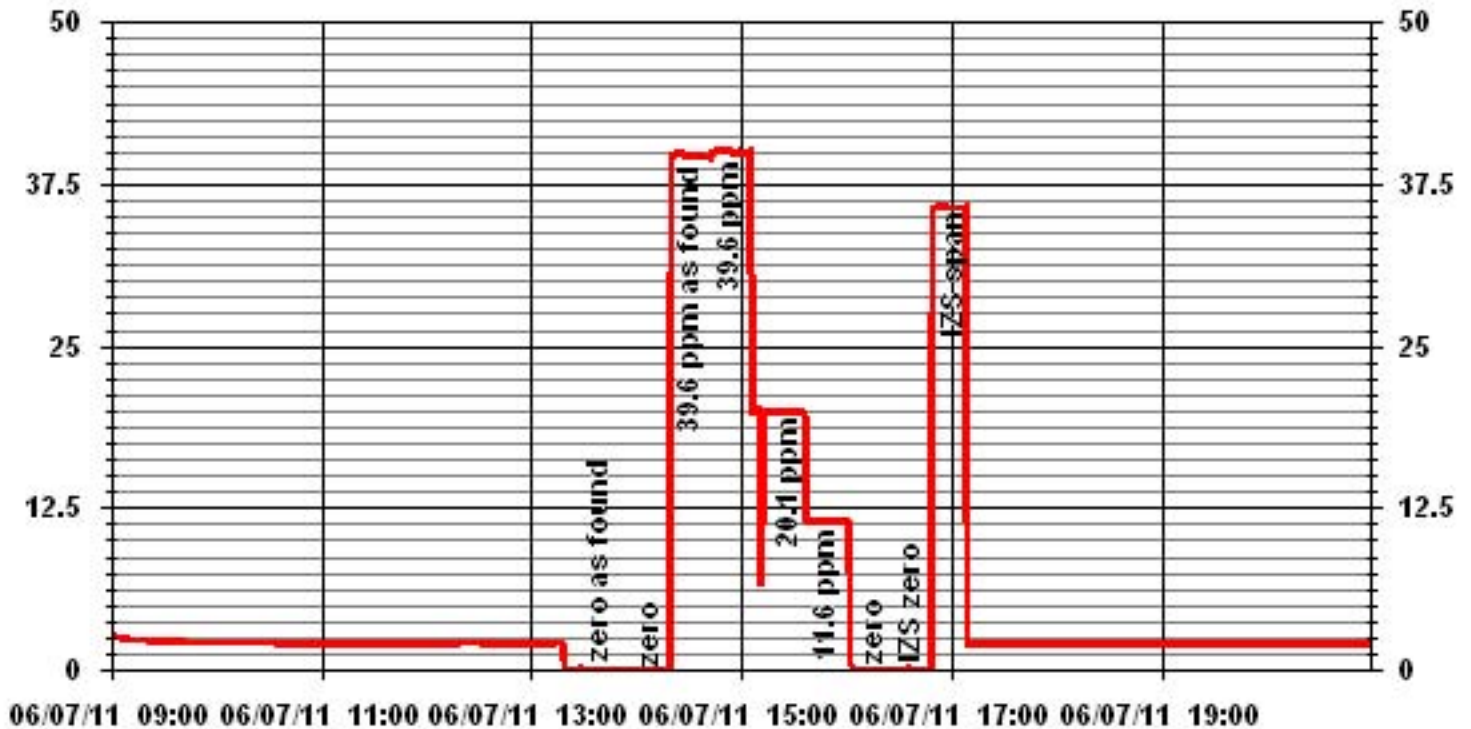
Calibration Date	June 7, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	13:13
End Time (MST)	17:12

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)
0.0	0.4	NA	Intercept	(±3% F.S.)
11.6	11.5	1.0094		0.999653
20.1	19.9	1.0104		1.000943
39.6	40.0	0.9911		0.09283



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	June 7, 2011	Previous Calibration	May 9, 2011
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:27	End Time (MST)	15:52
Reason:	Monthly Calibration		
Barometric Pressure	934 mmHg	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822		MFCF 1
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N :	4760		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration			After Calibration			
Concentration Range	0 - 1000			ppb		
Sample Flow/Conv. Temp	401 ccm	316 Deg C	402 ccm	315 Deg C		
Ozone Flow / Vacuum	73 ccm	4.6 "Hg-A	73 ccm	4.6 "Hg-A		
HVPS / A ZERO	662 Volts	19.7 MV	662 Volts	19.4 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C	50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	30.4 Deg C	45.2 Deg C	30.6 Deg C	45.3 Deg C		
Offset	3 NOx	0.4 NO	3 NOx	0.4 NO		
Slope	1.095 NOx	1.067 NO	1.100 NOx	1.071 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.993	NA NO2	0.993		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	2	0	2	NA	NA
No Adj Required										
4921	74.2	NA	768	749	NA	764	746	19	1.0078	1.0036
4921	74.2	NA	768	749	NA	769	749	20	1.0013	1.0000
4960	34.6	NA	358	349	NA	359	350	9	1.0032	0.9976
4978	16.8	NA	174	170	NA	175	172	3	1.0052	0.9856
4996	0.0	NA	0	0	NA	0	1	-1	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	61.4	NA	637	621	NA	769	751	18	NA	NA
No Adj Required										
4921	61.4	550	637	NA	503	773	266	506	0.9980	100.62%
4921	61.4	300	637	NA	284	773	485	288	0.9930	101.50%
4921	61.4	120	637	NA	122	770	647	124	1.0000	101.92%

Linearity	Sum of Least Squares	NOx= 0.998	NO= 0.999	NO2= 0.992
OK?	Correction Factors:	NOx= 1.0013	NO= 1.0000	NO2= 0.9980
Average Converter Efficiency= 101.35%				

Before Calibration			After Calibration		
Auto Zero	-1.0 NOx	-1.1 NO2	-0.3 NOx	-1.6 NO2	
Auto Span	706 NOx	685 NO2	708 NOx	690 NO2	
Sample Lines Connected YES					
Percent Change from Previous Calibration			NOx -0.8%	NO -0.7%	NO2 -0.2%

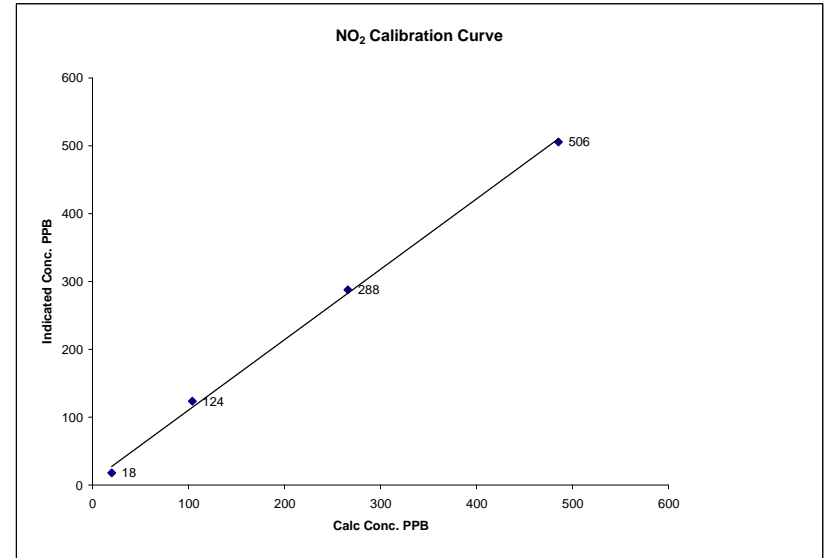
Notes: **NA : Not Applicable**
Additional GPT was done for O3 claibration. O3 set point 450, NO=351, NO2=421

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	June 7, 2011	Company	LICA
Plant / Location	St. Lina	Start Time (MST)	9:27
End Time (MST)	15:52		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998373
20	18	N/A	Intercept	(± 3% F.S.)	7.01888
104	124	0.8387			
266	288	0.9236			
485	506	0.9585			

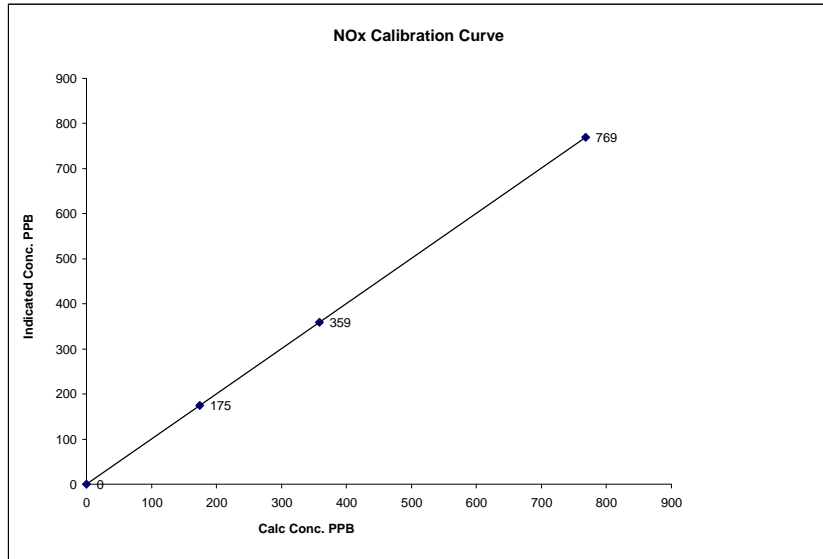


Notes:

NOx Calibration Curve

Calibration Date June 7, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:27 End Time (MST) 15:52

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999999
0	0	N/A	Intercept	(± 3% F.S.)	0.42933
174	175	0.9937			
358	359	0.9976			
768	769	0.9987			

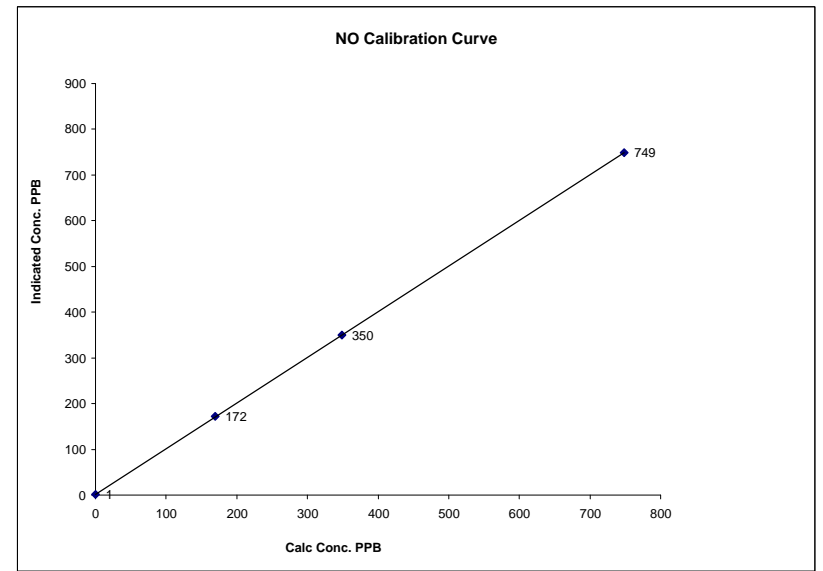


Notes:

NO Calibration Curve

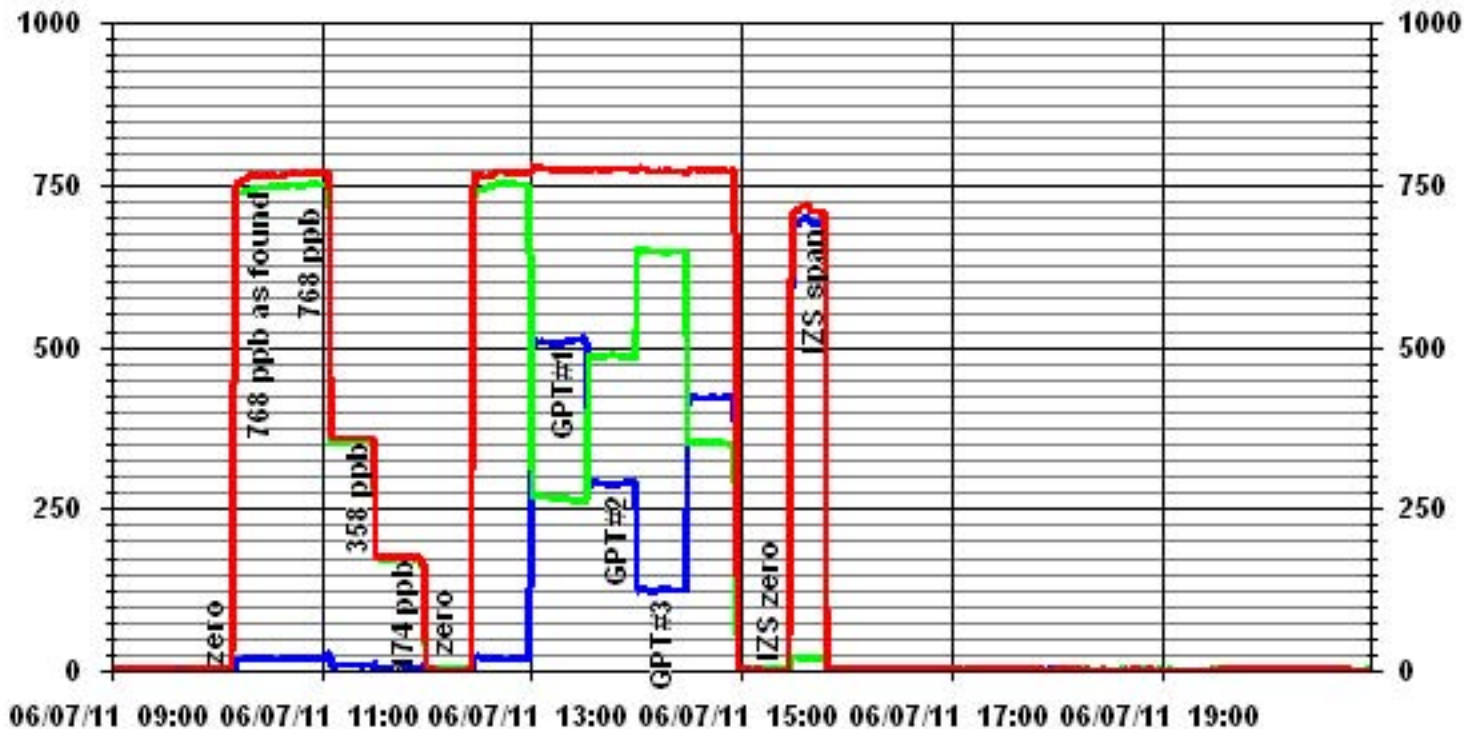
Calibration Date June 7, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:27 End Time (MST) 15:52

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999994
0	1	N/A	Intercept	(± 3% F.S.)	1.3003
170	172	0.9856			
349	350	0.9976			
749	749	0.9995			



Notes:

01 Minute Averages



— LICA31 NOX_ PPB

— LICA31 NO_ PPB

— LICA31 NO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	June 7, 2011	Previous Calibration	May 10, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	8:51	End Time (MST)	12:46
Reason:	Monthly Calibration		
Barometric Pressure	932 mm Hg	Station Temperature	25 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49C	S/N :	49C-54926-302	Method:	Fluorescent
Calibrator Make / Model:	Enviroincs 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
	0 - 500			
Concentration Range	ppb			
Cell A Flow / Cell B Flow	717 ccm	734 ccm	725 ccm	743 ccm
Pressure	694 mmHg		707 mmHg	
Bench Temp	55.1 Deg C		55.2 Deg C	
O3 Lamp / Box Temp	80 Deg C	30.5 Deg C	80 Deg C	31.6 Deg C
Offset / Slope	0.2	0.98	0.1	0.964

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	-2	N/A
4995	450	400	405	0.9877
4995	450	400	400	1.0000
4995	300	266	267	0.9963
4995	120	104	107	0.9720
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0000

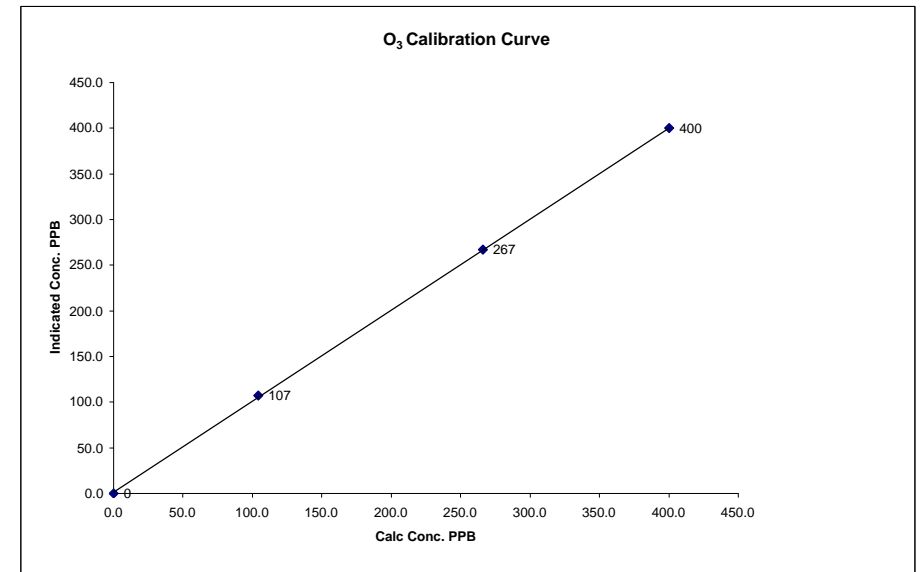
	Before Calibration	After Calibration
Auto Zero	0.8	1.1
Auto Span	349	342
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.3%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

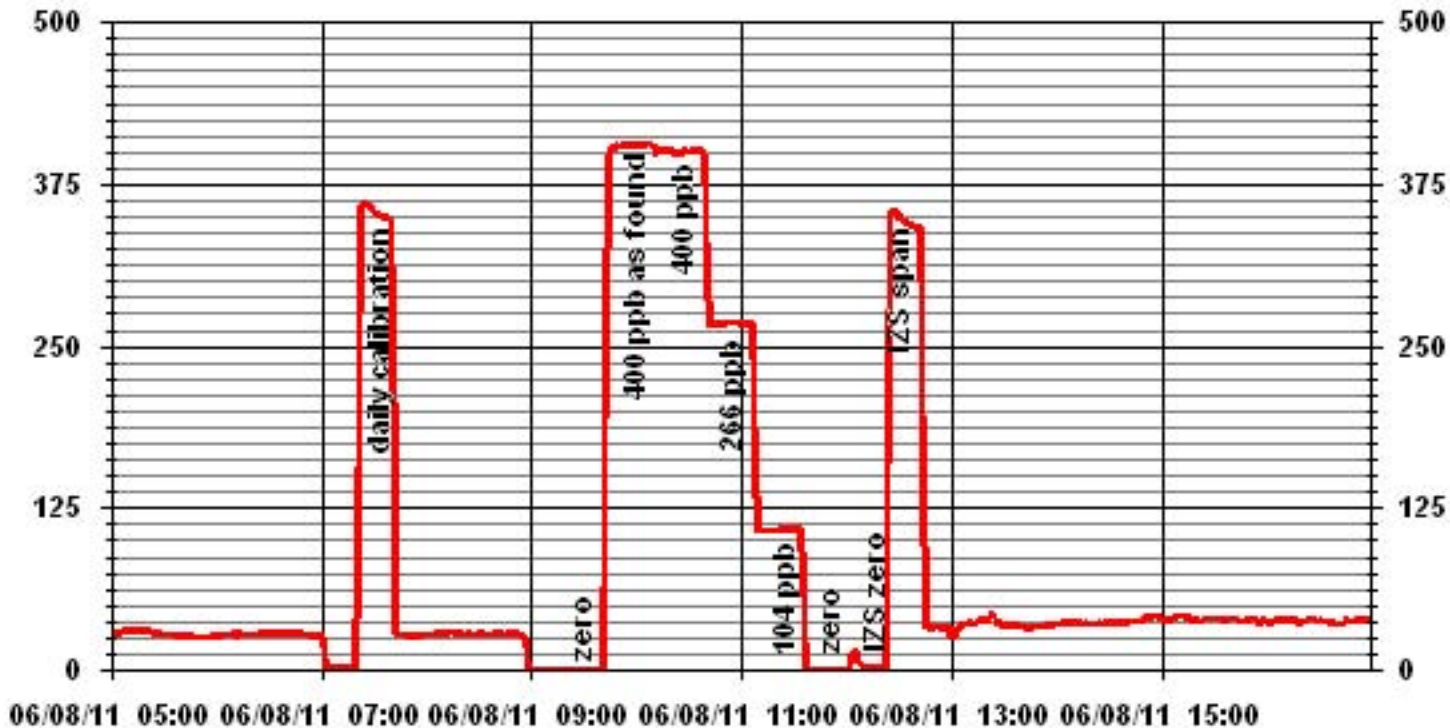
Calibration Date	June 7, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	8:51	End Time (MST)	12:46

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	n/a	0.999940	0.997943
104	107	0.9720		
266	267	0.9963		
400	400	1.0000		1.395942



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOMÒ 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	June 14, 2011	Make/Model:	Streamline FTS
Station Name:	Lica St. Lina (CASA # 31)	Serial Number:	LO 091099, Hi 091001
Location:	St. Lina Station	Cell s/n:	NA
Operator:	LICA	Thermometer s:	Station Temp. Sensor

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A208301003	Filter Load (%)	23.1%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	18.6
		Press (ATM)	0.917

Conversion from mmHg or "Hg to ATM (Atmospheres)

ATM = (mmHg) X (1.316 X 10⁻³) or ATM = ("Hg) X (3.34207 X 10⁻²)

Note: Tolerances are noted as BOLD in Brackets

Audit

Status			
Noise <0.10ug	0.004	Warnings	None
Pump Vacuum <0.4atm	0.29	Pump Gauge (inHg)	-20
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	18.6		0.0
Measured Press (± 0.01atm)	0.916	DATM	0.001
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	2.51%
Measured Main Flow (l/min)	2.96	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.11%
Measured Bypass Flow (l/min)	13.62	Flow Adjusted to Measured?	No
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	Base -0.02, Ref -0.02	Flow Control = Active	
Aux (< 0.6 l/min)	Base -0.02, Ref -0.00	Report Conditions = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 11:55 **Finish Time:** 13:34

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 18.0%

Comments: _____

Auditor/s: Ting Xu